

Fast Logic Programmable Delay Units

SERIES: PDU-16F

(6-Bit) TTL Interfaced



Features:

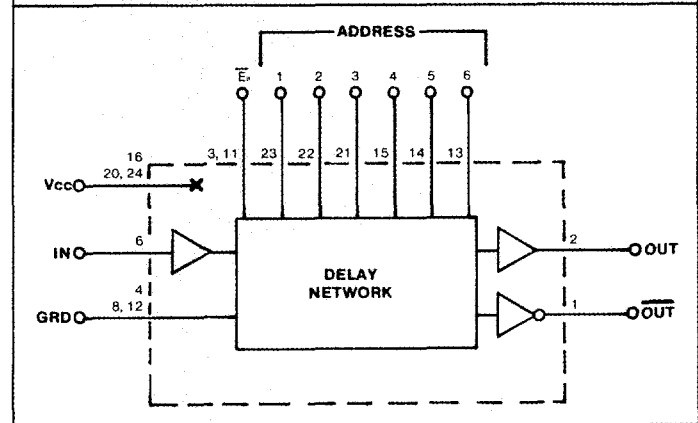
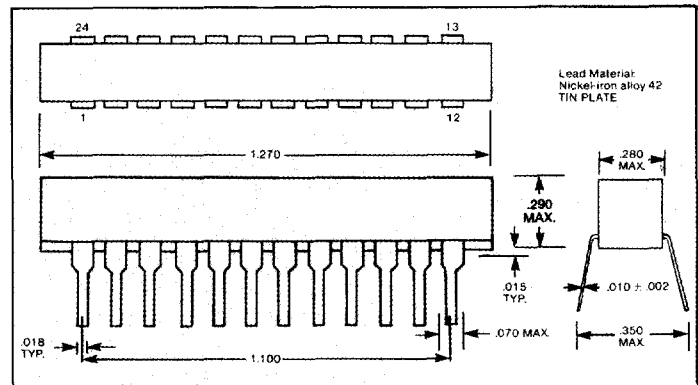
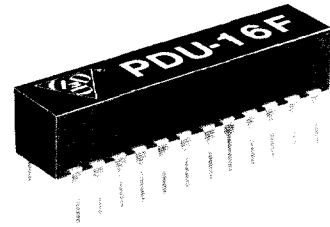
- Input & Output TTL buffered
- 6-Bit TTL programmable delay line
- Two (2) Separate outputs; inverting and non-inverting.
- Completely interfaced
- Compact & low profile

Specifications:

- Propagation delay:
Address to output (T_{SUA}) = 7 ns typ.
Enable to output (T_{SUE}) = 6 ns typ.
- Delay variation: Monotonic in one direction.
- Programmed delay tolerance: $\pm 5\%$ or 2 ns whichever is greater.
- Inherent delay (T_{D0}): 9 ns on pin 2 } typical
8 ns on pin 1 }
- Supply voltage: 5 Vdc $\pm 5\%$.
- Operating temperature: 0-70° C.
- Temperature coefficient: 100 PPM/°C.
- Supply current: $I_{CCH} = 74$ ma.
 $I_{CCL} = 30$ ma.
- Minimum pulse-width = 10% of total delay.
- DC parameters: See TTL-Fast Schottky Logic Table on Page 6.

Test Conditions:

- Input pulse-width: > 150% of Max. delay.
- Input pulse spacing: > 3 times of Max. delay.
- Input pulse voltage: TTL logic.
- Measurements taken @
 $T_a = 25^\circ C$; $V_{CC} = 5V$.



TRUTH TABLE

| Enable (E_0) | Address | | | | | | Delay Out |
|------------------|---------|--------|--------|--------|--------|--------|-----------|
| | 6 | 5 | 4 | 3 | 2 | 1 | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | T_0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 1 | T_1 |
| 0 | 0 | 0 | 0 | 0 | 1 | 0 | T_2 |
| 0 | 0 | 0 | 0 | 0 | 1 | 1 | T_3 |
| 0 | 0 | 0 | 0 | 1 | 0 | 0 | T_4 |
| 0 | 0 | 0 | 0 | 1 | 0 | 1 | T_5 |
| 0 | 0 | 0 | 0 | 1 | 1 | 0 | T_6 |
| 0 | 0 | 0 | 0 | 1 | 1 | 1 | T_7 |
| 0 | 0 | 0 | 1 | 0 | 0 | 0 | T_8 |
| 0 | 0 | 1 | 0 | 0 | 0 | 0 | T_{15} |
| 0 | 0 | 1 | 0 | 0 | 0 | 1 | T_{16} |
| 0 | 0 | 1 | 1 | 1 | 1 | 1 | T_{31} |
| 0 | 1 | 0 | 0 | 0 | 0 | 0 | T_{32} |
| 0 | 1 | 1 | 1 | 1 | 1 | 1 | T_{63} |
| 1 | ϕ | ϕ | ϕ | ϕ | ϕ | ϕ | 0 |

0 = Logic 0 1 Logic 1 ϕ Don't care.
 T_0 Reference or inherent delay of unit.
 $T_1 \rightarrow T_{63}$ Multiplier of incremental delay.

| Part No. | Incremental Delay Per Step (ns) | Total Programmed Delay (ns) |
|-------------|---------------------------------|-----------------------------|
| PDU-16F-0.5 | 0.5 \pm 0.3 | 31.5 |
| PDU-16F-1 | 1 \pm 0.5 | 63 |
| PDU-16F-2 | 2 \pm 0.5 | 126 |
| PDU-16F-3 | 3 \pm 1.0 | 189 |
| PDU-16F-4 | 4 \pm 1.0 | 252 |
| PDU-16F-5 | 5 \pm 1.0 | 315 |
| PDU-16F-6 | 6 \pm 1.0 | 378 |
| PDU-16F-8 | 8 \pm 1.0 | 504 |
| PDU-16F-10 | 10 \pm 1.5 | 630 |