

## 8.5 TO 9.6 GHz IMAGE REJECTION MIXER/IF AMP

### MODELS: IRA8596LR1A, IRA8596LR1B AND IRA8596LR1C

#### FEATURES

- RF/LO coverage ..... 8.5 to 9.6 GHz
- IF operation ..... 20 to 200 MHz
- LO power range ..... +7 to +10 dBm
- Conversion gain ..... 23 dB typical
- Image rejection ..... 22 dB typical

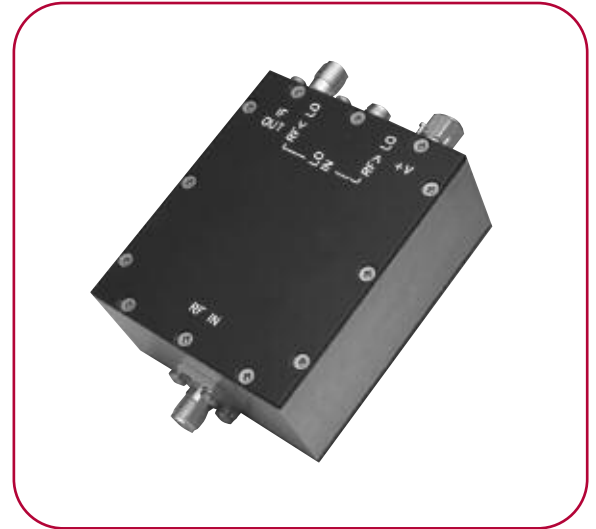
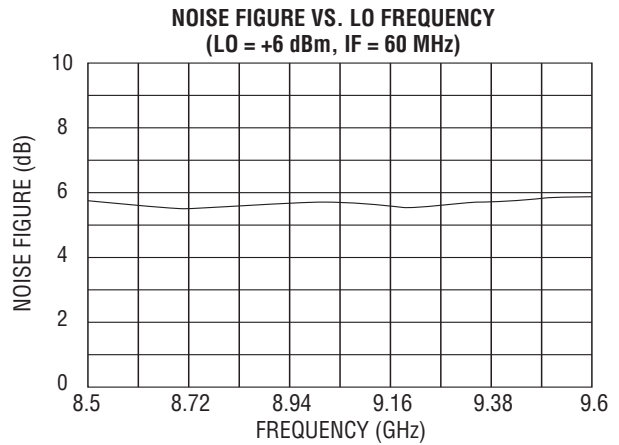
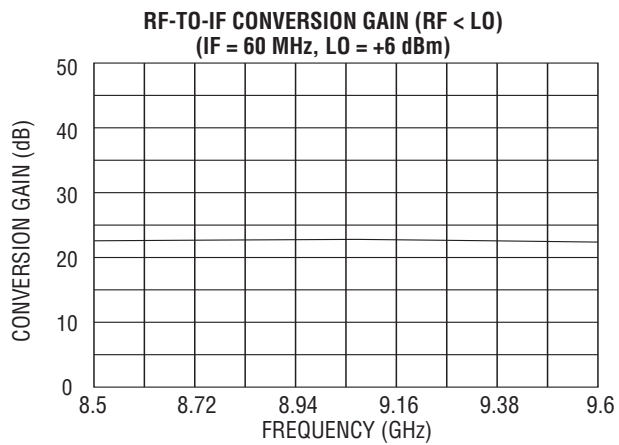
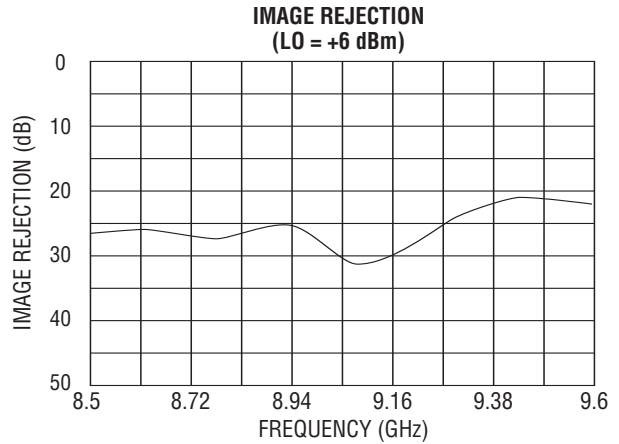
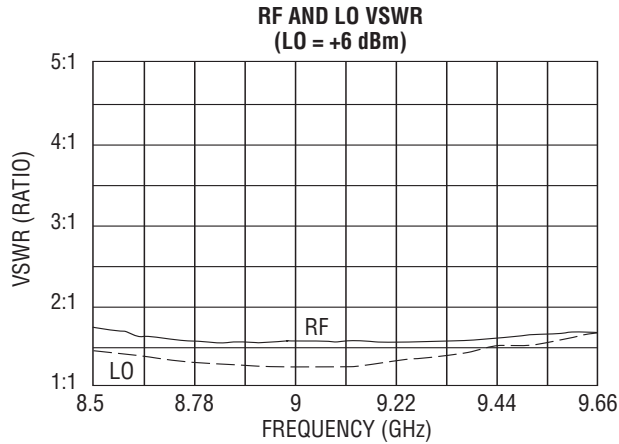


Image rejection mixers are useful for wideband test equipment or ultra-broadband receivers requiring rejection of an unwanted sideband of signal or noise following a low-noise front-end amplifier. The IRA Series of image rejection mixers has an integrated IF amplifier, thus making the overall sensitivity less dependent on the load noise.

#### ELECTRICAL SPECIFICATIONS

| INPUT PARAMETERS                       | CONDITION   | UNITS | MIN. | TYP.  | MAX. |
|--|-------------|-------|------|-------|------|
| RF frequency range                     |             | GHz   | 8.5  |       | 9.6  |
| RF VSWR (RF = -10 dBm)                 |             | Ratio |      | 2:1   |      |
| LO frequency range                     |             | GHz   | 8.5  |       | 9.6  |
| LO power range                         |             | dBm   | +7   |       | +10  |
| LO VSWR                                |             | Ratio |      | 2:1   |      |
| Bias                                   | +15 volts   | mA    |      | 100   |      |
| TRANSFER CHARACTERISTICS               | CONDITION   | UNITS | MIN. | TYP.  | MAX. |
| Conversion gain                        |             | dB    | 20   | 23    |      |
| Single-sideband noise figure at 25°C   |             | dB    |      | 6     | 6.5  |
| Image rejection (Note 1)               |             | dB    | 20   | 22    |      |
| LO-to-RF isolation                     |             | dB    | 20   | 25    |      |
| LO-to-IF isolation                     |             | dB    | 20   | 22    |      |
| Output power at 1 dB compression point |             | dBm   | 0    | +3    |      |
| OUTPUT PARAMETERS                      | CONDITION   | UNITS | MIN. | TYP.  | MAX. |
| IF frequency                           | IRA8596LR1A | MHz   | 20   |       | 40   |
|  | IRA8596LR1B | MHz   | 40   |       | 80   |
|  | IRA8596LR1C | MHz   | 100  |       | 200  |
| IF VSWR (IF = -10 dBm)                 |             | Ratio |      | 1.5:1 |      |

# IRA8596LR1B TYPICAL TEST DATA



## MAXIMUM RATINGS

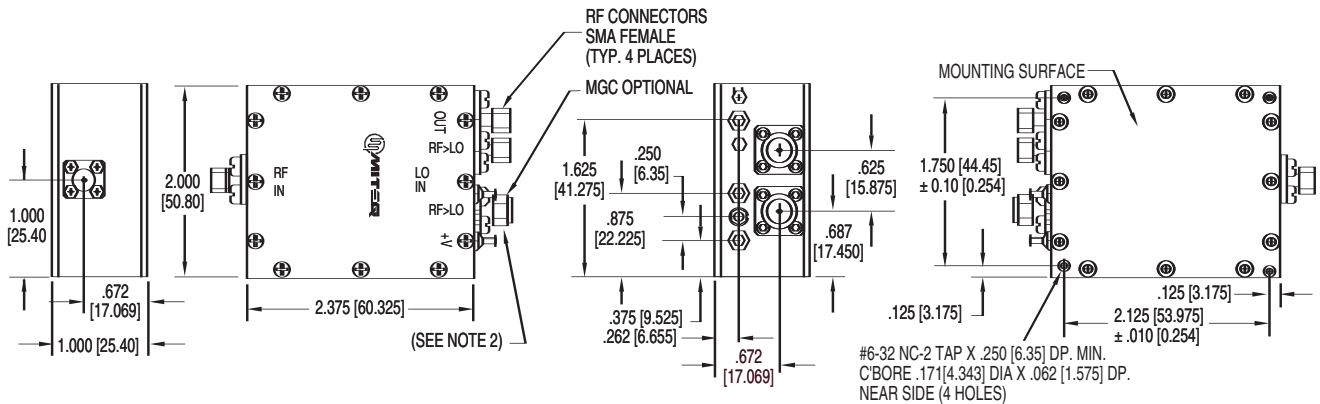
Specification temperature ..... +25°C  
 Operating temperature ..... -54 to +85°C  
 Storage temperature ..... -65 to +125°C

## GENERAL NOTE

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

NOTE: Test data supplied at 25°C; conversion gain, noise figure and image rejection.

## OUTLINE DRAWING



## NOTES:

1. Housing: iridite; covers: iridite: prime and black paint.
2. 50 ohm termination. Terminate unused LO input port with supplied termination.
3. All dimensions shown in brackets [ ] are in millimeters.

