

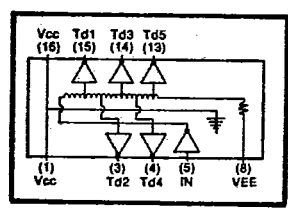
ECL Delay Modules

T-47-13
T-47-17

10k ECL DELAY MODULES

- $V_{ee} = -5.2V \pm 10\%$.
- 10k ECL buffered input and output in 16-pin transfer-molded DIP.
- 5-tap line provides delays from 5 ns to 500 ns.
- Minimum input pulse width is 20% of total delay.
- Temperature range -30 to $+85^\circ\text{C}$. Available with -55 to $+125^\circ\text{C}$.
- Transfer molded—reliable.
- Manufactured to meet Mil-D-23859.
- 500 linear FPM airflow and output terminated with 50 ohm to $-2.0V$.
- Fanout: 83 ECL loads.
- Commercial with additional testing, add suffix "CY".

- Military models with temperature range -55 to $+125^\circ\text{C}$ and ceramic package IC, add Suffix "M".
- Mil. temp. range (-55 to $+125^\circ\text{C}$) IC screened to Mil-Std-883C and 38510, add suffix "MX".
- Military features with additional burn-in and thermal shock, add suffix "MY".
- For delay module with QPL JAN IC, contact factory for details.



Available in these packages:

 For dimensions, see drawings 4, 8, 11, and 11A, on pages 22 and 23.

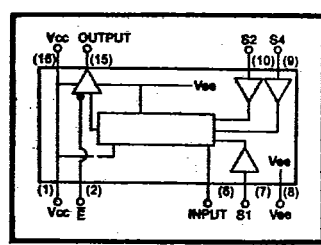
Part No.	NANOSECONDS					Output Rise Time
	T ₀₁	T ₀₂	T ₀₃	T ₀₄	T ₀₅	
ECLDL025	5	10	15	20	25	4
ECLDL050	10	20	30	40	50	4
ECLDL075	15	30	45	60	75	5
ECLDL100	20	40	60	80	100	6
ECLDL125	25	50	75	100	125	7
ECLDL150	30	60	90	120	150	7
ECLDL200	40	80	120	160	200	8
ECLDL250	50	100	150	200	250	10
ECLDL300	60	120	180	240	300	15
ECLDL350	70	140	210	280	350	15
ECLDL400	80	160	240	320	400	15
ECLDL450	90	180	270	350	450	20
ECLDL500	100	200	300	400	500	20

Delay Tolerance ± 2 ns or 5% W.I.G.
 Delay Characteristics @ $V_{ee} = -5.2 \pm .01$ Vdc @ T, 25°C
 Delay time measured @ $-1.3V$ level with output pulled down to $-2.0V$ 50Ω

10k ECL PROGRAMMABLE DELAY MODULES

- $V_{ee} = -5.2V \pm 10\%$.
- 10k ECL input and output.
- 3-bit binary gives 7 equal step delays.
- Available in 18 step delays from 1 ns to 50 ns.
- Low inherent delay (T_0); $T_0 = 3.0 \pm 1.5$ ns.
- Minimum input pulse width 8 ns or $8 \times$ step delay (W.I.G.).
- Temperature range -30 to $+85^\circ\text{C}$.
- 500 linear FPM airflow and output terminated with 50 ohm to $-2.0V_{dc}$.
- Fanout: 70 ECL loads.
- Manufactured to meet Mil-D-23859.
- Commercial with additional testing, add suffix "CY".
- Military models with temperature range -55 to $+125^\circ\text{C}$ and ceramic package IC, add Suffix "M".

- Mil. temp. range (-55 to $+125^\circ\text{C}$) IC screened to Mil-Std-883 and 38510, add suffix "MX".
- Mil features with additional burn-in and thermal shock, add suffix "MY".
- For delay module with QPL JAN IC, contact factory for details.



Available in these packages:

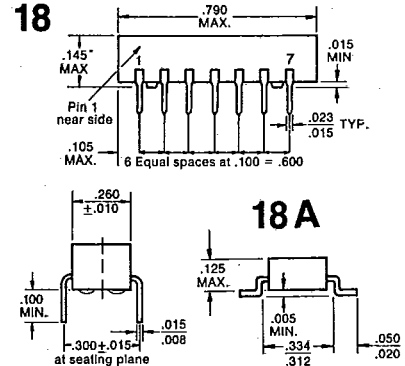
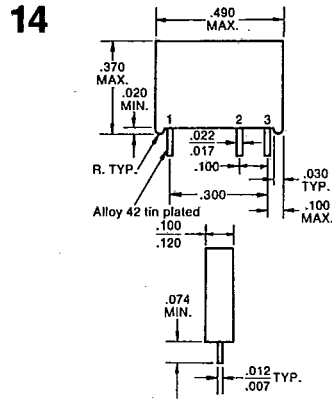
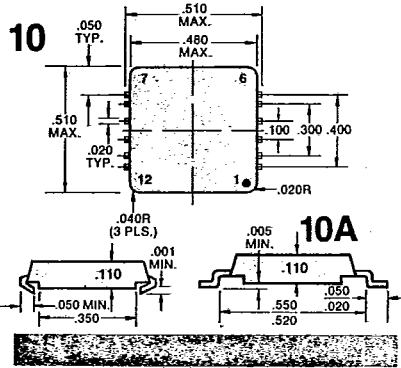
 For dimensions, see drawings 4, 8, 11, and 11A, on pages 22 and 23.

Technitrol Part No.	Step Delay ns \pm ns	Max. Delay ns \pm ns	Output Rise Time Max. (ns)
ECLPG301	1.0 \pm .4	10.0 \pm 1.5	3.6
ECLPG302	2.0 \pm .6	17.0 \pm 1.5	3.6
ECLPG303	3.0 \pm 1.0	24.0 \pm 1.5	3.6
ECLPG304	4.0 \pm 1.0	31.0 \pm 2.0	3.6
ECLPG305	5.0 \pm 1.5	38.0 \pm 2.0	3.6
ECLPG306	6.0 \pm 1.5	45.0 \pm 2.5	3.6
ECLPG307	7.0 \pm 1.5	52.0 \pm 2.5	3.6
ECLPG308	8.0 \pm 1.5	59.0 \pm 3.0	3.6
ECLPG309	9.0 \pm 1.5	66.0 \pm 3.5	3.6
ECLPG310	10.0 \pm 1.5	73.0 \pm 4.0	3.6
ECLPG315	15.0 \pm 1.5	108.0 \pm 5.0	5.0
ECLPG320	20.0 \pm 1.5	143.0 \pm 7.0	5.0
ECLPG325	25.0 \pm 1.5	178.0 \pm 9.0	5.0
ECLPG330	30.0 \pm 2.0	213.0 \pm 11.0	5.0
ECLPG335	35.0 \pm 2.0	248.0 \pm 12.0	5.0
ECLPG340	40.0 \pm 2.5	283.0 \pm 14.0	5.0
ECLPG345	45.0 \pm 2.5	318.0 \pm 16.0	5.0
ECLPG350	50.0 \pm 2.5	353.0 \pm 17.0	5.0

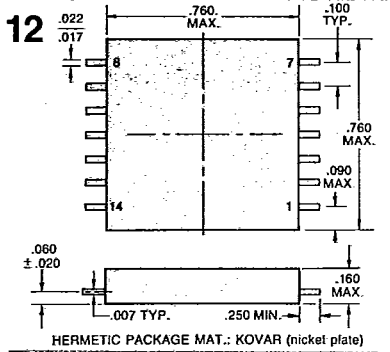
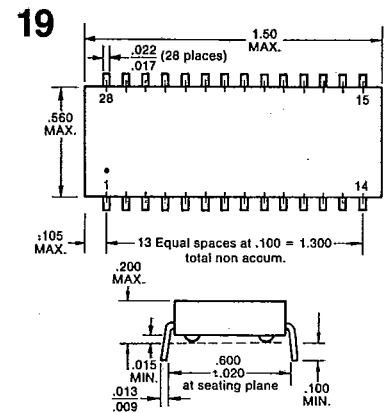
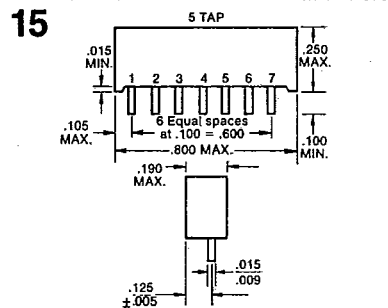
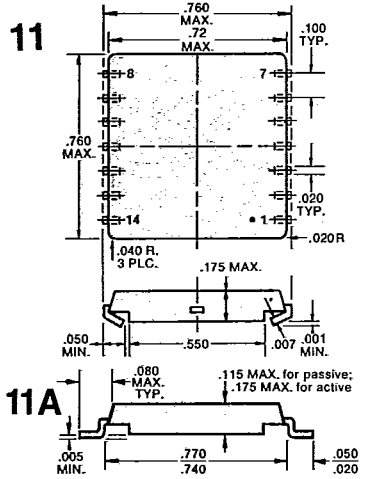
Delay Characteristics measured at $V_{ee} = -5.2 \pm .01$ Vdc, $T_a = 25^\circ\text{C}$.
 For truth table, see page 15.
 All delay times measured @ $-1.3V$ level with output pulled down to $-2.0V$ with 50Ω.
 Rise time measured from 20 to 80% of output pulse.
 For proper operation, minimum input pulse width should be 8 ns or 8 times step delay (W.I.G.) and repetition rate should be 2 times input pulse width.
 Input is internally terminated, therefore the delay line driver does not require a pull-down resistor.

T-50-23

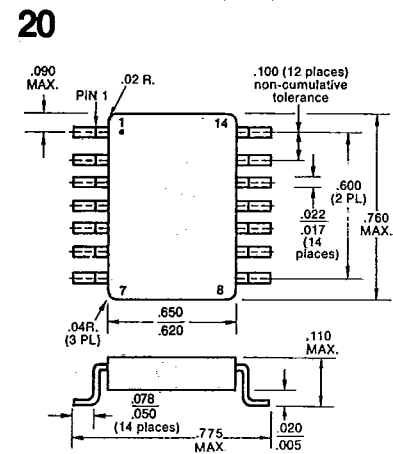
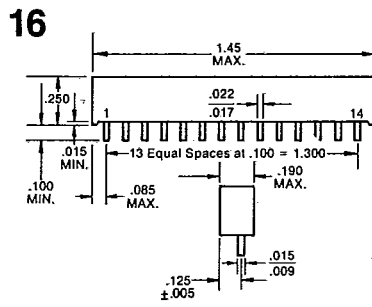
Surface-mount models are shown in shaded color.



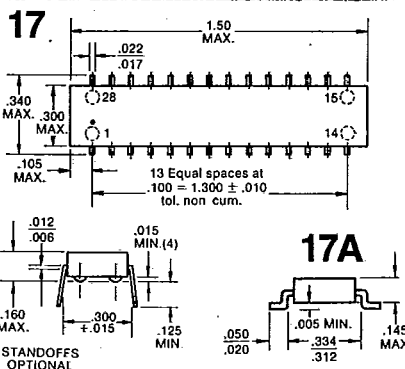
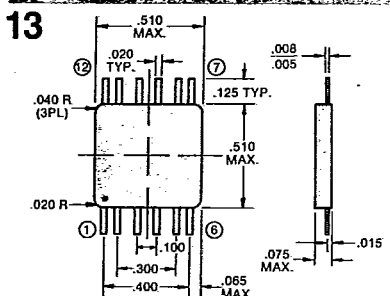
*For delays above 200 ns, height is .200 MAX.



HERMETIC PACKAGE MAT.: KOVAR (nickel plate)



Can be used for ceramic-substrate applications.



STANDOFFS OPTIONAL

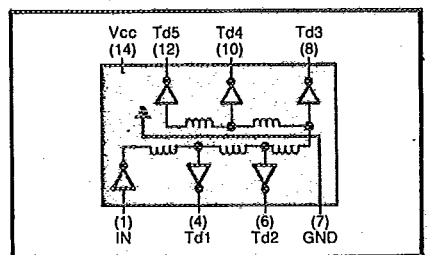
High-Performance 5-Tap TTL Delay Modules— $\frac{3}{4}$ " Sq.

High-Performance Surface-Mount TTL Delay Modules

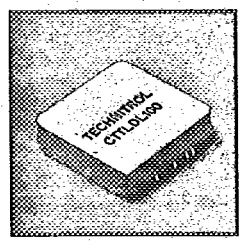
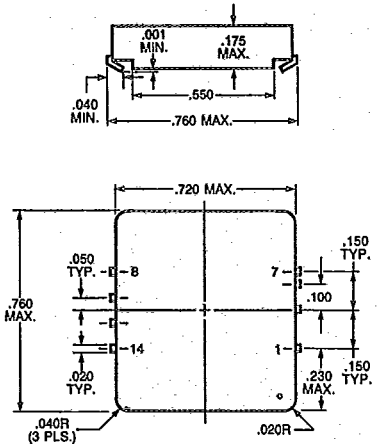
Part No.	NANOSECONDS					All Taps (Max.)	
	T _D 1	T _D 2	T _D 3	T _D 4	T _D 5	T _R +	T _R -
CTTLDL025	5.0	10.0	15.0	20.0	25.0	2.0	2.0
CTTLDL050	10.0	20.0	30.0	40.0	50.0	2.0	2.0
CTTLDL075	15.0	30.0	45.0	60.0	75.0	2.0	2.0
CTTLDL100	20.0	40.0	60.0	80.0	100.0	2.0	5.0
CTTLDL125	25.0	50.0	75.0	100.0	125.0	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



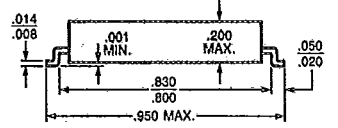
Actual Size

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

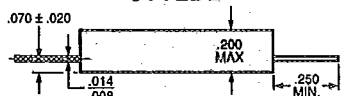
Part No.	Part No.	NANOSECONDS					All Taps (Max.)	
		T _D 1	T _D 2	T _D 3	T _D 4	T _D 5	T _R +	T _R -
GJTTLDL025	JTTLDL025	5.0	10.0	15.0	20.0	25.0	2.0	2.0
GJTTLDL050	JTTLDL050	10.0	20.0	30.0	40.0	50.0	2.0	2.0
GJTTLDL075	JTTLDL075	15.0	30.0	45.0	60.0	75.0	2.0	2.0
GJTTLDL100	JTTLDL100	20.0	40.0	60.0	80.0	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.

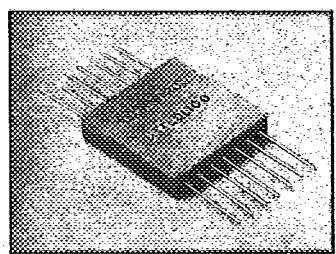
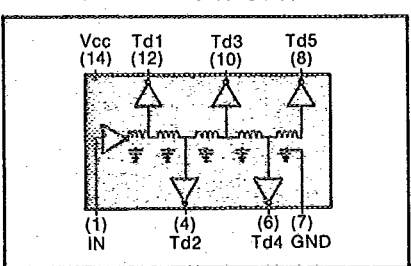
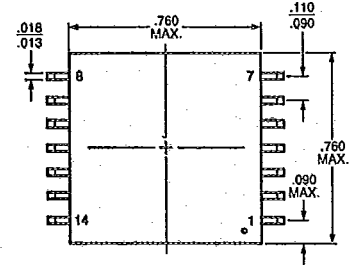
Hermetic Gull Wing GJTTLDL



Hermetic Flat-Pack JTTLDL



Schematic and Pin-Out for GJTTLDL and JTTLDL



Actual Size

Lead material: electro tin plated (alloy 42)
 Note: Pin numbers shown are for reference only and not necessarily marked on unit.

Technitrol

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