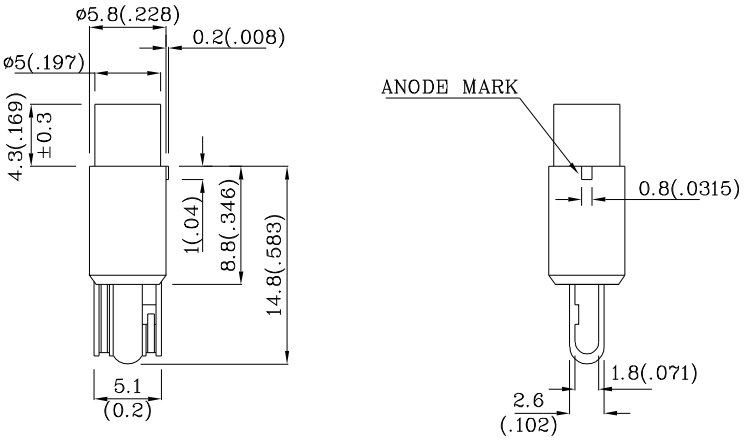
PRELIMINARY SPEC

## Features

- LONG LIFE, SOLID STATE.
- WEDGE BASE, EASY INSTALLATION & REPLACEMENT.
- UL RATING : 94V-0.
- 14V INTERNAL RESISTOR.
- RoHS COMPLIANT.



**ATTENTION**
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

Notes:

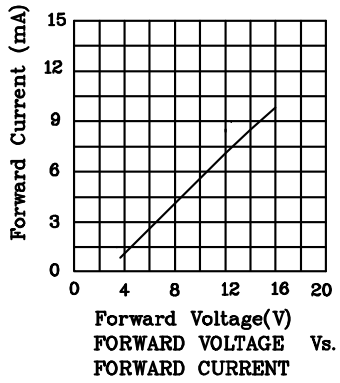
1. All dimensions are in millimeters (inches).
2. Tolerance is ± 0.25(0.01") unless otherwise noted.

| **Absolute Maximum Ratings ($T_A$=25°C)** | | **NWA (InGaN)** | **Unit** |
|---|---|---|---|
| Reverse Voltage | $V_R$ | 5 | V |
| Forward Voltage | $V_F$ | 16 | V |
| Power Dissipation | $P_T$ | 160 | mW |
| Operating Temperature | $T_A$ | -40 ~ +70 | °C |
| Storage Temperature | Tstg | -40 ~ +85 | |
| Electrostatic Discharge Threshold (HBM) | | 1000 | V |
| Lead Solder Temperature [2mm Below Package Base] | 260°C For 3 Seconds | | |
| Lead Solder Temperature [5mm Below Package Base] | 260°C For 5 Seconds | | |

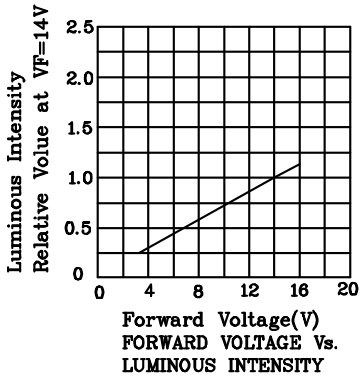
| **Operating Characteristics ($T_A$=25°C)** | | **NWA (InGaN)** | **Unit** |
|---|---|---|---|
| Forward Current (Typ.) ($V_F$=14V) | $I_F$ | 8.5 | mA |
| Forward Current (Max.) ($V_F$=14V) | $I_F$ | 12 | mA |
| Reverse Current (Max.) ($V_R$=5V) | $I_R$ | 10 | uA |
| Chromaticity Coordinates (Typ.) | X | 0.33 | |
| | Y | 0.34 | |

| Part Number | Emitting Color | Emitting Material | Lens-color | Luminous Intensity (V=14V) mcd | | Viewing Angle 2 θ 1/2 |
|---|---|---|---|---|---|---|
| | | | | min. | typ. | |
| XNZSNWA52W14V02 | White | InGaN | Water Clear | 40 | 128 | 70° |

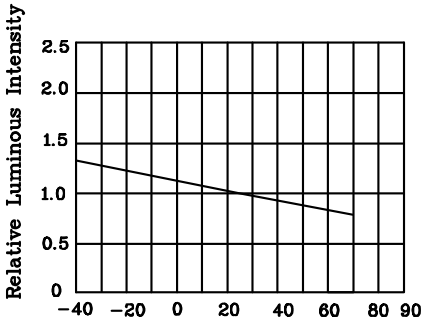
❖ **NWA**



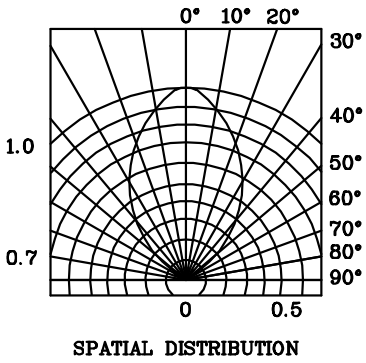

FORWARD VOLTAGE Vs.
FORWARD CURRENT




FORWARD VOLTAGE Vs.
LUMINOUS INTENSITY

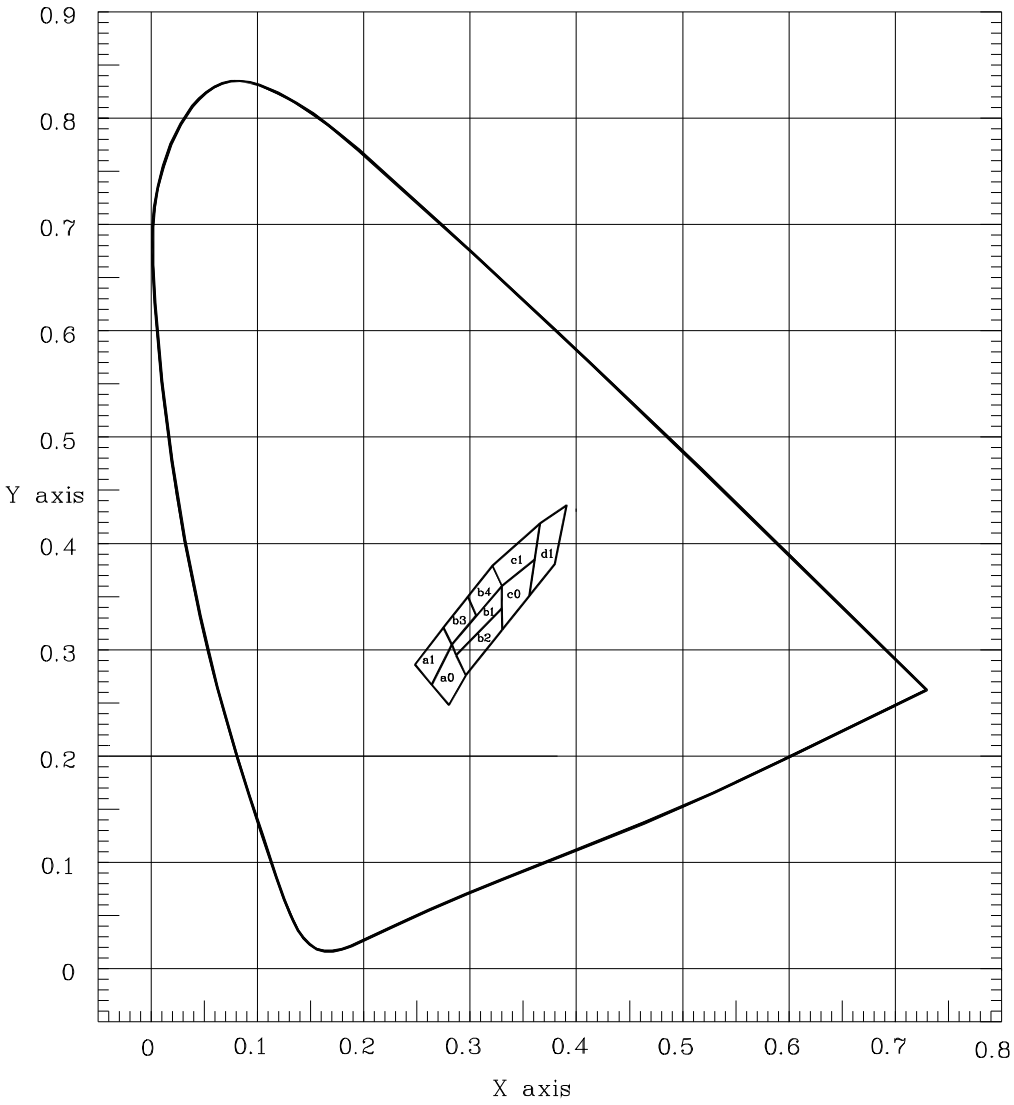



LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE




SPATIAL DISTRIBUTION

**XNZSNWA52W14V02**




| a1 | | | | |
|---|---|---|---|---|
| X | 0.248 | 0.275 | 0.283 | 0.264 |
| Y | 0.286 | 0.321 | 0.305 | 0.267 |

| a0 | | | | |
|---|---|---|---|---|
| X | 0.264 | 0.283 | 0.296 | 0.280 |
| Y | 0.267 | 0.305 | 0.276 | 0.248 |

| b3 | | | | |
|---|---|---|---|---|
| X | 0.275 | 0.298 | 0.306 | 0.283 |
| Y | 0.321 | 0.350 | 0.332 | 0.305 |

| b1 | | | | |
|---|---|---|---|---|
| X | 0.283 | 0.330 | 0.330 | 0.287 |
| Y | 0.305 | 0.360 | 0.339 | 0.295 |

| b2 | | | | |
|---|---|---|---|---|
| X | 0.287 | 0.330 | 0.330 | 0.296 |
| Y | 0.295 | 0.339 | 0.318 | 0.276 |

| b4 | | | | |
|---|---|---|---|---|
| X | 0.298 | 0.321 | 0.330 | 0.306 |
| Y | 0.350 | 0.379 | 0.360 | 0.332 |

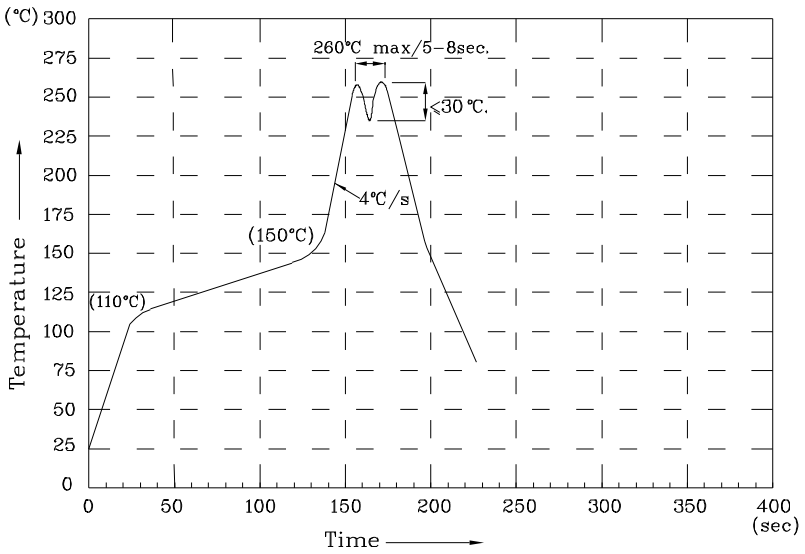
| c1 | | | | |
|---|---|---|---|---|
| X | 0.321 | 0.366 | 0.361 | 0.330 |
| Y | 0.379 | 0.419 | 0.385 | 0.360 |

| c0 | | | | |
|---|---|---|---|---|
| X | 0.330 | 0.361 | 0.356 | 0.330 |
| Y | 0.360 | 0.385 | 0.351 | 0.318 |

| d1 | | | | |
|---|---|---|---|---|
| X | 0.366 | 0.391 | 0.380 | 0.356 |
| Y | 0.419 | 0.436 | 0.381 | 0.351 |

Ta=25°, IF=20mA  Measurement Uncertainty of the Color Coordinates: +/−0.01

Wave Soldering Profile For Lead-free Through-hole LED.




NOTES:

1. Recommend the wave temperature 245℃~260℃. The maximum soldering temperature should be less than 260℃.
2. Do not apply stress on epoxy resins when temperature is over 85 degree℃.
3. The soldering profile apply to the lead free soldering (Sn/Cu/Ag alloy).
4. No more than once.

Remarks:

If special sorting is required (e.g. binning based on Luminous intensity/ luminous flux, or wavelength),

the typical accuracy of the sorting process is as follows:

1. Chromaticity Coordinates X, Y: +/-0.01.

2. Luminous intensity/ luminous flux: +/-15%.

Note: Accuracy may depend on the sorting parameters.