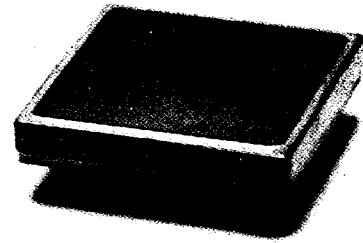
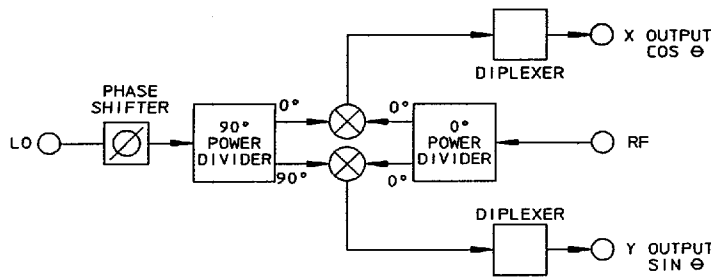




PCP-3S series

0° to 360° PHASE COMPARATORS
High Accuracy, Meri-Pac



- Catalog and Custom 10 to 500 MHz
- High Signal Isolation
- Low Profile, High Reliability PC Package

Model Number	Center Frequency, f_0	Usable Bandwidth, MHz
PCP-3S-70	70 MHz	66.5 - 73.5
PCP-3S-***B	10 - 500 MHz	$f_0 \pm 5\%$

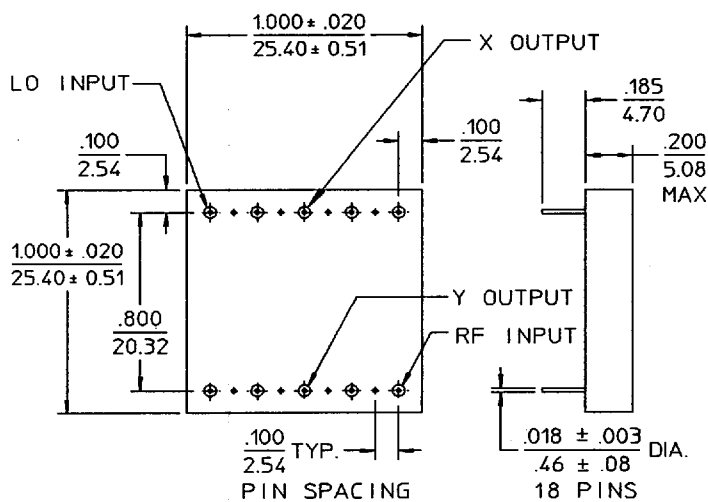
For complete Model Number replace *** with desired Center Frequency, f_0 in MHz.

MERRIMAC Phase Comparators provide two output voltages which together permit unambiguous phase comparisons to be made over the entire 0° to 360° phase shift range. One output is proportional to the *sine* of the phase difference between the reference (LO) and the unknown (RF) input signals; the other output is proportional to the *cosine*.

Basically, each phase comparator is an integrated assembly consisting of a power divider, two balanced mixers and a 90° quadrature hybrid. Two diplexers are also included which attenuate the second harmonic ($2f_0$) at the outputs.

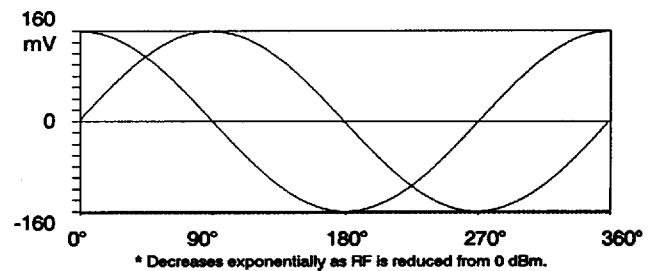
Custom designs with more tightly specified accuracies or other characteristics may be ordered for specific applications.

S-Meri-Pac™



NOTES: 1. Tolerance on 3 place decimals $\pm .010$ (.25) except as noted.
2. Dimensions in inches over millimeters.
3. All unmarked pins are case ground.

Output Voltage Characteristics*



COMMON SPECIFICATIONS

RF Characteristics

- Phase Difference Range: 0 - 360°
- VSWR (RF/LO): 2.0:1 max.
- LO Input Power (Ref.): +10 \pm 1 dBm
- RF Input Power (Unknown): +2 dBm max.
- Rise Time/Fall Time: 100 ns typ.
- Impedance (Unknown and Ref.): 50 Ω nom.

Video Output Characteristics

- "X" Output: $K \cos \theta$
- "Y" Output: $K \sin \theta$
- Peak Amplitude (RF = 0 dBm): 150 mV min. (into 150 Ω)
- Bandwidth: DC - 10% of RF
- Impedance (X and Y): 150 Ω nom.
- Signal Leakage (Isolation): 30 dB typ.

Output Accuracy

- Amplitude Balance: ± 5 mV max.
- Zero Crossing (In-Phase Inputs): $\pm 2^\circ$ @ f_0
- Phase Error, Arc tan θ : $\pm 5^\circ$ @ f_0

- Weight, nominal: 0.32 oz (9 g)
- Operating Temperature: -55 to +85°C

Contact MERRIMAC for further details. (11/91)

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