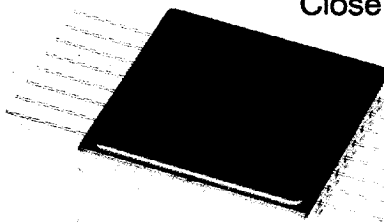
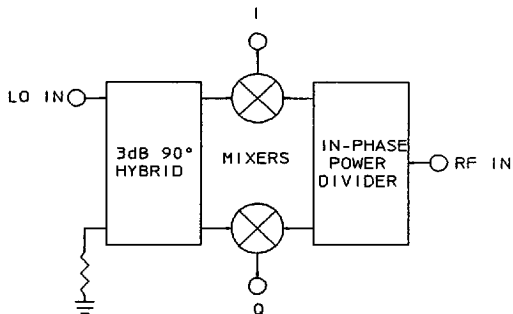




IQF-20F series

PRECISION I & Q DEMODULATORS
Close Tolerance, Flatpack

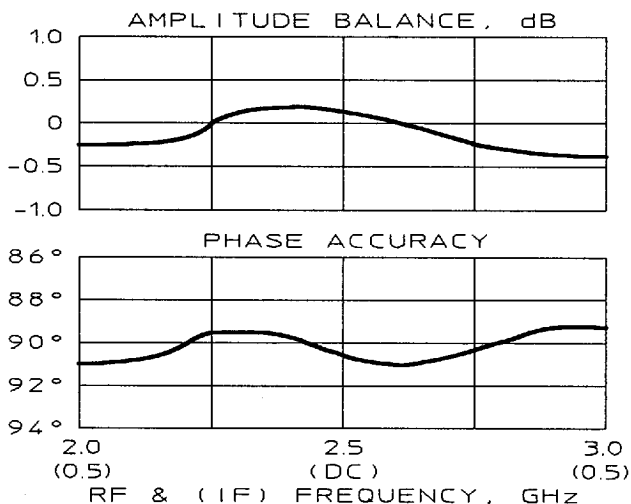


- Custom Frequencies from 1.5 to 4 GHz
- $\pm 1^\circ$, 0.2 dB I & Q Balance

Precision I & Q Demodulators are integrated networks which, when fed by an RF and LO signal, produce two equal amplitude signals that are in phase quadrature. Built around the standard parts, these units are optimized for high accuracy at a given LO frequency and in addition are fully functional over a 10% LO bandwidth. They can also be used in digital systems as a QPSK demodulator, which recovers two data channels from the incoming phase information. The QPSK input is applied to the RF port while the recovered carrier is applied to the LO port and generates the two independent I & Q data outputs.

MERRIMAC Precision I & Q Demodulators are designed for high reliability in accordance with MIL-M-28837 requirements and can be supplied screened to meet specific military and space requirements.

Performance over Video Bandwidth (LO at 2500 MHz)



Model Number	LO Frequency
IQF-20F-1500	1500 MHz
IQF-20F-2500	2500 MHz
IQF-20F-***B	1500 to 4000 MHz

For complete Model Number replace *** with desired LO Center Frequency, fo in MHz.

COMMON SPECIFICATIONS

- RF/LO Input Characteristics**
- †RF Bandwidth: 10% of fo
 - Impedance: 50 Ω nom.
 - VSWR: 1.5:1 max.
 - RF Power Level: 0 dBm nom.
 - LO Power Level, @ fo: +10 dBm nom.

- I & Q Output Characteristics**
- Video Bandwidth, nom.: DC to †250 MHz
 - Output Impedance: 50 Ω nom.

- Conversion Loss**
- (RF to I or Q): 10 dB typ. 12 dB max.

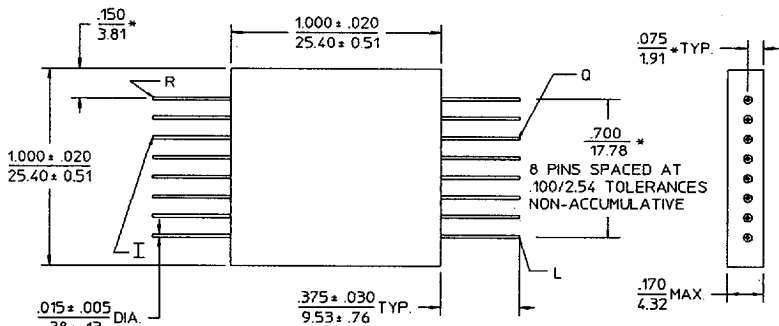
- IF Quadrature Balance (I to Q), @ 100 kHz IF**
- Phase, @ LO = fo: $\pm 1^\circ$ typ., $\pm 2^\circ$ max.
 - Phase, @ LO = fo $\pm 5\%$: $\pm 3^\circ$ typ., $\pm 5^\circ$ max.
 - Ampl., @ LO = fo: 0.2 dB max.
 - Ampl., @ LO = fo $\pm 5\%$: 0.5 dB max.

- Weight, nominal: 0.35 oz (10 g)
- Operating Temperature: -55° to $+85^\circ$ C

†RF and Video Bandwidths are typically much greater than that specified.

Contact MERRIMAC for further details. (2/92)

F - Package Outline



- NOTES:
1. Tolerance on 3 place decimals $\pm .010(.25)$ except as noted.
 2. Dimensions in inches over millimeters.
 3. Dimensions marked with * apply only at body.
 4. All unmarked pins are case ground.

41 Fairfield Place, West Caldwell, N.J. 07006 • (201) 575-1300 • FAX: (201) 575-0531