

# Surface Mount Bi-Color Chip LEDs

# MSL-155XX SERIES

## Description

The MSL-155xx, a series of bi-color Chip LED device, is designed in an industry standard package suitable for SMT assembly method. This series contain different combinations of Red & Green chips to provide broad range choices in wavelength and intensity. They are all molded in water clear epoxy package.

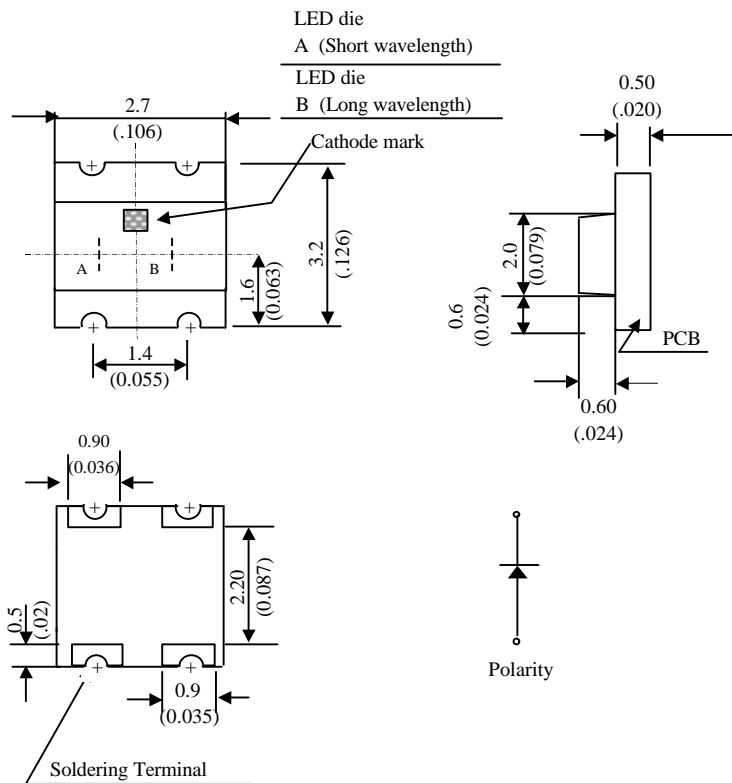
## Features

- Small Size
- Industry Standard Footprint
- Compatible with IR Solder process
- Available in 8 mm Tape on 7"(178mm) Diameter Reels
- Dual color

## Applications

- Push-button backlighting
- LCD backlighting
- Symbol backlighting
- Front panel indicator

## Package Dimensions



NOTE:  
1. All dimensions are in millimeter (inches)  
2. Tolerance is  $\pm 0.1\text{mm}$  (.004") unless otherwise specified.

## Absolute Maximum Ratings

@  $T_A = 25^\circ\text{C}$

Parameter	Symbol	Maximum Rating	Units
Peak Forward Current	$I_{FP}$	80	mA
DC Forward Current <sup>(1)</sup>	$I_F$	25	mA
Power Dissipation	$P_D$	65	mW
Reverse Voltage ( $I_R = 100 \mu\text{A}$ )	$V_R$	5	V
Operating Temperature Range	$T_{OPR}$	-20 to + 80	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-30 to + 100	$^\circ\text{C}$

Notes:

1. Derate linearly as shown in figure 4 for temperatures above  $25^\circ\text{C}$

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## Optical-Electrical Characteristics

Part Number MSL-	Color	Luminous Intensity $I_V$ (mcd) @ $I_F = 20 \text{ mA}^{(1)}$		Peak Wavelength $\lambda_{\text{peak}}^{(\text{nm})}$	Forward Voltage $V_F$ (Volts) @ $I_F = 20 \text{ mA}$		Viewing Angle $2\theta_{1/2}$ Degrees <sup>(2)</sup>
		Min.	Typ.	Typ.	Typ.	Max.	Typ.
155B0	Orange / Yellow Green	10 / 10	14 / 35	630 / 565	2.1 / 2.2	2.6	130
155B1	High eff Red / Yellow Green	10 / 10	14 / 35	640 / 565	1.9 / 2.2	2.6	130
155B2	Super Red / Yellow Green	30 / 10	45 / 35	660 / 565	1.8 / 2.2	2.2 / 2.6	130
155B5	Orange / Pure Green	4.5 / 2.0	13 / 6	610 / 555	2.2	2.6	130
155B6	AlGaAs Red / Pure Green	30 / 10	45 / 35	660 / 565	1.8/2.2	2.0/2.6	130

Notes:

- The luminous intensity,  $I_V$ , is measured at the peak of the spatial radiation pattern which may not be aligned with the mechanical axis of the lamp package.
- $2\theta_{1/2}$  is the off-axis angle where the luminous intensity is 1/2 of the peak intensity.

## Typical Optical - Electrical Characteristic Curves

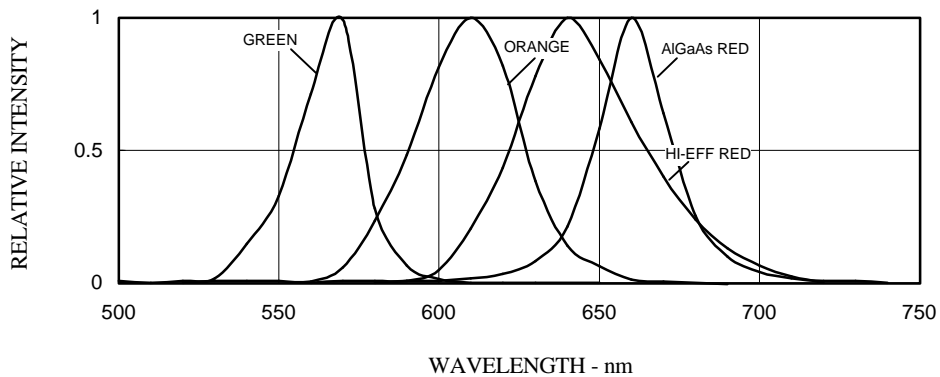
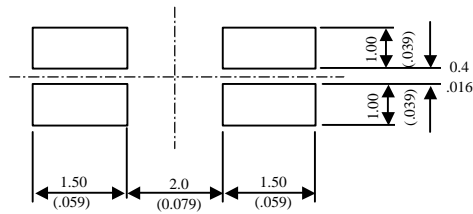


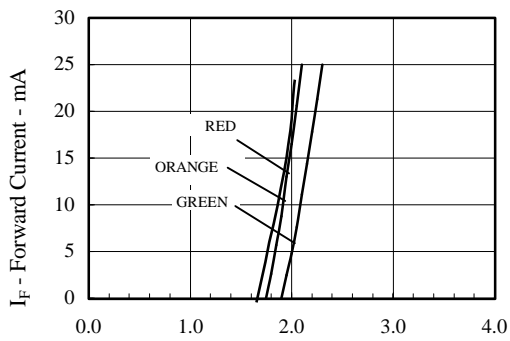
FIG. 1. Relative Intensity vs. Wavelength

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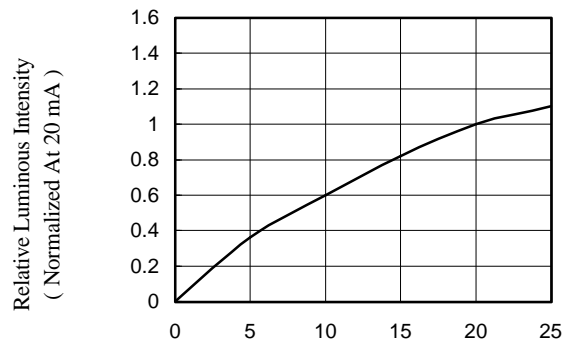
## Recommended Solder Patterns



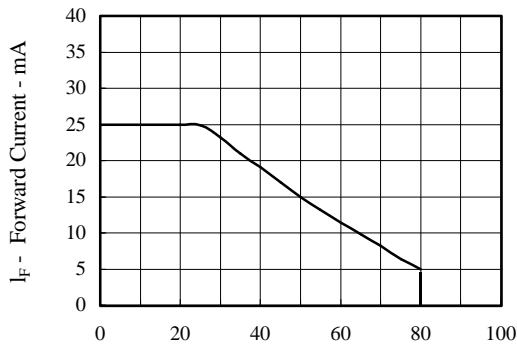
## Typical Optical - Electrical Characteristic Curves



$V_F$  - Forward Voltage - V  
FIG. 2 FORWARD CURRENT  
VS. FORWARD VOLTAGE.



$I_{DC}$  - DC Forward Current - mA  
FIG. 3 RELATIVE LUMINOUS INTENSITY  
VS. DC FORWARD CURRENT.



$T_A$  - Ambient Temperature -  $^{\circ}C$   
FIG. 4 MAXIMUM DC CURRENT  
VS. AMBIENT TEMPERATURE

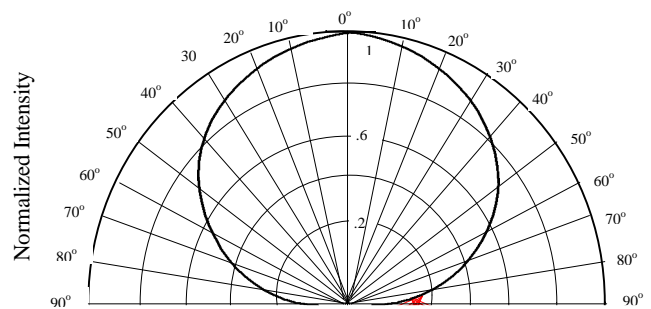


FIG. 5. RADIATION DIAGRAM