

## SMD LED LAMP

BL-LS0603XX

### ■ Features:

- 1.6mmx0.8mm SMD, 0.8mm THICKNESS
- Mono-color type
- Compatible with automatic placement equipment
- WIDE VIEWING ANGLE.
- IDEAL FOR BACKLIGHT AND INDICATOR.
- PACKAGE: 4KPCS/REEL
- RoHs Compliance



### ■ Electrical-optical characteristics: (Ta=25°C) (Test Condition: IF=20mA)

| Part Number  | Chip          |          |         | Lens Type   | Forward Voltage(VF)<br>Unit:V |      | Luminous Intensity (Iv)<br>Unit:mcd |      | Viewing Angle 2θ1/2 (deg) |
|--------------|---------------|----------|---------|-------------|-------------------------------|------|-------------------------------------|------|---------------------------|
|              | Emitted Color | Material | λP (nm) |             |                               |      |                                     |      |                           |
|              |               |          |         |             | Typ                           | Max  | Min.                                | Typ. |                           |
| BL-LS0603HC  | Red           | GaP      | 700     | Water Clear | 2.2                           | 2.7  | 0.3                                 | 1.0  | 130                       |
| BL-LS0603SRC | Super Red     | AlGaAs   | 660     |             | 1.85                          | 2.30 | 5                                   | 13   |                           |
| BL-LS0603LRC | Super Red     | AlGaAs   | 660     |             | 1.85                          | 2.30 | 10                                  | 28   |                           |
| BL-LS0603URC | Ultra Red     | AlGaAs   | 660     |             | 1.95                          | 2.50 | 20                                  | 45   |                           |
| BL-LS0603EC  | Orange        | GaAsP    | 640     |             | 2.10                          | 2.70 | 1                                   | 6    |                           |
| BL-LS0603YC  | Yellow        | GaAsP    | 583     |             | 2.15                          | 2.70 | 1                                   | 6    |                           |
| BL-LS0603GC  | Green         | GaP      | 568     |             | 2.30                          | 2.70 | 6                                   | 15   |                           |

### ■ Absolute maximum ratings (Ta=25°C)

| Parameter                                          | H                                                                     | SR  | LR  | UR  | E   | Y   | G   | Unit |
|----------------------------------------------------|-----------------------------------------------------------------------|-----|-----|-----|-----|-----|-----|------|
| Forward Current $I_F$                              | 30                                                                    | 30  | 30  | 30  | 30  | 30  | 30  | mA   |
| Power Dissipation $P_d$                            | 65                                                                    | 78  | 78  | 78  | 65  | 65  | 65  | mW   |
| Reverse Voltage $V_R$                              | 5                                                                     | 5   | 5   | 5   | 5   | 5   | 5   | V    |
| Peak Forward Current $I_{PF}$<br>(Duty 1/10 @1KHZ) | 100                                                                   | 100 | 100 | 100 | 100 | 100 | 100 | mA   |
| Operation Temperature $T_{OPR}$                    | -30 to +80                                                            |     |     |     |     |     |     | °C   |
| Storage Temperature $T_{STG}$                      | -40 to +85                                                            |     |     |     |     |     |     | °C   |
| Lead Soldering Temperature<br>$T_{SOL}$            | Max.260±5°C for 3 sec Max.<br>(1.6mm from the base of the epoxy bulb) |     |     |     |     |     |     | °C   |

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| Part Number  | Chip               |          |                     | Lens Type   | Forward Voltage(VF)<br>Unit:V |      | Luminous Intensity (Iv)<br>Unit:mcd |      | Viewing Angle 2θ1/2 (deg) |
|--------------|--------------------|----------|---------------------|-------------|-------------------------------|------|-------------------------------------|------|---------------------------|
|              | Emitted Color      | Material | λ <sub>P</sub> (nm) |             |                               |      |                                     |      |                           |
|              |                    |          |                     |             | Typ                           | Max  | Min.                                | Typ. |                           |
| BL-LS0603UDR | Ultra Red          | AlGaAs   | 655                 | Water Clear | 2.10                          | 2.50 | 22                                  | 55   | 130                       |
| BL-LS0603UHR | Ultra Red          | AlGaAs   | 645                 |             | 2.10                          | 2.60 | 30                                  | 80   |                           |
| BL-LS0603UEC | Ultra Orange       | AlGaAs   | 630                 |             | 2.10                          | 2.50 | 30                                  | 80   |                           |
| BL-LS0603UHD | Ultra Orange       | AlGaAs   | 618                 |             | 2.10                          | 2.60 | 50                                  | 110  |                           |
| BL-LS0603UYO | Ultra Amber        | AlGaInP  | 610                 |             | 2.10                          | 2.60 | 30                                  | 80   |                           |
| BL-LS0603UYC | Ultra Yellow       | AlGaInP  | 593                 |             | 2.10                          | 2.60 | 25                                  | 70   |                           |
| BL-LS0603UGC | Ultra Green        | AlGaInP  | 575                 |             | 2.20                          | 2.70 | 10                                  | 40   |                           |
| BL-LS0603PGC | Ultra Pure Green   | InGaN    | 525                 |             | 3.50                          | 4.20 | 50                                  | 100  |                           |
| BL-LS0603BGC | Ultra Bluish Green | InGaN    | 505                 |             | 3.50                          | 4.20 | 50                                  | 110  |                           |
| BL-LS0603DNB | Blue               | InGaN    | 470                 |             | 3.50                          | 4.20 | 10                                  | 33   |                           |
| BL-LS0603UBC | Ultra Blue         | InGaN    | 470                 |             | 3.50                          | 4.20 | 10                                  | 30   |                           |
| BL-LS0603UWC | Ultra White        | InGaN    | /                   |             | 3.50                          | 4.20 | 40                                  | 200  |                           |

### ■ Absolute maximum ratings (Ta=25°C)

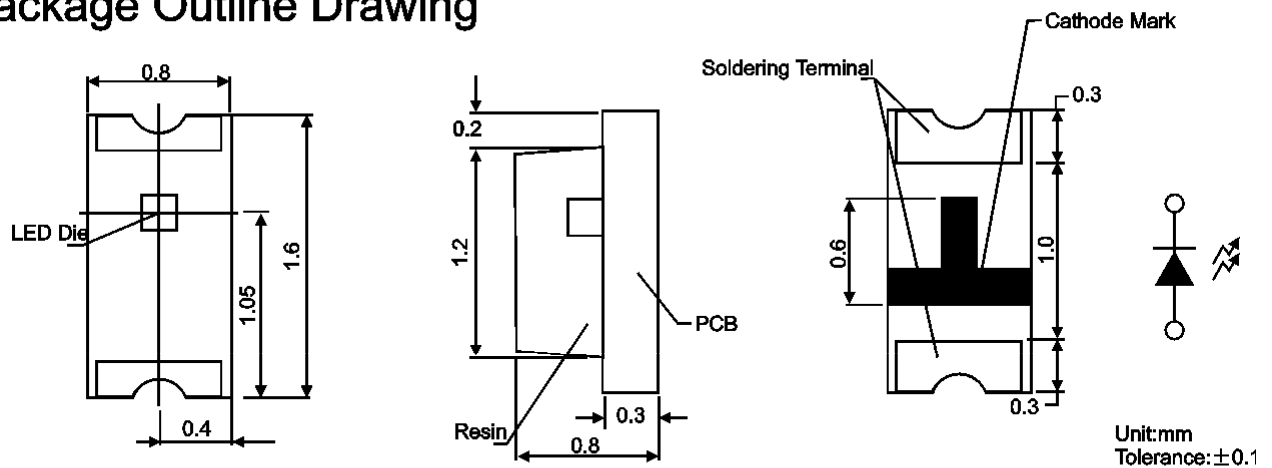
| Parameter                                          | UDR                                                                   | UHR | UE  | UHD | UYO | UY  | UG  | PG  | BG  | DNB | UB  | UW  | Unit |
|----------------------------------------------------|-----------------------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| Forward Current $I_F$                              | 30                                                                    | 30  | 30  | 30  | 30  | 30  | 30  | 30  | 30  | 30  | 30  | 30  | mA   |
| Power Dissipation $P_d$                            | 78                                                                    | 78  | 78  | 78  | 78  | 78  | 78  | 78  | 78  | 78  | 78  | 78  | mW   |
| Reverse Voltage $V_R$                              | 5                                                                     | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   | V    |
| Peak Forward Current $I_{PF}$<br>(Duty 1/10 @1KHZ) | 100                                                                   | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | mA   |
| Operation Temperature $T_{OPR}$                    | -30 to +80                                                            |     |     |     |     |     |     |     |     |     |     |     | °C   |
| Storage Temperature $T_{STG}$                      | -40 to +85                                                            |     |     |     |     |     |     |     |     |     |     |     | °C   |
| Lead Soldering Temperature<br>$T_{SOL}$            | Max.260±5°C for 3 sec Max.<br>(1.6mm from the base of the epoxy bulb) |     |     |     |     |     |     |     |     |     |     |     | °C   |

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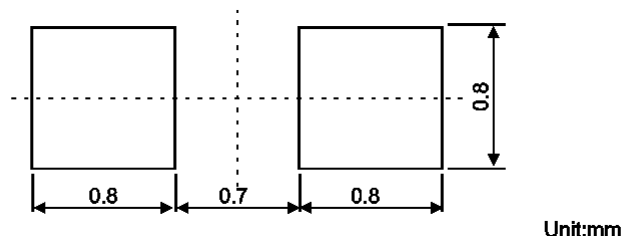
BL-LS0603XX

### ■ Package configuration & Internal circuit diagram

## BL-LS0603 Series Package Outline Drawing



## Recommended Soldering Pad Dimensions



### 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.

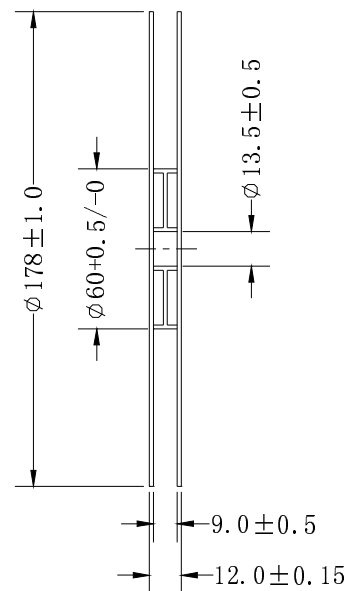
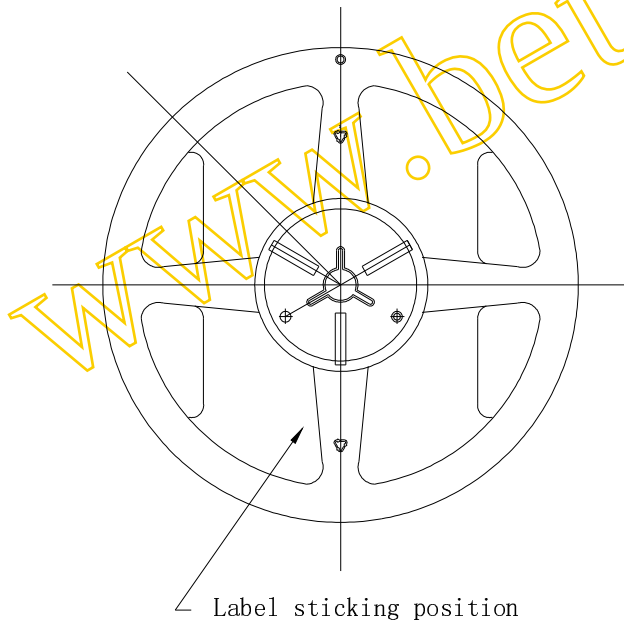
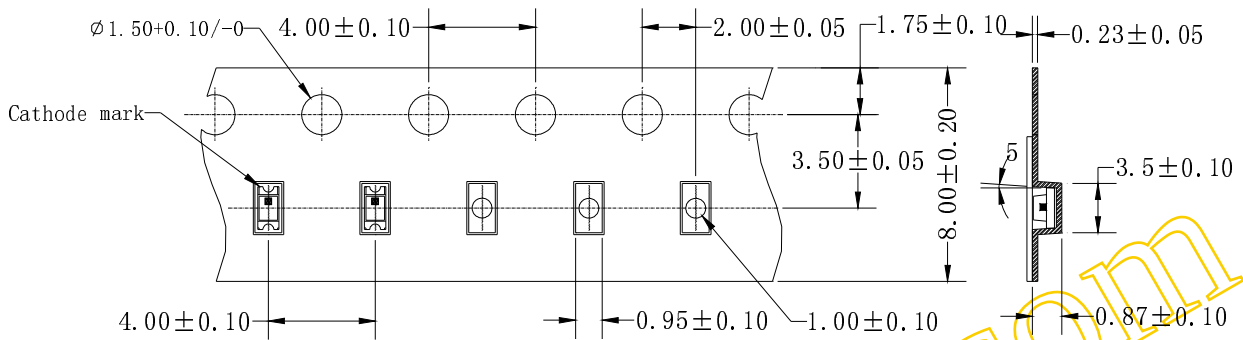
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### ■ Tape Specifications

Unit: mm

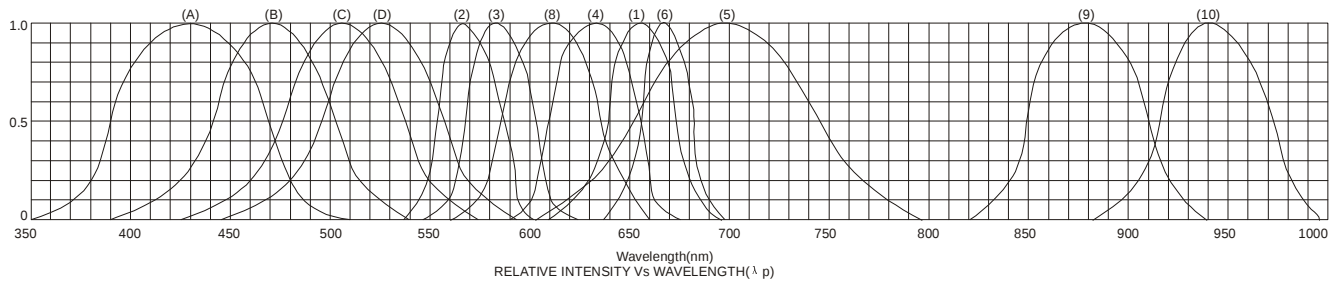
Tolerance:  $\pm 0.1$



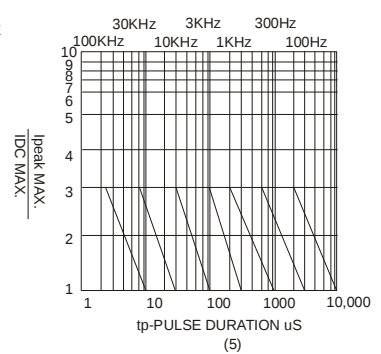
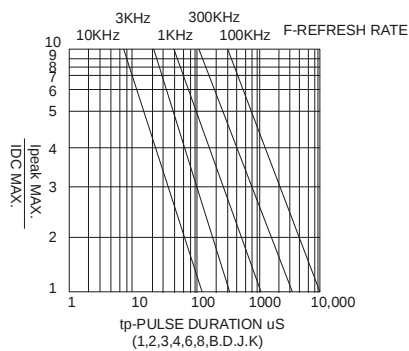
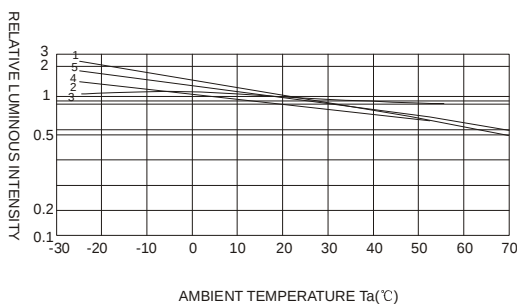
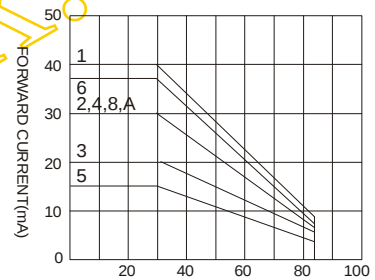
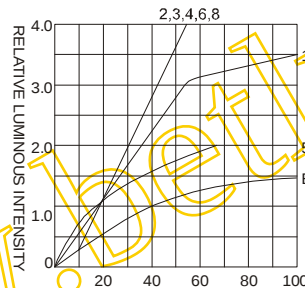
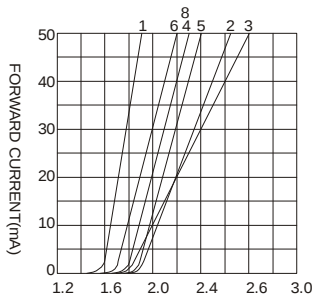
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### Typical electrical-optical characteristics curves:



- |                                           |                                      |
|-------------------------------------------|--------------------------------------|
| (1) - GaAsP/GaAs 655nm/Red                | (9) - GaAlAs 880nm                   |
| (2) - GaP 570nm/Yellow Green              | (10) - GaAs/GaAs & GaAlAs/GaAs 940nm |
| (3) - GaAsP/GaP 585nm/Yellow              | (A) - GaN/SiC 430nm/Blue             |
| (4) - GaAsP/GaP 635nm/Orange & Hi-Eff Red | (B) - InGaN/SiC 470nm/Blue           |
| (5) - GaP 700nm/Bright Red                | (C) - InGaN/SiC 505nm/Ultra Green    |
| (6) - GaAlAs/GaAs 660nm/Super Red         | (D) - InGaN/SiC 525nm/Ultra Green    |
| (8) - GaAsP/GaP 610nm/Super Red           |                                      |



NOTE: 25°C free air temperature unless otherwise specified