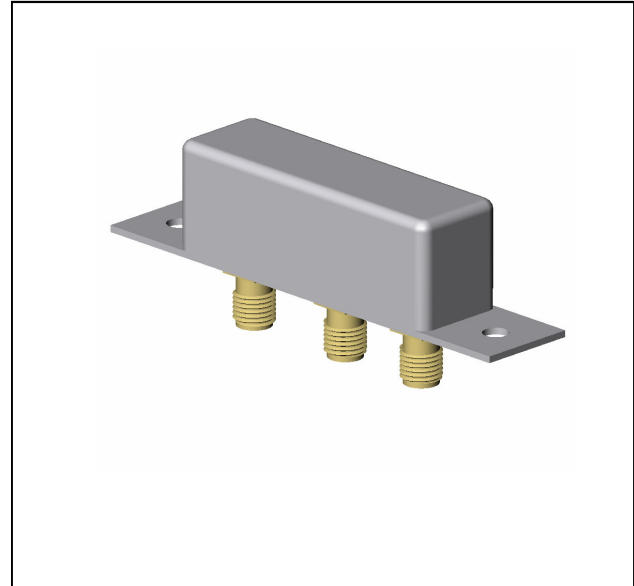


## Double-Balanced Mixer

**M1K  
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 Specifications<sup>1</sup>

Characteristics	Min	Typ.	Max.	Test Conditions
SSB Conversion Loss And SSB Noise Figure			9.0 dB  11.0 dB	fL 1.2 to 4.0 GHz fR 1.2 to 3.5 GHz fI 10 to 500 MHz  fL & fR 1.0 to 4.0 GHz fI 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. 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

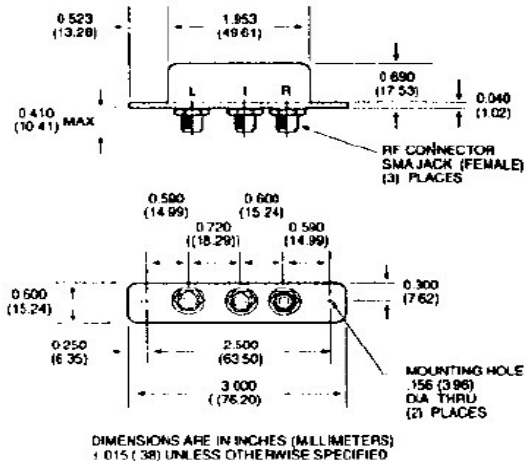
Storage Temperature	-65°C to +100°C
Operating Temperature Without Specification Degradation With dB Noise Figure Degradation	-54°C to +85°C -54°C to +100°C
Peak RF Input Power	+26 dBm, at +25°C

Weight 33 gram (1.164 oz) max.

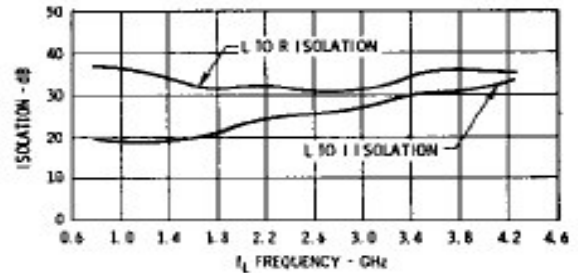
**Double-Balanced Mixer**

**M1K  
V2**

**Outline Drawing: M1K**



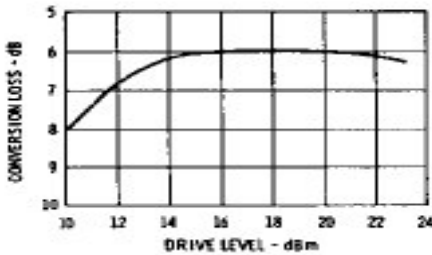
**Isolation**



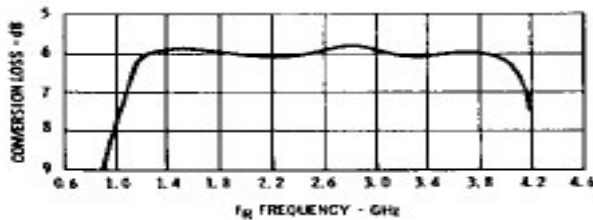
**Isolation vs. Frequency:** Level of the  $f_L$  signal fed through to the R- and I-ports with respect to the level of the  $f_L$  signal at the L-port.

**Typical Performance Curves at 25°C**

**Conversion Loss**

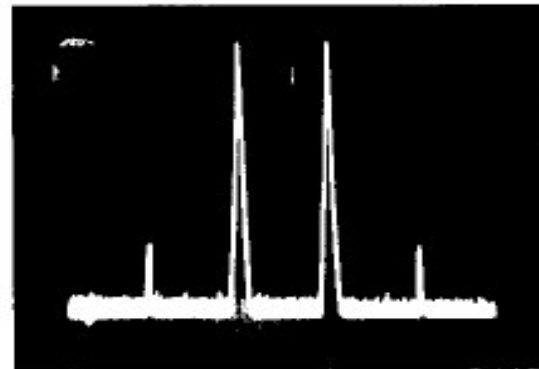


**Conversion Loss vs. LO Drive Power:** The minimum recommended drive level is +14 dBm. The maximum recommended drive level is +23 dBm.



**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  $f_L$  at 500 MHz and  $f_L$  greater than  $f_R$ . Data plotted with an  $f_L$  level of +20 dBm.

**Two-Tone Intermodulation**



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