

Surface Mount High Reliability Mixer

TUF-R1SM+

Level 7 (LO Power +7 dBm) 5 to 600 MHz



Generic photo used for illustration purposes only
CASE STYLE: NNN150

+RoHS Compliant
The +Suffix identifies 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, 5.9 dB typ.
- excellent isolation L-R, 50 dB typ; L-I, 48 dB typ.
- rugged welded construction
- shielded metal case

Applications

- VHF/UHF
- FM radio
- defense & federal communications

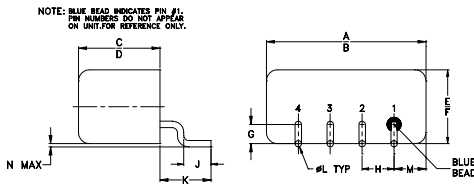
Electrical Specifications

FREQUENCY (MHz)	CONVERSION LOSS (dB)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)			IP3 at center band (dBm)										
		L	M	U	L	M	U											
5-600	DC-600	5.9	0.2	7.0	8.0	60	45	50	32	42	26	60	43	48	34	40	25	16

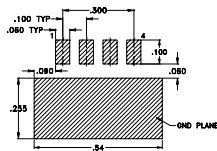
1 dB COMP.: +1 dBm typ.

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

Outline Drawing



PCB Land Pattern

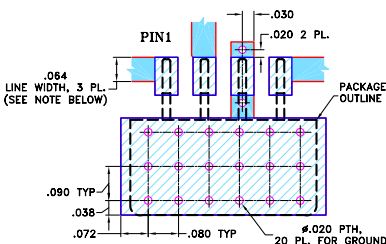


Suggested Layout,
Tolerance to be within ±.002

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 $0.030" \pm 0.002"$; 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

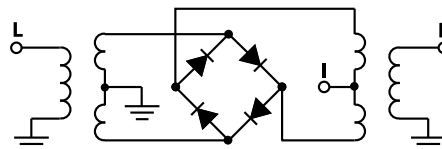
Notes

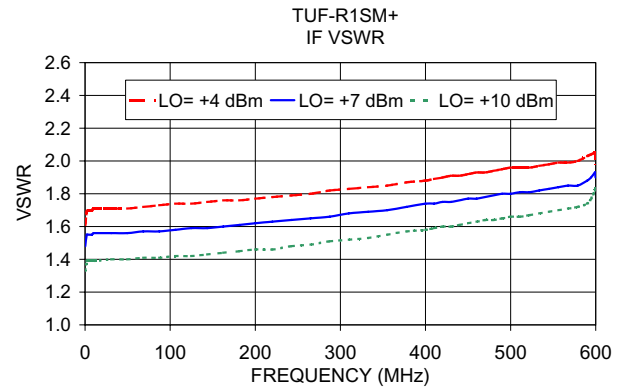
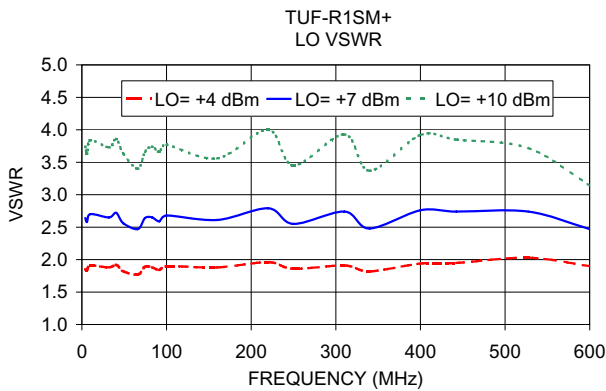
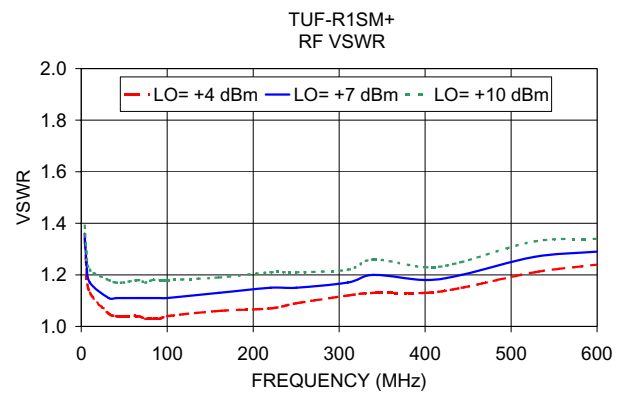
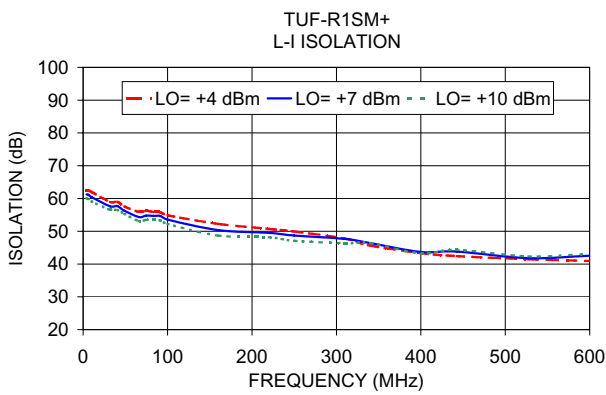
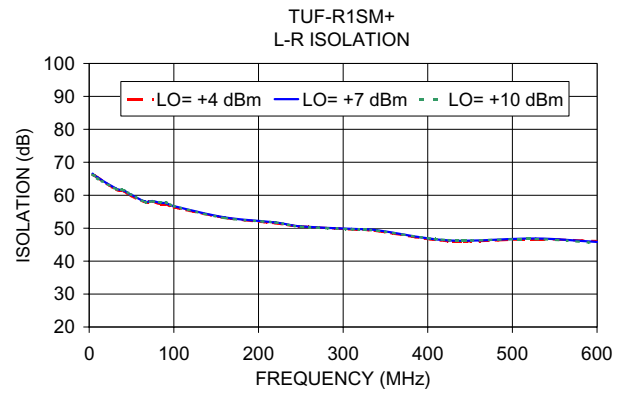
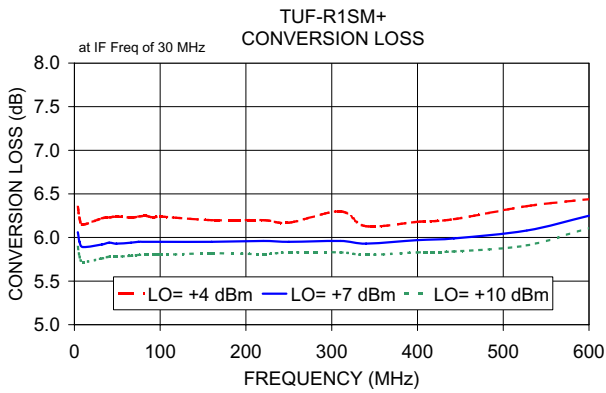
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Typical Performance Data

Frequency (MHz)	Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)
4.00	34.00	6.06	66.56	61.24	1.36
6.00	36.00	5.95	66.02	61.15	1.25
10.00	40.00	5.89	65.37	60.45	1.17
32.00	62.00	5.92	61.99	57.62	1.11
40.50	70.50	5.94	61.46	57.67	1.11
49.00	79.00	5.93	60.24	56.26	1.11
66.00	96.00	5.94	58.07	54.36	1.11
74.50	104.50	5.95	58.24	54.77	1.11
83.00	113.00	5.95	57.74	54.71	1.11
91.50	121.50	5.95	57.54	54.68	1.11
100.00	130.00	5.95	56.70	53.58	1.11
160.00	190.00	5.95	53.29	50.36	1.13
220.00	250.00	5.96	51.73	49.52	1.15
250.00	280.00	5.95	50.55	48.71	1.15
310.00	340.00	5.96	49.80	47.68	1.17
340.00	370.00	5.93	49.37	46.42	1.20
400.00	430.00	5.97	46.91	43.69	1.18
442.50	472.50	5.99	46.17	43.81	1.20
527.50	557.50	6.08	46.85	41.81	1.27
600.00	630.00	6.25	45.82	42.54	1.29

Electrical Schematic





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