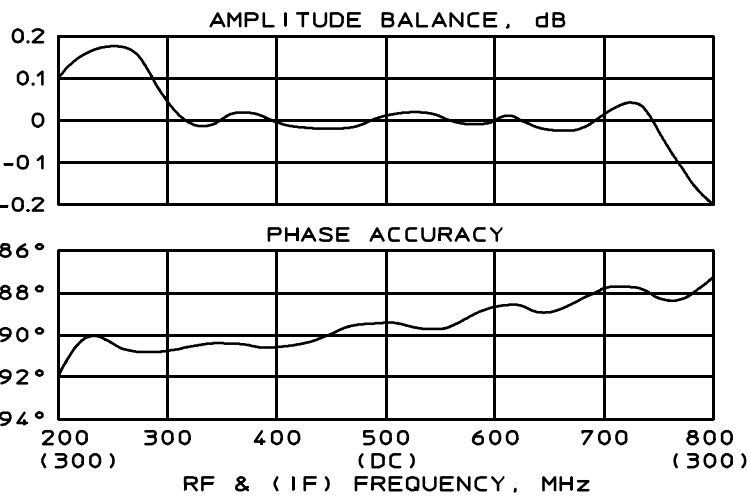


Performance over Video Bandwidth (LO at 500 MHz)



**PRINCIPAL SPECIFICATIONS**

Model Number	LO Freq. $f_0$	Video Bandwidth
IQF-20E-***B	20 - 160 MHz	<sup>†</sup> 50 MHz
IQF-20E-***B	160 - 1000 MHz	<sup>†</sup> 100 MHz

For complete model number replace \*\*\* with desired LO center freq.  $f_0$  in MHz.

**GENERAL SPECIFICATIONS**

**RF/LO Input Characteristics**

- <sup>†</sup>RF Bandwidth: 10% of  $f_0$
- Impedance: 50  $\Omega$  nom.
- VSWR: 1.5:1 max.
- RF Power Level: 0 dBm nom.
- LO Power Level @  $f_0$ : +10 dBm nom.

**I & Q Output Characteristics**

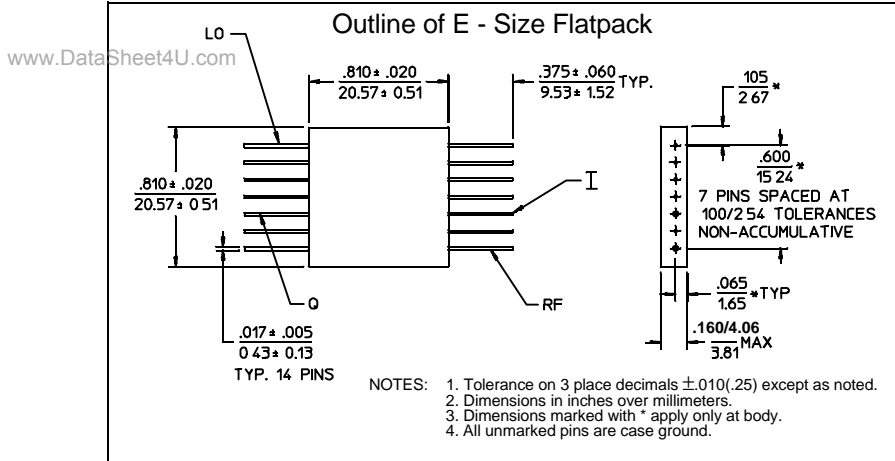
- Output Impedance: 50  $\Omega$  nom.
- Conversion Loss (RF to I or Q): 10 dB typ., 12 dB max.

**IF Quadrature Balance (I to Q), @ 100 kHz IF**

- Phase, @  $LO=f_0$ :  $\pm 1^\circ$  nom.,  $\pm 2^\circ$  max.
- Phase, @  $LO=f_0 \pm 5\%$ :  $\pm 3^\circ$  nom.,  $\pm 5^\circ$  max.
- Ampl., @  $LO=f_0$ : 0.2 dB max.
- Ampl., @  $LO=f_0 \pm 5\%$ : 0.5 dB max.

- Weight, nominal: 0.32 oz (9 g)
- Operating Temp:  $-55^\circ$  to  $+85^\circ C$

<sup>†</sup>RF and Video Bandwidths are typically much greater than specified.



**General Notes:**

1. I & Q networks are integrated devices that produce two quadrature-phased, equal amplitude signals when fed RF and LO signals.
2. Comprised of standard components, these units are optimized for high accuracy at a specified LO frequency and maintain specified performance across a bandwidth of 10% of the LO frequency.
3. I & Q networks can also be used in digital systems as a QPSK demodulator where it 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 resulting in the two independent data outputs at the I and Q data ports.
4. Merrimac I & Q networks comply with the relevant sections of MIL-M-28837 and can be supplied screened for compliance with additional specifications for military and space applications requiring the highest reliability.