



# SML-21 Series

2012(0805)  
2.0 × 1.25mm (t=0.8mm)

### Features

- Abundant color variations with diverse luminous intensity types

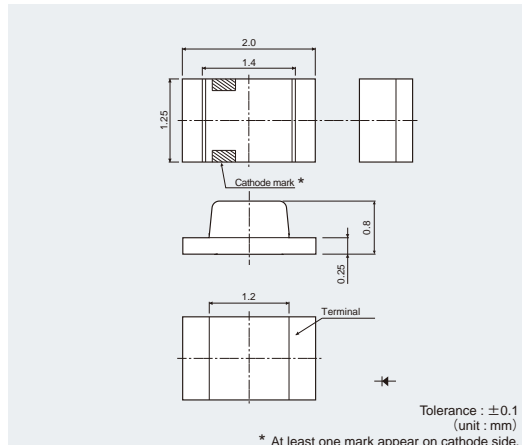


### Specifications

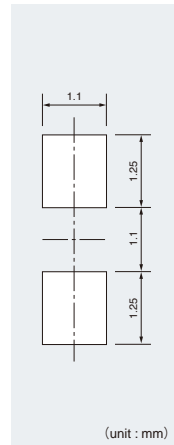
| Part No.      | Chip Structure  | Emitting Color  | Absolute Maximum Ratings (Ta=25°C) |                         |                               |                        |                                 | Electrical and Optical Characteristics (Ta=25°C) |                                |                    |                                |           |                                    |                     |            |                                   |                     |     |     |
|---------------|-----------------|-----------------|------------------------------------|-------------------------|-------------------------------|------------------------|---------------------------------|--|--------------------------------|--------------------|--------------------------------|-----------|------------------------------------|---------------------|------------|-----------------------------------|---------------------|-----|-----|
|               |                 |                 | Power Dissipation Pd (mW)          | Forward Current If (mA) | Peak Forward Current Ifp (mA) | Reverse Voltage Vr (V) | Operating Temperature Topr (°C) | Storage Temperature Tstg (°C)                    | Forward Voltage V <sub>F</sub> |                    | Reverse Current I <sub>R</sub> |           | Dominant Wavelength λ <sub>D</sub> |                     |            | Luminous Intensity I <sub>v</sub> |                     |     |     |
|               |                 |                 |                                    |                         |                               |                        | Typ. (V)                        | If (mA)  | Max. (μA)                      | V <sub>R</sub> (V) | Min.*3 (nm)                    | Typ. (nm) | Max.*3 (nm)                        | I <sub>F</sub> (mA) | Min. (mcd) | Typ. (mcd)                        | I <sub>F</sub> (mA) |     |     |
| SML-212VT     | AlGaInP on GaAs | Red             | 75                                 | 30                      | 60*1                          | 4                      | -30 to +85                      | -40 to +85                                       | 2.05                           | 20                 | 100                            | 4         | 625                                | 630                 | 635        | 20                                | 22                  | 63  |     |
| SML-210VT     | GaAsP on GaP    |                 | 70                                 | 25                      |                               |                        |                                 |  |                                |                    |                                |           |                                    |                     |            |                                   |                     |     | 1.4 |
| SML-212U2T(A) |                 |                 | 75                                 | 30                      | 100*2                         | 5                      | -40 to +100                     | -40 to +100                                      | 2                              | 10                 | 5                              | 611       | 615                                | 619                 | 71         | 140                               |                     |     |     |
| SML-211UT     | AlGaInP on GaAs | Orange          | 44                                 | 20                      | 60*1                          | 4                      | -30 to +85                      | -40 to +85                                       | 1.8                            | 2                  | 100                            | 4         | 615                                | 620                 | 625        | 2                                 | 0.9                 | 2.5 | 2   |
| SML-212DT     |                 |                 | 75                                 | 30                      |                               |                        |                                 |  |                                |                    |                                |           |                                    |                     |            |                                   |                     |     |     |
| SML-211DT     |                 |                 | 44                                 | 20                      | 2                             | 0.9                    | 2.5                             | 2  |                                |                    |                                |           |                                    |                     |            |                                   |                     |     |     |
| SML-210DT     | GaAsP on GaP    | Yellow          | 70                                 | 25                      | 60*1                          | 4                      | -30 to +85                      | -40 to +85                                       | 1.8                            | 2                  | 100                            | 4         | 602                                | 605                 | 608        | 2                                 | 2.2                 | 6.3 | 20  |
| SML-212WT(A)  |                 |                 | 75                                 | 30                      |                               |                        |                                 |  |                                |                    |                                |           |                                    |                     |            |                                   |                     |     |     |
| SML-211WT     | AlGaInP on GaAs |                 | 44                                 | 20                      | 2                             | 1.4                    | 4                               | 2  |                                |                    |                                |           |                                    |                     |            |                                   |                     |     |     |
| SML-212YT     |                 | 75              | 30                                 | 20                      | 22                            | 63                     | 20                              |  |                                |                    |                                |           |                                    |                     |            |                                   |                     |     |     |
| SML-211YT     |                 | 44              | 20                                 | 2                       | 1.4                           | 4                      | 2                               |  |                                |                    |                                |           |                                    |                     |            |                                   |                     |     |     |
| SML-210YT     | GaAsP on GaP    | Yellowish Green | 70                                 | 25                      | 60*1                          | 4                      | -30 to +85                      | -40 to +85                                       | 1.8                            | 2                  | 100                            | 4         | 584                                | 587                 | 590        | 2                                 | 2.2                 | 6.3 | 20  |
| SML-210MT     |                 |                 |                                    |                         |                               |                        |                                 |  |                                |                    |                                |           |                                    |                     |            |                                   |                     |     |     |
| SML-210PT     | GaP             |                 | Green                              | 70                      | 25                            | 60*1                   | 4                               | -30 to +85                                       | -40 to +85                     | 2.2                | 20                             |           |                                    | 567                 | 570        | 573                               | 20                  | 3.6 | 16  |
|               |                 |                 |                                    |                         |                               |                        |                                 |  |                                |                    |                                |           | 557                                | 560                 | 563        |                                   | 1.4                 | 4   |     |

\* 1:Duty1/5, 200Hz / \* 2:Duty1/10, 1kHz / \* 3:Reference

### Dimensions



### Recommended Solder Pattern Viewing Angle



## Electrical Characteristics Curves

### Forward Current-Forward Voltage



### Luminous Intensity-Atmosphere Temperature



### Luminous Intensity-Forward Current



### Derating



# SML-21 Series

## Rank Reference of Brightness

### Red (V, U)

(Ta=25°C, If=20mA)

| Package size(mm)    | Height(mm) | Luminous Intensity (mcd) | G                         | H          | J          | K          | L         | M                          | N        | P        | Q        | R         | S          | T          | U          | V          | W           | X            |  |  |
|---------------------|------------|--------------------------|---------------------------|------------|------------|------------|-----------|----------------------------|----------|----------|----------|-----------|------------|------------|------------|------------|-------------|--------------|--|--|
|                     |            |                          | 1.0 to 1.6                | 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 | 400 to 630 | 630 to 1000 | 1000 to 1600 |  |  |
| Mini-mold Chip LEDs | 20125      | 0.8                      | SML-211UT <sup>※/※1</sup> |            |            |            |           | SML-212VT <sup>※</sup>     |          |          |          |           |            |            |            |            |             |              |  |  |
|                     |            |                          | SML-210VT <sup>※</sup>    |            |            |            |           | SML-212U2T(A) <sup>*</sup> |          |          |          |           |            |            |            |            |             |              |  |  |

### Orange (D)

(Ta=25°C, If=20mA)

| Package size(mm)    | Height(mm) | Luminous Intensity (mcd) | G                         | H          | J          | K          | L         | M                      | N        | P        | Q        | R         | S          | T          | U          | V          | W           | X            |  |  |
|---------------------|------------|--------------------------|---------------------------|------------|------------|------------|-----------|------------------------|----------|----------|----------|-----------|------------|------------|------------|------------|-------------|--------------|--|--|
|                     |            |                          | 1.0 to 1.6                | 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 | 400 to 630 | 630 to 1000 | 1000 to 1600 |  |  |
| Mini-mold Chip LEDs | 20125      | 0.8                      | SML-211DT <sup>※/※1</sup> |            |            |            |           | SML-210DT <sup>※</sup> |          |          |          |           | SML-212DT  |            |            |            |             |              |  |  |
|                     |            |                          |                           |            |            |            |           |                        |          |          |          |           |            |            |            |            |             |              |  |  |

### Yellow (Y, W)

(Ta=25°C, If=20mA)

| Package size(mm)    | Height(mm) | Luminous Intensity (mcd) | G                         | H          | J          | K          | L         | M                         | N        | P        | Q        | R         | S          | T          | U          | V          | W           | X            |  |  |
|---------------------|------------|--------------------------|---------------------------|------------|------------|------------|-----------|---------------------------|----------|----------|----------|-----------|------------|------------|------------|------------|-------------|--------------|--|--|
|                     |            |                          | 1.0 to 1.6                | 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 | 400 to 630 | 630 to 1000 | 1000 to 1600 |  |  |
| Mini-mold Chip LEDs | 20125      | 0.8                      | SML-211YT <sup>※/※1</sup> |            |            |            |           | SML-212YT <sup>※</sup>    |          |          |          |           |            |            |            |            |             |              |  |  |
|                     |            |                          | SML-211WT <sup>※/※1</sup> |            |            |            |           | SML-212WT(A) <sup>*</sup> |          |          |          |           |            |            |            |            |             |              |  |  |
|                     |            |                          | SML-210YT <sup>※</sup>    |            |            |            |           |                           |          |          |          |           |            |            |            |            |             |              |  |  |

### Green (M, P)

(Ta=25°C, If=20mA)

| Package size(mm)    | Height(mm) | Luminous Intensity (mcd) | F                      | G          | H          | J          | K          | L                      | M        | N        | P        | Q        | R         | S          | T          | U          | V          | W           | X            |  |
|---------------------|------------|--------------------------|------------------------|------------|------------|------------|------------|------------------------|----------|----------|----------|----------|-----------|------------|------------|------------|------------|-------------|--------------|--|
|                     |            |                          | 0.63 to 1.0            | 1.0 to 1.6 | 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 | 400 to 630 | 630 to 1000 | 1000 to 1800 |  |
| Mini-mold Chip LEDs | 20125      | 0.8                      | SML-210PT <sup>※</sup> |            |            |            |            | SML-210MT <sup>※</sup> |          |          |          |          |           |            |            |            |            |             |              |  |
|                     |            |                          |                        |            |            |            |            |                        |          |          |          |          |           |            |            |            |            |             |              |  |

\* Please note that the brightness of some products may fall between ranks (half rank).  
 ※Brightness on specification sheet include tolerance of within ± 10%. ※1 If=2mA

## Part No. Construction



- \* 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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