

# SML-D1 Series

## EXCELED™

1608(0603)  
1.6 × 0.8mm (t=0.55mm)

### Features

- Original device technology enables high brightness and high reliability

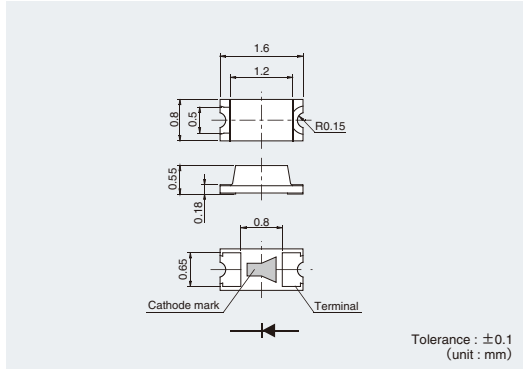


### Specifications

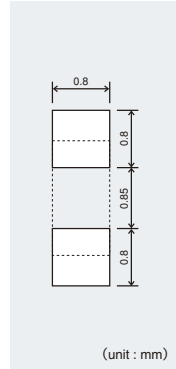
| Part No.           | Chip Structure  | Emitting Color  | Absolute Maximum Ratings (Ta=25°C) |                        |                              |                       |                                | Electrical and Optical Characteristics (Ta=25°C) |                        |    |                         |   |                             |              |     |                             |     |     |    |
|--------------------|-----------------|-----------------|------------------------------------|------------------------|------------------------------|-----------------------|--------------------------------|--|------------------------|----|-------------------------|---|-----------------------------|--------------|-----|-----------------------------|-----|-----|----|
|                    |                 |                 | Power Dissipation PD(mW)           | Forward Current IF(mA) | Peak Forward Current IFF(mA) | Reverse Voltage VR(V) | Operating Temperature Topr(°C) | Storage Temperature Tsig(°C)                     | Forward Voltage VF (V) |    | Reverse Current IR (μA) |   | Dominant Wavelength λD (nm) |              |     | Luminous Intensity Iv (mcd) |     |     |    |
| <b>SML-D12V8W</b>  | AlGaInP on GaAs | Red             | 54                                 | 20                     | 100*1                        | 5                     | -40 to +85                     | -40 to +100                                      | 2.2                    | 20 | 10                      | 4 | 625                         | 630          | 635 | 20                          | 16  | 40  | 20 |
| <b>SML-D12U8W</b>  |                 | Red             |                                    |                        |                              |                       |                                |  |                        |    |                         |   | 615                         | 620          | 625 |                             | 25  | 63  |    |
| <b>SML-D12D8W</b>  |                 | Orange          |                                    |                        |                              |                       |                                |  |                        |    |                         |   | 602                         | 605          | 608 |                             | 40  | 100 |    |
| <b>SML-D12Y8W</b>  |                 | Yellow          |                                    |                        |                              |                       |                                |  |                        |    |                         |   | 587                         | 590          | 593 |                             | 25  | 63  |    |
| <b>SML-D12M8W</b>  |                 | Yellowish Green |                                    |                        |                              |                       |                                |  |                        |    |                         |   | 569                         | 572          | 575 |                             | 10  | 25  |    |
| <b>SML-D12P8W</b>  |                 | Green           |                                    |                        |                              |                       |                                |  |                        |    |                         |   | 557                         | 560          | 563 |                             | 2.5 | 6.3 |    |
| <b>SMLD12HBC7W</b> | InGaN           | Pink            | 78                                 |                        |                              |                       |                                |  | 2.9                    | 5  |                         | 5 | (x, y)                      | (0.47, 0.25) | 5   | 9.0                         | 22  | 5   |    |

\* 1: Duty 1/10, 1kHz / \* 2: Reference

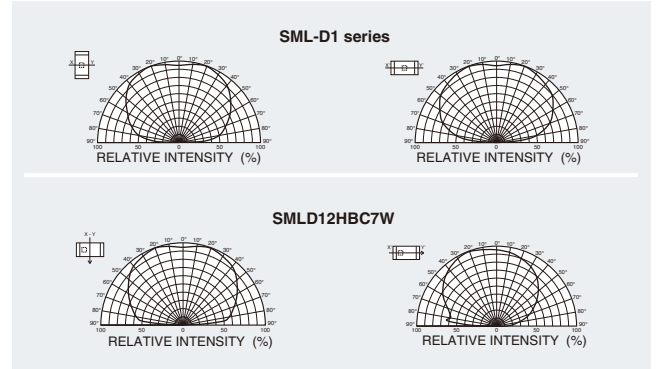
### Dimensions



### Recommended Solder Pattern



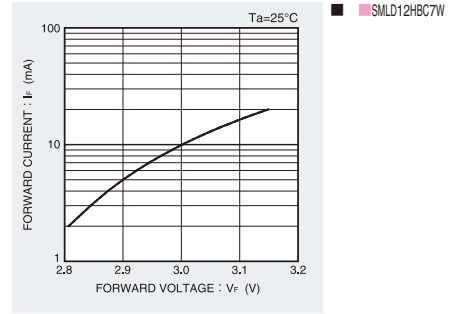
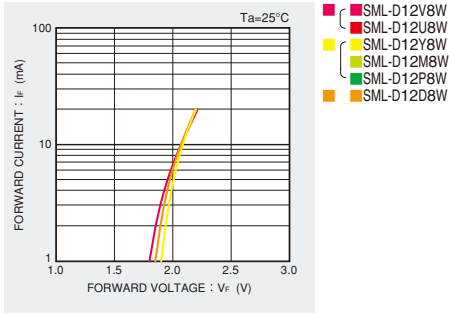
### Viewing Angle



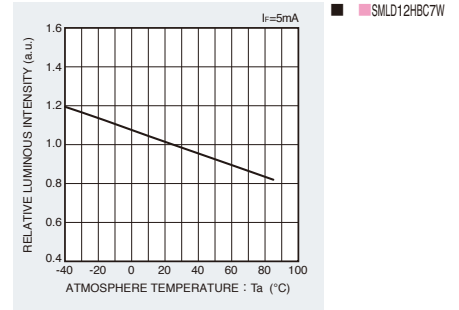
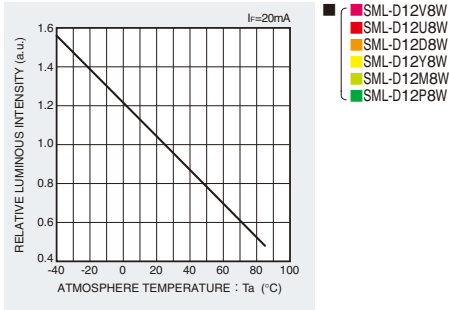
EXCELED™ is ROHME's pending trademark.

Electrical Characteristics Curves

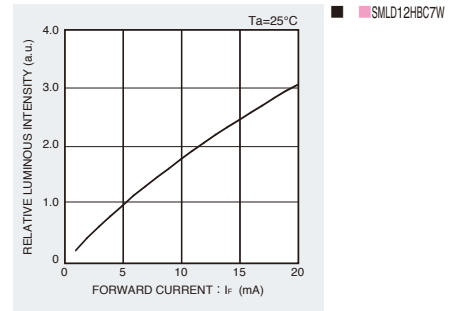
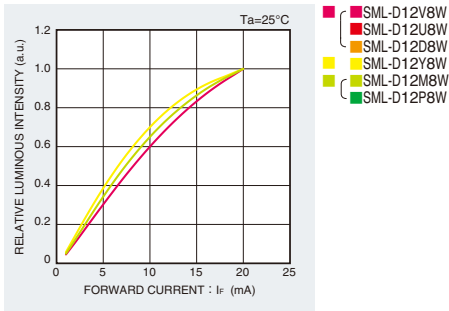
Forward Current-Forward Voltage



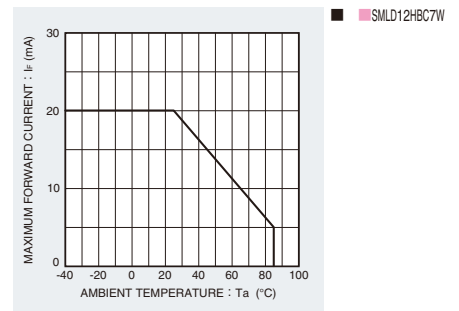
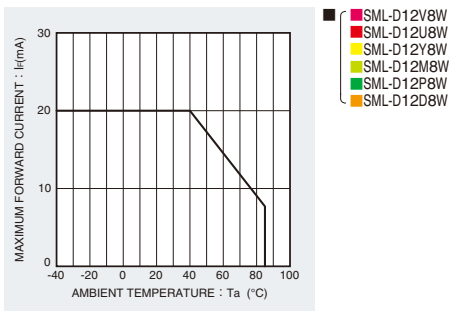
Luminous Intensity-Atmosphere Temperature



Luminous Intensity-Forward Current



Derating



# SML-D1 Series

## Rank Reference of Brightness

### Red (V, U)

(Ta=25°C, If=20mA)

| Package size(mm)<br>Height(mm) | Luminous Intensity (mcd) | H          | J          | K          | L         | M        | N        | P        | Q          | R         | S          | T          | U          |
|--------------------------------|--------------------------|------------|------------|------------|-----------|----------|----------|----------|------------|-----------|------------|------------|------------|
|                                |                          | 1.6 to 2.5 | 2.5 to 4.0 | 4.0 to 6.3 | 6.3 to 10 | 10 to 16 | 16 to 25 | 25 to 40 | 40 to 63   | 63 to 100 | 100 to 160 | 160 to 250 | 250 to 400 |
| Mini-mold Chip LEDs<br>1608    | 0.55                     |            |            |            |           |          |          |          | SML-D12V8W |           |            |            |            |
|                                |                          |            |            |            |           |          |          |          | SML-D12U8W |           |            |            |            |

### Orange (D)

(Ta=25°C, If=20mA)

| Package size(mm)<br>Height(mm) | Luminous Intensity (mcd) | H          | J          | K          | L         | M        | N        | P        | Q          | R         | S          | T          | U          |
|--------------------------------|--------------------------|------------|------------|------------|-----------|----------|----------|----------|------------|-----------|------------|------------|------------|
|                                |                          | 1.6 to 2.5 | 2.5 to 4.0 | 4.0 to 6.3 | 6.3 to 10 | 10 to 16 | 16 to 25 | 25 to 40 | 40 to 63   | 63 to 100 | 100 to 160 | 160 to 250 | 250 to 400 |
| Mini-mold Chip LEDs<br>1608    | 0.55                     |            |            |            |           |          |          |          | SML-D12D8W |           |            |            |            |

### Yellow (Y)

(Ta=25°C, If=20mA)

| Package size(mm)<br>Height(mm) | Luminous Intensity (mcd) | H          | J          | K          | L         | M        | N        | P          | Q        | R         | S          | T          | U          |
|--------------------------------|--------------------------|------------|------------|------------|-----------|----------|----------|------------|----------|-----------|------------|------------|------------|
|                                |                          | 1.6 to 2.5 | 2.5 to 4.0 | 4.0 to 6.3 | 6.3 to 10 | 10 to 16 | 16 to 25 | 25 to 40   | 40 to 63 | 63 to 100 | 100 to 160 | 160 to 250 | 250 to 400 |
| Mini-mold Chip LEDs<br>1608    | 0.55                     |            |            |            |           |          |          | SML-D12Y8W |          |           |            |            |            |

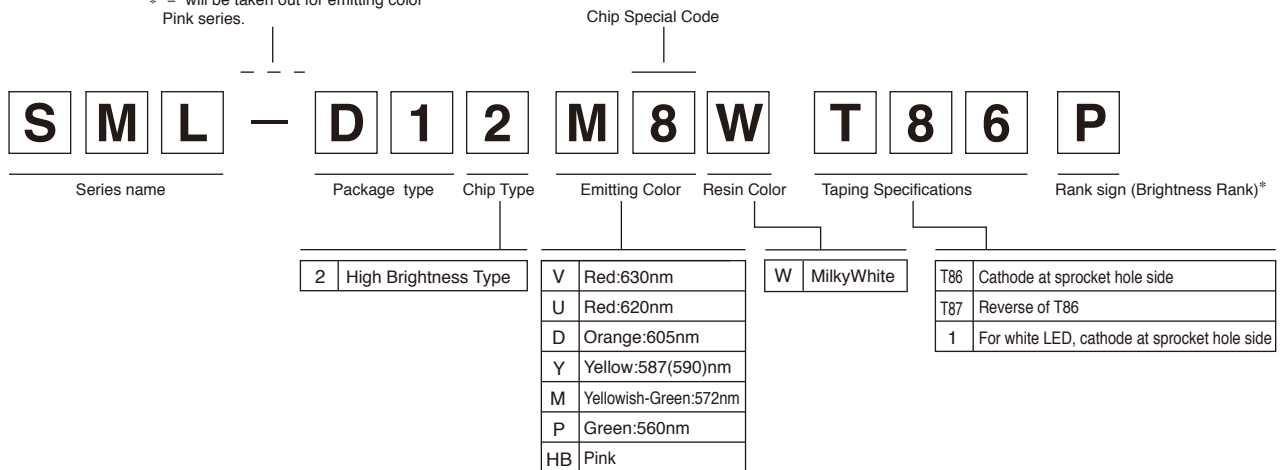
### Green (M, P)

(Ta=25°C, If=20mA)

| Package size(mm)<br>Height(mm) | Luminous Intensity (mcd) | H          | J          | K          | L         | M        | N        | P          | Q        | R         | S          | T          | U          |
|--------------------------------|--------------------------|------------|------------|------------|-----------|----------|----------|------------|----------|-----------|------------|------------|------------|
|                                |                          | 1.6 to 2.5 | 2.5 to 4.0 | 4.0 to 6.3 | 6.3 to 10 | 10 to 16 | 16 to 25 | 25 to 40   | 40 to 63 | 63 to 100 | 100 to 160 | 160 to 250 | 250 to 400 |
| Mini-mold Chip LEDs<br>1608    | 0.55                     |            | SML-D12P8W |            |           |          |          | SML-D12M8W |          |           |            |            |            |

## Part No. Construction

\* "-" will be taken out for emitting color Pink series.



- \* Concerning the Brightness rank
  - Please refer to the rank chart above for luminous intensity classification.
  - Part name is individual for each rank.
  - When shipped as sample, the part name will be a representative part name.
- General products are free of ranks. Please contact sales if rank appointment is needed.

## Packing Specification

ROHM LED products are being shipped with desiccant (silica gel) concluded in moisture-proof bags. Pasting the moisture sensitive label on the outer surface of the moisture-proof bags or enclosing the humidity indication card inside the bag is available upon request. Please contact the nearest sales office or distributor if necessary.

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