# CATV Amplifier Module

**Features**

- 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
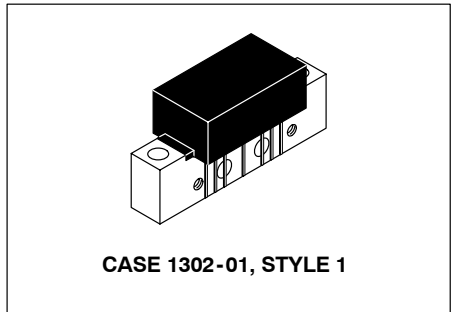
**Applications**

- CATV Systems Operating in the 5 to 75 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 75 MHz, CATV Reverse Amplifier

**MHW1304LC**

**5-75 MHz, 30.8 dB
CATV LOW CURRENT AMPLIFIER**

**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°C, 75 Ω system, unless otherwise noted)

| Characteristic | | Symbol | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Bandwidth | All | BW | 5 | — | 75 | MHz |
| Power Gain | (f = 5 MHz) | $G_p$ | 30 | 30.8 | 31.2 | dB |
| Slope | (5-75 MHz) | S | -0.2 | — | 0.5 | dB |
| Gain Flatness (Peak To Valley) | (5-75 MHz) | $G_F$ | — | — | 0.5 | dB |
| Return Loss — Input/Output | | IRL/ORL | | — | — | dB |
| | (@ f = 5-65 MHz) | | 20 | — | — | |
| | (@ f = 65-75 MHz) | | 18 | — | — | |
| Composite Second Order ($V_{out}$ = +50 dBmV per Ch., Worst Case) | | | | | | dBc |
| | 4-Channel FLAT | $CSO_4$ | — | -73 | -68 | |

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**Table 2. Electrical Characteristics** ($V_{CC}$ = 24 Vdc, $T_C$ = 30°C, 75 Ω system, unless otherwise noted) **(continued)**

| Characteristic | Symbol | Min | Typ | Max | Unit |
|---|---|---|---|---|---|
| Cross Modulation Distortion ($V_{out}$ = +50 dBmV per Ch., Worst Case)<br>4‑Channel FLAT | $XMD_4$ | — | -67 | -64 | dBc |
| Composite Triple Beat ($V_{out}$ = +50 dBmV per Ch., Worst Case)<br>4‑Channel FLAT | $CTB_4$ | — | -76 | -74 | dBc |
| Noise Figure<br>(f = 5‑75 MHz) | NF | — | 5 | 5.7 | dB |
| DC Current | $I_{DC}$ | 85 | 95 | 110 | mA |

**MHW1304LC**

## PACKAGE DIMENSIONS
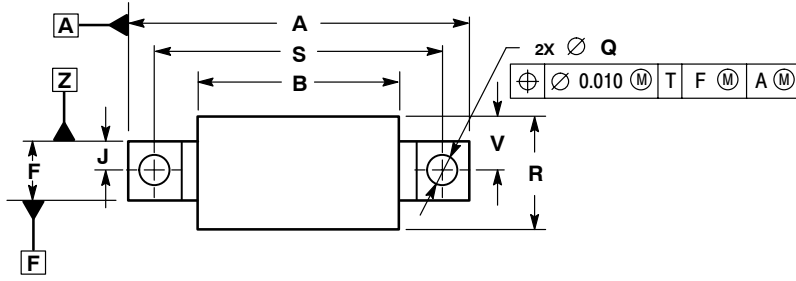


NOTES:
1. CONTROLLING DIMENSION: INCH.
2. INTERPRET DIMENSIONS AND TOLERANCES PER ASME Y14.5M, 1994.

| 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 | 7.620 | 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 | ---- | 15.240 |
| 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 |
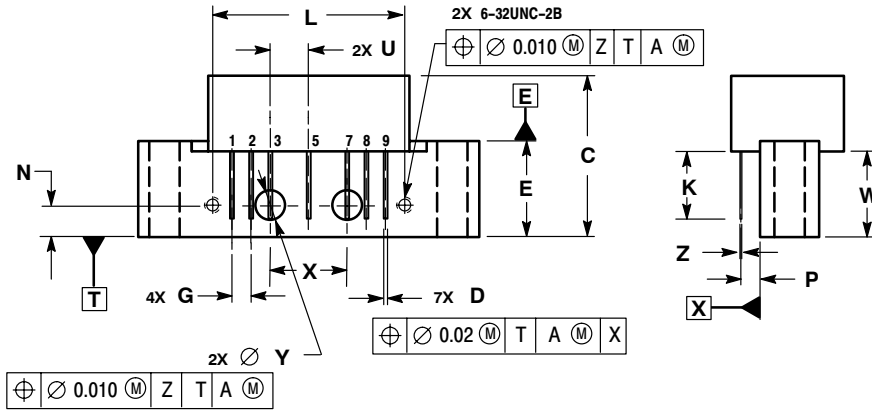
STYLE 1:
PIN 1. RF INPUT
2. GROUND
3. GROUND
4. DELETED
5. VDC
6. DELETED
7. GROUND
8. GROUND
9. RF OUTPUT

**CASE 1302-01**
**ISSUE C**

**MHW1304LC**

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