M6E-50

Double-Balanced Mixer

Rev. V3

Features

- LO 5 TO 500 MHz
- RF 5 TO 500 MHz
- IF DC TO 500 MHz
- LO DRIVE +7 dBm (nominal)
- HIGH ISOLATION 40 dB (TYP.)

Description

The M6E-50 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 available to MIL-STD-883, MIL-STD-202, or MIL-DTL-28837, consult factory.

Ordering Information

Part Number	Package
M6E-50	Relay Header

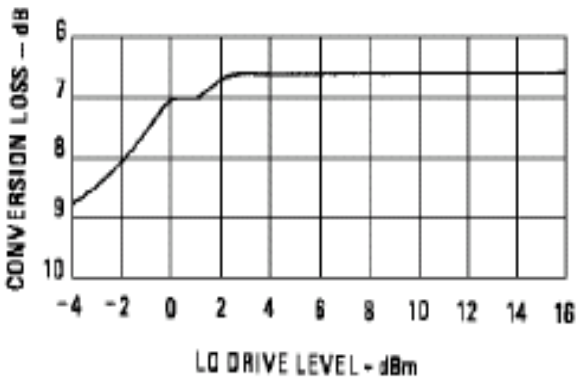
Electrical Specifications: $Z_0 = 50\Omega$ Lo = +7 dBm (Downconverter application only)

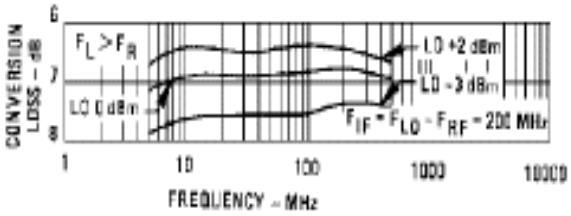
Parameter	Test Conditions	Units	Typical	Guaranteed	
				+25ºC	-54º to +85ºC
SSB Conversion Loss (max) & SSB Noise Figure (max)	fR = 10 to 100 MHz , fL = 10 to 100 MHz, fI = 10 to 100 MHz fR = 100 to 200 MHz , fL = 100 to 200 MHz, fI = 10 to 200 MHz fR = 5 to 500 MHz, fL = 5 to 500 MHz, fI = 0.5 to 500 MHz	dB dB dB	6.5 7.5 8.5	7.0 8.0 9.0	7.5 8.5 9.0
Isolation, L to R (min)	fL = 5 to 50 MHz fL = 50 to 500 MHz	dB dB	50 35	40 30	38 28
Isolation, L to I (min)	fL = 5 to 50 MHz fL = 50 to 500 MHz	dB dB	45 30	35 25	33 23
1 dB Conversion Comp.					
Input IP3					

• **North America** Tel: 800.366.2266 • **Europe** Tel: +353.21.244.6400
• **India** Tel: +91.80.4155721 • **China** Tel: +86.21.2407.1588
Visit www.macomtech.com for additional data sheets and product information.

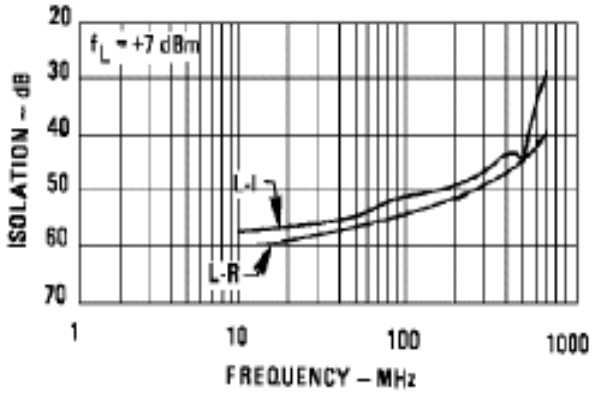
Typical Performance Curves

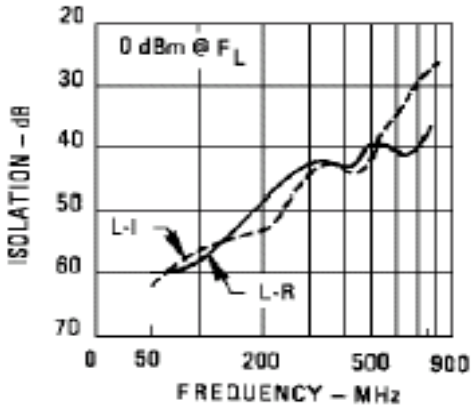
Conversion Loss





Isolation



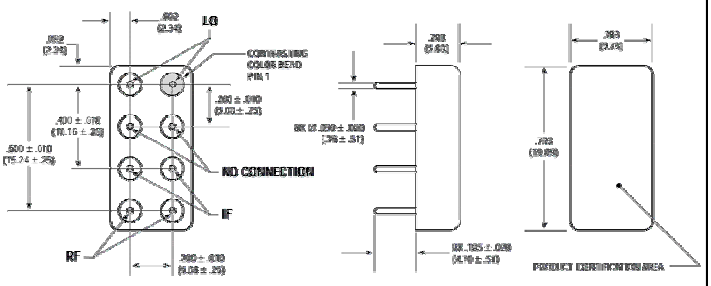


• **North America** Tel: 800.366.2266 • **Europe** Tel: +353.21.244.6400
• **India** Tel: +91.80.4155721 • **China** Tel: +86.21.2407.1588
Visit www.macomtech.com for additional data sheets and product information.

Absolute Maximum Ratings

Parameter	Absolute Maximum
Operating Temperature	-54ºC to +100ºC
Storage Temperature	-65ºC to +100ºC
Peak Input Power	+17 dBm max @ +25ºC dBm max @ +100ºC
Peak Input Current	50 mA DC

Outline Drawing: Relay Header *



Weight: 3 grams (0.11 oz.) max

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

• **North America** Tel: 800.366.2266 • **Europe** Tel: +353.21.244.6400
• **India** Tel: +91.80.4155721 • **China** Tel: +86.21.2407.1588
Visit www.macomtech.com for additional data sheets and product information.