

Miteq DM0408LW2

## Double-Balanced Mixer



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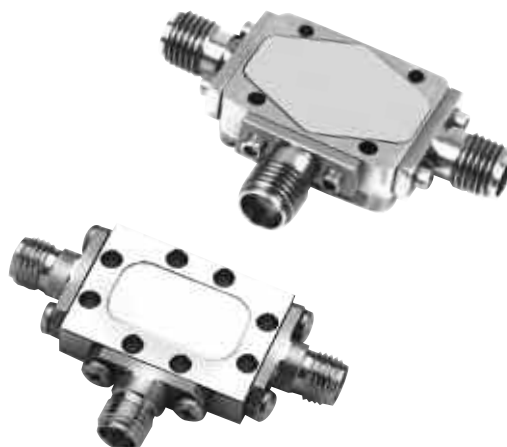
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## 4 TO 8 GHz DOUBLE-BALANCED MIXER

### MODELS: DM0408LW2, DM0408HW2, DM0408LA1 AND DM0408HA1

#### FEATURES

- RF/LO coverage ..... 4 to 8 GHz
- IF operation ..... DC to 2 GHz
- LO power range
  - L ..... +7 to +13 dBm
  - H ..... +15 to +20 dBm
- Conversion loss  
(midband RF) ..... 5 dB typical
- LO-to-RF isolation ..... 40 dB typical



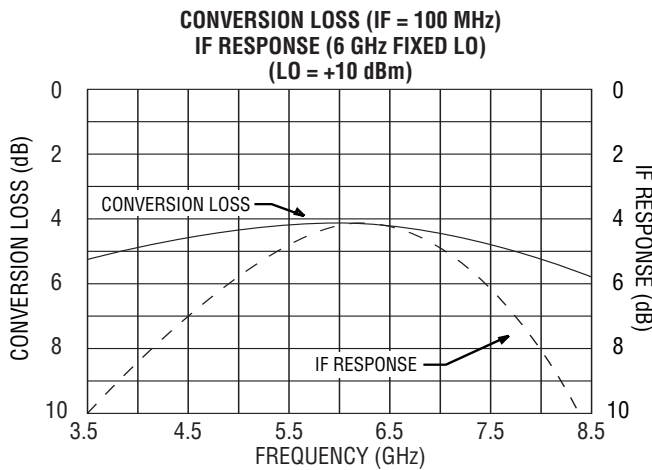
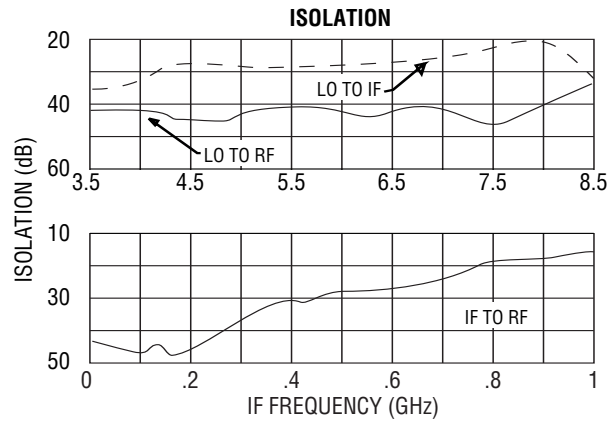
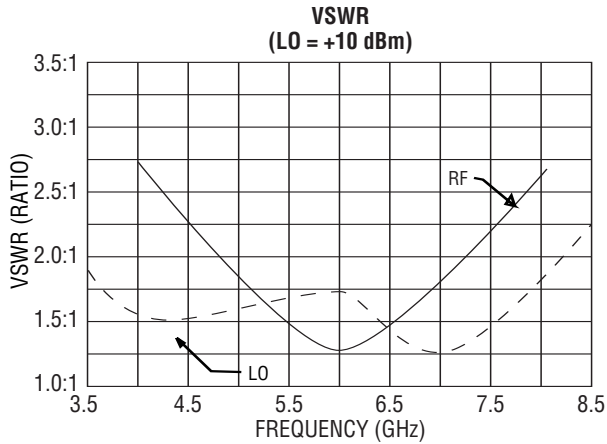
MITEQ's DM0408 Series of mixers are constructed using new highly efficient double-tuned microstrip RF and LO baluns with a DC-coupled IF structure. The construction, coupled with the hermetic packaging, provides for high inherent reliability and isolation over an octave frequency range. This device performs as an up- or downconverter covering satellite and communication applications. This mixer is also available with medium voltage diodes (M) yielding proportional changes in LO power and spurious performance.

#### ELECTRICAL SPECIFICATIONS

INPUT PARAMETERS	CONDITION	UNITS	MIN.	TYP.	MAX.
RF frequency range		GHz	4		8
RF VSWR (RF = -10 dBm, LO = +10 dBm) -L/-H (RF = -10 dBm, LO = +17 dBm)		Ratio Ratio		2:1 2.2:1	
LO frequency range		GHz	4		8
LO power range L H		dBm dBm	+7 +17	+10	+13 +23
LO VSWR		Ratio		1.75:1	
TRANSFER CHARACTERISTICS	CONDITION	UNITS	MIN.	TYP.	MAX.
Conversion loss (IF = 100 MHz) L H	LO = +10 dBm LO = +17 dBm	dB dB		5 6	6 7
Single-sideband noise figure L/H		dB		5.5/6.5	
LO-to-RF isolation		dB	30	40	
LO-to-IF isolation		dB	20	30	
IF-to-RF isolation	DC to 2 GHz	dB		30	
Input power at 1 dB compression L/H	LO = +10/+17 dBm	dBm		+3/+12	
Input two-tone third-order intercept point L/H	LO = +10/+17 dBm	dBm	+10/+20	+13/+22	
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	



# DMO408LA1 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 (m) RF x (n) LO	RF TEST FREQ. (GHz)	LO TEST FREQ. (GHz)	SPUR LEVEL (dBc)	
			L	H
1 x 1	5.5	6.5	0	0
1 x 2	7.2	4.1	28	32
1 x 3	8.3	3.2	12	10
2 x 1	4	7	53	60
2 x 2	5.75	6.25	55	58
2 x 3	7	5	50	55
3 x 1	3.17	8.5	47	-75
3 x 2	4	6.5	64	-75
3 x 3	6	6.33	53	-75

## MAXIMUM RATINGS

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

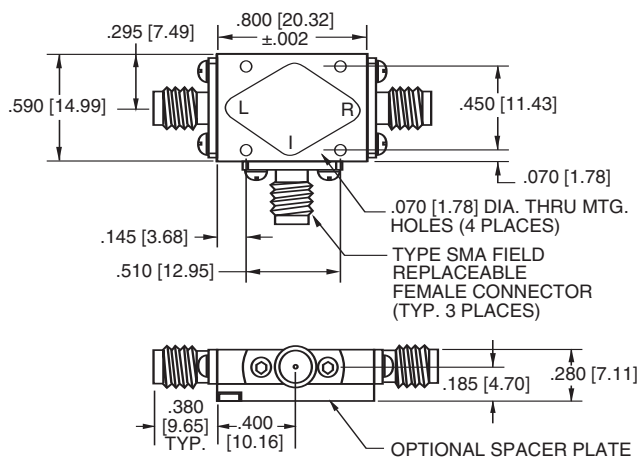
## AVAILABLE OPTION

Medium range option  
M (LO = +13 to +16 dBm), (IP<sup>3</sup> = +18 dBm typ.)  
Conversion loss = 7 dB max.

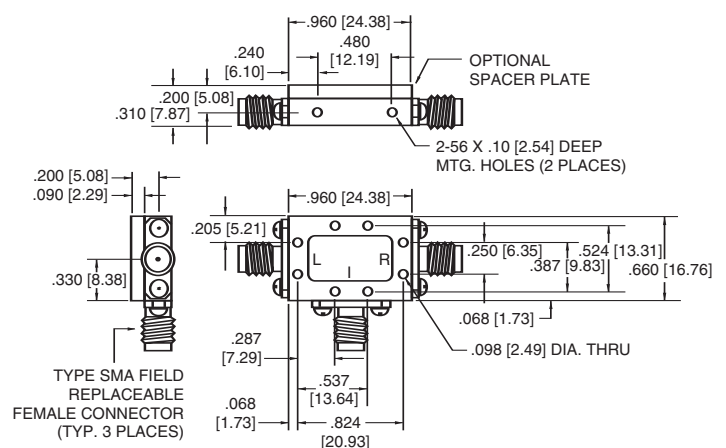
NOTE: Test data supplied at 25°C; conversion loss and LO-to-RF isolation.

## OUTLINE DRAWINGS

### W2 HOUSING



### A1 HOUSING



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



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