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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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## 0.5 TO 2 GHz DOUBLE-BALANCED MIXER

### MODELS: DM0052LA2 AND DM0052HA2

#### FEATURES

- RF/LO coverage..... 0.5 to 2 GHz
- IF operation..... DC to 0.5 GHz
- LO power range
  - L..... +7 to +13 dBm
  - H..... +17 to +23 dBm
- Conversion loss ..... 5.5 dB typical
- LO-to-RF isolation..... 40 dB typical

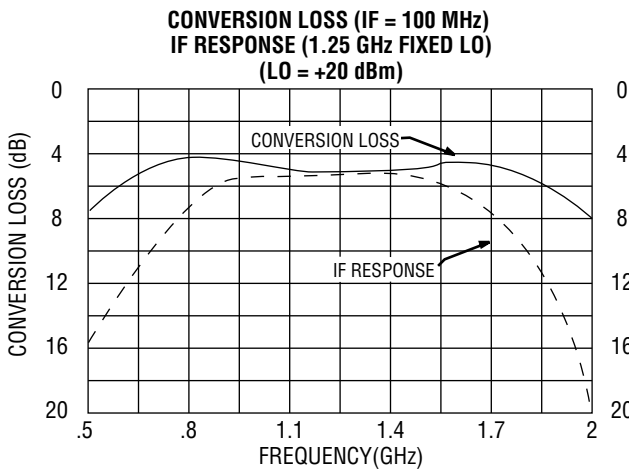
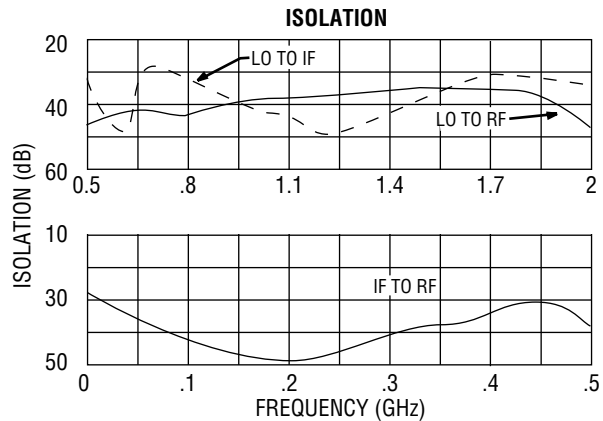
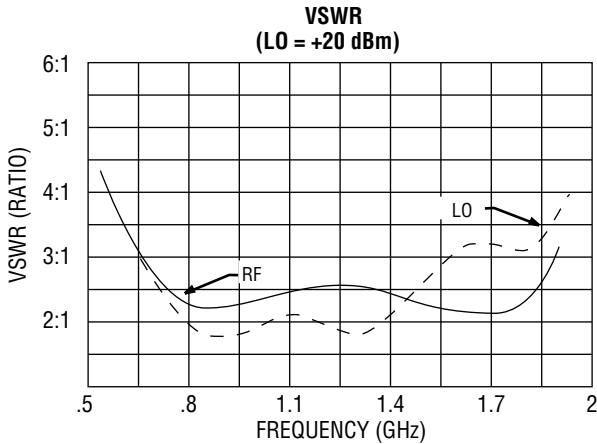


MITEQ's DM0052H and DM0052L mixers are constructed using a new microwave double-tuned RF/LO balun (patent pending) that yields an IF response from DC to the lowest RF frequency. This design also produces unusually high port-to-port isolation and further rejects out-of-band input signals with a "filter like" skirt selectivity. This device performs as an up- or downconverter covering most PCN and communication applications requiring high input signal levels (H version). The DM0052HA2 also makes an excellent high-level biphas test modulator or detector with low DC offset voltage.

#### ELECTRICAL SPECIFICATIONS

INPUT PARAMETERS	CONDITION	UNITS	MIN.	TYP.	MAX.
RF frequency range		GHz	0.5		2
RF VSWR L (RF = -10 dBm, LO = +10 dBm) H (RF = -10 dBm, LO = +20 dBm)	0.65 to 1.85 GHz	Ratio Ratio		2.5:1 3:1	
LO frequency range		GHz	0.5		2
LO power range L H		dBm dBm	+7 +17		+13 +23
LO VSWR	0.65 to 1.85 GHz	Ratio		3:1	
TRANSFER CHARACTERISTICS	CONDITION	UNITS	MIN.	TYP.	MAX.
Conversion loss (IF = 100 MHz, LO = +10 dBm)	0.5 to 2 GHz	dB		6.5	8.5
Single-sideband noise figure	0.5 to 2 GHz	dB		8.5	
LO-to-RF isolation	0.5 to 2 GHz	dB	25	40	
LO-to-IF isolation	0.5 to 2 GHz	dB		25	
IF-to-RF isolation	DC to 1 GHz	dB		30	
Input power at 1 dB compression L/H	LO = +10/+20 dBm	dBm	0	+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		0.5
IF VSWR (IF = -10 dBm, LO = +10 dBm)		Ratio		2.5:1	

# DM0052HA2 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	1.12	1.37	0	0
1 x 2	1.6	1.92	-46	-40
1 x 3	1.8	.69	-12	-12
2 x 1	.75	1.75	-55	-63
2 x 2	1.19	1.31	-57	-60
2 x 3	1.45	1.05	-46	-60
3 x 1	.56	1.93	-50	-70
3 x 2	.95	1.55	-70	-75
3 x 3	1.20	1.32	-57	-70

### MAXIMUM RATINGS

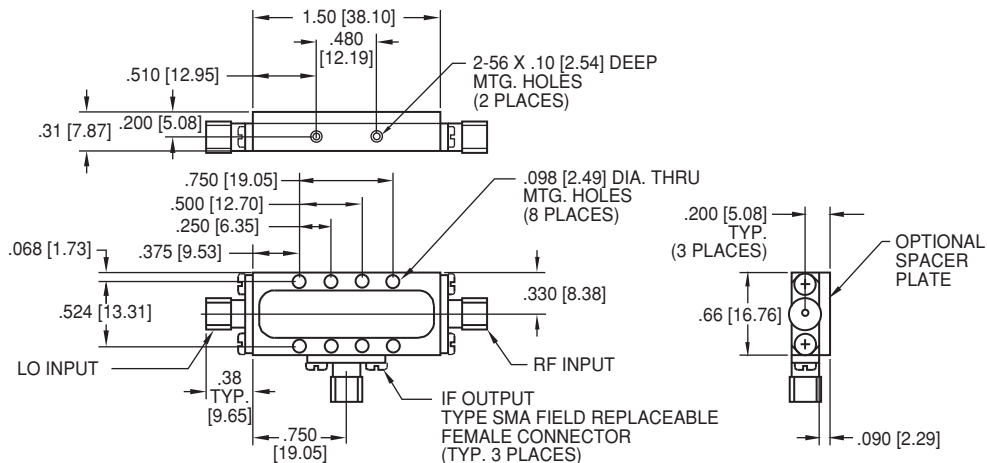
Specification temperature ..... +25°C  
 Operating temperature ..... -54 to +85°C  
 Storage temperature ..... -65 to +125°C

### AVAILABLE OPTION

Medium/high dynamic range options  
 M (LO = +13 to +17 dBm), (IP<sup>3</sup> = +18 dBm typ.)  
 Conversion loss = 9.5 dB max.

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.