LITEON

Ultra Bright AlInGaP Chip LED Lamp

LTST- C150/170/190KAKT Red Orange
LTST- C150/170/190KFKT Yellow Orange
LTST- C150/170/190KRKT Super Red
LTST- C150/170/190KSKT Yellow
LTST- C150/170/190KYKT Amber Yellow

Features

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

Description

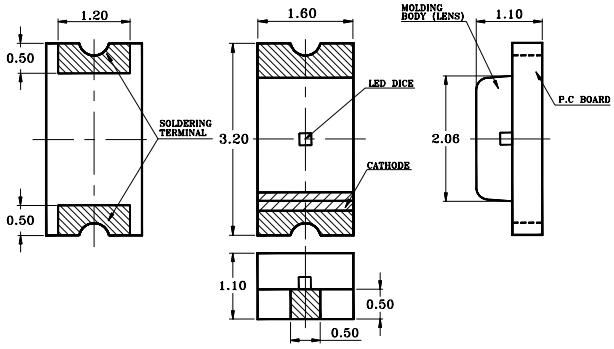
The Red Orange source color devices are made with Aluminum Indium Gallium Phosphide on Red Orange Light Emitting Diode.
The Yellow Orange source color devices are made with Aluminum Indium Gallium Phosphide on Yellow Orange Light Emitting Diode.
The Super Red source color devices are made with Aluminum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

Devices

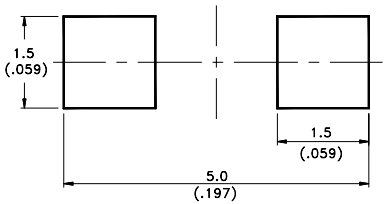
Part No. LTST-	Lens	Source Color
C150KAKT C170KAKT C190KAKT	Water Clear	AlInGaP Red Orange
C150KFKT C170KFKT C190KFKT	Water Clear	AlInGaP Yellow Orange
C150KRKT C170KRKT C190KRKT	Water Clear	AlInGaP Super Red
C150KSKT C170KSKT C190KSKT	Water Clear	AlInGaP Yellow
C150KYKT C170KYKT C190KYKT	Water Clear	AlInGaP Amber Yellow

Package Dimensions

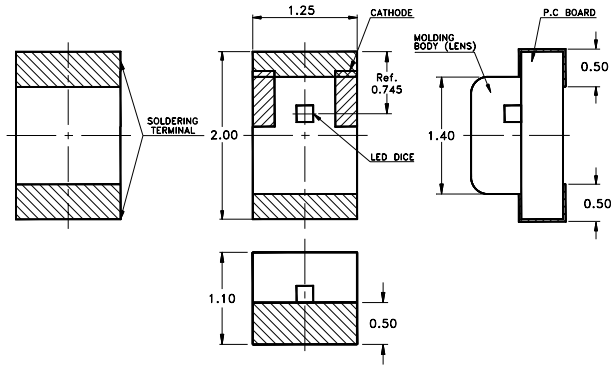
(1) LTST-C150XKT

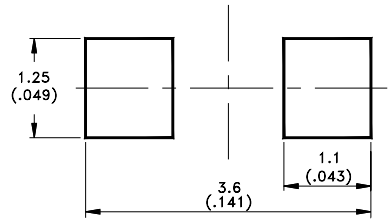


Pad Dimensions

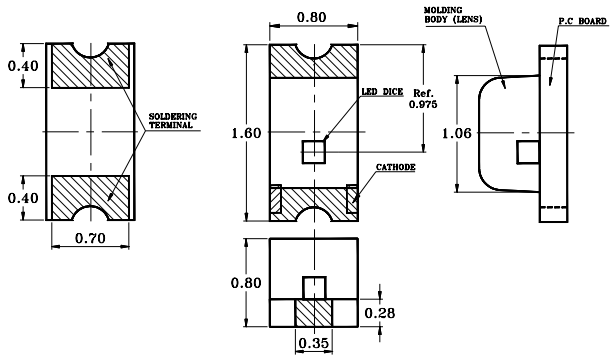


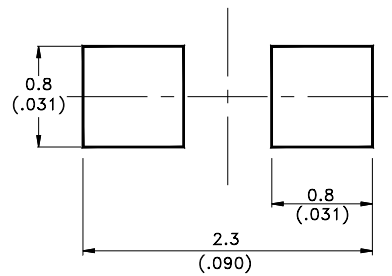
(2) LTST-C170XKT





(3) LTST-C190XKT



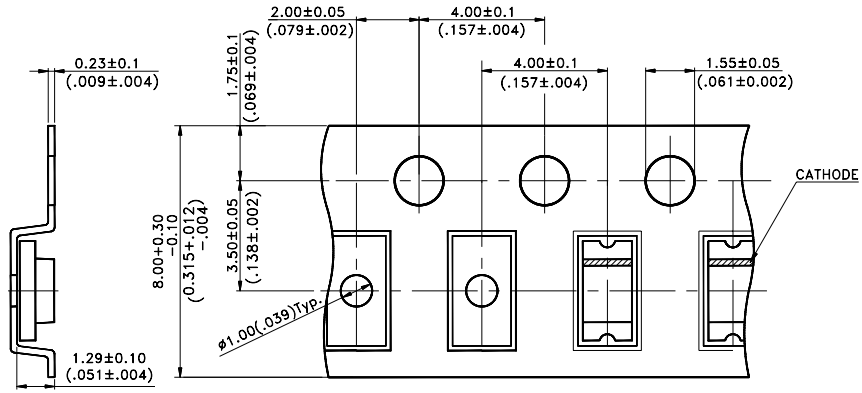


NOTES:

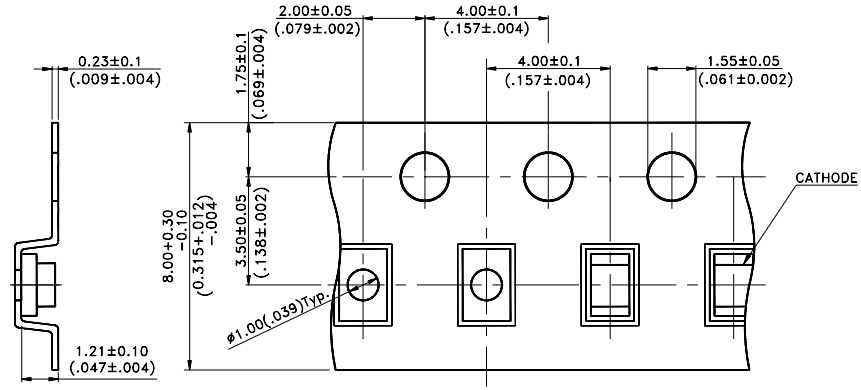
1. All dimensions are in millimeters (inches).
2. Tolerance is ± 0.1mm (.004") unless otherwise noted.
3. Specifications are subject to change without notice.

Package Dimensions of Tape

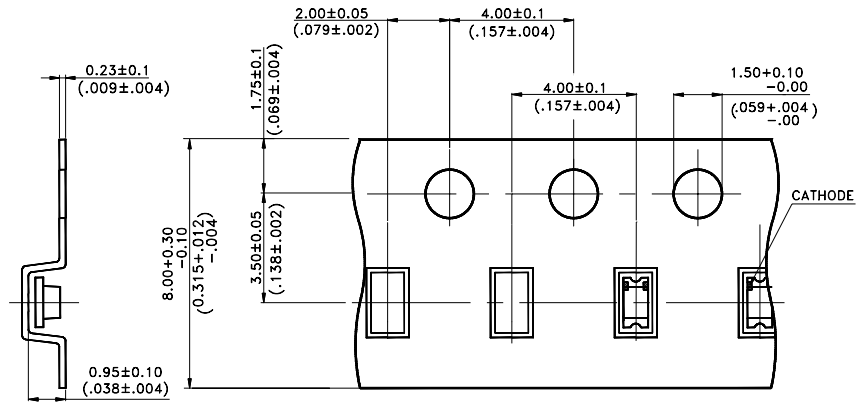
(1) LTST-C150XKT



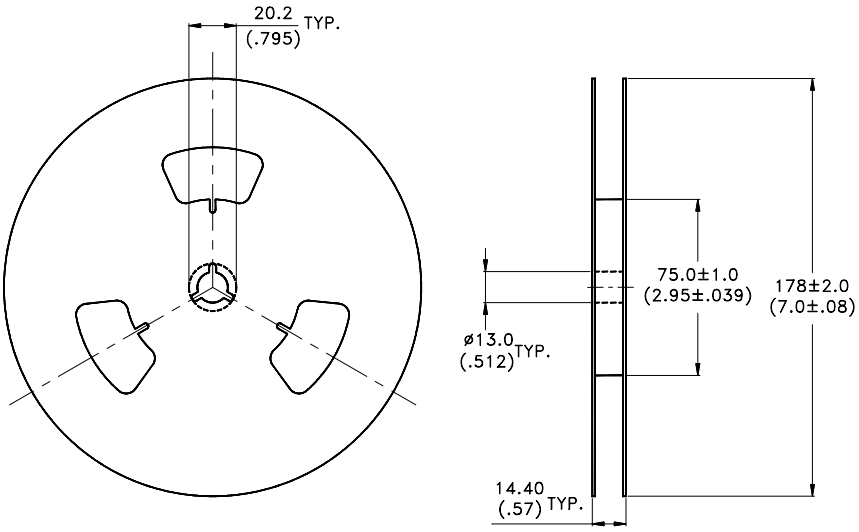
(2) LTST-C170XKT



(3) LTST-C190XKT



Package Dimensions of Reel



NOTES:
1. Empty component pockets sealed with top cover tape
2. 7 inch reel-3000 pieces per reel.
3. The maximum number of consecutive missing lamps is two.
4. In accordance with ANSI/EIA 481-1-A-1994 specifications.

Absolute Mmaximum Ratings at Ta=25℃

Parameter	Red Orange	Yellow Orange	Super Red	Yellow	Amber Yellow	Unit
Power Dissipation	75	75	75	75	75	mW
Peak Forward Current (1/10 Duty Cycle, 0.1ms Pulse Width)	80	80	80	80	80	mA
Continuous Forward Current	30	30	30	30	30	mA
Derating Linear From 50℃	0.4	0.4	0.4	0.4	0.4	mA/℃
Reverse Voltage	5	5	5	5	5	V
Operating Temperature Range	-55℃ to +85℃					
Storage Temperature Range	-55℃ to +85℃					
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. LTST-C150/170/190	Min.	Typ.	Max.	Unit.	Test Condition.
Luminous Intensity	Iv	Red Orange	KAKT	16	80	200	mcd	IF=20 mA Note 1
		Yellow Orange	KFKT	16	80	200		
		Super Red	KRKT	16	80	200		
		Yellow	KSKT	10	50	125		
		Amber Yellow	KYKT	16	80	200		
Viewing Angle	$2\theta_{1/2}$	Red Orange	KAKT		130		deg	Note 2 (Fig.6)
		Yellow Orange	KFKT		130			
		Super Red	KRKT		130			
		Yellow	KSKT		130			
		Amber Yellow	KYKT		130			
Peak Emission Wavelength	λP	Red Orange	KAKT		621		nm	Measurement @Peak (Fig.1)
		Yellow Orange	KFKT		611			
		Super Red	KRKT		639			
		Yellow	KSKT		591			
		Amber Yellow	KYKT		598			
Dominant Wavelength	λd	Red Orange	KAKT		615		nm	Note 3
		Yellow Orange	KFKT		605			
		Super Red	KRKT		631			
		Yellow	KSKT		589			
		Amber Yellow	KYKT		595			
Spectral Line Half Width	Δλ	Red Orange	KAKT		18		nm	
		Yellow Orange	KFKT		17			
		Super Red	KRKT		20			
		Yellow	KSKT		15			
		Amber Yellow	KYKT		16			

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.

Electrical / Optical Characteristics and Curves at TA = 25℃

Parameter	Symbol	Color	Part No. LTST-	Min.	Typ.	Max.	Unit.	Test Condition.
Forward Voltage	V_F	Red Orange	KAKT		2.0	2.4	V	I_F=20mA
		Yellow Orange	KFKT		2.0	2.4		
		Super Red	KRKT		2.0	2.4		
		Yellow	KSKT		2.0	2.4		
		Amber Yellow	KYKT		2.0	2.4		
Reverse Current	I_R	Red Orange	KAKT			100	μA	V_R=5V
		Yellow Orange	KFKT			100		
		Super Red	KRKT			100		
		Yellow	KSKT			100		
		Amber Yellow	KYKT			100		
Capacitance	C	Red Orange	KAKT		40		PF	V_F=0 f=1MHZ
		Yellow Orange	KFKT		40			
		Super Red	KRKT		40			
		Yellow	KSKT		40			
		Amber Yellow	KYKT		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)

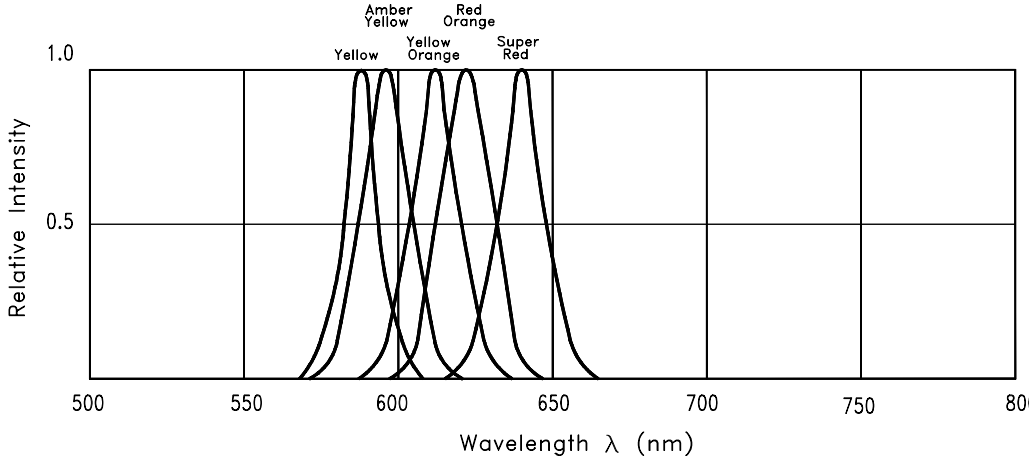


Fig.1 RELATIVE INTENSITY VS. WAVELENGTH

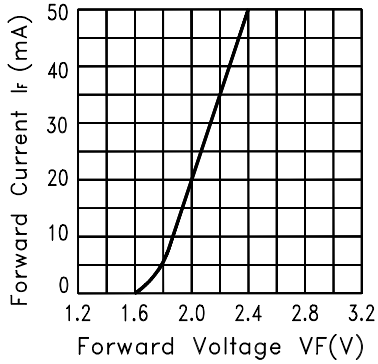


Fig.2 FORWARD CURRENT VS. FORWARD VOLTAGE

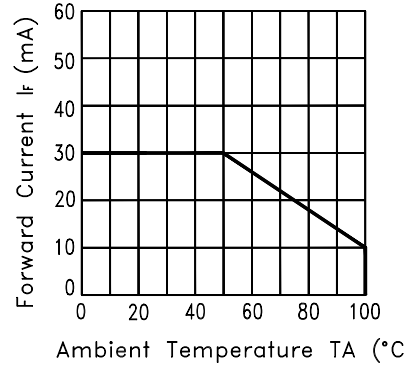


Fig.3 FORWARD CURRENT DERATING CURVE

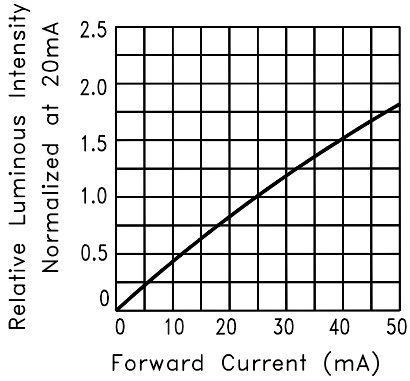


Fig.4 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

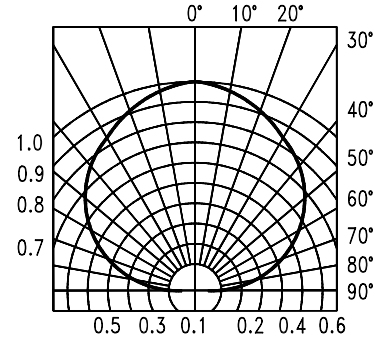


Fig.6 SPATIAL DISTRIBUTION