

3 W High Power Cool White LED

Features

- Feature of the device: small package with high efficiency
- Typical color temperature: 5650K
- Typical view angle: 140°
- High light flux output: 160 lm@700mA
- ESD protection
- Soldering methods: SMT
- Grouping parameter: brightness, forward voltage and chromaticity
- Optical efficiency: 55 lm/W
- Moisture sensitivity level: 3
- Color rendering index: 70 (typ.)
- Thermal resistance (junction to heat sink): 15°C /W
- RoHS Compliance



M7580



Applications

- Design and effect illumination
- Interior automotive lighting(e.g. dashboard backlight)
- Room lighting (e.g. luminaries, spotlights)
- Reading light (aircraft, car, bus)
- Signal and symbol luminaries
- Marker lights (e.g. steps, exit ways, etc.)
- Architectural illumination

Materials

Items	Description
Housing black body	Heat resistant polymer
Encapsulating Resin	Silicone resin
Electrodes	Au plating copper alloy
Die attach	Silver paste
Chip	InGaN

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TPLG-WR7580EL-GH13Z

Absolute Maximum Ratings (T_a=25°C)

Parameter	Symbol	Value	Unit
Forward Current	I_F	750	mA
Pulsed Forward Current (1)	I_{PF}	1000	mA
Power Dissipation	P_d	3.0	W
ESD Sensitivity	ESD	2000	V
Operating Temperature	T_{opr}	-40 ~ +85	°C
Storage Temperature	T_{stg}	-40 ~ +100	°C
Junction Temperature	T_j	125	°C
Junction to heat-sink thermal resistance	R_{th}	15	°C /W

Notes

1. $t_p \leq 100\mu s$, duty cycle=0.25

Electro-Optical Characteristics (T_a=25°C)

Parameter	Bin	Symbol	Min.	Typ.	Max.	Unit	Condition
Brightness (1)	-----	Φ v	150	160	-----	lm	IF =700mA
Forward Voltage (2)	V2	VF	3.25	-----	3.55	V	
	V3		3.55	-----	3.85		
	V4		3.85	-----	4.15		
	V5		4.15	-----	4.45		
Color Temperature	-----	CCT	5000	5650	6300	K	
Color Rending Index (3)	-----	CRI	-----	70	-----	-----	

Notes:

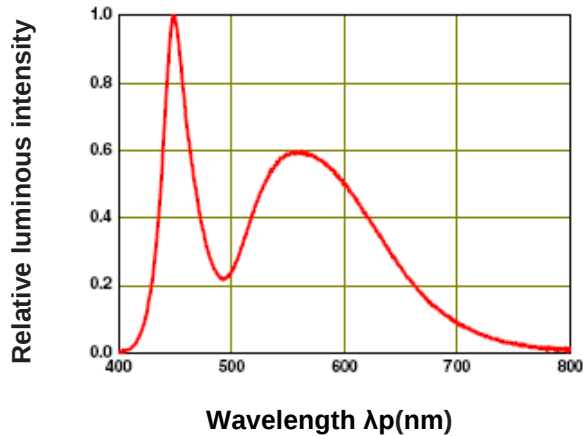
1. Luminous flux measurement tolerance: ±10%
2. Forward voltage measurement tolerance: ±0.1V
3. Color Rendering Index measurement tolerance: ±5

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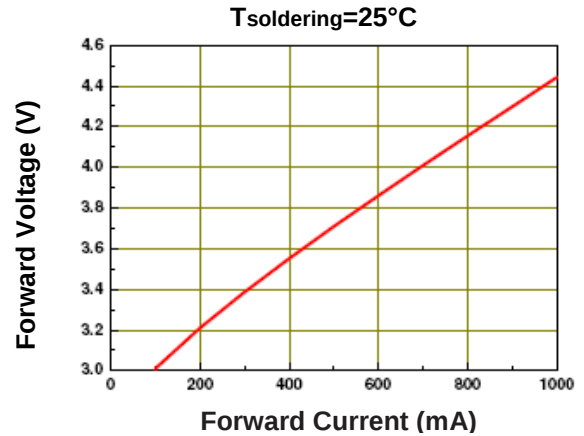
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Typical Electro-Optical Characteristics Curves (Ta=25°C)

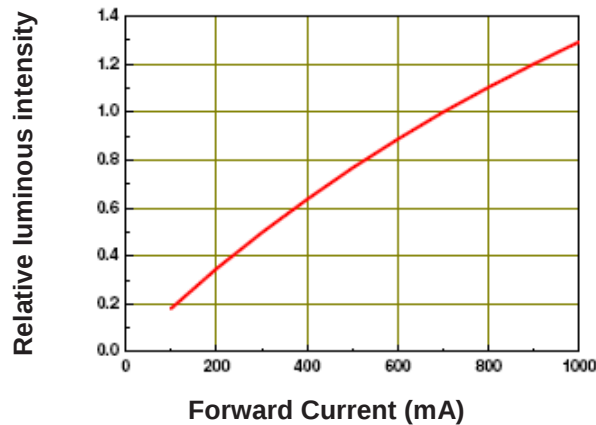
Spectral Distribution T_{soldering}=25°C, I_F=700mA



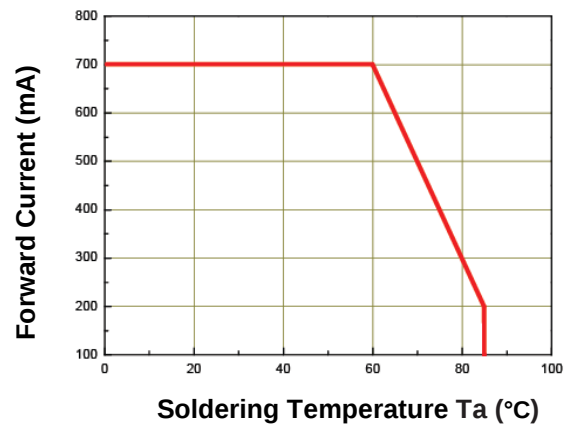
Forward Voltage vs. Forward Current



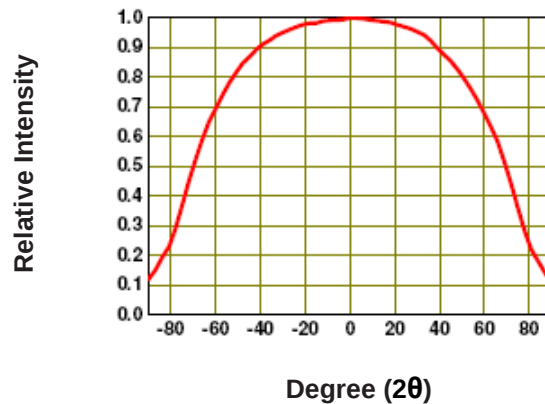
Relative Luminous Intensity vs. Forward Current
T_{soldering}=25°C



Forward Current Derating Curve on T_{JMAX}=125 °C



Typical Representative Spatial Radiation Pattern



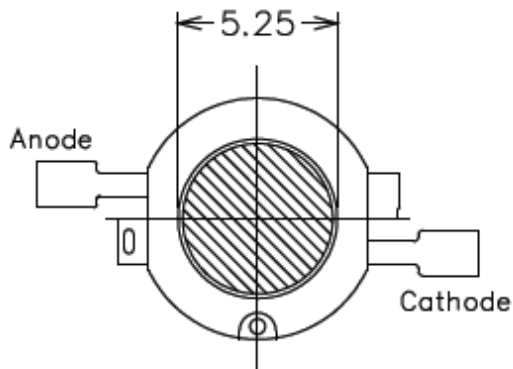
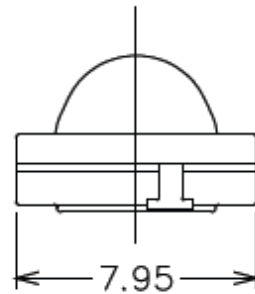
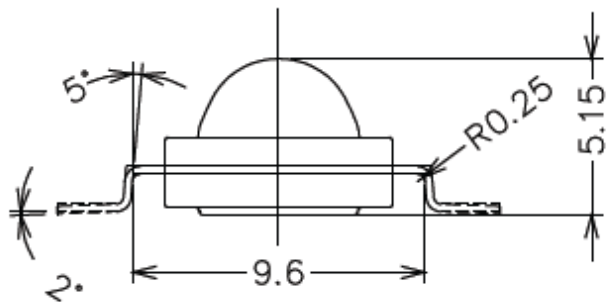
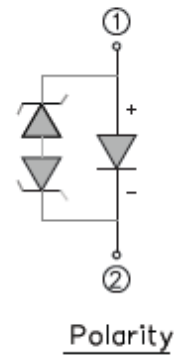
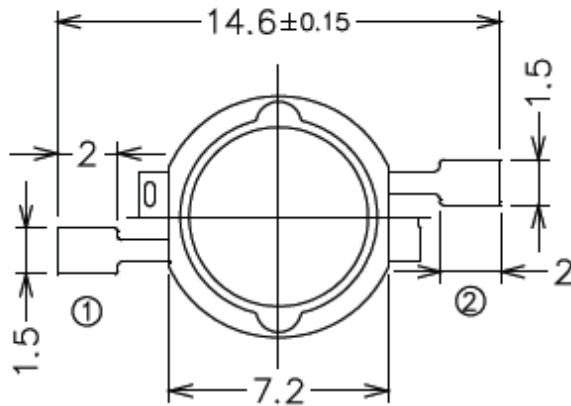
Note: 1. 2θ1/2 is the off axis angle from lamp centerline where the luminous intensity is 1/2 of the peak value.

2. View angle tolerance is ±10°.

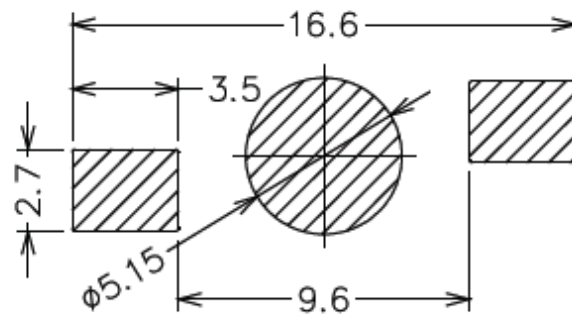
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Package Outline Dimensions (Unit=mm)



Bot. view



Soldering patterns

Note: The tolerances unless mentioned is ± 0.25 mm, Unit = mm

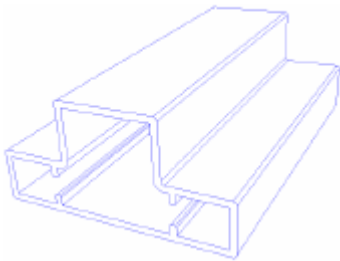
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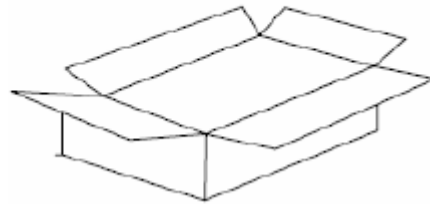
Packing Quantity Specification

Packing Type	PCS per Tube	PCS Per Inner Box	PCS Per Carton
Tube	50	1,000	12,000

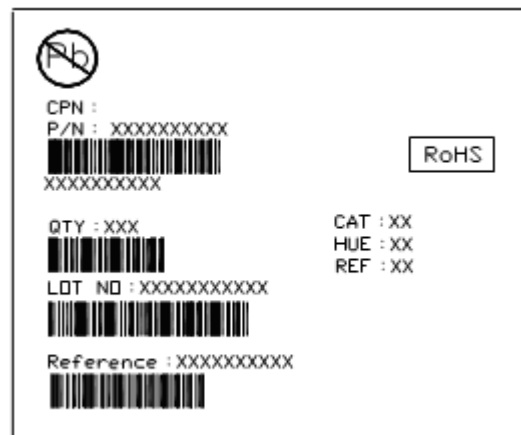
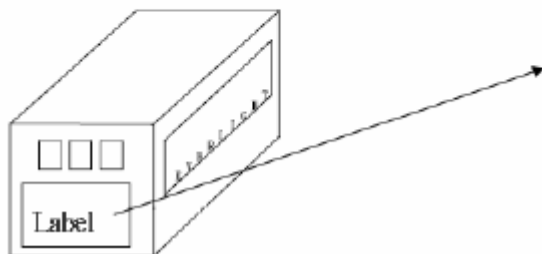
1. Tube



2. Inner Carton



3. Outside Carton



Label Explanation

CAT: Luminous Flux Rank

HUE: Color Bin Rank

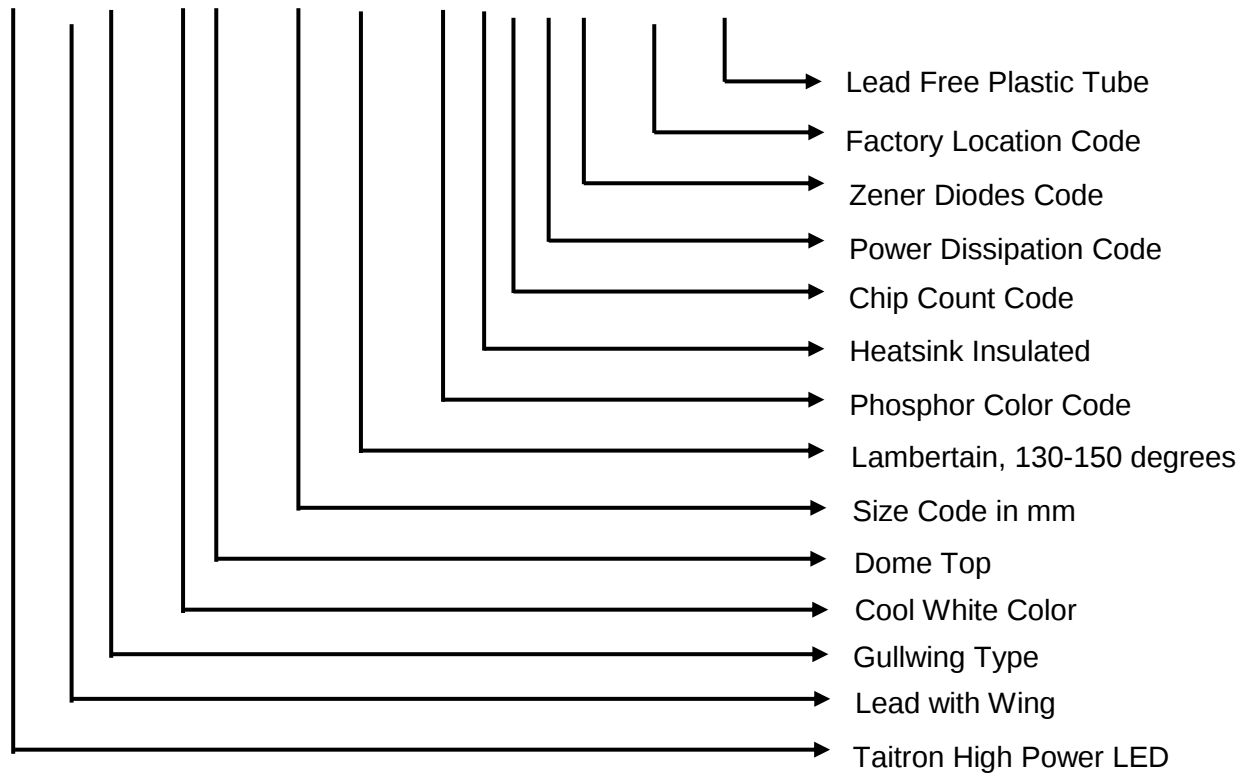
REF: Forward Voltage Rank

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Ordering Information

TP L G - W R 7580 EL - G H 13Z - 92 - TU



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Rank Combinations

Bin Range of Luminous Intensity

Group	Bin	Min.	Max.	Unit	Condition
N	13	150	160	lm	IF=700mA
	21	160	180		

Note: Luminous flux measurement tolerance: $\pm 10\%$

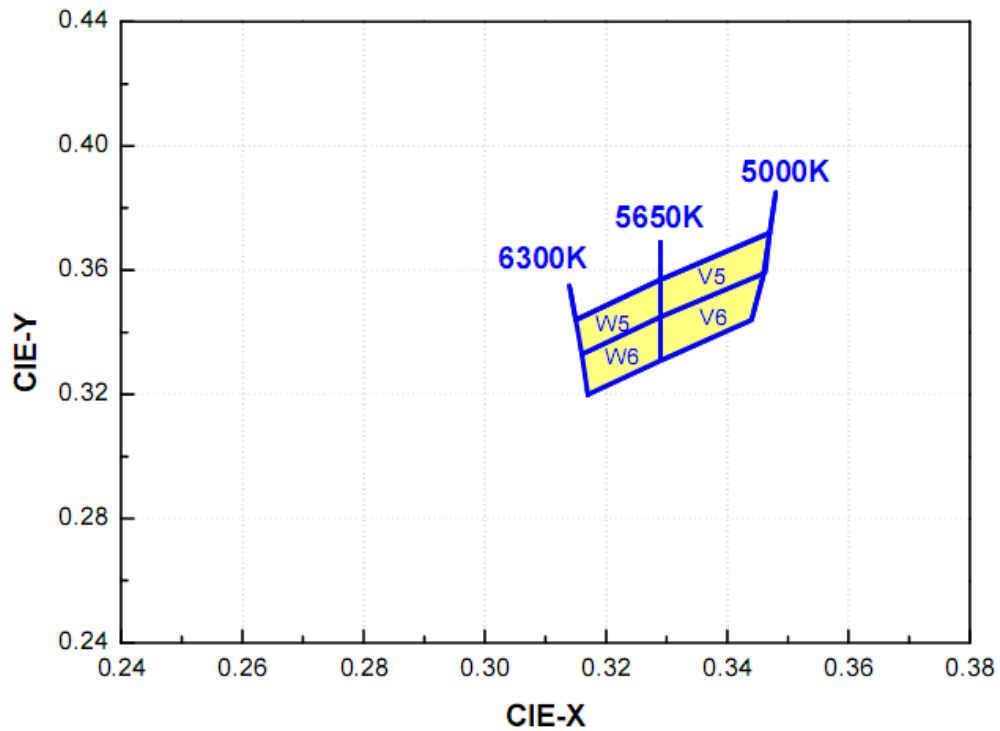
Cool-White Bin Coordinates

Bin	Chromaticity Coordinates				
V5	x	0.329	0.329	0.347	0.346
	y	0.345	0.357	0.372	0.359
V6	X	0.329	0.329	0.346	0.344
	y	0.331	0.345	0.359	0.344
W5	x	0.329	0.316	0.315	0.329
	y	0.345	0.333	0.344	0.357
W6	X	0.329	0.329	0.317	0.316
	y	0.345	0.331	0.320	0.333

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CIE Chromaticity Coordinates Diagram



Note: The highlight portion represents the allotted CCT sun-bins for the specific part number.

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