

1 W High Power LED

Features

- Small package with high efficiency
- ESD protection up to 8000V
- Soldering methods: SMT
- Moisture sensitivity level: 1
- Reliability testing conforms to IESNA LM80 Lumen maintenance test method
- Binning parameters: Brightness, forward voltage, wavelength and chromaticity
- RoHS Compliance



M4530



Applications

- General lighting
- Decorative and entertainment lighting
- Signal and symbol
- Exterior and interior automotive illumination

Materials

Part No.	Chip	
	Material	Emitted Color
TPCB-TR4530LS-H11Z	InGaN	True Green

Absolute Maximum Ratings ($T_a=25^{\circ}\text{C}$)

Parameter	Symbol	Value	Unit
DC Forward Current	I_F	400	mA
DC Pulse Current	I_{Pulse}	1000	mA
Power Dissipation	P_d	1	W
ESD Sensitivity	ESD	8000	V
Junction Temperature	T_j	125	$^{\circ}\text{C}$
Operating Temperature	T_{opr}	-40 ~ +100	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-40 ~ +100	$^{\circ}\text{C}$
Soldering Temperature	T_{sol}	260	$^{\circ}\text{C}$
Thermal Resistance	R_{th}	10	$^{\circ}\text{C/W}$
Allowable Reflow Cycle	n/a	2	Cycles

Notes:

1. This series LED is not designed for reverse bias used.
2. Avoid operating LED at maximum operating exceed 1 hour.

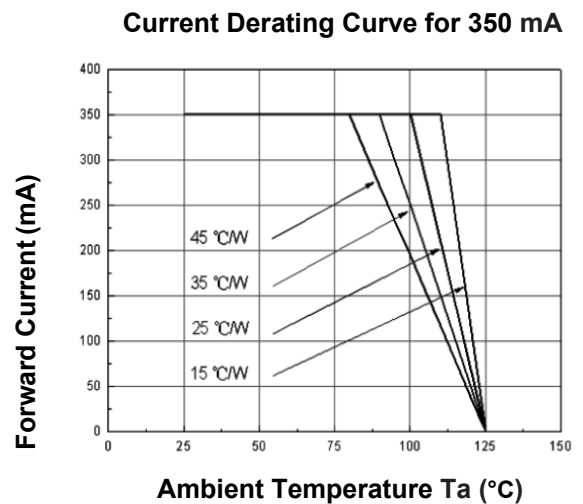
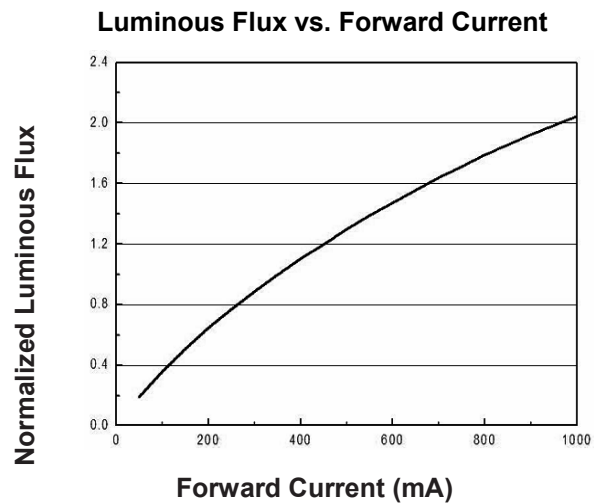
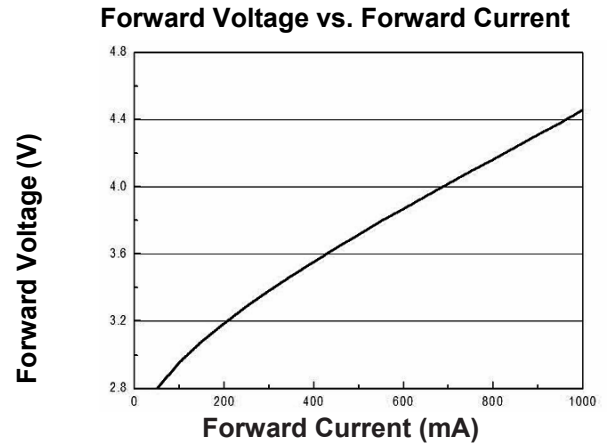
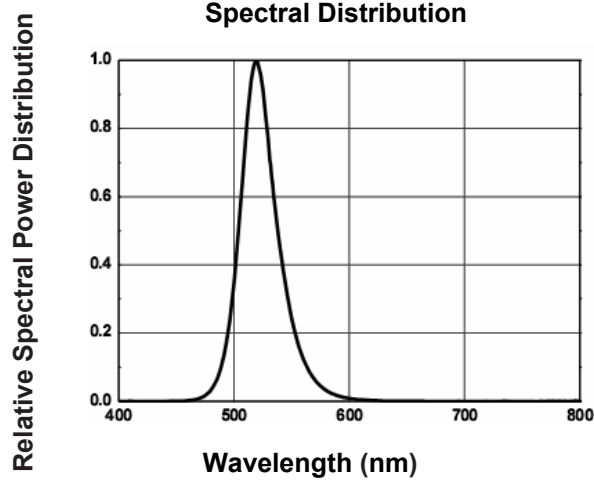
Electro-Optical Characteristics ($T_a=25^{\circ}\text{C}$)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Brightness (Note 1)	Φ_v	70	80	-----	lm	I _F =350mA
Forward Voltage (Note 2)	V_F	2.95	-----	3.85	V	
Viewing Angle	2$\theta_{1/2}$	-----	120	-----	deg	
Wavelength (3)	λ_d	520	-----	530	nm	

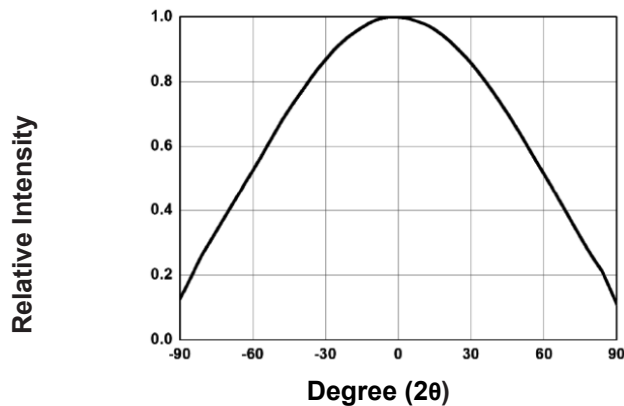
Notes:

1. Luminous flux measurement tolerance: $\pm 10\%$.
2. Forward Voltage measurement tolerance: $\pm 0.1\text{V}$.
3. Tolerance of Dominant Wavelength $\pm 1.0\text{nm}$

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

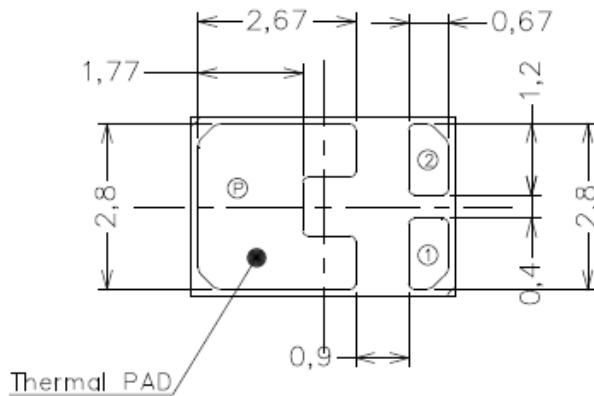
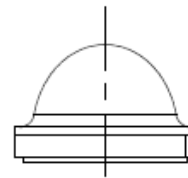
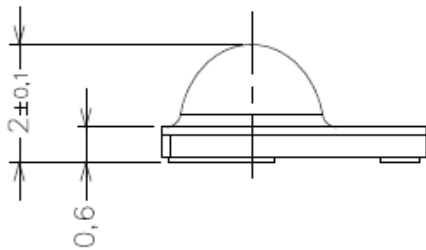
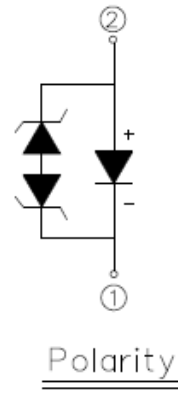
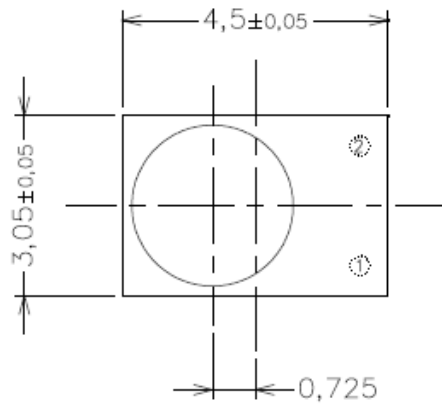


Typical Representative Spatial Radiation Pattern

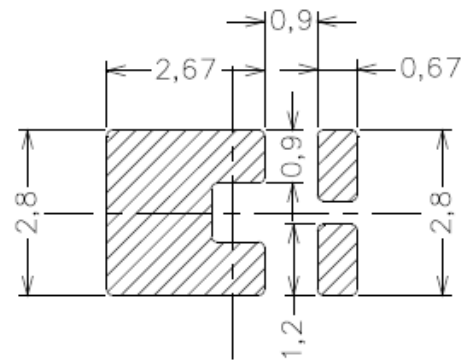


Note: 2θ1/2 is the off axis angle from lamp centerline where the luminous intensity is 1/2 of the peak value, the tolerance is ±5°

Package Outline Dimensions (Unit=mm)



Bot. view

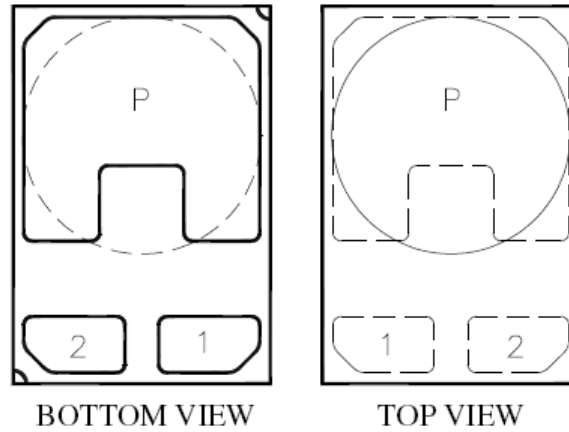


Soldering patterns

Note: 1. The tolerances unless mentioned is $\pm 0.1\text{mm}$, Unit = mm.

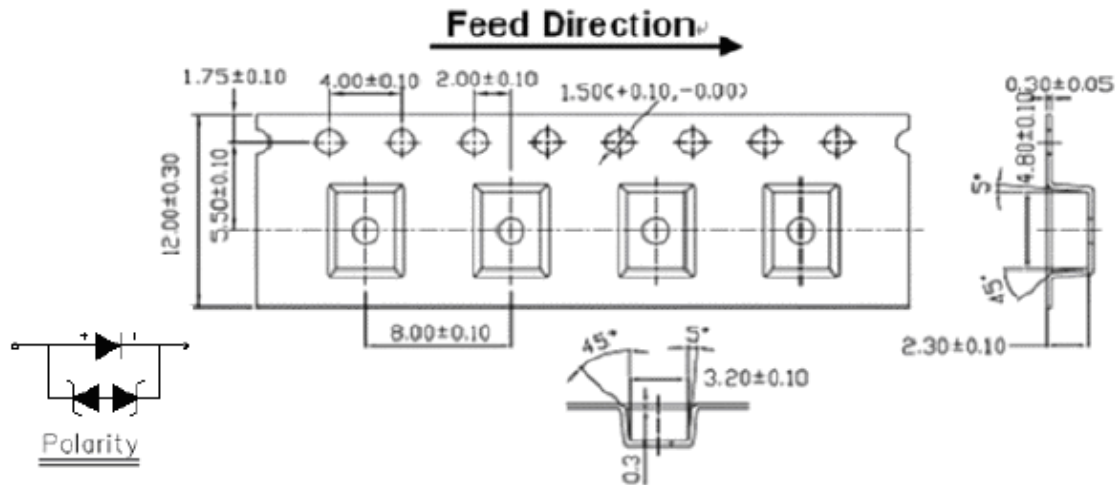
2. Do not handle the device by the lens. Incorrect force applied to the lens may lead to failure of devices.

Pad Configuration



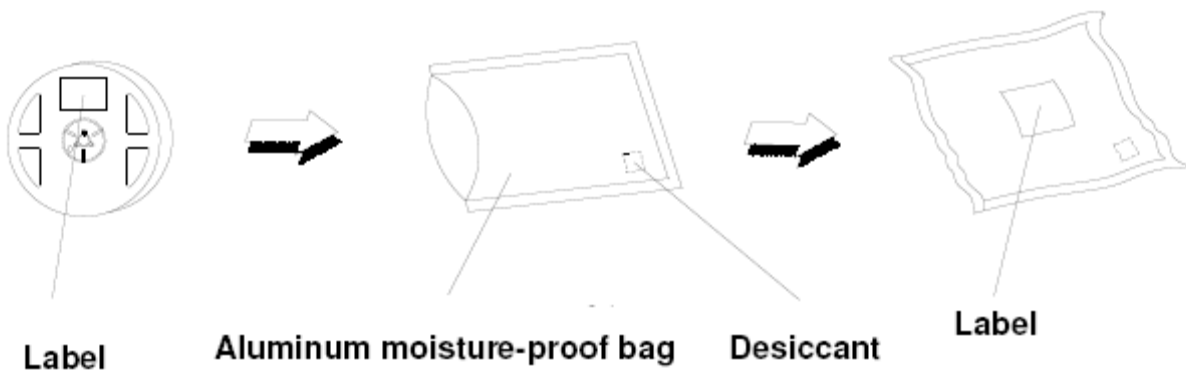
PAD	FUNCTION
1	ANODE
2	CATHODE
P	THERMAL PAD

Carrier Tape Dimensions (Unit=mm): Loaded quantity 400pcs per reel

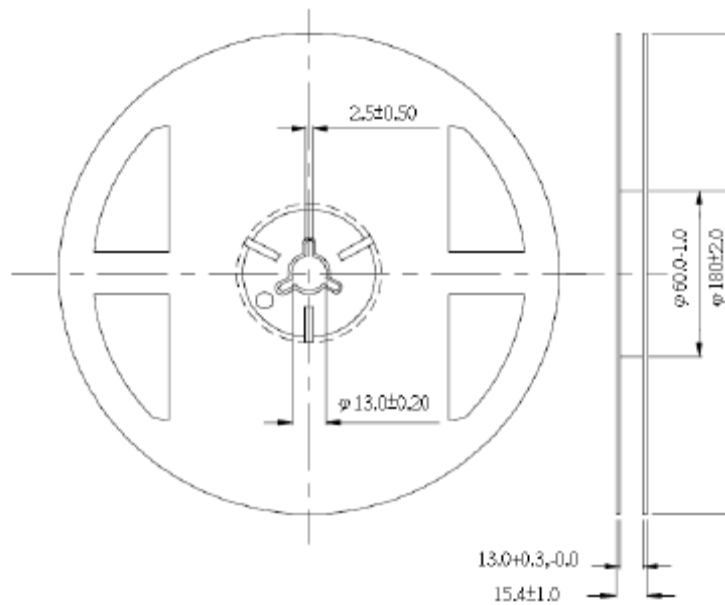


Note: The tolerances unless mentioned is $\pm 0.1\text{mm}$.

Moisture Resistant Packaging

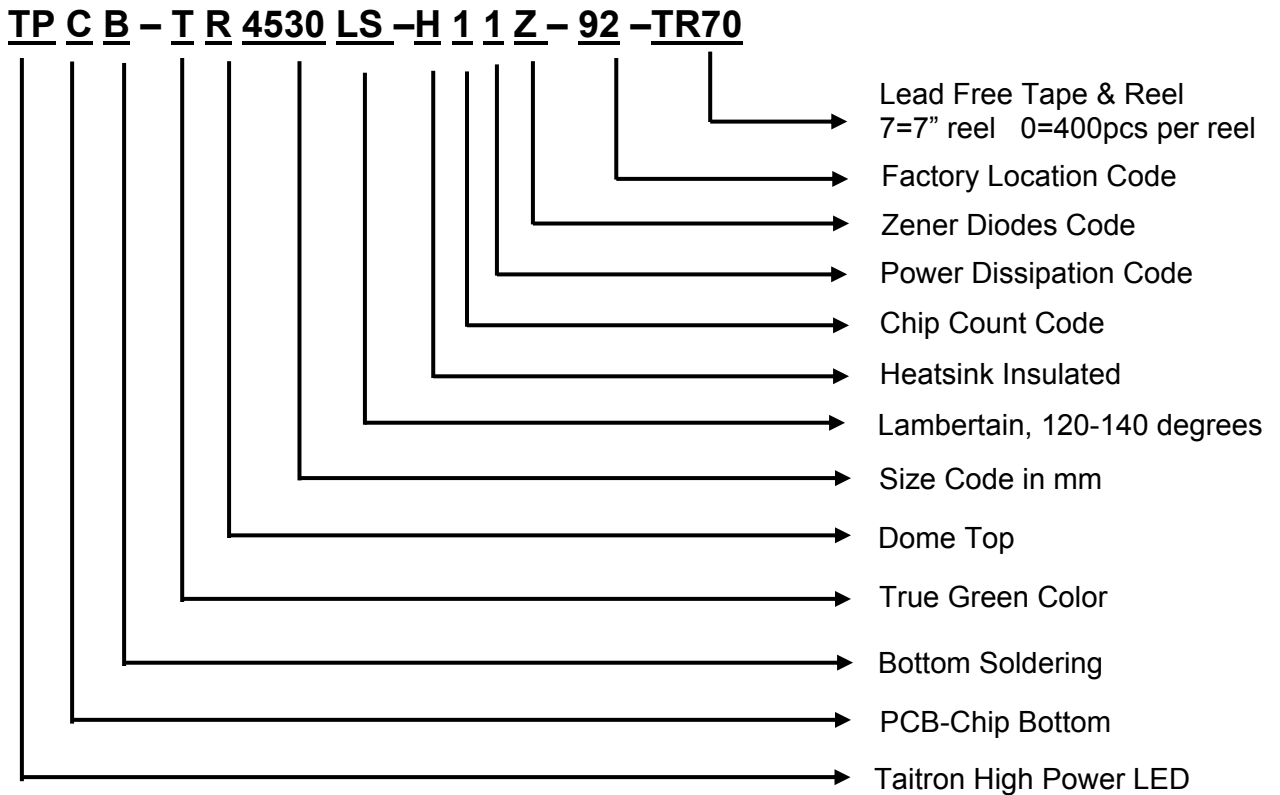


Reel Dimensions (Unit=mm):



Note: 1. The tolerances unless mentioned is ± 0.1 mm, Unit = mm.

Ordering Information

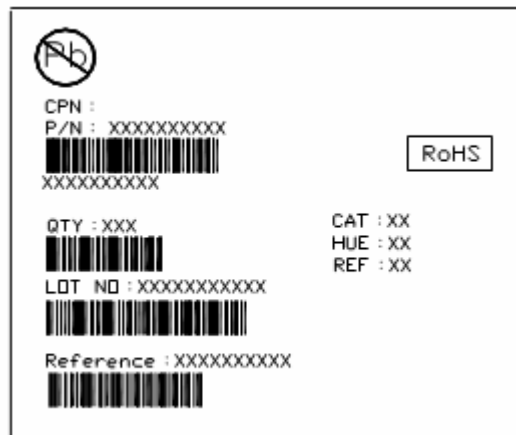


Label Explanation

CAT: Luminous Flux Rank

HUE: Color Bin Rank

REF: Forward Voltage Rank



Rank Combinations

Bin Range of Dominant Wavelength

Groups	Bin Code	Min	Max	Unit	Condition
G	1	520	525	nm	$I_F=350\text{mA}$
	2	525	530		

Bin Range of Luminous Intensity

Groups	Bin Code	Min	Max	Unit	Condition
F	7	70	80	lm	$I_F=350\text{mA}$
	8	80	90		

Bin Range of Forward Voltage

Groups	Bin Code	Min	Max	Unit	Condition
C	V1	2.95	3.25	V	$I_F=350\text{mA}$
	V2	3.25	3.55		
	V3	3.55	3.85		

Notes:

1. Tolerance of Luminous Intensity: $\pm 10\%$
2. Tolerance of Dominant wavelength: $\pm 1.0\text{nm}$
3. Tolerance of Forward Voltage: $\pm 0.1\text{V}$

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