

Ceramic

Frequency Mixer WIDE BAND

MCA1-85+

Level 7 (LO Power+7 dBm) 2800 to 8500 MHz

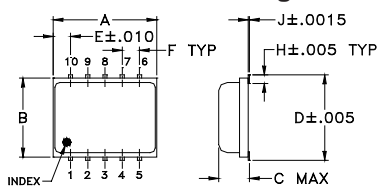
Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power	50 mW
IF Current	40 mA
Permanent damage may occur if any of these limits are exceeded.	

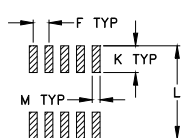
Pin Connections

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

Outline Drawing



PCB Land Pattern

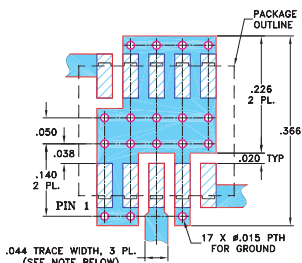


Suggested Layout,
Tolerance to be within ±.002

Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	
.30	.250	.085	.266	.050	.050	.012	
7.62	6.35	2.16	6.76	1.27	1.27	0.30	
H	J	K	L	M		wt	
.029	.004	.085	.296	.030		grams	
0.74	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

Features

- wide bandwidth, 2800 to 8500 MHz
- low conversion loss, 5.6 dB typ.
- high L-R isolation, 35 dB typ.
- IF, DC to 1250 MHz
- LTCC double balanced mixer
- aqueous washable
- 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



CASE STYLE: DZ885
PRICE: \$8.95 ea. QTY (10-49)

+ 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.

Electrical Specifications (T_{AMB}=-55°C to 100°C)

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	σ	Max.	Typ.	Min.	Typ.	
2800-8500	DC-1250							
2800-5000	DC-1250	5.5	0.2	8.1*	40	20	13	9
5000-8500	DC-1250	5.7	0.2	8.2*	35	20	40	20

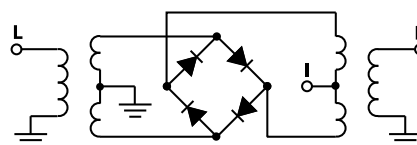
1 dB COMPR. 1 dBm typ.

* Conversion loss at 30 MHz IF, increases with IF frequency.

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	LO +7dBm	LO +7dBm		
2800.10	2770.10	5.89	36.81	10.35	2.20	2.37				
3000.10	2970.10	5.74	39.38	11.75	2.17	2.36				
3500.10	3470.10	5.29	38.41	13.58	1.75	2.57				
4000.10	3970.10	6.48	40.21	13.89	2.33	2.71				
4500.10	4470.10	6.38	31.07	17.67	1.86	2.62				
5000.10	4970.10	6.17	37.03	26.23	2.34	2.21				
5500.10	5470.10	5.85	40.91	31.19	1.88	2.81				
6000.10	5970.10	5.74	37.20	35.68	1.94	3.00				
6500.10	6470.10	5.38	39.09	43.95	1.83	2.16				
6700.10	6670.10	5.40	36.15	48.35	1.90	2.20				
6800.10	6770.10	5.46	36.09	46.81	1.78	2.38				
6900.10	6870.10	5.51	36.10	44.52	1.81	2.32				
7000.10	6970.10	5.59	36.07	42.59	1.80	2.29				
7500.10	7470.10	6.30	38.79	35.25	1.65	2.25				
7600.10	7570.10	6.60	38.05	34.31	1.53	2.67				
7700.10	7670.10	6.86	37.33	33.25	1.48	2.70				
7800.10	7770.10	6.86	36.19	31.74	1.50	2.50				
7900.10	7870.10	6.63	34.32	30.19	1.51	2.44				
8000.10	7970.10	6.31	32.74	29.14	1.56	2.47				
8500.10	8470.10	6.24	30.84	33.04	1.87	3.03				

Electrical Schematic



Mini-Circuits
ISO 9001 ISO 14001 AS 9100 CERTIFIED

For detailed performance specs & shopping online see web site

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Page 1 of 2

