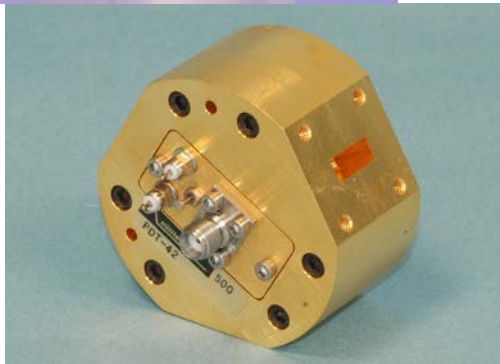


PIN SWITCHES (SPDT)



DESCRIPTION

Millitech series PDT broadband single-pole, double-throw (SPDT) PIN switches are available in seven waveguide bands from 18 to 100 GHz.

They are ideally suited for load switching and as duplexers and receiver protectors, offering wide bandwidth, high isolation, fast switching speeds, and low insertion loss. All switches are offered with integrated drivers, and can be operated with a standard TTL input.

FEATURES:

- High ON/OFF ratio
- Wide bandwidth
- Fast switching speed
- Standard TTL driver
- Custom sub-bands available

APPLICATIONS:

- Signal or load switching
- Duplexing
- Receiver front-end protection

Series PDT Y-configuration switches can be optimized for wide bandwidth (up to 10 GHz) or for improved isolation and insertion loss over smaller sub-bands.

Series PDT I-configuration switches are available in select commonly used bands. These offer fast, symmetrical switching speeds, increased isolation, and decreased insertion loss.

Millitech also offers series PSP single-pole, single-throw (SPST) switches and series PSH high speed switches. Please contact Millitech for information on series PS3 (SP3T) and PS4 (SP4T) models.

ELECTRICAL SPECIFICATIONS

Table 1 - Standard models available

Model Number	Frequency Range (GHz)* ¹	Insertion Loss (dB) (Max)	Isolation (dB)	Rise Time (ns)* ²	Fall Time (ns)* ²	Prop. Delay (ns)* ²	Max RF Power (dBm) (CW / Peak)	DC Bias* ³	Outline Drawing
PDT-42-022A0	18-26.5	1.8	22	20	300	10	+24 / +36	+/- 5V	Figure 2
PDT-28-033B0	26.5-40	1.0	30	10	10	10	+41 / +41	-30V* ⁴ / +5V	Figure 3
PDT-22-037B0	33-40	1.0	30	10	10	10	+41 / +41	-30V* ⁴ / +5V	TBA
PDT-22-038A0	33-43	2.0	22	20	300	10	+24 / +36	+/- 5V	Figure 2
PDT-22-041B0	33-50	1.4	30	10	10	10	+23 / +30	+/- 5V	TBA
PDT-22-043A0	40-45	2.0	22	20	300	10	+24 / +36	+/- 5V	Figure 2
PDT-22-045A0	43-47	2.0	22	20	300	10	+24 / +36	+/- 5V	Figure 2
PDT-22-048A0	45-50	2.0	22	20	300	10	+24 / +36	+/- 5V	Figure 2
PDT-19-044A0	40-47	2.5	22	20	300	10	+24 / +36	+/- 5V	Figure 2
PDT-19-050A0	47-53	2.5	22	20	300	10	+24 / +36	+/- 5V	Figure 2
PDT-19-057A0	53-60	2.5	22	20	300	10	+24 / +36	+/- 5V	Figure 2
PDT-15-055A0	50-60	2.5	22	20	300	10	+24 / +36	+/- 5V	Figure 2
PDT-15-065B0	55-75	2.5	30	10	10	10	TBD / TBD	+/- 5V	Figure 4
PDT-15-062A0	57-66	2.5	22	20	300	10	+24 / +36	+/- 5V	Figure 2
PDT-15-071A0	66-75	2.5	22	20	300	10	+24 / +36	+/- 5V	Figure 2
PDT-12-075B0	60-89	2.5	30	10	10	10	TBD / TBD	+/- 5V	Figure 4
PDT-12-063A0	60-66	3.0	19	20	300	10	+24 / +36	+/- 5V	Figure 2
PDT-12-068A0	65-71	3.0	19	20	300	10	+24 / +36	+/- 5V	Figure 2
PDT-12-074A0	71-76	3.0	19	20	300	10	+24 / +36	+/- 5V	Figure 2
PDT-12-079A0	76-81	3.0	19	20	300	10	+24 / +36	+/- 5V	Figure 2
PDT-12-084A0	81-86	3.0	19	20	300	10	+24 / +36	+/- 5V	Figure 2
PDT-12-088A0	85-90	3.0	19	20	300	10	+24 / +36	+/- 5V	Figure 2
PDT-10-080A0	75-85	3.0	18	20	300	10	+24 / +36	+/- 5V	Figure 2
PDT-10-090B0	80-100	2.5	30	10	10	10	TBD / TBD	+/- 5V	TBA
PDT-10-089A0	85-92	3.0	18	20	300	10	+24 / +36	+/- 5V	Figure 2
PDT-10-094A0	92-96	3.0	18	20	300	10	+24 / +36	+/- 5V	Figure 2
PDT-10-098A0	96-100	3.0	18	20	300	10	+24 / +36	+/- 5V	Figure 2

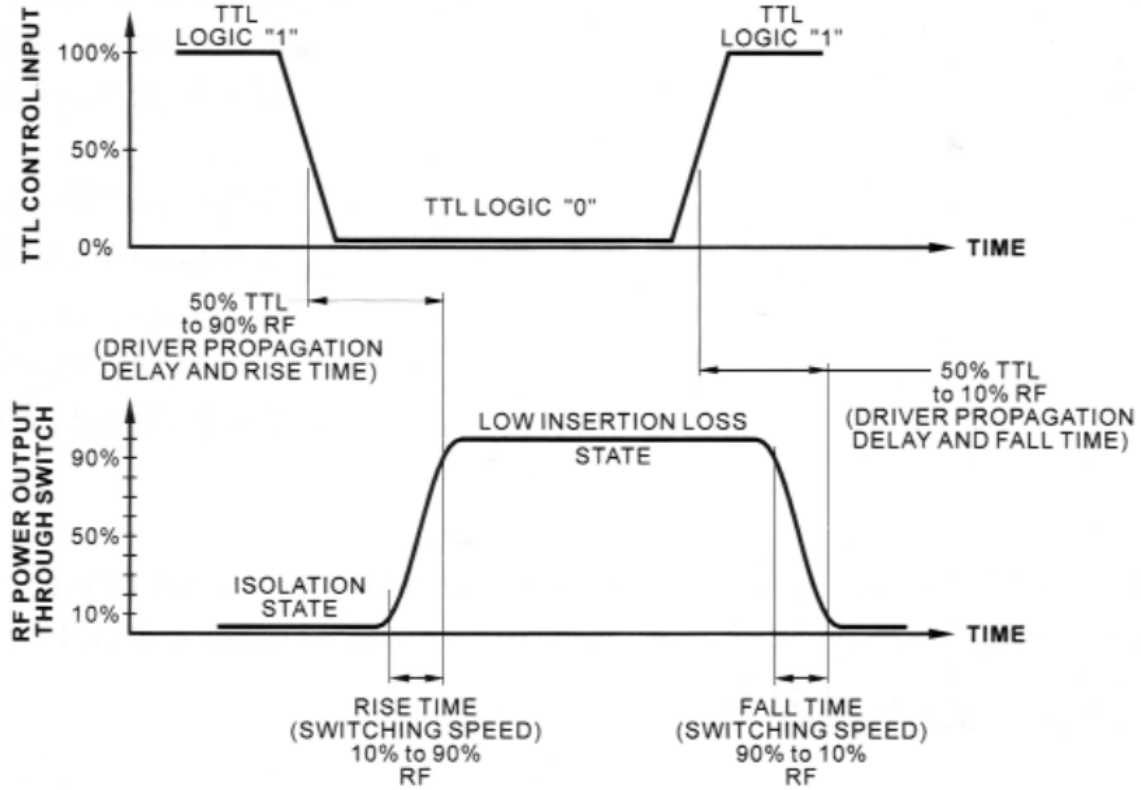
*1 - Narrow bandwidth units may be optimized for return loss and isolation, contact Millitech for customization details.

*2 - See figure 1 explanation of switching speeds.

*3 - Series PDT switches require both listed control voltages, as well as a TTL input to control the state.

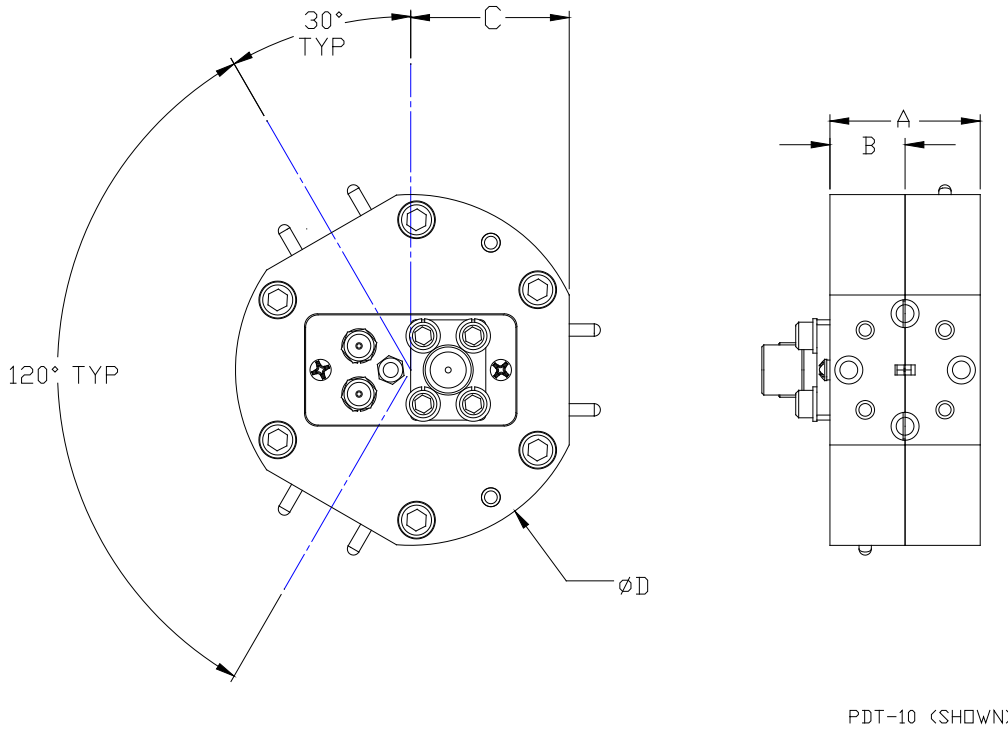
*4 - Negative voltage required to maintain stated isolation varies with incident RF power, consult Millitech for additional details.

FIGURE 1: SWITCHING SPEED TIMING DIAGRAM



OUTLINE DRAWINGS

FIGURE 2: PDT-XX OUTLINE DRAWING (Y-CONFIGURATION)



Model Number	PDT-42	PDT-22	PDT-19	PDT-15	PDT-12	PDT-10
A (in/mm)	1.00/25.4	1.13/28.7	1.13/28.7	0.75/19.0	0.75/19.0	0.75/19.0
B (in/mm)	0.5/12.7	0.56/14.2	0.56/14.2	0.38/9.6	0.38/9.6	0.38/9.6
C (in/mm)	1.06/26.9	0.67/17.0	0.67/17.0	0.79/20.0	0.79/20.0	0.79/20.0
D (in/mm)	0.96/23.6	1.75/44.4	1.75/44.4	1.75/44.4	1.75/44.4	1.75/44.4
Flange MIL.F-3922	/54-001*	/67B-006	/67B-007	/67B-008	/67B-009	/67B-010

* With #4-40 threaded holes, WR-42 model available only with rectangular flanges.

FIGURE 3: PDT-28 OUTLINE DRAWING (I-CONFIGURATION):

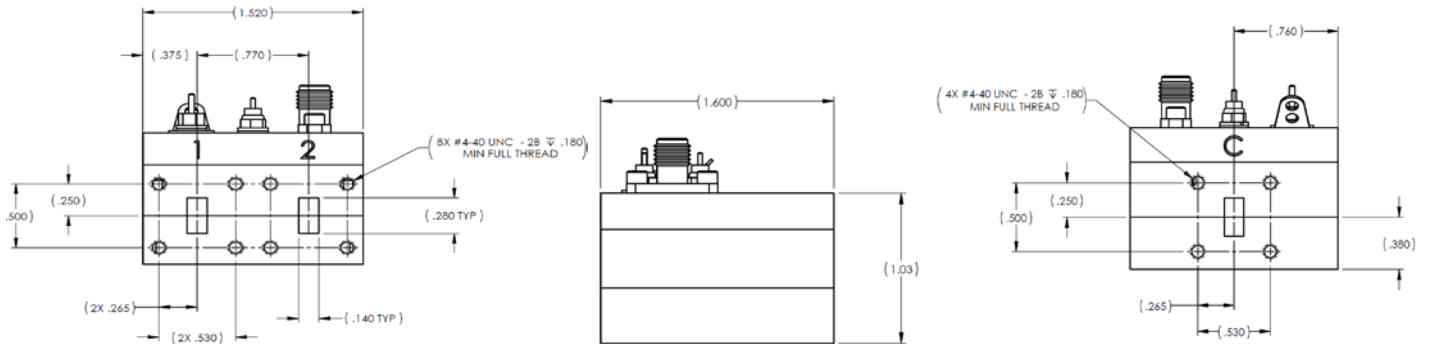
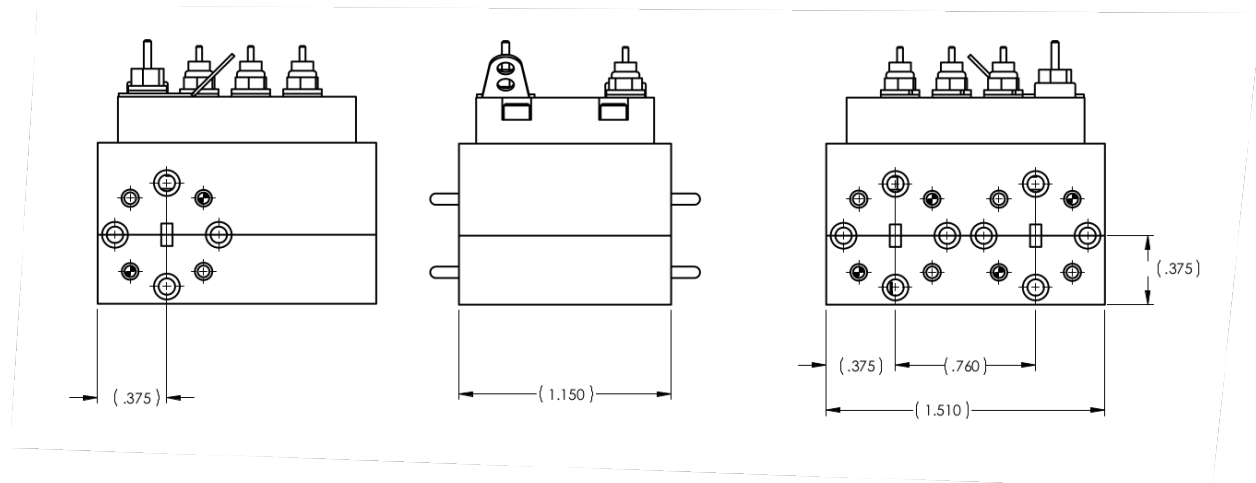


FIGURE 4: PDT-15 AND PDT-12 OUTLINE DRAWING (I-CONFIGURATION):



HOW TO ORDER

Specify Model Number PDT-XX-AAAAA
XX = Waveguide Band (WR – number)
AAAAA = See Table 1 for standard models or consult Millitech for custom optimized model. Y-configuration models can be tuned for any desired sub-band, up to 10 GHz maximum bandwidth.
Note: Previous line of PDT with standard isolation and in-line configuration is considered obsolete. Replacement parts are available upon request. Consult a representative.