

SML-51 Series

1608(0603)
1.6 × 0.8mm (t=0.55mm)

Features

- Original device technology enables high brightness and high reliability
- High reliability due to the wide operation temperature (-40°C to +100°C) (SML-512(A) Series)

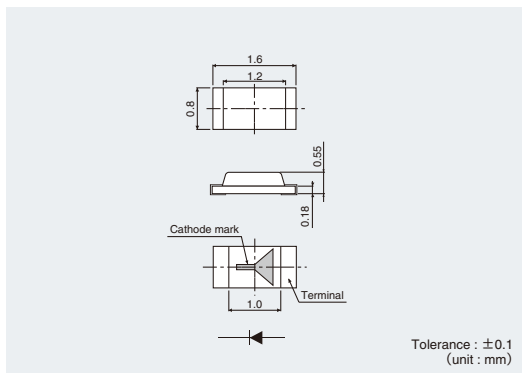
| Color Type | V | U | C | D |
|------------|---|---|---|---|
| | V | U | C | D |
| | W | M | P | B |

Specifications

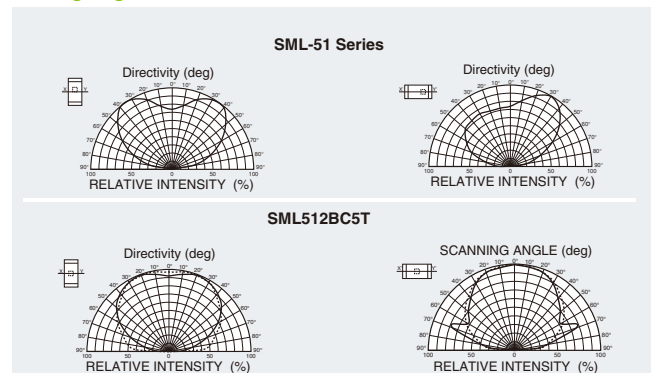
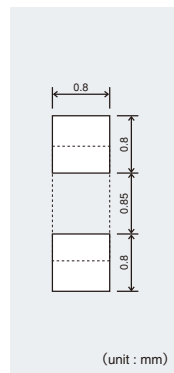
| Part No. | Chip Structure | Emitting Color | Absolute Maximum Ratings (Ta=25°C) | | | | | | Electrical and Optical Characteristics (Ta=25°C) | | | | | | | | | |
|---------------------|-----------------|-----------------|------------------------------------|------------------------|---|-----------------------|--------------------------------|------------------------------|--|--------|------------------------------|-------|-----------------------------|------|-----|-----------------------------|-----|----|
| | | | Power Dissipation PD(mW) | Forward Current IF(mA) | Peak Forward Current I _{FP} (mA) | Reverse Voltage VR(V) | Operating Temperature Topr(°C) | Storage Temperature Tstg(°C) | Forward Voltage VF Typ. (V) | IF(mA) | Reverse Current IR Max. (μA) | VR(V) | Dominant Wavelength λD (nm) | | | Luminous Intensity Iv (mcd) | | |
| SML-512VW(A) | AlGaInP on GaAs | Red | 75 | 30 | 100*2 | 5 | -40 to +100 | -40 to +100 | 2.0 | 20 | 10 | 5 | 626 | 630 | 636 | 35.5 | 56 | |
| SML-512VW | | | | | | | | | | | | | 619 | 624 | 629 | 22 | 63 | |
| SML-512UW | | | | | | | | | | | | | 615 | 620 | 625 | 14 | 40 | |
| SML-511UW | | | | | | | | | | | | | 600 | 603 | 606 | 71 | 112 | |
| SML-512CW(A) | AlGaInP on GaAs | Orange | 75 | 30 | 100*2 | 5 | -40 to +100 | -40 to +100 | 2.0 | 20 | 10 | 5 | 600 | 603 | 606 | 36 | 100 | 20 |
| SML-512DW | | | | | | | | | | | | | 603 | 606 | 609 | 36 | 100 | 20 |
| SML-511DW | | | | | | | | | | | | | 602 | 605 | 608 | 14 | 40 | |
| SML-512WW | AlGaInP on GaAs | Yellow | 75 | 30 | 100*2 | 5 | -40 to +100 | -40 to +100 | 2.0 | 20 | 10 | 5 | 587 | 590 | 593 | 36 | 63 | |
| SML-511WW | | | | | | | | | | | | | 567 | 570 | 575 | 14 | 40 | |
| SML-512MW | | | | | | | | | | | | | 557 | 560 | 563 | 14 | 14 | |
| SML-512PW(A) | AlGaInP on GaAs | Yellowish Green | 65 | 25 | 100*2 | 5 | -40 to +100 | -40 to +100 | 2.1 | 100 | 5 | 5 | 464 | 470 | 476 | 5.6 | 16 | 5 |
| SML512BC5T | | | | | | | | | | | | | InGaN | Blue | 66 | 20 | | |

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

Dimensions

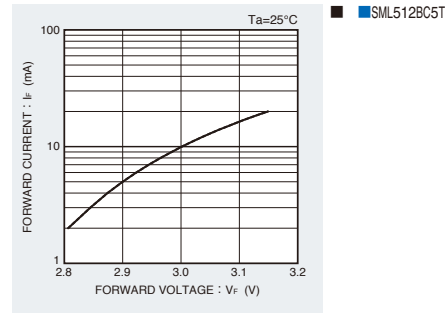
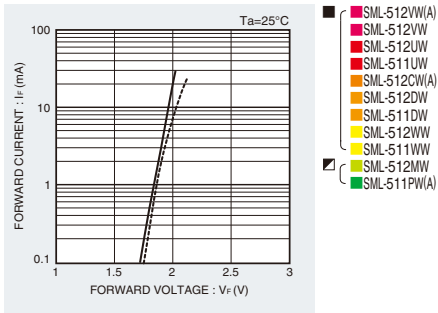


Recommended Solder Pattern Viewing Angle

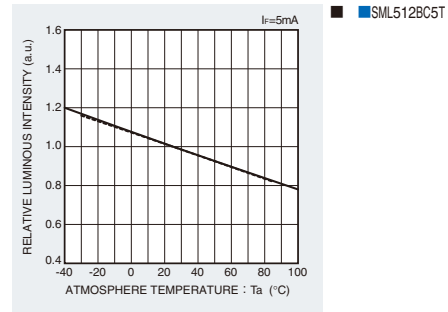
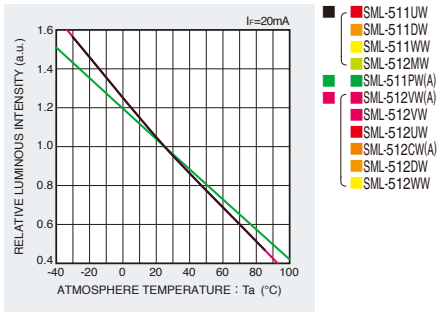


Electrical Characteristics Curves

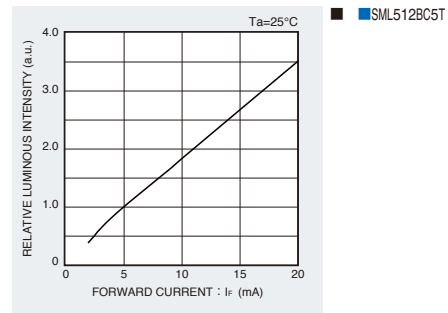
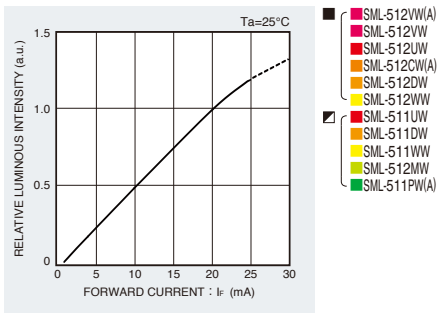
Forward Current-Forward Voltage



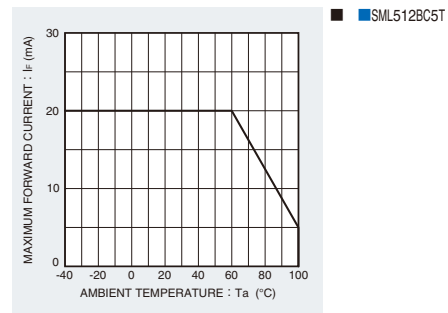
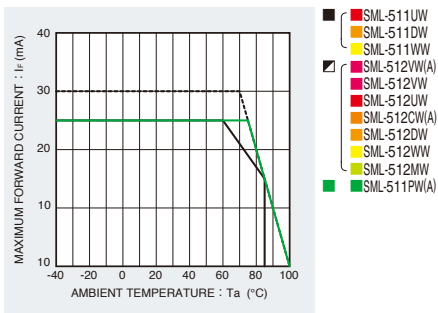
Luminous Intensity-Atmosphere Temperature



Luminous Intensity-Forward Current



Derating



SML-51 Series

Rank Reference of Brightness

Red (V, U)

(Ta=25°C, If=20mA)

| Package size(mm) | Height(mm) | Luminous Intensity (mcd) | J | K | L | M | N | P | Q | R | S | T |
|---------------------|------------|--------------------------|------------|------------|-----------|----------|----------|----------|----------|-----------|------------|------------|
| | | | 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 |
| Mini-mold Chip LEDs | 1608 | 0.55 | SML-512VW* | | | | | | | | | |
| | | | SML-511UW* | | | | | | | | | |
| | | | SML-512UW* | | | | | | | | | |

Orange (D)

(Ta=25°C, If=20mA)

| Package size(mm) | Height(mm) | Luminous Intensity (mcd) | J | K | L | M | N | P | Q | R | S | T |
|---------------------|------------|--------------------------|------------|------------|-----------|----------|----------|----------|----------|-----------|------------|------------|
| | | | 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 |
| Mini-mold Chip LEDs | 1608 | 0.55 | SML-511DW* | | | | | | | | | |
| | | | SML-512DW* | | | | | | | | | |

Yellow (W)

(Ta=25°C, If=20mA)

| Package size(mm) | Height(mm) | Luminous Intensity (mcd) | J | K | L | M | N | P | Q | R | S | T |
|---------------------|------------|--------------------------|------------|------------|-----------|----------|----------|----------|----------|-----------|------------|------------|
| | | | 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 |
| Mini-mold Chip LEDs | 1608 | 0.55 | SML-511WW* | | | | | | | | | |
| | | | SML-512WW* | | | | | | | | | |

Green (M)

(Ta=25°C, If=20mA)

| Package size(mm) | Height(mm) | Luminous Intensity (mcd) | J | K | L | M | N | P | Q | R | S | T |
|---------------------|------------|--------------------------|------------|------------|-----------|----------|----------|----------|----------|-----------|------------|------------|
| | | | 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 |
| Mini-mold Chip LEDs | 1608 | 0.55 | SML-512MW* | | | | | | | | | |

Blue (B)

(Ta=25°C, If=5mA)

| Package size(mm) | Height(mm) | Luminous Intensity (mcd) | J | K | L | M | N | P | Q | R | S | T |
|---------------------|------------|--------------------------|-------------|------------|------------|---------|----------|----------|----------|----------|-----------|------------|
| | | | 2.2 to 3.6 | 3.6 to 5.6 | 5.6 to 9.0 | 9 to 14 | 14 to 22 | 22 to 36 | 36 to 56 | 56 to 90 | 90 to 140 | 140 to 220 |
| Mini-mold Chip LEDs | 1608 | 0.55 | SML-512BC5T | | | | | | | | | |

*Brightness on specification sheet include tolerance of within ±10%.

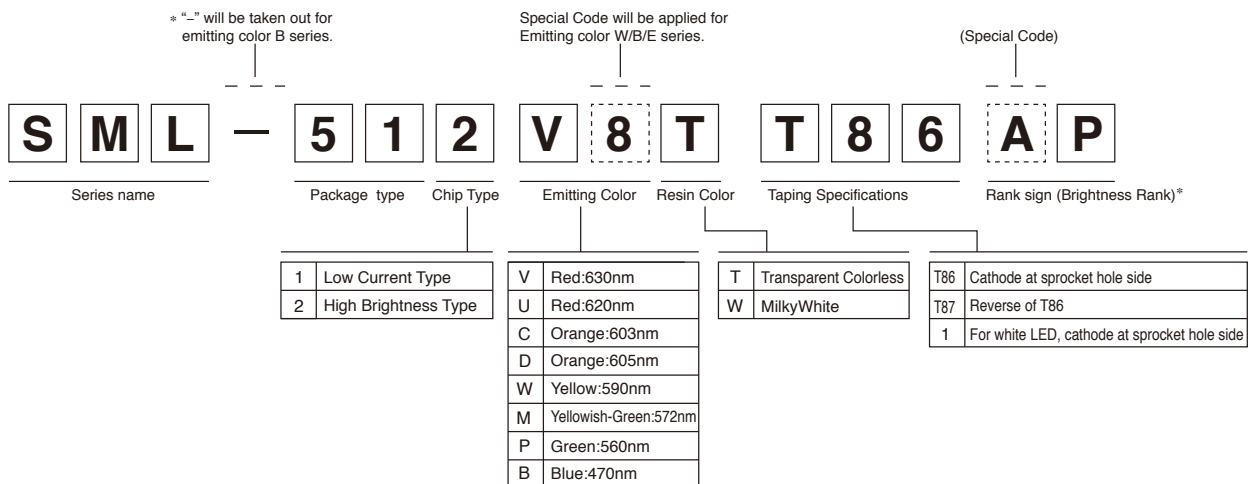
SML-512(A)

(Ta=25°C, If=20mA)

| Package size(mm) | Height(mm) | Luminous Intensity (mcd) | AE | AF | AG | AH | AJ | AK | AL | AM | AN | AP | AQ | AR | AS | AT | AU | AV | |
|---------------------|------------|--------------------------|--------------|------------|-------------|------------|----------|------------|------------|------------|------------|----------|--------------|----------|-----------|------------|------------|------------|--|
| | | | 5.6 to 7.1 | 7.1 to 9.0 | 9.0 to 11.2 | 11.2 to 14 | 14 to 18 | 18 to 22.4 | 22.4 to 28 | 28 to 35.5 | 35.5 to 45 | 45 to 56 | 56 to 71 | 71 to 90 | 90 to 112 | 112 to 140 | 140 to 180 | 180 to 224 | |
| Mini-mold Chip LEDs | 1608 | 0.55 | SML-512PW(A) | | | | | | | | | | SML-512VW(A) | | | | | | |
| | | | SML-512VW(A) | | | | | | | | | | SML-512CW(A) | | | | | | |

* Please note that the brightness of some products may fall between ranks (half rank).

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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