

Surface Mount Frequency Mixer

Level 13 (LO Power +13 dBm) 5 to 3000 MHz

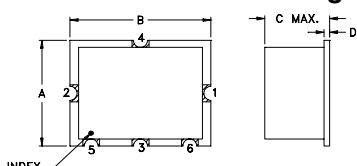
Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	200mW
IF Current	40mA

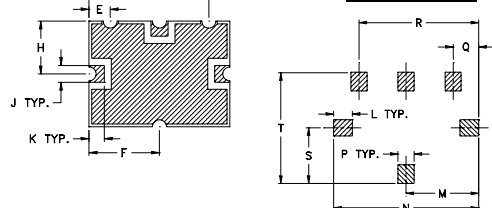
Pin Connections

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

Outline Drawing



PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

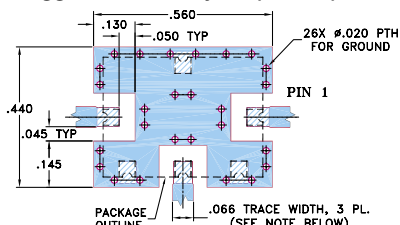
Outline Dimensions (inch)

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)



- 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

Features

- wideband, 5 to 3000 MHz
- good L-R isolation, 36 dB typ.
- excellent L-I isolation, 42 dB typ.
- triple balanced mixer

Applications

- CDMA
- GSM
- DCS
- PCN

SYM-30DMHW+ SYM-30DMHW



CASE STYLE: TTT167

PRICE: \$9.95 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.

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 m			Total Range Max.	L		M		U		L		M		U		
		\bar{X}	σ	Max.		Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.			
		f_L - f_U																
5-3000	5-1500	6.5	.10	8.4	9.3	36	25	39	30	34	23	41	27	42	33	45	30	22

1 dB COMP.: +9 dBm typ.

*IP3 at 800-900 MHz. and 1800-1900 MHz

L = low range [f_L to 10 f_L]

m = mid band [2 f_L to f_U/2]

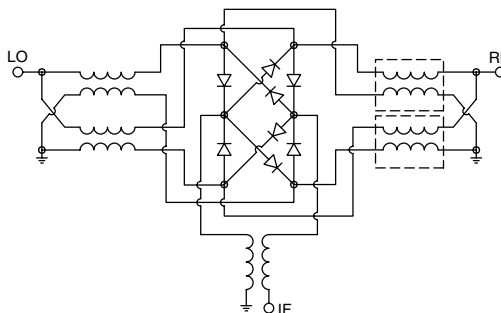
M = mid range [10 f_L to f_U/2]

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)
RF	LO	LO +13dBm	LO +13dBm	LO +13dBm	LO +13dBm	LO +13dBm
5.10	35.11	6.58	36.03	38.39	1.15	1.57
100.10	130.11	6.50	35.88	43.47	1.08	1.55
221.15	251.16	6.49	36.20	43.04	1.13	1.54
434.31	464.32	6.56	36.53	42.16	1.25	1.53
647.47	677.48	6.43	37.23	40.16	1.44	1.52
860.63	890.64	6.59	38.94	39.55	1.66	1.49
1002.73	1032.74	6.75	40.44	39.15	1.78	1.50
1215.89	1245.90	6.44	42.67	40.10	1.88	1.46
1429.05	1459.06	6.20	42.49	40.48	1.74	1.43
1500.10	1530.11	6.25	42.48	40.72	1.68	1.42
1600.10	1630.11	6.21	41.45	40.86	1.56	1.43
1815.49	1845.50	6.39	38.09	42.04	1.39	1.39
1923.18	1953.19	6.74	35.83	42.77	1.41	1.37
2030.87	2060.88	7.04	33.82	43.36	1.49	1.35
2138.56	2168.57	7.32	31.83	43.31	1.58	1.34
2246.25	2276.26	7.45	30.59	42.74	1.58	1.28
2461.64	2491.65	7.42	29.50	42.49	1.41	1.19
2677.02	2707.03	7.35	29.11	41.54	1.11	1.12
2892.41	2922.42	7.40	29.03	38.92	1.17	1.16
3000.10	3030.11	7.48	28.88	37.68	1.28	1.17

Electrical Schematic



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Performance Charts

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