

# Kingbright®

## 14mm (0.56INCH) FOUR DIGIT NUMERIC DISPLAYS

CA56-11

CC55-11

CA56-12

CC56-12

### Features

- 0.56INCH DIGIT HEIGHT
- LOW CURRENT OPERATION.
- 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 Bright Red source color devices are made with Gallium Phosphide Red Light Emitting Diode.

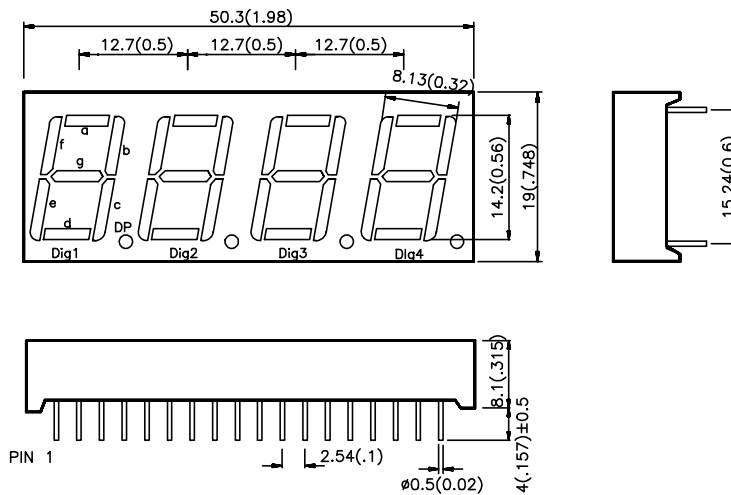
The Green source color devices are made with Gallium Phosphide Green Light Emitting Diode.

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.

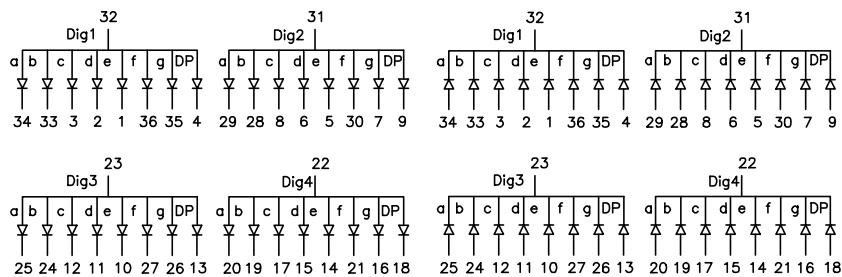
The Super Bright Red source color devices are made with Gallium Aluminum Arsenide Red Light Emitting Diode.

### Package Dimensions & Internal Circuit Diagram

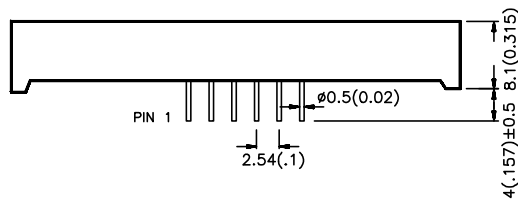
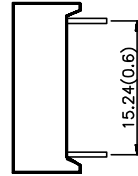
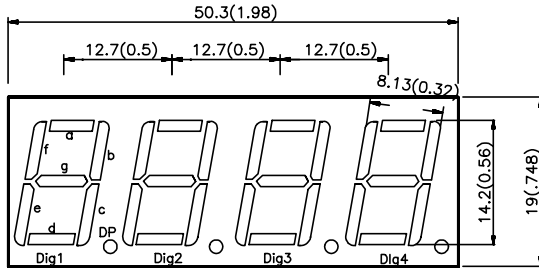


CA56-11

CC56-11



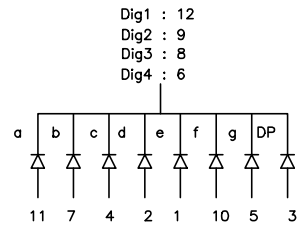
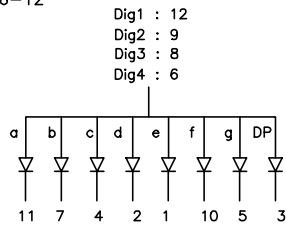
Package Dimensions & Internal Circuit Diagram



- 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.

CC56-12

CA56-12



Selection Guide

Part No.	Dice	Iv (ucd) @ 10 mA		Description
		Min.	Max.	
CA56-11HWA CA56-12HWA	BRIGHT RED (GaP)	560	1400	Common Anode, Rt Hand Decimal
CC56-11HWA CC56-12HWA				Common Cathode, Rt. Hand Decimal
CA56-11EWA CA56-12EWA	HIGH EFFICIENCY RED (GaAsP/GaP)	2200	5600	Common Anode, Rt Hand Decimal
CC56-11EWA CC56-12EWA				Common Cathode, Rt. Hand Decimal
CA56-11GWA CA56-12GWA	GREEN (GaP)	2200	5600	Common Anode, Rt Hand Decimal
CC56-11GWA CC56-12GWA				Common Cathode, Rt. Hand Decimal
CA56-11YWA CA56-12YWA	YELLOW (GaAsP/GaP)	2200	5600	Common Anode, Rt Hand Decimal
CC56-11YWA CC56-12YWA				Common Cathode, Rt. Hand Decimal
CA56-11SRWA CA56-12SRWA	SUPER BRIGHT RED (GaAlAs)	5600	21000	Common Anode, Rt Hand Decimal
CC56-11SRWA CC56-12SRWA				Common Cathode, Rt. Hand Decimal

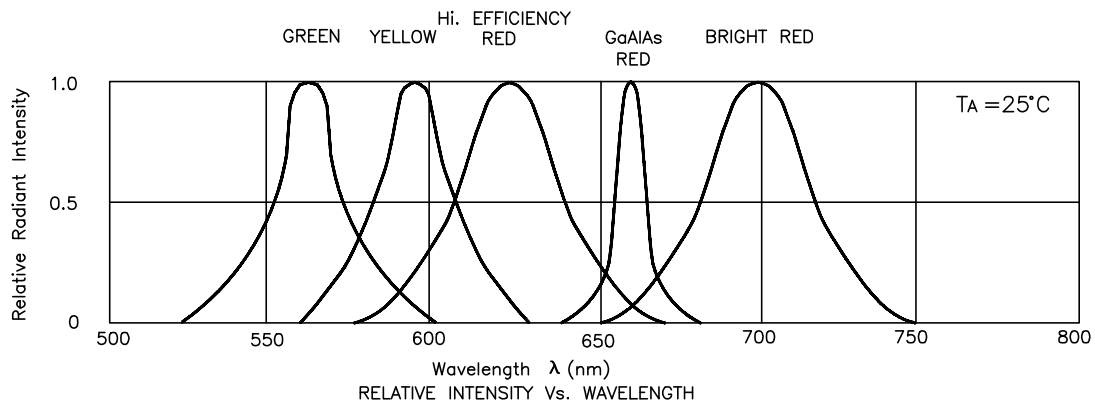
### Electrical / Optical Characteristics at T<sub>A</sub>=25°C

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

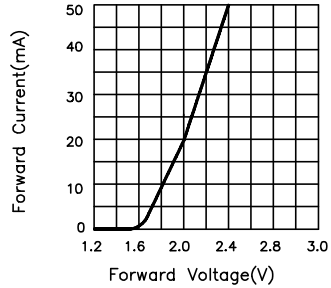
### Absolute Maximum Ratings at T<sub>A</sub>=25°C

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					

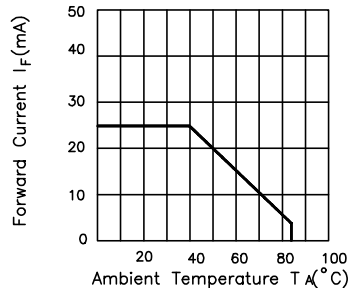
Notes:  
 1. 1/10 Duty Cycle, 0.1ms Pulse Width.  
 2. 4mm below package base.



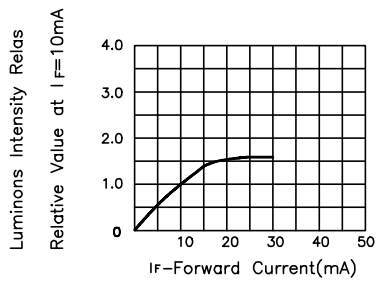
## Bright Red



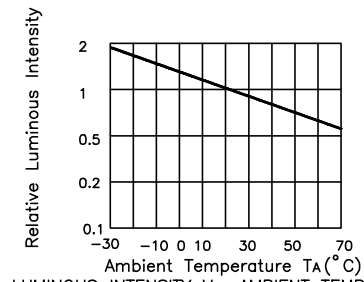
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

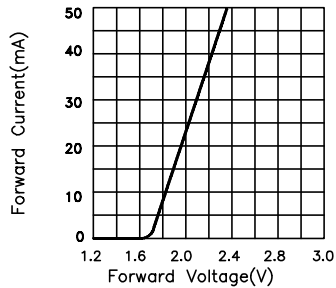


LUMINOUS INTENSITY Vs. FORWARD CURRENT

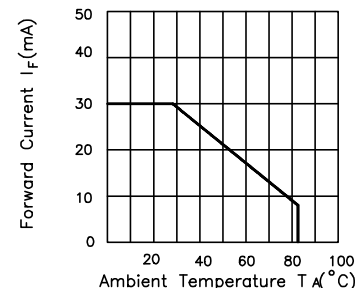


LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE

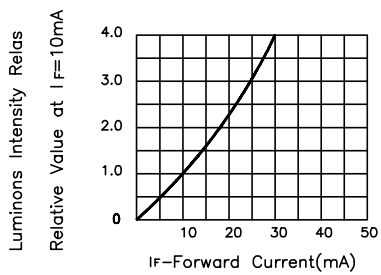
## High Efficiency Red



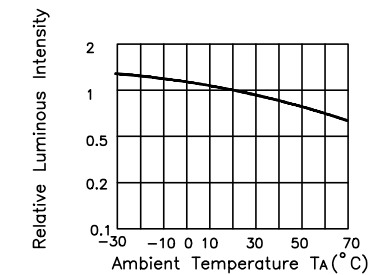
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

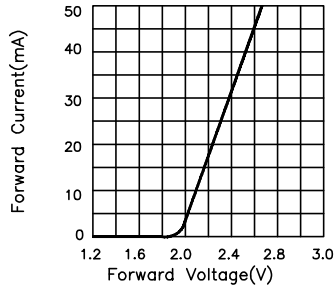


LUMINOUS INTENSITY Vs. FORWARD CURRENT

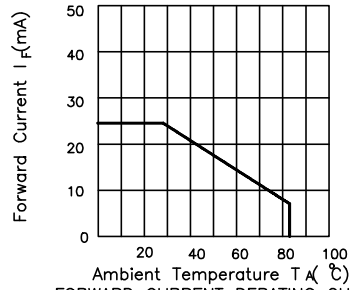


LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE

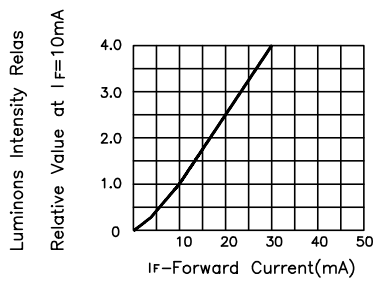
### Green



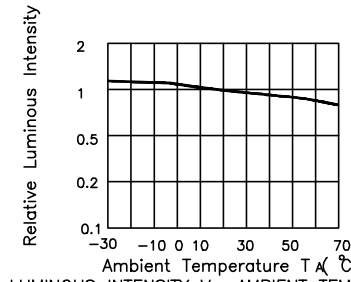
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

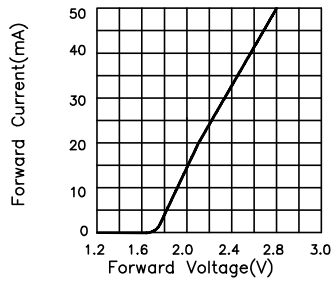


LUMINOUS INTENSITY Vs. FORWARD CURRENT

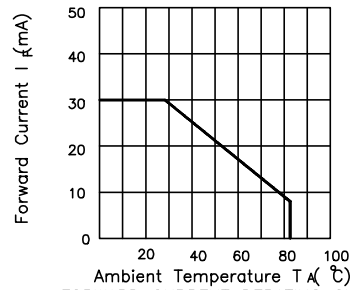


LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE

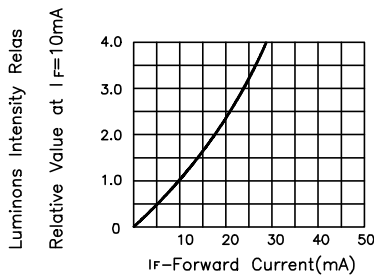
### Yellow



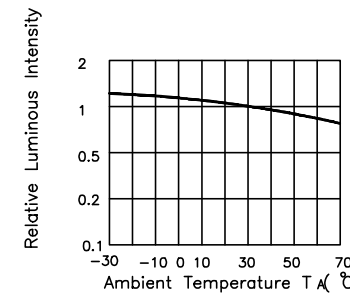
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

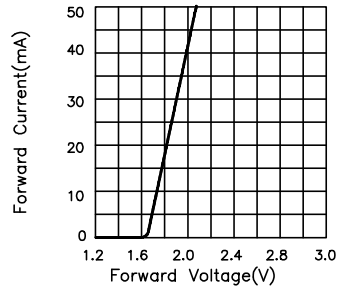


LUMINOUS INTENSITY Vs. FORWARD CURRENT

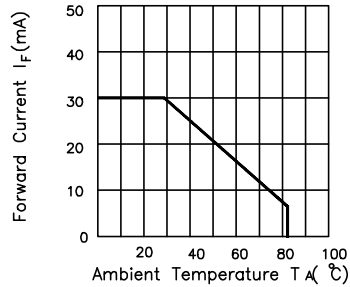


LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE

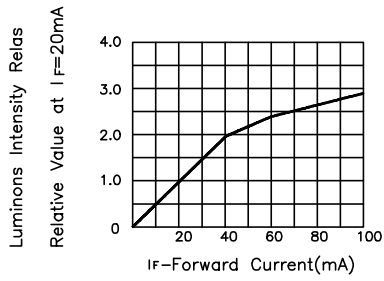
# Super Bright Red



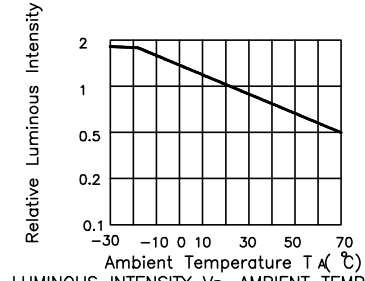
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE



LUMINOUS INTENSITY Vs. FORWARD CURRENT



LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE