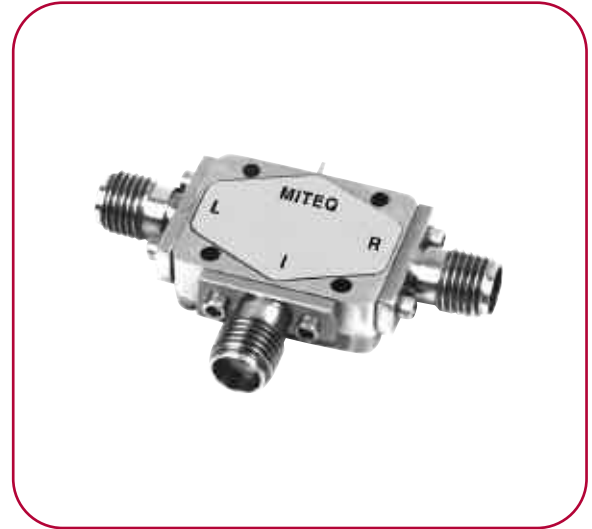


2 TO 8 GHz BIASABLE MESFET MIXER

MODEL: SBF0208LW2

FEATURES

- RF/LO coverage..... 2 to 8 GHz
- IF operation..... DC to 1 GHz
- LO power range..... +10 to +20 dBm
- Input 1 dB comp. +20 dBm
- Input IP³ +27 dBm typical
(@ +20 dBm LO)



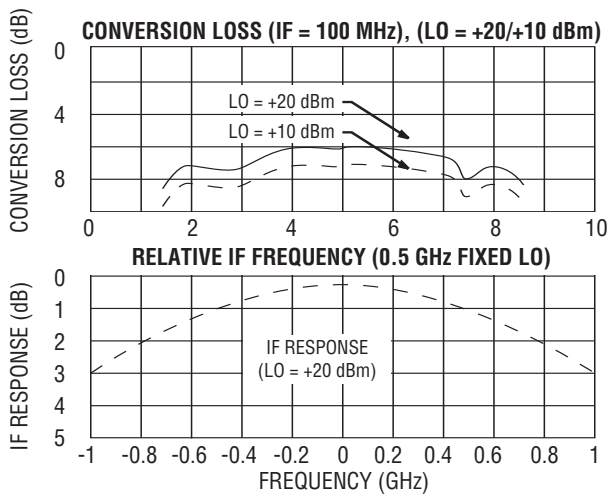
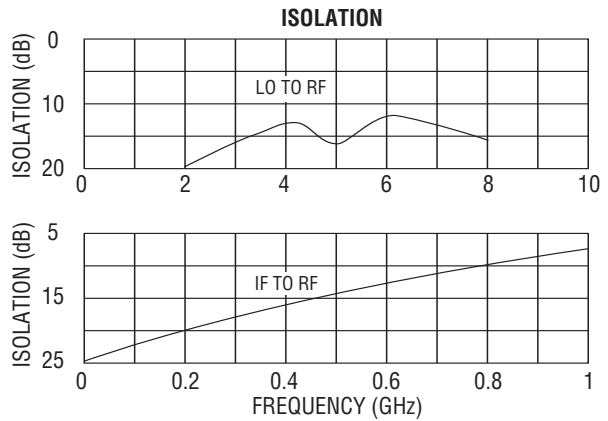
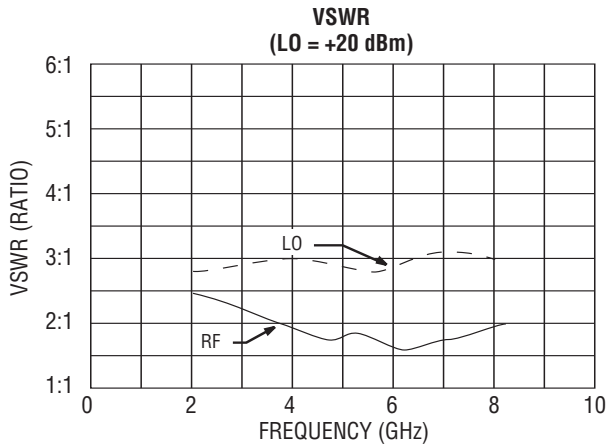
This FET mixer is designed to upgrade the dynamic range of existing systems that use a conventional ring type Schottky diode mixer, without changing the LO source. The input 1 dB compression and third-order intercept powers are typically 6 dB higher than a ring diode mixer of equal LO power. However, the LO-to-RF isolation of this particular FET mixer is approximately 10 dB less than an equivalent ring mixer.

ELECTRICAL SPECIFICATIONS

| INPUT PARAMETERS | CONDITION | UNITS | MIN. | TYP. | MAX. |
|--|----------------|-------|------|-------|------|
| RF frequency range | | GHz | 2 | | 8 |
| RF VSWR (RF = 0 dBm, LO = +20 dBm) | | Ratio | | 2.5:1 | |
| LO frequency range | | GHz | 2 | | 8 |
| LO power range | | dBm | +10 | | +20 |
| LO VSWR | LO = +20 dBm | Ratio | | 3:1 | |
| DC bias -15 V | | mA | | 10 | |
| TRANSFER CHARACTERISTICS | CONDITION | UNITS | MIN. | TYP. | MAX. |
| Conversion loss (IF = 100 MHz) | LO = +20 dBm | dB | | 7 | 9 |
| | LO = +10 dBm | dB | | 10 | |
| Single-sideband noise figure | LO = +20 dBm | dB | | 10 | |
| LO-to-RF isolation (Note 1) | | dB | 10 | 15 | |
| LO-to-IF isolation | | dB | 18 | 25 | |
| IF-to-RF isolation | | dB | | 12 | |
| Input power at 1 dB compression | LO = +20 dBm | dBm | | +20 | |
| Input two-tone third-order intercept point | LO = +20 dBm | dBm | +25 | +27 | |
| OUTPUT PARAMETERS | CONDITION | UNITS | MIN. | TYP. | MAX. |
| IF frequency range | 3 dB bandwidth | GHz | DC | | 1 |
| IF VSWR (IF = 0 dBm, LO = +20 dBm) | | Ratio | | 2.5:1 | |



SBF0208LW2 TYPICAL TEST DATA



SINGLE-TONE (m) RF x (n) LO RELATIVE SPUR LEVEL (dBc)
(AVERAGE MIDBAND RF, LO, IF FREQUENCIES,
RF = -10 dBm, LO = +20 dBm)

| SPUR (m) RF x (n) LO | RF TEST FREQ. (GHz) | LO TEST FREQ. (GHz) | SPUR LEVEL (dBc) |
|----------------------|---------------------|---------------------|------------------|
| 1 x 1 | 5 | 5.1 | 0 |
| 1 x 2 | 7.1 | 3.5 | -15 |
| 1 x 3 | 6.1 | 2 | -10 |
| 2 x 1 | 3.5 | 7.1 | -50 |
| 2 x 2 | 5 | 5.05 | -52 |
| 2 x 3 | 3 | 2.03 | -51 |
| 3 x 1 | 2 | 6.1 | -72 |
| 3 x 2 | 4 | 6.05 | -65 |
| 3 x 3 | 5 | 5.033 | -67 |

MAXIMUM RATINGS

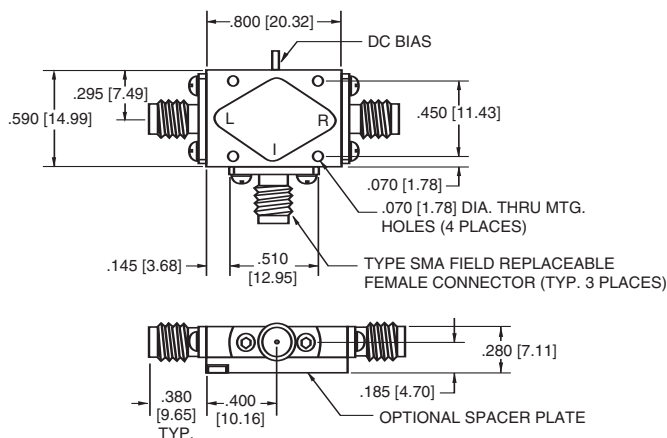
Specification temperature..... +25°C
 Operating temperature -54 to +85°C
 Storage temperature -65 to +125°C

GENERAL NOTE

- Single- and double-balanced circuits available with greater IP³ and LO-to-RF isolation, in octave bandwidths.

NOTE: Test data supplied at 25°C; conversion loss, LO-to-RF isolation and IP³.

OUTLINE DRAWING



NOTE: All dimensions shown in brackets [] are in millimeters.

