

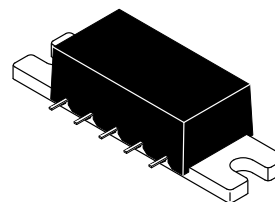
## The RF Line UHF Linear Amplifier

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 (MHL8115)  
28 Vdc (MHL8118)
- 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**  
**MHL8118**

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



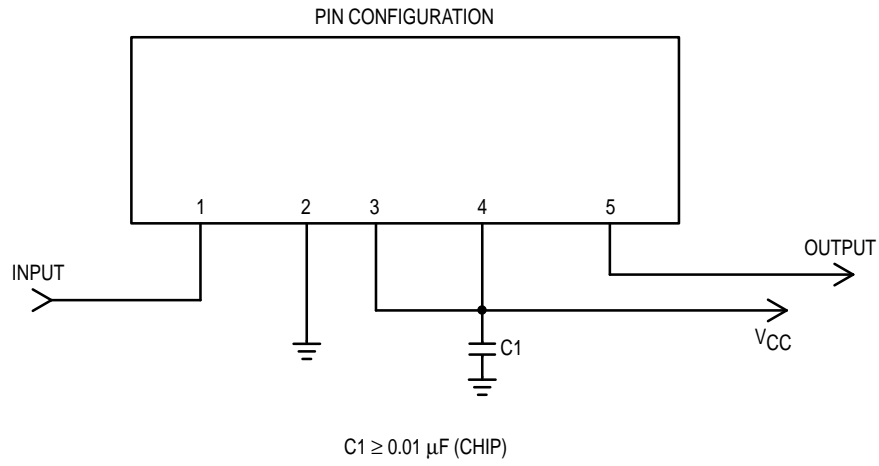
**CASE 448-02**  
**MHL8115, STYLE 2**  
**MHL8118, STYLE 1**

### ABSOLUTE MAXIMUM RATINGS ( $T_C = 25^\circ\text{C}$ unless otherwise noted)

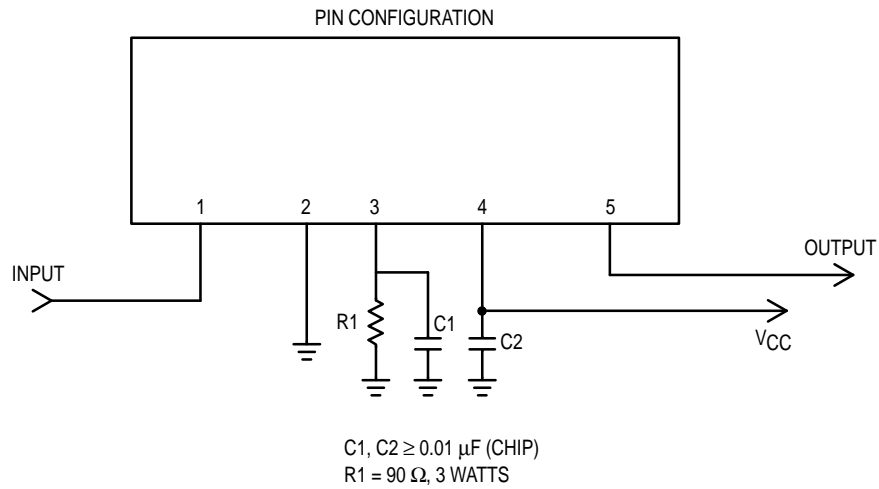
Rating	Symbol	Value	Unit
DC Supply Voltage	$V_{CC}$	18 32	Vdc
RF Input Power	$P_{in}$	+20	dBm
Storage Temperature Range	$T_{stg}$	-40 to +100	$^\circ\text{C}$
Operating Case Temperature Range	$T_C$	-20 to +100	$^\circ\text{C}$

### ELECTRICAL CHARACTERISTICS ( $T_C = +25^\circ\text{C}$ ; $V_{CC} = 15$ Vdc (MHL8115), 28 Vdc (MHL8118); 50 $\Omega$ System)

Characteristic	Symbol	Min	Typ	Max	Unit
Supply Current	$I_{DC}$	—	700 400	760 440	mA
Power Gain	$P_G$	16.5	17.5	—	dB
Gain Flatness	FL	—	1.0	2.0	dB
Power Output @ 1 dB Comp.	$P_{out}$ 1 dB	29	30	—	dBm
Third Order Intercept ( $f_1 = 879$ MHz, $f_2 = 884$ MHz)	ITO	40.5	41.5	—	dBm
Input/Output VSWR	VSWR	—	—	2.0:1 2.6:1	
Noise Figure, Broadband	NF	—	7.5 8.5	8.5 9.5	dB
Second Harmonic Distortion ( $P_O = 100$ mW, $f_{2H} = 1000$ MHz)	dso	—	-55	-45	dB
Second Order Intermodulation Distortion ( $P_O = 2.75$ dBm, $f_1 = 373$ MHz, $f_2 = 450$ MHz)	IM2	—	-65	-60	dB
Intermodulation Distortion, 3 Tone ( $f = 860$ MHz, $P_{sync} = 200$ mW)	IM3	—	-60	—	dB

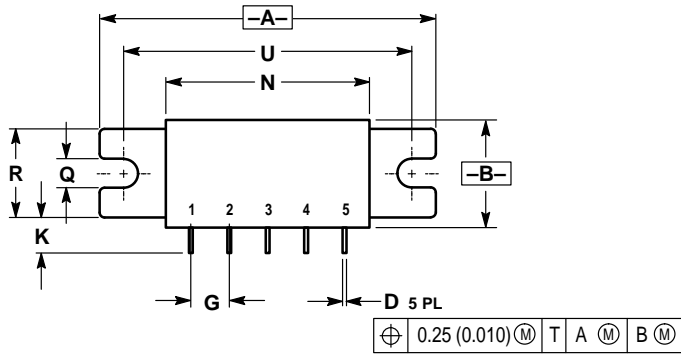


**Figure 1. MHL8115 External Connections  
(Case 448-02, Style 2)**



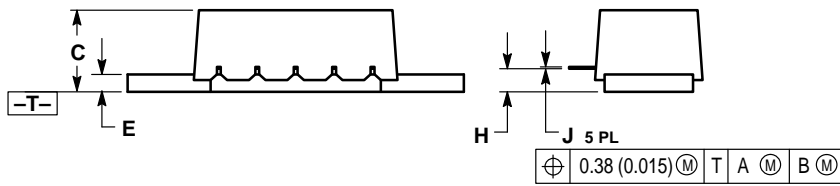
**Figure 1. MHL8118 External Connections  
(Case 448-02, Style 1)**

# PACKAGE DIMENSIONS




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

**CASE 448-02  
 ISSUE A**

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

**Mfax™:** RMFAX0@email.sps.mot.com – TOUCHTONE 602-244-6609  
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**ASIA/PACIFIC:** Motorola Semiconductors H.K. Ltd.; 8B Tai Ping Industrial Park,  
51 Ting Kok Road, Tai Po, N.T., Hong Kong. 852-26629298

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



MHL8115/D