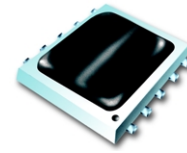


Ceramic

# Frequency Mixer WIDE BAND

## MCA1-60+

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



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.

### 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

### Mixer Electrical Specifications (T<sub>AMB</sub>= -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 <sub>L</sub> -f <sub>U</sub>	IF	$\bar{x}$	$\sigma$	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

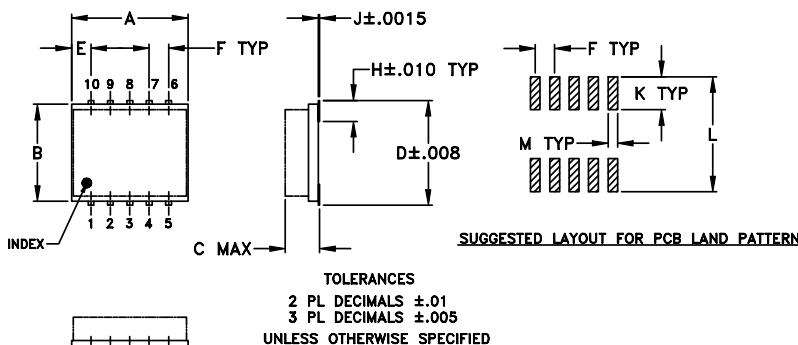
### Pin Connections

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

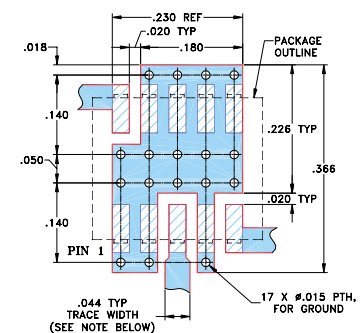
### Outline Drawing



### 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	

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



INTERNET <http://www.minicircuits.com>

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REV. D  
 M98898  
 ED-10107/5  
 MCA1-60+  
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 050914  
 Page 1 of 2

## 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	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

