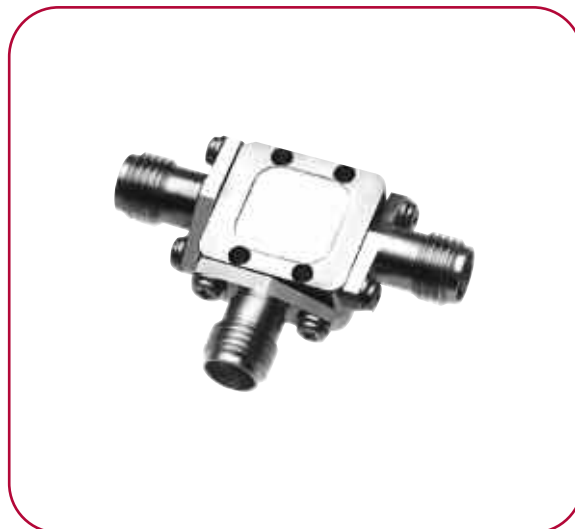


## 4 TO 18 GHz TRIPLE-BALANCED MIXER

### MODEL: TB0418LW1

#### FEATURES

- RF/LO coverage..... 4 to 18 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



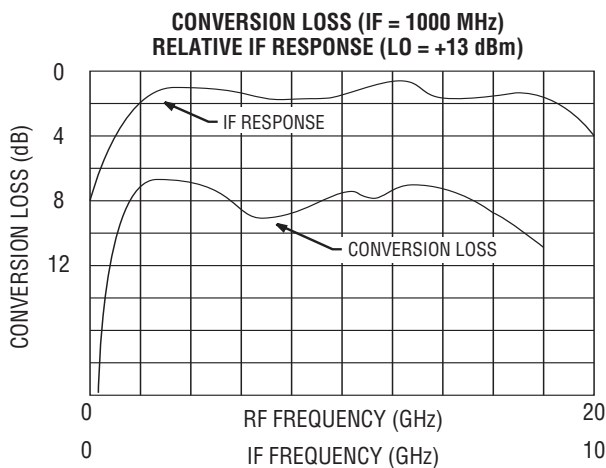
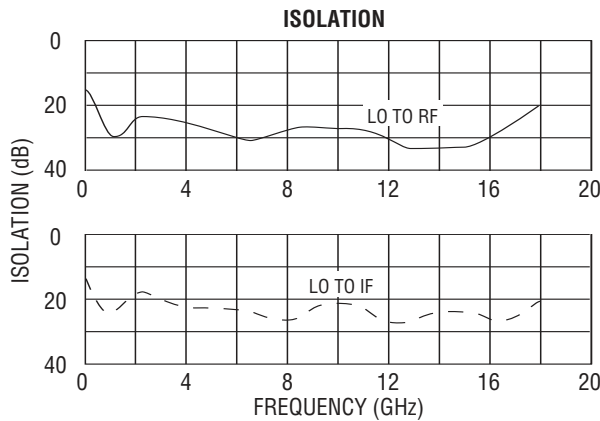
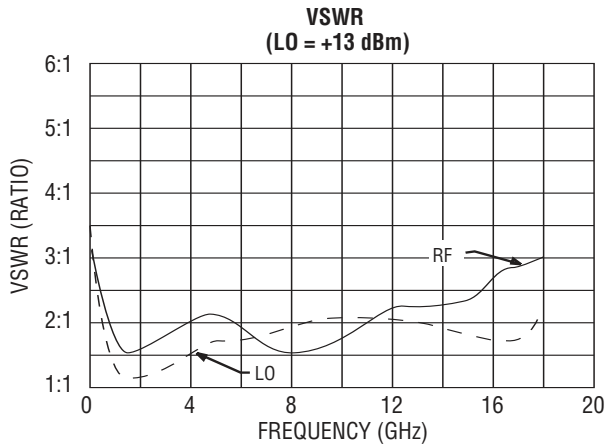
MITEQ's triple-balanced TB0418LW1 mixer series utilizes a dual-quad circuit to provide performance in overlapping RF and IF frequency ranges. In addition to extremely broadband operation, custom-processed diodes allow for minimal variation in conversion loss, extremely high third-order intercept and 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		18
RF VSWR (RF = -10 dBm, LO = +13 dBm)		Ratio		3:1	
LO frequency range		GHz	4		18
LO power range		dBm	+10	+13	+15
LO VSWR (LO = +13 dBm)		Ratio		2.5:1	
TRANSFER CHARACTERISTICS	CONDITION	UNITS	MIN.	TYP.	MAX.
Conversion loss (IF = 1000 MHz, LO = +13 dBm)		dB		8.5	9.5
Single-sideband noise figure		dB			13
LO-to-RF isolation		dB	20	25	
LO-to-IF isolation		dB		20	
RF-to-IF isolation		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	



# TBO418LW1 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

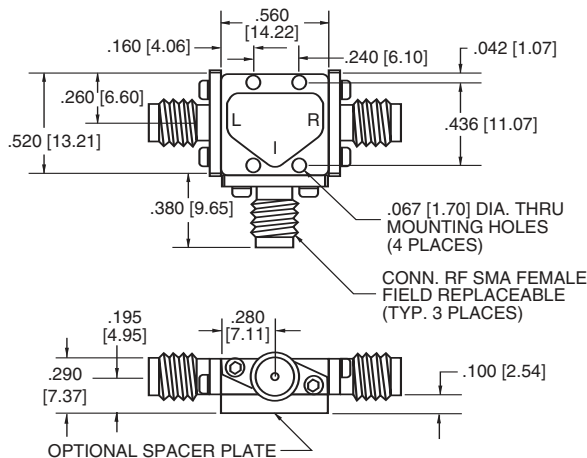
Specification temperature..... +25°C  
 Operating temperature ..... -54 to +85°C  
 Storage temperature ..... -65 to +125°C

## AVAILABLE OPTION

Medium/high dynamic range options  
 M (LO = +15 to +20 dBm), (IP<sup>3</sup> = +18 dBm typ.)  
 H (LO = +20 to +23 dBm), (IP<sup>3</sup> = +25 dBm typ.)  
 M, H (Conversion loss = 10.5 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.

