

Kingbright®

4mm CYLINDRICAL LED LAMPS

L-1413I HIGH EFFICIENCY RED L-1413H BRIGHT RED
 L-1413SG SUPER BRIGHT GREEN L-1413Y YELLOW
 L-1413SR SUPER BRIGHT RED L-1413G GREEN

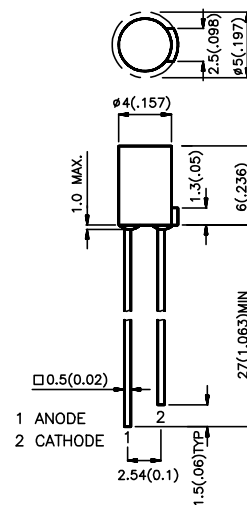
Features

- CYLINDRICAL TYPE, FLAT TOP.
- CONVEX CATHODE MARK ON BODY.
- LOW POWER CONSUMPTION.
- I.C. COMPATIBLE.
- RELIABLE AND RUGGED.
- LONG LIFE - SOLID STATE RELIABILITY.

Description

The Green and Super Bright Green source color devices are made with Gallium Phosphide 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.

Package Dimensions



- Notes:
1. All dimensions are in millimeters (inches).
 2. Tolerance is $\pm 0.25(0.01)$ 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) @ 10 mA *20mA		Viewing Angle
			Min.	Max.	
L-1413HDT	BRIGHT RED (GaP)	RED DIFFUSED	0.32	2	100°
L-1413IDT	HIGH EFFICIENCY RED (GaAsP/GaP)	RED DIFFUSED	3.2	8	100°
L-1413ITL		RED TRANSPARENT	12.5	32	100°
L-1413GDT	GREEN (GaP)	GREEN DIFFUSED	12.5	8	100°
L-1413SGDL	SUPER BRIGHT GREEN (GaP)	GREEN DIFFUSED	*3.2	*8	100°
L-1413YDT	YELLOW (GaAsP/GaP)	YELLOW DIFFUSED	1.25	8	100°
L-1413SRDT	SEUPER BRIGHR RED (GaAlAs)	RED DIFFUSED	*60	*100	100°

Note:
 1. $\theta_{1/2}$ 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

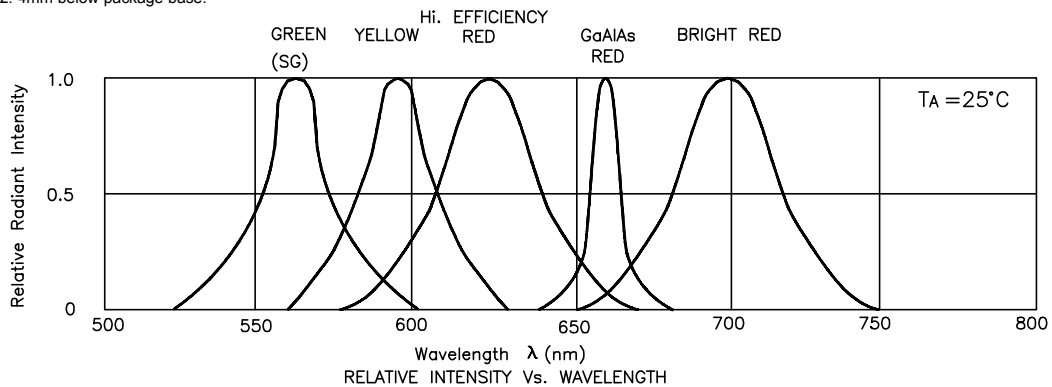
Symbol	Parameter	Device	Typ.	Max.	Units	Test Conditions
λ_{peak}	Peak Wavelength	Bright Red High Efficiency Red Green Yellow Super Bright Green Super Bright Red	700 625 565 590 565 660		nm	IF=20mA
$\Delta\lambda_{1/2}$	Spectral Line Halfwidth	Bright Red High Efficiency Red Green Yellow Super Bright Green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

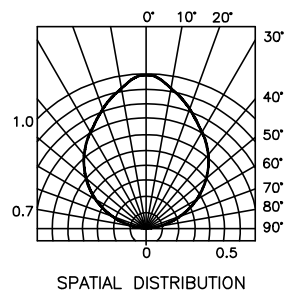
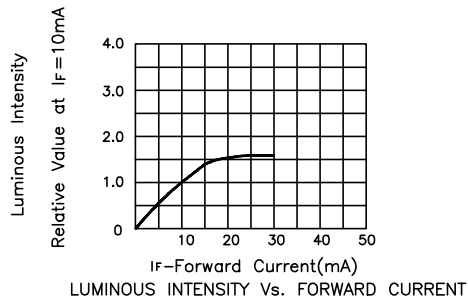
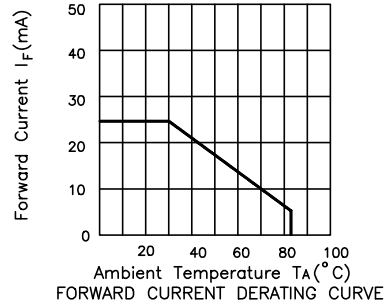
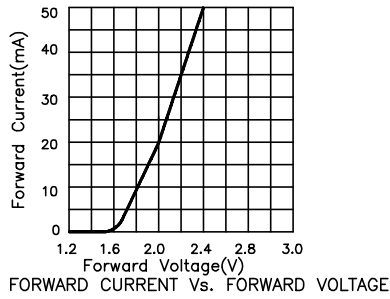
Parameter	Bright Red	High Efficiency Red	Green	Yellow	Super Bright Green	Super Bright Red	Units
Power dissipation	120	105	105	105	105	100	mW
DC Forward Current	25	30	25	30	25	30	mA
Peak Forward Current [1]	150	150	150	150	150	150	mA
Reverse Voltage	5	5	5	5	5	5	V
Operating/Storage Temperature	-40 °C To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

Notes:

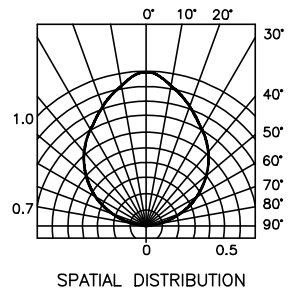
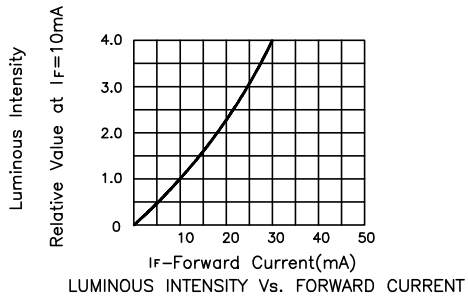
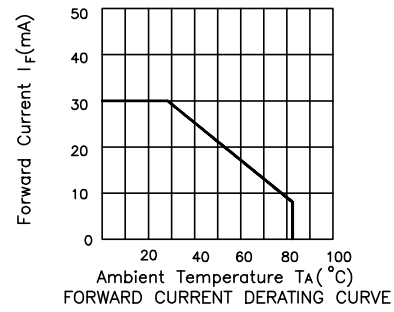
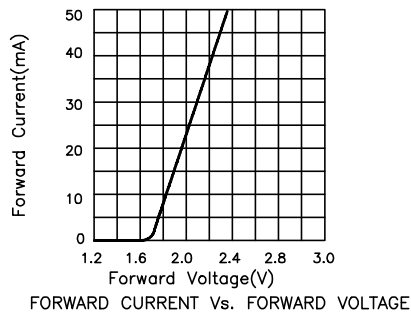
- 1/10 Duty Cycle, 0.1ms Pulse Width.
2. 4mm below package base.



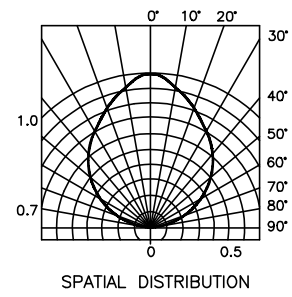
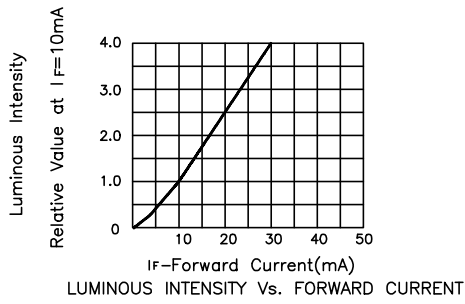
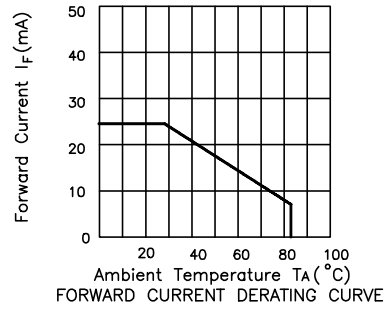
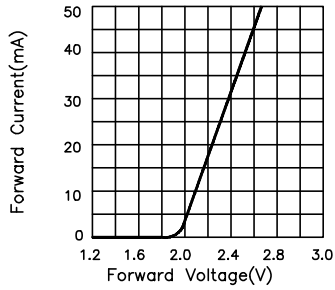
Bright Red L-1413HDT



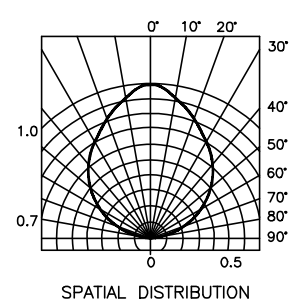
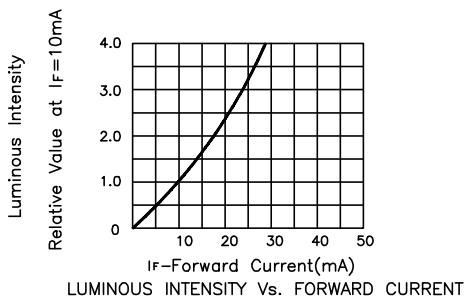
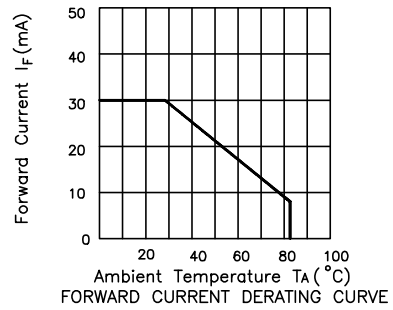
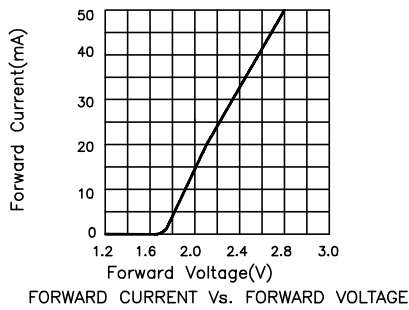
High Efficiency Red L-1413IDT, L-1413ITL



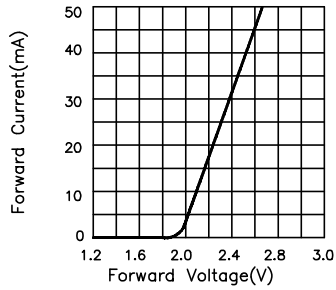
Green L-1413GDT



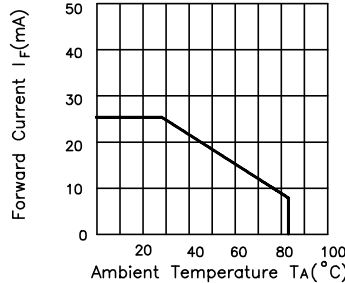
Yellow L-1413YDT



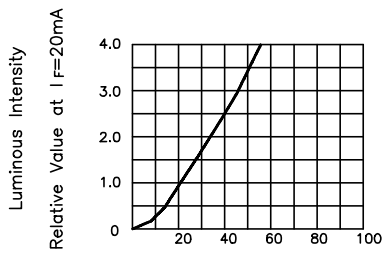
Super Bright Green L-1413SGDL



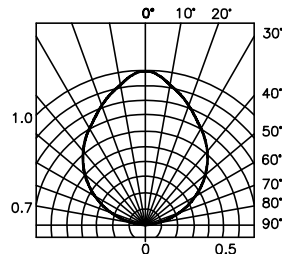
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE

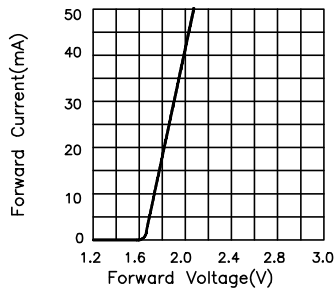


LUMINOUS INTENSITY Vs. FORWARD CURRENT

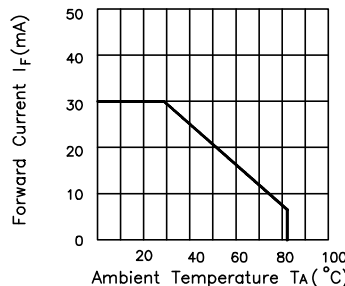


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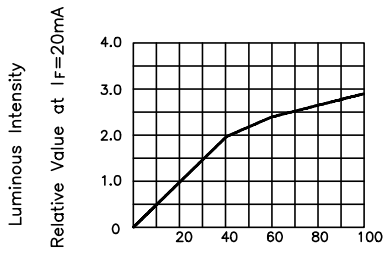
Super Bright Red L-1413SRDT



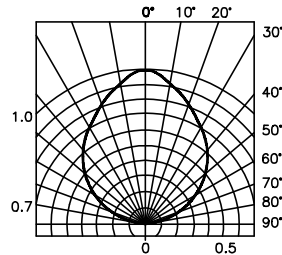
FORWARD CURRENT Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE



LUMINOUS INTENSITY Vs. FORWARD CURRENT



SPATIAL DISTRIBUTION