



Ultra Bright AlInGaP Chip LED Lamp

LTST- C150/170/190KA KT	Red Orange
LTST- C150/170/190KF KT	Yellow Orange
LTST- C150/170/190KR KT	Super Red
LTST- C150/170/190KS KT	Yellow
LTST- C150/170/190KY KT	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.

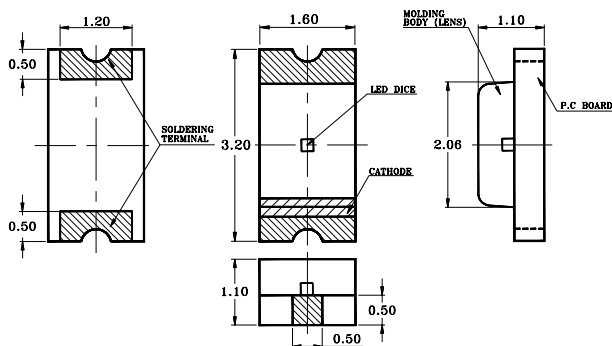
The Amber Yellow source color devices are made with Aluminum Indium Gallium Phosphide on Amber Yellow Light Emitting Diode.

Devices

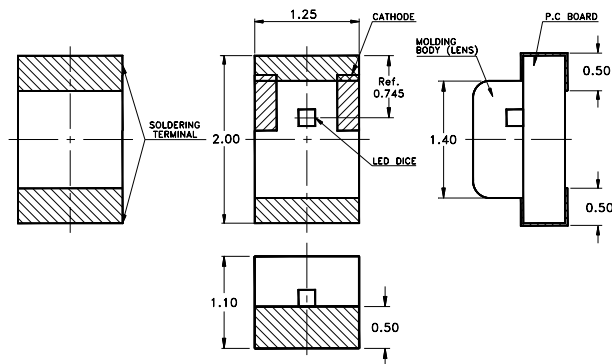
Part No. LTST-	Lens	Source Color
C150KA KT C170KA KT C190KA KT	Water Clear	AlInGaP Red Orange
C150KF KT C170KF KT C190KF KT	Water Clear	AlInGaP Yellow Orange
C150KR KT C170KR KT C190KR KT	Water Clear	AlInGaP Super Red
C150KS KT C170KS KT C190KS KT	Water Clear	AlInGaP Yellow
C150KY KT C170KY KT C190KY KT	Water Clear	AlInGaP Amber Yellow

Package Dimensions

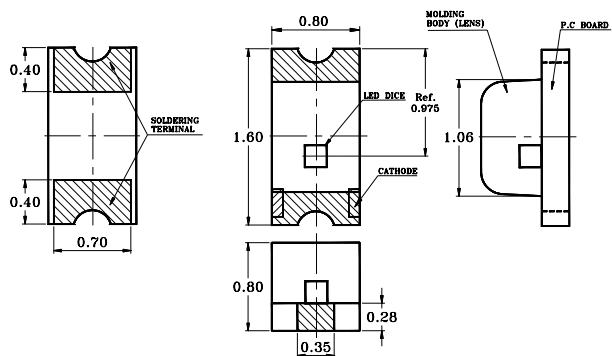
(1) LTST-C150XKT



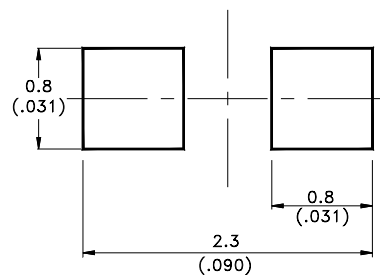
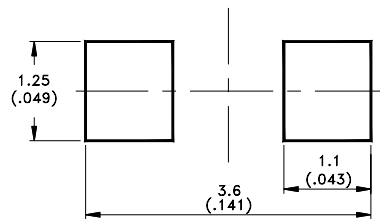
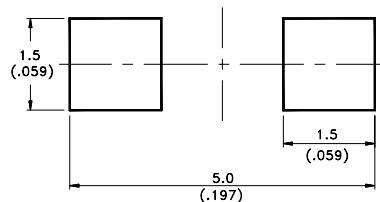
(2) LTST-C170XKT



(3) LTST-C190XKT



Pad Dimensions



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.

(1) LTST-C150XKT

Technical drawing of a cathode assembly. The drawing includes a side view on the left and a top view on the right. The side view shows a component with a width of 0.23 ± 0.1 ($.009 \pm .004$) and a height of 1.29 ± 0.10 ($.051 \pm .004$). The top view shows a rectangular plate with a width of 8.00 ± 0.30 ($-.10$) and a height of 3.50 ± 0.05 ($.138 \pm .002$). The plate has four circular holes with a diameter of $\phi 1.00(.039)$ Typ. The distance between the holes is 2.00 ± 0.05 ($.079 \pm .002$). The distance from the left edge to the first hole is 4.00 ± 0.1 ($.157 \pm .004$). The distance between the second and third holes is 4.00 ± 0.1 ($.157 \pm .004$). The distance from the third hole to the right edge is 1.55 ± 0.05 ($.061 \pm .002$). The right edge is labeled "CATHODE".

Technical drawing of a cathode assembly. The drawing includes a side view on the left and a top view on the right.

Side View Dimensions:

- Overall width: 0.23 ± 0.1 ($.009 \pm .004$)
- Overall height: 1.21 ± 0.10 ($.047 \pm .004$)

Top View Dimensions:

- Overall width: 2.00 ± 0.05 ($.079 \pm .002$)
- Overall height: 8.00 ± 0.30 ($-.010$, $.0315 \pm .012$, $-.004$)
- Distance from top edge to first hole center: 1.75 ± 0.1 ($.069 \pm .004$)
- Distance between hole centers: 4.00 ± 0.1 ($.157 \pm .004$)
- Distance from last hole center to right edge: 1.55 ± 0.05 ($.061 \pm 0.002$)
- Distance from top edge to hole center: 3.50 ± 0.05 ($.138 \pm .002$)
- Feature specification: $\varnothing 1.00 (.039)$ Typ.

A label "CATHODE" points to the rightmost feature in the top view.

Technical drawing of a cathode assembly, showing a side view and a top view with dimensions.

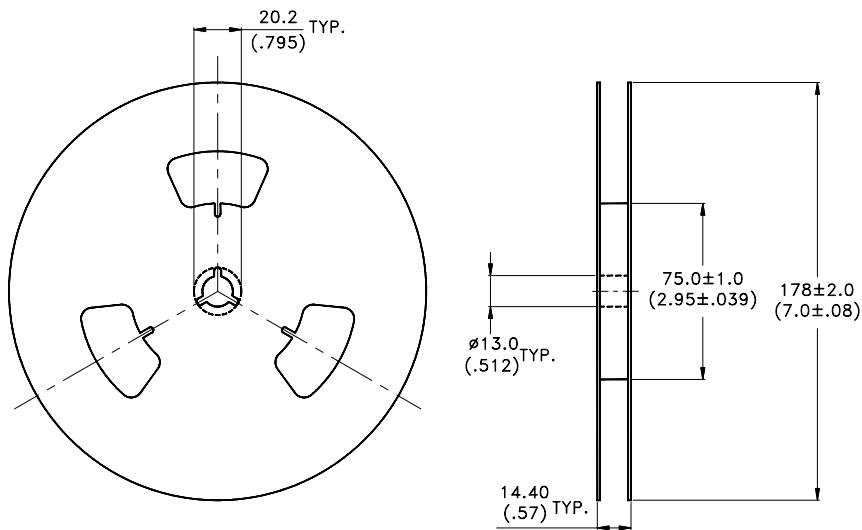
Side View Dimensions:

- Top flange thickness: 0.23 ± 0.1 ($.009 \pm .004$)
- Overall height: 8.00 ± 0.30 ($.0315 \pm .012$)
- Internal feature height: 3.50 ± 0.05 ($.138 \pm .002$)
- Bottom flange thickness: 0.95 ± 0.10 ($.038 \pm .004$)

Top View Dimensions:

- Overall width: 2.00 ± 0.05 ($.079 \pm .002$)
- Distance between first two holes: 4.00 ± 0.1 ($.157 \pm .004$)
- Distance between second and third holes: 4.00 ± 0.1 ($.157 \pm .004$)
- Distance from third hole to cathode: 1.50 ± 0.10 ($.059 \pm .004$)
- Cathode label: CATHODE

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					
Infrared Soldering Condition	260 for 5 Seconds					
Vapor phase Soldering Condition	215 for 3 minutes					

SMD LAMPS

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°	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	Δλ1/2	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° 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°C

Parameter	Symbol	Color	Part No. LTST-	Min.	Typ.	Max.	Unit.	Test Condition.
Forward Voltage	VF	Red Orange	KAKT		2.0	2.4	V	IF=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	IR	Red Orange	KAKT			100	μA	VR=5V
		Yellow Orange	KFKT			100		
		Super Red	KRKT			100		
		Yellow	KSKT			100		
		Amber Yellow	KYKT			100		
Capacitance	C	Red Orange	KAKT		40		pF	VF=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° is the off-axis angle at which the luminous intensity is half the axial luminous intensity.
3. The dominant wavelength, λ_d 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)

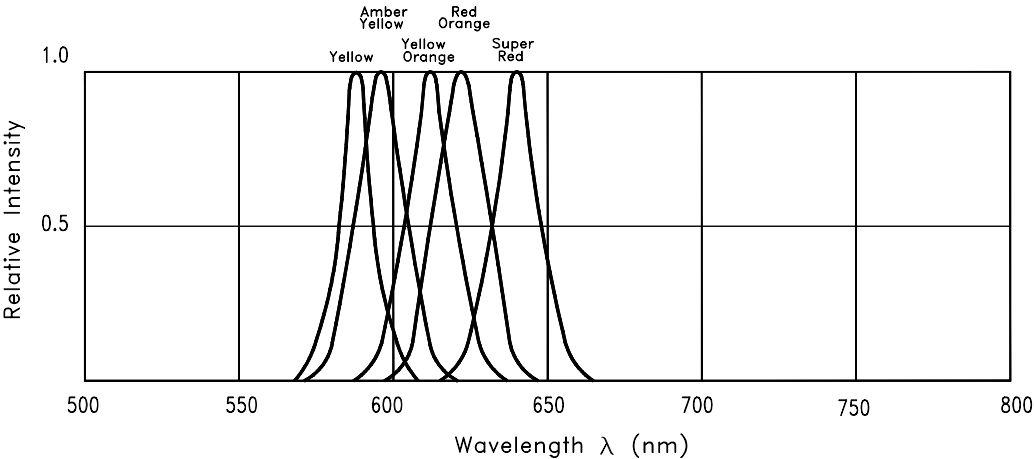


Fig.1 RELATIVE INTENSITY VS. WAVELENGTH

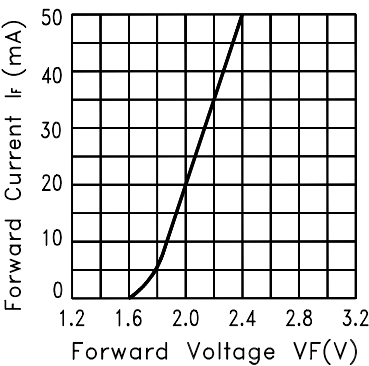


Fig.2 FORWARD CURRENT VS. FORWARD VOLTAGE

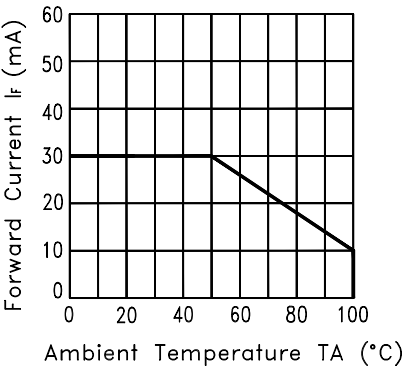


Fig.3 FORWARD CURRENT DERATING CURVE

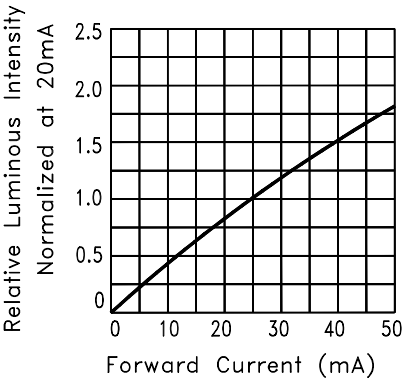


Fig.4 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

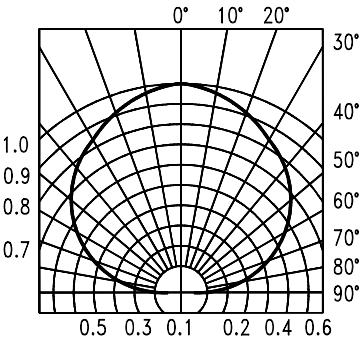


Fig.6 SPATIAL DISTRIBUTION