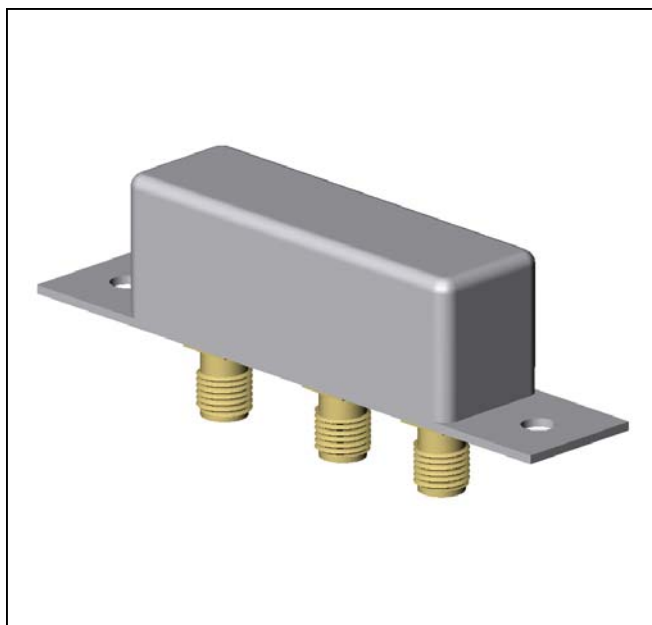


## Double-Balanced Mixer

Rev. V2

## Features

- LO and RF: 1.8 to 6.2 GHz
- IF: DC to 2 GHz
- LO Drive +7 dBm (nominal)
- High Isolation 35 dB (Typ.)

Guaranteed Specifications<sup>1</sup>

| Characteristics                                       | Min                              | Typ.                             | Max.                        | Test Conditions                                                                                                                        |
|-------------------------------------------------------|----------------------------------|----------------------------------|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| SSB Conversion Loss<br>And<br>SSB Noise Figure        |                                  | 7.0 dB<br>8.5 dB<br>9.0 dB       | 8.5 dB<br>9.5 dB<br>10.0 dB | fL & fR 1.8 to 4.2 GHz<br>fI 0.01 to 1 GHz<br>fL & fR 1.8 to 4.2 GHz<br>fI 0.01 to 2 GHz<br>fL & fR 1.8 to 6.2 GHz<br>fI 0.01 to 2 GHz |
| Isolation<br>fL at R<br>fL at I<br>fL at R<br>fL at I | 25 dB<br>15 dB<br>18 dB<br>15 dB | 40 dB<br>25 dB<br>25 dB<br>20 dB |                             | fL 1.8 to 4.2 GHz<br>fL 4.2 to 6.2 GHz                                                                                                 |
| Conversion Compression                                |                                  | 1.0 dB                           |                             | fR = 0 dBm<br>fL at +7 dB,                                                                                                             |

## 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      | -54°C to +100°C |
| Peak RF Input Power        | +17 dBm         |
| Peak Input Current at 25°C | 50 mA DC        |

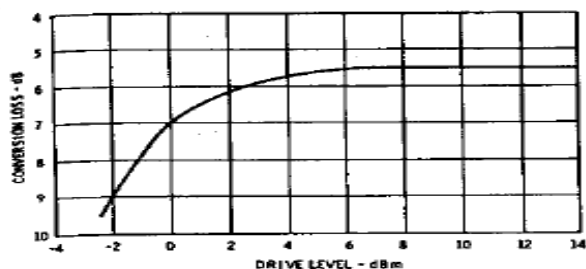
Weight 31 gram (1.1 oz) max.

## Double-Balanced Mixer

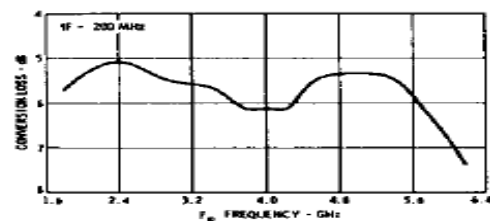
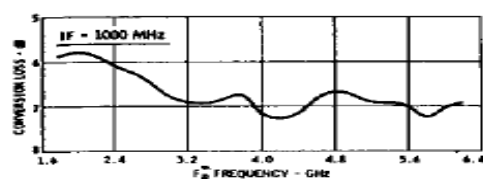
Rev. V2

## Typical Performance Curves at 25°C

Conversion Loss

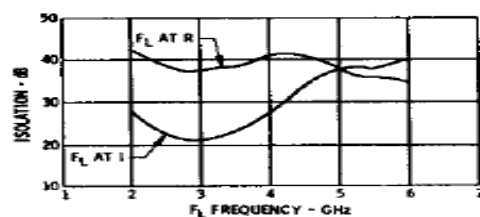


**Conversion Loss vs. Drive Level:** Conversion loss in an SSB system is a function of drive level ( $f_L$  with  $f_R$  at approximately 3 GHz and  $f_R$  level at -6 dBm.



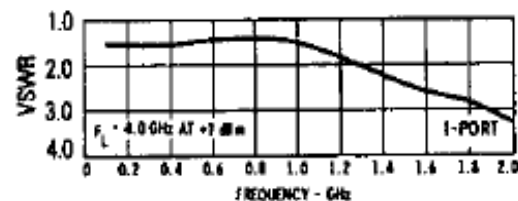
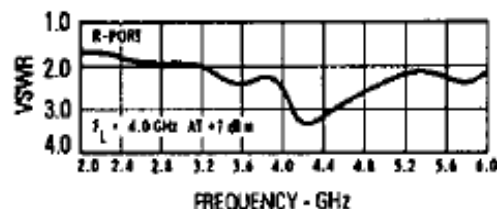
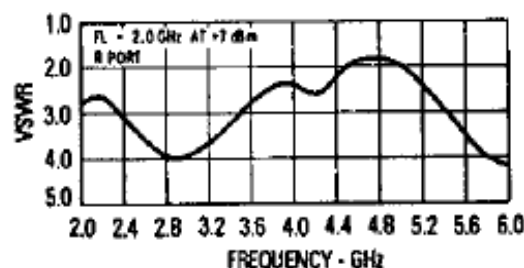
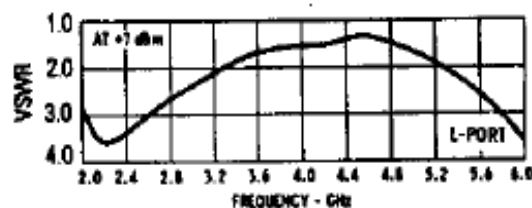
**Conversion Loss vs. Input Frequency:** The frequency ordinate refers to the report ( $f_R$ ) with  $f_L$  at 200 MHz and 1000 MHz, data plotted with  $f_L$  at +7 dBm.

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.

VSWR



**VSWR vs. Frequency:** VSWR of the L-, I- and R-ports in a 50-ohm system. Some variation in the R-port VSWR will occur as a function of the L-port frequency as shown above. Curves for R-port VSWR are plotted for L-port frequencies of 2 GHz and 4 GHz. A plot of I-port VSWR is also shown with  $f_L$  at 4 GHz.

### Outline Drawing: M1H

