

# FIXED SIP DELAY LINE

## $T_R < 1ns$

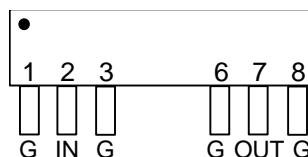
### (SERIES 2020 & 2021)



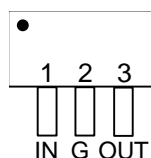
#### FEATURES

- 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

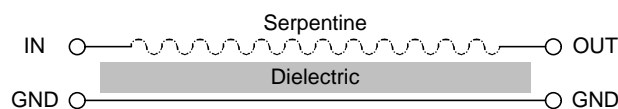
The 2020- and 2021-series devices are fixed, single-input, single-output, passive delay lines. The signal input (IN) is reproduced at the output (OUT), shifted by a time ( $T_D$ ) given by the device dash number. The characteristic impedance of the lines is nominally 50 ohms. The rise time ( $T_R$ )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

#### PIN DESCRIPTIONS

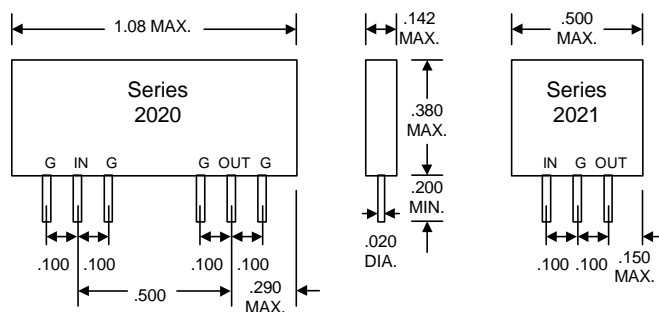
IN Signal Input  
OUT Signal Output  
G Ground

#### 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. ( $\Omega$ )
2021-100	2020-100	100 $\pm$ 10	50
2021-150	2020-150	150 $\pm$ 10	50
2021-200	2020-200	200 $\pm$ 10	50
2021-250	2020-250	250 $\pm$ 10	50
2021-300	2020-300	300 $\pm$ 10	50
2021-350	2020-350	350 $\pm$ 10	50
2021-400	2020-400	400 $\pm$ 10	50
2021-500	2020-500	500 $\pm$ 10	50
2021-600	2020-600	600 $\pm$ 12	50
2021-700	2020-700	700 $\pm$ 14	50
	2020-800	800 $\pm$ 16	50
	2020-900	900 $\pm$ 18	50
	2020-1000	1000 $\pm$ 20	50
	2020-1100	1100 $\pm$ 22	50
	2020-1200	1200 $\pm$ 24	50
	2020-1300	1300 $\pm$ 26	50
	2020-1400	1400 $\pm$ 28	50
	2020-1500	1500 $\pm$ 30	50
	2020-1600	1600 $\pm$ 32	50
	2020-1750	1750 $\pm$ 35	50

## PASSIVE DELAY LINE TEST SPECIFICATIONS

### TEST CONDITIONS

**INPUT:**

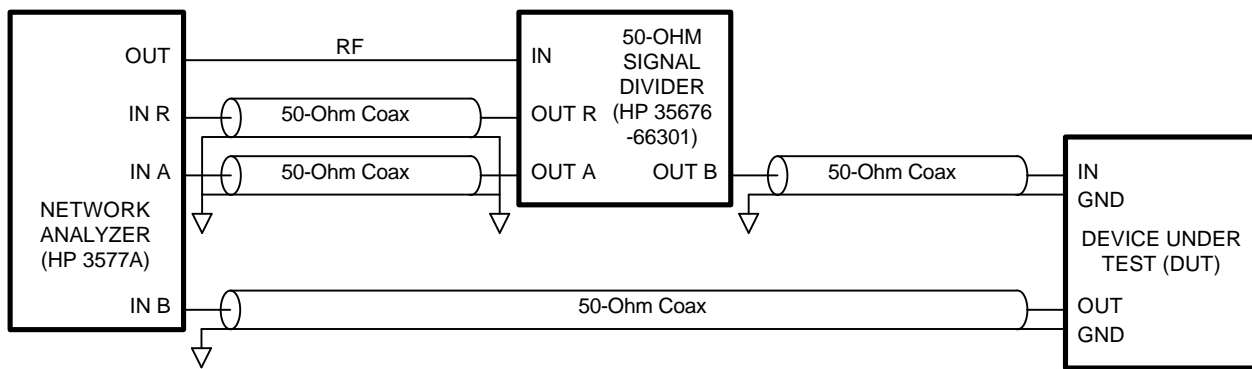
**Ambient Temperature:** 25°C ± 3°C  
**Source Amplitude:** 0dBm typical  
**Source Impedance:** 50Ω nominal  
**Input Frequency:** 27.777778MHz

**OUTPUT:**

**Z<sub>load</sub>:** 50Ω 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**