



# CATV Amplifier Module

## Features

- Specified for up to 132-Channel Loading
- Excellent Distortion Performance
- Superior Gain, Return Loss and DC Current Stability over Temperature
- Silicon Bipolar Transistor Technology
- Unconditionally Stable Under All Load Conditions

## Applications

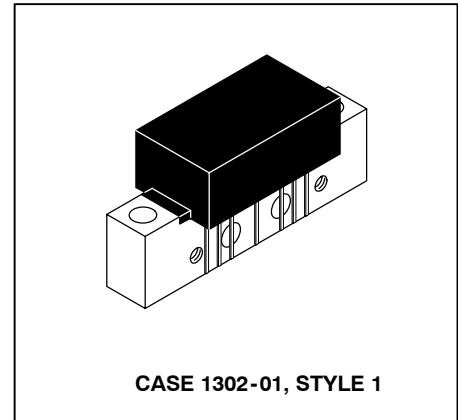
- CATV Systems Operating in the 40 to 870 MHz Frequency Range
- Single Module High Gain Line Amplifier in Cable TV Distribution System

## Description

- 24 Vdc Supply, 40 to 870 MHz, CATV High Gain Forward Amplifier Module
- Replaced MHW8342. There are no form, fit or function changes with this part replacement.
- RoHS Compliant

**MHW8342N**

**870 MHz  
 35.5 dB GAIN  
 132-CHANNEL  
 CATV AMPLIFIER MODULE**



**Table 1. Maximum Ratings**

| Rating                           | Symbol    | Value        | Unit |
|----------------------------------|-----------|--------------|------|
| RF Voltage Input (Single Tone)   | $V_{in}$  | +55          | 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   |

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

| Characteristic                             | Symbol | Min  | Typ  | Max  | Unit |
|--|--------|------|------|------|------|
| Frequency Range                            | BW     | 40   | —    | 870  | MHz  |
| Power Gain                                 | $G_p$  | 33.2 | 34   | 34.8 | dB   |
|  |        | 34   | 35.5 | 37   |      |
| Slope                                      | S      | 0.5  | 1.5  | 2.75 | dB   |
| Gain Flatness (Peak To Valley)             | $G_F$  | —    | 0.3  | 0.8  | dB   |
| Return Loss — Input<br>( $Z_0 = 75$ Ohms)  | IRL    |      |      |      | dB   |
|  |        | 22   | 28   | —    |      |
|  |        | 18   | 25   | —    |      |
|  |        | 16   | 22   | —    |      |
|  |        | 14   | 19   | —    |      |
| Return Loss — Output<br>( $Z_0 = 75$ Ohms) | ORL    |      |      |      | dB   |
|  |        | 22   | 28   | —    |      |
|  |        | 19   | 25   | —    |      |
|  |        | 17   | 22   | —    |      |
|  |        | 15   | 22   | —    |      |

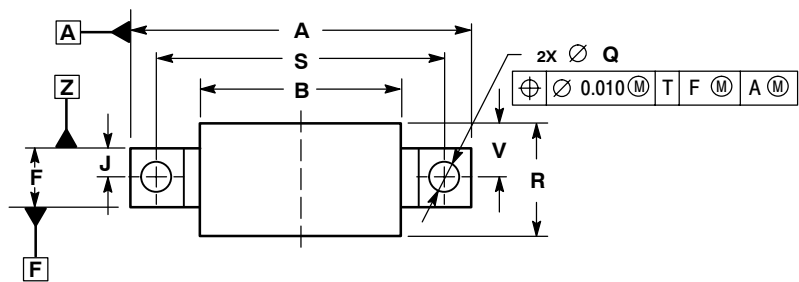
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**Table 2. Electrical Characteristics** ( $V_{CC} = 24$  Vdc,  $T_C = +30^\circ\text{C}$ , 75  $\Omega$  system unless otherwise noted) (continued)

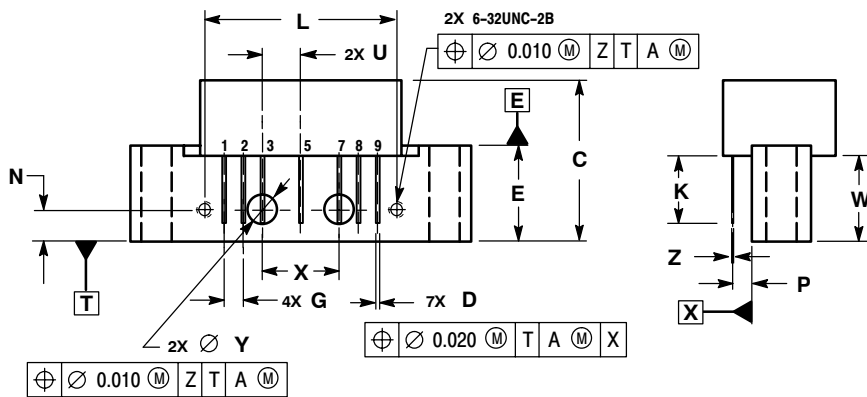
| Characteristic                          |                  | Symbol             | Min | Typ | Max | Unit |
|---|------------------|--------------------|-----|-----|-----|------|
| Composite Second Order                  |                  |                    |     |     |     | dBc  |
| ( $V_{out} = +44$ dBmV/ch., Worst Case) | 79-Channel FLAT  | CSO <sub>79</sub>  | —   | -65 | -60 |      |
| ( $V_{out} = +44$ dBmV/ch., Worst Case) | 112-Channel FLAT | CSO <sub>112</sub> | —   | -55 | -50 |      |
| ( $V_{out} = +44$ dBmV/ch., Worst Case) | 132-Channel FLAT | CSO <sub>132</sub> | —   | -48 | -44 |      |
| Cross Modulation Distortion             |                  |                    |     |     |     | dBc  |
| ( $V_{out} = +44$ dBmV, FM = 55.25 MHz) | 79-Channel FLAT  | XMD <sub>79</sub>  | —   | -63 | -60 |      |
| ( $V_{out} = +44$ dBmV, FM = 55.25 MHz) | 112-Channel FLAT | XMD <sub>112</sub> | —   | -56 | -52 |      |
| ( $V_{out} = +44$ dBmV, FM = 55.25 MHz) | 132-Channel FLAT | XMD <sub>132</sub> | —   | -56 | -50 |      |
| Composite Triple Beat                   |                  |                    |     |     |     | dBc  |
| ( $V_{out} = +44$ dBmV/ch., Worst Case) | 79-Channel FLAT  | CTB <sub>79</sub>  | —   | -64 | -62 |      |
| ( $V_{out} = +44$ dBmV/ch., Worst Case) | 112-Channel FLAT | CTB <sub>112</sub> | —   | -54 | -51 |      |
| ( $V_{out} = +44$ dBmV/ch., Worst Case) | 132-Channel FLAT | CTB <sub>132</sub> | —   | -50 | -46 |      |
| Noise Figure                            | 50 MHz           | NF                 | —   | 3.5 | 4.5 | dB   |
|   | 550 MHz          |                    | —   | 4.5 | —   |      |
|   | 870 MHz          |                    | —   | 5.5 | 6.5 |      |
| DC Current                              |                  | $I_{DC}$           | 310 | 325 | 350 | 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

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