PRODUCT SPECIFICATION

Part Number

PLH3535-WCUV01

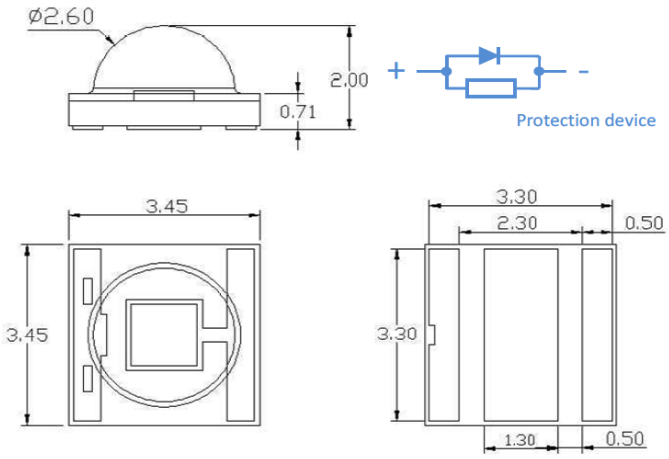
Details

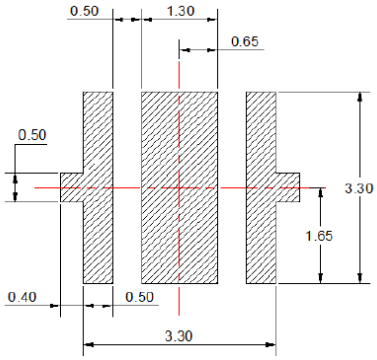
- 3535 Ultraviolet Surface Mount LED
- 3.45 x 3.45 x 2.0 mm
- Aluminum Nitride substrate
- Packaged on 1,000 piece reel

Features

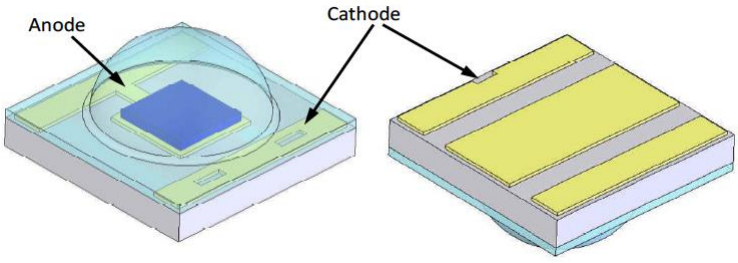
- Durable and Rugged
- RoHS Compliant
- Easy mounting on PCB

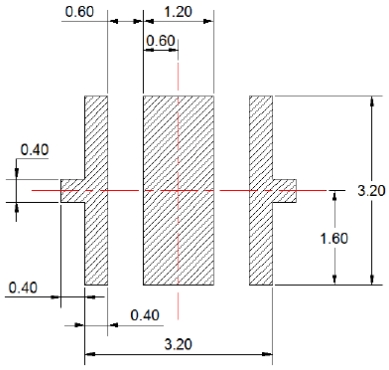
Mechanical Dimensions





Recommended soldering Pad Design





Recommend Stencil Pattern Design (Marked Area is Opening)

Notes:
1. Dimensions in millimeters unless otherwise noted
2. Tolerance is ±0.13mm unless otherwise noted.
3. Specifications subject to change without notice

Device Selection Guide

Model Number	Chip		Resin
	Material	Emitting Color	Clear
PLH3535-WCUV01	InGaAiN	Ultraviolet (UV)	

Radiometric Power and Forward Voltage (Tj =25 °C)

Color	Performance at Test Current 350mA				Performance at 700mA
	Group	Min. Radiometric Power (mW)	V_f		Typical Radiometric Power (mW)
			Min	Max	
U40 (380~390nm)	D1	200	3	4	340
	D2	240	3	4	410
	D3	280	3	4	475
U50 (390~400nm)	D4	320	3	4	545
	D5	360	3	4	610
	E1	400	3	4	680
	E2	440	3	4	750
U60 (400~410nm)	D4	320	3	4	545
	D5	360	3	4	610
	E1	400	3	4	680
	E2	440	3	4	750
	E3	480	3	4	815
U70 (410~420nm)	D4	320	3	4	545
	D5	360	3	4	610
	E1	400	3	4	680
	E2	440	3	4	750
	E3	480	3	4	815
	E4	520	3	4	885

Forward Voltage Binning

Part Number	Performance at Test Current (350mA)		
	V_f Group	Minimum (V)	Maximum (V)
PLH3535-WCUV01	V30	3.0	3.2
	V32	3.2	3.4
	V34	3.4	3.6
	V36	3.6	3.8
	V38	3.8	4.0

Absolute Maximum Ratings at Ta=25°C

Parameter	Rating
DC Forward Current (mA)	800mA
LED Junction Temperature	150°C
LED Operating Temperature	-40°C ~ 125°C
Storage Temperature	-40°C ~ 125°C
Soldering Temperature	Max. 260°C / Max. 10 sec. (JEDEC 020c)
ESD Sensitivity	2,000V HBM (JESD-22A-114-B)
Preconditioning	Acc. to JEDEC Level 2

Notes: 1. Never operate the LEDs in reverse bias.
2. Do not drive at rated current for more than 5 seconds without proper thermal management.
3. When the LEDs are illuminating, operating current should be decided after considering the packages maximum temperature.

Electrical and Optical Characteristics at Ta=25°C

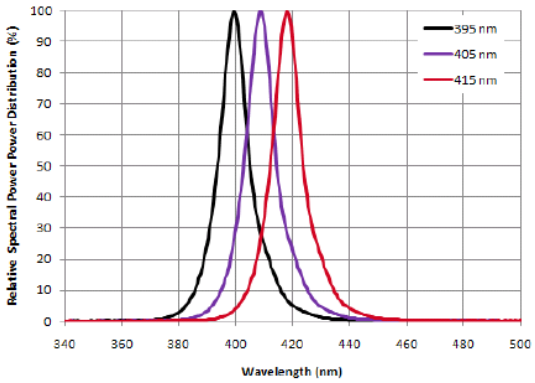
Color	Peak Wavelength (λp)		2Θ1/2	Temperature Coefficient of Vf (mV/°C)	Thermal Resistance Junction to Pad
	Min	Max		ΔVF /ΔTJ	(°C/W) $RΘ_{J-L}$
U40	380	390	125	-2~-4	4.4
U50	390	400	125	-2~-4	4.4
U60	400	410	125	-2~-4	4.4
U70	410	420	125	-2~-4	4.4

Notes:1. The peak/dominant wavelength is measured with an accuracy of ±1nm.

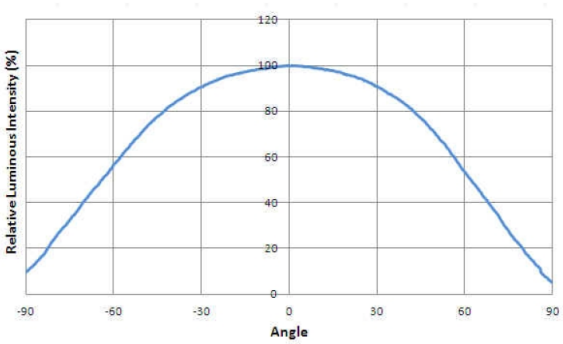
Electrical and Optical Curves

Relative Spectral Power Distribution, Ta=25 ℃

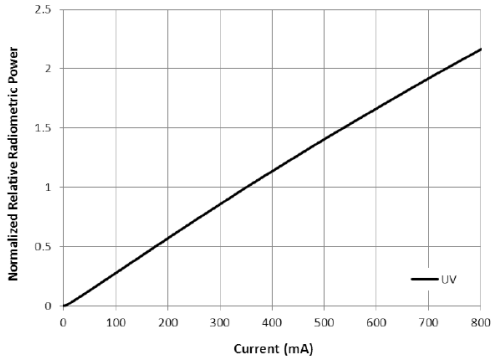
UV



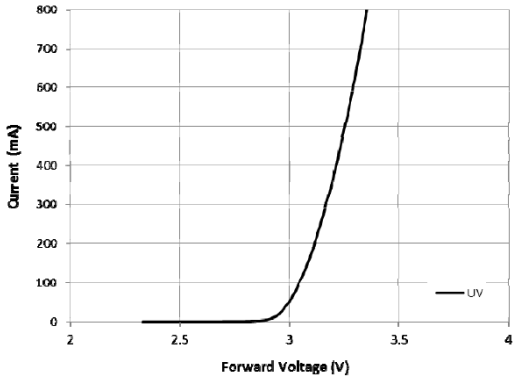
Typical Spatial Radiation Pattern



Typical Forward L-I Characteristics

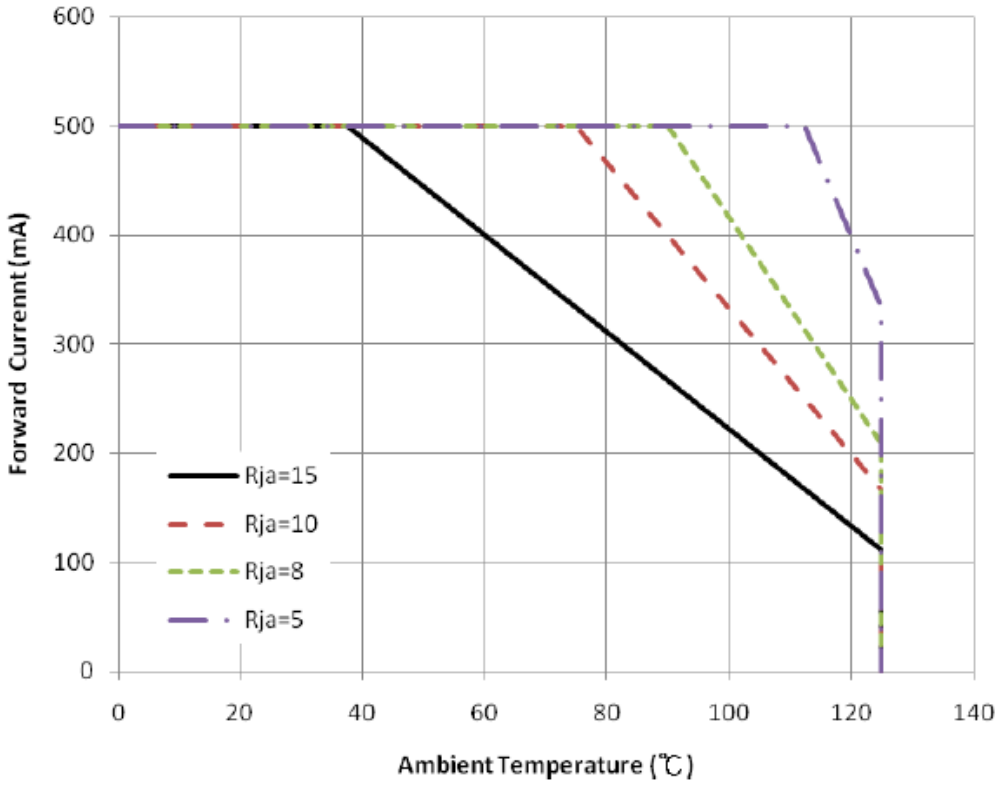


Typical Forward I-V Characteristics



Thermal design

Thermal design of the end product is important. The thermal resistance between the junction and the solder point (RΘJ-S) and the end product should be designed to minimize the thermal resistance from the solder point to ambient in order to optimize the emitter life and optical characteristics. The maximum operation current is determined by the plot of Allowable Forward Current vs. Ambient Temperature.



The junction temperature can be correlated to the thermal resistance between the junction and ambient (Rja) by the following equation.

Tj=Ta + Rja*W

Tj: LED junction temperature

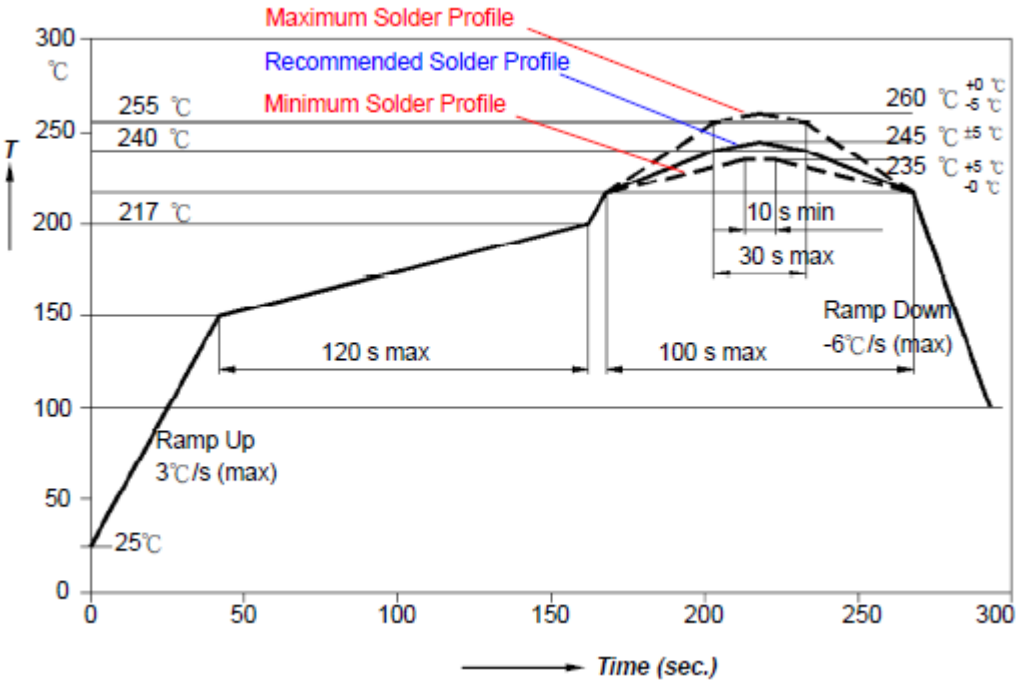
Ta: Ambient temperature

Rja: Thermal resistance between the junction and ambient

W: Input power (I_F*V_F)

Reflow Soldering

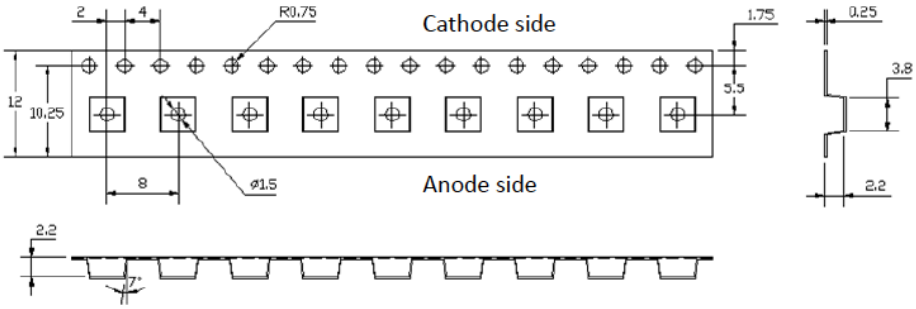
The LEDs can be soldered using the parameter listed below. As a general guideline, the users are suggested to follow the recommended soldering profile provided by the manufacturer of the solder paste. Although the recommended soldering conditions are specified in the list, reflow soldering at the lowest possible temperature is preferred for the LEDs.

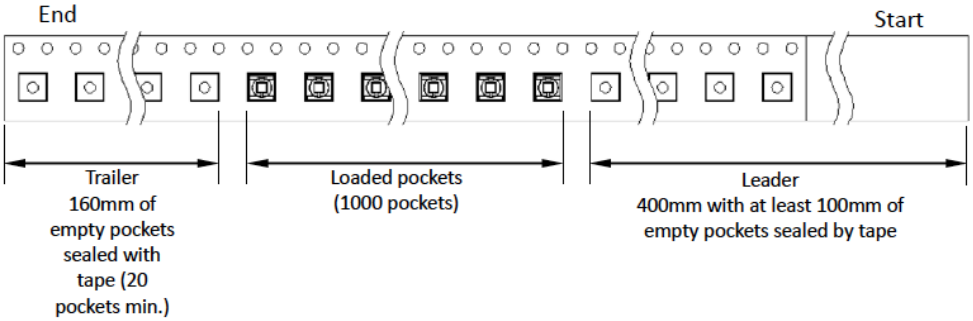


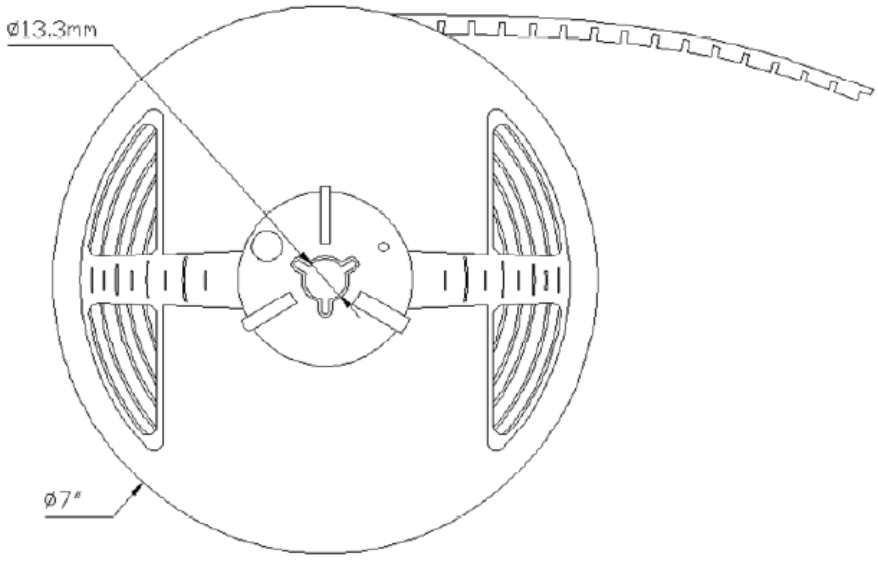
Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Average Ramp-up Rate (Tsmax to Tp)	3℃/second max.	3℃/second max.
Preheat - Temperature Min(Tsmin) - Temperature Max(Tsmax) - Time(tsmin to tsmax)	 100℃ 150℃ 60-120 seconds	 150℃ 200℃ 60-180 seconds
Time maintained above: - Temperature(TL) - Time(tL)	 183℃ 60-150 seconds	 217℃ 60-150 seconds
Peak/classification Temperature(Tp)	215℃	260℃
Time within 5℃ of actual Peak Temperature(tp)	10-30 seconds	20-40 seconds
Ramp-Down Rate	6℃/second max.	6℃/second max.
Time 25℃ to Peak Temperature	6 minutes max.	8 minutes max.

Packing Information

The carrier tape is conformal to EIA-481D







Note: All Dimensions are in millimeters

PLH3535-WCUV01 Customer Approval Signatures	Approved By	Checked By	Prepared By

Record Of Revisions			
Rev.	**Description**	**Date**	**Page**
0	Released Spec	08/11/15	--