

FIXED SIP DELAY LINE

$T_D/T_R = 10$
(SERIES 1515)

data
delay
devices, inc.


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

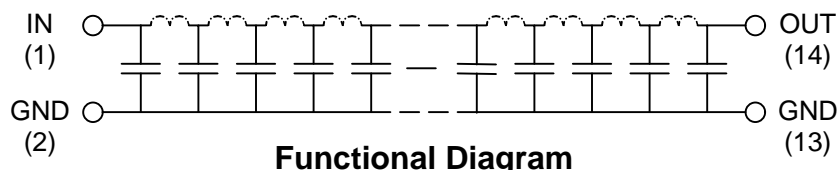
IN Signal Input
OUT Signal Output
GND Ground

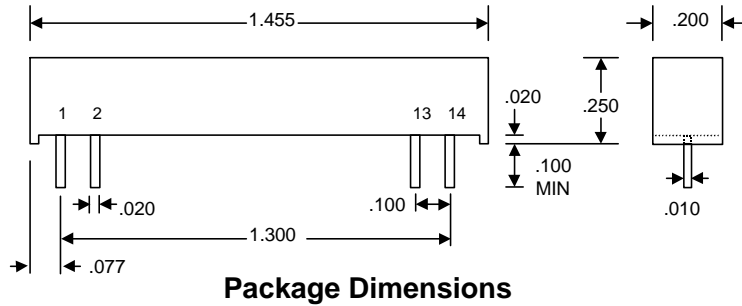
SERIES SPECIFICATIONS

- **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 (Ω) | 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 |



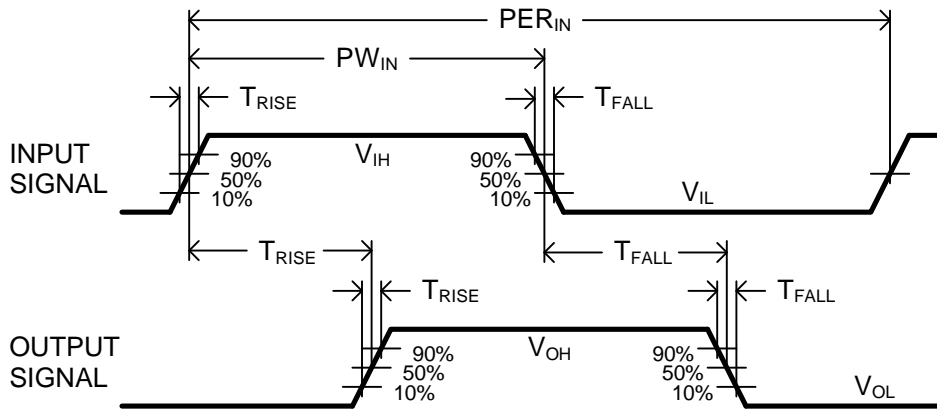


PASSIVE DELAY LINE TEST SPECIFICATIONS

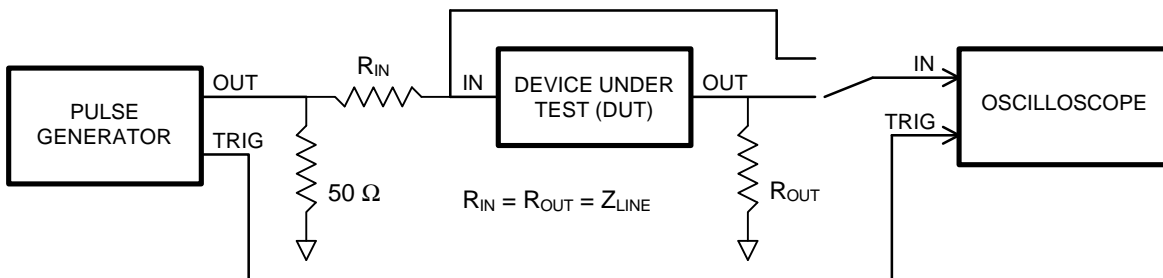
TEST CONDITIONS

| | | | |
|------------------------------------|--|--------------------------|------------------------|
| INPUT: | | OUTPUT: | |
| Ambient Temperature: | 25°C ± 3°C | R_{load}: | 10MΩ |
| Input Pulse: | High = 3.0V typical Low = 0.0V typical | C_{load}: | 10pf |
| Source Impedance: | 50Ω Max. | Threshold: | 50% (Rising & Falling) |
| Rise/Fall Time: | 3.0 ns Max. (measured at 10% and 90% levels) | | |
| Pulse Width (TD ≤ 75ns): | PW _{IN} = 100ns | | |
| Period (TD ≤ 75ns): | PER _{IN} = 1000ns | | |
| Pulse Width (TD > 75ns): | PW _{IN} = 2 x T _D | | |
| Period (TD > 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