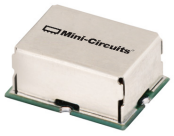
High IP3

Frequency Mixer

HJK-551H+

Level 17 (LO Power +17 dBm) 320 to 550 MHz



CASE STYLE: TTT881

Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
LO Power	+19 dBm
RF Power	+20 dBm

Permanent damage may occur if any of these limits are exceeded.

Pin Connections

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

Features

- high IP3, 30 dBm typ.
- excellent L-R isolation, 53 dB typ.; L-I isolation, 38 dB typ.

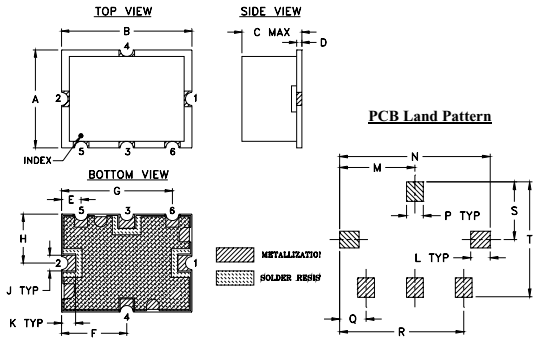
+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Applications

- base stations
- communication systems
- wireless application in Health care
- weather instruments/radar/satellites
- general aviation air to ground telephone
- land mobile radio
- aeronautical
- emergency

Outline Drawing



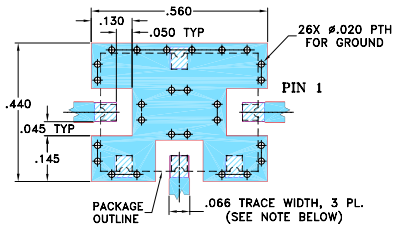
Suggested Layout,
Tolerance to be within ±.002

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)



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. THE USE OF SOLDER MASK OVER THE GROUND AREA UNDER THE UNIT AS SHOWN IS RECOMMENDED TO PREVENT POTENTIAL SHORTING. IF USER CHOOSES TO EXPOSE METAL UNDER THE ENTIRE UNIT GROUND PAD FOR IMPROVED GROUNDING, IT IS RECOMMENDED A SOLDER MASK DAM BE APPLIED AROUND EACH GROUND PAD TO ENSURE FILLET AND CONNECTION AT GROUND PADS.
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

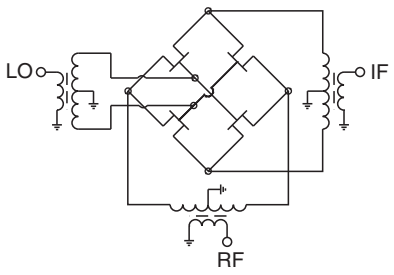
Electrical Specifications at 25°C

Parameter	Condition	Min.	Typ.	Max.	Units
Frequency Range, RF		320		550	
Frequency Range, LO		275		505	MHz
Frequency Range, IF		10		150	
Conversion Loss		—	7.0	8.3	dB
LO to RF Isolation		43	53	—	dB
LO to IF Isolation		30	38	—	dB
IP3		—	30	—	dBm
1 dB Compression (Input)			+20		dBm

Typical Performance Data

Frequency		Conversion Loss (dB)	Isolation L-R	Isolation L-I	VSWR RF Port	VSWR LO Port	IP3 (dBm)
RF MHz	LO MHz	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm
316	271	6.84	57.84	42.84	1.99	3.00	32.72
340	295	6.73	56.55	41.08	1.94	2.71	32.75
380	335	6.75	55.62	38.82	1.86	2.06	34.75
404	359	6.65	55.97	37.93	1.85	1.66	37.26
412	367	6.68	56.16	37.86	1.82	1.54	35.33
420	375	6.57	56.22	37.86	1.80	1.45	37.63
460	415	6.63	56.44	38.55	1.74	1.43	36.38
492	447	6.76	58.22	39.37	1.78	1.71	34.45
500	455	6.79	58.62	39.51	1.79	1.78	37.29
508	463	6.79	58.51	39.94	1.81	1.85	36.32
516	471	6.81	58.62	40.05	1.83	1.91	35.57
524	479	6.84	59.47	40.29	1.86	1.97	33.94
532	487	6.87	60.05	40.92	1.87	2.03	34.83
540	495	6.91	60.08	41.21	1.91	2.08	34.18
548	503	6.98	59.66	41.58	1.95	2.12	34.86
556	511	7.05	57.21	42.05	1.99	2.17	31.13

Electrical Schematic



Notes

A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
C. The parts covered by this specification document 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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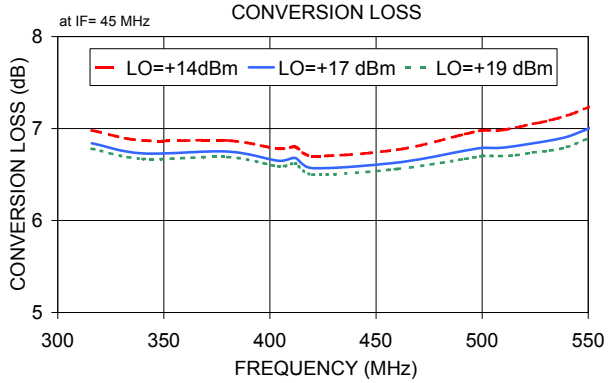
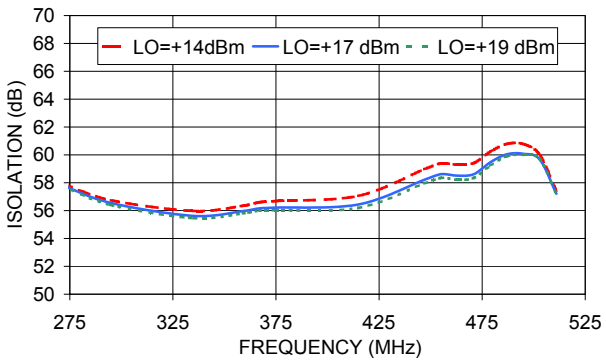
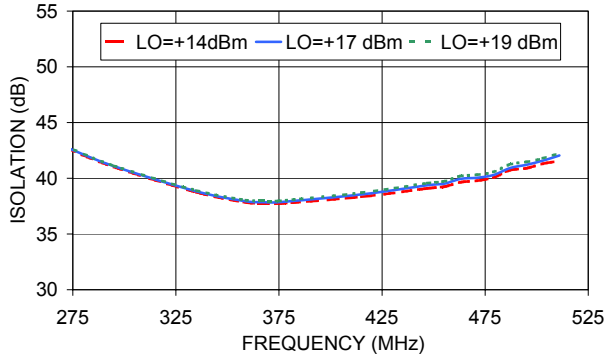
HJK-551H+
CONVERSION LOSS



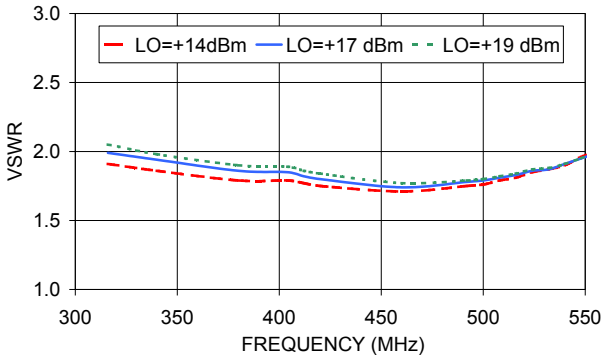
HJK-551H+
L-R ISOLATION



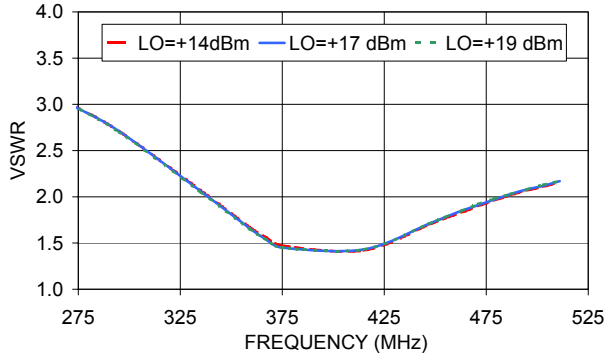
HJK-551H+
L-I ISOLATION



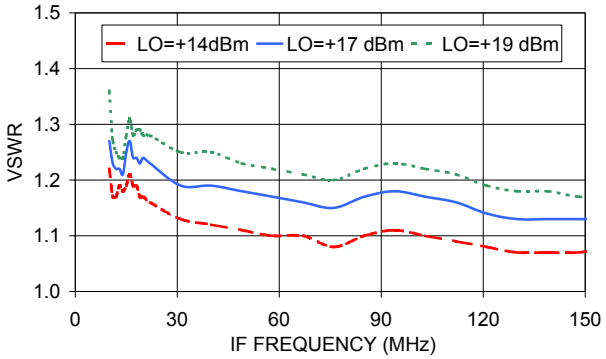
HJK-551H+
RF VSWR



HJK-551H+
LO VSWR



HJK-551H+
IF VSWR



HJK-551H+
IP3