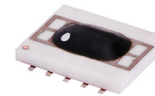


Frequency Mixer WIDE BAND

MCA1-85L+

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



Generic photo used for illustration purposes only

CASE STYLE: DZ885

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

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

Recommended Replacement:

MAC-85L+

- Footprint Compatible
- MIL Level Reliability

[Click here for data sheet](#)

+RoHS Compliant

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

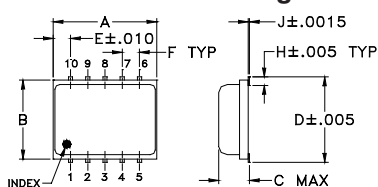
Available Tape and Reel

Reel Size	Devices/Reel
7"	10, 20, 50, 100, 200
13"	500, 1000

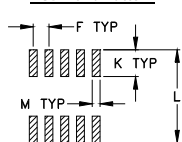
Applications

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

Outline Drawing



PCB Land Pattern

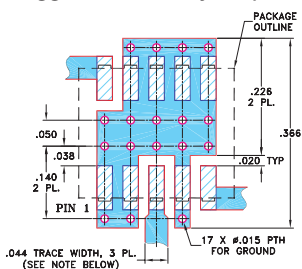


Suggested Layout,
Tolerance to be within ±.002

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

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-Circuit's 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

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 _L -f _U	IF	\bar{X} σ Max.	Typ.	Min.	Typ.	Min.	
2800-8500	DC-1200		5.7 0.2 8.4*	35	20	13	7	11
5000-5000	DC-1200		6.0 0.3 8.4*	35	20	38	20	7
5000-7500	DC-1200		7.0 0.3 —	31	—	32	—	8

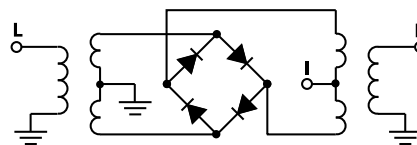
1 dB COMPR. 0 dBm typ.

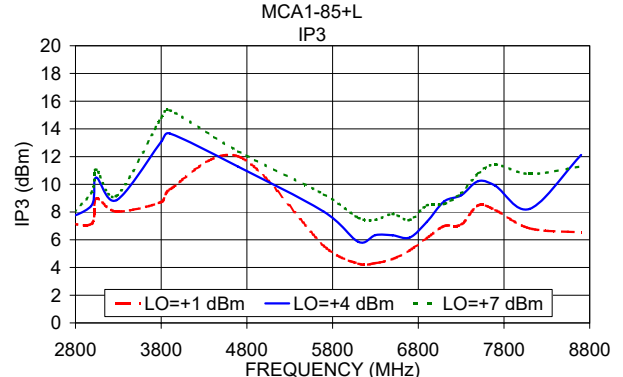
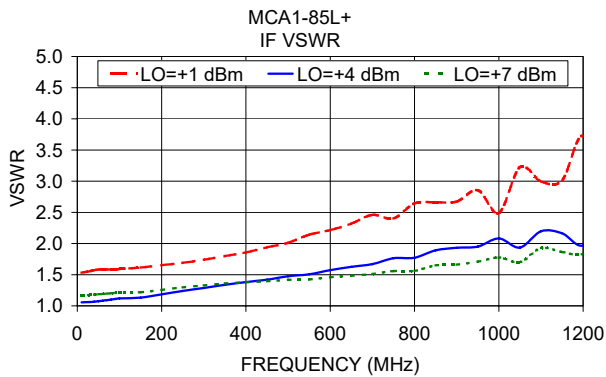
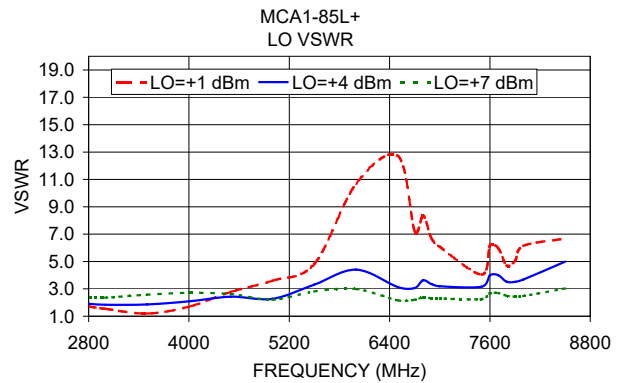
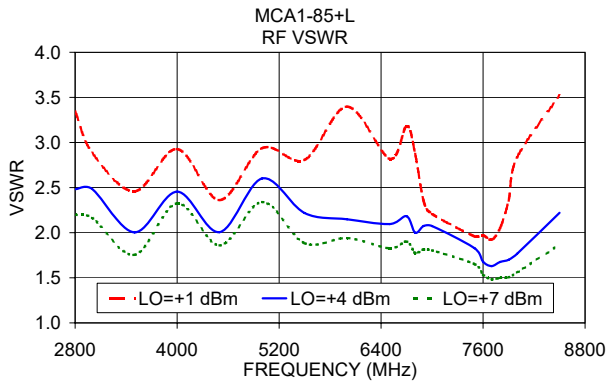
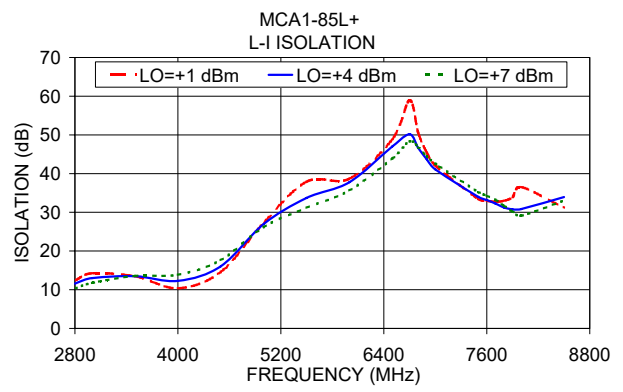
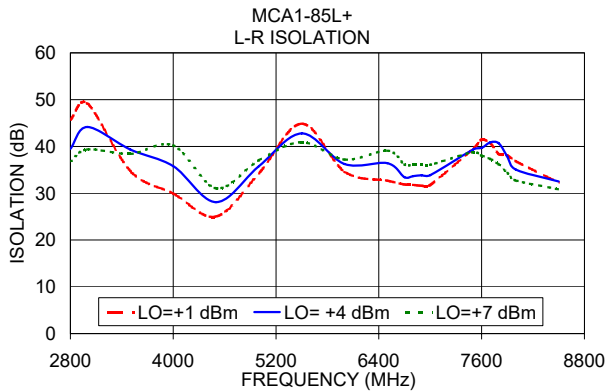
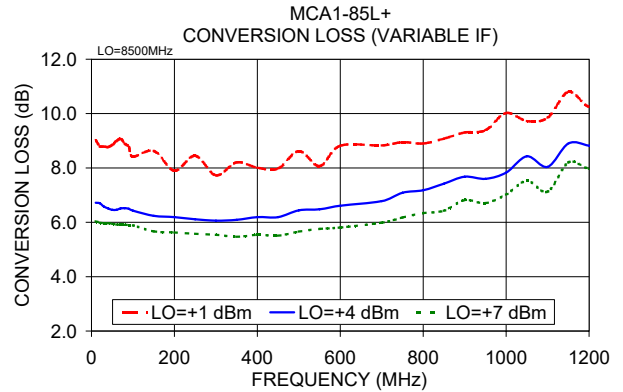
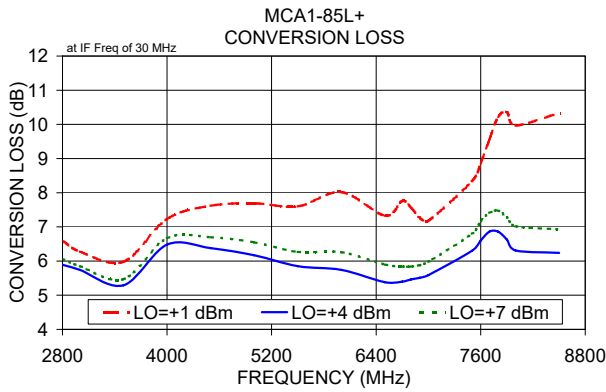
* Conversion loss at 30 MHz IF, increases with IF frequency.

Typical Performance Data

Frequency (MHz)	Conversion Loss (dB)		Isolation L-R (dB)		Isolation L-I (dB)		VSWR RF Port (:1)	VSWR LO Port (:1)
	LO	RF	LO	RF	LO	RF		
2800.10	2770.10	6.06	39.50	11.58	2.48	1.91		
3000.10	2970.10	5.85	44.16	13.00	2.48	1.84		
3500.10	3470.10	5.47	39.32	13.49	2.00	1.86		
4000.10	3970.10	6.67	35.79	12.28	2.46	2.08		
4500.10	4470.10	6.70	28.08	16.04	2.01	2.43		
5000.10	4970.10	6.55	35.79	27.00	2.60	2.28		
5500.10	5470.10	6.27	42.78	33.73	2.22	3.31		
6000.10	5970.10	6.26	36.23	37.80	2.15	4.41		
6500.10	6470.10	5.90	36.41	47.06	2.10	3.13		
6700.10	6670.10	5.84	33.42	50.18	2.18	3.06		
6800.10	6770.10	5.84	33.65	46.65	2.00	3.62		
6900.10	6870.10	5.88	33.84	43.73	2.07	3.35		
7000.10	6970.10	5.98	33.85	41.08	2.07	3.19		
7500.10	7470.10	6.80	39.32	33.99	1.83	3.16		
7600.10	7570.10	7.17	39.67	33.16	1.68	3.99		
7700.10	7670.10	7.41	40.86	32.27	1.63	4.00		
7800.10	7770.10	7.48	40.67	31.25	1.68	3.52		
7900.10	7870.10	7.28	37.86	30.76	1.70	3.52		
8000.10	7970.10	7.02	35.05	30.85	1.77	3.68		
8500.10	8470.10	6.93	32.51	33.93	2.22	4.99		

Electrical Schematic





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