

Ceramic

Frequency Mixer WIDE BAND

Level 10 (LO Power+10 dBm) 1000 to 4200 MHz

MCA1-42LH+



CASE STYLE: DZ885

Maximum Ratings

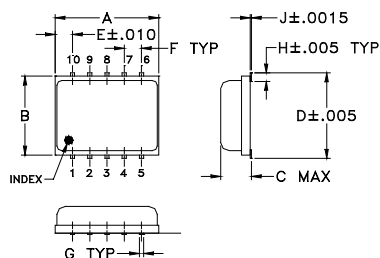
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power	50 mW
IF Current	40 mA

Permanent damage may occur if any of these limits are exceeded.

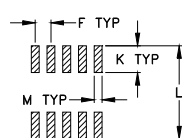
Pin Connections

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

Outline Drawing



PCB Land Pattern

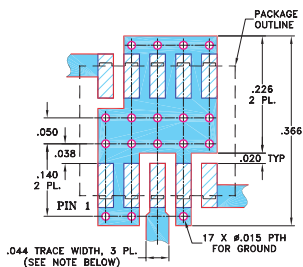


Suggested Layout,
Tolerance to be within ±.002

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.
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Features

- wide bandwidth, 1000 to 4200 MHz
- low conversion loss, 6.0 dB typ.
- excellent L-R isolation, 38 dB typ.
- LTCC double balanced mixer
- aqueous washable
- low cost
- low profile, 0.08"
- protected by US Patent 7,027,795

Applications

- cellular
- PCN
- fixed satellite
- WCDMA
- defense radar
- defense communications

Electrical Specifications (T_{AMB}=-55°C to 100°C)

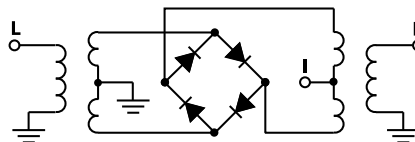
FREQUENCY (MHz)		CONVERSION LOSS (dB)			LO-RF ISOLATION (dB)		LO-IF ISOLATION (dB)		IP3 at center band (dBm)
LO/RF f _L -f _U	IF	$\overline{X}$	σ	Max.	Typ.	Min.	Typ.	Min.	Typ.
1000-4200	DC-1500	6.0	0.1	8.9	38	23	20	11	12

1 dB COMPR. +5 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	+10dBm	+10dBm	+10dBm	+10dBm	+10dBm
1000.10	1030.10	6.55	34.13	21.54	2.14	5.34
1200.10	1230.10	5.97	43.05	23.49	2.95	2.96
1500.10	1530.10	5.49	37.05	21.39	2.84	2.57
2000.10	2030.10	6.09	39.22	22.41	2.57	2.93
2200.10	2230.10	6.10	38.41	20.53	2.50	3.47
2500.00	2530.00	5.83	44.08	19.19	2.17	3.86
3000.10	3030.10	5.23	49.42	23.08	1.78	3.37
3500.10	3530.10	5.48	32.83	25.91	1.56	1.72
4000.10	4030.10	6.81	31.85	26.26	3.18	3.03
4200.10	4230.10	7.86	34.53	19.79	3.76	3.54

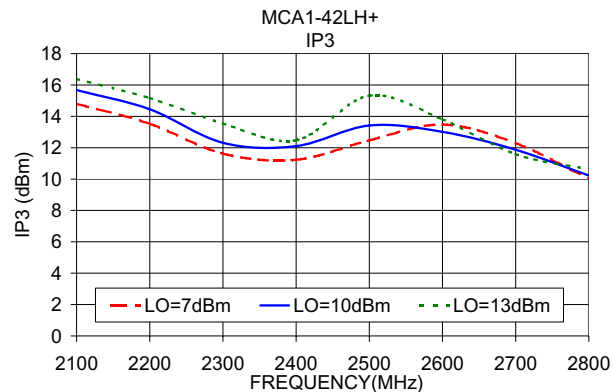
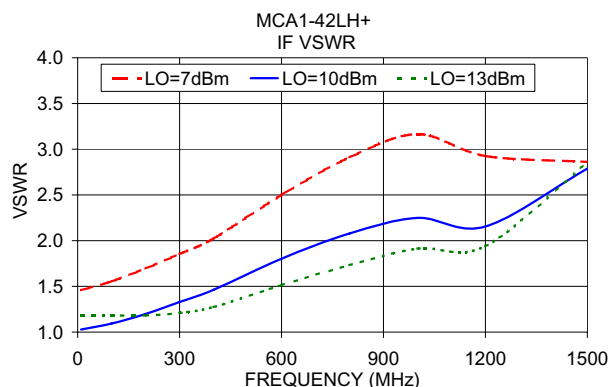
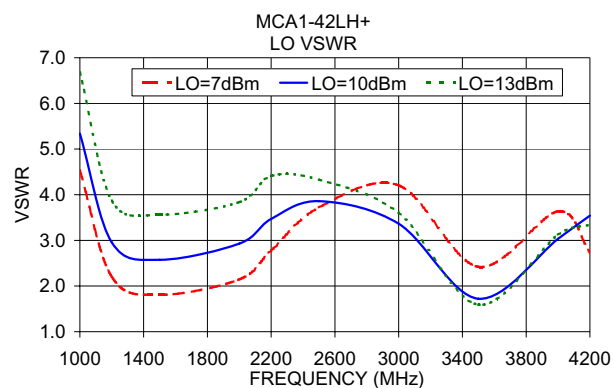
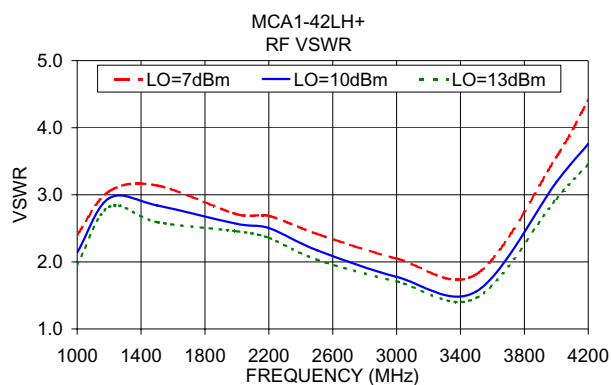
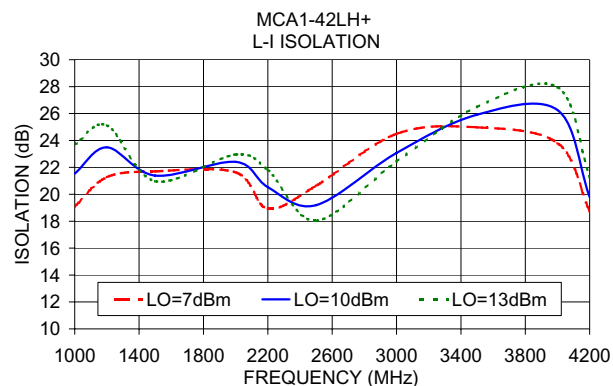
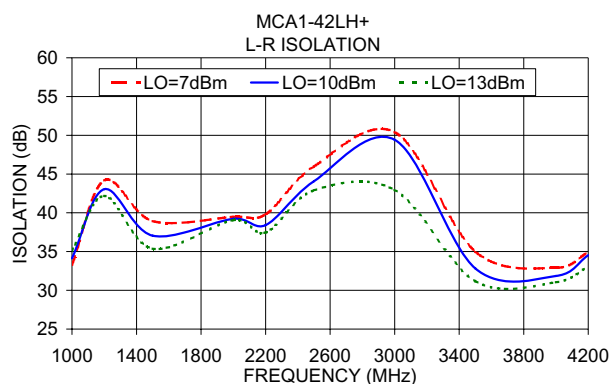
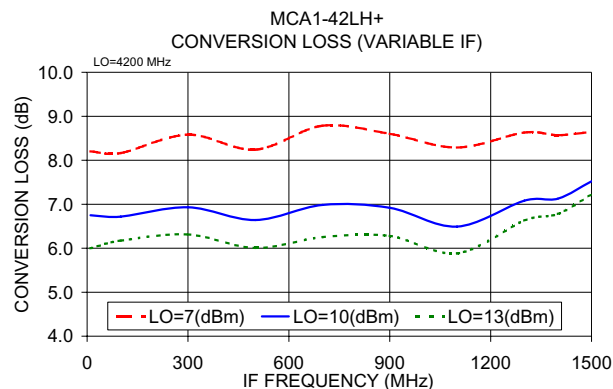
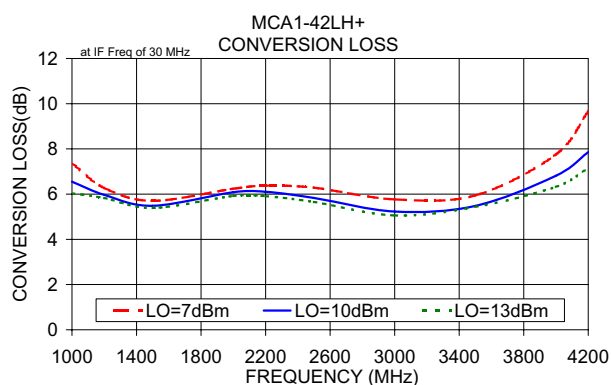
Electrical Schematic



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