Wideband

Frequency Mixer

HJK-272H+

Level 17 (LO Power +17 dBm) 600 to 2700 MHz

Generic photo used for illustration purposes only

CASE STYLE: TTT881

+RoHS Compliant

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

Available Tape and Reel at no extra cost

Reel Size	Devices/Reel
7"	10, 20, 50, 100, 200
13"	500

Maximum Ratings

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

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

Pad Connections

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

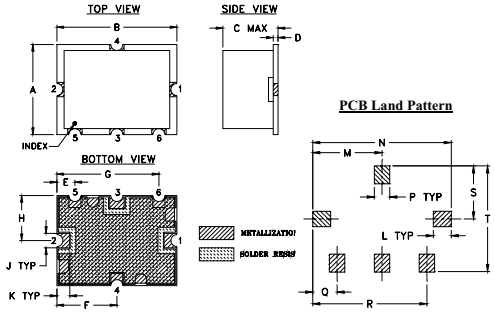
Features

- wideband
- good L-R isolation, 35 dB typ.
- compression, 3 dB higher than LO power
- protected by US Patent 6,807,407

Applications

- base stations
- communication systems
- cellular
- PCS
- DCS
- radar

Outline Drawing



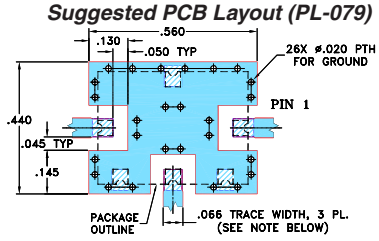
Suggested Layout,
Tolerance to be within ±.002

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

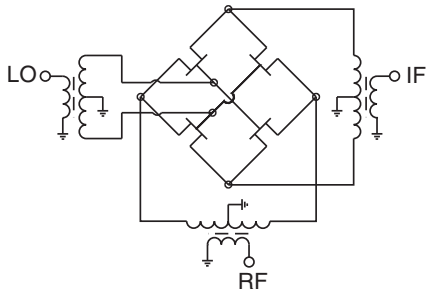
Electrical Specifications at 25°C

Parameter	Min.	Typ.	Max.	Unit
Frequency Range, RF/LO	600	—	2700	MHz
Frequency Range, IF	10	—	1000	MHz
Conversion Loss	—	7.7	8.9	dB
LO to RF Isolation	28	35	—	dB
LO to IF Isolation	17	23	—	dB
IP3	—	25	—	dBm
RF Input Power at 1 dB Compression	—	+20	—	dBm

Typical Performance Data

Frequency (MHz)		Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)	IP3 (dBm)
RF	LO	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm
597.00	627.00	7.24	38.44	37.32	2.32	4.33	24.89
642.50	672.50	7.08	39.44	36.29	2.27	4.33	25.35
688.00	718.00	6.97	39.38	35.75	2.14	4.25	25.80
779.00	809.00	6.79	46.14	43.45	1.94	4.04	25.09
824.50	854.50	6.74	50.27	35.58	1.86	3.95	25.34
936.75	966.75	6.61	53.04	30.83	1.77	3.68	26.11
1010.25	1040.25	6.55	48.00	29.10	1.74	3.51	25.28
1194.00	1224.00	6.55	40.81	27.69	1.62	3.14	25.46
1267.50	1297.50	6.56	41.12	27.60	1.57	3.06	25.49
1414.50	1444.50	6.69	43.94	28.29	1.47	2.99	25.60
1561.50	1591.50	6.94	44.87	29.44	1.48	3.11	27.63
1635.00	1665.00	7.33	47.81	31.00	1.49	3.21	27.84
1708.50	1738.50	7.14	51.44	32.67	1.37	3.29	26.97
1855.50	1885.50	6.81	45.18	35.94	1.15	3.44	25.87
1929.00	1959.00	6.76	42.62	36.96	1.12	3.47	24.81
2002.50	2032.50	6.69	40.99	35.71	1.14	3.45	24.94
2112.75	2142.75	6.63	39.28	32.41	1.22	3.37	24.91
2259.75	2289.75	6.81	46.55	28.70	1.40	3.13	25.52
2400.00	2430.00	6.99	45.78	27.16	1.57	2.91	25.43
2560.00	2590.00	7.25	38.37	24.84	1.79	2.64	25.51
2720.00	2750.00	7.65	35.04	23.95	2.00	2.52	25.38

Electrical Schematic



Notes

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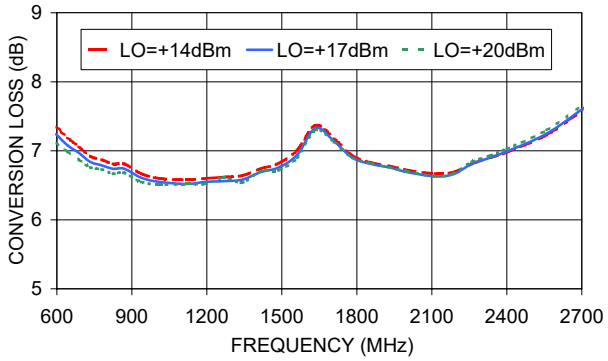
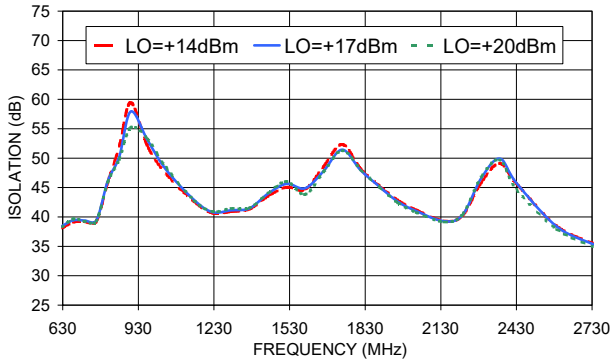
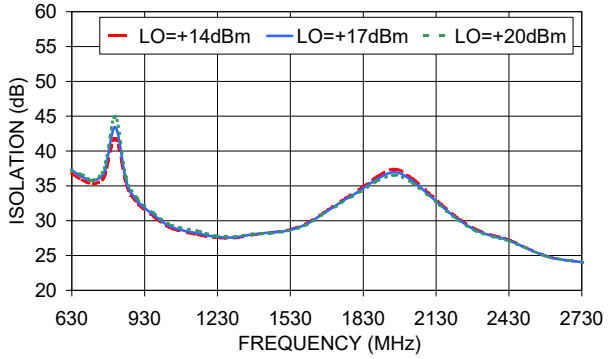
HJK-272H+
CONVERSION LOSS



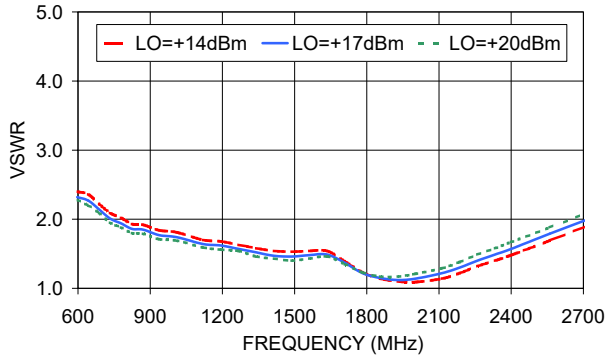
HJK-272H+
L-R ISOLATION



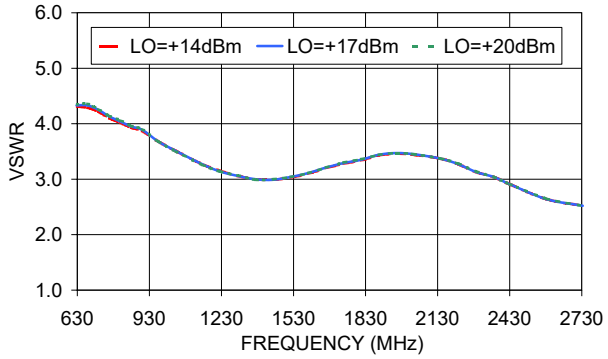
HJK-272H+
L-I ISOLATION



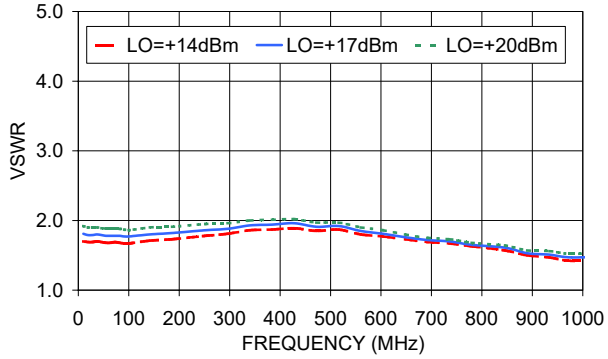
HJK-272H+
RF VSWR



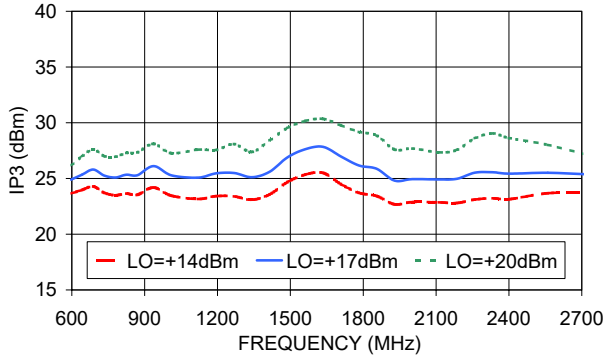
HJK-272H+
LO VSWR



HJK-272H+
IF VSWR



HJK-272H+
IP3



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