

Pulse Differentiator

Technitrol's Pulse Differentiator will differentiate input pulses, accepting or rejecting them based on a specified minimum pulse width.

- Available in pulse widths from 5 to 500 ns.
- Propagation delay from rising edge of input pulse to rising edge of output pulse is equal to nominal differentiator pulse width.
- Transfer molded—reliable.
- Military models with ceramic IC screened per Mil Std 883C and 38510 and military temperature range, add suffix "MX".
- Temperature range 0 to 70°C. -55 to +125°C available.
- Programmable model available.
- Fanout: Logic 1—20 loads; logic 0—10 loads.

Situation A:

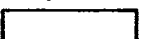
Input pulse width $\leq$ specified minimum pulse width.

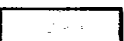
Input 

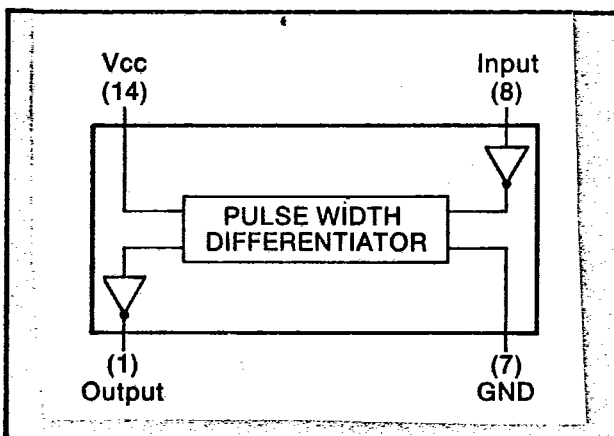
Output 

Situation B:

Input pulse width $\geq$ specified minimum pulse width.

Input 

Output 



Part number	Reject pulses $\leq$ width (ns)	Pass pulses $\geq$ width (ns)
TTLPD005	4	6.5
TTLPD010	8.5	11.5
TTLPD015	13.5	16.5
TTLPD020	18.5	21.5
TTLPD025	23.5	26.5
TTLPD030	28.5	31.5
TTLPD035	33.0	37.0
TTLPD040	38.0	42.0
TTLPD045	42.5	47.5
TTLPD050	47.5	52.5
TTLPD060	57.0	63.0
TTLPD070	66.0	74.0
TTLPD075	71.0	79.0
TTLPD100	95.0	105.0
TTLPD150	142.5	157.5
TTLPD200	190.0	210.0
TTLPD250	237.5	262.5
TTLPD300	285.0	315.0
TTLPD400	380.0	420.0
TTLPD500	475.0	525.0

- Delay characteristics @ V_{cc} 5.0., 25°C. no load.
- Input to output propagation delay (T_d) = (nominal pulse width +10 ns) ± 1.5 ns or 5% W.I.G.
- Rise and fall time 2 ns maximum.

Available in these packages:



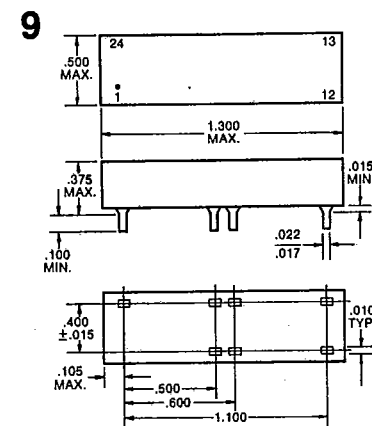
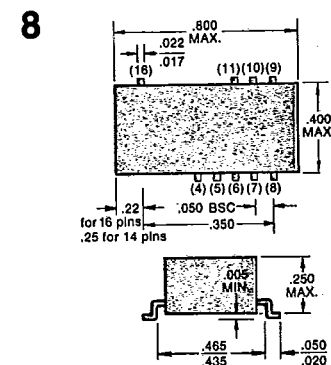
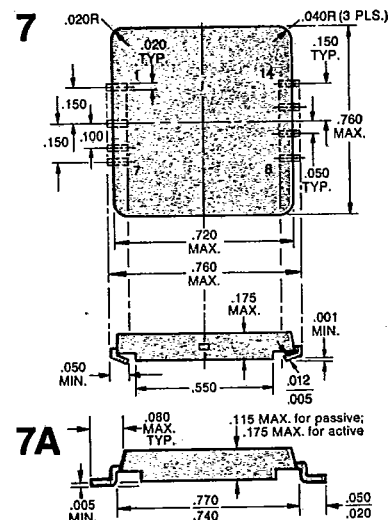
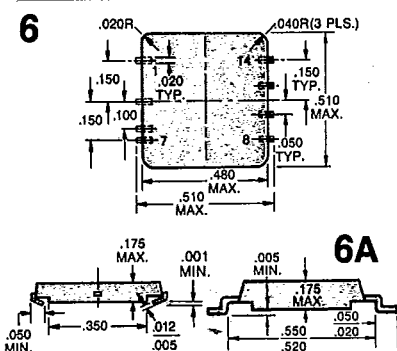
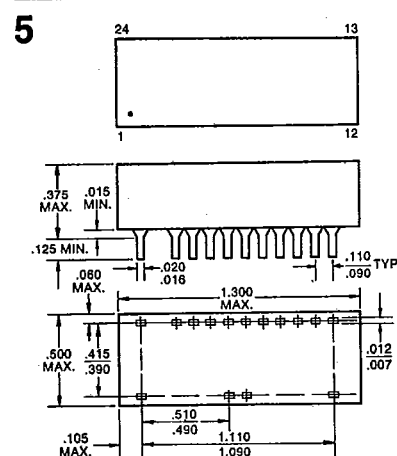
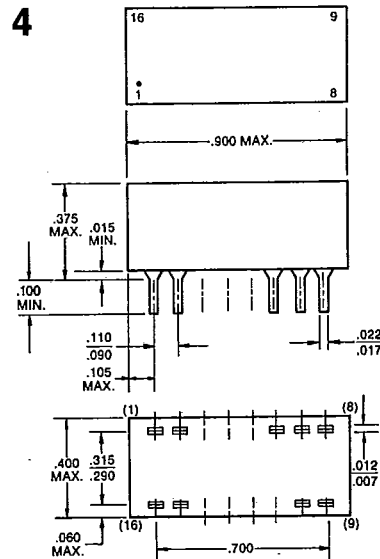
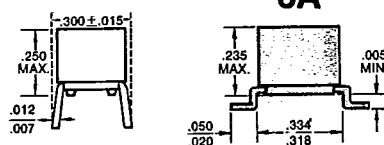
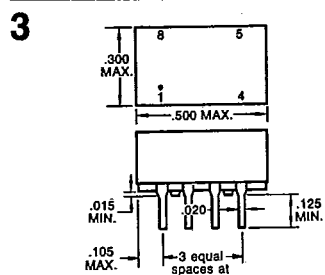
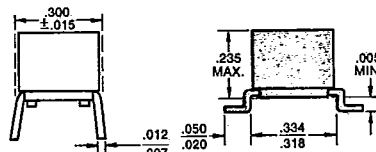
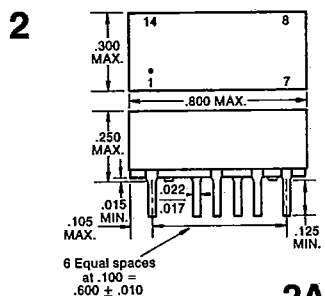
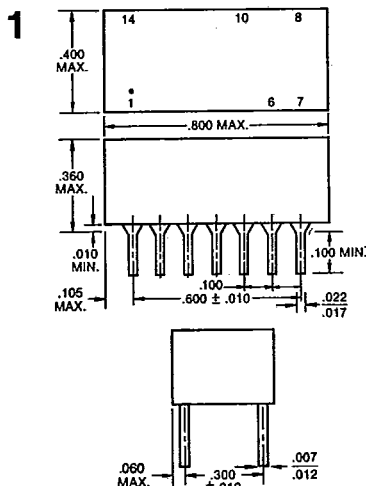
For dimensions, see drawings 1 and 8, on page 22.

Dimensions

Numbers of the drawings below are referenced in the catalog at the locations describing specific modules. One drawing may be referenced by two, three, or more modules. Only the pins specified in the applicable schematic are provided with each package.

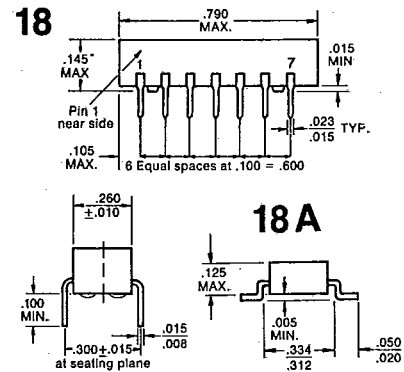
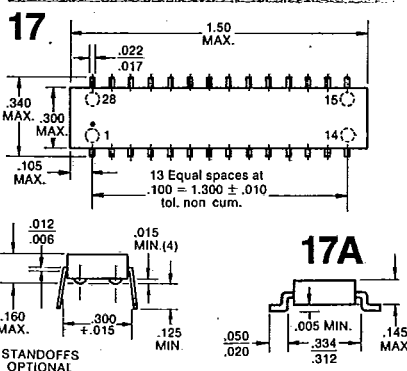
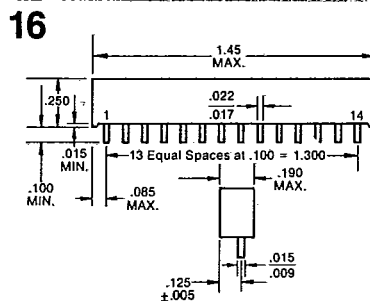
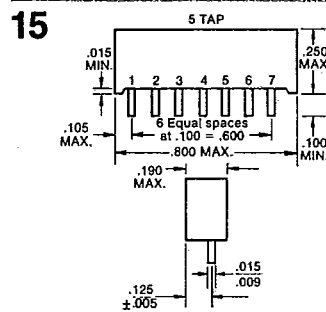
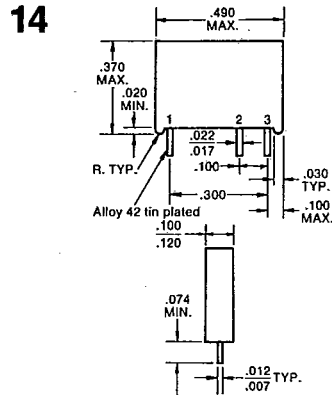
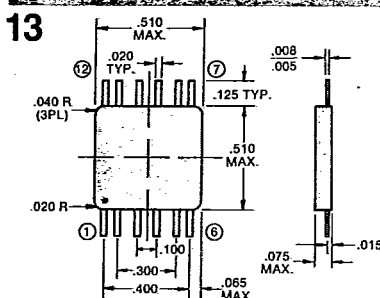
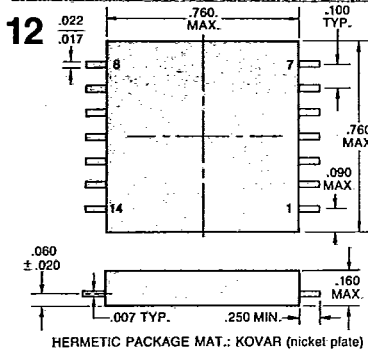
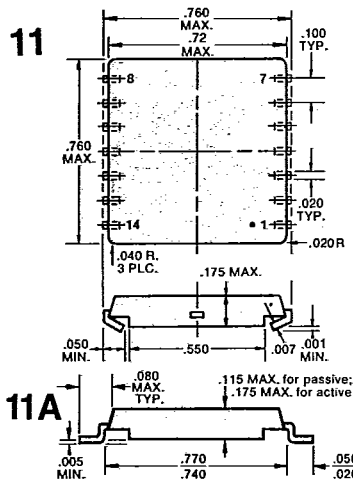
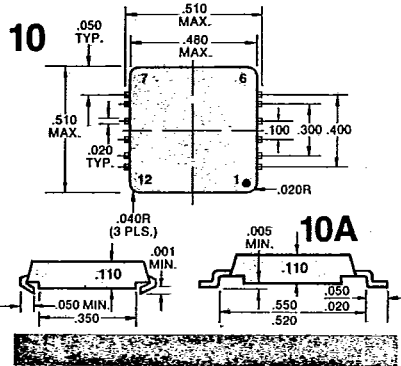
Pin numbers shown are for identification only, and are not necessarily marked on unit.

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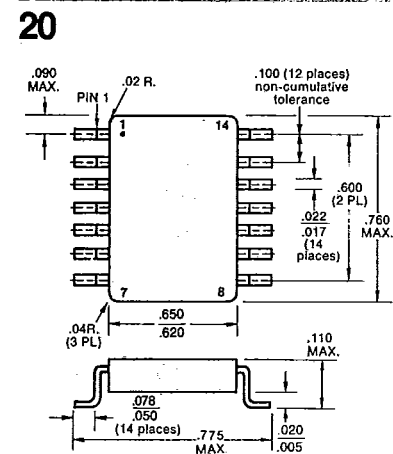
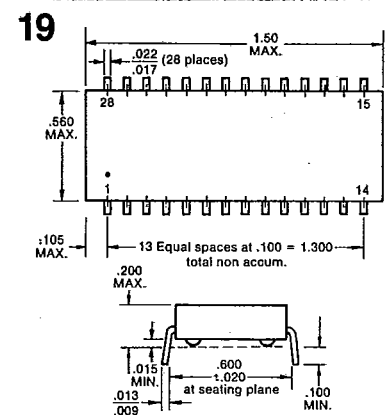


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Surface-mount models are shown in shaded color.



*For delays above 200 ns, height is .200 MAX.



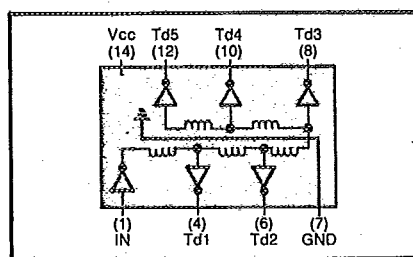
Can be used for ceramic-substrate applications.

High-Performance 5-Tap TTL Delay Modules- $\frac{3}{4}$ " Sq.

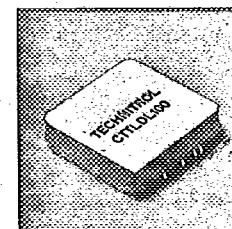
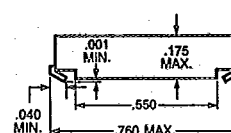
Part No.	NANOSECONDS					All Taps (Max.)	
	T _{D1}	T _{D2}	T _{D3}	T _{D4}	T _{D5}	T _{R+}	T _{R-}
CTTLDL025	5.0	10.0	15.0	20.0	25.0	2.0	2.0
CTTLDL050	10.0	20.0	30.0	40.0	50.0	2.0	2.0
CTTLDL075	15.0	30.0	45.0	60.0	75.0	2.0	2.0
CTTLDL100	20.0	40.0	60.0	80.0	100.0	2.0	5.0
CTTLDL125	25.0	50.0	75.0	100.0	125.0	2.0	5.0
CTTLDL150	30.0	60.0	90.0	120.0	150.0	2.0	6.0
CTTLDL200	40.0	80.0	120.0	160.0	200.0	2.0	7.0

Delay Characteristics measured @ V_{CC} = 5.0V, 25°C no load.
 Delay Tolerance ± 2 ns or 5% (whichever is greater).
 Minimum input-pulse width 20% of total delay.

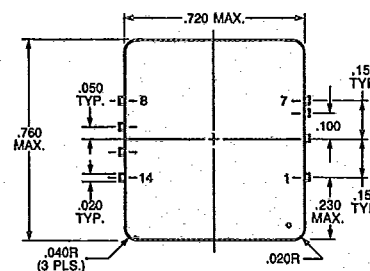
Schematic and Pin-Out for CTTLDL



C-Lead CTTLDL



Actual Size

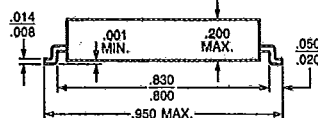


High-Performance Hermetic 5-Tap TTL Delay Modules- $\frac{3}{4}$ " Sq.

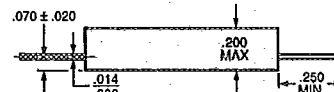
Part No.	Part No.	NANOSECONDS					All Taps (Max.)	
		T _{D1}	T _{D2}	T _{D3}	T _{D4}	T _{D5}	T _{R+}	T _{R-}
GJTTLDL025	JTTLDL025	5.0	10.0	15.0	20.0	25.0	2.0	2.0
GJTTLDL050	JTTLDL050	10.0	20.0	30.0	40.0	50.0	2.0	2.0
GJTTLDL075	JTTLDL075	15.0	30.0	45.0	60.0	75.0	2.0	2.0
GJTTLDL100	JTTLDL100	20.0	40.0	60.0	80.0	100.0	2.0	5.0
GJTTLDL125	JTTLDL125	25.0	50.0	75.0	100.0	125.0	2.0	6.0
GJTTLDL150	JTTLDL150	30.0	60.0	90.0	120.0	150.0	2.0	7.0
GJTTLDL200	JTTLDL200	40.0	80.0	120.0	160.0	200.0	2.0	8.0

Delay Characteristics measured @ V_{CC} = 5.0V, 25°C no load.
 Delay Tolerance ± 2 ns or 5% (whichever is greater).
 Minimum input-pulse width 40% of total delay.

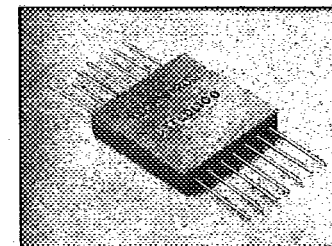
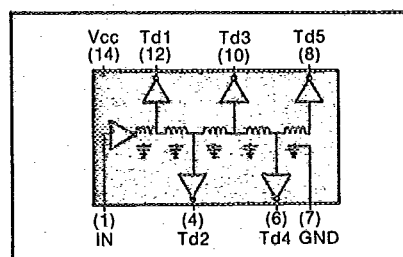
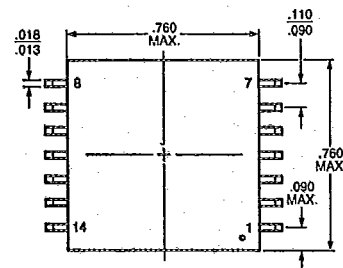
Hermetic Gull Wing GJTTLDL



Hermetic Flat-Pack JTTLDL



Schematic and Pin-Out for GJTTLDL and JTTLDL



Actual Size

Technitrol

1952 East Allegheny Avenue
 Philadelphia, PA 19134 USA
 Phone: 215-426-9105
 Fax: 215-426-2836

Lead material: electro tin plated (alloy 42)

Note: Pin numbers shown are for reference only and not necessarily marked on unit.