

High Power LED

BL-LS3528C1S1UWC

■ Features:

- POWER SMD LEDs , 3.5mmx2.8mm SMD, 1.9mm THICKNESS PLCC2 package
- Longer service and less luminosity loss, 50,000hours
- Different emitting colors are available Working current: 200-350mA
- With or without heat sink are both available
- PACKAGE: 2K PCS/REEL

■ Applications:

Commercial lighting
Residential lighting
Decorative lighting



■ Electrical-optical characteristics: (Ta=25°C) (Test Condition: IF=)

| Part Number | Chip | | Lens Type | Forward Voltage(VF) Unit:V | | Flux Unit:lm | | Viewing Angle 2θ1/2 (deg) |
|-----------------------|---------------|---------|-----------|-------------------------------|-----|--------------|------|---------------------------------|
| | Emitted Color | current | | Typ | Max | Min. | Typ. | |
| | | | | | | | | |
| BL-LS3528C1S1UWC-C30 | Ultra White | 30mA | yellow | 3.1 | 4.0 | 10 | 15 | 110 |
| BL-LS3528C1S1UWC-C60 | Ultra White | 60mA | yellow | 3.1 | 4.0 | 23 | 25 | 110 |
| BL-LS3528C1S1UWC-C150 | Ultra White | 150mA | yellow | 3.1 | 4.0 | 40 | 55 | 110 |

■ Absolute maximum ratings (Ta=25°C)

| Parameter | Rating | Unit |
|---|-------------|------|
| Forward Current I _F | 35/70/150 | mA |
| LED Junction Temperature | 120 | °C |
| Peak Forward Current I _{PF} (Duty 1/10 @1KHZ) | 100/200/500 | mA |
| Operation Temperature T _{OPR} | -40 to +80 | °C |
| Storage Temperature T _{STG} | -40 to +100 | °C |
| Aluminum-Core Pcb Temperature | 105 | °C |

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BIN CODE SYSTEM SELECTION CODE FOR Luminous Flux

| Group | brightness(lm) | | Group | brightness(lm) | |
|-------|----------------|-----|-------|----------------|-----|
| | min | max | | min | max |
| A5 | 9 | 10 | C0 | 20 | 30 |
| B0 | 10 | 12 | C1 | 30 | 40 |
| B1 | 12 | 14 | C2 | 40 | 50 |
| B2 | 14 | 17 | C3 | 50 | 60 |
| B3 | 17 | 20 | C4 | 60 | 70 |

tolerance of measurement of luminous intensity is +/-15%

forward voltage Ranks

| Group | Voltage (V) | | Group | Voltage (V) | |
|-------|-------------|-----|-------|-------------|-----|
| | min | max | | min | max |
| F | 2.8 | 3 | K | 3.6 | 3.8 |
| G | 3 | 3.2 | L | 3.8 | 4 |
| H | 3.2 | 3.4 | | | |
| J | 3.4 | 3.6 | | | |

forward voltage Ranks

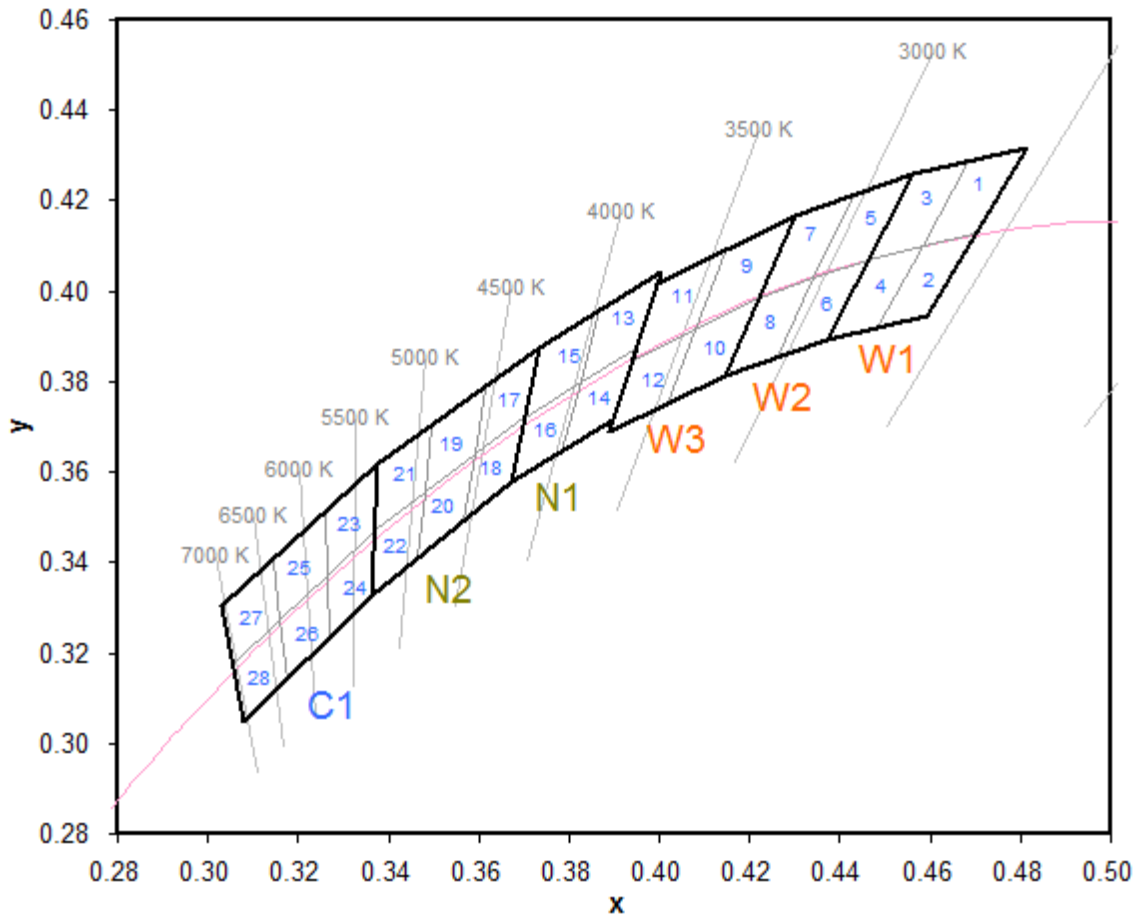
| Group | Voltage (V) | | Group | Voltage (V) | |
|-------|-------------|-----|-------|-------------|-----|
| | min | max | | min | max |
| F0 | 2.8 | 2.9 | K0 | 3.6 | 3.7 |
| F1 | 2.9 | 3 | K1 | 3.7 | 3.8 |
| G0 | 3 | 3.1 | L0 | 3.8 | 3.9 |
| G1 | 3.1 | 3.2 | L1 | 3.9 | 4 |
| H0 | 3.2 | 3.3 | | | |
| H1 | 3.3 | 3.4 | | | |
| J0 | 3.4 | 3.5 | | | |
| J1 | 3.5 | 3.6 | | | |

tolerance of measurement of forward voltage is +/-0.05v

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Color Temperature BIN



| | X | Y |
|----|--------|--------|
| W1 | 0.4373 | 0.3893 |
| | 0.4562 | 0.4260 |
| | 0.4813 | 0.4319 |
| | 0.4593 | 0.3944 |
| | | |
| | X | Y |
| W2 | 0.4147 | 0.3814 |
| | 0.4299 | 0.4165 |
| | 0.4562 | 0.4260 |
| | 0.4373 | 0.3893 |
| | | |
| | X | Y |
| W3 | 0.3889 | 0.3690 |
| | 0.3996 | 0.4015 |
| | 0.4299 | 0.4165 |
| | 0.4147 | 0.3814 |

| | X | Y |
|----|--------|--------|
| N1 | 0.3670 | 0.3578 |
| | 0.3736 | 0.3874 |
| | 0.4006 | 0.4044 |
| | 0.3898 | 0.3716 |
| | | |
| | X | Y |
| N2 | 0.3481 | 0.3557 |
| | 0.3376 | 0.3616 |
| | 0.3592 | 0.3641 |
| | 0.3670 | 0.3578 |
| | | |
| | X | Y |
| C1 | 0.3160 | 0.3274 |
| | 0.3028 | 0.3304 |
| | 0.3265 | 0.3371 |
| | 0.3364 | 0.3328 |

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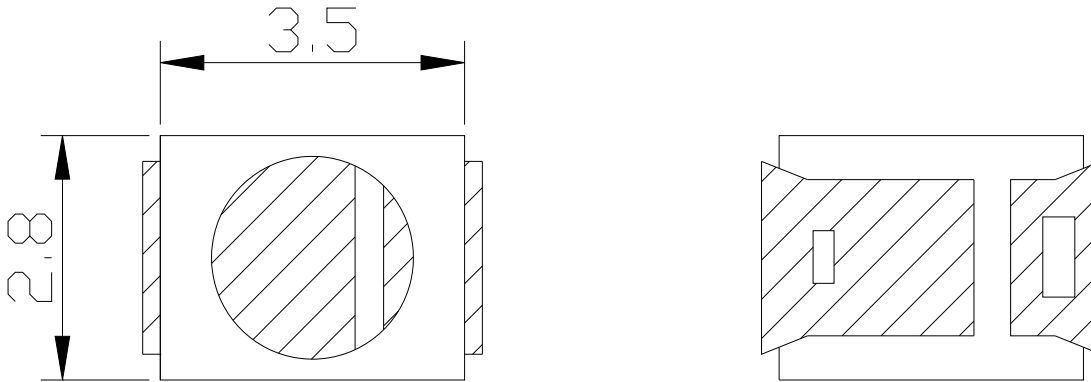
BL-LS3528C1S1UWC

| CODE | x | y | CODE | x | y | CODE | x | y | CODE | x | y |
|------|--------|--------|------|--------|--------|------|--------|--------|------|--------|--------|
| 1 | 0.4582 | 0.4099 | 8 | 0.4147 | 0.3814 | 15 | 0.3702 | 0.3722 | 22 | 0.3481 | 0.3557 |
| | 0.4687 | 0.4289 | | 0.4221 | 0.3984 | | 0.3736 | 0.3874 | | 0.3370 | 0.3472 |
| | 0.4813 | 0.4319 | | 0.4342 | 0.4028 | | 0.3869 | 0.3958 | | 0.3364 | 0.3328 |
| | 0.4700 | 0.4126 | | 0.4259 | 0.3853 | | 0.3825 | 0.3798 | | 0.3466 | 0.3411 |
| 2 | 0.4483 | 0.3919 | 9 | 0.4080 | 0.3916 | 16 | 0.3670 | 0.3578 | 23 | 0.3376 | 0.3616 |
| | 0.4582 | 0.4099 | | 0.4146 | 0.4089 | | 0.3702 | 0.3722 | | 0.3260 | 0.3512 |
| | 0.4700 | 0.4126 | | 0.4299 | 0.4165 | | 0.3825 | 0.3798 | | 0.3265 | 0.3371 |
| | 0.4593 | 0.3944 | | 0.4221 | 0.3984 | | 0.3783 | 0.3646 | | 0.3370 | 0.3472 |
| 3 | 0.4465 | 0.4071 | 10 | 0.4017 | 0.3751 | 17 | 0.3736 | 0.3874 | 24 | 0.3370 | 0.3472 |
| | 0.4562 | 0.4260 | | 0.4080 | 0.3916 | | 0.3616 | 0.3788 | | 0.3265 | 0.3371 |
| | 0.4687 | 0.4289 | | 0.4221 | 0.3984 | | 0.3592 | 0.3641 | | 0.3270 | 0.3230 |
| | 0.4582 | 0.4099 | | 0.4147 | 0.3814 | | 0.3703 | 0.3726 | | 0.3364 | 0.3328 |
| 4 | 0.4373 | 0.3893 | 11 | 0.3941 | 0.3848 | 18 | 0.3703 | 0.3726 | 25 | 0.3260 | 0.3512 |
| | 0.4465 | 0.4071 | | 0.3996 | 0.4015 | | 0.3592 | 0.3641 | | 0.3144 | 0.3408 |
| | 0.4582 | 0.4099 | | 0.4146 | 0.4089 | | 0.3568 | 0.3495 | | 0.3160 | 0.3274 |
| | 0.4483 | 0.3919 | | 0.4080 | 0.3916 | | 0.3670 | 0.3578 | | 0.3265 | 0.3371 |
| 5 | 0.4342 | 0.4028 | 12 | 0.3889 | 0.3690 | 19 | 0.3616 | 0.3788 | 26 | 0.3265 | 0.3371 |
| | 0.4430 | 0.4212 | | 0.3941 | 0.3848 | | 0.3496 | 0.3702 | | 0.3160 | 0.3274 |
| | 0.4562 | 0.4260 | | 0.4080 | 0.3916 | | 0.3481 | 0.3557 | | 0.3175 | 0.3139 |
| | 0.4465 | 0.4071 | | 0.4017 | 0.3751 | | 0.3592 | 0.3641 | | 0.3270 | 0.3230 |
| 6 | 0.4259 | 0.3853 | 13 | 0.3825 | 0.3798 | 20 | 0.3592 | 0.3641 | 27 | 0.3144 | 0.3408 |
| | 0.4342 | 0.4028 | | 0.3869 | 0.3958 | | 0.3481 | 0.3557 | | 0.3028 | 0.3304 |
| | 0.4465 | 0.4071 | | 0.4006 | 0.4044 | | 0.3466 | 0.3411 | | 0.3055 | 0.3177 |
| | 0.4373 | 0.3893 | | 0.3950 | 0.3875 | | 0.3568 | 0.3495 | | 0.3160 | 0.3274 |
| 7 | 0.4221 | 0.3984 | 14 | 0.3783 | 0.3646 | 21 | 0.3496 | 0.3702 | 28 | 0.3160 | 0.3274 |
| | 0.4299 | 0.4165 | | 0.3825 | 0.3798 | | 0.3376 | 0.3616 | | 0.3055 | 0.3177 |
| | 0.4430 | 0.4212 | | 0.3950 | 0.3875 | | 0.3370 | 0.3472 | | 0.3081 | 0.3049 |
| | 0.4342 | 0.4028 | | 0.3898 | 0.3716 | | 0.3481 | 0.3557 | | 0.3175 | 0.3139 |

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■ Package configuration & Internal circuit diagram



Notes:

1. All dimensions are in millimeters (inches)
2. Tolerance is $\pm 0.25(0.01)$ unless otherwise noted.
3. Specifications are subject to change without notice.

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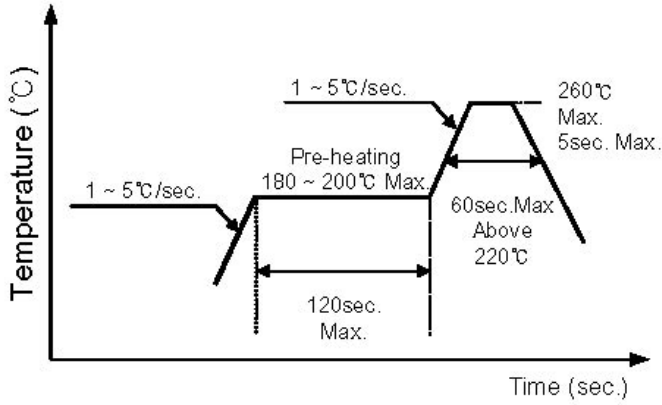
BL-LS3528C1S1UWC

■ Tape Specifications

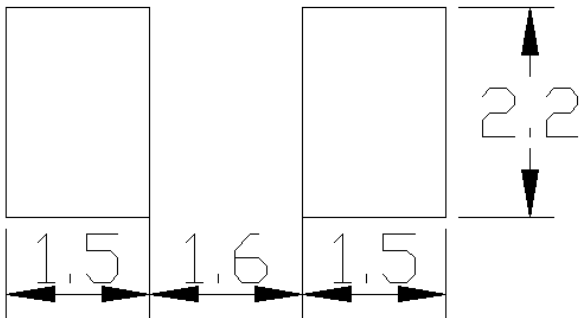
Smt Reflow Soldering Instructions

Number of reflow process shall be less than 2 times and cooling process to normal temperature is required between first and second soldering process

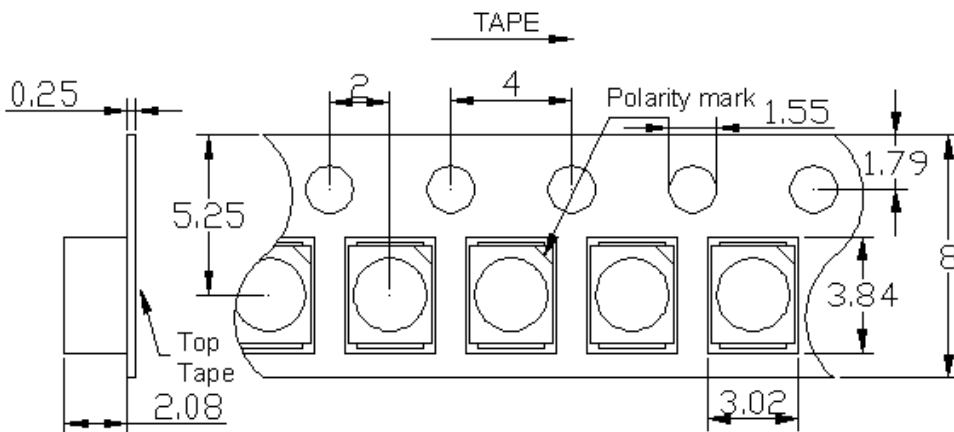
■ Lead-free Solder



Recommended Soldering Pattern (Units:mm)



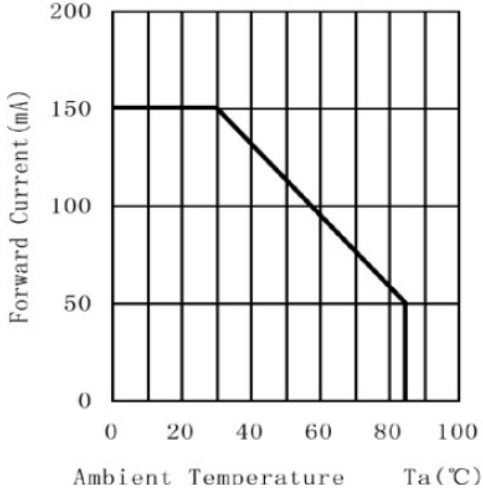
Tape Specifications (Units:mm)



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■ Typical electrical-optical characteristics curves:



Forward Voltage VS. Forward Current

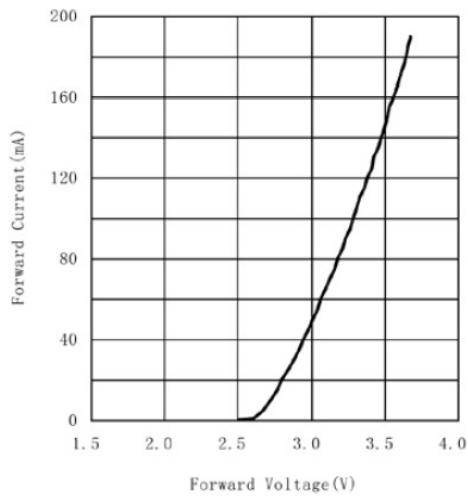
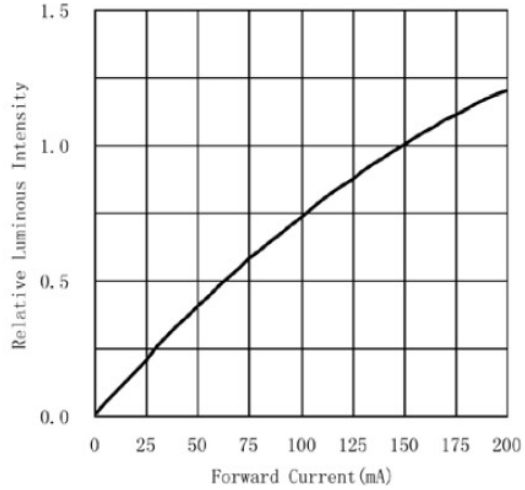
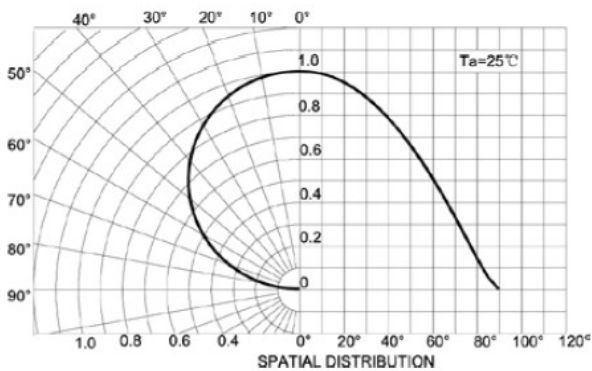
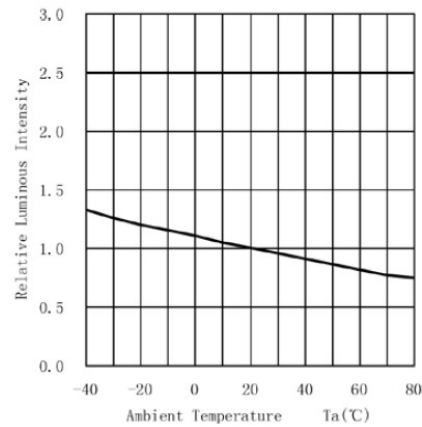


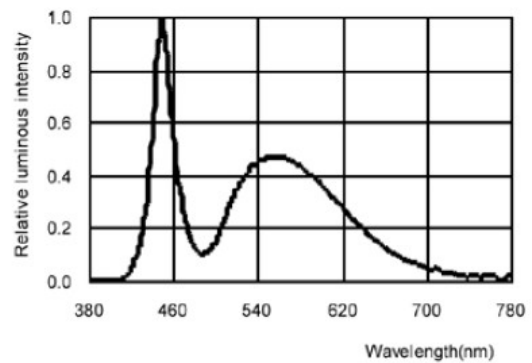
Diagram characteristics of radiation



Ambient Temperature VS. Relative Intensity



Relative spectral emission



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■ **Packing and weighting**

