

# 5-TAP SIP DELAY LINE

$$T_D/T_R = 3$$

## (SERIES 1505)

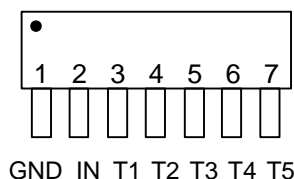
**data**  
**delay**  
**devices, inc.**



### FEATURES

- 5 taps of equal delay increment
- Very narrow device (SIP package)
- Stackable for PC board economy
- Low profile
- Epoxy encapsulated
- Meets or exceeds MIL-D-23859C

### PACKAGES



1505-xxz  
xx = Delay ( $T_D$ )  
z = Impedance Code

### FUNCTIONAL DESCRIPTION

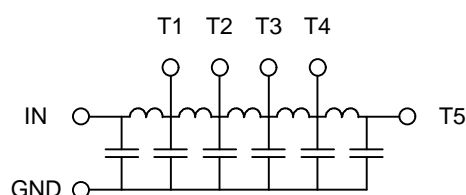
The 1505-series device is a fixed, single-input, five-output, passive delay line. The signal input (IN) is reproduced at the outputs (T1-T5) in equal increments. The delay from IN to T5 ( $T_D$ ) is given by the device dash number. The characteristic impedance of the line is given by the letter code that follows the dash number (See Table). The rise time ( $T_R$ ) of the line is 33% of  $T_D$ , and the 3dB bandwidth is given by  $1.05 / T_D$ .

### PIN DESCRIPTIONS

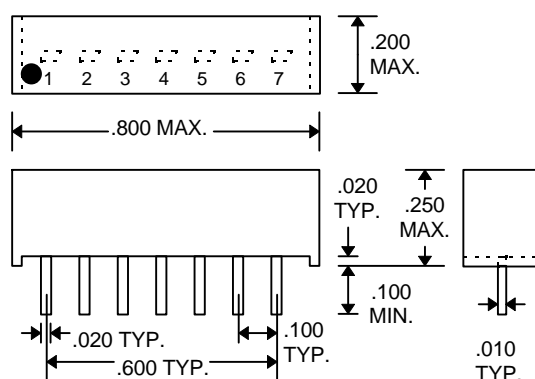
IN Signal Input  
T1-T5 Tap Outputs  
GND Ground

### SERIES SPECIFICATIONS

- Dielectric breakdown: 50 Vdc
- Distortion @ output: 10% max.
- Operating temperature:  $-55^\circ\text{C}$  to  $+125^\circ\text{C}$
- Storage temperature:  $-55^\circ\text{C}$  to  $+125^\circ\text{C}$
- Temperature coefficient: 100 PPM/ $^\circ\text{C}$



Functional Diagram



Package Dimensions

### DASH NUMBER SPECIFICATIONS

Part Number	$T_D$ (ns)	Delay per Tap (ns)	$T_R$ (ns)	Impedance ( $\Omega$ )	$R_{DC}$ ( $\Omega$ )
1505-5A	$5.0 \pm 1.0$	$1.0 \pm 0.3$	2.0	50	0.6
1505-10A	$10.0 \pm 1.0$	$2.0 \pm 0.4$	3.0	50	0.6
1505-20A	$20.0 \pm 1.5$	$4.0 \pm 0.6$	6.0	50	0.7
1505-30A	$30.0 \pm 2.0$	$6.0 \pm 1.0$	9.0	50	0.7
1505-40A	$40.0 \pm 2.5$	$8.0 \pm 1.5$	12.0	50	0.9
1505-50A	$50.0 \pm 3.0$	$10.0 \pm 1.8$	15.0	50	1.0
1505-60A	$60.0 \pm 3.0$	$12.0 \pm 2.0$	18.0	50	1.2
1505-70A	$70.0 \pm 3.5$	$14.0 \pm 2.0$	21.0	50	1.4
1505-80A	$80.0 \pm 4.0$	$16.0 \pm 2.0$	24.0	50	1.6
1505-90A	$90.0 \pm 5.0$	$18.0 \pm 3.0$	27.0	50	1.8
1505-100A	$100 \pm 5.0$	$20.0 \pm 3.0$	30.0	50	2.0
1505-5B	$5.0 \pm 1.0$	$1.0 \pm 0.3$	2.0	100	0.7
1505-10B	$10.0 \pm 1.0$	$2.0 \pm 0.4$	3.0	100	0.7
1505-20B	$20.0 \pm 1.5$	$4.0 \pm 0.6$	6.0	100	1.0
1505-30B	$30.0 \pm 2.0$	$6.0 \pm 1.0$	9.0	100	1.5
1505-40B	$40.0 \pm 2.5$	$8.0 \pm 1.5$	12.0	100	1.8
1505-50B	$50.0 \pm 3.0$	$10.0 \pm 1.8$	15.0	100	2.0
1505-60B	$60.0 \pm 3.0$	$12.0 \pm 2.0$	18.0	100	2.0
1505-75B	$75.0 \pm 3.5$	$15.0 \pm 2.0$	24.0	100	2.5
1505-100B	$100 \pm 5.0$	$20.0 \pm 3.0$	30.0	100	2.5
1505-30C	$30.0 \pm 2.0$	$6.0 \pm 1.0$	9.0	200	2.5
1505-50C	$50.0 \pm 3.0$	$10.0 \pm 1.8$	15.0	200	3.0
1505-60C	$60.0 \pm 3.0$	$12.0 \pm 2.0$	18.0	200	3.5
1505-100C	$100 \pm 5.0$	$20.0 \pm 3.0$	30.0	200	6.0
1505-50G	$50.0 \pm 3.0$	$10.0 \pm 1.8$	15.0	500	5.0
1505-100G	$100 \pm 5.0$	$20.0 \pm 3.0$	30.0	500	15.0
1505-200G	$200 \pm 10.0$	$40.0 \pm 6.0$	60.0	500	21.0
1505-300G	$300 \pm 15.0$	$60.0 \pm 8.0$	90.0	500	29.0

## PASSIVE DELAY LINE TEST SPECIFICATIONS

### TEST CONDITIONS

**INPUT:**

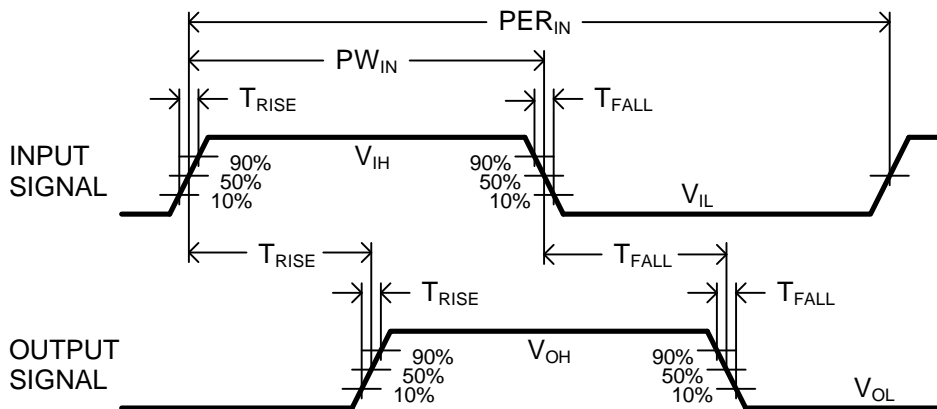
**Ambient Temperature:**  $25^{\circ}\text{C} \pm 3^{\circ}\text{C}$   
**Input Pulse:** High = 3.0V typical  
 Low = 0.0V typical  
**Source Impedance:** 50Ω Max.  
**Rise/Fall Time:** 3.0 ns Max. (measured at 10% and 90% levels)

**OUTPUT:**

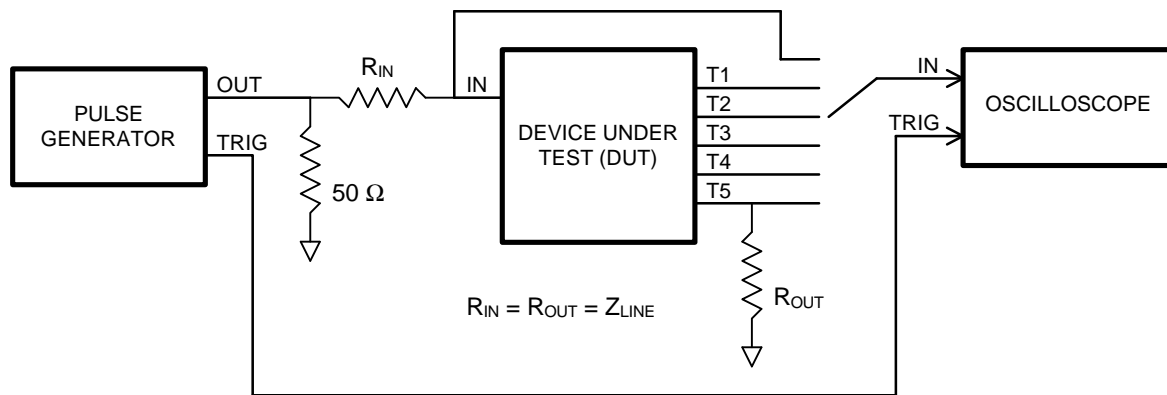
**R<sub>load</sub>:** 10MΩ  
**C<sub>load</sub>:** 10pf  
**Threshold:** 50% (Rising & Falling)

**Pulse Width (T<sub>D</sub> ≤ 75ns):** PW<sub>IN</sub> = 100ns  
**Period (T<sub>D</sub> ≤ 75ns):** PER<sub>IN</sub> = 1000ns  
**Pulse Width (T<sub>D</sub> > 75ns):** PW<sub>IN</sub> = 2 x T<sub>D</sub>  
**Period (T<sub>D</sub> > 75ns):** PER<sub>IN</sub> = 10 x T<sub>D</sub>

**NOTE:** The above conditions are for test only and do not in any way restrict the operation of the device.



**Timing Diagram For Testing**



**Test Setup**