

PTB & PTM-84A Series 8-BIT DIGITAL PHASE SHIFTER

20 to 100 MHz / 1.4° Phase Resol. / Monotonic / Broadband, Switched Cable Design / BNC or SMA



PRINCIPAL SPECIFICATIONS

Calibration Frequency, f_c , MHz	Usable Bandwidth	SMA Model Number	BNC Model Number
20 to 100	$f_c \pm 40\%$	PTM-84A-**B	PTB-84A-**B

For complete model number replace ** with desired calibration frequency, f_c in MHz.

GENERAL SPECIFICATIONS

Phase Shift Range: 0° to 360° nom. @ f_c
 Least Significant Bit: 1.4°
 Most Significant Bit : 180°
 Accuracy at, f_c : $1/2$ of LSB typ. guaranteed monotonic

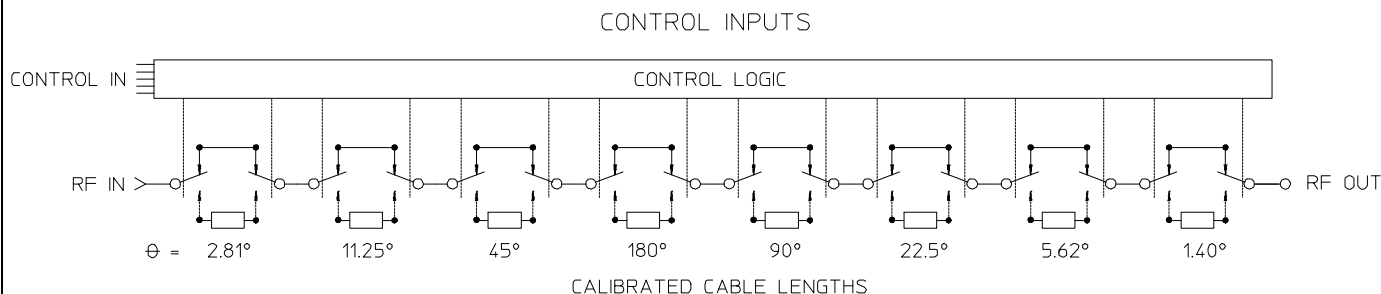
Impedance: 50Ω nom.
 VSWR: 1.3:1 max.
 Insertion Loss, I_L : 2.5 dB nom., 4 dB max.
 I_L , Variation vs. Cont: ± 0.2 dB @ mid band
 Max. Input Power: +10 dBm
 Control Input: 8 Bit TTL
 @ 2 loads max. per Bit

Logic Sense: Positive
 Supply Power: +5 VDC @ 250 mA max.
 Settling Time: $4 \mu s$ max.
 Weight, nominal: 10 oz (285 g)
 Operating Temp: -55° to $+85^\circ C$

General Notes:

1. PTB- & PTM-84A series phase shifters provide up to 360° of phase shift at a selected calibration frequency in 8 binary increments (255 steps) resulting in 1.4° resolution. Each step is generated with different cable lengths switched with PIN diodes. Advantages of the switched-line phase shifter over the digitally controlled analog type include potential for higher accuracy and smaller value of the Least Significant Bit (LSB).
2. Phase shifters based on cable switching are inherently stable and well matched. Phase shift can be set and held very closely in binary increments from the LSB to the MSB (Most Significant Bit).
3. This series can be calibrated up to 100 MHz and used to 180 MHz while the related PTM-84B series extends coverage to 500 MHz.

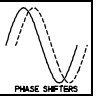
Functional Schematic Diagram



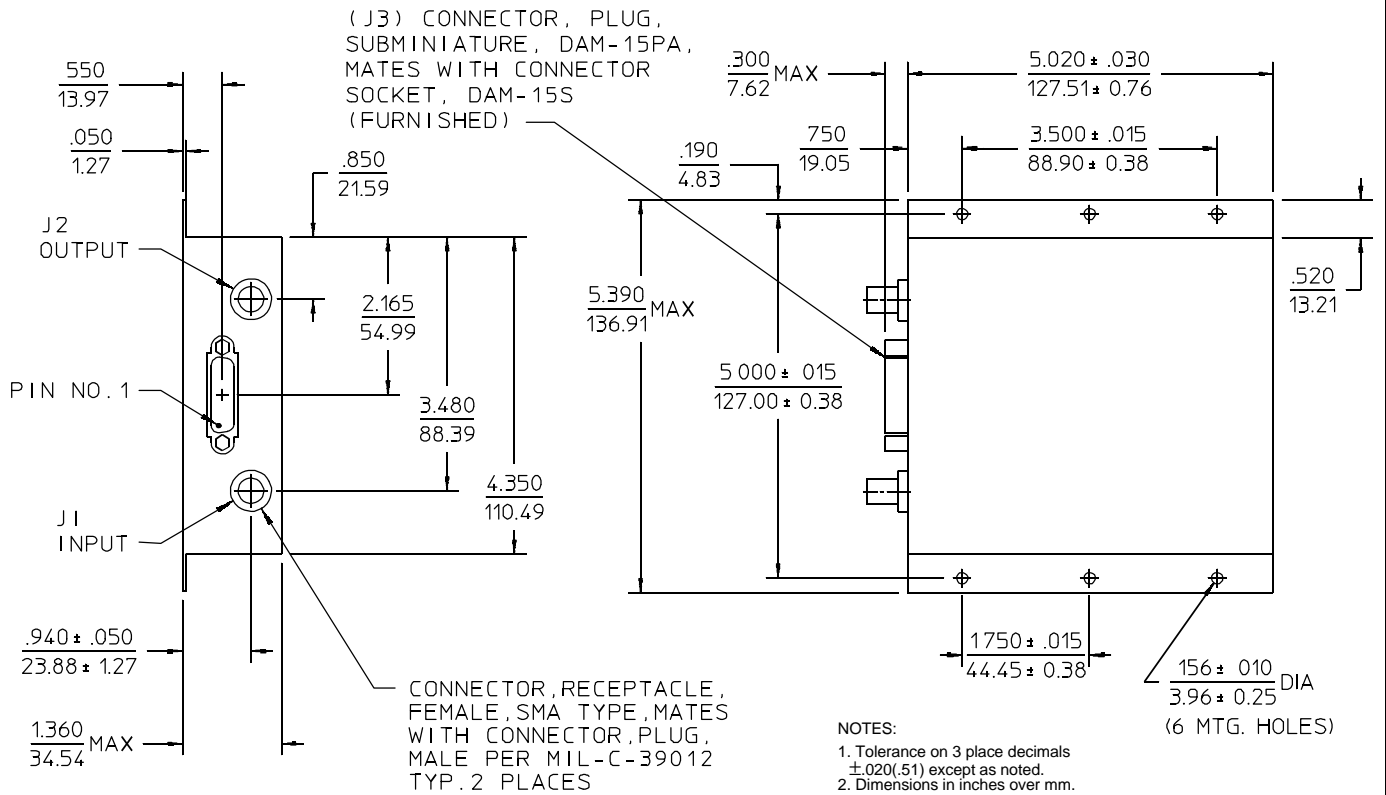
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Package Outline



	Bit	Phase Increment
LSB	1	1.40°
	2	2.81°
	3	5.62°
	4	11.25°
	5	22.5°
	6	45.0°
	7	90.0°
MSB	8	180.0°