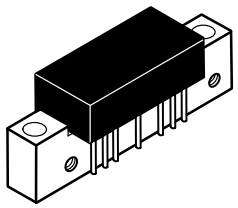
## The RF Line

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

**MHW7292**

- Specified for 110–Channel Performance
- Broadband Power Gain — @ f = 40–750 MHz
  $G_p$ = 29 dB (Typ)
- Broadband Noise Figure
  NF = 5.5 dB (Typ) @ 750 MHz
- Superior Gain, Return Loss and DC Current Stability with Temperature
- All Gold Metallization
- 7 GHz $f_T$ Ion–Implanted Transistors

**29 dB GAIN**
**750 MHz**
**110–CHANNEL**
**CATV AMPLIFIER**



**CASE 714–06, STYLE 1**

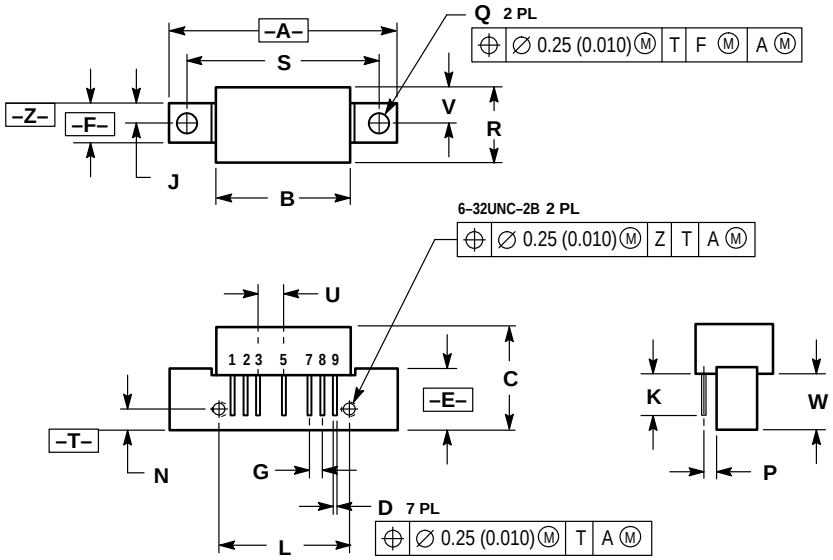
**MAXIMUM RATINGS**

| 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°C, 75 Ω system unless otherwise noted)

| Characteristic | | Symbol | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Frequency Range | | BW | 40 | — | 750 | MHz |
| Power Gain | 50 MHz<br>750 MHz | $G_p$ | 28.2<br>29 | 29<br>29.8 | 29.8<br>31 | dB |
| Slope | 40–750 MHz | S | 0 | 0.7 | 2 | dB |
| Gain Flatness (40–750 MHz, Peak to Valley) | | — | — | 0.4 | 0.8 | dB |
| Return Loss — Input/Output ($Z_0$ = 75 Ohms) | @ 40 MHz<br>@ f > 40 MHz (Derate) | IRL/ORL | 20<br>— | —<br>— | —<br>0.007 | dB<br>dB/MHz |
| Composite Second Order ($V_{out}$ = +40 dBmV/ch., Worst Case) | 110–Channel FLAT | $CSO_{110}$ | — | –70 | –60 | dBc |
| Cross Modulation Distortion @ Ch 2 ($V_{out}$ = +40 dBmV/ch., FM = 55 MHz) | 110–Channel FLAT | $XMD_{110}$ | — | –62 | –60 | dBc |
| Composite Triple Beat ($V_{out}$ = +40 dBmV/ch., Worst Case) | 110–Channel FLAT | $CTB_{110}$ | — | –62 | –60 | dBc |
| Noise Figure | 50 MHz<br>750 MHz | NF | —<br>— | —<br>6.0 | 5.5<br>6.5 | dB |
| DC Current ($V_{DC}$ = 24 V, $T_C$ = 30°C) | | $I_{DC}$ | 280 | 310 | 350 | mA |

## PACKAGE DIMENSIONS




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

| | INCHES | | MILLIMETERS | |
|---|---|---|---|---|
| DIM | 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 | | 4.10 BSC | |
| P | 0.100 BSC | | 2.54 BSC | |
| Q | 0.148 | 0.168 | 3.76 | 4.27 |
| R | —— | 0.595 | —— | 15.11 |
| S | 1.500 BSC | | 38.10 BSC | |
| U | 0.200 BSC | | 5.08 BSC | |
| V | 0.280 BSC | | 7.11 BSC | |
| W | 0.435 | 0.450 | 11.05 | 11.43 |

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

**CASE 714–06**
**ISSUE K**

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