

# FIXED SIP DELAY LINE

## $T_R < 1\text{ns}$

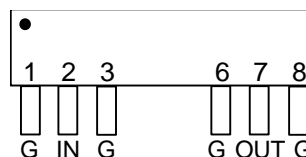
### (SERIES 2020 & 2021)



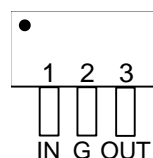
#### FEATURES

- Microstrip Technology
- Fast rise time for high frequency applications
- Delay available from 100ps to 2500ps
- Very narrow device (SIP package)
- Stackable for PC board economy
- Epoxy encapsulated
- Meets or exceeds MIL-D-23859C

#### PACKAGES



2020-xx  
xx = Delay ( $T_D$ )



2021-xx  
xx = Delay ( $T_D$ )

#### FUNCTIONAL DESCRIPTION

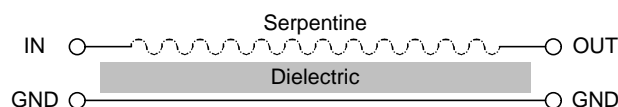
The 2020- and 2021-series devices are fixed, single-input, single-output, passive delay lines. The signal input (IN) is reproduced at the output (OUT), shifted by a time ( $T_D$ ) given by the device dash number. The characteristic impedance of the lines is nominally 50 ohms. The rise time ( $T_R$ ) of the lines is no more than 1ns, resulting in a 3dB bandwidth of at least 350MHz.

#### PIN DESCRIPTIONS

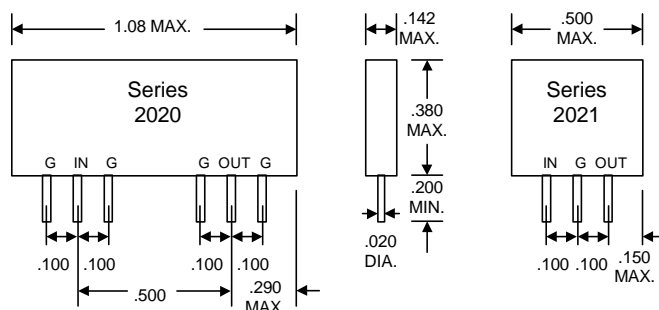
IN Signal Input  
OUT Signal Output  
G Ground

#### SERIES SPECIFICATIONS

- **Tolerance:** 2% or 10ps
- **Bandwidth:** >350MHz
- **Ripple in pass-band:** Approx. 0.2dB
- **Dielectric breakdown:** >500 Vdc
- **Operating temperature:** -65°C to +125°C
- **Temperature coefficient:** <100 PPM/°C



Functional Diagram



Package Dimensions

#### DASH NUMBER SPECIFICATIONS

Part Number	Part Number	Delay (ps)	Imped. (Ω)
2021-100	2020-100	100 ± 10	50
2021-150	2020-150	150 ± 10	50
2021-200	2020-200	200 ± 10	50
2021-250	2020-250	250 ± 10	50
2021-300	2020-300	300 ± 10	50
2021-350	2020-350	350 ± 10	50
2021-400	2020-400	400 ± 10	50
2021-500	2020-500	500 ± 10	50
2021-600	2020-600	600 ± 12	50
2021-700	2020-700	700 ± 14	50
	2020-800	800 ± 16	50
	2020-900	900 ± 18	50
	2020-1000	1000 ± 20	50
	2020-1100	1100 ± 22	50
	2020-1200	1200 ± 24	50
	2020-1300	1300 ± 26	50
	2020-1400	1400 ± 28	50
	2020-1500	1500 ± 30	50
	2020-1600	1600 ± 32	50
	2020-1750	1750 ± 35	50

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## PASSIVE DELAY LINE TEST SPECIFICATIONS

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### TEST CONDITIONS

**INPUT:**

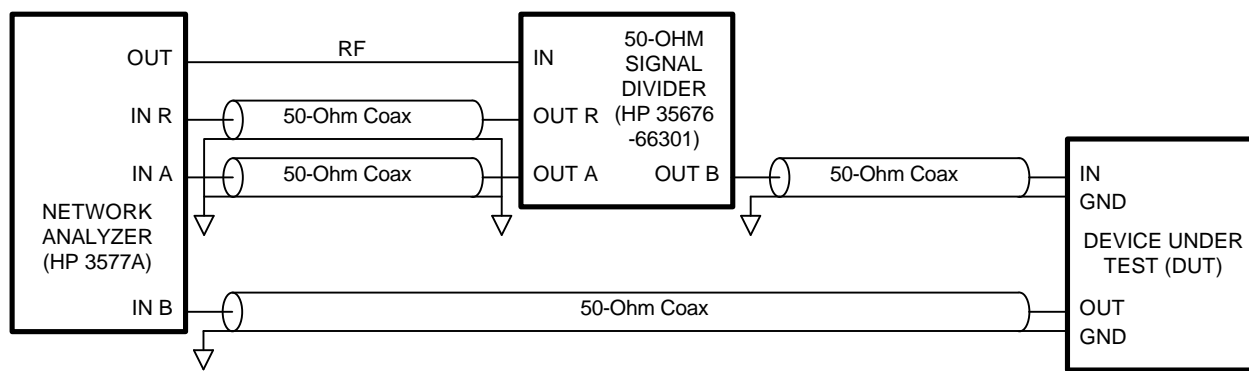
**Ambient Temperature:**  $25^{\circ}\text{C} \pm 3^{\circ}\text{C}$   
**Source Amplitude:** 0dBm typical  
**Source Impedance:**  $50\Omega$  nominal  
**Input Frequency:** 27.777778MHz

**OUTPUT:**

**Z<sub>load</sub>:**  $50\Omega$  nominal

Network analyzer is used in phase measurement mode, normalized with a wire jumper between input and output of DUT test socket. Delay is related to phase lag with proportionality constant of 100ps/deg.

**NOTE:** The above conditions are for test only and do not in any way restrict the operation of the device.



**Test Setup**