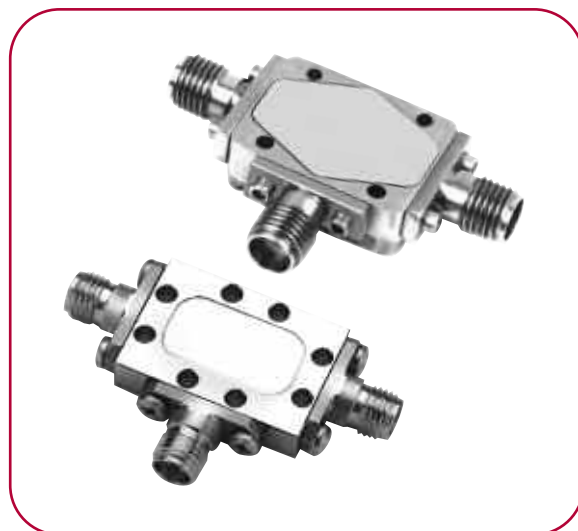


## 2 TO 18 GHz TRIPLE-BALANCED MIXER

### MODELS: TBR0218LW2 AND TBR0218LA1

#### FEATURES

- RF/LO coverage ..... 2 to 18 GHz
- IF operation ..... 0.05 to 3 GHz
- LO power range ..... +10 to +15 dBm
- Input 1 dB comp. .... +5 dBm typical
- Packaging ..... Hermetically sealed



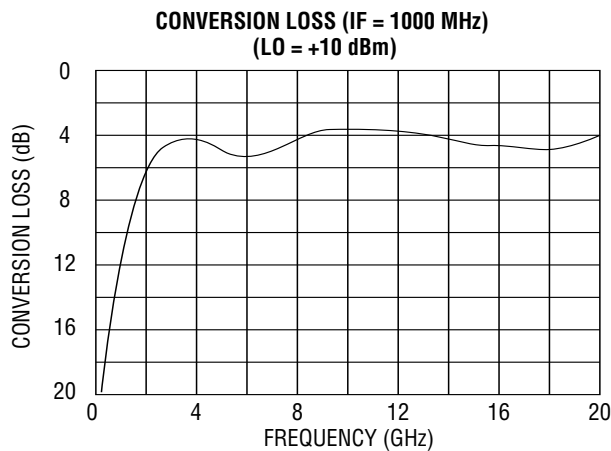
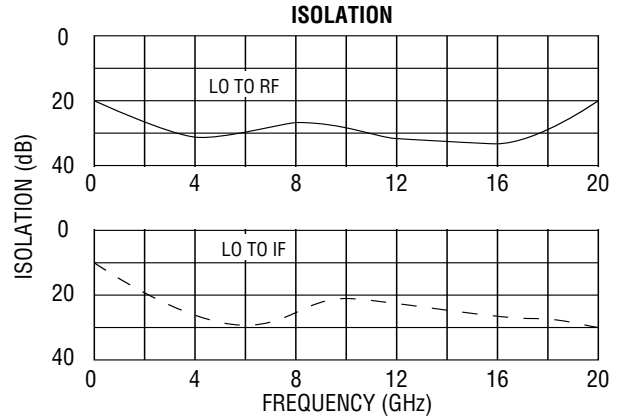
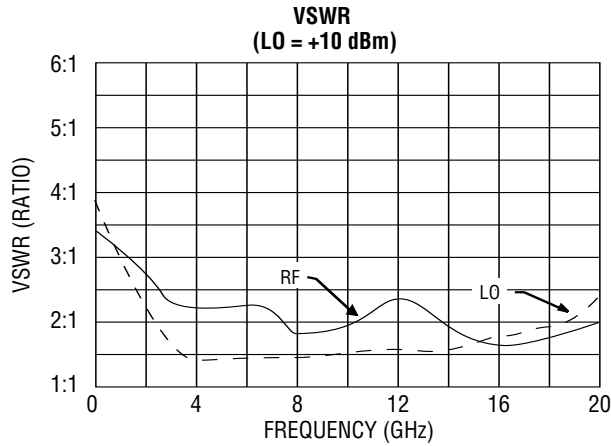
MITEQ's triple-balanced TBR0218L mixer series utilizes a dual-quad circuit to provide performance in overlapping RF and IF frequency ranges. In addition to extremely broadband operation, custom-processed diodes allow for minimal variation in conversion loss, extremely high third-order intercept and 1 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	2		18
RF VSWR (RF = -10 dBm, LO = +10 dBm)	2 to 18 GHz	Ratio		2.5:1	
LO frequency range		GHz	2		18
LO power range		dBm	+10	+13	+15
LO VSWR (LO = +13 dBm)	2 to 18 GHz	Ratio		2.5:1	
TRANSFER CHARACTERISTICS	CONDITION	UNITS	MIN.	TYP.	MAX.
Conversion loss (IF = 1000 MHz, LO = +10 dBm)	2 to 18 GHz	dB		6.5	8.5
Single-sideband noise figure	2 to 18 GHz	dB			9.5
LO-to-RF isolation	2 to 18 GHz	dB	20	25	
LO-to-IF isolation	2 to 18 GHz	dB		20	
RF-to-IF isolation	2 to 18 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	0.05		3
IF VSWR (IF = -10 dBm, LO = +10 dBm)		Ratio		2.5:1	



# TBR0218LW2/A1 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	9	9.1	REF
1 x 2	9	4.55	26
1 x 3	9	3.03	12
2 x 1	4.5	9.1	46
2 x 2	4.5	4.55	52
2 x 3	4.5	3.03	46
3 x 1	3	9.1	59
3 x 2	3	4.55	63
3 x 3	3	3.03	59

## MAXIMUM RATINGS

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

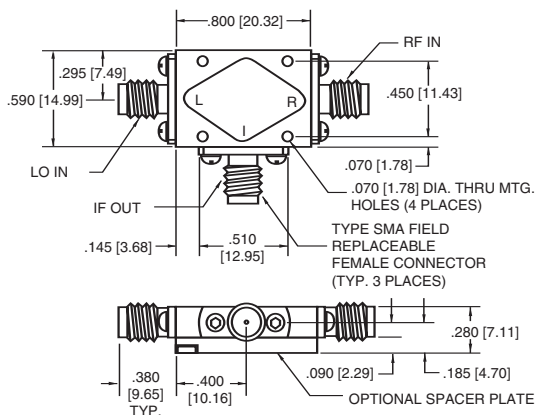
## AVAILABLE OPTION

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 = 9.5 dB max.)

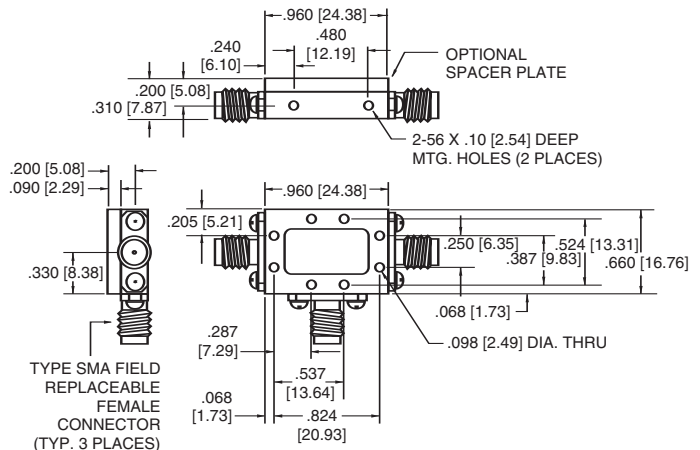
NOTE: Test data supplied at 25°C; conversion loss and LO-to-RF isolation.

## OUTLINE DRAWINGS

### W2 HOUSING



### A1 HOUSING



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

