

Ceramic

Frequency Mixer

WIDE BAND

MCA1T-24+

Level 7 (LO Power+7 dBm) 300 to 2400 MHz

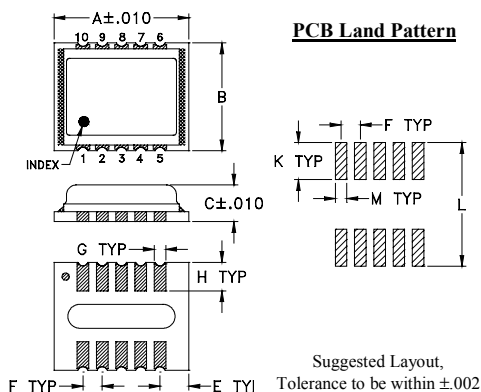
Maximum Ratings

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

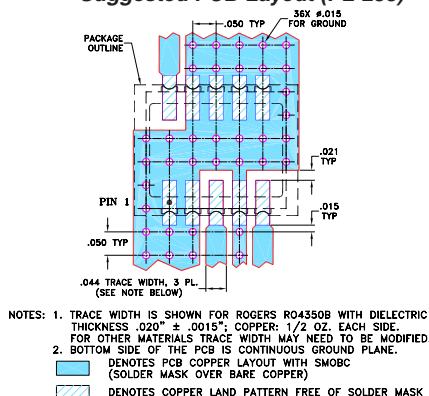
Outline Drawing



Outline Dimensions (inch/mm)

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: 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.
3. DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
4. 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-Circuits' applicable established test performance criteria and measurement instructions.
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Features

- wide bandwidth, 300 to 2400 MHz
- low conversion loss, 6.1 dB typ.
- excellent L-R isolation, 40 dB typ.
- LTCC double balanced mixer
- aqueous washable
- low cost
- low profile, 0.095"
- protected by US Patents 7,027,795 & 8,749,989

Applications

- cellular
- PCN
- defense & weather radar
- UHF TV
- WCDMA
- defense communications

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

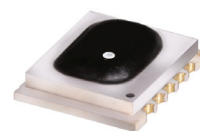
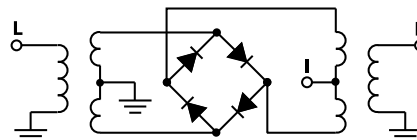
FREQUENCY (MHz)		CONVERSION LOSS (dB)			LO-RF ISOLATION (dB)		LO-IF ISOLATION (dB)		IP3 at center band (dBm)
LO/RF	IF	$\bar{X}$	σ	Max.	Typ.	Min.	Typ.	Min.	Typ.
300-2400	DC-700	6.1	0.1	8.9	40	25	25	15	10

1 dB COMPR. +1 dBm typ.

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
301.00	331.00	5.65	49.09	22.79	1.98	6.94
401.00	431.00	4.79	42.44	24.50	1.37	2.42
501.00	531.00	6.25	44.11	26.82	3.58	1.36
701.00	731.00	6.44	43.51	26.63	3.58	2.12
901.00	931.00	6.94	42.58	28.29	4.77	3.78
1151.00	1181.00	7.00	43.47	29.90	4.79	4.32
1301.00	1331.00	7.04	41.88	30.02	3.94	4.91
1501.00	1531.00	5.51	39.43	27.85	1.91	3.22
1701.00	1731.00	4.99	36.78	25.41	1.29	1.64
2001.00	2031.00	5.90	33.55	23.65	2.15	2.56
2401.00	2431.00	7.09	36.83	29.81	3.39	4.83

Electrical Schematic



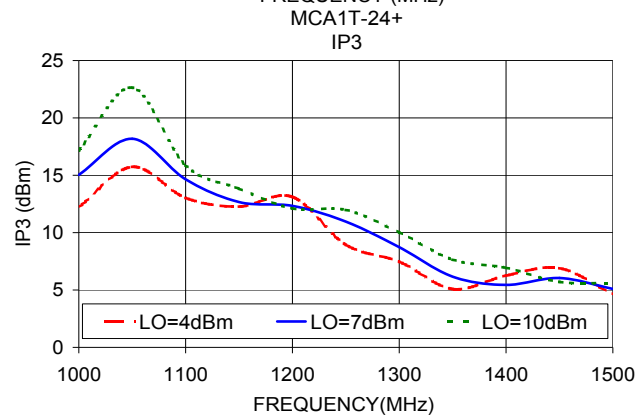
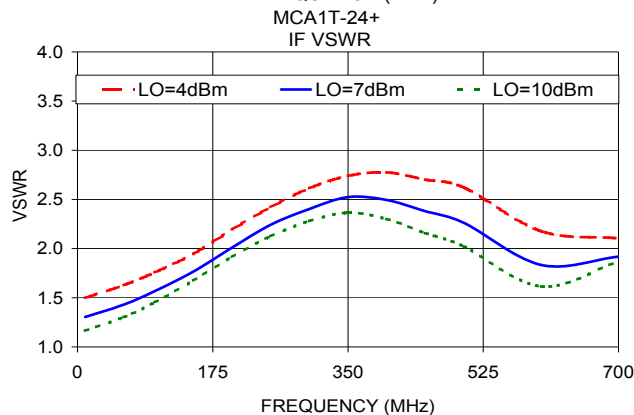
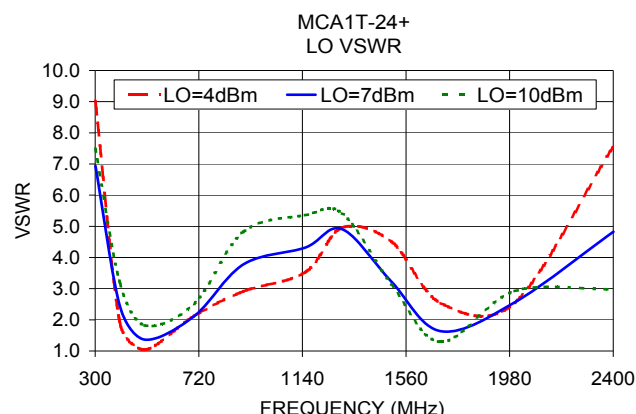
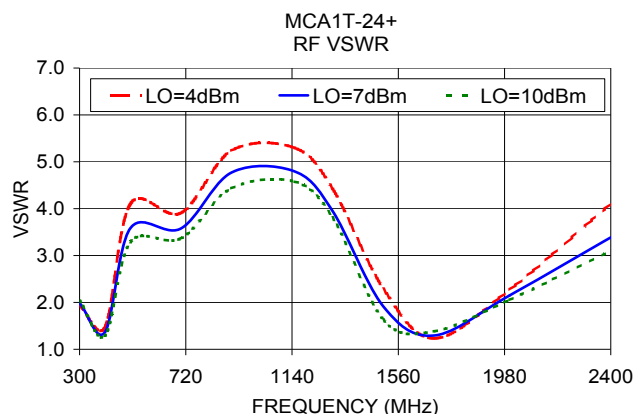
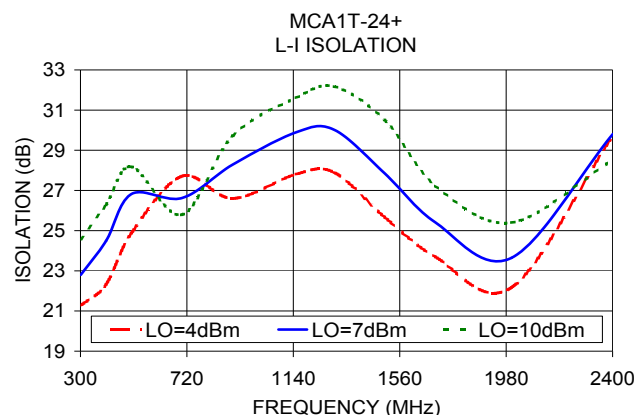
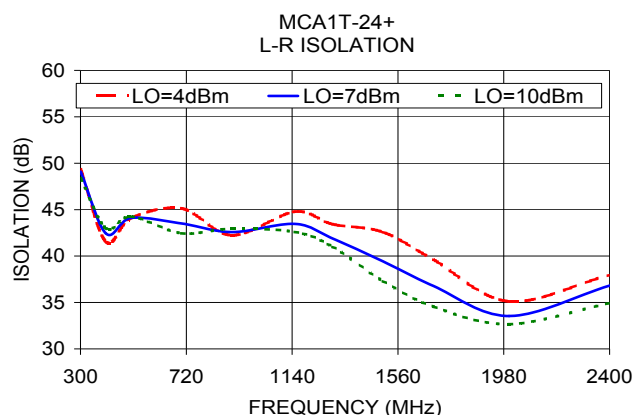
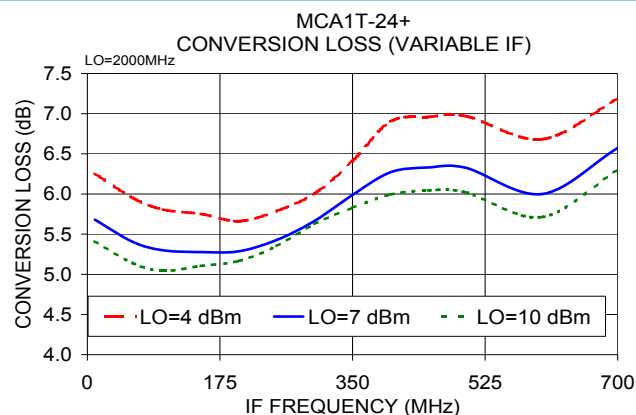
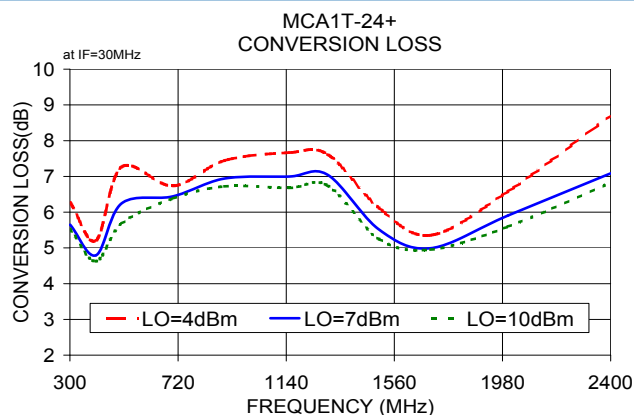
CASE STYLE: DZ885-2

+RoHS Compliant

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

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REV. B
M151777
MCA1T-24+
DJ/RS/CP
160816



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