

# AMT-X0103 6 GHz to 10 GHz RF/LO IMAGE REJECT MIXER

## Data Sheet



## Features

- RF/LO Frequency Range 6 to 10 GHz
- Image Rejection 30 dB Typical
- Typical Conversion loss 6 dB
- LO-RF Isolation 36 dB
- LO-IF Isolation 32 dB
- RF-IF Isolation 45 dB
- LO optimal Power 14 dBm
- IF Options: Octave Bands
- State-of-the-Art design



## Description

The AMT-X0103 is a passive Image Reject Mixer covering the 6 to 10 GHz Frequency range for RF/LO and IF octave bands starting from 20 MHz to 200 MHz. The input and output is matched to 50 Ohms. The performance is achieved through the use of AMT's proprietary technology which significantly suppresses the image frequency compared to traditional image reject designs. The AMT-X0103 is ideal for use as a downconverter in a communication system with high data rate signals, or in a test equipment system for Commercial or Military applications.

## Applications

- Downconverter
- High data rate receivers
- Communication systems
- Test Equipment

Note: AMTI does not guarantee any specific application and it is customer's responsibility to test the part for their application

## MAXIMUM RATINGS<sup>1</sup>

Parameter	Symbol	Units	MIN	MAX
Operating Temperature – Case	T <sub>MO</sub>	° C	-40	+85
Storage Temperature - Case	T <sub>MS</sub>	° C	-40	+125
RF Input Power (CW)	Pin	dBm		+20
LO Input Power (CW)	Pin	dBm		+27

1. Stresses above those listed under "Absolute Maximum Rating" may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

## ELECTRICAL SPECIFICATIONS @ 25°C (LO Power = +14 dBm, IF Freq= 60 MHz)

Parameter	Conditions	Units	MIN	Typical	MAX
RF Frequency Range		GHz	6		10
LO Frequency Range		GHz	6		10
LO Power Range		dBm	+13	+14	+15
RF Impedance (VSWR)	Reference to 50 ohms RF Pin = -10 dBm			1.8:1	2.3:1
LO Impedance (VSWR)	Reference to 50 ohms			1.8:1	2.3:1
IF Impedance (VSWR)	Reference to 50 ohms			1.3:1	1.5:1
Conversion Loss		dB		7	10
Image Rejection		dB		30	
Input IP3	With Two Tones	dBm		18	
LO to RF Isolation		dB		36	
LO to IF Isolation		dB		32	
RF to IF Isolation		dB		45	
IF Options : Octave bands	-1 -2 -3 -4	MHz	20 40 55 100		40 80 110 200

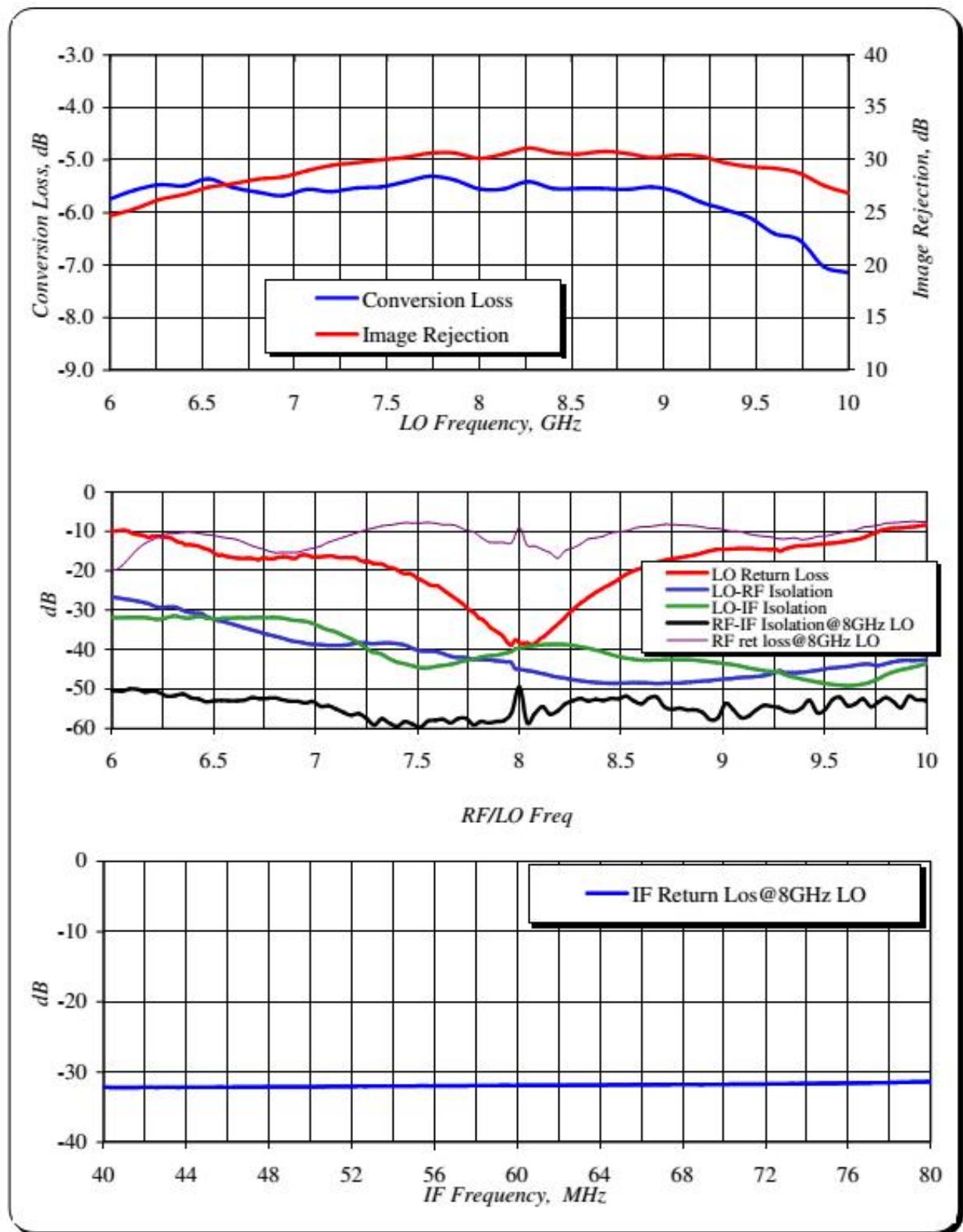
### Notes:

1/ Mixer normally aliened for LO> RF, please contact factory for other alignments

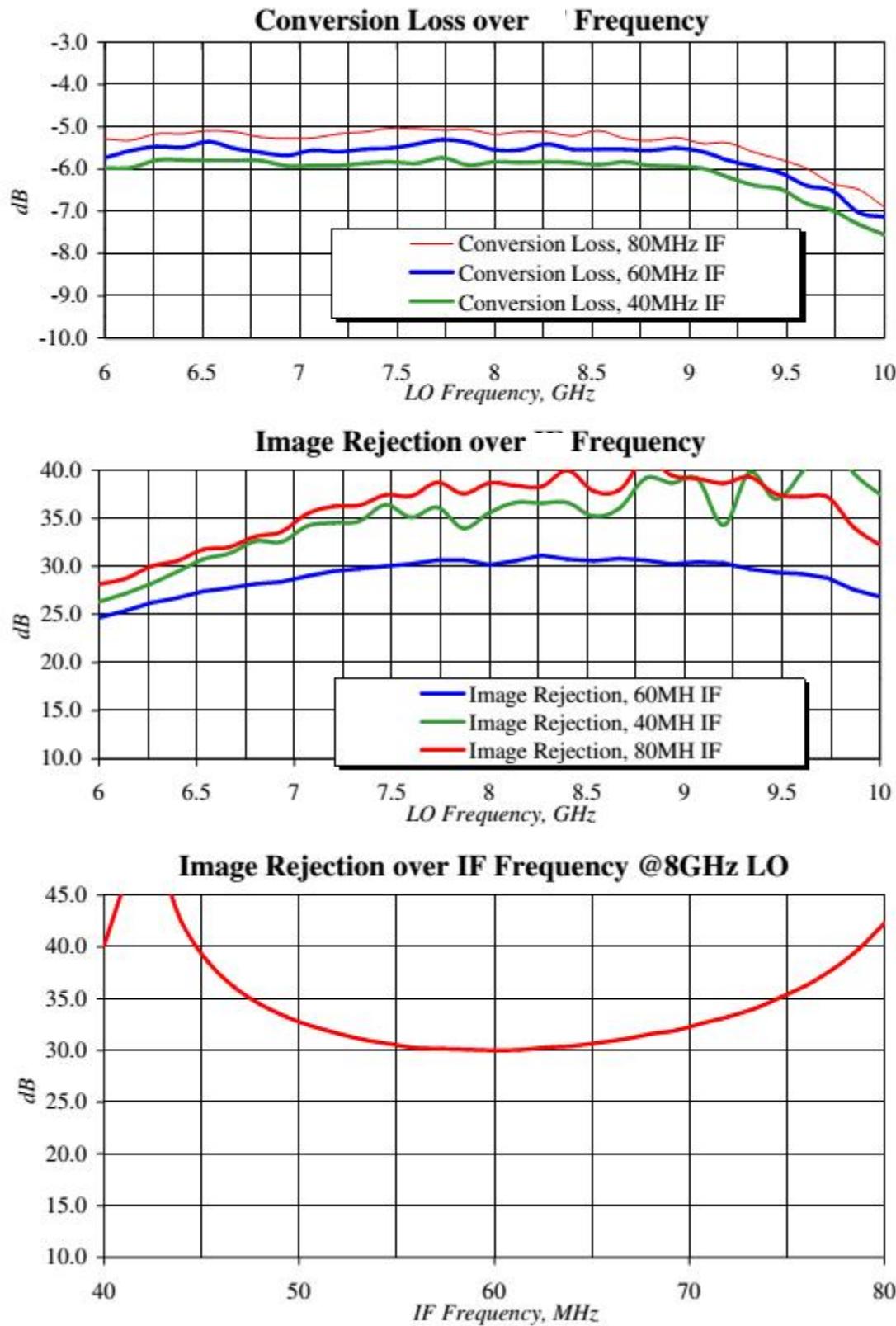
Custom Configurations available, please contact factory

Customized configurations of the above specifications are available

Typical measured data @ 25C with LO power = +14 dBm IF Freq = 60 MHz

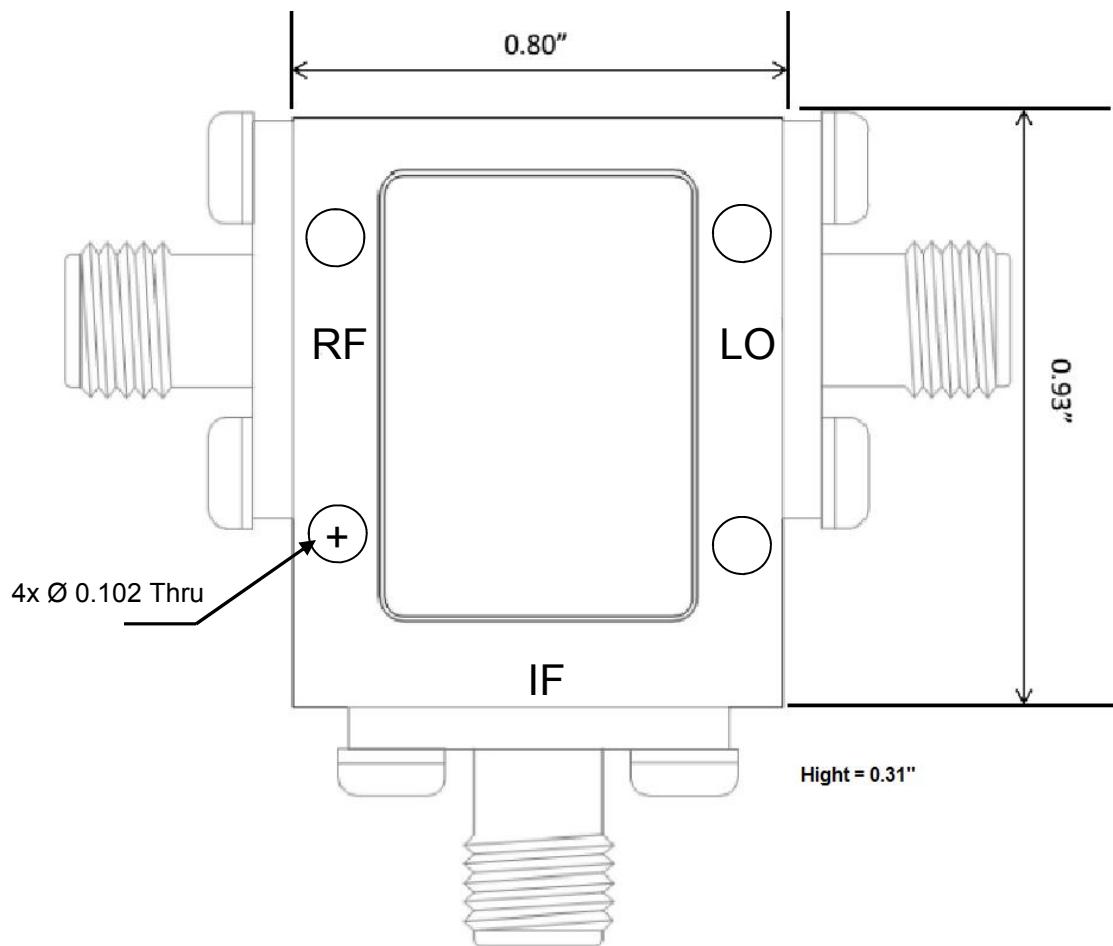


Typical measured data @ 25C with LO power = +15 dBm



**Package Outline: M053 all dimensions are in Inches**  
**SMA Female Connectors**

CAD Mechanical Model available upon request



Model Number	Description	Hermeticity	Package
AMT-X0103 -1	Image Reject Mixer RF/LO 6 to 10 GHz IF Freq 20 to 40 MHz	Non-Hermetic	Outline: M053
AMT-X0103 -2	Image Reject Mixer RF/LO 6 to 10 GHz IF Freq 40 to 80 MHz	Non-Hermetic	Outline: M053
AMT-X0103 -3	Image Reject Mixer RF/LO 6 to 10 GHz IF Freq 55 to 110 MHz	Non-Hermetic	Outline: M053
AMT-X0103 -4	Image Reject Mixer RF/LO 6 to 10 GHz IF Freq 100 to 200 MHz	Non-Hermetic	Outline: M053

Contact us for custom configurations and special requirements.

Our highly experienced team of engineers can quickly identify and implement innovative solutions using latest technology to improve performance and reduce cost.

- Add additional functionality: custom frequency range, Integrated LO Amplifier, Integrated RF or IF amplifier, Attenuator
- Integrated: Filters, Switches, Limiter, Digital attenuator, Phase shifter, Microcontroller, Multiple amplifiers, Switch matrix, Comb generators and others
- Mechanical: Custom packages - Surface Mount, Connectorized, Waveguide, Carrier, Drop-in, Hermetic and others

Agile Microwave Technology Inc is the logical choice for all your commercial or military RF/Microwave components/module requirements.

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