

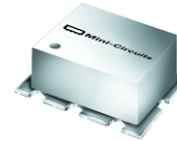
Frequency Mixer

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

SYM-20DH+ SYM-20DH

Features

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



CASE STYLE: TTT167
PRICE: \$9.95 ea. QTY (10-49)

Applications

- PCS
- DCS

**+ RoHS compliant in accordance
with EU Directive (2002/95/EC)**

See our web site for RoHS Compliance methodologies
and qualifications.

Mixer Electrical Specifications

MODEL NO.	FREQUENCY (MHz)		CONVERSION LOSS (dB)				LO-RF ISOLATION (dB)		LO-IF ISOLATION (dB)		IP3@ center band Typ. (dBm)	E FACTOR
	LO/RF $f_L - f_U$	IF	$\bar{x}$	σ	—	Total Range Max.	Typ.	Min.	Typ.	Min.		
SYM-20DH	1700-2000	10-300	6.7	.16	—	8.2	35	22	34	22	32	1.5

1 dB COMP.: +14 dBm typ.
E= (IP3(dBm)-LO Power(dBm))/10

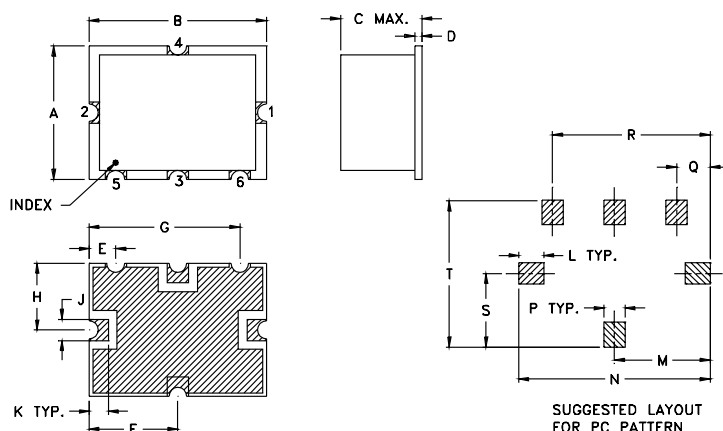
Pin Connections

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

Maximum Ratings

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

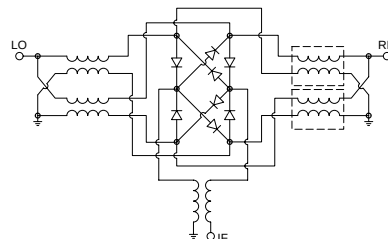
Outline Drawing



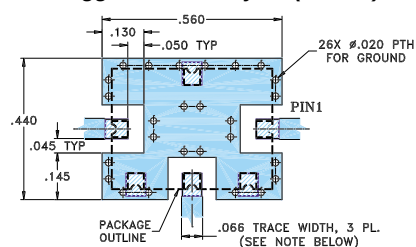
Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	Wt.
.375	.500	.15	.020	.075	.250	.425	.187	.050	.050	.070	.270	.540	.060	.095	.445	.208	.415	grams
9.53	12.70	3.81	0.51	1.91	6.35	10.80	4.75	1.27	1.27	1.78	6.86	13.72	1.52	2.41	11.30	5.28	10.54	g

electrical schematic



Demo Board MCL P/N: TB-12 Suggested PCB Layout (PL-079)



- NOTE: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350 WITH DIELECTRIC THICKNESS $0.030" \pm 0.002"$, COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. IF YOUR PCB DESIGN RULES ALLOW, GROUND VIAS SHOULD BE PLACED UNDER THE LAND PATTERN FOR BETTER RF PERFORMANCE. OTHERWISE GROUND VIAS SHOULD BE PLACED AS CLOSE TO LAND PATTERN AS POSSIBLE.
3. GROUND PAD SHALL BE FREE OF SOLDERMASK IF REQUIRED FOR SOLDERING.

■ DENOTES PCB COPPER LAYOUT
▨ DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

SYM-20DH+ SYM-20DH

Typical Performance Data

Frequency		Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF port (:1)	VSWR LO port (:1)
RF MHz	LO MHz	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm
1700.10	1730.10	6.64	30.70	36.93	1.43	1.25
1715.89	1745.89	6.67	30.51	36.94	1.42	1.24
1731.68	1761.68	6.71	30.40	36.96	1.40	1.22
1747.47	1777.47	6.78	30.15	36.60	1.38	1.21
1763.26	1793.26	6.84	30.01	36.47	1.37	1.21
1779.05	1809.05	6.87	29.89	36.34	1.36	1.22
1794.84	1824.84	6.89	29.75	36.02	1.34	1.22
1810.63	1840.63	6.92	29.67	35.85	1.32	1.20
1826.42	1856.42	6.92	29.58	35.69	1.31	1.19
1842.21	1872.21	6.98	29.51	35.38	1.29	1.18
1858.00	1888.00	7.01	29.44	35.12	1.27	1.18
1873.78	1903.78	7.05	29.36	34.93	1.26	1.18
1889.57	1919.57	7.07	29.30	34.57	1.24	1.17
1905.36	1935.36	7.12	29.22	34.21	1.23	1.16
1921.15	1951.15	7.13	29.18	34.12	1.22	1.14
1936.94	1966.94	7.18	29.11	33.93	1.21	1.14
1952.73	1982.73	7.23	29.02	33.56	1.20	1.14
1968.52	1998.52	7.24	28.92	33.31	1.20	1.14
1984.31	2014.31	7.27	28.88	32.93	1.21	1.13
2000.10	2030.10	7.34	28.90	32.60	1.22	1.13

Performance Charts

