

Frequency Mixer

MCA1-85+

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

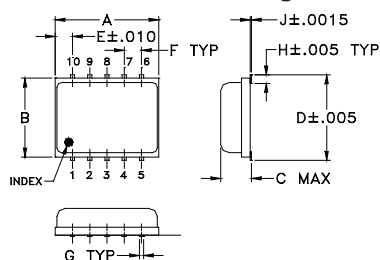
Maximum Ratings

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	

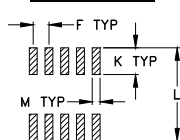
Pin Connections

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

Outline Drawing



PCB Land Pattern

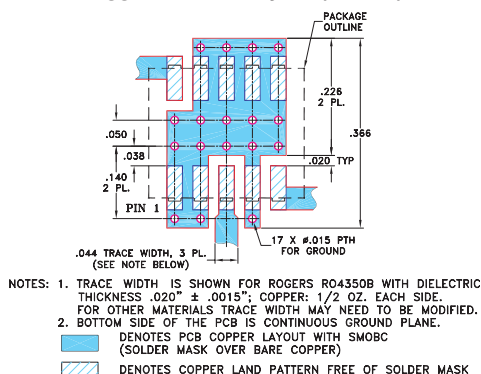


Suggested Layout,
Tolerance to be within $\pm .002$

Outline Dimensions ($\frac{\text{inch}}{\text{mm}}$)

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)



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

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_i-f_o	IF	$\bar{X}$	σ	Max.	Typ.	Min.	Typ.	Min.	Typ.
2800-8500	DC-1250								
2800-5000	DC-1250	5.5	0.2	8.1*	40	20	13	9	13
5000-8500	DC-1250	5.7	0.2	8.2*	35	20	40	20	8

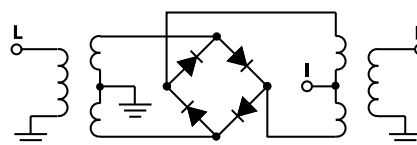
1 dB COMPR, 1 dBm typ.

* 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
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



CASE STYLE: DZ885

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

+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Recommended Replacement:
MAC-85+

- Footprint Compatible
- MIL Level Reliability
- Price \$7.95 Qty. (10)



[Click here for data sheet](#)

Notes

Notes
A. 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.

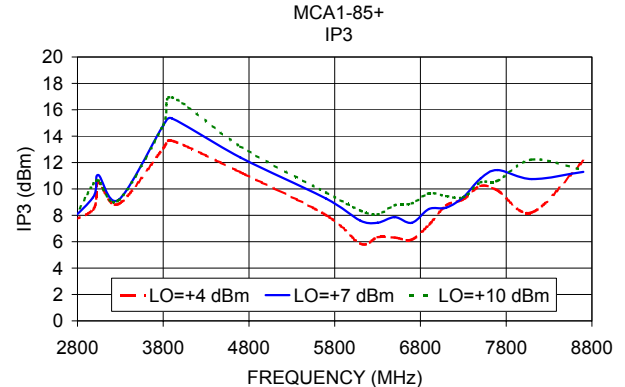
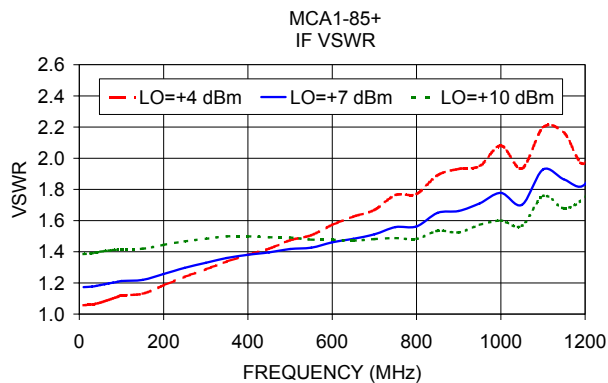
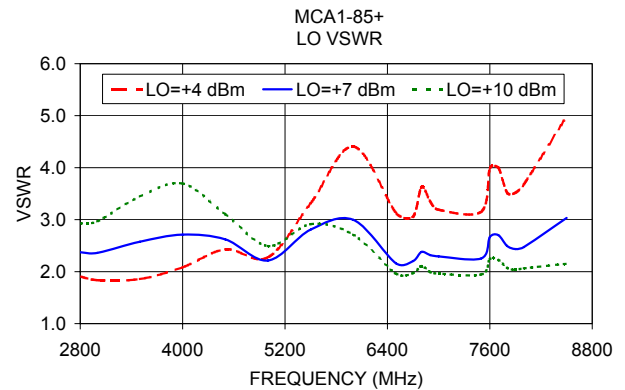
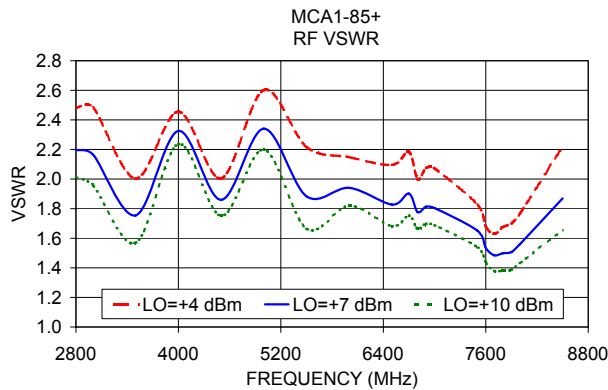
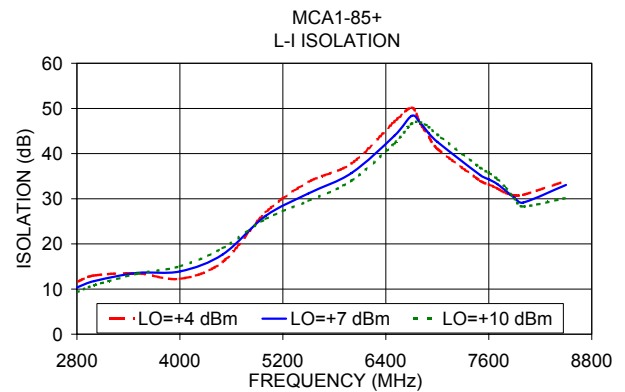
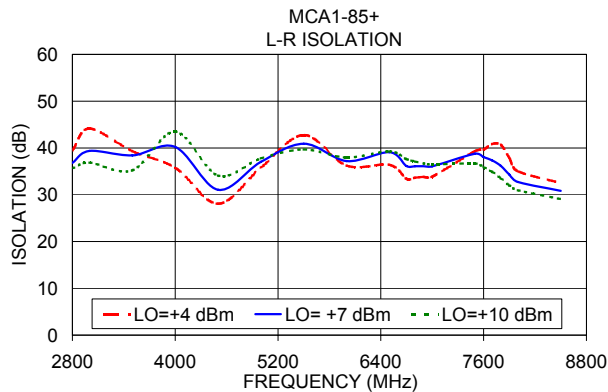
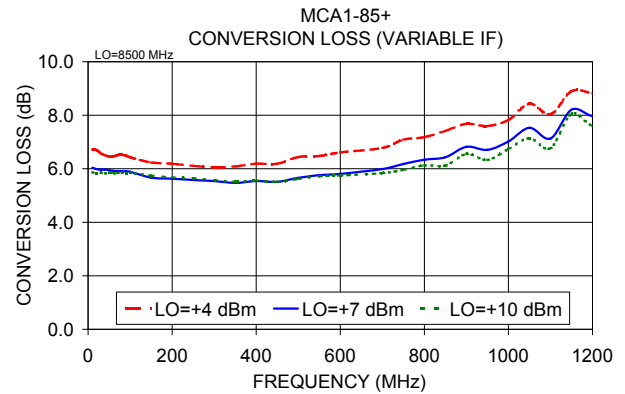
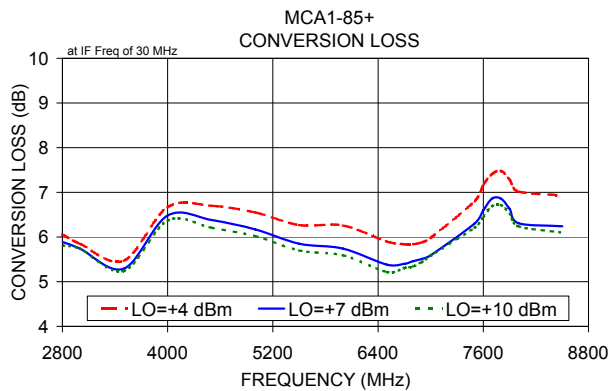
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