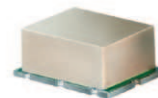


# Surface Mount Frequency Mixer

# SYM-30DLHW+ SYM-30DLHW

Level 10 (LO Power +10 dBm) 5 to 3000 MHz



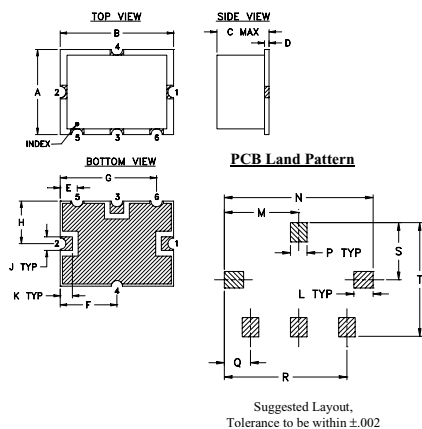
## Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	50mW
IF Current	40mA
Permanent damage may occur if any of these limits are exceeded.	

## Pin Connections

LO	2
RF	1
IF	3
GROUND	4,5,6

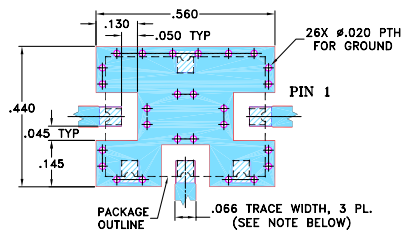
## Outline Drawing



## Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	J	K
.38	.50	.23	.020	.075	.250	.425	.187	.050	.050
9.65	12.70	5.84	0.51	1.91	6.35	10.80	4.75	1.27	1.27
L	M	N	P	Q	R	S	T	wt.	
.070	.270	.540	.060	.095	.445	.208	.415	grams	
1.78	6.86	13.72	1.52	2.41	11.30	5.28	10.54	0.8	

## Demo Board MCL P/N: TB-12 Suggested PCB Layout (PL-079)



## Features

- wideband, 5 to 3000 MHz
- good L-R isolation, 36 dB typ.
- excellent L-I isolation, 45 dB typ.
- low conversion loss, 6.5 dB typ.

## Applications

- CDMA
- GSM
- DCS
- PCN

## Electrical Specifications

FREQUENCY (MHz)	CONVERSION LOSS* (dB)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)			IP3* at center band (dBm)						
		L	M	U	L	M	U							
5-3000	5-1500	36	28	37	29	33	23	41	32	45	37	47	31	19

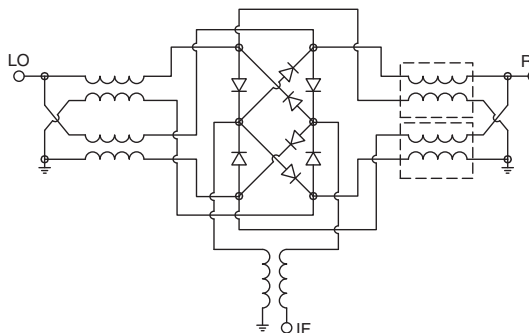
1 dB COMP: +5 dBm typ.  
\*IP3 at 800-900 MHz, and 1800-1900 MHz

L = low range [ $f_c$  to  $10 f_c$ ]  
M = mid range [ $10 f_c$  to  $f_c/2$ ]  
U = upper range [ $f_c/2$  to  $f_c$ ]

## Typical Performance Data

Frequency (MHz)	Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)
5.10	35.11	6.58	35.88	1.13	1.62
100.10	130.11	6.53	36.17	1.08	1.61
221.15	251.16	6.50	36.39	1.13	1.60
434.31	464.32	6.51	36.54	1.26	1.57
647.47	677.48	6.40	36.89	1.43	1.53
860.63	890.64	6.55	37.21	1.62	1.50
1073.78	1103.79	6.73	38.11	1.76	1.46
1215.89	1245.90	6.36	38.74	1.80	1.44
1429.05	1459.06	6.22	38.31	1.69	1.37
1600.10	1630.11	6.19	37.88	1.50	1.33
1815.49	1845.50	6.36	35.43	1.29	1.22
2030.87	2060.88	6.80	32.79	1.27	1.13
2246.25	2276.26	7.17	31.15	1.32	1.04
2353.95	2383.96	7.26	30.54	1.27	1.01
2461.64	2491.65	7.28	30.28	1.17	1.07
2569.33	2599.34	7.27	30.13	1.03	1.15
2677.02	2707.03	7.33	30.10	1.13	1.24
2784.72	2814.73	7.43	30.14	1.29	1.33
2892.41	2922.42	7.53	30.39	1.45	1.43
3000.10	3030.11	7.67	32.41	1.57	1.51

## Electrical Schematic



**Mini-Circuits**  
ISO 9001 ISO 14001 AS 9100 CERTIFIED

For detailed performance specs & shopping online see web site

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 The Design Engineers Search Engine Provides ACTUAL Data Instantly at [minicircuits.com](http://minicircuits.com)

IF/RF MICROWAVE COMPONENTS

Notes: 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuit's applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at [www.minicircuits.com/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp).

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## Performance Charts

