

Frequency Mixer

MCA-35MH+

Level 13 (LO Power+13 dBm) 500 to 3500 MHz



CASE STYLE: DZ883

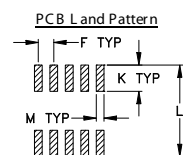
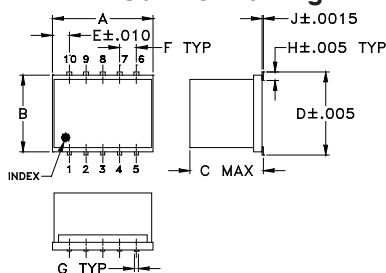
Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power	200 mW
IF Current	40 mA

Pin Connections

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

Outline Drawing

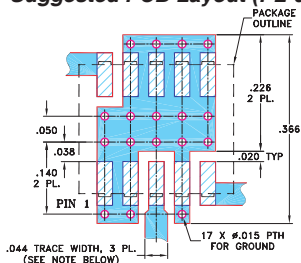


Suggested Layout,
Tolerance to be within ± 002

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

A	B	C	D	E	F	G
.30	.250	.190	.266	.050	.050	.012
7.62	6.35	4.83	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		0.5

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" $\pm$.0015"; COPPER: 1/2 OZ. EACH SIDE.
2. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
3. 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-Circuits' applicable established test performance criteria and measurement instructions.
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Features

- wide bandwidth, 500 to 3500 MHz
- excellent L-R isolation, 32 dB typ. (1800-2500 MHz)
- good matching 2:1 VSWR typ. (over 1800-2800 MHz)
- small size 0.25"x0.3"x0.2"
- aqueous washable
- triple balanced mixer
- protected by US Patent 6,917,796

Applications

- cellular
- PCN
- PDC
- DECT
- PHS
- WiMAX

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.	Typ.
500-3500	10-1500	6.9	0.1	8.7					
500-800	10-300	6.3	0.1	7.7	18	11	29	23	19
800-1000	10-200	6.5	0.1	7.7	24	17	28	20	22
1000-1800	10-800	6.6	0.1	8.7	29	20	28	20	20
1800-2000	10-200	6.3	0.1	7.7*	32	25	29	23	19
1800-2500	10-700	5.8	0.1	7.9	32	22	27	20	19
2000-3500	10-1500	6.5	0.1	8.7	29	17	23	15	19

1 dB COMPR. +9 dBm typ

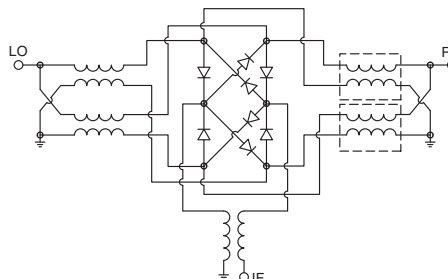
*Conversion loss tested at 30 MHz IF

- see individual band specs

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 +13dBm	LO +13dBm	LO +13dBm	LO +13dBm	LO +13dBm
460.00	490.00	6.07	14.89	31.56	1.65	1.44
820.00	850.00	6.55	22.74	28.78	2.86	1.11
1000.00	1030.00	6.52	27.75	27.75	3.40	1.27
1400.00	1430.00	6.99	32.26	26.14	2.21	1.75
1800.00	1830.00	6.07	32.12	30.09	1.92	1.57
1992.00	2022.00	5.92	33.68	28.32	1.70	1.54
2097.00	2127.00	5.70	32.52	28.29	1.55	1.38
2202.00	2232.00	5.82	31.97	28.76	1.54	1.34
2395.00	2425.00	6.15	30.82	26.29	1.67	1.35
2500.00	2530.00	5.95	30.44	26.01	1.87	1.37
2600.00	2630.00	6.13	31.78	26.48	2.20	1.30
2700.00	2730.00	6.47	30.50	26.37	2.54	1.28
2800.00	2830.00	6.75	30.68	25.93	2.82	1.34
2900.00	2930.00	6.94	30.99	25.14	3.05	1.49
3000.00	3030.00	6.74	28.34	24.21	3.53	1.62
3100.00	3130.00	6.80	29.07	23.03	3.88	1.83
3200.00	3230.00	6.80	28.43	21.62	3.85	2.01
3300.00	3330.00	6.81	27.62	22.07	3.63	2.12
3400.00	3430.00	6.53	27.00	21.28	3.23	2.19
3500.00	3530.00	6.35	24.71	20.83	2.77	2.20

Electrical Schematic

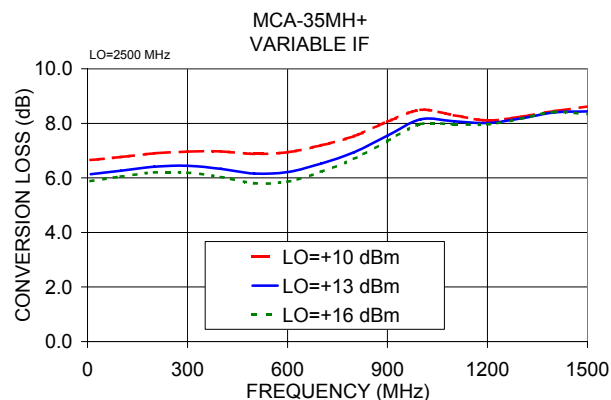
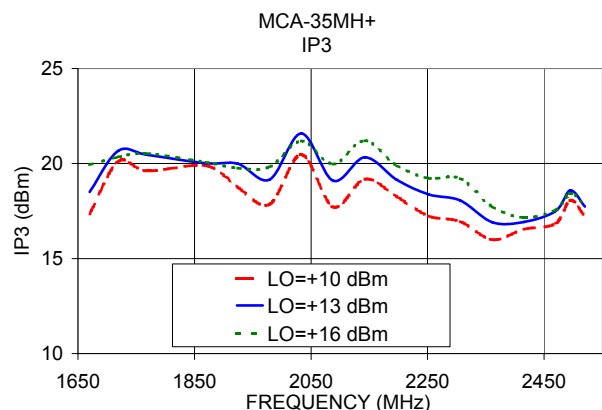
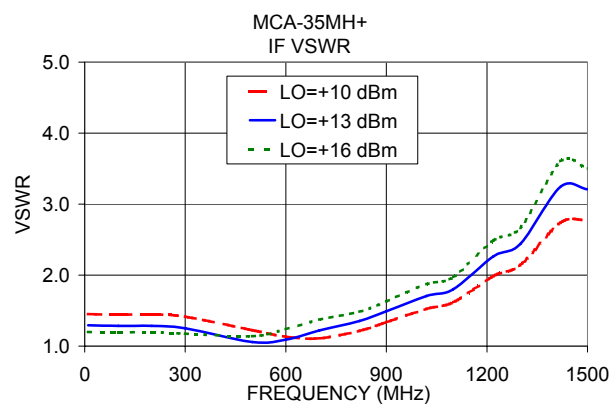
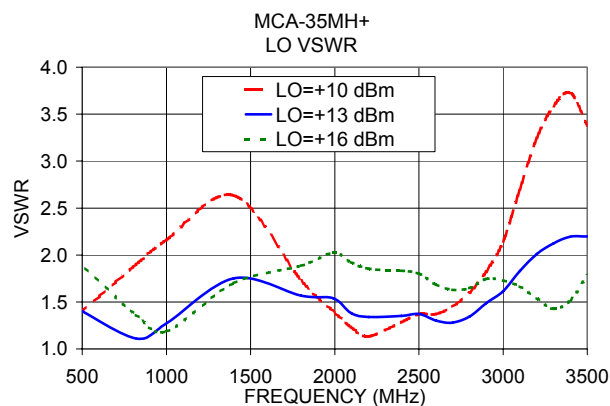
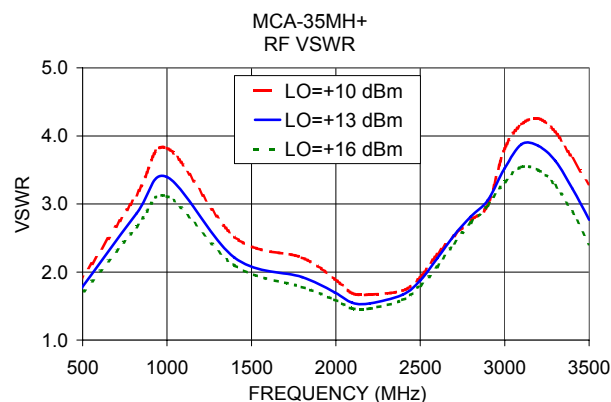
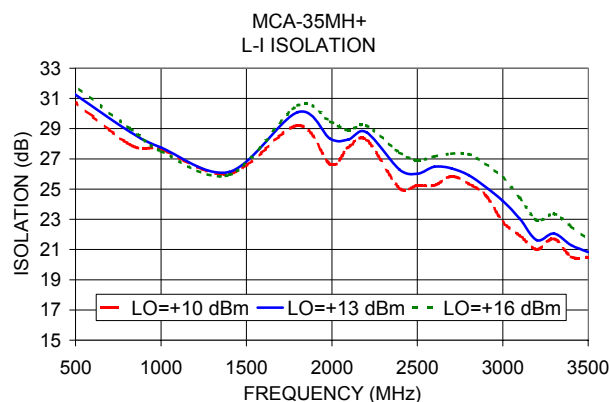
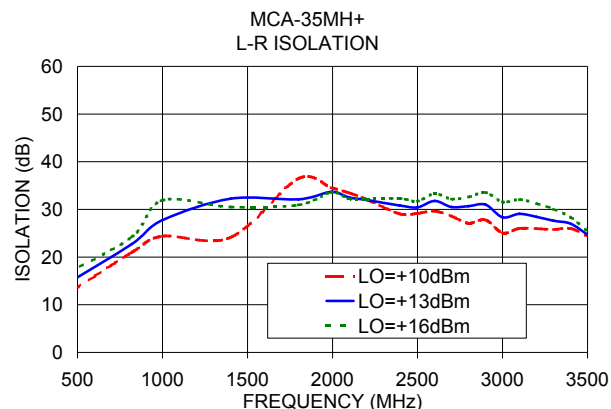
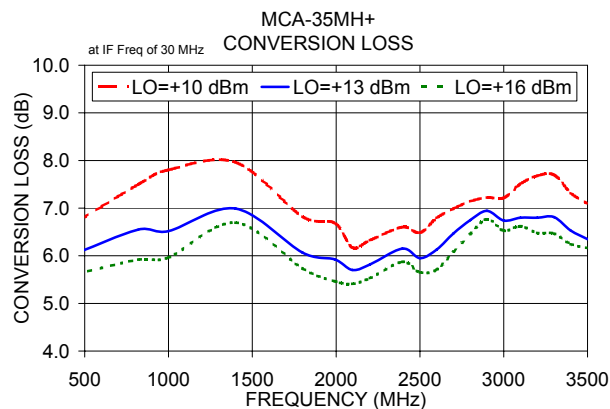


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Performance Charts

MCA-35MH+



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