LITEON

PLCC Lamps

LTL-94THK-TA Red Orange-Green
LTL-94TDK-TA Yellow-Green

Features

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

Description

The Orange source color devices are made with Gallium Arsenide Phosphide on Gallium Phoshide Orange Light Emitting Doide.

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

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

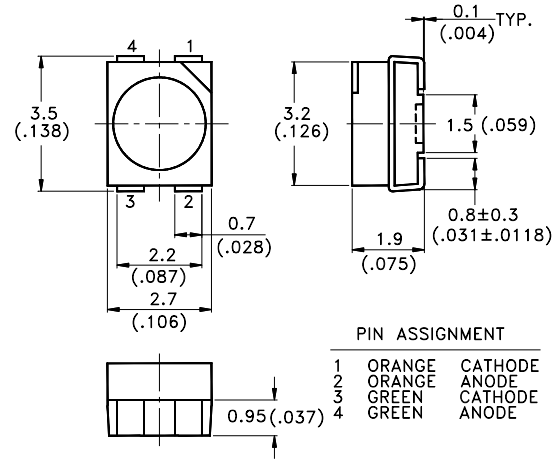
Devices

Part No. LTL-	Lens	Source Color
94THK-TA	Water Clear	Red Orange Green
94TDK-TA	Water Clear	Yellow Green

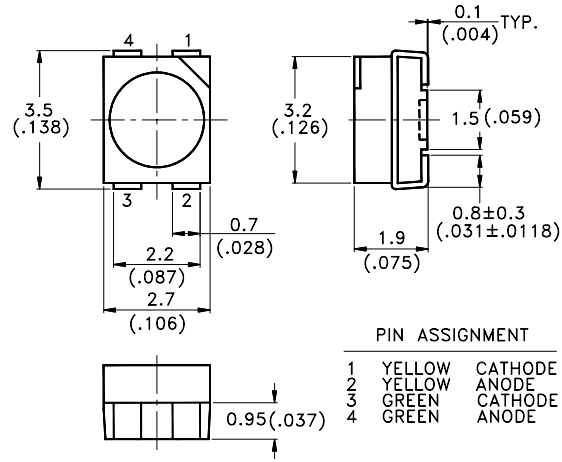
Notes:
1. All dimensions are in millimeters (inches).
2. Tolerance is ± 0.2mm (.008") unless otherwise noted.

Package Dimensions

(A) 94THK-TA



(B) 94TDK-TA



SMD LAMPS

Absolute Maximum Ratings at Ta=25℃

Parameter	Yellow	Green	Red Orange	Unit
Power Dissipation	60	100	100	mW
Peak Forward Current (1/10 Duty Cycle, 0.1ms Pulse Width)	80	120	120	mA
Continuous Forward Current	20	30	30	mA
Derating Linear From 50℃	0.4	0.6	0.6	mA/℃
Reverse Voltage	5	5	5	V
Operating Temperature Range	-55℃ to +100℃			
Storage Temperature Range	-55℃ to +100℃			
Infared Soldering Condition	260℃ for 5 Seconds			
Vapor phase Soldering Condition	215℃ for 3 minutes			
Wave Soldering Condition	260℃ for 5 Seconds			

Electrical / Optical Characteristics at Ta=25℃

Parameter	Symbol	Part No. LTL-	Source Color	Min.	Typ.	Max.	Unit.	Test Condition.
Luminous Intensity	I_V	94THK-TA	Red Orange	3.7	8.0		mcd	I_F=20 mA/chip Note 1
			Green	3.7	8.0			
		94TDK-TA	Green	3.7	8.0			
			Yellow	3.7	8.0			
Viewing Angle	$2\theta_{1/2}$	94THK-TA	Red Orange		120		deg	Note 2 (FIG.6)
			Green					
		94TDK-TA	Green					
			Yellow					
Peak Emission Wavelength	λP	94THK-TA	Red Orange		630		nm	Measurement @Peak (FIG.1)
			Green		565			
		94TDK-TA	Green		656			
			Yellow		585			
Dominant Wavelength	λd	94THK-TA	Red Orange		621		nm	Note 3
			Green		569			
		94TDK-TA	Green		569			
			Yellow		588			
Spectral Line Half Width	$\triangle\lambda$	94THK-TA	Red Orange		40		nm	
			Green		30			
		94TDK-TA	Green		30			
			Yellow		35			
Forward Voltage	V_F	94THK-TA	Red Orange		2.0	2.8	V	I_F=20mA
			Green		2.1	2.8		
		94TDK-TA	Green		2.1	2.8		
			Yellow		2.1	2.8		
Reverse Current	I_R	94THK-TA	Red Orange			100	μA	V_R=5V
			Green					
		94TDK-TA	Green					
			Yellow					
Capacitance	C	94THK-TA	Red Orange		20		PF	V_F=0 f=1MHZ
			Green		35			
		94TDK-TA	Green		35			
			Yellow		15			

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 Characteristics Curves
(25℃ Ambient Temperature Unless Otherwise Noted)

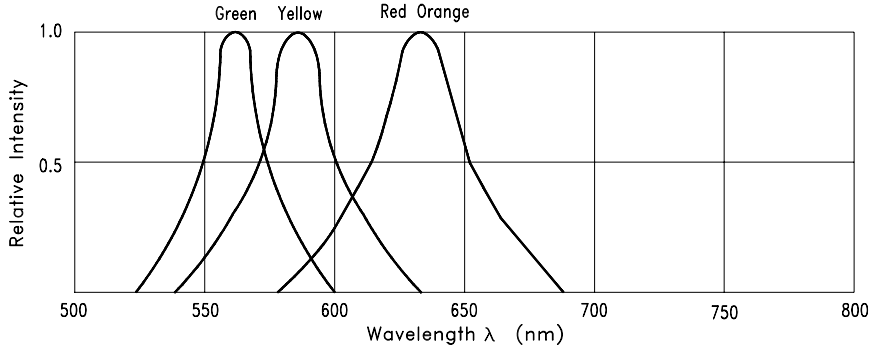


Fig.1 RELATIVE INTENSITY VS. WAVELENGTH

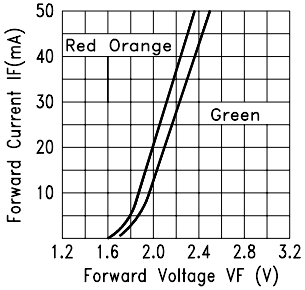


Fig.2 FORWARD CURRENT VS. FORWARD VOLTAGE

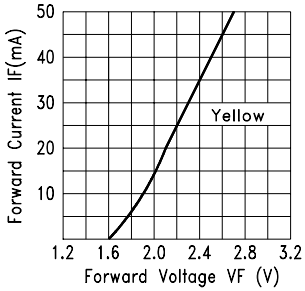


Fig.3 FORWARD CURRENT VS. FORWARD VOLTAGE

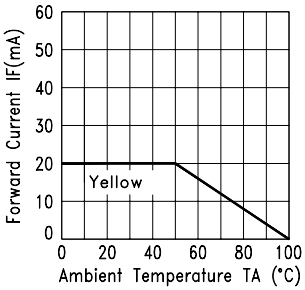


Fig.4 FORWARD CURRENT DERATING CURVE

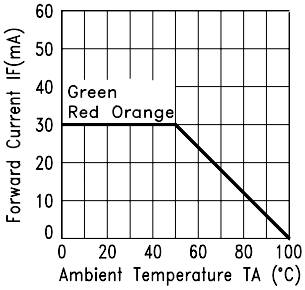


Fig.5 FORWARD CURRENT DERATING CURVE

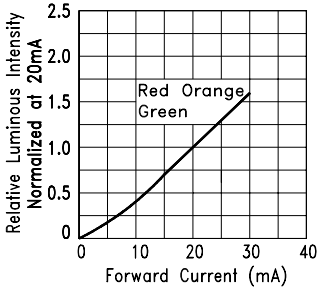


Fig.6 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

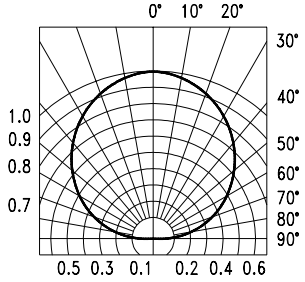


Fig.7 SPATIAL DISTRIBUTION

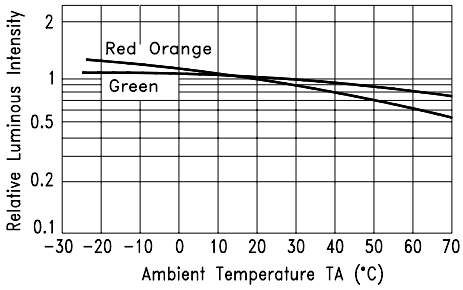


Fig.8 LUMINOUS INTENSITY VS. AMBIENT TEMPERATURE

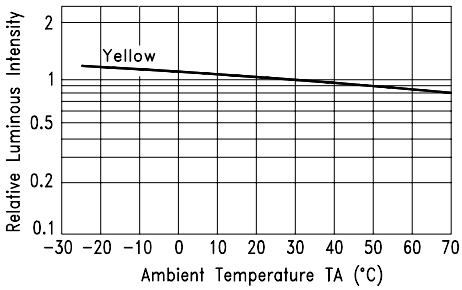


Fig.9 LUMINOUS INTENSITY VS. AMBIENT TEMPERATURE

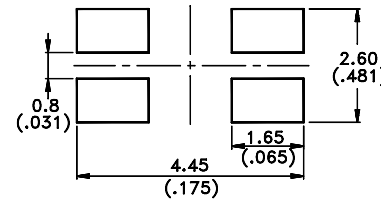
SMD LAMPS

User Guide
Cleaning

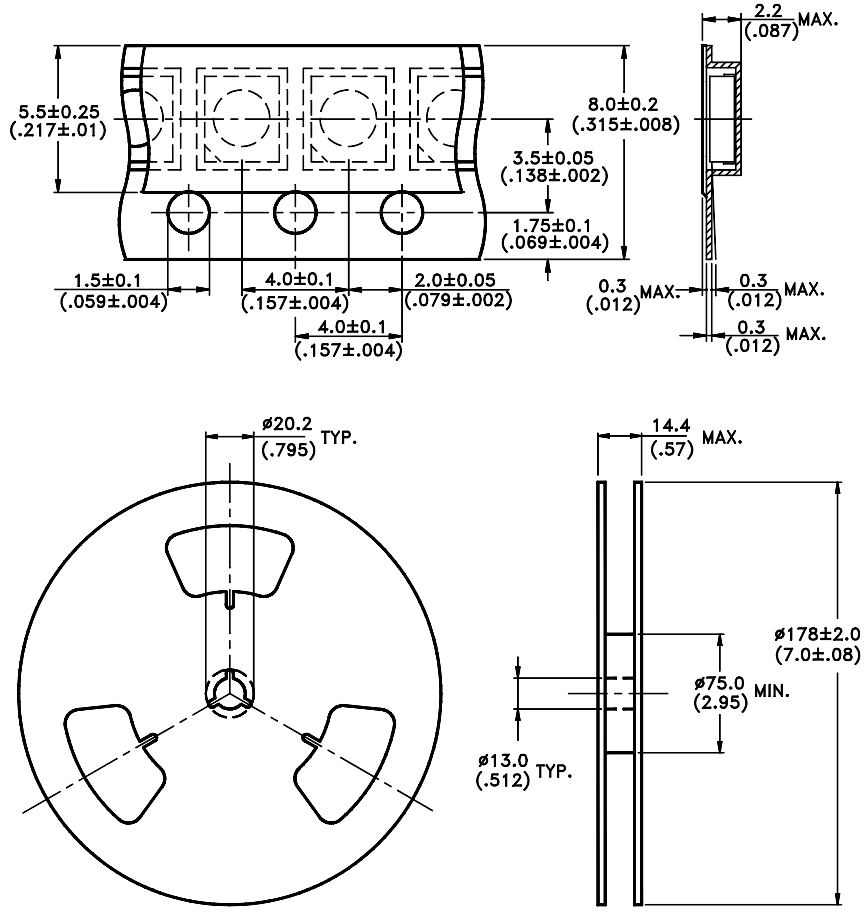
Do not use unspecified chemical liquid to clean LED they could harm the package.

If cleaning is necessary immerse the LED in ethyl alcohol or isopropyl alcohoa atnormal temperature for less one minute.

Soldering Pad Dimensions



Package Dimensions of Tape and Reel
LTL-9THK-TA/94TDK-TA



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 lamp are two.
4.In accordance with ANSI/EIA RS-481 specifications the cathode is oriented towards the tape sprocket hole.
5.All dimensions are in millime ters(inchs)