

Surface Mount Frequency Mixer

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

SYM-30DMHW+ SYM-30DMHW



Maximum Ratings

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

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

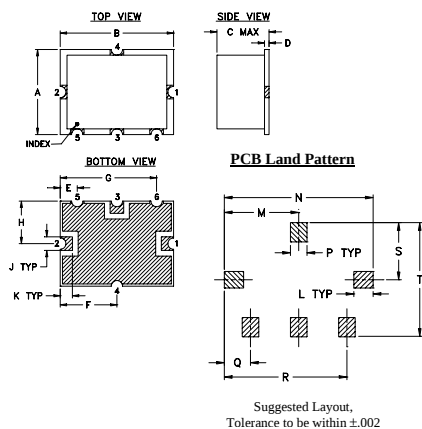
CASE STYLE: TTT167

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.

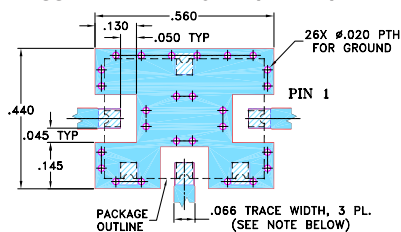
Outline Drawing



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)
LO/Rf	IF	Mid-Band m			Total Range Max.	L		M		U		L		M		U		
		$\overline{X}$	σ	Max.		Typ.	Min.	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 $f_U/2$]

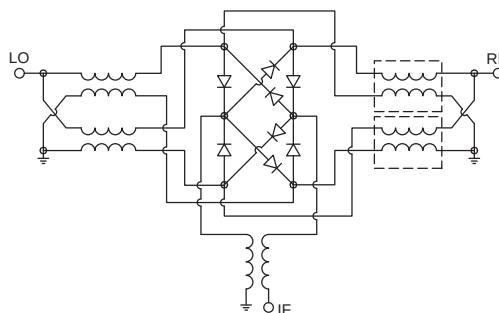
M = mid range [$10 f_L$ to $f_U/2$]

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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IF/RF MICROWAVE COMPONENTS

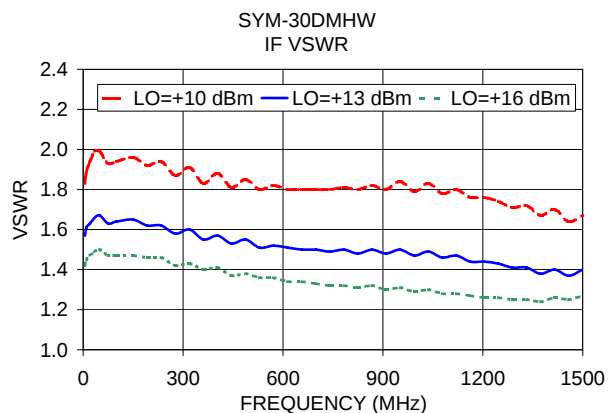
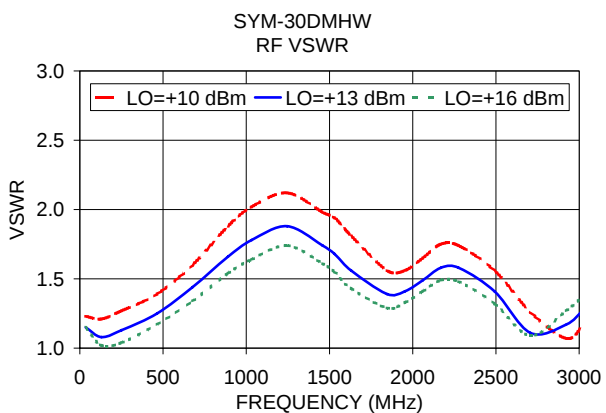
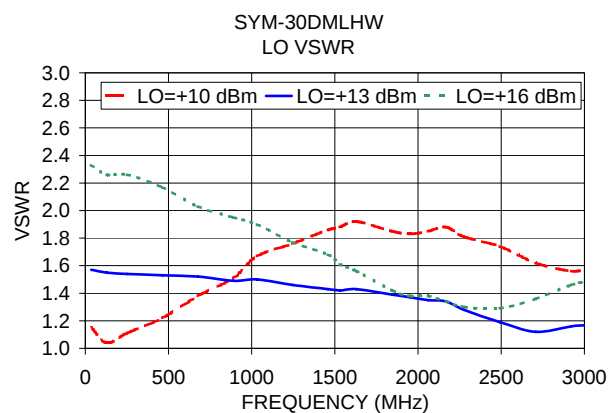
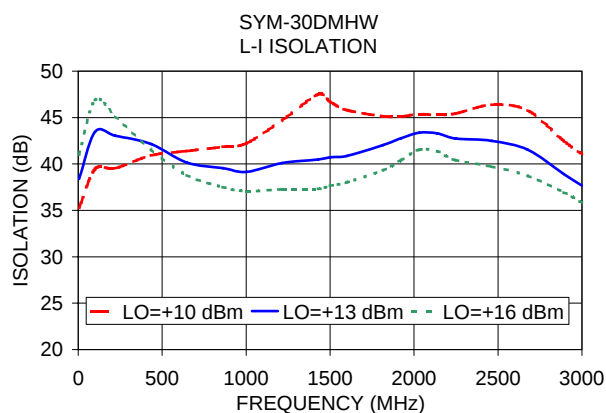
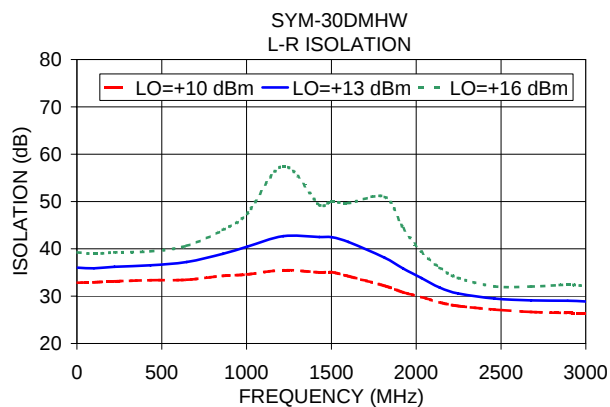
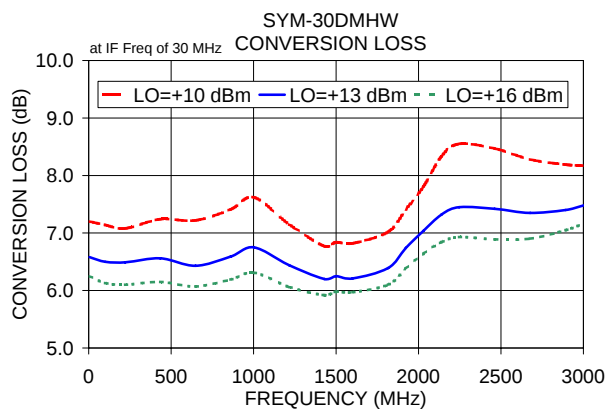
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Performance Charts

SYM-30DMHW+ SYM-30DMHW



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