

# 4 TO 18 GHz DOUBLE-BALANCED MIXER

## MODELS: DB0418LW1 AND DB0418HW1

### FEATURES

- RF/LO coverage..... 4 to 18 GHz
- IF operation..... DC to 2 GHz
- LO power range
  - L..... +7 to +13 dBm
  - M..... +13 to +16 dBm
  - H ..... +17 to +23 dBm
- Input 1 dB compression
  - L..... 0 dBm
  - M..... +5 dBm
  - H ..... +10 dBm
- Packaging ..... Hermetically sealed



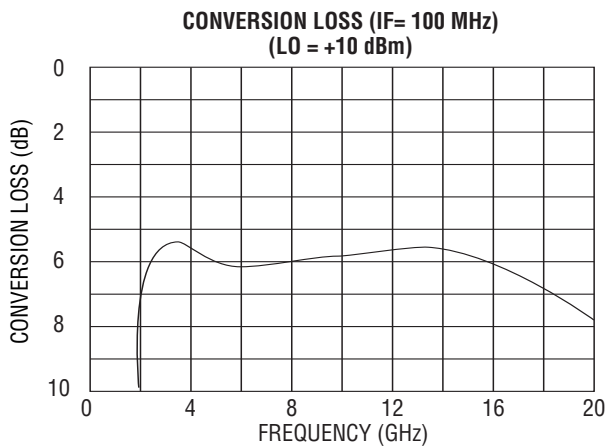
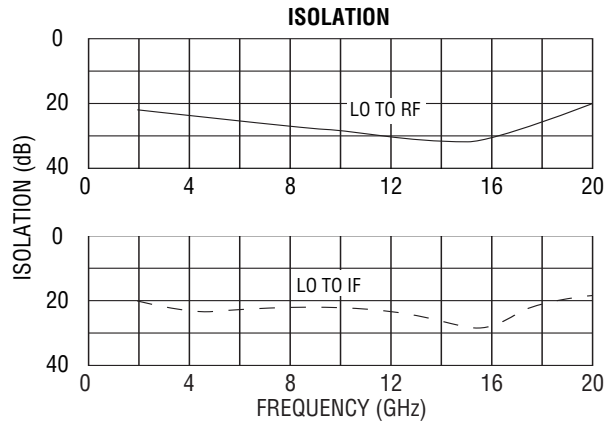
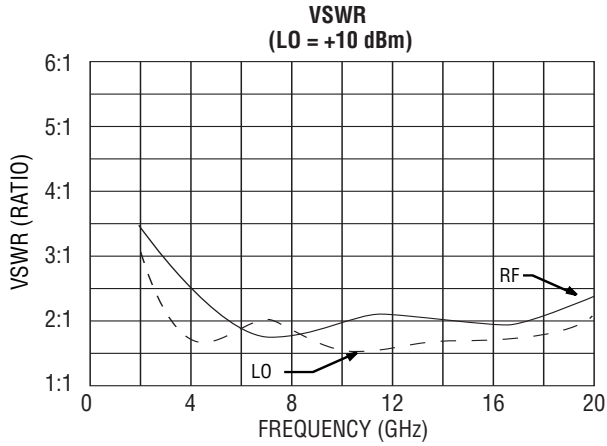
MITEQ's double-balanced DB0418 Series provides multioctave RF and LO coverage with high IF frequency operation. The miniature coaxial package is ideal for dense integration or drop-in interface. This device performs as an up- or downconverter.

### ELECTRICAL SPECIFICATIONS

INPUT PARAMETERS	CONDITION	UNITS	MIN.	TYP.	MAX.
RF frequency range		GHz	4		18
RF VSWR (RF = -10 dBm, LO = +10 dBm)	4 to 18 GHz	Ratio		2.75:1	
LO frequency range		GHz	4		18
LO power range L		dBm	+7	+10	+13
H		dBm	+17	+20	+23
LO VSWR (LO = +10 dBm)	4 to 18 GHz	Ratio		2.75:1	
TRANSFER CHARACTERISTICS	CONDITION	UNITS	MIN.	TYP.	MAX.
Conversion loss L (IF = 100 MHz, LO = +10 dBm)	4 to 18 GHz	dB		6.5	8.5
H (IF = 100 MHz, LO = +20 dBm)	4 to 18 GHz	dB		7.5	9.5
Single-sideband noise figure L	4 to 18 GHz	dB			9.5
H	4 to 18 GHz	dB			10.5
LO-to-RF isolation	4 to 18 GHz	dB	20	25	
LO-to-IF isolation	4 to 18 GHz	dB		20	
RF-to-IF isolation	4 to 18 GHz	dB		20	
Input two-tone third-order intercept point L	LO = +10 dBm	dBm		+10	
H	LO = +20 dBm	dBm		+20	
OUTPUT PARAMETERS	CONDITION	UNITS	MIN.	TYP.	MAX.
IF frequency range	3 dB bandwidth	GHz	DC		2
IF VSWR (IF = -10 dBm, LO = +10 dBm)		Ratio		2.5:1	



# DB0418LW1 TYPICAL TEST DATA



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

SPUR (m) RF x (n) LO	RF TEST FREQ. (GHz)	LO TEST FREQ. (GHz)	SPUR LEVEL (dBc)
1 x 1	18	17.9	0
1 x 2	18	8.95	30
1 x 3	18	5.97	10
2 x 1	9	17.9	43
2 x 2	9	8.95	54
2 x 3	9	5.97	43
3 x 1	6	17.9	59
3 x 2	6	8.95	72
3 x 3	6	5.97	57

### MAXIMUM RATINGS

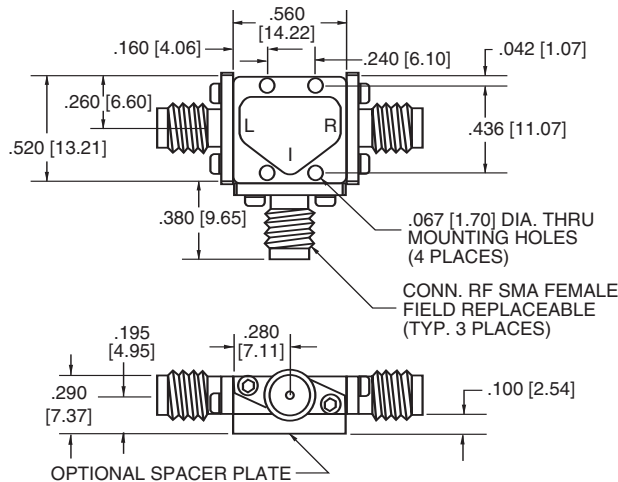
Specification temperature ..... +25°C  
 Operating temperature ..... -54 to +85°C  
 Storage temperature ..... -65 to +125°C

### AVAILABLE OPTION

Medium dynamic range option  
 M (LO = +13 to +16 dBm), (IP<sup>3</sup> = +15 dBm typ.)  
 Conversion loss = 9.5 dB

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.

