M2E / M2EC / SM2E

Double-Balanced Mixer



Rev. V4

Features

- LO 10 TO 1000 MHz
- RF 10 TO 1000 MHz
- F DC TO 600 MHz
- LO DRIVE: +20 dBm (nominal)
- HIGH INTERCEPT POINT: +30 dBm (TYP.)
- HERMETICALLY SEALED

Description

The M2E is a double balanced mixer, designed for use in military, commercial, and test equipment applications. The design utilizes Schottky ring quad diodes and broadband ferrite baluns to attain excellent performance. This mixer can also be used as a phase detector and/or bi-phase modulator since the IF port is DC coupled to the diodes. Environmental screening is available to MIL-STD-883, MIL-STD-202, or MIL-DTL-28837, consult factory.

Ordering Information

Part Number	Package	
M2E	TO-8	
M2EC	SMA Connectorized	
SM2E	Surface Mount	

Product Image



Electrical Specifications: $Z_0 = 50\Omega$ Lo = +20 dBm (Downconverter application only)

Parameter	Test Conditions	Units	Typical	Guaranteed	
Falameter	Test Conditions			+25⁰C	-54º to +85ºC *
SSB Conversion Loss (max) & SSB Noise Figure (max)	$eq:rescaled_$	dB dB dB dB	7.0 8.0 8.5 10.0	7.5 9.0 9.5 11.0	7.8 9.3 9.8 11.3
Isolation, L to R (min)	fL = 0.01 to 0.1 GHz fL = 0.1 to 0.4 GHz fL = 0.4 to 1 GHz	dB dB dB	40 35 25	35 25 18	34 24 17
Isolation, L to I (min)	fL = 0.01 to 0.1 GHz fL = 0.1 to 0.4 GHz fL = 0.4 to 1 GHz	dB dB dB	45 35 20	35 25 14	34 24 13
1 dB Conversion Comp.	fL = +25 dBm	dBm	+20		
Input IP3		dBm	+30		

* The M2EC specification limits apply at 0°C to +50°C.

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 Visit www.macomtech.com for additional data sheets and product information.

Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available. *M/A-COM Tech* changes to the

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Typical Performance Curves

Conversion Loss vs. Frequency





VSWR

Isolation



Conversion Loss vs. LO Drive



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Absolute Maximum Ratings

Parameter	Absolute Maximum		
Operating Temperature	-54°C to +100°C		
Storage Temperature	-65°C to +100°C		
Peak Input Power	+27 dBm max @ +25ºC dBm max @ +100ºC		
Peak Input Current	100 mA DC		

Outline Drawing: TO-8 *



Outline Drawing: SMA Connectorized *



* Dimensions are inches (millimeters) ±0.015 (0.38) unless otherwise specified.

Outline Drawing: Surface Mount *



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