M50 / M50C

Triple-Balanced Mixer



Rev. V2

Features

- LO 2.0 TO 26.0 GHz
- RF 2.0 TO 26.0 GHz
- IF 1.0 TO 15.0 GHz
- LO DRIVE +10 dBm (nominal)
- HIGH COMPRESSION POINT
- VERY WIDE BANDWIDTH

Description

The M50 is a triple balanced mixer, designed for use in military, commercial and test equipment applications. The design utilizes Schottky ring quad diodes and broadband soft dielectric baluns to attain excellent performance. The use of high temperature solder and welded assembly processes used internally makes it ideal for use in manual, semi-automated assembly. Environmental screening available to MIL-STD-883, MIL-STD-202 or MIL-DTL-28837, consult factory.

Ordering Information

Part Number	Package
M50	Minpac
M50C	SMA Connectorized

Electrical Specifications: $Z_0 = 50\Omega$ Lo = +10 dBm (Downconverter application only)

Product Image

Parameter	Test Conditions		Typical Guaranteed		aranteed
Parameter				+25⁰C	-54º to +85ºC *
SSB Conversion Loss (max) & SSB Noise Figure (max)	fR = 2.5 to 18 GHz, fL =2 to 18 GHz, fI =2 to 10 GHz fR = 2 to 18 GHz, fL =2 to 26 GHz, fI =2 to 12 GHz fR = 2 to 26 GHz, fL =2 to 26 GHz, fI =2 to 15 GHz	dB dB dB	7.5 8.0 9.0	9.5 10.5 11.5	10.0 11.0 12.0
Isolation, L to R (min)	fL = 2 to 3 GHz fL = 3 to 26 GHz	dB dB	30 22	15 20	13 18
Isolation, L to I (min)	fL = 2 to 7 GHz fL = 7 to 26 GHz	dB dB	30 22	15 20	13 20
1 dB Conversion Comp.	fL @ +10 dBm	dBm	+5		
Input IP3	fR1 =5 GHz @ -6 dBm, fR2 =5.01 GHz @ -6 dBm, fL=8 GHz @ 10 dBm fR1= 25 GHz @ -6 dBm, fR2 = 25.01 GHz @ -6 dBm, fL = 15 GHz @ 10 dBm	dBm dBm	+15 +15		

* The M50C specification limits apply at 0°C to +50°C.

1

ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed. PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology 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. • 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.

M/A-COM Technology Solutions Inc. and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.

Commitment to produce in volume is not guaranteed.

M50 / M50C

Triple-Balanced Mixer

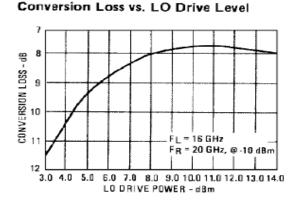
Rev. V2

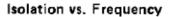
Technology Solutions

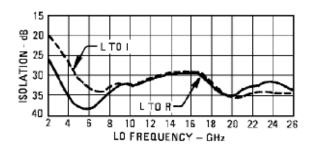
19 21

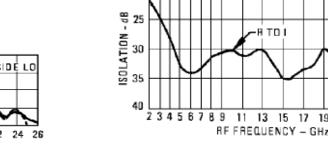
23 25

Typical Performance Curves

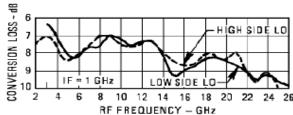




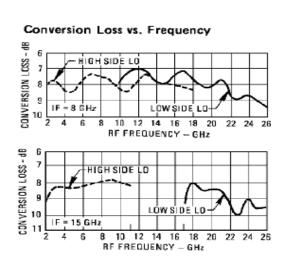




20



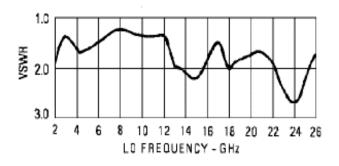
Conversion Loss vs. Frequency



2

ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed.

PRELIMINARY: Data Sheets contain information regarding a product WA-COM Technology 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. Commitment to produce in volume is not guaranteed. L-Port VSWR



• 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.

M/A-COM Technology Solutions Inc. and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.

Triple-Balanced Mixer

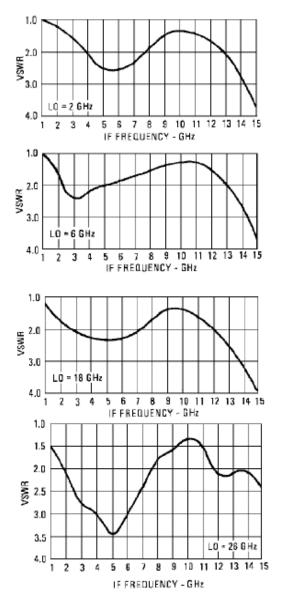


Rev. V2

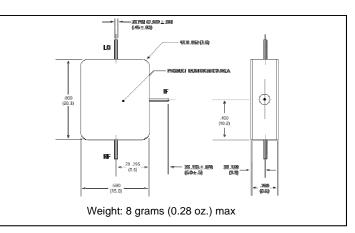
Absolute Maximum Ratings

Parameter	Absolute Maximum			
Operating Temperature	-54ºC to +100ºC			
Storage Temperature	-65°C to +100°C			
Peak Input Power	+26 dBm max @ +25ºC +22 dBm max @ +100ºC			
Peak Input Current	mA DC			

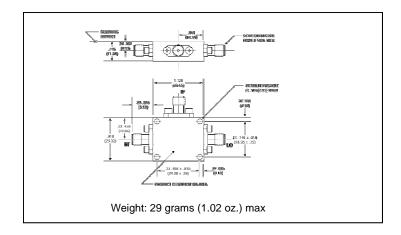
I-Port VSWR



Outline Drawing: Minpac *

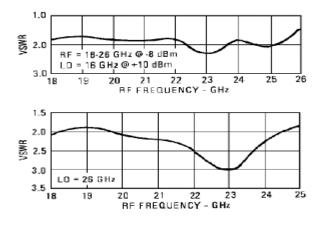


Outline Drawing: SMA Connectorized *



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

R-Port VSWR



3

ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed.

PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology 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. Commitment to produce in volume is not guaranteed. North America Tel: 800.366.2266
Europe Tel: +353.21.244.6400
India Tel: +91.80.4155721
 Visit www.macomtech.com for additional data sheets and product information.

M/A-COM Technology Solutions Inc. and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.