

5-TAP SIP DELAY LINE

$$T_D/T_R = 3$$

(SERIES 1505)

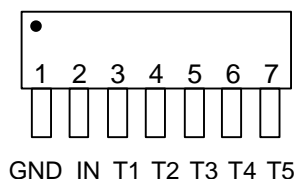
data
delay
devices, inc.



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

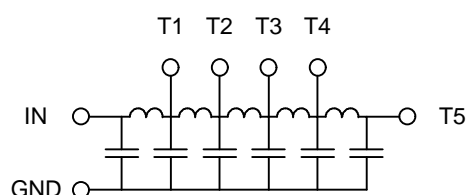
The 1505-series device is a fixed, single-input, five-output, passive delay line. The signal input (IN) is reproduced at the outputs (T1-T5) in equal increments. The delay from IN to T5 (T_D) is given by the device dash number. The characteristic impedance of the line is given by the letter code that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

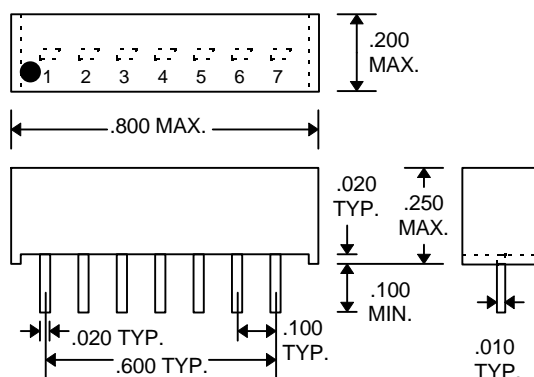
IN Signal Input
T1-T5 Tap Outputs
GND Ground

SERIES SPECIFICATIONS

- Dielectric breakdown: 50 Vdc
- Distortion @ output: 10% max.
- Operating temperature: -55°C to $+125^\circ\text{C}$
- Storage temperature: -55°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 (Ω) | R_{DC} (Ω) |
|-------------|----------------|--------------------|------------|------------------------|-----------------------|
| 1505-5A | 5.0 ± 1.0 | 1.0 ± 0.3 | 2.0 | 50 | 0.6 |
| 1505-10A | 10.0 ± 1.0 | 2.0 ± 0.4 | 3.0 | 50 | 0.6 |
| 1505-20A | 20.0 ± 1.5 | 4.0 ± 0.6 | 6.0 | 50 | 0.7 |
| 1505-30A | 30.0 ± 2.0 | 6.0 ± 1.0 | 9.0 | 50 | 0.7 |
| 1505-40A | 40.0 ± 2.5 | 8.0 ± 1.5 | 12.0 | 50 | 0.9 |
| 1505-50A | 50.0 ± 3.0 | 10.0 ± 1.8 | 15.0 | 50 | 1.0 |
| 1505-60A | 60.0 ± 3.0 | 12.0 ± 2.0 | 18.0 | 50 | 1.2 |
| 1505-70A | 70.0 ± 3.5 | 14.0 ± 2.0 | 21.0 | 50 | 1.4 |
| 1505-80A | 80.0 ± 4.0 | 16.0 ± 2.0 | 24.0 | 50 | 1.6 |
| 1505-90A | 90.0 ± 5.0 | 18.0 ± 3.0 | 27.0 | 50 | 1.8 |
| 1505-100A | 100 ± 5.0 | 20.0 ± 3.0 | 30.0 | 50 | 2.0 |
| 1505-5B | 5.0 ± 1.0 | 1.0 ± 0.3 | 2.0 | 100 | 0.7 |
| 1505-10B | 10.0 ± 1.0 | 2.0 ± 0.4 | 3.0 | 100 | 0.7 |
| 1505-20B | 20.0 ± 1.5 | 4.0 ± 0.6 | 6.0 | 100 | 1.0 |
| 1505-30B | 30.0 ± 2.0 | 6.0 ± 1.0 | 9.0 | 100 | 1.5 |
| 1505-40B | 40.0 ± 2.5 | 8.0 ± 1.5 | 12.0 | 100 | 1.8 |
| 1505-50B | 50.0 ± 3.0 | 10.0 ± 1.8 | 15.0 | 100 | 2.0 |
| 1505-60B | 60.0 ± 3.0 | 12.0 ± 2.0 | 18.0 | 100 | 2.0 |
| 1505-75B | 75.0 ± 3.5 | 15.0 ± 2.0 | 24.0 | 100 | 2.5 |
| 1505-100B | 100 ± 5.0 | 20.0 ± 3.0 | 30.0 | 100 | 2.5 |
| 1505-30C | 30.0 ± 2.0 | 6.0 ± 1.0 | 9.0 | 200 | 2.5 |
| 1505-50C | 50.0 ± 3.0 | 10.0 ± 1.8 | 15.0 | 200 | 3.0 |
| 1505-60C | 60.0 ± 3.0 | 12.0 ± 2.0 | 18.0 | 200 | 3.5 |
| 1505-100C | 100 ± 5.0 | 20.0 ± 3.0 | 30.0 | 200 | 6.0 |
| 1505-50G | 50.0 ± 3.0 | 10.0 ± 1.8 | 15.0 | 500 | 5.0 |
| 1505-100G | 100 ± 5.0 | 20.0 ± 3.0 | 30.0 | 500 | 15.0 |
| 1505-200G | 200 ± 10.0 | 40.0 ± 6.0 | 60.0 | 500 | 21.0 |
| 1505-300G | 300 ± 15.0 | 60.0 ± 8.0 | 90.0 | 500 | 29.0 |

PASSIVE DELAY LINE TEST SPECIFICATIONS

TEST CONDITIONS

INPUT:

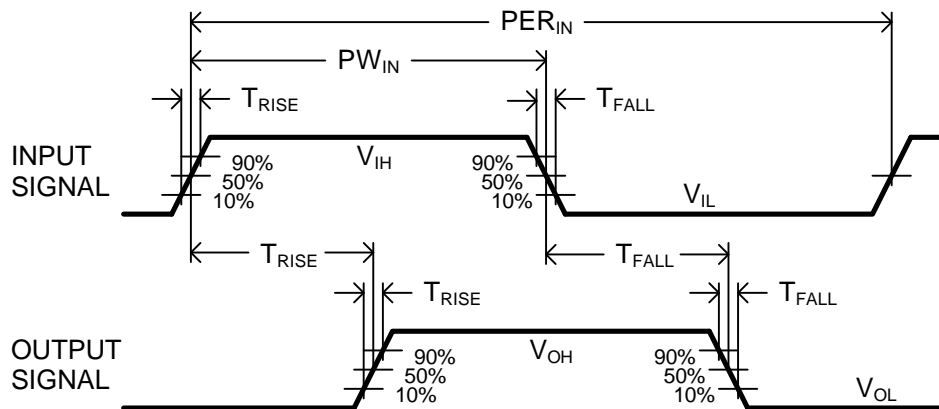
Ambient Temperature: $25^{\circ}\text{C} \pm 3^{\circ}\text{C}$
Input Pulse: High = 3.0V typical
 Low = 0.0V typical
Source Impedance: 50Ω Max.
Rise/Fall Time: 3.0 ns Max. (measured at 10% and 90% levels)

OUTPUT:

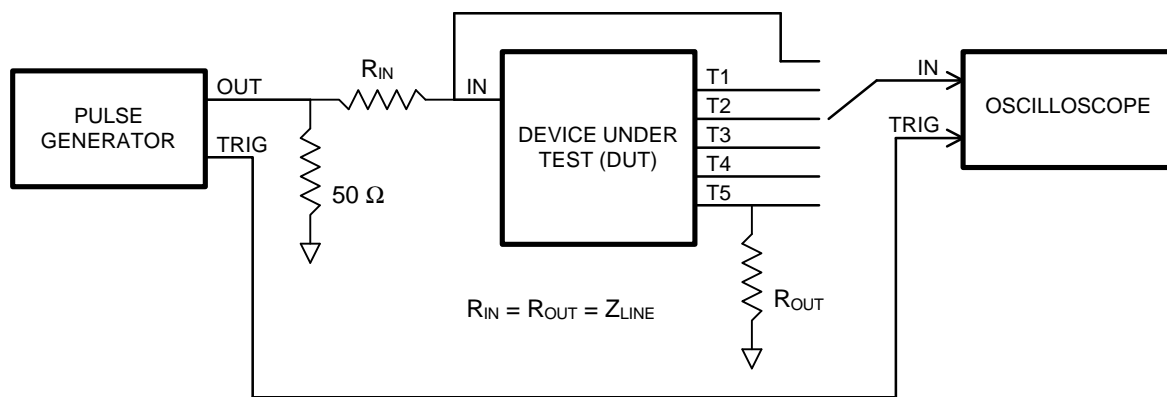
R_{load}: 10MΩ
C_{load}: 10pf
Threshold: 50% (Rising & Falling)

Pulse Width (T_D ≤ 75ns): PW_{IN} = 100ns
Period (T_D ≤ 75ns): PER_{IN} = 1000ns
Pulse Width (T_D > 75ns): PW_{IN} = 2 x T_D
Period (T_D > 75ns): PER_{IN} = 10 x T_D

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