

FEATURES

- 0.3 INCH (7.62mm) DIGIT HEIGHT.
- CONTINUOUS UNIFORM SEGMENTS.
- CHOICE OF SIX BRIGHT COLORS RED/BRIGHT RED/GREEN/YELLOW/ORANGE/HIGH EFFICIENCY RED.
- LOW POWER REQUIREMENT.
- EXCELLENT CHARACTERS APPEARANCE.
- HIGH CONTRAST.
- HIGH BRIGHTNESS.
- WIDE VIEWING ANGLE.
- SOLID STATE RELIABILITY.
- CATEGORIZED FOR LUMINOUS INTENSITY.
- I.C. COMPATIBLE.
- EASY MOUNTING ON P.C. BOARD OR SOCKETS.



DESCRIPTION

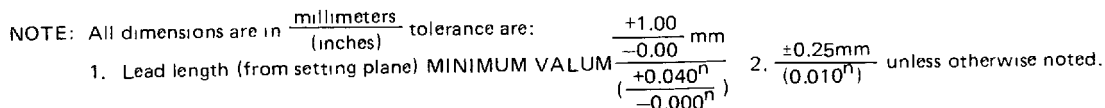
The LTC-3710 series devices are 0.3 inch (7.62mm) height four digit displays. The red series devices utilize LED chips which are made from GaAsP on a GaAs substrate. The bright red and green series devices utilize LED chips which are made from GaP on a transparent GaP substrate. The yellow, orange and high efficiency red series devices utilize LED chips which are made from GaAsP on a transparent GaP substrate. Red and bright red displays have black face and red segment color. Green, and orange displays have black face and white segment color, Yellow displays have black face and yellow segment color. High efficiency red displays have red face and red segment color.

DEVICES

PART NO. LTC—						DESCRIPTION
RED	BRIGHT RED	GREEN	YELLOW	ORANGE	HI.-EFF. RED	
3710R	3710P	3710G	3710Y	3710E	3710HR	Multiplex, Common Cathode
3718R	3718P	3718G	3718Y	3718E	3718HR	Multiplex, Common Cathode

LED CLOCK &  
FREQUENCY DISPLAYS

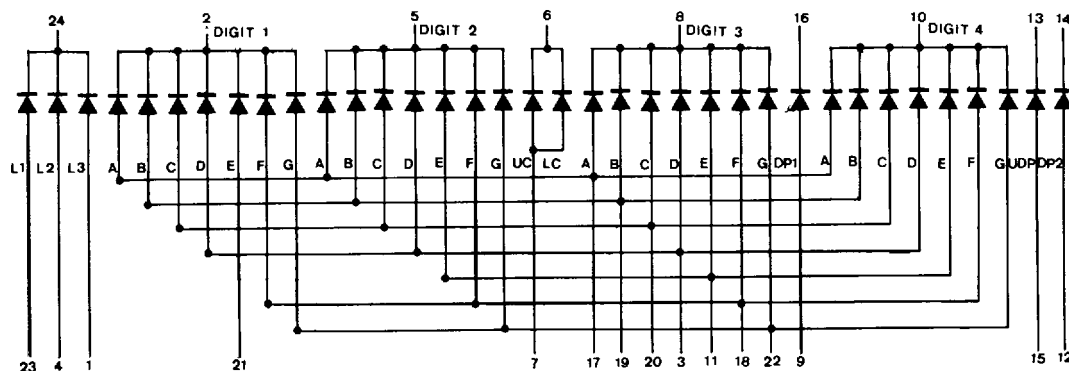
### A. LTC-3710 Series



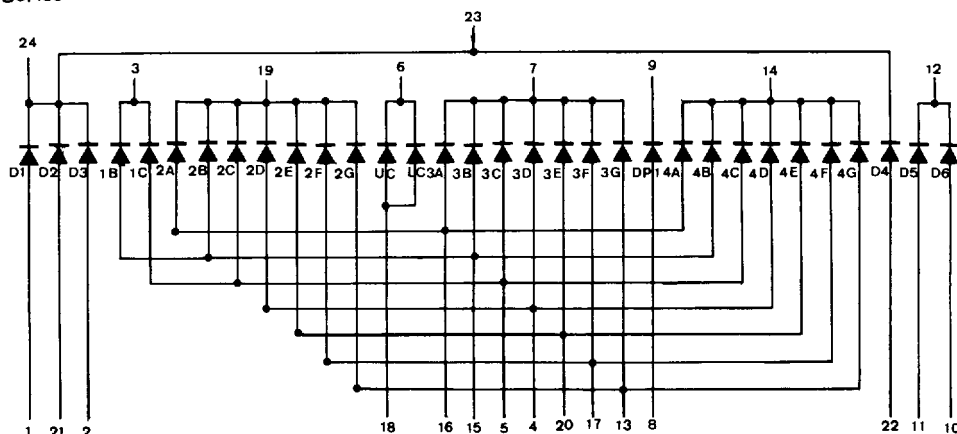
PIN NO.	CONNECTION	PIN NO.	CONNECTION
1	Anode L3	13	Cathode U,D,P
2	Common Cathode Digit 1	14	Cathode D,P 2,
3	Anode D, Digit 1, 2, 3, 4	15	Anode U,D,P.
4	Anode L2	16	Cathode D,P.1.
5	Common Cathode, Digit 2	17	Anode A, Digit 1, 2, 3, 4
6	Cathode UC, LC	18	Anode F, Digit 1, 2, 3, 4
7	Anode UC, LC	19	Anode B, Digit 1, 2, 3, 4
8	Common Cathode, Digit 3	20	Anode C, Digit 1, 2, 3, 4
9	Anode D.P.1.	21	Anode E, Digit 1
10	Common Cathode, Digit 4	22	Anode G, Digit 1, 2, 3, 4
11	Anode E, Digit 2, 3, 4	23	Anode L1
12	Anode D.P.2	24	Cathode L1, L2, L3

# INTERNAL CIRCUIT DIAGRAM

## LTC-3710 Series



## LTC-3718 Series



## ABSOLUTE MAXIMUM RATINGS

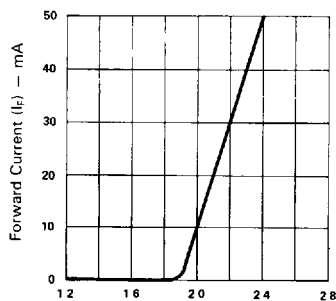
PARAMETER	RED	BRIGHT RED	GREEN	YELLOW	ORANGE	HI-EFF. RED	UNIT
Power Dissipation Per Segment	45	30	60	50	60	60	mW
Peak Forward Current Per Segment (1/10 Duty Cycle, 0.1ms Pulse Width)	120	40	80	60	80	80	mA
Continuous Forward Current Per Segment	20	12	20 20	16	20	20	mA
Derating Linear From 25° C Per Segment	0.24	0.14	0.24	0.2	0.24	0.24	mA/°C
Reverse Voltage Per Segment	5	5	5	5	5	5	V
Operating Temperature Range	-25° C to + 85° C						
Storage Temperature Range	-25° C to +85° C						
Solder Temperature 1/16 inch Below Seating Plane for 3 Seconds at 260° C							

# ELECTRICAL/OPTICAL CHARACTERISTICS AT $T_A = 25^{\circ}\text{C}$ LTC-3710HR

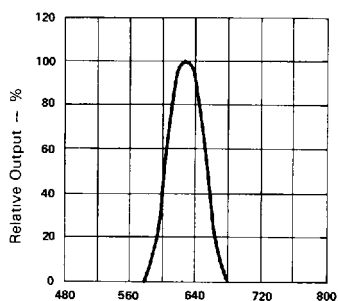
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity	$I_v$	750	1800		$\mu\text{cd}$	$I_F = 10\text{ mA}$
Peak Emission Wavelength	$\lambda_p$		635		nm	$I_F = 20\text{ mA}$
Spectral Line Half-Width	$\Delta\lambda$		40		nm	$I_F = 20\text{ mA}$
Forward Voltage any Segment or D.P.	$V_F$		2.1	2.8	V	$I_F = 20\text{ mA}$
Reverse Current, any Segment or D.P.	$I_R$			100	$\mu\text{A}$	$V_R = 5\text{ V}$
Luminous Intensity Matching Ratio	$I_v\text{-m}$			2:1		$I_F = 20\text{ mA}$

## TYPICAL ELECTRICAL/OPTICAL CHARACTERISTIC CURVES

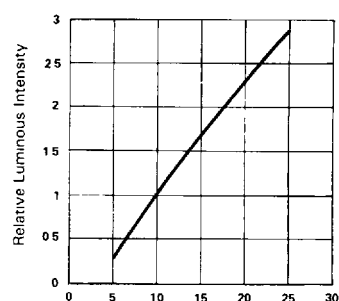
( $25^{\circ}\text{C}$  Ambient Temperature Unless Otherwise Noted)



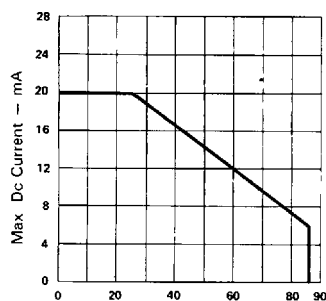
Forward Voltage ( $V_F$ ) — Volts  
Fig. 1 FORWARD CURRENT Vs. FORWARD VOLTAGE



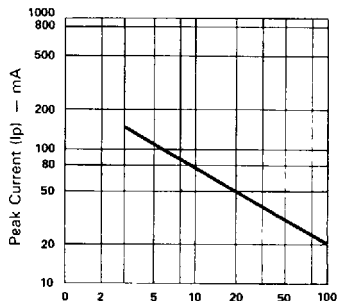
Wavelength ( $\lambda$ ) — nm  
Fig. 2 SPECTRAL RESPONSE



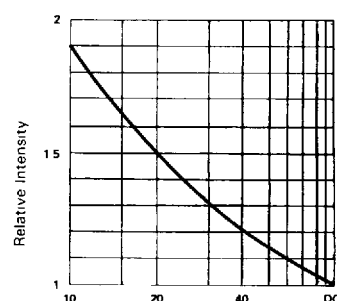
Forward Current ( $I_F$ ) — mA  
Fig. 3 RELATIVE, LUMINOUS INTENSITY Vs. FORWARD CURRENT (PER SEGMENT)



Ambient Temperature ( $T_A$ ) —  $^{\circ}\text{C}$   
Fig. 4 MAX. ALLOWABLE DC CURRENT PER SEG Vs AMBIENT TEMPERATURE



Duty Cycle %  
Fig. 5 MAX. PEAK CURRENT Vs. DUTY CYCLE % (REFRESH RATE —  $F = 1\text{ KHz}$ )



Duty Cycle %  
Fig. 6 LUMINOUS INTENSITY Vs. DUTY CYCLE % (AVERAGE  $I_F = 10\text{ mA}$  PER SEG)