

## The RF Line CATV Amplifier Module

### Features

- Specified for up to 112-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

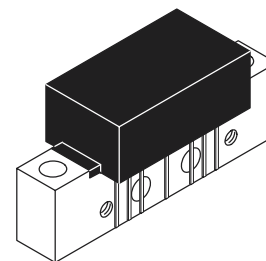
- CATV Systems Operating in the 40 to 750 MHz Frequency Range
- Single Module High Gain Line Amplifier in Cable TV Distribution System

### Description

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

**MHW7342**

**750 MHz  
35.2 dB GAIN  
112-CHANNEL  
CATV AMPLIFIER MODULE**



CASE 1302-01, STYLE 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   |

### 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                   | —                    | 750              | MHz  |
| Power Gain<br>50 MHz<br>750 MHz                                                                     | $G_p$  | 33.2<br>33.8         | 34<br>35.2           | 34.8<br>36       | dB   |
| Slope<br>40-750 MHz                                                                                 | S      | 0.3                  | 1.2                  | 2.25             | dB   |
| Gain Flatness (Peak To Valley)                                                                      | $G_F$  | —                    | 0.3                  | 0.8              | dB   |
| Return Loss — Input<br>( $Z_o = 75$ Ohms)<br>40-80 MHz<br>80-320 MHz<br>320-640 MHz<br>640-750 MHz  | IRL    | 22<br>18<br>16<br>14 | 28<br>25<br>22<br>19 | —<br>—<br>—<br>— | dB   |
| Return Loss — Output<br>( $Z_o = 75$ Ohms)<br>40-80 MHz<br>80-240 MHz<br>240-640 MHz<br>640-750 MHz | ORL    | 22<br>19<br>17<br>15 | 28<br>25<br>22<br>22 | —<br>—<br>—<br>— | dB   |

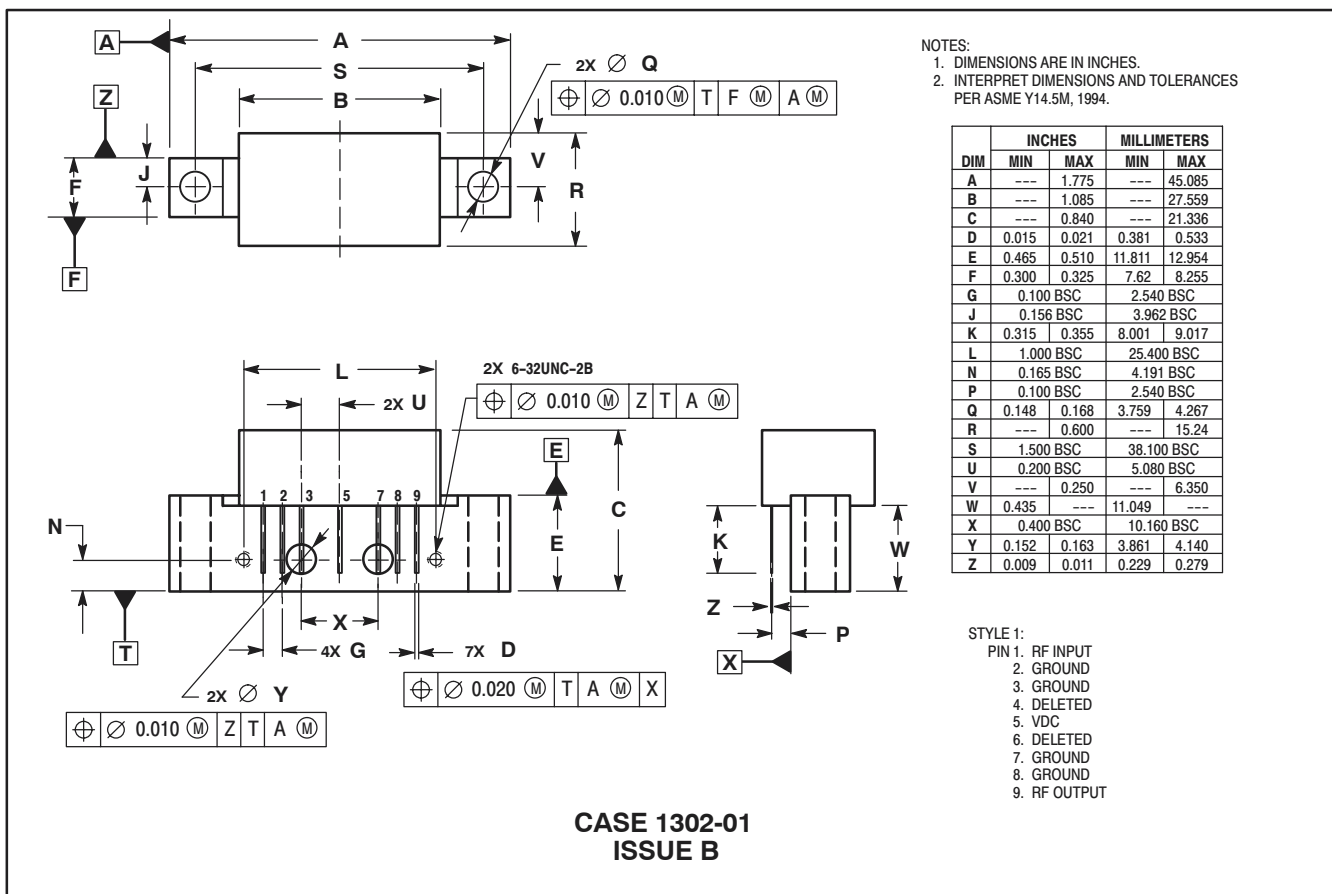
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**ELECTRICAL CHARACTERISTICS — continued** ( $V_{CC} = 24 \text{ Vdc}$ ,  $T_C = +30^\circ\text{C}$ ,  $75 \Omega$  system unless otherwise noted)

| Characteristic                                                                  |                  | Symbol      | Min | Typ | Max | Unit |
|---------------------------------------------------------------------------------|------------------|-------------|-----|-----|-----|------|
| Composite Second Order<br>( $V_{out} = +44 \text{ dBmV/ch.}$ , Worst Case)      | 79-Channel FLAT  | $CSO_{79}$  | —   | -65 | -57 | dBc  |
|                                                                                 | 112-Channel FLAT | $CSO_{112}$ | —   | -55 | -50 |      |
| Cross Modulation Distortion<br>( $V_{out} = +44 \text{ dBmV}$ , FM = 55.25 MHz) | 79-Channel FLAT  | $XMD_{79}$  | —   | -63 | -60 | dBc  |
|                                                                                 | 112-Channel FLAT | $XMD_{112}$ | —   | -56 | -53 |      |
| Composite Triple Beat<br>( $V_{out} = +44 \text{ dBmV/ch.}$ , Worst Case)       | 79-Channel FLAT  | $CTB_{79}$  | —   | -64 | -62 | dBc  |
|                                                                                 | 112-Channel FLAT | $CTB_{112}$ | —   | -54 | -52 |      |
| Noise Figure                                                                    | 50 MHz           | NF          | —   | 3.5 | 4.5 | dB   |
|                                                                                 | 550 MHz          |             | —   | 4.5 | —   |      |
|                                                                                 | 750 MHz          |             | —   | 5   | 6   |      |
| DC Current                                                                      |                  | $I_{DC}$    | 310 | 325 | 350 | mA   |

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