

Frequency Mixer

TUF-1LHSM+

Level 10 (LO Power +10 dBm) 2 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

- low conversion loss, 6.0 dB typ.
- high L-R & L-I isolation, 50 dB typ.
- rugged welded construction

Applications

- VHF/UHF
- defense & federal communications

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											
LO/RF f_L - f_U	Mid-Band \bar{m} σ Total Range Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.										
2-600	DC-600	6.0	0.17	7.0	8.0	70	50	50	30	42	25	65	45	50	30	41	22	17

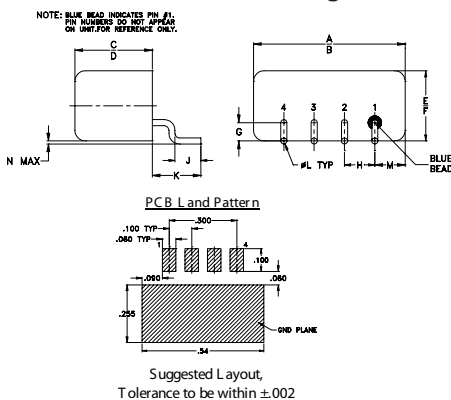
1 dB COMP: +5 dBm typ.

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 $f_U/2$]

Typical Performance Data

Frequency (MHz)	Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)
2.00	32.00	6.28	67.01	1.47	2.80
4.00	34.00	5.95	65.93	1.27	2.68
5.00	35.00	5.89	65.47	1.23	2.65
10.00	40.00	5.80	63.93	1.14	2.48
20.00	50.00	5.82	61.72	1.12	2.53
50.00	80.00	5.82	56.12	1.11	2.47
59.87	89.87	5.78	54.83	1.11	2.35
100.00	70.00	5.77	51.13	1.12	2.37
117.74	87.74	5.79	50.12	1.15	2.32
175.61	145.61	5.69	47.32	1.18	2.26
200.00	170.00	5.73	46.57	1.21	2.33
233.48	203.48	5.70	45.24	1.25	2.27
291.36	261.36	5.69	43.94	1.27	2.24
300.00	270.00	5.68	43.65	1.31	2.29
349.23	319.23	5.71	42.63	1.35	2.28
407.10	337.10	5.70	41.85	1.40	2.28
464.97	434.97	5.72	40.61	1.45	2.29
522.84	492.84	5.77	39.23	1.49	2.33
580.71	550.71	5.84	38.82	1.51	2.33
600.00	570.00	5.87	38.87	1.53	2.31

Outline Drawing

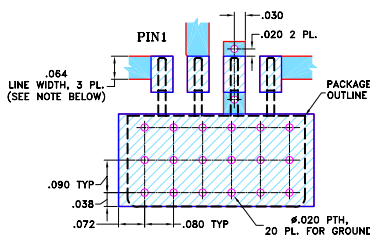


Outline Dimensions (inch/mm)

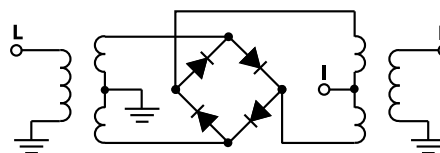
A	B	C	D	E	F	G
.50	.48	.255	.240	.23	.21	.06
12.70	12.19	6.48	6.10	5.84	5.33	1.52

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)



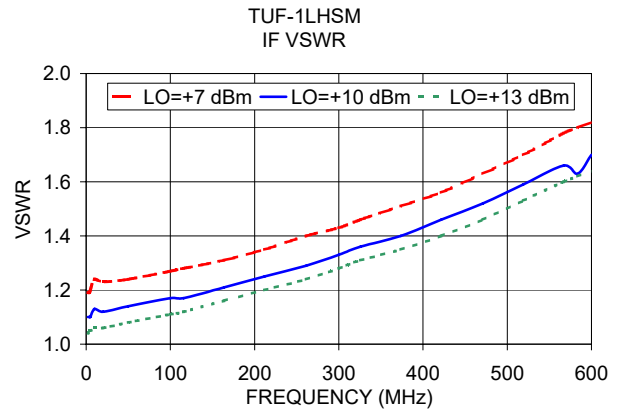
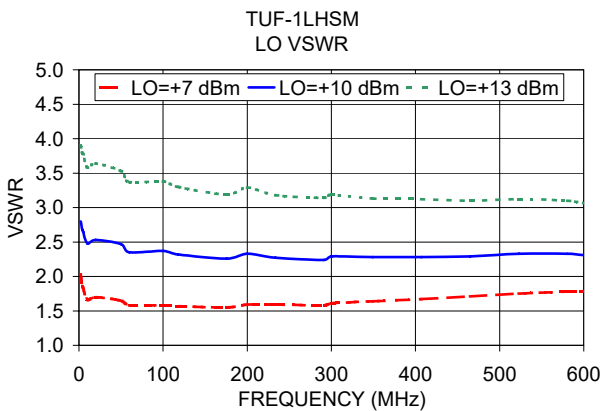
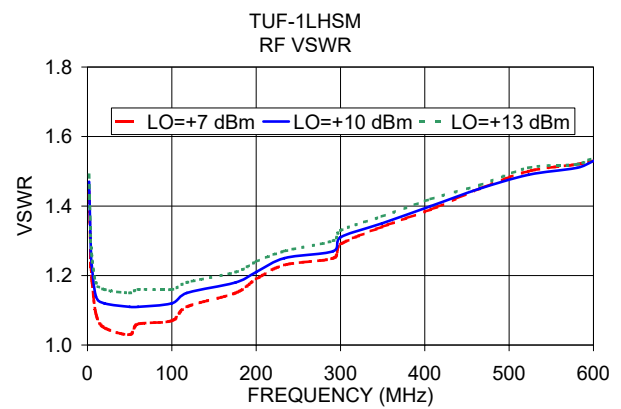
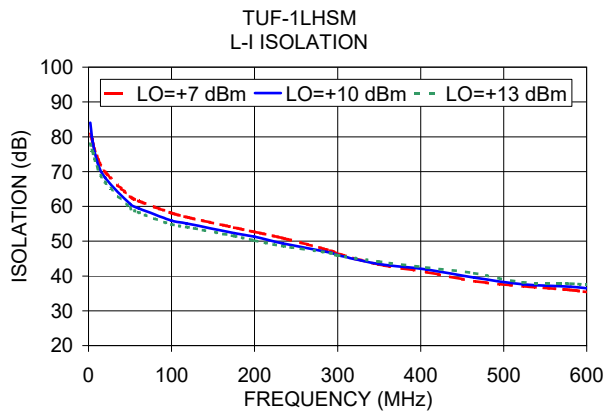
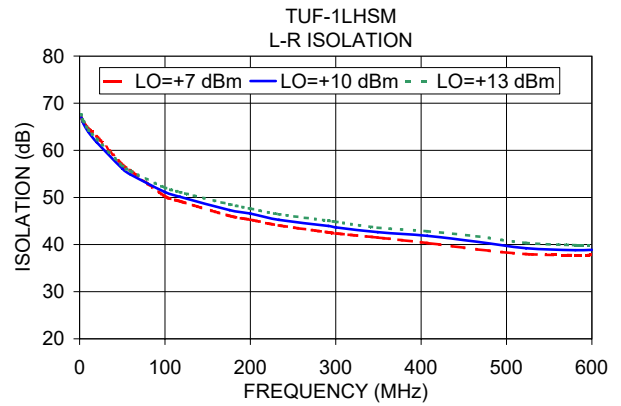
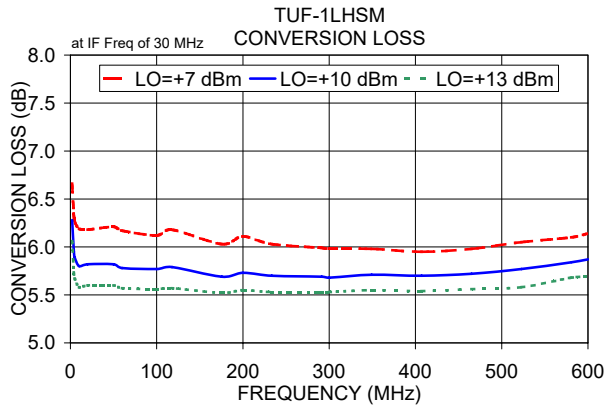
Electrical Schematic



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.
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