



BRIGHTTEK
BRIGHTTEK (EUROPE) LIMITED

Brighten Up The World With LED!



ISO/TS 16949:2009



BS EN ISO 14001:2004



QC 080000 IECQ HSPM

PRODUCT DATASHEET



- ▶ Ceramic High Power
- ▶ 3838 2.85t Series
- ▶ Red (620~630nm)

NOR57S60



Release Date: 07 December 2022 Version: A1.1



3535 2.85t Series



FEATURES:

- **Package:** Ceramic SMT Package with Glass Lens
- **Forward Current:** 350~500mA
- **Forward Voltage (typ.):** 2.1V
- **Luminous Flux (typ.):** 40lm@350mA
- **Colour:** Red
- **Wavelength:** 620~630nm
- **Viewing angle:** 60°
- **Materials:**
 - Resin: Glass (Water Clear)
 - L/T Finish: Ag plated
- **Operating Temperature:** -40~+85°C
- **Storage Temperature:** -40~+100°C
- **Grouping parameters:**
 - Forward Voltage
 - Luminous Flux
 - Dominant Wavelength
- **Soldering methods:** Reflow Soldering
- **MSL:** Level 3 according to J-STD020
- **Packing:** 12mm tape with max.500pcs/reel, ø180mm (7")

APPLICATIONS:

- Portable Lighting
- Outdoor Lighting
- Commercial Lighting
- Indoor Lighting
- Industrial Lighting
- Plant Grow Light

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

| Parameter | Symbol | Ratings | Unit |
|---|-----------|----------|---------|
| DC Forward Current | I_F | 500 | mA |
| Pulse Forward Current, D=0.01S, Duty=1/10 | I_{PF} | 700 | mA |
| Reverse Voltage | V_R | 5 | V |
| Reverse Current @5V | I_R | 10 | μ A |
| Junction Temperature | T_j | 115 | °C |
| Operating Temperature | T_{OPR} | -40~+85 | °C |
| Storage Temperature | T_{STG} | -40~+100 | °C |
| Soldering Temperature | T_{SOL} | 260 | °C |
| Thermal Resistance - Junction to Solder Point | R_{th} | 12 | °C/W |

* in the order of Cool White / Warm White

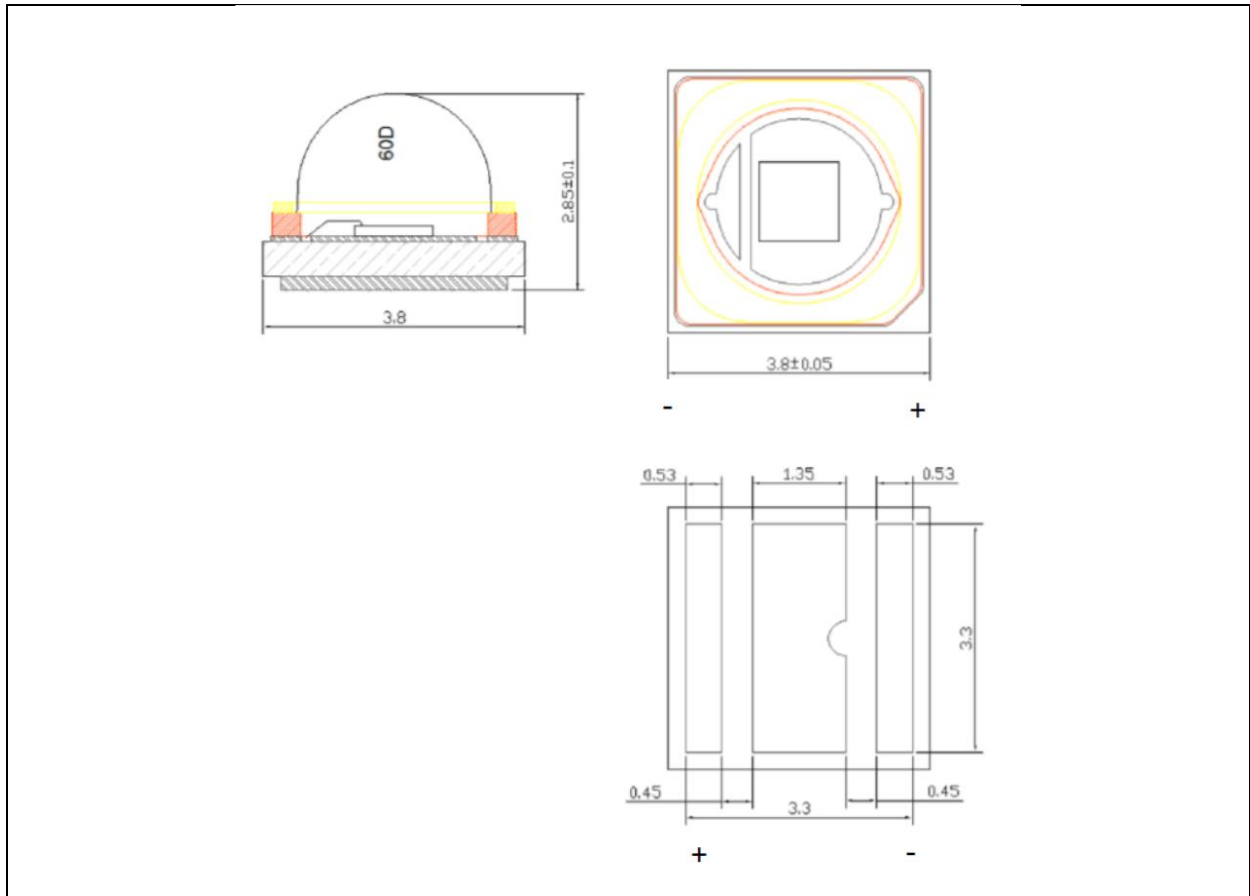
Electrical & Optical Characteristics (Ta=25°C)

| Parameter | Symbol | Values | | | Unit | Test Condition |
|---------------------|-----------------|--------|------|------|------|----------------|
| | | Min. | Typ. | Max. | | |
| Forward Voltage | V_F | 1.4 | --- | 2.8 | V | $I_F=350mA$ |
| Luminous Flux | Φ_V | 30 | --- | 50 | lm | $I_F=350mA$ |
| Dominant Wavelength | λ_D | 620 | --- | 630 | nm | $I_F=350mA$ |
| Viewing Angle | $2\theta_{1/2}$ | --- | 60 | --- | deg | $I_F=350mA$ |

1. Radiant Flux (Φ_V) $\pm 5\%$, Forward Voltage (V_F) $\pm 0.06V$, Viewing angle($2\theta_{1/2}$) $\pm 10^\circ$

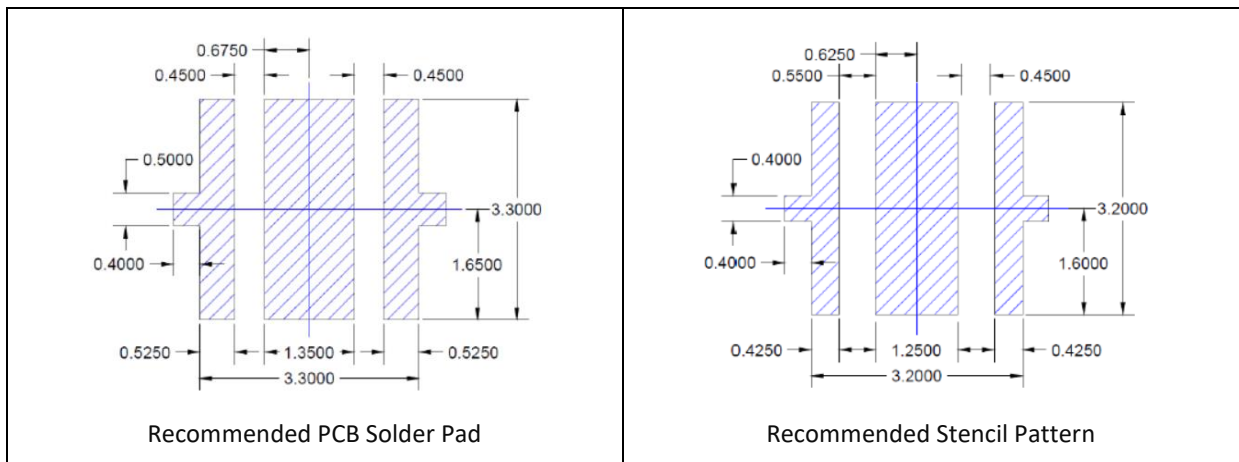
OUTLINE DIMENSION:

Package Dimension:



1. All dimensions are in millimetre (mm).
2. Tolerance ± 0.13 mm, unless otherwise noted.

Recommended Soldering Pad Dimension:



1. Dimensions are in millimetre (mm).
2. Tolerance ± 0.12 mm with angle tolerance $\pm 0.5^\circ$.

BINNING GROUPS:

 Forward Voltage Classifications ($I_F = 350\text{mA}$):

| Code | Min. | Max. | Unit |
|------|------|------|------|
| V14 | 1.4 | 1.6 | V |
| V16 | 1.6 | 1.8 | |
| V18 | 1.8 | 2.0 | |
| V20 | 2.0 | 2.2 | |
| V22 | 2.2 | 2.4 | |
| V24 | 2.4 | 2.6 | |
| V26 | 2.6 | 2.8 | |

 Luminous Flux Classifications ($I_F = 350\text{mA}$):

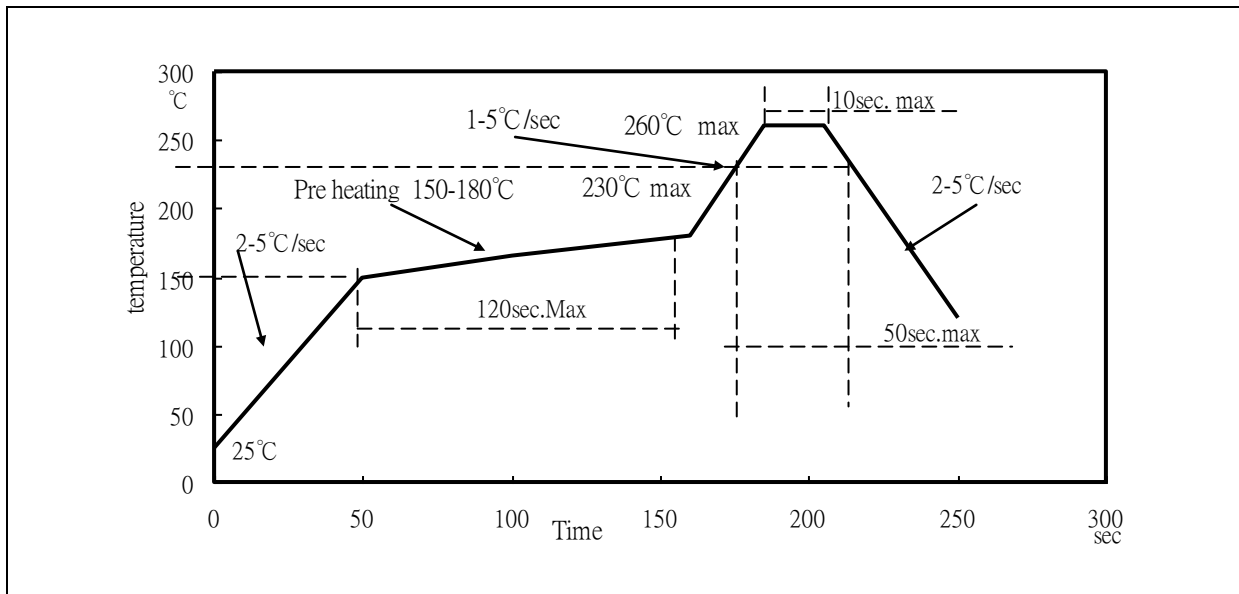
| Code | Min. | Max. | Unit |
|------|------|------|------|
| R3 | 30 | 50 | lm |

 Dominant Wavelength Classifications ($I_F = 350\text{mA}$):

| Code | Min. | Max. | Unit |
|------|------|------|------|
| R1 | 620 | 625 | nm |
| R2 | 625 | 630 | |

RECOMMENDED SOLDERING PROFILE:

Reflow Lead-free Solder:

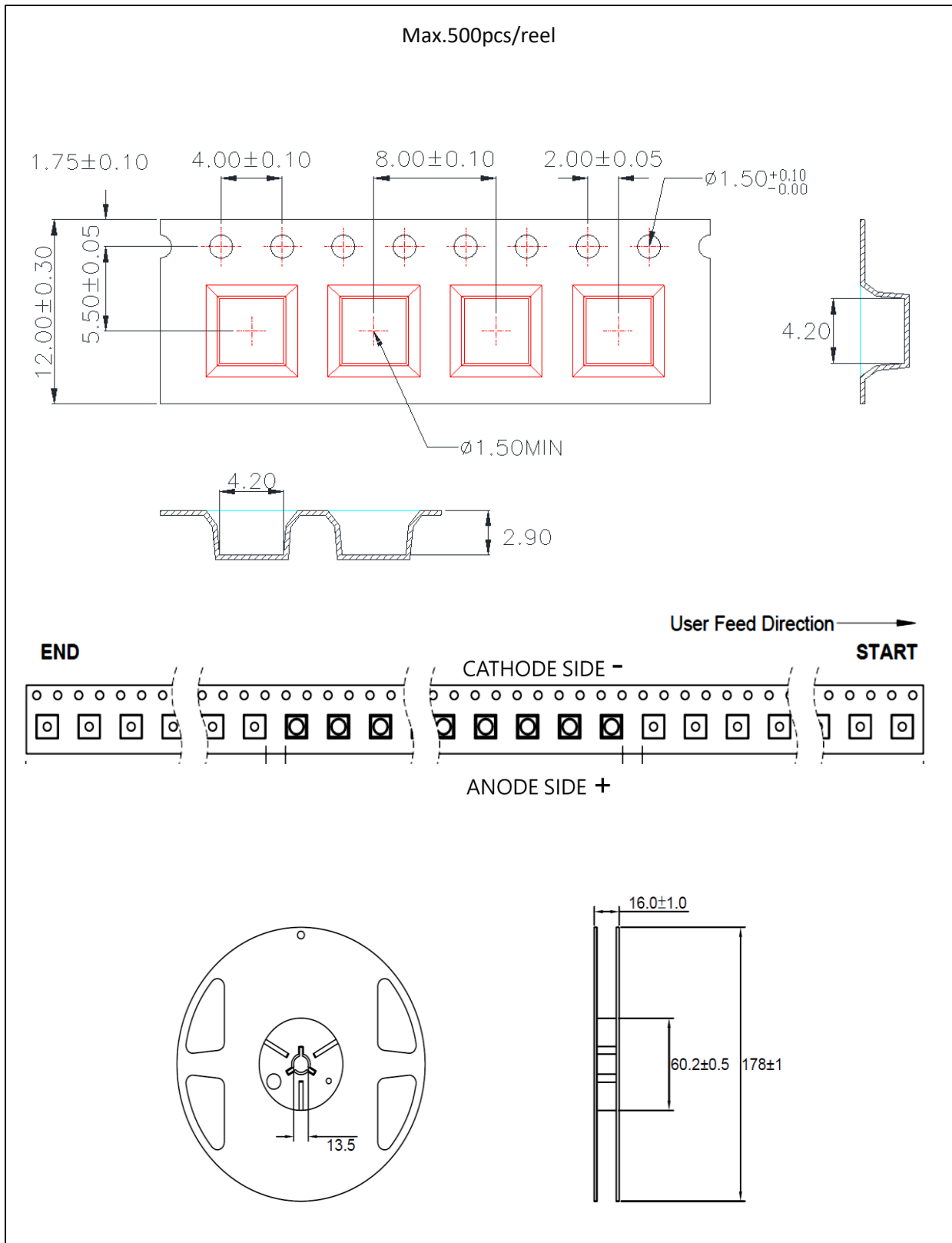


Note:

1. Maxima reflow soldering: 2 times.
2. The recommend reflow temperature is 240°C. The maxima soldering temperature should be limited to 260°C.
3. Before, during, and after soldering, should not apply stress on the components and PCB board.

PACKING SPECIFICATION:

Reel Dimension:



PRECAUTIONS OF USE:

Storage:

It is recommended to store the products in the following conditions:

- Humidity: 60% R.H. Max.
- Temperature: 5°C~30°C (41°F ~86°F).

Shelf life in sealed bag: 12 months at 5°C~30°C and <60% R.H.

Once the package is opened, the products should be used within a week. Otherwise, they should be kept in a damp-proof box with desiccating agent <10% R.H. and apply baking before use.

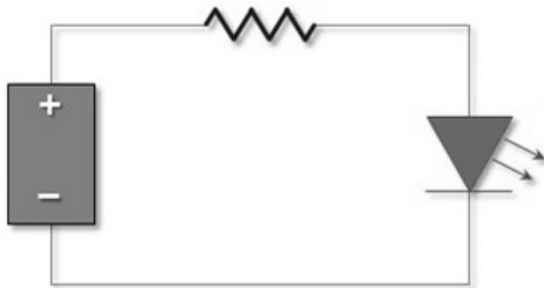
Baking:

It is recommended to bake the LED before soldering if the pack has been unsealed for longer than 24hrs. The suggested baking conditions are as followings:

- 60±3°C x 24hrs and <5%RH, taped / reel package.

It's normal to see slight color fading of carrier (light yellow) after baking in process.

Testing Circuit:



Must apply resistor(s) for protection (over current proof).

Cleaning:

Use alcohol-based cleaning solvents such as isopropyl alcohol to clean the LED carrier / package. Avoid putting any stress force directly on to the LED lens.

ESD (Electrostatic Discharge):

Static Electricity or power surge will damage the LED. Use of a conductive wrist band or anti-electrostatic glove is recommended when handling the LED all time. All devices, equipment, machinery, work tables, and storage racks must be properly grounded.

In the events of manual working in process, make sure the devices are well protected from ESD at any time.

REVISION RECORD:

| Version | Date | Summary of Revision |
|---------|------------|---------------------|
| A1.0 | 20/05/2022 | Datasheet set-up. |
| A1.1 | 07/12/2022 | Update bin table. |