

# Kingbright®

## 10.9mm (0.43INCH) SINGLE DIGIT NUMERIC DISPLAYS

SA43-11	SC43-11
SA43-13	SC43-13
FA43-11	FC43-11
FA43-12	FC43-12

### Features

- 0.43 INCH DIGIT HEIGHT.
- LOW CURRENT OPERATION.
- EXCELLENT CHARACTER APPEARANCE.
- UNIVERSAL 1. OVERFLOW AVAILABLE.
- 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.

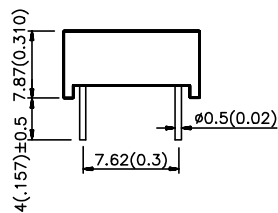
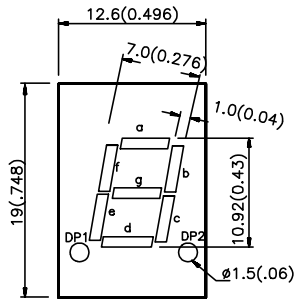
The High Efficiency Red source color devices are made with Gallium Arsenide Phosphide on Gallium Phosphide Orange Light Emitting Diode.

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

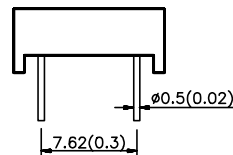
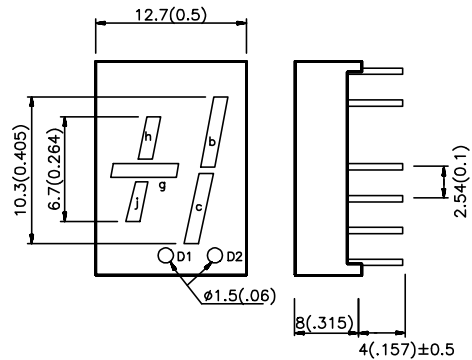
The Super Bright Red source color devices are made with Gallium Aluminum Arsenide Red Light Emitting Diode.

### Package Dimensions

SA43-11, SC43-11  
SA43-13, SC43-13

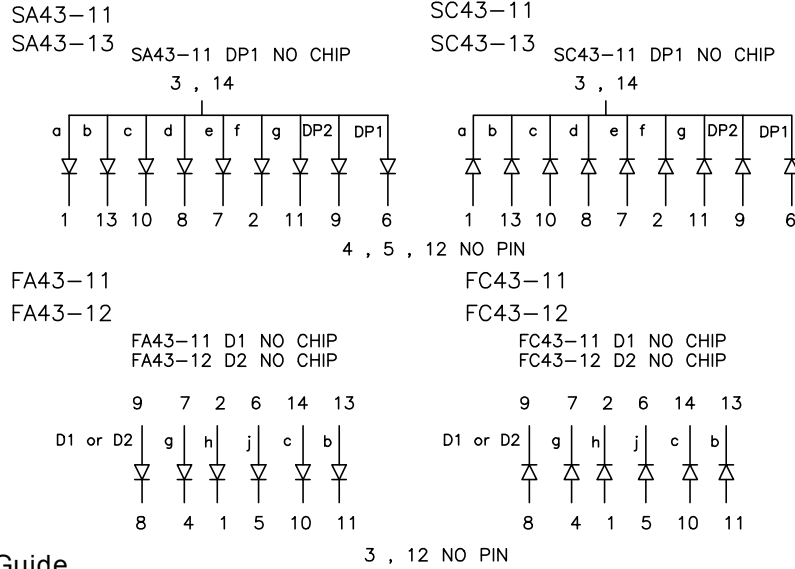


FA43-11, FC43-11  
FA43-12, FC43-12



Notes:

Internal Circuit Diagram



Selection Guide

Part No.	Dice	Iv (ucd) @ 10 mA		Description
		Min.	Max.	
SA43-11HWA SA43-13HWA FA43-11HWA FA43-12HWA	BRIGHT RED (GaP)	360	900	Common Anode Rt. Hand Decimal Common Anode Lt & Rt. Hand Decimal Common Anode Rt. Hand Decimal Common Anode Rt. Hand Decimal
SC43-11HWA SC43-13HWA FC43-11HWA FC43-12HWA				Common Cathode Rt. Hand Decimal Common Cathode Lt & Rt. Hand Decimal Common Cathode Rt. Hand Decimal Common Cathode Rt. Hand Decimal
SA43-11EWA SA43-13EWA FA43-11EWA FA43-12EWA	HIGH EFFICIENCY RED (GaAsP/GaP)	2200	5600	Common Anode Rt. Hand Decimal Common Anode Lt & Rt. Hand Decimal Common Anode Rt. Hand Decimal Common Anode Rt. Hand Decimal
SC43-11EWA SC43-13EWA FC43-11EWA FC43-12EWA				Common Cathode Rt. Hand Decimal Common Cathode Lt & Rt. Hand Decimal Common Cathode Rt. Hand Decimal Common Cathode Rt. Hand Decimal
SA43-11GWA SA43-13GWA FA43-11GWA FA43-12GWA	GREEN (GaP)	1400	3600	Common Anode Rt. Hand Decimal Common Anode Lt & Rt. Hand Decimal Common Anode Rt. Hand Decimal Common Anode Rt. Hand Decimal
SC43-11GWA SC43-13GWA FC43-11GWA FC43-12GWA				Common Cathode Rt. Hand Decimal Common Cathode Lt & Rt. Hand Decimal Common Cathode Rt. Hand Decimal Common Cathode Rt. Hand Decimal
SA43-11YWA SA43-13YWA FA43-11YWA FA43-12YWA	YELLOW (GaAsP/GaP)	1400	3600	Common Anode Rt. Hand Decimal Common Anode Lt & Rt. Hand Decimal Common Anode Rt. Hand Decimal Common Anode Rt. Hand Decimal
SC43-11YWA SC43-13YWA FC43-11YWA FC43-12YWA				Common Cathode Rt. Hand Decimal Common Cathode Lt & Rt. Hand Decimal Common Cathode Rt. Hand Decimal Common Cathode Rt. Hand Decimal
SA43-11SRWA SA43-13SRWA FA43-11SRWA FA43-12SRWA	SUPER BRIGHT RED (GaAlAs)	3600	21000	Common Anode Rt. Hand Decimal Common Anode Lt & Rt. Hand Decimal Common Anode Rt. Hand Decimal Common Anode Rt. Hand Decimal
SC43-11SRWA SC43-13SRWA FC43-11SRWA FC43-12SRWA				Common Cathode Rt. Hand Decimal Common Cathode Lt & Rt. Hand Decimal Common Cathode Rt. Hand Decimal Common Cathode Rt. Hand Decimal

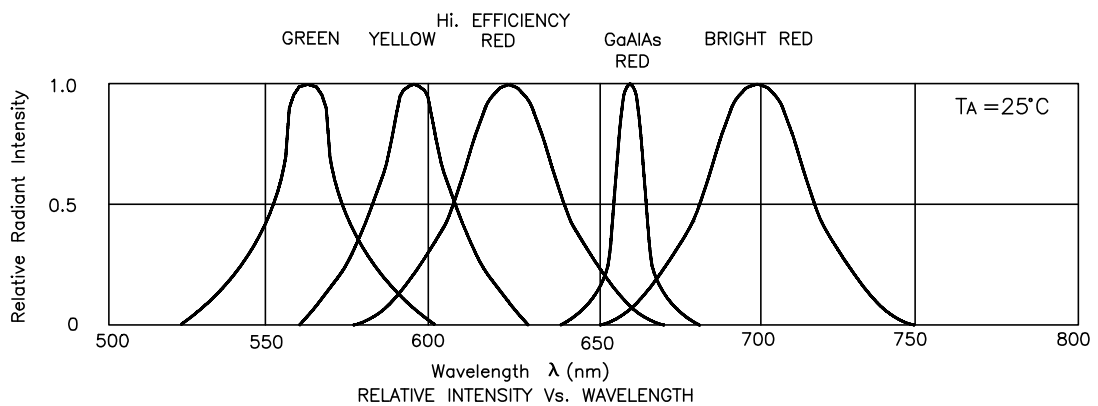
Electrical / Optical Characteristics at T<sub>A</sub>=25°C

Symbol	Parameter	Device	Typ.	Max.	Units	Test Conditions
$\lambda_{peak}$	Peak Wavelength	Bright Red High Efficiency Red Green Yellow Super Bright Red	700 625 565 590 660		nm	IF=20mA
$\Delta\lambda_{1/2}$	Spectral Line Halfwidth	Bright Red High Efficiency Red Green Yellow Super Bright Red	45 45 30 35 20		nm	IF=20mA
C	Capacitance	Bright Red High Efficiency Red Green Yellow Super Bright Red	40 12 45 10 95		pF	VF=0V;f=1MHz
V <sub>F</sub>	Forward Voltage	Bright Red High Efficiency Red Green Yellow Super Bright Red	2.0 2.0 2.2 2.1 1.85	2.5 2.5 2.5 2.5 2.5	V	IF=20mA
I <sub>R</sub>	Reverse Current	All	10		uA	VR = 5V

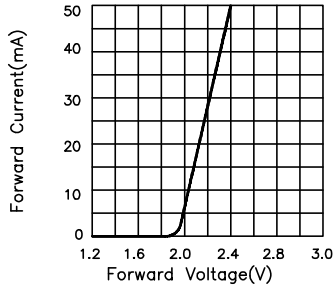
Absolute Maximum Ratings at T<sub>A</sub>=25°C

Parameter	Bright Red	High Efficiency Red	Green	Yellow	Super Bright Red	Units
Power dissipation	120	105	105	105	100	mW
DC Forward Current	25	30	25	30	30	mA
Peak Forward Current [1]	150	150	150	150	150	mA
Reverse Voltage	5	5	5	5	5	V
Operating/Storage Temperature	-40°C To +85°C					
Lead Soldering Temperature [2]	260°C For 5 Seconds					

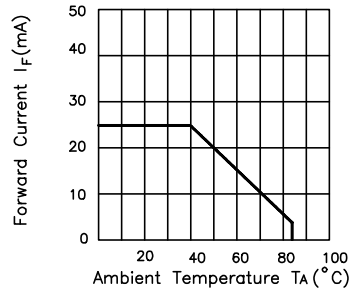
Notes:  
 1. 1/10 Duty Cycle, 0.1ms Pulse Width.  
 2. 4mm below package base.



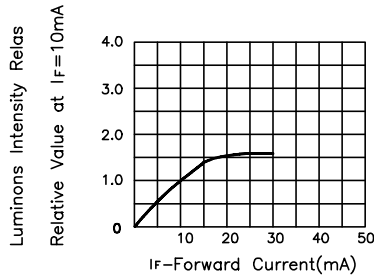
## Bright Red



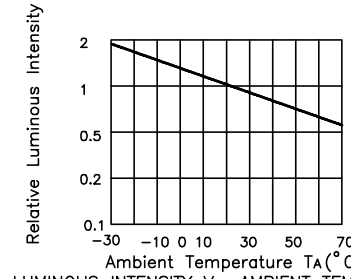
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

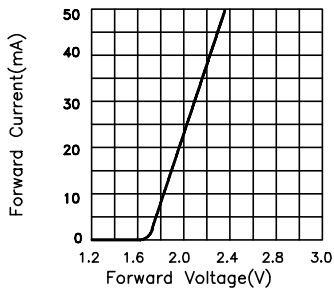


LUMINOUS INTENSITY Vs. FORWARD CURRENT

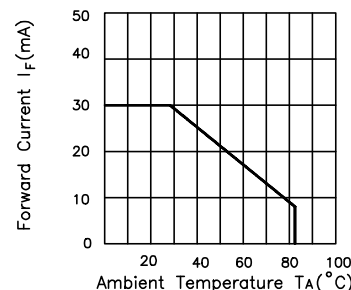


LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE

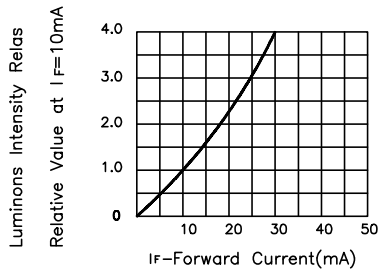
## High Efficiency Red



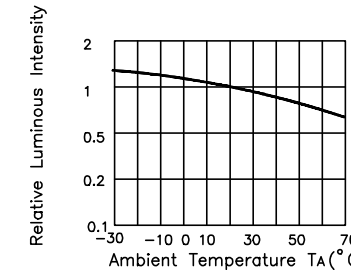
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

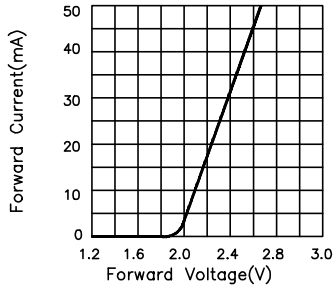


LUMINOUS INTENSITY Vs. FORWARD CURRENT

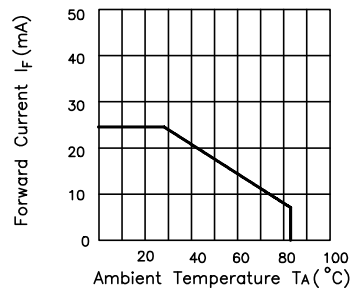


LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE

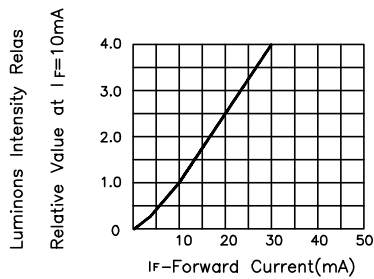
## Green



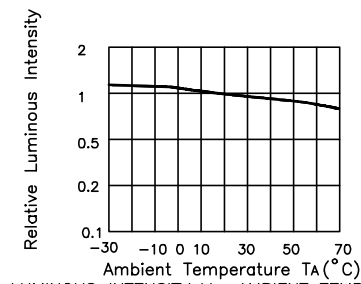
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

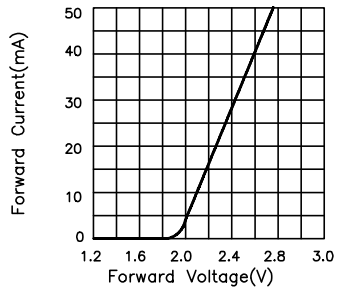


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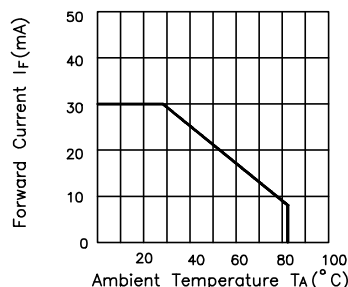


LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE

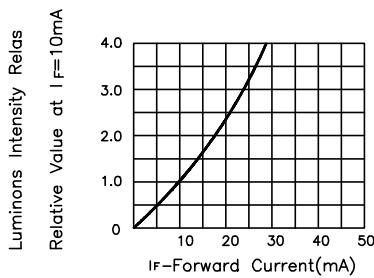
## Yellow



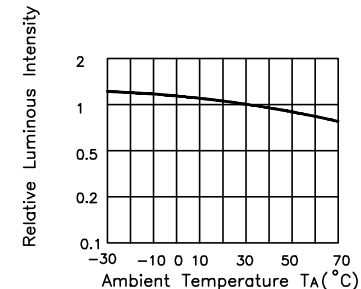
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

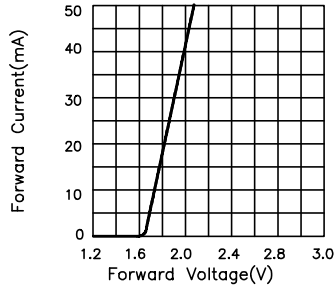


LUMINOUS INTENSITY Vs. FORWARD CURRENT

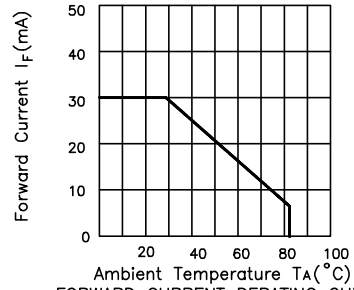


LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE

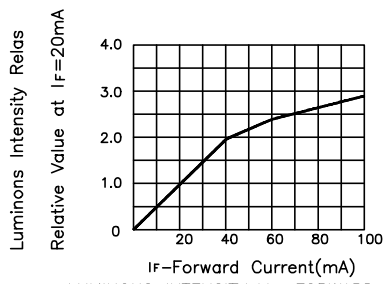
## Super Bright Red



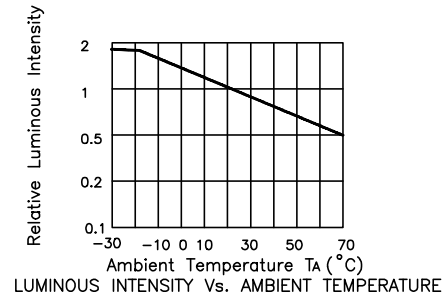
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE



LUMINOUS INTENSITY Vs. FORWARD CURRENT



LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE