

SA23-11	SC23-11
SA23-12	SC23-12
SBA23-11	SBC23-11

### Features

- LARGE SIZE.
- 2.3 INCH DIGIT HEIGHT.
- LOW CURRENT OPERATION.
- EXCELLENT CHARACTER APPEARANCE.
- HIGH LIGHT OUTPUT.
- EASY MOUNTING ON P.C. BOARDS OR SOCKETS.
- MULTICOLOR AVAILABLE.
- CATEGORIZED FOR LUMINOUS INTENSITY,  
YELLOW AND GREEN CATEGORIZED FOR COLOR.
- MECHANICALLY RUGGED.
- STANDARD : GRAY FACE, WHITE SEGMENT.

### Description

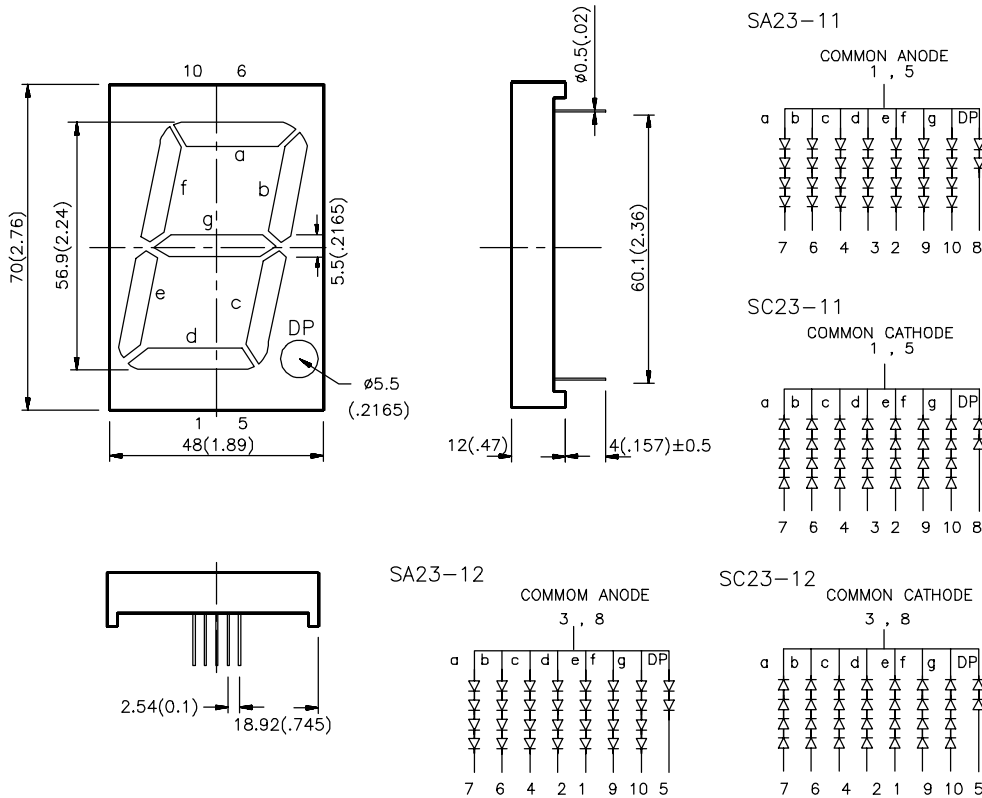
The High Efficiency Red source color devices are made with Gallium Arsenide Phosphide on Gallium Phosphide Orange Light Emitting Diode.

The Green source color devices are made with Gallium Phosphide Green 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.

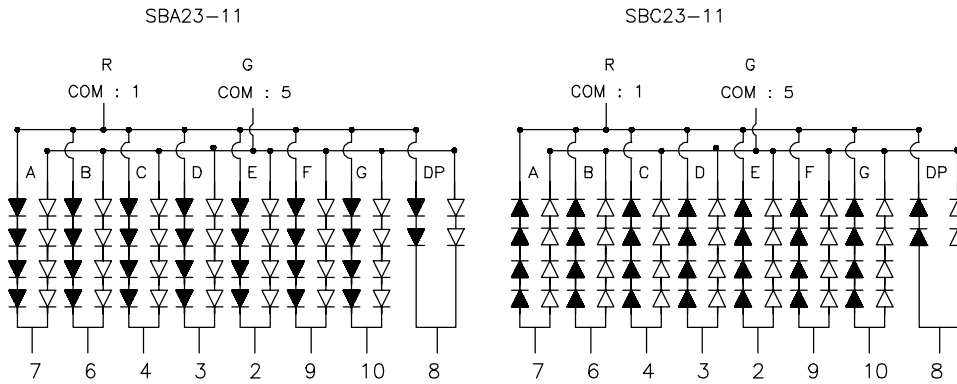
### Package Dimensions & Internal Circuit Diagram



#### 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.

## Package Dimensions & Internal Circuit Diagram



## Selection Guide

Part No.	Dice	Iv (ucd) @ 10 mA		Description
		Min.	Typ.	
SA23-11EWA SA23-12EWA	HIGH EFFICIENCY RED (GaAsP/GaP)	8000	18000	Common Anode, Rt. Hand Decimal
SC23-11EWA SC23-12EWA				Common Cathode, Rt. Hand Decimal
SA23-11GWA SA23-12GWA	GREEN (GaP)	8000	24000	Common Anode, Rt. Hand Decimal
SC23-11GWA SC23-12GWA				Common Cathode, Rt. Hand Decimal
SA23-11YWA SA23-12YWA	YELLOW (GaAsP/GaP)	3000	8000	Common Anode, Rt. Hand Decimal
SC23-11YWA SC23-12YWA				Common Cathode, Rt. Hand Decimal
SA23-11SRWA SA23-12SRWA	SUPER BRIGHT RED (GaAlAs)	26000	75000	Common Anode, Rt. Hand Decimal
SC23-11SRWA SC23-12SRWA				Common Cathode, Rt. Hand Decimal
SBA23-11EGWA	HIGH EFFICIENCY RED (GaAsP/GaP) GREEN (GaP)	8000	18000	Common Anode, Rt. Hand Decimal
SBC23-11EGWA		8000	24000	Common Cathode, Rt. Hand Decimal

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

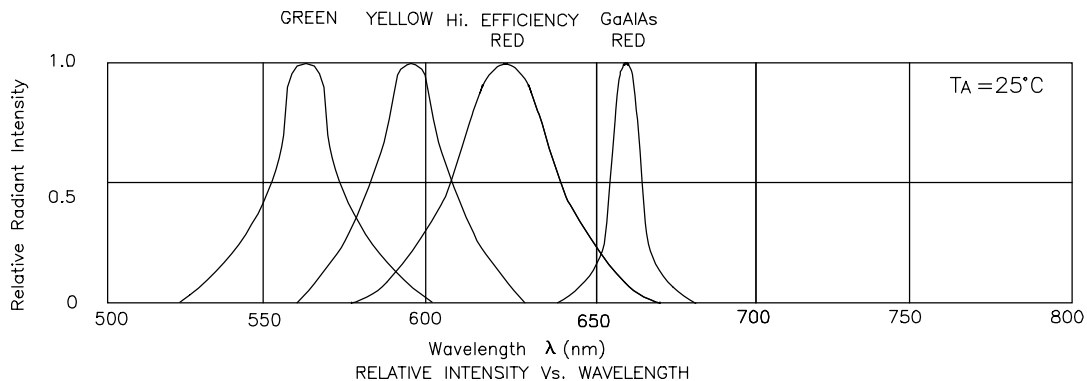
Symbol	Parameter	Device	Typ.	Max.	Units	Test Conditions
$\lambda_{peak}$	Peak Wavelength	High Efficiency Red Green Yellow Super Bright Red	625 565 590 660		nm	IF=20mA
$\Delta\lambda_{1/2}$	Spectral Line Halfwidth	High Efficiency Red Green Yellow Super Bright Red	45 30 35 20		nm	IF=20mA
C	Capacitance	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

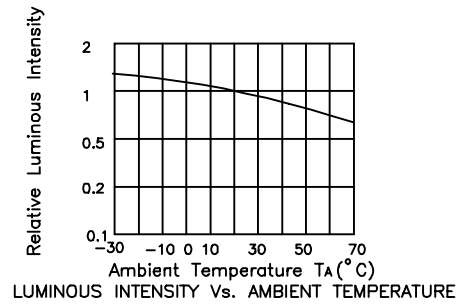
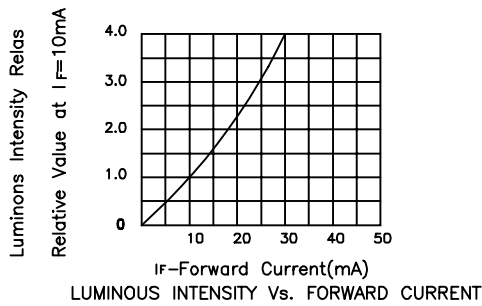
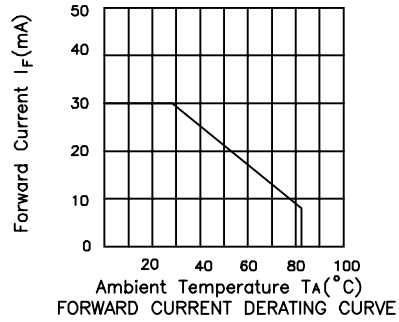
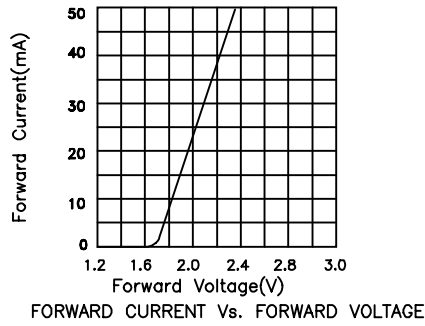
Parameter	High Efficiency Red	Green	Yellow	Super Bright Red	Units
Power dissipation	105	105	105	100	mW
DC Forward Current	30	25	30	30	mA
Peak Forward Current [1]	150	150	150	150	mA
Reverse Voltage	5	5	5	5	V
Operating/Storage Temperature	-40°C To +85°C				
Lead Soldering Temperature [2]	260°C For 5 Seconds				

### Notes:

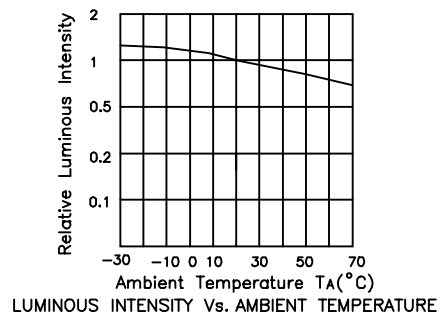
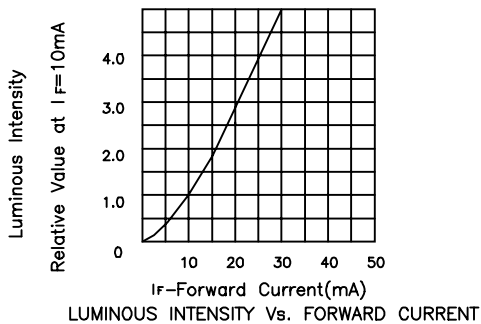
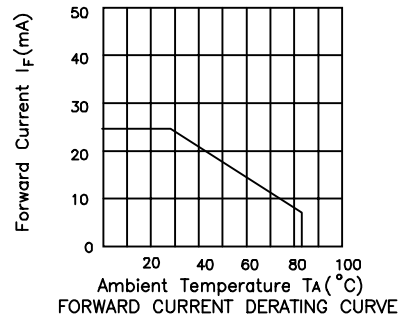
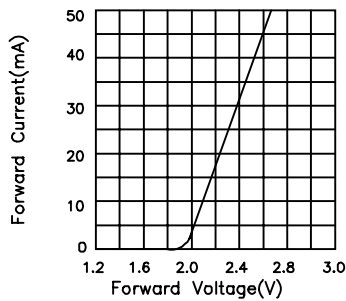
- 1/10 Duty Cycle, 0.1ms Pulse Width.
2. 4mm below package base.



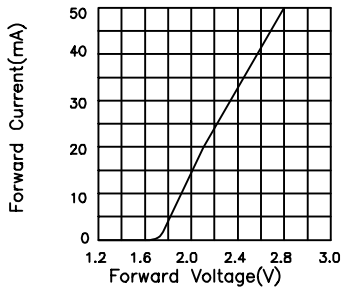
## High Efficiency Red



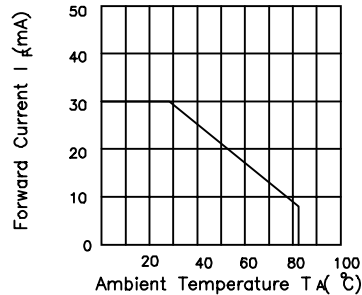
## Green



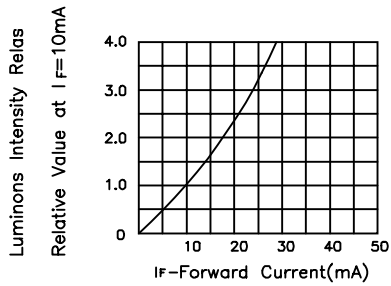
## Yellow



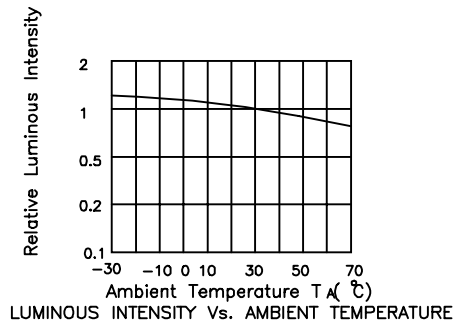
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

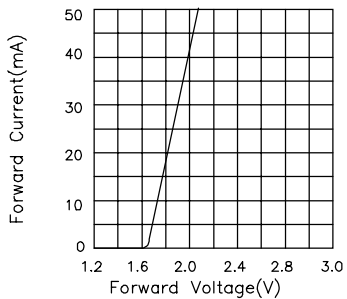


LUMINOUS INTENSITY Vs. FORWARD CURRENT

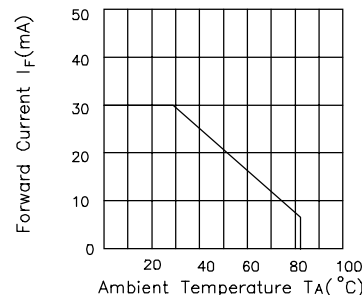


LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE

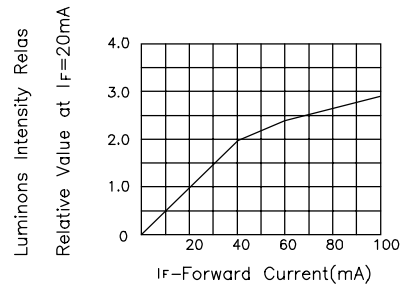
## Super Bright Red



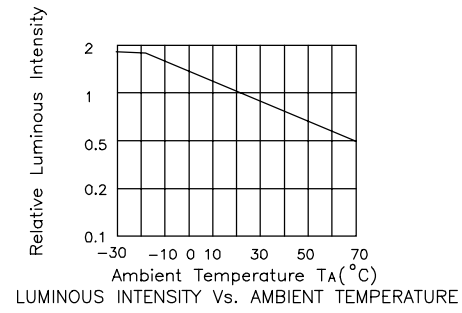
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE



LUMINOUS INTENSITY Vs. FORWARD CURRENT



LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE