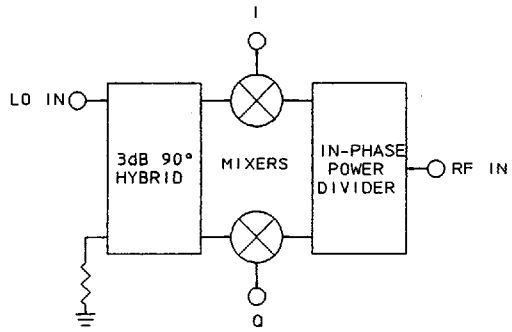
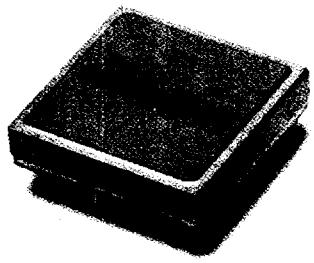
Merrimac

IQP-4R series

I & Q PHASE DETECTORS
Octave LO Bandwidth





- **Low Conversion Loss**
- **Space saving hermetic design**
- **No lead forming for reliability**
- **Adapts to automatic insertion and wave soldering techniques**

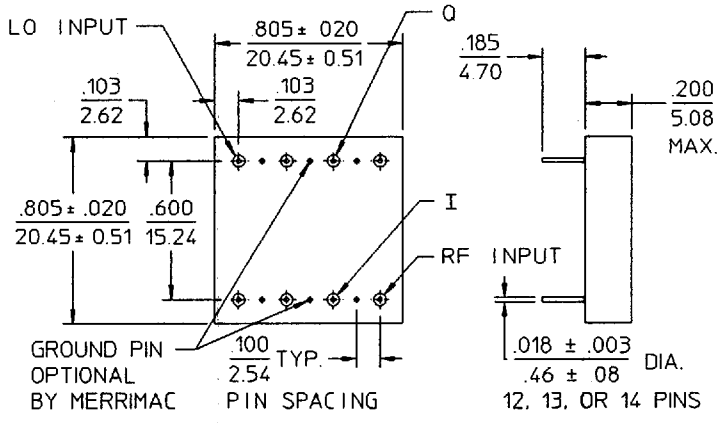
MERRIMAC I & Q Phase Detectors are integrated networks which, when fed by an RF and LO signal, produce two equal amplitude signals that are in phase quadrature.

The IQP-4R series of I & Q Phase Detectors includes an octave band quadrature network which maintains the 90° phase balance to be maintained over a full octave of LO frequencies, such as would be required in a frequency agile communications system.

I & Q Phase Detectors are popular for application in image rejection demodulator circuits, whereby with the addition of an external IF 90° Hybrid, a complete system is formed. Additionally, they can be used as phase correlators in closed loop applications and vector modulator sub-systems.

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

Meri-Pac™ R-Package Outline



NOTES: 1. Tolerance on 3 place decimals ±.010(.25) except as noted.
2. Dimensions in inches over millimeters.
3. Lead dimensions apply only at body.
4. All unmarked pins are case ground.

Model Number	RF/LO Center Frequency, f_o	†Bandwidth MHz
IQP-4R-30	30 MHz	20 - 40
IQP-4R-60	60 MHz	40 - 80
IQP-4R-300	300 MHz	200 - 400
IQP-4R-***B	10 – 500 MHz	67% of f_o

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

COMMON SPECIFICATIONS

RF and LO Input Characteristics	
Impedance:	50 Ω nom.
VSWR:	1.5:1 max.
RF Power Level:	0 dBm nom.
LO Power Level	+10 dBm nom.
I & Q Output Characteristics	
Video Bandwidth:	DC to †50 MHz nom.
Output Impedance:	50 Ω nom.
Conversion Loss	
(RF to I or Q):	10 dB typ., 12 dB max.
IF Balance (I to Q)	
Phase:	90° ±4° typ., ±5° max.
Amplitude:	0.25dB typ., 0.5dB max.
Weight, nominal:	0.32 oz (9 g)
Operating Temperature:	−55° to +85°C

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

AVAILABLE SPECIFICATIONS

Higher Frequencies:	see IQP-4S series
Narrowband LO:	see IQP-20E series
Phase Balance:	90° ± 3° max.
Amplitude Balance:	0.5 dB max.
Conversion Loss:	8 dB typ., 10 dB max.

Contact MERRIMAC for further details. (11/91)

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