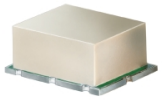
High IP3

Frequency Mixer

SYM-22H+
SYM-22H

Level 17 (LO Power +17 dBm) 1500 to 2200 MHz



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.

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

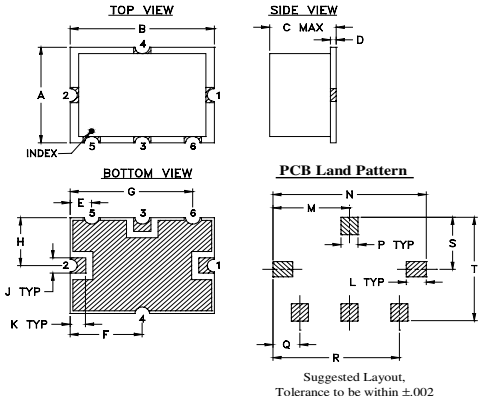
Features

- low conversion loss, 5.6 dB typ.
- high IP3, 30 dBm typ.
- useable over 1000-2400 MHz
- good L-R isolation, 33 dB typ.; & L-I isolation, 38 dB typ.
- IF response to DC

Applications

- PCS
- cellular

Outline Drawing

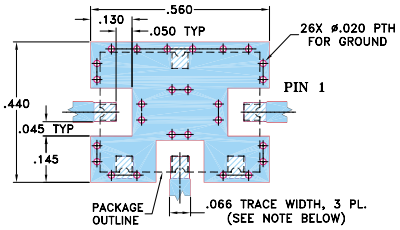


Outline Dimensions (inch / mm)

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

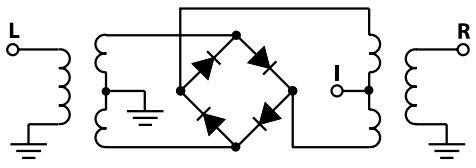
FREQUENCY (MHz)		CONVERSION LOSS (dB)			LO-RF ISOLATION (dB)		LO-IF ISOLATION (dB)		IP3 at center band (dBm)
LO/RF	IF	Mid-Band m		Total Range Max.					
f_L-f_U		$\overline{X}$	σ		Typ.	Min.	Typ.	Min.	Typ.
1500-2200	DC-200	5.6	.30	8.8	33	22	38	22	30

1 dB COMP.: +14 dBm typ.

Typical Performance Data

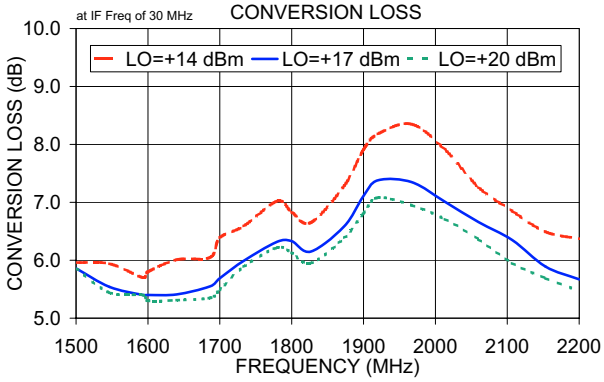
Frequency (MHz)		Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)
RF	LO	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm
1500.00	1530.00	5.86	34.00	36.00	2.12	2.32
1546.67	1576.67	5.54	34.50	37.70	1.85	2.20
1593.33	1623.33	5.40	35.40	38.00	1.81	2.25
1600.00	1630.00	5.40	35.40	38.20	1.75	2.32
1640.00	1670.00	5.41	36.70	39.60	1.60	2.40
1686.67	1716.67	5.55	37.40	40.50	1.57	2.55
1700.00	1730.00	5.69	37.00	40.90	1.51	2.55
1733.33	1763.33	5.99	36.70	41.40	1.41	2.92
1780.00	1810.00	6.32	36.90	42.50	1.37	3.11
1800.00	1830.00	6.33	37.30	42.80	1.30	2.88
1826.67	1856.67	6.15	37.70	43.10	1.27	2.65
1873.33	1903.33	6.59	36.00	43.60	1.30	2.84
1900.00	1930.00	7.11	35.00	43.20	1.27	3.26
1920.00	1950.00	7.38	34.60	43.10	1.25	3.50
1966.67	1996.67	7.35	33.80	43.10	1.37	3.64
2013.33	2043.33	7.01	33.40	42.40	1.36	3.57
2060.00	2090.00	6.66	32.50	41.70	1.42	3.21
2106.67	2136.67	6.35	31.40	40.70	1.46	2.80
2153.33	2183.33	5.89	30.60	39.70	1.51	2.37
2200.00	2230.00	5.67	30.60	39.20	1.59	1.99

Electrical Schematic

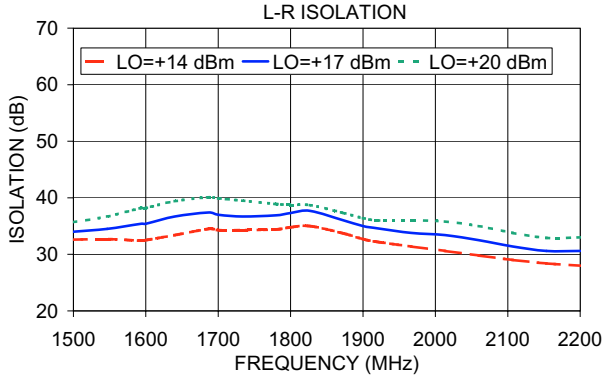


Performance Charts

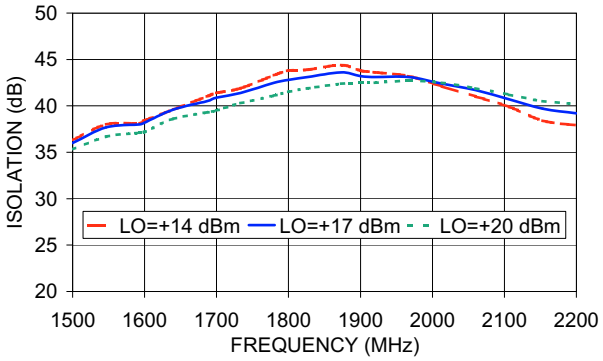
SYM-22H
CONVERSION LOSS
at IF Freq of 30 MHz



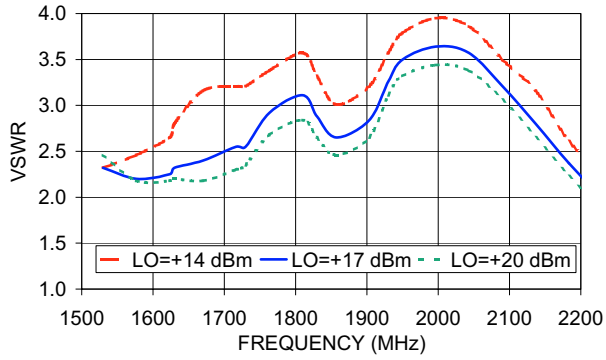
SYM-22H
L-R ISOLATION



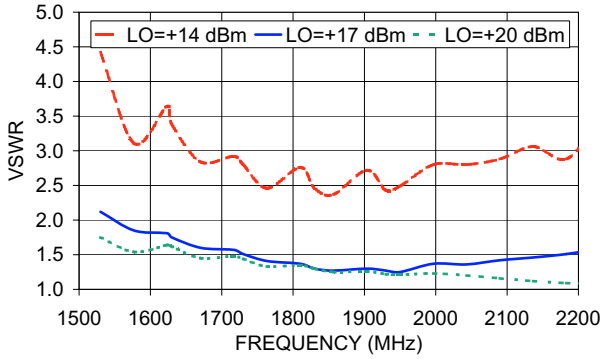
SYM-22H
L-I ISOLATION



SYM-22H
LO VSWR



SYM-22H
RF VSWR



SYM-22H
IF VSWR