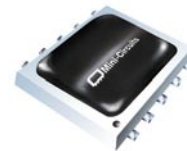


Ceramic

Frequency Mixer WIDE BAND

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

MCA1-113H+



CASE STYLE: DZ885

PRICE: \$ 14.95 ea. QTY (10-49)

Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power	50 mW
IF Current	40 mA

Pin Connections

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

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, 0.08"
- protected by US Patent 7,027,795

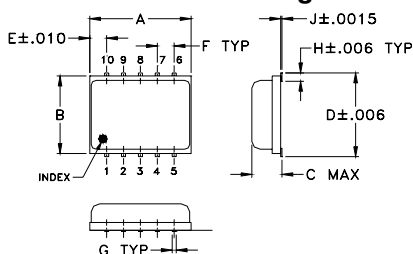
Applications

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

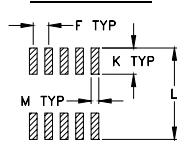
+ RoHS compliant in accordance with EU Directive (2002/95/EC)

The +Suffix has been added in order to identify RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.

Outline Drawing



PCB Land Pattern



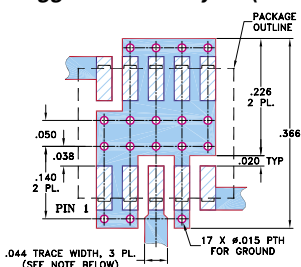
Suggested Layout,
Tolerance to be within ±.002

Outline Dimensions (inch)

A	B	C	D	E	F	G
.30	.250	.085	.262	.050	.050	.012
7.62	6.35	2.16	6.66	1.27	1.27	0.30
H	J	K	L	M	N	wt
.027	.004	.085	.296	.030		grams
0.69	0.10	2.16	7.52	0.76		0.25

Demo Board MCL P/N: TB-144

Suggested PCB Layout (PL-045)



- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .020" ± .0015"; 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

Electrical Specifications

FREQUENCY (MHz)		CONVERSION LOSS* (dB)			LO-RF ISOLATION (dB)		LO-IF ISOLATION (dB)		IP3 at center band (dBm)
LO/RF $f_c - f_u$	IF	\bar{X}	σ	Max.	Typ.	Min.	Typ.	Min.	
3800-11000	DC-1800								
3800-6500	DC-1800	6.7	0.2	8.8	27	17	13	8	23
6500-9500	DC-1800	6.8	0.2	8.8	35	25	32	16	21
9500-11000	DC-1800	6.6	0.2	8.5	28	20	25	16	21

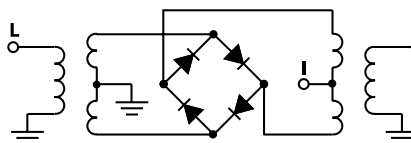
1 dB COMPR. +14 dBm typ.

* 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 LO Port (:1)	VSWR RF Port (:1)
RF	LO	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm
3800.00	3830.00	6.33	31.72	11.09	2.01	2.43
4340.00	4370.00	5.53	36.54	14.38	1.81	2.42
4880.00	4910.00	5.40	29.89	11.85	1.95	1.72
5420.00	5450.00	6.77	21.32	11.53	2.08	1.70
5960.00	5990.00	6.64	22.71	20.47	2.72	1.70
6500.00	6530.00	6.65	32.83	22.91	4.89	1.79
6800.00	6830.00	6.68	38.25	21.78	2.97	1.72
7100.00	7130.00	7.72	30.12	22.19	3.97	2.68
7400.00	7430.00	7.55	31.69	25.62	2.94	2.68
7700.00	7730.00	6.85	39.07	30.58	3.52	2.49
8000.00	8030.00	6.74	51.51	37.43	3.01	2.31
8300.00	8330.00	6.33	34.76	44.18	3.00	2.16
8600.00	8630.00	6.32	31.34	48.01	2.54	2.18
8900.00	8930.00	6.21	32.00	39.54	2.56	1.94
9200.00	9230.00	6.16	31.72	31.50	2.42	1.89
9500.00	8530.00	6.44	31.16	29.44	3.87	1.80
10000.00	10030.00	6.58	27.87	22.69	3.08	1.66
10500.00	10530.00	6.53	25.25	22.32	2.85	1.71
10750.00	10780.00	6.80	26.33	24.17	5.02	2.76
11000.00	11030.00	7.11	26.19	24.04	2.25	1.93

Electrical Schematic



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