M1K

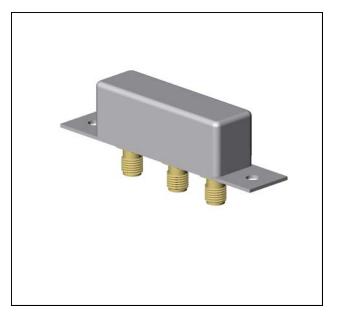
Double-Balanced Mixer



Rev. V2

Features

- LO and RF: 1.0 to 4.0 GHz
- IF: DC to 1000 MHZ
- LO Drive +20 dBm (nominal)
- High Intercept Point: +28 dBm (Typ.)



Guaranteed Specifications¹

Characteristics	Min	Тур.	Max.	Test Conditions
SSB Conversion Loss And SSB Noise Figure			9.0 dB	fL 1.2 to 4.0 GHz fR 1.2 to 3.5 GHz fl 10 to 500 MHz
			11.0 dB	fL & fR 1.0 to 4.0 GHz fl 10 to 1000 MHz
Isolation				
fL at R fL at I	20 dB 10 dB 15 dB	31 dB 19 dB 25 dB		fL 1.0 to 4.0 GHz fL 1.0 to 2.0 GHz fL 2.0 to 4.0 GHz
Conversion Compression		1.0 dB		fL = +20 dBm fR = +13 dBm

Notes:

1

1. Measure in a 50-Ohm system with nominal LO drive and downconverter application only, unless otherwise specified. The I-Port frequency range extends to DC for phase detection, pulse modulation, or attenuator applications, I-Port VSWR degrades from a 50-Ohm system at low IF frequencies.

Absolute Maximum Ratings

Storage Temperature	-65°C to +100°C	
Operating Temperature Without Specification Degradation With dB Noise Figure Degradation	-54°C to +85°C -54°C to +100°C	
Peak RF Input Power	+26 dBm, at +25°C	

Weight 33 gram (1.164 oz) max.

- 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.
- North America Tel: 800.366.2266
 Europe Tel: +353.21.244.6400
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- Visit www.macomtech.com for additional data sheets and product information.

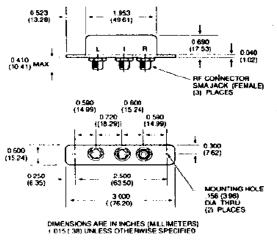
PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available. Commitment to produce in volume is not guaranteed.

M1K

Double-Balanced Mixer

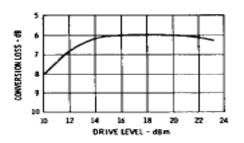


Outline Drawing: M1K

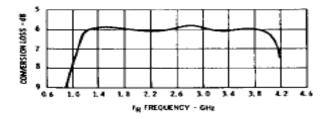


Typical Performance Curves at 25°C

Conversion Loss



Conversion Loss vs. LO Drive Power: The minimum recommended drive level is +14 dBm. The maximum recommended drive level is +23 dBm.

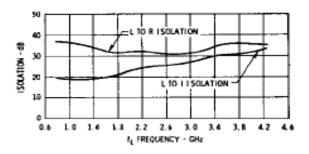


Conversion Loss vs. Input Frequency: Conversion loss of the mixer when used in an SSB system. The frequency ordinate refers to the R-port (f_R) with f_I at 500 MHz and f_L greater than f_R . Data plotted with an f_L level of +20 dBm.

2

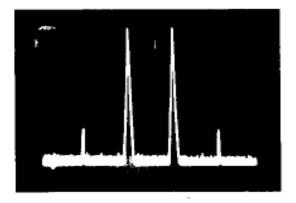
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Isolation



Isolation vs. Frequency: Level of the f signal fed through to the R- and I-ports with respect to the level of the f signal at the L-port.

Two-Tone Intermodulation



Typical Two-Tone Intermodulation Performance: $f_1 = 500 \text{ MHz}$, $f_R = 2.5 \text{ GHz} \pm 1 \text{ MHz}$, $f_L > f_R$, $f_L = 3.0 \text{ GHz}$ at +20 dBm, f_R at -10 dBm vertical scale 10 dB/cm.

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