

26 TO 40 GHz IMAGE REJECTION OR I/Q MIXERS

MODELS: IR2640NI7A, IR2640NI7B, IR2640NI7C AND IR2640NI7Q

FEATURES

- RF/LO coverage 26 to 40 GHz
- IF operation DC to 0.5 GHz
- LO power range +16 to +18 dBm
- Conversion loss 9 dB typical
- Image rejection 25 dB typical



MITEQ's IR Series of image rejection mixers is useful for wideband test equipment or in ultra-broadband receivers requiring rejection of an unwanted sideband of signal or noise following a low-noise front-end amplifier. These mixers are also useful as linear single-sideband upconverters by operating in the reverse mode.

ELECTRICAL SPECIFICATIONS

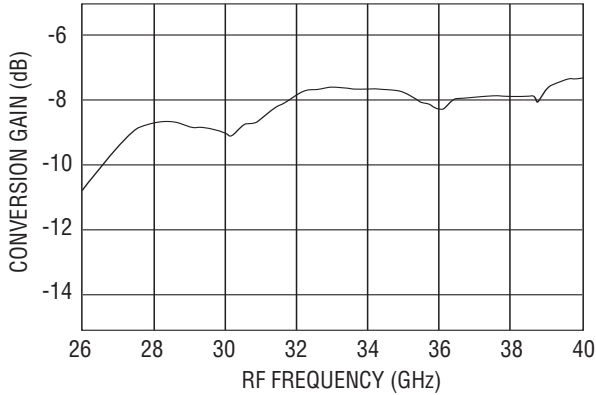
INPUT PARAMETERS	CONDITION	UNITS	MIN.	TYP.	MAX.
RF frequency range		GHz	26		40
RF VSWR (RF = -10 dBm, LO = +16 dBm)		Ratio		2:1	
LO frequency range		GHz	26		40
LO power range		dBm	+16		+18
LO VSWR (LO = +16 dBm)		Ratio		2.5:1	
TRANSFER CHARACTERISTICS	CONDITION	UNITS	MIN.	TYP.	MAX.
Conversion loss (Note 1)	RF > LO	dB		9	12
	IR2640NI7Q	dB		12	15
Single-sideband noise figure		dB		9.5	
Image rejection (Note 1)	RF < LO	dB	18	25	
LO-to-RF isolation		dB	20	25	
LO-to-IF isolation		dB		25	
Input power at 1 dB compression	LO = +16 dBm	dBm		+7	
Input two-tone third-order intercept point	LO = +16 dBm	dBm		+17	
Amplitude balance	IR2640NI7Q	dB		±1	±1.5
Phase balance	IR2640NI7Q	Degrees		±10	±15
OUTPUT PARAMETERS	CONDITION	UNITS	MIN.	TYP.	MAX.
IF frequency (image rejection mode)	IR2640NI7A	MHz	20		40
	IR2640NI7B	MHz	40		80
	IR2640NI7C	MHz	100		200
IF frequency (QIFM, I/Q demodulator mode)	IR2640NI7Q	MHz	DC		500
IF VSWR (IF = -10 dBm, LO = +16 dBm)		Ratio		1.5:1	

IMAGE REJECTION MIXER PRODUCTS



IR2640NI7C TYPICAL TEST DATA

CONVERSION GAIN, RF > LO
(LSB REJECTED LO = +16 dBm, RF = -10 dBm, IF = 150 MHz)



LO-TO-RF AND LO-TO-IF ISOLATION
(LO = +16 dBm)

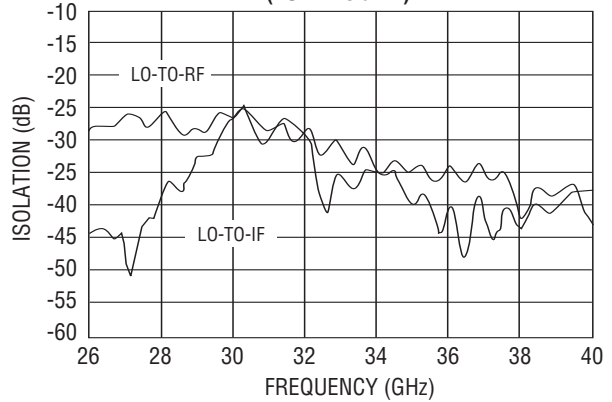
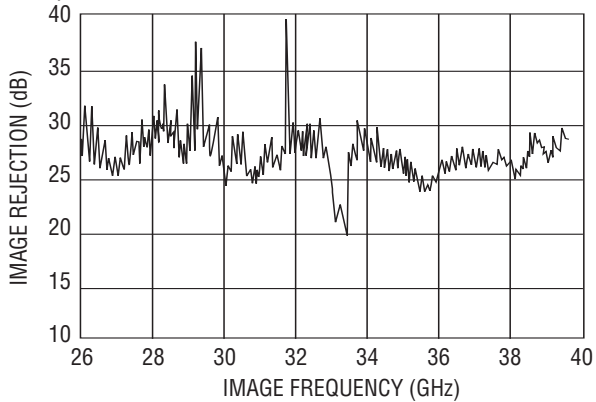
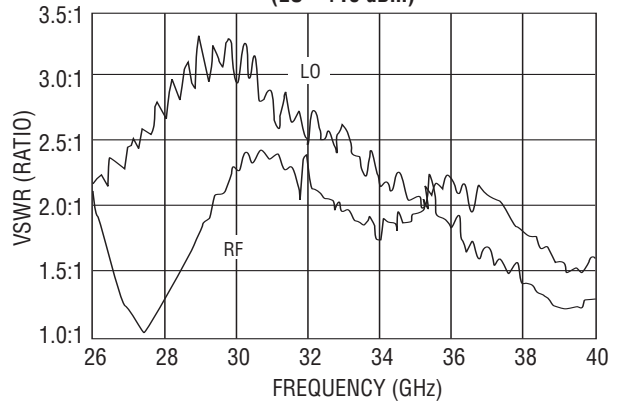


IMAGE REJECTION, IMAGE < LO
(LSB REJECTED LO = +16 dBm, RF = -10 dBm, IF = 150 MHz)



RF AND LO PORT VSWR
(LO = +16 dBm)



MAXIMUM RATINGS

Specification temperature..... +25°C
 Operating temperature -54 to +85°C
 Storage temperature -65 to +125°C

GENERAL NOTE

1. Standard catalog unit aligned and tested for guaranteed RF > LO performance. RF < LO guaranteed performance is available, please contact MITEQ.

NOTE: Test data supplied at 25°C; conversion loss, LO-to-RF isolation, image rejection (IF Options A, B and C), phase and amplitude balance (IF Option Q).

OUTLINE DRAWINGS

IR2640NI7A, B and C

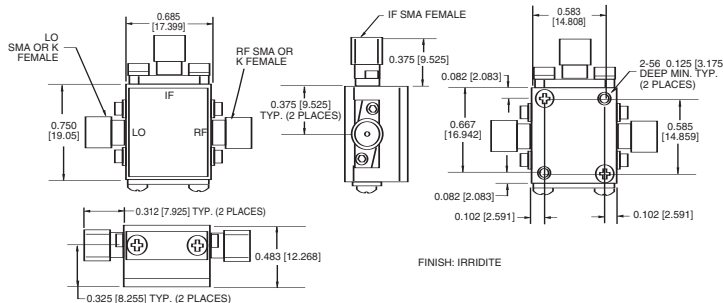
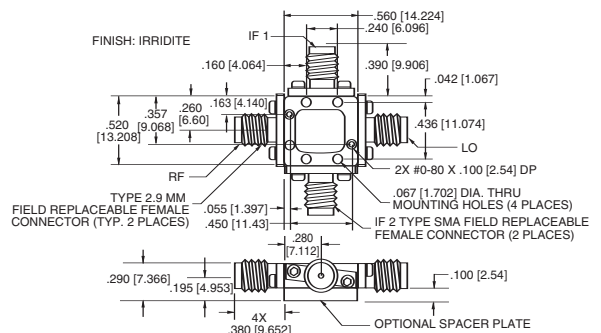


IMAGE REJECTION

IR2640NI7Q



GIFM, I/Q DEMODULATOR

NOTE: All dimensions shown in brackets [] are in millimeters.

