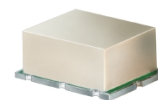


High IP3 Frequency Mixer

SYM-14H+ SYM-14H

Level 17 (LO Power +17 dBm) 100 to 1370 MHz



CASE STYLE: TTT167
PRICE: \$9.95 ea. QTY (1-9)

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

- wide bandwidth, 100 to 1370 MHz
- low conversion loss, 6.5 dB typ.
- high IP3, 30 dBm typ.
- excellent match LO VSWR, 1.25:1 typ.; RF VSWR, 1.6:1 typ.
- good L-R isolation, 36 dB typ.

+ 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.

Applications

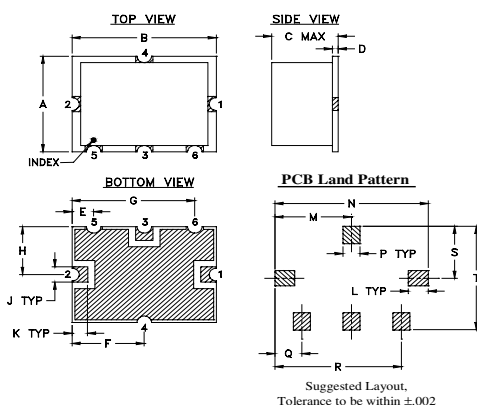
- cellular
- UHF TV
- ISM

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		Total Range	Typ.	Min.	Typ.	Min.	Typ.	
$f_L - f_U$		\bar{X}	σ	Max.						
100-1370	10-1000	6.5	.20	7.4	8.9	36	28	30	24	30

1 dB COMP.: +14 dBm typ.
m=mid band ($2f_L$ to $f_U/2$)

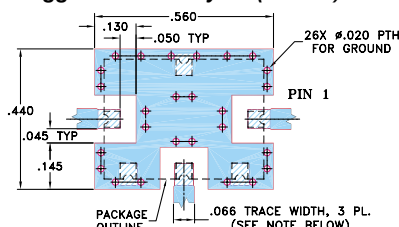
Outline Drawing



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)

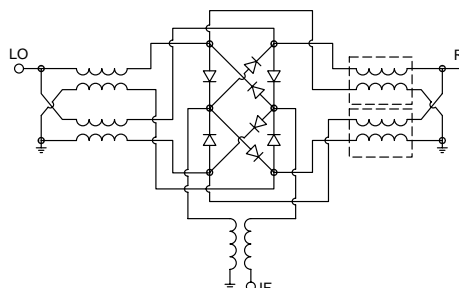


- NOTE: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030" ± .002"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. GROUND PAD SHALL BE FREE OF SOLDER MASK IF REQUIRED FOR SOLDERING.
3. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER), SEE NOTE 2.
 - DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

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
100.00	130.00	5.64	40.30	44.40	1.21	1.64
190.71	220.71	5.86	38.80	40.50	1.33	1.63
200.00	230.00	5.82	38.70	39.70	1.32	1.66
281.42	311.42	5.94	37.70	36.90	1.39	1.62
372.14	402.14	5.98	37.30	34.70	1.51	1.52
400.00	430.00	5.98	36.80	33.90	1.51	1.53
462.85	492.85	6.05	36.50	33.60	1.59	1.44
553.57	583.57	6.01	36.20	31.50	1.76	1.34
600.00	630.00	6.02	36.50	31.30	1.85	1.29
644.28	674.28	6.15	36.20	29.80	1.89	1.28
735.00	765.00	6.43	36.60	29.60	1.96	1.23
825.71	855.71	6.45	36.00	29.70	1.99	1.18
916.42	946.42	6.66	36.00	30.50	2.08	1.12
1000.00	1030.00	6.23	36.50	30.60	2.06	1.09
1007.14	1037.14	6.38	36.60	30.70	2.03	1.08
1097.85	1127.85	6.36	40.50	31.20	2.06	1.07
1188.57	1218.57	6.52	43.10	32.50	1.94	1.08
1279.28	1309.28	6.89	41.80	34.80	2.06	1.12
1340.00	1370.00	7.18	42.30	38.20	2.06	1.18
1370.00	1400.00	7.34	42.10	39.80	2.10	1.18

Electrical Schematic



Mini-Circuits
ISO 9001 ISO 14001 CERTIFIED

ALL NEW
minicircuits.com

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 For detailed performance specs & shopping online see Mini-Circuits web site



The Design Engineers Search Engine Provides ACTUAL Data Instantly From MINI-CIRCUITS At: www.minicircuits.com

RF/IF MICROWAVE COMPONENTS

REV. C
M112207
SYM-14H
DJ/TD/AM
071211
Page 1 of 2

Performance Charts

