

Ceramic

Frequency Mixer WIDE BAND

MCA1-85+

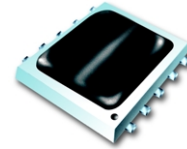
Level 7 (LO Power +7 dBm) 2800 to 8500 MHz

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
- low cost
- low profile, 0.08"

Applications

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



CASE STYLE: DZ885

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

(Patent pending)

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

The +suffix has been added in order to identify RoHS Compliance. There has been no change to the model's material, form, fit, or function. See our web site for RoHS Compliance methodologies and qualifications.

Mixer Electrical Specifications ($T_{AMB} = -55^{\circ}\text{C}$ to 100°C)

MODEL NO.	FREQUENCY (MHz)		CONVERSION LOSS (dB)			LO-RF ISOLATION (dB)		LO-IF ISOLATION (dB)		IP3@ center band Typ. (dBm)	E FACTOR
	LO/Rf $f_L - f_U$	IF	$\bar{x}$	σ	Max.	Typ.	Min.	Typ.	Min.		
MCA1-85+	2800-8500	DC-1250									
	2800-5000	DC-1250	5.5	0.2	8.1*	40	20	13	9	13	0.6
	5000-8500	DC-1250	5.7	0.2	8.2*	35	20	40	20	8	0.1

1dB Compr.: +1 dBm typ.

E= $[(IP3(\text{dBm}) - LO\ Power(\text{dBm}))]/10$

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

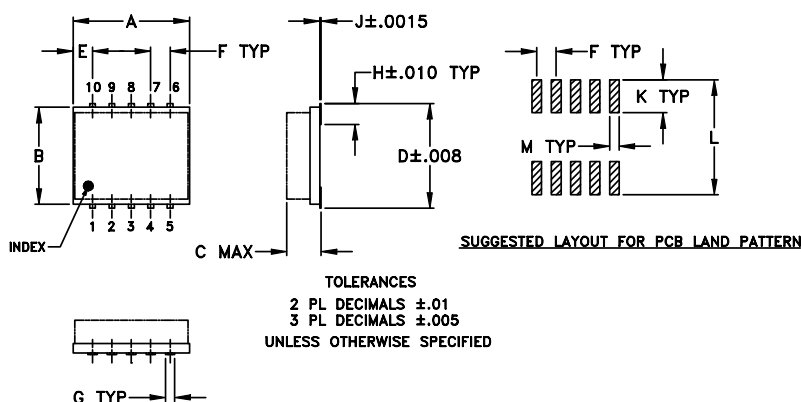
Pin Connections

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

Maximum Ratings

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

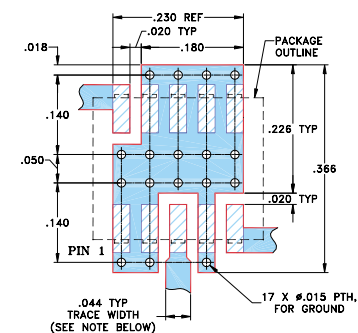
Outline Drawing



Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.30	.250	.085	.274	.050	.050	.012
7.62	6.35	2.16	6.96	1.27	1.27	0.30
H	J	K	L	M		wt
.057	.004	.085	.296	.030		grams
1.45	0.10	2.16	7.52	0.76		0.25

Demo Board MCL P/N: TB-144 Suggested PCB Layout (PL-045)



INTERNET <http://www.minicircuits.com>

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REV. B
 M98898
 ED-11119/2
 MCA1-85+
 DJ/RS/CP
 050901
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Typical Performance Data at 25°C

Frequency		Conversion Loss	Isolation L-R	Isolation L-I	VSWR LO port	VSWR RF port
RF MHz	LO MHz	(dB) LO +7 dBm	(dB) LO +7 dBm	(dB) LO +7 dBm	(:1) LO +7 dBm	(:1) LO +7 dBm
2800.10	2770.10	5.89	36.81	10.35	2.37	2.20
3000.10	2970.10	5.74	39.38	11.75	2.36	2.17
3500.10	3470.10	5.29	38.41	13.58	2.57	1.75
4000.10	3970.10	6.48	40.21	13.89	2.71	2.33
4500.10	4470.10	6.38	31.07	17.67	2.62	1.86
5000.10	4970.10	6.17	37.03	26.23	2.21	2.34
5500.10	5470.10	5.85	40.91	31.19	2.81	1.88
6000.10	5970.10	5.74	37.20	35.68	3.00	1.94
6500.10	6470.10	5.38	39.09	43.95	2.16	1.83
6700.10	6670.10	5.40	36.15	48.35	2.20	1.90
6800.10	6770.10	5.46	36.09	46.81	2.38	1.78
6900.10	6870.10	5.51	36.10	44.52	2.32	1.81
7000.10	6970.10	5.59	36.07	42.59	2.29	1.80
7500.10	7470.10	6.30	38.79	35.25	2.25	1.65
7600.10	7570.10	6.60	38.05	34.31	2.67	1.53
7700.10	7670.10	6.86	37.33	33.25	2.70	1.48
7800.10	7770.10	6.86	36.19	31.74	2.50	1.50
7900.10	7870.10	6.63	34.32	30.19	2.44	1.51
8000.10	7970.10	6.31	32.74	29.14	2.47	1.56
8500.10	8470.10	6.24	30.84	33.04	3.03	1.87

Performance Charts

