

Surface Mount Frequency Mixer

Level 7 (LO Power +7 dBm) 5 to 1200 MHz

**SYM-12+
SYM-12**



CASE STYLE: TTT167
PRICE: \$9.45 ea. QTY (1-9)

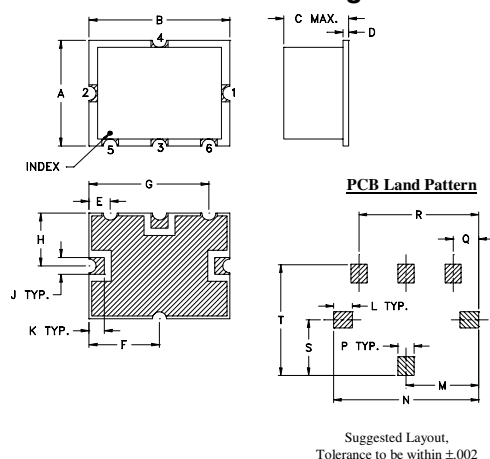
Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	50mW
IF Current	40mA

Pin Connections

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

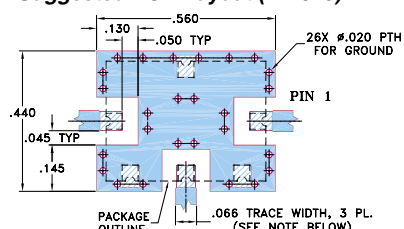
Outline Drawing



Outline Dimensions (inch)

A	B	C	D	E	F	G	H	J	
.375	.500	.23	.020	.075	.250	.425	.187	.050	
9.53	12.70	5.84	0.51	1.91	6.35	10.80	4.75	1.27	
K	L	M	N	P	Q	R	S	T	wt.
.050	.070	.270	.540	.060	.095	.445	.208	.415	grams
1.27	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

- low conversion loss, 6.5 dB typ.
- excellent L-R isolation, 50 dB typ.; L-I, 46 dB typ.
- IF response to DC

Applications

- cellular
- UHF TV
- ISM/GPS

+ 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.

Electrical Specifications

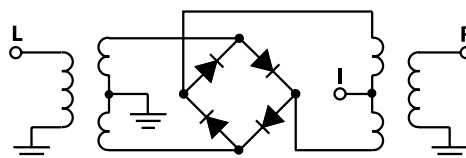
FREQUENCY (MHz)		CONVERSION LOSS (dB)				LO-RF ISOLATION (dB)						LO-IF ISOLATION (dB)						IP3 at center band (dBm)
LO/RF	IF	Mid-Band			Total Range Max.	L	M	U	L	M	U	L	M	U				
		\bar{X}	σ	Max.														
5-1200	DC-1000	6.5	.30	8.0	9.0	68	45	50	30	37	25	56	40	46	25	29	18	16

1 dB COMP.: +1 dBm typ.

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 +7dBm	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm
5.00	35.00	6.57	72.28	69.79	1.43	3.00
10.10	40.10	6.37	71.75	68.24	1.19	2.56
50.00	80.00	6.49	63.00	60.09	1.07	2.42
102.45	72.45	6.54	68.06	64.89	1.01	2.36
143.30	113.30	6.62	59.96	55.79	1.01	2.32
224.15	194.15	6.70	55.72	50.78	1.03	2.25
280.35	250.35	6.74	53.25	48.69	1.02	2.36
350.63	320.63	6.80	51.05	46.92	1.04	2.32
438.53	408.53	7.05	47.81	45.14	1.11	2.33
548.47	518.47	6.96	46.31	42.00	1.20	2.34
600.00	570.00	7.01	45.68	39.34	1.27	2.33
685.97	655.97	7.10	43.02	37.59	1.45	2.37
767.15	737.15	7.00	40.88	35.91	1.64	2.38
857.93	827.93	7.07	40.26	34.32	1.87	2.41
900.00	870.00	7.11	40.45	33.02	2.16	2.37
1000.00	970.00	7.29	40.41	30.95	2.48	2.34
1100.00	1070.00	7.71	40.52	29.45	2.78	2.31
1150.00	1120.00	8.07	40.56	28.53	3.06	2.35
1170.00	1140.00	8.18	40.56	28.47	3.35	2.38
1200.00	1170.00	8.39	40.43	28.40	3.50	2.39

Electrical Schematic



Mini-Circuits®

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

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661

Distribution Centers NORTH AMERICA 800-654-7949 • 417-335-5935 • Fax 417-335-5945 • EUROPE 44-1252-832600 • Fax 44-1252-837010

Mini-Circuits ISO 9001 & ISO 14001 Certified



REV. A
M98898
SYM-11
DJ/TD/CP/AM
060626
Page 1 of 2

Performance Charts

SYM-12+ SYM-12

