



### Millimeter-Wave Harmonic Mixer 26.5 - 40GHz



#### Features

- Broadband, up to 325GHz
- High Dynamic Range
- Low Noise Figure

#### Typical Applications

- Research and Development
- Test and Measurement
- Wireless Infrastructure

#### Electrical Specifications, $T_A=25^\circ\text{C}$

Parameter	Min.	Typ.	Max.	Units
RF Input Frequency	26.5		40	GHz
RF Input Power			+20	dBm
LO Frequency	3-3		5	GHz
LO Power	12		18	dBm
IF Output Frequency	2		100	MHz
Conversion Loss		25	28	dB
Conversion Response		$\pm 2.5$		dB
Input 1dB Compression (P1dB)		-5		dBm
In-Band Spurious rejection		-50		dBc
Harmonic Number		8		
Bias Voltage			+10	V
RF / LO/ IF Connectors	WR-28/SMA-Female/SMA-Female			
Frequency Relationship	$(RF \pm IF)/8 = LO$			

#### Environmental Specifications and Test Standards

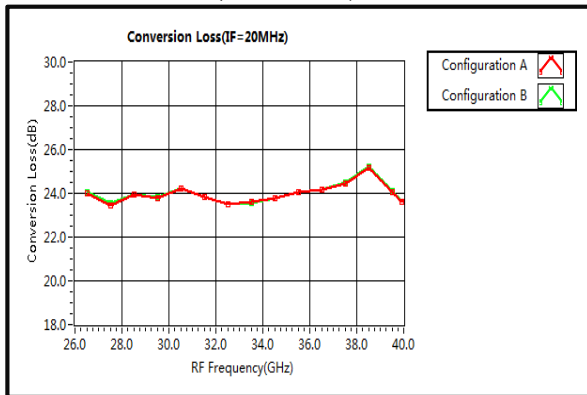
Parameter	Standard	Description
Operational Temperature	MIL-STD-39016	-40°C~+85°C
Storage Temperature		-55°C~+125°C
Thermal Shock		1 Hour @ -45°C → 1 Hour @ +85°C (5 Cycles)
Random Vibration		Acceleration Spectral Density 6 (m/s) Total 92.6 RMS
Electrical & Temperature Burn In		Temperature +85°C for 72 Hours
Shock		1. Weight >20g, 50g half sine wave for 11ms, Speed variation 3.44m/s 2. Weight <=20g, 100g Half sine wave for 6ms, Speed variation 3.75m/s 3. Total 18 times (6 directions, 3 repetitions per direction).
Altitude		Standard: 30,000 Ft (Epoxy Sealed Controlled Environment) Optional: Hermetically Sealed (60,000 ft. 1.0 PSI min)
Hermetically Sealed (Optional)	MIL-STD-883	MIL-STD-883 (For Hermetically Sealed Units)

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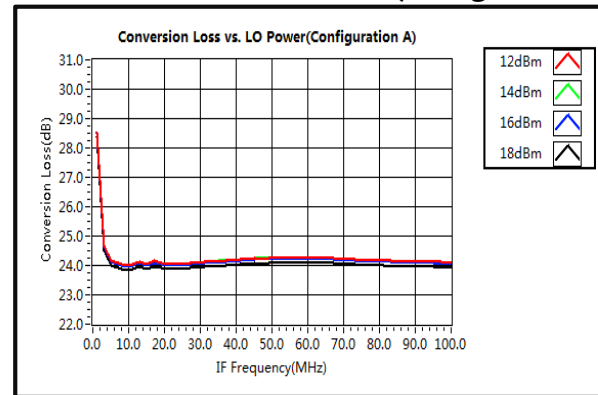


## Typical Performance Plots

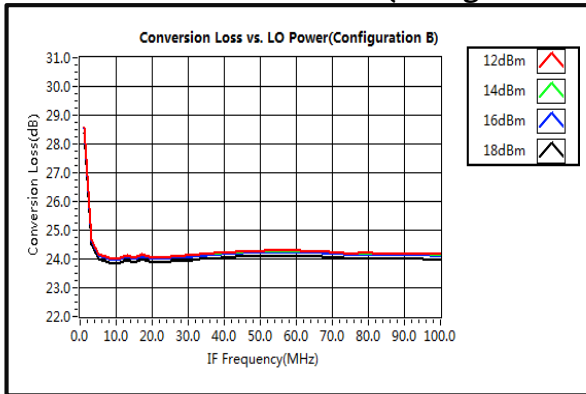
### Conversion Loss(IF=20MHz)



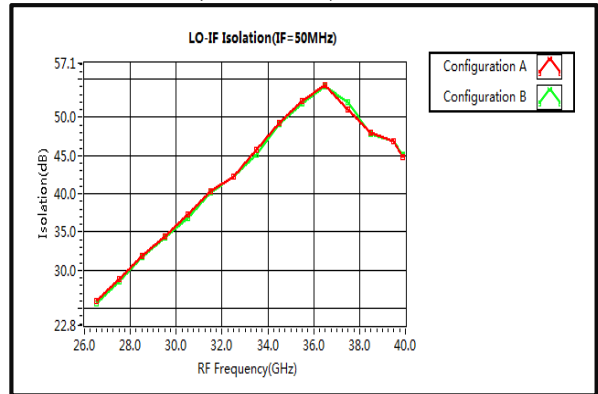
### Conversion Loss vs. LO Power (Configuration A)



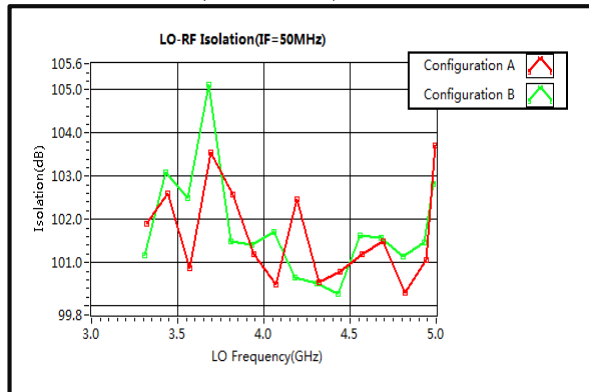
### Conversion Loss vs. LO Power (Configuration B)



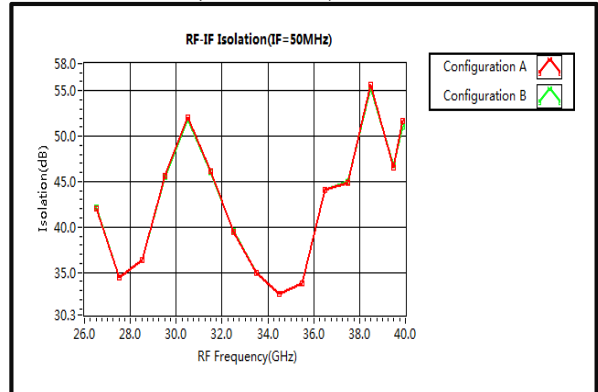
### LO-IF Isolation(IF=50MHz)



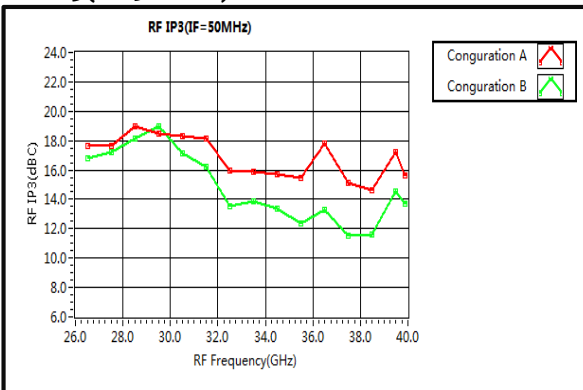
### LO-RF Isolation(IF=50MHz)



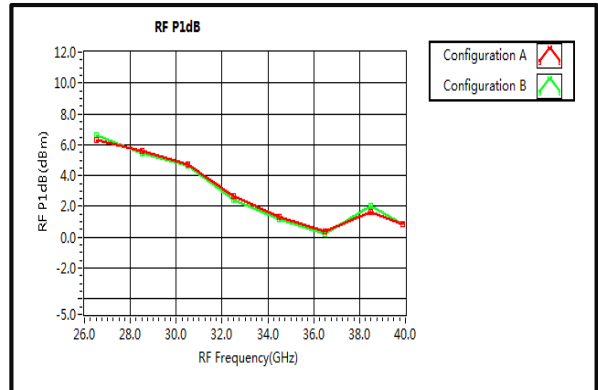
### RF-IF Isolation(IF=50MHz)



### RF IP3(IF=50MHz)



### RF P1dB

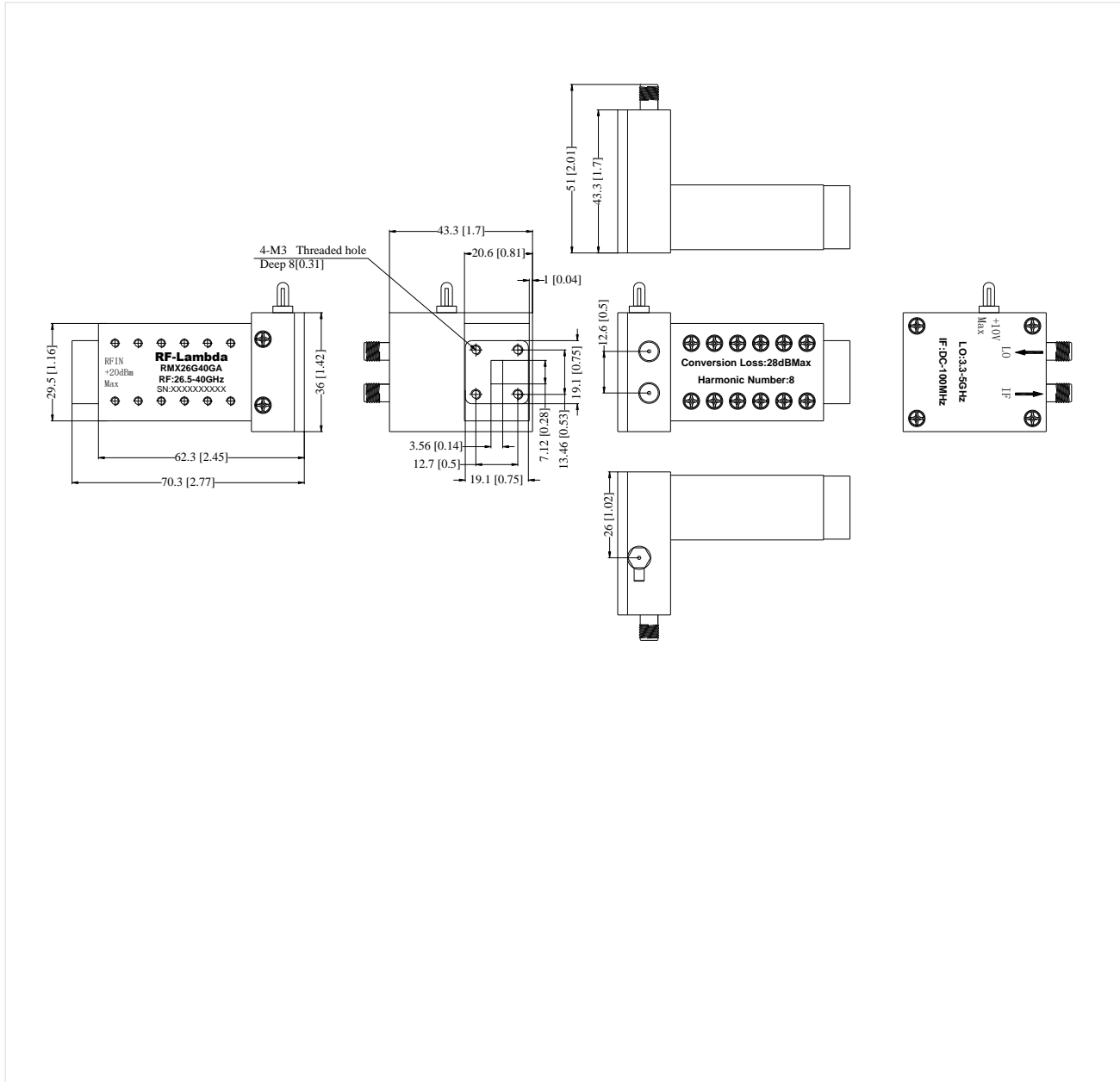


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### Outline Drawing:

All Dimensions in mm [inches]



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### Important Notice

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