

# Surface Mount Frequency Mixer

Level 17 (LO Power +17 dBm) 50 to 1000 MHz

## SYM-10DHW+ SYM-10DHW



CASE STYLE: TTT167  
PRICE: \$16.95 ea. QTY (1-9)

+ 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

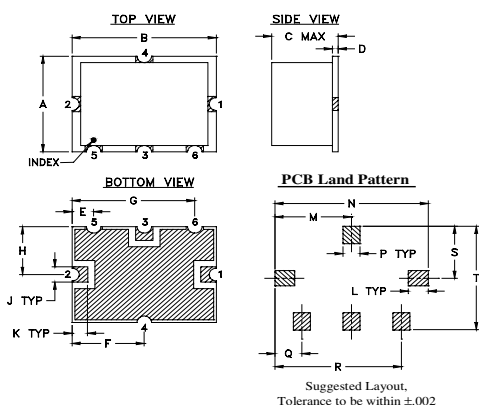
### Features

- low conversion loss, 7.0 dB typ.
- excellent L-R isolation, 48 dB typ.
- high IP3, 25 dBm typ.

### Applications

- UHF TV
- cellular
- ISM/GSM

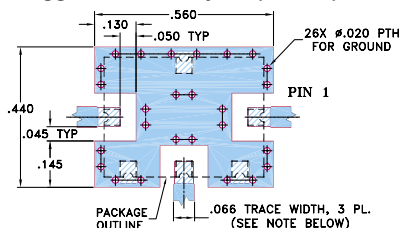
### Outline Drawing



### 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)



- NOTE: 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 Specifications

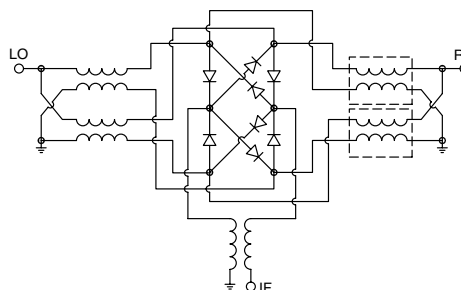
FREQUENCY (MHz)	CONVERSION LOSS (dB)	LO-RF ISOLATION (dB)		LO-IF ISOLATION (dB)		IP3 at center band (dBm)		
		Typ.	Min.	Typ.	Min.			
50-1000	20-800	7.0	—	8.5	9.8	45 30	29 20	25

1 dB COMP: +14 dBm typ.  
m= mid band [2f<sub>L</sub> to f<sub>U</sub>/2]

### 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 +17dBm	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm
50.00	80.00	6.80	49.30	41.30	1.51	1.53
80.00	110.00	6.60	50.20	41.70	1.54	1.48
100.00	130.00	6.69	49.80	42.20	1.51	1.54
117.86	147.86	6.68	48.50	41.80	1.52	1.59
185.71	215.71	6.81	45.70	41.10	1.57	1.53
253.57	283.57	6.92	43.50	39.90	1.53	1.50
300.00	330.00	6.95	42.70	38.60	1.48	1.65
321.43	351.43	6.86	42.20	37.70	1.47	1.56
389.29	419.29	7.14	43.10	36.90	1.46	1.65
457.14	487.14	7.15	42.20	34.70	1.38	1.43
500.00	530.00	7.03	43.60	33.10	1.35	1.41
525.00	555.00	7.03	47.50	32.20	1.34	1.30
592.86	622.86	7.15	51.40	29.00	1.33	1.34
660.71	690.71	7.14	43.40	27.50	1.28	1.39
728.57	758.57	7.14	40.00	27.10	1.29	1.37
796.43	826.43	7.39	40.90	27.50	1.34	1.40
800.00	830.00	7.44	41.00	27.60	1.34	1.41
864.29	894.29	7.53	43.60	26.70	1.36	1.46
932.14	962.14	7.93	41.70	25.90	1.46	1.48
1000.00	1030.00	8.38	37.10	25.20	1.61	1.44

### Electrical Schematic



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RF/IF MICROWAVE COMPONENTS

REV. E  
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ED-6487/2  
DJ/TD/AM  
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## Performance Charts

