



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

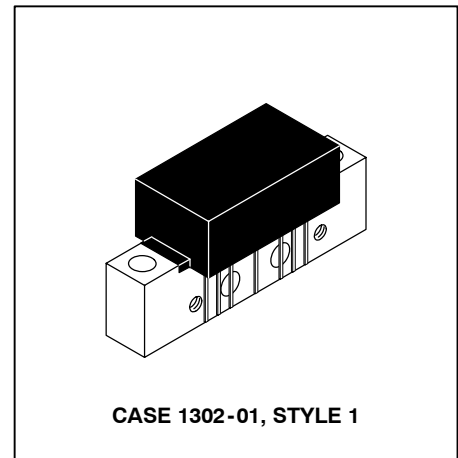
- CATV Systems Operating in the 40 to 750 MHz Frequency Range
- Input Stage Amplifier in Optical Nodes, Line Extenders and Trunk Distribution Amplifiers for CATV Systems
- Driver Amplifier in Linear General Purpose Applications
- Output Stage Amplifier on Applications Requiring Low Power Dissipation

Description

- 24 Vdc Supply, 40 to 750 MHz, CATV Forward Amplifier Module
- Replaced MHW7222B. There are no form, fit or function changes with this part replacement.
- RoHS Compliant

MHW7222BN

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



ARCHIVE INFORMATION

ARCHIVE INFORMATION

Table 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 |

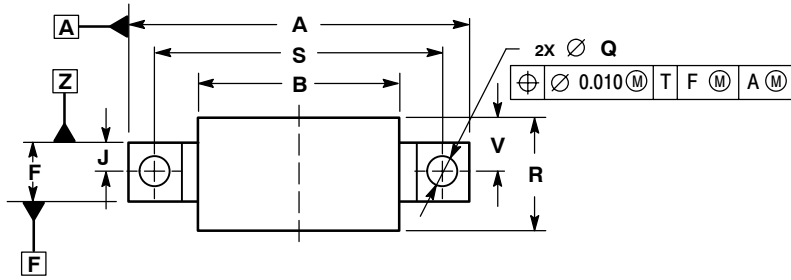
Table 2. Electrical Characteristics ($V_{CC} = 24$ Vdc, $T_C = +30^\circ\text{C}$, 75 Ω system unless otherwise noted)

| 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 |

Table 2. Electrical Characteristics ($V_{CC} = 24 \text{ Vdc}$, $T_C = +30^\circ\text{C}$, 75Ω system unless otherwise noted) **(continued)**

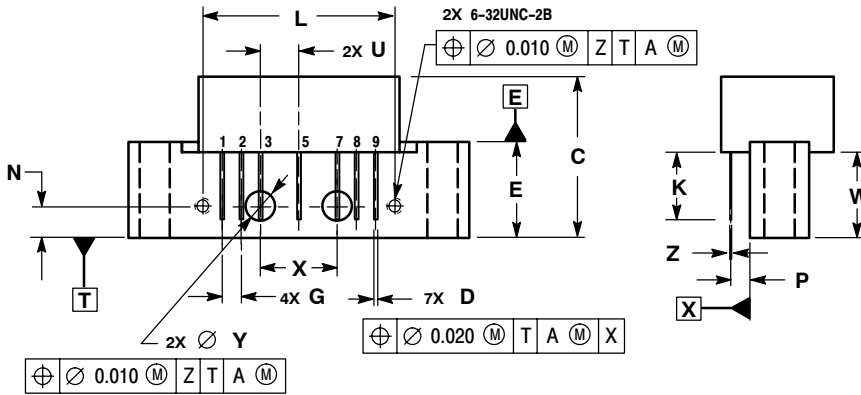
| Characteristic | Symbol | Min | Typ | Max | Unit |
|--|---|--------|--------------|--------------|------|
| Cross Modulation Distortion ($V_{out} = +40 \text{ dBmV/ch}$, 110-Channel @ $F_m = 55.25 \text{ MHz}$) ($V_{out} = +44 \text{ dBmV/ch}$, 77-Channel @ $F_m = 55.25 \text{ MHz}$) | XMD ₁₁₀ XMD 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 MHz f = 750 MHz | NF | — — | 3.7 5 | 4.5 6.5 | dB |
| DC Current | I _{DC} | 180 | 220 | 240 | mA |

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 E**

How to Reach Us:

Home Page:
www.freescale.com

E-mail:
support@freescale.com

USA/Europe or Locations Not Listed:
Freescale Semiconductor
Technical Information Center, CH370
1300 N. Alma School Road
Chandler, Arizona 85224
+1-800-521-6274 or +1-480-768-2130
support@freescale.com

Europe, Middle East, and Africa:
Freescale Halbleiter Deutschland GmbH
Technical Information Center
Schatzbogen 7
81829 Muenchen, Germany
+44 1296 380 456 (English)
+46 8 52200080 (English)
+49 89 92103 559 (German)
+33 1 69 35 48 48 (French)
support@freescale.com

Japan:
Freescale Semiconductor Japan Ltd.
Headquarters
ARCO Tower 15F
1-8-1, Shimo-Meguro, Meguro-ku,
Tokyo 153-0064
Japan
0120 191014 or +81 3 5437 9125
support.japan@freescale.com

Asia/Pacific:
Freescale Semiconductor Hong Kong Ltd.
Technical Information Center
2 Dai King Street
Tai Po Industrial Estate
Tai Po, N.T., Hong Kong
+800 2666 8080
support.asia@freescale.com

For Literature Requests Only:
Freescale Semiconductor Literature Distribution Center
P.O. Box 5405
Denver, Colorado 80217
1-800-441-2447 or 303-675-2140
Fax: 303-675-2150
LDCForFreescaleSemiconductor@hibbertgroup.com

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