

I/Q Mixer / Modulator

Model MIQ24MS-2

Communications Band

RF 1.9 to 4.2 GHz

Electrical Specifications:⁽¹⁾

| Parameter | Conditions | | | Specifications | | |
|---|------------|------------|----------|----------------|---------|--------|
| | RF (GHz) | LO (GHz) | IF (MHz) | Min | Typical | Max |
| SSB Conversion loss: ^{(2) (3)} | 2.0-4.2 | 2.0-4.2 | DC-500 | | 5.5 dB | 7.0 dB |
| | 1.9-4.2 | 1.9-4.2 | DC-500 | | 6.0 dB | 7.5 dB |
| Image Rejection Side-band Suppression: ⁽⁴⁾ | 1.9-2.0 | 1.9-2.0 | DC-500 | 18 dB | 26 dB | |
| | 2.0-4.2 | 2.0-4.2 | DC-500 | 20 dB | 32 dB | |
| Amplitude Match | 1.9-4.2 | 1.9-4.2 | DC-500 | | 0.2 dB | |
| Phase Match | 1.9-4.2 | 1.9-4.2 | DC-500 | | 2 deg | |
| Isolation | 1.9-4.2 | LO to RF: | 1.9-4.2 | 34 dB | 42 dB | |
| | | LO to I/Q: | 1.9-4.2 | | 30 dB | |
| | | RF to I/Q: | DC-500 | | 24 dB | |
| | | I/Q to RF: | DC-500 | | 40 dB | |
| Input 1 dB Compression Point: | 1.9-4.2 | 1.9-4.2 | DC-500 | | +6 dBm | MIQ24 |
| Input Third Order Intercept Point: | 1.9-4.2 | 1.9-4.2 | DC-500 | | +14 dBm | MIQ24 |
| LO Power: ⁽⁵⁾ | 1.9-4.2 | 1.9-4.2 | DC-500 | | +10 dBm | MIQ24 |

Model MIQ2xMS-2

LO Power

4 = +10 dBm

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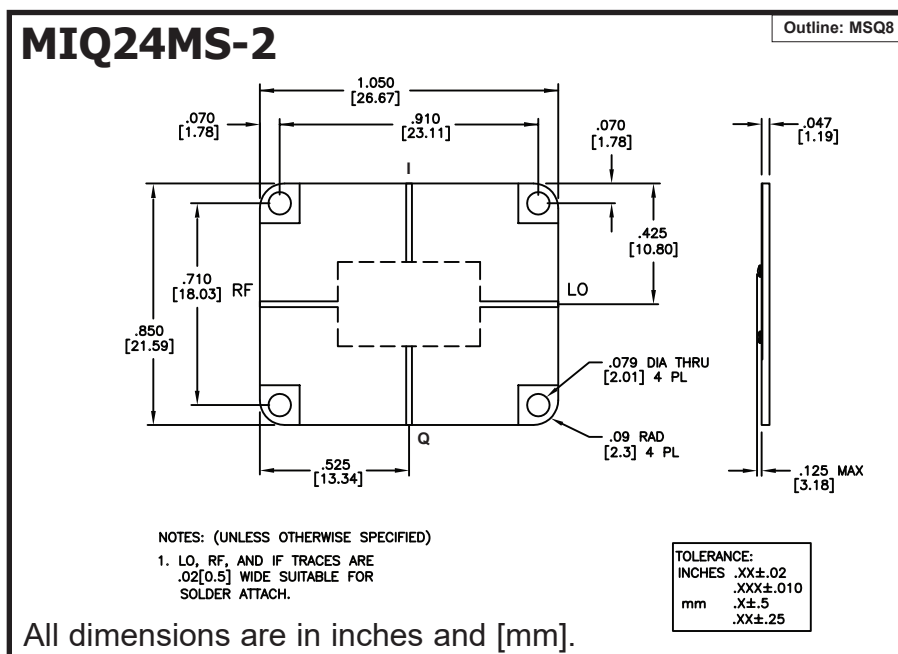
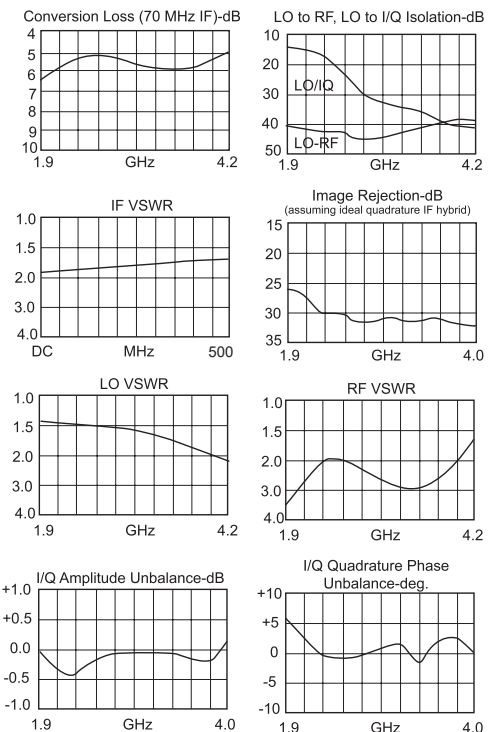
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Notes:

- Specifications are guaranteed when tested as a downconverter in a 50 Ohm system at +25°C with the nominal LO power. Specifications indicated as typical are not guaranteed.
- Noise figure is typically within ±0.5 dB of conversion loss for IF frequencies greater than 10 MHz.
- Conversion loss typically degrades less than 0.5 dB at +100°C and improves less than 0.5 dB at -55°C. Conversion loss is the combined value.
- Measured with an IF quadrature hybrid whose amplitude and phase errors are 0.5 dB and 3 degrees maximum. An IF quadrature hybrid is not included.
- Usable LO drives are up to 2 dB below to 3 dB above nominal.
- See Application notes M112, for aid in selecting the outline and for mounting and installation information.

Typical Performance at 25°C



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|---|------------|------------|----------|----------------|---------|--------|
| | RF (GHz) | LO (GHz) | IF (MHz) | Min | Typical | Max |
| SSB Conversion loss: ^{(2) (3)} | 2.2-4.2 | 2.2-4.2 | DC-500 | | 5.5 dB | 7.0 dB |
| | 1.9-4.2 | 1.9-4.2 | DC-500 | | 6.0 dB | 9.0 dB |
| Image Rejection Side-band Suppression: ⁽⁴⁾ | 1.9-2.0 | 1.9-2.0 | DC-500 | 18 dB | 26 dB | |
| | 2.0-4.2 | 2.0-4.2 | DC-500 | 20 dB | 32 dB | |
| Amplitude Match | 1.9-4.2 | 1.9-4.2 | DC-500 | | 0.2 dB | |
| Phase Match | 1.9-4.2 | 1.9-4.2 | DC-500 | | 2 deg | |
| Isolation | 1.9-4.2 | LO to RF: | 1.9-4.2 | 30 dB | 42 dB | |
| | | LO to I/Q: | 1.9-4.2 | | 30 dB | |
| | | RF to I/Q: | DC-500 | | 24 dB | |
| | | I/Q to RF: | DC-500 | | 40 dB | |
| Input 1 dB Compression Point: | 1.9-4.2 | 1.9-4.2 | DC-500 | | +9 dBm | MIQ26 |
| Input Third Order Intercept Point: | 1.9-4.2 | 1.9-4.2 | DC-500 | | +17 dBm | MIQ26 |
| LO Power: ⁽⁵⁾ | 1.9-4.2 | 1.9-4.2 | DC-500 | | +13 dBm | MIQ26 |

Model MIQ2xMS-2

LO Power

6 = +13 dBm

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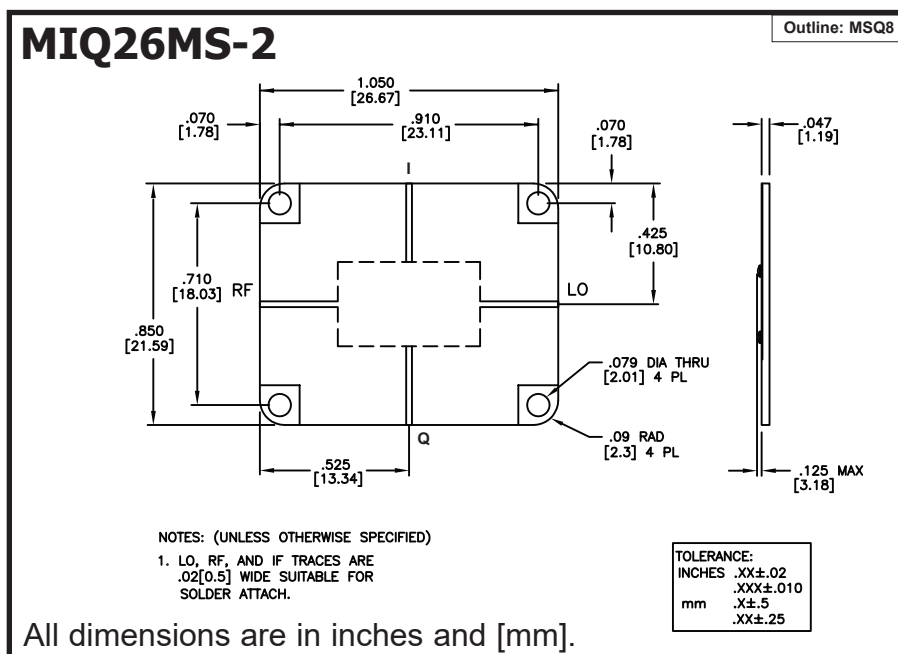
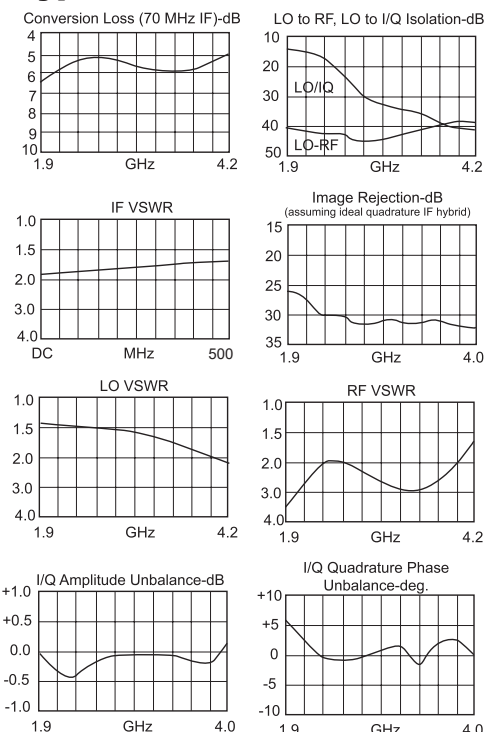
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| | | RF to I/Q: | DC-500 | | 24 dB | |
| | | I/Q to RF: | DC-500 | | 40 dB | |
| Input 1 dB Compression Point: | 1.9-4.2 | 1.9-4.2 | DC-500 | | +13 dBm | MIQ27 |
| Input Third Order Intercept Point: | 1.9-4.2 | 1.9-4.2 | DC-500 | | +21 dBm | MIQ27 |
| LO Power: ⁽⁵⁾ | 1.9-4.2 | 1.9-4.2 | DC-500 | | +17 dBm | MIQ27 |

Model MIQ2xMS-2

LO Power

7 = +10 dBm

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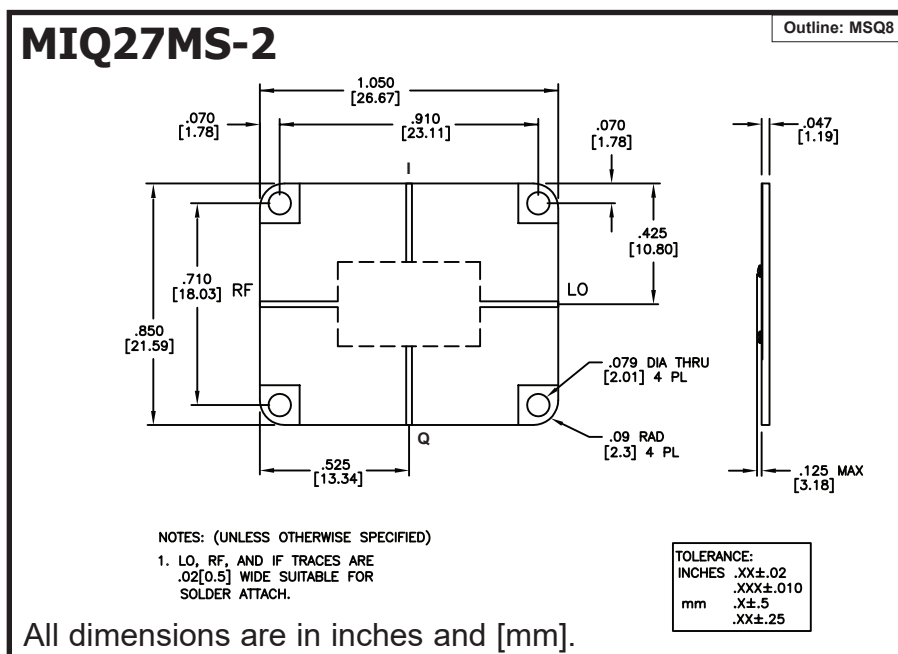
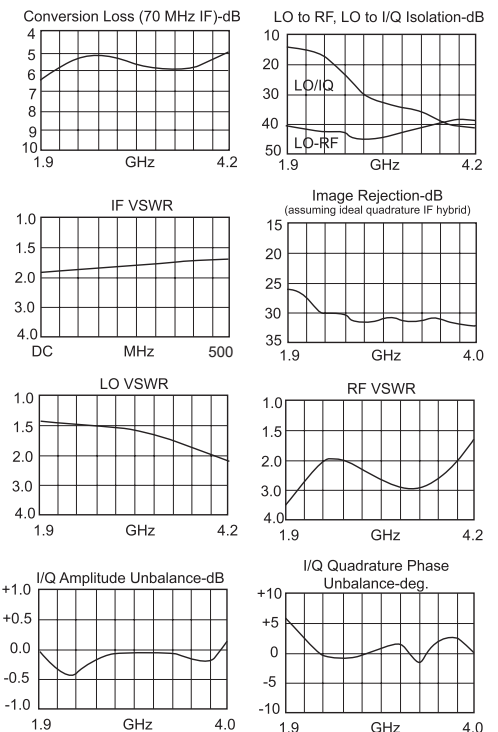
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Typical Performance at 25°C



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