

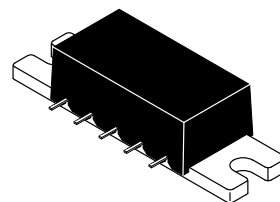
The RF Line UHF Linear Amplifier

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



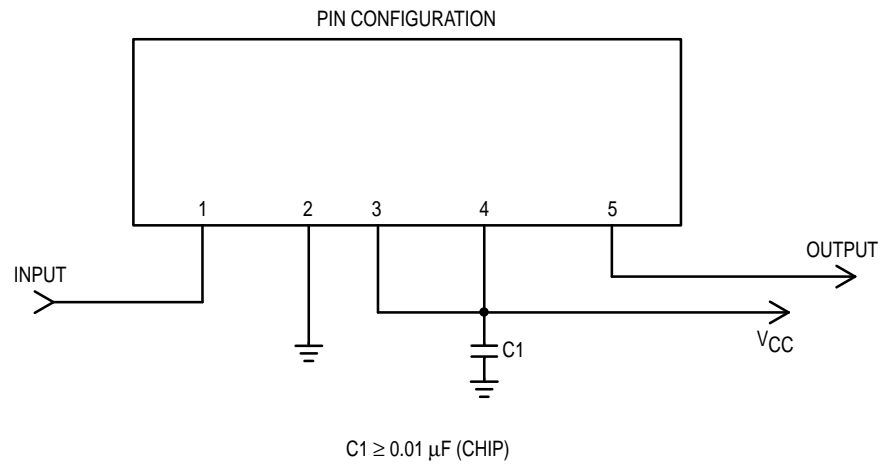
CASE 448-01
MHL8115, STYLE 2
MHL8118, STYLE 1

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

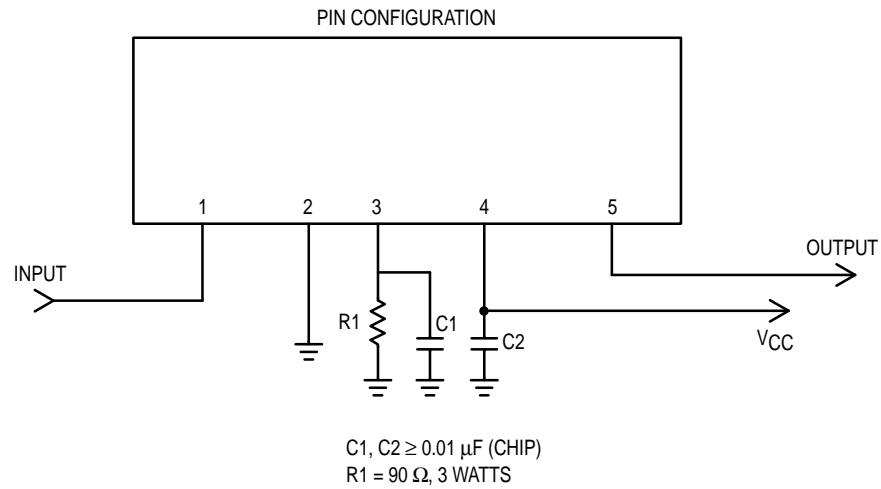
Rating	Symbol	Value	Unit
DC Supply Voltage MHL8115 MHL8118	V_{CC}	18 32	Vdc
RF Input Power	P_{in}	+20	dBm
Storage Temperature Range	T_{stg}	–40 to +100	$^\circ\text{C}$
Operating Case Temperature Range	T_C	–20 to +100	$^\circ\text{C}$

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

Characteristic	Symbol	Min	Typ	Max	Unit
Supply Current MHL8115 MHL8118	I_{DC}	— —	700 400	760 440	mA
Power Gain ($f = 900$ MHz)	P_G	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_{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 ($f = 50$ –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 ($P_O = 100$ 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

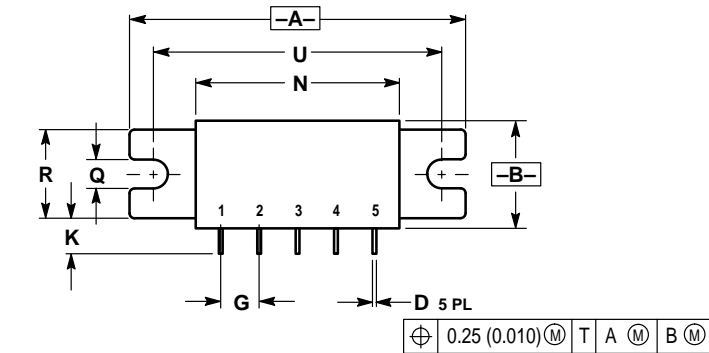


**Figure 1. MHL8115 External Connections
(Case 448-01, Style 2)**



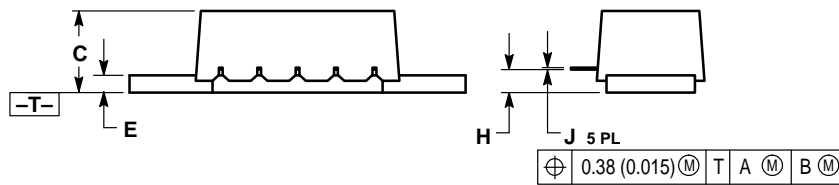
**Figure 2. MHL8118 External Connections
(Case 448-01, Style 1)**

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	0.170	0.210	4.32	5.33
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:
1. RF INPUT
 2. GROUND
 3. RESISTOR-GROUND
 4. VCC
 5. RF OUTPUT

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

**CASE 448-01
ISSUE O**

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MHL8115/D

