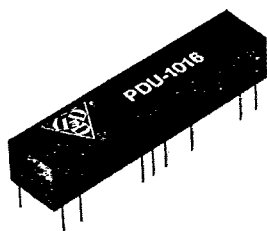


Digitally Programmable Delay Units

SERIES: PDU-1016
(4-Bit) ECL Interfaced

data delay devices, inc.



Features:

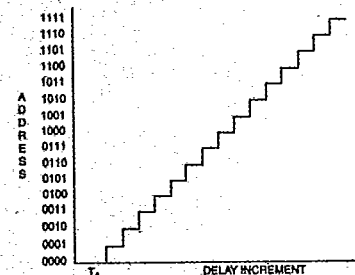
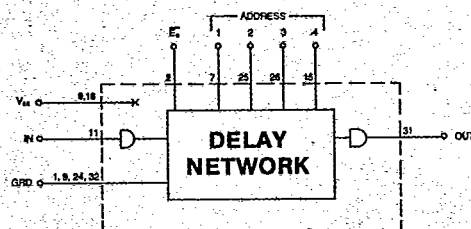
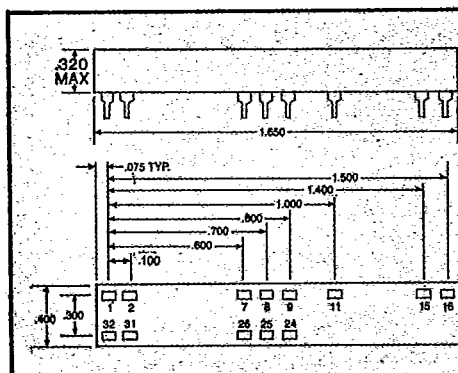
- Input & output ECL buffered
- 4-BIT ECL programmable delay line
- Output same polarity of input
- Completely interfaced
- Compact & low profile

Specifications:

- Input signal requirement: ECL logic.
- Output fan-out: ECL loads.
- Delay variation: Monotonic in one direction.
- Programmed delay tolerance: $\pm 5\%$ or 1 ns whichever is greater.
- Inherent delay (T_0): 11 ns ± 1 ns for PDU-1016-1 thru -5. Greater for rest of part numbers.
- Propagation delay:
Address to output (T_{SUA}) = 5 ns typ.
Enable to output (T_{SUE}) = 2 ns typ.
- Power dissipation: 615 mw typ.
- Supply voltage: $-5 \text{ Vdc} \pm 5\%$.
- Operating Temperature: $0-70^\circ\text{C}$.
- Temperature Coefficient: 100 PPM/ $^\circ\text{C}$.

Test Conditions

- Input pulse-width: $\geq 100\%$ of Max. delay.
- Input pulse spacing: ≥ 3 times of Max. delay.
- Input pulse voltage: ECL logic.
- Measurements taken @ $T_a = 25^\circ\text{C}$, $V_{EE} = -5\text{V}$.



TRUTH TABLE

Enable (E ₀)	Address (Bit No.)				Delay Out
	4	3	2	1	
0	0	0	0	0	T_0
0	0	0	0	1	T_1
0	0	0	1	0	T_2
0	0	0	1	1	T_3
0	0	1	0	0	T_4
0	0	1	0	1	T_5
0	0	1	1	0	T_6
0	0	1	1	1	T_7
0	1	0	0	0	T_8
0	1	0	0	1	T_9
0	1	0	1	0	T_{10}
0	1	0	1	1	T_{11}
0	1	1	0	0	T_{12}
0	1	1	0	1	T_{13}
0	1	1	1	0	T_{14}
0	1	1	1	1	T_{15}
1	0	0	0	0	0

0 = Logic 0 1 = Logic 1 $\emptyset$ = Don't care.

T_0 = Reference or inherent delay of unit.

$T_1 \rightarrow T_{15}$ = Multiplier of incremental delay.

Part No.	Incremental Delay Per Step (ns)	Total Programmed Delay (ns)
PDU-1016-5	.5 $\pm$.3	7.5
PDU-1016-1	1 $\pm$.5	15
PDU-1016-2	2 $\pm$.5	30
PDU-1016-3	3 $\pm$ 1.0	45
PDU-1016-4	4 $\pm$ 1.0	60
PDU-1016-5	5 $\pm$ 1.0	75
PDU-1016-6	6 $\pm$ 1.0	90
PDU-1016-8	8 $\pm$ 1.0	120
PDU-1016-10	10 $\pm$ 1.5	150
PDU-1016-12	12 $\pm$ 1.5	180
PDU-1016-15	15 $\pm$ 1.5	225
PDU-1016-20	20 $\pm$ 2.0	300
PDU-1016-25	25 $\pm$ 2.5	375
PDU-1016-30	30 $\pm$ 3.0	450
PDU-1016-35	35 $\pm$ 3.5	525
PDU-1016-40	40 $\pm$ 4.0	600
PDU-1016-45	45 $\pm$ 4.5	675
PDU-1016-50	50 $\pm$ 5.0	750
PDU-1016-60	60 $\pm$ 6.0	900
PDU-1016-80	80 $\pm$ 8.0	1,200
PDU-1016-100	100 $\pm$ 10.0	1,500