

# 7-BIT ADJUSTABLE, HIGH B.W. PASSIVE DELAY LINE (SERIES 3D2700)



## FEATURES

- Delay adjustable in 127 steps
- Delay step sizes of 0.5ns to 3ns available
- Fast rise time for high frequency applications
- I/O reversible
- BNC female connectors
- Meets or exceeds MIL-D-23859C

## PACKAGE



## FUNCTIONAL DESCRIPTION

The 3D2700 device is a single-input, single-output, passive delay line. The signal input (IN) is reproduced at the output (OUT), shifted by a time ( $T_D$ ) which can be adjusted via seven binary-weighted switches. The value of these switches, multiplied by the device dash number, determines the device delay (referenced to the delay with all the switches off). The device is offered in 50-ohm and 75-ohm impedance versions.

## PIN DESCRIPTIONS

IN Signal Input (BNC)  
OUT Signal Output (BNC)

## SERIES SPECIFICATIONS

- **Delay Tolerance:** 2%
- **Minimum Delay (all switches off):** 2ns
- **Impedance:** 50 $\Omega$  or 75 $\Omega$
- **Ripple in pass-band:** Approx. 0.2dB
- **Dielectric breakdown:** 100 VDC
- **Operating temp:** -65 $^{\circ}$ C to +125 $^{\circ}$ C
- **Temperature coeff:** <100 PPM/ $^{\circ}$ C
- **Case dimensions:** 4.13" x 2.68" x 1.66"  
(10.5cm x 6.8cm x 4.2cm)

## DASH NUMBER SPECIFICATIONS

Part Number	Delay Step (ns)	Delay Range (ns)	Impedance ( $\Omega$ )	3dB B.W. (MHz)
3D2700-0.5A	0.5	63.5	50	30
3D2700-1A	1.0	127.0	50	28
3D2700-1.5A	1.5	190.5	50	26
3D2700-2A	2.0	254.0	50	24
3D2700-2.5A	2.5	317.5	50	22
3D2700-3A	3.0	381.0	50	20
3D2700-0.5Y	0.5	63.5	75	30
3D2700-1Y	1.0	127.0	75	28
3D2700-1.5Y	1.5	190.5	75	26
3D2700-2Y	2.0	254.0	75	24
3D2700-2.5Y	2.5	317.5	75	22
3D2700-3Y	3.0	381.0	75	20

Notes: 3db BW measured at maximum delay

Larger dash numbers are available in larger form factors. Please contact factory for details.

©2014 Data Delay Devices

## PASSIVE DELAY LINE TEST SPECIFICATIONS

### TEST CONDITIONS

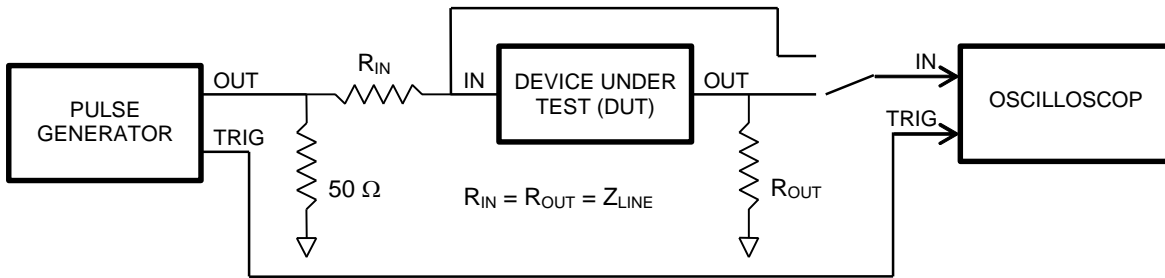
**INPUT:**

**Ambient Temperature:**  $25^{\circ}\text{C} \pm 3^{\circ}\text{C}$   
**Input Pulse:** High = +0.5V typical  
 Low = -0.5V typical  
**Source Impedance:**  $50\Omega$  Max.  
**Rise/Fall Time:** 3.0 ns Max. (measured at 10% and 90% levels)  
**Pulse Width:**  $PW_{IN} = 100\text{ns}$   
**Period:**  $PER_{IN} = 1000\text{ns}$

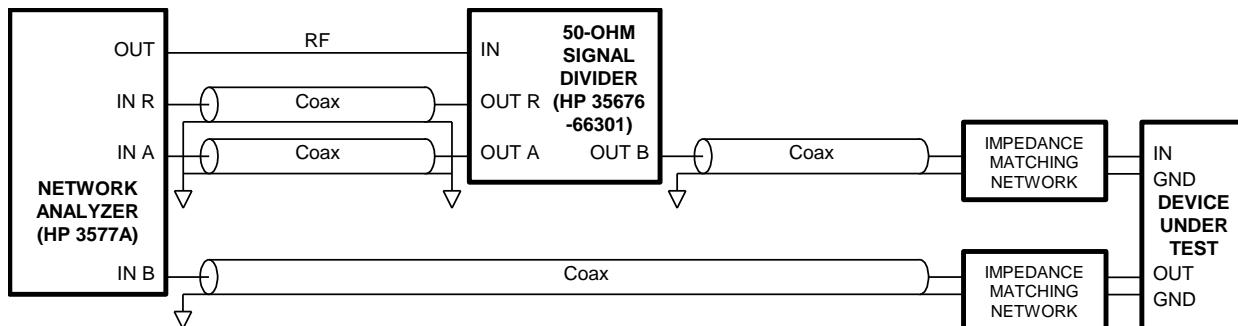
**OUTPUT:**

**$R_{load}$ :**  $10\text{M}\Omega$   
 **$C_{load}$ :** 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.



**Test Setup (Delay Measurements)**



**Test Setup (Frequency Response)**