

Programmable Delay Units

SERIES: PDU-138

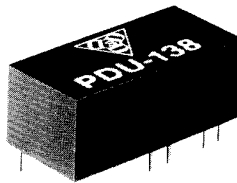
**T²L Interfaced
(3 BIT)**

**data
delay
devices, inc.**



Features:

- Digitally programmable in 8 delay steps.
- Delay increments of 1/2 NS thru 50 NS.
- Fits standard 16 pins DIP socket.
- Output fully T²L interfaced.
- Precise and stable delays.
- Propagation delay compensated.
- 10 T²L fan-out capability.
- Output pulse polarity same as input.



Specifications:

- Logic 1 input voltage: 2 V min.
- Logic 1 input current: -40 ma (@ 3.0 V).
- Logic 0 input voltage: 0.8 V max.
- Logic 0 input current: -6 ma (@ 0.45 V)
- Logic 1 output voltage: 2.4 V min.
- Logic 0 output voltage: 0.4 V max.
- Supply voltage V_{cc}: 5 Vdc ± 5%.
- Operating temperature: 0-70°C. (-55°C to +125°C on request)*
- Inherent delay (T₀₀): 7 NS ± 1 NS.
- Propagation Delay:
Address to output (T_{SUA}) = 12 NS typ.
Enable to output (T_{SUE}) = 12 NS typ.
- Temperature coefficient: 100 PPM/°C.
- Delay variation: Monotonic in one direction.
- Total delay tolerance: ± 5% or 1 NS whichever is greater.

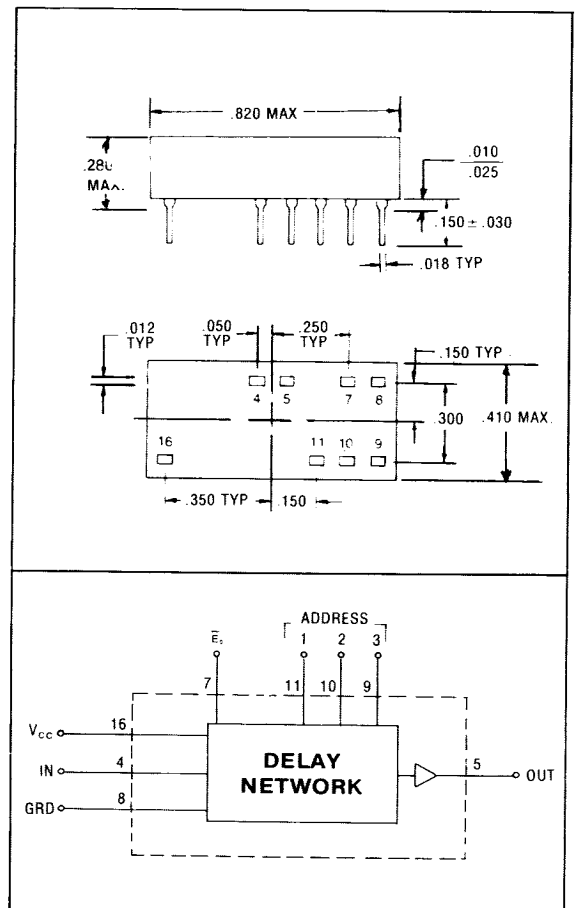
Test Conditions:

- Input pulse-width: 150% of max. delay.
- Input pulse spacing: 3 times pulse width.
- Input rise-time: ≤ 4 NS.
- Input pulse voltage: 3 V max.
- Ambient temperature: 25°C.
- V_{cc}: 5.0 V_{DC} typ.
- I_{cc}: 40 ma typ.

*Add "M" after P/N Ex.: PDU-138-2M

TRUTH TABLE

Enable	Address (Bit No.)			Delay Out	1 = High 0 = Low Ø = Don't care T ₀ = Reference or inherent delay of circuit. T ₁ to T ₇ = Multiplier of incremental delay.
	3	2	1		
0	0	0	0	T ₀	
0	0	0	1	T ₁	
0	0	1	0	T ₂	
0	0	1	1	T ₃	
0	1	0	0	T ₄	
0	1	0	1	T ₅	
0	1	1	0	T ₆	
0	1	1	1	T ₇	
1	Ø	Ø	Ø	Ø	



Part** Number	Incremental Delay Per Step	Total Delay* Change
PDU-138-.5	.5 ns ± .3 NS	3.5 NS
PDU-138-1	1 ns ± .4 NS	7 NS
PDU 138-2	2 ns ± .4 NS	14 NS
PDU 138-3	3 ns ± .5 NS	21 NS
PDU-138-5	5 ns ± .6 NS	35 NS
PDU-138-10	10 ns ± 1 NS	70 NS
PDU-138-15	15 ns ± 1.3 NS	105 NS
PDU-138-20	20 ns ± 1.5 NS	140 NS
PDU-138-40	40 ns ± 2.0 NS	280 NS
PDU-138-50	50 ns ± 2.5 NS	350 NS

*This delay value does not include T₀ delay.

**Other delay increments available on request.

3 Mt. Prospect Avenue, Clifton, New Jersey 07013 ■ (201) 773-2299 ■ FAX (201) 773-9672 ■ TWX 710-989-7008