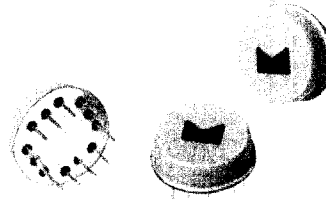


MINIATURE DOUBLE BALANCED MIXERS

M-139 & M-140 & M-162

1 to 3000 MHz / 0, +7 and +13 dBm LO / TO-8 Package



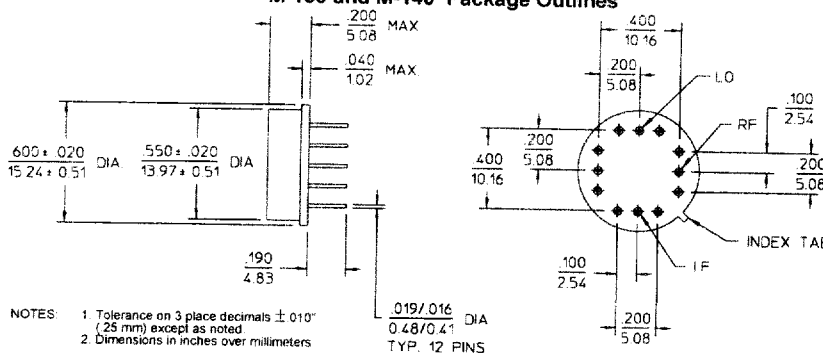
PRINCIPAL SPECIFICATIONS

| Model Number | RF/LO Freq., MHz | LO Drive, Nom. | IF Freq., MHz | Operating Range, MHz | | Conversion Loss, dB | | Port Isolation, Min., dB | | | 1 dB Compr. Point* | 3 rd Order Intercept Point* Pol. Sense |
|--------------|------------------|----------------|---------------|----------------------|------|---------------------|-----|--------------------------|----|---------------|--------------------|---|
| | | | | Max. | Typ. | L-R | L-X | R-X | | | | |
| M-139 | 1 - 1000 | 0 dBm | DC - 500 | 1 - 500 | 8.5 | 7.5 | 35 | 20 | 15 | -7 dBm (typ.) | +4 dBm (typ.) | Pos. |
| | | | | 500 - 700 | 9.0 | 8.0 | 25 | 15 | 10 | | | |
| | | | | 700 - 1000 | 12.0 | 10.0 | 25 | 15 | 10 | | | |
| M-140 | 10 - 3000 | +13 dBm | 10 - 1000 | 10 - 500 | 9.0 | 8.0 | 25 | 20 | 15 | +7 dBm (typ.) | +19 dBm (typ.) | Neg. |
| | | | | 500 - 1000 | 9.0 | 7.0 | 30 | 25 | 20 | | | |
| | | | | 1000 - 3000 | 9.0 | 8.0 | 20 | 20 | 20 | | | |
| M-162 | 10 - 1500 | +7 dBm | DC - 800 | 10 - 1000 | 8.0 | 7.0 | 30 | 20 | — | +0 dBm (typ.) | +12 dBm (typ.) | Pos. |
| | | | | 1000 - 1500 | 9.5 | 8.5 | 20 | 10 | — | | | |

All specifications are as measured in a 50Ω system, at nominal LO Power, in a down converter application.

*Referenced to Input

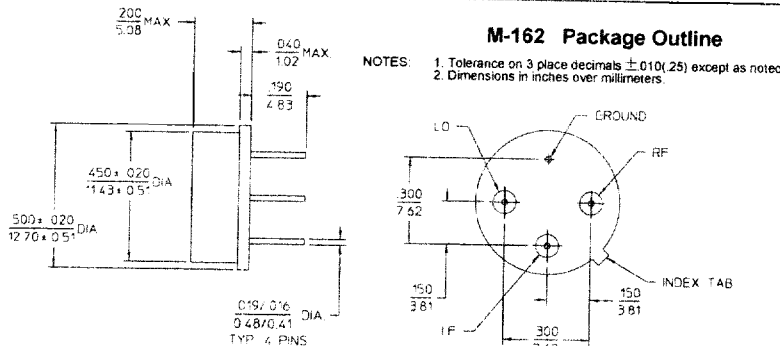
M-139 and M-140 Package Outlines



GENERAL SPECIFICATIONS

- Impedance: 50 Ω nom.
- Noise Figure: Within ±1 dB of Conversion Loss
- DC Offset Voltage: 5 mV typ.
- Weight, nom: 0.1 oz (2.8 g) (all models)
- Operating Temp: -55° to +85°C

M-162 Package Outline



General Notes:

The M-139, M-140 and M-162 Double Balanced Mixers are general purpose devices covering the frequency range of 1 to 3000 MHz using lumped element circuits teamed with toroidal transformers to provide high performance in a small package.