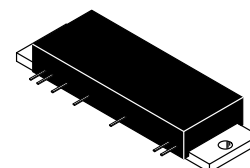


## The RF Line Microwave Bipolar Power Amplifier

- Specified 26 Volt Characteristics:
  - RF Output Power: 15 Watts
  - RF Power Gain: 34 dB Typ
  - Efficiency: 24% Min
- 50 Ohm Input/Output Impedances

**MHW1916**

**15 W  
1930–1990 MHz  
RF POWER AMPLIFIER**



CASE 301AK-01, STYLE 1

### MAXIMUM RATINGS (Flange Temperature = 25°C)

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 +95	°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 $\Omega$ 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)	$G_p$	31	34	38	dB
Output Power at 1 dB Compression	$P_{1dB}$	15	—	—	Watts
Efficiency (1 dB Compression Power)	$\eta$	24	27	—	%
Input VSWR ( $P_{out} = 15$ W)	VSWR <sub>IN</sub>	—	—	2:1	
Ripple ( $P_{out} = 15$ W)	$R_p$	—	1	2	dB
Gain Variation at any given Frequency over Output Power (1 mW $\leq P_{out} \leq 15$ W)	$\Delta G_p$	—	1	2.4	dB
Load Mismatch Stress ( $P_{out} = 15$ W; Load VSWR = 3:1; at All Phase Angles)	$\psi$	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  $P_{out}$ .

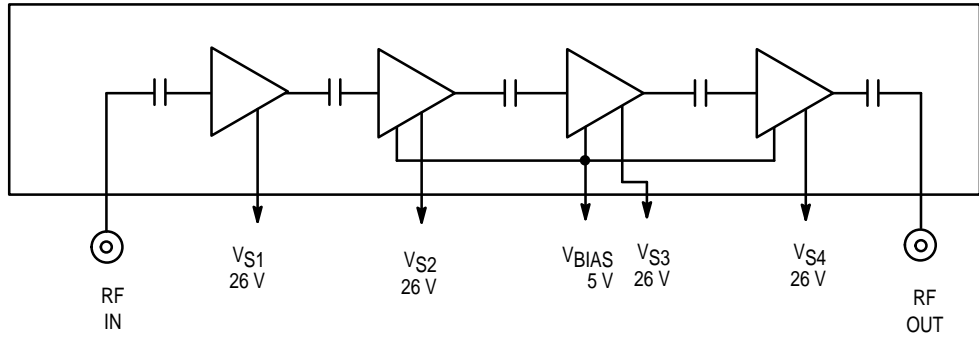
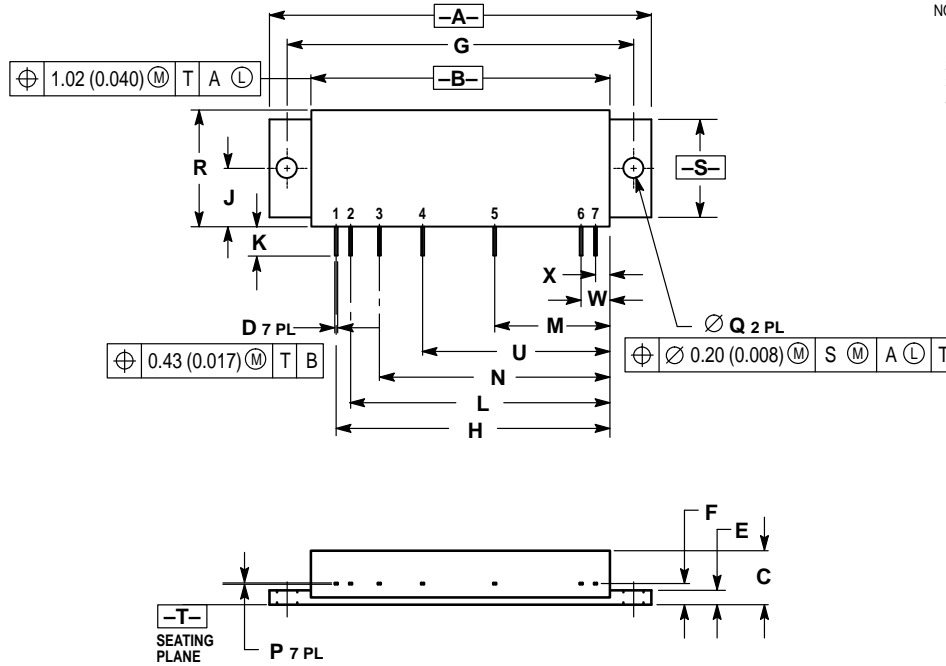


Figure 1. Internal Diagram

# 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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