FIXED DIP DELAY LINE

$T_D/T_R = 5$

(SERIES 1504)

## FEATURES
- Fast rise time for high frequency applications
- Delays as large as 1000ns available
- Low DC resistance
- Standard 16-pin DIP package
- Epoxy encapsulated
- Meets or exceeds MIL-D-23859C

## FUNCTIONAL DESCRIPTION
The 1504-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 20% of $T_D$, and the 3dB bandwidth is given by $1.75 / T_D$.

## 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

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Delay (ns)</th>
<th>Impedance (Ω)</th>
<th>RDC (Ω)</th>
<th>Part Number</th>
<th>Delay (ns)</th>
<th>Impedance (Ω)</th>
<th>RDC (Ω)</th>
<th>Part Number</th>
<th>Delay (ns)</th>
<th>Impedance (Ω)</th>
<th>RDC (Ω)</th>
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</thead>
<tbody>
<tr>
<td>1504-10A</td>
<td>10 ± 1.0</td>
<td>50</td>
<td>2.0</td>
<td>1504-25A</td>
<td>20 ± 1.0</td>
<td>50</td>
<td>1.0</td>
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<td></td>
</tr>
<tr>
<td>1504-25A</td>
<td>25 ± 1.3</td>
<td>50</td>
<td>1.0</td>
<td>1504-30A</td>
<td>30 ± 1.5</td>
<td>50</td>
<td>1.2</td>
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<tr>
<td>1504-30A</td>
<td>40 ± 2.0</td>
<td>50</td>
<td>1.5</td>
<td>1504-40A</td>
<td>45 ± 2.3</td>
<td>50</td>
<td>1.5</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>1504-40A</td>
<td>65 ± 3.0</td>
<td>50</td>
<td>1.5</td>
<td>1504-55A</td>
<td>75 ± 3.8</td>
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<td>1.8</td>
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</tr>
<tr>
<td>1504-75A</td>
<td>100 ± 5.0</td>
<td>50</td>
<td>2.0</td>
<td>1504-100A</td>
<td>1504-10B</td>
<td>10 ± 1.0</td>
<td>100</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>1504-20A</td>
<td>20 ± 1.0</td>
<td>100</td>
<td>1.0</td>
<td>1504-25B</td>
<td>20 ± 1.0</td>
<td>100</td>
<td>1.5</td>
<td></td>
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<td></td>
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<tr>
<td>1504-30B</td>
<td>25 ± 1.3</td>
<td>100</td>
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<td>1504-40B</td>
<td>40 ± 2.0</td>
<td>100</td>
<td>1.8</td>
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<td></td>
</tr>
<tr>
<td>1504-40B</td>
<td>45 ± 2.3</td>
<td>100</td>
<td>1.5</td>
<td>1504-55B</td>
<td>60 ± 3.0</td>
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<td>1504-55B</td>
<td>75 ± 3.8</td>
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<td>2.0</td>
<td>1504-100B</td>
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<td>4.0</td>
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<tr>
<td>1504-40B</td>
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<td>200</td>
<td>2.0</td>
<td>1504-55B</td>
<td>80 ± 4.0</td>
<td>200</td>
<td>6.3</td>
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<td>3.0</td>
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<td>200 ± 10.0</td>
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<td>3.8</td>
<td>1504-40B</td>
<td>200 ± 10.0</td>
<td>200</td>
<td>6.0</td>
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<td>1504-55B</td>
<td>250 ± 12.5</td>
<td>200</td>
<td>7.3</td>
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</table>

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DATA DELAY DEVICES, INC.

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3 Mt. Prospect Ave. Clifton, NJ 07013
PASSIVE DELAY LINE TEST SPECIFICATIONS

**TEST CONDITIONS**

**INPUT:**
- Ambient Temperature: 25°C ± 3°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)
- Pulse Width (TD <= 75ns): \( PW_{IN} = 100\text{ns} \)
- Period (TD <= 75ns): \( PER_{IN} = 1000\text{ns} \)
- Pulse Width (TD > 75ns): \( PW_{IN} = 2 \times T_D \)
- Period (TD > 75ns): \( PER_{IN} = 10 \times T_D \)

**OUTPUT:**
- \( R_{load} \): 10MΩ
- \( C_{load} \): 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.

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**Package Dimensions**

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**Timing Diagram For Testing**

**Test Setup**