



# CATV Amplifier Module

## Features

- Specified for 77-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

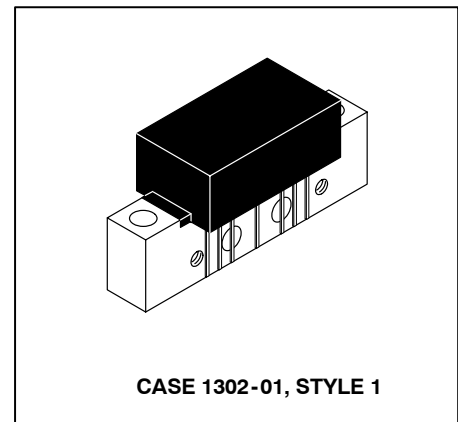
- CATV Systems Operating in the 40 to 550 MHz Frequency Range
- Single Module High Gain Line Amplifier in Cable TV Distribution System

## Description

- 24 Vdc Supply, 40 to 550 MHz, CATV Forward Amplifier Module
- Replaced MHW6342T. There are no form, fit or function changes with this part replacement.
- RoHS Compliant

**MHW6342TN**

**550 MHz  
 35.2 dB GAIN  
 77-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   |

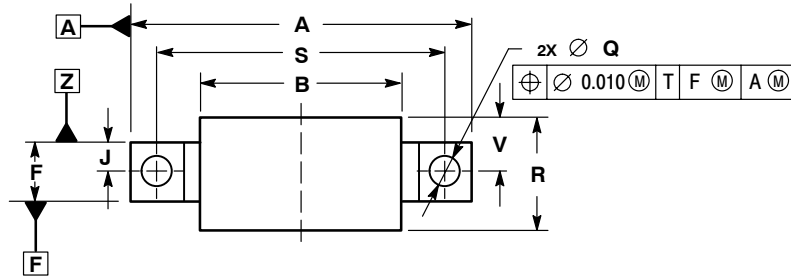
**Table 2. Electrical Characteristics** ( $V_{CC} = 24$  Vdc,  $T_C = +30^\circ\text{C}$ , 75  $\Omega$  system unless otherwise noted)

| Characteristic  | Symbol                                 | Min          | Typ          | Max       | Unit |
|---|--|--------------|--------------|-----------|------|
| Frequency Range   | BW                                     | 40           | —            | 550       | MHz  |
| Power Gain  | $G_p$                                  | 33.5<br>34.5 | 34.5<br>35.2 | 35.5<br>— | dB   |
| Slope   | S                                      | 0            | 0.7          | 2         | dB   |
| Gain Flatness (Peak To Valley)  | $G_F$                                  | —            | 0.3          | 0.8       | dB   |
| Return Loss — Input/Output<br>( $Z_o = 75$ Ohms)  | IRL/ORL                                | 18<br>16     | —<br>—       | —<br>—    | dB   |
| Second Order Intermodulation Distortion<br>( $V_{out} = +46$ dBmV per ch., Ch 2, M13, M22)<br>( $V_{out} = +44$ dBmV per ch., Ch 2, M30, M39) | IMD                                    | —<br>—       | -80<br>-74   | —<br>—    | dBc  |
| Cross Modulation Distortion<br>( $V_{out} = +46$ dBmV per ch.)<br>( $V_{out} = +44$ dBmV per ch.)   | XMD <sub>60</sub><br>XMD <sub>77</sub> | —<br>—       | -62<br>-63   | —<br>-57  | dBc  |

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

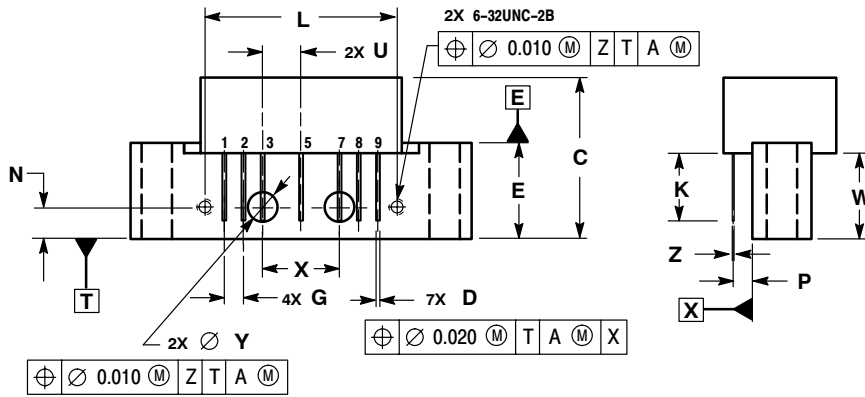
| Characteristic  | Symbol                                 | Min    | Typ          | Max       | Unit |
|---|--|--------|--------------|-----------|------|
| Composite Triple Beat<br>( $V_{out} = +46$ dBmV per ch.)      60-Channel FLAT<br>( $V_{out} = +44$ dBmV per ch.)      77-Channel FLAT | CTB <sub>60</sub><br>CTB <sub>77</sub> | —<br>— | - 64<br>- 63 | —<br>- 57 | dBc  |
| Composite Second Order<br>( $V_{out} = +46$ dBmV/ch, 60-Channel FLAT)<br>( $V_{out} = +44$ dBmV/ch, 77-Channel FLAT)                  | CSO <sub>60</sub><br>CSO <sub>77</sub> | —<br>— | - 70<br>- 65 | —<br>- 57 | dBc  |
| Noise Figure      550 MHz   | NF                                     | —      | 5.5          | 6.5       | dB   |
| DC Current  | I <sub>DC</sub>                        | —      | 310          | 340       | 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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