

# FIXED SIP DELAY LINE

## $T_D/T_R = 10$

### (SERIES 1515)



#### FEATURES

- Fast rise time for high freq. applications
- Very narrow device (SIP package)
- Stackable for PC board economy
- Low profile
- Epoxy encapsulated
- Meets or exceeds MIL-D-23859C

#### PACKAGES



1515-xxz  
 xx = Delay ( $T_D$ )  
 z = Impedance Code

#### FUNCTIONAL DESCRIPTION

The 1515-series device is a fixed, single-input, single-output, passive delay line. The signal input (IN) is reproduced at the output (OUT), shifted by a time ( $T_D$ ) 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 10% of  $T_D$ , and the 3dB bandwidth is given by  $3.5 / T_D$ .

#### PIN DESCRIPTIONS

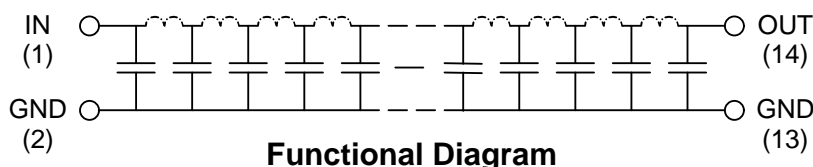
IN Signal Input  
 OUT Signal Output  
 GND Ground

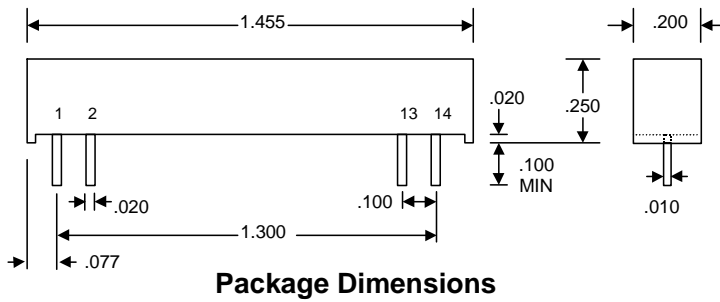
#### SERIES SPECIFICATIONS

- **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

#### DASH NUMBER SPECIFICATIONS

Part Number	Delay (ns)	Impedance ( $\Omega$ )	Ins. Loss (dB)	Cut-Off (MHz)
1515-10A	10 $\pm$ 1.0	50	< 0.5	350
1515-20A	20 $\pm$ 1.0	50	< 0.5	175
1515-30A	30 $\pm$ 1.5	50	< 0.5	116
1515-40A	40 $\pm$ 2.0	50	< 0.5	87
1515-50A	50 $\pm$ 2.5	50	< 0.5	70
1515-60A	60 $\pm$ 3.0	50	< 1.0	58
1515-70A	70 $\pm$ 3.5	50	< 1.0	50
1515-80A	80 $\pm$ 4.0	50	< 1.0	43
1515-90A	90 $\pm$ 4.5	50	< 1.0	38
1515-100A	100 $\pm$ 5.0	50	< 1.0	35
1515-10Y	10 $\pm$ 1.0	75	< 0.5	350
1515-20Y	20 $\pm$ 1.0	75	< 0.5	175
1515-30Y	30 $\pm$ 1.5	75	< 0.5	116
1515-40Y	40 $\pm$ 2.0	75	< 0.5	87
1515-50Y	50 $\pm$ 2.5	75	< 0.5	70
1515-60Y	60 $\pm$ 3.0	75	< 1.0	58
1515-70Y	70 $\pm$ 3.5	75	< 1.0	50
1515-10B	10 $\pm$ 1.0	100	< 0.5	350
1515-20B	20 $\pm$ 1.0	100	< 0.5	175
1515-30B	30 $\pm$ 1.5	100	< 0.5	116
1515-40B	40 $\pm$ 2.0	100	< 0.5	87
1515-50B	50 $\pm$ 2.5	100	< 0.5	70



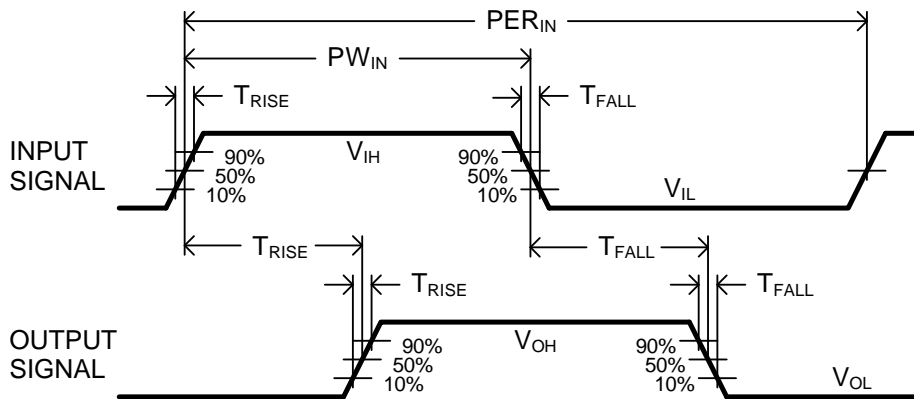


## PASSIVE DELAY LINE TEST SPECIFICATIONS

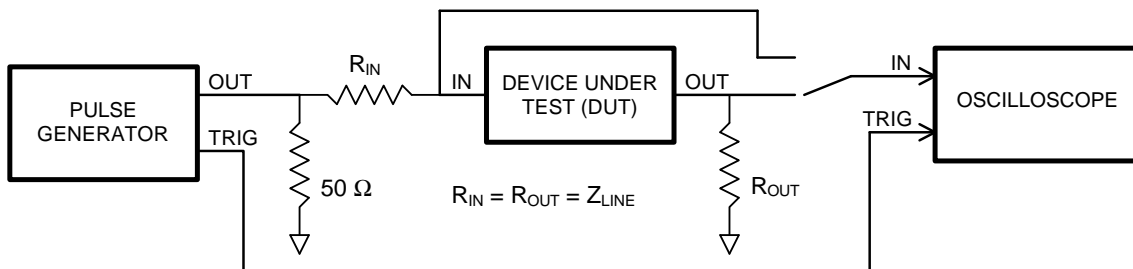
### TEST CONDITIONS

<b>INPUT:</b>		<b>OUTPUT:</b>	
<b>Ambient Temperature:</b>	25°C ± 3°C	<b>R<sub>load</sub>:</b>	10MΩ
<b>Input Pulse:</b>	High = 3.0V typical Low = 0.0V typical	<b>C<sub>load</sub>:</b>	10pf
<b>Source Impedance:</b>	50Ω Max.	<b>Threshold:</b>	50% (Rising & Falling)
<b>Rise/Fall Time:</b>	3.0 ns Max. (measured at 10% and 90% levels)		
<b>Pulse Width (TD ≤ 75ns):</b>	PW <sub>IN</sub> = 100ns		
<b>Period (TD ≤ 75ns):</b>	PER <sub>IN</sub> = 1000ns		
<b>Pulse Width (TD &gt; 75ns):</b>	PW <sub>IN</sub> = 2 x T <sub>D</sub>		
<b>Period (TD &gt; 75ns):</b>	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**