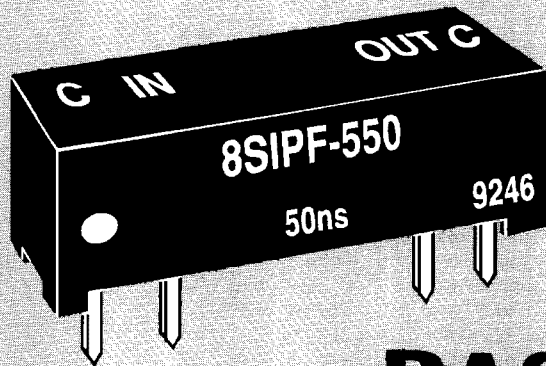


# EC<sup>2</sup>



## PASSIVE DELAY LINE

*low profile*

# SIP

# LUMPED CONSTANT

- Analog input and output
- Delays stable and precise
- 8-pin SIP package (.230 high)
- Available in delays from 1 to 100ns
- Precise, fixed delay
- Available in impedances of 50 and 100 ohms

## design notes

The "SIP Series" Lumped Constant Passive Delay Lines developed by Engineered Components Company have been designed to provide precise delays for analog delay line applications. These delay lines provide excellent delay accuracy, low DCR, low attenuation and low distortion.

These delay lines are offered in 70 models with delays from 1 to 100ns. Delay time is measured at the 50% point on the leading edge. Accuracies are maintained as shown under "Operating Characteristics." Temperature coefficient of delay is less than 75 ppm/°C over the operating temperature range of -55 to +125°C.

"Sip Series" LC delay lines are intended for use in most analog applications; they are also compatible with the low signal levels of TTL and ECL. These delay lines find extensive use in providing the required delay timing functions necessary in radar, computer, communication, testing and instrument applications.

Construction of the "SIP Series" utilizes miniature inductors and monolithic ceramic capacitors to provide the utmost in miniaturization and reliability. The MTBF on these delay lines, when calculated per MIL-HDBK-217, for 50°C ground fixed environment and with 5V DC applied, is in excess of 12 million hours.

The "SIP Series" delay lines are packaged in an 8-pin SIP housing, molded of flame-proof Diallyl Phthalate per MIL-M-14, Type SDG-F. These delay lines are designed to meet the applicable portions of MIL-D-23859, and they are capable of meeting the environmental requirements of MIL-STD-202 for moisture resistance, vibration, temperature cycling, humidity and life. Flat metal leads meet the solderability requirements of MIL-STD-202, Method 208. Corner standoffs on the housing provide positive standoff from the printed circuit board to permit solder-fillet formation and flush cleaning of solder-flux residues for improved reliability.

Marking consists of manufacturer's name, part number, terminal identification and date code of manufacture. All marking is applied by silk screen process using white epoxy paint in accordance with MIL-STD-130, to meet the permanency of identification required by MIL-STD-202, Method 215.

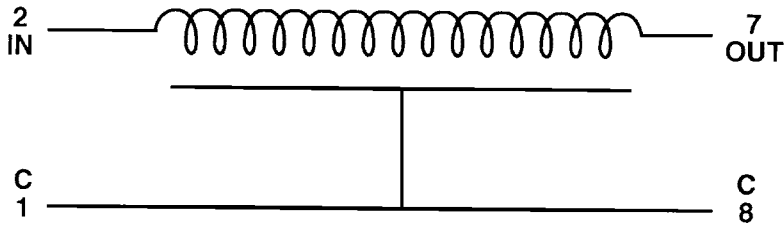
# EC<sup>2</sup>

## engineered components company

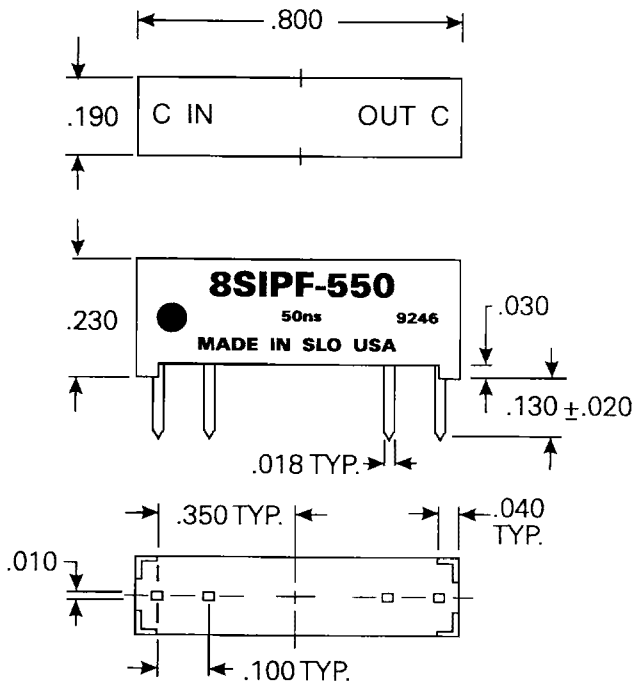
3580 Sacramento Drive, P.O. Box 8121, San Luis Obispo, CA 93403-8121

Phone: (805) 544-3800

**BLOCK DIAGRAM IS SHOWN BELOW**



**MECHANICAL DETAIL IS SHOWN BELOW**



**TEST CONDITIONS**

1. All measurements are made at 25°C.
2. Test procedures in accordance with MIL-D-23859.

**OPERATING SPECIFICATIONS**

Total delay tolerance: . . . . .	See tabulations
Rise time, maximum: . . . . .	See tabulations
Impedance: . . . . .	50 or 100 ohms
Impedance tolerance: . . . . .	±10%
DC resistance, maximum: . . . . .	See tabulations
Attenuation, maximum: . . . . .	.5 db
Distortion, maximum: . . . . .	±5%
Overshoot, maximum: . . . . .	10%
Working voltage, maximum: . . . . .	25V DC
Dielectric strength: . . . . .	100V DC @ 50ua
Insulation resistance, minimum: . . . . .	10,000 megohms @ 100V DC

**PART NUMBER TABLE**

PART NO.	DELAY TIME (ns)	RISE TIME (ns)	IMPEDANCE	DCR (ohms)
8SIPF-501	1 ± 0.2	2.0	↑ 50	0.2
8SIPF-502	2 ± 0.2	2.3		0.3
8SIPF-503	3 ± 0.3	2.7		0.4
8SIPF-504	4 ± 0.4	3.0		0.5
8SIPF-505	5 ± 0.5	3.3		0.5
8SIPF-506	6 ± 0.5	3.7		0.5
8SIPF-507	7 ± 0.5	4.0		0.5
8SIPF-508	8 ± 0.6	4.3		0.5
8SIPF-509	9 ± 0.6	4.7		0.6
8SIPF-510	10 ± 0.7	5.0		0.8
8SIPF-511	11 ± 0.7	5.4		0.8
8SIPF-512	12 ± 0.7	5.7		0.8
8SIPF-513	13 ± 0.8	6.1		0.8
8SIPF-514	14 ± 0.8	6.5		0.8
8SIPF-515	15 ± 0.8	6.8		0.8
8SIPF-516	16 ± 0.8	7.0		0.8
8SIPF-517	17 ± 0.9	7.4		1.0
8SIPF-518	18 ± 1.0	7.7		1.0
8SIPF-519	19 ± 1.0	8.1		1.1
8SIPF-520	20 ± 1.0	8.5		1.1
8SIPF-522	22 ± 1.0	9.0	1.1	
8SIPF-524	24 ± 1.0	10.0	1.1	
8SIPF-525	25 ± 1.1	10.3	1.2	
8SIPF-526	26 ± 1.2	10.5	1.2	
8SIPF-528	28 ± 1.2	11.0	1.2	
8SIPF-530	30 ± 1.5	12.0	1.4	
8SIPF-535	35 ± 1.5	13.5	1.6	
8SIPF-540	40 ± 2.0	15.0	2.6	
8SIPF-545	45 ± 2.0	16.5	2.6	
8SIPF-550	50 ± 2.5	18.5	2.8	
8SIPF-560	60 ± 2.5	22.0	3.0	
8SIPF-570	70 ± 3.0	25.0	3.2	
8SIPF-580	80 ± 3.0	28.0	3.5	
8SIPF-590	90 ± 4.0	32.0	5.2	
8SIPF-5100	100 ± 4.0	35.0	50	5.6
8SIPF-1001	1 ± 0.2	2.0	↑ 100	0.2
8SIPF-1002	2 ± 0.2	2.3		0.3
8SIPF-1003	3 ± 0.3	2.7		0.4
8SIPF-1004	4 ± 0.4	3.0		0.5
8SIPF-1005	5 ± 0.5	3.3		0.5
8SIPF-1006	6 ± 0.5	3.7		0.5
8SIPF-1007	7 ± 0.5	4.0		0.5
8SIPF-1008	8 ± 0.6	4.4		0.5
8SIPF-1009	9 ± 0.6	4.7		0.6
8SIPF-1010	10 ± 0.7	5.0		0.8
8SIPF-1011	11 ± 0.7	5.4		0.8
8SIPF-1012	12 ± 0.7	5.7		0.8
8SIPF-1013	13 ± 0.8	6.1		0.8
8SIPF-1014	14 ± 0.8	6.4		0.8
8SIPF-1015	15 ± 0.8	6.8		0.8
8SIPF-1016	16 ± 0.8	7.1		0.8
8SIPF-1017	17 ± 0.9	7.4		1.0
8SIPF-1018	18 ± 1.0	7.7		1.0
8SIPF-1019	19 ± 1.0	8.1		1.1
8SIPF-1020	20 ± 1.0	8.5		1.1
8SIPF-1022	22 ± 1.0	9.1	1.1	
8SIPF-1024	24 ± 1.0	9.8	1.1	
8SIPF-1025	25 ± 1.1	10.3	1.2	
8SIPF-1026	26 ± 1.2	10.5	1.2	
8SIPF-1028	28 ± 1.2	11.0	1.2	
8SIPF-1030	30 ± 1.5	12.0	1.4	
8SIPF-1035	35 ± 1.5	13.5	1.6	
8SIPF-1040	40 ± 2.0	15.0	2.6	
8SIPF-1045	45 ± 2.0	16.5	2.6	
8SIPF-1050	50 ± 2.5	18.5	2.8	
8SIPF-1060	60 ± 2.5	22.0	3.0	
8SIPF-1070	70 ± 3.0	25.0	3.2	
8SIPF-1080	80 ± 3.0	28.0	3.5	
8SIPF-1090	90 ± 4.0	32.0	5.2	
8SIPF-10100	100 ± 4.0	35.0	100	5.6

Special delay lines can be readily manufactured with longer or specific delays, impedances, rise times and package configurations for specific applications.