

Ceramic

Frequency Mixer

WIDE BAND

MCA1T-85L+

Level 4 (LO Power+4 dBm) 2800 to 8500 MHz

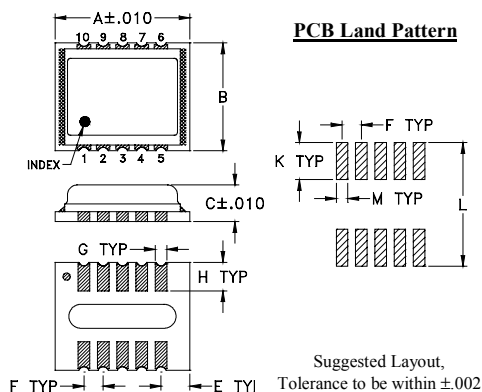
Maximum Ratings

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

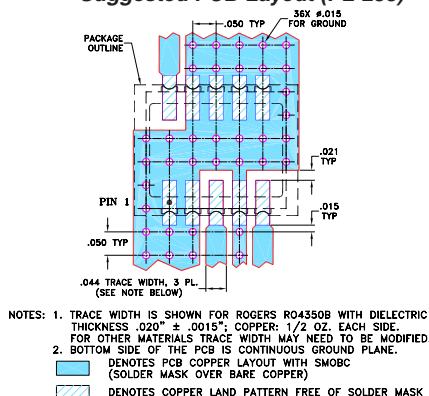
Outline Drawing



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)



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.
- B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' applicable established test performance criteria and measurement instructions.
- C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp

Features

- wide bandwidth, 2800 to 8500 MHz
- high L-R isolation, 35 dB typ.
- IF, DC to 1200 MHz
- LTCC double balanced mixer
- aqueous washable
- low cost
- low profile, 0.095"
- protected by US Patent 7,027,795 & 8,749,989

Applications

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

Electrical Specifications (T_{AMB}=-40°C to 85°C)

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.
2800-8500	DC-1200								
2800-5000	DC-1200	5.7	0.2	8.4*	35	20	13	7	11
5000-7500	DC-1200	6.0	0.3	8.4*	35	20	38	20	7
7500-8500	DC-1200	7.0	0.3	—	31	—	32	—	8

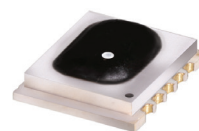
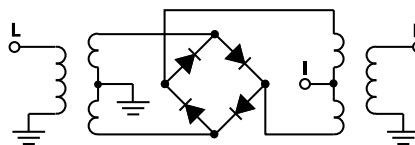
1 dB COMPR. 0 dBm typ.

* 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 +4dBm	LO +4dBm	LO +4dBm	LO +4dBm	LO +4dBm
2800.00	2770.10	6.57	35.68	11.51	2.96	2.36
3028.00	2998.10	6.02	35.94	13.02	2.53	2.01
3514.00	3484.10	5.36	36.84	13.44	1.60	2.34
4000.00	3970.10	6.20	27.71	11.19	2.09	2.43
4567.00	4537.10	6.88	26.37	18.64	1.76	2.49
5030.00	5000.10	6.65	30.49	25.08	2.34	2.87
5530.00	5500.10	6.49	36.99	30.26	2.22	3.70
6108.00	6078.10	6.98	50.37	37.40	3.10	3.61
6345.00	6315.10	6.64	39.24	41.03	2.90	3.58
6582.00	6552.10	6.46	40.54	44.77	2.57	3.38
6819.00	6789.10	6.25	37.96	43.02	2.52	3.48
7056.00	7026.10	6.25	37.74	39.02	2.45	3.19
7293.00	7263.10	6.30	34.97	35.49	2.32	3.22
7530.00	7500.10	6.44	32.69	35.99	2.26	3.00
7767.00	7737.10	6.58	30.94	29.06	2.27	2.91
8004.00	7974.10	6.46	28.52	22.33	2.02	2.80
8050.00	8020.10	6.38	28.47	21.82	1.99	2.74
8150.00	8120.10	6.24	27.46	21.67	1.87	2.46
8500.00	8470.10	6.07	24.98	23.26	1.49	1.77
8550.00	8520.10	6.26	24.71	23.44	1.46	2.13

Electrical Schematic



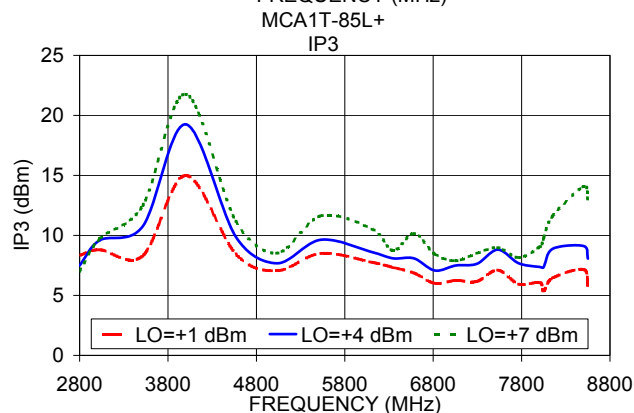
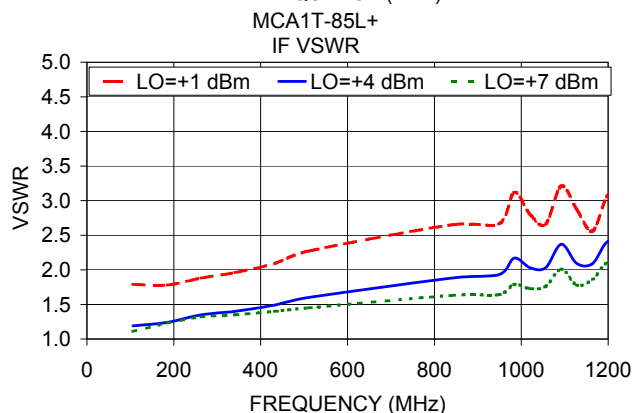
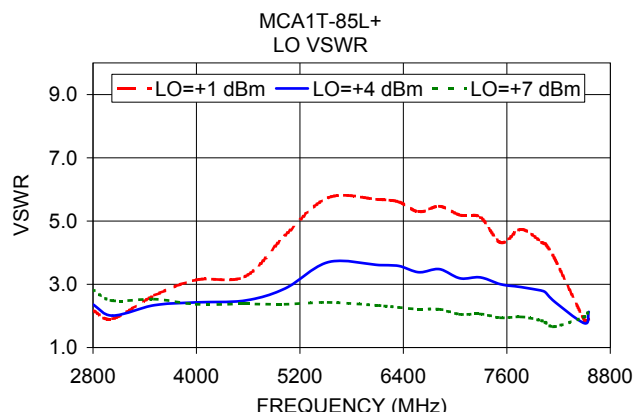
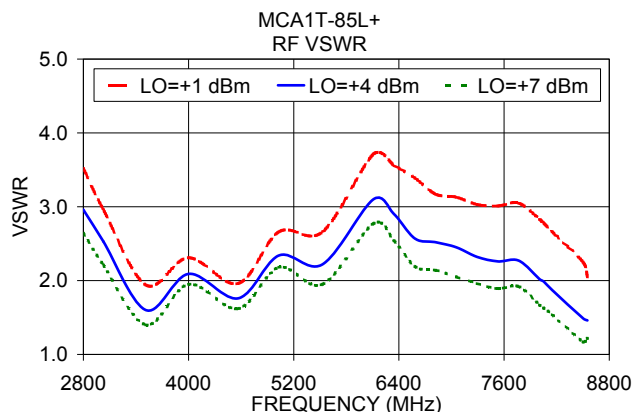
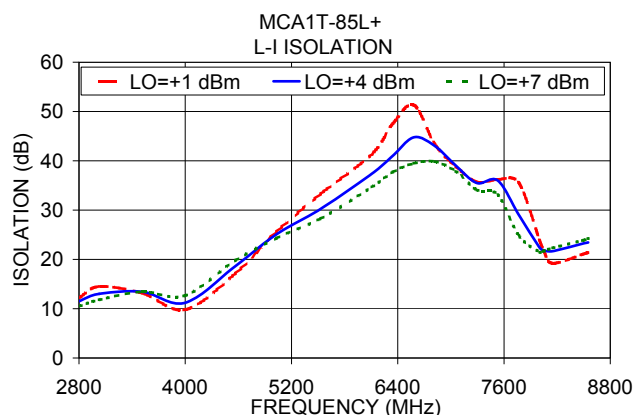
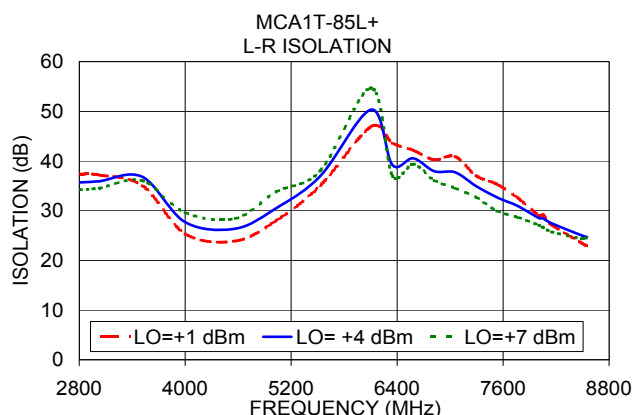
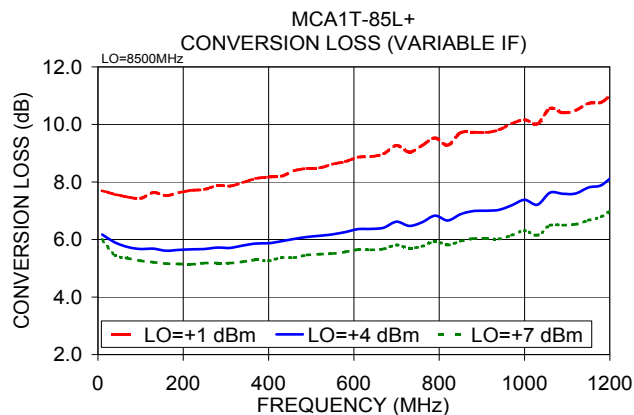
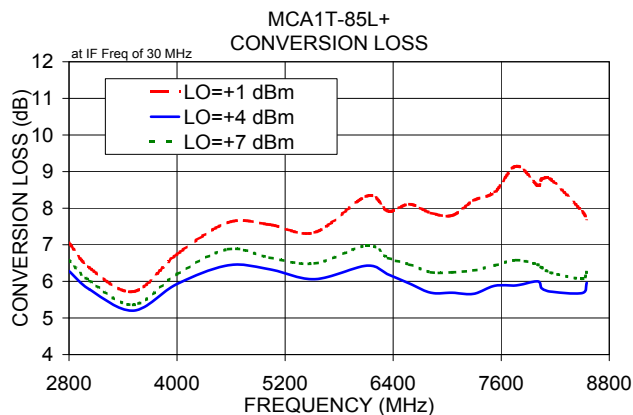
CASE STYLE: DZ885-2

+RoHS Compliant

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

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DJ/RS/CP/AM
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