

Kingbright®

100mm (4.0 INCH) 5X7 DOT MATRIX DISPLAYS

| | |
|----------|----------|
| TA40-11 | TC40-11 |
| TBA40-11 | TBC40-11 |
| TBA40-12 | TBC40-12 |

Features

- 4.0 INCH MATRIX HEIGHT.
- DOT SIZE 10mm.
- 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

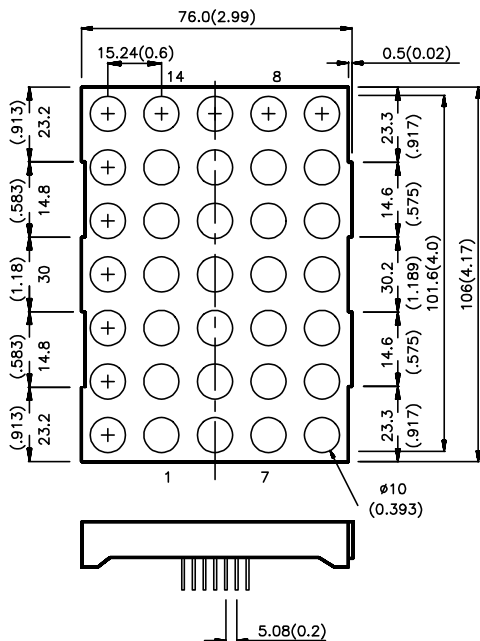
The Green source color devices are made with Gallium Phosphide Green Light Emitting Diode.

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.

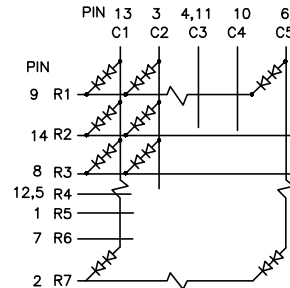
The Super Bright Red source color devices are made with Gallium Aluminum Arsenide Red Light Emitting Diode.

Package Dimensions

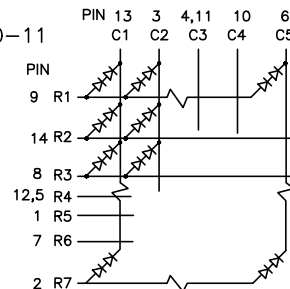


Internal Circuit Diagram

TA40-11



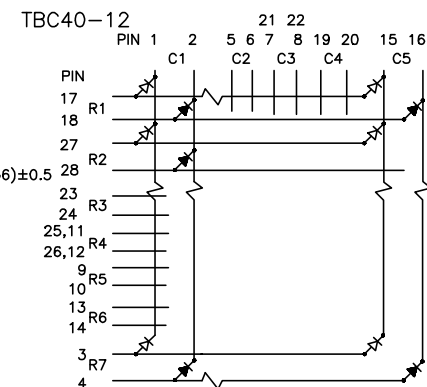
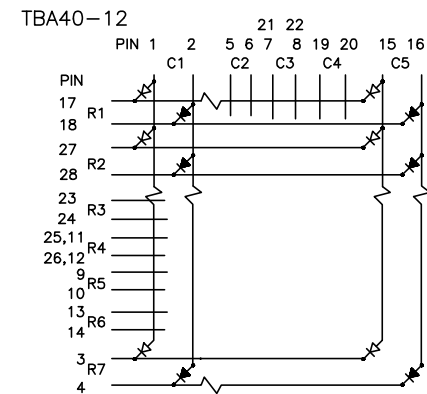
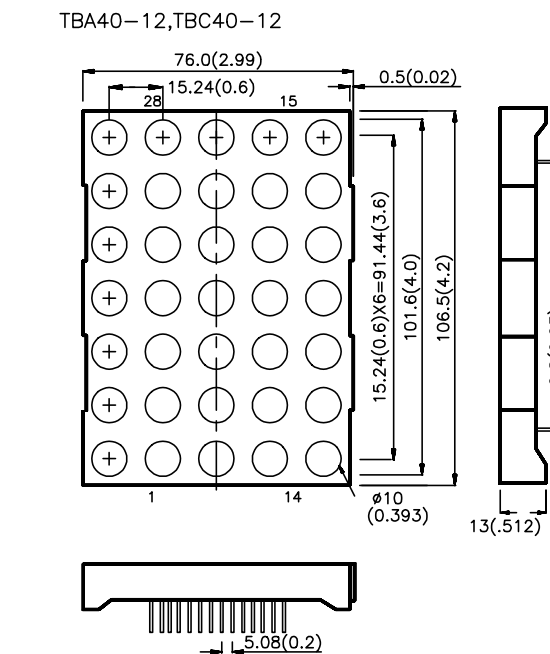
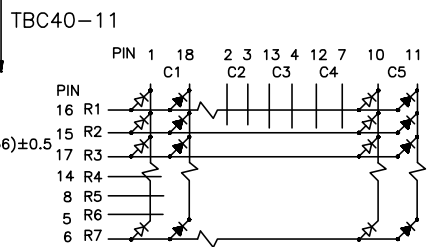
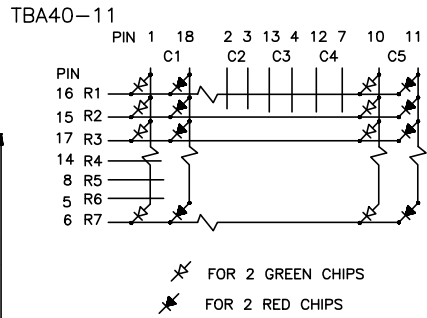
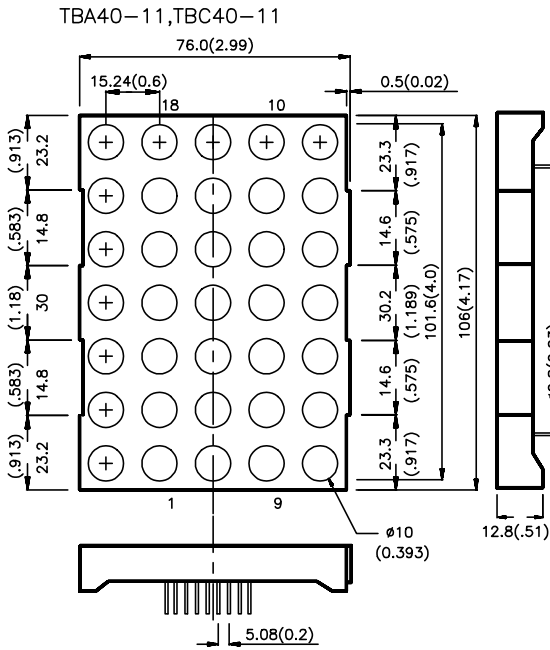
TC40-11



- 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. | Max. | |
| TA40-11EWA | HIGH EFFICIENCY RED (GaAsP/GaP) | 3600 | 9000 | Column Anode |
| TC40-11EWA | | | | Column Cathode |
| TA40-11GWA | GREEN (GaP) | 2200 | 5600 | Column Anode |
| TC40-11GWA | | | | Column Cathode |
| TA40-11YWA | YELLOW (GaAsP/GaP) | 2200 | 5600 | Column Anode |
| TC40-11YWA | | | | Column Cathode |
| TA40-11SRWA | SUPER BRIGHT RED (GaAlAs) | 14000 | 31000 | Column Anode |
| TC40-11SRWA | | | | Column Cathode |
| TBA40-11EGWA | HIGH EFFICIENCY RED (GaAsP/GaP) GREEN (GaP) | 3600 | 9000 | Column Anode |
| TBC40-11EGWA | | | | Column Cathode |
| TBA40-12EGWA | HIGH EFFICIENCY RED (GaAsP/GaP) GREEN (GaP) | 3600 | 9000 | Column Anode |
| TBC40-12EGWA | | | | Column Cathode |

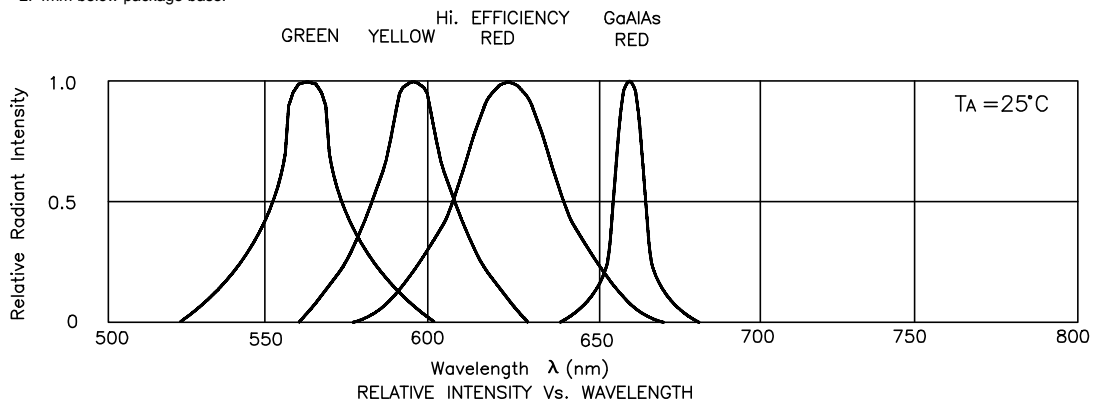
Electrical / Optical Characteristics at T_A=25°C

| Symbol | Parameter | Device | Typ. | Max. | Units | Test Conditions |
|-----------------------|-------------------------|------------------------------------------------------------|---------------------------|--------------------------|-------|-----------------|
| λ_{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 _F | 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 _R | Reverse Current | All | 10 | | uA | VR = 5V |

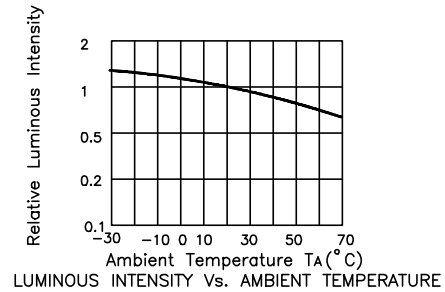
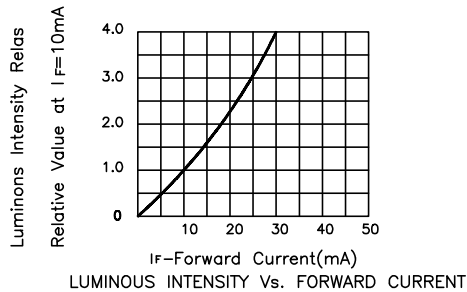
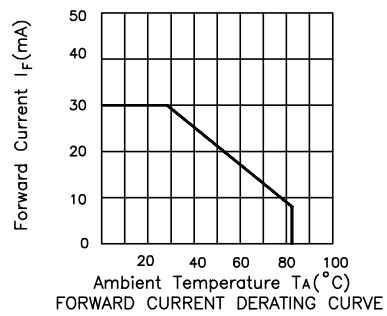
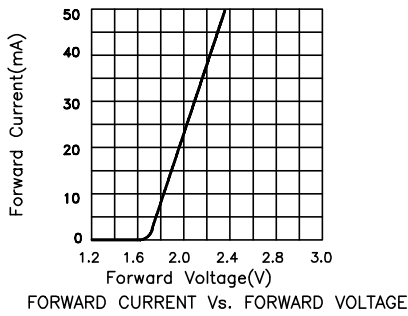
Absolute Maximum Ratings at $T_A=25^\circ\text{C}$

| 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 | | | | |

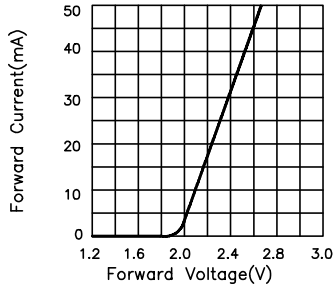
- Notes:
 1. 1/10 Duty Cycle, 0.1ms Pulse Width.
 2. 4mm below package base.



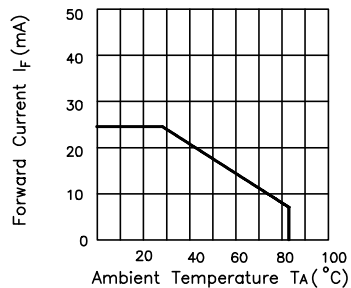
High Efficiency Red



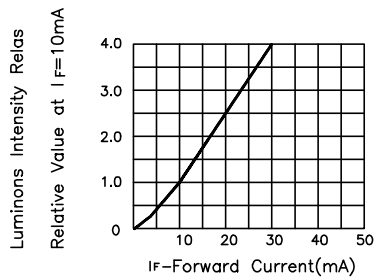
Green



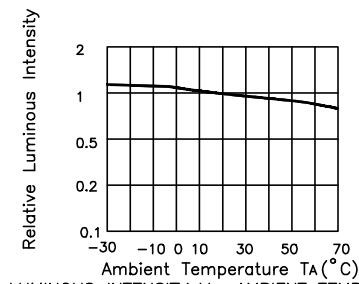
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

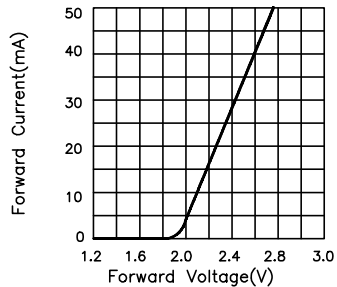


LUMINOUS INTENSITY Vs. FORWARD CURRENT

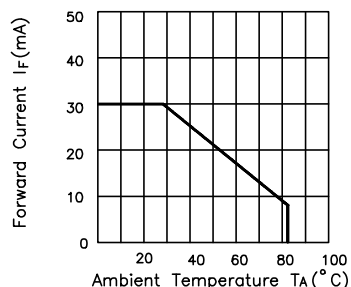


LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE

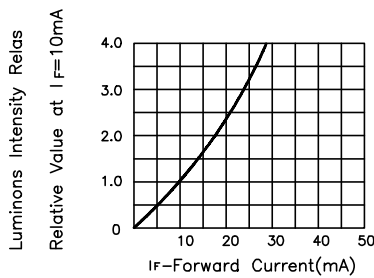
Yellow



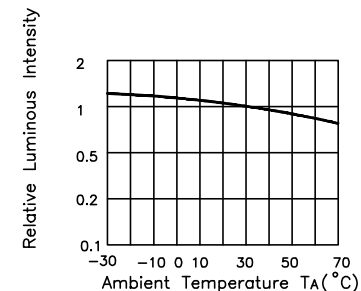
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

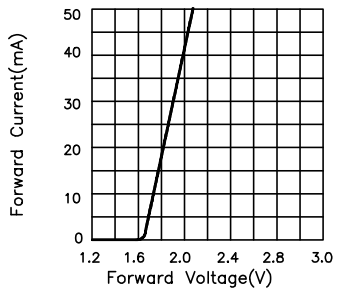


LUMINOUS INTENSITY Vs. FORWARD CURRENT

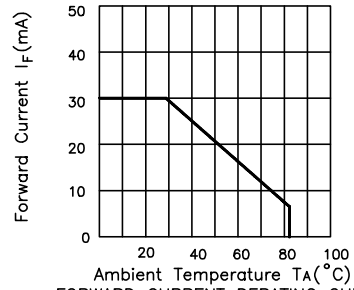


LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE

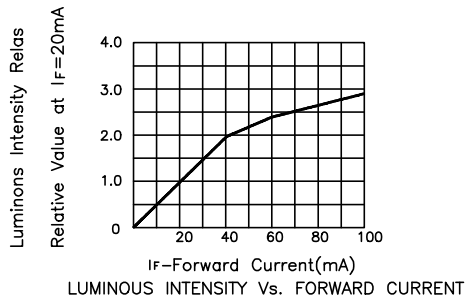
Super Bright Red



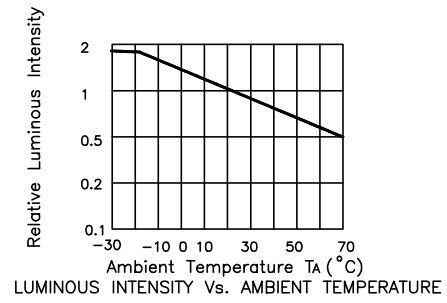
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE



LUMINOUS INTENSITY Vs. FORWARD CURRENT



LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE