Ultra Bright AlInGaP PLCC LED Lamps

LTL-94PKAK-TA Red Orange
LTL-94PKFK-TA Yellow Orange
LTL-94PKRK-TA Supper Red
LTL-94PKYK-TA Amber Yellow

Features

- Package 8mm tape on 7" diameter reels.
- Compatible with automatic placement equipment.
- Compatible with infrared and vapor phase reflow solder process.
- EIA STD package.

Description

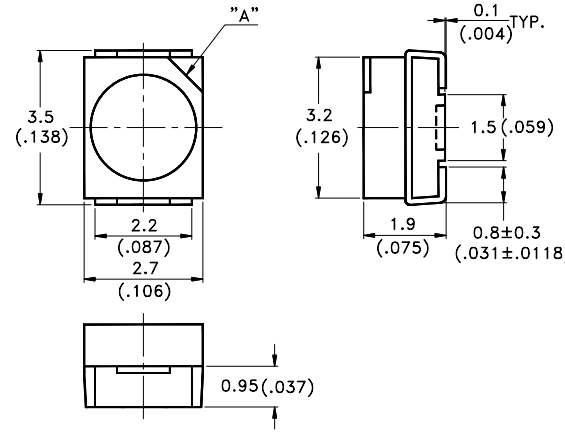
The Super Orange source color devices are made with Aluminum Indium Gallium Phosphide on Super Orange Light Emitting Diode.

The Yellow Orange source color devices are made with Aluminum Indium Gallium Phosphide on Yellow Orange Light Emitting Diode.

The Super Red source color devices are made with Aluminum Indium Gallium Phosphide on Super Red Light Emitting Diode.

The Amber Yellow source color devices are made with Aluminum Indium Gallium Phosphide on Amber Yellow Light Emitting Diode.

Package Dimensions



Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.25mm (.010") unless otherwise noted.
3. "A" identify cathode.

Devices

Part No. LTL-	Lens	Source Color
94PKAK-TA	Water Clear	AlInGaP Red Orange
94PKFK-TA	Water Clear	AlInGaP Yellow Orange
94PKRK-TA	Water Clear	AlInGaP Super Red
94PKYK-TA	Water Clear	AlInGaP Amber Yellow

Absolute Mmaximum Ratings at Ta=25℃

Parameter	Red Orange	Yellow Orange	Super Red	Amber Yellow	Unit
Power Dissipation	75	75	75	75	mW
Peak Forward Current (1/10 Duty Cycle, 0.1ms Pulse Width)	80	80	80	80	mA
Continuous Forward Current	30	30	30	30	mA
Derating Linear From 50℃	0.4	0.4	0.4	0.4	mA/℃
Reverse Voltage	5	5	5	5	V
Operating Temperature Range	-55℃ to +100℃				
Storage Temperature Range	-55℃ to +100℃				
Wave Soldering Condition	260℃ for 5 Seconds				
Infared Soldering Condition	260℃ for 5 Seconds				
Vapor phase Soldering Condition	215℃ for 3 minutes				

Electrical / Optical Characteristics and Curves at Ta = 25℃

Parameter	Symbol	Color	Part No. LTL-	Min.	Typ.	Max.	Unit.	Test Condition.
Luminous Intensity	I_V	Red Orange	94PKAK-TA	16	100		mcd	I_F=20 mA Note 1
		Yellow Orange	94PKFK-TA	16	100			
		Super Red	94PKRK-TA	16	100			
		Amber Yellow	94PKYK-TA	16	100			
Viewing Angle	$2\theta_{1/2}$	Red Orange	94PKAK-TA		120		deg	Note 2 (Fig.6)
		Yellow Orange	94PKFK-TA		120			
		Super Red	94PKRK-TA		120			
		Amber Yellow	94PKYK-TA		120			
Peak Emission Wavelength	λP	Red Orange	94PKAK-TA		621		nm	Measurement @Peak (Fig.1)
		Yellow Orange	94PKFK-TA		611			
		Super Red	94PKRK-TA		639			
		Amber Yellow	94PKYK-TA		598			
Dominant Wavelength	λd	Red Orange	94PKAK-TA		615		nm	Note 3
		Yellow Orange	94PKFK-TA		605			
		Super Red	94PKRK-TA		631			
		Amber Yellow	94PKYK-TA		595			
Spectral Line Half Width	$\triangle\lambda$	Red Orange	94PKAK-TA		18		nm	
		Yellow Orange	94PKFK-TA		17			
		Super Red	94PKRK-TA		20			
		Amber Yellow	94PKYK-TA		16			
Forward Voltage	V_F	Red Orange	94PKAK-TA		2.0	2.4	V	I_F=20mA
		Yellow Orange	94PKFK-TA		2.0	2.4		
		Super Red	94PKRK-TA		2.0	2.4		
		Amber Yellow	94PKYK-TA		2.0	2.4		
Reverse Current	I_R	Super Orange	94PKAK-TA			100	μA	V_R=5V
		Yellow Orange	94PKFK-TA			100		
		Super Red	94PKRK-TA			100		
		Amber Yellow	94PKYK-TA			100		
Capacitance	C	Red Orange	94PKAK-TA		40		PF	V_F=0 f=1MHZ
		Yellow Orange	94PKFK-TA		40			
		Super Red	94PKRK-TA		40			
		Amber Yellow	94PKYK-TA		40			

NOTES:1. Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve.
2. $2\theta_{1/2}$ is the off-axis angle at which the luminous intensity is half the axial luminous intensity.
3. The dominant wavelength, λd is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.

Typical Electrical / Optical Characteristic Curves
(25℃ Ambient Temperature Unless Otherwise Noted)

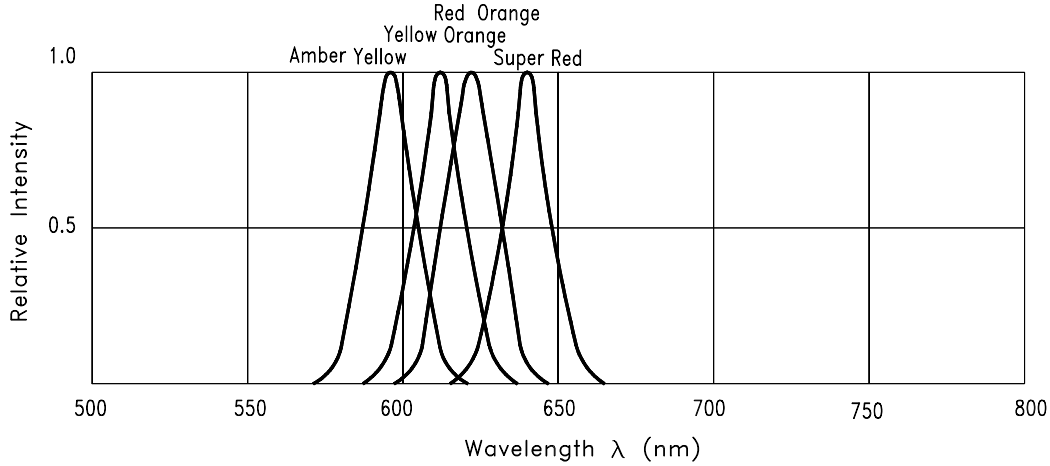


Fig.1 RELATIVE INTENSITY VS. WAVELENGTH

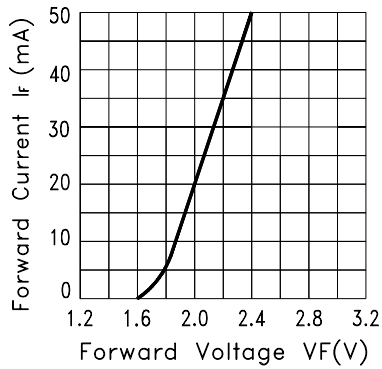


Fig.2 FORWARD CURRENT VS. FORWARD VOLTAGE

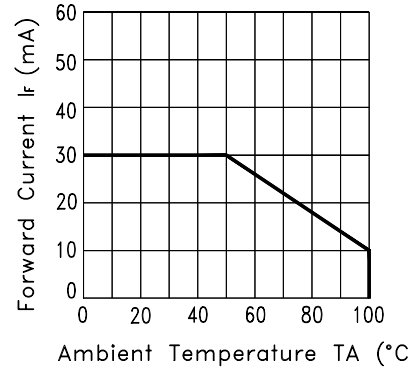


Fig.3 FORWARD CURRENT DERATING CURVE

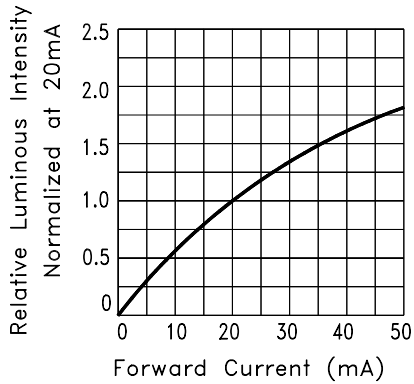


Fig.4 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

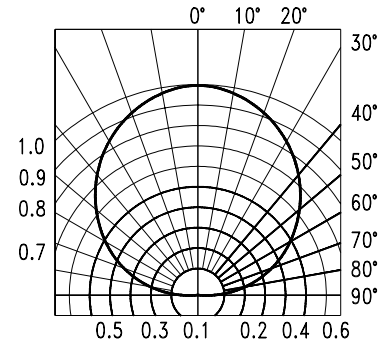
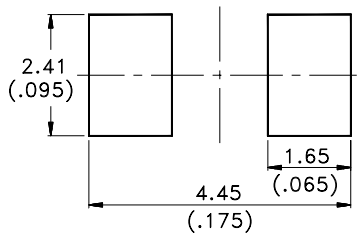


Fig.6 SPATIAL DISTRIBUTION

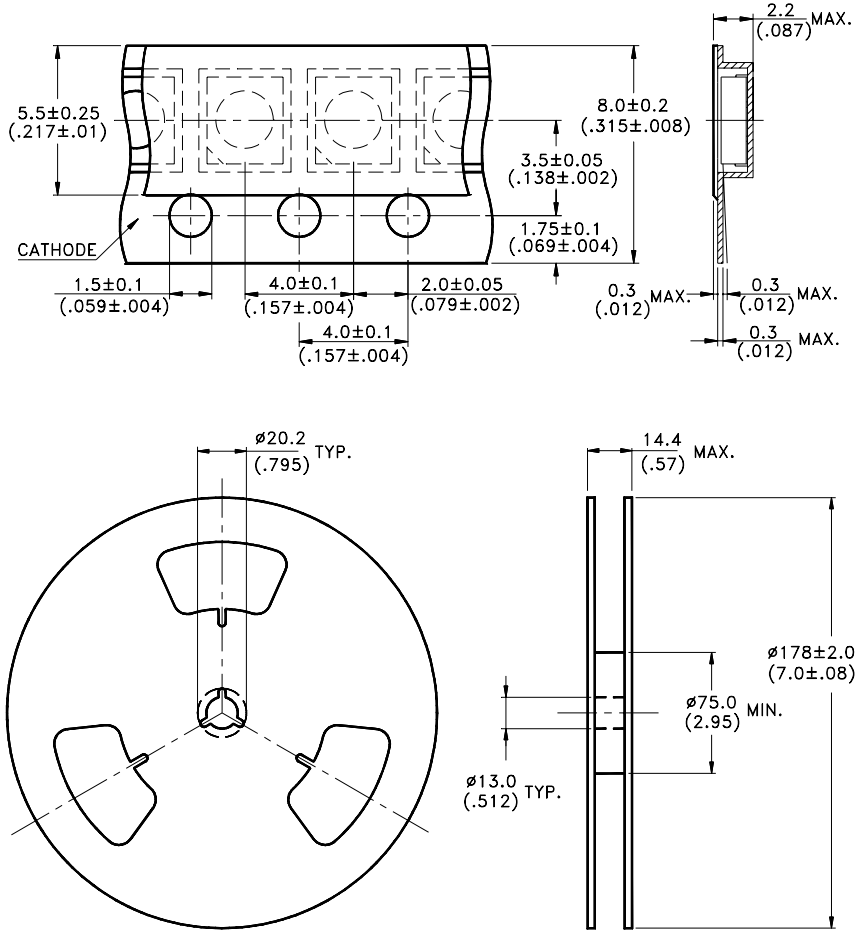
User Gulde Cleaning

Do not use unspecified chemical liquid to clean LED they could harm the package. If cleaning is necessary, immerse the LED in ethyl alcohol or isopropyl alcohol at normal temperature for less one minute.

Soldering Pad Dimensions



Package Dimension of Tape and Reel



Notes : 1. Empty component pockets sealed with top cover tape.
2. 7 inch reel-1500 pieces per reel.
3. The maximum number of consecutive missing lamps are two.
4. In accordance with ANSI/EIA RS-481 specifications the casthode is oriented towards the tape sprocket hole.