Double-Balanced Mixer 5-500 MHz

MD-108/143/146

- Low Cost
- 7 dB Typical Conversion Loss
- Available in Three Models

Guaranteed Specifications*

(From −55°C to +85°C)

Frequency Range	RF, LO Ports		5-500 MHz
	IF Port		DC-500 MHz
Conversion Loss	5-150 MHz		7.0 dB Max
	150-500 MHz		9.0 dB Max
Isolation	LO to RF	(5-150 MHz)	40 dB Min
		(150-500 MHz)	35 dB Min
	LO to IF	(5-150 MHz)	35 dB Min
		(150-500 MHz)	25 dB Min
	RF to IF	(5-150 MHz)	25 dB Min
		(150-500 MHz)	20 dB Min

Operating Characteristics

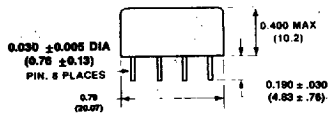
Impedance	50 Ohms Nominal
Maximum Input	
Total Power	400 mW Max @ 25°C Derated to 85°C @ 3.2 mW/°C
IF Port Current	50 mA Max
DC Polarity	Negative (Positive if LO input at pin 5)
DC Offset	≤ 1 mV Typical
RF Input	
1 dB Compression	+2.5 dBm Typical
1 dB Desensitization	0 dBm Typical
SSB Noise Figure	Within 1 dB of Conversion Loss Max
Typical Two-Tone IM Ratio (with −10 dBm input, each input 25 MHz and 35 MHz IF)	100-350 MHz ≥ 55 dB 350-500 MHz ≥ 40 dB
Environmental	See Appendix for MIL-STD-883 screening option.
Pin Configuration	(MD-108) LO; P1 & P5, RF; P8, IF; P3 & P7*** (MD-146) LO; P1 & P5, RF; P8 & P4, IF; P3 & P7***

All specifications apply when operated at +7 dBm available LO power with 50 ohm source and load impedance.
**No internal connection.
***P3 and P7 are connected together to make IF port.

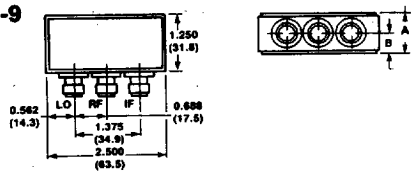
Ordering Information

Model No.	Package
MD-108 PIN	Relay Header
MD-143 BNC	Connectorized
MD-146 PIN	Relay Header

RH-3



C-9

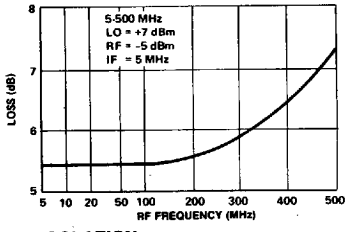


Dimensions in ( ) are in mm.

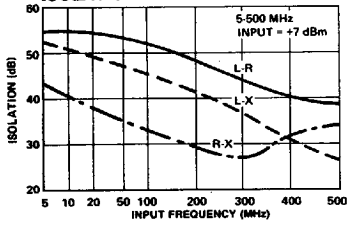
See Appendix for complete physical dimensions.

Typical Performance

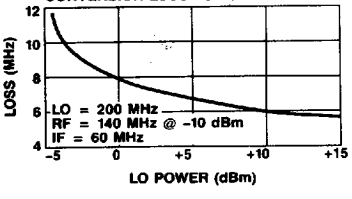
CONVERSION LOSS



ISOLATION



CONVERSION LOSS VS LO POWER



Specifications Subject to Change Without Notice.