

# CATV Amplifier Module

## Features

- Specified for 6- and 10-Channel Loading
- Excellent Distortion Performance
- Low Power Consumption
- Capable of Handling Multiple Channels in the Return Path with Good Distortion Performance
- Silicon Bipolar Transistor Technology
- Unconditionally Stable Under All Load Conditions

## Applications

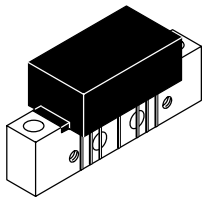
- CATV Systems Operating in the 5 to 65 MHz Frequency Range
- Specified for Use as a Return Path Amplifier for Low-Split 2-Way Cable TV Systems

## Description

- 24 Vdc Supply, 5 to 65 MHz, CATV Reverse Amplifier Module
- Replaced MHW1304LA. There are no form, fit or function changes with this part replacement.
- RoHS Compliant

**MHW1304LAN**

**5-65 MHz, 30.8 dB, 10-CHANNEL  
CATV LOW CURRENT  
AMPLIFIER MODULE**



**CASE 1302-01, STYLE 1**

**Table 1. Maximum Ratings**

| Parameter                        | Symbol    | Value       | Unit |
|----------------------------------|-----------|-------------|------|
| DC Supply Voltage                | $V_{CC}$  | +28         | Vdc  |
| RF Input Voltage (Single Tone)   | $V_{in}$  | +60         | 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  $\Omega$  system, unless otherwise noted)

| Characteristic                                                     | Symbol     | Min  | Typ  | Max  | Unit |
|--------------------------------------------------------------------|------------|------|------|------|------|
| Bandwidth All                                                      | BW         | 5    | —    | 65   | MHz  |
| Power Gain (f = 5 MHz)                                             | $G_p$      | 30   | 30.8 | 31.2 | dB   |
| Slope (5-65 MHz)                                                   | S          | -0.2 | —    | 0.5  | dB   |
| Gain Flatness (Peak To Valley) (5-65 MHz)                          | $G_F$      | —    | —    | 0.5  | dB   |
| Return Loss — Input/Output (@ f = 5-65 MHz)                        | IRL/ORL    | 20   | —    | —    | dB   |
| Composite Second Order ( $V_{out} = +50$ dBmV per Ch., Worst Case) |            |      |      |      | dBc  |
| 6-Channel FLAT                                                     | $CSO_6$    | —    | -73  | -68  |      |
| 10-Channel FLAT                                                    | $CSO_{10}$ | —    | -70  | -65  |      |

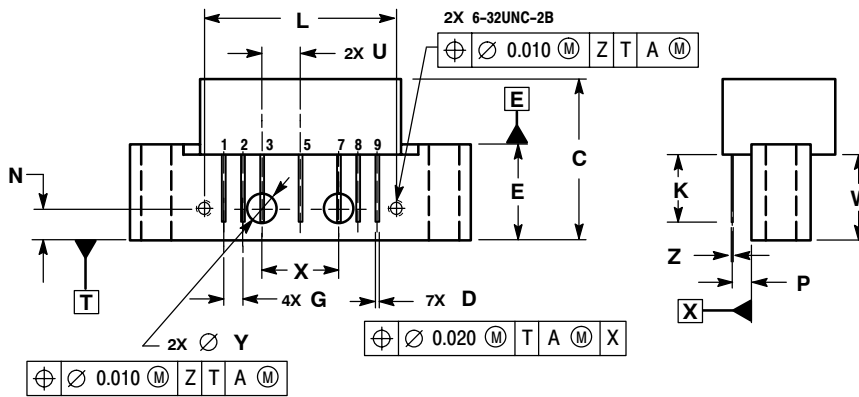
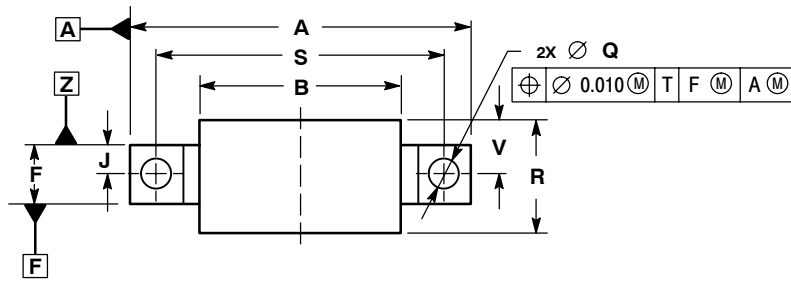
**Table 2. Electrical Characteristics** ( $V_{CC} = 24 \text{ Vdc}$ ,  $T_C = 30^\circ\text{C}$ ,  $75 \Omega$  system, unless otherwise noted) **(continued)**

| Characteristic                                                                     | Symbol     | Min | Typ  | Max  | Unit |
|------------------------------------------------------------------------------------|------------|-----|------|------|------|
| Cross Modulation Distortion<br>( $V_{out} = +50 \text{ dBmV}$ per Ch., Worst Case) |            |     |      |      | dBc  |
| 6-Channel FLAT                                                                     | $XMD_6$    | —   | - 67 | - 64 |      |
| 10-Channel FLAT                                                                    | $XMD_{10}$ | —   | - 61 | - 58 |      |
| Composite Triple Beat<br>( $V_{out} = +50 \text{ dBmV}$ per Ch., Worst Case)       |            |     |      |      | dBc  |
| 6-Channel FLAT                                                                     | $CTB_6$    | —   | - 76 | - 74 |      |
| 10-Channel FLAT                                                                    | $CTB_{10}$ | —   | - 67 | - 64 |      |
| Noise Figure<br>( $f = 5\text{-}65 \text{ MHz}$ )                                  | NF         | —   | 5    | 5.7  | dB   |
| DC Current                                                                         | $I_{DC}$   | 85  | 95   | 110  | mA   |

ARCHIVE INFORMATION

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# PACKAGE DIMENSIONS



| 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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