

Ultra Wide Band Mixer (Bi-Directional) 7GHz - 40GHz



Product Description

RMX07G40GA is an ultra wideband mixer with a frequency range of 7 to 40GHz.

The LO power of the mixer is 14dBm. The conversion loss is 14dB.

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

Features

- Ultra Wide Band Mixer
- High Dynamic Range
- Low Noise Figure

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_A=+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		14		dBm
Conversion Loss		14		dB
Input 1dB Compression (P1dB)		-1		dBm
Output Third Order Intercept (OIP3)		9		dBm
Isolation		-50		dB
Weight		0.028Max.		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

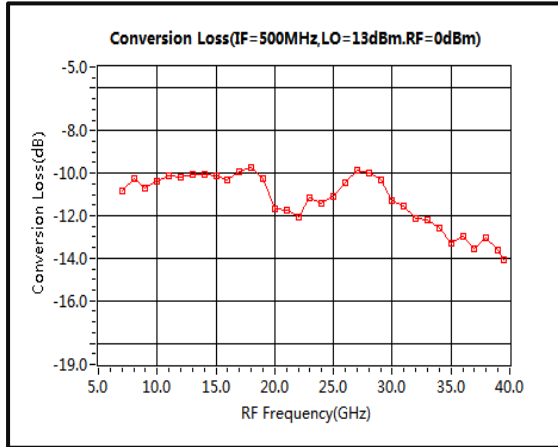
Parameter		Rating
RF Input Power	RF	+21dBm
	IF	+21dBm
	LO	+25dBm

Environmental Specifications and Test Standards

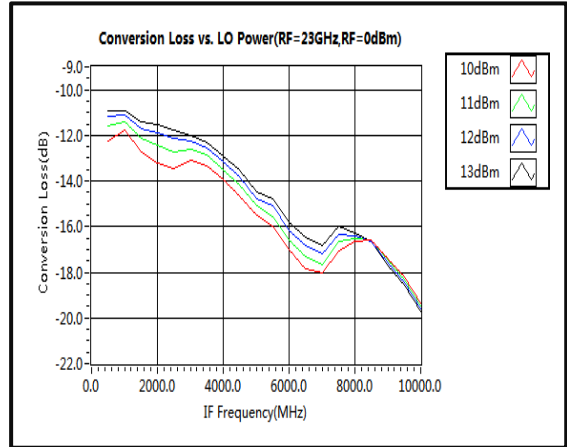
Parameter	Description
Operational Temperature	-40°C to +85°C (Case Temperature)
Storage Temperature	-50°C to +105°C
Thermal Shock	-40°C → +85°C (5 Cycles / 10 hours)
**Random Vibration	MIL-STD-202G Table 214-I, Test Condition Letter C 1.5 Hours Per Axis
High Temperature Burn In	Temperature +85°C for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

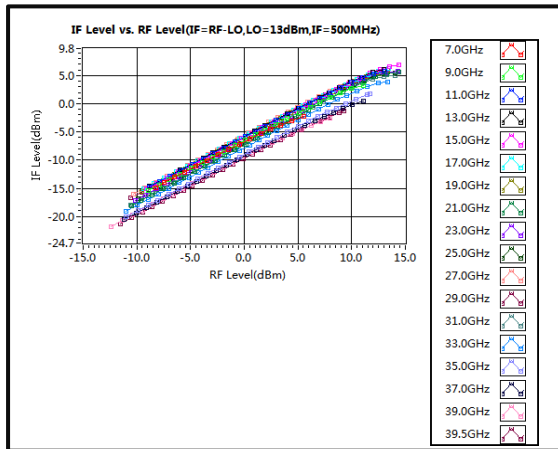
Conversion Loss



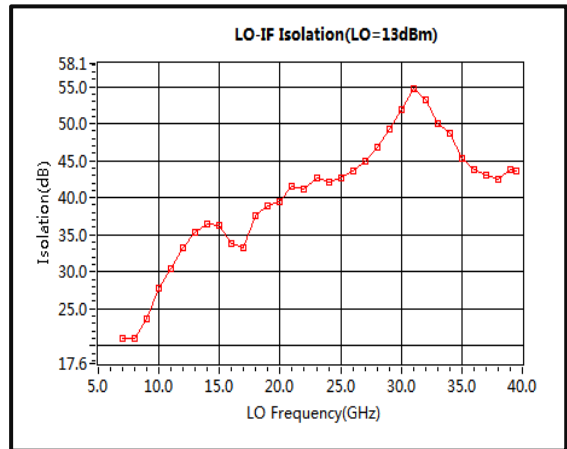
Conversion Loss vs. LO Power



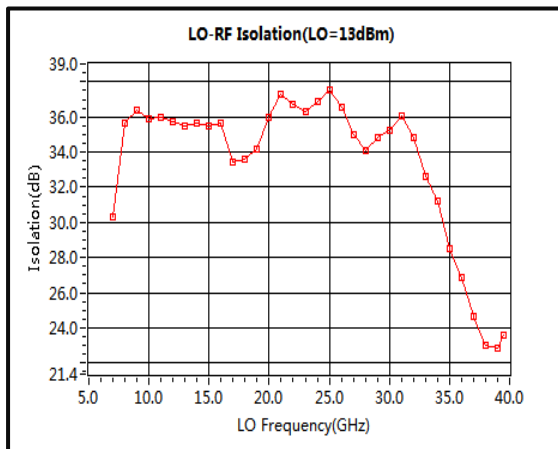
IF Level vs. RF Level (IF=RF-LO)



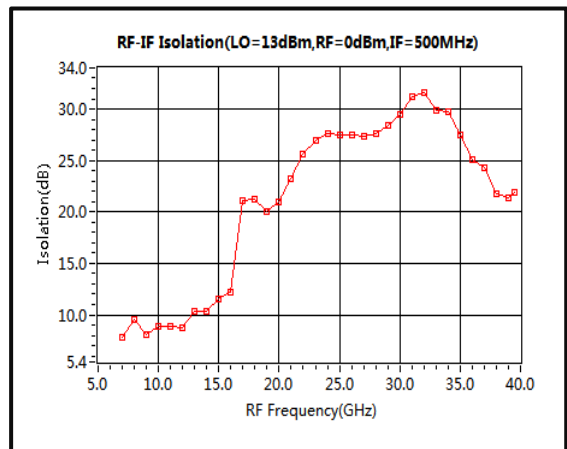
LO-IF Isolation



LO-RF Isolation

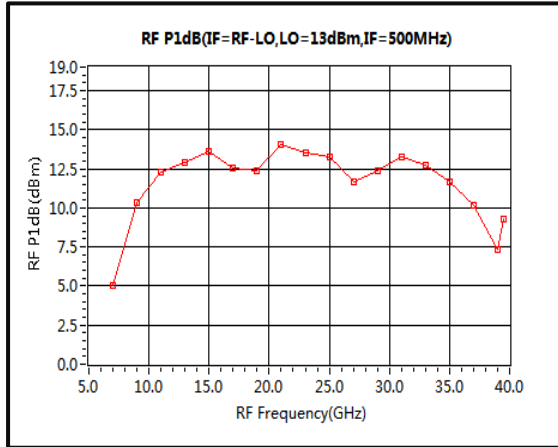


RF-IF Isolation

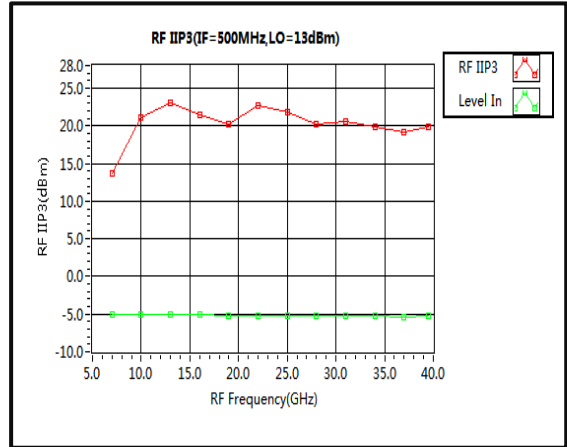


Typical Performance Plots

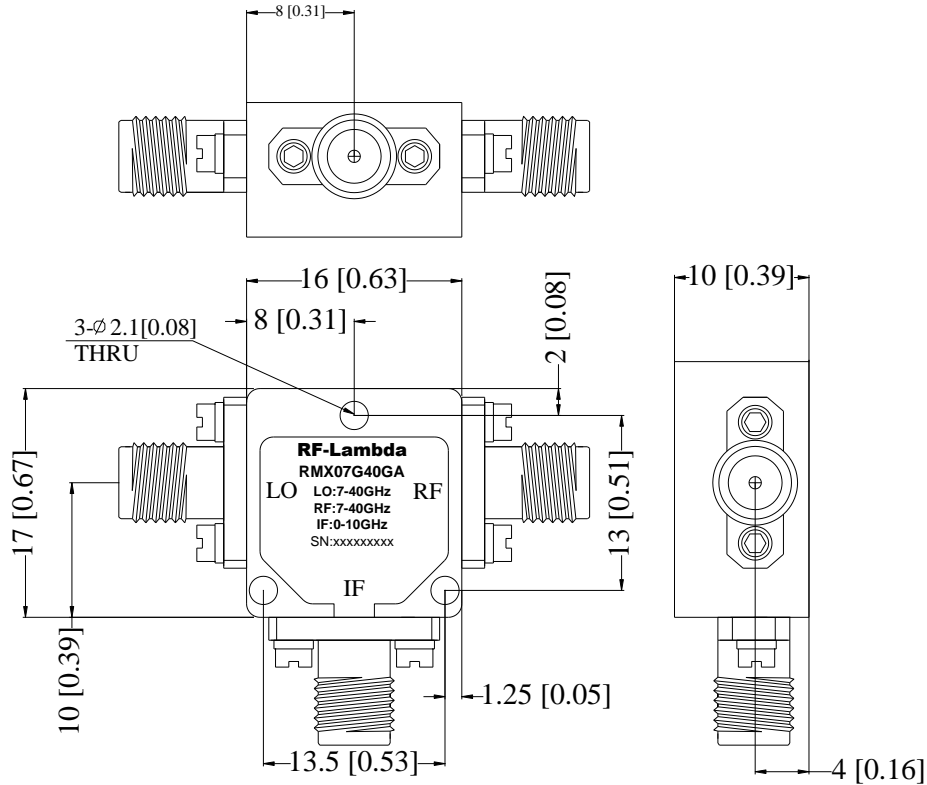
RF P1dB



RF IIP3

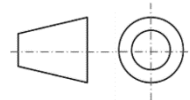


Outline Drawing



Notes:

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



Additional Information

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

Ordering Information

Part Number	Modification	Description
RMX07G40GA	Connectors 2.92mm-Female / SMA-Female	7GHz-40GHz Ultra Wide Band Mixer (Bi-Directional)

Important Notice

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