



BENCH BRIEFS

SERVICE INFORMATION FROM HEWLETT-PACKARD

MAY-JULY 1979

Group Delay

Dan Braun
Hewlett-Packard, Mtn. View

As a microwave technician involved in the repair and calibration of Hewlett-Packard's microwave test equipment, there have been many occasions when customers touring HP's repair center have asked me, "What does that instrument do?" Their look of curiosity turns to one of confusion when I respond, "It measures IF flatness, power, and group delay." We are talking about an HP 3710A or 3790A Microwave Link Analyzer System.

But this article is not about the MLA, it's about one function of the MLA and that's measure group delay. And what is group delay? It is synonymous with envelope delay, phase delay, or differential phase. Basically, they all mean the same thing. Some may argue that there are differences, but they are minimal. Most engineering texts refer to group delay with a lot of mathematical formulas. The IEEE Dictionary refers to group delay as "the derivative of radian phase with respect to radian frequency, $d\phi/dw$. It is equal to the phase delay for an ideal non-dispersive delay device, but may differ greatly in actual devices where there is ripple in the phase vs. frequency characteristic."

The Telecommunication Transmission Handbook by Roger L. Freeman defines group delay as envelope delay distortion and goes on to say that it's the derivative of radian phase characteristics with respect to radian frequency characteristics. And, since group delay is defined as the incremental change in phase caused by an incremental change in angular frequency, where the increment approaches zero in both cases, group delay is expressed as

$$GD = \frac{d\phi}{df}$$

where d indicates the derivative of; ϕ is the angular phase (radians), and f is the angular frequency (radians/sec.).

$d\phi$ and df can be further defined as

$$\frac{d\phi}{df} = \lim_{\Delta f \rightarrow 0} \frac{\Delta\phi}{\Delta f}$$

which means that $\Delta\phi$ (change in phase) and Δf (change in frequency) must approach zero. By definition, the amount of change in phase and frequency as shown in Figure 1 must be infinitely small (approaching zero) for it to be group delay.

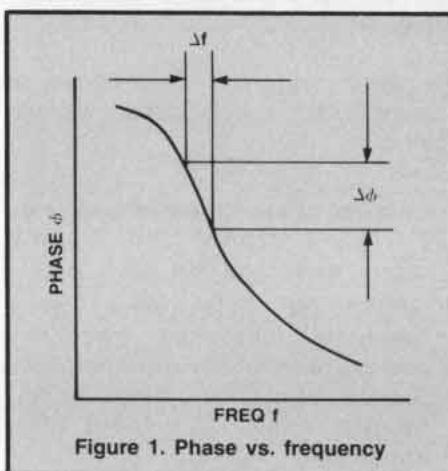


Figure 1. Phase vs. frequency

Actually, group delay is a theoretical concept and in practice cannot be measured at all. What is actually measured, referring back to the IEEE definition, is differential (radian) phase and differential (radian) frequency which, if measured correctly, can be assumed to approximate group delay. It is the variations in delay at different frequencies that causes the problems and is referred to as group delay distortion.

What is Delay Distortion?

Electromagnetic waves travel 186,000 miles per second in free space. Electrical signals, however, do not travel this fast through communications channels. In fact, signals may travel over certain types of circuits as slowly as 15,000 miles per second, and will rarely travel faster

than about 100,000 miles per second over a microwave radio path. These lower velocities result from the nature of the communications equipment or the transmission path.

A telephone line behaves like a low pass filter, particularly if inductive loading is used to reduce attenuation. Multiplex systems use very sharp filters to separate one channel from another, and the tuned circuits in a radio receiver serve the same purpose. All these filters and filter-like elements introduce delay.

The slowing down of a signal in its passage through a communications channel is of little importance. Delay becomes a problem only when it interferes with the ability of the receiver to understand the message. In the case of speech, delay distortion causes little interference since the ear is relatively insensitive to phase variations. Facsimile, telegraph, and data signals, however, are quite vulnerable to delay distortion.

Usually, only relative delay — the maximum range or difference in delay values in a channel — is of importance, since only the delay difference causes distortion in the received signal. Absolute delay — the total delay experienced by signal elements — is usually not important except where signals, or parts of a signal, are transmitted from one point to another over different routes and must arrive at the same time.

IN THIS ISSUE

GROUP DELAY

A QUICK GUIDE TO BATTERIES

SPARE PARTS KIT

INTEGRATED CIRCUIT CROSS REFERENCE

SERVICE NOTES

READERS CORNER

For example, if two tones, such as 1200 and 2200 cycles per second, are used to transmit binary data (shifting from one frequency to the other), it is important that these two tones experience approximately the same transmission delay in going from one end of the circuit to the other. If the data is being transmitted at 1000 bits per second, each bit will be one millisecond long. If these transmissions consist of alternate 1's and 0's, the signal will be alternately shifting between 1200 and 2200 cps. The transmission propagation time for those two tones between the two ends of a given circuit can vary considerably. For example, 60 miles of loaded telephone cable may introduce a delay to the 2200 cycle tone of 6.1 milliseconds as compared to 5.1 milliseconds for the 1200 cycle tone, a difference of 1 millisecond. If the 2200 cycle tone is transmitted first followed by the 1200 cycle tone (each transmitted for 1 millisecond), it can be seen that they will both be received at the same time, rather than one following the other. In 120 miles, they would be received in the reverse order!

Delay Distortion At Higher Frequencies

In high speed data transmission, the problem of delay distortion becomes more serious and troublesome as the transmission rate increases. Data bits usually originate as rectangular-shaped pulses which are used to modulate a carrier at a particular keying rate for transmission over a communications circuit. The pulses resulting from this modulation process are composed of many frequencies whose amplitudes and phases have a fixed relationship in time. The energy of the fundamental and harmonic frequencies are vectorially added together to form the envelope of the composite signal. If the pulses are processed through circuit components such as band-pass filters or amplifiers, which because of reactive (imaginary) components within the circuitry do not offer equal transit time to all frequencies, the signal shape (envelope) is seriously distorted. As shown in Figure 2, if the third harmonic is delayed by

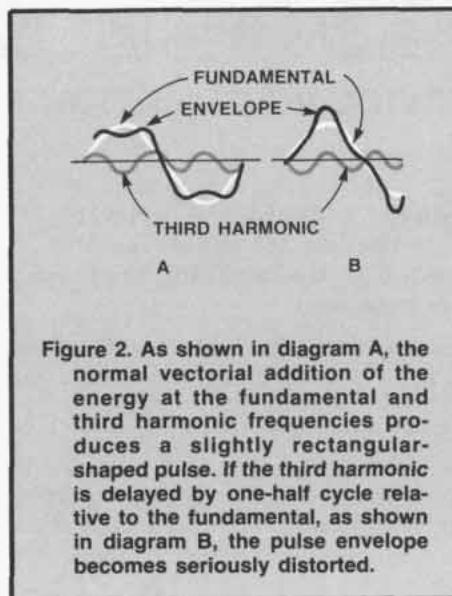


Figure 2. As shown in diagram A, the normal vectorial addition of the energy at the fundamental and third harmonic frequencies produces a slightly rectangular-shaped pulse. If the third harmonic is delayed by one-half cycle relative to the fundamental, as shown in diagram B, the pulse envelope becomes seriously distorted.

one-half cycle relative to the fundamental, the pulse shape is severely distorted.

To demonstrate the effect shown in Figure 2, try the following experiment:

- Connect two audio oscillators (e.g., HP Model 3325A's) to the A and B inputs of an oscilloscope.
- Set A for x frequency at y amplitude (the exact frequency and amplitude are unimportant). Set oscillator B for 3 times the frequency and one-third the amplitude.
- Set up the oscillators so that they are phase locked together with zero phase shift between them (Figure 2A).
- Now shift the third harmonic oscillator so that it is delayed by one-half cycle (180 degrees).
- If the two composites shown in Figure 2B were fed into a speaker, you would note a drastic difference in sound even though the frequencies haven't changed.

Phase Shift

The phase and frequency of a signal are, by definition, inseparable. In fact, a good definition of frequency is the rate of change of phase with respect to time, or $d\phi/dt$, where ϕ is the phase shift (usually in radians; π radians equal 180° , 2 π radians equal one cycle) and t is time in seconds.

Thus, it follows that the more the phase of a signal is shifted in passing through a channel, the more time is required for it to get through the channel. Where phase shift is known, the phase delay of a single frequency is

$$\text{delay (time)} = \frac{\text{phase shift (radians)}}{\text{frequency (radians per sec.)}}$$

This is usually expressed as

$$t = \frac{\phi}{\omega}$$

It is important to note that in practical systems, phase delay, as expressed above, is applicable only to single, steady-state frequencies.

In an ideal system, phase shift would be linear and all signals passing through such a system would be delayed equal amounts, regardless of their frequency. Unfortunately, phase shift in a communication channel is never linear. In a high quality system, the overall phase shift characteristic may look like that shown in Figure 3.

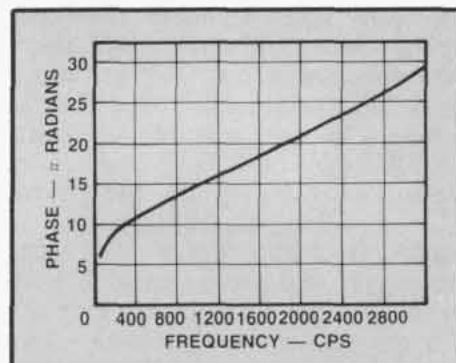


Figure 3. Phase shift characteristic of a high-quality 100-mile carrier telephone circuit.

Measuring Group and Envelope Delay

Whenever a complex signal (such as a modulated or keyed carrier frequency) is transmitted, the relationship between frequency and phase shift described above no longer holds true unless the system is perfectly distortion-free. Since phase shift is always non-linear in actual systems, some of the component frequencies undergo more phase shift than other frequency components.

For simplicity, assume that the complex signal consists of only two component frequencies. Added together, the two frequencies form a beat-frequency or modulation envelope. Because of non-linear phase shift, the two component frequencies and modulation envelope travel at different velocities through the channel with the relationship between them constantly changing. If phase shift were linear, all the frequencies would travel at the same velocity; and there would be no displacement of one frequency with respect to the other and no independent delay of the modulation envelope or envelope delay.

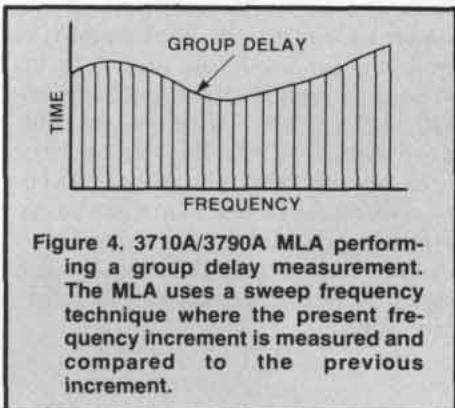
The more non-linear the phase shift, the greater the envelope delay. In other words, the greater the rate of

change of phase shift, the more envelope delay will result.

Since virtually all forms of electrical communication use signals which require a band of frequencies for successful transmission, both envelope and group delay are the forms of delay of greatest general importance. Hewlett-Packard measures relative delay (and other parameters) in microwave radio applications with the HP 3710A/3790A Microwave Link Analyzer System. Audio data line delay distortion measurements to CCITT standards are performed by the 3770A/3770B Analyzers.

Figure 4 shows the basic principle used in making group delay measurements with the 3710A/3790A

MLA. A frequency range is selected and the MLA sweeps that range with its transmitter. Time required (delay) for increments of the swept signal to reach the receiver is measured with the composite of all increments forming the group delay picture displayed on the CRT.



Group Delay and the Phase Lock Loop

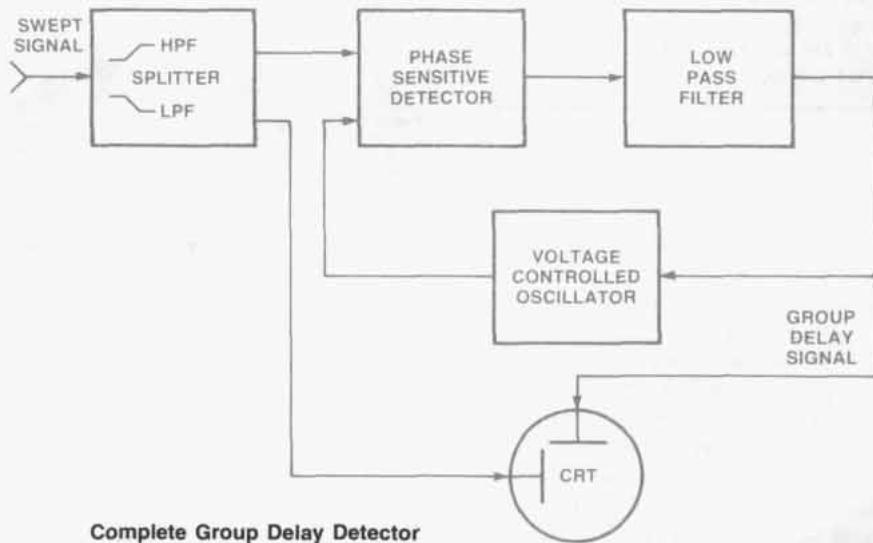
The method used in the HP Microwave Link Analyzer (MLA) to measure group delay distortion is a special application of a phase lock loop as described in a previous issue of Bench Briefs (October 1978).

Generally speaking, a phase lock loop (PLL) is used to produce an accurate signal (or some multiple) from a stable reference. In the case of the MLA, however, the object is to measure group delay distortion. As the main article pointed out, group delay distortion is merely fluctuations in phase per frequency. And since the phase and frequency of a signal are, by definition, inseparable, it follows that if we plot the small changes in phase that occur due to absolute delay, we should be able to convert that to group delay distortion.

As shown in the accompanying figure, the swept signal is applied

to the PLL as the reference signal. An internal voltage controlled oscillator is phase locked to the incoming signal, and it is the PLL error voltage that is the detected phase error or group delay signal. The swept signal is applied to the horizontal plates, and the group delay signal is applied to the vertical plates of a CRT. The key to the group delay

detector is a special low pass filter designed to pass only frequencies lower than 10 Hz. If frequencies higher than 10 Hz were allowed to pass through, the error voltage would completely correct all phase fluctuations so rapidly it would appear there was no group delay distortion at all.





GROUP DELAY

Figure 5 shows the basic principle used in making envelope delay measurements with the 3770A/B Analyzers. The transmitter part of the instrument generates a carrier signal that is alternately modulated with a reference signal and then a test signal. The test signal frequency starts out at the lowest end of the frequency range the instrument is capable of transmitting and steps up to the high end start, stop and reference signals are switch-selectable. For example, 300 Hz to 3.4 kHz could be the test range, and 1kHz the reference. Delay is measured by comparing the delay of the envelopes recovered at each of the various test frequencies to the delay of the reference signal.

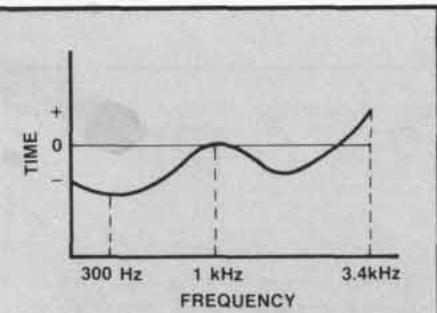


Figure 5. 3770A/B Analyzer performing an envelope delay measurement. A carrier signal is alternately modulated with a reference signal and then a swept series of test signals. Each separate test signal is compared back to the reference signal. The relative group delay of the channel at the two frequencies is measured by comparing the delay of the envelope recovered during the measuring period with that recovered during the reference period.

Delay Compensation Networks

Where amplitude response of a circuit is unsatisfactory, a filter is used to introduce a controlled amount of loss at certain frequencies to obtain the desired performance. In a carrier system, the channel bandpass filters which isolate individual channels from each other are the principal sources of delay distortion. These filters should have uniform amplitude response within a desired band of frequencies, but must exhibit a very

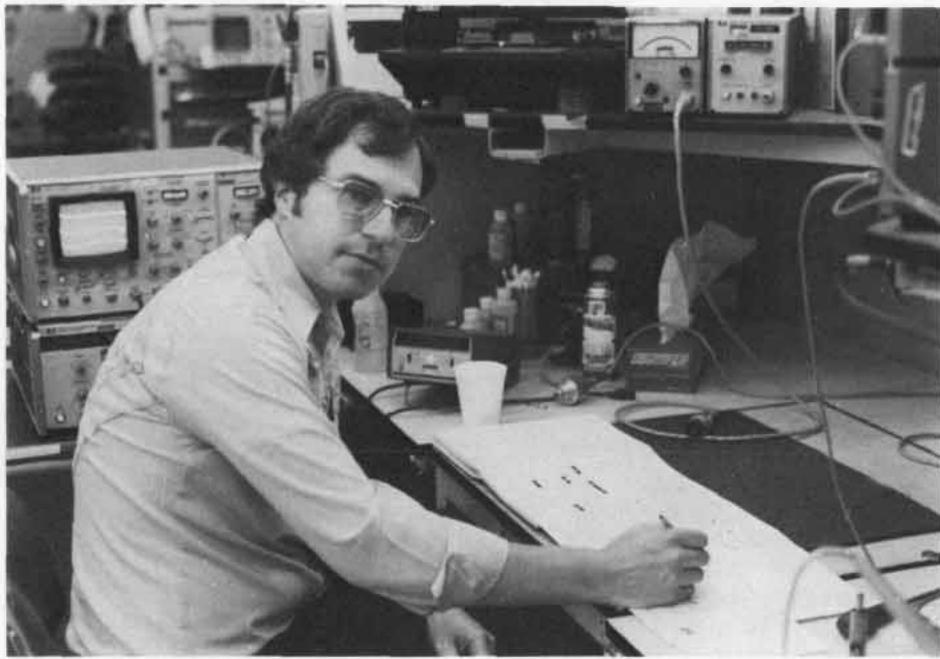
rapid attenuation of all frequencies outside the desired band. Unfortunately, such rapid change in the attenuation characteristic of a filter is also accompanied by rapid changes in the phase shift.

In the case of excessive relative delay, a network which would correct the phase shift characteristics of the communications channel might very well neutralize the desired attenuation of the filters responsible for the delay. Special delay equalizers called elliptical all-pass filters are required to overcome this problem. Without getting into filter theory, it will suffice to say that these filters are complex and their component values are usually calculated by computer. In typical applications, these filter networks generally contain several adjustable components so that the group delay response can be adjusted for flatness

while being observed on the CRT of a group delay detector.

Summary

In conclusion, there are several important points to remember. Group delay is a transit time phenomena. Group delay distortion causes audio distortion in communication links. This cannot be eliminated, but it can be compensated for by special filters. Relative group delay can be measured by a unique application of a phase lock loop and displayed graphically on a CRT. Group delay distortion is not an absolute measurement, but a relative measurement. The actual transit time of a signal through a communication link is not important. It is the changes or fluctuations in the transit time from one frequency to another expressed as group delay distortion that is important.



Dan Braun, who has been with Hewlett-Packard 5 years, is an instrument service technician at the HP Customer Service Center in Mt. View, California. As you can probably tell from the nature of the article, Dan's primary responsibilities are the repair and calibration of HP's microwave test equipment.

Born and raised in the San Francisco Bay Area, Dan attended College of San Mateo where he obtained his AA degree. He furthered his electronic background in Class A school while serving 6 years in the Navy. Dan and his wife, Frieda, live in San Jose, California.

A Quick Guide to Batteries

(Editor's Note: The following article appeared in the *Electronic Buyers' News* and is reproduced with permission of CMP Publications Inc.)

Even though the electrochemical fabrication of the most commonly used batteries has been known for more than a century, new and improved batteries are providing users an even widening choice of operating characteristics for meeting different requirements.

Consequently, this article attempts to define and explain many of today's batteries and their differing characteristics.

The term battery applies to a range of products classed as primary and secondary. Because their active materials are irreversibly consumed during periods of usage, primary batteries can't be recharged. However, recharging secondary batteries reconstitutes their active materials and permits them to be reused many times.

Strictly speaking, a battery is an assembly of two or more cells. The cells, each made up of two dissimilar electrodes, are in contact with an electrolyte within a closed container. The voltage output of the cell is a function of the electrochemical properties of the electrodes and the electrolyte. For systems in common use today, this ranges from 1.2 to 3.0 volts.

Every cell and battery has two important characteristics: voltage and discharge rate. Voltage higher than the cell voltage are obtained by connecting cells in series so that their voltages combine. For example, a 12-volt battery would consist of six 2-volt cells or eight 1.5-volt cells. In the early days of tube-type radio, there was a constant demand for 45- and 90-volt batteries, each requiring a large number of cells.

Discharge rate is expressed in ampere-hours or milliampere-hours. This is the product of current measured in amperes or milliamperes and the number of hours that the cell or battery can supply or discharge that amount of current. The abbreviations are Ahr and mAh.

Primary Batteries

Until recently the choice of battery power was limited to the carbon-zinc (Leclanche) dry cell used for general-purpose applications such as flashlights and portable radios. Then the zinc-chloride versions of the carbon-zinc system offered significantly improved energy density, while the alkaline-manganese dioxide system provided a further improvement, the latter being suited for efficient powering of transistorized circuitry. Mercuric oxide and silver oxide met the need for compact button cells for hearing aids, calculators, cameras, and other special needs.

Carbon-Zinc Flashlight Battery



Carbon-Zinc (Leclanche). Still the most common and lowest cost primary system for general purposes, from toys and flashlights to transistorized radios and recorders, carbon-zinc batteries and cells account for at least half of the primary battery sales.

The cell consists of a positive carbon electrode and an electrolyte composed of manganese dioxide, ammonium chloride and zinc chloride

and water. The negative electrode is the zinc case. The voltage per cell is 1.5V. Cell sizes range from AAA to D and the lowest cost battery is the 9-V rectangular case size for transistorized products.

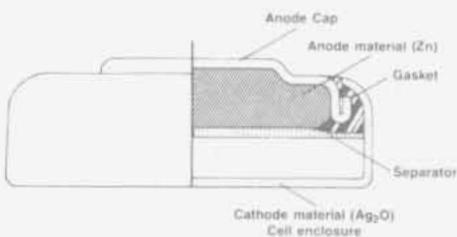
Carbon-Zinc (Zinc-Chloride). The zinc-chloride or heavy-duty version of the basic system provides about 50% more life for the same case size as the Leclanche version. Construction is similar except the ammonium chloride is omitted from the electrolyte. Cell voltage is 1.5V.

Alkaline Manganese Dioxide. The so-called alkaline cell is a further refinement of the basic carbon-zinc system, using the same positive and negative electrodes. Highly alkaline potassium hydroxide is used in place of zinc-chloride. Reportedly, these cells and batteries offer a twofold improvement in energy density over the carbon-zinc system for about twice the price. This system is better adapted for use where reliability and length of service offset the increased cost. Case sizes are similar and cell voltage is the same.

Mercuric Oxide Cells. The mercuric oxide cell has a higher electrical capacity for its size than either carbon-zinc or alkaline cells, providing 1.35 volts per cell. The cathode is mercuric oxide, the anode is zinc and the electrolyte is potassium hydroxide or sodium hydroxide. This system provides effective button-size cells for watches and hearing aids, but seems to be losing ground to the more effective silver-oxide systems.

Silver-Oxide Cells. Silver oxide cells provide more than twice the energy of carbon zinc cells of an equivalent size and offer more energy per unit volume than mercuric oxide cells. Available in two types, high drain and low drain, the silver oxide cathodes are paired to zinc anodes; and the electrolytes are potassium

Silver-Oxide Watch Battery



hydroxide or sodium hydroxide. These button-sized 1.55 cells are in wide demand for watches and hearing aids.

Magnesium Cells are primarily used in military applications due to their ability to withstand extremes in temperature and humidity and to provide energy after years of storage. A magnesium alloy is used for the anode; magnesium bromide for the electrolyte. Magnesium cells provide 1.8 volts per cell.

Zinc-Air Cells are high-energy primary systems available commercially today for hearing aid and

watch use. They use oxygen as the positive electrode, zinc as the negative electrode and feature an electrolyte of potassium hydroxide. Shelf life is excellent because they are only activated by removing the tape from a tiny hole, which admits air. The zinc air cell provides 1.5 volts per cell.

Lithium Cells. The term lithium cell or battery applies to a number of different electrochemical systems capable of producing from 1 to 4 volts per cell. Lithium is used as the negative electrode in all of them, but the voltage and operating characteristics are determined by the choice of cathode and electrolyte. All of the systems employ highly reactive alkali metals prepared without the use of water, so they are classed as non-aqueous.

At present, lithium systems in use or under investigation are also classed as either solid or liquid. In the solid

Lithium Cell



systems, the cathode is a metal halide, sulfide or oxide, and the electrolytes are lithium salts in organic solvent. The liquid systems have soluble reactants with catalytic materials (sulfur dioxide or thionyl chloride). The electrolytes in the liquid units can be organic or inorganic.

The Type Used in HP Calculators

Rechargeable Nicads

Nickel-cadmium batteries are often blamed for early failure when in fact, you have been abusing the poor things all along without realizing it. And true to Murphy's law, your device will go dead when you need it the most and do not have the charger with you; or you do have the charger, but there's no AC power available.

To demonstrate proper nicad use, let's look at the nicad cells used by Hewlett-Packard calculators. These cells, according to their manufacturer, should average approximately 500 charge/discharge cycles. Sometimes your treatment of these batteries may shorten or appear to shorten their useful life. Of

course, subjecting nicads to excessive temperatures will guarantee to shorten their life. But the way you use the calculator and charge the batteries can also affect their performance.

The ideal charge/discharge cycle is as follows: 1) fully charge the nicads on the recharger; 2) remove the recharger and operate the calculator on battery power until a low level indication occurs; 3) recharge fully on recharger. This method results in maximum battery performance. Actually most people do not use their calculators in this manner, but rather in the broad spectrum between two extremes. Those two

extremes are excessively deep discharging and continual recharger use.

Continual Recharger Use

Continual recharger use does not harm the calculator or batteries. If the calculator is used in a combination of recharger and battery power, and if the battery is discharged to a different level each charge/discharge cycle, no harm is done. If, however, a battery is subjected to a repetitive depth of discharge over a period of many months, a phenomenon known as memory may result. Memory is an apparent temporary loss of capacity. To illustrate, suppose a calculator is kept on the recharger continually, except for a 5-minute period each day when it is used on battery power. Over a long period of time, the nickel-cadmium batteries begin to "remember" the capacity they

Though lithium systems cost less than silver oxide materials, their manufacturing costs are higher. They can replace mercury and silver based systems where their voltages are about equal, but the higher lithium voltages may call for circuit or product redesign.

Lithium battery systems can present potential safety hazards because of their higher energy content, higher reactivity and the unusual nature of the materials involved. Most often, they are seen as supplementing rather than replacing silver oxide systems. But lithium cells have the highest watt hours per cubic inch (Whr/in³) and their hermetically sealed cells afford a shelf life in excess of five years.

Secondary Batteries

Lead-Acid Cell. Storage batteries made of multiple lead-acid cells are the most widely used rechargeable batteries.

The positive electrodes of lead-acid cells are made of lead peroxide and the negative electrodes are made of sponge lead paste. The groups of positive and negative plates are interleaved and spaced by separators. The complete assembly is placed in an electrolyte of diluted sulfuric acid. A storage battery is made up of separate compartments or cells, each with its own filler and vent plug. The voltage of each cell is approximately 2 volts. Actually, automobile batteries use cells of 2.1 volts so the combinations of 6 cells provides 12.6 volts.

An interesting sidelight can be shown when you compare high cost vs low cost automobile batteries within the same group (i.e. group being a standard size of battery such as 24F). In general, the low cost battery will have fewer plates (less lead, hence lower cost), and have a lower ampere-hour rating than the high cost battery. Once quick way to verify this is to weigh the two batteries.

Obviously, the battery with more plates has more lead and therefore weighs more. It also lasts longer when you inadvertently leave your lights on. It also can provide more cranking power for cold morning starts.

Of more interest to the electronics industry for the continuous power of remote instrumentation sensors, TV sets, medical instruments and truly portable tools is the true sealed lead-acid battery. No acid or vapor is vented and all evolved oxygen gas is recombined with the plate materials. These batteries and cells are presently limited to lower watt-hour ratings than the maintenance-free batteries. Although some of the cases are flashlight cell size, these sealed lead-acid cells are not interchangeable with either carbon zinc and alkaline cells.

There are a number of different proprietary methods for making sealed lead-acid cells. Some makers are

are expected to deliver each day, and they then will deliver no more than that amount. Memory is completely reversible by a few complete charge/discharge cycles (from full charge down to low level indication).

Deep Discharge

The other extreme encountered is excessive deep discharging of batteries. This is potentially the most damaging to nicad cells. In most cases, the cause of failure when a battery is too deeply discharged is an internal short. Normally a charged or partially-charged cell has enough internal energy to vaporize a short. However, when a cell has been too deeply discharged, the cell does not have enough internal energy to clear or prevent a potential short. The result is that with a number of

deep discharge cycles, the chances of shorting increase. There are two varieties of shorts possible — a low-impedance and a high-impedance short. A low-impedance shorted cell will not respond to any level of recharging current. A high-impedance shorted cell can recover under high charging currents (2A to 4A). However, the shelf life of this cell is very short as it actually discharges itself through its own internal short. Consequently, both low-impedance and high-impedance shorted cells are considered permanent failures. Another type of failure associated with deep discharge is called cell reversal. In a multi-cell battery, deep discharge will cause one cell to become exhausted first, since cells cannot be precisely matched in capacity. The cell with remaining capacity drives the exhausted cell into a reverse state of charge which is cell

reversal. This is a permanent failure, and the battery pack must be replaced.

The problem of discharging your battery too deeply does not always disappear even when you have been made aware of the situation. A malfunctioning low-level detect system could be the guilty culprit.

We won't discuss catastrophic cell failure in the form of venting since it is an easily recognizable problem requiring battery replacement. Excessive temperature, excessive overcharge, cell reversal, and misuse or abuse of nicads are all causes of venting.

So remember, to get an average of 500 charge/discharge cycles out of your HP calculator Nicads, give it a full charge, use it until all the decimal points light up, then give it another full charge.

using very thin, spirally wound positive and negative plates, with the liquid electrolyte contained in a separator. Other makers are using a gelled sulfuric acid electrolyte. All of these cells, however, have safety vents, usually resealable membranes, to prevent the cell from exploding in the event of accidental overcharge.

Nickel-Cadmium Cell. The nickel-cadmium cell can be recharged many times and has almost constant voltage during discharge. These cells operate well at low temperatures and can be hermetically sealed.



In the charged condition, the positive electrode is nickel hydroxide and the negative electrode is metallic cadmium. The electrolyte is a

solution of potassium hydroxide. The average operating voltage is about 1.2 volts.

Nickel-cadmium power sources are divided into the low watt-hour units suitable for calculators, walkie-talkie portable radios and portable tools, not to mention vented versions with higher ratings which are widely used in aircraft ignition systems. Sealed nickel-cadmium cells are made in button sizes through the range of flashlight "D" cells. Rechargers are supplied with the consumer product as part of a line-cord transformer-rectifier assembly.

Recommended Spare Parts Kit For HP Products

SPARES

Spare Parts — Anticipated Requirements Evaluation System

The last issue of Bench Briefs showed you a simple system for ordering parts directly from HP (MOP for Mail Order Parts) so you could avoid the \$20 minimum charge. Now, here is a way to put it to use — replenishing spare parts kits.

SPARES is the name of a computer program used by HP to generate recommended spare parts lists for most HP products. After purchasing the recommended spare parts kit, if your instrument should ever need repair, there is a 90% probability of having the part available. Probability is even higher if spares are replenished as they are used.

Multiple Lists

Recommendations can be made for a single product (1 each 5245L), a quantity of identical products (96 each 5245L), or a combination list for various quantities of different products (6 each 412A, 27 each 1707A, and 9 each 5245L). Recommendations can be made for a spare parts inventory of one year up to nine years.

Long-Term Packaging

Long-term and military-standard packaging is optional. The process used for long-term packaging increases the kit's shelf life because each part is individually packaged and marked. This provides easy identification and protection against destructive effects of weather and atmospheric conditions while in storage.

For more information about SPARES, contact your local HP Sales and Service office. Reference the HP Corporate Parts Center Policies and Procedures Manual, Section 3080.

Replacement Part Cross Reference

When selecting replacement parts for your HP products, you may notice that many manuals list only an HP part number for the part, even though it appears that this part is manufactured by one of the large semiconductor manufacturers. Service personnel often ask why only HP part numbers are listed.

It is recommended that HP replacement parts be used to ensure that the original performance of the product will be obtained. While some parts used in HP instruments are identical to that which can be purchased at a local electronics distributor, many times parts will be selected for certain characteristics, such as gain, bandwidth, capaci-

tance, etc. There may also be slight mechanical differences, such as the shaping or length of leads. In some cases special quality checks are employed to ensure that high reliability parts are used at the factory and at HP field offices.

Therefore, we suggest obtaining replacement parts from HP to maintain the quality that you have paid for in your instrument. There may be situations however where HP replacement parts are not in stock and substituting parts will allow you to return the product to service immediately. In these cases it may be worthwhile to see if a substitute part will work in the circuit. Perhaps an HP part could be ordered and installed at some later date.

To help you in these situations, here's a cross-reference of HP integrated circuit part numbers to manufacturers "generic type" part numbers (whom in most cases is the originator of the part). Even though the cross-reference only lists one manufacturer, there may actually be several approved sources for an HP part. While every attempt was made to ensure the accuracy of the list, it is advisable to compare the description of the device being replaced with the description of the substituted part. For example, if the service manual describes the device being replaced as a "dual J-K flip-flop", check this against the description of the replacement part.

Manufacturers Code Number Cross Reference

Number	Manufacturer	Location	Number	Manufacturer	Location
00039	Nippon Electric Co.	Tokyo, JP	03334	Amperex Elek. Corp. Semicon. & MC Div.	Slatersville, RI
00350	Exar Integrated Systems Inc.	Sunnyvale, CA	03406	National Semiconductor Corp.	Santa Clara, CA
00575	Western Digital Corp.	Newport Beach, CA	03545	Teledyne Philbrick Nexus	Dedham, MA
01590	Plessey Semiconductors	Santa Ana, CA	03658	Optimax Inc.	Colmar, PA
01698	Texas Instr. Inc. Semicond. Cmpnt. Div.	Dallas, TX	03677	American Micro Systems Inc.	Santa Clara, CA
01795	Synertek	Santa Clara, CA	03714	Intersil Inc.	Cupertino, CA
01876	HP Div. 02 Santa Clara IC's 86	Santa Clara, CA	03755	Hybrid Systems Corp.	Burlington, MA
01921	RCA Corp. Solid State Div.	Somerville, NJ	03758	Electronic Arrays, Inc.	Mountain View, CA
01973	GE Co. Semiconductor Prod. Dept.	Auburn, NY	03780	Intech Inc.	Santa Clara, CA
01991	Transitron Electronic Corp.	Wakefield, MA	03794	Advanced Micro Devices Inc.	Sunnyvale, CA
02023	Illinois Tool Works Inc. Licon Div.	Chicago, IL	03795	Motorola Inc.	Franklin Park, IL
02037	Motorola Semiconductor Products	Phoenix, AZ	03799	Harris Semicon. Div. Harris-Intertype	Melbourne, FL
02180	Precision Monolithics Inc.	Santa Clara, CA	03811	Intel Corp.	Mountain View, CA
02237	Fairchild Semiconductor Div.	Mountain View, CA	04078	Mostek Corp.	Carrollton, TX
02290	Raytheon Co. Semiconductor Div. HQ	Mountain View, CA	04092	Monolithic Memories Inc.	Sunnyvale, CA
02569	Crystalonics, Div. Teledyne	Cambridge, MA	04183	Nitron Div. McDonnell Douglas Corp.	Cupertino, CA
02598	Unitrode Corp.	Watertown, MA	04200	Sprague Electric Co.	North Adams, MA
02634	Sprague Elect. Co. Semiconductor Div.	Concord, NH	05436	Burr Brown Co.	Tucson, AZ
02713	General Instr. Corp. Semicon. Prod. GP	Hicksville, NY	06338	SGS Ates	Milan, IT
02763	Teledyne Semiconductor	Mountain View, CA	06545	Lambda Electronics Corp.	Melville, NY
02838	Dynamic Measurements Corp.	Winchester, MA	06563	Siemens Corp. Components Group	Scottsdale, AZ
02882	Zetlex Inc. Sub. of Redcor Corp.	Concord, CA	06852	Data Delay Devices	Clifton, NJ
02883	Siliconix	Santa Clara, CA	07653	Zilog Inc.	Cupertino, CA
02910	Signetics Corp.	Sunnyvale, CA	07810	Texas Instruments France	Nice, FR
03183	HP Div. 22 Data Systems	Cupertino, CA	07915	Hytek Microsystems Inc.	San Diego, CA
03285	Analog Devices Inc.	Norwood, MA			

HP P/N	Mfr.	Desc.	1A13-0049	02763	2740CE	1A13-0092	04436	DACR0-CCD-V
1A13-0013	032HS	4NK	1A13-0052	03795	K1091A-7.50MHZ	1A13-0043	02237	1A17P12SC
1A13-0014	0543H	3112/12C	1A13-0051	03795	K1091A-6.0120MHZ	1A13-0044	05436	DACR0-CH1-T
1A13-0034	03714	TH5010PQ	1A13-0054	03406	AH01540	1A13-0048	05436	ANCH0AG-12
1A13-0035	032HS	293A1SPFC1	1A13-0057	03406	LH0024RH	1A13-0100	02237	1A17P10KMC
1A13-0036	03745	DAC172-12-RCH	1A13-0058	03406	LH0021CK	1A13-0105	05436	DACR0-CH1-V
1A13-0039	029R2	70441	1A13-0061	03795	K1100A-8.79MHZ	1A13-0109	02598	PIC425
1A13-0040	029R2	70440	1A13-0062	03795	K1100A-10.48MHZ	1A13-0110	02598	PIC426
1A13-0041	0340H	1M0042CH	1A13-0064	032HS	ANC12Q2-003	1A13-0114	02598	PIC445
1A13-0043	03745	K1091A-10.48575MHZ	1A13-0067	03795	K1115A-10MHZ	1A13-0115	02598	PIC400
1A13-0045	03795	K1091A-4.0MHZ	1A13-0101	03795	K1100A2P-500	1A13-0116	03795	K1100A-9.8304MHZ
1A13-0046	03705	K1110A-15MHZ	1A13-0062	02598	PIC446	1A13-0117	03795	K1100A-1.792MHZ
1A13-0047	03795	K1091A-10.0MHZ	1A13-0063	02598	PIC401	1A13-0119	03795	K1110A-4.0MHZ
1A13-0048	032HS	751H	1A13-0064	02598	PIC401	1A13-0120	06352	100U-45100
			1A13-0069	03795	K1100A-2.75MHZ	1A13-0121	03795	K1114A-10.137AMHZ

INTEGRATED CIRCUIT CROSS REFERENCE

HP P/N	Mfr.	Desc.	HP P/N	Mfr.	Desc.
1A16-1301	02237	93448PC PROGRAMMED	1A18-0173	03758	FA4900 MASKED
1A16-1302	01698	SN74S287N PROGRAMMED	1A18-0174	03758	FA4900 MASKED
1A16-1303	02237	93448PC PROGRAMMED	1A18-0175	03758	FA4900 MASKED
1A16-1304	02237	93448PC PROGRAMMED	1A18-0176	03758	FA4900 MASKED
1A16-1305	02237	93448PC PROGRAMMED	1A18-0181	01698	TMS4050-1JL
1A16-1306	02237	93448PC PROGRAMMED	1A18-0182	02037	MCM6590L MASKED
1A16-1307	02237	93448PC PROGRAMMED	1A18-0184	02037	MCM6590L MASKED
1A16-1308	02237	93L424PC	1A18-0185	02037	MCM6590L MASKED
1A16-1309	02237	93L412PC	1A18-0186	02037	MCM6590L MASKED
1A16-1310	03799	HML-7611-5 PROGRAMMED	1A18-0187	02037	MCM6590L MASKED
1A16-1311	03799	HML-7611-5 PROGRAMMED	1A18-0188	02037	MCM6590L MASKED
1A16-1312	03799	HML-7611-5 PROGRAMMED	1A18-0189	02037	MCM6590L MASKED
1A16-1313	01698	SN74S287U PROGRAMMED	1A18-0197	03798	AM91112APC
1A16-1314	04092	6782-1J MASKED	1A18-0199	03798	AM91112APC
1A16-1315	04092	4260-1J MASKED	1A18-0201	03758	FA4900 MASKED
1A16-1321	02910	NA25115F PROGRAMMED	1A18-0202	03758	FA4900 MASKED
1A16-1322	02910	NA25115F PROGRAMMED	1A18-0203	02910	PA171 MASKED
1A16-1323	02910	NA25115F PROGRAMMED	1A18-0204	03758	FA4900 MASKED
1A16-1324	02910	NA25291N PROGRAMMED	1A18-0205	02910	PA171 MASKED
1A16-1325	02910	NA25291N PROGRAMMED	1A18-0206	02910	PA171 MASKED
1A16-1326	02910	MR25291N PROGRAMMED	1A18-0207	02910	PA171 MASKED
1A16-1327	02910	NA25291N PROGRAMMED	1A18-0208	03798	AM9216RDC MASKED
1A16-1328	04092	K260-1J MASKED	1A18-0209	03798	AM9216RDC MASKED
1A16-1329	01698	SN74S474N	1A18-0211	03798	AM9216RDC MASKED
1A16-1330	02910	NA25115N PROGRAMMED	1A18-0212	02910	PA171 MASKED
1A16-1331	02910	NA25115N PROGRAMMED	1A18-0213	02910	PA171 MASKED
1A16-1332	02910	NA25115N PROGRAMMED	1A18-0214	03798	AM9216RDC MASKED
1A16-1333	02910	NA25123F PROGRAMMED	1A18-0215	02037	MCM6832P MASKED
1A16-1334	02237	934220C	1A18-0217	02037	MCM6832P MASKED
1A16-1335	02037	4CM1015L	1A18-0218	02037	MCM6832P MASKED
1A16-1336	02910	NA25185I PROGRAMMED	1A18-0219	02037	MCM6832P MASKED
1A16-1337	02910	NA25185I PROGRAMMED	1A18-0220	02037	MCM6832P MASKED
1A16-1338	02237	10145APC	1A18-0221	02037	MCM6832P MASKED
1A16-1339	03406	DM8478CAR/N	1A18-0222	02037	MCM6832P MASKED
1A16-1340	01698	SH74S1AAN PROGRAMMED	1A18-0223	02037	MCM6832P MASKED
1A16-1341	03406	DM7452AAN PROGRAMMED	1A18-0234	03811	C2708
1A16-1342	03406	NH7452AAN PROGRAMMED	1A18-0236	03811	CS316A MASKED
1A16-1343	02910	NA25181F PROGRAMMED	1A18-0237	02713	R-3-24513
1A16-1344	02910	NA25181F	1A18-0238	03798	AM9120APC
1A16-1345	03811	03624A PROG	1A18-0239	02037	MCM6590L MASKED
1A16-1346	03811	03624A PROG	1A18-0240	02037	MCM6590L MASKED
1A16-1347	03811	03624A PROG	1A18-0241	02037	MCM6590L MASKED
1A16-1348	03811	03624A PROG	1A18-0242	02037	MCM6590L MASKED
1A16-1349	03811	03624A PROG	1A18-0243	02037	MCM6590L MASKED
1A16-1350	03811	03624A PROG	1A18-0244	02037	MCM6590L MASKED
1A16-1351	03714	TMS610CE PROGRAMMED	1A18-0245	02037	MCM6590L MASKED
1A16-1352	01698	SN74S282AJ PRGMD	1A18-0246	02037	MCM6590L MASKED
1A16-1353	01698	SN74S282AJ PRGMD	1A18-0247	01698	TMS4050-2JL
1A16-1354	01698	SN74S282AJ PRGMD	1A18-0250	03811	C2708
1A16-1355	01698	SN74S282AN PRGMD	1A18-0254	02910	PA171
1A16-1356	01698	SN74S282AN PROGRAMMED	1A18-0255	02037	MCM6590P MASKED
1A16-1357	01698	SN74S282AN PROGRAMMED	1A18-0256	02037	MCM6590P MASKED
1A16-1358	03799	HML-7611-5 PROGRAMMED	1A18-0257	02037	MCM6590P MASKED
1A16-2031	04092	K260-1J MASKED	1A18-0258	02037	MCM6590P MASKED
1A16-2052	04092	6200-1J MASKED	1A18-0259	01795	SYC2316A MASKED
1A16-2053	04092	4200-1J MASKED	1A18-0260	01795	SYC2316A MASKED
1A16-2054	04092	4200-1J MASKED	1A18-0273	03798	AM9216RDC MASKED
1A16-2055	04092	4200-1J MASKED	1A18-0274	01794	AM9216RDC MASKED
1A16-2056	04092	6200-1J MASKED	1A18-0275	03794	AM9216RDC MASKED
1A16-2057	04092	6200-1J MASKED	1A18-0276	03794	AM9216RDC MASKED
1A16-2058	04092	6200-1J MASKED	1A18-0277	03794	AM9216RDC MASKED
1A16-2059	04092	6200-1J MASKED	1A18-0279	02237	3341ADC
1A18-0037	03811	C1702A PROGRAMMED	1A18-0284	04078	MK3100N MASKED
1A18-0041	03406	WW5241ARLN	1A18-0295	04078	MK3100OP MASKED
1A18-0093	02237	3441DC	1A18-0296	04078	MK3100OP MASKED
1A18-0094	00575	PT1472H-01	1A18-0297	02910	PA171 MASKED
1A18-0095	00575	PT1482H-01	1A18-0298	03794	AM9216RDC MASKED
1A18-0096	01698	TW52501NC	1A18-0299	03794	AM9216RDC MASKED
1A18-0100	03406	WW5216B JW/WN	1A18-0302	03794	C1302 MASKED
1A18-0102	01698	TMS410NC	1A18-0304	03794	AM91112APC
1A18-0103	01698	TMS4030JL	1A18-0309	03794	AM9216RDC MASKED
1A18-0104	03811	C1002A MASKED	1A18-0311	03794	AM9216RDC MASKED
1A18-0105	03811	C1302 MASKED	1A18-0311	03794	AM9216RDC MASKED
1A18-0106	03406	WW5261N	1A18-0312	03794	AM9216RDC MASKED
1A18-0107	03714	IM7512CP	1A18-0313	03794	AM9216RDC MASKED
1A18-0108	02037	KA05L-1	1A18-0314	03794	AM9216RDC MASKED
1A18-0114	04078	KA0465-3	1A18-0315	03794	AM9216RDC MASKED
1A18-0115	03677	P1010A	1A18-0316	03794	AM9216RDC MASKED
1A18-0125	02910	PS26	1A18-0317	03794	AM9216RDC MASKED
1A18-0128	03811	C21078	1A18-0308	03794	AM9216RDC MASKED
1A18-0130	03758	EA4900 MASKED	1A18-0309	02037	MCM6590P MASKED
1A18-0131	03758	FA4900 MASKED	1A18-0310	03794	AM9216RDC MASKED
1A18-0132	03758	FA4900 MASKED	1A18-0311	03794	AM9216RDC MASKED
1A18-0133	03758	FA4900 MASKED	1A18-0312	03794	AM9216RDC MASKED
1A18-0134	03406	WW1101A/AIN	1A18-0313	03794	AM91L3ADC
1A18-0135	02037	MCM8A10L	1A18-0314	02237	3A1PC MASKED
1A18-0140	03794	AM9112APC	1A18-0315	02237	3A51PC MASKED
1A18-0141	03811	CA316A MASKED	1A18-0316	02237	3A51PC MASKED
1A18-0142	03811	CA316A MASKED	1A18-0317	01698	TMS4047-1JL SELCTD
1A18-0143	03811	CA316A MASKED	1A18-0318	03794	C2101-1
1A18-0144	03811	CA316A MASKED	1A18-0319	03811	PE101L-3
1A18-0145	03811	CA316A MASKED	1A18-0320	03794	P2101-2
1A18-0146	01698	TMS4050JL	1A18-0322	03794	AM91L3APC
1A18-0147	01698	TMS4050NL	1A18-0324	03794	AM9216RDC MASKED
1A18-0152	02910	PS26	1A18-0326	04078	MK8090P-1A
1A18-0155	02910	P26B	1A18-0327	04078	MK8102P-6
1A18-0157	03758	FA4900 MASKED	1A18-0328	02037	MCMA61N
1A18-0158	03758	FA4900 MASKED	1A18-0329	04078	MK3100N-3 MASKED
1A18-0159	03758	FA4900 MASKED	1A18-0330	04078	MK3100N-3 MASKED
1A18-0160	03758	FA4900 MASKED	1A18-0331	04078	MK3100N-3 MASKED
1A18-0161	03758	FA4900 MASKED	1A18-0332	03811	D2115L
1A18-0162	03758	FA4900 MASKED	1A18-0334	01698	TMS4047-2JL SELCTD
1A18-0165	01698	TMS4062JL	1A18-0336	03794	AM9112APC
1A18-0167	02037	MCM8560AP MASKED	1A18-0338	02037	TMS411A-2JL SELCTD
1A18-0170	03811	CA316A MASKED	1A18-0340	01698	TMS411A-2JL SELCTD
1A18-0172	03758	FA4900 MASKED	1A18-0341	01698	TMS5161-2JL SELCTD

INTEGRATED CIRCUIT CROSS REFERENCE

13

P/N	Mfr.	Desc.	1A18-0615	03794	AM9216RDC MASKED	1A18-0732	01795	SYP231AA MASKED
1A18-0499	03406	MW241N MASKED	1A18-0616	03794	AM9216RDC MASKED	1A18-0733	01698	TMS473PNL MASKED
1A18-0500	03794	AM9216RDC MASKED	1A18-0617	03794	AM9216RDC MASKED	1A18-0734	01698	TMS473ZNL MASKED
1A18-0501	03794	AM9216RDC MASKED	1A18-0618	03794	AM9216RDC MASKED	1A18-0735	03811	PA155
1A18-0502	03794	AM9216RDC MASKED	1A18-0620	03794	AM9216RDC MASKED	1A18-0736	02037	MCM6833P MASKED
1A18-0503	03794	AM9216RDC MASKED	1A18-0621	03794	AM9216RDC MASKED	1A18-0737	03406	MWS244J PROGRAMMED
1A18-0504	03794	AM9216RDC MASKED	1A18-0622	03794	AM9216RDC MASKED	1A18-0740	03406	MWS244J PROGRAMMED
1A18-0505	02919	ZK07N MASKED	1A18-0623	03794	AM9216RDC MASKED	1A18-0741	03406	MWS244J PROGRAMMED
1A18-0506	02919	ZK07N MASKED	1A18-0624	03794	AM9216RDC MASKED	1A18-0742	03406	MWS244J PROGRAMMED
1A18-0507	02910	ZK07N MASKED	1A18-0625	03794	AM9216RDC MASKED	1A18-0743	01698	TMS2716JL
1A18-0508	03406	WM5280N-5	1A18-0626	03794	AM9216RDC MASKED	1A18-0744	03714	P2322 MASKED
1A18-0509	01698	TM54116-15JL SELCTD	1A18-0627	03794	AM9216RDC MASKED	1A18-0745	03406	MWS244J PROGRAMMED
1A18-0510	02037	MG6590P2 MASKED	1A18-0628	03794	AM9216RDC MASKED	1A18-0746	03794	AM9216RDC MASKED
1A18-0512	03794	AM9216RDC MASKED	1A18-0629	03794	AM9216RDC MASKED	1A18-0747	03794	AM9216RDC MASKED
1A18-0513	03794	AM9216RDC MASKED	1A18-0630	04143	AM9216RDC MASKED	1A18-0748	03794	AM9216RDC MASKED
1A18-0514	02037	MCM6707 MASKED	1A18-0631	03183	1A22-0001 MASKED	1A18-0750	01698	TMS270AUL PROGRAMMED
1A18-0515	03794	AM9216RDC MASKED	1A18-0632	03183	1A22-0001 MASKED	1A18-0751	02037	MCM6832L MASKED
1A18-0516	03794	AM9216RDC MASKED	1A18-0633	03183	1A22-0001 MASKED	1A18-0752	01698	TMS270AUL PROGRAMMED
1A18-0517	03794	AM9216RDC MASKED	1A18-0634	03183	1A22-0001 MASKED	1A18-0753	03406	WU/C2920N
1A18-0518	03794	AM9216RDC MASKED	1A18-0635	03183	1A22-0001 MASKED	1A18-0754	03406	WU/C2910N
1A18-0519	03794	AM9216RDC MASKED	1A18-0636	03183	1A22-0001 MASKED	1A18-0755	03794	AM9216RDC MASKED
1A18-0520	03794	AM9216RDC MASKED	1A18-0637	03183	1A22-0001 MASKED	1A18-0756	02910	ZK07N MASKED
1A18-0521	03794	AM9216RDC MASKED	1A18-0638	03183	1A22-0001 MASKED	1A18-0757	02237	71LO2FPC
1A18-0522	03794	AM9216RDC MASKED	1A18-0639	08183	1A22-0001 MASKED	1A18-0758	03794	AM9216RDC MASKED
1A18-0523	03794	AM9216RDC MASKED	1A18-0640	03183	1A22-0001 MASKED	1A18-0759	03794	AM9216RDC MASKED
1A18-0524	03794	AM9216RDC MASKED	1A18-0641	03183	1A22-0001 MASKED	1A18-0760	03794	AM9216RDC MASKED
1A18-0525	03794	AM9216RDC MASKED	1A18-0642	03183	1A22-0001 MASKED	1A18-0761	03794	AM9216RDC MASKED
1A18-0526	03794	AM9216RDC MASKED	1A18-0643	03811	P2114L	1A18-0762	01698	TMS2532JL
1A18-0527	03794	AM9216RDC MASKED	1A18-0644	01795	SYP233J MASKED	1A18-0763	03794	AM9233CPC MASKED
1A18-0528	03794	AM9216RDC MASKED	1A18-0645	01795	SYP233J MASKED	1A18-0764	03794	AM9216RDC MASKED
1A18-0529	03794	AM9216RDC MASKED	1A18-0646	01795	SYP233J MASKED	1A18-0765	03794	AM9216RDC MASKED
1A18-0530	03794	AM9216RDC MASKED	1A18-0647	01795	SYP233J MASKED	1A18-0766	03794	AM9216RDC MASKED
1A18-0531	02910	ZK07N MASKED	1A18-0648	01795	SYP233J MASKED	1A18-0767	03794	AM9216RDC MASKED
1A18-0532	02037	MCM6833P MASKED	1A18-0649	01795	SYP233J MASKED	1A18-0768	03794	AM9216RDC MASKED
1A18-0533	03794	AM9216RDC MASKED	1A18-0650	01795	SYP233J MASKED	1A18-0769	03794	AM9216RDC MASKED
1A18-0534	03794	AM9216RDC MASKED	1A18-0651	01795	SYP233J MASKED	1A18-0770	03811	C3181A
1A18-0535	01795	SYP233J MASKED	1A18-0652	03183	IAC1-9XXX MASKED	1A18-0772	03811	D2115A
1A18-0536	01795	SYP233J MASKED	1A18-0653	03183	IAC1-9XXX MASKED	1A18-0773	01795	SYP231AA MASKED
1A18-0537	01795	SYP233J MASKED	1A18-0654	03794	AM9216RDC MASKED	1A18-0774	02713	PN-3-9316-B
1A18-0538	01795	SYP233J MASKED	1A18-0655	03794	AM9216RDC MASKED	1A18-0775	02713	PN-3-9316-R
1A18-0539	01795	SYP233J MASKED	1A18-0656	03794	AM9216RDC MASKED	1A18-0776	02713	PN-3-9316-R
1A18-0540	01795	SYP233J MASKED	1A18-0657	03794	AM9216RDC MASKED	1A18-0777	02713	PN-3-9316-R
1A18-0541	01795	SYP233J MASKED	1A18-0658	03794	AM9216RDC MASKED	1A18-0778	03811	C2708 PROGRAMMED
1A18-0542	01795	SYP233J MASKED	1A18-0659	03794	AM9216RDC MASKED	1A18-0779	03811	C2708 PROGRAMMED
1A18-0543	01795	SYP233J MASKED	1A18-0660	03183	IAC2-9XXX MASKED	1A18-0780	03811	C2708 PROGRAMMED
1A18-0544	01795	SYP233J MASKED	1A18-0661	03183	IAC2-9XXX MASKED	1A18-0781	03811	C2708 PROGRAMMED
1A18-0545	01795	SYP233J MASKED	1A18-0662	03183	IAC2-9XXX MASKED	1A18-0782	03811	C2708 PROGRAMMED
1A18-0546	01795	SYP233J MASKED	1A18-0663	03183	IAC2-9XXX MASKED	1A18-0783	03811	C2708 PROGRAMMED
1A18-0547	03794	AM9216RDC MASKED	1A18-0664	03183	IAC2-9XXX MASKED	1A18-0784	03811	C2708 PROGRAMMED
1A18-0548	03794	AM9216RDC MASKED	1A18-0665	03183	IAC2-9XXX MASKED	1A18-0785	03811	C2708 PROGRAMMED
1A18-0549	03794	AM9216RDC MASKED	1A18-0666	03183	IAC2-9XXX MASKED	1A18-0786	02037	MCM6832L MASKED
1A18-0550	03794	AM9216RDC MASKED	1A18-0667	03183	IAC2-9XXX MASKED	1A18-0787	02037	MCM6832L MASKED
1A18-0551	03811	P2112A	1A18-0668	03794	AM9216RDC MASKED	1A18-0788	02037	MCM6832L MASKED
1A18-0552	03811	C2708 PROGRAMMED	1A18-0669	03183	IAC1-9XXX MASKED	1A18-0789	02037	MCM6832L MASKED
1A18-0553	03811	C2708 PROGRAMMED	1A18-0670	03183	IAC1-9XXX MASKED	1A18-0790	03811	P2332 MASKED
1A18-0554	03811	C2708 PROGRAMMED	1A18-0671	03183	IAC1-9XXX MASKED	1A18-0791	02037	MCM6832L MASKED
1A18-0555	03811	C2708 PROGRAMMED	1A18-0672	03183	IAC1-9XXX MASKED	1A18-0792	02037	MCM6832L MASKED
1A18-0556	03811	C2708 PROGRAMMED	1A18-0673	03183	IAC1-9XXX MASKED	1A18-0793	01795	SYP233J MASKED
1A18-0557	03811	C2708 PROGRAMMED	1A18-0674	03183	IAC1-9XXX MASKED	1A18-0794	03811	C2716
1A18-0558	03811	C2708 PROGRAMMED	1A18-0675	03183	IAC1-9XXX MASKED	1A18-0795	01795	SYP231AA MASKED
1A18-0559	03811	C2708 PROGRAMMED	1A18-0676	03183	IAC1-9XXX MASKED	1A18-0796	03811	P2332 MASKED
1A18-0560	03811	C2708 PROGRAMMED	1A18-0677	03183	IAC1-9XXX MASKED	1A18-0797	03811	P2332 MASKED
1A18-0561	03811	C2708 PROGRAMMED	1A18-0678	03183	IAC1-9XXX MASKED	1A18-0798	03811	P2332 MASKED
1A18-0562	03811	P2114L	1A18-0679	03183	IAC1-9XXX MASKED	1A18-0799	03811	P2332 MASKED
1A18-0563	03794	AM9216RDC MASKED	1A18-0680	03183	IAC1-9XXX MASKED	1A18-0800	03811	P2332 MASKED
1A18-0564	03794	AM9216RDC MASKED	1A18-0681	03183	IAC1-9XXX MASKED	1A18-0801	03811	P2332 MASKED
1A18-0565	03794	AM9216RDC MASKED	1A18-0682	03183	IAC1-9XXX MASKED	1A18-0802	03811	P2332 MASKED
1A18-0566	03794	AM9216RDC MASKED	1A18-0683	03183	IAC1-9XXX MASKED	1A18-0803	03811	P2332 MASKED
1A18-0567	03794	AM9216RDC MASKED	1A18-0684	03183	IAC1-9XXX MASKED	1A18-0804	03811	P2332 MASKED
1A18-0568	03794	AM9216RDC MASKED	1A18-0685	03183	IAC1-9XXX MASKED	1A18-0805	03811	P2332 MASKED
1A18-0569	03794	AM9216RDC MASKED	1A18-0686	03183	IAC1-9XXX MASKED	1A18-0806	03811	P2332 MASKED
1A18-0570	03794	AM9216RDC MASKED	1A18-0687	03183	IAC1-9XXX MASKED	1A18-0807	03811	P2332 MASKED
1A18-0571	03811	C4316A MASKED	1A18-0688	03183	IAC1-9XXX MASKED	1A18-0808	03811	P2332 MASKED
1A18-0572	03811	C4316A MASKED	1A18-0689	03183	IAC1-9XXX MASKED	1A18-0809	03811	P2332 MASKED
1A18-0573	02037	MCM68317L MASKED	1A18-0690	03183	IAC1-9XXX MASKED	1A18-0810	03811	P2332 MASKED
1A18-0574	02037	MCM68317L MASKED	1A18-0691	03183	IAC1-9XXX MASKED	1A18-0811	03811	P2332 MASKED
1A18-0575	02037	MCM68317L MASKED	1A18-0692	02037	MCM68332P MASKED	1A18-0812	03811	P2332 MASKED
1A18-0576	02037	MCM68317L MASKED	1A18-0693	02037	MCM68317P MASKED	1A18-0813	03811	P2332 MASKED
1A18-0577	03794	AM9216RDC MASKED	1A18-0694	02037	MCM68332P MASKED	1A18-0814	03811	P2332 MASKED
1A18-0578	03794	AM9216RDC MASKED	1A18-0695	02037	MCM145111P	1A18-0815	03811	P2332 MASKED
1A18-0579	03794	AM9216RDC MASKED	1A18-0696	01795	SYP231AA MASKED	1A18-0816	03811	P2332 MASKED
1A18-0580	03794	AM9216RDC MASKED	1A18-0697	01795	SYP231AA MASKED	1A18-0817	03811	P2332 MASKED
1A18-0581	03794	AM9216RDC MASKED	1A18-0698	01795	SYP231AA MASKED	1A18-0818	03811	P2332 MASKED
1A18-0582	03794	AM9216RDC MASKED	1A18-0699	04078	MK3851 MASKED	1A18-0819	03811	P2332 MASKED
1A18-0583	03794	AM9216RDC MASKED	1A18-0700	02037	MCM6841P	1A18-0820	03811	P2332 MASKED
1A18-0584	03794	AM9216RDC MASKED	1A18-0701	02037	MCM6841P	1A18-0821	03811	P2332 MASKED
1A18-0585	03794	AM9216RDC MASKED	1A18-0702	01795	SYP233J MASKED	1A18-0822	03811	P2332 MASKED
1A18-0586	03794	AM9216RDC MASKED	1A18-0703	01795	SYP233J MASKED	1A18-0823	02037	MCM2147C-70
1A18-0587	03794	AM9216RDC MASKED	1A18-0704	01795	SYP233J MASKED	1A18-0824	03811	RPT732
1A18-0588	03794	AM9216RDC MASKED	1A18-0705	01795	SYP233J MASKED	1A18-0825	03811	P2716-1
1A18-0589	03794	AM9216RDC MASKED	1A18-0706	01795	SYP231AA MASKED	1A18-0826	01698	P2332 MASKED
1A18-0590	03794	AM9216RDC MASKED	1A18-0707	02910	PA16N MASKED	1A18-0827	01698	P2332 MASKED
1A18-0591	03794	AM9216RDC MASKED	1A18-0708	03677	S4101LP	1A18-0828	01698	P2332 MASKED
1A18-0592	03794	AM9216RDC MASKED	1A18-0709	01795	SYP231AR-3 MASKED	1A18-0829	01698	P2332 MASKED
1A18-0593	03794	AM9216RDC MASKED	1A18-0710	01795	SYP231AR MASKED	1A18-0830	03794	AM9216RDC MASKED
1A18-0594	03794	AM9216RDC MASKED	1A18-0711	02910	PA16N MASKED	1A18-0831	03794	AM9216RDC MASKED
1A18-0595	03794	AM9216RDC MASKED	1A18-0712	01795	SYC2316H MASKED	1A18-0832	01698	TMS2514JL PROG
1A18-0596	03794	AM9216RDC MASKED	1A18-0713	01795	SYC231AH MASKED	1A18-0833	01698	TMS2514JL PROG
1A18-0597	03794	AM9216RDC MASKED	1A18-0714	01795	SYC231AB MASKED	1A18-0834	01698	TMS2514JL PROG
1A18-0598	03794	AM9216RDC MASKED	1A18-0715	01795	SYC231AB MASKED	1A18-0835	01698	TMS2514JL PROG
1A18-0599	03794	AM9216RDC MASKED	1A18-0716	01795	SYC231AB MASKED	1A18-0836	01698	TMS2514JL PROG
1A18-0600	03794	AM9216RDC MASKED	1A18-0717	01795	SYC231AB MASKED	1A18-0837	01698	TMS2514JL PROG
1A18-0601	03794	AM9216RDC MASKED	1A18-0718	01795	SYC231AB MASKED	1A18-0838	01698	TMS2514JL PROG
1A18-0602	03794	AM9216RDC MASKED	1A18-0719	01795	SYC231AB MASKED	1A18-0839	01698	TMS2514JL PROG
1A18-0603	03794	AM9216RDC MASKED	1A18-0720	01795	SYC231AB MASKED	1A18-0840	01698	TMS2514JL PROG
1A18-0604	03794	AM9216RDC MASKED	1A18-0721	01795	SYC231AB MASKED</td			

INTEGRATED CIRCUIT CROSS REFERENCE

HP P/N Mfr. Desc.

1A18-0880 03811 R270R PROGRAMMED
1A18-0880 03183 1A42-6198 MASKED
1A18-0891 03183 1A42-6199 MASKED
1A18-0892 03183 1A42-6200 MASKED
1A18-0893 03183 1A42-6201 MASKED
1A18-0894 01698 TM54732NL
1A18-0895 03811 P214P
1A18-0896 02713 Rn-3-9116 MASKED
1A18-0897 02713 Rn-3-9116 MASKED
1A18-0898 02713 Rn-3-9116 MASKED
1A18-0899 02713 Rn-3-9116 MASKED
1A18-0900 02713 Rn-3-9116 MASKED
1A18-0901 02713 Rn-3-9116 MASKED
1A18-0902 02713 Rn-3-9116 MASKED
1A18-0903 02713 Rn-3-9116 MASKED
1A18-0904 02713 Rn-3-9116 MASKED
1A18-0905 02713 Rn-3-9116 MASKED
1A18-0906 02713 Rn-3-9116 MASKED
1A18-0907 02713 Rn-3-9116 MASKED
1A18-0908 02713 Rn-3-9116 MASKED
1A18-0909 02713 Rn-3-9116 MASKED
1A18-0910 02713 Rn-3-9116 MASKED
1A18-0911 02713 Rn-3-9116 MASKED
1A18-0912 02713 Rn-3-9116 MASKED
1A18-0913 03794 AM921BADC1197 MSKO
1A18-0914 03794 AM921BADC1197 MSKO
1A18-0915 03794 AM921BADC1197 MSKO
1A18-0916 03794 AM921BADC1197 MSKO
1A18-0917 03794 AM921BADC1197 MSKO
1A18-0918 03794 AM921BADC1197 MSKO
1A18-0919 03794 AM921BADC1197 MSKO
1A18-0920 02910 2A16N MASKED
1A18-0921 02910 2A16N MASKED
1A18-0922 02910 2A16N MASKED
1A18-0923 02910 2A16N MASKED
1A18-0924 02910 2A16N MASKED
1A18-0925 02910 2A16N MASKED
1A18-0926 02910 2A16N MASKED
1A18-0927 03811 P2332 MASKED
1A18-0928 03811 P2332 MASKED
1A18-0929 03811 P2332 MASKED
1A18-0930 03811 P2332 MASKED
1A18-0931 02910 2A16N MASKED
1A18-0932 02910 2A16N MASKED
1A18-0933 02910 2A16N MASKED
1A18-0934 02910 2A16N MASKED
1A18-0935 02910 2A16 MASKED
1A18-0936 02910 2A16N MASKED
1A18-0937 02910 2A16N MASKED
1A18-0938 02910 2A16N MASKED
1A18-0939 02910 2A16N MASKED
1A18-0940 02910 2A16N MASKED
1A18-0941 02910 2A16N MASKED
1A18-0942 02910 2A16N MASKED
1A18-0943 02910 2A16N MASKED
1A18-0944 02910 2A16N MASKED
1A18-0945 02910 2A16N MASKED
1A18-0946 02910 2A16N MASKED
1A18-0947 02910 2A16N MASKED
1A18-0948 02713 Rn-3-9316A MASKED
1A18-0949 02713 Rn-3-9316A MASKED
1A18-0950 02937 MC659nP MASKED
1A18-0951 01795 SYP2322 MASKD
1A18-0952 01795 SYP2323 MASKD
1A18-0953 03794 AM921BADC
1A18-0954 03794 AM921BADC
1A18-0955 03799 HN3-6514-Q
1A18-0956 03794 AM921BADC MASKD
1A18-0957 03794 AM921BADC MASKD
1A18-0958 03794 AM921BADC MASKD
1A18-0959 03794 AM921BADC MASKD
1A18-0960 02937 MC6683P2 MASKED
1A18-0961 03794 AM921BADC MASKD
1A18-0962 02937 MC6683P2L MASKED
1A18-0963 02910 P432N
1A18-0965 02910 P432N
1A18-0966 02910 P432N
1A18-0967 02910 P432N
1A18-0968 02910 P432N
1A18-0970 02910 P432N
1A18-0971 02910 P432N
1A18-0972 02910 P432N
1A18-0973 02910 P432N
1A18-0974 02910 P432N
1A18-0975 02910 P432N
1A18-0976 02910 P432N
1A18-0701 02037 HCM6832P MASKED
1A20-0001 01973 4JK19A55
1A20-0004 01973 4JK19A519
1A20-0010 01973 4JK19A5H1
1A20-0012 02037 MC351G
1A20-0013 02037 MC352G
1A20-0014 02037 MC353G
1A20-0015 02037 MC354G
1A20-0016 02037 MC355G
1A20-0017 02037 MC356G
1A20-0018 02037 MC364G
1A20-0019 02037 MC359G
1A20-0020 02037 MC360G
1A20-0021 02037 MC361G
1A20-0022 02037 MC362G
1A20-0032 02237 9E2PC
1A20-0033 02237 9E3PC
1A20-0034 02237 9E4PC
1A20-0035 02237 9E5PC
1A20-0036 02237 9E6PC
1A20-0037 02237 9E7PC
1A20-0038 02237 9E8PC
1A20-0039 02237 9E9PC
1A20-0040 02237 9E10PC
1A20-0041 02237 9E11PC
1A20-0042 02237 9E12PC
1A20-0043 02237 9E13PC
1A20-0044 01973 PA1A
1A20-0045 02237 971PC
1A20-0046 01921 CA3005
1A20-0047 01921 CA3110
1A20-0048 02237 941HC
1A20-0049 02237 914HC
1A20-0050 02037 MC1531A
1A20-0051 02237 702HC
1A20-0052 02237 923HC
1A20-0054 01698 SN7400N
1A20-0055 01698 SN7490AN
1A20-0056 01698 SN7492AN
1A20-0057 01991 TAA 276V
1A20-0058 02910 SP650A
1A20-0062 02037 MC344G SELECTED
1A20-0063 01698 SN7451N
1A20-0065 01698 SN7470N
1A20-0067 02910 SP631N
1A20-0068 01698 SN7451VN
1A20-0069 01698 SN7420N
1A20-0070 01698 SN7430N
1A20-0071 01698 SN7460N
1A20-0072 01698 SN7450N
1A20-0073 01698 SN7451N
1A20-0074 01698 SN7454N
1A20-0075 01698 SN7473N
1A20-0076 01698 SN7476N
1A20-0077 01698 SN7474N
1A20-0078 02910 SP620N
1A20-0080 02037 MC810P
1A20-0081 02237 911HC
1A20-0083 01698 SN7510L
1A20-0084 01698 SN7453N
1A20-0085 01698 SN7460N
1A20-0086 01698 SN1583N
1A20-0087 02037 MC805P
1A20-0088 01698 SN1581N
1A20-0094 01698 SN1584N
1A20-0095 01698 SN1584N
1A20-0096 01698 SN1583N
1A20-0099 01698 SN7493N
1A20-0100 02037 MC7441AP
1A20-0101 02037 MC1034P
1A20-0102 02037 MC1013P
1A20-0103 01921 CA3015A
1A20-0104 03406 LM201H
1A20-0106 02937 MC816P
1A20-0110 02237 9E9IC
1A20-0111 02037 MC8301P
1A20-0113 01991 TOA370QV
1A20-0114 01973 PA23B
1A20-0115 02037 MC1430P
1A20-0121 02910 NAT90N
1A20-0122 02037 MC053P
1A20-0123 03406 LM300H
1A20-0125 02237 711HC
1A20-0127 02237 9E10PC
1A20-0128 01698 SN15837N
1A20-0129 02237 9E03DC
1A20-0130 02237 9E04DC
1A20-0131 02237 9E09DC
1A20-0132 02237 9E16DC
1A20-0133 01991 TCA600NRY
1A20-0134 02237 9E10PC
1A20-0137 01921 CA3029A
1A20-0138 03545 552
1A20-0140 02037 MC3026P
1A20-0141 02037 MC3010P
1A20-0142 02037 MC1104P
1A20-0143 02037 MC1027P
1A20-0144 02037 MC1018P
1A20-0145 02037 MC1101P
1A20-0146 02037 MC1117P
1A20-0147 02037 MC1007P
1A20-0157 02037 MC1123P
1A20-0158 03406 LM302H
1A20-0160 02037 MC1431P
1A20-0162 03406 LM769H
1A20-0174 01698 SN7404N
1A20-0175 01698 SN7405N
1A20-0180 02037 MC1124P
1A20-0181 02037 MC1015P
1A20-0184 02037 MC1433L
1A20-0186 02237 9E54IC
1A20-0187 02237 9E52IC
1A20-0192 01921 EA 3001
1A20-0194 02910 NAT90N
1A20-0196 02037 MC1123P
1A20-0197 02237 7194NM
1A20-0200 02037 MC1010P
1A20-0201 02037 MC1439P
1A20-0202 02910 SP322P
1A20-0207 01921 CA741CT
1A20-0214 02037 MC3000P
1A20-0215 02037 MC3003P
1A20-0217 02037 MC8401P
1A20-0218 02910 NMH261
1A20-0219 02910 NMH262
1A20-0221 01698 TMS3702LH
1A20-0212 02037 MC1020P
1A20-0213 02037 MC1014P
1A20-0214 01698 SN7428AN
1A20-0218 03285 16A
1A20-0223 02037 ML4301AG
1A20-0224 03406 LMH002CH
1A20-0225 03406 LM1032-4
1A20-0231 02237 9116PC
1A20-0233 01698 SN74193N
1A20-0235 02037 MC1031P
1A20-0238 02037 MC1810P
1A20-0239 02037 MC3002P
1A20-0240 01921 CA3026
1A20-0242 03406 LM301AH-2P
1A20-0247 03406 LM305H
1A20-0249 01921 CA3051
1A20-0252 02037 MC1026P
1A20-0253 02037 MC1035P
1A20-0256 01698 SN1585AN
1A20-0257 02037 MC857P
1A20-0258 01698 SN1582PN
1A20-0259 02037 MC840P
1A20-0260 02037 MC839P
1A20-0261 01698 SN7412IN
1A20-0262 03406 NW8590N
1A20-0269 01698 SN7403N
1A20-0270 02237 733HC
1A20-0272 02037 MC1022P
1A20-0273 02037 MC1006P
1A20-0274 02037 MC1809P
1A20-0275 02037 MC1039P
1A20-0276 02037 MC1033P
1A20-0277 02037 MC1450P
1A20-0279 01698 TXL107N
1A20-0281 01698 SN74107N
1A20-0282 01698 SN7486N
1A20-0283 02037 MC672P
1A20-0284 02037 MC642P
1A20-0286 02237 7A16PC
1A20-0287 01921 CA3000
1A20-0288 01921 CA3020
1A20-0289 01698 SN15836N
1A20-0301 01698 SN7475N
1A20-0302 02910 SP670N
1A20-0304 02910 SP650N
1A20-0314 01698 SN15835N
1A20-0315 01698 SN7476N
1A20-0316 01921 CA3013C
1A20-0317 02037 MC1413P
1A20-0318 02910 SP618N
1A20-0325 02037 MC815P
1A20-0326 01921 CA3024
1A20-0327 01698 SN7401N
1A20-0328 01698 SN7402N
1A20-0330 02237 9A08DC
1A20-0331 01698 SN7403N
1A20-0332 02037 MC820P
1A20-0333 02037 MC824P
1A20-0334 02037 MC825P
1A20-0335 02237 9A07DC
1A20-0336 02037 MC820C
1A20-0338 02237 9A22DC
1A20-0339 02037 9A93DC
1A20-0341 01698 SN158004N
1A20-0342 01698 SN158097N
1A20-0343 02237 9A99DC
1A20-0344 02237 91110C
1A20-0345 01698 SN15831N
1A20-0346 01698 SN15833N
1A20-0347 02237 936DC
1A20-0348 01698 SN15844N
1A20-0349 01698 SN15849N
1A20-0350 01698 SN15851N
1A20-0351 01698 SN15853N
1A20-0352 01921 CA3018
1A20-0355 02237 9A710H
1A20-0357 02237 9114PC
1A20-0361 01698 SN4935N
1A20-0362 01698 SN7480N
1A20-0363 01698 SN7482N
1A20-0364 01698 SN7491AN
1A20-0365 01698 SN7481N
1A20-0366 01698 SN7494N
1A20-0367 01698 SN7495N
1A20-0368 01698 SN7496N
1A20-0370 01698 SN74M0N
1A20-0371 01698 SN74H10N
1A20-0372 01698 SN74H11N
1A20-0373 01698 SN74H20N
1A20-0374 01698 SN74H21N
1A20-0375 01698 SN74H30N
1A20-0376 01698 SN74H40N
1A20-0377 01698 SN74H50N
1A20-0378 01698 SN74H51N
1A20-0380 01698 SN74H52N
1A20-0381 01698 SN74H54N
1A20-0382 01698 SN74H55N
1A20-0383 01698 SN74H60N
1A20-0384 01698 SN74H61N
1A20-0385 01698 SN74H62N
1A20-0386 01698 SN74H71N
1A20-0387 01698 SN74H72N
1A20-0391 01698 SN74H73N
1A20-0392 01698 SN74H74N
1A20-0394 01698 TL762C
1A20-0397 01698 SN7270N
1A20-0398 01698 SN7271N
1A20-0400 02910 NA281
1A20-0408 02237 727HL
1A20-0410 03406 NW507
1A20-0411 02037 MC817P
1A20-0417 01921 CA3002
1A20-0418 02037 MC1812P
1A20-0419 02910 SR240N
1A20-0424 01698 SN74H44N
1A20-0425 01698 SN74100N
1A20-0426 02037 MC1496B
1A20-0427 02037 MC1496B
1A20-0429 02910 LM309N

HP P/N	Mfr.	Desc.	HP P/N	Mfr.	Desc.
1A20-0430	02237	LM3099	1A20-0694	02037	MC3025P
1A20-0433	01921	CA3023	1A20-0695	01698	SN74181N
1A20-0435	01698	SN7418RN	1A20-0697	02037	MC4012P
1A20-0437	02037	MC4015P	1A20-0698	02037	MC4006P
1A20-0439	02237	723PC	1A20-0699	02037	MC3041P
1A20-0440	02037	MC116P	1A20-0610	02037	MC8309P
1A20-0441	02037	MC1101P	1A20-0611	01698	SN74182P
1A20-0443	01694	SN74L93N	1A20-0612	02237	Q3300C
1A20-0444	02037	MC1025P	1A20-0613	01698	SN74H05N
1A20-0445	01698	SN5402N	1A20-0614	02237	Q3L08P
1A20-0446	01698	SN5474N	1A20-0615	02037	MC8314P
1A20-0447	01698	SN5410N	1A20-0616	02237	Q322PC
1A20-0448	01698	SN5404N	1A20-0617	02037	MC3022P
1A20-0449	02037	MC3n60P	1A20-0618	01698	SN7417N
1A20-0450	02910	NA290N	1A20-0619	01698	SN74H22N
1A20-0451	02037	MC3n64P	1A20-0620	01698	SN74153N
1A20-0452	02037	MC1R05P	1A20-0621	01698	SN74384
1A20-0455	02910	NA288N	1A20-0622	01698	SN74191AN
1A20-0456	02910	NA855N	1A20-0623	03406	DW420NN
1A20-0457	02910	NA142N	1A20-0624	02037	MC1651L
1A20-0458	02910	NA816N	1A20-0625	02037	MC6K6P
1A20-0459	02910	NA840N	1A20-0626	02037	MC8314P
1A20-0460	02910	NA840N	1A20-0627	02237	Q3L01PC
1A20-0461	02910	NA880N	1A20-0628	01698	SN74H9N
1A20-0462	02910	NA251N	1A20-0629	01698	SN74S112N
1A20-0463	02910	NAH70N	1A20-0630	02037	MC4044P
1A20-0464	02910	NAH90N	1A20-0631	01698	SN74H108N
1A20-0465	02910	NAH80N	1A20-0636	02910	NA281ADC
1A20-0466	02910	NA825N	1A20-0637	02910	NA875N
1A20-0467	02910	NA881N	1A20-0639	02037	MC8001P
1A20-0468	01698	SN7445N	1A20-0640	01698	SN74150N
1A20-0469	01698	SN74H12N	1A20-0655	01698	SN7425N
1A20-0470	0285	118A	1A20-0656	01698	SN74L9AN
1A20-0471	01698	SN7406N	1A20-0657	02237	Q311PC
1A20-0472	02037	MC1001P	1A20-0658	02237	Q3L12PC
1A20-0473	02037	MC1048P	1A20-0659	02237	Q3L00PC
1A20-0474	01921	CA3012	1A20-0661	01698	SN7432N
1A20-0475	03406	LM306H	1A20-0665	02037	MC1814P
1A20-0476	02237	715HC	1A20-0666	02037	MC1006P
1A20-0477	02910	LM301AN	1A20-0667	02037	MC1040P
1A20-0478	03406	LM308H	1A20-0668	01698	SN7407V
1A20-0479	02037	MC835P	1A20-0669	02237	Q3L10PC
1A20-0482	02237	9A380C	1A20-0670	01698	SN7450N
1A20-0483	01698	SN7490N SELECTED	1A20-0671	01698	SN74S04N
1A20-0484	01698	SN7484N	1A20-0684	01698	SN74S05N
1A20-0485	02237	9A1A0C	1A20-0685	01698	SN74S11N
1A20-0486	02237	9A340C	1A20-0686	01698	SN74S11N
1A20-0488	02237	9A420C	1A20-0687	01698	SN74S15N
1A20-0491	01698	SN74145N	1A20-0688	01698	SN74S25N
1A20-0492	02910	NA291N	1A20-0689	01698	SN74S28N
1A20-0493	03406	LM307N	1A20-0690	01698	SN74S46N
1A20-0494	02585	2100	1A20-0691	01698	SN74S64N
1A20-0495	01698	SN74154N	1A20-0692	01698	SN74S65N
1A20-0497	01698	SN74L95N	1A20-0693	01698	SN74S74N
1A20-0498	04200	IM1500	1A20-0694	01698	SN74S86N
1A20-0505	03406	DW8220N	1A20-0695	01698	SN74S113N
1A20-0506	02037	MCB244P	1A20-0696	01698	SN74S114N
1A20-0507	02910	NA263N	1A20-0697	01698	SN74S140N
1A20-0508	02910	NA202N	1A20-0700	02037	MC3019P
1A20-0509	02037	MC1488L	1A20-0701	02237	Q3L14PC
1A20-0510	02237	MC1489L	1A20-0702	02237	Q3L11PC
1A20-0511	01698	SN7408N	1A20-0703	02910	NA292N
1A20-0512	01698	SN74H4N	1A20-0704	01698	SN7412N
1A20-0513	01698	SN7409N	1A20-0705	02037	MC8310P
1A20-0514	01698	SN74264	1A20-0706	02237	Q324PC
1A20-0515	02037	MC8602P	1A20-0707	01698	SN74141N
1A20-0516	02237	91120C	1A20-0708	02237	Q3L09PC
1A20-0517	02237	9A650C	1A20-0709	02237	Q3L28PC
1A20-0518	02237	9A530C	1A20-0710	02237	Q3L22PC
1A20-0519	02237	9A220C	1A20-0713	01698	SN74193N
1A20-0520	02237	9A060C	1A20-0714	01698	SN74M106N
1A20-0533	02037	MC838P	1A20-0716	01698	SN74191N
1A20-0535	01698	SN75401RP	1A20-0717	03406	MM5052
1A20-0536	02910	NA284N	1A20-0718	03406	DS0025CN
1A20-0537	01698	SN7413N	1A20-0719	02037	MC7242P
1A20-0538	01698	SN7423N	1A20-0720	03406	DS8830N
1A20-0539	01698	SN7437U	1A20-0721	03406	DS8820AN
1A20-0542	02910	NA234N	1A20-0722	01698	SN75109N
1A20-0543	02910	NA233N	1A20-0723	01698	SN75107AN
1A20-0544	01698	SN74H103N	1A20-0724	02037	MC4007P
1A20-0545	01698	SN74191H	1A20-0725	01698	SN74170J
1A20-0546	01698	SN74192N	1A20-0726	01698	SN7419QN
1A20-0567	02037	MC4024P	1A20-0727	02237	Q321PC
1A20-0588	01698	SN75325N	1A20-0730	02237	9A60PDC
1A20-0589	02910	NA243N	1A20-0731	03406	MC1404AD
1A20-0574	01698	SN74173N	1A20-0734	01698	SN7419N
1A20-0575	02910	NA235N	1A20-0737	02037	Q34RPC
1A20-0577	01698	SN7416N	1A20-0738	01698	SN74155N
1A20-0578	02037	MC1n24P	1A20-0739	01698	SN74H101N
1A20-0579	01698	SN74L12N	1A20-0740	01698	SN74H87N
1A20-0581	02037	MC1032P	1A20-0741	02237	Q328PC
1A20-0582	02037	MC1101P	1A20-0742	02037	MCB3U6P
1A20-0583	01698	SN74L00N	1A20-0743	01698	SN74194N
1A20-0584	01698	SN74L02N	1A20-0744	01698	SN7497N
1A20-0585	01698	SN74L03N	1A20-0745	02237	9A15DC
1A20-0586	01698	SN74L04N	1A20-0751	01698	SN74194N
1A20-0587	01698	SN74L10N	1A20-0752	01698	SN74HT8N
1A20-0588	01698	SN74L20N	1A20-0761	01698	SN7408N SELECTED
1A20-0589	01698	SN74L30N	1A20-0762	01698	SN74157N
1A20-0590	01698	SN74L51N	1A20-0763	01795	SYM1404A
1A20-0591	01698	SN74L54N	1A20-0765	01698	SN74197N
1A20-0592	01698	SN74L55N	1A20-0767	02037	MC858P SELECTED
1A20-0593	03406	DM74L71N	1A20-0768	02037	MC858P SELECTED
1A20-0594	03406	DM74L72N	1A20-0770	03406	MM5064H
1A20-0595	03406	DM74L74N	1A20-0774	02910	SP374N
1A20-0596	03406	DM74L76N	1A20-0777	01698	SN74L42N
1A20-0597	03406	DM74L78N	1A20-0778	02237	9A16PC
1A20-0598	03406	DM74L84N	1A20-0780	03406	DS8831N
1A20-0599	03406	DM74L95N	1A20-0781	03714	TM5013CDO
1A20-0600	03406	DM74L90N	1A20-0782	01698	SN7427N
1A20-0601	03406	DM74L73N	1A20-0783	01698	SN7420N
1A20-0602	03406	DM74L83N	1A20-0784	02037	MC7250P
1A20-0603	03406	DM74L85N	1A20-0788	01698	SN74176N

INTEGRATED CIRCUIT CROSS REFERENCE

HP P/N	Mfr.	Desc.	1#20-108A	01698	SN54H30J	1#20-1213	01698	SN74LS113AN
1#20-042A	01921	CN4041AE	1#20-1069	01698	SN54H60J	1#20-1214	01698	SN7412KAN
1#20-0429	01921	CN4022AF	1#20-1070	01698	SN54J30J	1#20-1215	01698	SN74LS136N
1#20-093n	01921	CN4026AE	1#20-1071	01698	SN54H74J	1#20-1216	01698	SN74LS138N
1#20-0931	01921	CN4027AF	1#20-1072	01698	SN74S139N	1#20-1217	01698	SN74LS151N
1#20-0932	01921	CN4033AF	1#20-1073	02910	NW2542N	1#20-1218	01698	SN74L157N
1#20-0933	01921	CN4017AE	1#20-1074	01698	SN7412RN	1#20-1219	00575	T91602R
1#20-0934	01921	CN4016AF	1#20-1075	01698	SN74S15P	1#20-1220	02910	2632H
1#20-0935	01921	CN4020AE	1#20-1076	01698	SN74S17AN	1#20-1221	01698	0800H-1
1#20-0936	01921	CN4024AF	1#20-1077	01698	SN74S157N	1#20-1222	02237	9404DC
1#20-0937	01921	CN4040AF	1#20-1079	02037	MC14501URCP	1#20-1224	02937	MC1021AH
1#20-0938	01921	CN4027AE	1#20-1080	02910	NW13N	1#20-1225	02937	MC10231P
1#20-0939	01921	CN4013AF	1#20-1081	02037	MCB252AH	1#20-1227	02937	MC10137P
1#20-0940	01921	CN4044AF	1#20-1082	01698	SN74147N	1#20-1228	02910	2602H
1#20-0941	01921	CN4043AF	1#20-1083	02910	NT079N	1#20-1229	01698	SN74111N
1#20-0942	01921	CN4000AE	1#20-1084	02237	9L24DC	1#20-1230	01698	CN74491N
1#20-0943	01921	CN4021AF	1#20-1086	04200	UHP-40R	1#20-1231	01698	CN74492N
1#20-0944	01921	CN4025AF	1#20-1087	03811	U4508A	1#20-1232	01698	THS105NC
1#20-0945	01921	CN4012AF	1#20-1089	01698	SN74279N	1#20-1233	01698	SN74L47N
1#20-0946	01921	CN4001AF	1#20-1091	01698	SN5413J	1#20-1234	02569	THS035CPA
1#20-0947	01921	CN4030AF	1#20-1092	01698	SN5412P	1#20-1235	02569	THS018CPA
1#20-0948	01921	CN4002AE	1#20-1093	01698	SN5400J	1#20-1236	03406	THS040H
1#20-0949	01921	CN4011AF	1#20-1094	01698	SN5410J	1#20-1237	03406	THS0504H
1#20-0950	01921	CN4012AE	1#20-1095	01698	SN5474J	1#20-1238	01698	SN74LS253N
1#20-0951	01921	CN4019AF	1#20-1096	01698	SN5419KJ	1#20-1240	01698	SN7AS138N
1#20-0952	02237	9620C	1#20-1097	01698	SN5404J	1#20-1241	02937	MC1412CP
1#20-0953	02237	9630C	1#20-1098	02910	S8292F	1#20-1242	02937	MC2012L
1#20-0954	02237	9640C	1#20-1099	01698	SN5409J	1#20-1243	01698	SN74LS15N
1#20-0955	02237	9650C	1#20-1100	01698	SN7429RN	1#20-1244	01698	SN74LS153N
1#20-0956	02237	9660C	1#20-1101	01698	SN5402J	1#20-1245	01698	SN74LS155N
1#20-0957	02237	9670C	1#20-1102	02910	3101AN	1#20-1246	01698	SN74LS04N
1#20-0958	01921	CN4042AF	1#20-1107	01698	SN7416AN	1#20-1247	01698	SN74L172N
1#20-0959	01921	CN4036AF	1#20-1108	02037	MC1648P	1#20-1248	02910	NA2533N
1#20-0960	01921	CN4039AF	1#20-1109	02037	MC4022P	1#20-1250	01698	SN7413AN
1#20-0961	01921	CN4021AF	1#20-1110	01698	SN75110AN	1#20-1251	01698	SN74L519N
1#20-0962	01921	CN4006AF	1#20-1111	02237	93L40DC	1#20-1252	02883	L0110CJ
1#20-0963	01921	CN4031AE	1#20-1112	01698	SN74LS74N	1#20-1253	01698	SN5450UJ
1#20-0964	02237	9460C	1#20-1113	03406	DW8553N	1#20-1254	03406	DW8055N
1#20-0965	02237	94650C	1#20-1114	02037	MC1451ACP	1#20-1255	01698	SN7436RN
1#20-0966	02237	94680C	1#20-1115	03406	DSRA22N	1#20-1256	01698	SN7422RN
1#20-0967	02237	9470C	1#20-1116	01698	SN74109N	1#20-1257	01698	SN74159N
1#20-0968	02237	94710C	1#20-1117	02237	VL8APC	1#20-1258	01698	SN74170N
1#20-0969	01921	CN4035AE	1#20-1119	02037	MC1648L	1#20-1259	01698	SN74221N
1#20-0970	01921	CN4014AF	1#20-1120	04200	UHP-40	1#20-1261	01698	SN74281N
1#20-0971	02237	9710C	1#20-1121	01698	SN74125N	1#20-1262	01698	SN74290N
1#20-0972	02237	9820C	1#20-1122	02037	MC1451URCP	1#20-1263	01698	SN74H15N
1#20-0973	02237	9830C	1#20-1123	04078	MWS09N	1#20-1264	01698	SN74293N
1#20-0974	02237	9850C	1#20-1124	01698	SN7433N	1#20-1265	02037	MC145278CP
1#20-0975	02237	94710C	1#20-1129	02763	34ACJ	1#20-1266	02237	40097PC
1#20-0976	01921	CN4015AF	1#20-1130	01698	SN74S133N	1#20-1267	01698	SN7418AN
1#20-0977	01921	CN4034AF	1#20-1131	03406	DW8160N	1#20-1268	01698	SN74LS6N
1#20-0978	01921	CN4007AF	1#20-1132	02037	MC1690L	1#20-1269	01698	SN74LS157N
1#20-0979	01921	CN4009AF	1#20-1137	01698	SN15809N	1#20-1270	01698	SN74L121N
1#20-0980	01921	CN4016AF	1#20-1139	02037	VH04PC SELECTED	1#20-1271	01698	SN74143J
1#20-0981	01921	CN4018AF	1#20-1140	02910	MWS66N	1#20-1272	01698	SN74LS33N
1#20-0982	02037	ML7270P	1#20-1141	01698	SN74185N	1#20-1273	01698	SN74LS8PN
1#20-0985	02037	MC1890P	1#20-1142	01698	SN74L4AN	1#20-1274	01698	SN74LS22N
1#20-0986	03406	DW8175N	1#20-1143	03406	DW8552N	1#20-1275	01698	SN74S240N
1#20-0987	02237	94L18APC	1#20-1144	01698	SN74LS02N	1#20-1276	01698	SN74LS194AN
1#20-0988	02237	934100C	1#20-1145	01921	CN4049AF	1#20-1277	01698	SN74LS192N
1#20-0989	02910	ML2710N	1#20-1146	01921	CN4050AF	1#20-1278	01698	SN74LS191N
1#20-0990	02037	MC1494A1	1#20-1148	03406	DW8090N	1#20-1279	01698	SN74LS190N
1#20-0991	01921	CN4044AF	1#20-1149	03406	MWS260N	1#20-1280	01698	SN74LS181N
1#20-0992	04078	MWS330P	1#20-1150	02037	MC14520RCP	1#20-1281	01698	SN74LS139N
1#20-0994	01698	SN74747N	1#20-1155	02910	MWS290N	1#20-1282	01698	SN74LS104N
1#20-0995	01698	SN745153N	1#20-1156	02037	MC2257L	1#20-1283	01698	SN74LS04H
1#20-1002	01698	SN74104N	1#20-1157	02037	MC2259L	1#20-1284	01698	SN74LS46N
1#20-1004	01698	SN7404W	1#20-1158	01698	SN74551N	1#20-1285	01698	SN74LS45N
1#20-1005	02237	94Z21P	1#20-1159	03406	MWS587N	1#20-1286	01698	SN74LS46N
1#20-1006	03794	AM1101A	1#20-1164	01698	SN74H16N	1#20-1287	02037	IM002ACL
1#20-1007	02290	RCBT23MP	1#20-1165	03406	MWS513N	1#20-1288	02919	NT14N
1#20-1008	02910	IP707N	1#20-1166	01698	SN74H16N	1#20-1289	01698	SN74LS194N
1#20-1009	02237	949490C	1#20-1167	03406	DW8551N	1#20-1290	02237	U1512U
1#20-1015	01698	SN74S15AN	1#20-1168	02037	MWS026L	1#20-1291	01698	IM8554J
1#20-1016	01698	SN7545R9N	1#20-1169	04078	MWS009P	1#20-1292	03406	IMB1204
1#20-1017	02237	94L21P	1#20-1170	02037	MC14529AL	1#20-1293	03406	DMB130N
1#20-1020	02037	MC4224AL	1#20-1171	02037	MC1024L	1#20-1294	03406	DMB123N
1#20-1021	03406	DM8000H	1#20-1174	01698	TWS-024NC	1#20-1295	03406	DMB121N
1#20-1022	01698	SN5404N	1#20-1175	02037	MC14522P	1#20-1296	01698	SN74LS295RN
1#20-1023	01698	SN5493N	1#20-1176	02037	MC14015RCP	1#20-1297	01698	SN74LS266N
1#20-1024	01698	SN5416N	1#20-1179	01698	TM53122NC	1#20-1298	01698	SN74LS251N
1#20-1025	02037	MC1710L	1#20-1180	04078	MWS009P	1#20-1299	01698	SN74525TN
1#20-1026	02037	MC1213L	1#20-1181	02037	MC14529AL	1#20-1300	01698	SN74S173N
1#20-1027	01698	SN74198N	1#20-1183	02037	MC4016P	1#20-1301	01698	SN74S152N
1#20-1028	01698	SN74809N	1#20-1184	01698	SN74284N	1#20-1302	01698	SN74S251N
1#20-1029	02290	RCBT24MP	1#20-1186	01698	SN74282N	1#20-1303	01698	SN74S195N
1#20-1030	02290	RCBT24MP	1#20-1187	01698	SN74162N	1#20-1304	01698	SN74S194N
1#20-1031	02037	MC3007P	1#20-1188	01698	TWS3113NC	1#20-1305	01698	SN74S182N
1#20-1032	01698	SN74194N	1#20-1189	02410	SM3R0N	1#20-1306	01698	SN74S134N
1#20-1034	02037	MC1019P	1#20-1190	01921	CN0444AF	1#20-1307	01698	SN74S1512N
1#20-1037	01698	SN7446AN	1#20-1190	02037	MC145108CP	1#20-1308	02037	MC10411L
1#20-1038	01698	SN7448N	1#20-1190	03406	SN74C173N	1#20-1309	01698	SN74S284N
1#20-1042	01698	SN74165N	1#20-1191	01698	SN74S175N	1#20-1310	01698	SN7510ARN
1#20-1043	03406	DM5406N	1#20-1192	01698	SN74173N	1#20-1311	01921	CD4053RF
1#20-1044	02237	94210C	1#20-1193	01698	SN74L5197N	1#20-1314	01921	CD4052RE
1#20-1045	02910	NA273N	1#20-1194	01698	SN74L5193N	1#20-1315	01921	CD4051RE
1#20-1046	01698	SN7415AN	1#20-1195	01698	SN74L5175N	1#20-1316	01921	CD4648AE
1#20-1047	03406	DM74L42AN	1#20-1196	01698	SN74L5174N	1#20-1317	01921	CD4047AE
1#20-1048	02290	RT20	1#20-1197	01698	SN74LS03N	1#20-1318	01921	CD4045AE
1#20-1049	01698	SN74367N	1#20-1198	01698	SN74LS03N	1#20-1319	01698	SN74S15

INTEGRATED CIRCUIT CROSS REFERENCE

17

HP P/N	Mfr.	Desc.	HP P/N	Mfr.	Desc.
1A20-1337	02910	NA200N	1A20-1463	01698	SN74390N
1A20-1338	02910	NA2550N	1A20-1464	01698	SN74393N
1A20-1339	02037	MC14002UBCP	1A20-1465	01698	SN7449N
1A20-1340	02037	MC14585RCP	1A20-1466	02237	40174PC
1A20-1344	02037	MC17040L	1A20-1467	02910	NA283N
1A20-1346	01698	TMS3120NC	1A20-1468	03406	DW8542
1A20-1347	02237	9356PC	1A20-1469	01698	SN74LS107AN
1A20-1348	03406	HM5307N	1A20-1470	01698	SN74LS157N
1A20-1349	03406	DM85L54N	1A20-1471	02037	MC14539BCP
1A20-1353	03406	AH5024CN	1A20-1472	03406	DM85LS2N
1A20-1355	02037	MC14539BCP	1A20-1473	01698	SN7414N
1A20-1356	02037	MC14529BCP	1A20-1474	02883	L0114CJ
1A20-1357	03406	AM3705CD	1A20-1475	02237	9351A0C
1A20-1358	02237	91L34PC	1A20-1476	02910	NA796N
1A20-1359	02037	MC16114P	1A20-1477	02910	NAT95N
1A20-1360	02910	NAT69N	1A20-1478	01698	SN74LS21N
1A20-1361	02237	9314PC	1A20-1479	02037	MC14551RCP
1A20-1362	02838	220V1P0Z	1A20-1480	02037	MC8800L
1A20-1363	03714	IM5013ACD	1A20-1481	02037	MC8821L
1A20-1364	03406	HM5313N (75-)	1A20-1482	02037	MC10211P
1A20-1365	03406	HM74C157N	1A20-1483	01921	C0407IRE
1A20-1366	02037	MMH002ACP1	1A20-1484	02237	40098PC
1A20-1367	01698	SN7450RN	1A20-1485	03406	HM74C21N
1A20-1368	01698	SN74366N	1A20-1486	01921	C04081RF
1A20-1369	03406	AH0134CD	1A20-1487	01921	C04081RF
1A20-1371	03406	AH0152CD	1A20-1488	01921	SN74LS67AN
1A20-1372	02237	74S109NC	1A20-1489	01921	SN74LS16RN
1A20-1373	02737	91510UC	1A20-1490	03406	HM74C163N
1A20-1374	03285	An/5101NTJN	1A20-1491	02037	MC14020RCP
1A20-1375	02037	MC3103L	1A20-1492	02037	MC14049RCP
1A20-1376	02237	93L100M	1A20-1493	02037	MC14013BCP
1A20-1377	02237	93L140M	1A20-1494	02037	MC14025URCP
1A20-1378	01698	SN54192N	1A20-1495	02037	MC14001URCP
1A20-1379	01698	SN5408N	1A20-1500	02037	MC14011UBCP
1A20-1380	01698	SN5496N	1A20-1501	02037	MC14082BCP
1A20-1381	01698	SN5432N	1A20-1502	02037	MC14015BCP
1A20-1383	02037	MC1013AL	1A20-1503	02037	MC14007UBCP
1A20-1384	01590	SP8641A	1A20-1504	02037	MC14016RCP
1A20-1385	02037	MC145052RCP	1A20-1505	02037	MC14049URCP
1A20-1386	02037	MC14566HCP	1A20-1506	02037	MC14024BCP
1A20-1387	02037	MC145159RCP	1A20-1507	02037	MC14012URCP
1A20-1388	0237	MC14071CP	1A20-1508	02037	MC14017RCP
1A20-1389	02037	MC14593RCP	1A20-1509	02037	MC14023URCP
1A20-1390	03406	HM74C160N	1A20-1510	01921	CD4053RF
1A20-1391	03406	HM74C161N	1A20-1511	02037	MC14002UHCP
1A20-1392	01698	HM74C80N	1A20-1512	02037	MC14024RCP
1A20-1394	03406	NMBL99N	1A20-1513	01921	C04051RF
1A20-1395	03811	P3404	1A20-1514	02037	MC14014RCP
1A20-1398	03794	AM2505PC	1A20-1515	01921	C04556RE
1A20-1399	02037	MC10176P	1A20-1516	01921	C04555RE
1A20-1400	02037	MC10104P	1A20-1518	03406	D74L00N
1A20-1402	03406	MM80C95N	1A20-1519	02037	MC663P
1A20-1403	01921	CN4072RF	1A20-1520	02037	MC660P
1A20-1404	01921	CN4069RE	1A20-1521	02037	MC14009RCP
1A20-1405	01921	CN4075RE	1A20-1522	02037	MC3440P
1A20-1406	01698	SN74S112N SLECTEN	1A20-1524	02037	MC8402L
1A20-1407	01921	CN4078RE	1A20-1525	02037	MC14009RCL
1A20-1408	01921	CN4073RF	1A20-1526	02037	MC14024RCL
1A20-1409	01921	CN4082RE	1A20-1527	02037	MC14029RCL
1A20-1410	01921	CN4088RE	1A20-1528	01921	CD4029AF
1A20-1411	01698	SN74LS75N	1A20-1529	01921	C04018AF
1A20-1412	02037	MC14556RCP	1A20-1530	01921	C04027AF
1A20-1413	02037	MC14511BCP	1A20-1531	01921	C04013AF
1A20-1414	01698	SN74LS12N	1A20-1532	01921	C04044AF
1A20-1415	01698	SN74LS13N	1A20-1533	01921	C04043AF
1A20-1416	01698	SN74LS14N	1A20-1534	01921	C04001AF
1A20-1417	01698	SN74LS26N	1A20-1535	01921	C04025AF
1A20-1418	01698	SN74LS42N	1A20-1536	01921	C04030AF
1A20-1419	01698	SN74LS45N	1A20-1537	01921	C04002AF
1A20-1420	01698	SN74LS42N	1A20-1538	01921	C04011AF
1A20-1421	01698	SN74LS46N	1A20-1539	01921	C04012AF
1A20-1422	01698	SN74LS122N	1A20-1540	01921	C04042AF
1A20-1423	01698	SN74LS123N	1A20-1541	01921	C04015AF
1A20-1424	01698	SN74LS124N	1A20-1542	01921	C04049AF
1A20-1425	01698	SN74LS132N	1A20-1543	01921	C04050AF
1A20-1426	01698	SN74LS145N	1A20-1544	01921	C04074AF
1A20-1427	01698	SN74LS156N	1A20-1545	01921	C04053AF
1A20-1428	01698	SN74LS158N	1A20-1546	02037	MC14050HCl
1A20-1429	01698	SN74LS160AN	1A20-1547	02037	MC14051HCl
1A20-1430	01698	SN74LS161AN	1A20-1548	01921	C04058AF
1A20-1431	01698	SN74LS162AN	1A20-1549	02037	MC14534QFL
1A20-1432	01698	SN74LS163AN	1A20-1550	01921	C04071AF
1A20-1433	01698	SN74LS164N	1A20-1551	01921	C04081AF
1A20-1434	01698	SN74LS44AH	1A20-1552	01921	C04023AF
1A20-1435	01698	SN74LS469N	1A20-1553	01921	C04011AF
1A20-1436	01698	SN74LS170N	1A20-1554	01921	C04033AF
1A20-1437	01698	SN74LS221N	1A20-1555	01921	C04056AF
1A20-1438	01698	SN74LS257N	1A20-1556	01921	C04555RF
1A20-1439	01698	SN74LS258N	1A20-1557	03411	PAZ16
1A20-1440	01698	SN74LS279N	1A20-1558	02037	MC3441AP
1A20-1441	01698	SN74LS283N	1A20-1559	03406	HM74C164N
1A20-1442	01698	SN74LS290N	1A20-1560	03406	HM74C165N
1A20-1443	01698	SN74LS293N	1A20-1561	03406	HM74C193N
1A20-1444	01698	SN74LS298N	1A20-1562	03406	HM74C175N
1A20-1445	01698	SN74LS375N	1A20-1563	03406	HM74C14N
1A20-1446	01698	SN74LS495AN	1A20-1564	01698	SN74LS125AN
1A20-1447	01698	SN74LS670N	1A20-1565	02037	MC14539RCL
1A20-1448	01698	SN74S499N	1A20-1567	02037	MC14539RCL
1A20-1449	01698	SN74532N	1A20-1573	02037	MC14558RCP
1A20-1450	01698	SN74537N	1A20-1574	01698	SN74LS73AN
1A20-1451	01698	SN74533N	1A20-1575	03406	HM74C192N
1A20-1452	01698	SN74S142N	1A20-1576	03406	HM74C107N
1A20-1453	01698	SN74S163N	1A20-1577	01921	C04093RF
1A20-1454	01698	SN74S168N	1A20-1578	01921	C04076RE
1A20-1455	01698	SN74S149N	1A20-1579	03794	AM2803HC
1A20-1456	01698	SN74S281N	1A20-1580	01698	SN74247N
1A20-1457	01698	SN74S299N	1A20-1581	01921	C04065AF
1A20-1458	01698	SN74S31N	1A20-1585	02910	74123N
1A20-1459	01698	SN74S177N	1A20-1586	02237	45128PC
1A20-1460	01698	SN74265N	1A20-1587	03406	DW8459N
1A20-1461	01698	SN74273	1A20-1588	02037	MC14568RCP
1A20-1462	01698	SN74351N	1A20-1589	03406	HM74C164N

INTEGRATED CIRCUIT CROSS REFERENCE

HP P/N	Mfr.	Desc.	1820-1946	02180	DC-CH0EQ	1820-2081	02037	MC68A21P
1A20-1780	02237	11C90DC	1820-1935	03406	WV74C905J	1820-2082	01698	SN5442AJ
1A20-1781	03799	H2-200-5	1820-1934	02037	MR14019RCL	1820-2083	02237	4n298PC
1A20-1782	03794	AM26502PC	1820-1937	03406	MR14053J	1820-2084	02037	MC14014RCP
1A20-1783	01698	TWSA080AN	1820-1941	03406	LF13201N	1820-2085	02237	4n198PC
1A20-1784	01698	SNTAL5P91N	1820-1942	01698	SN74S1A3J	1820-2086	02037	MC14004RCP
1A20-1785	01698	SN74LS261N	1820-1943	01698	SN74S1A9J	1820-2087	03714	TW6402CDL
1A20-1786	02237	MC345YCP	1820-1944	02037	MR1013N	1820-2088	02237	9A13TC
1A20-1787	01698	SN7427J	1820-1945	02037	MR10114L	1820-2089	02237	9A12TC
1A20-1788	02237	F10016DC	1820-1946	02037	MC10117L	1820-2090	02037	MC14082RCP
1A20-1789	03285	AD7530JN	1820-1947	02037	MC14496FP	1820-2091	02037	MC14075RCP
1A20-1791	01698	SN74284N	1820-1948	01698	TL607C	1820-2092	01698	TMS3129NC
1A20-1792	01698	SN74285N	1820-1949	01698	SN74LS154N	1820-2093	02237	F10010DC
1A20-1793	01698	SN74116N	1820-1950	02037	MC10212P	1820-2094	02237	9A16PC
1A20-1794	03406	WV81LS95N	1820-1955	01921	CN0009RE	1820-2095	02237	9A27PC
1A20-1795	03406	LF1333I	1820-1956	01921	CN0429E	1820-2096	01698	SN74LS393N
1A20-1796	03406	NS3611N	1820-1957	01921	CN4511BF	1820-2097	02037	MC14543RCP
1A20-1797	03406	DH0035C	1820-1958	01921	CN4616AE	1820-2098	03406	DW8099N
1A20-1798	01698	SN54LS74J	1820-1959	01921	CN4508AE	1820-2099	02037	MC6802P
1A20-1799	01698	SN54LS02J	1820-1960	02037	MC14017RCP	1820-2100	02237	3R61EP
1A20-1800	01698	SN7542P8JN	1820-1961	02037	MC14023RCP	1820-2102	01698	SN74LS173N
1A20-1801	01698	SN54LS03J	1820-1962	02037	MC14024RCP	1820-2103	03794	DQ0056CN
1A20-1803	01698	SN54D0J	1820-1963	01921	CN04013RAE	1820-2104	01698	SN74LS242N
1A20-1804	02237	MC08464P	1820-1964	01921	CN0427AF	1820-2106	02237	F11C0D0C
1A20-1805	02910	T4191N	1820-1965	02037	MC14025HCP	1820-2107	02037	SN74LS08N
1A20-1806	03406	WV74C85N	1820-1966	03794	AM9335APC	1820-2108	02910	NAT31N
1A20-1807	02883	DG2008A	1820-1967	02037	MC14071RCP	1820-2109	03811	CR253
1A20-1810	02037	MC346UP	1820-1971	02883	NR201CJ	1820-2110	01698	SN7477P
1A20-1811	02237	A4278HOC	1820-1973	01698	TL6041P	1820-2111	01698	SN7546RN
1A20-1814	02037	MC14517RCP	1820-1974	01698	SN74S1R1J	1820-2113	02037	MC6848RL
1A20-1817	02910	NAT37N	1820-1975	01698	SN74LS165N	1820-2114	02237	FCM7002PC
1A20-1821	01698	SN74LS113AN	1820-1976	01921	CN4505RE	1820-2117	02237	9A36ATC
1A20-1822	02910	NR25100I PROGRAMMED	1820-1977	02037	MC12061P	1820-2118	02237	9A502PC
1A20-1823	03406	WV80C97J	1820-1978	02037	938APC	1820-2120	03794	AM25LS14DC
1A20-1824	01698	SN75112N	1820-1980	02910	NA2531N	1820-2121	01698	SN74LS34BN
1A20-1827	03406	WV74C144N	1820-1981	03794	AM25509PC	1820-2124	02037	MC14033RCP
1A20-1828	02910	NAT28N	1820-1982	01698	SN75363N	1820-2125	02237	4n138PC
1A20-1830	02037	MC10210L	1820-1983	03285	AM561K1N	1820-2126	03406	WV5113J(7A+)
1A20-1831	02937	MP10103L	1820-1985	03406	DM8556RD	1820-2127	01698	SN7427AN
1A20-1832	02037	MC10212L	1820-1986	03406	LF13609	1820-2128	01698	SN75114N
1A20-1833	01698	SN75361AN	1820-1987	01698	SN74LS599N	1820-2129	02634	UHP40T
1A20-1834	02237	11C700C	1820-1988	03406	AM001YCJ	1820-2130	02237	11C704H
1A20-1837	03406	DA1201CD	1820-1989	02237	74LS393PC	1820-2131	02037	MC67NP
1A20-1838	03285	AM562JN/BIN	1820-1990	02037	MC10101L	1820-2134	01698	SN7524AN
1A20-1840	02883	NG201CJ	1820-1991	01698	SN74LS390N	1820-2136	03406	DQ8073N
1A20-1841	02483	NS5008R	1820-1992	03794	AM25LS160PC	1820-2137	02037	MC68400P
1A20-1842	02037	MC346ZP	1820-1993	02037	MC10159L	1820-2138	03406	NS4871N
1A20-1844	00039	UDPA251D	1820-1994	01698	SN74LS243N	1820-2140	02237	11C05DC
1A20-1845	03406	DS834N	1820-1995	03285	AD7550D	1820-2141	01698	CE4549N
1A20-1849	02023	WV5873	1820-1997	01698	SN74LS174N	1820-2142	01698	PAAH MASKED
1A20-1850	02037	MC14580RCP	1820-2000	03406	WV5307AHN	1820-2143	03406	PA25T
1A20-1851	03794	AM74LS148N	1820-2002	02237	9377P	1820-2144	02037	MC34KHP
1A20-1852	02037	MC1A14P	1820-2004	00039	UDPA253D	1820-2145	02037	UR34H7P
1A20-1854	02237	3A702DC	1820-2006	01794	AM9080A-4DC	1820-2146	02037	MC68444RL
1A20-1855	02037	MC14543RCP	1820-2007	01698	SN74LS245N	1820-2149	01976	AP34B
1A20-1856	03285	AM563KD/RCD	1820-2008	02037	MC14013RCP	1820-2150	03811	DA279-5
1A20-1857	03406	DS8555N	1820-2009	02237	4n499PC	1820-2151	02037	MC6802L
1A20-1858	01698	SN74LS177N	1820-2013	02037	MC14071RCP	1820-2152	02237	3A70PC PROGRAMMED
1A20-1859	01698	SN74LS240N	1820-2014	02037	MC140691RCP	1820-2153	02237	3A70PC PROGRAMMED
1A20-1862	02910	BS541A	1820-2015	02037	MC14070RCP	1820-2154	02237	3A16PC
1A20-1863	02910	RT988	1820-2016	02237	9401PC	1820-2155	02910	PK51
1A20-1864	03811	P3212	1820-2017	01921	CN0408RF	1820-2156	03406	WV74C92PN
1A20-1865	03794	AM25LS08PC	1820-2018	01921	CN0608RF	1820-2157	02037	MC3450P
1A20-1866	03794	AM25LS07PC	1820-2019	02037	MC14584RCP	1820-2158	02037	MC3452P
1A20-1867	03794	AM25LS09PC	1820-2020	02634	UNN-577A	1820-2159	01698	SN75117P
1A20-1868	01698	SN74S197N	1820-2021	02037	MC14520RCP	1820-2161	03406	DS8835N
1A20-1869	01698	SN74S196N	1820-2023	02037	MC10197P	1820-2163	02910	PA52I
1A20-1870	03406	DS8839N	1820-2024	01698	SN74LS244N	1820-2164	01698	SN7412BN
1A20-1871	01698	SN74S283N	1820-2025	03714	ICL7101CPL	1820-2165	02037	MC6881P/MC3449P
1A20-1872	03406	WB1LS96N	1820-2026	01698	SN74LS196N	1820-2166	02037	MC1412V9P
1A20-1873	03406	WB1LS90N	1820-2027	02237	3A53PC	1820-2167	02037	MC1057AF
1A20-1874	03406	WB555N	1820-2028	02037	MC68R28P	1820-2168	03794	AM2502PC
1A20-1875	02910	RT38N	1820-2031	02037	MC14021RCP	1820-2170	02634	ULN-204AB
1A20-1876	03794	AM74S1A1N	1820-2032	02237	4104PC	1820-2172	02237	3A52PC
1A20-1877	03794	AM74S160N	1820-2033	02037	MC14561RCP	1820-2173	02237	3A54PC
1A20-1878	01698	SN54A63J	1820-2035	03811	P1205	1820-2174	03406	DS36314
1A20-1879	01698	SN54LS00J	1820-2036	02037	MC6875P	1820-2175	02037	MC6852P
1A20-1880	01698	SN54LS27J	1820-2037	02037	MC14081RCP	1820-2176	03811	PA243
1A20-1881	01921	CG0428AF	1820-2038	03406	MM74C09J	1820-2177	03811	PA243
1A20-1882	02037	MC10119L	1820-2039	03794	AM9B28A+4PC	1820-2178	03811	PA041 MASKED
1A20-1884	02910	NAT97N	1820-2040	03406	WB5315N	1820-2179	02037	AM25L5251RPC
1A20-1885	02910	NR25160N	1820-2041	03406	DS3612W	1820-2180	03406	WV3880N
1A20-1887	01698	SN74S241A	1820-2042	01698	SN54LS21J	1820-2181	03811	PA041 MASKED
1A20-1888	02037	MC12019L	1820-2043	01698	SN54177J	1820-2182	01698	SN74497N
1A20-1890	01698	SN74S284N	1820-2044	01698	SN7541P	1820-2184	04078	WV3880N
1A20-1897	01921	CG0428AF	1820-2046	01698	SN74LS153N	1820-2185	03811	PA041 MASKED
1A20-1898	01921	CG4021AF	1820-2047	01590	SPB622RDG	1820-2186	03794	AM25LS251RPC
1A20-1899	01921	CG4516AF	1820-2049	02037	SN74LS196N	1820-2187	03811	CR275
1A20-1900	01921	CG4520AF	1820-2050	02037	MC14575RCP	1820-2189	02037	PA048 MASKED
1A20-1910	01921	CG4521AF	1820-2051	02037	MC14520RCL	1820-2193	02037	MC1017AL
1A20-1911	00575	T016024-A	1820-2053	02910	74LS154N	1820-2194	01698	SN74LS527AN
1A20-1912	02037	MC14074PC	1820-2054	02037	MC14040RCL	1820-2195	02910	74LS04N
1A20-1913	0194H	SN74LS240N	1820-2055	02037	MC14015RCL	1820-2196	02237	9A33TC
1A20-1914	01698	SN74LS241N	1820-2056	01698	SN74LS378N	1820-2198	01698	SN74L5147N
1A20-1919	00039	UDPA255A0	1820-2060	00339	UPD369P	1820-2200	01698	SN74LS152AN
1A20-1920	00039	UDPA226A0	1820-2061	01698	AC9595N+DIP	1820-2201	01698	SN74LS1523AN
1A20-1921	03794	DA224	1820-2062	01698	SN54LS174J	1820-2202	01698	SN74LS1523N
1A20-1922	01698	SN74L516N	1820-2063	03406	WV74C151H	1820-2203	03794	AM24L517PC
1A20-1924	02410	NAT93N	1820-2066	02037	MC1017AL	1820-2204	03714	TM640-1-IPL
1A20-1925	01921</							

INTEGRATED CIRCUIT CROSS REFERENCE

19

HP/P/N	Mfr.	Desc.	1A26-0041	01921	C43059	1A26-0146	02290	PC4195TK
1A20-2219	02037	MC684BRP	1A26-0042	02037	MCC1741	1A26-0147	02180	DAC-100CC93
1A20-2220	02037	MC14075BCP	1A26-0043	01921	C43077T	1A26-0148	02037	MFC4000R
1A20-2221	01921	CN40675F	1A26-0044	02237	UAT390C	1A26-0210	02037	MR1204
1A20-2222	01921	CN40949F	1A26-0045	02910	NF5628	1A26-0211	03406	LW312D
1A20-2223	02037	MC14032RCP	1A26-0046	02037	MCC145K	1A26-0212	03406	LW320K-05
1A20-2224	02037	MC14034RCP	1A26-0047	01698	UAT23CJ	1A26-0213	02237	TA15KC
1A20-2225	01921	CN40410URF	1A26-0051	01698	TL514CN	1A26-0214	02910	NF515A
1A20-2226	01921	CN4045RF	1A26-0055	02237	UAT110C	1A26-0215	02910	NF556A
1A20-2227	01921	CN4000RF	1A26-0056	02910	NE511H	1A26-0216	03406	LM381N
1A20-2228	02037	MC14044RCP	1A26-0058	01698	LW201AL	1A26-0217	03406	LW310N
1A20-2229	01921	CN45124F	1A26-0060	02037	MHC138B	1A26-0218	03406	LW304N-04
1A20-2230	01921	CN40475F	1A26-0061	03793	S6301AJ	1A26-0219	03406	LM341N
1A20-2231	01921	CN40313F	1A26-0064	02237	UAT33DC	1A26-0212	02237	UAT776TC
1A20-2232	02037	MC14034RCP	1A26-0065	01698	SN7231JP	1A26-0213	02910	NF521A
1A20-2233	01921	CN4099RF	1A26-0067	02910	NE511H	1A26-0214	02037	MC7915CT
1A20-2234	03406	DS3649N	1A26-0069	02237	LM311AD	1A26-0215	02037	MC7405-2CT
1A20-2235	01698	SN545528JG	1A26-0070	02037	MC1741CL	1A26-0217	02290	PC4558T
1A20-2236	03406	IMD2901ADC	1A26-0071	02037	MHC156S	1A26-0218	01921	CA3100T
1A20-2237	03406	PB8304	1A26-0072	02237	UAT208H	1A26-0219	02910	NF567V
1A20-2240	02037	MC68402P	1A26-0074	03285	AD553K(SEL)	1A26-0220	03406	LW320M-05
1A20-2241	01921	CN40103RF	1A26-0075	01921	C43079	1A26-0221	02037	MC7912CT
1A20-2242	02037	950030C	1A26-0077	03406	LM311F	1A26-0222	02237	UA4136PC
1A20-2243	01698	SN75469N	1A26-0078	01921	C43030	1A26-0224	02910	SP555CT
1A20-2244	01698	SN74LS179N	1A26-0079	03545	1H21	1A26-0225	03406	LW322N
1A20-2245	03411	PA04H MASKED	1A26-0081	03406	1H318H	1A26-0226	02237	TM412MC
1A20-2246	03406	HM5369AA/N	1A26-0082	03285	AD741LH	1A26-0228	02180	SS572SCJ
1A20-2247	02910	NA2510n1	1A26-0084	02037	MHC1776CG	1A26-0229	02180	DP-05CJ
1A20-2248	01698	54L50A	1A26-0087	01921	C43004	1A26-0230	01921	CA3053
1A20-2249	01698	54L510	1A26-0089	03545	1H22	1A26-0231	02237	IA760HC
1A20-2250	01698	54L530	1A26-0090	03285	AN741KH(SFL)	1A26-0232	03406	LW240
1A20-2251	01698	54L519A	1A26-0091	06563	DRAM 6,8B10	1A26-0233	03406	LW20K-15
1A20-2252	01698	54S30	1A26-0094	01698	SN7523N	1A26-0234	03406	LW20K-12
1A20-2253	01698	54S40	1A26-0098	03406	LW211H	1A26-0236	02237	IA760MC (SFL)
1A20-2257	02037	MC14501HCP	1A26-0099	02237	TA12UC	1A26-0237	00350	X320
1A20-2258	02037	MC14174RCP	1A26-0100	01698	SN7274J	1A26-0238	03406	LW325AS
1A20-2259	01698	AC5947NF	1A26-0101	02910	NE565K	1A26-0239	03714	TCLR001/D(SFL)
1A20-2260	03406	IMD2911ANC	1A26-0102	03406	LM312H	1A26-0240	03714	TCLR00R/D(SEL)
1A20-2261	01698	SN54LS15J	1A26-0103	02037	MHC145S	1A26-0243	02037	MC1558G
1A20-2262	03794	AM25LS2539PC	1A26-0104	03406	LM371H	1A26-0244	02910	NF529A
1A20-2263	03811	PA04A MSK0	1A26-0105	02883	DA172BK	1A26-0245	03406	LW370N
1A20-2264	02237	40088PC	1A26-0106	02037	MCH715CP	1A26-0246	02037	MC7802CK
1A20-2265	02037	40088PC	1A26-0108	03406	LH062CH	1A26-0247	03780	A+4350
1A20-2266	02910	NE590F	1A26-0109	03799	H42-2625-R0593	1A26-0248	02037	MC1408L-6
1A20-2267	02910	NE591F	1A26-0110	03406	LM212H	1A26-0249	03285	AD504J
1A20-2268	01698	SN74LS45N	1A26-0111	02037	MHC145A	1A26-0250	03406	LH0042CH(SFL)
1A20-2269	03411	PA04B MSK0	1A26-0112	03406	LM316AH	1A26-0251	03285	AN514K
1A20-2270	03794	AM25LS2569DC	1A26-0113	03406	LW207H	1A26-0252	03285	AN7529JN
1A20-2271	03811	DR039	1A26-0114	02237	710HH	1A26-0251	02037	MC3442P
1A20-2272	02237	F3870PC MASKED	1A26-0115	02910	NE526A	1A26-0254	02037	MC17141SCP1
1A20-2273	02634	UDN291R1A	1A26-0116	02180	CMP-01-CJ	1A26-0255	02910	NE522A
1A20-2274	02634	UN-2V4URB	1A26-0117	02237	TA12KC	1A26-0256	03793	SA1502N
1A20-2275	03406	MH7AC90N	1A26-0119	02910	NE555T	1A26-0257	02037	MFC407n
1A20-2276	03406	MH7AC85N	1A26-0120	03406	LM390U4	1A26-0258	03406	LW0824KC
1A20-2277	02037	MC140298AL	1A26-0121	03714	R00TC	1A26-0263	03285	AN532JD
1A20-2278	03811	CA748	1A26-0122	02237	TA05UC	1A26-0264	03285	AN7520LN
1A20-2279	02037	MC14175BCP	1A26-0123	02037	MCH712CK	1A26-0265	02180	DP-05EJ
1A20-2280	04078	MHP3870H MSK0	1A26-0124	02910	NE529K	1A26-0267	03406	LH062CDN
1A20-2282	01698	SN54641JG	1A26-0125	02037	MHC1514L	1A26-0268	03406	LW208U
1A20-2283	01698	SN55462JG	1A26-0126	02037	MCH718CK	1A26-0270	03799	HA-200RA
1A20-2284	02037	MC68A00P	1A26-0127	02180	NAC-100RC03	1A26-0271	01698	SN72741P
1A20-2285	03794	MCA717A-1.0MHz	1A26-0128	02037	MHC1468L	1A26-0272	03406	LM361H
1A20-2287	02910	NT45253H	1A26-0129	03714	TCLR01CTZ	1A26-0274	02037	MCTRL14ACP
1A20-2288	04078	MH3858P	1A26-0130	02910	NE550L	1A26-0275	02037	MC7811PACP
1A20-2289	03811	CA251A	1A26-0131	03714	TCLR00ACTY	1A26-0276	02037	MC7805ACP
1A20-2290	03406	DS3632N	1A26-0132	02237	1H7400C	1A26-0277	03406	LW320T-15
1A20-2291	02037	MCA680P	1A26-0134	02237	1H7470H	1A26-0281	02037	MC79114ACP
1A20-2292	01590	SP8817ADG	1A26-0137	02910	NE550N	1A26-0282	02037	MC79112ACP
1A20-2293	02037	MC68A00P	1A26-0138	02037	MHC7339P	1A26-0283	03406	LW325S
1A20-2294	03811	PR04H MSK0	1A26-0139	01921	CA1458G	1A26-0284	02037	MC79106K
1A20-2295	03811	PR355 MSKN	1A26-0140	02037	MCH7168R	1A26-0285	02037	MC78105ACP
1A20-2296	02037	MCH502P	1A26-0141	03406	LM319D	1A26-0286	02037	MC78103C
1A20-2297	02037	MC8500P	1A26-0142	02037	MHC1458CP1	1A26-0287	02037	MC3476G
1A20-2298	07653	ZP04-CPU-PS	1A26-0144	02037	MHC7045CP	1A26-0288	02037	MC3476F
1A20-2299	07653	ZP04-DMA-PS	1A26-0145	02037	MHC706CP	1A26-0289	03406	LW320T-24
1A20-2300	07653	ZP04-SIO/2-PS	1A26-0146	02037	MHC708CP	1A26-0290	03406	UAT9M124NC
1A20-2301	07653	ZP04-CTC-PS	1A26-0147	02037	MHC712CP	1A26-0291	03406	AN5130P
1A20-2304	01698	SN742ZJ	1A26-0149	02037	MHC741CP	1A26-0293	03285	LM333JH
1A20-2306	02037	MH1446VP	1A26-0150	02237	TA24UC	1A26-0299	03406	LW320T-24
1A20-2307	02037	MC1469P	1A26-0152	02569	CNP125PK	1A26-0300	02237	UAT9M124NC
1A20-2308	03811	PR039-A	1A26-0154	02037	MHC7045CP	1A26-0301	01698	SN72L02PL
1A20-2309	03406	DS3629N	1A26-0155	02037	MHC718CP	1A26-0302	02037	MC17415CG
1A20-2310	04078	MK5039GN	1A26-0156	03406	ME550H	1A26-0303	01921	CA7416
1A26-0002	02037	MC1510G	1A26-0159	02037	MCH350P	1A26-0304	03406	LF355H
1A26-0003	02037	MC1456CG	1A26-0160	02237	TA06K	1A26-0306	03406	LM339An
1A26-0004	02237	HA304HC	1A26-0161	02037	MLH324P	1A26-0307	01921	CA3130T
1A26-0006	02037	MC1469G	1A26-0162	03406	LM321H	1A26-0308	03285	AN562KKn/BN
1A26-0009	02180	<55725CJ	1A26-0164	02237	TA24PC	1A26-0309	03285	An51BJ
1A26-0010	02037	723HM	1A26-0165	03406	LM4250CH	1A26-0311	02037	MLP01AP1
1A26-0011	01698	SN52741	1A26-0167	01921	CA3094AT	1A26-0312	02037	MC3403P
1A26-0013	02180	S55741CJ	1A26-0169	03406	LM320H-5+	1A26-0314	03406	LM355-1H
1A26-0014	02037	MC1595L	1A26-0172	03406	LM308N	1A26-0315	03406	LM348N
1A26-0015	01921	CA3060D	1A26-0173	03406	LM320K-5+	1A26-0316	03406	LM007V-1H
1A26-0016	02037	MI_M204G	1A26-0175	03406	LM319N	1A26-0318	06338	TRA23I
1A26-0017	03406	LM259H	1A26-0176	03285	AN5056JH	1A26-0319	03406	LF356H
1A26-0019	02037	MC1437L	1A26-0177	02237	723BE	1A26-0320	03406	LM395K
1A26-0020	02180	DAC-01CY	1A26-0178	03406	LM320H-12	1A26-0321	01921	CA3099E
1A26-0021	03406	LM310H	1A26-0179	03406	LM320H-5+	1		

INTEGRATED CIRCUIT CROSS REFERENCE

HP P/N	Mfr.	Desc.	HP P/N	Mfr.	Desc.
I226-0342	02237	UAT740HDC	I226-0471	02180	OP-07CJ
I226-0343	02037	MC1436CG	I226-0472	03406	LH0644AC
I226-0344	02037	MC7908CP	I226-0473	02037	MH2046(SEL)
I226-0345	02237	UAT74M12UC	I226-0474	02037	MC3467P
I226-0346	03406	LW35RN	I226-0475	02037	MC3468P
I226-0348	03406	LW37TN	I226-0476	01498	TL610CP
I226-0349	02237	UAT78N06HL	I226-0477	01698	TL610CP
I226-0353	02237	UAT7H154CH	I226-0478	02237	UAT7909UC
I226-0356	03285	AN7530JD	I226-0479	01698	LW293P
I226-0357	01406	LF357H	I226-0480	03406	LF1333J3N
I226-0358	03406	LF256H, SEL NOISE	I226-0481	03406	LH0033CG
I226-0360	02037	MC3431P	I226-0482	03714	H2-2525-5
I226-0364	02037	HC12040P	I226-0483	02237	UAT79MGUIC
I226-0365	03799	HA2065-5	I226-0484	02237	UAT78MGUIC
I226-0366	02037	MC7912CT(SEL)	I226-0485	03285	AN7530LN
I226-0367	02037	MC7809NSG	I226-0486	02037	MC1405PACP
I226-0368	02037	MC7912CT(SEL)	I226-0488	03406	LW218H
I226-0369	02037	MC7812CT(SEL)	I226-0489	03714	TH5024CPE
I226-0370	03406	LW340K-8	I226-0490	03714	TH5032CPE
I226-0371	03406	LF256H	I226-0491	02237	UAF355TC
I226-0373	03406	LW555CN	I226-0492	03406	DS3630N
I226-0374	02237	9450-10C	I226-0493	02037	ML308AP1
I226-0375	03406	LX5700H	I226-0495	02037	MC79L12ACG
I226-0376	03406	LW323K(SEL)	I226-0496	02037	MC79L05ACG
I226-0377	03406	LW320T-18	I226-0497	03406	LF311M
I226-0378	03406	LW320N(SEL)	I226-0498	01698	SN76540N
I226-0379	02037	MC3476G-(20/70)	I226-0499	03406	LH091CJ
I226-0380	03406	LW311H(SEL)	I226-0500	02037	MC1405AHC
I226-0381	02037	MC1459G-(20/70)	I226-0502	02037	MC1406AHC
I226-0382	02037	MC1355P	I226-0503	03406	LF398H
I226-0383	03406	LW308H(SEL)	I226-0504	03285	AN7530LD
I226-0384	03406	LW309H(SEL)	I226-0505	02037	MC1741NCPI
I226-0386	03406	LW309K(SEL)	I226-0506	01921	CA3140F
I226-0387	03714	TCL 8250 C PE	I226-0507	02037	S7A266
I226-0388	03406	LW0071-1H	I226-0508	03285	AD561J0
I226-0390	03406	LW3911N	I226-0509	02037	MC1658P
I226-0391	03714	TCL741C-LN-TY	I226-0510	03406	LF1333PN
I226-0392	03794	A3010AH	I226-0511	01698	UAT79M15CLA
I226-0393	01698	LW317TK	I226-0512	02037	MC78M15CG
I226-0394	03406	LW78L01ACH	I226-0517	03406	AN0809PCN
I226-0396	02237	7R15UC	I226-0519	01698	TL071C
I226-0397	03406	LW220K-5.0	I226-0520	01698	TL071B
I226-0398	03406	LW271H	I226-0521	01698	TL072C
I226-0399	02037	MC3340P	I226-0522	01698	TL074C
I226-0400	02037	MC1555G	I226-0523	03406	LW337K
I226-0401	02483	L144CJ	I226-0524	03406	LW324AN
I226-0402	06545	LAS-1515	I226-0526	02037	MC3420P
I226-0403	06545	LAS-1815	I226-0527	03406	LW337T
I226-0404	02237	UAT952UC	I226-0528	03406	LF356RH
I226-0405	03406	LH0022CH	I226-0529	02037	MC341U
I226-0408	03714	ICL8212CPA	I226-0531	02237	UAT79T2C
I226-0409	02037	MC1723L	I226-0532	03799	HA1-4605-5
I226-0410	01498	TL084CN	I226-0533	03406	LW326H
I226-0411	02037	MC1453ARCP	I226-0534	01921	CA3080F
I226-0412	03406	LW393N	I226-0536	03406	LW340AK-5
I226-0413	03799	HA2-2605-5	I226-0537	03406	LW220K-5.2
I226-0414	03406	LH0070-2H	I226-0538	01698	TL084BCN
I226-0415	02910	SN5000R	I226-0539	03406	LW317H
I226-0416	03406	LF13331D	I226-0540	03714	ICL8211CTY
I226-0417	03406	LF13333D	I226-0542	02180	NP-14CJ
I226-0418	02237	UAT7912UC	I226-0543	02237	UAT714HC
I226-0419	03406	LW3909N	I226-0544	02037	MC1403U
I226-0420	02037	MC1458P1	I226-0545	01698	TL0R2ACP
I226-0421	03285	AN536AJ	I226-0546	02910	NE592K
I226-0422	03406	LF298H	I226-0547	01698	TL072ACP
I226-0423	03406	LW317K	I226-0548	03406	LW161D
I226-0424	02037	MC3405P	I226-0549	01921	CA3140H
I226-0425	03799	HA2-2605-5	I226-0550	02237	UA0010FPC
I226-0426	03794	AM670L	I226-0551	01698	TL7R05ACK
I226-0427	01921	CA741CGH	I226-0552	03406	LF13741H
I226-0428	01698	SR3524J	I226-0554	03406	LM340L7-12
I226-0429	03799	H1-1R14A-5	I226-0555	03406	LM340L8-5
I226-0430	03285	AN559DN	I226-0556	02037	MC1458N
I226-0431	02037	MC14433L	I226-0557	03406	LW348D
I226-0432	03714	TCL H049 CC PE	I226-0558	03406	LM337H
I226-0433	03406	LF356HN	I226-0559	03406	LM340K-24
I226-0434	03406	LM341P-4,0	I226-0565	01698	TL494CN
I226-0435	03406	LM341P-12	I226-0567	02037	MLMC101A
I226-0436	03406	LM341P-24	I226-0568	03406	LW320H-6
I226-0437	02037	MC1493L	I226-0569	02910	NF5534AT
I226-0438	03406	LW340LH-12	I226-0572	01698	TL0R4ACN
I226-0439	03406	LH-0053CG	I226-0573	03714	ICL80690CQ
I226-0440	02180	NP-01CJ	I226-0574	02237	UAT714LHC
I226-0441	02237	UAT9601C	I226-0575	02763	9400CJ
I226-0442	03714	IC5027CPE	I226-0576	02180	NP-16E
I226-0443	02237	UAT890C	I226-0577	02180	NAC-10RCQ4
I226-0444	02237	UAT790C	I226-0578	03794	AM685HL
I226-0445	02237	UAT7905UC	I226-0579	03794	AM686LN
I226-0446	03714	ICL8059CPN	I226-0580	03406	LF1350RN
I226-0447	03406	LF257H	I226-0582	03406	LF13201D
I226-0448	03285	AN7520LN(SEL)	I226-0583	02237	UAT79MGUC
I226-0449	03406	LM320T-8.0	I226-0584	02237	UAT78MGHC
I226-0450	01698	TL497CN	I226-0585	03406	LM3299T
I226-0451	02037	MC7915CK	I226-0586	02237	UAT7RL62AWC
I226-0452	02483	LW130CJ	I226-0587	02483	LW121CJ
I226-0453	02180	DA-100AC03	I226-0588	02483	LW120CJ
I226-0454	02910	NE527A	I226-0589	03406	LF13509D
I226-0455	03714	TCL 8013CC TZ	I226-0590	01698	LAS 19U
I226-0456	02237	UAT780C	I226-0592	03406	LM358AH
I226-0457	03406	LM325H	I226-0593	02763	RT50CJ
I226-0458	03406	LF255H	I226-0594	03406	LH0044CH
I226-0459	03406	LH0042C0	I226-0595	03285	AD522A(SEL)
I226-0460	02237	UAT78L2AAWC	I226-0596	02037	MC1200P
I226-0461	01698	TL702CL(SEL)	I226-0597	02037	MC14569ACP
I226-0462	02037	MC3410CL	I226-0598	01698	TL074ACN
I226-0464	02037	MC78M15CP	I226-0599	02180	NP-16F
I226-0465	01921	CA3140T	I226-0601	02180	NP-16E
I226-0466	02037	MC1777C	I226-0602	03285	AN7509KD
I226-0467	02037	MC1403P1	I226-0603	02237	UAT7840PC
I226-0468	02037	MC3423P1	I226-0604	02883	DG508CK
I226-0469	03334	ATF431	I226-0605	02883	D201CK
I226-0470	02037	MC1404RCP	I226-0607	03406	LW340AT-15
			I226-0608	02910	UAT7808PA

INTEGRATED CIRCUIT CROSS REFERENCE

21

Desc.	Mfr.	HP P/N	6282-1J MASKED	6282-1J MASKED	6282-1J MASKED	6282-1J MASKED	64092	1816-1194	9112DC	02237	1820-0516
2A16N MASKD		02910 181n-0938	6300-1J	6300-1J	6300-1J	6300-1J	04092	1816-1234	911HC	02237	1820-0081
2A16N MASKD		02910 1818-0940	6301-1J	6301-1J	6301-1J	6301-1J	04092	1816-1314	914HC	02237	1820-0049
2A16N MASKD		02910 1818-0941	6301-1J	6301-1J	6301-1J	6301-1J	04092	1816-0129	923HC	02237	1820-0052
2A16N MASKD		02910 1818-0942	6301-1J	6301-1J	6301-1J	6301-1J	04092	1816-0392	9300PC	02237	1820-0134
2A16N MASKD		02910 1818-0943	6301-1J	6301-1J	6301-1J	6301-1J	04092	1816-0413	9305PC	02237	1820-0357
2A16N MASKD		02910 1818-0944	6301-1J	6301-1J	6301-1J	6301-1J	04092	1816-0591	9313PC	02237	1820-0898
2A16N MASKD		02910 1818-0945	6301-1J	6301-1J	6301-1J	6301-1J	04092	1816-0592	9316PC	02237	1820-0231
2A16N MASKD		02910 1818-0946	6301-1J	6301-1J	6301-1J	6301-1J	04092	1816-0593	9318PC	02237	1820-0657
2A16N MASKD		02910 1818-0947	6301-1J	6301-1J	6301-1J	6301-1J	04092	1816-0594	931HC	02237	1820-0313
2A16N MASKD		02910 1818-0707	6301-1J	6301-1J	6301-1J	6301-1J	04092	1816-0595	9321PC	02237	1820-0727
2A16N MASKD		02910 1818-0711	6301-1J	6301-1J	6301-1J	6301-1J	04092	1816-0617	9322PC	02237	1820-0616
2A16N MASKD		02910 1818-0920	6301-1J	6301-1J	6301-1J	6301-1J	04092	1816-0618	9324PC	02237	1820-0706
2A16N MASKD		02910 1818-0921	6301-1J	6301-1J	6301-1J	6301-1J	04092	1816-0619	9328PC	02237	1820-0741
2A16N MASKD		02910 1818-0922	6301-1J	6301-1J	6301-1J	6301-1J	04092	1816-0820	933APC	02237	1820-0833
2A16N MASKD		02910 1818-0923	6301-1J	6301-1J	6301-1J	6301-1J	04092	1816-0821	93410DC	02237	1820-0988
2A16N MASKD		02910 1818-0924	6301-1J	6301-1J	6301-1J	6301-1J	04092	1816-0822	93415DC	02237	1816-0914
2A16N MASKD		02910 1818-0925	6301-1J	6301-1J	6301-1J	6301-1J	04092	1816-0824	93415PC	02237	1816-1015
2A16N MASKD		02910 1818-0926	6301-1J	6301-1J	6301-1J	6301-1J	04092	1816-0825	93422DC	02237	1816-1334
2A16N MASKD		02910 1818-0939	6301-1J	6301-1J	6301-1J	6301-1J	04092	1816-0826	93427PC PROGRAMMED	02237	1816-1183
2A17 MASKD		02910 1818-0206	6301-1J	6301-1J	6301-1J	6301-1J	04092	1816-0827	93448DC	02237	1816-0993
2A171 MASKED		02910 1818-0203	6301-1J	6301-1J	6301-1J	6301-1J	04092	1816-0830	93448DC PROGRAMMED	02237	1816-0960
2A171 MASKED		02910 1818-0205	6301-1J	6301-1J	6301-1J	6301-1J	04092	1816-0851	93448NC	02237	1816-0961
2A171 MASKED		02910 1818-0207	6301-1J	6301-1J	6301-1J	6301-1J	04092	1816-0852	93448PC	02237	1816-1301
2A171 MASKED		02910 1813-0212	6301-1J	6301-1J	6301-1J	6301-1J	04092	1816-0853	93448PC PROGRAMMED	02237	1816-1303
2A171 MASKED		02910 1818-0213	6301-1J	6301-1J	6301-1J	6301-1J	04092	1816-0854	93448PC PROGRAMMED	02237	1816-1304
2A171 MASKED		02910 1818-0287	6301-1J	6301-1J	6301-1J	6301-1J	04092	1816-0855	93448PC PROGRAMMED	02237	1816-1305
2A32N		02910 1818-0363	6301-1J	6301-1J	6301-1J	6301-1J	04092	1816-0856	93448PC PROGRAMMED	02237	1816-1306
2A32N		02910 1818-0365	6301-1J	6301-1J	6301-1J	6301-1J	04092	1816-0857	93448PC PROGRAMMED	02237	1816-1307
2A32N		02910 1818-0956	6301-1J	6301-1J	6301-1J	6301-1J	04092	1816-0863	93448PC	02237	1820-0737
2A32N		02910 1818-0967	6301-1J	6301-1J	6301-1J	6301-1J	04092	1816-0962	9356PC	02237	1820-1347
2A32N		02910 1818-0968	6301-1J	6301-1J	6301-1J	6301-1J	04092	1816-0996	9368PC	02237	1820-1903
2A32N		02910 1818-0970	6301-1J	6301-1J	6301-1J	6301-1J	04092	1816-0997	9368PC	02237	1820-1979
2A32N		02910 1818-0971	6301-1J	6301-1J	6301-1J	6301-1J	04092	1816-0999	9370PC	02237	1820-2002
2A32N		02910 1818-0972	6301-1J	6301-1J	6301-1J	6301-1J	04092	1816-1000	9374PC	02237	1820-1361
2A32N		02910 1818-0973	6301-1J	6301-1J	6301-1J	6301-1J	04092	1816-1001	93L00PC	02237	1820-0659
2A32N		02910 1818-0974	6330-1J	6330-1J	6330-1J	6330-1J	04092	1816-0348	93L11PC	02237	1820-0627
2A32N		02910 1818-0975	6330-1J	6330-1J	6330-1J	6330-1J	04092	1816-0273	93L12PC	02237	1820-0614
2A32N		02910 1818-0976	6330-1J	6330-1J	6330-1J	6330-1J	04092	1816-0274	93L13PC	02237	1820-0708
2A511		02910 1820-2155	6330-1J	6330-1J	6330-1J	6330-1J	04092	1816-0275	93L10NM	02237	1820-1376
2A521		02910 1820-2163	6330-1J	6330-1J	6330-1J	6330-1J	04092	1816-0276	93L11PC	02237	1820-0669
2740CE		02763 1813-0049	6335J	6335J	6335J	6335J	04092	1816-0994	93L10PC	02237	1820-1752
3101AN		02910 1820-1106	6340-1J	6340-1J	6340-1J	6340-1J	04092	1816-0439	93L11PC	02237	1820-0702
3112V12C		05436 1813-0016	6341-1J	6341-1J	6341-1J	6341-1J	04092	1816-1033	93L12PC	02237	1820-0654
3207N		02910 1820-1008	6341-1J	6341-1J	6341-1J	6341-1J	04092	1816-1034	93L14NM	02237	1820-1377
3341ADC		02237 1818-0279	6341-1J	6341-1J	6341-1J	6341-1J	04092	1816-1035	93L14PC	02237	1820-0701
3341DC		02237 1818-0093	6341-1J	6341-1J	6341-1J	6341-1J	04092	1816-0114	93L15DC	02237	1820-0778
335110C		02237 181d-0422	6341-1J	6341-1J	6341-1J	6341-1J	04092	1816-1037	93L16PC	02237	1820-1358
340099DC		02237 1820-1906	6341-1J	6341-1J	6341-1J	6341-1J	04092	1816-1038	93L21PC	02237	1820-1017
34702DC		02237 1820-1854	6345-1J	6345-1J	6345-1J	6345-1J	02037	1818-0108	93L22PC	02237	1820-0710
3A16PC		02237 1820-2154	702HC	702HC	702HC	702HC	02237	1820-0051	93L24PC	02237	1820-0864
3A50PC		02237 1820-1928	709AHM	709AHM	709AHM	709AHM	02237	1820-0197	93L26PC	02237	1820-0709
3A51PC MASKD		02237 1818-0314	710HM	710HM	710HM	710HM	02237	1820-0114	93L40PC	02237	1820-1111
3A51PC MASKD		02237 1818-0315	711HC	711HC	711HC	711HC	02237	1820-0125	93L412PC	02237	1820-1309
3A52PC		02237 1820-2172	715HC	715HC	715HC	715HC	02237	1820-0476	93L415PC	02237	1816-0723
3A53PC		02237 1820-2027	716Z	716Z	716Z	716Z	02838	1813-0133	93L422PC	02237	1816-1308
3A54PC		02237 1820-2173	723BE	723BE	723BE	723BE	02763	1826-0177	93S10DC	02237	1820-1373
3A61EPC		02237 1820-2100	723HM	723HM	723HM	723HM	02237	1826-0010	93S12DC	02237	1820-1290
3A70PC PROGRAMMED		02237 1820-2152	723PC	723PC	723PC	723PC	02237	1820-0439	93S16DC	02237	1820-1475
3A70PC PROGRAMMED		02237 1820-2153	727HL	727HL	727HL	727HL	02237	1820-0408	9400CJ	02763	1826-0575
400097PC		02237 1820-2265	7411PC	7411PC	7411PC	74123N	02237	1820-1064	9403PC	02237	1820-0934
400098PC		02237 1820-1766	74123N	74123N	74123N	74123N	02910	1820-1585	941HC	02237	1820-0048
40118BC		02237 1820-1744	74164PC	74164PC	74164PC	74164PC	02237	1820-0294	94030DC	02237	1820-2242
40163HPC		02237 1820-2136	74191N	74191N	74191N	74191N	02910	1820-1805	9404DC	02237	1820-1222
40174PC		02237 1820-2146	742PC	742PC	742PC	742PC	02237	1826-0164	941HC	02237	1820-0315
40198PC		02237 1820-2085	74LS04N	74LS04N	74LS04N	74LS04N	02910	1820-2195	942DC	02237	1820-0952
40278PC		02237 1820-1813	74LS154N	74LS154N	74LS154N	74LS154N	02910	1820-2053	942PC	02237	1820-0972
40299PC		02237 1820-2083	74LS174PC	74LS174PC	74LS174PC	74LS174PC	02237	1820-1700	942PC	02237	1820-0332
40408PC		02237 1820-2264	74LS260PC	74LS260PC	74LS260PC	74LS260PC	02237	1820-1905	943DC	02237	1820-0973
40409PC		02237 1820-2009	74LS393PC	74LS393PC	74LS393PC	74LS393PC	02237	1820-1989	943PC	02237	1820-0933
40K		03285 1813-0013	74S109DC	74S109DC	74S109DC	74S109DC	02237	1820-1372	944DC	02237	1820-0954
4104PC		02237 1820-2032	74S5173N	74S5173N	74S5173N	74S5173N	04092	1820-2184	944PC	02237	1820-0034
41528PC		02237 1820-1586	7815UC	7815UC	7815UC	7815UC	02237	1820-0396	94590DC	02237	1820-0055
41X194510		01973 1820-0006	7824UC	7824UC	7824UC	7824UC	02237	1820-0150	9460DC	02237	1820-0309
41X194555		01973 1820-0010	78405CJ	78405CJ	78405CJ	78405CJ	02237	1820-0122	9460DC	02237	1820-0974
41X194581		01973 1820-0110	7A05UC	7A05UC	7A05UC	7A05UC	02237	1826-0226	94A12TC	02237	1820-2089
5A16DM		02237 1820-1172	7A06KC	7A06KC							

INTEGRATED CIRCUIT CROSS REFERENCE

23

Desc.	Mfr.	HP P/N	Part #	Description	HP P/N	Description	Part #	Description	HP P/N	Description	Part #
C2708 PROGRAMMED	03811	1814-0782	CN4022AF	01921	1820-0927	D3624A PROGRAMMED	03811	1816-1023	03811	1816-1024	03811
C2708 PROGRAMMED	03811	1814-0783	CN4029AF	01921	1820-1528	D3624A PROGRAMMED	03811	1816-1026	03811	1816-1027	03811
C2708 PROGRAMMED	03811	1814-0784	CN4030AF	01921	1820-1536	D3624A PROGRAMMED	03811	1816-1064	03811	1816-1066	03811
C2716	03811	1814-0785	CN4031AF	01921	1820-0963	D3624A PROGRAMMED	03811	1816-1067	03811	1816-1067	03811
C080A	03811	1814-0794	CN4032AF	01921	1820-0231	D3624A PROGRAMMED	03811	1816-1094	03811	1816-1094	03811
C251A	03811	1820-2299	CN4037AE	01921	1820-0932	D3624A PROGRAMMED	03811	1816-1300	03811	1820-2071	03811
C253	03811	1820-2109	CN4034AE	01921	1820-0977	D4201	0289	1820-2070	03811	1820-1934	03811
C275	03811	1820-2191	CN4035AF	01921	1820-0969	D4208-1	04039	1820-1221	03811	1820-2271	03811
C4315A	03811	1814-0770	CN4036AU	01921	1820-0959	D4224	02794	1820-1921	03811	1820-2150	03811
C4316A MASKED	03811	1814-0141	CN4037AE	01921	1820-0945	D4279-5	02180	1820-0177	03755	1813-0036	03755
C4316A MASKED	03811	1814-0142	CN4038AF	01921	1820-0924	D4201C0	02180	1820-1837	02180	1820-0220	02180
C4316A MASKED	03811	1814-0144	CN4039AU	01921	1820-0960	D4C-01CY	02180	1820-1934	02180	1820-0127	02180
C4316A MASKED	03811	1814-0145	CN4040AF	01921	1820-0937	D4C-08E0	02180	1820-0145	02180	1820-0145	02180
C4316A MASKED	03811	1814-0170	CN4040AF	01921	1820-1925	DAC-100ACQ3	02180	1820-0171	02180	1820-0171	02180
C4316A MASKED	03811	1814-0236	CN4041AE	01921	1820-0928	DAC-100HCQ3	02180	1820-0172	02180	1820-0172	02180
C4316A MASKED	03811	1814-0382	CN4041UF	01921	1820-2225	DAC-100CCQ3	02180	1820-0174	02180	1820-0174	02180
C4316A MASKED	03811	1814-0383	CN4042AF	01921	1820-0958	DAC-100CC04	02180	1820-0177	02180	1820-0177	02180
C4316A MASKED	03811	1814-0384	CN4042BF	01921	1820-1540	DAC372-12-MCN	02180	1820-0181	02180	1820-0181	02180
C4316A MASKED	03811	1814-0385	CN4043AE	01921	1820-1956	DAC71-CSA-I	02180	1813-0132	02180	1820-1807	02180
C4316A MASKED	03811	1814-0386	CN4043AF	01921	1820-0941	DAC80-CM1-I	02180	1813-0094	02180	1813-0105	02180
C4316A MASKED	03811	1814-0571	CN4043AF	01921	1820-1531	DAC80-CM1-V	02180	1813-0092	02180	1813-0120	02180
C4316A MASKED	03811	1814-0572	CN4044AF	01921	1820-0940	DAC80-CC0-V	02180	1813-0092	02180	1820-0147	02180
C4316A MASKED	03811	1814-0579	CN4044AF	01921	1820-1532	DNU4-510n	02180	1820-0147	02180	1820-0147	02180
C748	03811	1820-2278	CN4045AE	01921	1820-1597	D6172R0	02180	1820-0105	02180	1820-1724	02180
CA 3001	01921	1820-0192	CN4045BF	01921	1820-1318	D6184P0	02180	1820-0154	02180	1820-1807	02180
CA1458G	01921	1826-0139	CN4046AF	01921	1820-2226	D6200RA	02180	1820-0154	02180	1820-1725	02180
CA3000	01921	1820-0297	CN4047AE	01921	1820-1184	D6200RA	02180	1820-0154	02180	1820-1725	02180
CA3009	01921	1820-0417	CN4047BF	01921	1820-1317	D6201CJ	02180	1820-1840	02180	1820-1797	02180
CA3004	01921	1826-0087	CN4048AE	01921	1820-2230	D6201CJ	02180	1820-1840	02180	1820-1797	02180
CA3005	01921	1820-0046	CN4048AF	01921	1820-1116	D6201K	02180	1820-1711	02180	1820-1711	02180
CA3010	01921	1820-0047	CN4049AF	01921	1820-1145	D6201K	02180	1820-1506	02180	1820-1506	02180
C3012	01921	1820-0474	CN4049AF	01921	1820-1542	D6566B0	02180	1820-1841	02180	1820-1841	02180
CA3015A	01921	1820-0103	CN4050AF	01921	1820-1146	D6598CJ	02180	1820-1725	02180	1820-1725	02180
CA301R	01921	1820-0352	CN4050BE	01921	1820-1543	D6598CK	02180	1820-0605	02180	1820-0605	02180
CA3020	01921	1820-0298	CN4050BE	01921	1820-1976	DH0035CG	02180	1818-0470	02180	1818-0470	02180
CA3023	01921	1820-0433	CN4051BE	01921	1820-1315	DH2316EN	02180	1818-0471	02180	1818-0471	02180
CA3026	01921	1820-0240	CN4051BF	01921	1820-1513	DH2316EN	02180	1818-0472	02180	1818-0472	02180
CA3028H	01921	1820-0306	CN4052BE	01921	1820-1314	DH2316EN	02180	1818-0473	02180	1818-0473	02180
CA3029	01921	1820-0326	CN4053BF	01921	1820-1510	DH2316EN	02180	1818-0474	02180	1818-0474	02180
CA3030	01921	1826-0078	CN4053BY	01921	1820-1545	DH2316EN	02180	1818-0475	02180	1818-0475	02180
CA3051	01921	1820-0249	CN4054BE	01921	1820-1331	DH2504CN	02180	1820-1720	02180	1820-1720	02180
CA3053	01921	1826-0230	CN4055BE	01921	1820-1646	D5540AN	02180	1820-1043	02180	1820-1043	02180
CA3059	01921	1826-0041	CN4059AD	01921	1820-1649	D7489N	02180	1820-1054	02180	1820-1054	02180
CA3060D	01921	1826-0015	CN4060AE	01921	1820-1667	D74L00N	02180	1820-1518	02180	1820-1518	02180
C3075	01921	1826-0153	CN4060AE	01921	1820-1325	D74L164N	02180	1820-0602	02180	1820-0602	02180
C3076A	01921	1826-0187	CN4061AF	01921	1820-1543	D74L42AN	02180	1820-1047	02180	1820-1047	02180
C3079	01921	1826-0075	CN4061AY	01921	1820-1548	D74L71N	02180	1820-0593	02180	1820-0593	02180
C3077	01921	1826-0041	CN4067BE	01921	1820-1660	D74L72N	02180	1820-0594	02180	1820-0594	02180
C3080H	01921	1826-0185	CN4067BF	01921	1820-2221	D74L73N	02180	1820-0595	02180	1820-0595	02180
CA3080E	01921	1826-0534	CN4068BE	01921	1820-1410	D74L74N	02180	1820-1556	02180	1820-1556	02180
C3085	01921	1826-0292	CN4069BE	01921	1820-1404	D74L78N	02180	1820-0597	02180	1820-0597	02180
C3094AT	01921	1826-0167	CN4070HE	01921	1820-1601	D74L85N	02180	1820-0603	02180	1820-0603	02180
CA3095E	01921	1826-0321	CN4071AE	01921	1820-1483	D74L89AN	02180	1820-1055	02180	1820-1055	02180
C3101F	01921	1826-0218	CN4071BF	01921	1820-1550	D74L90N	02180	1820-0600	02180	1820-0600	02180
CA3130AS	01921	1826-0626	CN4072BF	01921	1820-1403	D74L93N	02180	1820-0601	02180	1820-0601	02180
CA3130T	01921	1826-0307	CN4073BF	01921	1820-1408	D74L95N	02180	1820-0599	02180	1820-0599	02180
CA3140E	01921	1826-0506	CN4075AE	01921	1820-1405	D74L5173N	02180	1820-1885	02180	1820-1885	02180
CA3140H	01921	1826-0549	CN4076BE	01921	1820-1578	D74L5189N	02180	1816-1089	02180	1816-1089	02180
CA3140T	01921	1826-0465	CN4076BF	01921	1820-1544	D74S288D PROGRAMMED	02180	1816-1158	02180	1816-1158	02180
CA741CF	01921	1826-0427	CN4077BF	01921	1820-1672	D74S288D PROGRAMMED	02180	1816-1159	02180	1816-1159	02180
CA741CT	01921	1820-0203	CN4078E	01921	1820-1407	D74S288D PROGRAMMED	02180	1816-1044	02180	1816-1044	02180
CA741G	01921	1826-03103	CN4081BE	01921	1820-1488	D74S288D PROGRAMMED	02180	1816-1045	02180	1816-1045	02180
CN40011AL	01921	1820-0942	CN4081BF	01921	1820-1486	D74S288D PROGRAMMED	02180	1816-1100	02180	1816-1100	02180
CN40010BF	01921	1820-2227	CN4081BF	01921	1820-1551	D74S288D PROGRAMMED	02180	1816-1101	02180	1816-1101	02180
CN40001AF	01921	1820-0946	CN4082BE	01921	1820-2222	D74S288D PROGRAMMED	02180	1820-1294	02180	1820-1294	02180
CN40011AF	01921	1820-0930	CN4083BF	01921	1820-2017	D74S288D PROGRAMMED	02180	1820-1131	02180	1820-1131	02180
CN40011AF	01921	1820-0949	CN4093BF	01921	1820-1577	D74S288D PROGRAMMED	02180	1820-1254	02180	1820-1254	02180
CN40011AF	01921	1820-1534	CN4094BE	01921	1820-1681	D74S288D PROGRAMMED	02180	1820-1794	02180	1820-1794	02180
CN40012AF	01921	1820-0950	CN4094BE	01921	1820-1650	D74S288D PROGRAMMED	02180	1820-1872	02180	1820-1872	02180
CN40012AF	01921	1820-1539	CN4095BF	01921	1820-2233	D74S288D PROGRAMMED	02180	1820-1873	02180	1820-1873	02180
CN40013AF	01921	1820-0939	CN4095BF	01921	1820-1599	D74S288D PROGRAMMED	02180	1820-0623	02180	1820-0623	02180
CA40113AF	01921	1820-1531	CN4511BE	01921	1820-1957	D74S288D PROGRAMMED	02180	1820-1131	02180	1820-1131	02180
CA40113AF	01921	1820-1963	CN4512BF	01921	1820-2229	D74S288D PROGRAMMED	02180	1820-1167	02180	1820-1167	02180
CA40144AF	01921	1820-0970	CN4514BF	01921	1820-1683	D74S288D PROGRAMMED	02180	1820-1292	02180	1820-1292	02180
CN40155AF	01921	1820-0976	CN4514BF	01921	1820-1499	D74S526N	02180	1820-1468	02180	1820-1468	02180
CN40155AF	01921	1820-1541	CN4520BF	01921	1820-1900	D74S526N	02180	1820-1143	02180	1820-1143	021

INTEGRATED CIRCUIT CROSS REFERENCE

Desc.	Mfr.	HP P/N	IC P/N	Ref.	Ref.	IC P/N	Ref.	Ref.	Ref.	Ref.
LW309K(SEL)		03406	1826~0386	MC10125L	02037	1820~1052	MC1402BBCL	02037	1820~1526	
LW310H		03406	1826~0021	MC10130P	02037	1820~1444	MC1402B8CP	02037	1820~1512	
LW310N		03406	1826~0208	MC10117P	02037	1820~0116	MC1402B8CP	02037	1820~1962	
LW311F		03406	1826~0077	MC10133L	02037	1820~0817	MC1402B8CP	02037	1820~2223	
LW311H(SEL)		03406	1826~0380	MC10134L	02037	1820~0814	MC14034BCP	02017	1820~2232	
LW311L		01698	1826~0026	MC10135L	02037	1820~0819	MC14035BCP	02037	1820~2089	
LW312D		03406	1826~0201	MC10136L	02037	1820~0820	MC14038BCP	02037	1820~2224	
LW312H		03406	1826~0102	MC10137L	02037	1820~0821	MC14039P1	02037	1826~0467	
LW316AH		03406	1826~0112	MC10138L	02037	1820~1381	MC140404CL	02037	1820~0544	
LW317H		03406	1826~0539	MC10139P	02037	1820~0102	MC140406BCP	02037	1820~2054	
LW317K		03406	1826~0423	MC10140AL	02037	1820~0824	MC14042HCP	02037	1820~1495	
LW317KC		01698	1826~0393	MC10141L	02037	1820~0825	MC14042HCP	02037	1820~1501	
LW318H		03406	1826~0081	MC10142P	02037	1820~0213	MC14043BCP	02037	1820~2124	
LW318N		03406	1826~0207	MC1015P	02037	1820~1993	MC14044HCP	02037	1820~2228	
LW319N		03406	1826~0141	MC10140L	02037	1820~0180	MC14046HCP	02037	1826~0470	
LW319H		03406	1826~0191	MC10141P	02037	1820~0826	MC14049URCP	02037	1820~1505	
LW319N		03406	1826~0175	MC10142L	02037	1820~2067	MC14049URCP	02037	1820~1615	
LW320P~05		03406	1826~0220	MC10162P	02037	1820~0828	MC14050BCP	02037	1820~1746	
LW320H~12		03406	1826~0178	MC10164L	02037	1820~0829	MC140518CL	02037	1820~1521	
LW320M~15		03406	1826~0192	MC1014P	02037	1820~0400	MC14051BCP	02037	1820~2013	
LW320H~5.2		03406	1826~0179	MC10174P	02037	1820~1359	MC140528CL	02037	1820~1546	
LW320H~6		03406	1826~0568	MC10176L	02037	1820~2193	MC14052BCP	02037	1826~0486	
LW320P~05		03406	1826~0202	MC10176P	02037	1820~1399	MC14053BCP	02037	1826~0501	
LW320U~15		03406	1826~0169	MC10178L	02037	1820~2066	MC1405L	02037	1826~0642	
LW320K~5.2		03406	1826~0173	MC10174P	02037	1820~1632	MC14066HCP	02037	1826~0502	
LW320T~14		03406	1826~0277	MC10179L	02037	1820~0830	MC14068HCP	02037	1820~1931	
LW320T~18		03406	1826~0377	MC1017P	02037	1820~0146	MC14069URCL	02037	1820~1592	
LW320T~24		03406	1826~0299	MC10181L	02037	1820~0331	MC14069URCP	02037	1820~2014	
LW320T~H.0		03406	1826~0449	MC1018P	02037	1820~0144	MC1406L	02037	1826~0155	
LW321H		03406	1826~0162	MC10195P	02037	1820~1685	MC140708CL	02037	1820~1908	
LW322N		03406	1826~0225	MC10197P	02037	1820~2023	MC14070HCP	02037	1820~2015	
LW322N(SEL)		03406	1826~0378	MC1019P	02037	1820~1036	MC14071HCP	02037	1820~1970	
LW323K		03406	1826~0181	MC102P	02037	1820~0212	MC14071CIP	02037	1820~1388	
LW323K(SEL)		03406	1826~0376	MC10210L	02037	1820~1830	MC140738CL	02037	1820~1910	
LW324AN		03406	1826~0524	MC10211P	02037	1820~1482	MC14075BCP	02037	1820~1909	
LW324F		03406	1826~0291	MC10212L	02037	1820~1832	MC14075BCP	02037	1820~2011	
LW325A5		03406	1826~0238	MC10212H	02037	1820~1950	MC14076HCP	02037	1820~2220	
LW325H		03406	1826~0457	MC10215L	02037	1820~1120	MC14077HCL	02037	1820~1907	
LW325S		03406	1826~0283	MC10216P	02037	1820~1224	MC14078HCP	02037	1820~1930	
LW326H		03406	1826~0533	MC1022P	02037	1820~0272	MC140918CP	02037	1820~2037	
LW329QZ		03406	1826~0585	MC10231P	02037	1820~1225	MC14092RCP	02037	1820~2090	
LW334Z		03406	1826~0623	MC1023P	02037	1820~0157	MC1409L6	02037	1826~0248	
LW337N		03406	1826~0558	MC1024P	02037	1820~0578	MC1409L8	02037	1826~0188	
LW337K		03406	1826~0523	MC1025P	02037	1820~0444	MC14093HCL	02037	1820~1936	
LW337T		03406	1826~0527	MC1026P	02037	1820~0252	MC14174HCP	02037	1820~2258	
LW349U		03406	1826~0304	MC1027P	02037	1820~0143	MC14175HCP	02037	1820~2279	
LW340LRA~5		03406	1826~0536	MC1029P	02037	1820~0200	MC14206	02037	1826~0200	
LW340L4T~15		03406	1826~0607	MC1031P	02037	1820~0235	MC1430P	02037	1820~0115	
LW340K~24		03406	1826~0559	MC1032P	02037	1820~0581	MC1431P	02037	1820~0180	
LW340K~H		03406	1826~0370	MC1037P	02037	1820~0276	MC1433G	02037	1820~0316	
LW340LH~12		03406	1826~0438	MC1034P	02037	1820~0101	MC1433L	02037	1820~0181	
LW340LAZ~12		03406	1826~0554	MC1035P	02037	1820~0253	MC1433P	02037	1820~0317	
LW340LAZ~5		03406	1826~0555	MC1037P	02037	1820~1227	MC1434C0	02037	1826~0343	
LW341P~12		03406	1826~0435	MC1039P	02037	1820~0275	MC1436G	02037	1826~0431	
LW341P~24		03406	1826~0436	MC1040P	02037	1820~0667	MC1437L	02037	1826~0014	
LW341P~8.0		03406	1826~0434	MC1044P	02037	1820~0792	MC1438H	02037	1826~0060	
LW342P~12		03406	1826~0648	MC1047P	02037	1820~0897	MC1439G	02037	1820~0201	
LW343N		03406	1826~0632	MC1048P	02037	1820~0473	MC1439L	02037	1826~0222	
LW343H		03406	1826~0634	MC10576F	02037	1820~2167	MC14411P	02037	1820~1779	
LW348U		03406	1826~0557	MC1068P	02037	1820~0916	MC14412VP	02037	1820~2164	
LW348N		03406	1826~0315	MC1065P	02037	1820~0917	MC14413L	02037	1826~0431	
LW350K		03406	1826~0631	MC1068P	02037	1820~0791	MC14415L	02037	1826~0334	
LW355~1H		03406	1826~0314	MC1202H	02037	1826~0594	MC14490FP	02037	1826~1947	
LW358AH		03406	1826~0592	MC1201PL	02037	1820~1242	MC14490VP	02037	1820~2306	
LW358N		03406	1826~0346	MC12013L	02037	1820~1888	MC14501UBCP	02037	1820~1079	
LW360N~8		03406	1826~0638	MC12040L	02037	1820~1344	MC14502HAL	02037	1820~1635	
LW361M		03406	1826~0272	MC12040P	02037	1820~0304	MC14502BCP	02037	1820~1385	
LW361N		03406	1826~0210	MC1204L	02037	1820~1915	MC14503RC	02037	1820~2257	
LW370N		03406	1826~0245	MC12041P	02037	1820~1977	MC14506BCP	02037	1820~1386	
LW371H		03406	1826~0104	MC1210L	02037	1820~1025	MC14507CP	02037	1820~1330	
LW377N		03406	1826~0348	MC1217L	02037	1820~1026	MC14508HCL	02037	1820~1593	
LW380N~8		03406	1826~0209	MC1306P	02037	1824~0293	MC14510HCP	02037	1820~1189	
LW381N		03406	1826~0206	MC1350P	02037	1426~0159	MC145118CP	02037	1820~1413	
LW390UN		03406	1826~0120	MC1355P	02037	1826~0382	MC14512CP	02037	1820~1241	
LW390HN		03406	1826~0419	MC14001HCP	02037	1820~1745	MC14515HCP	02037	1820~1329	
LW3911N		03406	1826~0390	MC140011URCP	02037	1820~1499	MC14516CP	02037	1820~1114	
LW393N		03406	1826~0412	MC140011URCP	02037	1820~1620	MC14517HCP	02037	1820~1815	
LW395K		03406	1826~0320	MC14002BCP	02037	1820~2079	MC145188CL	02037	1820~1591	
LW425UCH		03406	1826~0165	MC14002URCP	02037	1820~1339	MC145188CP	02037	1820~1122	
LW555CN		03406	1826~0373	MC14002URCP	02037	1820~1511	MC14519HCP	02037	1820~1387	
LW709H		03406	1820~0162	MC140068CP	02037	1820~2086	MC145208CP	02037	1820~1150	
LW78L10AHC		03406	1826~0394	MC14057URCP	02037	1820~1503	MC145208CP	02037	1820~2021	
LW5700H		03406	1826~0375	MC14068CL	02037	1820~1525	MC14529HCP	02037	1820~1181	
MC1001P		02037	1820~0472	MC14018CP	02037	1820~1747	MC14522CP	02037	1820~1175	
MC1004P		02037	1820~0142	MC14011URCP	02037	1820~1500	MC14526HCP	02037	1820~1328	
MC1005P		02037	1820~0666	MC14011URCP	02037	1820~1621	MC14527HCP	02037	1820~1265	
MC1007P		02037	1820~0147	MC140128CP	02037	1820~1960	MC145288CL	02037	1820~2051	
MC1010UL		02037	1820~1990	MC14012URCP	02037	1820~1507	MC14528HCP	02037	1820~1356	
MC10101P		02037	1820~0801	MC140138CP	02037	1820~1497	MC14530HCP	02037	1820~1327	
MC10102P		02037	1820~0802	MC140144CP	02037	1820~1617	MC14532HCP	02037	1820~1570	
MC10103L		02037	1820~1831	MC140158CL	02037	1820~2055	MC14534DCP	02037	1820~1455	
MC10104P		02037	1820~1666	MC140158CP	02037	1820~1176	MC145368CP	02037	1824~0411	
MC10105P		02037	1820~1400	MC140158CP	02037	1820~1502	MC14538HCL	02037	1820~1569	
MC10106P		02037	1820~0803	MC140158CP	02037	1820~1622	MC145388CP	02037	1820~1932	
MC10107P		02037	1820~0805	MC140158CP	02037	1820~20				

Desc.	Mfr.	HP P/N		MC3A1R		02037	1820-0021	MCB58P SELECTED		02037	1820-0207
MC1454U (-20/70)		02037	1826-0381	MC362G		02037	1820-0022	MC8601P		02037	1820-1524
MC14572UHCP		02037	1820-1657	MC364G SELECTED		02037	1820-0018	MC8602P		02037	1820-0515
MC14593HCP		02037	1820-1349	MC4001P		02037	1820-0062	MC860P		02037	1820-0323
MC14594HCP		02037	1820-2019	MC4002P		02037	1820-0639	MC872PAH		02037	1820-1081
MC14595HCP		02037	1820-1340	MC4006P		02037	1820-0843	MC14545		02037	1820-0048
MC14596P1		02037	1826-0142	MC4007P		02037	1820-0604	MC1741		02037	1826-0042
MC14593		02037	1826-0111	MC400RP		02037	1820-0724	MC1776		02037	1826-0325
MC14594		02037	1826-0556	MC4010P		02037	1820-0842	MC1776C		02037	1826-0466
MC14595P1		02037	1826-0420	MC4012P		02037	1820-0607	MC1044L		02037	1816-1053
MC1460H		02037	1820-0277	MC4019P		02037	1820-0437	MC10152L		02037	1816-1335
MC1463H		02037	1826-0039	MC4016P		02037	1820-1183	MC145101-1P		02037	1818-0695
MC1463H		02037	1826-0137	MC401AP		02037	1820-1332	MC14524CR MASKED		02037	1818-0694
MC1466L		02037	1826-0128	MC4022P		02037	1820-1109	MC14524CD MASKED		02037	1818-0446
MC1468H		02037	1826-0140	MC4024P		02037	1820-0567	MC2147C-70		02037	1818-0449
MC1469G		02037	1826-0004	MC403RP		02037	1820-0534	MC4000A		02037	1818-0042
MC1469H		02037	1826-0024	MC4044P		02037	1820-0630	MC4000A		02037	1818-0043
MC148RL		02037	1829-0504	MC660P		02037	1820-1520	MC4000A		02037	1818-0044
MC1489AL		02037	1820-099H	MC662P		02037	1820-0288	MC4000A		02037	1818-0045
MC1489L		02037	1820-0510	MC663P		02037	1820-1519	MC6256A1		02037	1826-120
MC1494L		02037	1826-036	MC665P		02037	1820-0625	MC6500AL		02037	1818-0480
MC1496L		02037	1826-0437	MC667P		02037	1820-1606	MC65372L PROGRAMMEN		02037	1818-0361
MC1496G		02037	1820-0427	MC668P		02037	1820-1605	MC65372L PROGRAMMEN		02037	1818-0364
MC1496L		02037	1826-0223	MC670P		02037	1820-2133	MC6540A1		02037	1818-0167
MC1510H		02037	1826-0002	MC672P		02037	1820-0287	MC65572L		02037	1818-0336
MC1514L		02037	1826-0125	MC6800L		02037	1820-1480	MC6581P		02037	1818-0707
MC1531G		02037	1820-0650	MC6802L		02037	1820-2151	MC6590U MASKED		02037	1818-0182
MC1545U		02037	1826-0103	MC6802P		02037	1820-2099	MC6590L MASKED		02037	1818-0183
MC1550H		02037	1826-0028	MC6821L		02037	1820-1481	MC6590L MASKED		02037	1818-0184
MC1555G		02037	1826-0400	MC6828P		02037	1820-2030	MC6590L MASKED		02037	1818-0185
MC1556G		02037	1826-0243	MC6848BL		02037	1820-2113	MC6590L MASKED		02037	1818-0186
MC1590G		02037	1826-0037	MC6848BP		02037	1820-2219	MC6590L MASKED		02037	1818-0187
MC1595L		02037	1826-0014	MC6850L		02037	1820-1690	MC6590L MASKED		02037	1818-0188
MC1644L		02037	1820-1119	MC6852P		02037	1820-2175	MC6590L MASKED		02037	1818-0189
MC1648P		02037	1820-1108	MC6860P		02037	1820-2291	MC6590L MASKED		02037	1818-0221
MC1650L		02037	1820-0919	MC6870A		02037	1820-1637	MC6590L MASKED		02037	1818-0222
MC1651L		02037	1820-0624	MC6871A-1.0MHZ		03795	1820-2285	MC6590L MASKED		02037	1818-0223
MC1658P		02037	1826-0509	MC6875P		02037	1820-2036	MC6590L MASKED		02037	1818-0239
MC1660L		02037	1820-0790	MC6881P/MC3449P		02037	1820-2165	MC6590L MASKED		02037	1818-0240
MC1662L		02037	1820-0795	MC6880P		02037	1820-2137	MC6590L MASKED		02037	1818-0241
MC1664L		02037	1820-0795	MC6880P		02037	1820-2240	MC6590L MASKED		02037	1818-0242
MC1672L		02037	1820-0797	MC6882L		02037	1820-2180	MC6590L MASKED		02037	1818-0243
MC1674L		02037	1820-0793	MC68840P		02037	1820-2307	MC6590L MASKED		02037	1818-0245
MC1690L		02037	1820-1132	MC68848BL		02037	1820-2148	MC6590L MASKED		02037	1818-0246
MC1693L		02037	1820-0920	MC68848P		02037	1820-2284	MC6590P MASKED		02037	1818-0375
MC1694L		02037	1820-1334	MC68880P		02037	1820-2293	MC6590P MASKED		02037	1818-0255
MC1723G		02037	1820-0196	MC7250P		02037	1820-0719	MC6590P MASKED		02037	1818-0256
MC1723L		02037	1826-0409	MC7270P		02037	1820-0786	MC6590P MASKED		02037	1818-0257
MC1741CL		02037	1826-0070	MC7441AP		02037	1820-0984	MC6593P MASKED		02037	1818-0258
MC1741HCP1		02037	1826-0505	MC7479P		02037	1820-0100	MC6590P MASKED		02037	1818-0260
MC1741SCG		02037	1826-0302	MC7805CK		02037	1820-0908	MC6590P MASKED		02037	1818-0309
MC1741SCP1		02037	1826-0254	MC7805CH		02037	1820-0246	MC6590P MASKED		02037	1818-0950
MC1776CG		02037	1826-0086	MC7806CP		02037	1820-0144	MC6590P MASKED		02037	1818-0451
MC1840P		02037	1820-0985	MC7808AC		02037	1820-0146	MC6670P MASKED		02037	1818-0514
MC1A01L		02037	1820-0868	MC7812CP		02037	1820-0147	MC68120AL		02037	1818-0328
MC1A01P		02037	1820-0441	MC7812CT (SEL)		02037	1820-0366	MC68120P MASKED		02037	1818-0579
MC1A05P		02037	1820-0454	MC7812CT (SEL)		02037	1820-0369	MC68131L		02037	1818-0573
MC1A06P		02037	1820-0273	MC7815CP		02037	1820-0106	MC68131L		02037	1818-0574
MC1A08P		02037	1820-0274	MC781ACK		02037	1820-0126	MC68131L		02037	1818-0575
MC1A10P		02037	1820-0238	MC7818CP		02037	1820-0149	MC68131L		02037	1818-0576
MC1A12P		02037	1820-0418	MC78105ACP		02037	1820-0276	MC68132L		02037	1818-0577
MC1A14P		02037	1820-0665	MC7815ACP		02037	1820-0275	MC6832L		02037	1818-0216
MC2257L		02037	1820-1156	MC78105G		02037	1820-0274	MC6832L		02037	1818-0217
MC2259L		02037	1820-1157	MC78106G		02037	1820-0367	MC6832L		02037	1818-0218
MC3001H		02037	1820-0141	MC78105CA		02037	1820-0152	MC6832L		02037	1818-0219
MC3002P		02037	1820-0239	MC78105CP		02037	1820-0464	MC6832L		02037	1818-0220
MC3002H		02037	1820-0923	MC79046..C2T		02037	1820-0215	MC6832L		02037	1818-0751
MC3003P		02037	1820-0205	MC7905CT		02037	1820-0294	MC6832L		02037	1818-0960
MC3005P		02037	1820-0204	MC7908ALP		02037	1820-0344	MC6832L		02037	1818-0962
MC3007P		02037	1820-1031	MC7912CK		02037	1820-0221	MC6832L		02037	1818-0788
MC3021P		02037	1820-0841	MC7912C1		02037	1820-0368	MC6832L		02037	1818-0789
MC3022P		02037	1820-0617	MC7912C1 (SFL)		02037	1820-0451	MC6832L		02037	1818-0790
MC3025P		02037	1820-0604	MC7915CK		02037	1820-0451	MC6832L		02037	1818-0791
MC302A2P		02037	1820-0140	MC7915CT		02037	1820-0214	MC6832L		02037	1818-0792
MC3029P		02037	1820-0700	MC791U3C		02037	1820-0286	MC6832L		02037	1818-0960
MC3061P		02037	1820-0449	MC791n5ACG		02037	1820-0494	MC6832L		02037	1818-0362
MC3062P		02037	1820-0609	MC79105ACP		02037	1820-0285	MC6832L PROGRAMMED		02037	1818-0363
MC3062H		02037	1820-0451	MC79106C		02037	1820-0284	MC6832P MASKED		02037	1818-0395
MC3103L		02037	1820-1375	MC79112ACG		02037	1820-0495	MC6832P MASKED		02037	1818-0396
MC3340H		02037	1820-0399	MC79112ACP		02037	1820-0282	MC6832P MASKED		02037	1818-0397
MC3403P		02037	1820-0312	MC79115ACP		02037	1820-0281	MC6832P MASKED		02037	1818-0398
MC3405P		02037	1820-0424	MC810G		02037	1820-0080	MC6833P MASKED		02037	1818-0400
MC3410CL		02037	1826-0462	MC815P		02037	1820-0325	MC6833P MASKED		02037	1818-0736
MC3410CP		02037	1826-0529	MC816P		02037	1820-0106	MC6833P MASKED		02037	1818-0201
MC3420H		02037	1826-0526	MC817P		02037	1820-0411	MC6833P MASKED		02037	1818-0532
MC3423P1		02037	1826-0468	MC824P		02037	1820-0324	MC6833P MASKED		02037	1818-0690
MC3431P		02037	1826-0360	MC826dP		02037	1820-0506	MC6833P MASKED		02037	1818-0691
MC3440H		02037	1820-1522	MC8301P		02037	1820-0111	MC6833P MASKED		02037	1818-0692
MC3441AP		02037	1820-1558	MC8307P		02037	1820-0094	MC6833P MASKED		02037	1818-0693
MC3442P		02037	1820-1842	MC8308P		02037	1				

Desc.	Mfr.	HP P/N	NR233N	02910	1820-0543	NR25131F PROGRAMMED	02910	1816-0938	
NR406P-1A		0407R	1818-0324	NR235N	02910	1820-0542	NR25131F PROGRAMMED	02910	1816-0970
NR4102P-6		0407R	1818-0327	NR243N	02910	1820-0569	NR25131F PROGRAMMED	02910	1816-0971
NR5009N		0407R	1820-1124	NR251N	02910	1820-0462	NR25131F PROGRAMMED	02910	1816-0972
NR5009P		0407R	1820-1180	NR263N	02910	1820-0507	NR25131F PROGRAMMED	02910	1816-0973
NR5399N		0407R	1820-2310	NR267N	02910	1820-0435	NR25131F PROGRAMMED	02910	1816-0974
NR6036P		0407R	1820-0993	NR271N	02910	1820-0989	NR25131F PROGRAMMED	02910	1816-0975
NRP3870 MSK0		0407R	1820-2280	NR273N	02910	1820-1045	NR25131F PROGRAMMED	02910	1816-0976
MLM201API		0203T	1826-0311	NR280N	02910	1820-0322	NR25131F PROGRAMMED	02910	1816-0977
MLMP04G		0203T	1826-0016	NR281ADC	02910	1820-0636	NR25131F PROGRAMMED	02910	1816-0979
MLM304G(SEL)		0203T	1826-0471	NR284N	02910	1820-0400	NR25131F PROGRAMMED	02910	1816-0980
MLM301AG		0203T	1820-0223	NR288N	02910	1820-0536	NR25131F PROGRAMMED	02910	1816-0981
MLM308AP		0203T	1826-0493	NR290N	02910	1820-0450	NR25131F PROGRAMMED	02910	1816-0982
MLM324P		0203T	1826-0161	NR291N	02910	1820-0492	NR25131F PROGRAMMED	02910	1816-0983
MLM339P		0203T	1826-0138	NR292N	02910	1820-0703	NR25131F PROGRAMMED	02910	1816-0985
MLMC101A		0203T	1826-0567	NR293N	02910	1820-0789	NR25131F PROGRAMMED	02910	1816-0986
MM 5216 RJW/N	03406	1818-0108	NR25091	02910	1816-0728	NR25131F PROGRAMMED	02910	1816-0987	
MM101A/A1N	03406	1818-0134	NR25101	02910	1820-2247	NR25131F PROGRAMMED	02910	1816-0988	
MM1402AD	03406	1820-0733	NR251001 PROGRAMMED	02910	1820-1822	NR25131F PROGRAMMED	02910	1816-0989	
MM5006H	03406	1820-0770	NR25115F	02910	1816-0505	NR25131F PROGRAMMED	02910	1816-0990	
MM5013N	03406	1820-1165	NR25115F PROGRAMMED	02910	1816-0599	NR25131F PROGRAMMED	02910	1816-0991	
MM5040H	03406	1820-1236	NR25115F PROGRAMMED	02910	1816-0600	NR25131F PROGRAMMED	02910	1816-0992	
MM5050AH	03406	1820-1237	NR25115F PROGRAMMED	02910	1816-0601	NR25131F PROGRAMMED	02910	1816-0993	
MM5052	03406	1820-0717	NR25115F PROGRAMMED	02910	1816-0910	NR25131F PROGRAMMED	02910	1816-0996	
MM5057N	03406	1820-1167	NR25115F PROGRAMMED	02910	1816-0911	NR25131F PROGRAMMED	02910	1816-0997	
MM5214ABLW	03406	1820-0410	NR25115F PROGRAMMED	02910	1816-0912	NR25131F PROGRAMMED	02910	1816-0970	
MM5214LN MASKED	03406	1818-0469	NR25115F PROGRAMMED	02910	1816-0921	NR25131F PROGRAMMED	02910	1816-0971	
MM5244J PROGRAMMED	03406	1818-0739	NR25115F PROGRAMMED	02910	1816-0922	NR25131F PROGRAMMED	02910	1816-0972	
MM5244J PROGRAMMED	03406	1818-0740	NR25115F PROGRAMMED	02910	1816-0923	NR25131F PROGRAMMED	02910	1816-0973	
MM5244J PROGRAMMED	03406	1818-0741	NR25115F PROGRAMMED	02910	1816-1049	NR25131F PROGRAMMED	02910	1816-0974	
MM5244J PROGRAMMED	03406	1818-0742	NR25115F PROGRAMMED	02910	1816-1050	NR25131F PROGRAMMED	02910	1816-0975	
MM5244J PROGRAMMED	03406	1818-0745	NR25115F PROGRAMMED	02910	1816-1121	NR25131F PROGRAMMED	02910	1816-0976	
MM526UN	03406	1820-1149	NR25115F PROGRAMMED	02910	1816-1122	NR25131F PROGRAMMED	02910	1816-0977	
MM5261N	03406	1818-0106	NR25115I PROGRAMMED	02910	1816-1323	NR25131F PROGRAMMED	02910	1816-0978	
MM5269N	03406	1818-0440	NR25115I PROGRAMMED	02910	1816-0949	NR25131F PROGRAMMED	02910	1816-0979	
MM5280Nc	03406	1818-0508	NR25115I PROGRAMMED	02910	1816-0950	NR25131F PROGRAMMED	02910	1816-0980	
MM5307ABN	03406	1820-2001	NR25115I PROGRAMMED	02910	1816-0951	NR25131F PROGRAMMED	02910	1816-0981	
MM5307N	03406	1820-1348	NR25115I PROGRAMMED	02910	1816-0952	NR25131F PROGRAMMED	02910	1816-0982	
MM5312N	03406	1820-1756	NR25115I PROGRAMMED	02910	1816-0953	NR25131F PROGRAMMED	02910	1816-0983	
MM5312N(74-)	03406	1820-1364	NR25115I PROGRAMMED	02910	1816-0954	NR25131F PROGRAMMED	02910	1816-1175	
MM5313N(74+)	03406	1820-2126	NR25115I PROGRAMMED	02910	1816-0955	NR25131F PROGRAMMED	02910	1816-1238	
MM5314N	03406	1820-2040	NR25115I PROGRAMMED	02910	1816-0956	NR25131N PROGRAMMED	02910	1816-0989	
MM5324N	03406	1820-2246	NR25115I PROGRAMMED	02910	1816-0956	NR25131N PROGRAMMED	02910	1816-0990	
MM5371N	03406	1820-1755	NR25115I PROGRAMMED	02910	1816-0957	NR25137F	02910	1816-0931	
MM5650H	03406	1826-0156	NR25115I PROGRAMMED	02910	1816-0958	NR25140F	02910	1816-0928	
MM5873	02023	1820-1849	NR25115I PROGRAMMED	02910	1816-0959	NR25141F	02910	1816-0929	
MM74C00J	03406	1820-2038	NR25115I PROGRAMMED	02910	1816-1330	NR25141F	02910	1816-1142	
MM74C01N	03406	1820-2210	NR25115N PROGRAMMED	02910	1816-1331	NR25141F	02910	1816-1163	
MM74C02N	03406	1820-1627	NR25115N PROGRAMMED	02910	1816-1332	NR25141F	02910	1816-1094	
MM74C04N	03406	1820-2211	NR25123F	02910	1816-0616	NR25141F PROGRAMMED	02910	1816-1029	
MM74C08N	03406	1820-1603	NR25123F PROGRAMMED	02910	1816-0916	NR25141F PROGRAMMED	02910	1816-1030	
MM74C107N	03406	1820-1576	NR25123N	02910	1816-1333	NR25141F PROGRAMMED	02910	1816-1073	
MM74C10N	03406	1820-2212	NR25123N PROGRAMMED	02910	1816-1332	NR25141F PROGRAMMED	02910	1816-1074	
MM74C14J	03406	1820-1590	NR25123N PROGRAMMED	02910	1816-0777	NR25141F PROGRAMMED	02910	1816-1075	
MM74C14N	03406	1820-1563	NR25123N PROGRAMMED	02910	1816-0861	NR25141F PROGRAMMED	02910	1816-1175	
MM74C15N	03406	1820-2055	NR25126F	02910	1816-0917	NR25141F PROGRAMMED	02910	1816-1176	
MM74C15AN	03406	1820-1827	NR25131F PROGRAMMED	02910	1816-1118	NR25141F PROGRAMMED	02910	1816-1194	
MM74C15TN	03406	1820-1365	NR25131F PROGRAMMED	02910	1816-1120	NR25141F PROGRAMMED	02910	1816-1198	
MM74C16DN	03406	1820-1390	NR25129F	02910	1816-0782	NR25141F PROGRAMMED	02910	1816-1073	
MM74C161N	03406	1820-1391	NR25129F PROGRAMMED	02910	1816-0420	NR25141F PROGRAMMED	02910	1816-1074	
MM74C162N	03406	1820-2214	NR25129F PROGRAMMED	02910	1816-1182	NR25141F PROGRAMMED	02910	1816-1075	
MM74C163N	03406	1820-1493	NR25129F PROGRAMMED	02910	1816-1233	NR25140F	02910	1816-1240	
MM74C164N	03406	1820-1559	NR25130F	02910	1816-0918	NR25180F PROGRAMMED	02910	1816-1242	
MM74C165N	03406	1820-1566	NR25131F	02910	1816-0710	NR25180F PROGRAMMED	02910	1816-1249	
MM74C173N	03406	1820-1190	NR25131F PROGRAMMED	02910	1816-0497	NR25180F PROGRAMMED	02910	1816-1250	
MM74C175N	03406	1820-1562	NR25131F PROGRAMMED	02910	1816-0498	NR25180F PROGRAMMED	02910	1816-1251	
MM74C192N	03406	1820-1575	NR25131F PROGRAMMED	02910	1816-0499	NR25181F	02910	1816-1160	
MM74C193N	03406	1820-1561	NR25131F PROGRAMMED	02910	1816-0500	NR25181F	02910	1816-1161	
MM74C20N	03406	1820-1626	NR25131F PROGRAMMED	02910	1816-0501	NR25181F PROGRAMMED	02910	1816-1166	
MM74C221J	03406	1820-1612	NR25131F PROGRAMMED	02910	1816-0502	NR25181F PROGRAMMED	02910	1816-1167	
MM74C221N	03406	1820-1485	NR25131F PROGRAMMED	02910	1816-0503	NR25181F PROGRAMMED	02910	1816-1168	
MM74C30N	03406	1820-1674	NR25131F PROGRAMMED	02910	1816-0504	NR25181F PROGRAMMED	02910	1816-1169	
MM74C324	03406	1820-2213	NR25131F PROGRAMMED	02910	1816-0505	NR25181F PROGRAMMED	02910	1816-1170	
MM74C373N	03406	1820-2215	NR25131F PROGRAMMED	02910	1816-0506	NR25181F PROGRAMMED	02910	1816-1171	
MM74C374N	03406	1820-2216	NR25131F PROGRAMMED	02910	1816-0507	NR25181F PROGRAMMED	02910	1816-1172	
MM74C42N	01406	1820-1735	NR25131F PROGRAMMED	02910	1816-0508	NR25181F PROGRAMMED	02910	1816-1173	
MM74C74J	03406	1820-1931	NR25131F PROGRAMMED	02910	1816-0509	NR25181F PROGRAMMED	02910	1816-1174	
MM74C744	03406	1820-1753	NR25131F PROGRAMMED	02910	1816-0510	NR25181F PROGRAMMED	02910	1816-1175	
MM74C83J	03406	1820-1937	NR25131F PROGRAMMED	02910	1816-0511	NR25181F PROGRAMMED	02910	1816-1176	
MM74C85N	03406	1820-1906	NR25131F PROGRAMMED	02910	1816-0512	NR25181F PROGRAMMED	02910	1816-1177	
MM74C86N	03406	1820-2276	NR25131F PROGRAMMED	02910	1816-0513	NR25181F PROGRAMMED	02910	1816-1178	
MM74C89N	03406	1820-1392	NR25131F PROGRAMMED	02910	1816-0514	NR25181F PROGRAMMED	02910	1816-1179	
MM74C901N	03406	1820-1651	NR25131F PROGRAMMED	02910	1816-0515	NR25181F PROGRAMMED	02910	1816-1195	
MM74C902N	03406	1820-1652	NR25131F PROGRAMMED	02910	1816-0516	NR25181F PROGRAMMED	02910	1816-1196	
MM74C903N	03406	1820-1653	NR25131F PROGRAMMED	02910	1816-0517	NR25181F PROGRAMMED	02910	1816-1197	
MM74C904N	03406	1820-1654	NR25131F PROGRAMMED	02910	1816-0518	NR25181F PROGRAMMED	02910	1816-1198	
MM74C905N	03406	1820-1935	NR25131F PROGRAMMED	02910	1816-0519	NR25181F PROGRAMMED	02910	1816-1200	
MM74C906N	03406	1820-1655	NR25131F PROGRAMMED	02910	1816-0520	NR25181F PROGRAMMED	02910	1816-1275	
MM74C907N	03406	1820-1656	NR25131F PROGRAMMED	02910	1816-0521	NR25181F PROGRAMMED	02910	1816-1276	
MM74C908N	03406	1820-2275	NR25131F PROGRAMMED	02910	1816-0522	NR25181F PROGRAMMED	02910	1816-1343	
MM74C910N	03406	1816-0754	NR25131F PROGRAMMED	02910	1816-0523	NR25181N PROGRAMMED	02910	1816-1162	
MM74C914N	03406	1820-1778	NR25131F PROGRAMMED	02910	1816-0524	NR25181N PROGRAMMED	02910	1816-1176	
MM74C920N	03406	1818-0753	NR25131F PROGRAMMED	02910	1816-0525	NR25181N PROGRAMMED	02910	1816-1177	
MM74C922N	03406	1820-2156	NR25131F PROGRAMMED	02910	1816-0526	NR25181N PROGRAMMED	02910	1816-1178	
MM74C923N	03406	1820-2309	NR25131F PROGRAMMED	02910	1816-0527	NR25181N PROGRAMMED	02910	1816-1179	
MM80097N	03677	1820-1059							

INTEGRATED CIRCUIT CROSS REFERENCE

Desc.	Mfr.	HP P/N	0P-11F1	0218N	1826-0028	SAP2RN
NR251851 PROGRAMMED	02910	1816-1203	NP-16CJ	0218N	1826-0049	SAP29F
NR251851 PROGRAMMED	02910	1816-1204	NP-16F	0218N	1826-0576	SAA1027
NR251851 PROGRAMMFD	02910	1816-1205	P11n34	0218N	1826-0601	SN50008
NR251851 PROGRAMMED	02910	1816-1206	P11n12	0218N	1814-0115	SN857KG
NR251851 PROGRAMMED	02910	1816-1207	P11n14-2	0218N	1814-0320	SFS55CT
NR251851 PROGRAMMED	02910	1816-1208	P11n14-4	0218N	1814-0425	SA1504N
NR251851 PROGRAMMED	02910	1816-1209	P2112A	0218N	1814-0342	SG3501AJ
NR251851 PROGRAMMED	02910	1816-1210	P2114-2	0218N	1814-0553	S63524J
NR251851 PROGRAMMED	02910	1816-1211	P2114L	0218N	1814-0492	SN158094N
NR251851 PROGRAMMED	02910	1816-1212	P2114L3	0218N	1814-0443	SN158097N
NR251851 PROGRAMMED	02910	1816-1213	P2142	0218N	1814-0495	SN15830N
NR251851 PROGRAMMED	02910	1816-1214	P2332 MASKED	0218N	1814-0764	SN15831N
NR251851 PROGRAMMED	02910	1816-1215	P2332 MASKED	0218N	1814-0797	SN15832N
NR251851 PROGRAMMED	02910	1816-1216	P2332 MASKED	0218N	1814-0794	SN15833N
NR251851 PROGRAMMED	02910	1816-1217	P2332 MASKED	0218N	1814-0799	SN15836N
NR251851 PROGRAMMED	02910	1816-1218	P2332 MASKED	0218N	1814-0800	SN15837N
NR251851 PROGRAMMED	02910	1816-1219	P2332 MASKED	0218N	1814-0801	SN15844N
NR251851 PROGRAMMED	02910	1816-1220	P2332 MASKED	0218N	1814-0802	SN15845N
NR251851 PROGRAMMED	02910	1816-1221	P2332 MASKED	0218N	1814-0803	SN15846N
NR251851 PROGRAMMED	02910	1816-1222	P2332 MASKED	0218N	1814-0804	SN15848N
NR251851 PROGRAMMED	02910	1816-1223	P2332 MASKED	0218N	1814-0805	SN15849N
NR251851 PROGRAMMED	02910	1816-1224	P2332 MASKED	0218N	1814-0806	SN15851N
NR251851 PROGRAMMED	02910	1816-1225	P2332 MASKED	0218N	1814-0807	SN15858N
NR251851 PROGRAMMED	02910	1816-1226	P2332 MASKED	0218N	1814-0808	SN15841N
NR251851 PROGRAMMED	02910	1816-1227	P2332 MASKED	0218N	1814-0809	SN15862N
NR251851 PROGRAMMED	02910	1816-1228	P2332 MASKED	0218N	1814-0810	SN15863N
NR251851 PROGRAMMED	02910	1816-1229	P2332 MASKED	0218N	1814-0811	SN15842N
NR251851 PROGRAMMED	02910	1816-1230	P2332 MASKED	0218N	1814-0817	SN4935N
NR251851 PROGRAMMED	02910	1816-1231	P2332 MASKED	0218N	1814-0813	SN5274I
NR251851 PROGRAMMED	02910	1816-1232	P2332 MASKED	0218N	1814-0814	SN5400J
NR251851 PROGRAMMED	02910	1816-1233	P2332 MASKED	0218N	1814-0815	SN5400N
NR251851 PROGRAMMED	02910	1816-1236	P2332 MASKED	0218N	1814-0816	SN5402J
NR251851 PROGRAMMED	02910	1816-1336	P2332 MASKED	0218N	1814-0817	SN5402N
NR251851 PROGRAMMED	02910	1816-1337	P2332 MASKED	0218N	1814-0818	SN5404J
NR251851 PROGRAMMED	02910	1816-1299	P2332 MASKED	0218N	1814-0819	SN5404N
NR25229N MASKED	02910	1816-0344	P2332 MASKED	0218N	1814-0820	SN5406J
NR25229N MASKED	02910	1816-0345	P2332 MASKED	0218N	1814-0821	SN5408J
NR25229N MASKED	02910	1816-0346	P2332 MASKED	0218N	1814-0822	SN5408N
NR25229N MASKED	02910	1816-0347	P2332 MASKED	0218N	1814-0927	SN5410J
NR25229F	02910	1816-0915	P2332 MASKED	0218N	1814-0928	SN5410N
NR25271H PROGRAMMED	02910	1816-1171	P2332 MASKED	0218N	1814-0929	SN5412J
NR25271H PROGRAMMED	02910	1816-1193	P2332 MASKED	0218N	1814-0930	SN5413J
NR25280N MASKED	02910	1816-1237	P2025	0218N	1820-2035	SN5414N
NR25291N PROGRAMMED	02910	1816-1324	P2028A	0218N	1820-1087	SN54192N
NR25291N PROGRAMMED	02910	1816-1325	P212	0218N	1820-1864	SN54196J
NR25291N PROGRAMMED	02910	1816-1326	P2404	0218N	1820-1395	SN54197J
NR25291N PROGRAMMED	02910	1816-1327	P360AL-6	0218N	1816-0868	SN54199J
NR25311N	02910	1820-1980	P4060AL-6 PROGRAMMED	0218N	1816-1060	SN5423J
NR25311N	02910	1820-1249	P4002-1	0218N	1816-0449	SN5430J
NR25424N MASKED	02910	1820-1073	P4040	0218N	1820-2069	SN5432N
NR25504N	02910	1820-1338	P4265	0218N	1820-2072	SN5442AJ
NR25527N	02910	1820-1140	P4269	0218N	1820-2073	SN5474J
NR25534N	02910	1820-1467	P5101LL-3	0218N	1818-0319	SN5474N
NR25534N	02910	1820-1777	P0394-6	0218N	1820-2308	SN5490N
NR25904N	02910	1820-1145	P0411 MASKED	0218N	1820-2189	SN5493N
NR4404N	02910	1820-0454	P0411A MSKD	0218N	1820-2205	SN5495AN
NR4404N	02910	1820-0460	P0408 MASKED	0218N	1820-2142	SN5496N
NR4415N	02910	1820-0437	P0408 MASKED	0218N	1820-2192	SN54H106N
NR4416N	02910	1820-0458	P0408 MASKED	0218N	1820-2245	SN54H11J
NR4425N	02910	1820-0466	P0408 MSKD	0218N	1820-2269	SN54H30J
NR4855N	02910	1820-0208	P0408 MSKD	0218N	1820-2294	SN54H40J
NR4875N	02910	1820-0456	P0408A	0218N	1820-2074	SN54H74J
NR4875N	02910	1820-0637	P0408A-2	0218N	1820-2205	SN54L500J
NR4875N	02910	1820-0461	P155	0218N	1818-0735	SN54L502J
NR4875N	02910	1820-0467	P216	0218N	1820-1557	SN54L503J
NR4875N	02910	1820-0468	P243	0218N	1820-2177	SN54L511J
NR4875N	02910	1820-0465	P257	0218N	1820-2143	SN54L512J
NR4890N	02910	1820-0464	P355 MSKD	0218N	1820-2295	SN54L517J
NR4T04N	02910	1820-1084	P4238	01973	1820-0114	SN54L522J
NR4T04N	02910	1820-1360	PIC600	02598	1813-0115	SN54L527J
NR4T14N	02910	1820-1040	PIC601	02598	1813-0083	SN54L574J
NR4T14N	02910	1820-1289	PIC611	02598	1813-0084	SN54S20J
NR4T26N	02910	1820-1428	PIC625	02598	1813-0109	SN55453BZJ
NR4T31N	02910	1820-2108	PIC626	02598	1813-0110	SN54A61UJ
NR4T31N	02910	1820-1817	PIC645	02598	1813-0114	SN54A62UJ
NR4T40N	02910	1820-0195	PIC646	02598	1813-0082	SN72311P
NR4T90H	02910	1820-0121	P141728-01	00576	1818-0094	SN72709J
NR4T93H	02910	1820-1924	P141828-01	00576	1818-0095	SN72710L
NR4T95H	02910	1820-1477	Rn-3-2513	02713	1818-0237	SN72710N
NR4T95H	02910	1820-1476	Rn-3-9316 MASKED	02713	1818-0896	SN72741H
NR4T97H	02910	1820-1884	Rn-3-9316 MASKED	02713	1818-0947	SN72747J
NRCT070UL	04183	1818-0630	Rn-3-9316 MASKED	02713	1818-0988	SN727L022L
NR5011A	02910	1820-0058	Rn-3-9316 MASKED	02713	1818-0899	SN7400J
NR5211A	02910	1820-0213	Rn-3-9316 MASKED	02713	1818-0900	SN7404N
NR5222A	02910	1820-0256	Rn-3-9316 MASKED	02713	1818-0901	SN7405J
NR5264A	02910	1820-0115	Rn-3-9316 MASKED	02713	1818-0902	SN7405N
NR527K	02910	1820-0454	Rn-3-9316 MASKED	02713	1818-0903	SN7403J
NR529A	02910	1820-0244	Rn-3-9316 MASKED	02713	1818-0904	SN7403N
NR529K	02910	1820-0124	Rn-3-9316 MASKED	02713	1818-0905	SN7404J
NR531H	02910	1820-0067	Rn-3-9316 MASKED	02713	1818-0906	SN7404N
NR550L	02910	1820-0130	Rn-3-9316 MASKED	02713	1818-0907	SN7404W
NR550N	02910	1820-0137	Rn-3-9316 MASKED	02713	1818-0908	SN7405J
NR5534AT	02910	1820-0633	Rn-3-0316 MASKED	02713	1818-0909	SN7405N
NR5534AT	02910	1820-0569	Rn-3-9316 MASKED	02713	1818-0910	SN7406N
NR5534N	02910	1820-0625	Rn-3-9316 MASKED	02713	1818-0911	SN7406N SELECTED
NR5555T	02910	1820-0119	Rn-3-9316 MASKED	02713	1818-0948	SN7407N
NR556A	02910	1820-0205	Rn-3-9316 MASKEN	02713	1818-0949	SN7408J
NR5629	02910	1820-0047	RA1A	01973	1820-0044	SN7408N
NR565A	02910	1820-0204	RC419ETK	02290	1826-0196	SN7409N
NR565K	02910	1820-0101	RC455RN5	02290	1826-0326	SN74100N
NR566M	02910	1820-0189	RC45581	02290	1826-0217	SN74104N
NR567V	02910	1820-0219	RC8T23H	02290	1820-1007	SN74107N
NR5911F	02910	1820-2246	RC8T24H	02290	1820-1030	SN74109N
NR5911F	02910	1820-2267	RF4F-02J	0218N	1826-0622	SN7410N
NR5924A	02910	1826-0194	Rn-3-9316-R	02713	1818-0774	SN74111N
NR592K	02910	1826-0546	Rn-3-9316-R	02713	1818-0775	SN74116N
NP-01CJ	02180	1826-0440	Rn-3-9316-R	02713	1818-0776	SN74118N
NP-05CJ	02180	1826-0229	Rn-3-9316-R	02713	1818-0777	SN74120N
NP-05FJ	02180	1826-0266	Rv4558nd	02290	1826-0328	SN74121N
NP-07CJ	02180	1826-0471	S2350-2	03677	1820-1754	SN74122N
NP-07TP	02180	1826-0635	S5101LP	03677	1818-0708	SN74123N
NP-07Y	02180	1826-0641	S52	0354-0	1820-0138	SN74125N
NP-11F	02180	1826-0616	S5733A	0354-0	1820-0040	SN74126N

Desc.	Mfr.	HP P/N	SN7476J	01698	1820-0658	SN74LS145N	01698	1820-1426
SN7412HN		01698 1820-1074	SN7476N	01698	1820-0076	SN74LS147N	01698	1820-2200
SN7412N		01698 1820-0907	SN7480N	01698	1820-1326	SN74LS14N	01698	1820-1416
SN74132N		01698 1820-0896	SN7481N	01698	1820-0362	SN74LS151N	01698	1820-1217
SN74132N		01698 1820-1056	SN7482N	01698	1820-0365	SN74LS153N	01698	1820-1244
SN74136N		01698 1820-1250	SN7483N	01698	1820-0363	SN74LS155N	01698	1820-1245
SN7413N		01698 1820-0537	SN7484N	01698	1820-0305	SN74LS158N	01698	1820-1427
SN74141H		01698 1820-0707	SN7485N	01698	1820-0484	SN74LS157N	01698	1820-1470
SN74143J		01698 1820-1271	SN7486N	01698	1820-0921	SN74LS158N	01698	1820-1428
SN74143N		01698 1820-1171	SN7489N	01698	1820-0282	SN74LS16AN	01698	1820-1243
SN74145N		01698 1820-0491	SN7489N	01698	1820-0628	SN74LS161AN	01698	1820-1429
SN74147N		01698 1820-1082	SN7490N	01698	1820-0055	SN74LS162AN	01698	1820-1430
SN74148N		01698 1820-1473	SN7490N SFLFCTED	01698	1820-0483	SN74LS163AN	01698	1820-1432
SN7414N		01698 1820-1053	SN7491A	01698	1820-0364	SN74LS164N	01698	1820-1433
SN74150N		01698 1820-0640	SN7492N	01698	1820-0056	SN74LS165N	01698	1820-1975
SN74151AN		01698 1820-0622	SN7493N	01698	1820-0099	SN74LS166N	01698	1820-1922
SN74153N		01698 1820-0620	SN7494N	01698	1820-0366	SN74LS170N	01698	1820-1436
SN74154N		01698 1820-0495	SN7495N	01698	1820-0367	SN74LS174N	01698	1820-1196
SN74155N		01698 1820-0738	SN7496N	01698	1820-0368	SN74LS176N	01698	1820-1195
SN74156N		01698 1820-1046	SN7497N	01698	1820-0744	SN74LS181N	01698	1820-1280
SN74157N		01698 1820-0762	SN74H00N	01698	1820-0370	SN74LS190N	01698	1820-1279
SN74159N		01698 1820-1257	SN74H01N	01698	1820-0605	SN74LS191N	01698	1820-1278
SN741A0N		01698 1820-0899	SN74H04N	01698	1820-0424	SN74LS192N	01698	1820-1277
SN74161N		01698 1820-0716	SN74H05N	01698	1820-0613	SN74LS193N	01698	1820-1194
SN74162N		01698 1820-1145	SN74H101N	01698	1820-0739	SN74LS194AN	01698	1820-1276
SN74163N		01698 1820-0713	SN74H102N	01698	1820-0469	SN74LS195AN	01698	1820-1300
SN74164N		01698 1820-1064	SN74H103N	01698	1820-0544	SN74LS196N	01698	1820-1251
SN74165N		01698 1820-1042	SN74H106N	01698	1820-0715	SN74LS199N	02837	1820-2049
SN74166N		01698 1820-1107	SN74H105N	01698	1820-1164	SN74LS197N	01698	1820-1193
SN74167N		01698 1820-0909	SN74H108N	01698	1820-0631	SN74LS20N	01698	1820-1204
SN7416N		01698 1820-0577	SN74H10N	01698	1820-0371	SN74LS21N	01698	1820-1205
SN74170J		01698 1820-0725	SN74H11N	01698	1820-0372	SN74LS221N	01698	1820-1437
SN74170N		01698 1820-1459	SN74H15N	01698	1820-1263	SN74LS22N	01698	1820-1274
SN74173N		01698 1820-0574	SN74H183N	01698	1820-0847	SN74LS240N	01698	1820-1917
SN74173N		01698 1820-1192	SN74H20N	01698	1820-0373	SN74LS241N	01698	1820-1918
SN74174W		01698 1820-0788	SN74H21N	01698	1820-0374	SN74LS242N	01698	1820-2104
SN74175N		01698 1820-0839	SN74H22N	01698	1820-0419	SN74LS243N	01698	1820-1994
SN74178N		01698 1820-1258	SN74H30N	01698	1820-0375	SN74LS244N	01698	1820-2024
SN74179N		01698 1820-1259	SN74H40J	01698	1820-0867	SN74LS245N	01698	1820-2075
SN7417N		01698 1820-0618	SN74H40U	01698	1820-0376	SN74LS247N	01698	1820-1688
SN74180N		01698 1820-0435	SN74H50N	01698	1820-0377	SN74LS248N	01698	1820-1644
SN74181N		01698 1820-0606	SN74H51N	01698	1820-0378	SN74LS249N	01698	1820-1443
SN74182N		01698 1820-0611	SN74H52N	01698	1820-0379	SN74LS251N	01698	1820-1298
SN74184N		01698 1820-1267	SN74H53N	01698	1820-0380	SN74LS252N	01698	1820-1238
SN74185AN		01698 1820-1141	SN74H54N	01698	1820-0381	SN74LS254N	01698	1820-1438
SN74186J		01698 1816-0713	SN74H55N	01698	1820-0382	SN74LS257AN	01698	1820-2194
SN74187N MASKED		01698 1816-0343	SN74H60N	01698	1820-0383	SN74LS258AN	01698	1820-1890
SN74188AN		01698 1816-1141	SN74H61N	01698	1820-0384	SN74LS259AN	01698	1820-1439
SN74190N		01698 1820-0734	SN74H24N	01698	1820-0385	SN74LS259N	01698	1820-1859
SN74191N		01698 1820-0545	SN74H71N	01698	1820-0386	SN74LS261N	01698	1820-1785
SN74192N		01698 1820-0546	SN74H72N	01698	1820-0387	SN74LS26AN	01698	1820-1297
SN74193N		01698 1820-0233	SN74H73N	01698	1820-0391	SN74LS262N	01698	1820-1417
SN74194N		01698 1820-0743	SN74H74N	01698	1820-0512	SN74LS273N	01698	1820-1730
SN74195N		01698 1820-1027	SN74H76N	01698	1820-0752	SN74LS279N	01698	1820-1440
SN74196N		01698 1820-0751	SN74H78N	01698	1820-0392	SN74LS282N	01698	1820-1206
SN74197N		01698 1820-0765	SN74H87N	01698	1820-0740	SN74LS286N	01698	1820-1859
SN74198N		01698 1820-1032	SN74L00N	01698	1820-0583	SN74LS283N	01698	1820-1441
SN74199N		01698 1820-0726	SN74L02N	01698	1820-0584	SN74LS28N	01698	1820-1273
SN74200N		01698 1820-0783	SN74L03N	01698	1820-0585	SN74LS290N	01698	1820-1442
SN7420J		01698 1820-0857	SN74L04N	01698	1820-0586	SN74LS293N	01698	1820-1443
SN7422N		01698 1820-0669	SN74L10N	01698	1820-0587	SN74LS295N	01698	1820-1296
SN74221N		01698 1820-1260	SN74L121N	01698	1820-1270	SN74LS298N	01698	1820-1444
SN74222J		01698 1820-2304	SN74L122N	01698	1820-0513	SN74LS299N	01698	1820-1987
SN74222N		01698 1820-1256	SN74L123N	01698	1820-1247	SN74LS30N	01698	1820-1207
SN74223N		01698 1820-0538	SN74L153N	01698	1820-1143	SN74LS322AN	01698	1820-2201
SN74227N		01698 1820-1580	SN74L154N	01698	1820-1049	SN74LS323N	01698	1820-2202
SN74228N		01698 1820-0655	SN74L157N	01698	1820-1214	SN74LS324N	01698	1820-1642
SN74229N		01698 1820-1460	SN74L157N	01698	1820-1269	SN74LS325N	01698	1820-2064
SN74229N		01698 1820-0514	SN74L164N	01698	1820-0793	SN74LS323N	01698	1820-1208
SN74229N		01698 1820-1461	SN74L192N	01698	1820-0911	SN74LS33N	01698	1820-1272
SN74229N		01698 1820-2127	SN74L193N	01698	1820-0912	SN74LS348N	01698	1820-2121
SN74229N		01698 1820-1728	SN74L204N	01698	1820-054H	SN74LS353N	01698	1820-2046
SN74229N		01698 1820-1089	SN74L304N	01698	1820-0549	SN74LS365AN	01698	1820-1641
SN74229N		01698 1820-1787	SN74L424N	01698	1820-0777	SN74LS366AN	01698	1820-1640
SN74227N		01698 1820-0782	SN74L456N	01698	1820-1142	SN74LS367AN	01698	1820-1491
SN74224N		01698 1820-1261	SN74L457N	01698	1820-1233	SN74LS368AN	01698	1820-1492
SN74224N		01698 1820-1791	SN74L51N	01698	1820-0490	SN74LS373N	01698	1820-2102
SN74225N		01698 1820-1792	SN74L54N	01698	1820-0591	SN74LS374N	01698	1820-2121
SN74228N		01698 1820-1184	SN74L55N	01698	1820-0592	SN74LS375N	01698	1820-1445
SN74229N		01698 1820-1262	SN74L73N	01698	1820-1731	SN74LS377N	01698	1820-1858
SN74229N		01698 1820-1264	SN74L75N	01698	1820-076	SN74LS378N	01698	1820-2056
SN74229N		01698 1820-1100	SN74L85N	01698	1820-1268	SN74LS379N	01698	1820-2244
SN74230N		01698 1820-0070	SN74L86N	01698	1820-0598	SN74LS37N	01698	1820-1287
SN74233N		01698 1820-0661	SN74L93H	01698	1820-0443	SN74LS38N	01698	1820-1209
SN74233N		01698 1820-1124	SN74L95H	01698	1820-0497	SN74LS39N	01698	1820-1991
SN74231N		01698 1820-1462	SN74L98N	01698	1820-0556	SN74LS393N	01698	1820-2096
SN74236N		01698 1820-2007	SN74L500N	01698	1820-1197	SN74LS3945N	01698	1820-1446
SN74236N		01698 1820-1368	SN74L500N	02037	1820-2107	SN74LS396N	01698	1820-2026
SN74237N		01698 1820-1049	SN74L502J	01698	1820-1647	SN74LS40N	01698	1820-1286
SN74238N		01698 1820-1255	SN74L502N	01698	1820-1144	SN74LS42N	01698	1820-1418
SN74237N		01698 1820-0539	SN74L503N	01698	1820-1148	SN74LS47AN	01698	1820-1602
SN74238N		01698 1820-0621	SN74L504N	01698	1820-1199	SN74LS48N	01698	1820-1604
SN74239N		01698 1820-1463	SN74L505N	01698	1820-1200	SN74LS49N	01698	1820-2078
SN74239N		01698 1820-1464	SN74L508N	01698	1820-1201	SN74L551N	01698	1820-1210
SN74240N		01698 1820-0071	SN74L509N	01698	1820-1246	SN74L554N	01698	1820-1285
SN74242N		01698 1820-0214	SN74L510UAN	01698	1820-1469	SN74L555N	01698	1820-1284
SN74244N		01698 1820-0468	SN74L510UAN	01698	1820-1282	SN74L564N	01698	1820-2206
SN7446AN		01698 1820-1037	SN74L5113AN	01698	182			

INTEGRATED CIRCUIT CROSS REFERENCE

Desc.	Mfr.	HP P/N	SN74S281H	01698 1820-1456	SN74S472N	01698 1816-1055
SNT4LS96N		01698 1820-1421	SN74S287J PROGRAMMED	01698 1816-1271	SN74S472N PROGRAMMED	01698 1816-1068
SNT4S00N		01698 1820-0681	SN74S287J PROGRAMMED	01698 1816-1272	SN74S472N PROGRAMMED	01698 1816-1069
SNT4S02N		01698 1820-1322	SN74S287J PROGRAMMED	01698 1816-1273	SN74S472N PROGRAMMED	01698 1816-1070
SNT4S03N		01698 1820-0682	SN74S287J PROGRAMMED	01698 1816-1274	SN74S472N PROGRAMMED	01698 1816-1071
SNT4S04N		01698 1820-0683	SN74S287J PROGRAMMED	01698 1816-1275	SN74S472N PROGRAMMED	01698 1816-1072
SNT4S5N		01698 1820-0684	SN74S287N PROGRAMMED	01698 1816-0268	SN74S472N PROGRAMMED	01698 1816-1145
SNT4S08N		01698 1820-1367	SN74S287N PROGRAMMED	01698 1816-0421	SN74S472N PROGRAMMED	01698 1816-1252
SNT4S09N		01698 1820-1448	SN74S287N PROGRAMMED	01698 1816-0422	SN74S472N PROGRAMMED	01698 1816-1076
SNT4S10N		01698 1820-0685	SN74S287N PROGRAMMED	01698 1816-0423	SN74S472N PROGRAMMED	01698 1816-1077
SNT4S112N		01698 1820-0629	SN74S287N PROGRAMMED	01698 1816-0721	SN74S472N PROGRAMMED	01698 1816-1078
SNT4S112N SELECTED		01698 1820-1406	SN74S287N PROGRAMMED	01698 1816-0722	SN74S472N PROGRAMMED	01698 1816-1079
SNT4S113N		01698 1820-0695	SN74S287N PROGRAMMED	01698 1816-0729	SN74S472N PROGRAMMED	01698 1816-1080
SNT4S114N		01698 1820-0696	SN74S287N PROGRAMMED	01698 1816-0730	SN74S472N PROGRAMMED	01698 1816-1081
SNT4S114N		01698 1820-0929	SN74S287N PROGRAMMED	01698 1816-0731	SN74S474J PROGRAMMED	01698 1816-1082
SNT4S115N		01698 1820-0686	SN74S287N PROGRAMMED	01698 1816-0732	SN74S474J PROGRAMMED	01698 1816-1083
SNT4S124N		01698 1820-1324	SN74S287N PROGRAMMED	01698 1816-0733	SN74S474J PROGRAMMED	01698 1816-1086
SNT4S132N		01698 1820-1307	SN74S287N PROGRAMMED	01698 1816-0735	SN74S474J PROGRAMMED	01698 1816-1087
SNT4S133N		01698 1820-1130	SN74S287N PROGRAMMED	01698 1816-0736	SN74S474J PROGRAMMED	01698 1816-1084
SNT4S134N		01698 1820-1306	SN74S287N PROGRAMMED	01698 1816-0737	SN74S474J PROGRAMMED	01698 1816-1085
SNT4S135N		01698 1820-1639	SN74S287N PROGRAMMED	01698 1816-0738	SN74S51N	01698 1820-1158
SNT4S138N		01698 1820-1240	SN74S287N PROGRAMMED	01698 1816-0739	SN74S54N	01698 1820-0691
SNT4S139N		01698 1820-1072	SN74S287N PROGRAMMED	01698 1816-0740	SN74S54N	01698 1820-0692
SNT4S140N		01698 1820-0697	SN74S287N PROGRAMMED	01698 1816-0742	SN74S74N	01698 1820-0493
SNT4S151N		01698 1820-1319	SN74S287N PROGRAMMED	01698 1816-0779	SN74S54N	01698 1820-1321
SNT4S153N		01698 1820-0998	SN74S287N PROGRAMMED	01698 1816-0897	SN74S56N	01698 1820-0694
SNT4S157N		01698 1820-1077	SN74S287N PROGRAMMED	01698 1816-0898	SN75107AN	01698 1820-0723
SNT4S158N		01698 1820-1015	SN74S287N PROGRAMMED	01698 1816-0932	SN75108HN	01698 1820-1310
SNT4S159N		01698 1820-0687	SN74S287N PROGRAMMED	01698 1816-0933	SN75109N	01698 1820-0722
SNT4S162N		01698 1820-1452	SN74S287N PROGRAMMED	01698 1816-1009	SN7510L	01698 1820-0083
SNT4S163J		01698 1820-1942	SN74S287N PROGRAMMED	01698 1816-1010	SN75110AN	01698 1820-1110
SNT4S163N		01698 1820-1453	SN74S287N PROGRAMMED	01698 1816-1011	SN75112AN	01698 1820-1262
SNT4S168N		01698 1820-1454	SN74S287N PROGRAMMED	01698 1816-1012	SN75116N	01698 1820-2128
SNT4S169J		01698 1820-1943	SN74S287N PROGRAMMED	01698 1816-1018	SN75117P	01698 1820-2159
SNT4S169N		01698 1820-1455	SN74S287N PROGRAMMED	01698 1816-1019	SN75150P	01698 1820-1075
SNT4S174N		01698 1820-1076	SN74S287N PROGRAMMED	01698 1816-1020	SN75234P	01698 1820-2134
SNT4S175N		01698 1820-1191	SN74S287N PROGRAMMED	01698 1816-1021	SN75235N	01698 1820-0694
SNT4S181J		01698 1820-1974	SN74S287N PROGRAMMED	01698 1816-1039	SN75322N	01698 1820-1673
SNT4S181N		01698 1820-0999	SN74S287N PROGRAMMED	01698 1816-1040	SN75325N	01698 1820-0563
SNT4S182N		01698 1820-1305	SN74S287N PROGRAMMED	01698 1816-1041	SN75341AN	01698 1820-1433
SNT4S187N MASKED		01698 1816-0352	SN74S287N PROGRAMMED	01698 1816-1090	SN75361AP	01698 1820-1887
SNT4S188N		01698 1816-1174	SN74S287N PROGRAMMED	01698 1816-1091	SN75363N	01698 1820-1982
SNT4S188N PROGRAMMED		01698 1816-0003	SN74S287N PROGRAMMED	01698 1816-1143	SN75367N	01698 1820-1611
SNT4S188N PROGRAMMED		01698 1816-0004	SN74S287N PROGRAMMED	01698 1816-1146	SN75417NE	01698 1820-2181
SNT4S188N PROGRAMMED		01698 1816-0184	SN74S287N PROGRAMMED	01698 1816-1148	SN75450HN	01698 1820-0902
SNT4S188N PROGRAMMED		01698 1816-0185	SN74S287N PROGRAMMED	01698 1816-1149	SN75451BP	01698 1820-0535
SNT4S188N PROGRAMMED		01698 1816-0186	SN74S287N PROGRAMMED	01698 1816-1150	SN75452BL	01698 1820-1669
SNT4S188N PROGRAMMED		01698 1816-0254	SN74S287N PROGRAMMED	01698 1816-1152	SN75452BP	01698 1820-0799
SNT4S188N PROGRAMMED		01698 1816-0255	SN74S288J PRGMD	01698 1816-1152	SN75453BP	01698 1820-1016
SNT4S188N PROGRAMMED		01698 1816-0256	SN74S288J PRGMD	01698 1816-1353	SN75454BP	01698 1820-1050
SNT4S188N PROGRAMMED		01698 1816-0351	SN74S288J PRGMD	01698 1816-1354	SN75441P	01698 1820-2044
SNT4S188N PROGRAMMED		01698 1816-0353	SN74S288J PRGMD	01698 1816-1355	SN75462P	01698 1820-2208
SNT4S188N PROGRAMMED		01698 1816-0363	SN74S288N PROGMD	01698 1816-1153	SN75466N	01698 1820-2111
SNT4S188N PROGRAMMED		01698 1816-0412	SN74S288N PROGMD	01698 1816-1151	SN75469N	01698 1820-2443
SNT4S188N PROGRAMMED		01698 1816-0561	SN74S288N PROGRAMMED	01698 1816-0424	SN75471P	01698 1820-2207
SNT4S188N PROGRAMMED		01698 1816-0562	SN74S288N PROGRAMMED	01698 1816-0425	SN75477P	01698 1820-2110
SNT4S188N PROGRAMMED		01698 1816-0597	SN74S288N PROGRAMMED	01698 1816-0614	SN75491N	01698 1820-1230
SNT4S188N PROGRAMMED		01698 1816-0615	SN74S288N PROGRAMMED	01698 1816-0778	SN75492N	01698 1820-1231
SNT4S188N PROGRAMMED		01698 1816-0635	SN74S288N PROGRAMMED	01698 1816-0780	SN75497N	01698 1820-2186
SNT4S188N PROGRAMMED		01698 1816-0636	SN74S288N PROGRAMMED	01698 1816-0894	SN75498N	01698 1820-2141
SNT4S188N PROGRAMMED		01698 1816-0676	SN74S288N PROGRAMMED	01698 1816-0895	SN76549N	01698 1820-0498
SNT4S188N PROGRAMMED		01698 1816-0677	SN74S288N PROGRAMMED	01698 1816-0896	SN8400N	01698 1820-0878
SNT4S188N PROGRAMMED		01698 1816-0784	SN74S288N PROGRAMMED	01698 1816-0988	SN8402N	01698 1820-0888
SNT4S188N PROGRAMMED		01698 1816-0785	SN74S288N PROGRAMMED	01698 1816-0991	SN8404N	01698 1820-0889
SNT4S188N PROGRAMMED		01698 1816-0786	SN74S288N PROGRAMMED	01698 1816-1095	SN84121N	01698 1820-0880
SNT4S188N PROGRAMMED		01698 1816-0787	SN74S288N PROGRAMMED	01698 1816-1158	SN8442N	01698 1820-0882
SNT4S188N PROGRAMMED		01698 1816-0790	SN74S288N PROGRAMMED	01698 1816-1169	SN8475N	01698 1820-0861
SNT4S188N PROGRAMMED		01698 1816-0791	SN74S288N PROGRAMMED	01698 1816-1241	SN84840N	01698 1820-0877
SNT4S188N PROGRAMMED		01698 1816-0792	SN74S288N PROGRAMMED	01698 1816-1243	SN84841N	01698 1820-0885
SNT4S188N PROGRAMMED		01698 1816-0793	SN74S288N PROGRAMMED	01698 1816-1244	SN84840N	01698 1820-0883
SNT4S188N PROGRAMMED		01698 1816-0794	SN74S288N PROGRAMMED	01698 1816-1245	SN84841N	01698 1820-0887
SNT4S188N PROGRAMMED		01698 1816-0821	SN74S288N PROGRAMMED	01698 1816-1246	SP322A	02910 1820-0202
SNT4S188N PROGRAMMED		01698 1816-0843	SN74S288N PROGRAMMED	01698 1816-1247	SP370N	02910 1820-0900
SNT4S188N PROGRAMMED		01698 1816-0999	SN74S288N PROGRAMMED	01698 1816-1258	SP374N	02910 1820-0774
SNT4S188N PROGRAMMED		01698 1816-0900	SN74S288N PROGRAMMED	01698 1816-1269	SP380N	02910 1820-1187
SNT4S188N PROGRAMMED		01698 1816-0901	SN74S288N PROGRAMMED	01698 1816-1270	SP616N	02910 1820-0318
SNT4S188N PROGRAMMED		01698 1816-0920	SN74S288N PROGRAMMED	01698 1816-1271	SP620A	02910 1820-0059
SNT4S188N PROGRAMMED		01698 1816-0935	SN74S288N PROGRAMMED	01698 1816-1356	SP620N	02910 1820-0078
SNT4S188N PROGRAMMED		01698 1816-0936	SN74S288N PROGRAMMED	01698 1816-1357	SP629N	02910 1820-0319
SNT4S188N PROGRAMMED		01698 1816-0967	SN74S288N PROGRAMMED	01698 1816-1362	SP631N	02910 1820-0067
SNT4S188N PROGRAMMED		01698 1816-1006	SN74S288N PROGRAMMED	01698 1816-1363	SP659N	02910 1820-0320
SNT4S188N PROGRAMMED		01698 1816-1007	SN74S288N PROGRAMMED	01698 1816-0787	SP670N	02910 1820-0302
SNT4S188N PROGRAMMED		01698 1816-1022	SN74S289N PROGRAMMED	01698 1820-1457	SP680N	02910 1820-0303
SNT4S188N PROGRAMMED		01698 1816-1025	SN74S300N PROGRAMMED	01698 1820-1323	SDRA17HUG	01590 1820-2292
SNT4S188N PROGRAMMED		01698 1816-1088	SN74S322N PROGRAMMED	01698 1820-1449	SDRA27PRDG	01590 1820-2047
SNT4S188N PROGRAMMED		01698 1816-1154	SN74S323J PROGRAMMED	04092 1820-2185	SDRA61S	01590 1820-1384
SNT4S188N PROGRAMMED		01698 1816-1155	SN74S323N PROGRAMMED	01698 1820-1676	SC5725CJ	02180 1826-0009
SNT4S188N PROGRAMMED		01698 1816-1156	SN74S324N PROGRAMMED	01698 1820-1677	SC5725CL	02180 1826-0228
SNT4S188N PROGRAMMED		01698 1816-1199	SN74S323N PROGRAMMED	01698 1820-1450	SC5741CL	02180 1826-0013
SNT4S188N PROGRAMMED		01698 1816-1340	SN74S328N PROGRAMMED	01698 1820-1458	SY2314A MASKED	01795 1814-0698
SNT4S189J		01698 1816-0640	SN74S328T PROGRAMMED	01698 1816-1358	SY2332P MASKED	01795 1818-0702
SNT4S189N		01698 1816-0724	SN74S328T PROGRAMMED	01698 1816-0257	SY2332P MASKED	01795 1818-0703
SNT4S194N		01698 1820-1304	SN74S328T PROGRAMMED	01698 1816-0258	SY2332P MASKED	01795 1818-0704
SNT4S195N		01698 1820-1303	SN74S328T PROGRAMMED	01698 1816-0286	SY2332P MASKED	01795 1818-0705
SNT4S195N		01698 1820-1669	SN74S328T PROGRAMMED	01698 1816-0341	SY2332P MASKED	01795 1818-0264
SNT4S197N		01698 1820-1668	SN74S328T PROGRAMMED	01698 1816-0342	SYC2316A MASKED	01795 1818-0265
SNT4S200N		01698 1820-0598	SN74S328T PROGRAMMED	01698 1816-0350	SYC2316A MASKED	01795 1818-0266
SNT4S202N		01698 1820-0688	SN74S328T PROGRAMMED	01698 1816-0354	SYC2316H MASKED	01795 1818-0712
SNT4S222N		01698 1820-0689	SN74S328T PROGRAMMED	01698 1816-0438	SYC2316H MASKED	01795 1818-0713
SNT4S220N		01698 1820-1433	SN74S328T PROGRAMMED	01698 1816-0679	SYC2316H MASKED	01795 1818-0714
SNT4S225W		01698 1820-1624	SN74S328T PROGRAMMED	01698 1816-0707	SYC2316H MASKED	01795 1818-0715
SNT4S225N		01698 1820-1302	SN74S328T PROGRAMMED	01698 1816-0795	SYC2316H MASKED	0179

INTEGRATED CIRCUIT CROSS REFERENCE

31

Desc.	Mfr.	HP P/N	TMS2516JL	01698 1818-0498	UAT11UC	02237 1826-0055
SYC2316H MASKED		01795 1818-0721	TMS2516JL PROG	01698 1818-0856	UAT14MC	02237 1826-0543
SYC2316H MASKED		01795 1818-0722	TMS2516JL PROG	01698 1818-0857	UAT14LHC	02237 1826-0574
SYC2316H MASKED		01795 1818-0723	TMS2516JL PROG	01698 1818-0858	UAT23CJ	01698 1826-0049
SYC2316H MASKED		01795 1818-0724	TMS2516JL PROG	01698 1818-0859	UAT26HC	02237 1826-0031
SYC2316H MASKED		01795 1818-0725	TMS2516JL PROG	01698 1818-0860	UAT33UC	02237 1826-0064
SYC2316H MASKED		01795 1818-0726	TMS2516JL PROG	01698 1818-0861	UAT34UC	02237 1826-0183
SYC2316H MASKED		01795 1818-0727	TMS2516JL PROG	01698 1818-0862	UAT39UC	02237 1826-0044
SYM140A		01795 1820-0763	TMS2516JL PROG	01698 1818-0863	UAT40UC	02237 1826-0056
SYP2316A MASKED		01795 1818-0697	TMS2516JL PROG	01698 1818-0865	UAT47UM	02237 1826-0135
SYP2316A MASKED		01795 1818-0706	TMS2516JL PROG	01698 1818-0866	UAT49NC	02237 1826-0184
SYP2316A MASKED		01795 1818-0795	TMS2516JL PROG	01698 1818-0867	UAT49HIC	02237 1826-0342
SYP2316A MASKED		01795 1818-0710	TMS2516JL PROG	01698 1818-0868	UAT54T2C	02237 1826-0541
SYP2316A MASKED		01795 1818-0728	TMS2516JL PROG	01698 1818-0869	UAT60UC	02237 1826-0231
SYP2316A MASKED		01795 1818-0729	TMS2516JL PROG	01698 1818-0870	UAT64HIC(SEL)	02237 1824-0236
SYP2316A MASKED		01795 1818-0730	TMS2516JL PROG	01698 1818-0871	UAT76TC	02237 1826-0212
SYP2316A MASKED		01795 1818-0731	TMS25172JL PROG	01698 1818-0762	UAT80UD	02910 1826-0604
SYP2316A MASKED		01795 1818-0732	TMS2708JL PROGRAMMED	01698 1818-0452	UAT824AC	02237 1826-0262
SYP2316A MASKED		01795 1818-0773	TMS2708JL PROGRAMMED	01698 1818-0453	UAT86GKC	02237 1826-0443
SYP2316B-3 MASKED		01795 1818-0709	TMS2708JL PROGRAMMED	01698 1818-0454	UAT89GUIC	02237 1826-0456
SYP2332 MASKED		01795 1818-0951	TMS2708JL PROGRAMMED	01698 1818-0455	UAT89H5KC	02237 1813-0100
SYP2332 MASKED		01795 1818-0952	TMS2708JL PROGRAMMED	01698 1818-0456	UAT89H12SC	02237 1813-0093
SYP2332 MASKED		01795 1818-0535	TMS2708JL PROGRAMMED	01698 1818-0457	UAT89H15KC	02237 1813-0124
SYP2332 MASKED		01795 1818-0536	TMS2708JL PROGRAMMED	01698 1818-0458	UAT89H6KC	02237 1813-0121
SYP2332 MASKED		01795 1818-0537	TMS2708JL PROGRAMMED	01698 1818-0459	UAT8BL15ACH	02237 1826-0353
SYP2332 MASKED		01795 1818-0538	TMS2708JL PROGRAMMED	01698 1818-0460	UAT8BL26AWC	02237 1826-0460
SYP2332 MASKED		01795 1818-0539	TMS2708JL PROGRAMMED	01698 1818-0461	UAT8BL2A2WC	02237 1826-0586
SYP2332 MASKED		01795 1818-0540	TMS2708JL PROGRAMMED	01698 1818-0462	UAT8M06HL	02237 1826-0349
SYP2332 MASKED		01795 1818-0541	TMS2708JL PROGRAMMED	01698 1818-0463	UAT8M12UC	02237 1826-0345
SYP2332 MASKED		01795 1818-0542	TMS2708JL PROGRAMMED	01698 1818-0464	UAT8M6MGHC	02237 1826-0584
SYP2332 MASKED		01795 1818-0543	TMS2708JL PROGRAMMED	01698 1818-0465	UAT8M6GUIC	02237 1826-0484
SYP2332 MASKED		01795 1818-0544	TMS2708JL PROGRAMMED	01698 1818-0466	UAT8S540PC	02237 1826-0603
SYP2332 MASKED		01795 1818-0545	TMS2708JL PROGRAMMED	01698 1818-0467	UAT9005UC	02237 1826-0445
SYP2332 MASKED		01795 1818-0546	TMS2708JL PROGRAMMED	01698 1818-0468	UAT9060UC	02237 1826-0474
SYP2332 MASKED		01795 1818-0644	TMS2708JL PROGRAMMED	01698 1818-0750	UAT911ZUC	02237 1826-0414
SYP2332 MASKED		01795 1818-0645	TMS2708JL PROGRAMMED	01698 1818-0752	UAT924CKC	01698 1826-0620
SYP2332 MASKED		01795 1818-0646	TMS2711JL	01698 1818-0743	UAT952UC	02237 1826-0404
SYP2332 MASKED		01795 1818-0647	TMS2710JL	01698 1818-0491	UAT96KCC	02237 1826-0444
SYP2332 MASKED		01795 1818-0648	TMS30V2LP	01698 1820-0211	UAT96GUIC	02237 1826-0441
SYP2332 MASKED		01795 1818-0649	TMS3113NC	01698 1820-1186	UAT98H6KC	02237 1813-0127
SYP2332 MASKED		01795 1818-0650	TMS3120NC	01698 1820-1346	UAT9M12AHC	02237 1826-0300
SYP2332 MASKED		01795 1818-0651	TMS31224C	01698 1820-1178	UAT9M12CKC	01698 1826-0629
SYP2332 MASKED		01795 1818-0793	TMS3129NC	01698 1820-2092	UAT9M15CL	01698 1826-0511
S7A24A		02037 1826-0507	TMS4144NL MASKED	07H10 1818-0453	UAT9M6GH	02237 1826-0583
TAA2707V		01991 1820-0058	TMS4027-15JL SELCTD	01698 1818-0317	UAT9MGUIC	02237 1826-0483
TAA231		06338 1820-0318	TMS4027-25JL SELCTD	01698 1818-0334	UAF355TC	02237 1826-0491
TTC6000HV		01991 1820-0133	TMS4030JL	01698 1818-0103	UHN-5707A	02634 1820-2020
TXL105		01698 1820-0279	TMS4045-10JL	01698 1818-0443	UHN29R1A	02634 1820-2273
TLO611CP		01698 1826-0640	TMS4045-45JL	01698 1818-0438	UHP4-402	04200 1820-1120
TLO711CP		01698 1826-0520	TMS4050-01JL	01698 1818-0181	UHP4-407	02634 1820-2129
TLO711P		01698 1826-0519	TMS4050JL	01698 1818-0146	UHP4-408	04200 1820-1086
TLO724CP		01698 1826-0547	TMS4050NL	01698 1818-0147	UL-N-2054A	02634 1820-2170
TLO72CP		01698 1826-0521	TMS4060-2JL	01698 1818-0247	UL-N-2068A	02634 1820-2274
TLO744CN		01698 1826-0600	TMS4040JL	01698 1818-0165	UL-N-2074A	02634 1820-2130
TLO74CN		01698 1826-0522	TMS4040NL	01698 1818-0263	UL-N-2111A	02634 1826-0029
TLO824CP		01698 1826-0545	TMS4103NC	01698 1818-0102	UM1500	04200 1820-0494
TLO844CN		01698 1826-0572	TMS4115-15JL SELCTD	01698 1818-0509	UP036290	00309 1820-2060
TLO84RCN		01698 1826-0538	TMS4116-20JL SELCTD	01698 1818-0341	UP0R2280	00309 1820-1920
TLO84CN		01698 1826-0410	TMS4117-25JL SELCTD	01698 1818-0340	UP0R241U	00309 1820-1844
TL431CLP		01698 1826-0643	TMS4118-25JL SELCTD	01698 1818-0391	UP0R253U	00309 1820-2005
TL494CN		01698 1826-0565	TMS4712NL	01698 1818-0894	UP0R255AN	00309 1820-1919
TL497CN		01698 1826-0450	TMS4732NL MASKED	01698 1818-0733	VFC32KP	05434 1826-0624
TL514CN		01698 1826-0551	TMS4772NL MASKED	01698 1818-0734	XCT9LUSCG	02037 1826-0332
TL601CP		01698 1826-0476	TMS80R0AN	01698 1820-1783	XCT9L12CA	02037 1826-0331
TL604IP		01698 1820-1973	TAA3709V	01991 1820-0113	XD-2207CP	03350 1820-1648
TL607CP		01698 1820-1948	TP1402A	00575 1820-1681	XO2240	03350 1820-1628
TL610CP		01698 1826-0477	TP1402H	00575 1820-1719	XO320	03350 1826-0237
TL702CL (SEL)		01698 1826-0461	TP1402B-05	00575 1820-1911	ZANA-CPU-PS	07453 1820-2298
TL702CN		01698 1820-0396	UA0001EPC	02237 1826-0550	ZAOA-CFC-PS	07453 1820-2301
TL7805ACKC		01698 1826-0551	UA208H	02237 1826-0072	ZAOA-OMA-PS	07653 1820-2299
TMS-4024NC		01698 1820-1174	UA304HC	02237 1826-0004	ZAOA-SL-/-PS	07653 1820-2300
TMS-0105NC		01698 1820-1232	UA4130PC	02237 1826-0222	Zn440	02842 1813-0040
TMS2501NC		01698 1818-0096	UA710HC	02237 1820-0355	Zn441	02842 1813-0039

supplement to
BENCH BRIEFS
SERVICE NOTE INDEX

Need Any Service Notes?

Here's the latest listing of Service Notes available for Hewlett-Packard products. To obtain information for instruments you own, remove the order form and mail it to the HP distribution center nearest you.

140T OSCILLOSCOPE

140T-1A-S. All prefixes. Modification to reduce shock hazard during failure conditions.

141T STORAGE OSCILLOSCOPE

141T-7A-S. All prefixes. Elimination of potential safety hazard.

204C/D OSCILLATOR

204C/D-3A. 204C and 204C-H20 serials 0989A18215 and below, and 204D serials 1105A05485 and below. Modification to accept new type batteries (Option 002 only).

239A OSCILLATOR

239A-1. Serials 1814A00100 thru 1814A00226. Procedures for correction of wiring of ground select switch.

239A-2. Serials 1814A00100 thru 1814A00231. Procedures for correction of amplitude instability.

339A DISTORTION MEASUREMENT SET

339A-1. Serials below 1730A00451. Solving oscillation problems when testing high gain amplifiers.

339A-2. Serials below 1730A00410. Procedures for replacement of zener diodes A4CR5, A4CR11 and photocells A3E1, A3E2.

339A-3. Serials below 1730A00555. Replacement procedures for photocell A3E1.

339A-4A. Serials below 1730A00409. Replacement procedures for photomodule A2E1.

419A DC NULL VOLTMETER

419A-7A-S. Elimination of potential shock hazard.

427A VOLTMETER

427A-5. Serials 0947A18910 and below. Meter stability improvement when switching from DCV+ to DCV- positions.

432C POWER METER

432C-2. Serials 1832A and below. Modification to buffer BCD output data.

465A AMPLIFIER

465A-6. Serials 0970A05175 and below. Recommended replacement for transistor Q9.

478A THERMISTOR MOUNTS

478A-1D. All serials. Thermistor assembly replacement procedure.

478A-2A. Serials below 49673. RF connector assembly replacement procedures.

478A-3. All serials between 49673 to 65600. Ground modification to prevent currents flowing through thermistors.

495A MICROWAVE AMPLIFIER

495A-8A. Serials 826-0311 thru 1717A. Modification to prevent arcing in high voltage circuits.

608C/D VHF SIGNAL GENERATORS

608D-4B. 608C serials below 2354 and 608D serials below 4916. Recommended silicon rectifier conversion.

895A POWER SUPPLY

295A-2. Serials 1821A-01702 and below. Modification to replace zener reference diode 1902-0763.

1200A/B OSCILLOSCOPE

1200A/B-1A. Serials 1202A and below. Recommended low voltage regulator transistor replacement.

1201A/B OSCILLOSCOPE

1201A/B-9. Serials 1331A and below. Recommended low voltage regulator transistor replacement.

1220A OSCILLOSCOPE

1220A-21A. Serials 1814A, 1814S, and below. Recommended CRT replacement.

1222A OSCILLOSCOPE

1222A-1A. Serials 1809A, 1809S, and below. Recommended CRT replacement.

1310A DISPLAY

1310A-19-S. Serials 1812A-01656 and below. Elimination of potential hazard.

1311A DISPLAY

1311A-19-S. Serials 1552A-01477 and below. Elimination of potential hazard.

1317A DISPLAY

1317A-6-S. Serials 1649A-00600 and below. Elimination of potential hazard.

1321A DISPLAY

1321A-6-S. Serials 1656A-00425 and below. Elimination of potential hazard.

1350A GRAPHICS TRANSLATOR

1350A-1. All serials. Resistor change to standardize Z axis amplifier U65 selection.

1610A LOGIC ANALYZER

1610A-4-S. Serials 1812A00645 and below. Elimination of power line socket shock hazard.

1610A-5. Serials 1822A and below and 01610-63005's serials below 1806A01040. Modification to prevent fuse failures due to line fluctuations.

1610A-6. Modification to the display board to improve performance.

1610A-7. All serials. Low voltage power supply troubleshooting.

1611A LOGIC STATE ANALYZER

10262A-1. Serials 1818A00511 and below. Modification to 10262A personality module for input signal threshold detection.

1615A LOGIC ANALYZER

1615A-1-S. Serials 1825A00626 and below. Elimination of power line socket shock hazard.

1640A SERIAL DATA ANALYZER

1640A-1-S. Serials 1827A00315 and below. Elimination of power socket shock hazard.

1640A-2. Serials 1827A00295 and below. Power supply current limit modification.

1640A-3. Serials 1835A00402 and below. Recommended replacement for clamping diodes on A4 interface board.

1710B OSCILLOSCOPE

1710B-15. All serials. Modification to eliminate intermittent auto baseline at slow sweeps.

1712A OSCILLOSCOPE

1712A-14. All serials. Modification to prevent intermittent auto baseline at slow sweeps.

1715A OSCILLOSCOPE

1715A-2. Serials 1820A01025 and below. Recommended replacement parts to improve reliability of analog assembly A18.

1715A-3. Serials 1728A and below. Modification to eliminate intermittent auto baseline at slow sweeps.

1720A OSCILLOSCOPE

1720A-18. All serials. Modification to eliminate intermittent auto baseline at slow sweeps.

1722A/B OSCILLOSCOPE

1722A-18. All serials. Modification to eliminate intermittent auto baseline at slow sweeps.

1722B-1. Serials 1737A and below. Modifications to eliminate intermittent auto baseline at slow sweeps.

1725A OSCILLOSCOPE

1725A-2. Serials 1823A00800 and below. Recommended replacement parts for reliability of analog assembly A18.

1725A-2. Serials 1720A and below. Modifications to prevent intermittent auto baseline at slow sweeps.

1742A OSCILLOSCOPE

1742A-1. Serials prefixed 1807A. Modification to prevent false readings in delayed sweep "TRIG'D" mode.

1915A OUTPUT AMPLIFIER

1915A-4A. Serials 1522A and below. Preferred replacement parts for A5CR2 and A5CR3 diodes.

3325A SYNTHESIZER/FUNCTION GENERATOR

3325A-1. Serials 1748A00310 and below. Recommended power supply modification.

3330A/B AUTOMATIC SYNTHESIZER

3330A/B-10. Serials 1331A02237 and below. Recommended isolated HP-IB timing improvement.

3335A FREQUENCY SYNTHESIZER

3335A-2. Serials below 1640A00300. Elimination of potential problem when replacing A4U56, A5Q1, A5Q2, A5CR3, or A4.

3335A-3. Serials below 1640A00376. Recommended installation of special sweep mode switch.

3403A/B/C TRUE RMS VOLTMETER

3403C-7. All serials. Recommended modifications to update 3403A to 3403C. Supplements 3403C-4.

3420A/B DC DIFFERENTIAL VOLTMETER/RATIO METER

3420A/B-5C-S. Elimination of potential safety hazard.

3435A MULTIMETER

3435A-3. Serials 1606A06400 and below. Recommended replacement of A1U14 and A1U15 digit drivers.

3438A HP-IB MULTIMETER

3438A-3. Serials 1717A00920 and below. Recommended replacement of A1U14 and A1U15 digit drivers.

3450B DIGITAL MULTIMETER

3450B-5. All serials. Recommended power supply transformer replacement.

3455A DIGITAL VOLTMETER

3455A-12B. Serials 1622A02566 to 1622A03300. Recommendations to improve ohms converter response time.

3455A-13. Serials 1622A03538 and below. Recommended modifications to reduce switch bounce and A1U48 oscillations.

3466A MULTIMETERS

3466A-4A. All serials. Recommended replacement of integrator of amp U400.

3466A-6. Serials 1716A02781 and below. Recommended true RMS converter replacement.

3466A-7. Serials 1716A03380 and below. Recommended replacement of A4U901, A4U905, A4U906, and A4U911 digit drivers.

3495A SCANNER

3495A-3. Serials 1428A02505 and below. Recommended modifications to meet European VDE conducted RFI specifications with accessory 44413A.

3551A TRANSMISSION TEST SET

3551A-9A. Serials 1550A04325 and below. Recommended A3 input amplifier assembly, front panel, and front subpanel replacement.

3551A-11. Serials 1550A04325 and below. Recommended replacement kit for new type WECO 310 jacks.

3555B TRANSMISSION AND NOISE MEASURING SET

3555B-2D. Serials 0992A05670 and below. Recommendations for improved power supply reliability.

3582A SPECTRUM ANALYZER

3582A-1. All serials. How to replace front panel switches.

3585A

3585A-1. Serials below 1750A00230. Input/conversion assembly rust problem correction.

3702A DEMODULATOR DISPLAY

3702A-24. All serials. Recommended replacement of varactor diode A3CR5 (0122-0602).

3702A-25. All serials. Recommended replacement of A3 assembly I.F. mixer & local oscillator.

3702B IF/BB RECEIVER

3702B-40. Serials below 1242U-00251. Recommended field replacement of A2 assembly.

3702B-41. Serials below 1438U-01046 and serials 1438U-01046 to 1723U-02055 inclusive. Replacement of Y2 display switch (S7).

3702Z DEMODULATOR DISPLAY

3702Z-9. All serials. Replacement of varactor diode A3CR5.

3702Z DEMODULATOR DISPLAY

3702Z-10. All serials. Replacement of A3 assembly I.F. mixer & local oscillator.

3721A CORRELATOR

3721A-16. Serials 1544U-00660 and below. Recommendations for improved operation of reset circuitry.

3721A-17. Serials 1544U-00665 and below. Elimination of noise on dither position.

3745A/B SELECTIVE LEVEL MEASURING SET

3745A/B-4C. Serials 1607U and below. Recommendations to eliminate HP-IB system operational errors.

3745A/B-19. Serials 1815U and above. Preferred replacement of A109 ROM1.

3745A/B-21. Serials 1815U. Improvement in low frequency noise floor.

3745A/B-22. Serials 1812U and below. Preferred replacement of A109 ROM4.

3745A/B-23. Serials 1815U, 1831U and 1836U. Prevention of possible remote start-up problem.

3745A/B-24. Serials 1812U and below. Recommended retrofit kit for special option H14.

3745A/B-26. Serials between 1815U and 1844U. XY driver (option 040) wire harness modification

3747A/B SELECTIVE LEVEL MEASURING SET

3747A/B-1. Serials 1819U and below. Improvement in low frequency noise floor.

3747A/B-2. Serials 1834U and below. Prevention of possible remote start-up problem.

3747A/B-3. Serials 1804U and below. Recommended modification to 10MHz crystal filter assembly.

3747A/B-5. Serials between 1804U and 1908U. XY driver (option 040) wire harness modification.

3760A DATA GENERATOR

3760A-11. Serials 1744U-00356 to 1744U-00394. Recommended modification to data delay switching.

3763A ERROR DETECTOR

3763A-2. Serials below 1812U-00156. Modification to reduce the susceptibility of the 3763A to conducted line interference.

3770A AMPLITUDE/DELAY DISTORTION ANALYZER

3770A-17A. Serials below 1651U-00483. Recommendations to improve attenuation distortion response with input frequencies widely separated/preventing oscillation on A31.

3770A-18. Serials below 1817U-00503. Preferred replacement for loudspeaker LS1.

3770A-37. All serials. Recommended retrofitting instructions for option 001 (+10dBm switch).

3770B TELEPHONE LINE ANALYZER

3770B-14. Serials below 1728U-00246. Recommended replacements to prevent oscillations on assembly A31.

3770B-16. Serials below 1728U-00311. Procedures to prevent shorting of capacitors on A23 assembly.

3771A/B DATA LINE ANALYZER

3771A/B-1. All serials. Retrofitting instructions for printer board option 004.

3780A PATTERN GENERATOR/ERROR DETECTOR

3780A-4B. Serials below 1804U-00531. Modification to prevent noise on the AC line supply.

3780A-10B. Serials below 1804U-00531. Recommendations to reduce the susceptibility to conducted mains supply interference.

3780A-16. All serials. Procedures for selection of correct data threshold level.

3964A INSTRUMENTATION TAPE RECORDER

3964A-16A. Serials 1715A through 1814A; and option 009/010 with serials 1821A00792 and below. Recommended modification of A24 F1 and F2 to 5 amps.

3968A INSTRUMENTATION TAPE RECORDER

3968A-16A/8868A-14A. Serials 1715A through 1814A; and option 009/010 with serials 1821A00702 and below. Recommended modification of A24 LF1 and F2 to 5 amps.

5045A DIGITAL IC TESTER

5045A-5B. All serials. Recommended new relays check test cards.

5045A-9. All serials. Recommended handling precaution for CMOS boards.

5045A-10. All serials. Power supply modification to prevent overvoltage adjustment conditions.

5045A-11. All serials. Revised cross talk test to improve current performance tests.

5045A-12. All serials. Recommended proper ground reference for test equipment.

5045A-13. Serials 1748A00345 and below. Paper advance circuit modification to prevent Q2 drive transistor damage.

5045A-15. All serials. Revised 5045A A11 adjustments.

5300A MEASURING SYSTEM

5300A-5. All serials. Recommended 10548A diagnostic test card update.

5300B MEASURING SYSTEM

5300B-2. All serials. Recommended 10548A diagnostic test card update.

5307A HIGH RESOLUTION COUNTER

5307A-1A. Serials 1308. Modification to install ground input overload protection.

5308A 75 MHZ TIMER/COUNTER

5308A-4A. Serials 1720 and below. Recommended modification to prevent self-check erroneous display.

5312A ACSII CONVERTER

5312A-3. Troubleshooting procedures using signature analysis.

5314A UNIVERSAL COUNTER

5314A-1. Serial 1816. Recommended modifications of A1 main board assemblies.

5328A UNIVERSAL COUNTER

5328A-15A. Serials 1818U-00761 and above. Recommended replacement for A2 power supply assembly.

5328A-22. Series 1625. Troubleshooting option 011 (HP-IB) using signature analysis.

5328A-23. Serials 1828-08626, 1828-08733, 1828-08743, 1828-08742, and 1828-09052. Recommended improvement to A3 oscillator support assembly.

5342A MICROWAVE FREQUENCY COUNTER

5342A-9. Serials 1812 and below. Recommended procedure to correct false frequency readout.

5354A FREQUENCY COUNTER

5354A-8. All serials. Compatibility and repair information.

5363A TIME INTERVAL PROBES

5363A-3. All serials. Recommended probe FET replacement.

5370A UNIVERSAL TIME INTERVAL COUNTER

5370A-1. All serials. Recommended HP-IB verification program.

5370A-2. Recommended ROM changes.

5381A 80 MHz FREQUENCY COUNTER

5381A-2. Serials 1624 and below. Recommended field replacement of A1CR1 full wave bridge rectifier.

5420A DIGITAL SIGNAL ANALYZER

5420A-14. All serials. Modification to improve performance of 54470B digital filter.

5451B/C FOURIER ANALYZER

5451B-19/5451C-01. Serials 1748A and below. Modification to prevent intermittent operation of 5477A system control while running modal analysis.

5500C LASER HEAD

5526A-4. Serials 1648A and below. Modification to eliminate laser starting problems.

6110A THRU 6116A DC POWER SUPPLY

6110A-2. Serials 1815A01507 and older. Recommended modification to replace zener diode 1902-0763.

6111A-2. Serials 1606A02096 and below. Recommended modification to replace zener diode 1902-0763.

6112A-2. Serials 1634A01849 and below. Recommended modification to replace zener diode 1902-0763.

6113A-3. Serials 1617A01250 and below. Recommended modification to replace zener diode 1902-0763.

6116A-2. Serials 1741A01825 and below. Recommended modification to replace zener diode 1902-0763.

6128C THRU 6131A DIGITAL VOLTAGE SOURCE

6128C-1. Serials 1621A00150 and below. Modification to replace zener diode 1902-0763.

6129C-2. Serials 1739A00366 and below. Modification to replace zener diode 1902-0763.

6130C-2. Serials 1821A01045 and below. Modification to replace zener diode 1902-0763.

6131C-2. Serials 1825A00680 and below. Modification to replace zener diode 1902-0763.

6282A THRU 6296ADC POWER SUPPLY

6282A-3. Serials 1814A03006 and below. Modification to replace zener diode 1902-0763.

6286A-3. Serials 1744A03991 and below. Modification to replace zener diode 1902-0763.

6291A-2. Serials 1810A04422 and below. Modification to replace zener diode 1902-0763.

6296A-3. Serials 1816A03146 and below. Modification to replace zener diode 1902-0763.

6427B THRU 6434B POWER SUPPLY

6427B-2. Serials 1711A01140 and below. Modification to replace zener diode 1902-0763.

6428B-2. Serials 1834A02369 and below. Modification to replace zener diode 1902-0763.

6433B-2. Serials 1706A03305 and below. Modification to replace zener diode 1902-0763.

6434B-2. Serials 1826A02850 and below. Modification to replace zener diode 1902-0763.

6438B/6439B/6443B/6448B POWER SUPPLY

6438B-2. Serials 1706A01695 and below. Modification to replace zener diode 1902-0763.
 6439B-2. Serials 1821A01775 and below. Modification to replace zener diode 1902-0763.
 6443B-2. Serials 1706A02090 and below. Modification to replace zener diode 1902-0763.
 6448B-2. Serials 1825A02166 and below. Modification to replace zener diode 1902-0763.

6515A/6516A POWER SUPPLY

6515A-2. Serial 1712A04660. Modification to replace zener diode 1902-0763.
 6516A-2. Serials 1818A04030. Modification to replace zener diode 1902-0763.

6521A/6522A/6525A POWER SUPPLY

6521A-6. Serial 1818A01190. Modification to replace zener diode 1902-0763.
 6522A-6. Serial 1820A01267. Modification to replace zener diode 1902-0763.
 6525A-6. Serials 1827A02471 and below. Modification to replace zener diode 1902-0763.

7221A GRAPHIC PLOTTER

7221A-6/9872A-8. 7221A Serials 1823A-01381 and below, and 07221-60181 and 07221-66131 manufactured before 10/1/78. Change power-up sequence to processor BIB's.

7402A/7404A OSCILLOGRAPHIC RECORDERS

7402A-8. Serial prefixes: 7402A — 1720A03286 to 1720A03500, 7404A — 1740A00541 to 1740A00580. Recommended procedures to lubricate drive roller bearings.
 7402A-9. Serials 1820A3600 and before. Noise reduction modification on options 004 and 0009.

8018A DATA GENERATOR

8018A-1. Serials 1702G00101-1702G00205. Recommended improved power supply kit.
 8018A-2. Serials 1826G00285 and below. A3 bit rate board modification.

8165A PROGRAMMABLE SIGNAL SOURCE

8165A-2. Serials 1812G00241 to 1812G00281. Procedure to eliminate power-on problem.

8165A PROGRAMMABLE SIGNAL SOURCE

8165A-3. Serials 1701G00101 to 1812G00281. Recommended power dissipation improvement on A10.

8411A HARMONIC FREQUENCY CONVERTER

8411A-2. All serials. Recommended adjustment procedures to ensure compatibility with broadband applications.
 8411A-3. All serials. Correct part numbers to use when replacing sampler assemblies.

8412A PHASE-MAGNITUDE DISPLAY

8412A-6. Serials 1625A and below. Modification for use with 8750A storage-normalizer. Supersedes P-08512-60051.
 8412A-7-S. Serials 1812A and below. Improvement of fuse labeling.
 8412A-8. Serials 1720A through 1812A and instruments modified for use with 8750A storage-normalizer. Recommended replacement for A3U1, A3U3, and A3U4 BI-FET analog switches.

8414A POLAR DISPLAY

8414A-5. Serials 1616A03675 and below. Recommended replacement for high voltage oscillator transistors Q1 and Q2.

8443A/B TRACKING GENERATOR/COUNTER

8443A/B-1-S. 8443A serials 1217A and below; 8443B serials 1228A and below. Elimination of potential shock hazard.

8478B THERMISTOR MOUNT

8478B-1A. Serials 2383 through 2898 and serials 24aa and above. Recommended thermistor assembly replacement kit.
 8478B-2. All serials 1144A12160 and below. Recommended ground modification.

8501A STORAGE-NORMALIZER

8501A-2. Serials 1830A00220 and below. Modification of rear panel connectors to be compatible with new and improved interconnect and labeling interface cables.

8503A/B S-PARAMETER TEST SET

8503A-1/8503B-1. All serials. Recommended procedures for cleaning of solenoid contacts in A5 coaxial switch assembly.

8505A NETWORK ANALYZER

8505A-14. Serials 1833A00770 and below. Modification of rear panel connectors to be compatible with new and improved interconnect and labeling interface cables.

8558B SPECTRUM ANALYZER

8558B-13A. Serials 1612A and below. Two pot gear drive tuning modification.

8558B-16. All serials. Recommendations for changing standard 8558B into 75 ohm option 001 or 002.

8558B-18. Serials 1823A04286 to 1823A04360. Recommended replacement of W9 ribbon cable PC connectors.

8565A SPECTRUM ANALYZER

8750A-2/8565A-3. Improvement of the 8750A horiz. gain control range when used with the 8565A spectrum analyzer.

8565A-4. Serials 1849A and below. Recommended parts for oversized AT1 isolator.

8565A-5. All serials. Recommended YTO replacement kit.

8568A SPECTRUM ANALYZER

8568A-2. Serials 1806A thru 1818A. MOS counter IC date codes with known defective devices.

8568A-3. All serials. Procedure to correct delay following instrument preset.

8568A-4. Serials 1805A and below. Recommended modification to improve 10 Hz bandwidth noise floor.

8568A-5. All serials. List of operation and service documentation available.

8568A-6A. All serials. User information available to improve performance.

8568A-9. All serials. Replacement of A28 battery pack.

8568A-11. All serials. Recommended fuse replacement.

8568A-12. IF-display sections prefixed 1811A and below. Recommended modifications to A1V1 CRT/A1A2 Z axis amplifier compatibility.

8614A SIGNAL GENERATOR

8614A-19A. Serials 1748A and below. Recommended replacement for germanium transistors on A500.

8616A-17A. Serials 1739A and below. Recommended replacement for germanium transistors on A500.

8660A/B/C SYNTHESIZED SIGNAL GENERATOR

8660A-29. All serials. Programming interface verification program.

8699B RF UNIT

8699B-5A. Serials 1441A and below. Recommended A3 YIG oscillator replacement kit.

8750A STORAGE-NORMALIZER

8750A-2/8565A-3. Serials 1808A and below. Improvement of the 8750A horiz gain control range when used with the 8565A spectrum analyzer.

8750A-4A. Serials 1808A and below. Selected resistor for use with option 003 and 004 dedicated interface cards.

8750A-5. All serials. Recommended 220V/240V line voltage fuse replacement.

8750A-6. All serials. 8750A/8410B multi-octave glitches explained.

8868A INSTRUMENTATION TAPE RECORDER

3968A-16A/8868A-14A. Serials 1715A through 1814A, and Option 009/010 with serials 1821A00702 and below. Recommended modification of A24 F1 and F2 to 5 amps.

9411A CONTROLLER CARD

9411A-3. Clarification of prom/control card rev compatibilities.

9571A-DTS 70

9571A-1. All serials. Recommended installation of SPT9 in Rev. C software.

9571A-2. Modification of self test file (%FT600) for systems that do not have power supply programmers.

9571A-3. 91073A prom vendor change.

9862A CALCULATOR PLOTTER

9862A-6A. All serials. Mechanical parts list correction.

9872A GRAPHIC PLOTTER

7221A-6/9872A-8. 9872A serials 1810A-02691 and below, and 09872-60131 and 09872-66131 manufactured before 10/1/78. Change power-up sequence to processor BIB's.

9872A-9. Recommended memory PCA replacement.

10262A PERSONALITY MODULE

10262A-1. Serials 1818A00511 and below, 1611A option A18. Modification for input signal threshold detection.

10761 BINARY MULTIPLIER

10761A-1. Serials below 1712. Modification to eliminate signal timing problems.

59308A TIMING GENERATOR

59308A-3. Serials 1740A00466 through 1744A00690. Modification to improve 5 volt regulator.

69351A/B POWER SUPPLY

69351A-1/69351B-1. 69351A all serials, 69351B serials 1818A02638 and below. Modification to use zener diode 1902-0785.

86242A/C RF PLUG-INS

86242A-3B. All serials. Recommended YTO replacement kit. Supersedes 86242A-1, 86242A-3, 86242A-3A.

86242C-1C. All serials. Recommended YTO replacement kit. Supersedes 86242C-1, 86242C-1A, 86242C-1B.

86250A/B/C/D RF

86250A-3A. Serials 1238A and below and 1246A and above. Recommended YTO replacement kit. Supersedes 86250A/B-1 and 86250A-3.

86250B-3A. Serials 1238A and below and 1246A and above. Recommended YTO replacement kit. Supersedes 86250A/B-1 and 86250B-3.

86250C-1A. Serials 1625A and below. Recommended YTO replacement kit. Supersedes 86250C-1

86250D-1A. Serials 1709A and below. Recommended YTO replacement kit. Supersedes 86250D-1

86330B/86331B OSCILLATOR MODULES

86330B-3/86331B-3. All serials with option 001. Modification to RF mounting bracket when replacing modulator-amplifier-detector.

86341B OSCILLATOR MODULES

86341B-3. All serials with option 001. Recommended modification to LRF mounting bracket when replacing modulator-amplifier-detector.

86342A/C OSCILLATOR MODULE

86342A-4B. All serials. Recommended YTO replacement kit. Supersedes 86342A-1, 86342A-4, 86342A-4A.

86342C-1B. All serials. Recommended YTO replacement kit. Supersedes 86342C-1, 86342C-1A

83650C OSCILLATOR MODULE

86350C-1A. Serials 1741A and below. Recommended YTO replacement kit. Supersedes 86350C-1.

86351A OSCILLATOR MODULE

86351A-3A. All serials. Recommended YTO replacement kit. Supersedes 86351A-3.

86352A OSCILLATOR MODULE

86352A-3A. All serials. Recommended YTO replacement kit. Supersedes 86352A-3.

94151A PROGRAMMABLE DRIVER/COMPARATOR CARD

94151A-1. Modification to improve drive signal characteristics under capacitive load when used in 9571A.

If you want service notes, please check the appropriate boxes below and return this form separately to one of the following addresses.

Hewlett-Packard
1820 Embarcadero Road
Palo Alto, California 94303

For European customers (ONLY)

Hewlett-Packard
Central Mailing Dept.
P. O. Box 529
Van Hueven Goedhartlaan 121
AMSTELVEEN—1134
Netherlands

NAME _____

COMPANY NAME _____

ADDRESS _____

CITY _____

STATE _____ ZIP _____

- | | | | | |
|-------------------------------------|---------------------------------------|--|--|--|
| <input type="checkbox"/> 140T-1A-S | <input type="checkbox"/> 1725A-2 | <input type="checkbox"/> 3747A/B-5 | <input type="checkbox"/> 6116A-2 | <input type="checkbox"/> 8558B-18 |
| <input type="checkbox"/> 141T-7A-S | <input type="checkbox"/> 1725A-3 | <input type="checkbox"/> 3763A-2 | <input type="checkbox"/> 6128C-1 | <input type="checkbox"/> 8565A-4 |
| <input type="checkbox"/> 204C/D-3A | <input type="checkbox"/> 1742A-1 | <input type="checkbox"/> 3770A-17A | <input type="checkbox"/> 6129C-2 | <input type="checkbox"/> 8565A-5 |
| <input type="checkbox"/> 239A-1 | <input type="checkbox"/> 1915A-4A | <input type="checkbox"/> 3770A-36 | <input type="checkbox"/> 6130C-2 | <input type="checkbox"/> 8568A-2 |
| <input type="checkbox"/> 239A-2 | <input type="checkbox"/> 3325A-1 | <input type="checkbox"/> 3770A-37 | <input type="checkbox"/> 6131C-2 | <input type="checkbox"/> 8568A-3 |
|
 |
 |
 |
 |
 |
| <input type="checkbox"/> 339A-1 | <input type="checkbox"/> 3330A/B-10 | <input type="checkbox"/> 3770B-14 | <input type="checkbox"/> 6282A-3 | <input type="checkbox"/> 8568A-4 |
| <input type="checkbox"/> 339A-2 | <input type="checkbox"/> 3335A-2 | <input type="checkbox"/> 3770B-16 | <input type="checkbox"/> 6282A-3 | <input type="checkbox"/> 8568A-5 |
| <input type="checkbox"/> 339A-3 | <input type="checkbox"/> 3335A-3 | <input type="checkbox"/> 3771A/B-1 | <input type="checkbox"/> 6291A-2 | <input type="checkbox"/> 8568A-6A |
| <input type="checkbox"/> 339A-4A | <input type="checkbox"/> 3403C-7 | <input type="checkbox"/> 3780A-4B | <input type="checkbox"/> 6296A-3 | <input type="checkbox"/> 8568A-9 |
| <input type="checkbox"/> 419A-7A-S | <input type="checkbox"/> 3420A/B-5C-S | <input type="checkbox"/> 3780A-10B | <input type="checkbox"/> 6427B-2 | <input type="checkbox"/> 8568A-11 |
|
 |
 |
 |
 |
 |
| <input type="checkbox"/> 427A-5 | <input type="checkbox"/> 3435A-3 | <input type="checkbox"/> 3780A-16 | <input type="checkbox"/> 6428B-2 | <input type="checkbox"/> 8568A-12 |
| <input type="checkbox"/> 432C-2 | <input type="checkbox"/> 3438A-3 | <input type="checkbox"/> 3976A-16A | <input type="checkbox"/> 6433B-2 | <input type="checkbox"/> 8614A-19A |
| <input type="checkbox"/> 465A-6 | <input type="checkbox"/> 3450B-5 | <input type="checkbox"/> 2968A-16A/8868A-14A | <input type="checkbox"/> 6434B-2 | <input type="checkbox"/> 8616A-17A |
| <input type="checkbox"/> 478A-12 | <input type="checkbox"/> 3455A-12B | <input type="checkbox"/> 5045A-53 | <input type="checkbox"/> 6438B-2 | <input type="checkbox"/> 8660A-29 |
| <input type="checkbox"/> 478A-2A | <input type="checkbox"/> 3455A-13 | <input type="checkbox"/> 5045A-9 | <input type="checkbox"/> 6439B-2 | <input type="checkbox"/> 8699B-5A |
|
 |
 |
 |
 |
 |
| <input type="checkbox"/> 478A-3 | <input type="checkbox"/> 3466A-4A | <input type="checkbox"/> 5045A-10 | <input type="checkbox"/> 6443B-2 | <input type="checkbox"/> 8750A-2/8565A-3 |
| <input type="checkbox"/> 495A-8A | <input type="checkbox"/> 3466A-6 | <input type="checkbox"/> 5045A-11 | <input type="checkbox"/> 6448B-2 | <input type="checkbox"/> 8750A-4A |
| <input type="checkbox"/> 608D-4B | <input type="checkbox"/> 3466A-7 | <input type="checkbox"/> 5045A-12 | <input type="checkbox"/> 6515A-2 | <input type="checkbox"/> 8750A-5 |
| <input type="checkbox"/> 895A-2 | <input type="checkbox"/> 3495A-3 | <input type="checkbox"/> 5045A-13 | <input type="checkbox"/> 6516A-2 | <input type="checkbox"/> 8750A-6 |
| <input type="checkbox"/> 1200A/B-1A | <input type="checkbox"/> 3551A-9A | <input type="checkbox"/> 5045A-15 | <input type="checkbox"/> 6521A-6 | <input type="checkbox"/> 9411A-3 |
|
 |
 |
 |
 |
 |
| <input type="checkbox"/> 1201A/B-9 | <input type="checkbox"/> 3551A-11 | <input type="checkbox"/> 5083-4 | <input type="checkbox"/> 6522A-6 | <input type="checkbox"/> 9571A-1 |
| <input type="checkbox"/> 1220A-21A | <input type="checkbox"/> 3555B-20 | <input type="checkbox"/> 5300A-5 | <input type="checkbox"/> 6525A-6 | <input type="checkbox"/> 9571A-2 |
| <input type="checkbox"/> 1222A-1A | <input type="checkbox"/> 3582A-1 | <input type="checkbox"/> 5300B-2 | <input type="checkbox"/> 7221A-6/9872A-8 | <input type="checkbox"/> 9571A-3 |
| <input type="checkbox"/> 1310A-19-S | <input type="checkbox"/> 3585A-1 | <input type="checkbox"/> 5307A-1A | <input type="checkbox"/> 7402A-8 | <input type="checkbox"/> 9862A-6A |
| <input type="checkbox"/> 1311A-19-S | <input type="checkbox"/> 3702A-24 | <input type="checkbox"/> 5308A-4A | <input type="checkbox"/> 7402A-9 | <input type="checkbox"/> 9872A-9 |
|
 |
 |
 |
 |
 |
| <input type="checkbox"/> 1317A-6-S | <input type="checkbox"/> 3702A-25 | <input type="checkbox"/> 5312A-3 | <input type="checkbox"/> 8018A-1 | <input type="checkbox"/> 10262A-1 |
| <input type="checkbox"/> 1321A-6-S | <input type="checkbox"/> 3702B-40 | <input type="checkbox"/> 5314A-1 | <input type="checkbox"/> 8018A-2 | <input type="checkbox"/> 10761A-1 |
| <input type="checkbox"/> 1350A-1 | <input type="checkbox"/> 3702B-41 | <input type="checkbox"/> 5328A-U-15A | <input type="checkbox"/> 8165A-2 | <input type="checkbox"/> 59308A-3 |
| <input type="checkbox"/> 1610A-4-S | <input type="checkbox"/> 3702Z-9 | <input type="checkbox"/> 5328A-22 | <input type="checkbox"/> 8165A-3 | <input type="checkbox"/> 69351A-1/69351B-1 |
| <input type="checkbox"/> 1610A-5 | <input type="checkbox"/> 3702Z-10 | <input type="checkbox"/> 5328A-23 | <input type="checkbox"/> 8411A-2 | <input type="checkbox"/> 86242A-3B |
|
 |
 |
 |
 |
 |
| <input type="checkbox"/> 1610A-6 | <input type="checkbox"/> 3721A-16 | <input type="checkbox"/> 5342A-9 | <input type="checkbox"/> 8411A-3 | <input type="checkbox"/> 86252C-1C |
| <input type="checkbox"/> 1610A-7 | <input type="checkbox"/> 3721A-17 | <input type="checkbox"/> 5354A-8 | <input type="checkbox"/> 8412A-6 | <input type="checkbox"/> 86250A-3A |
| <input type="checkbox"/> 1615A-1-S | <input type="checkbox"/> 3745A/B-4C | <input type="checkbox"/> 5363A-3 | <input type="checkbox"/> 8412A-7-S | <input type="checkbox"/> 86250B-3A |
| <input type="checkbox"/> 1640A-1-S | <input type="checkbox"/> 3745A/B-19 | <input type="checkbox"/> 5370A-1 | <input type="checkbox"/> 8412A-8 | <input type="checkbox"/> 86250C-1A |
| <input type="checkbox"/> 1640A-2 | <input type="checkbox"/> 3745A/B-21 | <input type="checkbox"/> 5370A-2 | <input type="checkbox"/> 8414A-5 | <input type="checkbox"/> 86250D-1A |
|
 |
 |
 |
 |
 |
| <input type="checkbox"/> 1640A-3 | <input type="checkbox"/> 3745A/B-22 | <input type="checkbox"/> 5381A-2 | <input type="checkbox"/> 8443A/B-1-S | <input type="checkbox"/> 86330B-3/86331B-3 |
| <input type="checkbox"/> 1710B-15 | <input type="checkbox"/> 3745A/B-23 | <input type="checkbox"/> 5420A-14 | <input type="checkbox"/> 8478B-1A | <input type="checkbox"/> 86341B-3 |
| <input type="checkbox"/> 1712A-14 | <input type="checkbox"/> 3745A/B-24 | <input type="checkbox"/> 5451B-19/5451C-01 | <input type="checkbox"/> 8478B-2 | <input type="checkbox"/> 86342A-4B |
| <input type="checkbox"/> 1715A-2 | <input type="checkbox"/> 3745A/B-26 | <input type="checkbox"/> 5526A-4 | <input type="checkbox"/> 8501A-2 | <input type="checkbox"/> 86342C-1B |
| <input type="checkbox"/> 1715A-3 | <input type="checkbox"/> 3747A/B-1 | <input type="checkbox"/> 6110A-2 | <input type="checkbox"/> 8503A-1/8503B-1 | <input type="checkbox"/> 86350C-1A |
|
 |
 |
 |
 |
 |
| <input type="checkbox"/> 1720A-18 | <input type="checkbox"/> 3747A/B-2 | <input type="checkbox"/> 6111A-2 | <input type="checkbox"/> 8505A-14 | <input type="checkbox"/> 86351A-3A |
| <input type="checkbox"/> 1722A-18 | <input type="checkbox"/> 3747A/B-3 | <input type="checkbox"/> 6112A-2 | <input type="checkbox"/> 8558B-13A | <input type="checkbox"/> 86352A-3A |
| <input type="checkbox"/> 1722B-1 | <input type="checkbox"/> 3747A/B-3 | <input type="checkbox"/> 6113A-2 | <input type="checkbox"/> 8558B-16 | <input type="checkbox"/> 94151A-1 |

READERS CORNER

Here's your chance to share your ideas and views with other *Bench Briefs* recipients. In Reader's Corner, we will print letters to the Editor, troubleshooting tips, modification information, and new tools and products that have made your job easier. In short, Reader's Corner will feature anything from readers that is of general interest to electronic service personnel.

If there is something you have to share with other *Bench Briefs* readers, let us hear from you.

An Infallible I.Q. Test

Puzzles often turn up in the strangest places. This one was given to me at a picnic outing I recently attended. The solutions are found by matching the numbered statements with the list of words.

- | | |
|--|--|
| 1) That which Noah built | 9) A dog sitting in a refrigerator |
| 2) An article for serving ice cream | 10) What a boy does on the lake when his motor won't run |
| 3) What a bloodhound does in chasing a woman | 11) What do you call a person who wrote for an Inn |
| 4) An expression to represent the loss of a parrot | 12) What the captain said when the boat was bombed |
| 5) An appropriate title for a knight named Koll | 13) What a little acorn says when he grows up |
| 6) A sunburned man | 14) What one does to trees that are in the way |
| 7) A tall coffee pot perking | 15) What you do if you have yarn and needles |
| 8) What one does when it rains | 16) Can George Washington turn into a country? |

- A. Hypotenuse
- B. Polygon
- C. Inscribe
- D. Geometry
- E. Unit
- F. Centar
- G. Decagon
- H. Arc
- I. Circle
- J. Axiom
- K. Cone
- L. Coincide
- M. Cosecant
- N. Tangent
- O. Hero
- P. Perpendicular

Editor's Note

In the last issue of *Bench Briefs* an incorrect part number was listed on page 23 for an insulator used in the 8640B/M Signal Generators. Part number 0841-00064 should be 08641-00064.

Also, the last issue of *Bench Briefs* was incorrectly numbered Volume 18 Number 1; it should be Volume 19 Number 1. This issue is Volume 19 Number 2.

Sorry for any inconvenience this may have caused.

Editor

HEWLETT-PACKARD COMPANY
1820 Embarcadero Road
Palo Alto, California 94303

BENCH BRIEFS
MAY-JULY 1979
Volume 19 Number 2

Service information from
Hewlett-Packard Company

To obtain a qualification form for a free subscription, send your request to the above address.

Reader comments or technical article contributions are welcomed. Please send them to the above address, attention Bench Briefs.

Editor: Jim Bechtold, HP Mt. View
California

Bulk Rate
U.S. Postage
PAID
Sunnyvale, CA.
Permit No.
317

Address Correction Requested

Printed in U.S.A.