

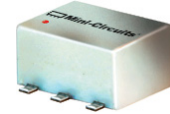
High IP3

Frequency Mixer

NON-CATALOG

ADE-132FH+

Level 17 (LO Power +17 dBm) 1050 to 1300 MHz



CASE STYLE: CD636

Maximum Ratings

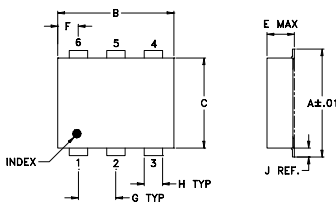
| | |
|-----------------------|----------------|
| Operating Temperature | -40°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| RF Power | 20 dBm |
| LO Power | 19 dBm |

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

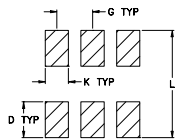
Pin Connections

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

Outline Drawing



PCB Land Pattern

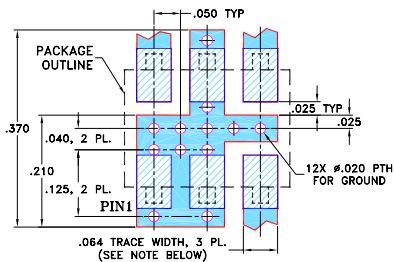


Suggested Layout.
Tolerance to be within ±.002

Outline Dimensions (inch/mm)

| | | | | | | |
|------|------|------|------|------|------|-------|
| A | B | C | D | E | F | G |
| .272 | .310 | .220 | .100 | .162 | .055 | .100 |
| 6.91 | 7.87 | 5.59 | 2.54 | 4.11 | 1.40 | 2.54 |
| H | J | K | L | | | wt |
| .030 | .026 | .065 | .300 | | | grams |
| 0.76 | 0.66 | 1.65 | 7.62 | | | 0.25 |

Demo Board MCL P/N: TB-02 Suggested PCB Layout (PL-051)



- NOTES: 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. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
 - DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

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-Circuits' 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

Features

- excellent IP3, 31 dBm typ.
- excellent P1 dB compression, +20 dBm at input
- good L-R isolation, 33 dB typ.
- good L-I isolation, 34 dB typ.
- aqueous washable
- patent pending

Applications

- GPS
- amateur radio

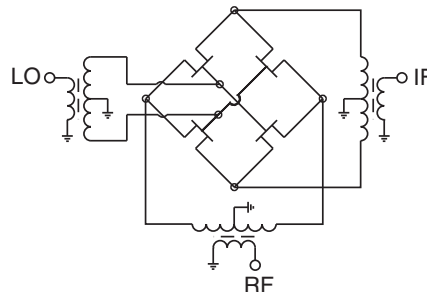
Electrical Specifications at 25°C

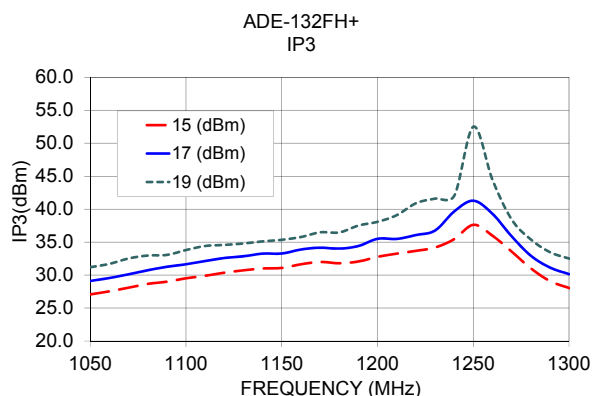
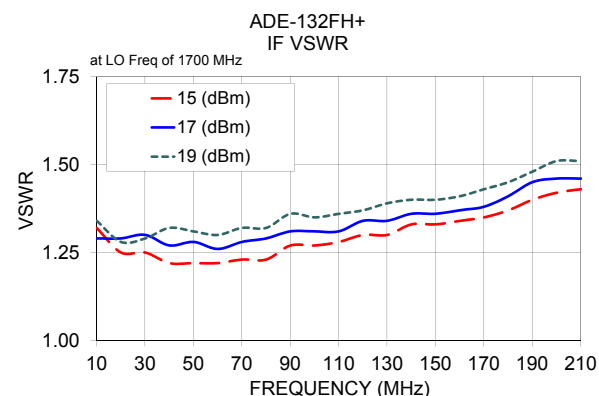
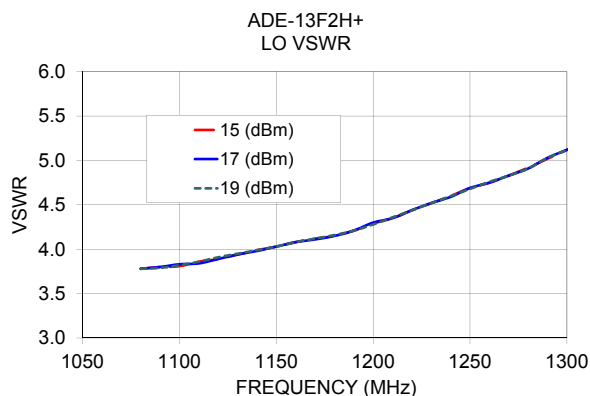
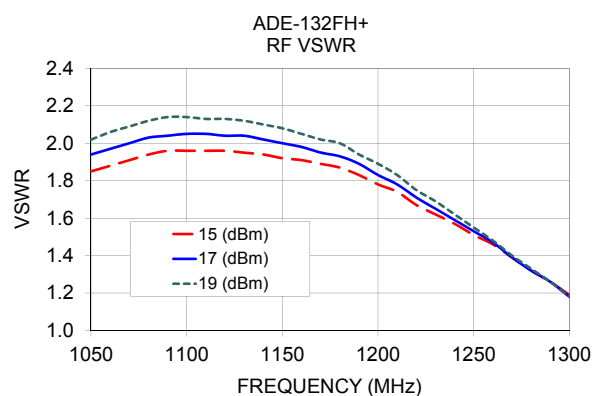
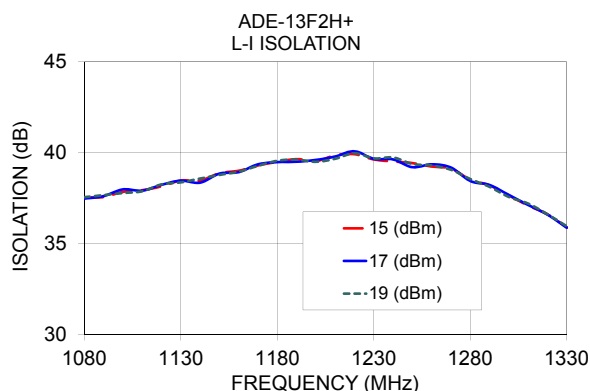
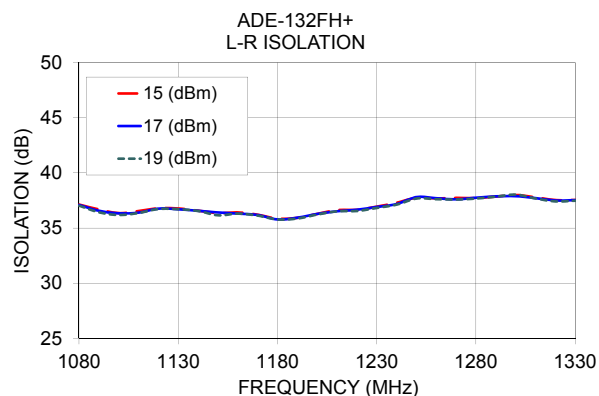
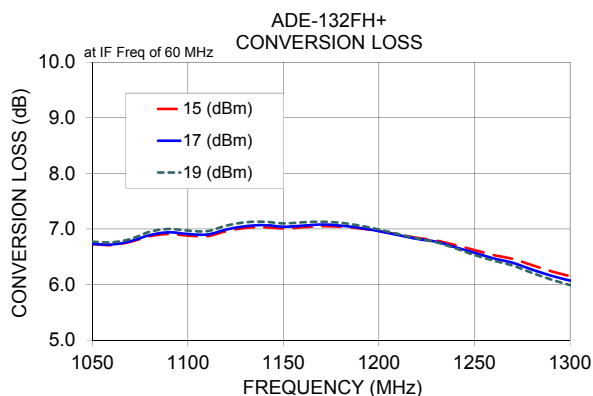
| Parameter | Min. | Typ. | Max. | Unit |
|------------------------------------|------|------|------|------|
| Frequency Range, RF | 1050 | — | 1300 | MHz |
| Frequency Range, LO | 1080 | — | 1330 | MHz |
| Frequency Range, IF | 10 | — | 210 | MHz |
| Conversion Loss | — | 6.9 | 8.5 | dB |
| LO to RF Isolation | 24 | 33 | — | dB |
| LO to IF Isolation | 17 | 34 | — | dB |
| IP3 | — | 31 | — | 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 |
| 1050.10 | 1080.10 | 6.73 | 37.09 | 37.47 | 1.94 | 3.78 | 29.11 |
| 1060.10 | 1090.10 | 6.72 | 36.56 | 37.61 | 1.97 | 3.80 | 29.56 |
| 1070.10 | 1100.10 | 6.78 | 36.33 | 37.98 | 2.00 | 3.83 | 30.12 |
| 1080.10 | 1110.10 | 6.89 | 36.40 | 37.91 | 2.03 | 3.84 | 30.73 |
| 1090.10 | 1120.10 | 6.94 | 36.76 | 38.23 | 2.04 | 3.89 | 31.26 |
| 1100.10 | 1130.10 | 6.91 | 36.70 | 38.46 | 2.05 | 3.94 | 31.64 |
| 1170.10 | 1200.10 | 7.08 | 36.28 | 39.60 | 1.95 | 4.30 | 34.15 |
| 1180.10 | 1210.10 | 7.06 | 36.52 | 39.79 | 1.93 | 4.35 | 34.01 |
| 1190.10 | 1220.10 | 7.02 | 36.66 | 40.08 | 1.89 | 4.44 | 34.41 |
| 1200.10 | 1230.10 | 6.96 | 36.91 | 39.66 | 1.83 | 4.52 | 35.50 |
| 1210.10 | 1240.10 | 6.89 | 37.18 | 39.63 | 1.78 | 4.59 | 35.48 |
| 1220.10 | 1250.10 | 6.82 | 37.81 | 39.20 | 1.71 | 4.69 | 36.07 |
| 1230.10 | 1260.10 | 6.77 | 37.70 | 39.36 | 1.65 | 4.75 | 36.76 |
| 1240.10 | 1270.10 | 6.67 | 37.60 | 39.18 | 1.59 | 4.83 | 39.66 |
| 1250.10 | 1280.10 | 6.57 | 37.75 | 38.44 | 1.53 | 4.91 | 41.27 |
| 1260.10 | 1290.10 | 6.47 | 37.87 | 38.22 | 1.47 | 5.03 | 39.26 |
| 1270.10 | 1300.10 | 6.39 | 37.89 | 37.67 | 1.39 | 5.12 | 35.85 |
| 1280.10 | 1310.10 | 6.27 | 37.71 | 37.12 | 1.32 | 5.22 | 32.92 |
| 1290.10 | 1320.10 | 6.16 | 37.50 | 36.59 | 1.26 | 5.33 | 31.13 |
| 1300.10 | 1330.10 | 6.07 | 37.53 | 35.87 | 1.18 | 5.42 | 30.13 |

Electrical Schematic





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