

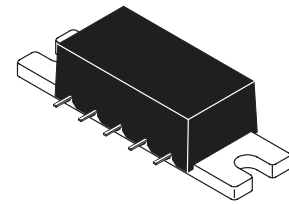
## The RF Line UHF Linear Amplifier

Designed for linear amplifier applications in 50 Ohm systems requiring wide bandwidth, low noise, and low distortion. Internal DC blocking on RF ports reduces external component count and related circuit area. This hybrid utilizes push-pull circuit design.

- Supply Voltage: 15 Vdc
- Third Order Intercept: 41.5 dBm Typ
- Power Gain: 17.5 dB Typ (@ 900 MHz)
- Excellent Phase Linearity and Group Delay Characteristics
- 50 Ohm Input/Output Impedances

**MHL8115**

**1 W, 17.5 dB  
50–1000 MHz  
LINEAR AMPLIFIERS**



**CASE 448-02, STYLE 2**

### ABSOLUTE MAXIMUM RATINGS (T<sub>C</sub> = 25°C unless otherwise noted)

Rating	Symbol	Value	Unit
DC Supply Voltage	V <sub>CC</sub>	18	Vdc
RF Input Power	P <sub>in</sub>	+20	dBm
Storage Temperature Range	T <sub>stg</sub>	-40 to +100	°C
Operating Case Temperature Range	T <sub>C</sub>	-20 to +100	°C

### ELECTRICAL CHARACTERISTICS (T<sub>C</sub> = +25°C; V<sub>CC</sub> = 15 Vdc; 50 Ω System)

Characteristic	Symbol	Min	Typ	Max	Unit
Supply Current	I <sub>DC</sub>	—	700	760	mA
Power Gain (f = 900 MHz)	P <sub>G</sub>	16.5	17.5	—	dB
Gain Flatness (f = 50–1000 MHz)	FL	—	1.0	2.0	dB
Power Output @ 1 dB Comp. (f = 900 MHz)	P <sub>out</sub> 1 dB	29	30	—	dBm
Third Order Intercept (f <sub>1</sub> = 879 MHz, f <sub>2</sub> = 884 MHz)	ITO	40.5	41.5	—	dBm
Input/Output VSWR (f = 50–900 MHz) (f = 900–1000 MHz)	VSWR	—	—	2.0:1 2.6:1	
Noise Figure, Broadband (f = 500 MHz) (f = 1000 MHz)	NF	—	7.5 8.5	8.5 9.5	dB
Second Harmonic Distortion (P <sub>o</sub> = 100 mW, f <sub>2H</sub> = 1000 MHz)	d <sub>so</sub>	—	-55	-45	dB
Second Order Intermodulation Distortion (P <sub>o</sub> = 2.75 dBm, f <sub>1</sub> = 373 MHz, f <sub>2</sub> = 450 MHz)	IM2	—	-65	-60	dB
Intermodulation Distortion, 3 Tone (f = 860 MHz, P <sub>sync</sub> = 200 mW)	IM3	—	-60	—	dB

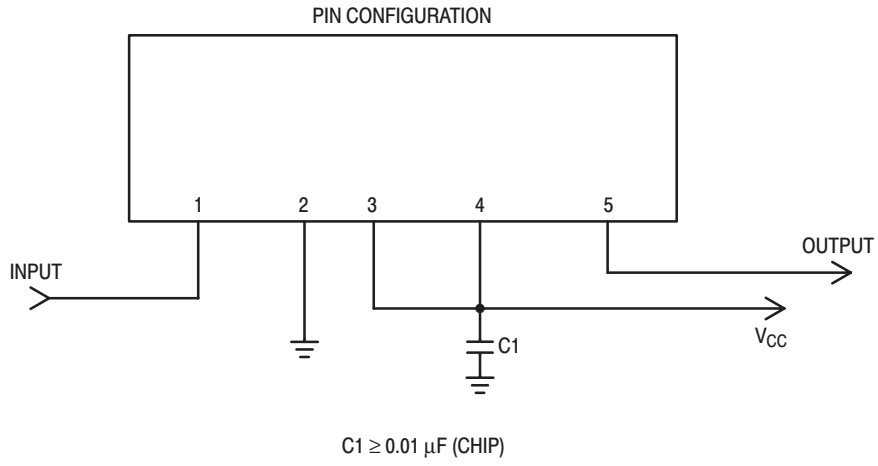
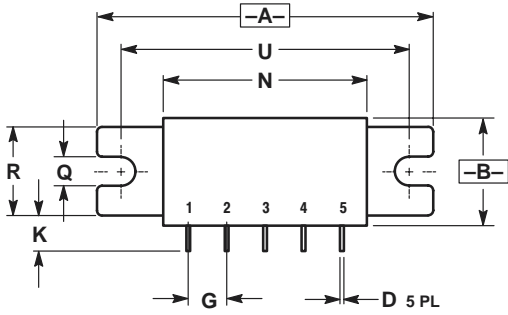
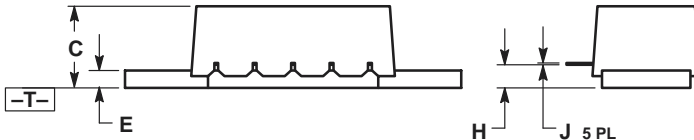


Figure 1. MHL8115 External Connections

# PACKAGE DIMENSIONS



$\oplus 0.25 (0.010) \text{ (M) T A (M) B (M)}$



$\oplus 0.38 (0.015) \text{ (M) T A (M) B (M)}$

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


DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	1.740	1.760	44.20	44.70
B	0.550	0.570	13.97	14.49
C	0.405	0.445	10.29	11.30
D	0.018	0.022	0.46	0.55
E	0.085	0.095	2.16	2.41
G	0.200 BSC		5.08 BSC	
H	0.120 BSC		3.05 BSC	
J	0.009	0.011	0.23	0.28
K	0.180	0.220	4.57	5.59
N	1.045	1.075	26.54	27.30
Q	0.145	0.155	3.68	3.94
R	0.455	0.465	11.56	11.81
U	1.490	1.510	37.85	38.35

- STYLE 2:  
 PIN 1. RF INPUT  
 2. GROUND  
 3. VCC1  
 4. VCC2  
 5. RF OUTPUT

CASE 448-02  
 ISSUE A

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