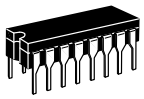
Quad Line Receiver

MC1692

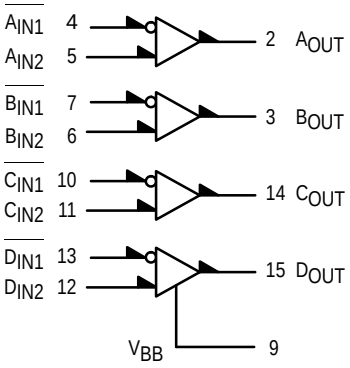


L SUFFIX
CERAMIC PACKAGE
CASE 620–10

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	–30°C		+25°C		+85°C		Unit
		Min	Max	Min	Max	Min	Max	
Power Supply Drain Current	I_E	—	—	—	50	—	—	mAdc
Input Current	I_{in}	—	—	—	250	—	—	μAdc
Input Leakage Current	I_R	—	—	—	100	—	—	μAdc
Reference Voltage	V_{BB}	–1.375	–1.275	–1.35	–1.25	–1.3	–1.2	Vdc
Switching Times Propagation Delay	t^{-+} t^{+-}	0.6 0.6	1.6 1.8	0.6 0.6	1.5 1.7	0.6 0.6	1.7 1.9	ns
Rise Time, Fall Time (10% to 90%)	t^+, t^-	0.6	2.2	0.6	2.1	0.6	2.3	ns

LOGIC DIAGRAM

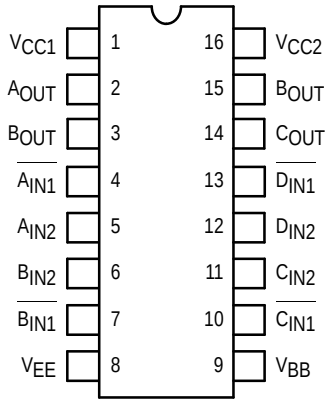


V_{CC1} = PIN 1
V_{CC2} = PIN 16
V_{EE} = PIN 8

t_{pd} = 0.9 ns typ (510 ohm load)
= 1.1 ns typ (50 ohm load)

P_D = 220 mW typ/pkg (No Load)
Full Load Current, I_L = –25 mAdc max

PIN ASSIGNMENT



APPLICATION INFORMATION

The MC1692 quad line receiver is used primarily to receive data from balanced twisted pair lines, as indicated in Figure 1. The line is driven with a MC1660 OR/NOR gate. The MC1660 is terminated with 50 ohm resistors to –2.0 volts. At the end of the twisted pair a 100 ohm termination resistor is placed across the differential line receiver inputs of the MC1692. Illustrated in Figure 2 is the sending and receiving waveforms at a data rate of 400 megabits per second over an 18 foot twisted pair cable. The waveform picture of Figure 3 shows a 5.0 nanosecond pulse being propagated down the 18 foot line. The delay time for the line is 1.68 ns/foot.

The MC1692 may also be applied as a high frequency schmitt trigger as illustrated in Figure 4. This circuit has been used in excess of 200 MHz. The MC1692 when loaded into 50 ohms will produce an output rising edge of about 1.5 nanoseconds.

FIGURE 1 — LINE DRIVER/RECEIVER

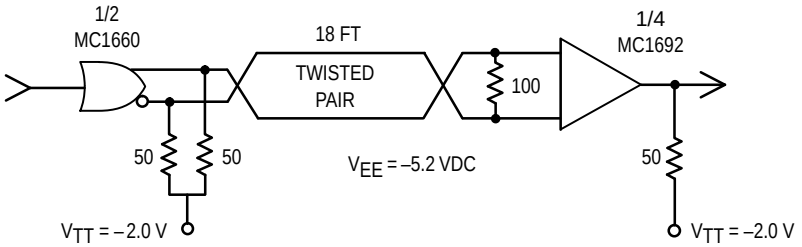


FIGURE 2 — 400 MBS WAVEFORMS

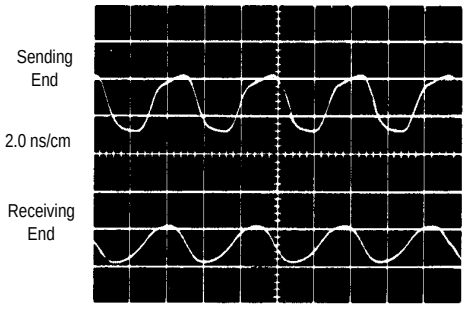


FIGURE 3 — PULSE PROPAGATION WAVEFORMS

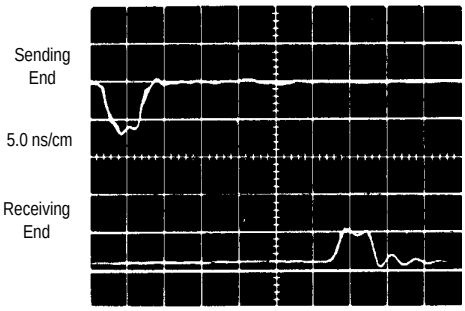
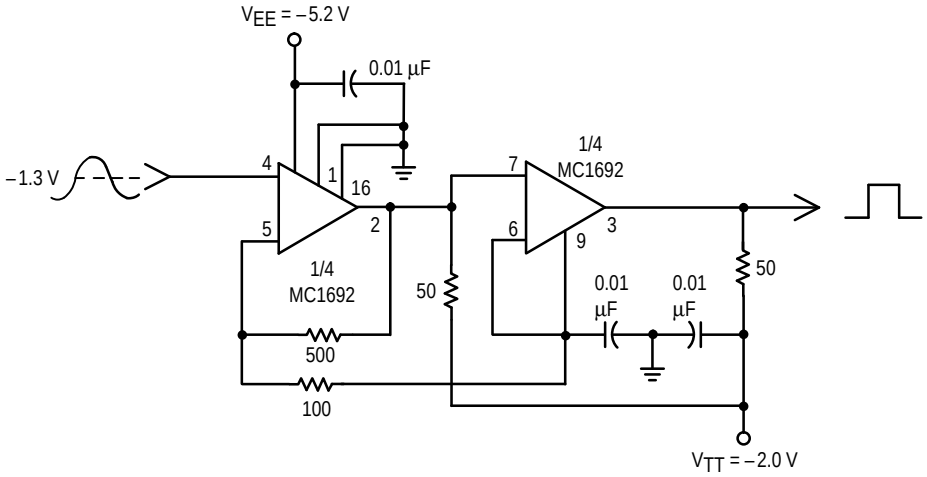


FIGURE 4 — 200 MHz SCHMITT TRIGGER



OUTLINE DIMENSIONS

L SUFFIX
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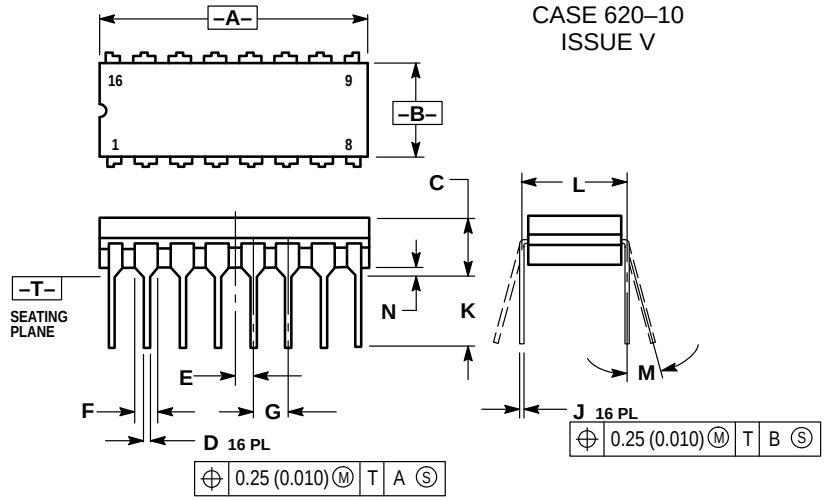
CASE 620–10
ISSUE V



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. DIMENSION L TO CENTER OF LEAD WHEN FORMED PARALLEL.
4. DIMENSION F MAY NARROW TO 0.76 (0.030) WHERE THE LEAD ENTERS THE CERAMIC BODY.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.750	0.785	19.05	19.93
B	0.240	0.295	6.10	7.49
C	—	0.200	—	5.08
D	0.015	0.020	0.39	0.50
E	0.050 BSC		1.27 BSC	
F	0.055	0.065	1.40	1.65
G	0.100 BSC		2.54 BSC	
H	0.008	0.015	0.21	0.38
K	0.125	0.170	3.18	4.31
L	0.300 BSC		7.62 BSC	
M	0 °	15 °	0 °	15 °
N	0.020	0.040	0.51	1.01

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