

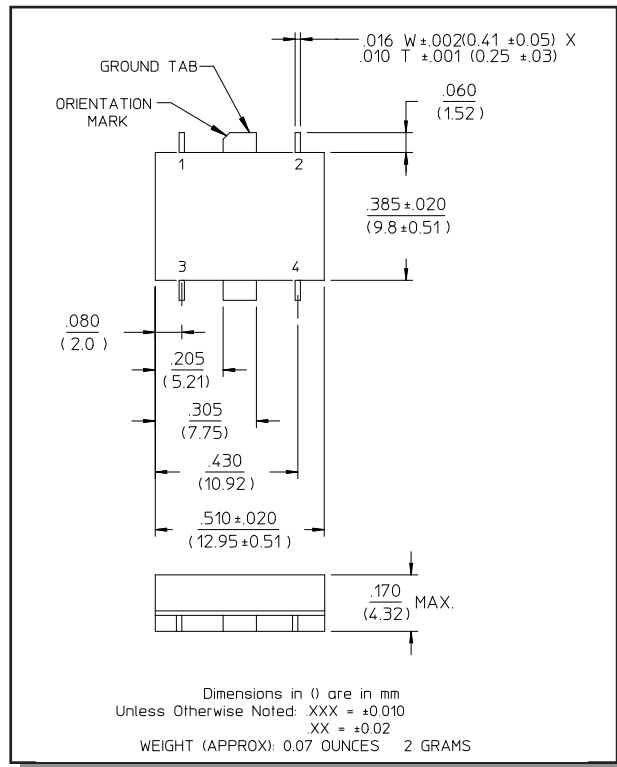
Features

- n Fully Hermetic Package
- n 1 dB Compression Point: +5 dBm
- n Conversion Loss: 6 dB Typical Midband
- n LO-RF/LO-IF Isolation: 40 dB Typical Midband
- n Impedance: 50 Ohms Nominal
- n Maximum Input Power: 300 mW Max, Derated to 85°C @ 3.2 mW/°C
- n X Port Current: 50 mA Max.
- n MIL-STD-883 Screening Available

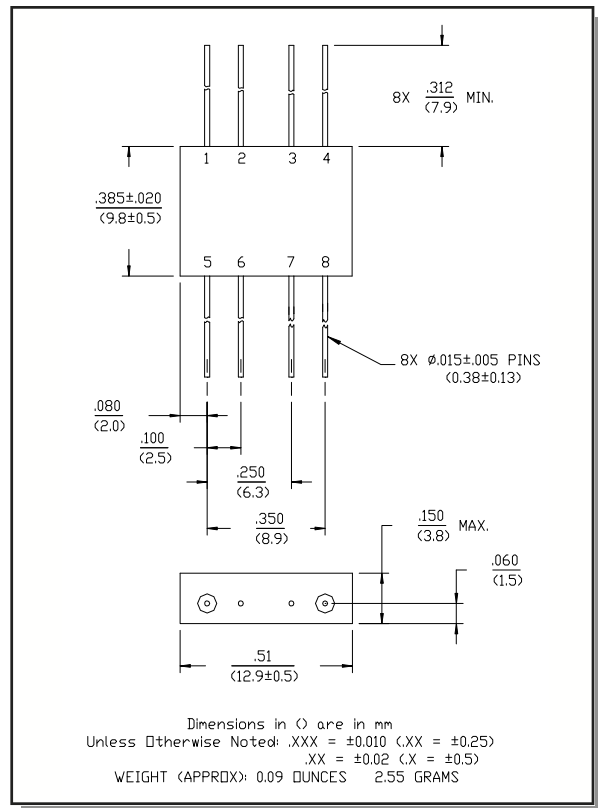
Description

Transformers convert the LO and RF paths to balanced lines connecting to a medium barrier, Schottky diode ring quad. These transformers help provide excellent isolation between ports. Conversion loss is low. The direct connection of the IF port to the diode quad allows these mixers to be used as phase detectors and bi-phase modulators.

SF-1 (MDS-148)



FP-2 (MD-148)



Pin Configuration (MD-148)

| Pin No. | Function | Pin No. | Function |
|---------|----------|---------|----------|
| 1 | GND | 5 | LO |
| 2 | GND | 6 | GND |
| 3 | GND | 7 | GND |
| 4 | IF | 8 | RF |

Pin Configuration (MDS-148)

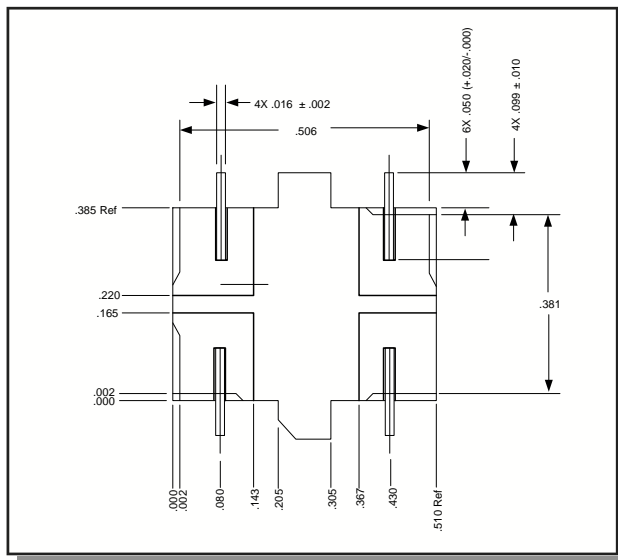
| Pin No. | Function | Pin No. | Function |
|---------|----------|---------|----------|
| 1 | GND | 3 | LO |
| 2 | IF | 4 | RF |

Electrical Specifications¹: $T_A = -55^{\circ}\text{C}$ to $+85^{\circ}\text{C}$

| Parameter | Test Conditions | Frequency | Units | Min | Typ | Max |
|---|---|--------------------------------|------------|--------|--------|-----------|
| Frequency Range | RF, LO Ports IF Port | 10 - 1500 DC - 1500 | MHz MHz | — | — | — |
| Conversion Loss | | 10 - 800 MHz 800 - 1500 MHz | dB dB | — — | — — | 7.5 10 |
| Isolation | LO to RF | 10 - 100 MHz | dB | 35 | — | — |
| | | 100 - 1000 MHz | dB | 25 | — | — |
| | | 1000 - 1500 MHz | dB | 20 | — | — |
| | LO to IF | 10 - 100 MHz | dB | 35 | — | — |
| | | 100 - 1000 MHz | dB | 20 | — | — |
| | | 1000 - 1500 MHz | dB | 12 | — | — |
| RF to IF | 10 - 100 MHz | dB | 30 | — | — | |
| | 100 - 1000 MHz | dB | 18 | — | — | |
| | 1000 - 1500 MHz | dB | 8 | — | — | |
| DC Polarity | Negative | — | — | — | — | — |
| DC Offset | — | — | mV | — | ≤10 | — |
| RF Input | 1 dB Compression 1 dB Desensitization | — | dBm | — | +5 | — |
| | | — | dBm | — | +3 | — |
| SSB Noise Figure | Within 1 dB of Conversion Loss Max | — | — | — | — | — |
| Typical Two-Tone IM Ratio ² | with a -10 dBm input, each input, 25 MHz and 35 MHz IF | 1500 MHz | dB | — | 50 | — |

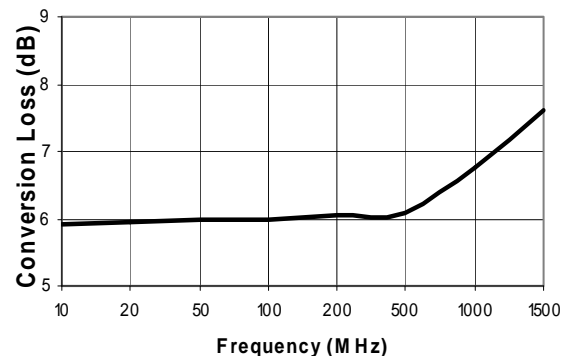
- All specifications apply when operated at +10 dBm available LO power with 50 ohm source and load impedance.
- Measured at 1500 MHz.

Bottom View of SF-1

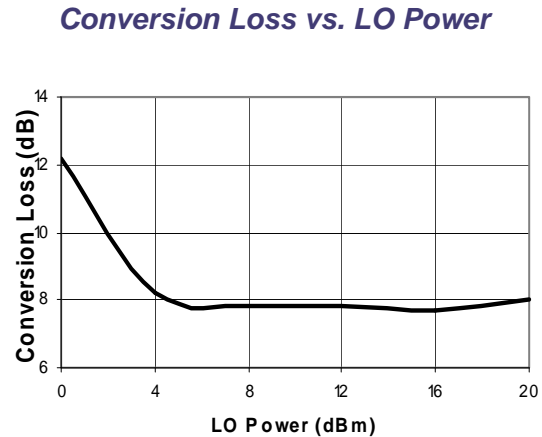
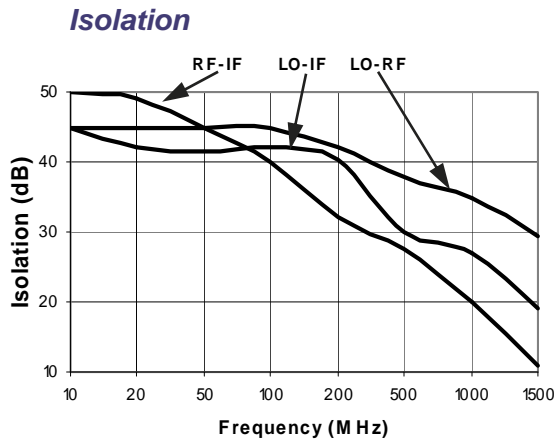


Typical Performance Curves

Conversion Loss



Typical Performance Curves



Ordering Information

| Part Number | Package |
|-------------|---------|
| MD-148 PIN | FP-2 |
| MDS-148 PIN | SF-1 |