

## LED Displays

Order code	Manufacturer code	Description
57-0450	SA40-19EWA	4IN LED DISPLAY ANODE RED (RC)
57-0455	SC40-19EWA	4IN LED DISPLAY CATHODE RED
57-0460	SA40-19SRWA	4IN LED DISPLAY ANODE S/RED (RC)
57-0470	SA40-19GWA	4IN LED DISPLAY ANODE GREEN (RC)

LED Displays	Page 1 of 6
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 20/02/2007

# Kingbright®

## 100mm (4.0INCH) SINGLE DIGIT NUMERIC DISPLAYS

SA40-18	SC40-18
SA40-19	SC40-19

### Features

- LARGE SIZE.
- 4.0 INCH DIGIT HEIGHT.
- LOW CURRENT OPERATION.
- EXCELLENT CHARACTER APPEARANCE.
- HIGH LIGHT OUTPUT.
- 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 Bright Red source color devices are made with Gallium Phosphide Red Light Emitting Diode.

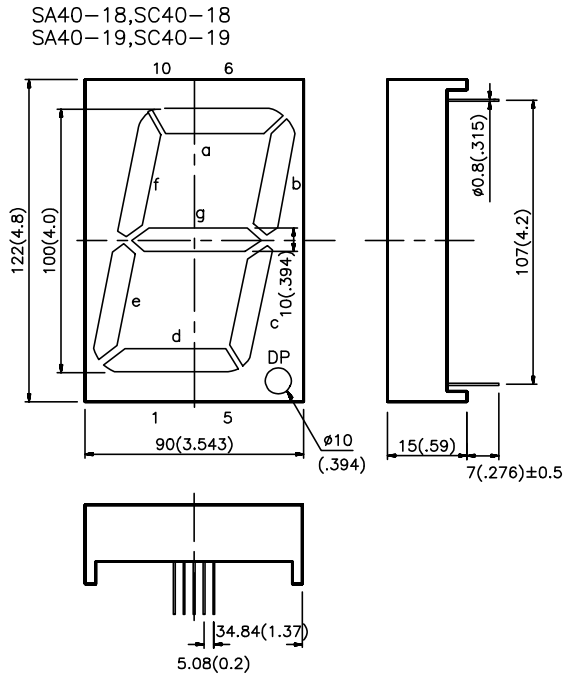
The Green source color devices are made with Gallium Phosphide Green Light Emitting Diode.

The High Efficiency Red source color devices are made with Gallium Arsenide Phosphide on Gallium Phosphide Orange Light Emitting Diode.

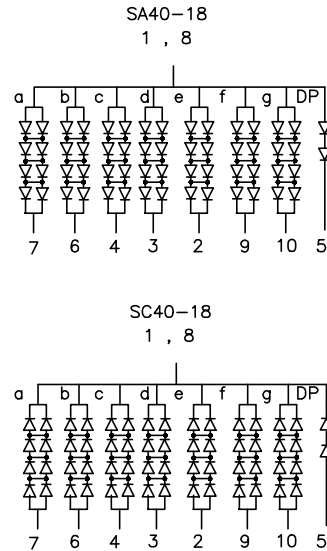
The Yellow source color devices are made with Gallium Arsenide Phosphide on Gallium Phosphide Yellow Light Emitting Diode.

The Super Bright Red source color devices are made with Gallium Aluminum Arsenide Red Light Emitting Diode.

### Package Dimensions

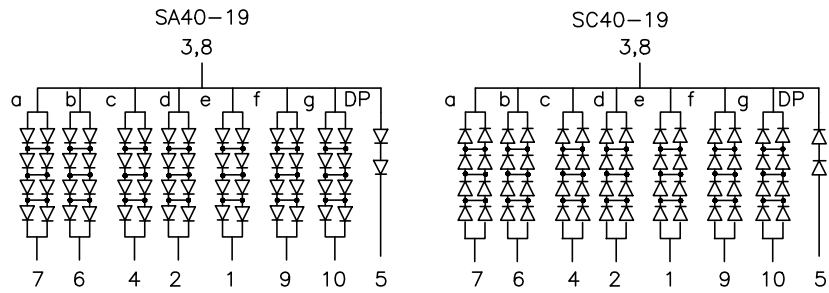


### Internal Circuit Diagram



- 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.

Internal Circuit Diagram



Selection Guide

Part No.	Dice	Iv (ucd) @ 10 mA		Description
		Min.	Max.	
SA40-18EWA SA40-19EWA	HIGH EFFICIENCY RED (GaAsP/GaP)	3600	14000	Common Anode, Rt. Hand Decimal
SC40-18EWA SC40-19EWA				Common Cathode, Rt. Hand Decimal
SA40-18GWA SA40-19GWA	GREEN (GaP)	3600	9000	Common Anode, Rt. Hand Decimal
SC40-18GWA SC40-19GWA				Common Cathode, Rt. Hand Decimal
SA40-18YWA SA40-19YWA	YELLOW (GaAsP/GaP)	3600	9000	Common Anode, Rt. Hand Decimal
SC40-18YWA SC40-19YWA				Common Cathode, Rt. Hand Decimal
SA40-18SRWA SA40-19SRWA	SUPER BRIGHT RED (GaAlAs)	14000	31000	Common Anode, Rt. Hand Decimal
SC40-18SRWA SC40-19SRWA				Common Cathode, Rt. Hand Decimal

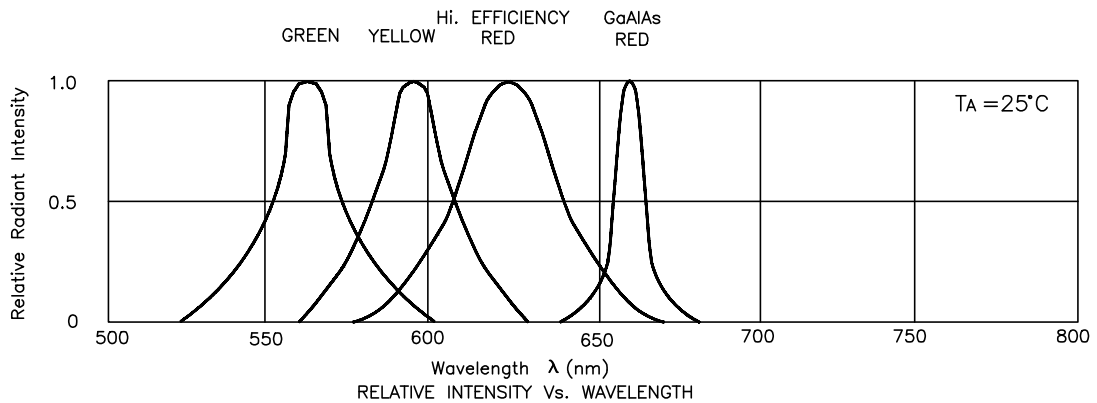
Electrical / Optical Characteristics at T<sub>A</sub>=25°C

Symbol	Parameter	Device	Typ.	Max.	Units	Test Conditions
$\lambda_{peak}$	Peak Wavelength	High Efficiency Red Green Yellow Super Bright Red	625 565 590 660		nm	IF=20mA
$\Delta\lambda_{1/2}$	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	2.0 2.2 2.1 1.85	2.5 2.5 2.5 2.5	V	IF=20mA
I <sub>R</sub>	Reverse Current	All	10		uA	VR = 5V

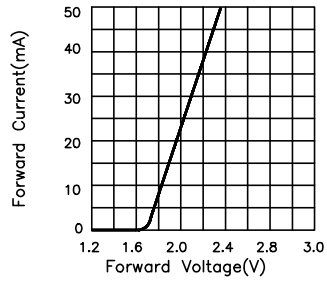
Absolute Maximum Ratings at T<sub>A</sub>=25°C

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				

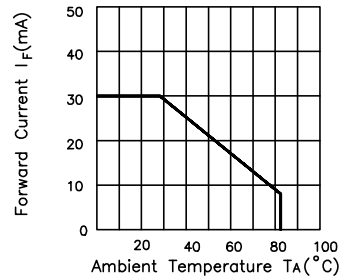
- Notes:  
 1. 1/10 Duty Cycle, 0.1ms Pulse Width.  
 2. 4mm below package base.



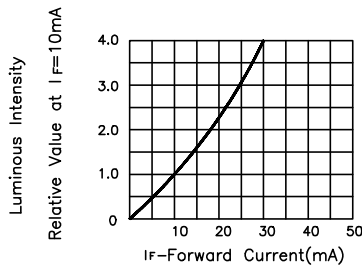
### High Efficiency Red



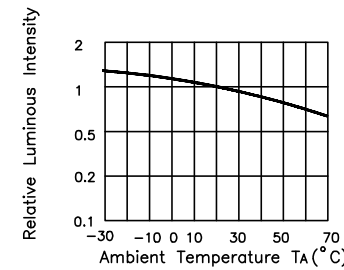
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

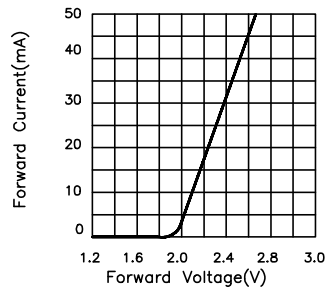


LUMINOUS INTENSITY Vs. FORWARD CURRENT

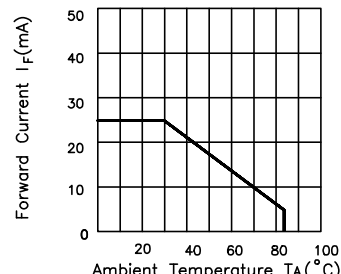


LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE

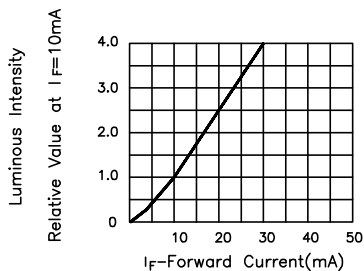
### Green



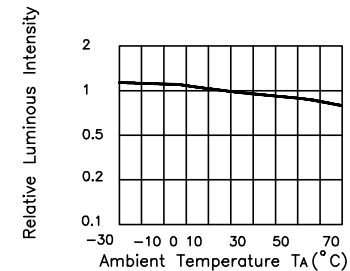
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

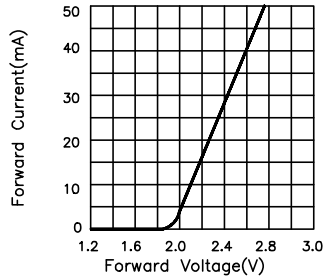


LUMINOUS INTENSITY Vs. FORWARD CURRENT

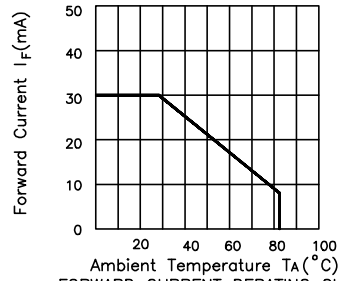


LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE

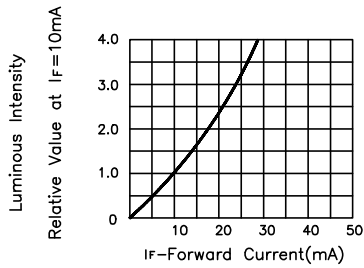
Yellow



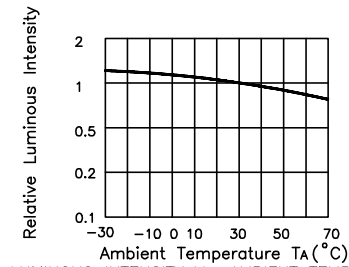
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

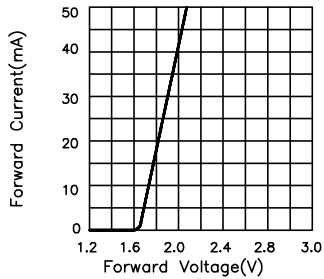


LUMINOUS INTENSITY Vs. FORWARD CURRENT

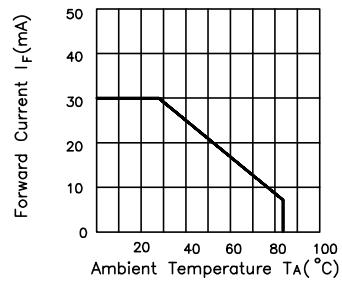


LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE

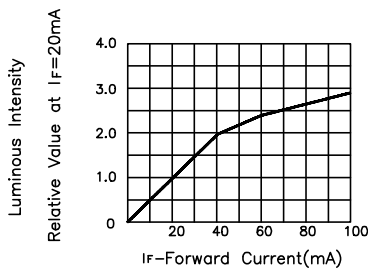
Super Bright Red



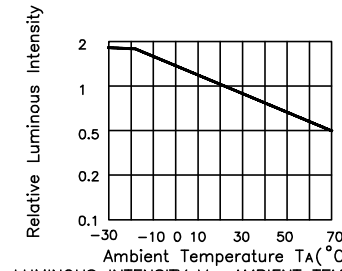
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE



LUMINOUS INTENSITY Vs. FORWARD CURRENT



LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE