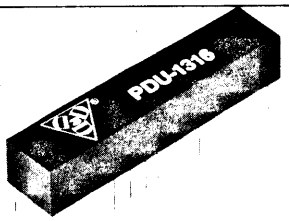
Digitally Programmable Delay Units

SERIES: PDU-1316
(4-Bit) TTL Interfaced

data delay devices, inc.



Features:

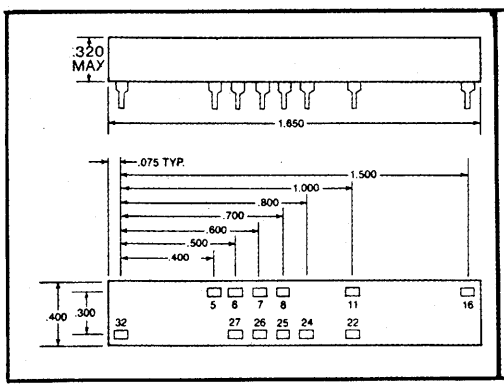
- Input & output TTL buffered
- 4-BIT TTL programmable delay line
- Two (2) separate outputs; inverting & non-inverting
- Completely interfaced
- Compact & low profile

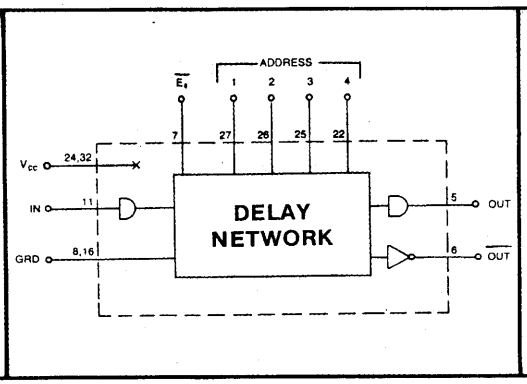
Specifications:

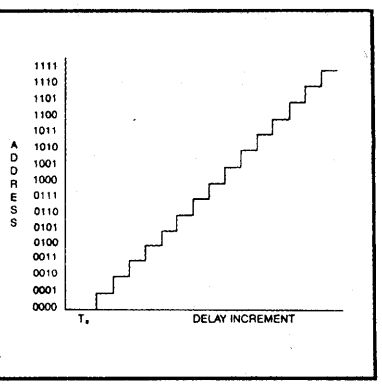
- **Input signal requirement:** TTL logic.
- **Output fan-out:** TTL Schottky loads.
- **Delay variation:** Monotonic in one direction.
- **Programmed delay tolerance:** ±5% or 1 ns whichever is greater.
- **Inherent delay (T_{DO}):**
  19 ns ± 1 ns on pin 5 } for PDU-1316-1 thru -10
  15 ns ± 1 ns on pin 6 }
  greater for rest of Part Numbers.
- **Propagation delay:**
  Address to output (T_{SUA}) = 12 ns typ.
  Enable to output (T_{SUE}) = 12 ns typ.
- **Power dissipation:** 740 mw max.
- **Supply voltage:** 5 Vdc ± 5%.
- **Operating temperature:** 0-70°C.
- **Temperature coefficient:** 100 PPM/°C.

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°C; V_{CC} = 5V.







TRUTH TABLE

Enable ($\overline{Eo}$)	Address 4	3	2	1	Delay Out
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	Ø	Ø	Ø	Ø	0

0 = Logic 0 1 = Logic 1 Ø = Don't care.
T_0 = Reference or inherent delay of unit.
$T_1 \longrightarrow T_{15}$ = Multiplier of incremental delay.

Part No.	Incremental Delay Per Step (ns)	Total Programmed Delay (ns)
PDU-1316-.5	.5 ± .3	7.5
PDU-1316-1	1 ± .5	15.0
PDU-1316-2	2 ± .5	30.0
PDU-1316-3	3 ± 1.0	45.0
PDU-1316-4	4 ± 1.0	60.0
PDU-1316-5	5 ± 1.0	75.0
PDU-1316-6	6 ± 1.0	90.0
PDU-1316-8	8 ± 1.0	120.0
PDU-1316-10	10 ± 1.5	150.0
PDU-1316-12	12 ± 1.5	180.0
PDU-1316-15	15 ± 1.5	225.0
PDU-1316-20	20 ± 2.0	300.0
PDU-1316-25	25 ± 2.5	375.0
PDU-1316-30	30 ± 3.0	450.0
PDU-1316-35	35 ± 3.5	525.0
PDU-1316-40	40 ± 4.0	600.0
PDU-1316-45	45 ± 4.5	675.0
PDU-1316-50	50 ± 5.0	750.0
PDU-1316-60	60 ± 6.0	900.0
PDU-1316-80	80 ± 8.0	1,200.0
PDU-1316-100	100 ± 10.0	1.500.0

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