

# Surface Mount Frequency Mixer

Level 13 (LO Power +13 dBm) 40 to 2500 MHz

## SYM-25DMHW+ SYM-25DMHW



CASE STYLE: TTT167  
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	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	200mW
IF Current	40mA

### Pin Connections

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

### Features

- wideband, 40 to 2500 MHz
- low conversion loss, 6.6 dB typ.
- high IP3, 26 dBm typ.
- IF response to DC

### Applications

- cellular
- PCS
- satellite distribution

### Electrical Specifications

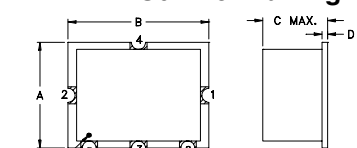
FREQUENCY (MHz)	CONVERSION LOSS* (dB)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)			IP3 at center band (dBm)										
		L	M	U	L	M	U											
40-2500	DC-1000*	6.6	.10	8.0	9.0	47	32	37	27	35	22	38	28	35	25	38	20	26

1 dB COMP.: +9 dBm typ.  
\*Conversion loss increases up to 6 dB higher as IF frequency decreases from 5MHz to DC.  
L = low range [ $f_l$  to  $10 f_l$ ]  
M = mid band [ $2 f_l$  to  $f_u/2$ ]  
U = upper range [ $f_u/2$  to  $f_u$ ]

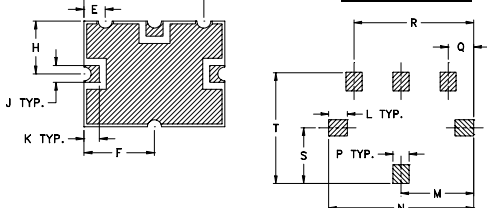
### Typical Performance Data

Frequency (MHz)	Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)	
						LO +13dBm
10.10	80.10	6.05	53.30	37.85	1.14	1.50
100.10	170.10	6.13	61.96	37.66	1.14	1.48
200.10	270.10	6.20	57.62	37.58	1.17	1.45
400.10	470.10	6.17	51.91	37.25	1.28	1.42
644.24	714.24	6.32	48.85	36.97	1.49	1.26
805.62	875.62	6.34	44.29	34.60	1.70	1.20
1000.10	1070.10	6.49	40.91	34.12	2.01	1.11
1209.07	1279.07	6.72	36.71	32.67	2.27	1.04
1451.13	1521.13	6.87	35.32	33.07	2.79	1.08
1500.10	1570.10	6.99	35.51	33.59	2.90	1.11
1612.51	1682.51	6.98	36.55	34.68	2.94	1.18
1854.58	1924.58	7.66	35.12	37.81	2.52	1.35
2000.10	2070.10	8.04	33.74	39.74	2.41	1.47
2177.34	2247.34	8.02	32.04	37.96	2.21	1.59
2258.03	2328.03	8.00	31.23	35.83	2.14	1.65
2419.41	2489.41	7.92	30.39	32.11	2.09	1.85
2500.10	2430.10	7.67	29.98	30.34	1.82	2.00

### Outline Drawing



### PCB Land Pattern

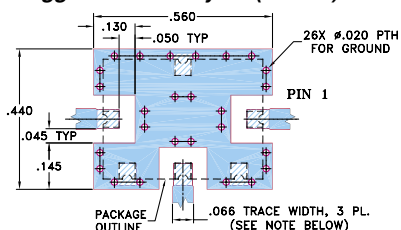


Suggested Layout, Tolerance to be within ±.002

### Outline Dimensions (inch)

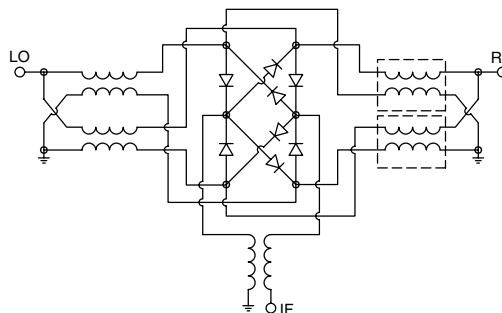
A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	Wt.
.375	.500	.23	.020	.075	.250	.425	.187	.050	.050	.070	.270	.540	.060	.095	.445	.208	.415	grams
9.53	12.70	5.84	0.51	1.91	6.35	10.80	4.75	1.27	1.27	1.78	6.86	13.72	1.52	2.41	11.30	5.28	10.54	0.8

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



1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030" ± .002". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
  2. GROUND PAD SHALL BE FREE OF SOLDER MASK IF REQUIRED FOR SOLDERING.
  3. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER), SEE NOTE 2.  
■ DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

### Electrical Schematic



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

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## Performance Charts

