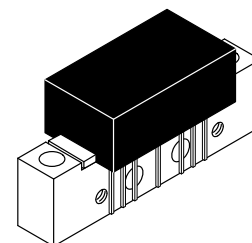


# The RF Line 110-Channel (750 MHz) CATV Line Extender Amplifier

**MHW7242A**

- Specified for 110-Channel Performance
- Broadband Power Gain — @  $f = 40-750$  MHz  
     $G_p = 24$  dB (Typ)
- Broadband Noise Figure  
     $NF = 7$  dB (Max) @ 750 MHz
- Superior Gain, Return Loss and DC Current Stability with Temperature
- All Gold Metallization
- 7 GHz  $f_T$  Ion-Implanted Transistors
- Improved CTB Performance

**24 dB GAIN  
750 MHz  
110-CHANNEL  
CATV AMPLIFIER**



**CASE 714Y-03, STYLE 1**

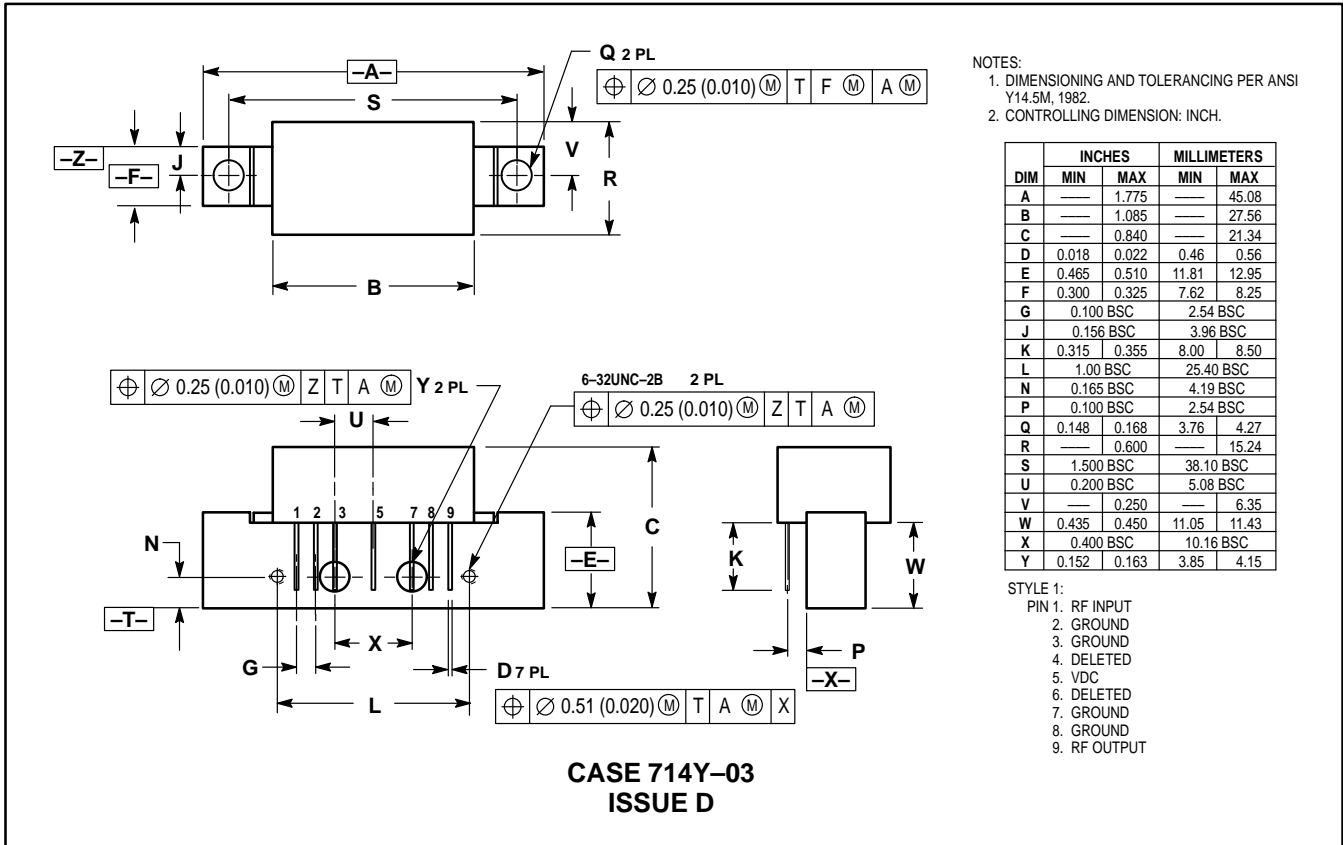
## MAXIMUM RATINGS

| 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   | $G_p$                                   | 23.2<br>24 | 24<br>24.7 | 24.8<br>26 | dB           |
| Slope  | S                                       | 0          | 0.6        | 1.5        | dB           |
| Gain Flatness (40-750 MHz, Peak To Valley)   | —                                       | —          | 0.4        | 0.6        | dB           |
| Return Loss — Input/Output ( $Z_0 = 75$ Ohms)  | IRL/ORL                                 | 20<br>—    | —<br>—     | —<br>0.007 | dB<br>dB/MHz |
| Composite Second Order<br>( $V_{out} = +40$ dBmV/ch., Worst Case)<br>( $V_{out} = +44$ dBmV/ch., Worst Case)               | CSO <sub>110</sub><br>CSO <sub>77</sub> | —<br>—     | -69<br>-78 | -62<br>—   | dBc          |
| Cross Modulation Distortion @ Ch 2<br>( $V_{out} = +40$ dBmV/ch., FM = 55 MHz)<br>( $V_{out} = +44$ dBmV/ch., FM = 55 MHz) | XMD <sub>110</sub><br>XMD <sub>77</sub> | —<br>—     | -63<br>-58 | -61<br>—   | dBc          |
| Composite Triple Beat<br>( $V_{out} = +40$ dBmV/ch., Worst Case)<br>( $V_{out} = +44$ dBmV/ch., Worst Case)                | CTB <sub>110</sub><br>CTB <sub>77</sub> | —<br>—     | -67<br>-64 | -63<br>—   | dBc          |
| Noise Figure   | NF                                      | —<br>—     | 4.8<br>5.5 | 5.5<br>7   | dB           |
| DC Current   | $I_{DC}$                                | 280        | 318        | 350        | mA           |

## PACKAGE DIMENSIONS



- NOTES:  
 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.  
 2. CONTROLLING DIMENSION: INCH.

| DIM | INCHES    |       | MILLIMETERS |       |
|-----|-----------|-------|-------------|-------|
|     | MIN       | MAX   | MIN         | MAX   |
| A   | —         | 1.775 | —           | 45.08 |
| B   | —         | 1.085 | —           | 27.56 |
| C   | —         | 0.840 | —           | 21.34 |
| D   | 0.018     | 0.022 | 0.46        | 0.56  |
| E   | 0.465     | 0.510 | 11.81       | 12.95 |
| F   | 0.300     | 0.325 | 7.62        | 8.25  |
| G   | 0.100 BSC | —     | 2.54 BSC    | —     |
| J   | 0.156 BSC | —     | 3.96 BSC    | —     |
| K   | 0.315     | 0.355 | 8.00        | 8.50  |
| L   | 1.00 BSC  | —     | 25.40 BSC   | —     |
| N   | 0.165 BSC | —     | 4.19 BSC    | —     |
| P   | 0.100 BSC | —     | 2.54 BSC    | —     |
| Q   | 0.148     | 0.168 | 3.76        | 4.27  |
| R   | —         | 0.600 | —           | 15.24 |
| S   | 1.500 BSC | —     | 38.10 BSC   | —     |
| U   | 0.200 BSC | —     | 5.08 BSC    | —     |
| V   | —         | 0.250 | —           | 6.35  |
| W   | 0.435     | 0.450 | 11.05       | 11.43 |
| X   | 0.400 BSC | —     | 10.16 BSC   | —     |
| Y   | 0.152     | 0.163 | 3.85        | 4.15  |

- STYLE 1:  
 PIN 1. RF INPUT  
 2. GROUND  
 3. GROUND  
 4. DELETED  
 5. VDC  
 6. DELETED  
 7. GROUND  
 8. GROUND  
 9. RF OUTPUT

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