

## Ultra Wide Band Mixer (Down-Converting) 7GHz - 40GHz



### Product Description

RMXDC07G40GA is an ultra wideband mixer with a frequency range of 7 to 40GHz.

The LO power is 13dBm. The conversion loss is +5dB.

The operating temperature of this product is -40 to +85°C.

### Features

- Ultra Wide Band Mixer
- High Dynamic Range

### Typical Applications

- Wireless Infrastructure
- Military and Aerospace Applications
- Test Instrumentation
- Radar Systems
- 5G Wireless Communications
- Microwave Radio Systems
- TR Modules
- Research and Development
- Cellular Base Stations

### Electrical Specifications (T<sub>A</sub>=+25°C)

Parameter	Min	Typ	Max	Units
RF Input Frequency	7		40	GHz
LO Input Frequency	7		40	GHz
IF Output Frequency	DC		10	GHz
LO Power		13		dBm
Conversion Loss		5		dB
Input 1dB Compression (P1dB)		-6		dBm
Input Third Order Intercept (IIP3)		4		dBm
Isolation		-60		dB
Voltage		6		V
Current		300		mA
Weight		0.08Max.		lbs.
RF / LO & IF Connectors	2.92mm-Female / SMA-Female			
Frequency Relationship	RF=IF+LO			
Package	Epoxy Sealed (Standard)			
	Hermetically Sealed (Optional)			

**Absolute Maximum Ratings**

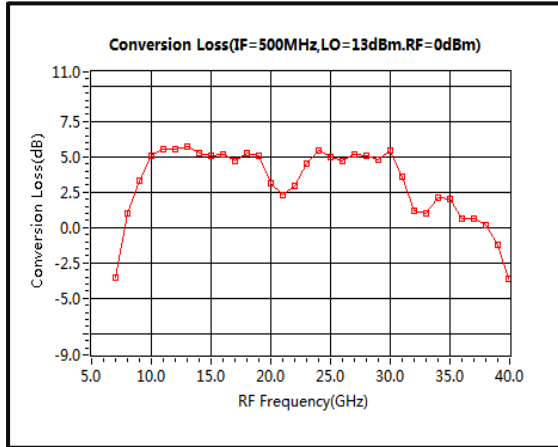
Parameter		Rating
	Biasing	+7V
RF Input Power	RF	+5dBm
	IF	+21dBm
	LO	+25dBm

**Environmental Specifications and Test Standards**

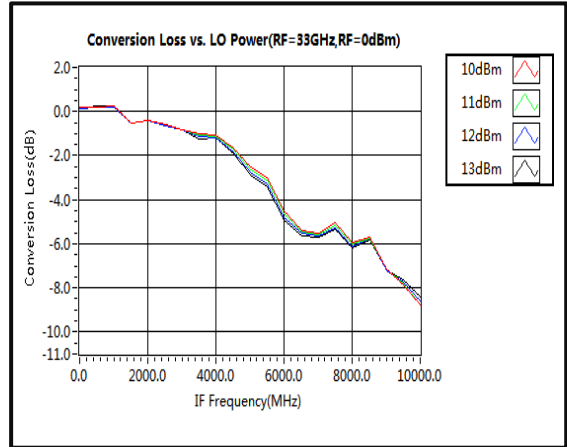
Parameter	Description
Operational Temperature	-40°C to +85°C (Case Temperature)
Storage Temperature	-50°C to +105°C
Thermal Shock	-40°C → +85°C (5 Cycles / 10 hours)
**Random Vibration	MIL-STD-202G Table 214-I, Test Condition Letter C 1.5 Hours Per Axis
High Temperature Burn In	Temperature +85°C for 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 (For Hermetically Sealed Units)

Typical Performance Plots

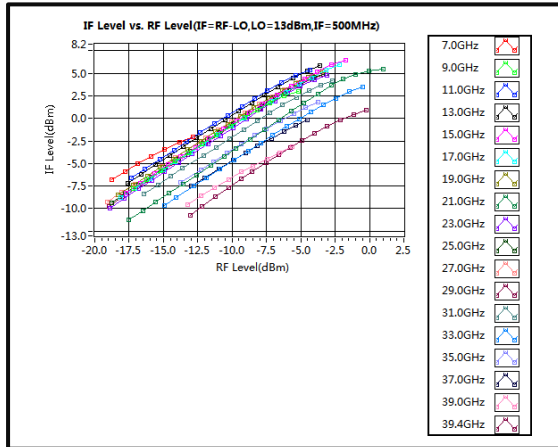
Conversion Loss



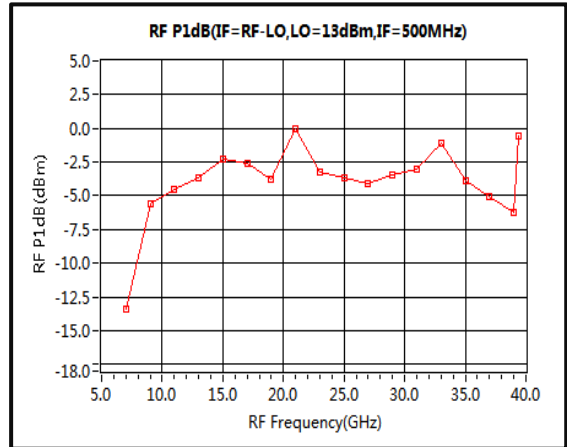
Conversion Loss vs. LO Power



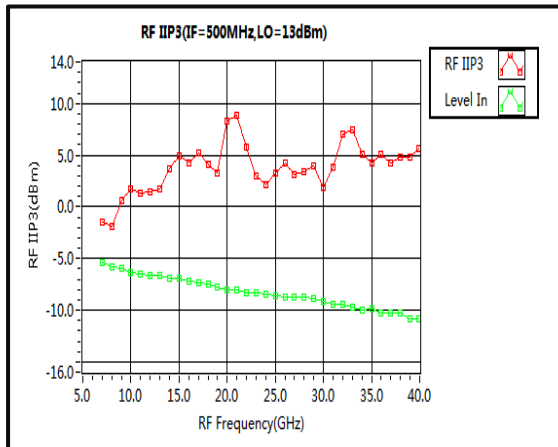
IF Level vs. RF Level (IF=RF-LO)



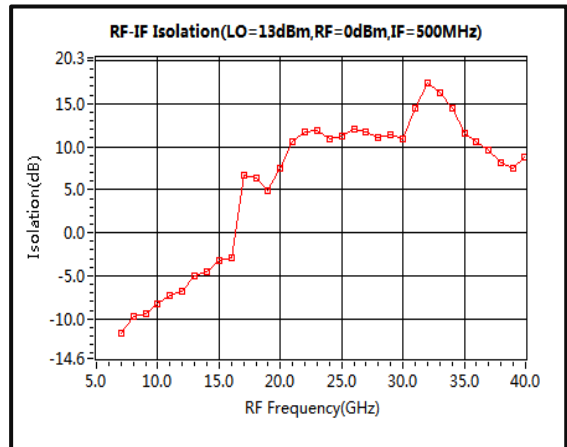
RF P1dB (IF=RF-LO)



RF IIP3

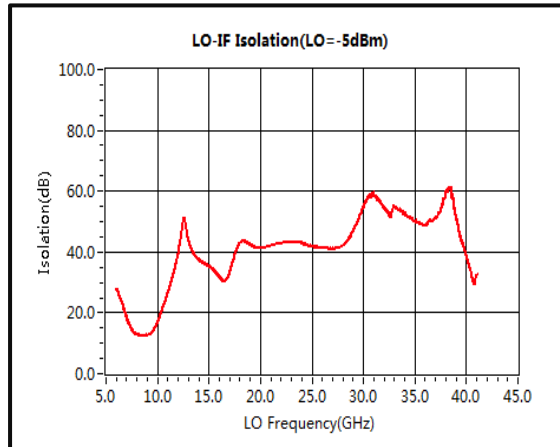


RF to IF Isolation

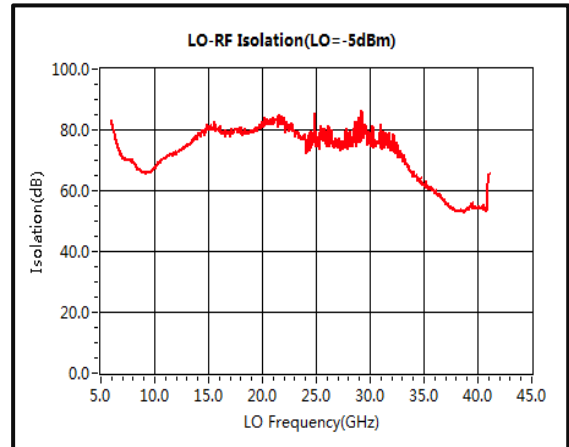


Typical Performance Plots

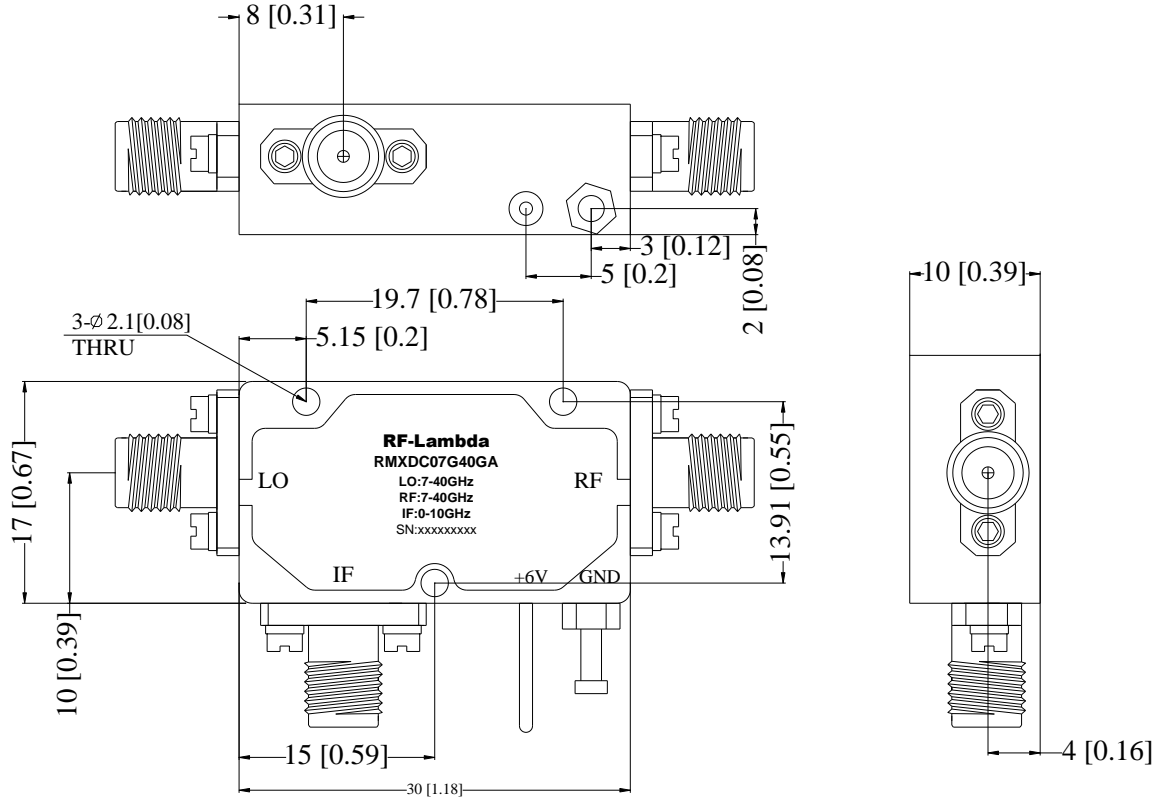
LO to IF Isolation



LO to RF Isolation

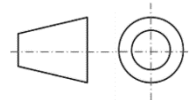


**Outline Drawing**



Notes:

1. Package Material: Aluminum
2. Finish: Gold Plated
3. All dimensions are in millimeters [inches].
4. Housing Tolerances  $\pm 0.1$  [0.004] unless otherwise specified.
5. Standard torque wrench must be used to secure RF connectors.



Additional Information

Documentation	Webpage
ESD Policy	<a href="https://rflambda.com/pdf/rflambda_esd_control.pdf">https://rflambda.com/pdf/rflambda_esd_control.pdf</a>
Connector Torque Specifications	<a href="https://www.rflambda.com/pdf/Torque_Specifications.pdf">https://www.rflambda.com/pdf/Torque_Specifications.pdf</a>
Random Vibration Test Standard	<a href="https://www.rflambda.com/pdf/rflambda_random_vibration_MIL-STD-202G.pdf">https://www.rflambda.com/pdf/rflambda_random_vibration_MIL-STD-202G.pdf</a>

**Ordering Information**

Part Number	Modification	Description
RMXDC07G40GA	Connectors 2.92mm-Female / SMA-Female	7GHz-40GHz Ultra Wide Band Mixer (Down-Converting)

**Important Notice**

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