

Kingbright®

60mm (2.3 INCH) 8x8 DOT MATRIX DISPLAY

| | |
|----------|----------|
| TA23-11 | TC23-11 |
| TBA23-11 | TBC23-11 |
| TBA23-12 | TBC23-12 |

Features

- 2.3 INCH MATRIX HEIGHT.
- DOT SIZE 5mm.
- LOW CURRENT OPERATION.
- HIGH CONTRAST AND LIGHT OUTPUT.
- COMPATIBLE WITH USACII AND EBCDIC CODES.
- STACKABLE HORIZONTALLY.
- COLUMN CATHODE AND COLUMN ANODE AVAILABLE.
- 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 DOT.

Description

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

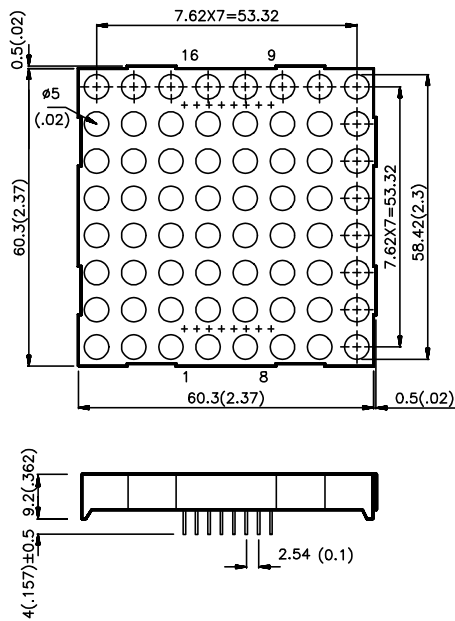
The Green source color devices are made with Gallium Phosphide Green Light Emitting Diode.

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.

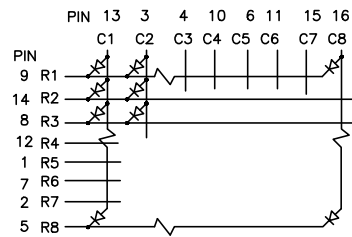
The Super Bright Red source color devices are made with Gallium Aluminum Arsenide Red Light Emitting Diode.

Package Dimensions

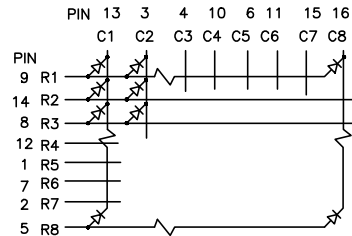


Internal Circuit Diagram

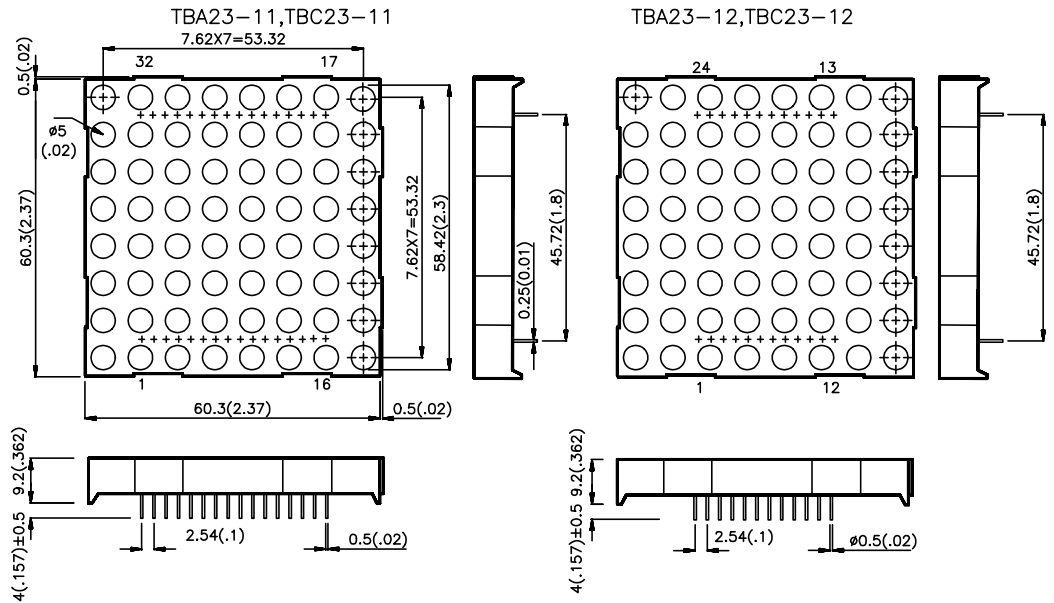
TA23-11



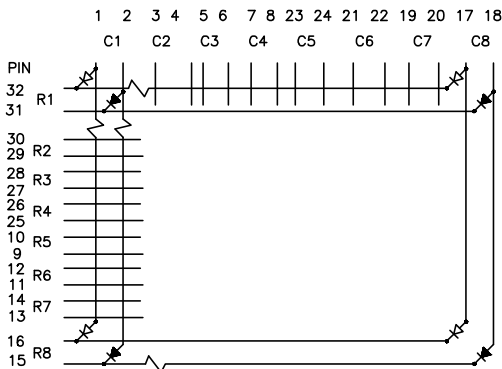
TC23-11



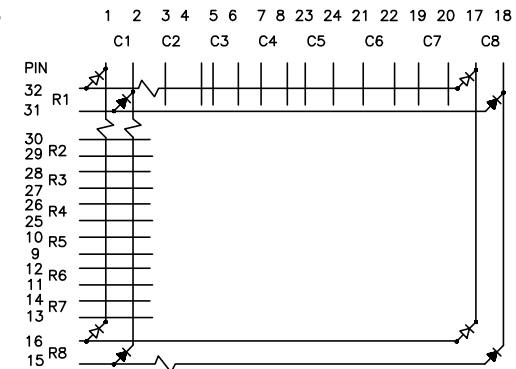
Package Dimensions & Internal Circuit Diagram



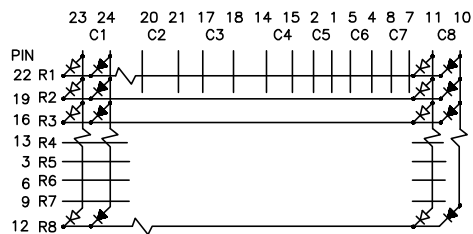
TBA23-11



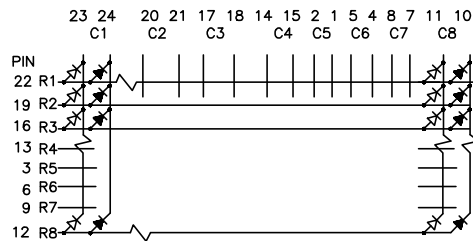
TBC23-11



TBA23-12



TBC23-12



Notes:

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

GREEN RED

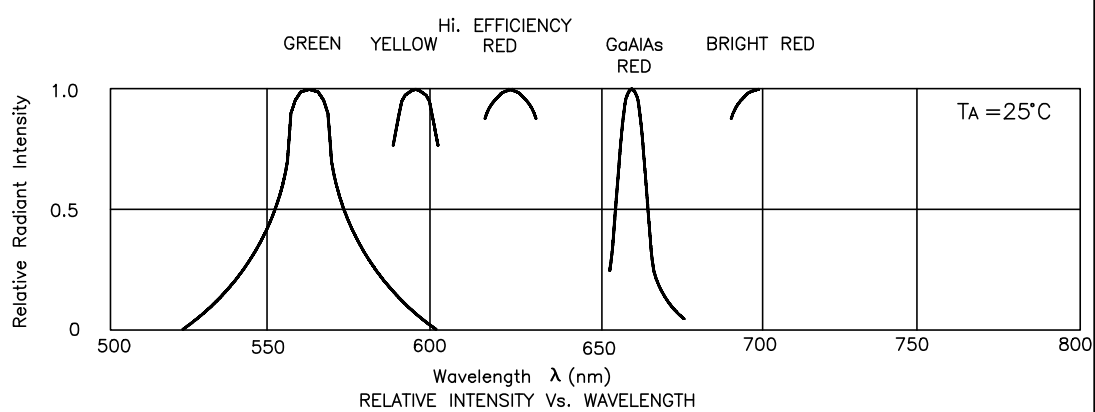
Selection Guide

| Part No. | Dice | Iv (ucd) @ 10 mA | | Description |
|--------------|---|---------------------|-------|----------------|
| | | Min. | Max. | |
| TA23-11HWA | BRIGHT RED (GaP) | 560 | 1400 | Column Anode |
| TC23-11HWA | | | | Column Cathode |
| TA23-11EWA | HIGH EFFICIENCY RED (GaAsP/GaP) | 3600 | 9000 | Column Anode |
| TC23-11EWA | | | | Column Cathode |
| TA23-11GWA | GREEN (GaP) | 2200 | 5600 | Column Anode |
| TC23-11GWA | | | | Column Cathode |
| TA23-11YWA | YELLOW (GaAsP/GaP) | 2200 | 5600 | Column Anode |
| TC23-11YWA | | | | Column Cathode |
| TA23-11SRWA | SUPER BRIGHT RED (GaAlAs) | 14000 | 31000 | Column Anode |
| TC23-11SRWA | | | | Column Cathode |
| TBA23-11HGWA | BRIGHT RED (GaP) GREEN(GaP) | 560 | 1400 | Column Anode |
| TBC23-11HGWA | | | | Column Cathode |
| TBA23-11EGWA | HIGH EFFICIENCY RED (GaAsP/GaP) GREEN (GaP) | 3600 | 9000 | Column Anode |
| TBC23-11EGWA | | | | Column Cathode |
| TBA23-12HGWA | BRIGHT RED (GaP) GREEN(GaP) | 560 | 1400 | Column Anode |
| TBC23-12HGWA | | | | Column Cathode |
| TBA23-12EGWA | HIGH EFFICIENCY RED (GaAsP/GaP) GREEN (GaP) | 3600 | 9000 | Column Anode |
| TBC23-12EGWA | | | | Column Cathode |

Electrical / Optical Characteristics at T_A=25°C

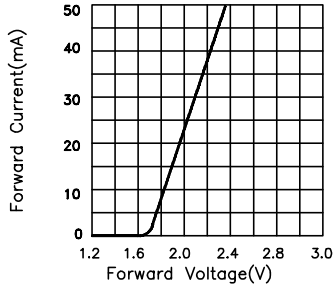
| Symbol | Parameter | Device | Typ. | Max. | Units | Test Conditions |
|-----------------------|-------------------------|--|----------------------------------|---------------------------------|-------|-----------------|
| λ_{peak} | Peak Wavelength | Bright Red High Efficiency Red Green Yellow Super 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 _F | 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 _R | Reverse Current | All | 10 | | uA | VR = 5V |

Absolute Maximum Ratings at $T_A=25^\circ\text{C}$

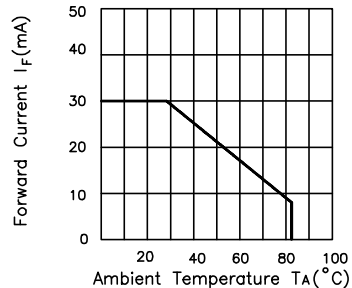


Bright Red

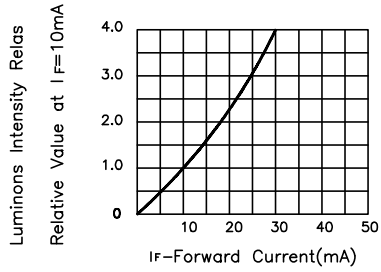
High Efficiency Red



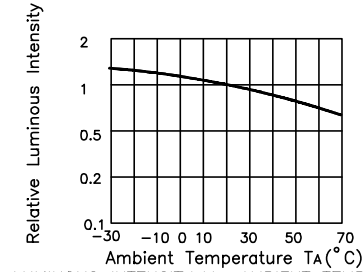
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

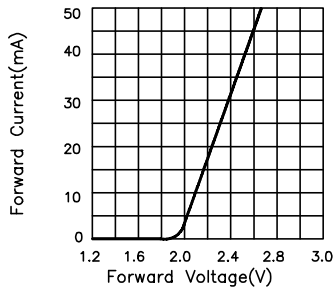


LUMINOUS INTENSITY Vs. FORWARD CURRENT

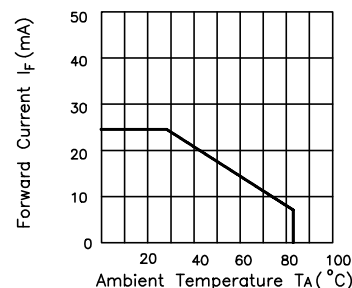


LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE

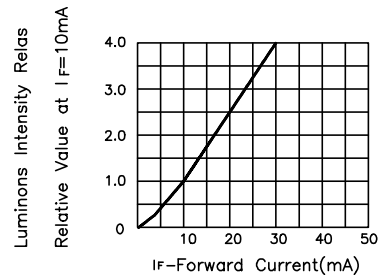
Green



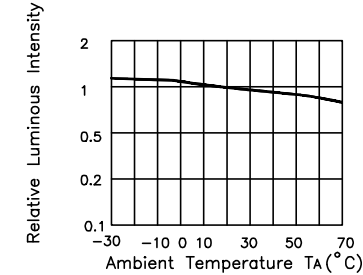
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

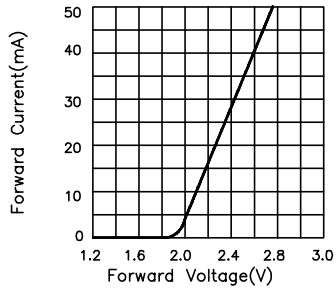


LUMINOUS INTENSITY Vs. FORWARD CURRENT

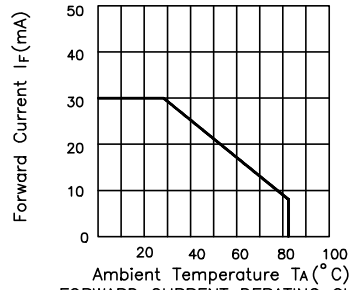


LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE

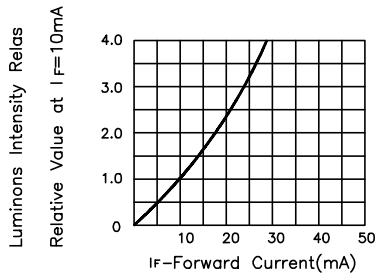
Yellow



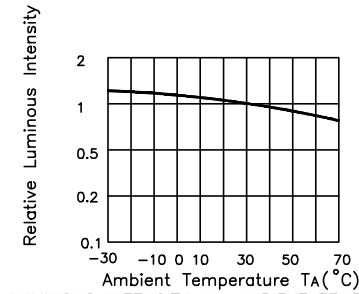
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

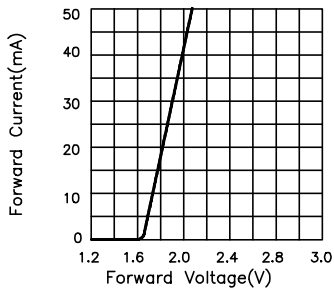


LUMINOUS INTENSITY Vs. FORWARD CURRENT

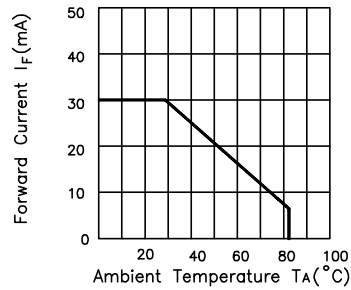


LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE

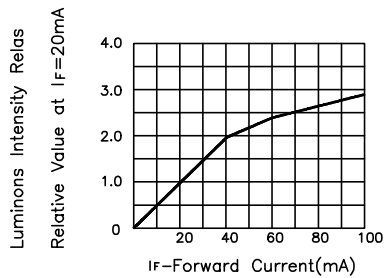
Super Bright Red



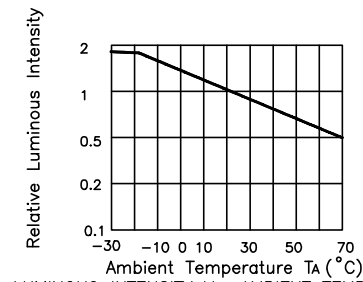
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE



LUMINOUS INTENSITY Vs. FORWARD CURRENT



LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE