

12 TO 18 GHz DOUBLE-BALANCED MIXER

MODELS: DB1218LW1 AND DB1218HW1

FEATURES

- RF/LO coverage 12 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



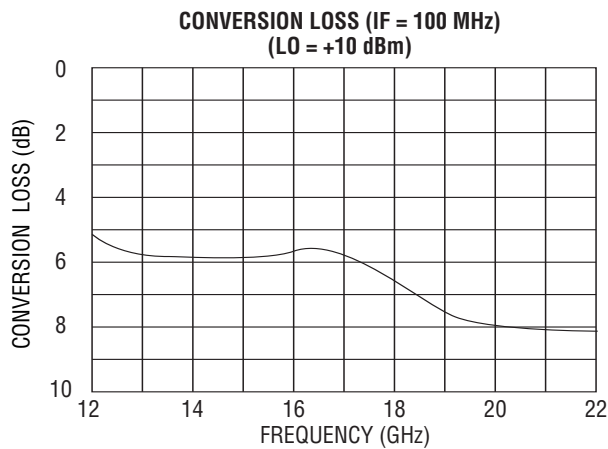
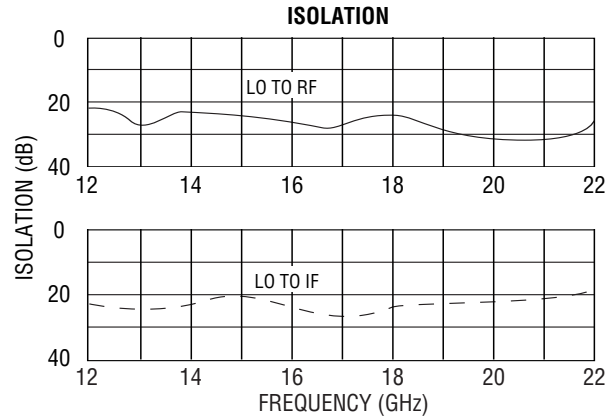
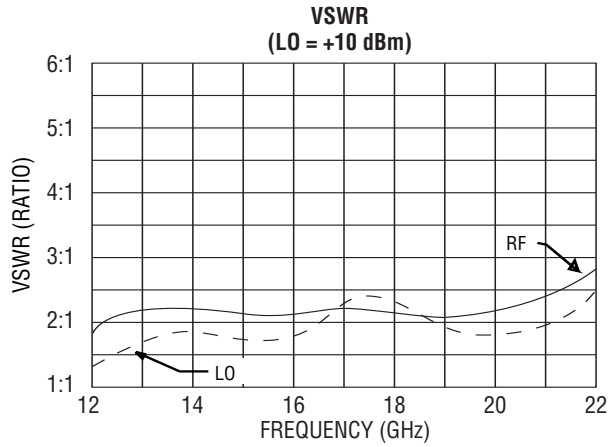
MITEQ's double-balanced DB1218 Series provides octave RF and LO coverage with high IF frequency operation. The miniature coaxial package is ideal for dense integration or drop-in interface. This device performs as an up- or downconverter.

ELECTRICAL SPECIFICATIONS

INPUT PARAMETERS	CONDITION	UNITS	MIN.	TYP.	MAX.
RF frequency range		GHz	12		18
RF VSWR (RF = -10 dBm, LO = +10 dBm)	12 to 18 GHz	Ratio		2.5:1	
LO frequency range		GHz	12		18
LO power range L		dBm	+7	+10	+13
H		dBm	+17	+20	+23
LO VSWR (LO = +10 dBm)	12 to 18 GHz	Ratio		2.5:1	
TRANSFER CHARACTERISTICS	CONDITION	UNITS	MIN.	TYP.	MAX.
Conversion loss (IF = 100 MHz, LO = +10 dBm) L	12 to 18 GHz	dB		6.5	8.5
(IF = 100 MHz, LO = +20 dBm) H	12 to 18 GHz	dB		7.5	9.5
Single-sideband noise figure L	12 to 18 GHz	dB			9.5
H	12 to 18 GHz	dB			10.5
LO-to-RF isolation	12 to 18 GHz	dB	20	25	
LO-to-IF isolation	12 to 18 GHz	dB		20	
RF-to-IF isolation	12 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	2 dB bandwidth	GHz	DC		2
IF VSWR (IF = -10 dBm, LO = +10 dBm)		Ratio		2.5:1	



DB1218LW1 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

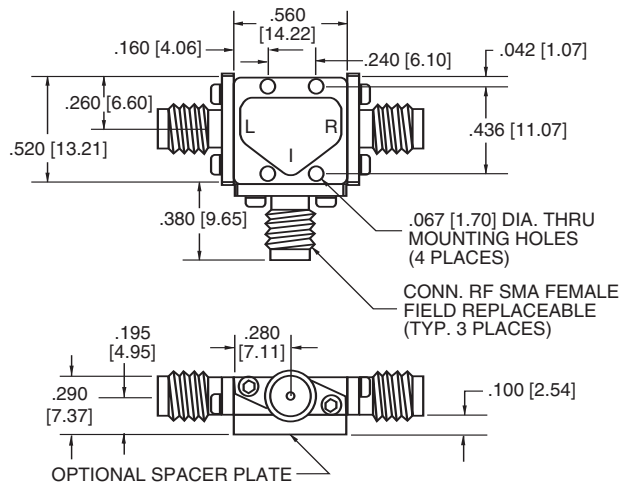
Specification temperature +25°C
 Operating temperature -54 to +85°C
 Storage temperature -65 to +125°C

AVAILABLE OPTION

Medium dynamic range option
 M (LO = +13 to +16 dBm), (IP³ = +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.

