

Surface Mount LEDs

Order code	Manufacturer code	Description
72-8560	KP-2012IT	0805 HE RED SMT LED (RC)
72-8565	KP-2012SRT	0805 S/RED SMT LED (RC)
72-8570	KP-2012SGT	0805 GREEN SMT LED (RC)
72-8575	KP-2012YT	0805 YELL.SMT LED
72-8590	KP-2012IT.	REEL 0805 HE RED SMT LED (2000) (RC)
72-8595	KP-2012SRT.	REEL 0805 SUPER RED SMT LED (2000) (RC)
72-8600	KP-2012SGT.	REEL 0805 GREEN SMT LED (2000) (RC)
72-8605	KP-2012YT.	REEL 0805 YELLOW SMT LED (2000)

Surface Mount LEDs	Page 1 of 7
The enclosed information is believed to be correct, Information may change 'without notice' due to product improvement. Users should ensure that the product is suitable for their use. E. & O. E.	Revision A 04/07/2003

Kingbright®

2.0x1.2mm SMD CHIP LED LAMPS

KP-2012 SERIES

Features

- 2.0mmx1.2mm SMT LED. 1.1mm THICKNESS.
- LOW POWER CONSUMPTION.
- WIDE VIEWING ANGLE.
- IDEAL FOR BACKLIGHT AND INDICATOR.
- VARIOUS COLORS AND LENS TYPES AVAILABLE.

Description

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

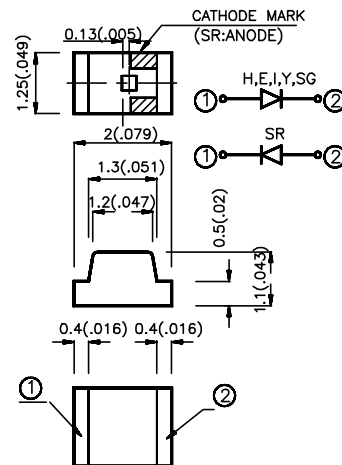
The Super Bright Green source color devices are made with Gallium Phosphide Green Light Emitting Diode.

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 Diodes.

Package Dimensions



Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is $\pm 0.1(0.004)$ unless otherwise noted.
3. Lead spacing is measured where the lead emerge package.
4. Specifications are subjected to change without notice.

Selection Guide

Part No.	Dice	Lens Type	Iv (mcd) @ 20 mA		Viewing Angle 2 θ 1/2
			Min.	Typ.	
KP-2012HD	BRIGHT RED (GaP)	RED DIFFUSED	0.8	1.25	120°
KP-2012HC	BRIGHT RED (GaP)	WATER CLEAR	0.8	1.25	120°
KP-2012HT	BRIGHT RED (GaP)	RED TRAS.	0.8	1.25	120°
KP-2012ID	HIGH EFFICIENCY RED (GaAsP/GaP)	RED DIFFUSED	5	12.5	120°
KP-2012EC	HIGH EFFICIENCY RED (GaAsP/GaP)	WATER CLEAR	5	12.5	120°
KP-2012IT	HIGH EFFICIENCY RED (GaAsP/GaP)	RED TRANS.	5	12.5	120°
KP-2012YD	YELLOW (GaAsP/GaP)	YELLOW DIFFUSED	3.2	8	120°
KP-2012YC	YELLOW (GaAsP/GaP)	WATER CLEAR	3.2	8	120°
KP-2012YT	YELLOW (GaAsP/GaP)	YELLOW TRANS.	3.2	8	120°
KP-2012SRD	SUPER BRIGHT RED (GaAlAs)	RED DIFFUSED	40	70	120°
KP-2012SRC	SUPER BRIGHT RED (GaAlAs)	WATER CLEAR	40	70	120°
KP-2012SRT	SUPER BRIGHT RED (GaAlAs)	RED TRANS.	40	70	120°
KP-2012SGD	SUPER BRIGHT GREEN (GaP)	GREEN DIFFUSED	3.2	12.5	120°
KP-2012SGC	SUPER BRIGHT GREEN (GaP)	WATER CLEAR	3.2	12.5	120°
KP-2012SGT	SUPER BRIGHT GREEN (GaP)	GREEN TRNS.	3.2	12.5	120°

Note:

1. θ 1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.

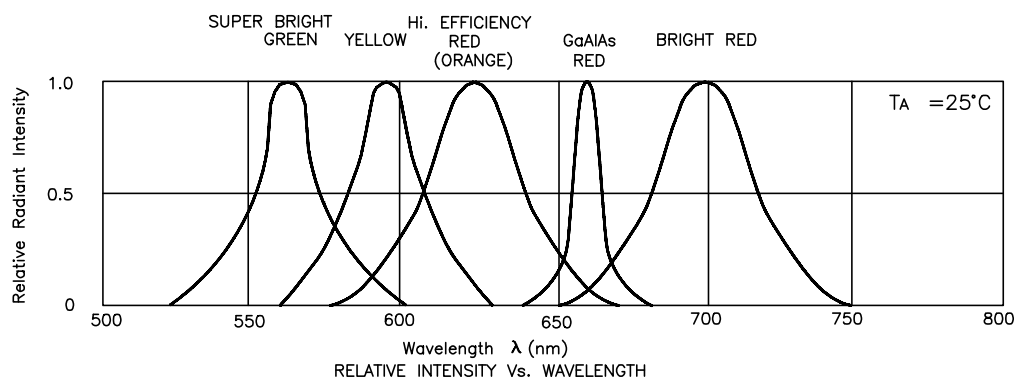
Electrical / Optical Characteristics at T_A=25°C

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

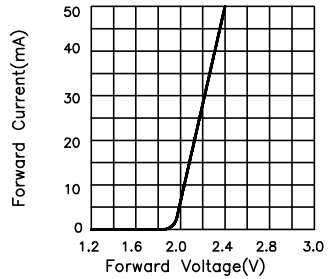
Absolute Maximum Ratings at T_A=25°C

Parameter	Bright Red	High Efficiency Red	Yellow	Super Bright Red	Super Bright Green	Units
Power dissipation	105	105	105	100	105	mW
DC Forward Current	25	30	30	30	25	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]	230 °C For 3 Seconds					

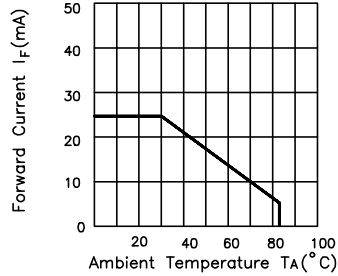
Note:
1. 1/10 Duty Cycle, 0.1ms Pulse Width.



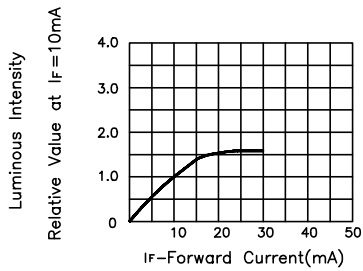
Bright Red KP-2012HD, KP-2012HC, KP-2012HT



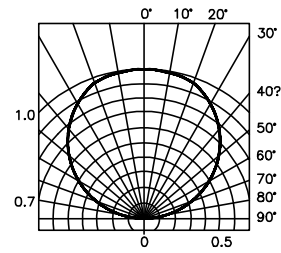
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

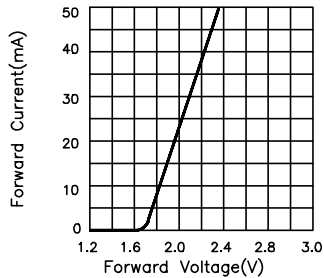


LUMINOUS INTENSITY Vs. FORWARD CURRENT

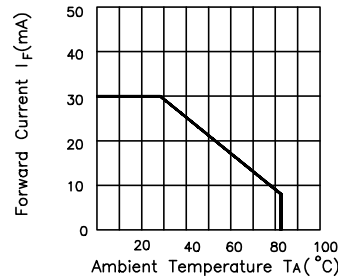


SPATIAL DISTRIBUTION

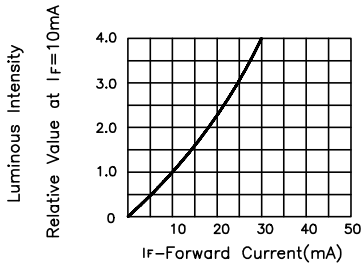
High Efficiency Red KP-2012ID, KP-2012EC, KP-2012IT



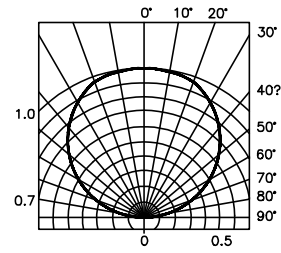
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

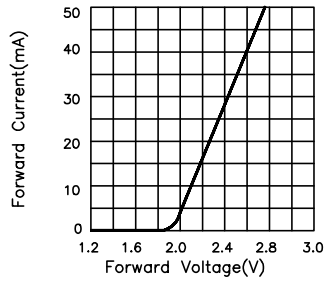


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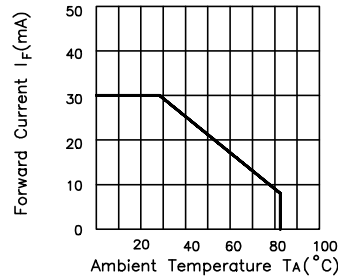


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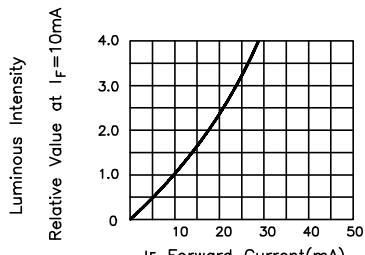
Yellow KP-2012YD, KP-2012YC, KP-2012YT



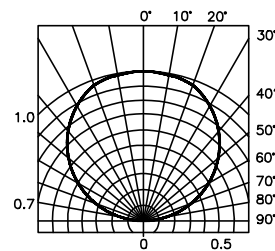
FORWARD CURRENT Vs. FORWARD VOLTAGE



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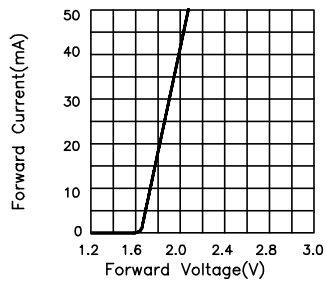


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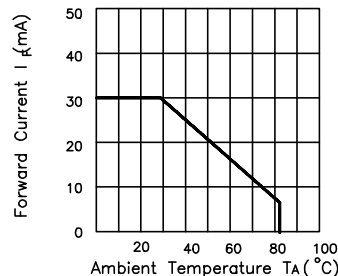


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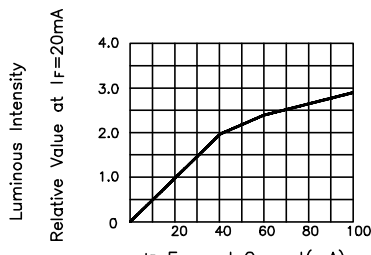
Super Bright Red KP-2012SRD, KP-2012SRC, KP-2012SRT



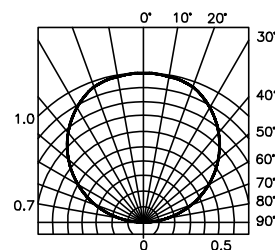
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

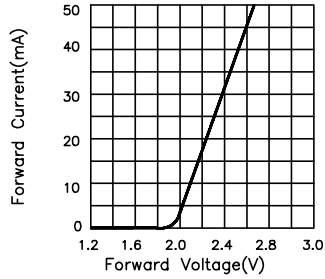


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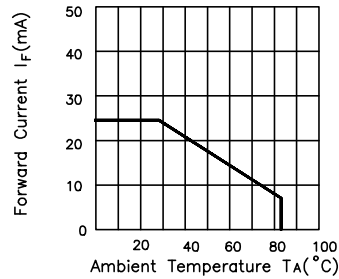


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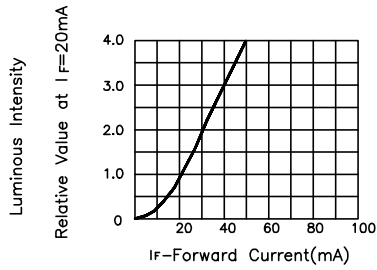
Super Bright Green KP-2012SGD, KP-2012SRC, KP-2012SGT



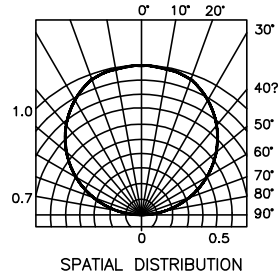
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

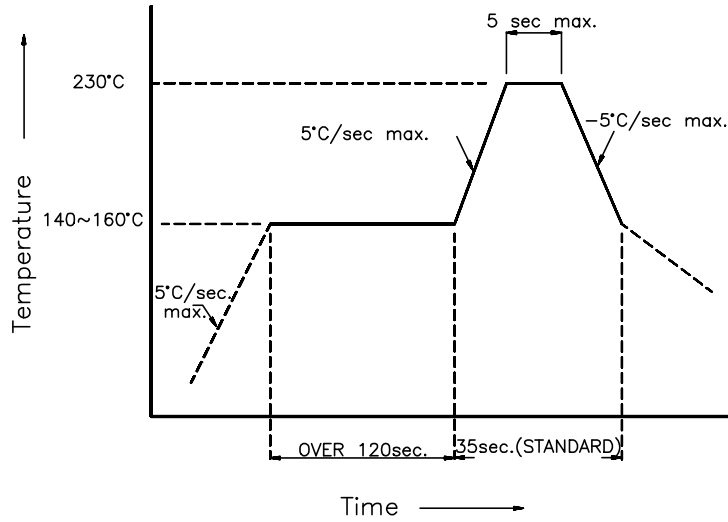


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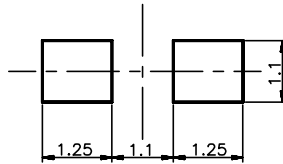
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KP-2012 Series SMT Reflow Soldering Instructions

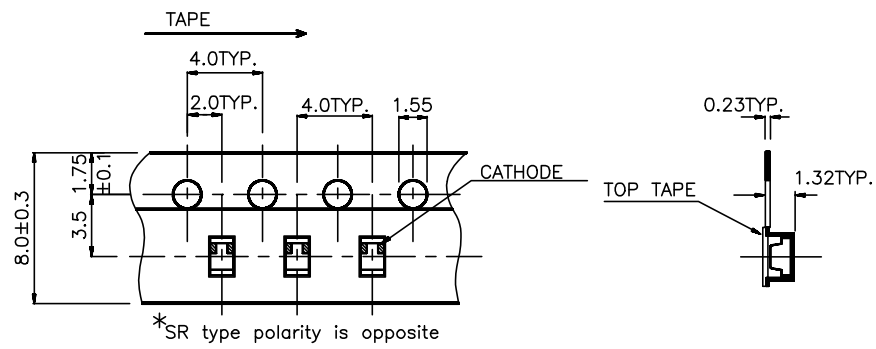


KP-2012 Series Recommended Soldering Pattern

FOR REFLOW SOLDERING



KP-2012 Series Tape Specifications



(Units : mm)