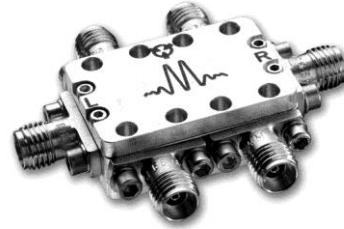


QUADRATURE-IF/BI-PHASE DOUBLE-BALANCED MIXERS

IQB-0618



Features

- LO/RF 6.0 to 18.0 GHz
- IF DC to 5.0 GHz
- 12 dB Typical Conversion Loss (each IF)
- 5 Degree Typical Phase Deviation
- .5 dB Typical Amplitude Deviation

Electrical Specifications - Specifications guaranteed from -55 to +100°C, measured in a 50-Ohm system.

Parameter	LO (GHz)	RF (GHz)	IF (GHz)	Min	Typ	Max	Diode Option LO drive level (dBm)
Conversion Loss (dB) (each IF)	6.0-18.0	6.0-18.0	DC-5.0		12		
Image Rejection (dB)	6.0-18.0	6.0-18.0	DC-5.0		20		
I/Q/B Amplitude Deviation (dB)	6.0-18.0	6.0-18.0	DC-5.0		0.5		
I/Q/B Quadrature Phase Deviation (degrees)	6.0-18.0	6.0-18.0	DC-5.0		5		
Isolation (dB)							
LO-RF	6.0-18.0	6.0-18.0			20		
LO-IF	6.0-18.0	6.0-18.0			20		
RF-IF	6.0-18.0	6.0-18.0			20		
Input 1 dB Compression (dBm)	6.0-18.0	6.0-18.0			+4		L (+14 to +17)
Input Two-Tone Third Order Intercept Point (dBm)	6.0-18.0	6.0-18.0			+14		L (+14 to +17)

Part Number Options

<i>Please specify diode level and package style by adding to model number.</i>	
Package Style(s) ¹	Example
KB	IQB-0618 <u>L</u> <u>K</u>

¹Application of DC current has been known to damage mixer diodes. IF DC current should be limited to less than 50 mA to prevent damage. Any application of DC current could cause field damage and void the warranty.

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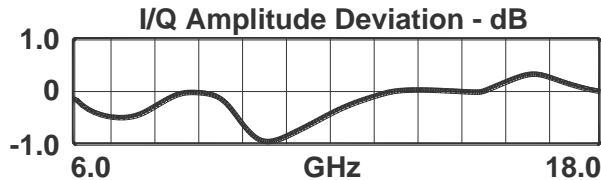
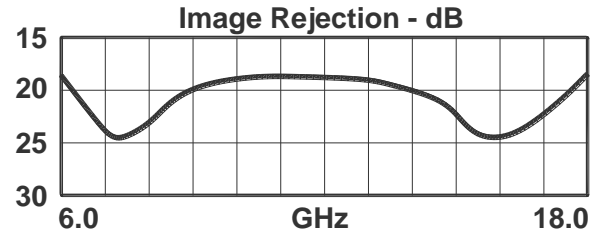
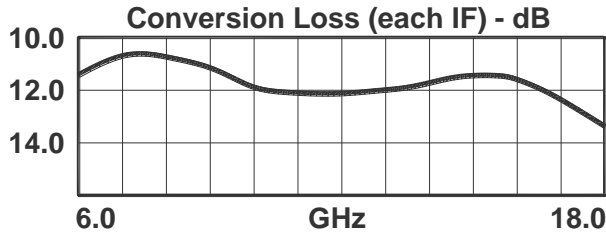
**QUADRATURE-IF/BI-PHASE
DOUBLE-BALANCED MIXERS**

IQB-0618

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LO/RF 6.0 to 18.0 GHz
IF DC to 5.0 GHz

Typical Performance



The difference between the IQB and a more typical IQ mixer is the balanced IF. The I1 and I2 ports are a balanced "I" output (Ports 1 and 2 are 180 degrees out of phase), and the Q1 and Q2 ports are a balanced "Q" output. The IQB can be used like a normal I/Q by grounding either port 1 or port 2 on either side. Using the I1/I2 and Q1/Q2 ports provides balanced IF outputs.

A typical I/Q mixer is constructed with two four-diode, double-balanced mixers. However, the IQB is constructed with two triple-balanced eight-diode M2-style mixers, which allows for a very wideband, balanced IF output.

DATA SHEET NOTES:

1. Mixer Conversion Loss Plot IF frequency is 70 MHz.
2. Mixer Noise Figure typically measures within 0.5 dB of conversion loss for IF frequencies greater than 5 MHz.
3. Conversion Loss typically degrades less than 0.5 dB for LO drives 2 dB below the lowest and 3 dB above highest nominal LO drive levels.
4. Conversion Loss typically degrades less than 0.5 dB at +100°C and improves less than 0.5 dB at -55°C.
5. Maximum input power is +26 dBm at +25°C, derated linearly to +23 dBm at +100°C.
6. Specifications are subject to change without notice. Contact Marki Microwave for the most recent specifications and data sheets.
7. Catalog mixer circuits are continually improved. Configuration control requires custom mixer model numbers and specifications.

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