

1 TO 30 GHz DOUBLE-BALANCED MIXER

MODEL: DB0130LA2

FEATURES

- RF/LO coverage 1 to 30 GHz
- IF operation DC to 500 MHz
- Conversion loss 8.5 dB typical
- Ultra-broadband frequency coverage
- Operational as fundamental and third order harmonic mixer



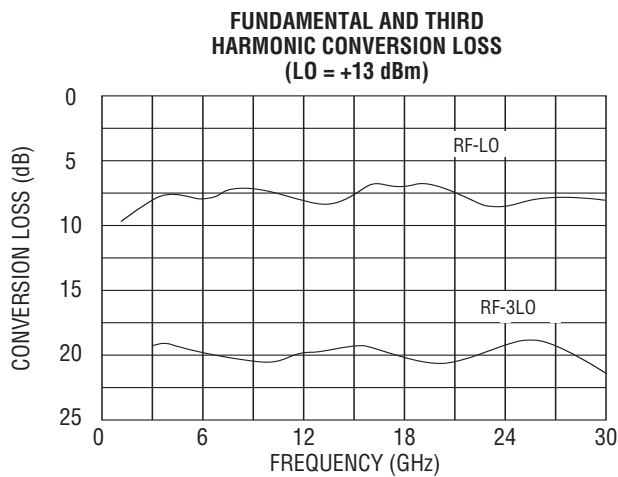
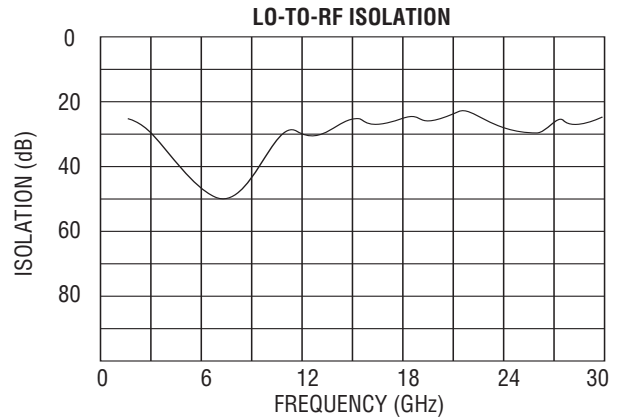
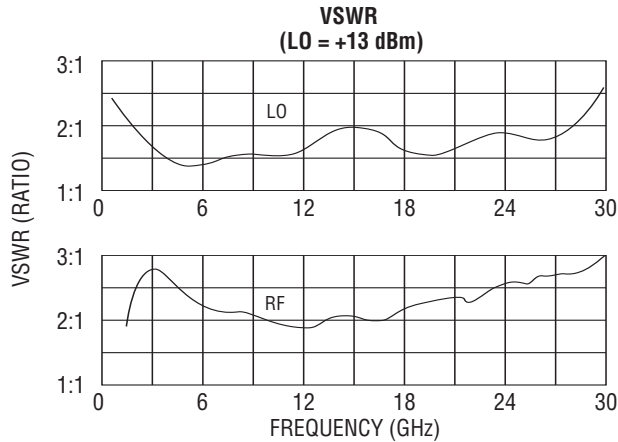
MITEQ's double-balanced DB0130LA2 provides the industry's broadest frequency span in a single device. The extended performance baluns and efficiently matched diodes provide five octaves of instantaneous frequency coverage. This unit is ideal for instrumentation requirements of converting broad frequency ranges to a common IF frequency. This device performs as an up- or downconverter.

ELECTRICAL SPECIFICATIONS

INPUT PARAMETERS	CONDITION	UNITS	MIN.	TYP.	MAX.
RF frequency range		GHz	1		30
RF VSWR (RF = -10 dBm, LO = +13 dBm)	1 to 30 GHz	Ratio		3:1	
LO frequency range		GHz	1		30
LO power range		dBm	+10		+13
LO VSWR (LO = +13 dBm)	1 to 30 GHz	Ratio		3:1	
TRANSFER CHARACTERISTICS	CONDITION	UNITS	MIN.	TYP.	MAX.
Conversion loss (IF = 100 MHz, LO = +13 dBm)	1 to 30 GHz	dB		8.5	9.5
Single-sideband noise figure	1 to 30 GHz	dB		9	
LO-to-RF isolation	1 to 30 GHz	dB	18	30	
LO-to-IF isolation	1 to 30 GHz	dB		15	
RF-to-IF isolation	1 to 30 GHz	dB		15	
Input power at 1 dB compression		dBm		+5	
Input two-tone third-order intercept point		dBm		+15	
OUTPUT PARAMETERS	CONDITION	UNITS	MIN.	TYP.	MAX.
IF frequency range	3 dB bandwidth	GHz	DC		0.5
IF VSWR (IF = -10 dBm, LO = +13 dBm)		Ratio		2.5:1	



DB0130LA2 TYPICAL TEST DATA



SINGLE-TONE (m) RF x (n) LO RELATIVE SPUR LEVEL (dBc) TO REF (RF = -10 dBm, LO = +13 dBm)

	5	94	100	100	104	95
RF HARMONIC (m)	4	81	84	82	88	83
	3	59	72	57	80	55
	2	43	54	43	50	50
	1	REF	30	10	37	18
		1	2	3	4	5

LO HARMONIC (n)

MAXIMUM RATINGS

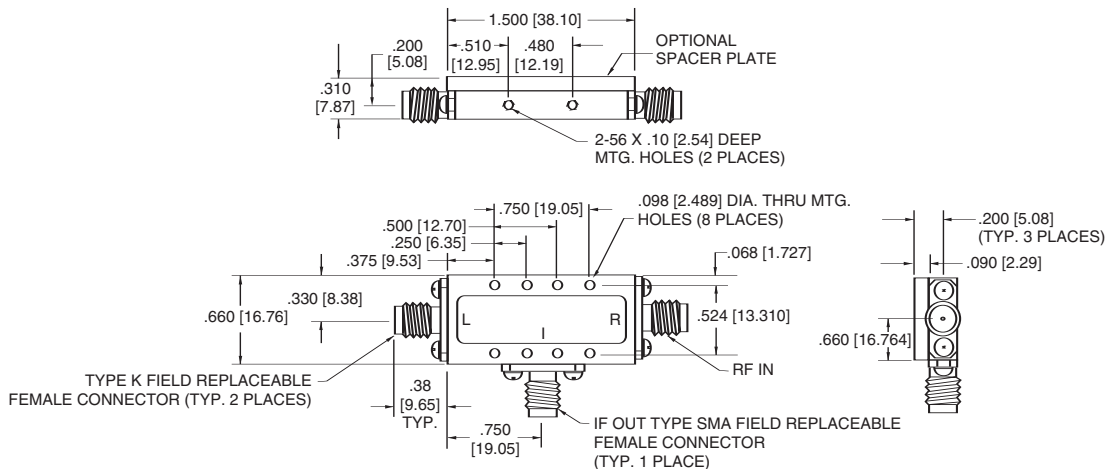
Specification temperature +25°C
 Operating temperature -54 to +85°C
 Storage temperature -65 to +125°C

AVAILABLE OPTION

Medium/high dynamic range options
 M (LO = +13 to +17 dBm), (IP³ = +18 dBm typ.)
 H (LO = +17 to +20 dBm), (IP³ = +22 dBm typ.)
 M, H (Conversion loss = 10.5 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.

