## The RF Line

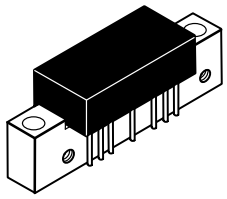
# 750 MHz CATV Conventional Hybrid Amplifier

Designed specifically for 750 MHz CATV applications. Features ion–implanted arsenic emitter transistors with an all gold metallization system.

- Supply Voltage = 24 Vdc
- 5th Generation Die Technology
- Specified for 110 Channel Performance
- Power Gain = 14.5 dB max @ f = 50 MHz
- Superior Gain, Return Loss and DC Current Stability
- All Gold Metallization

**MHW7142**

**24 Vdc**
**750 MHz**
**110 – CHANNEL**
**CATV AMPLIFIER**



**CASE 714–06, Style 1**

**MAXIMUM RATINGS**

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| DC Supply Voltage | $V_{CC}$ | +28 | Vdc |
| RF Input Voltage (Single Tone) | $V_{IN}$ | +70 | dBmV |
| Operating Case Temperature Range | $T_C$ | – 20 to +100 | °C |
| Storage Temperature Range | $T_{stg}$ | – 40 to +100 | °C |

**ELECTRICAL CHARACTERISTICS** ($V_{CC}$ = 24Vdc, $T_C$ = 25°C, 75 ohm system, unless otherwise noted)

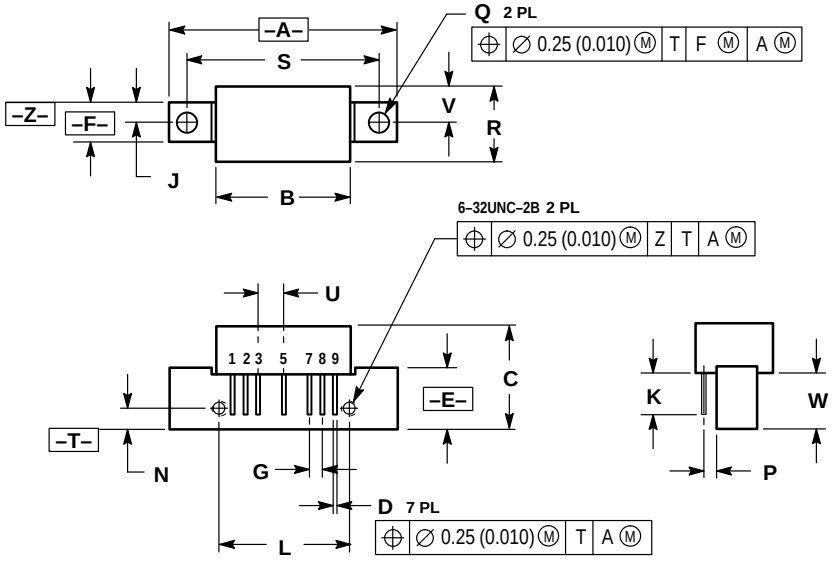
| Characteristic | | Symbol | Min | Max | Unit |
|---|---|---|---|---|---|
| Frequency | | BW | 40 | 750 | MHz |
| Power Gain | (f = 50 MHz) | Gp1 | 13.5 | 14.5 | dB |
| Power Gain | (f = 750 MHz) | Gp2 | 14.2 | 15.2 | dB |
| Slope | (f = 40 – 750 MHz) | S | 0.3 | 1.5 | dB |
| Gain Flatness | (f = 40 – 750 MHz, Peak to Valley) | $G_f$ | — | 0.6 | dB |
| Return Loss | (@ f = 40 MHz) | RL | 20 | — | dB |
| Return Loss Derate | (@ f > 40 MHz) | RLD | — | .006 | dB/MHz |
| Composite Second Order | ($V_{out}$ = +40 dBmV/ch) | $CSO_{110}$ | — | –60 | dBc |

(continued)

**ELECTRICAL CHARACTERISTICS — continued** ($V_{CC}$ = 24Vdc, $T_C$ = 25°C, 75 ohm system, unless otherwise noted)

| Characteristic | | Symbol | Min | Max | Unit |
|---|---|---|---|---|---|
| Cross Modulation | ($V_{out}$ = +40 dBmV/ch, FM = 55.25 MHz) | $XMD_{110}$ | — | –66 | dBc |
| Composite Triple Beat | ($V_{out}$ = +40 dBmV/ch) | $CTB_{110}$ | — | –62 | dBc |
| Noise Figure | (f = 50 MHz) | $NF_1$ | — | 6.0 | dB |
| Noise Figure | (f = 750 MHz) | $NF_2$ | — | 7.5 | dB |
| DC Current | | IDC | 180 | 240 | 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**




**How to reach us:**
**USA / EUROPE / Locations Not Listed**: Motorola Literature Distribution; P.O. Box 5405, Denver, Colorado 80217. 303–675–2140 or 1–800–441–2447

**Mfax**™: RMFAX0@email.sps.mot.com – TOUCHTONE 602–244–6609
– US & Canada ONLY 1–800–774–1848

**INTERNET**: http://motorola.com/sps

**JAPAN**: Nippon Motorola Ltd.: SPD, Strategic Planning Office, 4–32–1, Nishi–Gotanda, Shinagawa–ku, Tokyo 141, Japan. 81–3–5487–8488

**ASIA / PACIFIC**: Motorola Semiconductors H.K. Ltd.; 8B Tai Ping Industrial Park, 51 Ting Kok Road, Tai Po, N.T., Hong Kong. 852–26629298