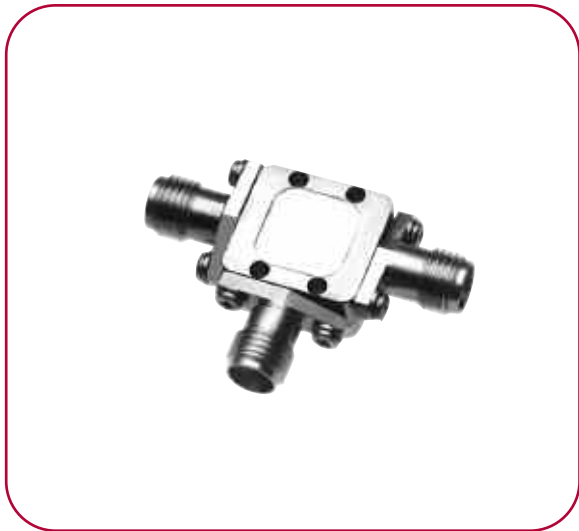


4 TO 26 GHz TRIPLE-BALANCED MIXER

MODEL: TB0426LW1

FEATURES

- RF/LO coverage..... 4 to 26 GHz
- IF operation..... 0.5 to 8 GHz
- LO power range..... +10 to +15 dBm
- Input 1 dB comp. +5 dBm typical
- Packaging Hermetically sealed



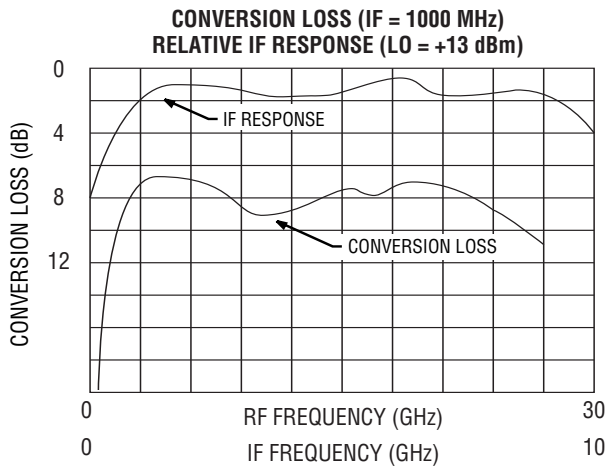
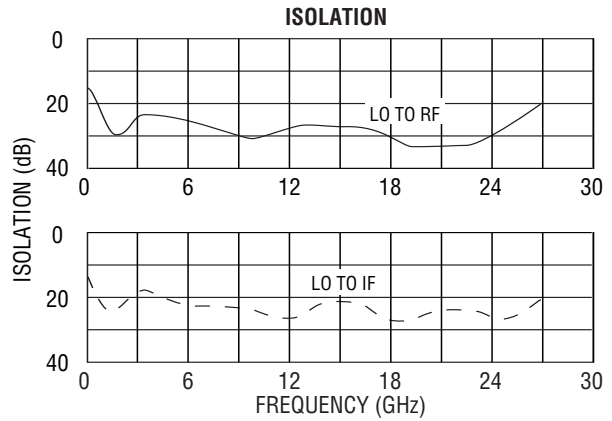
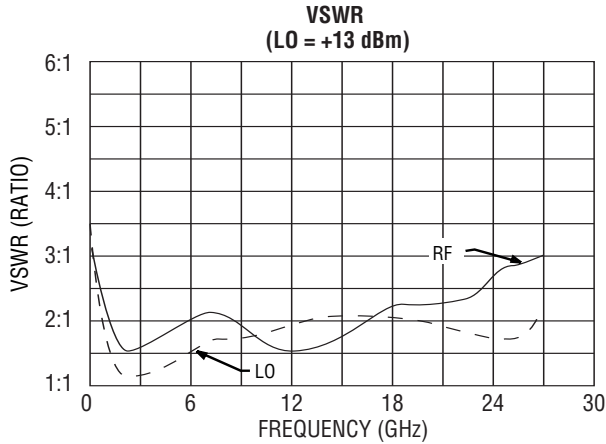
MITEQ's triple-balanced TB0426LW1 mixer series utilizes a dual-quad circuit to provide performance in overlapping RF and IF frequency ranges. In addition to extremely broadband operation, custom-processed diodes allow for minimal variation in conversion loss, extremely high third-order intercept and 1 dB compression points versus input LO power range. Options for various drive level diodes provide numerous combinations of intercept point and LO level. This device performs as an up- or downconverter.

ELECTRICAL SPECIFICATIONS

| INPUT PARAMETERS | CONDITION | UNITS | MIN. | TYP. | MAX. |
|---|----------------------------|----------------|------|--------------|------|
| RF frequency range | | GHz | 4 | | 26 |
| RF VSWR (RF = -10 dBm, LO = +13 dBm) | 4 to 24 GHz 4 to 26 GHz | Ratio Ratio | | 2.5:1 3:1 | |
| LO frequency range | | GHz | 4 | | 26 |
| LO power range | | dBm | +10 | +13 | +15 |
| LO VSWR (LO = +13 dBm) | 4 to 26 GHz | Ratio | | 2.5:1 | |
| TRANSFER CHARACTERISTICS | CONDITION | UNITS | MIN. | TYP. | MAX. |
| Conversion loss (IF = 1000 MHz, LO = +13 dBm) | 4 to 18 GHz | dB | | 8.5 | 9.5 |
| | 18 to 26 GHz | dB | | 10 | 12 |
| Single-sideband noise figure | 4 to 26 GHz | dB | | | 13 |
| LO-to-RF isolation | 4 to 26 GHz | dB | 20 | 25 | |
| LO-to-IF isolation | 4 to 26 GHz | dB | | 20 | |
| RF-to-IF isolation | 4 to 26 GHz | dB | | 20 | |
| Input power at 1 dB compression | LO = +13 dBm | dBm | | +5 | |
| Input two-tone third-order intercept point | LO = +13 dBm | dBm | | +15 | |
| OUTPUT PARAMETERS | CONDITION | UNITS | MIN. | TYP. | MAX. |
| IF frequency range | 3 dB bandwidth | GHz | 0.5 | | 8 |
| IF VSWR (IF = -10 dBm, LO = +13 dBm) | | Ratio | | 2.5:1 | |



TB0426LW1 TYPICAL TEST DATA



**SINGLE-TONE (m) RF x (n) LO RELATIVE SPUR LEVEL (dBc)
(AVERAGE MIDBAND RF, LO, IF FREQUENCIES,
RF = -10 dBm, LO = +13 dBm)**

| SPUR (m) RF x (n) LO | RF TEST FREQ. (GHz) | LO TEST FREQ. (GHz) | SPUR LEVEL (dBc) |
|----------------------|---------------------|---------------------|------------------|
| 1 x 1 | 12 | 11 | REF |
| 1 x 2 | 12 | 5.5 | 25 |
| 1 x 3 | 12 | 3.67 | 13 |
| 2 x 1 | 6 | 11 | 47 |
| 2 x 2 | 6 | 5.5 | 50 |
| 2 x 3 | 6 | 3.67 | 46 |
| 3 x 1 | 4 | 11 | 56 |
| 3 x 2 | 4 | 5.5 | 60 |
| 3 x 3 | 4 | 3.67 | 58 |

MAXIMUM RATINGS

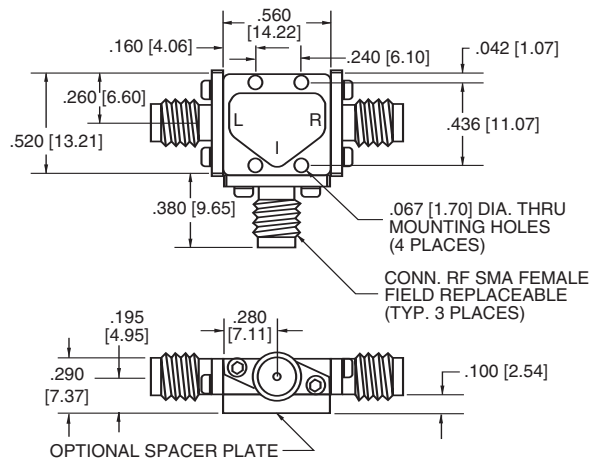
Specification temperature..... +25°C
 Operating temperature -54 to +85°C
 Storage temperature -65 to +125°C

AVAILABLE OPTION

Medium/high dynamic range options
 M (LO = +15 to +20 dBm), (IP³ = +18 dBm typ.)
 H (LO = +20 to +23 dBm), (IP³ = +25 dBm typ.)
 M, H (Conversion loss = 13 dB max.)

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

OUTLINE DRAWING



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

