

SML-31 series

1608(0603)
1.6×0.8mm(t=0.8mm)

Features

- 1608 standard size(1.6×0.8mm, t=0.8mm)
- Abundant color variations with diverse luminous intensity types

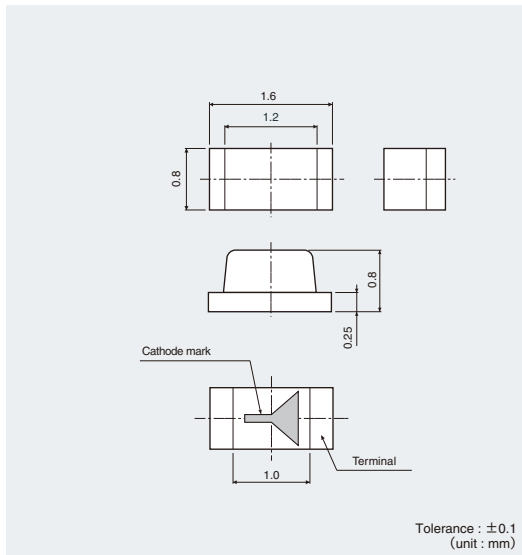


Product Specifications

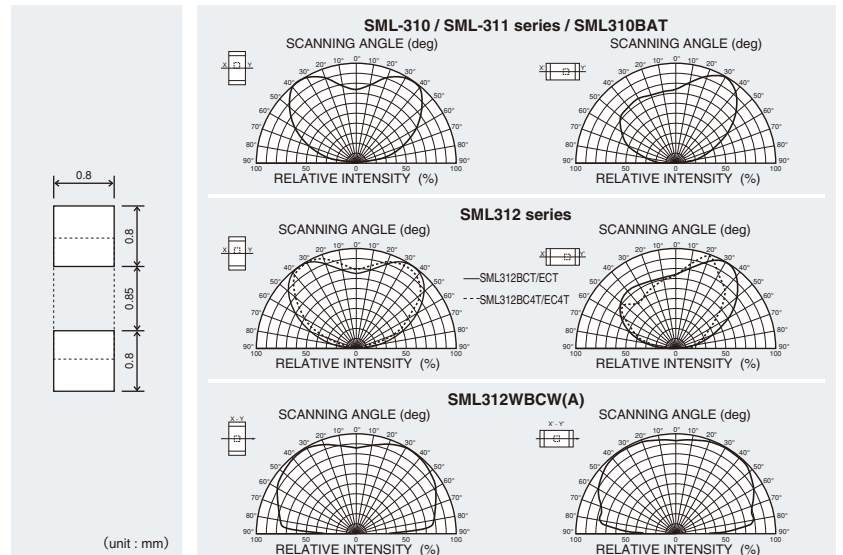
| Part No. | LED chip | Emitting color | Absolute maximum ratings (Ta=25°C) | | | | | | Electrical and optical characteristics (Ta=25°C) | | | | | | | | | | |
|-----------------|-----------------|-----------------|------------------------------------|------------------------|------------------------------|-----------------------|--------------------------------|------------------------------|--|-----|-------------------------|---|-----------------------------|--------------|-----|-----------------------------|-----|-----|------|
| | | | Power dissipation PD(mW) | Forward current IF(mA) | Peak forward current IFP(mA) | Reverse voltage VR(V) | Operating temperature Topr(°C) | Storage temperature Tsig(°C) | Forward voltage VF (V) | | Reverse current IR (μA) | | Dominant wavelength λD (nm) | | | Luminous intensity Iv (mcd) | | | |
| ■ SML-310VT | GaAsP on GaP | Red | 55 | | | | | | 2 | 20 | | | 625 | 630 | 635 | 20 | 1.4 | 4 | 20 |
| ■ SML-311UT | AlGaInP on GaAs | | | 44 | | | | | | 1.8 | 2 | | | 615 | 620 | 625 | 2 | 0.9 | 2.5 |
| ■ SML-311DT | | | Orange | | | | | | | | | | | 602 | 605 | 608 | | 1.6 | 3.15 |
| ■ SML-310DT | GaAsP on GaP | | | 55 | | | | | | 2 | 20 | | | | | | 20 | 2.2 | 6.3 |
| ■ SML-311WT | AlGaInP on GaAs | Yellow | 44 | | 60±1 | 4 | | -40 to +85 | 1.8 | 2 | | 4 | 587 | 590 | 593 | 2 | 0.9 | 2.5 | 2 |
| ■ SML-311YT | | | | | | | | | | | | | | 584 | 587 | 590 | | 2.2 | 6.3 |
| ■ SML-310YT | GaAsP on GaP | Yellowish Green | 55 | 20 | | | | -30 to +85 | 2.1 | | | | | | | | | | |
| ■ SML-310MT | GaP | | | | | | | | | | | | | 2.2 | | 100 | | | 567 |
| ■ SML-310PT | | | Green | | | | | | | | | | 557 | 560 | 563 | | 1.4 | 4 | |
| ■ SML312ECT | | Bluish Green | 84 | | 100±2 | | | | 3.3 | 20 | | | 520 | 527 | 535 | 20 | 90 | 200 | 20 |
| ■ SML312EC4T | | | | | | | | | | | | | | | | | | | |
| ■ SML312BCT | InGaIn on SiC | Blue | | | | 5 | | | 3.3 | | 5 | | 464 | 470 | 476 | | 22 | 63 | |
| ■ SML312BC4T | | | | | | | | | | | | | | | | 3.2 | | 460 | 466 |
| ■ SML310BAT | | | 94 | | 70±2 | | | | 3.8 | | | | | | | | | | |
| □ SML312WBCW(A) | | White | 108 | 30 | 100±2 | | | -40 to +100 | 3.0 | 5 | | | (x, y) | (0.30, 0.29) | 5 | 45 | 71 | 5 | |

※ 1:Duty1/5, 200Hz / ※ 2:Duty1/10, 1kHz

Dimensions

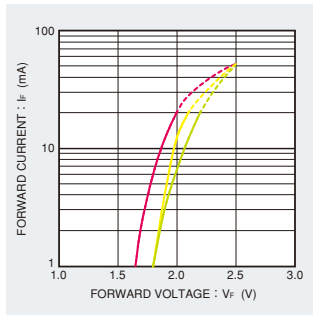


Recommended Solder Pattern Viewing Angle

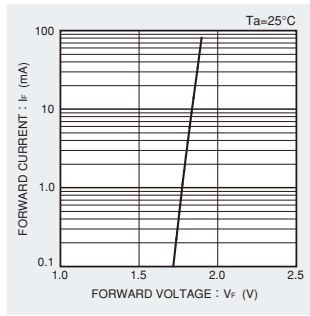


Electrical Characteristics Curves

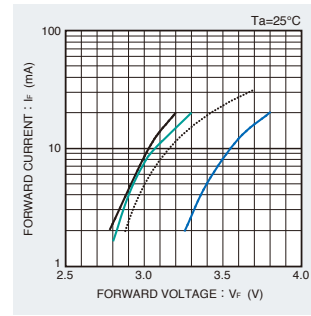
Forward Current-Forward Voltage



- SML-310VT
- SML-310DT
- SML-310YT
- SML-310MT
- SML-310PT
- SML-310YT

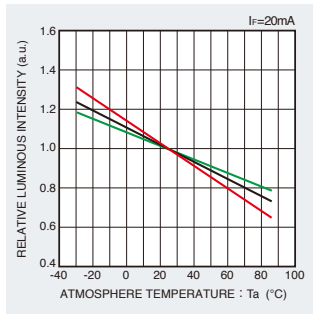


- SML-311UT
- SML-311DT
- SML-311WT
- SML-311YT

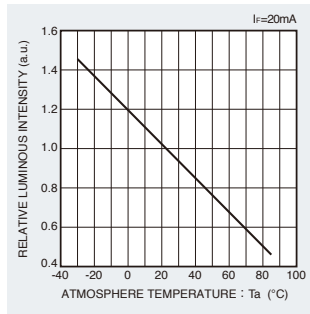


- SML312BC4T
- SML312EC4T
- SML312BCT
- SML312ECT
- SML312BAT
- SML312WBCW(A)

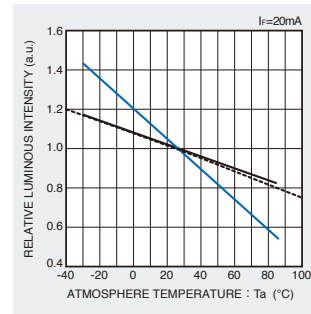
Luminous Intensity-Atmosphere Temperature



- SML-310VT
- SML-310DT
- SML-310YT
- SML-310MT
- SML-310PT

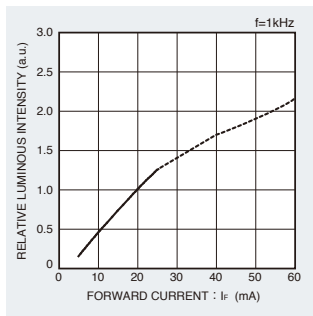


- SML-311UT
- SML-311DT
- SML-311WT
- SML-311YT

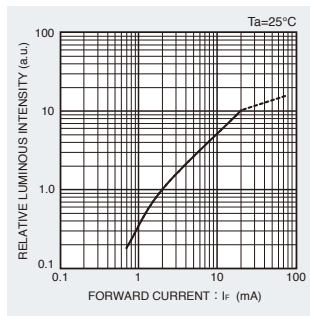


- SML312BC4T
- SML312EC4T
- SML312BCT
- SML312ECT
- SML312BAT
- SML312WBCW(A)

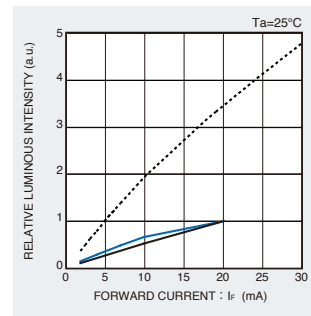
Luminous Intensity-Forward Current



- SML-310VT
- SML-310DT
- SML-310YT
- SML-310MT
- SML-310PT

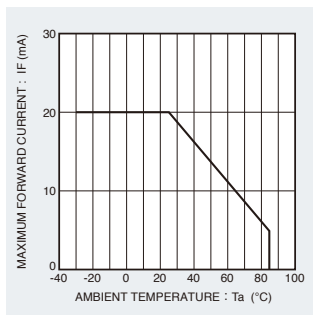


- SML-311UT
- SML-311DT
- SML-311WT
- SML-311YT

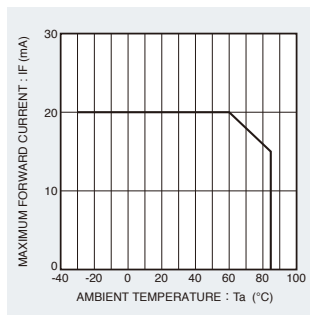


- SML312BC4T
- SML312EC4T
- SML312BCT
- SML312ECT
- SML312BAT
- SML312WBCW(A)

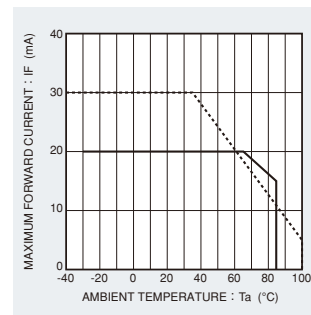
Deratings



- SML-310VT
- SML-310DT
- SML-310YT
- SML-310MT
- SML-310PT



- SML-311UT
- SML-311DT
- SML-311WT
- SML-311YT



- SML312BC4T
- SML312EC4T
- SML312BCT
- SML312ECT
- SML312BAT
- SML312WBCW(A)

SML-31 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 | 1608 | 0.8 | SML-311UT ^{※/※1} | | | | | | | | | | | | | | | | | |
| | | | SML-310VT [※] | | | | | | | | | | | | | | | | | |

Orange (D)

(Ta=25°C, If=2mA)

| 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 | 1608 | 0.8 | SML-311DT | | | | | | | | | | | | | | | | |

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 | 1608 | 0.8 | SML-311YT ^{※/※1} | | | | | | | | | | | | | | | | |
| | | | SML-311WT ^{※/※1} | | | | | | SML-310YT [※] | | | | | | | | | | |

Green (M, P, E)

(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 | 1608 | 0.8 | SML-310MT [※] | | | | | | SML312ECT [※] | | | | | | | | | | |
| | | | SML-310PT [※] | | | | | | SML312EC4T [※] | | | | | | | | | | |

Blue (B)

(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 | |
|---------------------|------------|--------------------------|------------|------------|------------|------------|------------|---------|------------|----------|----------|----------|-----------|------------|------------|------------|------------|--|
| | | | 0.9 to 1.4 | 1.4 to 2.2 | 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 | 220 to 360 | 360 to 560 | 560 to 900 | |
| Mini-mold Chip LEDs | 1608 | 0.8 | SML310BAT | | | | | | SML312BC4T | | | | | | | | | |
| | | | SML312BCT | | | | | | | | | | | | | | | |

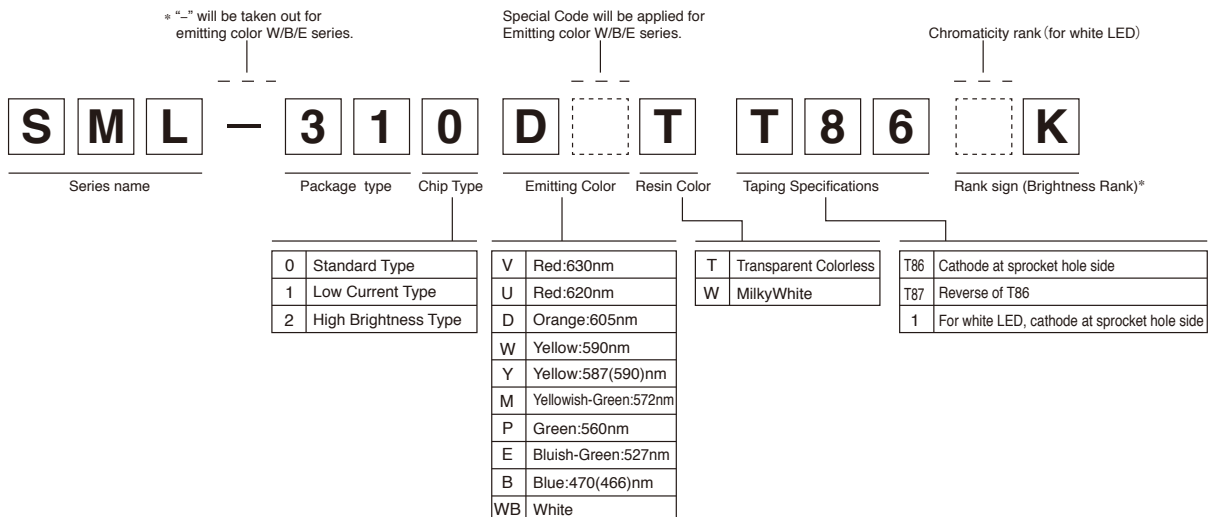
White (WB)

(Ta=25°C, If=5mA)

| Package size(mm) | Height(mm) | Luminous Intensity (mcd) | P | Q | R | S | T | U | V | W | X1 | X2 | Y1 | Y2 | Z1 | |
|---------------------|------------|--------------------------|---------------|----------|----------|-----------|------------|------------|------------|------------|-------------|--------------|--------------|--------------|--------------|--|
| | | | 25 to 36 | 36 to 56 | 56 to 90 | 90 to 140 | 140 to 220 | 220 to 360 | 360 to 560 | 560 to 900 | 900 to 1100 | 1100 to 1400 | 1400 to 1800 | 1800 to 2200 | 2200 to 2800 | |
| Mini-mold Chip LEDs | 1608 | 0.8 | SML312WBCW(A) | | | | | | | | | | | | | |

※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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