

# SP24 Series 20-Tap High Performance Passive Delay Modules

- Fast Rise Time, Low DCR
- High Bandwidth  $\approx 0.35/t_r$
- Low Distortion LC Network
- 20 Equal Delay Taps
- Standard Impedances: 50 - 75 - 100 - 200  $\Omega$
- Stable Delay vs. Temperature: 100 ppm/ $^{\circ}C$
- Operating Temperature Range -55 $^{\circ}C$  to +125 $^{\circ}C$

## Operating Specifications - Passive Delay Lines

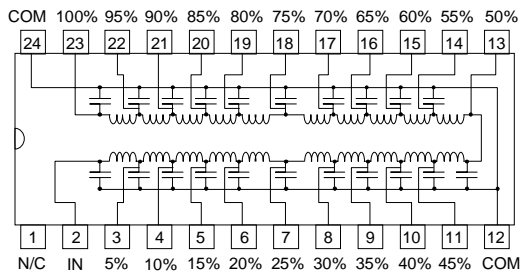
Pulse Overshoot (Pos)	5% to 10%, typical
Pulse Distortion (S)	3% typical
Working Voltage	25 VDC maximum
Dielectric Strength	100VDC minimum
Insulation Resistance	1,000 M $\Omega$ min. @ 100VDC
Temperature Coefficient	70 ppm/ $^{\circ}C$ , typical
Bandwidth ( $f_c$ )	0.35/ $t_r$ approx.
Operating Temperature Range	-55 $^{\circ}$ to +125 $^{\circ}C$
Storage Temperature Range	-65 $^{\circ}$ to +150 $^{\circ}C$

Electrical Specifications <sup>1,2,3</sup> at 25 $^{\circ}C$  Note: For SMD Package Add "G" to end of P/N in Table Below

Total (ns)	Tap-to-Tap (ns)	50 Ohm Part Number	Rise Time max. (ns)	DCR max. (Ohms)	75 Ohm Part Number	Rise Time max. (ns)	DCR max. (Ohms)	100 Ohm Part Number	Rise Time max. (ns)	DCR max. (Ohms)	200 Ohm Part Number	Rise Time max. (ns)	DCR max. (Ohms)
10 $\pm$ 0.50	0.5 $\pm$ 0.2	SP24-105	2.5	1.0	SP24-107	2.5	1.0	SP24-101	2.8	1.3	SP24-102	3.5	2.5
20 $\pm$ 1.00	1.0 $\pm$ 0.4	SP24-205	3.7	1.7	SP24-207	3.7	1.7	SP24-201	3.7	1.8	SP24-202	4.0	3.9
25 $\pm$ 1.25	1.25 $\pm$ 0.5	SP24-255	4.0	1.8	SP24-257	4.0	1.8	SP24-251	4.0	2.1	SP24-252	4.5	4.4
30 $\pm$ 1.50	1.5 $\pm$ 0.5	SP24-305	4.8	1.9	SP24-307	4.8	1.9	SP24-301	4.8	2.3	SP24-302	5.0	4.8
40 $\pm$ 2.00	2.0 $\pm$ 0.5	SP24-405	5.5	2.1	SP24-407	5.5	2.1	SP24-401	5.5	2.4	SP24-402	7.5	5.0
50 $\pm$ 2.50	2.5 $\pm$ 0.5	SP24-505	6.0	2.2	SP24-507	6.0	2.2	SP24-501	6.2	2.6	SP24-502	9.0	5.2
60 $\pm$ 3.00	3.0 $\pm$ 0.6	SP24-605	7.0	2.4	SP24-607	7.0	2.4	SP24-601	7.1	2.7	SP24-602	10.0	5.3
70 $\pm$ 3.50	3.5 $\pm$ 0.8	SP24-705	7.9	2.6	SP24-707	7.9	2.6	SP24-701	8.1	2.8	SP24-702	11.0	5.4
75 $\pm$ 3.75	3.75 $\pm$ 0.8	SP24-755	8.7	2.6	SP24-757	8.8	2.6	SP24-751	8.8	2.9	SP24-752	11.5	5.5
80 $\pm$ 4.00	4.0 $\pm$ 1.0	SP24-805	9.4	2.8	SP24-807	9.4	2.8	SP24-801	9.5	3.0	SP24-802	12.0	5.7
100 $\pm$ 5.00	5.0 $\pm$ 1.0	SP24-1005	11.8	3.0	SP24-1007	12.2	3.2	SP24-1001	12.8	3.3	SP24-1002	15.0	6.0
150 $\pm$ 7.50	7.5 $\pm$ 2.0	SP24-1505	15.5	3.4	SP24-1507	15.8	3.4	SP24-1501	16.0	3.7	SP24-1502	23.0	7.0
200 $\pm$ 10.0	10.0 $\pm$ 2.0	SP24-2005	20.0	3.6	SP24-2007	20.6	3.6	SP24-2001	21.0	4.1	SP24-2002	31.0	8.1
250 $\pm$ 12.5	12.5 $\pm$ 3.0	SP24-2505	26.0	3.8	SP24-2507	26.9	3.8	SP24-2501	28.0	4.4	SP24-2502	38.0	9.2
300 $\pm$ 15.0	15.0 $\pm$ 3.0	SP24-3005	32.0	4.4	SP24-3007	32.4	4.4	SP24-3001	32.5	5.2	SP24-3002	46.0	9.9

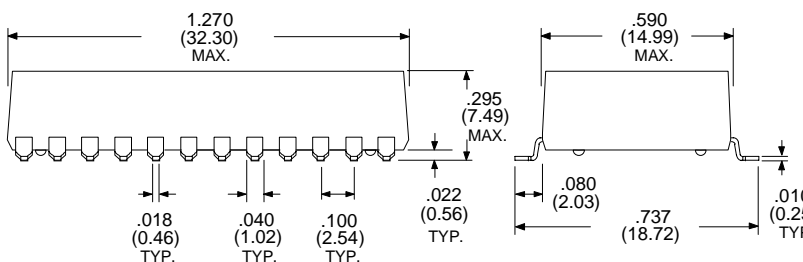
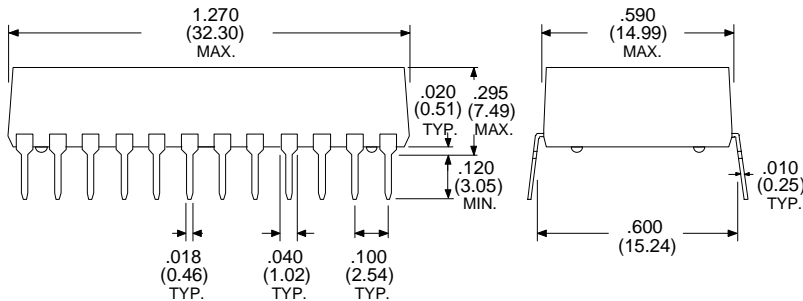
1. Rise Times are measured from 10% to 90% points.
2. Delay Times measured at 50% points of leading edge.
3. Output (100% Tap) terminated to ground through  $R_L=Z_0$

SP24 Style 20-Tap Schematic



Dimensions in Inches (mm)

Default Thru-hole 24-Pin Package. Example: SP24-105



Gull wing SMD Package Add suffix "G" to P/N. Example: SP24-105G

Alternate Pinout, Similar 20 Tap Electricals, refer to Series **SP24A**

Also, for same 24-Pin package and Single Output refer to Series **SP241**