Ceramic

Frequency Mixer WIDE BAND

MCA1-60+

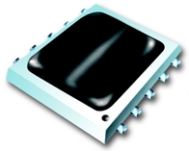
Level 7 (LO Power +7 dBm) 1600 to 6000 MHz

Features

- wide bandwidth, 1600 to 6000 MHz
- useable to 8 GHz
- IF, DC to 2000 MHz
- LTCC double balanced mixer
- low cost
- low profile, 0.08"

Applications

- PCN
- defense & weather radar
- WCDMA
- defense communications



CASE STYLE: DZ885
PRICE: $7.95 ea. QTY (10-49)

(Patent pending)

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

The +suffix has been added in order to identify RoHS Compliance. There has been no change to the model's material, form, fit, or function. See our web site for RoHS Compliance methodologies and qualifications.

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

MODEL NO.	FREQUENCY (MHz)		CONVERSION LOSS (dB)			LO-RF ISOLATION (dB)		LO-IF ISOLATION (dB)		IP3@ center band Typ. (dBm)	E FACTOR
	LO/RF f_L- f_U	IF	$\bar{x}$	σ	Max.	Typ.	Min.	Typ.	Min.		
MCA1-60+	1600-4400	DC-2000	6.3	0.2	8.3*	32	20	17	—	9	0.2
	4400-6000	DC-2000	6.2	0.3	8.5*	23	17	18	—	8	0.1

1dB Compr.: +1 dBm typ.
E= [IP3(dBm)-LO Power(dBm)]/10
• Conversion loss at 30 MHz IF, increases with IF frequency. See Graphs

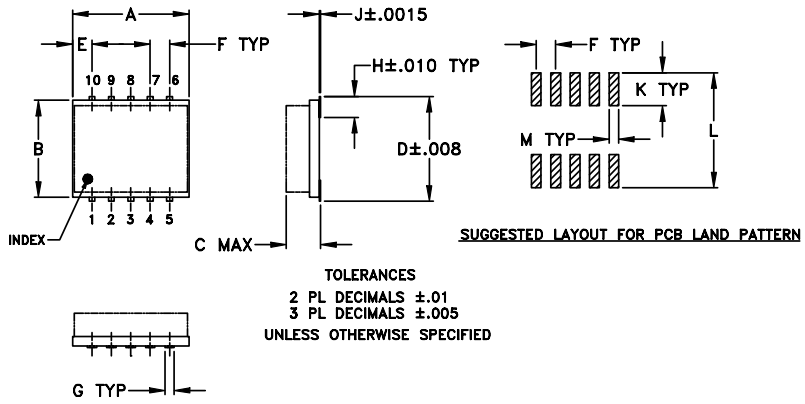
Pin Connections

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

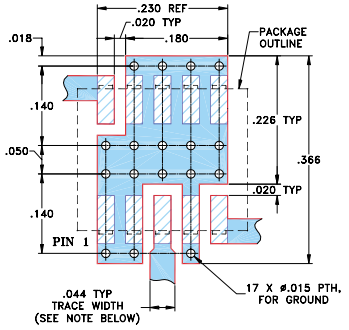
Maximum Ratings

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

Outline Drawing



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



NOTE: TRACE WIDTH IS SHOWN FOR ROGERS RO4350 WITH DIELECTRIC THICKNESS 0.020" ± 0.0015", COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.

DENOTES PCB COPPER LAYOUT

DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Outline Dimensions (inch / mm)

A	B	C	D	E	F	G
.30	.250	.085	.274	.050	.050	.012
7.62	6.35	2.16	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	0.25

Typical Performance Data at 25°C

Frequency		Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR LO port (:1)	VSWR RF port (:1)
RF MHz	LO MHz	LO +7 dBm	LO +7 dBm	LO +7 dBm	LO +7 dBm	LO +7 dBm
1600.00	1630.00	5.85	33.44	18.92	2.77	3.21
1800.00	1830.00	5.57	43.23	20.13	3.06	2.72
2000.00	2030.00	5.67	35.50	19.59	3.18	1.52
2300.00	2330.00	5.57	30.85	17.13	2.32	2.55
2500.00	2530.00	5.67	31.53	16.64	1.12	3.70
3000.00	3030.00	6.65	33.86	17.37	4.50	6.40
3300.00	3330.00	6.51	33.27	17.79	4.42	2.35
3500.00	3530.00	6.26	32.26	16.02	2.74	2.17
3800.00	3830.00	5.85	33.61	14.80	4.29	2.21
4000.00	4030.00	6.13	34.90	16.01	3.49	2.03
4300.00	4330.00	6.05	33.36	17.95	3.60	1.97
4500.00	4530.00	5.95	29.83	18.64	2.60	2.31
4700.00	4730.00	6.02	28.69	19.14	2.51	1.78
4900.00	4930.00	6.11	25.78	19.89	2.02	1.91
5000.00	5030.00	5.99	24.51	20.40	1.54	1.50
5200.00	5230.00	5.88	23.40	21.37	1.71	1.53
5300.00	5330.00	6.06	22.68	21.68	2.45	2.25
5500.00	5530.00	6.00	22.63	19.20	3.96	3.70
5700.00	5730.00	6.14	23.13	15.10	6.43	5.34
6000.00	6030.00	6.61	24.37	13.33	2.81	1.73

Performance Charts