DOUBLE-BALANCED MIXER

- LO 4 TO 16 GHz
- RF 6 TO 14 GHz
- IF DC to 2 GHz
- LO DRIVE +7 dBm (NOMINAL)
- HIGH ISOLATION: 35 dB (TYP.)
- LOW VSWR: <2.0:1 (TYP.)
- LOW NOISE FIGURE: <6.0 dB (TYP?)
- MIL-M-28837 EQUIVALENT LEVEL SCREENING AVAILABLE

Guaranteed Specifications$^1, 2$

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<td>SSB Conversion Loss</td>
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<td>8.0</td>
<td>8.5</td>
<td>$f_R$ 6 to 9 GHz</td>
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| and SSB Noise Figure (Max.)            | 7.5  | 9.0   | 9.5            | $f_L$ 5 to 10 GHz
|                                        |      |       |                | $f_0.05$ to 1 GHz |
| Isolation (Min.)                       |      |       |                | $f_R$ 6 to 14 GHz |
| $f_L$ at $R$                           | 35   | 20    | 18             | $f_L$ 4 to 12 GHz |
| $f'_L$ at $I$                          | 17   | 12dB  | 10             | $f_L$ 4 to 6 GHz |
|                                        | 35   | 23dB  | 21             | $f_L$ 6 to 12 GHz |
|                                        | 28   | 15dB  | 13             | $f_L$ 12 to 16 GHz |
| $f_L$ at $R$                           | 40   | 28dB  | 26             | $f_L$ 12 to 16 GHz |
|                                        |      |       |                | $f_R$ Level = +2 dBm |
| Conversion Compression                 | 1.0  |       |                | $f_L$ Level = +7 dBm |

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

Absolute Maximum Ratings

- Operating Temperature .......................................................... -54°C to +100°C
- Storage Temperature ............................................................. -65°C to +100°C
- Peak Input Power ............................................................... +23 dBm max. at +25°C, +20 dBm max at +100°C
- Peak Input Current at 25°C .................................................... 100 mA DC
- Weight M14A: 42.5 grams (1.5 oz.) max.
- Connectors SMA Female
Typical Performance at 25°C

Conversion Loss vs. Drive Level: The minimum recommended drive level is 14 dBm. The maximum recommended drive level is +10 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 ($f_R$). Data plotted with an $f_L$ level of +7 dBm.

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.

Isolation

VSWR vs. Frequency: VSWR of the L-, I- and R-ports in a 50-ohm system with $f_L$ at +7 dBm. Only a small variation in the R-port VSWR will occur as a function of the L-port frequency.

Typical Harmonic IM Signals (dB Below Designed Output)

Harmonic Intermodulation Products: Intermodulation signals which result from the mixing of mixer generated harmonics of the input signals are shown. Mixing product suppression is indicated by the number of dB below the desired output level.

WJ-M14A

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