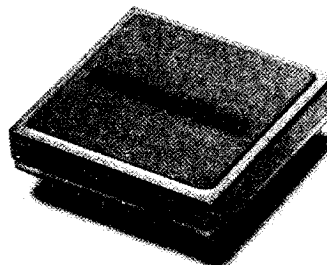
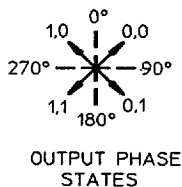
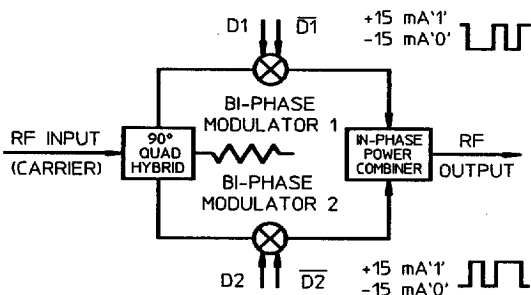




# JPP-21R series

## QUADRAPHASE (QPSK) MODULATORS Differential ECL/TTL Compatible Drive



- Catalog and Custom to 1000 MHz
- High Data Rate Design
- Low Profile, High Reliability Package

Model Number	Center Frequency, $f_0$	RF Input Bandwidth	Amplitude Balance	Phase Balance at center $f_0$	Phase Balance at 10% Band Limits	Insertion Loss, max
JPP-21R-70	70 MHz	7 MHz	0.5 dB	$\pm 1^\circ$ typ., $\pm 2^\circ$ max.	$\pm 2^\circ$ typ., $\pm 4^\circ$ max.	6 dB
JPP-21R-***B	10 - 200 MHz	10% of $f_0$	0.5 dB	$\pm 1^\circ$ typ., $\pm 2^\circ$ max.	$\pm 2^\circ$ typ., $\pm 4^\circ$ max.	6 dB
JPP-21R-***B	200 - 1000 MHz	10% of $f_0$	1.0 dB	$\pm 2^\circ$ typ., $\pm 3^\circ$ max.	$\pm 2^\circ$ typ., $\pm 5^\circ$ max.	9 dB

For complete Model Number replace \*\*\* with desired Center Frequency,  $f_0$  in MHz.

MERRIMAC Quadrphase Modulators are composed of two biphas modulators, a 90° quadrature hybrid and an inphase power combiner. The modulators are generally used in systems which generate high data rate QPSK signals.

Their function is to accept two differential data inputs, which independently biphas modulate an RF carrier, which are then combined to produce a relative four phase output of 0, 90, 180 and 270 degrees. This series is available off the shelf at 70 MHz center frequency and from 10 to 1000 MHz on special order. Differential drive allows easy interface with ECL/TTL drivers.

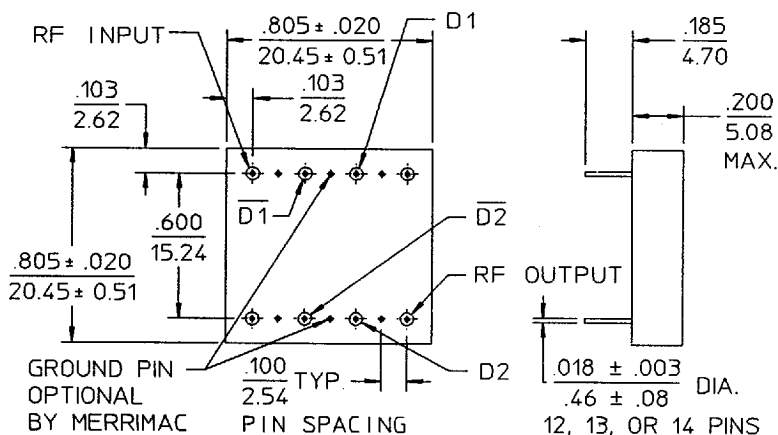
MERRIMAC Quadrphase Modulators are designed for high reliability in accordance with MIL-M-28837 requirements and can be supplied screened to meet specific military and space applications.

### COMMON SPECIFICATIONS

RF Impedance:	50 $\Omega$ nom.
VSWR:	1.5:1 max.
RF Input Level:	0 dBm nom.
Data Bandwidth:	> 100 MHz nom.
Data Signal Levels:	Logic 1: +15 mA nom. Logic 0: -15 mA nom.
Weight, nominal:	0.32 oz (9 g)
Operating Temperature:	-55° to +85°C

Contact MERRIMAC for further details. (11/91)

### Outline of R-Size Meri-Pac™



Modulation Sequence		
Data Ports 1, 2	0, 0	ref. 0°
	1, 0	-270°
	1, 1	-180°
	0, 1	-90°

- 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.