

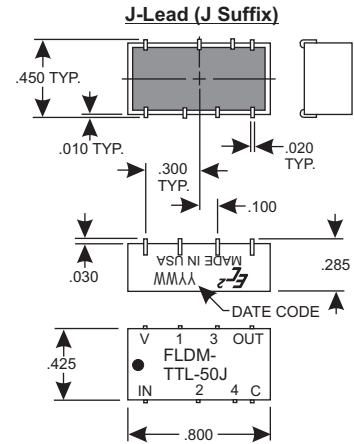
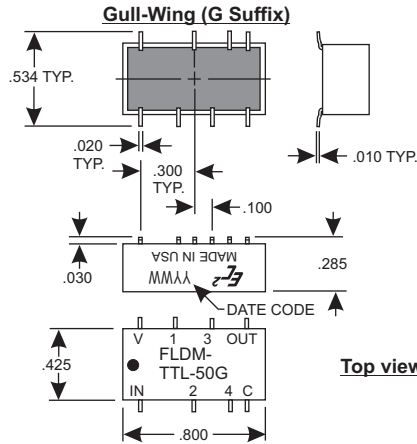
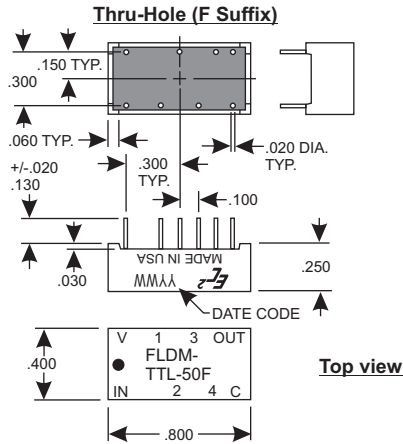
FAST TTL Logic Delay Module

The FAST TTL 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 25ns 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 2 million hours. The temperature coefficient of delay is less than 500 ppm/deg.C over the operating temperature range of 0 to +70 deg. C.

The module is provided in a 14-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 8 copper leads are tin-lead plated and meet the solderability requirements of MIL-STD-202, Method 208.

MECHANICAL DIAGRAM

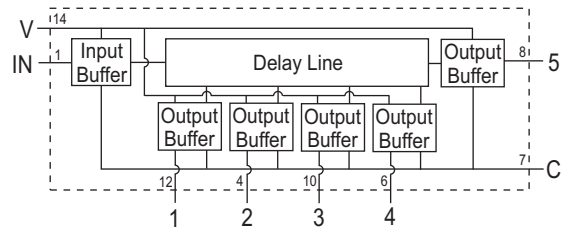


Product Selection Table (Add F suffix for Thru-Hole Leads, G suffix for Gull-Wing Leads, or J suffix for J-Leads)

Part Number	Output Delay and Tolerances (in ns)				
	Tap 1 (20%)	Tap 2 (40%)	Tap 3 (60%)	Tap 4 (80%)	Tap 5 (100%)
FLDM-TTL-10	6.0+/-1.0	7.0+/-1.0	8.0+/-1.0	9.0+/-1.0	10.0+/-1.0
FLDM-TTL-12	6.0+/-1.0	7.5+/-1.0	9.0+/-1.0	10.5+/-1.0	12.0+/-1.0
FLDM-TTL-14	6.0+/-1.0	8.0+/-1.0	10.0+/-1.0	12.0+/-1.0	14.0+/-1.0
FLDM-TTL-16	6.0+/-1.0	8.5+/-1.0	11.0+/-1.0	13.5+/-1.0	16.0+/-1.0
FLDM-TTL-18	6.0+/-1.0	9.0+/-1.0	12.0+/-1.0	15.0+/-1.0	18.0+/-1.0
FLDM-TTL-22	6.0+/-1.0	10.0+/-1.0	14.0+/-1.0	18.0+/-1.0	22.0+/-1.0
FLDM-TTL-25	5.0+/-1.0	10.0+/-1.0	15.0+/-1.0	20.0+/-1.0	25.0+/-1.0
FLDM-TTL-30	6.0+/-1.0	12.0+/-1.0	18.0+/-1.0	24.0+/-1.0	30.0+/-1.0
FLDM-TTL-35	7.0+/-1.0	14.0+/-1.0	21.0+/-1.0	28.0+/-1.5	35.0+/-1.5
FLDM-TTL-40	8.0+/-1.0	16.0+/-1.0	24.0+/-1.0	32.0+/-1.5	40.0+/-1.5
FLDM-TTL-45	9.0+/-1.0	18.0+/-1.0	27.0+/-1.0	36.0+/-1.5	45.0+/-2.0
FLDM-TTL-50	10.0+/-1.0	20.0+/-1.0	30.0+/-1.0	40.0+/-2.0	50.0+/-2.0
FLDM-TTL-55	11.0+/-1.0	22.0+/-1.0	33.0+/-1.5	44.0+/-2.0	55.0+/-2.0
FLDM-TTL-60	12.0+/-1.0	24.0+/-1.0	36.0+/-1.5	48.0+/-2.0	60.0+/-2.0
FLDM-TTL-65	13.0+/-1.0	26.0+/-1.5	39.0+/-1.5	52.0+/-2.0	65.0+/-2.5
FLDM-TTL-70	14.0+/-1.0	28.0+/-1.5	42.0+/-2.0	56.0+/-2.0	70.0+/-2.5
FLDM-TTL-75	15.0+/-1.0	30.0+/-1.5	45.0+/-2.0	60.0+/-2.5	75.0+/-2.5
FLDM-TTL-80	16.0+/-1.0	32.0+/-1.5	48.0+/-2.0	64.0+/-2.5	80.0+/-3.0
FLDM-TTL-85	17.0+/-1.0	34.0+/-1.5	51.0+/-2.0	68.0+/-2.5	85.0+/-3.0
FLDM-TTL-90	18.0+/-1.0	36.0+/-1.5	54.0+/-2.0	72.0+/-2.5	90.0+/-3.0
FLDM-TTL-95	19.0+/-1.0	38.0+/-1.5	57.0+/-2.0	76.0+/-2.5	95.0+/-3.0
FLDM-TTL-100	20.0+/-1.0	40.0+/-1.5	60.0+/-2.0	80.0+/-3.0	100.0+/-3.0
FLDM-TTL-125	25.0+/-1.0	50.0+/-2.0	75.0+/-2.5	100.0+/-3.0	125.0+/-4.0
FLDM-TTL-150	30.0+/-1.5	60.0+/-2.0	90.0+/-3.0	120.0+/-4.0	150.0+/-5.0
FLDM-TTL-175	35.0+/-1.5	70.0+/-2.5	105.0+/-4.0	140.0+/-5.0	175.0+/-5.0
FLDM-TTL-200	40.0+/-1.5	80.0+/-2.5	120.0+/-4.0	160.0+/-5.0	200.0+/-6.0
FLDM-TTL-225	45.0+/-2.0	90.0+/-3.0	135.0+/-4.0	180.0+/-6.0	225.0+/-7.0
FLDM-TTL-250	50.0+/-2.0	100.0+/-3.0	150.0+/-5.0	200.0+/-6.0	250.0+/-8.0
FLDM-TTL-300	60.0+/-2.0	120.0+/-4.0	180.0+/-5.0	240.0+/-7.0	300.0+/-9.0
FLDM-TTL-350	70.0+/-2.0	140.0+/-4.5	210.0+/-7.0	280.0+/-9.0	350.0+/-11.0
FLDM-TTL-400	80.0+/-3.0	160.0+/-5.0	240.0+/-7.0	320.0+/-10.0	400.0+/-12.0
FLDM-TTL-450	90.0+/-3.0	180.0+/-6.0	270.0+/-8.0	360.0+/-11.0	450.0+/-14.0
FLDM-TTL-500	100.0+/-3.0	200.0+/-6.0	300.0+/-9.0	400.0+/-12.0	500.0+/-15.0
FLDM-TTL-600	120.0+/-4.0	240.0+/-7.0	360.0+/-11.0	480.0+/-15.0	600.0+/-18.0
FLDM-TTL-700	140.0+/-4.0	280.0+/-9.0	420.0+/-13.0	600.0+/-17.0	700.0+/-20.0
FLDM-TTL-800	160.0+/-5.0	320.0+/-10.0	480.0+/-15.0	640.0+/-19.0	800.0+/-20.0
FLDM-TTL-900	180.0+/-6.0	360.0+/-11.0	520.0+/-16.0	720.0+/-20.0	900.0+/-22.0
FLDM-TTL-1000	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.

BLOCK DIAGRAM



Operating Specifications:

All measurements made at 25 deg. C
 All measurements made with Vcc = +5VDC
 All measurements made with (1) FAST TTL output load

Operating Temperature: 0 to +70 deg. C
 Storage Temperature: -55 to +125 deg. C

Vcc Supply Voltage: 4.75 to 5.25VDC

Vcc Supply Current:

Constant "0" in = 40mA typical

Constant "1" in = 7mA typical

Logic "High" Input:

Voltage: 2.0VDC min. ; Vcc max.

Current: 2.7VDC = 20uA max. ; 5.5VDC = 1mA max.

Logic "Low" Input:

Voltage: 0.8 VDC max.

Current: -0.6mA max.

Logic "High" Voltage Out: 2.7VDC min.

Logic "Low" Voltage Out: 0.5VDC max.



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