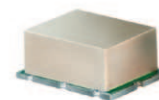


High IP3 Frequency Mixer

Level 17 (LO Power +17 dBm) 1700 to 2000 MHz

SYM-20DH+ SYM-20DH



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

- low conversion loss, 6.7 dB typ.
- high IP3, 32 dBm typ.
- good L-R isolation, 35dB typ.; & L-I isolation, 34 dB typ.
- triple balanced mixer

Applications

- PCS
- DCS

CASE STYLE: TTT167
PRICE: \$9.95 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.

Electrical Specifications

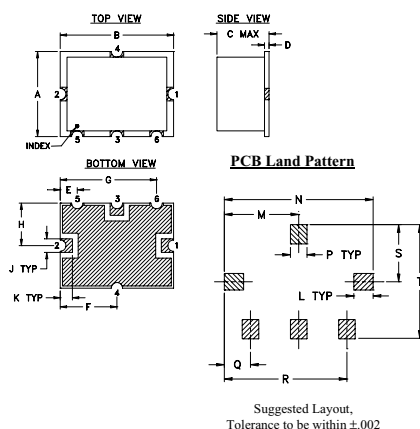
FREQUENCY (MHz)		CONVERSION LOSS (dB)		LO-RF ISOLATION (dB)		LO-IF ISOLATION (dB)		IP3 at center band (dBm)
LO/RF f_L - f_U	IF	Mid-Band m		Total Range Max.		Typ. Min.		
		$\overline{X}$	σ					
1700-2000	10-300	6.7	.16	8.2		35	22	32

1 dB COMP.: +14 dBm typ.

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
1700.10	1730.10	6.47	35.02	32.95	1.45	1.21
1715.10	1745.10	6.50	34.99	32.87	1.44	1.20
1730.10	1760.10	6.49	34.96	32.69	1.42	1.20
1745.10	1775.10	6.48	35.04	32.54	1.40	1.20
1760.10	1790.10	6.49	35.15	32.39	1.37	1.19
1775.10	1805.10	6.58	35.17	32.27	1.35	1.19
1790.10	1820.10	6.59	35.19	32.18	1.32	1.19
1805.10	1835.10	6.65	35.06	32.08	1.30	1.18
1820.10	1850.10	6.71	34.93	31.92	1.29	1.18
1835.10	1865.10	6.68	35.00	31.78	1.26	1.17
1850.10	1880.10	6.68	35.17	31.65	1.24	1.16
1865.10	1895.10	6.72	35.17	31.50	1.22	1.16
1880.10	1910.10	6.77	35.33	31.37	1.19	1.15
1895.10	1925.10	6.82	35.38	31.19	1.17	1.14
1910.10	1940.10	6.82	35.45	31.01	1.16	1.14
1925.10	1955.10	6.86	35.52	30.93	1.14	1.13
1940.10	1970.10	6.86	35.59	30.96	1.12	1.13
1955.10	1985.10	6.83	35.64	31.03	1.10	1.12
1975.10	2005.10	6.91	35.62	31.06	1.08	1.12
2000.10	2030.10	6.97	35.38	30.95	1.05	1.10

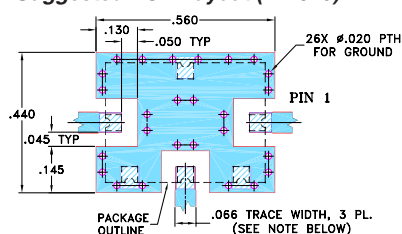
Outline Drawing



Outline Dimensions (inch mm)

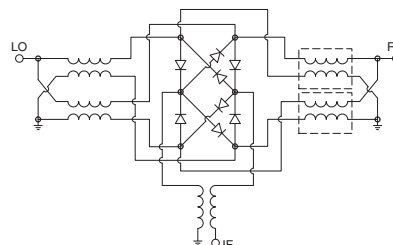
A	B	C	D	E	F	G	H	J	K
.38	.50	.23	.020	.075	.250	.425	.187	.050	.050
9.65	12.70	5.84	0.51	1.91	6.35	10.80	4.75	1.27	1.27
L	M	N	P	Q	R	S	T	wt.	
.070	.270	.540	.060	.095	.445	.208	.415	grams	
1.78	6.86	13.72	1.52	2.41	11.30	5.28	10.54	0.8	

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" $\pm$.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



Mini-Circuits®
ISO 9001 ISO 14001 AS 9100 CERTIFIED

For detailed performance specs
& shopping online see web site

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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-Circuits' 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.

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Performance Charts

SYM-20DH+ SYM-20DH

