

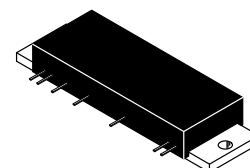
The RF Line

Microwave Bipolar Power Amplifier

MHW1915

15 W
1930–1990 MHz
RF POWER AMPLIFIER

- Specified 26 Volt Characteristics:
 - RF Output Power: 15 Watts
 - RF Power Gain: 31 dB Typ
 - Efficiency: 25% Min
- 50 Ohm Input/Output System



CASE 301AK-01, STYLE 1

MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|----------------------------------|-----------|-------------|------|
| DC Supply Voltage | V_S | 28 | Vdc |
| DC Bias Voltage | V_B | 5.5 | Vdc |
| RF Input Power | P_{in} | 17 | dBm |
| RF Output Power | P_{out} | 23 | W |
| Operating Case Temperature Range | T_C | -30 to +85 | °C |
| Storage Temperature Range | T_{stg} | -30 to +100 | °C |

ELECTRICAL CHARACTERISTICS ($V_S = 26$ Vdc; $V_{BIAS} = 5$ Vdc; $T_C = +25^\circ\text{C}$; 50 Ω system)

| Characteristic | Symbol | Min | Typ | Max | Unit |
|--|--------------------|---|-----|------|-------|
| Frequency Range | BW | 1930 | — | 1990 | MHz |
| Total Quiescent Current ($P_{in} = 0$ mW) | I_q | — | 300 | — | mA |
| Power Gain ($P_{out} = 15$ W) (1) | G_p | 29 | 31 | — | dB |
| Output Power at 1 dB Compression | P_{1dB} | 15 | — | — | Watts |
| Efficiency (1 dB Compression Power) | η | 25 | — | — | % |
| Input VSWR ($P_{out} = 15$ W) | VSWR _{IN} | — | — | 2:1 | — |
| Ripple ($P_{out} = 15$ W) | R_p | — | 1 | — | dB |
| Load Mismatch Stress ($P_{out} = 15$ W; Load VSWR = 2:1; at All Phase Angles) | ψ | No Degradation in Output Power | | | |
| Stability ($P_{out} = 1$ mW – 15 W; Load VSWR = 2:1; at All Phase Angles except Harmonics) | — | All Spurious Outputs More than 60 dB Below Desired Signal | | | |
| Stability ($P_{out} = 1$ mW – 15 W; Load VSWR = 2:1; $f = 1930 - 1990$ MHz; at All Phase Angles) | — | All Spurious Outputs Typically Lower than -36 dBm | | | |

(1) Adjust P_{in} for specified P_{out} .

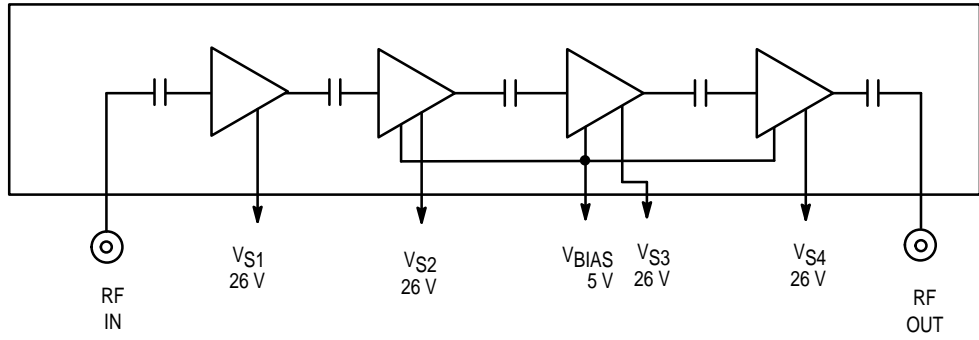
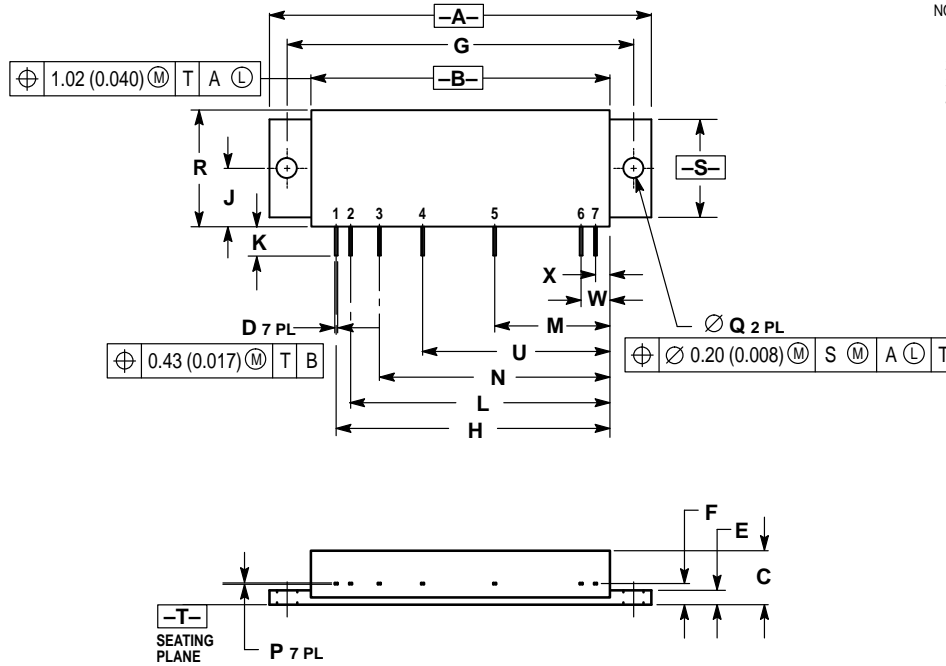


Figure 1. Internal Diagram

PACKAGE DIMENSIONS




- NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
 2. CONTROLLING DIMENSION: INCH.
 3. DIMENSION F TO CENTER OF LEADS.
 4. REF INDICATES NON-CONTROLLED DIMENSION FOR REFERENCE USE ONLY.

| DIM | INCHES | | MILLIMETERS | |
|-----|---------------|-------|---------------|-------|
| | MIN | MAX | MIN | MAX |
| A | 2.638 | 2.662 | 67.01 | 67.61 |
| B | 2.075 REF | | 52.71 REF | |
| C | — | 0.375 | — | 9.53 |
| D | 0.017 | 0.023 | 0.43 | 0.58 |
| E | 0.098 | 0.114 | 2.49 | 2.90 |
| F | 0.134 | 0.156 | 3.40 | 3.96 |
| G | 2.405 BSC REF | | 61.09 BSC REF | |
| H | 1.900 BSC | | 48.26 BSC | |
| J | 0.390 | 0.430 | 9.91 | 10.92 |
| K | 0.175 | 0.217 | 4.45 | 5.51 |
| L | 1.800 BSC | | 45.72 BSC | |
| M | 0.800 BSC | | 20.32 BSC | |
| N | 1.600 BSC | | 40.64 BSC | |
| P | 0.010 REF | | 0.25 REF | |
| Q | 0.133 | 0.147 | 3.38 | 3.73 |
| R | 0.800 | 0.820 | 20.32 | 20.83 |
| S | 0.668 | 0.692 | 16.97 | 17.58 |
| U | 1.300 BSC | | 33.02 BSC | |
| W | 0.200 BSC | | 5.08 BSC | |
| X | 0.100 BSC | | 2.54 BSC | |

- STYLE 1:
- PIN 1. RF INPUT
 - DC TERMINAL, Vs1
 - DC TERMINAL, Vs2
 - DC TERMINAL, Vb
 - DC TERMINAL, Vs3
 - DC TERMINAL, Vs4
 - RF OUTPUT

**CASE 301AK-01
ISSUE B**

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