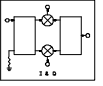
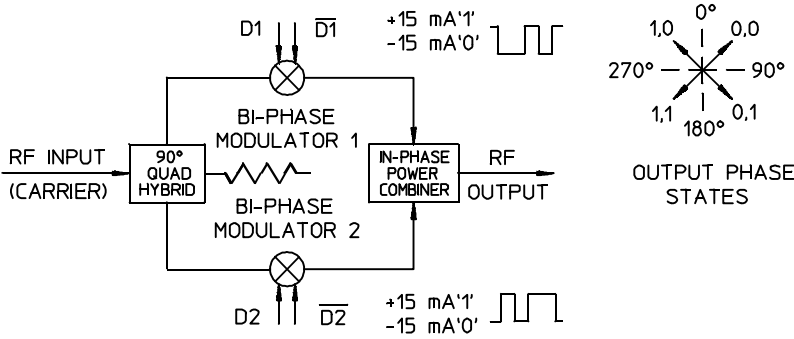


# JPF-21E Series QUADRAPHASE MODULATORS

Units to 1 GHz / High Data Bandwidth / Differential ECL/TTL Compatible Drive / Hi-Rel Package



## PRINCIPAL SPECIFICATIONS

Model Number	Center Frequency, $f_0$ , MHz	RF Input Bandwidth	Amplitude Balance, dB, Max.	Phase Balance at Center, $f_0$		Phase Balance at 10% Band Limits		Insertion Loss, dB, Max.
				Typ.	Max.	Typ.	Max.	
JPF-21E-***B	10 - 200	10% of $f_0$	0.5	$\pm 1^\circ$	$\pm 2^\circ$	$\pm 2^\circ$	$\pm 4^\circ$	6
JPF-21E-***B	200 - 1000	10% of $f_0$	1.0	$\pm 1^\circ$	$\pm 3^\circ$	$\pm 3^\circ$	$\pm 5^\circ$	9

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

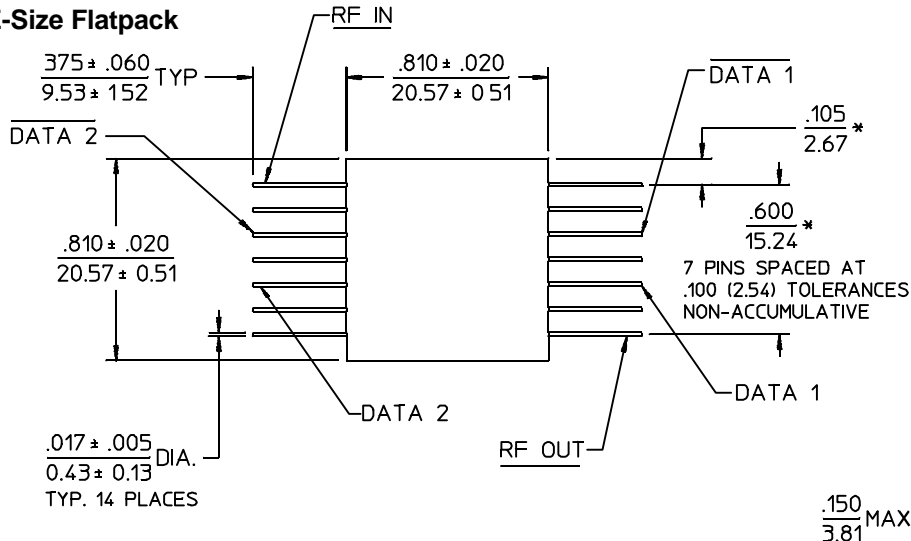
### General Notes:

- Units in the JPF-21E series of Quadrature Modulators are composed of two biphasic 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 biphasic 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.
- The JPF-21E series is available with frequencies from 10 to 1000 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 requiring the highest reliability.

## GENERAL SPECIFICATIONS

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

### E-Size Flatpack



- NOTES:
- Tolerance on 3 place decimals  $\pm 0.10(.25)$  except as noted.
  - Dimensions in inches over millimeters.
  - Dimensions marked with \* apply only at body.
  - All unmarked pins are case ground.

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

