

Frequency Mixer

TUF-2SM+

Level 7 (LO Power +7 dBm) 50 to 1000 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

- low conversion loss, 5.85 dB typ.
- excellent L-R isolation, 47 dB typ.; L-I, 44 dB typ.
- wideband, 50 to 1000 MHz
- rugged welded construction

Applications

- VHF/UHF
- cellular
- ISM/GSM

Electrical Specifications

FREQUENCY (MHz)	CONVERSION LOSS (dB)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)			IP3 @ CENTER BAND (dBm)										
		L	M	U	L	M	U											
50-1000	DC-1000	5.85	0.07	7.5	9.0	58	40	47	30	42	25	50	35	44	20	29	18	16

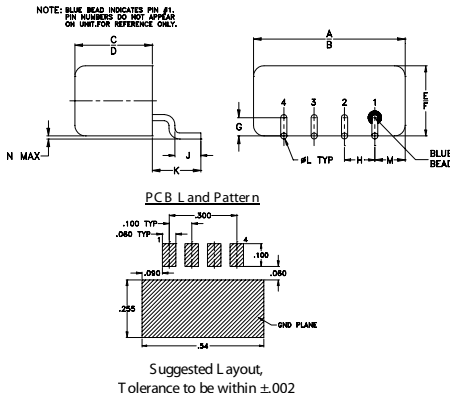
1 dB COMP: +1 dBm typ.

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

Typical Performance Data

Frequency (MHz)	Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)
RF	LO	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm
50.00	80.00	6.03	61.24	1.08	2.52
100.00	70.00	6.12	55.20	1.10	2.47
129.17	99.17	6.03	53.19	1.12	2.42
200.00	170.00	5.94	49.63	1.17	2.35
208.33	178.33	5.97	49.40	1.22	2.31
287.50	257.50	5.98	46.76	1.27	2.32
340.28	310.28	5.94	45.51	1.33	2.34
366.67	336.67	5.91	45.07	1.36	2.32
445.83	415.83	5.88	43.51	1.43	2.32
498.61	468.61	5.96	42.80	1.47	2.34
500.00	470.00	5.98	42.81	1.50	2.33
551.39	521.39	6.04	42.43	1.58	2.37
630.56	600.56	6.27	41.96	1.68	2.38
683.33	653.33	6.36	41.15	1.76	2.35
709.72	679.72	6.45	40.66	1.79	2.33
788.89	758.89	6.59	39.89	1.94	2.34
868.06	838.06	6.81	39.69	2.11	2.38
947.22	917.22	7.04	39.66	2.31	2.42
973.61	943.61	7.23	39.91	2.37	2.42
1000.00	970.00	7.37	39.73	2.44	2.41

Outline Drawing

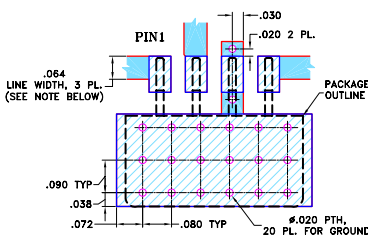


Outline Dimensions (inch/mm)

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)

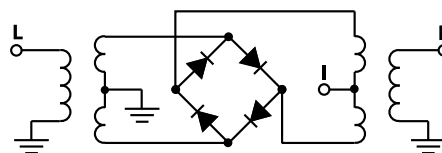


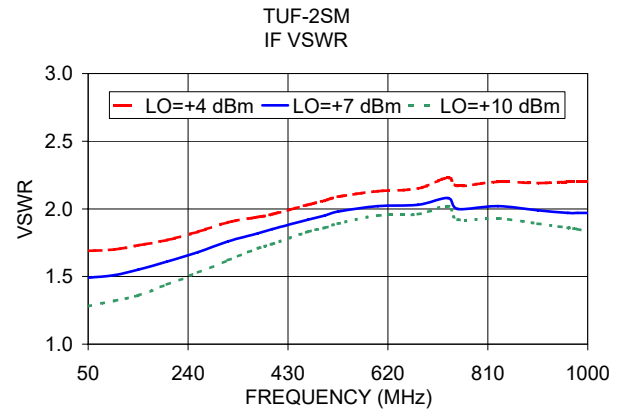
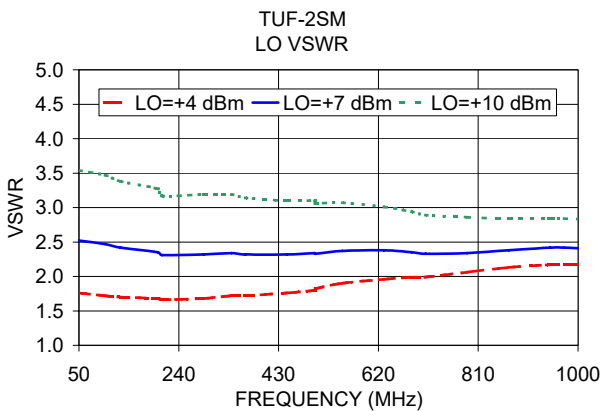
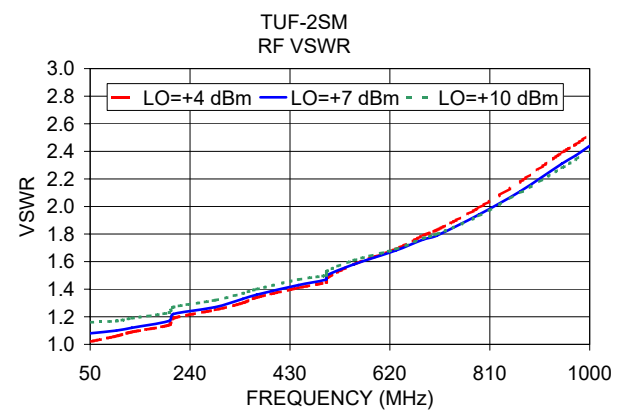
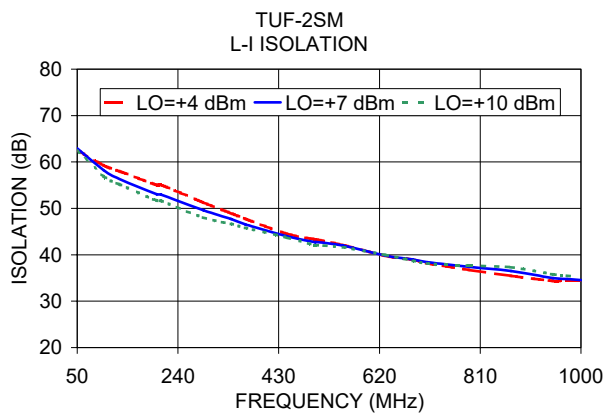
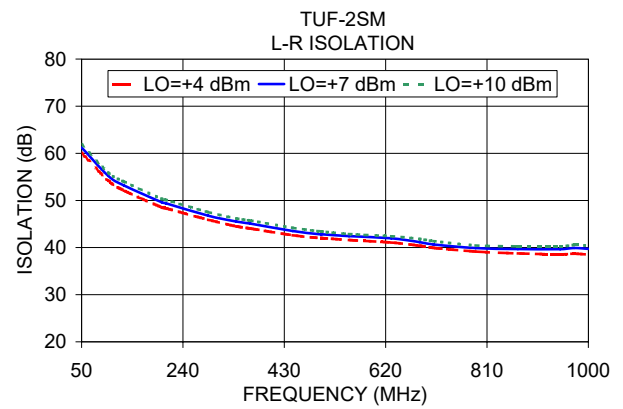
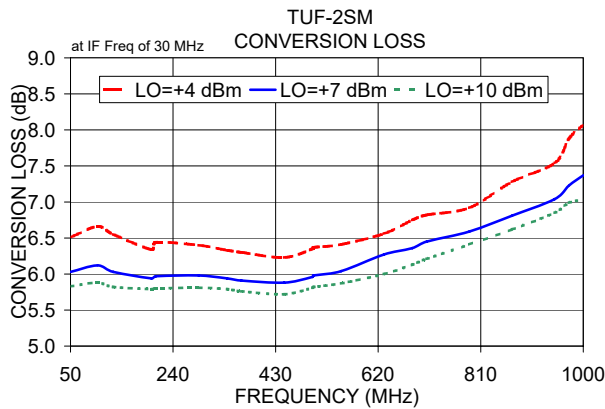
- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.030 ± 0.002 ; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
■ DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)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

Notes

- Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
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Electrical Schematic





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