

Wideband Frequency Mixer

HJK-272H+

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



CASE STYLE: TTT881
PRICE: \$9.95 ea. QTY. (10)

+RoHS Compliant

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 |
| 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

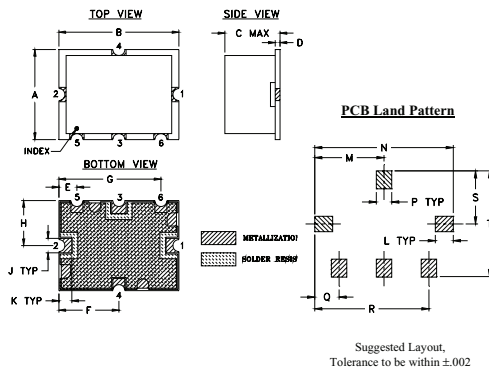
Applications

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

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 |

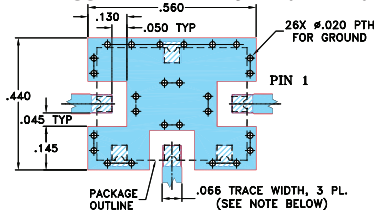
Outline Drawing



Outline Dimensions (inch)

| 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)



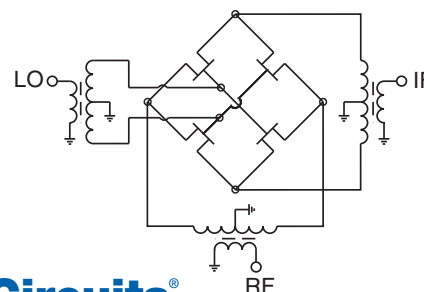
NOTE:

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

Typical Performance Data

| Frequency (MHz) | Conversion Loss (dB) | | Isolation L-R (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



Mini-Circuits
ISO 9001 ISO 14001 AS 9100 CERTIFIED
IF/RF MICROWAVE COMPONENTS

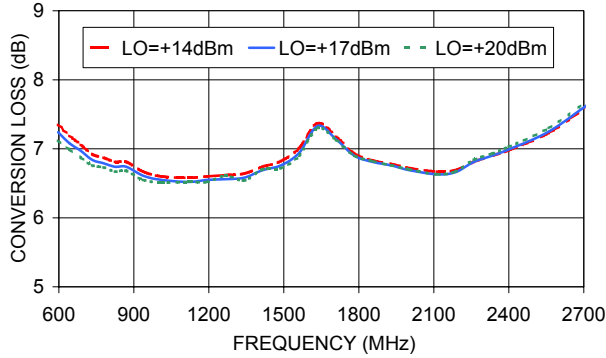
For detailed performance specs & shopping online see web site

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 The Design Engineers Search Engine Provides ACTUAL Data Instantly at minicircuits.com

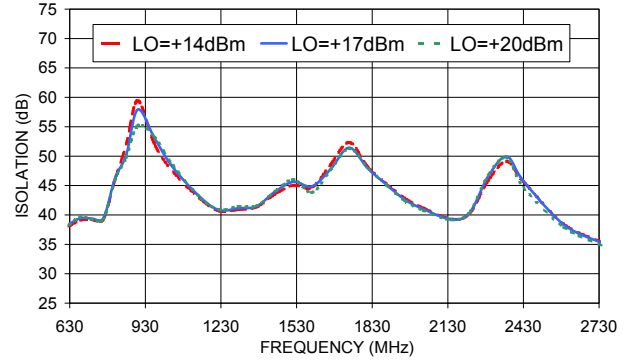
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REV. OR
M137921
HJK-272H+
ED-14170/1
WL/CP/AM
120713
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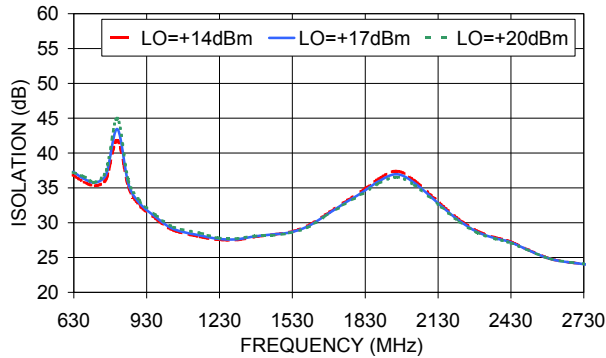
HJK-272H+
CONVERSION LOSS



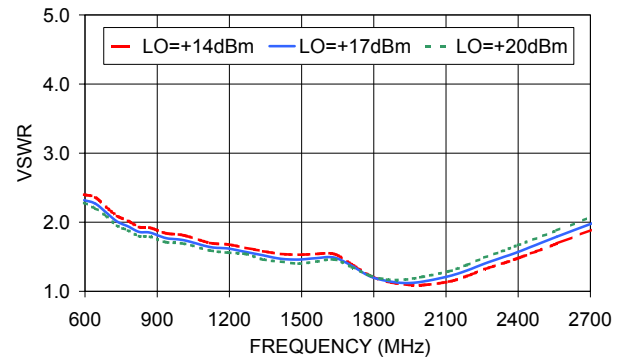
HJK-272H+
L-R ISOLATION



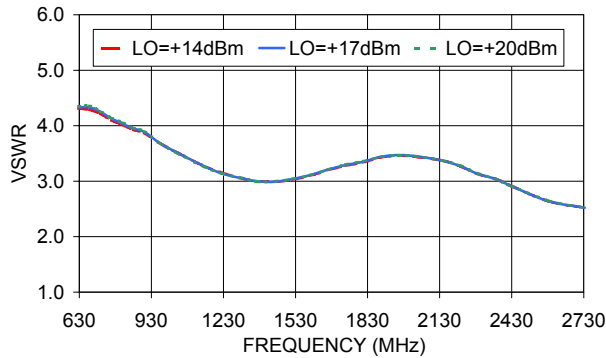
HJK-272H+
L-I ISOLATION



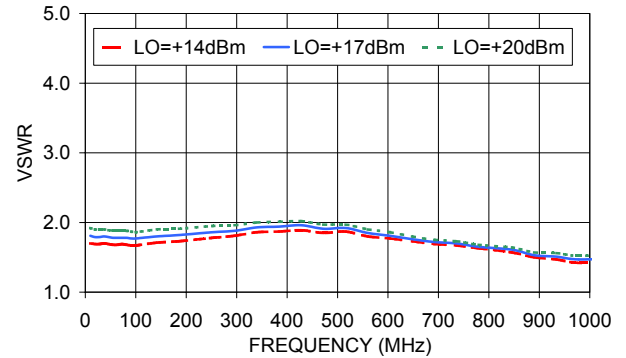
HJK-272H+
RF VSWR



HJK-272H+
LO VSWR



HJK-272H+
IF VSWR



HJK-272H+
IP3

