

## DS1L series, SIP thin film delay lines



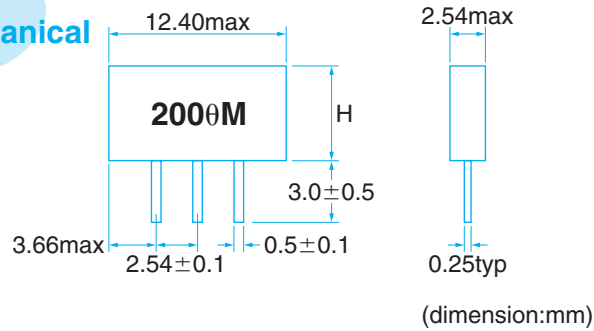
These delay lines provide timing control to 10 nanosecond in a SIP solder lead three pin package. Thin film on ceramic construction provide for high reliability and high bandwidth performance.

RoHS compliant



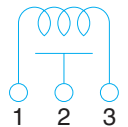
### SPECIFICATIONS

#### Mechanical



| Time Delay | H       | Form |
|------------|---------|------|
| 0.1~5.0ns  | 6.35max | D    |
| 5.5~10.0ns | 9.20max | V    |

#### Equivalent circuit



#### Electrical

| Type                     | DS1L                     |
|--------------------------|--------------------------|
| Time Delay range         | 0.1~2.0ns (0.10ns step)  |
|                          | 2.25~5.0ns (0.25ns step) |
|                          | 5.5~10.0ns (0.50ns step) |
| Time Delay Tolerance     | ±0.050ns (0.10~0.20ns)   |
|                          | ±0.125ns (2.25~5.00ns)   |
|                          | ±0.250ns (5.00~10.0ns)   |
| Characteristic Impedance | 50±5 Ω                   |

| Type                    | DS1L         |
|-------------------------|--------------|
| DC Resistance           | 1.0 Ω/ns max |
| Rated Current           | 100mA        |
| Temp. coefficient of Td | <150ppm/°C   |
| Insulation resistance   | >100M Ω 50V  |
| Operating temperature   | -10~+85°C    |
| Storage Temperature     | -40~+125°C   |



### PART NUMBER

**DS1L 5 DJ 200 S (-C)**

- Given to RoHS compliant products
- Serial code
- Time Delay(200=2.0ns)
- Lead Frame
- Impedance(5=50Ω)
- Part Code, Number of elements



# DL1L series, SIP thin film delay lines



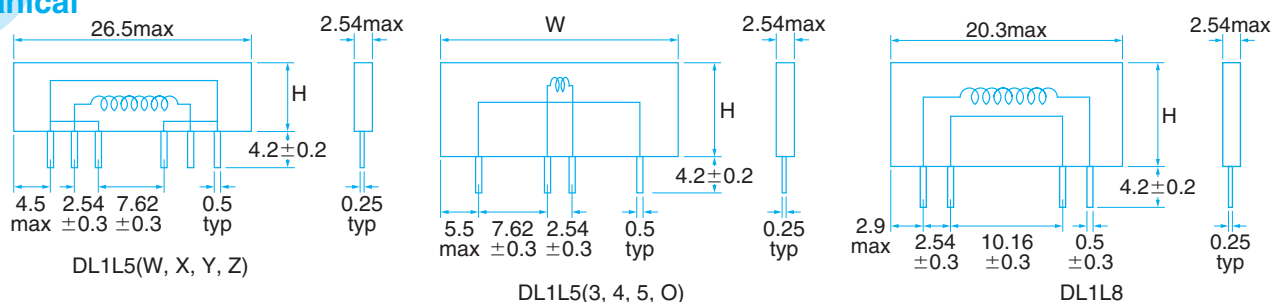
Performance to 5 GHz. For many high frequency applications, discrete, tight tolerance( $\pm 50$  picosecond) delay lines can be used to help solve your TTL, and ECL timing and clock deskew needs.

RoHS compliant

## SPECIFICATIONS

### Mechanical

(dimension : mm)



DL1L5(W, X, Y, Z)

| Time Delay | H        | Code |
|------------|----------|------|
| 0.1~0.5ns  | 7.60max  | W    |
| 0.6~2.6ns  | 10.10max | X    |
| 2.7~3.5ns  | 14.00max | Y    |
| 3.6~5.1ns  | 16.45max | Z    |

DL1L5(3, 4, 5, O)

| Time Delay | H        | W        | Code |
|------------|----------|----------|------|
| 0.1~1.3ns  | 7.50max  | 26.50max | 3    |
| 1.4~2.5ns  | 10.10max |          | 4    |
| 2.6~3.4ns  | 12.70max | 27.90max | 5    |
| 3.6~10ns   | 15.50max |          | O    |

DL1L8

| Time Delay | Time Delay Tolerance | H        | Code |
|------------|----------------------|----------|------|
| 0.1~1.2ns  | $\pm 0.05$ ns        | 12.00max | B    |
| 1.3~2.6ns  | $\pm 0.05$ ns        |          |      |
| 2.8ns      | $\pm 0.10$ ns        |          | F    |
| 3.0~5.0ns  | $\pm 0.25$ ns        |          |      |

### Electrical

| Type                     | DL1L5(W, X, Y, Z)         | DL1L5(3, 4, 5, O)                                  |                            |                            | DL1L8                                          |
|--------------------------|---------------------------|----------------------------------------------------|----------------------------|----------------------------|------------------------------------------------|
| Time Delay Range         | 0.1~5.1ns<br>(0.1ns step) | 0.1~2.50ns<br>(0.1ns step)                         | 2.6~4.90ns<br>(0.2ns step) | 5.0~10.0ns<br>(0.5ns step) | 0.1~2.6ns(0.1ns step)<br>3.0~5.0ns(0.5ns step) |
| Time Delay Tolerance     | ±0.050ns                  | 0.05ns                                             | ±0.100ns                   | ±0.250ns                   | above table                                    |
| Characteristic Impedance | 50±5Ω                     |                                                    |                            |                            | 75±7.5Ω                                        |
| Retune Loss              | 20dB min                  |                                                    |                            |                            | 20dB min                                       |
| DC Resistance            | 0.1~0.5ns : 0.5Ωmax       | 0.1~1.0ns : 0.8Ωmax<br><br>1.1~10ns : 0.8Ωmax/ 1ns |                            |                            | 0.1~1.0ns : <1.7Ω                              |
|                          | 0.6~2.6ns : 1.0Ωmax       |                                                    |                            |                            | 0.1~5.0ns : <1.7Ω/ns                           |
|                          | 2.7~3.5ns : 2.0Ωmax       |                                                    |                            |                            |                                                |
|                          | 3.6~5.1ns : 3.0Ωmax       |                                                    |                            |                            |                                                |
| Rise / fall time         | 1ns or less               | 1ns or less                                        | 2ns or less                |                            | >1ns                                           |
| Rated Current            | 100mA                     |                                                    |                            |                            |                                                |
| Operating temperature    | -40~+85°C                 |                                                    |                            |                            | -10~+85°C                                      |

## PART NUMBER

**DL1L 5 X K 260 S (-C)**

- Given to RoHS compliant products
- Serial code
- Time Delay(260=2.6ns)
- Lead Frame
- Height code
- Impedance(5=50 $\Omega$ ,8=75 $\Omega$ )
- Part Code