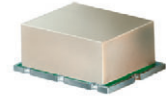


# High IP3 Frequency Mixer

# SYM-30DHW+ SYM-30DHW

Level 17 (LO Power +17 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
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, 40 dB typ.
- excellent L-I isolation, 44 dB typ.
- wide IF bandwidth, useable to 3 GHz
- high IP3, 26 dBm typ.

## Applications

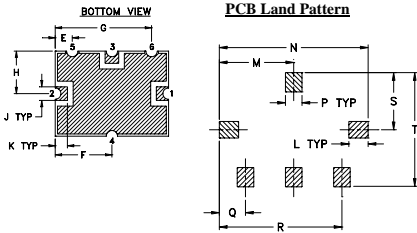
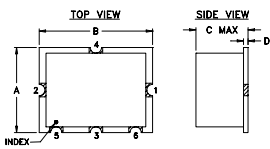
- CDMA
- GSM
- DCS
- PCN

CASE STYLE: TTT167  
PRICE: \$10.95 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

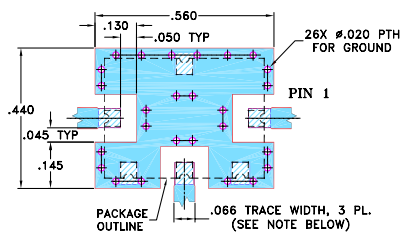


Suggested Layout,  
Tolerance to be within ±.002

## 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)



## 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								
5-3000	5-1500	6.5	.10	8.3	9.1	36	24	40	30	40	25	42	28	44	36	48	33	29

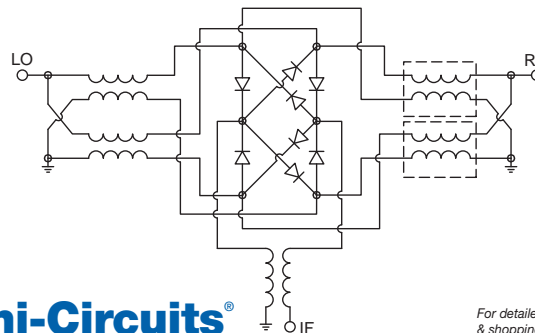
1 dB COMP: +14 dBm typ.  
\*IP3 at 800-900 MHz and 1800-1900 MHz

L = low range [ $f_1$  to  $10 f_1$ ]  
M = mid range [ $10 f_1$  to  $f_1/2$ ]  
U = upper range [ $f_1/2$  to  $f_1$ ]

## 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
5.10	35.11	6.52	35.53	39.27	1.16	1.65
10.10	40.11	6.37	36.08	42.21	1.09	1.64
50.10	80.11	6.32	35.81	44.46	1.04	1.65
150.10	180.11	6.35	36.19	44.52	1.07	1.65
292.21	322.22	6.54	36.11	44.86	1.14	1.59
434.31	464.32	6.48	36.06	44.17	1.21	1.60
576.42	606.43	6.51	36.15	43.45	1.31	1.61
718.52	748.53	6.35	36.82	43.17	1.40	1.56
860.63	890.64	6.48	37.89	43.23	1.51	1.56
1002.73	1032.74	6.61	38.92	43.28	1.58	1.57
1144.84	1174.85	6.51	40.92	43.96	1.67	1.51
1286.94	1316.95	6.34	42.38	45.03	1.62	1.52
1429.05	1459.06	6.15	42.75	45.18	1.56	1.45
1600.10	1630.11	6.10	42.06	45.85	1.37	1.42
1815.49	1845.50	6.32	40.35	45.85	1.20	1.36
2030.87	2060.88	6.91	37.09	44.23	1.34	1.31
2246.25	2276.26	7.53	34.69	43.76	1.52	1.22
2461.64	2491.65	7.53	34.48	46.04	1.44	1.12
2677.02	2707.03	7.31	36.24	45.72	1.29	1.09
3000.10	3030.11	7.24	39.16	41.54	1.37	1.27

## Electrical Schematic



**Mini-Circuits**  
ISO 9001 ISO 14001 AS 9100 CERTIFIED

For detailed performance specs & shopping online see web site

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 The Design Engineers Search Engine Provides ACTUAL Data Instantly at [minicircuits.com](http://minicircuits.com)

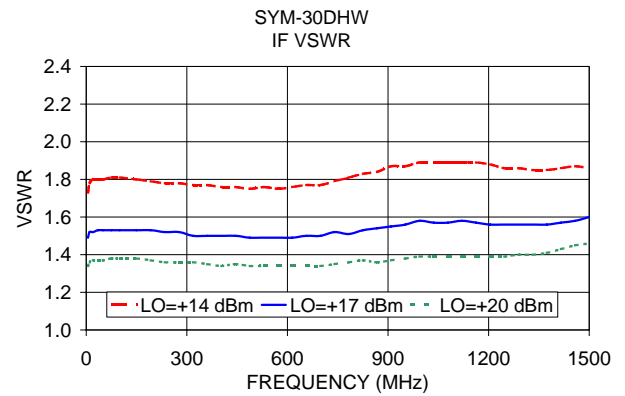
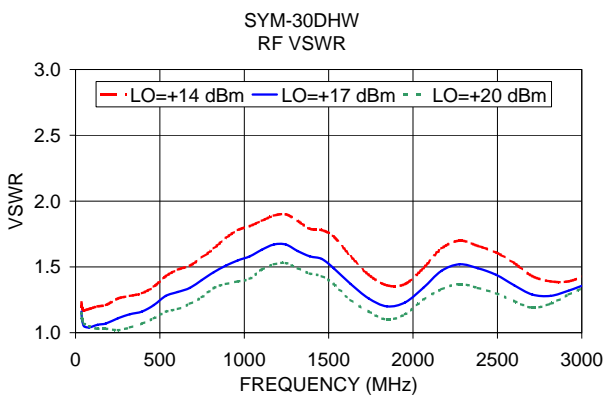
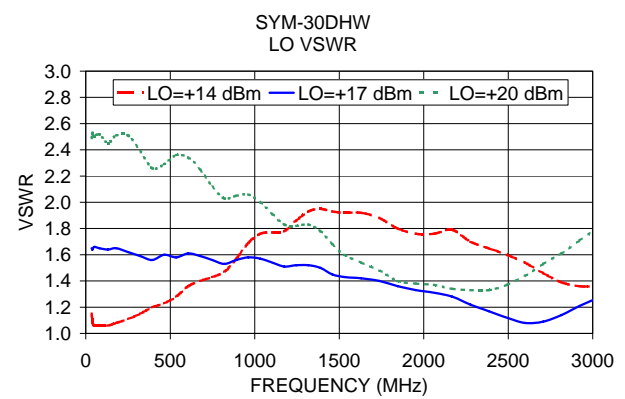
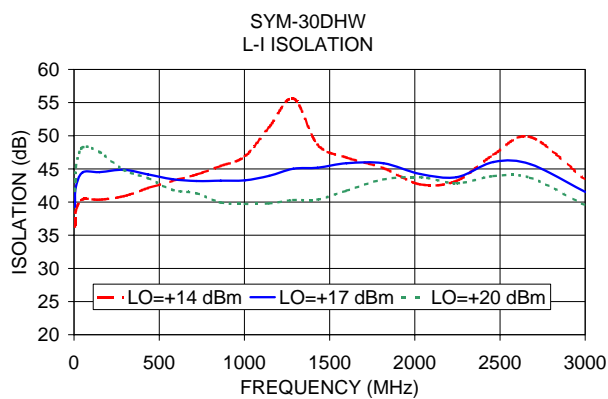
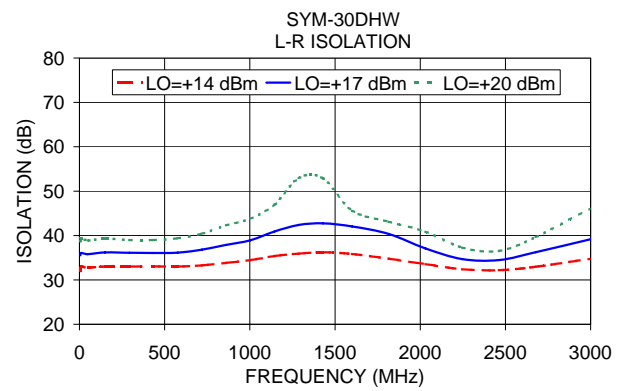
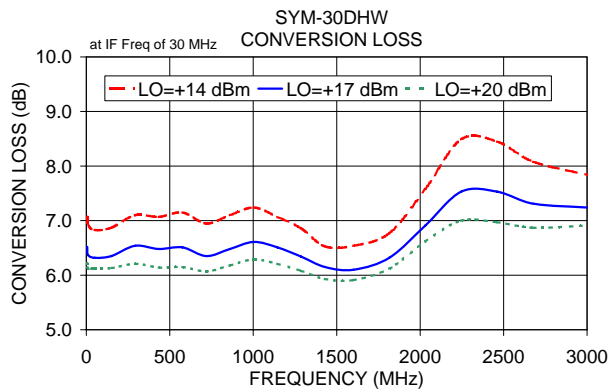
IF/RF MICROWAVE COMPONENTS

Notes: 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuit's applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet are subject to Mini-Circuit's standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuit's website at [www.minicircuits.com/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp).

REV. C  
M112207  
SYM-30DHW  
DJ/TD/CP/AM  
091006  
Page 1 of 2

# Performance Charts

# SYM-30DHW+ SYM-30DHW



ISO 9001 ISO 14001 AS 9100 CERTIFIED

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

The Design Engineers Search Engine



Provides ACTUAL Data Instantly at [minicircuits.com](http://minicircuits.com)

IF/RF MICROWAVE COMPONENTS

For detailed performance specs & shopping online see web site

Notes: 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuit's applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at [www.minicircuits.com/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp).