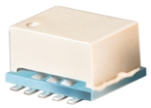
Ceramic

Frequency Mixer WIDE BAND

MCA-50MH+
MCA-50MH

Level 13 (LO Power+13 dBm) 1000 to 5000 MHz



CASE STYLE: DZ883
PRICE: $8.95 ea. QTY.(10-49)

+ RoHS compliant in accordance with EU Directive (2002/95/EC)

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

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

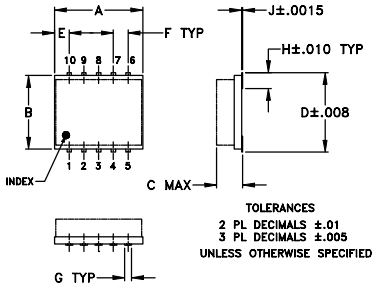
Features

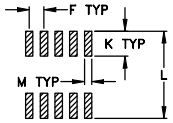
- wide bandwidth, 1000 to 5000 MHz
- good L-R isolation, 25 dB typ.; L-I isolation, 30 dB typ.
- small size 0.25"x0.3"x0.2"
- aqueous washable
- triple balanced mixer
- protected by US Patent 6,917,796

Applications

- PCN
- satellite
- line of sight links

Outline Drawing





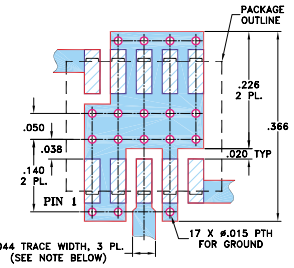
SUGGESTED LAYOUT FOR PCB LAND PATTERN

Outline Dimensions (inch / mm)

A	B	C	D	E	F	G
.30	.250	.190	.274	.050	.050	.012
7.62	6.35	4.83	6.96	1.27	1.27	0.30

H	J	K	L	M	wt
.057	.004	.085	.296	.030	grams
1.45	0.10	2.16	7.52	0.76	0.5

Demo Board MCL P/N: TB-144
Suggested PCB Layout (PL-045)



NOTES: 1. TRASCE 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

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.
1000-5000	**10-1500**	**7.3**	**0.2**	**9.9**		●		●	
1000-1400	10-400	6.2	0.1	7.8	20	11	32	25	20
1400-2000	10-600	6.0	0.1	7.7	34	20	28	20	21
2000-2600	10-600	7.8	0.1	9.9	25	18	28	20	21
2600-4500	10-1500	6.6	0.1	8.6	39	22	30	20	18
4500-5000	50-500	7.3	0.2	8.9	35	22	30	20	21

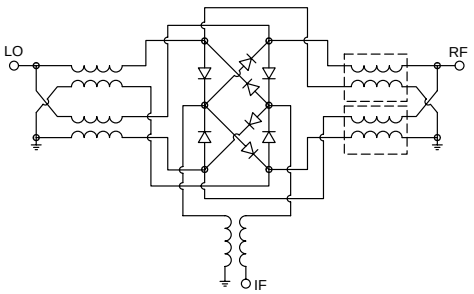
1 dB COMPR. +9 dBm typ.

● see individual band specs

Typical Performance Data

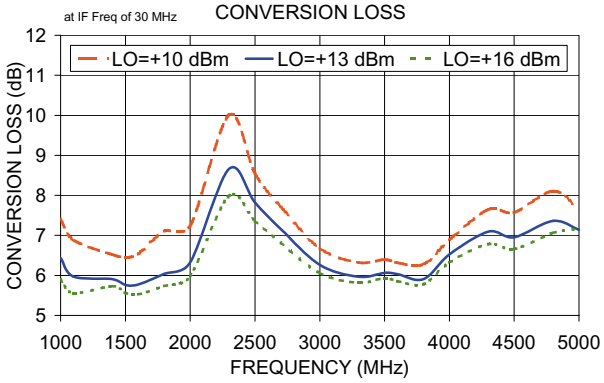
Frequency (MHz)		Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)
RF	LO	LO +13dBm	LO +13dBm	LO +13dBm	LO +13dBm	LO +13dBm
1000.10	1030.10	6.43	16.42	31.37	1.28	2.13
1100.10	1130.10	5.97	18.64	31.89	1.17	2.23
1400.10	1430.10	5.91	30.08	31.47	1.23	2.49
1500.10	1530.10	5.76	34.43	31.25	1.26	2.39
1600.10	1630.10	5.78	39.11	31.37	1.28	2.25
1800.10	1830.10	6.04	39.49	29.65	1.42	2.06
2000.10	2030.10	6.32	28.14	28.64	1.53	2.12
2300.10	2330.10	8.66	23.59	25.91	1.90	1.97
2500.10	2530.10	7.82	24.04	27.43	1.78	2.12
2700.10	2730.10	7.15	28.71	30.07	1.63	2.12
3000.10	3030.10	6.26	33.02	28.73	1.61	1.50
3300.10	3330.10	5.97	41.64	28.07	1.75	1.33
3500.10	3530.10	6.06	44.84	29.22	1.82	1.03
3600.10	3630.10	6.03	56.06	28.90	1.80	1.05
3800.10	3830.10	5.91	40.61	30.53	1.79	1.22
4000.10	4030.10	6.53	35.57	34.07	1.78	1.11
4300.10	4330.10	7.10	39.56	33.74	2.07	1.60
4500.10	4530.10	6.95	40.10	31.97	2.08	2.10
4800.10	4830.10	7.36	29.20	28.90	1.59	2.02
5000.10	5030.10	7.14	32.79	30.33	1.57	1.61

Electrical Schematic

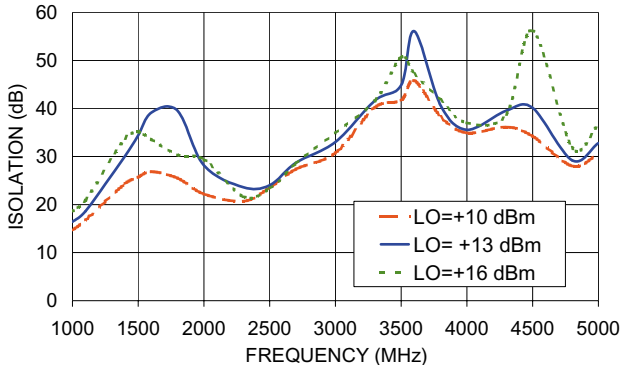


Performance Charts

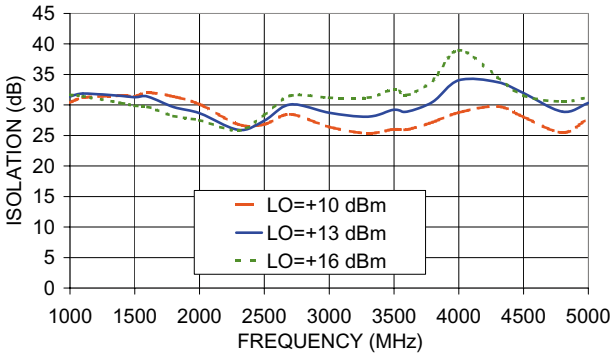
MCA-50MH
at IF Freq of 30 MHz
CONVERSION LOSS



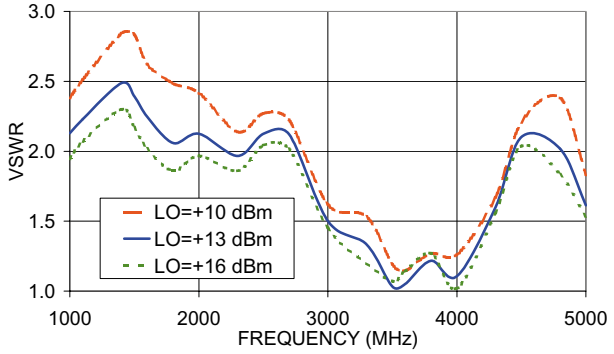
MCA-50MH
L-R ISOLATION



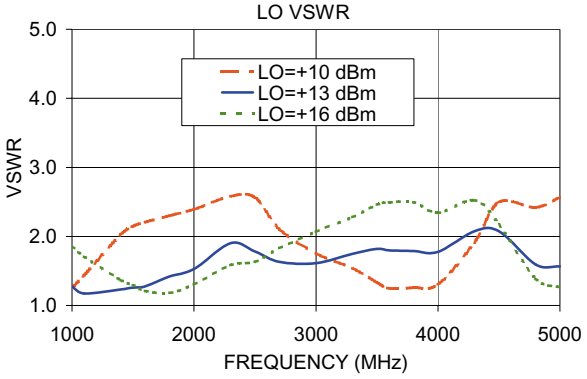
MCA-50MH
L-I ISOLATION



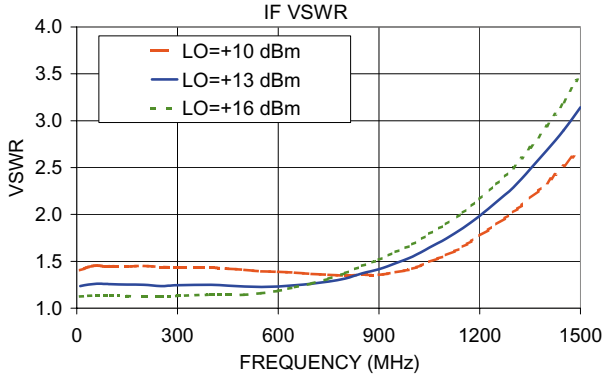
MCA-50MH
RF VSWR



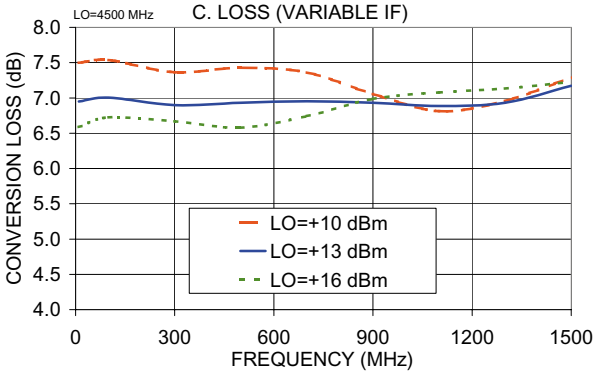
MCA-50MH
LO VSWR



MCA-50MH
IF VSWR



MCA-50MH
LO=4500 MHz
C. LOSS (VARIABLE IF)



MCA-50MH
IP3