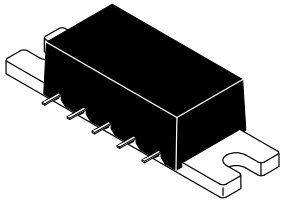
MHL8115
MHL8118

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

1 W, 17.5 dB
50 – 1000 MHz
LINEAR AMPLIFIERS



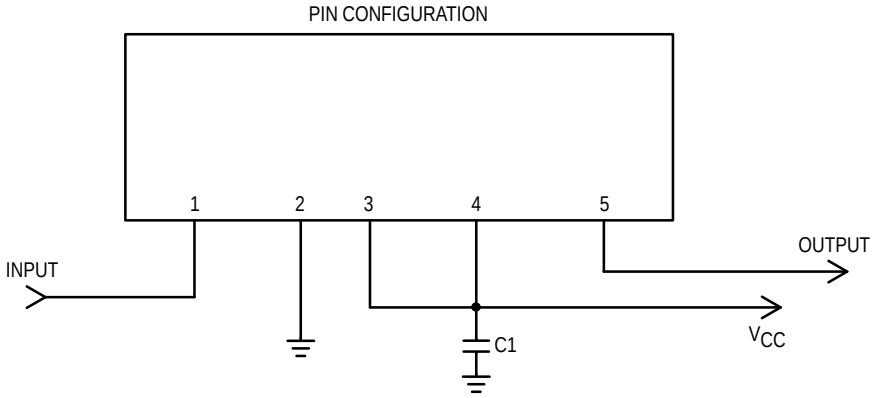
CASE 448–02
MHL8115, STYLE 2
MHL8118, STYLE 1

ABSOLUTE MAXIMUM RATINGS (T_C = 25°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	°C
Operating Case Temperature Range		T_C	–20 to +100	°C

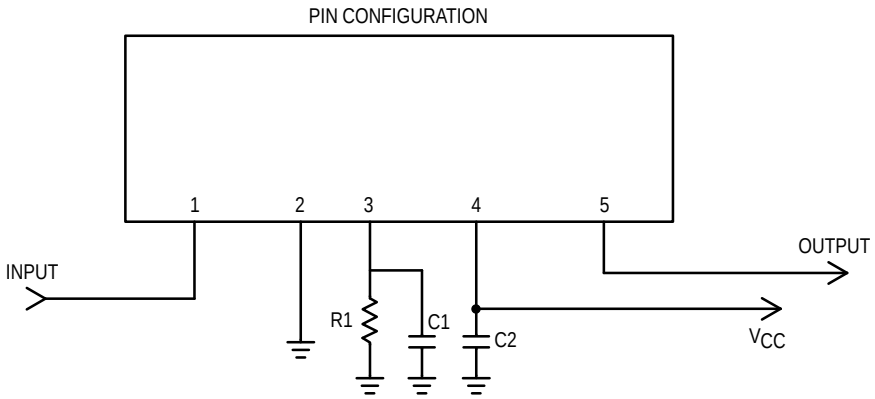
ELECTRICAL CHARACTERISTICS (T_C = +25°C; V_{CC} = 15 Vdc (MHL8115), 28 Vdc (MHL8118); 50 Ω System)

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 (f1 = 879 MHz, f2 = 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



C1 ≥ 0.01 µF (CHIP)

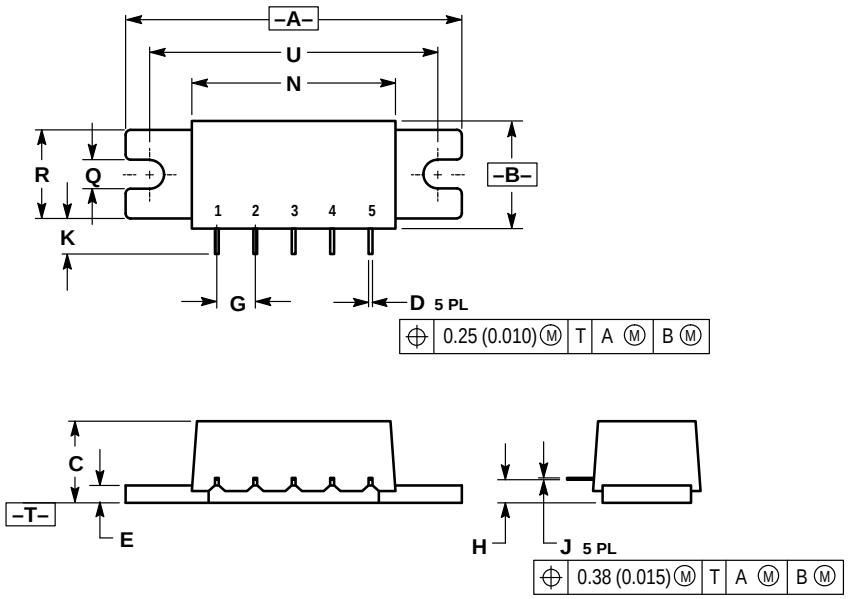
Figure 1. MHL8115 External Connections
(Case 448–02, Style 2)



C1, C2 ≥ 0.01 µF (CHIP)
R1 = 90 Ω, 3 WATTS

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.

	INCHES		MILLIMETERS	
DIM	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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