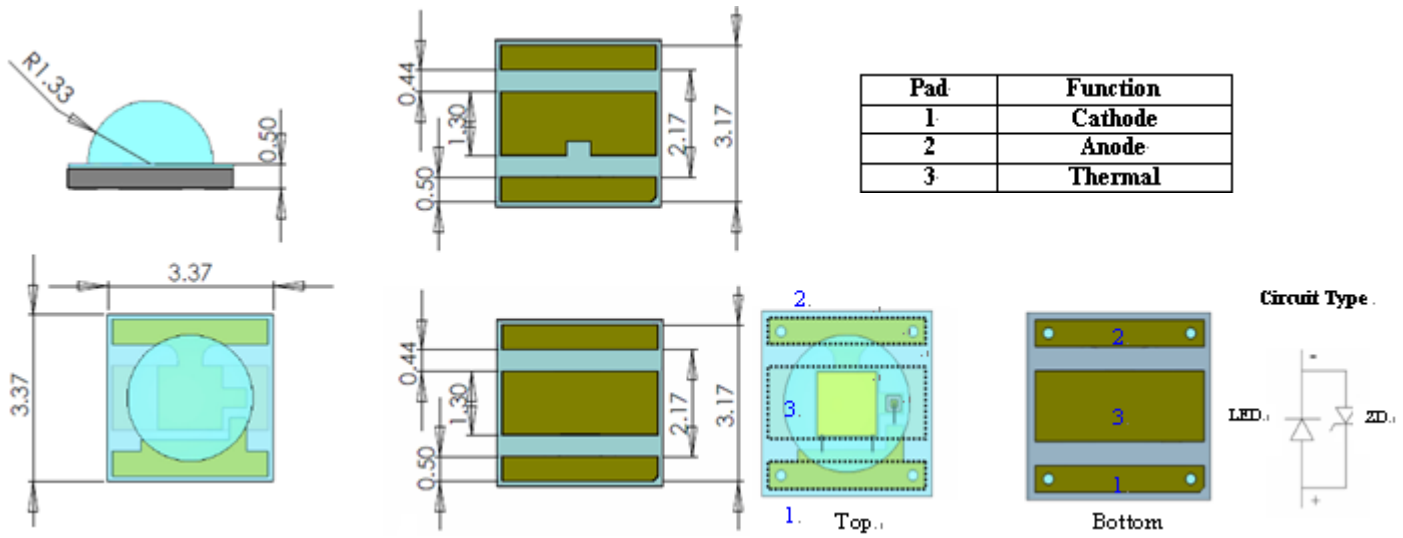


**SPECIFICATIONS** **CSHU33NW2ZC**
**PACKAGE OUTLINES**


- Notes:
1. All dimensions are in millimeter (inches).
  2. Tolerance is  $\pm 0.25\text{mm}$  (0.01") unless otherwise noted.
  3. Specifications are subject to change without notice.

Part Number	Chip Material	Color of Emission	Lens Type	Viewing Angle
CSHU33NW2ZC	InGaN	White	Water Clear	120°



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**ABSOLUTE MAXIMUM RATINGS**
**(TA=25°C)**

Parameter	Symbol	Max Rating	Unit
Forward Current	I <sub>F</sub>	500	mA
ESD Threshold (HBM)	V	2000	V
Reverse Voltage	V	5	V
Junction Temperature	T <sub>J</sub>	125	°C
Operating Temperature Range	T <sub>OP</sub>	-40~+100	°C
Storage Temperature Range	T <sub>STG</sub>	-40~+100	°C
Peak Pulsing Current (1/10 duty f = 10KHz)	I <sub>FP</sub>	-	mA
Soldering Temperature	T <sub>SOL</sub>	Max 260°C for 5 sec Max	

**OPTICAL-ELECTRICAL CHARACTERISTICS**
**(TA=25°C)**

Parameter	Symbol	Test Condition	Value			Unit
			Min	Typ	Max	
CCT Range	X	I <sub>F</sub> = 350mA	-	0.35	-	-
CCT Range	Y	I <sub>F</sub> = 350mA	-	0.36	-	-
Reverse Leakage Current	I <sub>R</sub>	V <sub>R</sub> = 12V	-	-	-	µA
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> = 350mA	-	3.4	3.75	V
Luminous Intensity	I <sub>v</sub>	I <sub>F</sub> = 350mA	74	80	-	lm

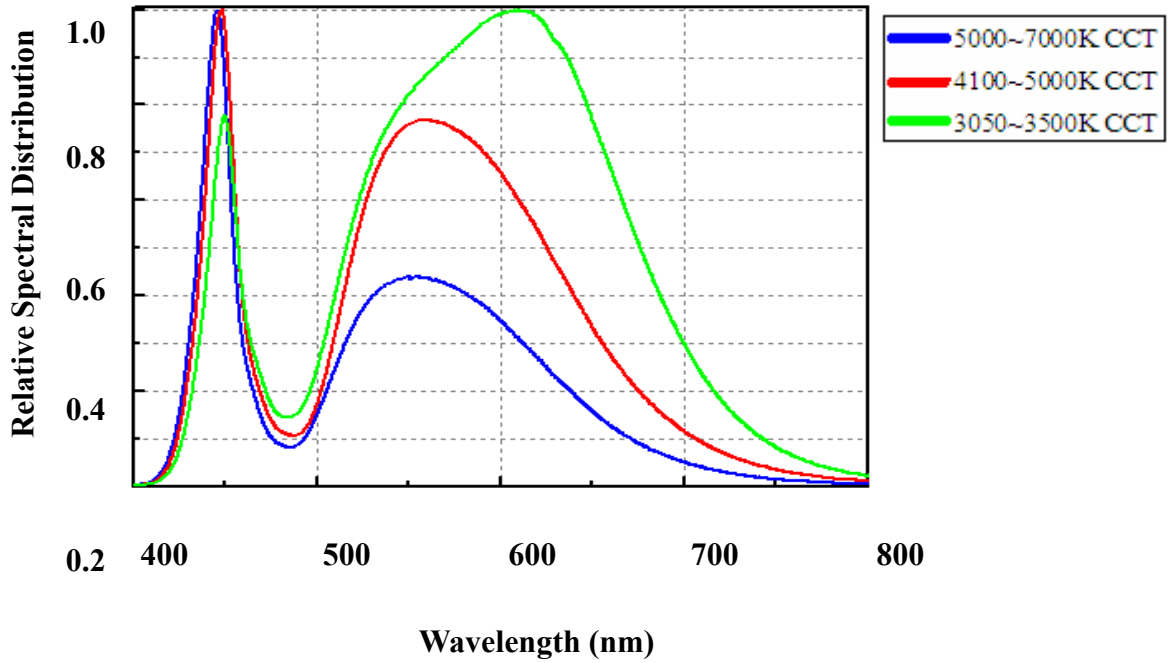
\*Tolerance of viewing angle: -10 / +5 deg.



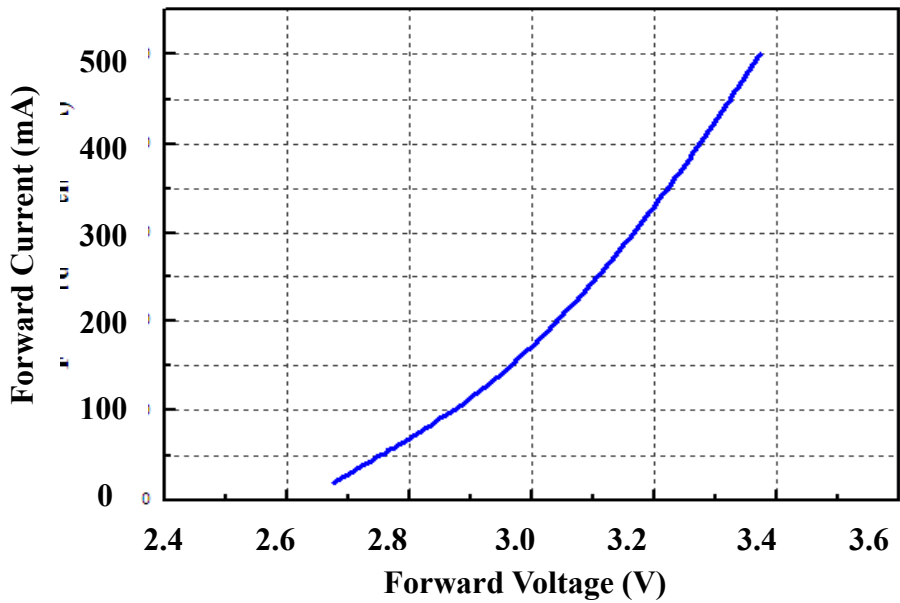
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# RELATIVE SPECTRAL CHARACTERISTICS & ELECTRICAL CHARACTERISTICS

Relative Spectral Characteristics,  $T_j=25^{\circ}\text{C}$ ,  $I_F=350\text{mA}$



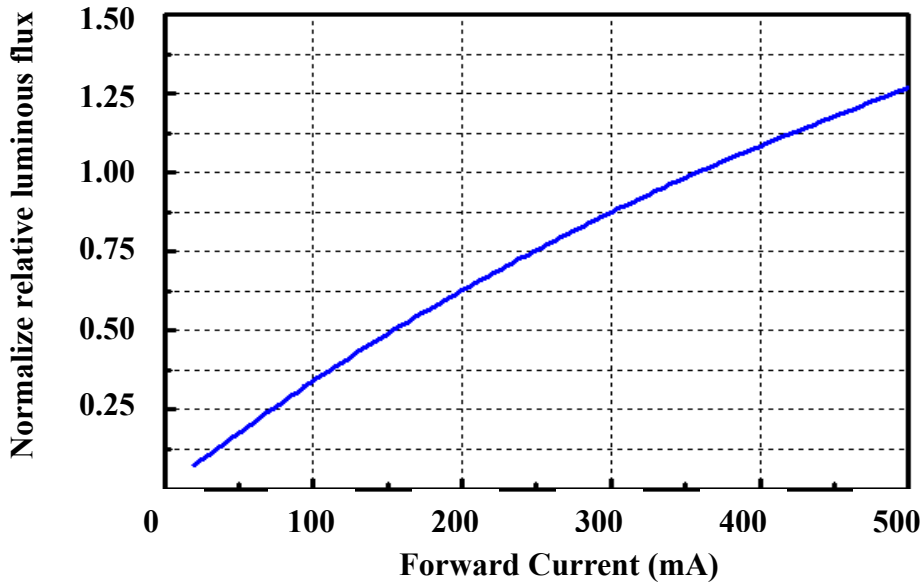
Typical Electrical Characteristics,  $T_j=25^{\circ}\text{C}$



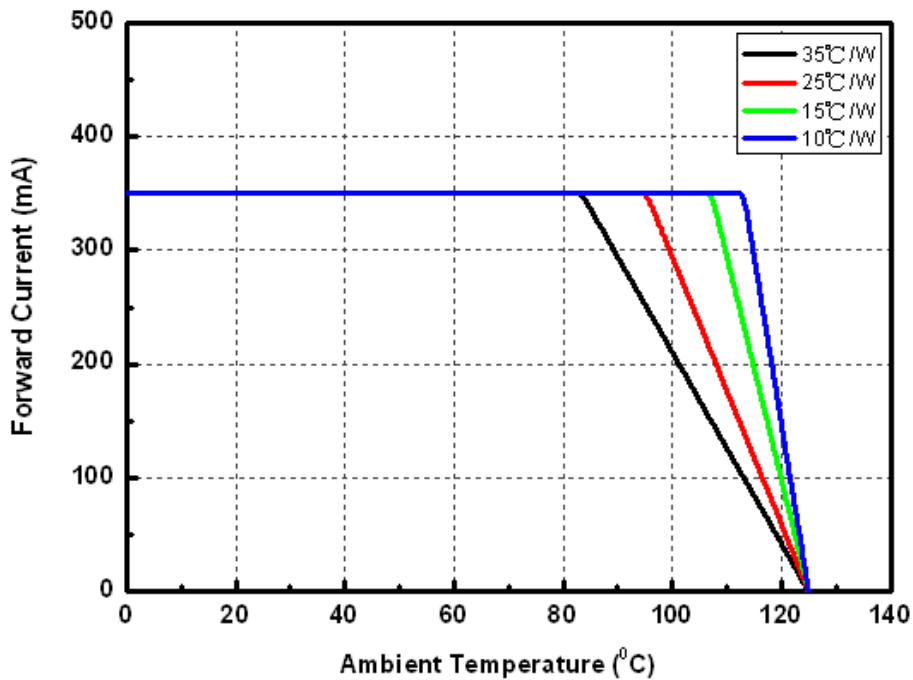
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## OPTICAL CHARACTERISTIC CURVES

Typical Relative Luminous Flux vs. Forward Current,  $T_j=25^{\circ}\text{C}$

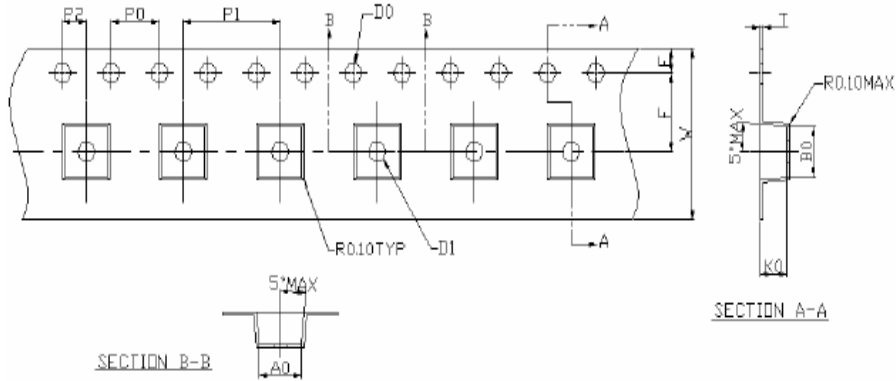


Current Derating Curve,  $I_F=350\text{mA}$

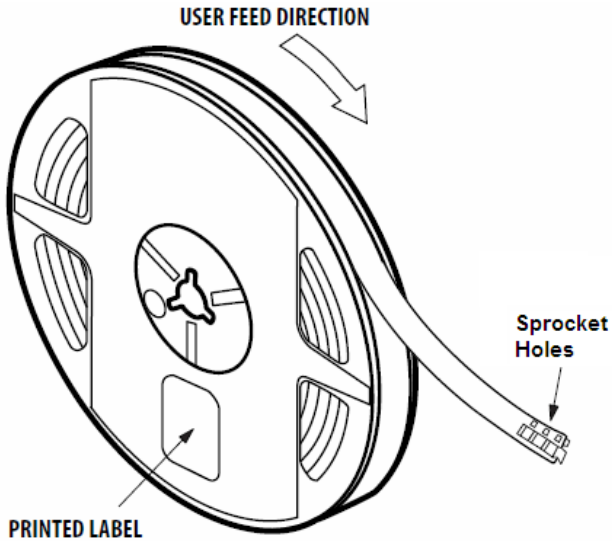
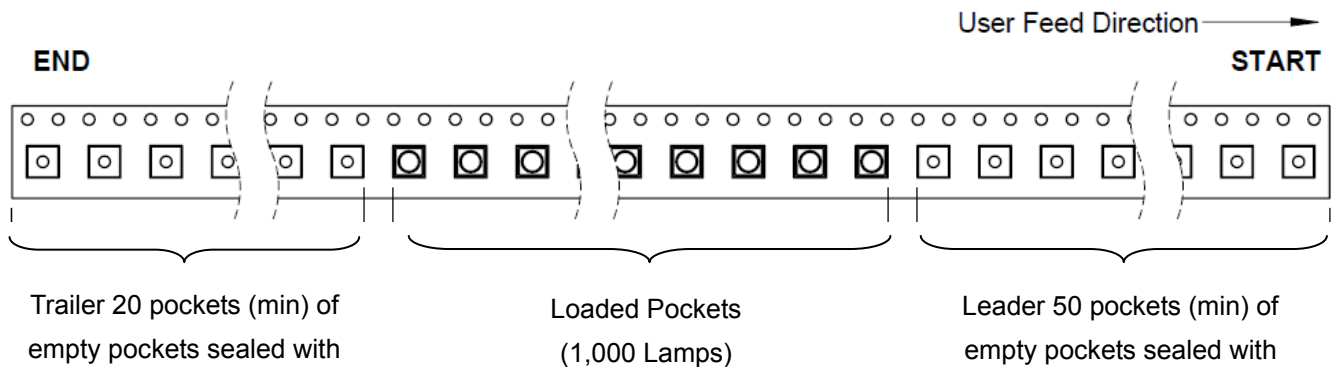


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## TAPING ORIENTATION



Item	Specification	Tol. (+/-)
W	12.00	± 0.30
E	1.75	± 0.10
F	5.50	± 0.10
D0	1.50	+0.10, -0
D1	1.50	± 0.10
P0	4.00	± 0.10
P1	8.00	± 0.10
P2	2.00	± 0.10
P0 x 10	40.00	± 0.20
t	0.30	± 0.05
A0	3.80	± 0.10
B0	3.80	± 0.10
K0	2.20	± 0.10



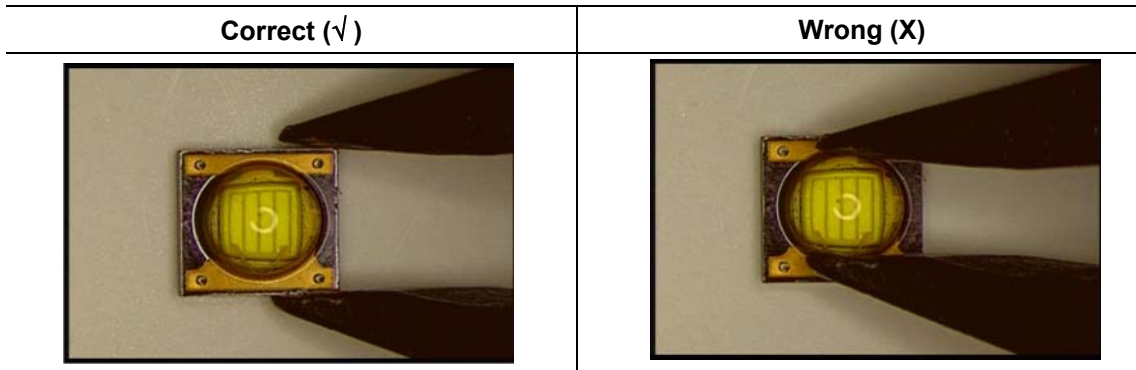
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## LENS HANDLING

### Lens handling

Please follow the guideline to grab LEDs

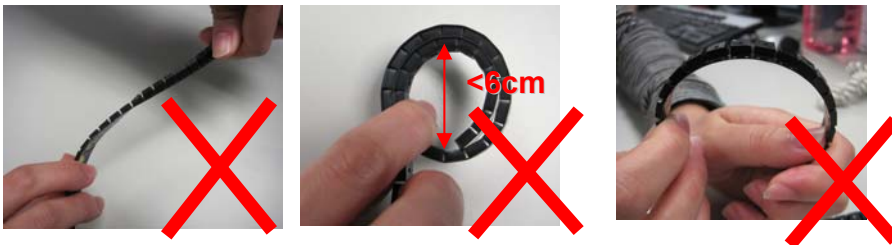
- Use tweezers to grab LEDs
- Do not touch lens with the tweezers
- Do not touch lens with fingers
- Do not apply more than 4N of lens (400g) directly onto the lens



### Lens cleaning

In the case where a minimal level of dirt and dust particles can not be guaranteed, a suitable cleaning solution can be applied to the lens surface

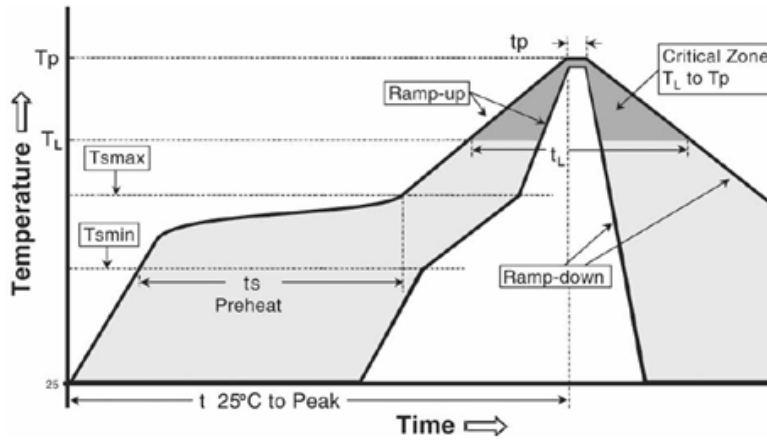
- Try a gentle swabbing using a lint-free swab
- If needed, the use of lint-free swab and isopropyl alcohol used gently removes dirt from the lens surface
- Do not use other solvents as they may directly react with the LED assembly
- Do not use ultrasonic cleaning that the LED will be damaged
- 



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# SOLDERING CONDITIONS

## Reflow soldering conditions



Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Average ramp-up rate (T <sub>smax</sub> to T <sub>p</sub> )	3° C/second max.	3° C/second max.
<b>Preheat</b>		
- Temperature Min (T <sub>smin</sub> )	100 °C	150 °C
- Temperature Max (T <sub>smax</sub> )	150 °C	200 °C
- Time (T <sub>smin</sub> to T <sub>smax</sub> ) (t <sub>s</sub> )	60-120 seconds	60-180 seconds
Time maintained above:		
- Temperature (T <sub>L</sub> )	183 °C	217 °C
- Time (t <sub>L</sub> )	60-150 seconds	60-150 seconds
Peak Temperature (T <sub>p</sub> )	215 °C	260 °C
Time within 5°C of actual Peak Temperature (t <sub>p</sub> ) <sup>2</sup>	10-30 seconds	20-40 seconds
Ramp-down Rate	6 °C/second max.	6 °C/second max.
Time 25°C to Peak Temperature	6 minutes max.	8 minutes max.



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