

Termination Insensitive Mixer, 5 MHz - 1500 MHz

Rev. V5

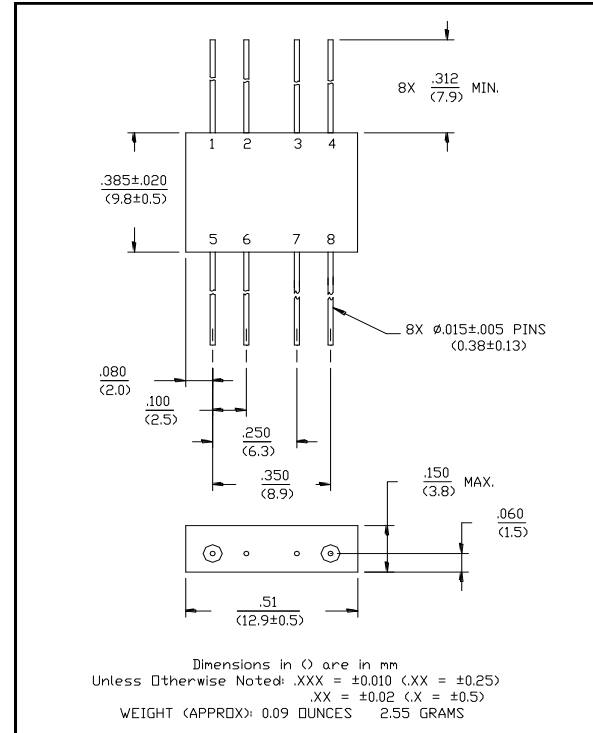
Features

- Low VSWR
- Conversion Loss: 6 dB Typical Midband
- LO-RF Isolation: 35 dB Typical Midband
- Conversion Loss Flatness: 1.5 dB Typical
- Impedance: 50 Ohms Nominal
- Maximum Input Power: 300 mW max. @ 25°C,
Derated linearly to 85°C @ 3.2 mW/°C
- IF Port Current: 50 mA Max.
- MIL-STD-883 Screening Available

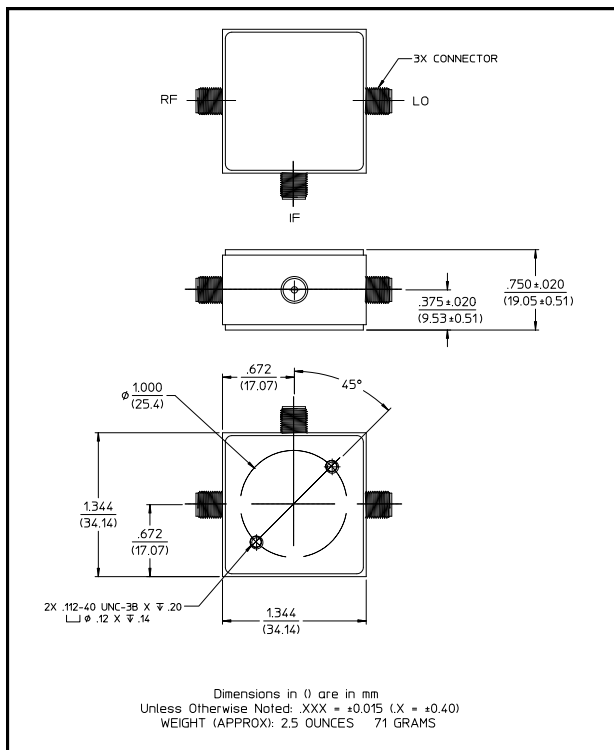
Description

Transformers convert the LO and RF paths to balanced lines connecting to a low 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. Advanced transformer design yields improved VSWR.

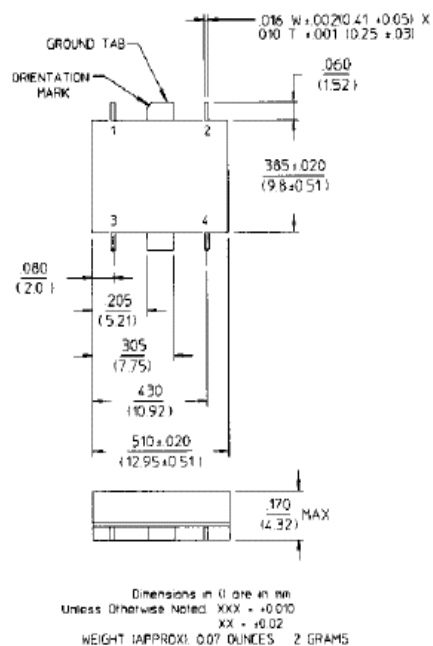
FP-2 (MD-158)



C-7 (MDC-158)



SF-1 (MDS-158)



Electrical Specifications¹: T_A = -55°C to +85°C

| Parameter | Test Conditions | Frequency | Units | Min | Typ | Max |
|------------------------------|--|---|----------------|----------------|-------------|--------------------|
| Frequency Range | RF, LO Ports IF Port | 5 - 1500 DC - 1000 | MHz MHz | — — | — — | — — |
| Conversion Loss | | 5 - 1000 MHz 5 - 1300 MHz 5 - 1500MHz | dB dB dB | — — — | — — — | 7.0 9.0 10.0 |
| Isolation | LO to RF | 5 – 1500 MHz 5 - 1000 MHz 5 - 600 MHz | dB dB dB | 20 25 30 | — — — | — — — |
| | LO to IF | 5 – 1500 MHz 5 - 1000 MHz | dB dB | 17 20 | — — | — — |
| | RF to IF | 5 – 1500 MHz 5 - 1000 MHz 5 - 600 MHz | dB dB dB | 8 18 20 | — — — | — — — |
| DC Polarity | Negative | — | — | — | — | — |
| DC Offset | | | mV | — | ≤1 | — |
| RF Input | 1 dB Compression 1 dB Desensitization | | dBm dBm | — — | +1 -1 | — — |
| SSB Noise Figure | Within 1 dB of Conversion Loss Max. | — | — | — | — | — |
| Typical Two Tone IM Ratio | With -10 dBm input, each input 60 MHz and 70 MHz IF | 300 MHz 1000 MHz | dB dB | — — | 50 48 | — — |

1. All specifications apply when operated at +7 dBm available LO power with 50 Ohm source and load impedance.
2. For MDC-158 add 1.0 dB to conversion loss.

Pin Configuration (MD-158)

| 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-158)

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

Absolute Maximum Ratings (MDS-158)⁴

| Parameter | Absolute Maximum |
|------------------------------|------------------------------------|
| Max Input Power ⁵ | 300mW |
| Total Power | 350 mW Derated at 85°C @ 3.2 mW/°C |
| LO Power | +24 dBm |

4. Operation of this device above any one of these parameters may cause permanent damage.
5. Ambient Temperature (T_A) = +25°C

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- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
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- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
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- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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