

The RF Line

High Output Doubler

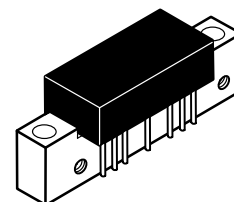
600 MHz CATV Amplifier

Designed specifically for 600 MHz CATV applications. Features ion-implanted arsenic emitter transistors with 7 GHz f_T and an all gold metallization system.

- 24 V Supply Voltage
- 6th Generation Die Technology
- Specified for 87-Channel Performance
- Broadband Power Gain — @ $f = 40-600$ MHz
 $G_p = 20$ dB (Typ) @ 50 MHz
 22 dB (Typ) @ 600 MHz
- Broadband Noise Figure
 $NF = 5.5$ dB (Typ) @ 600 MHz
- Improvement in Distortion Over Conventional Hybrids
- Allows Higher Output Level Operation

MHW6205-6A

20 dB GAIN
600 MHz
87-CHANNEL
CATV AMPLIFIER



CASE 714-06, STYLE 1

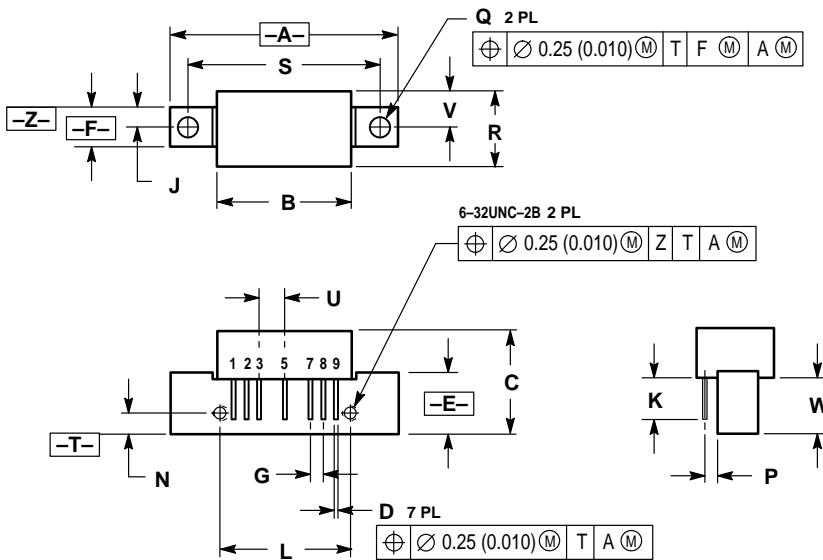
ABSOLUTE MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|----------------------------------|-----------|-------------|------|
| RF Voltage Input (Single Tone) | V_{in} | +70 | dBmV |
| DC Supply Voltage | V_{CC} | +28 | Vdc |
| Operating Case Temperature Range | T_C | -20 to +100 | °C |
| Storage Temperature Range | T_{stg} | -40 to +100 | °C |

ELECTRICAL CHARACTERISTICS ($V_{CC} = 24$ Vdc, $T_A = +30^\circ\text{C}$, 75 Ω system unless otherwise noted)

| Characteristic | Symbol | Min | Typ | Max | Unit |
|--|-------------------|--------------|------------|--------------|------|
| Frequency Range | BW | 40 | — | 600 | MHz |
| Power Gain 50 MHz 600 MHz | G_p | 19.5 19.8 | 20 20.1 | 20.5 21.5 | dB |
| Slope 40 – 600 MHz | S | 0 | 0.2 | 1.5 | dB |
| Gain Flatness (40 – 600 MHz, Peak to Valley) | — | — | 0.3 | 0.6 | dB |
| Return Loss — Input/Output ($Z_0 = 75$ Ohms) 40 – 600 MHz | IRL/ORL | 18 | — | — | dB |
| Composite Second Order — Intermodulation Distortion ($V_{out} = +44$ dBmV/ch., Worst Case) 87-Channel FLAT | CSO ₈₇ | — | -65 | -63 | dBc |
| Cross Modulation Distortion ($V_{out} = +44$ dBmV/ch., FM = 55 MHz) 87-Channel FLAT | XMD ₈₇ | — | -67 | -65 | dBc |
| Composite Triple Beat ($V_{out} = +44$ dBmV/ch., Worst Case) 87-Channel FLAT | CTB ₈₇ | — | -68 | -63 | dBc |
| Noise Figure 50 MHz 600 MHz | NF | — — | 4.5 5.5 | 5.5 6.5 | dB |
| DC Current ($V_{DC} = 24 \pm 0.5$ Vdc, $T_C = 30^\circ\text{C}$) | I_{DC} | 380 | 435 | 460 | mA |

PACKAGE DIMENSIONS




- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: INCH.

| DIM | INCHES | | MILLIMETERS | |
|-----|-----------|-----------|-------------|-------|
| | MIN | MAX | MIN | MAX |
| A | — | 1.775 | — | 45.08 |
| B | — | 1.085 | — | 27.56 |
| C | — | 0.840 | — | 21.34 |
| D | 0.018 | 0.022 | 0.46 | 0.56 |
| E | 0.465 | 0.510 | 11.81 | 12.95 |
| F | 0.300 | 0.325 | 7.62 | 8.25 |
| G | 0.100 BSC | 2.54 BSC | | |
| J | 0.156 BSC | 3.96 BSC | | |
| K | 0.315 | 0.355 | 8.00 | 8.50 |
| L | 1.00 BSC | 25.40 BSC | | |
| N | 0.165 BSC | 4.10 BSC | | |
| P | 0.100 BSC | 2.54 BSC | | |
| Q | 0.148 | 0.168 | 3.76 | 4.27 |
| R | — | 0.595 | — | 15.11 |
| S | 1.500 BSC | 38.10 BSC | | |
| U | 0.200 BSC | 5.08 BSC | | |
| V | 0.280 BSC | 7.11 BSC | | |
| W | 0.435 | 0.450 | 11.05 | 11.43 |

- STYLE 1:
1. RF INPUT
 2. GROUND
 3. GROUND
 4. DELETED
 5. VDC
 6. DELETED
 7. GROUND
 8. GROUND
 9. RF OUTPUT

**CASE 714-06
ISSUE K**

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MOTOROLA



MHW6205-6A/D

