

2 TO 4 GHz DOUBLE-BALANCED MIXER

MODELS: DM0204LW2 AND DM0204LA1

FEATURES

- RF/LO coverage 2 to 4 GHz
- IF operation DC to 1 GHz
- LO power range +7 to +13 dBm
- Conversion loss..... 4.5 dB typical
- LO-to-RF isolation 40 dB typical
- Input 1 dB comp. +3 dBm typical
- Input IP³ +13 dBm typical



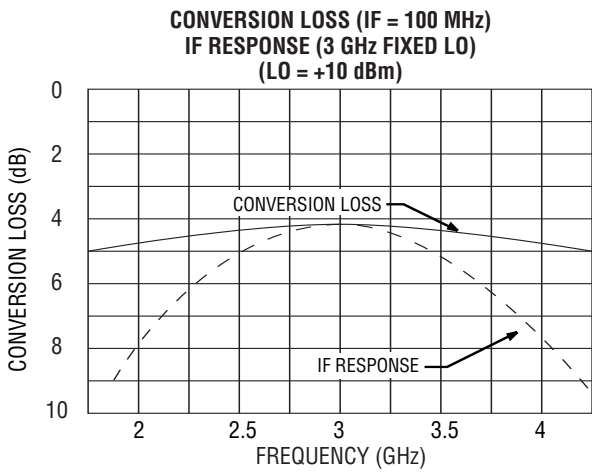
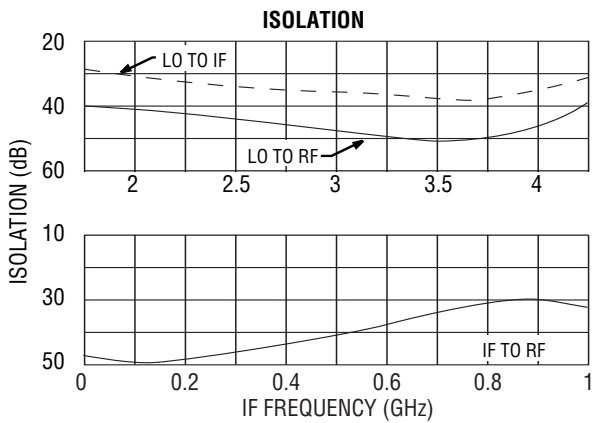
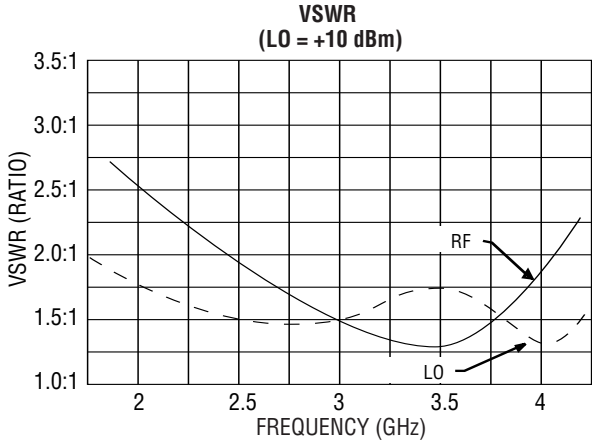
MITEQ's DM0204LW2 and A1 Series of mixers are constructed using new highly efficient, double-tuned microstrip RF and LO baluns (patent pending) with a DC-coupled IF structure. The construction, coupled with the hermetic packaging, provides for high inherent reliability and isolation over an octave frequency range. This device performs as an up- or downconverter covering many PCN and communication applications. This mixer is also available with medium or high forward voltage diodes (M, H) yielding proportional changes in LO power and spurious performance.

ELECTRICAL SPECIFICATIONS

INPUT PARAMETERS	CONDITION	UNITS	MIN.	TYP.	MAX.
RF frequency range		GHz	2		4
RF VSWR (RF = -10 dBm, LO = +10 dBm)		Ratio		1.75:1	
LO frequency range		GHz	2		4
LO power range		dBm	+7		+13
LO VSWR (LO = +10 dBm)		Ratio		1.5:1	
TRANSFER CHARACTERISTICS	CONDITION	UNITS	MIN.	TYP.	MAX.
Conversion loss (IF = 100 MHz, LO = +10 dBm)		dB		4.5	7
Single-sideband noise figure		dB		5	
LO-to-RF isolation		dB	35	40	
LO-to-IF isolation		dB	25	35	
IF-to-RF isolation	DC to 1 GHz	dB		40	
Input power at 1 dB compression	LO = +10 dBm	dBm		+3	
Input two-tone third-order intercept point	LO = +10 dBm	dBm	+10	+13	
OUTPUT PARAMETERS	CONDITION	UNITS	MIN.	TYP.	MAX.
IF frequency range	3 dB bandwidth	GHz	DC		1
IF VSWR (IF = -10 dBm, LO = +10 dBm)		Ratio		2.5:1	



DM0204LA1 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	2.7	3.2	0
1 x 2	3.5	2.0	25
1 x 3	4.6	1.7	11
2 x 1	1.8	4.1	55
2 x 2	2.9	3.1	59
2 x 3	2.9	2.1	60
3 x 1	1.4	4.5	65
3 x 2	2.1	3.4	75
3 x 3	2.95	3.12	75

MAXIMUM RATINGS

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

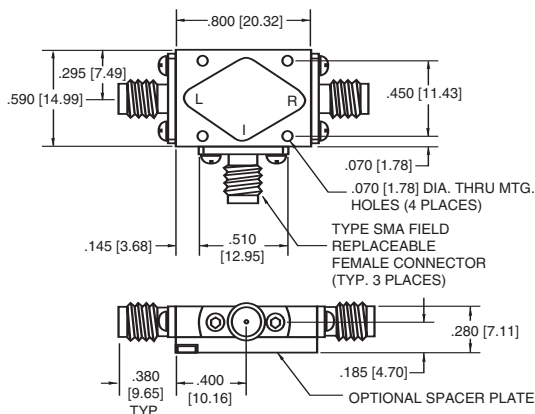
AVAILABLE OPTION

Medium/high dynamic range options
 M (LO = +13 dBm), (IP³ = +15 dBm typ.)
 H (LO = +20 dBm), (IP³ = +22 dBm typ.)
 M, H (Conversion loss = 8 dB max.)

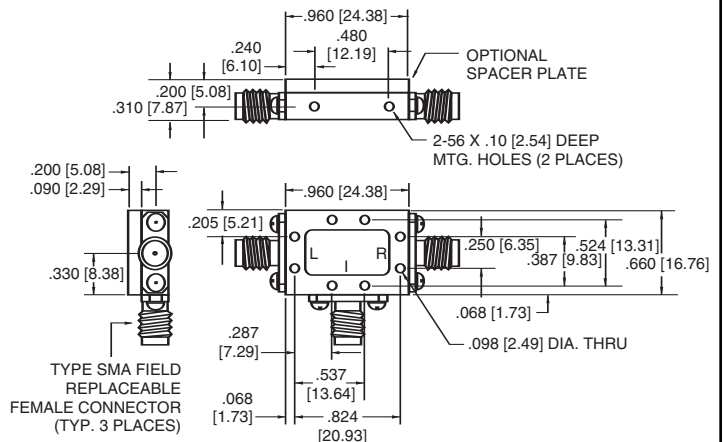
NOTE: Test data supplied at 25°C; conversion loss and LO-to-RF isolation.

OUTLINE DRAWINGS

W2 HOUSING



A1 HOUSING



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

