# 8-Bit Programmable 10K ECL Logic Delay Line

The 8-Bit Programmable 10K ECL Logic Delay Lines manufactured by Engineered Components Company are designed to provide output waveforms that reproduce the input waveform after a set amount of delay time has elapsed. The final delay of the output waveform can be adjusted during or after installation into a circuit. The adjustment is made by applying a logic "0" or "1" at each of the 8 multiplexor programming pins (see the Truth Table Examples). The delay times are calibrated to the listed tolerances on the rising edge delays (see the Product Selection Table).

The MTBF on these modules, when calculated per MIL-HDBK-217, for a 50 deg.C ground fixed environment and with 50VDC applied, is in excess of 0.30 million hours. The temperature coefficient of delay is less than 150 ppm/deg.C over the operating temperature range of -30 to +85 deg. C.

The module is provided in a 64-pin DIP package, fully encapsulated in epoxy resin and is housed in a Diallyl Phthalate case, blue in color. The case marking is applied by silkscreen using white epoxy paint. The 22 copper leads are tin-lead plated and meet the solderability requirements of MIL-STD-202, Method 208.

BLOCK DIAGRAM
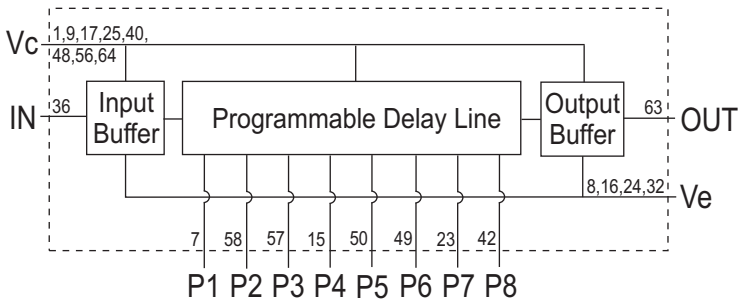
MECHANICAL DIAGRAM
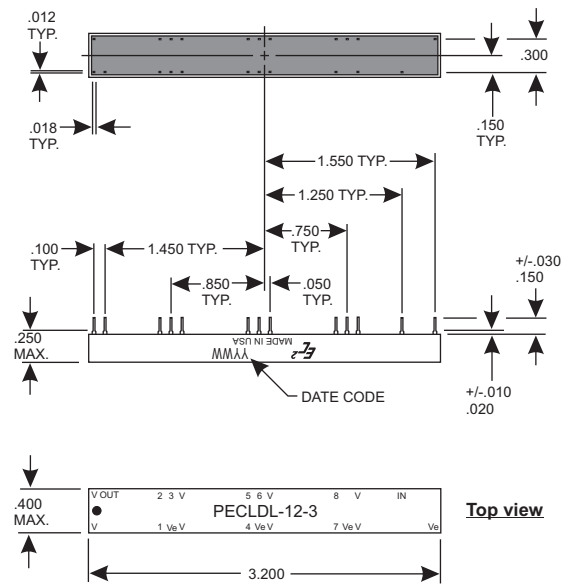
Product Selection Table

Part Number	Output Delays and Tolerances (in ns)			
	*Step Zero Delay	Maximum Delay (Nominal)	Delay Change Per Step	** Maximum Deviation From Programmed Delay
PECLDL-12-1	12.0+/-0.5	267	1.0	+/-6.0
PECLDL-12-2	12.0+/-0.5	522	2.0	+/-8.0
PECLDL-12-3	12.0+/-0.5	777	3.0	+/-12.0
PECLDL-12-4	12.0+/-0.5	1032	4.0	+/-16.0
PECLDL-12-5	12.0+/-0.5	1287	5.0	+/-20.0

* Delay at step zero is referenced to the input pin.

**All delay times after step zero are referenced to step zero.

TRUTH TABLE EXAMPLES (Delay times in ns)

Part Number																	
	Programming Pin 8	0	0	0	0	0	0	0	0	0	0	0	0	...	1	1
	Programming Pin 7	0	0	0	0	0	0	0	0	0	0	0	0	...	1	1
	Programming Pin 6	0	0	0	0	0	0	0	0	0	0	0	0	...	1	1
	Programming Pin 5	0	0	0	0	0	0	0	0	0	0	0	0	...	1	1
	Programming Pin 4	0	0	0	0	0	0	0	1	1	1	1	...		1	1
	Programming Pin 3	0	0	0	0	1	1	1	1	0	0	0	0	...	1	1
	Programming Pin 2	0	0	1	1	0	0	1	1	0	0	1	1	...	1	1
	Programming Pin 1	0	1	0	1	0	1	0	1	0	1	0	1	...	0	1
PECLDL-12-1		12	1	2	3	4	5	6	7	8	9	10	11	...	254	255
PECLDL-12-2		12	2	4	6	8	10	12	14	16	18	20	22	...	508	510
PECLDL-12-3		12	3	6	9	12	15	18	21	24	27	30	33	...	762	765
PECLDL-12-4		12	4	8	12	16	20	24	28	32	36	40	44	...	1016	1020
PECLDL-12-5		12	5	10	15	20	25	30	35	40	45	50	55	...	1270	1275

Operating Specifications:

All measurements made at 25 deg. C
All measurements made with Ve = -5.2VDC, Vc = 0VDC
All measurements made with (1) 10K ECL output load
All measurements made with a 100 ohm pulldown
   resistor to -2VDC at the input and output

Operating Temperature: -30 to +85 deg. C
Storage Temperature: -55 to +125 deg. C

Vee Supply Voltage: -5.2 +/-5% VDC
Vcc Supply Current: 250mA typical
Logic "High" Input:
   Voltage: -0.98VDC min.
   Current: 265uA max.
Logic "Low" Input:
   Voltage: -1.63VDC max.
   Current: 0.5uA min.
Logic "High" Voltage Out: -0.96VDC min.
Logic "Low" Voltage Out: -1.65VDC max.
Multiplexor setup time = 2ns typ.

Special modules can often be manufactured to provide for customer specific applications.