

## LED Displays

Order code	Manufacturer code	Description
57-1410	SA52-11LEWA	0.5IN CA HE RED L/C DISPLAY
57-1415	SC52-11LEWA	0.5IN CC HE RED L/C DISPLAY
57-1420	n/a	0.5IN CA SUPER RED L/C DISPLAY
57-1425	SC52-11LSRWA	0.5IN CC SUPER RED L/C DISPLAY (RC)

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The enclosed information is believed to be correct, Information may change 'without notice' due to product improvement. Users should ensure that the product is suitable for their use. E. & O. E.	Revision A 04/07/2003

# Kingbright®

## 13mm (0.52INCH) LOW CURRENT SINGLE DIGIT NUMERIC DISPLAYS

SA52-11L

SC52-11L

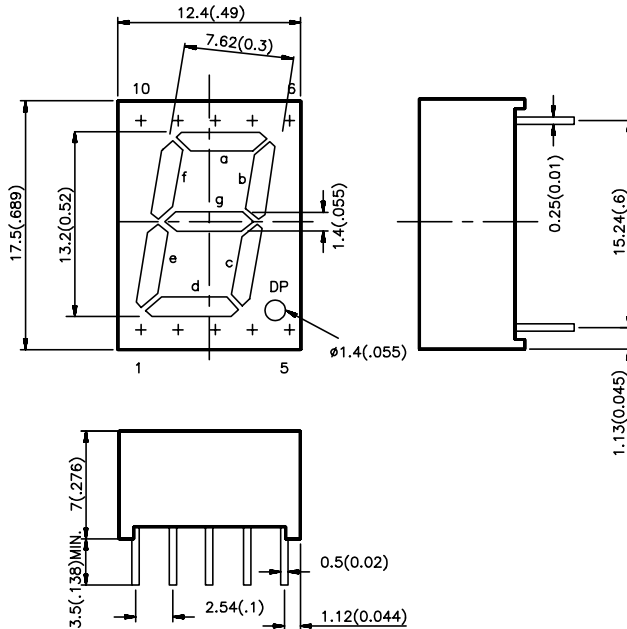
### Features

- 0.52 INCH DIGIT HEIGHT.
- MINIMUM LUMINOUS INTENSITY SPECIFIED AT 2mA.
- HIGH LIGHT OUTPUT AT LOW CURRENT.
- EXCELLENT CHARACTER APPEARANCE.
- EASY MOUNTING ON P.C. BOARDS OR SOCKETS.
- I.C. COMPATIBLE.
- CATEGORIZED FOR LUMINOUS INTENSITY, YELLOW AND GREEN CATEGORIZED FOR COLOR.
- MECHANICALLY RUGGED.
- STANDARD : GRAY FACE, WHITE SEGMENT.

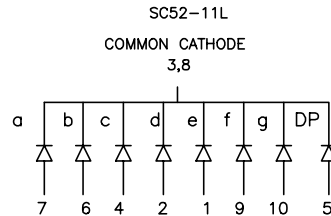
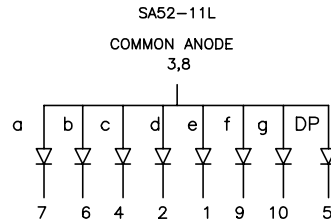
### Description

The Green source color devices are made with Gallium Phosphide Green Light Emitting Diode.  
The High Efficiency Red source color devices are made with Gallium Arsenide Phosphide on Gallium Phosphide Orange Light Emitting Diode.  
The Yellow source color devices are made with Gallium Arsenide Phosphide on Gallium Phosphide Yellow Light Emitting Diode.  
The Super Bright Red source color devices are made with Gallium Aluminum Arsenide Red Light Emitting Diode.

### Package Dimensions



### Internal Circuit Diagram



#### Notes:

1. All dimensions are in millimeters (inches), Tolerance is  $\pm 0.25(0.01)$  unless otherwise noted.
2. Specifications are subjected to change without notice.

## Selection Guide

Part No.	Dice	I <sub>v</sub> (ucd) @ 2mA		Description
		Min.	Max.	
SA52-11LEWA	HIGH EFFICIENCY RED (GaAsP/GaP)	560	1400	Common Anode, Rt Hand Decimal
SC52-11LEWA				Common Cathode, Rt. Hand Decimal
SA52-11LGWA	GREEN (GaP)	560	2200	Common Anode, Rt Hand Decimal
SC52-11LGWA				Common Cathode, Rt. Hand Decimal
SA52-11LYWA	YELLOW (GaAsP/GaP)	360	900	Common Anode, Rt Hand Decimal
SC52-11LYWA				Common Cathode, Rt. Hand Decimal
SA52-11LSRWA	SUPER BRIGHT RED (GaAlAs)	3600	9000	Common Anode, Rt Hand Decimal
SC52-11LSRWA				Common Cathode, Rt. Hand Decimal

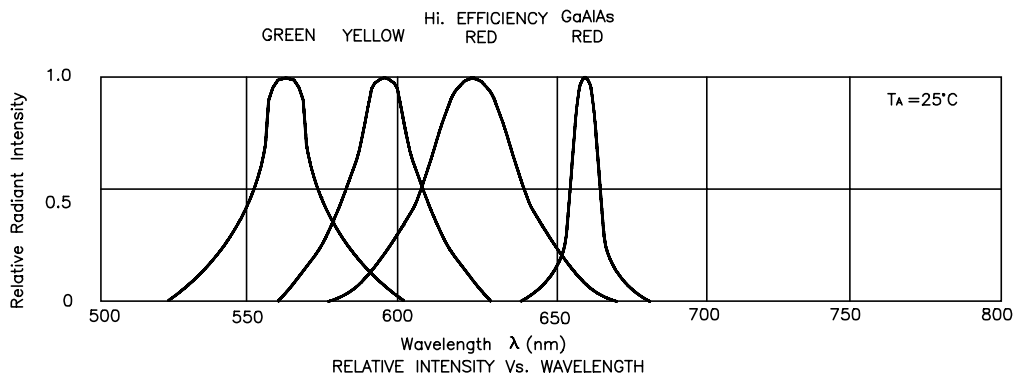
## Electrical / Optical Characteristics at T<sub>A</sub>=25°C

Symbol	Parameter	Device	Typ.	Max.	Units	Test Conditions
λ <sub>peak</sub>	Peak Wavelength	High Efficiency Red Green Yellow Super Bright Red	625 565 590 660		nm	IF=20mA
Δλ <sub>1/2</sub>	Spectral Line Halfwidth	High Efficiency Red Green Yellow Super Bright Red	45 30 35 20		nm	IF=20mA
C	Capacitance	High Efficiency Red Green Yellow Super Bright Red	12 45 10 95		pF	VF=0V;f=1MHz
V <sub>F</sub>	Forward Voltage	High Efficiency Red Green Yellow Super Bright Red	1.7 1.9 1.8 1.65	2.0 2.2 2.1 1.95	V	IF=2mA
I <sub>R</sub>	Reverse Current	All	10		uA	VR = 5V

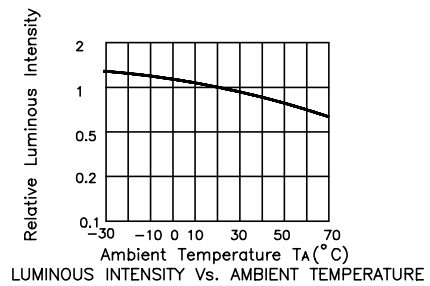
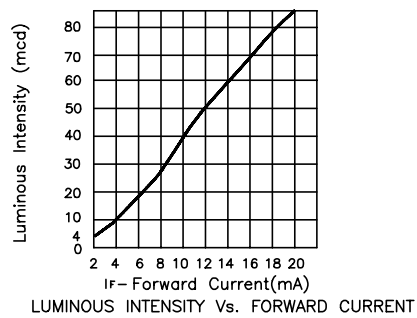
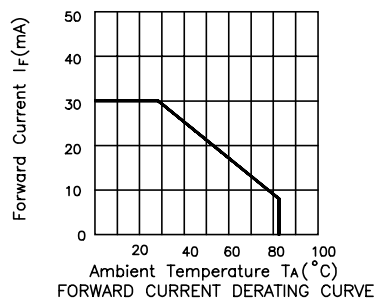
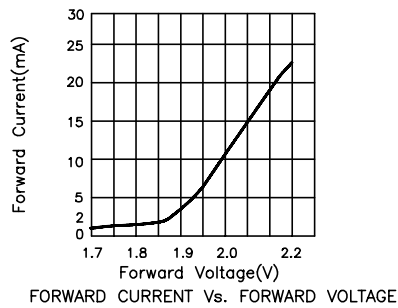
## Absolute Maximum Ratings at T<sub>A</sub>=25°C

Parameter	High Efficiency Red	Green	Yellow	Super Bright Red	Units
Power dissipation	105	105	105	100	mW
DC Forward Current	30	25	30	30	mA
Peak Forward Current [1]	150	150	150	150	mA
Reverse Voltage	5	5	5	5	V
Operating/Storage Temperature	-40 °C To +85 °C				
Lead Soldering Temperature [2]	260 °C For 5 Seconds				

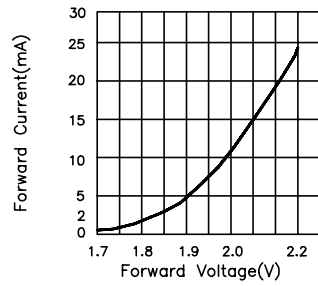
Notes:  
 1. 1/10 Duty Cycle, 0.1ms Pulse Width.  
 2. 4mm below package base



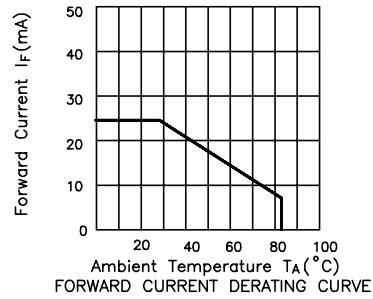
### High Efficiency Red



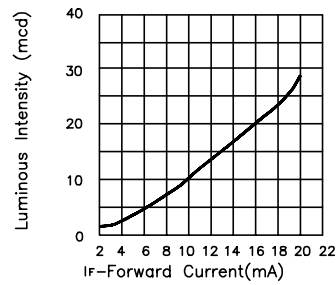
## Green



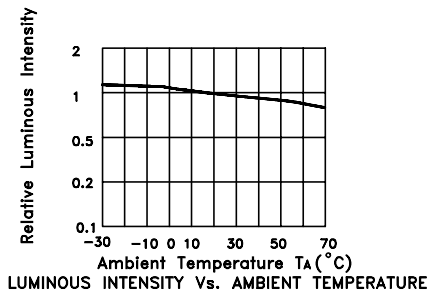
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

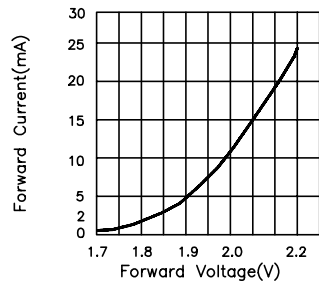


LUMINOUS INTENSITY Vs. FORWARD CURRENT

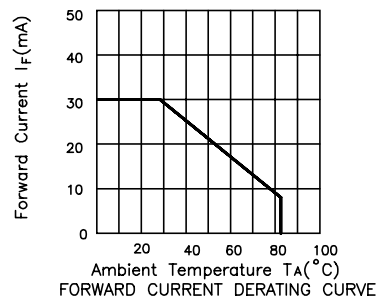


LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE

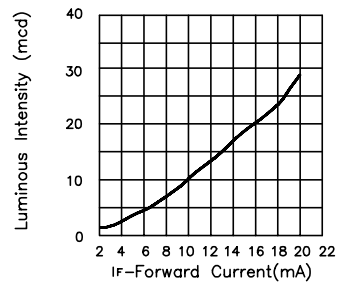
## Yellow



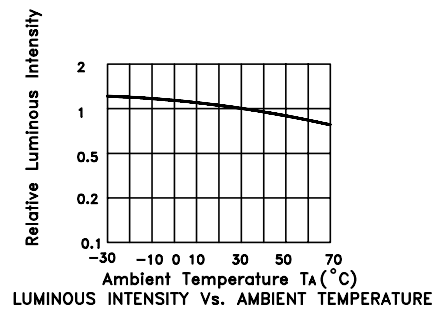
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

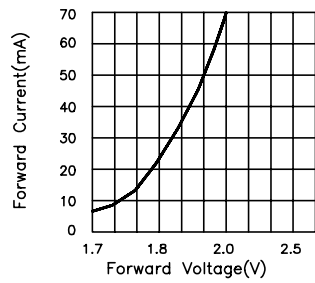


LUMINOUS INTENSITY Vs. FORWARD CURRENT

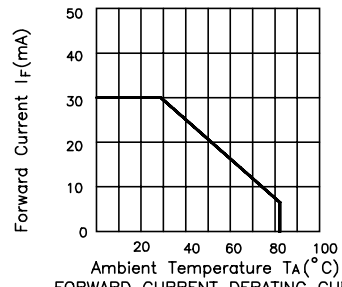


LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE

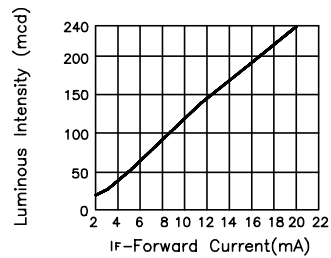
## Super Bright Red



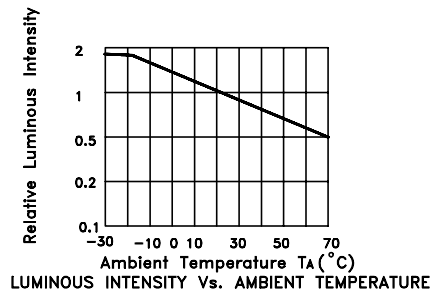
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE



LUMINOUS INTENSITY Vs. FORWARD CURRENT



LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE