

The RF Line CATV Amplifier Module

Features

- Specified for 77- and 110-Channel Loading
- Excellent Distortion Performance
- Silicon Bipolar Transistor Technology
- Unconditionally Stable Under All Load Conditions

Applications

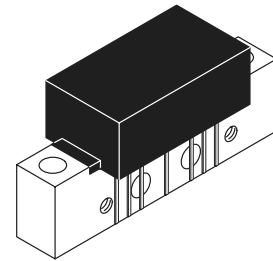
- CATV Systems Operating in the 40 to 750 MHz Frequency Range
- Input Stage Amplifier in Optical Nodes, Line Extenders and Trunk Distribution Amplifiers for CATV Systems
- Driver Amplifier in Linear General Purpose Applications
- Output Stage Amplifier on Applications Requiring Low Power Dissipation

Description

- 24 Vdc Supply, 40 to 750 MHz, CATV Forward Amplifier

MHW7222B

**750 MHz
22.7 dB GAIN
110-CHANNEL
CATV AMPLIFIER**



CASE 1302-01, STYLE 1

MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|----------------------------------|-----------|-------------|------|
| DC Supply Voltage | V_{CC} | +28 | Vdc |
| RF Input Voltage (Single Tone) | V_{in} | +70 | dBmV |
| 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, $T_C = +30^\circ\text{C}$, 75 Ω system unless otherwise noted)

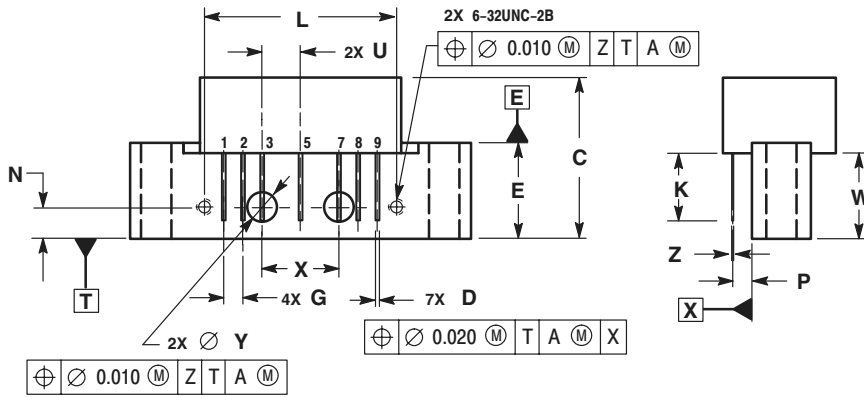
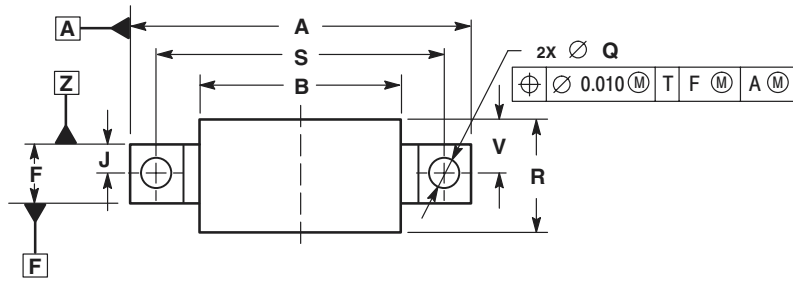
| Characteristic | Symbol | Min | Typ | Max | Unit |
|---|---------------------------|--------------|--------------|--------------|--------|
| Frequency Range | BW | 40 | — | 750 | MHz |
| Power Gain f = 50 MHz f = 750 MHz | G_p | 21.4 22.2 | 21.9 22.7 | 22.4 23.2 | dB |
| Slope (f = 40-750 MHz) | S | 0.2 | 0.7 | 1.2 | — |
| Gain Flatness (Peak To Valley) (f = 40-750 MHz) | G_F | — | 0.4 | 0.6 | — |
| Input/Output Return Loss @ f = 40 MHz | IRL/ORL | 20 | 25 | — | dB |
| Derate Return Loss @ f > 40 MHz | RLD | — | — | 0.006 | dB/MHz |
| Composite Second Order ($V_{out} = +40$ dBmV/ch; 110 Channels) ($V_{out} = +44$ dBmV/ch; 77 Channels) | CSO_{110} CSO_{77} | — — | -67 -67 | -60 -60 | dBc |

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

| Characteristic | Symbol | Min | Typ | Max | Unit |
|--|---|--------|------------|------------|------|
| Cross Modulation Distortion ($V_{out} = +40 \text{ dBmV/ch}$, 110-Channel @ $F_m = 55.25 \text{ MHz}$) ($V_{out} = +44 \text{ dBmV/ch}$, 77-Channel @ $F_m = 55.25 \text{ MHz}$) | XMD ₁₁₀ XMD ₇₇ | — — | -63 -59 | -60 -56 | dBc |
| Composite Triple Beat ($V_{out} = +40 \text{ dBmV/ch}$, 110-Channels, Worst Case) ($V_{out} = +44 \text{ dBmV/ch}$, 77-Channels, Worst Case) | CTB ₁₁₀ CTB ₇₇ | — — | -64 -65 | -61 -62 | dBc |
| Noise Figure $f = 50 \text{ MHz}$ $f = 750 \text{ MHz}$ | NF | — — | 3.7 5 | 4.5 6.5 | dB |
| DC Current | I_{DC} | 180 | 220 | 240 | mA |

NOTES

PACKAGE DIMENSIONS



- NOTES:
 1. DIMENSIONS ARE IN INCHES.
 2. INTERPRET DIMENSIONS AND TOLERANCES PER ASME Y14.5M, 1994.

| DIM | INCHES | | MILLIMETERS | |
|-----|-----------|-------|-------------|--------|
| | MIN | MAX | MIN | MAX |
| A | --- | 1.775 | --- | 45.085 |
| B | --- | 1.085 | --- | 27.559 |
| C | --- | 0.840 | --- | 21.336 |
| D | 0.015 | 0.021 | 0.381 | 0.533 |
| E | 0.465 | 0.510 | 11.811 | 12.954 |
| F | 0.300 | 0.325 | 7.62 | 8.255 |
| G | 0.100 BSC | | 2.540 BSC | |
| J | 0.156 BSC | | 3.962 BSC | |
| K | 0.315 | 0.355 | 8.001 | 9.017 |
| L | 1.000 BSC | | 25.400 BSC | |
| N | 0.165 BSC | | 4.191 BSC | |
| P | 0.100 BSC | | 2.540 BSC | |
| Q | 0.148 | 0.168 | 3.759 | 4.267 |
| R | --- | 0.600 | --- | 15.24 |
| S | 1.500 BSC | | 38.100 BSC | |
| U | 0.200 BSC | | 5.080 BSC | |
| V | --- | 0.250 | --- | 6.350 |
| W | 0.435 | --- | 11.049 | --- |
| X | 0.400 BSC | | 10.160 BSC | |
| Y | 0.152 | 0.163 | 3.861 | 4.140 |
| Z | 0.009 | 0.011 | 0.229 | 0.279 |

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

CASE 1302-01 ISSUE B

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