

Ceramic

Frequency Mixer WIDE BAND

MCA1T-113H+

Level 17 (LO Power+17 dBm) 3800 to 11000 MHz

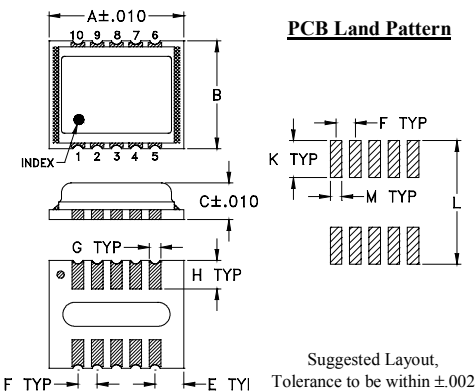
Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-40°C to 85°C
RF Power	50 mW
IF Current	40 mA
Permanent damage may occur if any of these limits are exceeded.	

Pin Connections

LO	10
RF	5
IF	3
GROUND	1,2,4,6,7,8,9

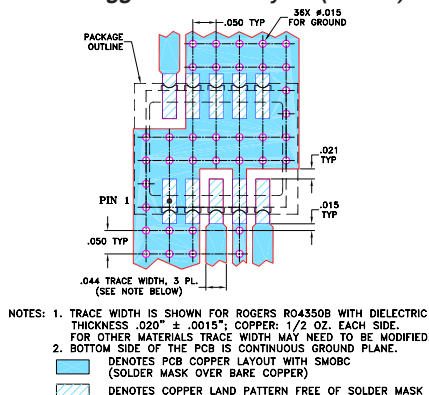
Outline Drawing



Outline Dimensions (inch)

A	B	C	E	F	G
.350	.280	.095	.075	.050	.030
8.89	7.11	2.41	1.91	1.27	0.76
H	K	L	M	wt	
.074	.096	.321	.030	grams	
1.88	2.44	8.15	0.76	0.21	

Demo Board MCL P/N: TB-493+ Suggested PCB Layout (PL-288)



Features

- wide bandwidth, 3800 to 11000 MHz
- low conversion loss, 6.8 dB typ.
- high L-R isolation, 35 dB typ.
- IF, DC to 1800 MHz
- LTCC double balanced mixer
- low cost
- low profile, 0.095"
- aqueous washable
- protected by US Patent 7,027,795
- additional patent pending

Applications

- satellite up and down converters
- line of sight links
- defense radar
- defense communication
- federal fixed service

Electrical Specifications

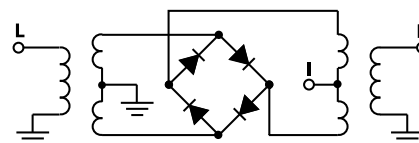
FREQUENCY (MHz)		CONVERSION LOSS* (dB)			LO-RF ISOLATION (dB)		LO-IF ISOLATION (dB)		IP3 at center band (dBm)
LO/RF f_L-f_U	IF	$\bar{X}$	σ	Max.	Typ.	Min.	Typ.	Min.	Typ.
3800-11000	DC-1800								
3800-6500	DC-1800	6.7	0.2	9.0	27	15	13	8	22
6500-9500	DC-1800	6.8	0.2	8.8	35	20	32	20	21
9500-11000	DC-1800	7.5	0.2	9.5	28	18	25	15	21

1 dB COMPR. +14 dBm typ.
* Conversion loss at 30 MHz IF, increases with IF frequency.

Typical Performance Data at 25°C

Frequency (MHz)		Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)
RF	LO	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm
3800.00	3830.00	6.02	29.37	12.51	1.96	2.88
4000.00	4030.00	5.58	30.22	13.41	1.75	2.98
4200.00	4230.00	5.30	28.87	12.84	1.59	2.87
4500.00	4530.00	5.24	27.75	12.99	1.34	2.83
4800.00	4830.00	5.38	24.29	12.36	1.10	2.77
5000.00	5030.00	6.19	25.35	11.60	1.47	2.79
5200.00	5230.00	6.94	21.26	11.03	1.68	2.70
5500.00	5530.00	7.86	17.52	10.68	1.48	2.72
5800.00	5830.00	7.81	19.64	15.00	1.61	3.28
6000.00	6030.00	7.19	22.63	19.10	1.83	3.51
6200.00	6230.00	6.86	25.31	23.08	2.04	3.48
6500.00	6530.00	7.18	29.58	29.51	2.23	3.16
6827.00	6857.00	6.54	34.24	34.49	1.61	3.84
8015.00	8045.00	7.07	44.15	35.76	2.45	3.11
8609.00	8639.00	7.39	32.87	39.74	3.88	3.21
9203.00	9233.00	7.31	28.64	39.11	2.08	3.67
9500.00	9530.00	7.15	24.36	35.38	1.90	4.20
10106.00	10136.00	7.28	24.03	18.50	2.17	3.93
10538.00	10568.00	7.63	25.90	21.31	2.09	2.66
11000.00	11030.00	8.60	26.28	22.34	2.22	2.75

Electrical Schematic



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IF/RF MICROWAVE COMPONENTS

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Performance Charts

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