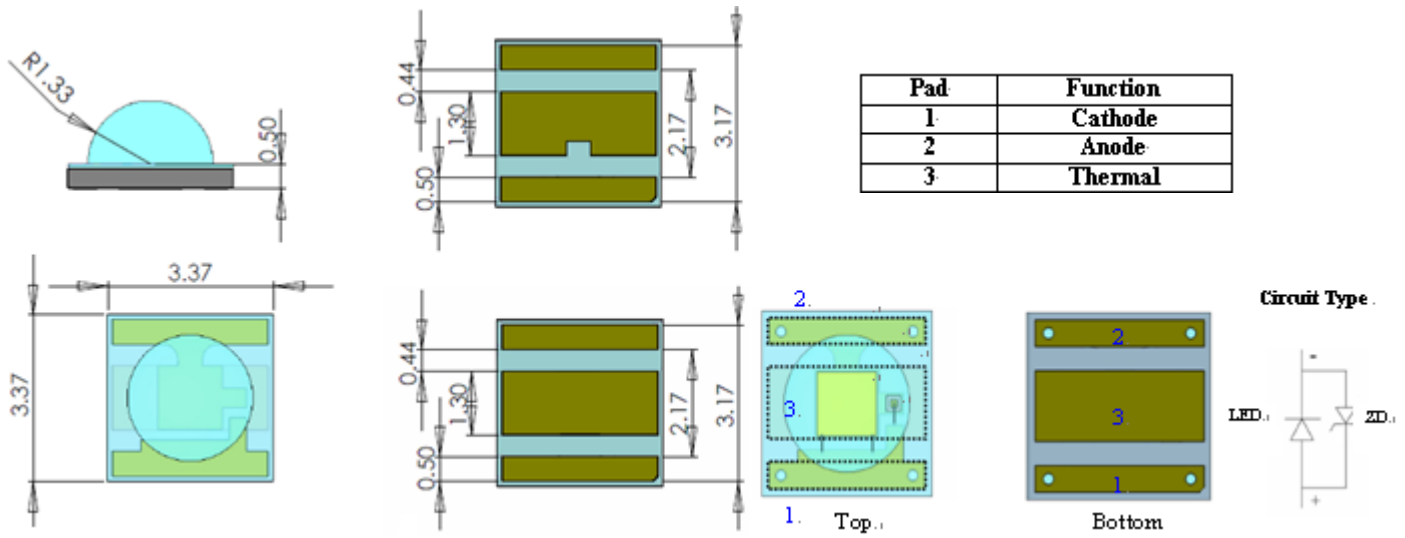


SPECIFICATIONS **CSHU33WW2ZC**
PACKAGE OUTLINES


- 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 |
|-------------|---------------|-------------------|-------------|---------------|
| CSHU33WW2ZC | InGaN | Warm White | Water Clear | 120° |



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ABSOLUTE MAXIMUM RATINGS
(TA=25°C)

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

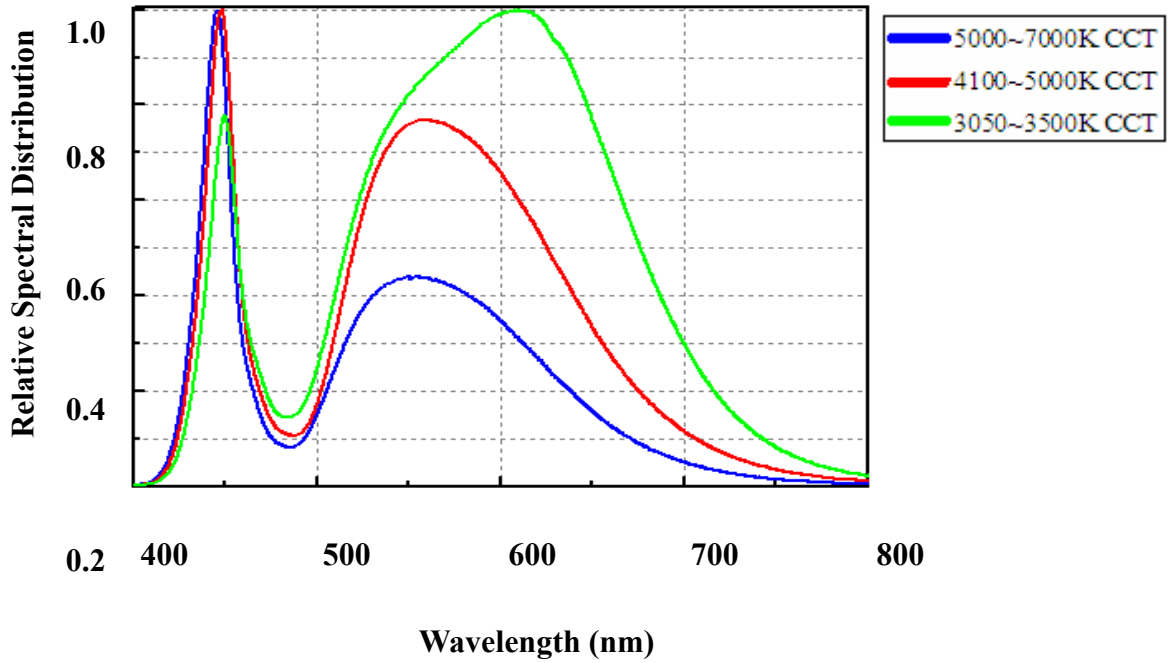
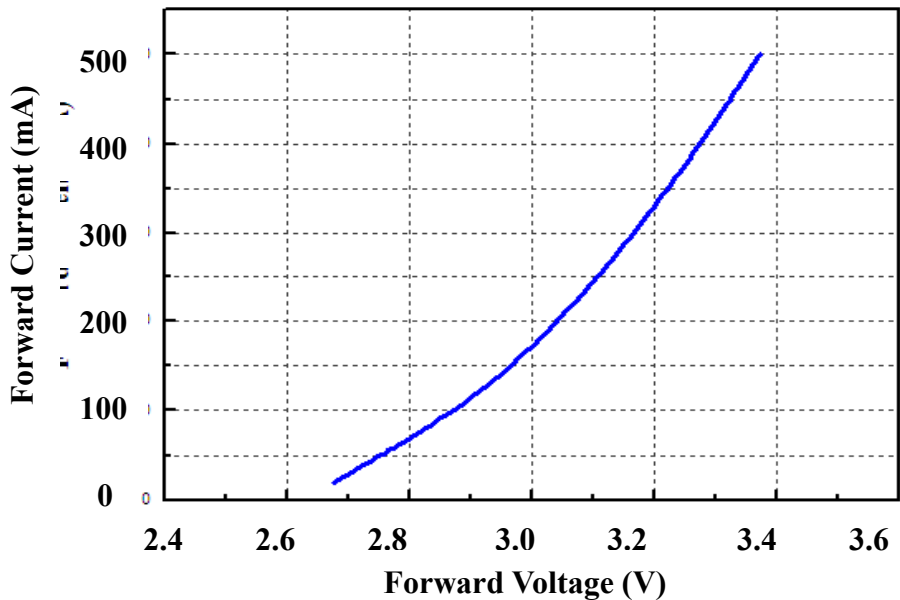
OPTICAL-ELECTRICAL CHARACTERISTICS
(TA=25°C)

| Parameter | Symbol | Test Condition | Value | | | Unit |
|-------------------------|----------------|------------------------|-------|------|------|------|
| | | | Min | Typ | Max | |
| CCT Range | X | I _F = 350mA | - | 0.43 | - | - |
| CCT Range | Y | I _F = 350mA | - | 0.40 | - | - |
| Reverse Leakage Current | I _R | V _R = 12V | - | - | - | µA |
| Forward Voltage | V _F | I _F = 350mA | - | 3.4 | 3.75 | V |
| Luminous Intensity | I _v | I _F = 350mA | 60 | 74 | - | lm |

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



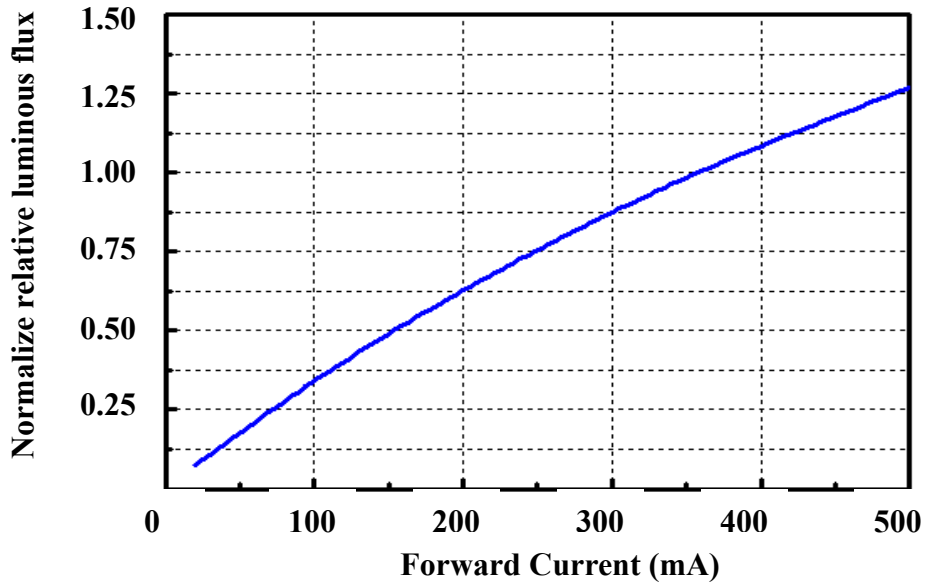
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RELATIVE SPECTRAL CHARACTERISTICS & ELECTRICAL CHARACTERISTICS
Relative Spectral Characteristics, $T_j=25^{\circ}\text{C}$, $I_F=350\text{mA}$

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


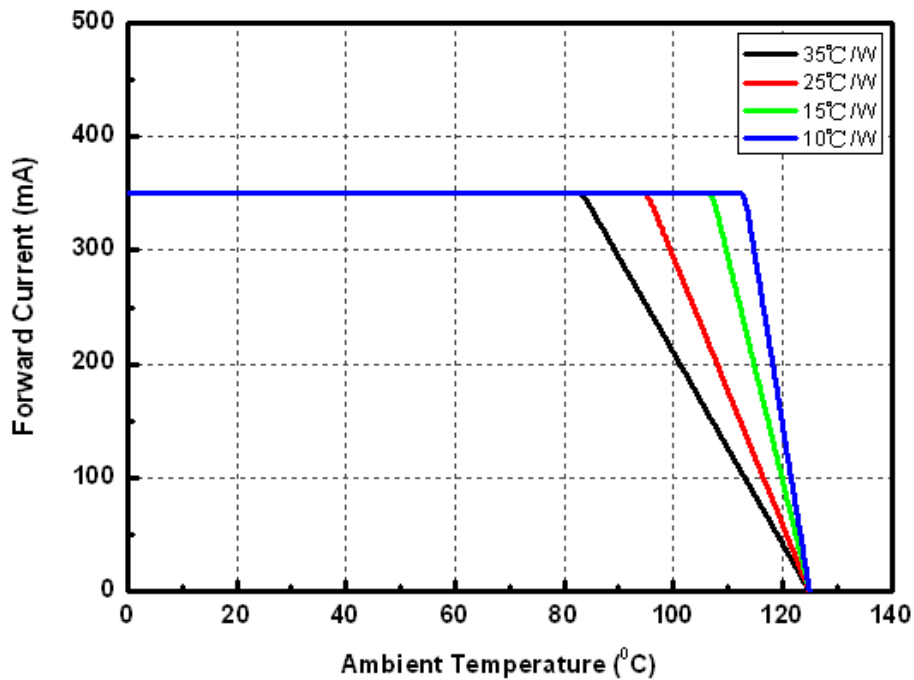
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OPTICAL CHARACTERISTIC CURVES

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

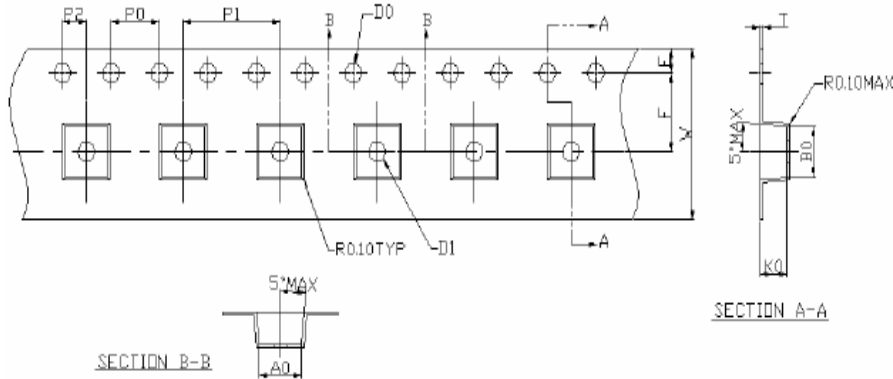


Current Derating Curve, $I_F=350\text{mA}$

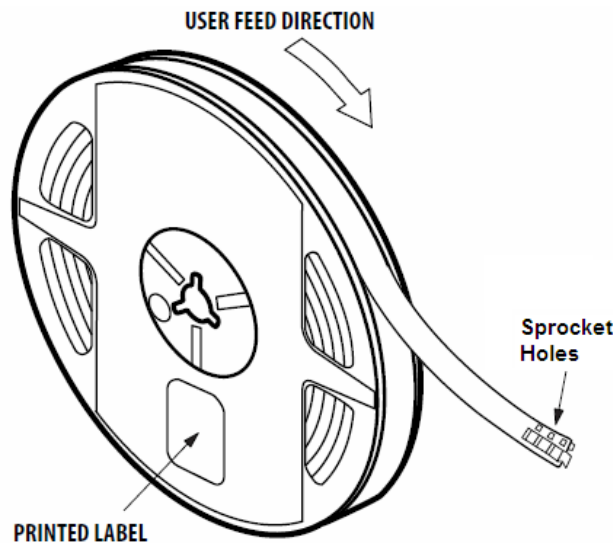
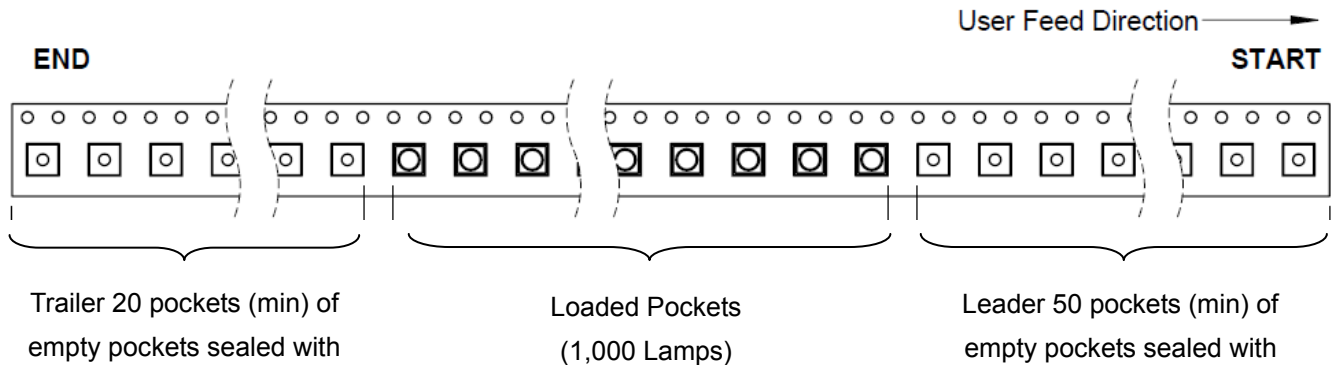


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TAPING ORIENTATION



| 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 |



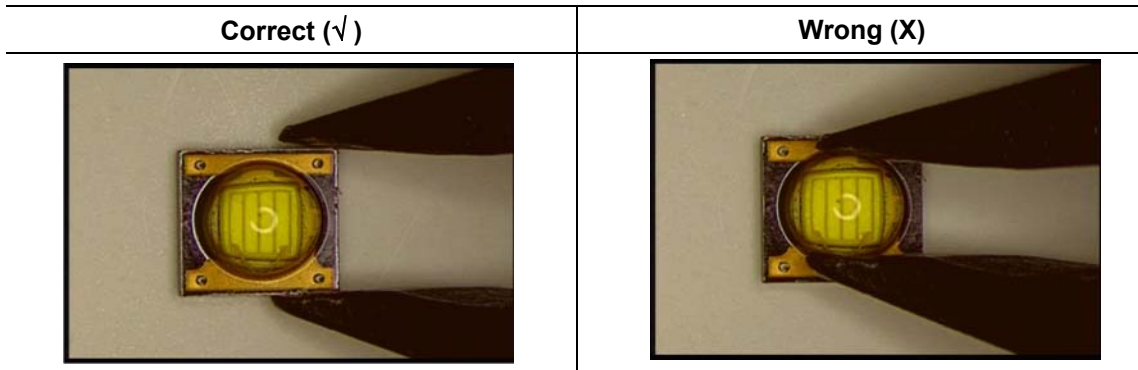
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LENS HANDLING

Lens handling

Please follow the guideline to grab LEDs

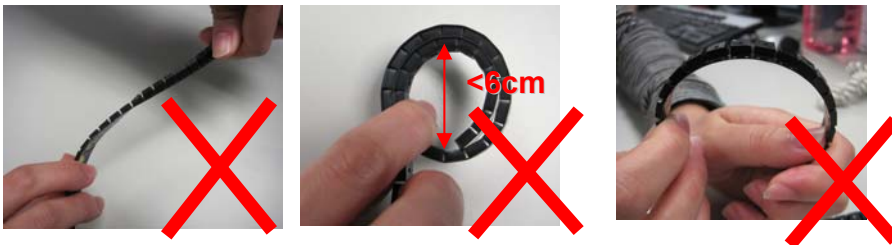
- Use tweezers to grab LEDs
- Do not touch lens with the tweezers
- Do not touch lens with fingers
- Do not apply more than 4N of lens (400g) directly onto the lens



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

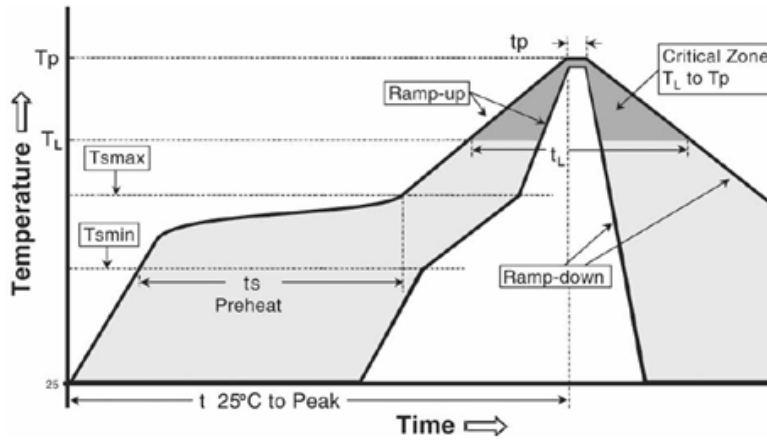
- Try a gentle swabbing using a lint-free swab
- If needed, the use of lint-free swab and isopropyl alcohol used gently removes dirt from the lens surface
- Do not use other solvents as they may directly react with the LED assembly
- Do not use ultrasonic cleaning that the LED will be damaged
-



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SOLDERING CONDITIONS

Reflow soldering conditions



| Profile Feature | Sn-Pb Eutectic Assembly | Pb-Free Assembly |
|--|-------------------------|------------------|
| Average ramp-up rate (T Amin to Tp) | 3° C/second max. | 3° C/second max. |
| Preheat | | |
| - Temperature Min (T Amin) | 100 °C | 150 °C |
| - Temperature Max (T smax) | 150 °C | 200 °C |
| - Time (T Amin to T smax) (ts) | 60-120 seconds | 60-180 seconds |
| Time maintained above: | | |
| - Temperature (Tl) | 183 °C | 217 °C |
| - Time (tl) | 60-150 seconds | 60-150 seconds |
| Peak Temperature (Tp) | 215 °C | 260 °C |
| Time within 5°C of actual Peak Temperature (tp) ² | 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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