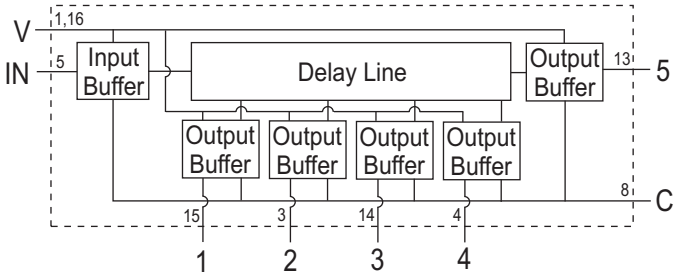
10K ECL Logic Delay Module

The 10K ECL Logic Delay Modules 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 five output waveforms are delay line taps provided at 20% increments of the total delay (20, 40, 60, 80, and 100%). These delay modules are non-inverting. The delay times are calibrated to the listed tolerances on the rising edge delays. The products with a total delay of less than 10ns have additional delay present at tap 1 due to internal propagation delays (see the Product Selection Table).

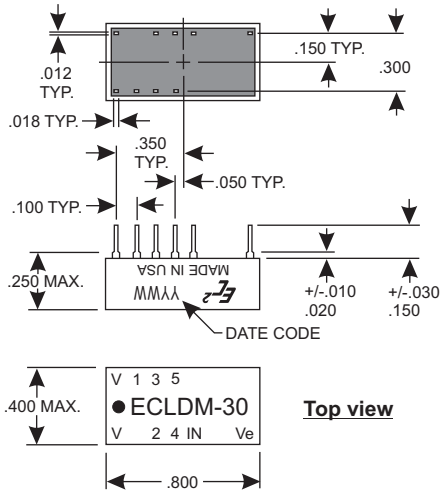
The MTBF on these modules, when calculated per MIL-HDBK-217, for a 50 deg.C ground fixed environment and with 50VDC applied, is in excess of 3 million hours. The temperature coefficient of delay is less than 300 ppm/deg.C over the operating temperature range of -30 to +85 deg. C.

The module is provided in a 16-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 9 copper leads are tin-lead plated and meet the solderability requirements of MIL-STD-202, Method 208.

BLOCK DIAGRAM



MECHANICAL DIAGRAM



Top view

Product Selection Table

Part Number	Rise Time Max. (ns)	Output Delay and Tolerances (in ns) Tap 1 (20%)	Tap 2 (40%)	Tap 3 (60%)	Tap 4 (80%)	Tap 5 (100%)
ECLDM-6	4	2.0+/-0.2	3.0+/-0.2	4.0+/-0.2	5.0+/-0.2	6.0+/-0.2
ECLDM-10	4	2.0+/-0.5	4.0+/-0.5	6.0+/-0.5	8.0+/-0.5	10.0+/-0.5
ECLDM-15	4	3.0+/-0.5	6.0+/-0.5	9.0+/-0.5	12.0+/-0.5	15.0+/-0.5
ECLDM-20	4	4.0+/-0.5	8.0+/-0.5	12.0+/-0.5	16.0+/-0.5	20.0+/-0.5
ECLDM-25	4	5.0+/-1.0	10.0+/-1.0	15.0+/-1.0	20.0+/-1.0	25.0+/-1.0
ECLDM-30	4	6.0+/-1.0	12.0+/-1.0	18.0+/-1.0	24.0+/-1.0	30.0+/-1.0
ECLDM-35	4	7.0+/-1.0	14.0+/-1.0	21.0+/-1.0	28.0+/-1.5	35.0+/-1.5
ECLDM-40	4	8.0+/-1.0	16.0+/-1.0	24.0+/-1.5	32.0+/-1.5	40.0+/-1.5
ECLDM-45	5	9.0+/-1.0	18.0+/-1.0	27.0+/-1.5	36.0+/-1.5	45.0+/-2.0
ECLDM-50	5	10.0+/-1.0	20.0+/-1.0	30.0+/-1.5	40.0+/-1.5	50.0+/-2.0
ECLDM-75	8	15.0+/-1.0	30.0+/-1.5	45.0+/-2.0	60.0+/-2.5	75.0+/-2.5
ECLDM-100	10	20.0+/-1.0	40.0+/-1.5	60.0+/-2.0	80.0+/-3.0	100.0+/-3.0
ECLDM-125	15	25.0+/-1.0	50.0+/-2.0	75.0+/-2.5	100.0+/-3.0	125.0+/-3.5
ECLDM-150	15	30.0+/-1.5	60.0+/-2.0	90.0+/-3.0	120.0+/-4.0	150.0+/-5.0
ECLDM-175	20	35.0+/-1.5	70.0+/-2.5	105.0+/-4.0	140.0+/-5.0	175.0+/-5.0
ECLDM-200	20	40.0+/-1.5	80.0+/-2.5	120.0+/-4.0	160.0+/-5.0	200.0+/-6.0
ECLDM-225	25	45.0+/-2.0	90.0+/-3.0	135.0+/-4.0	180.0+/-6.0	225.0+/-7.0
ECLDM-250	25	50.0+/-2.0	100.0+/-3.0	150.0+/-4.5	200.0+/-6.0	250.0+/-8.0
ECLDM-300	30	60.0+/-2.0	120.0+/-4.0	180.0+/-5.0	240.0+/-7.0	300.0+/-9.0
ECLDM-350	35	70.0+/-2.0	140.0+/-4.5	210.0+/-7.0	280.0+/-9.0	350.0+/-11.0
ECLDM-400	40	80.0+/-3.0	160.0+/-5.0	240.0+/-7.0	320.0+/-10.0	400.0+/-12.0
ECLDM-450	45	90.0+/-3.0	180.0+/-6.0	270.0+/-8.0	360.0+/-11.0	450.0+/-14.0
ECLDM-500	50	100.0+/-3.0	200.0+/-6.0	300.0+/-9.0	400.0+/-12.0	500.0+/-15.0
ECLDM-600	30	120.0+/-4.0	240.0+/-7.0	360.0+/-11.0	480.0+/-15.0	600.0+/-18.0
ECLDM-700	35	140.0+/-4.0	280.0+/-9.0	420.0+/-13.0	560.0+/-17.0	700.0+/-20.0
ECLDM-800	40	160.0+/-5.0	320.0+/-10.0	480.0+/-15.0	640.0+/-19.0	800.0+/-20.0
ECLDM-900	45	180.0+/-6.0	360.0+/-11.0	540.0+/-16.0	720.0+/-20.0	900.0+/-22.0
ECLDM-1000	50	200.0+/-6.0	400.0+/-12.0	600.0+/-18.0	800.0+/-20.0	1000.0+/-22.0

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

Operating Specifications:

All measurements made at 25 deg. C
All measurements made with Vee = -5.2VDC, Vcc = 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

Vcc Supply Voltage: -5.2 +/-5% VDC
Vee Supply Current: 50mA typical
Logic "High" Input:
Voltage: -.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.

engineered components company
A Division of Cornucopia Tool & Plastics, Inc. PO Box 1915, 448 Sherwood Rd., Paso Robles CA 93447
Phone: 805-369-0034
Fax: 805-369-0033
Web: www.ec2.com