



# 53173Y LTL- 54173G SERIES 57173HR

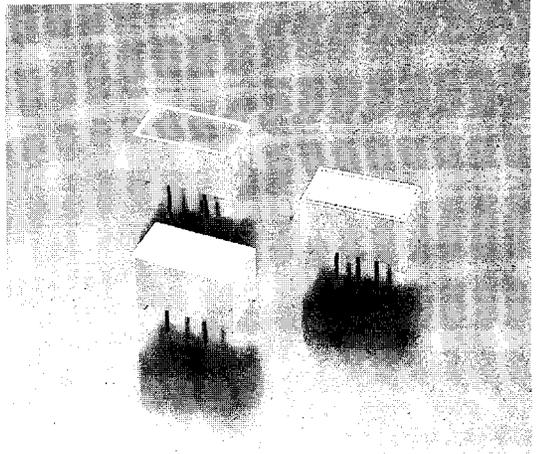
T-41-31

12.7mm x 6.35mm LIGHT BAR

TAIWAN LITON ELECTRONIC 49E D ■ 8835695 0003661 655 ■ TLIT

## FEATURES

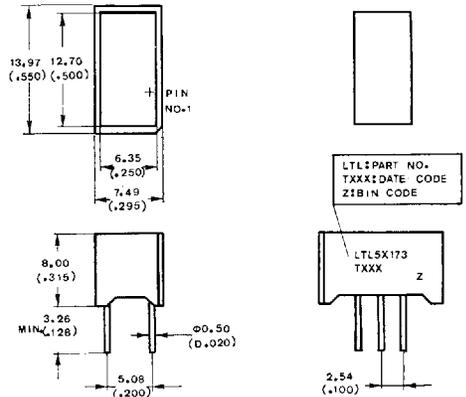
- 12.7mm x 6.35mm RECTANGULAR LIGHT BAR.
- CHOICE OF THREE BRIGHT COLORS-GREEN/ YELLOW/ HIGH EFFICIENCY RED.
- LARGE, BRIGHT, UNIFORM LIGHT EMITTING AREAS.
- LOW POWER REQUIREMENT.
- I.C. COMPATIBLE.
- EXCELLENT ON-OFF CONTRAST.
- CAN BE USED WITH PANEL AND LEGEND MOUNT.
- SUITABLE FOR MULTIPLEX OPERATION.
- EASY MOUNTING ON P.C. BOARD.



## DESCRIPTION

The LTL-53173Y/54173G/57173HR series bars are rectangular light sources designed for a variety of applications where a large bright source of light is required. These light bars are configured in dual-in-line packages. The green series devices utilize LED chips which are made from GaP on a transparent GaP substrate. The yellow and high efficiency red series devices utilize LED chips which are made from GaAsP on transparent GaP substrate. The green devices have green bar color, yellow devices have yellow bar color, and high-efficiency red devices have red bar color.

## PACKAGE DIMENSIONS



NOTE: All dimensions are in  $\frac{\text{millimeters}}{\text{(inches)}}$  tolerance are:

1. Lead length (from seating plane): minimum value  $\frac{+1.00}{-0.00}$  mm  $\frac{+0.040''}{-0.000''}$
2.  $\pm 0.25\text{mm}$   $\frac{\pm 0.25\text{mm}}{(0.010'')}$  unless otherwise noted.

PART NO. LTL-			DESCRIPTION
GREEN	YELLOW	HI-EFF. RED	
54173G	53173Y	57173HR	Universal Rectangular Bar

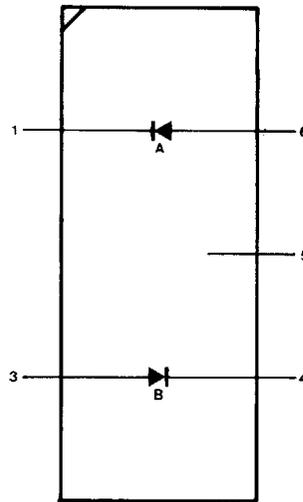
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## PIN CONNECTION

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PIN NO.	CONNECTION
1	Cathode A
2	No Pin
3	Anode B
4	Cathode B
5	No Connection
6	Anode A

## INTERNAL CIRCUIT DIAGRAM



## ABSOLUTE MAXIMUM RATINGS AT $T_A = 25^\circ\text{C}$

PARAMETER	GREEN	YELLOW	HI.-EFF. RED	UNIT
Power Dissipation Per Chip	75	60	75	mW
Peak Forward Current Per Chip (1/10 Duty Cycle, 0.1ms Pulse Width)	100	80	100	mA
Continuous Forward Current Per Chip	25	20	25	mA
Derating Linear From $25^\circ\text{C}$ Per Chip	0.3	0.24	0.3	$\text{mA}/^\circ\text{C}$
Reverse Voltage Per Chip	5	5	5	V
Operating Temperature Range	$-25^\circ\text{C}$ to $+85^\circ\text{C}$			
Storage Temperature Range	$-25^\circ\text{C}$ to $+85^\circ\text{C}$			
Solder Temperature 1/16 inch Below Seating Plane for 3 Seconds at $260^\circ\text{C}$				www.DataSheet4U.com

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

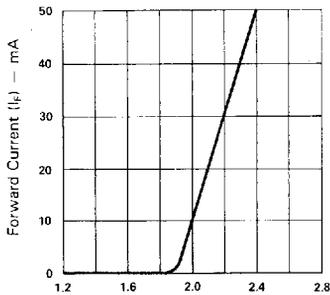
LTL-54173G

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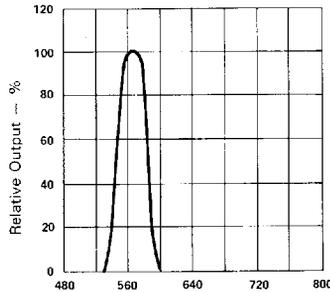
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity Per Bar	$I_v$	2.3	4.2		mcd	$I_F = 10\text{ mA}$
Peak Emission Wavelength	$\lambda_p$		565		nm	$I_F = 20\text{ mA}$
Spectral Line Half-Width	$\Delta\lambda$		30		nm	$I_F = 20\text{ mA}$
Forward Voltage any Chip	$V_F$		2.1	2.8	V	$I_F = 20\text{ mA}$
Reverse Current any Chip	$I_R$			100	$\mu\text{A}$	$V_R = 5\text{V}$

## TYPICAL ELECTRICAL/OPTICAL CHARACTERISTIC CURVES

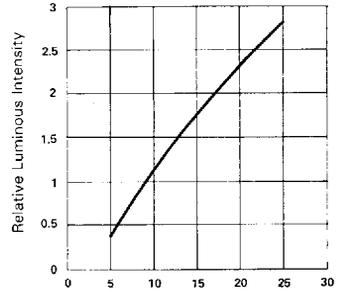
( $25^\circ\text{C}$  Ambient Temperature Unless Otherwise Noted)



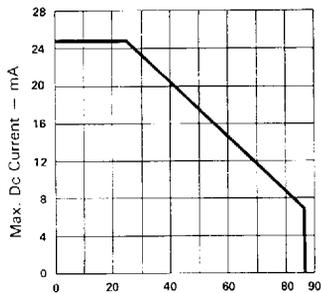
Forward Voltage ( $V_F$ ) - Volts  
Fig. 1 FORWARD CURRENT Vs. FORWARD VOLTAGE.



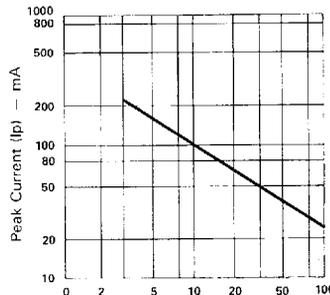
Wavelength ( $\lambda$ ) - nm.  
Fig. 2 SPECTRAL RESPONSE.



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 -  $F = 1\text{ KHz}$ )

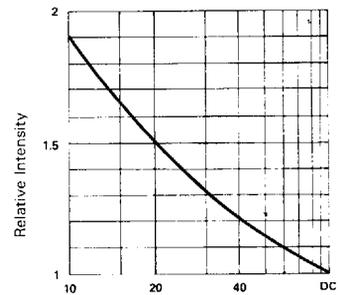


Fig. 6 LUMINOUS INTENSITY Vs. DUTY CYCLE.% (AVERAGE  $I_F = 10\text{ mA}$  PER SEG.)

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PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity Per Bar	$I_v$	2.3	4.2		mcd	$I_F = 10\text{ mA}$
Peak Emission Wavelength	$\lambda_p$		565		nm	$I_F = 20\text{ mA}$
Spectral Line Half-Width	$\Delta\lambda$		30		nm	$I_F = 20\text{ mA}$
Forward Voltage any Chip	$V_F$		2.1	2.8	V	$I_F = 20\text{ mA}$
Reverse Current any Chip	$I_R$			100	$\mu\text{A}$	$V_R = 5\text{ V}$

### TYPICAL ELECTRICAL/OPTICAL CHARACTERISTIC CURVES

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

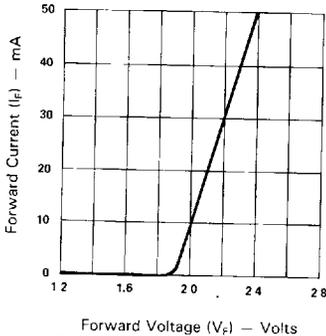


Fig 1 FORWARD CURRENT Vs FORWARD VOLTAGE.

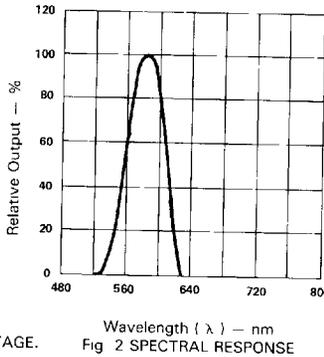


Fig 2 SPECTRAL RESPONSE

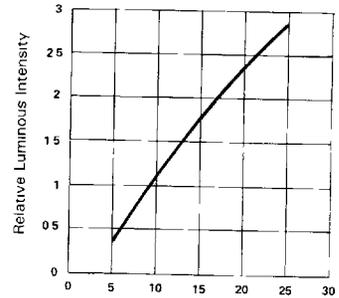


Fig 3 RELATIVE LUMINOUS INTENSITY Vs FORWARD CURRENT (PER SEGMENT)

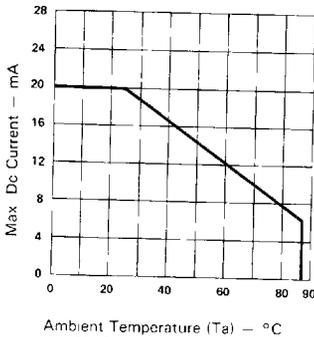


Fig 4 MAX ALLOWABLE DC CURRENT PER SEG Vs AMBIENT TEMPERATURE

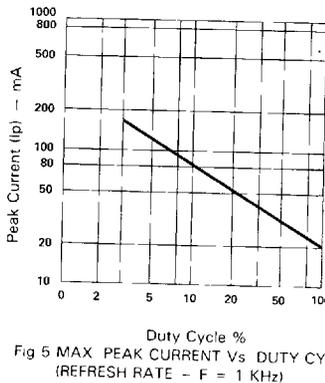


Fig 5 MAX PEAK CURRENT Vs DUTY CYCLE % (REFRESH RATE - F = 1 KHz)

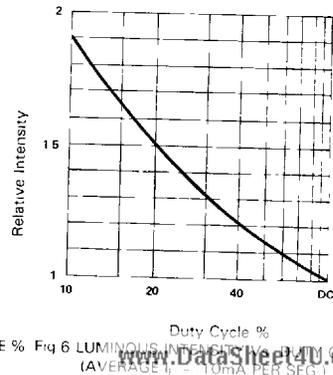


Fig 6 LUMINOUS INTENSITY Vs DUTY CYCLE % (AVERAGE  $I_F = 10\text{ mA}$  PER SEG)

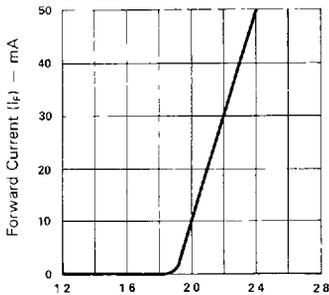
# ELECTRICAL/OPTICAL CHARACTERISTICS AT $T_A = 25^\circ\text{C}$

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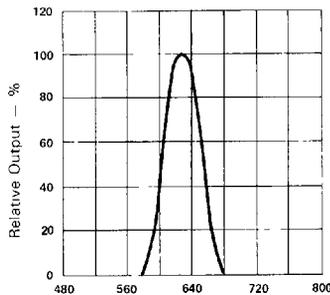
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity Per Bar	$I_V$	2.3	4.2		mcd	$I_F = 10\text{ mA}$
Peak Emission Wavelength	$\lambda_P$		635		nm	$I_F = 20\text{ mA}$
Spectral Line Half-Width	$\Delta\lambda$		40		nm	$I_F = 20\text{ mA}$
Forward Voltage any Chip	$V_F$		2.1	2.8	V	$I_F = 20\text{ mA}$
Reverse Current any Chip	$I_R$			100	$\mu\text{A}$	$V_R = 5\text{V}$

## TYPICAL ELECTRICAL/OPTICAL CHARACTERISTIC CURVES

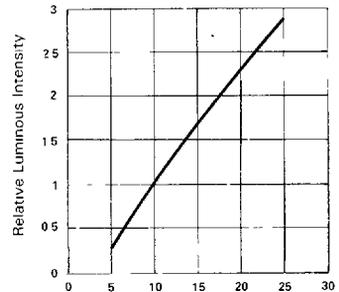
( $25^\circ\text{C}$  Ambient Temperature Unless Otherwise Noted)



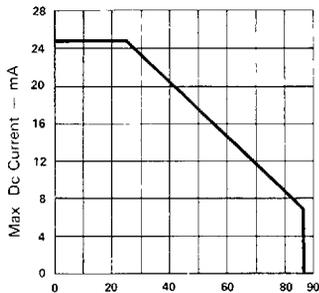
Forward Voltage ( $V_F$ ) — Volts  
Fig 1 FORWARD CURRENT Vs FORWARD VOLTAGE



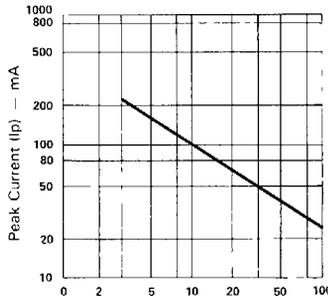
Wavelength ( $\lambda$ ) — nm  
Fig 2 SPECTRAL RESPONSE



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 —  $F = 1\text{ KHz}$ )

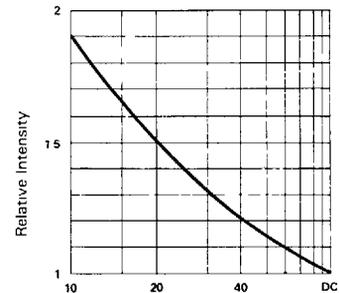


Fig 6 LUMINOUS INTENSITY Vs DUTY CYCLE % (AVERAGE  $I_F = 10\text{mA}$  PER SEG)

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