

# 5-TAP SIP DELAY LINE

$$T_D/T_R = 3$$

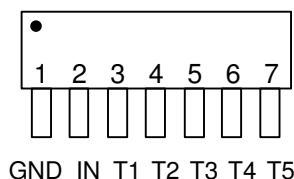
(SERIES 1505)



## 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

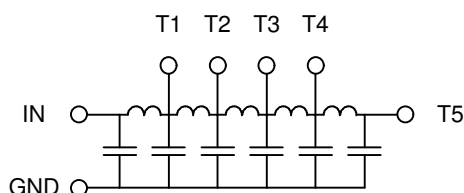
The 1505-series device is a fixed, single-input, five-output, passive delay line. The signal input (IN) is reproduced at the outputs (T1-T5) in equal increments. The delay from IN to T5 ( $T_D$ ) is given by the device dash number. The characteristic impedance of the line is given by the letter code 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

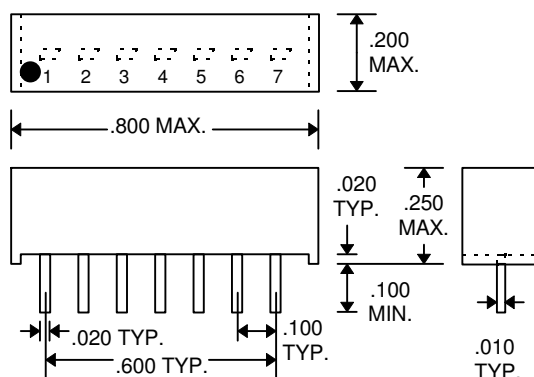
IN Signal Input  
T1-T5 Tap Outputs  
GND Ground

## SERIES SPECIFICATIONS

- Dielectric breakdown: 50 Vdc
- Distortion @ output: 10% max.
- Operating temperature: -55°C to +125°C
- Storage temperature: -55°C to +125°C
- Temperature coefficient: 100 PPM/°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:**  $50\Omega$  Max.  
**Rise/Fall Time:** 3.0 ns Max. (measured at 10% and 90% levels)

**Pulse Width ( $T_D \leq 75\text{ns}$ ):**  $PW_{IN} = 100\text{ns}$

**Period ( $T_D \leq 75\text{ns}$ ):**  $PER_{IN} = 1000\text{ns}$

**Pulse Width ( $T_D > 75\text{ns}$ ):**  $PW_{IN} = 2 \times T_D$

**Period ( $T_D > 75\text{ns}$ ):**  $PER_{IN} = 10 \times T_D$

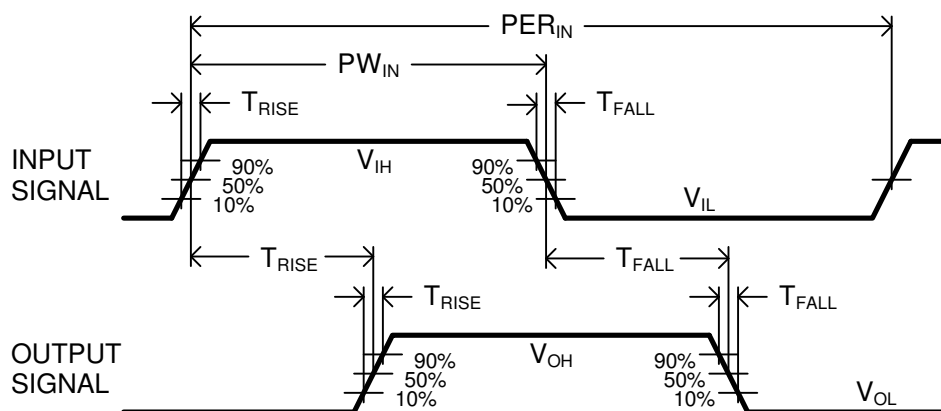
#### OUTPUT:

**$R_{load}$ :**  $10M\Omega$

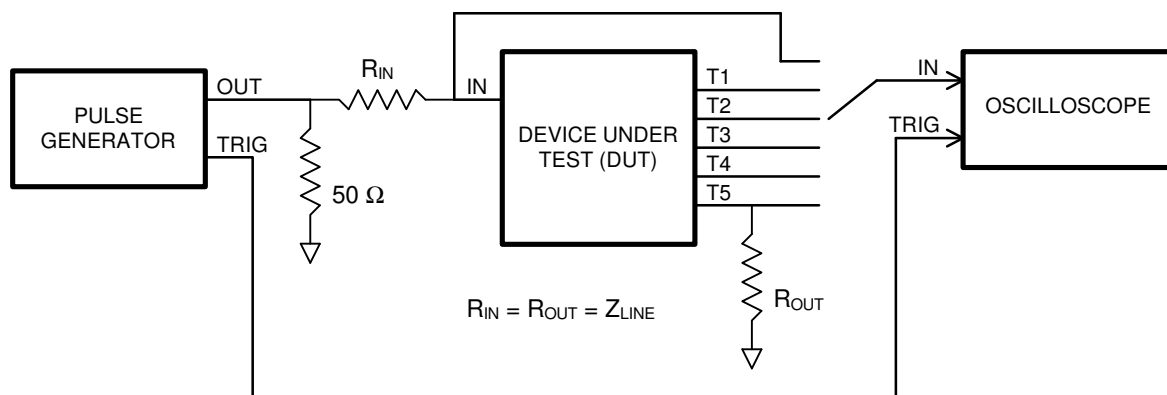
**$C_{load}$ :** 10pf

**Threshold:** 50% (Rising & Falling)

**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