

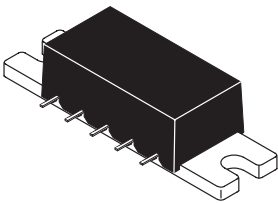
The RF Line
UHF Linear Amplifier

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: 28 Vdc
- Third Order Intercept: 38 dBm Typ
- Power Gain: 18.5 dB Typ (@ f = 900 MHz)
- Excellent Phase Linearity and Group Delay Characteristics
- 50 Ohm Input/Output Impedances

MHL8018

400 mW, 18.5 dB
40–1000 MHz
LINEAR AMPLIFIERS



CASE 448–02, STYLE 1

ABSOLUTE MAXIMUM RATINGS (T_C = 25°C unless otherwise noted)

Rating	Symbol	Value	Unit
DC Supply Voltage	V _{CC}	32	Vdc
RF Input Power	P _{in}	+14	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} = 28 Vdc; 50 Ω System)

Characteristic	Symbol	Min	Typ	Max	Unit
Supply Current	I _{DC}	—	210	240	mA
Power Gain (f = 900 MHz)	P _G	17.5	18.5	19.5	dB
Gain Flatness (f = 40–1000 MHz)	FL	—	1.0	2.0	dB
Power Output @ 1 dB Comp. (f = 900 MHz)	P _{out} 1 dB	25	26	—	dBm
Third Order Intercept (f ₁ = 879 MHz, f ₂ = 884 MHz)	ITO	37	38	—	dBm
Input/Output VSWR (f = 40–900 MHz) (f = 900–1000 MHz)	VSWR	—	—	2.0:1 2.6:1	
Noise Figure, Broadband (f = 500 MHz) (f = 1000 MHz)	NF	—	6.5 7.5	8.0 9.0	dB
Second Harmonic Distortion (P _O = 100 mW, f _{2H} = 1000 MHz)	d _{so}	—	–50	–40	dB
Second Order Intermodulation Distortion (P _O = 2.75 dBm, f ₁ = 373 MHz, f ₂ = 450 MHz)	IM2	—	—	–60	dB
Intermodulation Distortion, 3 Tone (f = 860 MHz, P _{sync} = 200 mW)	IM3	—	–60	—	dB



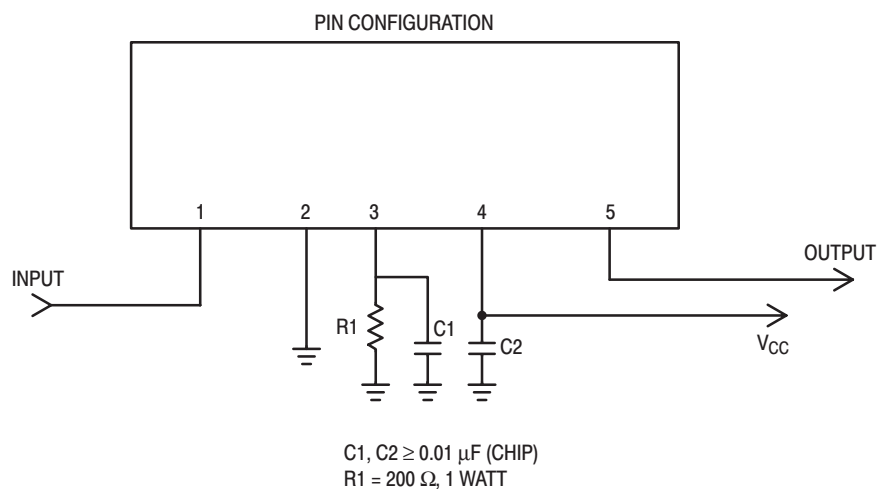
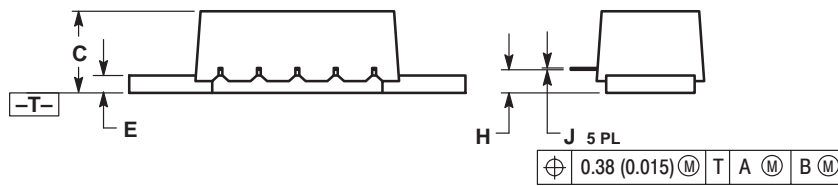
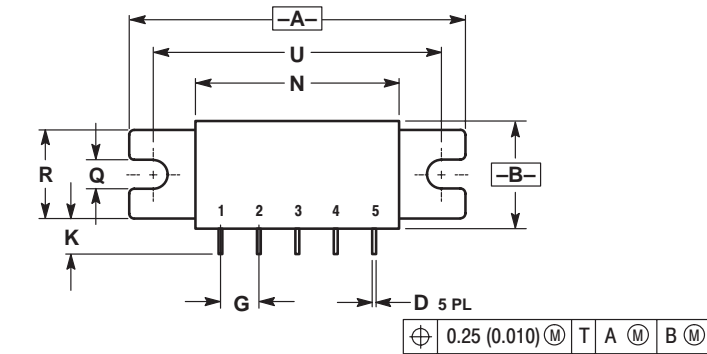


Figure 1. MHL8018 External Connections

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
 - GROUND
 - RESISTOR-GROUND
 - VCC
 - RF OUTPUT

**CASE 448-02
ISSUE A**

Motorola reserves the right to make changes without further notice to any products herein. Motorola makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Motorola assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation consequential or incidental damages. "Typical" parameters which may be provided in Motorola data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. Motorola does not convey any license under its patent rights nor the rights of others. Motorola products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the Motorola product could create a situation where personal injury or death may occur. Should Buyer purchase or use Motorola products for any such unintended or unauthorized application, Buyer shall indemnify and hold Motorola and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that Motorola was negligent regarding the design or manufacture of the part. Motorola and  are registered trademarks of Motorola, Inc. Motorola, Inc. is an Equal Opportunity/Affirmative Action Employer.

Mfax is a trademark of Motorola, Inc.

How to reach us:

USA/EUROPE/Locations Not Listed: Motorola Literature Distribution;
P.O. Box 5405, Denver, Colorado 80217. 1-303-675-2140 or 1-800-441-2447

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

Customer Focus Center: 1-800-521-6274

Mfax™: RMFAX0@email.sps.mot.com – TOUCHTONE 1-602-244-6609
Motorola Fax Back System – US & Canada ONLY 1-800-774-1848
– <http://sps.motorola.com/mfax/>

ASIA/PACIFIC: Motorola Semiconductors H.K. Ltd.; Silicon Harbour Centre,
2, Dai King Street, Tai Po Industrial Estate, Tai Po, N.T., Hong Kong.
852-26668334

HOME PAGE: <http://motorola.com/sps/>



MOTOROLA



MHL8018/D