LED Displays

Order code	Manufacturer code	Description
57-0150	TA20-11EWA	50.8MM ROW CATHODE S/RED DISP LEAD FREE
57-0155	TC20-11EWA	50.8MM ROW ANODE HE RED DISP
57-0157	TC20-11SRWA	ROW ANODE SUPER RED DISPLAY

Sales: 01206 751166 **Technical: 01206 835555** **Fax: 01206 7551188**
Sales@rapidelec.co.uk **Tech@rapidelec.co.uk** **www.rapidelectronics.co.uk**

Kingbright®

50mm (2.0 INCH) 5x7 DOT MATRIX DISPLAYS

TA20-11	TC20-11
TBA20-11	TBC20-11
TBA20-12	TBC20-12
TBA20-22	TBC20-22

Features

- ●2.0 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.
- ●APPLICABLE TO THREE COLORS - GREEN, ORANGE AND YELLOW (MIXED COLOR).
- ●CATEGORIZED FOR LUMINOUS INTENSITY.
- ●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.

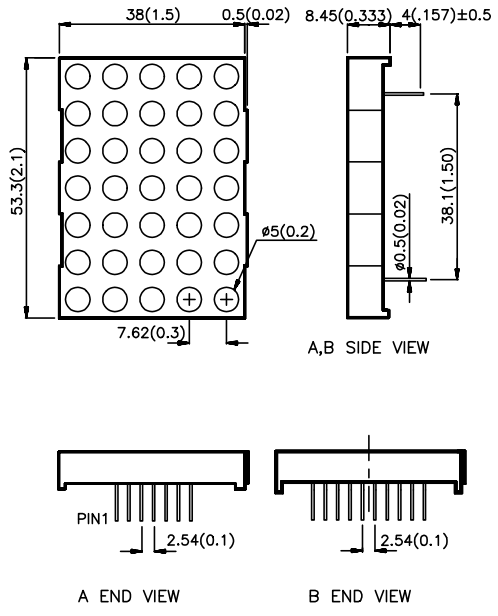
The Yellow source color devices are made with Gallium Arsenide Phosphide on Gallium Phosphide Yellow Light Emitting Diode.

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

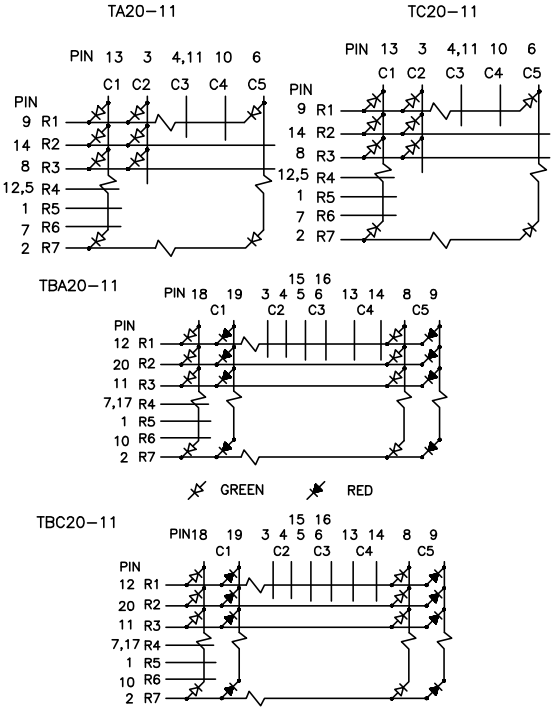
Package Dimensions

A : TA20−11,TC20−11

B : TBA20−11,TBC20−11



Internal Circuit Diagram



Notes:
1. All dimensions are in millimeters (inches), Tolerance is ±0.25(0.01")unless otherwise noted.
2. Specifications are subjected to change whitout notice.

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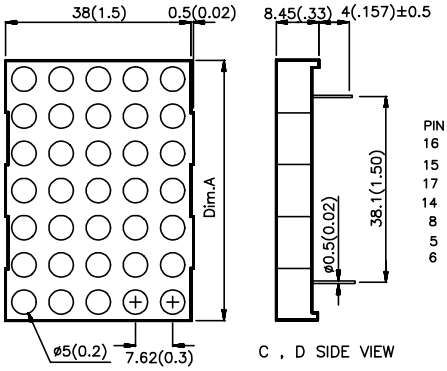
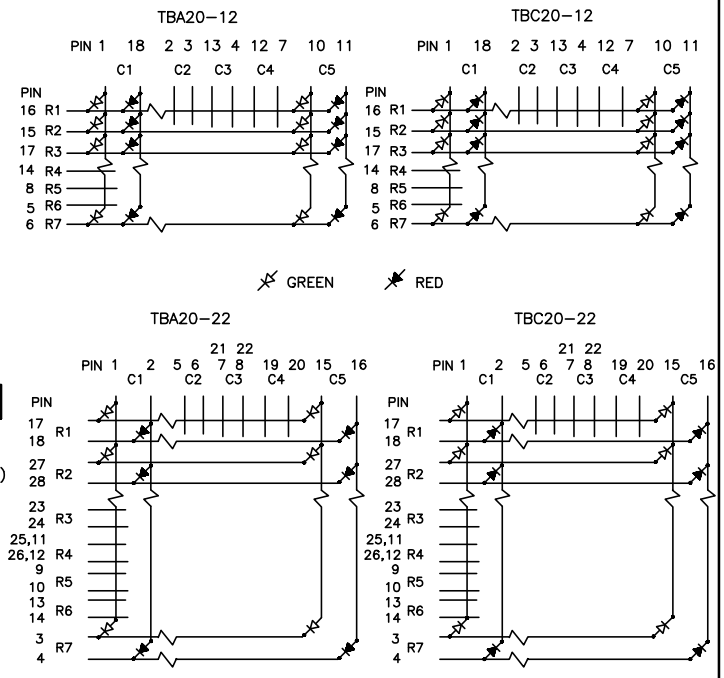
Package Dimensions

C : TBA20−12,TBC20−12 (Dim.A : 53.3)

D : TBA20−22,TBC20−22 (Dim.A : 53.0)



Internal Circuit Diagram



Selection Guide

Part No.	Dice	Iv (ucd) @ 10 mA		Description
		Min.	Max.	
TA20-11HWA	BRIGHT RED (GaP)	560	1400	Column Anode
TC20-11HWA				Column Cathode
TA20-11EWA	HIGH EFFICIENCY RED (GaAsP/GaP)	3600	9000	Column Anode
TC20-11EWA				Column Cathode
TA20-11GWA	GREEN (GaP)	2200	5600	Column Anode
TC20-11GWA				Column Cathode
TA20-11YWA	YELLOW (GaAsP/GaP)	2200	5600	Column Anode
TC20-11YWA				Column Cathode
TA20-11SRWA	SUPER BRIGHT RED (GaAlAs)	9000	31000	Column Anode
TC20-11SRWA				Column Cathode
TBA20-11EGWA	HIGH EFFICIENCY RED (GaAsP/GaP) GREEN(GaP)	3600	9000	Column Anode
TBC20-11EGWA		2200	5600	Column Cathode
TBA20-12EGWA	HIGH EFFICIENCY RED (GaAsP/GaP) GREEN(GaP)	3600	9000	Column Anode
TBC20-12EGWA		2200	5600	Column Cathode
TBA20-22EGWA	HIGH EFFICIENCY RED (GaAsP/GaP) GREEN(GaP)	3600	9000	Column Anode
TBC20-22EGWA		2200	5600	Column Cathode

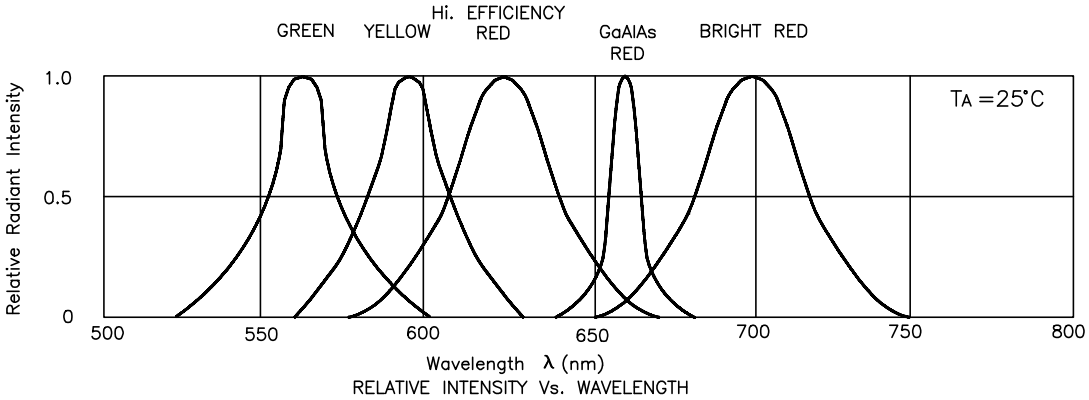
Electrical / Optical Characteristics at T_A=25°C

Symbol	Parameter	Device	Typ.	Max.	Units	Test Conditions
λpeak	Peak Wavelength	Bright Red High Efficiency Red Green Yellow Super Bright Red	700 625 565 590 660		nm	IF=20mA
Δλ1/2	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°C

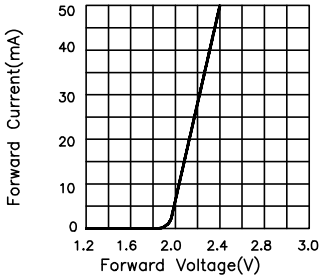
Parameter	Bright Red	High Efficiency Red	Green	Yellow	Super Bright Red	Units
Power dissipation	120	105	105	105	100	mW
DC Forward Current	25	30	25	30	30	mA
Peak Forward Current [1]	150	150	150	150	150	mA
Reverse Voltage	5	5	5	5	5	V
Operating/Storage Temperature	-40°C To +85°C					
Lead Soldering Temperature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

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

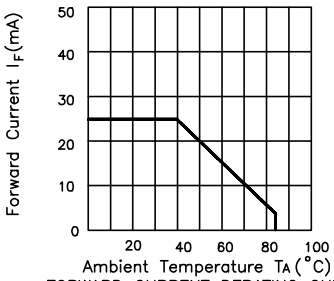


RELATIVE INTENSITY Vs. WAVELENGTH

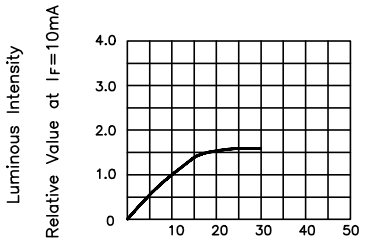
Bright Red



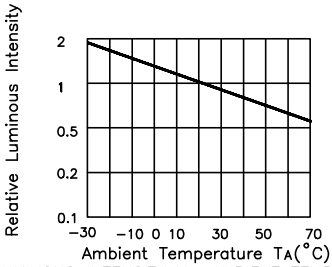
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

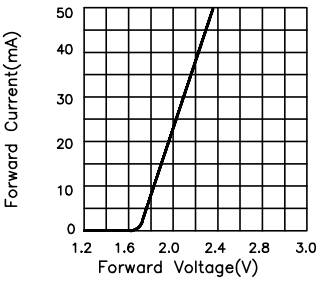


LUMINOUS INTENSITY Vs. FORWARD CURRENT

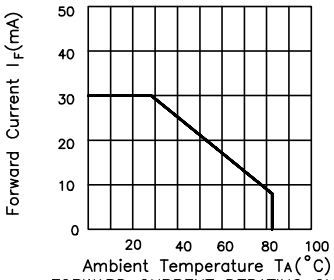


LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE

High Efficiency Red



FORWARD CURRENT Vs. FORWARD VOLTAGE



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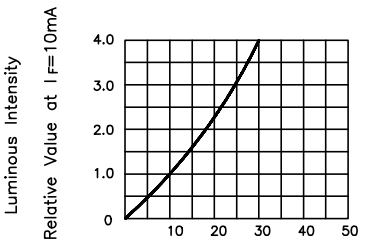
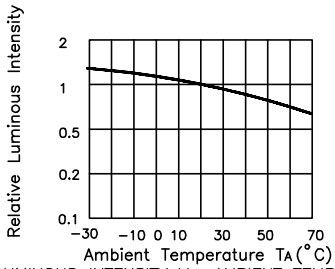
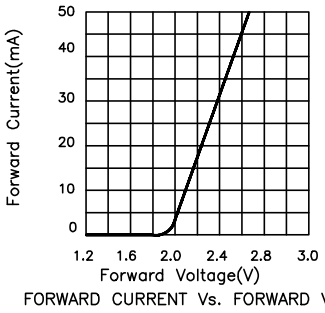


LUMINOUS INTENSITY Vs. FORWARD CURRENT



LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE

Green



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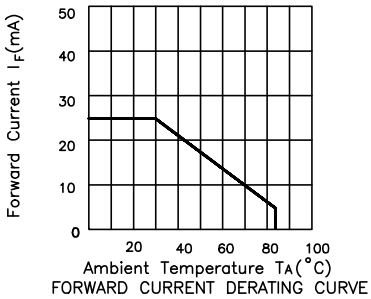

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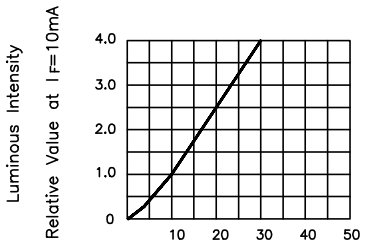
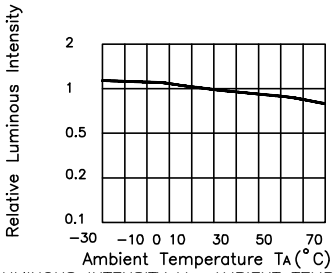
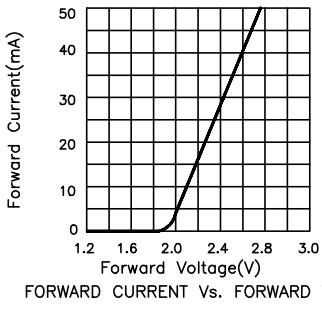


LUMINOUS INTENSITY Vs. FORWARD CURRENT



LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE

Yellow



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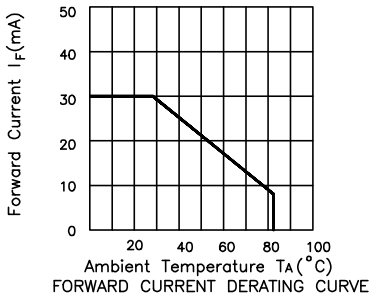

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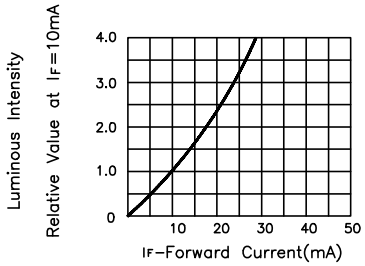
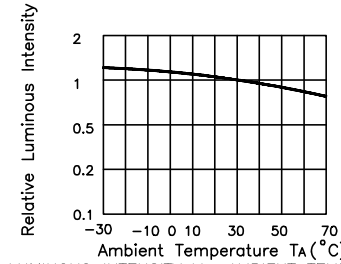


LUMINOUS INTENSITY Vs. FORWARD CURRENT



LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE

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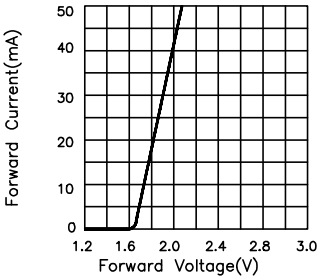
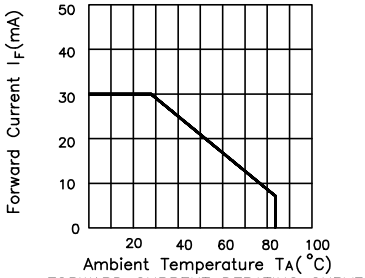
Super Bright Red



FORWARD CURRENT Vs. FORWARD VOLTAGE



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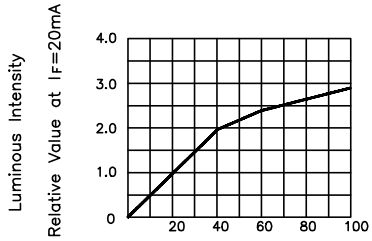
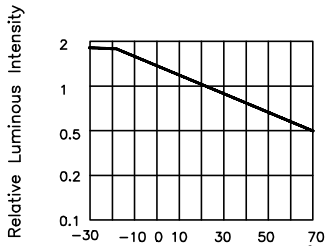


LUMINOUS INTENSITY Vs. FORWARD CURRENT



LUMINOUS INTENSITY Vs. AMBIENT TEMPERATURE