

IQ Mixer

RF:10-40 GHz/LO:10-40 GHz/IF:DC-12 GHz

Model: TLIQ-1040-12-K

TLIQ-1040-12-K is an ultra-broadband mixer spanning 10 to 40 GHz on the RF and LO ports with an IF from DC to 12 GHz. Up to 24 dBc of image rejection is available due to the excellent phase and amplitude balance of its on-chip LO quadrature hybrid.

Features:

- RF/LO coverage : 10-40 GHz
- IF operation : DC-12 GHz
- Conversion loss: -12dB Typ
- LO power : 10dBm Typ
- Image Rejection : 24dBc Typ

Applications:

- Single Sideband and Image Rejection Mixing
- IQ Modulation / Demodulation
- Vector Amplitude Modulation
- Band Shifting

Electrical Characteristics:

Parameter	Min	Typ	Max	Units
RF Frequency	10		40	GHz
LO Frequency	10		40	GHz
LO-Input power	4	10	13	dBm
IF Frequency	DC		12	GHz
Image Rejection @RF/LO:6-26GHz,I+Q:DC-0.2GHz		24		dBc
Conversion Loss @RF/LO:6-26GHz,I/Q:DC-23GHz		-12		dB
LO to IF Isolation		40		dB
LO to RF Isolation		40		dB
RF to IF Isolation		30		dB

Mechanical Specifications:

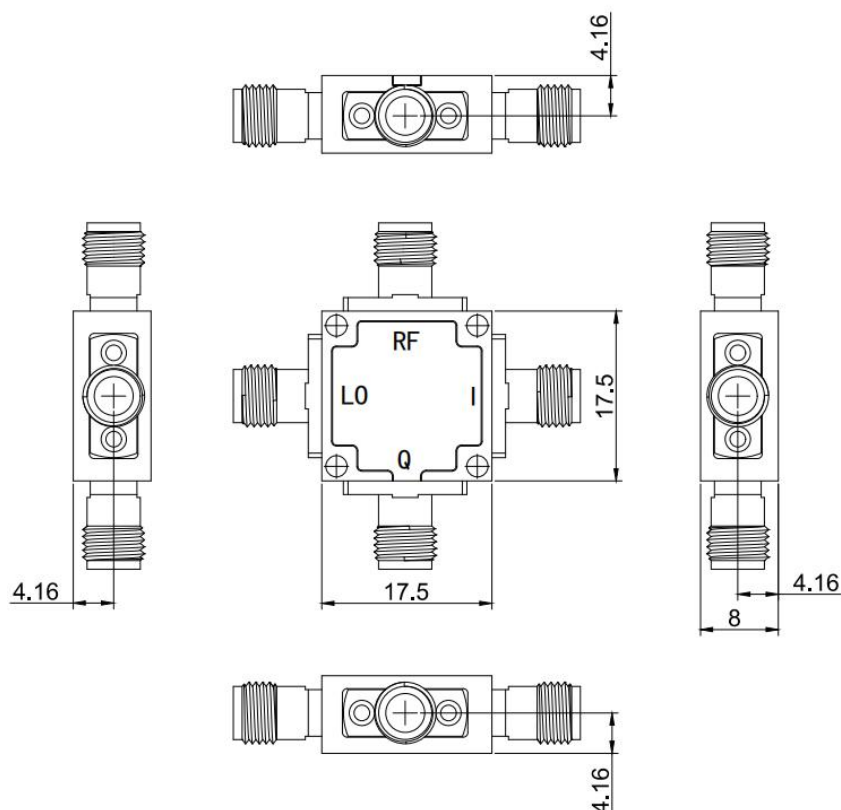
Parameter	Value	Units
RF Connector	2.92mm Female	
LO Connector	2.92mm Female	
IF Connector	SMA Female	
Size	17.5*17.5*8(Without Connector)	mm

Absolute Maximum Ratings:

Parameter	Value
LO Input Power	+20 dBm
RF/IF Input Power	+2 dBm
ESD sensitivity (HBm)	Class 0, passed 150V

Outline Drawing:

Unit:mm



Regulatory Compliance:



Environmental Conditions:

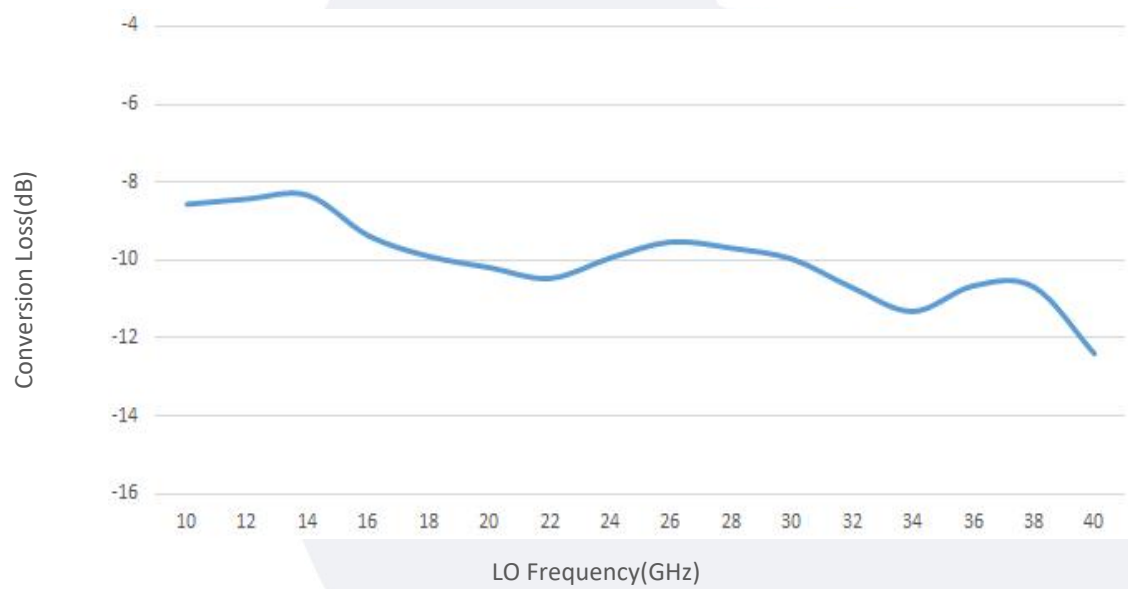
Parameter	Min	Typ	Max	Units
Operating Temperature	-45		+85	°C
Non-operating Temperature	-55		+100	°C
Relative humidity		95		%
Altitude	10,000			feet
Shock / Vibration(MIL-STD-810F)	25g rms (15 degree 2KHz) endurance, 1 hour per axis			
Shock(non operating)	20G for 11msc half sin wave,3 axis both directions			

Ordering Information:

Base Number	Description	Revision
TLIQ-1040-12-K	Image Rejection or I/Q Mixer RF:10-40GHz,LO:10-40GHz,IF:DC-12GHz	Rev.1.1

Typical Performance Data:

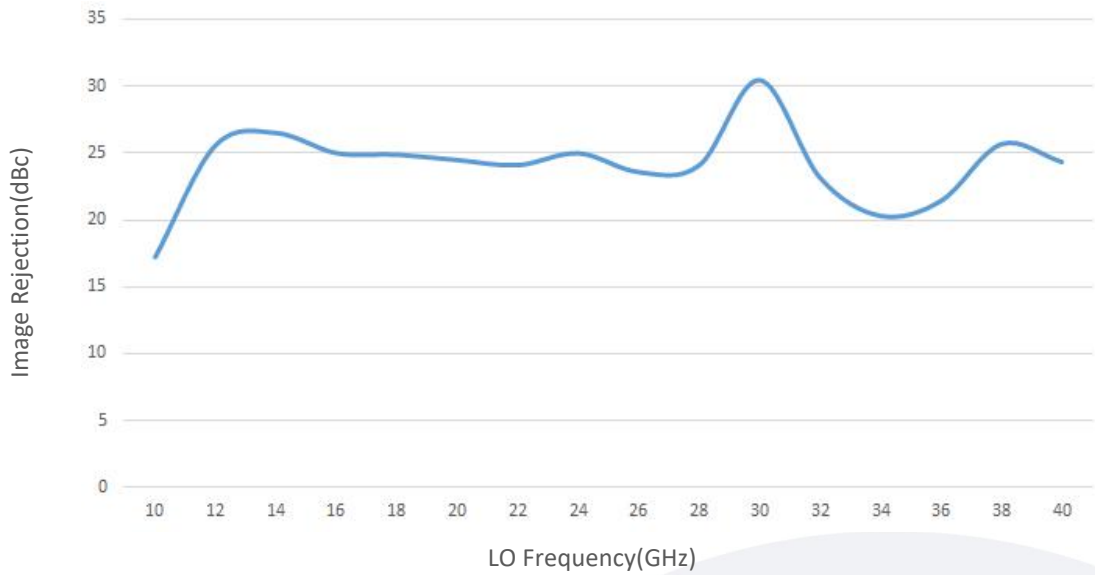
Conversion Loss vs LO Frequency



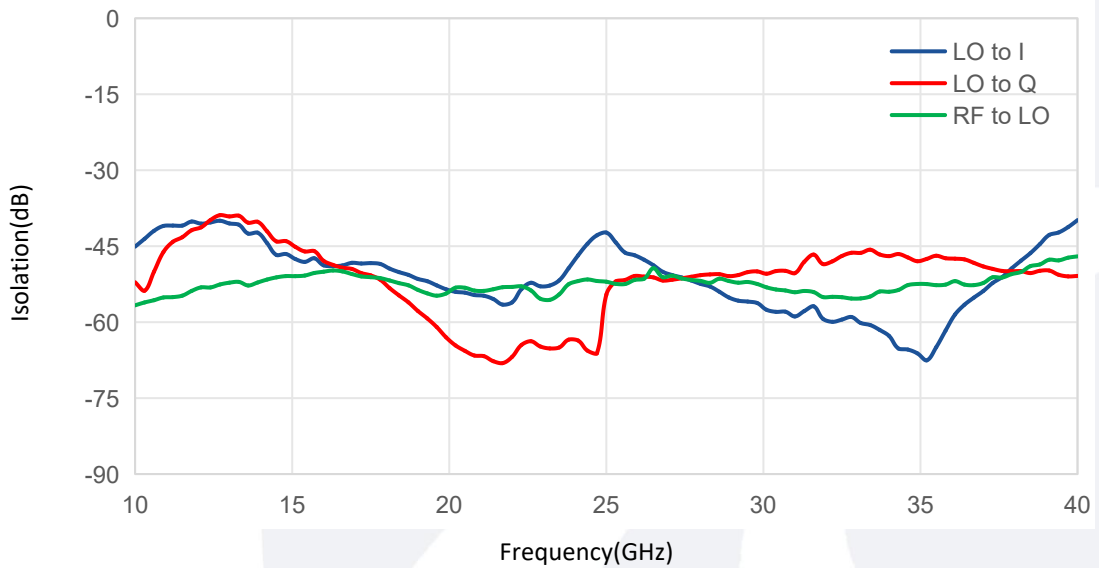
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

Typical Performance Data:

Image Rejection vs LO Frequency

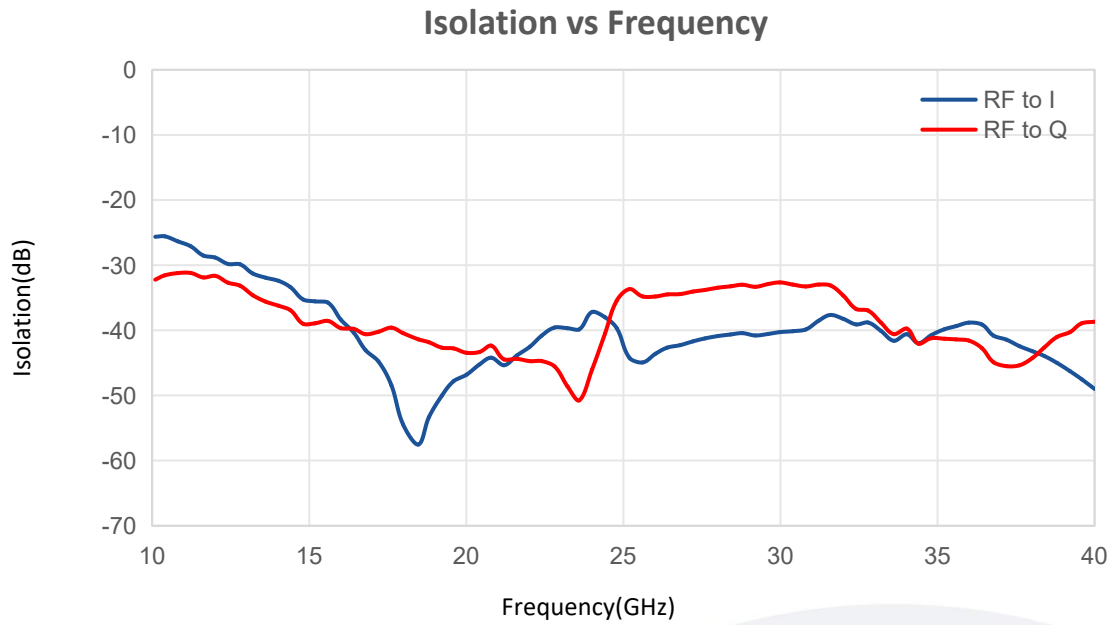


Isolation vs Frequency



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