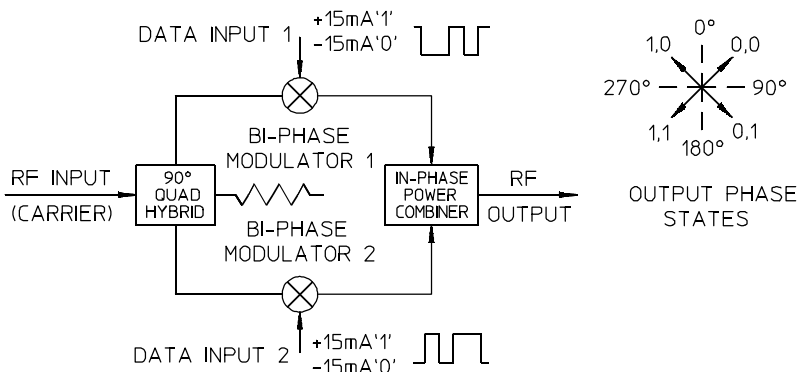


# JPM-2A & 4A Series

# QUADRAPHASE MODULATORS

5 to 1000 MHz / 10% and Octave Bandwidths / High Data Bandwidth / Low Conversion Loss / SMA



## PRINCIPAL SPECIFICATIONS

Model Number	Center Frequency, $f_0$	† Bandwidth RF Input
JPM-2A-***B	5 - 1000 MHz	10% of $f_0$
JPM-4A-***B	5 - 300 MHz	67% of $f_0$

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

## GENERAL SPECIFICATIONS

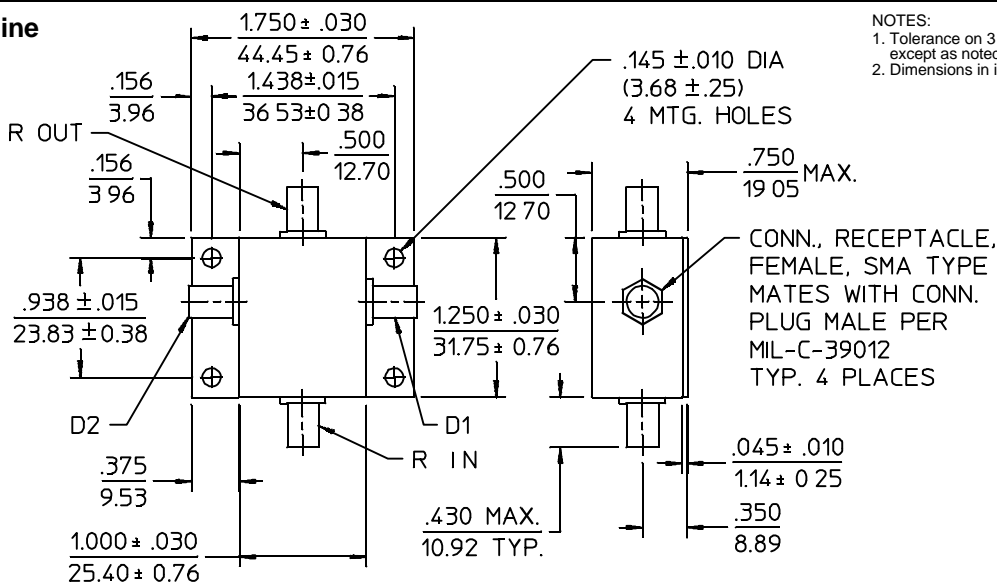
Amplitude Balance:	0.5 dB typ., 1.0 dB max.
Phase Balance:	$\pm 2^\circ$ typ., $\pm 5^\circ$ max.
Insertion Loss:	6 dB nom. 9 dB max.
RF Impedance:	50 $\Omega$ nom.
VSWR:	1.5:1 max.
RF Input Level:	0 dBm nom.
Data Modulation Bandwidth:	DC to †50 MHz nom.
Modulation Sequence Data Ports 1,2:	0,0: ref. $0^\circ$ 1,0: $-270^\circ$ 1,1: $-180^\circ$ 0,1: $-90^\circ$
Data Signals Levels Logic 1:	+15 mA nom.
Logic 0:	-15 mA nom.
Weight, nominal:	2 oz (57 g)
Operating Temp:	$-55^\circ$ to $+85^\circ\text{C}$

†RF Output and Data Bandwidths are typically much greater than specified.

### General Notes:

- Units in the JPM-A series of Quadrature Modulators are composed of two biphase modulators, a  $90^\circ$  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. All units in this series may be ordered with optional integrated TTL drivers.
- 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.

### Package Outline



### NOTES:

- Tolerance on 3 place decimals  $\pm .020(.51)$  except as noted.
- Dimensions in inches over millimeters.

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