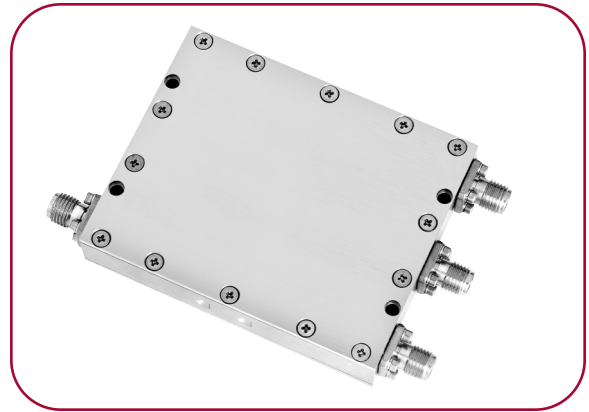


## 0.5 TO 2 GHz IMAGE REJECTION OR I/Q MIXERS

### MODELS: IR0502LC1A, IR0502LC1B, IR0502LC1C AND IR0502LC1Q

#### FEATURES

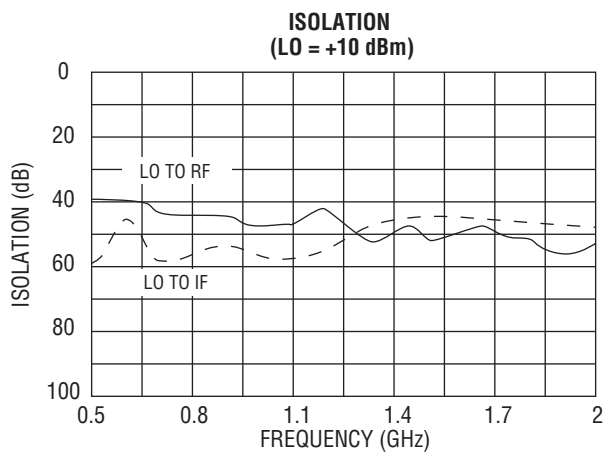
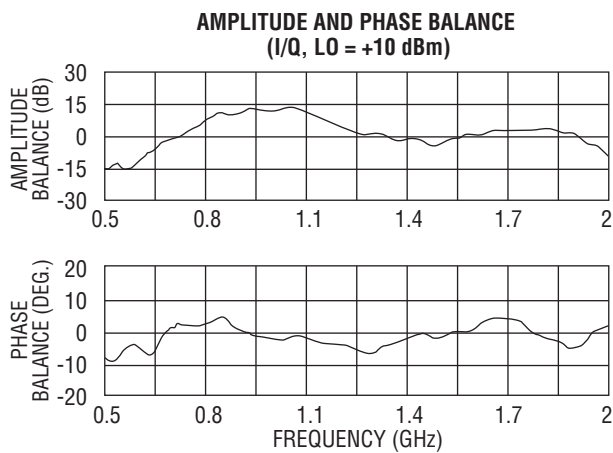
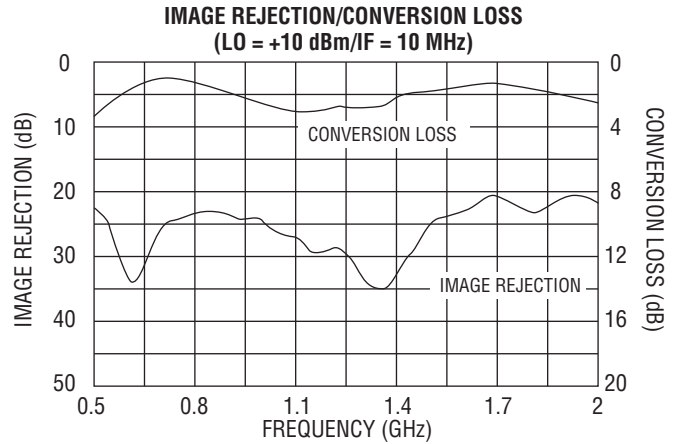
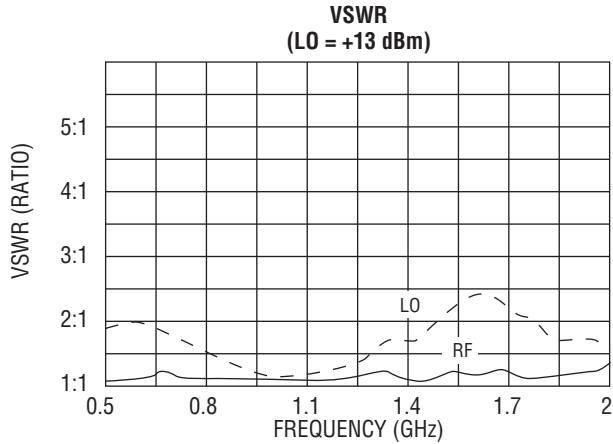
- RF/LO coverage ..... 0.5 to 2 GHz
- IF operation ..... DC to 0.5 GHz
- Conversion loss ..... 8.5 dB typical
- Image rejection ..... 18 dB typical



#### ELECTRICAL SPECIFICATIONS

INPUT PARAMETERS	CONDITION	UNITS	MIN.	TYP.	MAX.
RF frequency range		GHz	0.5		2
RF VSWR (RF = -10 dBm)		Ratio		2:1	
LO frequency range		GHz	0.5		2
LO power range	IR0502LC1	dBm	+10	+12	+13
	IR0502MC1	dBm	+13	+15	+16
	IR0502HC1	dBm	+17	+18	+20
LO VSWR		Ratio		2.5:1	
TRANSFER CHARACTERISTICS	CONDITION	UNITS	MIN.	TYP.	MAX.
Conversion loss (Note 1)	RF > LO	dBm		8.5	9.5
	IR0502LC1Q	dB		11.5	12.5
Single-sideband noise figure		dB		10	
Image rejection (Note 1)	RF < LO	dB	15	18	
LO-to-RF isolation		dB	18	20	
LO-to-IF isolation		dB		20	
Input power at 1 dB compression	IR0502LC1	dBm		+6	
	IR0502MC1	dBm		+10	
	IR0502HC1	dBm		+15	
Input two-tone third-order intercept point	IR0502LC1	dBm		+16	
	IR0502MC1	dBm		+20	
	IR0502HC1	dBm		+25	
Amplitude balance	IR0502LC1Q	dB			±1.5
Phase balance	IR0502LC1Q	Degrees			±10
Truth table	IR0502LC1Q		<b>Port</b>	<b>RF &lt; LO</b>	<b>RF &gt; LO</b>
			I	0	-90
			Q	-90	0
OUTPUT PARAMETERS	CONDITION	UNITS	MIN.	TYP.	MAX.
IF frequency (image rejection mode)	IR0502LC1A	MHz	20		40
	IR0502LC1B	MHz	40		80
	IR0502LC1C	MHz	100		200
IF frequency (QIFM, I/Q demodulator mode)	IR0502LC1Q	MHz	DC		500
IF VSWR (IF = -10 dBm)		Ratio		1.5:1	

# IR0502LC1 TYPICAL TEST DATA



**MAXIMUM RATINGS**

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

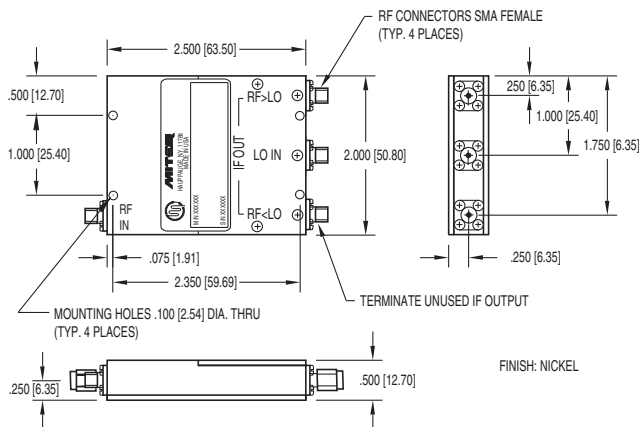
**GENERAL NOTE**

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

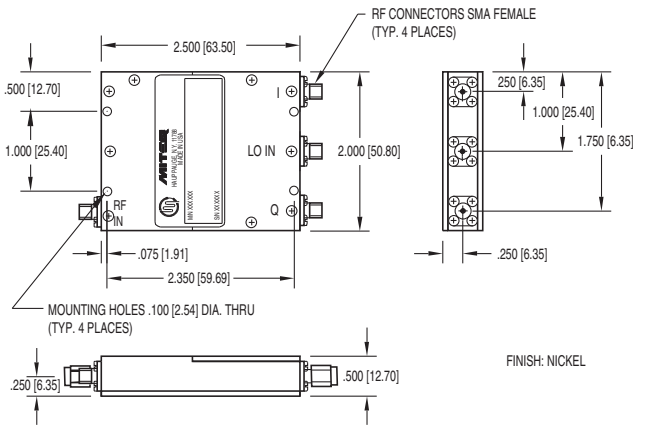
## OUTLINE DRAWINGS

**IR0502LC1A, B and C**



**IMAGE REJECTION**

**IR0502LC1Q**



**QIFM, I/Q DEMODULATOR**

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