

Surface Mount

High Reliability Mixer

TUF-R2LHSM+

Level 10 (LO Power +10 dBm) 50 to 1000 MHz



CASE STYLE: NNN150
PRICE: \$10.85 ea. QTY (1-9)

+ RoHS compliant in accordance with EU Directive (2002/95/EC)

The +Suffix has been added in order to identify RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.

Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power	50mW
IF Current	40mA

Permanent damage may occur if any of these limits are exceeded.

Pin Connections

LO	4
RF	1
IF	2
GROUND	3
CASE GROUND	3

Features

- hermetically sealed ceramic quad
- low conversion loss, 6.2 dB typ.
- excellent isolation L-R, 49 dB typ.; L-I, 44 dB typ.
- wideband, 50 to 1000 MHz
- rugged welded construction
- shielded metal case

Applications

- VHF/UHF
- cellular
- ISM/GSM

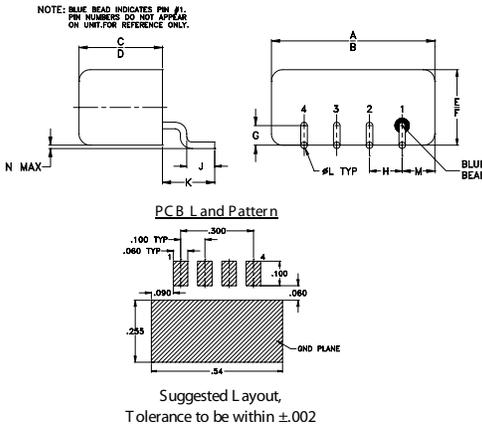
Electrical Specifications

FREQUENCY (MHz)	CONVERSION LOSS (dB)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)			IP3 at center band (dBm)										
		L	M	U	L	M	U											
50-1000	DC-1000	6.2	0.03	7.5	9.0	55	45	49	38	42	35	52	40	44	30	35	24	17

1 dB COMP.: +5 dBm typ.

L = 50-100 MHz M = 100-500 MHz U = upper range [$f_c/2$ to f_u]
m = mid band [$2f_l$ to $f_u/2$]

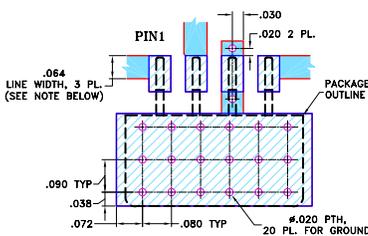
Outline Drawing



Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.50	.48	.255	.240	.23	.21	.06
12.70	12.19	6.48	6.10	5.84	5.33	1.52
H	J	K	L	M	N	wt
.100	.09	.16	.020	.09	.005	grams
2.54	2.29	4.06	0.51	2.29	0.13	1.9

Demo Board MCL PIN: TB-201 Suggested PCB Layout (PL-081)

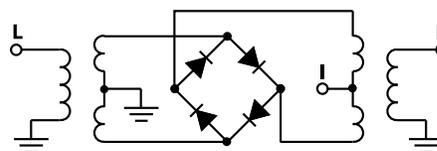


- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.030" ± 0.002"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
■ DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
■ DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Typical Performance Data

Frequency (MHz)	Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)
50.10	80.10	6.19	60.26	1.10	2.28
130.10	160.10	6.11	55.17	1.03	2.34
210.10	240.10	6.05	52.42	1.05	2.34
250.10	280.10	6.08	51.75	1.08	2.25
290.10	320.10	6.02	50.74	1.11	2.28
330.10	360.10	6.06	49.93	1.11	2.25
370.10	400.10	6.06	49.17	1.15	2.23
410.10	440.10	6.09	49.14	1.14	2.24
450.10	480.10	6.07	48.54	1.17	2.20
490.10	520.10	6.09	47.02	1.15	2.22
530.10	560.10	6.18	45.69	1.16	2.19
610.10	640.10	6.26	44.68	1.18	2.20
650.10	680.10	6.28	44.91	1.23	2.18
730.10	760.10	6.41	44.98	1.26	2.17
770.10	800.10	6.48	44.73	1.21	2.18
810.10	840.10	6.58	43.60	1.16	2.18
850.10	880.10	6.70	42.59	1.13	2.17
930.10	960.10	6.99	41.76	1.09	2.17
970.10	1000.10	7.14	41.23	1.17	2.17
1010.10	1040.10	7.16	40.78	1.21	2.15

Electrical Schematic



Mini-Circuits
ISO 9001 ISO 14001 AS 9100 CERTIFIED

For detailed performance specs & shopping online see web site

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 The Design Engineers Search Engine Provides ACTUAL Data Instantly at minicircuits.com

IF/RF MICROWAVE COMPONENTS

Notes: 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuit's applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet are subject to Mini-Circuit's standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuit's website at www.minicircuits.com/MCLStore/terms.jsp.

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