High Reliability Mixer

Level 13 (LO Power +13 dBm) 5 to 600 MHz

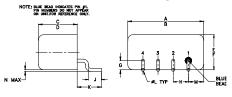
Maximum Ratings

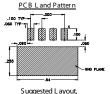
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power	50mW
IF Current	40mA
Permanent damage may occur if any o	of these limits are exceeded

Pin Connections

LO	4
RF	1
IF	2
GROUND	3
CASE GROUND	3

Outline Drawing



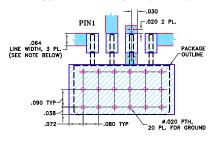


Tolerance to be within ±.002

Outline Dimensions (inch)

G	F	E	D	С	В	Α
.06	.21	.23	.240	.255	.48	.50
1.52	5.33	5.84	6.10	6.48	12.19	12.70
wt	N	M	L	K	J	Н
grams	.005	.09	.020	.16	.09	.100
1.0	0.12	2 20	0.51	4.06	2.20	2 54

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 0Z. 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

Features

- hermetically sealed ceramic quad
- low conversion loss, 6.0 dB typ.
- high L-R & L-I isolation, 40 dB typ.
- rugged welded construction
- shielded metal case

Applications

- VHF/UHF
- defense & federal communications

TUF-R1MHSM+



CASE STYLE: NNN150

+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Electrical Specifications

	UENCY Hz)			dB)	LOSS	LO-RF ISOLATION (dB)		LO-I	IP3 at center band (dBm)			
LO/RF	IF	"	m m	iu	Total	L	М	U	L	М	U	
f_L - f_U		\overline{X}	σ	Мах.	Range Max.	Typ. Min.	Typ. Min.	Typ. Min.	Typ. Min.	Typ. Min.	Typ. Min.	Тур.
5-600	DC-600	6.0	0.07	7.0	8.5	55 43	45 33	37 28	55 42	43 32	34 23	20

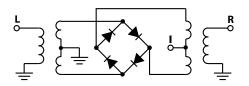
1 dB COMP.: +9 dBm typ.

 $L = low range [f_i to 10 f_i]$ $M = mid range [10 f_i to f_i/2]$ $U = upper range [f_i/2 to f_i]$ m= mid band [2 f_1 to $f_1/2$]

Typical Performance Data

	uency Hz)	Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)	
RF	LO	LO +13dBm	LO +13dBm	LO +13dBm	LO +13dBm	LO +13dBm	
4.00 6.00 8.00 10.00 50.00 101.00 131.00 211.00	34.00 36.00 38.00 40.00 80.00 131.00 161.00 241.00	6.28 6.10 5.99 5.95 5.91 5.93 5.93 5.94	54.64 54.57 54.47 54.33 49.58 47.52 45.98 43.69	53.43 53.25 53.04 52.89 47.41 45.29 43.86 42.58	1.40 1.28 1.21 1.16 1.03 1.04 1.05	2.34 2.37 2.36 2.35 2.28 2.33 2.23 2.19	
251.00	281.00	5.93	42.16	40.86	1.13	2.30	
331.00	361.00	5.97	40.35	38.43	1.16	2.27	
355.00	385.00	5.98	40.29	38.20	1.17	2.22	
419.50	449.50	6.02	38.24	35.31	1.17	2.21	
441.00	471.00	6.07	37.56	34.30	1.17	2.26	
484.00	514.00	6.12	36.97	34.19	1.20	2.27	
505.50	535.50	6.11	36.70	33.71	1.21	2.23	
527.00	557.00	6.11	36.47	33.20	1.22	2.30	
548.50	578.50	6.11	36.19	32.30	1.23	2.33	
570.00	600.00	6.08	36.00	31.73	1.23	2.23	
585.00	615.00	6.12	36.00	31.73	1.23	2.23	
600.00	630.00	6.17	35.53	30.83	1.22	2.40	

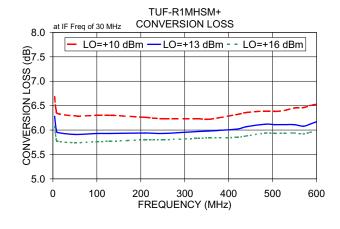
Electrical Schematic

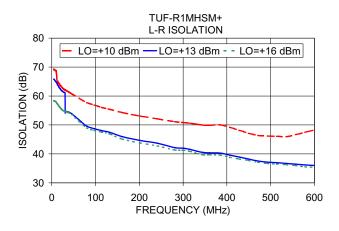


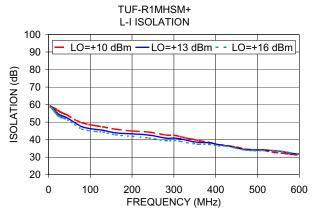
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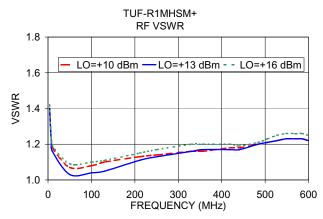
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.

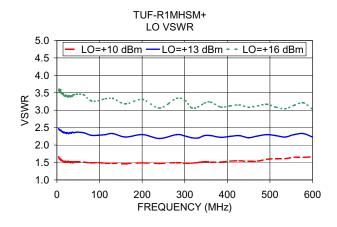
C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp

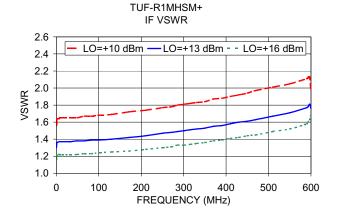












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