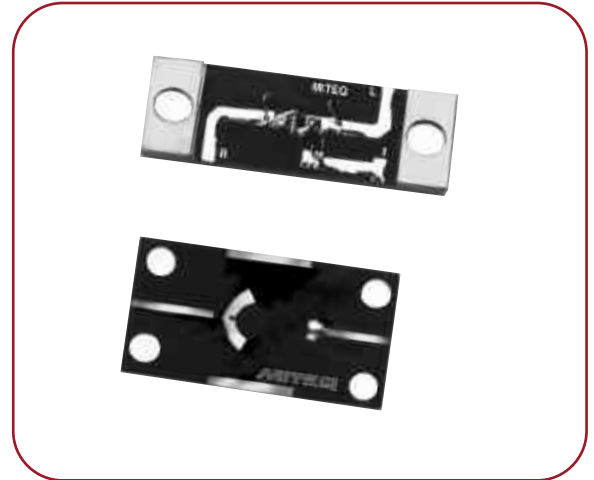


4 TO 18 GHz DROP-IN DOUBLE-BALANCED MIXER

MODELS: DB0418LE1, DB0418LW6, DB0418HE1 AND DB0418HW6

FEATURES

- RF/LO coverage..... 4 to 18 GHz
- IF operation..... DC to 2 GHz
- LO power range
 - L..... +7 to +13 dBm
 - H..... +17 to +23 dBm
- Conversion loss
(midband RF) 5 dB typical
- Lowest cost



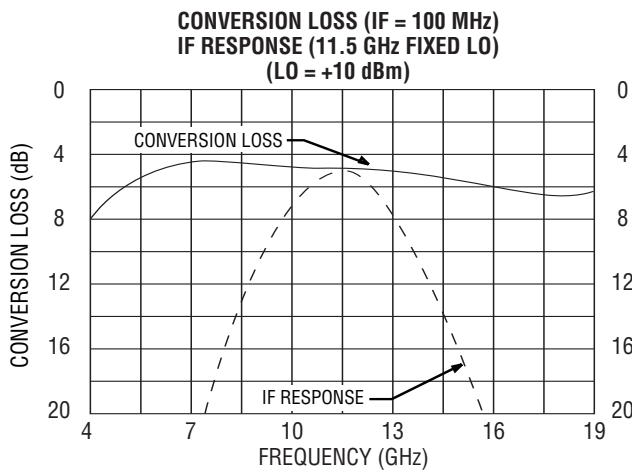
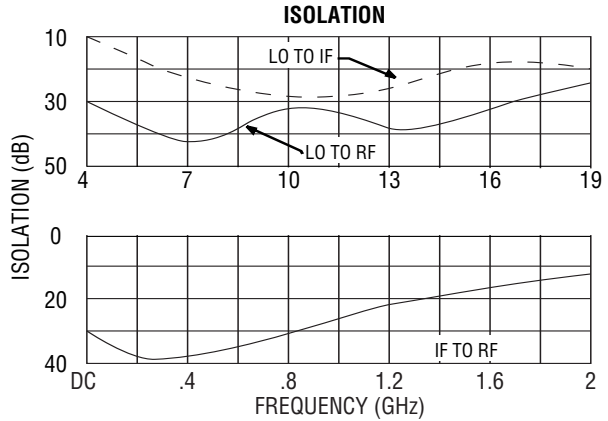
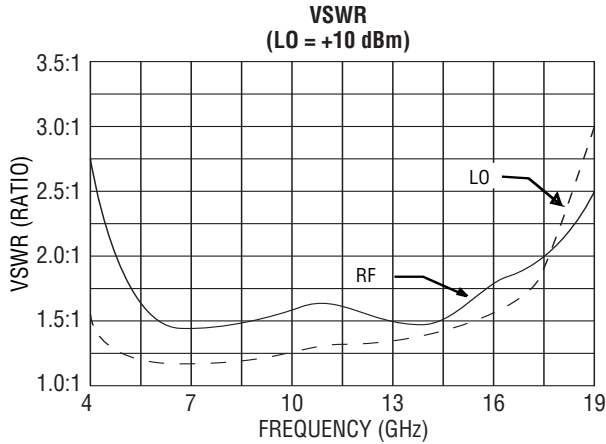
MITEQ's Special Mixer Products Department offers the industry's smallest microstrip-compatible mixer covering the specified frequency range from 4 to 18 GHz with performance operating to 20 GHz. The design achieves low RF input VSWR, while also maintaining a strong solderable interface connection on 0.030 inch wide 1 1/2 ounce copper lines. The deck to microstrip height of 0.039 inch (1 mm) is consistent with a very small ground ledge inductance for a superior microstrip 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 L (RF = -10 dBm, LO = +10 dBm)	4 to 18 GHz	Ratio		1.5:1	
H (RF = -10 dBm, LO = +20 dBm)	4 to 18 GHz	Ratio		1.5:1	
LO frequency range		GHz	4		18
LO power range L		dBm	+7	+10	+13
H		dBm	+17	+20	+23
LO VSWR	4 to 18 GHz	Ratio		1.25:1	
TRANSFER CHARACTERISTICS	CONDITION	UNITS	MIN.	TYP.	MAX.
Conversion loss (IF = 1 GHz, LO = +10 dBm)	RF = 4 to 18 GHz	dB		7	8.5
(IF = 1 GHz, LO = +20 dBm)		dB		8	9.5
Single-sideband noise figure (LO = +10 dBm)	4 to 18 GHz	dB		7.5	9
LO-to-RF isolation	4 to 18 GHz	dB	22	30	
LO-to-IF isolation	4 to 18 GHz	dB		20	
RF-to-IF isolation	4 to 18 GHz	dB		25	
Input power at 1 dB compression L/H	LO = +10/+20 dBm	dBm	0/+10	+3/+13	
Input two-tone third-order intercept point L/H	LO = +10/+20 dBm	dBm	+10/+20	+13/+23	
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		2:1	



DBO418LE1 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 (L), +20 dBm (H))

	SPUR		RF TEST FREQ. (GHz)	LO TEST FREQ. (GHz)	SPUR LEVEL (dBc)	
	(m) RF	(n) LO			L	H
1	x	1	10.5	11.5	0	0
1	x	2	14	7.5	-26	-25
1	x	3	15	5.3	-15	-12
2	x	1	6.5	1.4	-45	-53
2	x	2	10.5	11	-53	-60
2	x	3	13	9	-48	-48
3	x	1	5.3	17	-50	-57
3	x	2	8.3	13	-50	-68
3	x	3	10	10.3	-50	-55

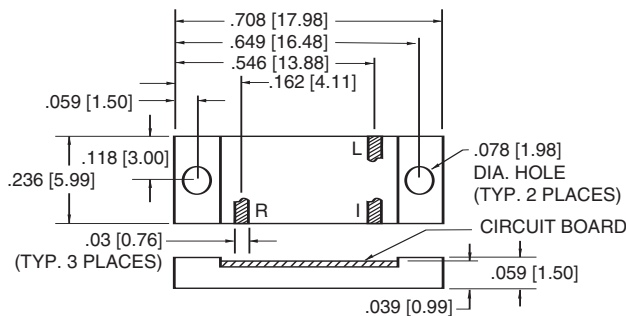
MAXIMUM RATINGS

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

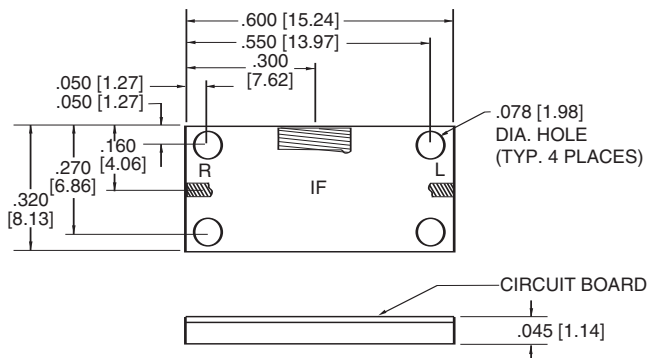
NOTE: Test data supplied at 25°C; conversion loss and LO-to-RF isolation.

OUTLINE DRAWINGS

E1 HOUSING



W6 HOUSING



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

