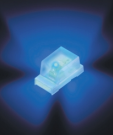
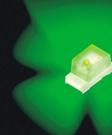


# High Brightness Type Mini-molded chip LEDs

## SML31 \* Series

| Package Size<br>(mm)               | Blue  |              |           | Green   |           |
|------------------------------------|---|--------------|-----------|---|-----------|
|                                    | GaN on SiC  | InGaN on SiC |           |   |           |
|                                    | 428nm   | 468nm        |           | 525nm   |           |
| 1608<br>(0603)<br>1.6×0.8<br>t=0.8 |  |              |           |  |           |
|                                    | SML310BAT   | SML311BBT    | SML312BCT | SML311EBT   | SML312ECT |

Note) "-" will be taken out for emitting color B/E series.

### Absolute Maximum Ratings (Ta=25°C)

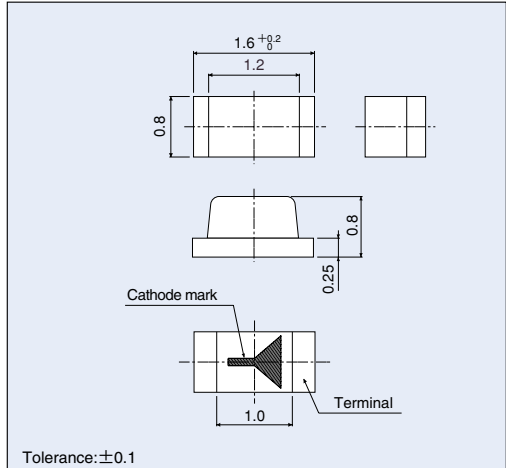
| Part No.  | Emitting color | Power dissipation<br>P <sub>D</sub><br>(mW) | Forward current<br>I <sub>F</sub><br>(mA) | Peak forward current<br>* I <sub>FP</sub><br>(mA) | Reverse voltage<br>V <sub>R</sub><br>(V) | Operating temperature<br>T <sub>opr</sub><br>(°C) | Stotage temperature<br>T <sub>stg</sub><br>(°C) |  |  |  |  |
|-----------|----------------|---|---|---|--|---|---|--|--|--|--|
| SML310BAT | Blue           | 94  | 20  | 70  | 5  | -30 to +85  | -40 to +100                                     |  |  |  |  |
| SML311BBT |                | 84  |   | 100   |  |   |   |  |  |  |  |
| SML312BCT |                |   |   |   |  |   |   |  |  |  |  |
| SML311EBT | Green          | 84  | 20  | 100   | 5  | -30 to +85  | -40 to +100                                     |  |  |  |  |
| SML312ECT |                |   |   |   |  |   |   |  |  |  |  |

\* Ifp measured under duty ≤ 1/10, 1kHz.

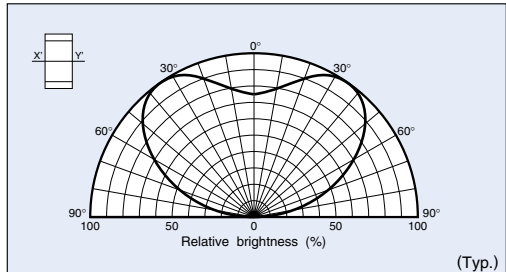
### Electrical Optical Characteristics (Ta=25°C)

| Part No.  | Resin Color          | Forward voltage<br>V <sub>F</sub> |                        | Reverse current<br>I <sub>R</sub> |                       | Light wavelength       |                 |                        | Brightness<br>I <sub>v</sub> |               |                        |     |
|-----------|----------------------|-----------------------------------|------------------------|-----------------------------------|-----------------------|------------------------|-----------------|------------------------|------------------------------|---------------|------------------------|-----|
|           |                      | Typ.<br>(V)                       | I <sub>F</sub><br>(mA) | Max.<br>(μA)                      | V <sub>R</sub><br>(V) | Peak<br>λ <sub>p</sub> | Half-wave<br>Δλ | I <sub>F</sub><br>(mA) | Min.<br>(mcd)                | Typ.<br>(mcd) | I <sub>F</sub><br>(mA) |     |
|           |                      |                                   |                        |                                   |                       | Typ.<br>(nm)           | Typ.<br>(nm)    |                        |                              |               |                        |     |
| SML310BAT | Transparent<br>Clear | 3.8                               | 20                     | 100                               | 5                     | 428                    | 65              | 20                     | 1.4                          | 3.6           | 20                     |     |
| SML311BBT |                      |                                   |                        |                                   |                       |                        |                 |                        |                              |               |                        |     |
| SML312BCT |                      | 3.5                               |                        |                                   |                       | 468                    | 26              |                        |                              | 22            |                        | 63  |
| SML311EBT |                      |                                   |                        |                                   |                       | 523                    | 36              |                        |                              | 36            |                        | 90  |
| SML312ECT |                      | 3.8                               |                        |                                   |                       | 518                    | 36              |                        |                              | 90            |                        | 200 |

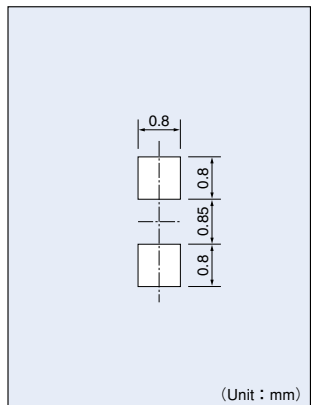
### External Dimensions (Unit : mm)



### Directivity

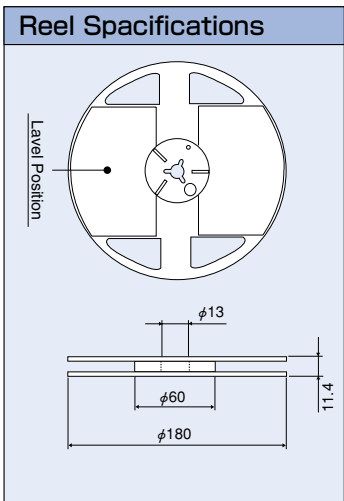
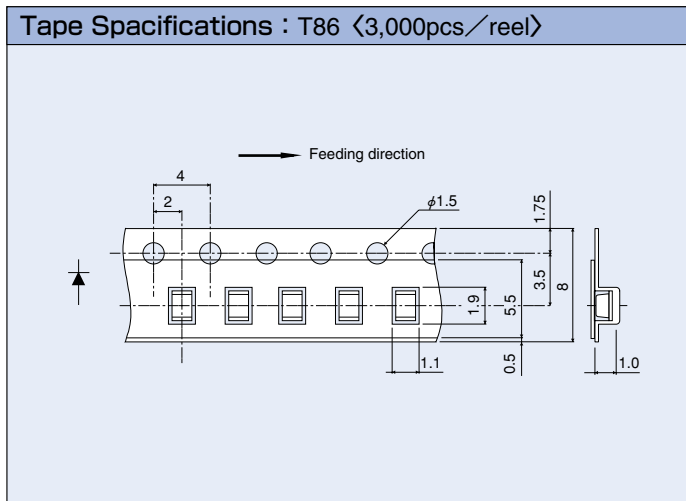


### Recommended Pad Layout



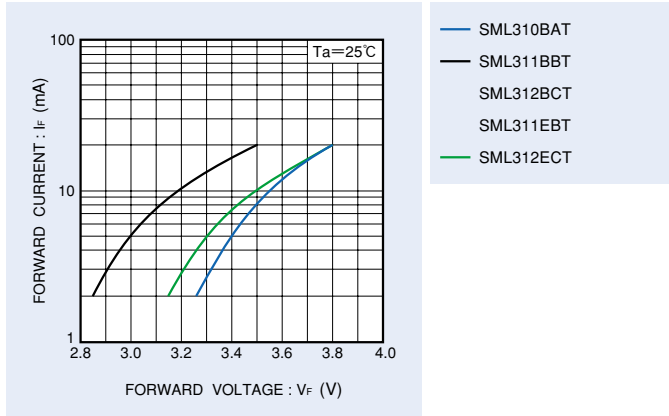
The recommended thickness of the screen mask for soldering is between 100 and 200 μm. The hole size of the screen mask should be same as the recommended land pattern or smaller.

### Packaging Specifications (Unit : mm)

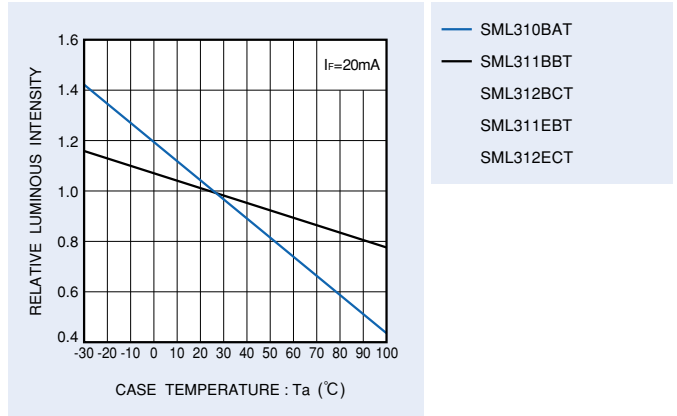


## Electrical Characteristic Curves

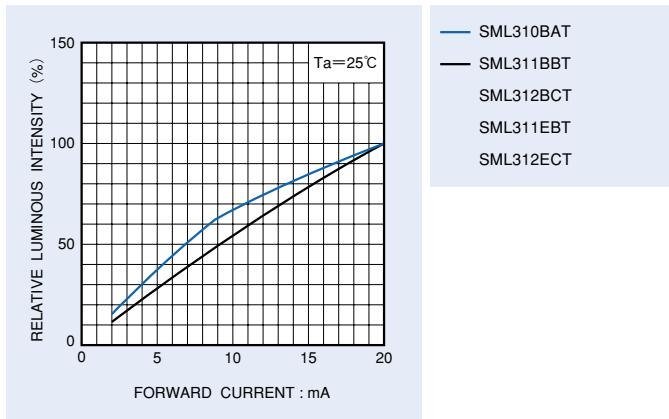
### Forward Current - Forward Voltage



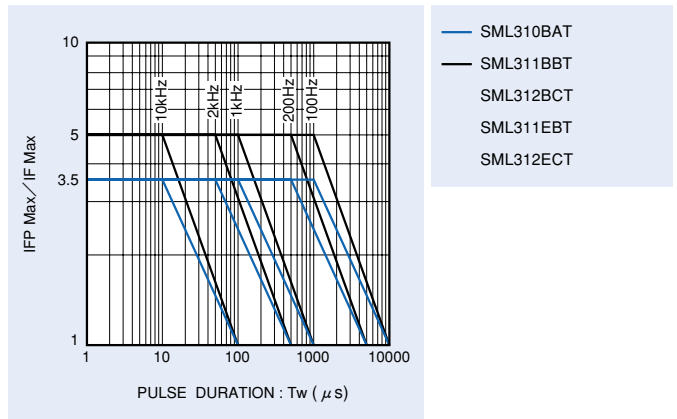
### Relative Luminous Intensity - Case Temperature



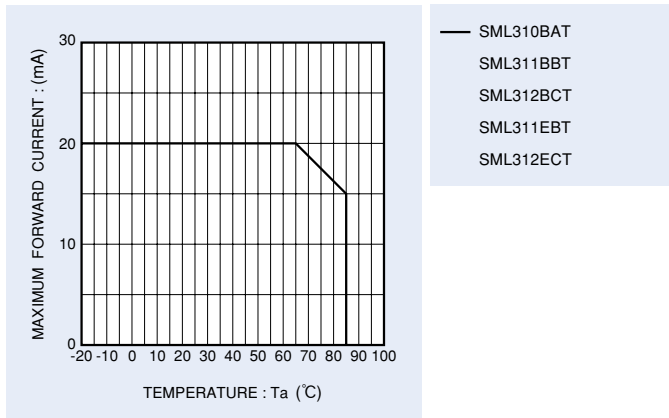
### Relative Luminous Intensity - Forward Current



### Ratio of Maximum Tolerable Peak Current - Pulse Duration



## Derating



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