

# SERIES EL517 ECL (10K COMPATIBLE) PROGRAMMABLE LOGIC DELAY MODULES (5-BIT)

- 5-Bit ECL Programmable Delay Line • 32 Pin DIP Package
- ECL Input and Output Levels • 70 ECL DC Fan-out Capacity

## Specifications:

- Supply Voltage :  $-5.2\text{VDC}$  to Vee
- Logic 1 Voltage :  $-.96\text{v}$  Min
- Logic 1 Current :  $265\mu\text{A}$  Max
- Logic 0 Voltage :  $-1.65\text{v}$  Max
- Logic 0 Current :  $.5\mu\text{A}$  Min
- Output Rise Time<sup>(2)</sup> :  $5\text{NSEC}$  Typ.
- Storage Temperature :  $-55^\circ\text{C}$  to  $+125^\circ\text{C}$
- Operating Temperature :  $-30^\circ\text{C}$  to  $+85^\circ\text{C}$
- Temperature Coefficient :  $100\text{ PPM}/^\circ\text{C}$
- Power Dissipation :  $615\text{mW}$  Typ.

## Test Conditions:

- Input Pulse-Width : Min 150% of Total Delay
- Input Pulse Rise Time :  $2\text{NSEC}$  Max
- Input Pulse Voltage :  $1\text{v}$  ( $-0.75\text{vH}$  to  $-1.75\text{vL}$ )
- Vee Supply Voltage :  $-5.2\text{VDC}$

## Truth Table

| Enable<br>Eo | Address Bit No. |   |   |   |   | Total<br>Delay |
|--------------|-----------------|---|---|---|---|----------------|
|              | 5               | 4 | 3 | 2 | 1 |                |
| 0            | 0               | 0 | 0 | 0 | 0 | 1D             |
| 0            | 0               | 0 | 0 | 0 | 1 | 1D+1T          |
| 0            | 0               | 0 | 0 | 1 | 0 | 1D+2T          |
| 0            | 0               | 0 | 0 | 1 | 1 | 1D+3T          |
| 0            | 0               | 0 | 1 | 0 | 0 | 1D+4T          |
| 0            | 0               | 0 | 1 | 0 | 1 | 1D+5T          |
| 0            | 0               | 1 | 0 | 0 | 0 | 1D+8T          |
| 0            | 0               | 1 | 1 | 1 | 1 | 1D+15T         |
| 0            | 1               | 1 | 1 | 1 | 1 | 1D+31T         |

1 = High 0 = Low

When Eo is 1, no output

1D = Inherent Delay  $5.5 \pm 1$

T = Multiplier of Incremental Delay  
(Delay change per step)

For simplicity, all 32 programmable steps  
are not shown in this Truth Table.

## Electrical Specifications at $25^\circ\text{C}$

| Part<br>Number | Inherent<br>Delay Time<br>(NS) (1) | Incremental<br>Delay<br>Per Step (NS) (1) | Max Delay<br>Time (NS) (1) |
|----------------|------------------------------------|-------------------------------------------|----------------------------|
| EL517-5.5-0.5  | $5.5 \pm 1$                        | $0.5 \pm 0.3$                             | $21 \pm 1$                 |
| EL517-5.5-1    | $5.5 \pm 1$                        | $1 \pm 0.5$                               | $36.5 \pm 2$               |
| EL517-5.5-2    | $5.5 \pm 1$                        | $2 \pm 0.5$                               | $67.5 \pm 2.5$             |
| EL517-5.5-3    | $5.5 \pm 1$                        | $3 \pm 1.0$                               | $98.5 \pm 3.0$             |
| EL517-5.5-4    | $5.5 \pm 1$                        | $4 \pm 1.0$                               | $129.5 \pm 3.0$            |
| EL517-5.5-5    | $5.5 \pm 1$                        | $5 \pm 1.0$                               | $160.5 \pm 4.0$            |
| EL517-5.5-6    | $5.5 \pm 1$                        | $6 \pm 1.0$                               | $191.5 \pm 4.0$            |
| EL517-5.5-8    | $5.5 \pm 1$                        | $8 \pm 1.0$                               | $253.5 \pm 5.0$            |
| EL517-5.5-10   | $5.5 \pm 1$                        | $10 \pm 1.5$                              | $315.5 \pm 6.0$            |
| EL517-5.5-12   | $5.5 \pm 1$                        | $12 \pm 1.5$                              | $377.5 \pm 8$              |
| EL517-5.5-15   | $5.5 \pm 1$                        | $15 \pm 1.5$                              | $470.5 \pm 10$             |
| EL517-5.5-20   | $5.5 \pm 1$                        | $20 \pm 2.0$                              | $625.5 \pm 12$             |

Note: (1) Measured at  $-1.3\text{v}$  level leading edge.

(2) Measured from 20% to 80% Pulse Amplitude.

(3) Outputs terminated through 270 ohms to  $-5.2\text{VDC}$ .

