

### TECHNICAL DESCRIPTION / APPLICATION

Units in the JPF-21F series of Quadrature Modulators are composed of two biphase modulators, a 90° quadrature hybrid and an in-phase power combiner. These devices are generally used in systems to generate QPSK coded signals. The units accept two differential data inputs each of which independently biphase modulates an RF carrier. These are then combined to produce a quadrature output of 0, 90, 180 and 270 degrees. Differential drive allows easy interface with ECL/TTL drivers. Units in the JPF-21F series are available from stock with a 1500 and 2500 MHz center frequency and from 1500 to 3000 MHz for special orders. Merrimac Quadrature Modulators comply with the relevant sections of MIL-M-28837 and may be supplied screened for compliance with additional specifications for military and space applications requiring the highest reliability.

### PRINCIPAL SPECIFICATIONS

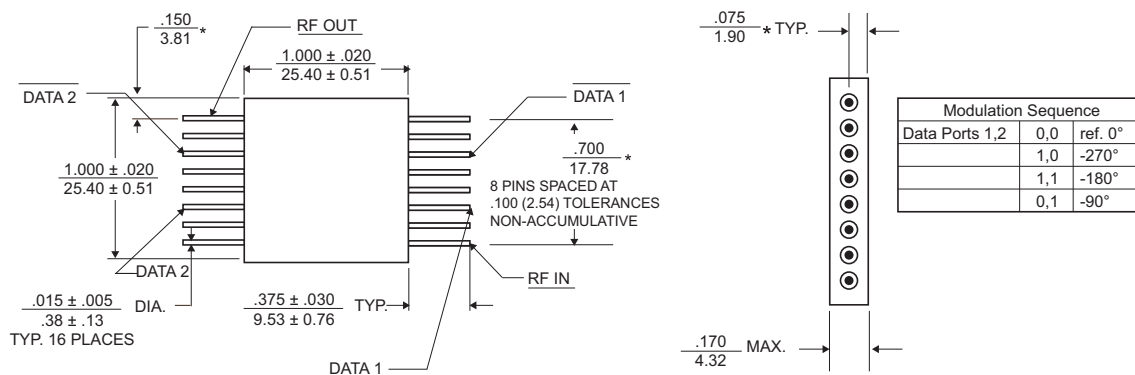
Model Number	Center Frequency, $f_0$ , MHz	RF Input Bandwidth	Amplitude Balance at Center, $f_0$ , dB, Max.	Phase Balance at Center, $f_0$		Phase Balance at 10% Band Limits		Insertion Loss, dB, Max.
				Typ.	Max.	Typ.	Max.	
JPF-21F-***B	1200-2500	10% of $f_0$	1.0	$\pm 2^\circ$	$\pm 5^\circ$	$\pm 2^\circ$	$\pm 5^\circ$	13.5 dB

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

### GENERAL SPECIFICATIONS

Impedance	VSWR	RF Input Level	Data Bandwidth	Data Signal Levels	Weight, nominal	Operating Temperature
50 $\Omega$ nom.	RF Input 1.5:1 max. RF Output 2:1 max.	0 dBm nom.	100 MHz nom.	Logic 1: +15 mA nom. Logic 0: -15 mA nom.	0.35 oz. (10 g)	-55° to +85°C

### 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.