

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

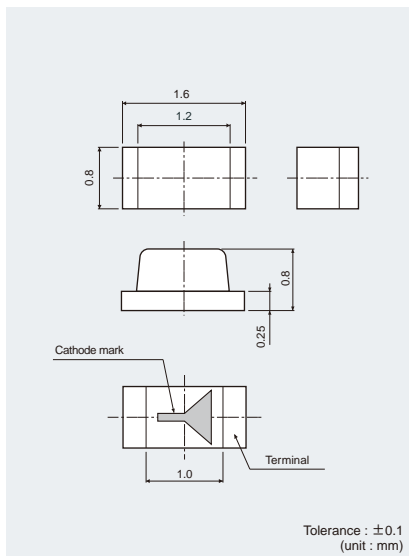


Product Specifications

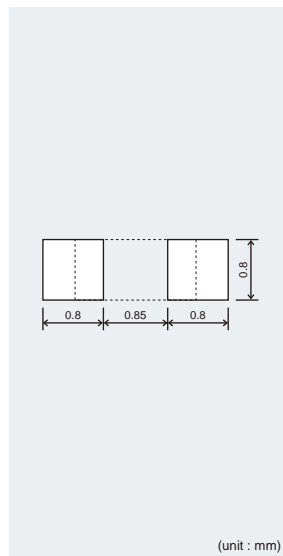
| Part No. | LED chip | Emitting color | Absolute maximum ratings (Ta=25°C) | | | | | Electrical and optical characteristics (Ta=25°C) | | | | | | | | | | | |
|-------------------|-----------------|-----------------|------------------------------------|------------------------|------------------------------|-----------------------|--------------------------------|--|------------------------|-----|-------------------------|---|-----------------------------|-----|-----|-----------------------------|-----|------|-----|
| | | | Power dissipation PD(mW) | Forward current IF(mA) | Peak forward current IFP(mA) | Reverse voltage VR(V) | Operating temperature Topr(°C) | Storage temperature Tstg(°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 | 2 |
| SML-311DT | | | Orange | | | | | | | | | | 602 | 605 | 608 | | 1.6 | 3.15 | |
| SML-310DT | GaAsP on GaP | | | 55 | | | | | 2 | 20 | | | 20 | 2.2 | 6.3 | 20 | | | |
| 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 | | | 20 | | | -30 to +85 | 2.1 | | 100 | | | | | | | 2.2 | 6.3 | |
| SML-310MT | GaP | Yellowish Green | 55 | | | | | | | | | | 567 | 570 | 573 | | 3.6 | 16 | |
| SML-310PT | | Green | | | | | | | 2.2 | | | | | 557 | 560 | 563 | | 1.4 | 4 |
| SML312ECT | InGaN | Bluish Green | | | | | | | 3.3 | 20 | | | 520 | 527 | 535 | 20 | 90 | 200 | 20 |
| SML312EC4T | | | | | | | | | 3.2 | | | | 525 | | | | 36 | 90 | |
| SML312BCT | | Blue | | 84 | | 100 _{±2} | 5 | | | | | 5 | | | | | 22 | 63 | |
| SML312BC4T | | | | | | | | | | 3.2 | | | | 464 | 470 | 476 | | 46 | |

※1:Duty1/5, 200Hz / ※2:Duty1/10, 1kHz

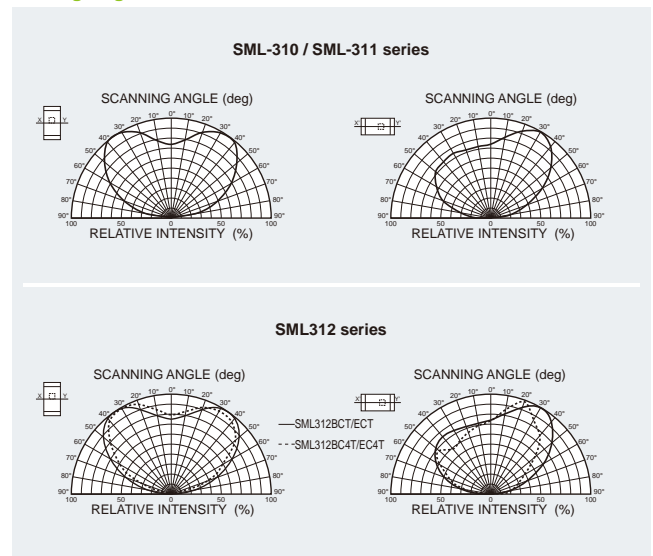
Dimensions



Recommended Solder Pattern

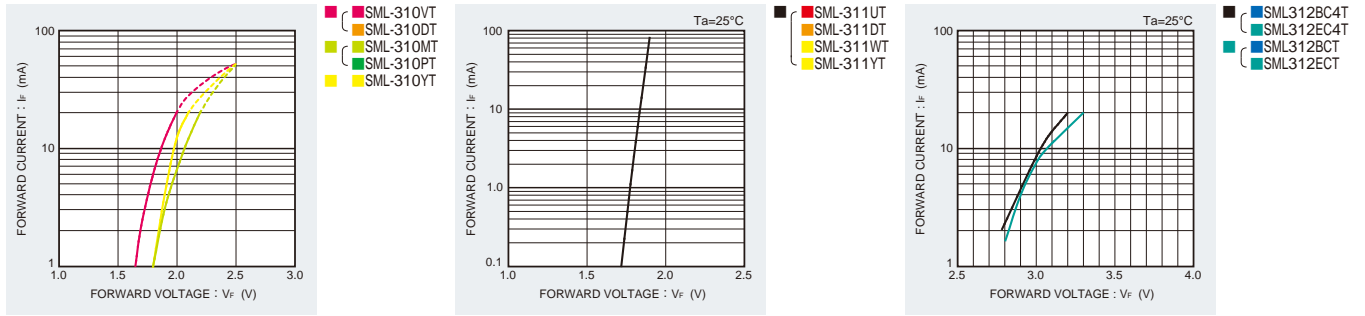


Viewing Angle

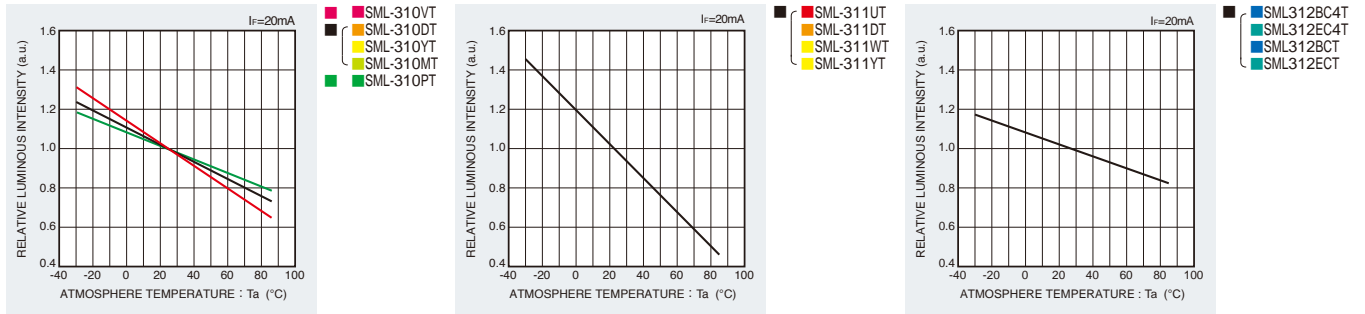


Electrical Characteristics Curves

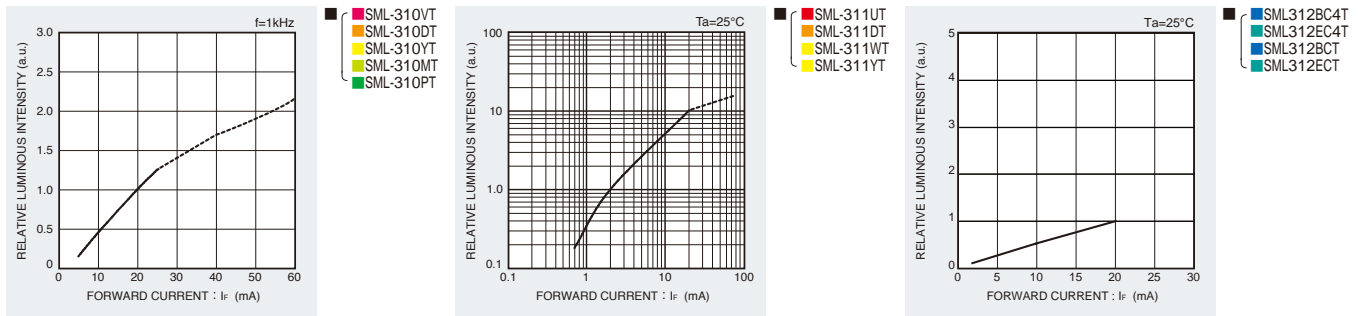
Forward Current-Forward Voltage



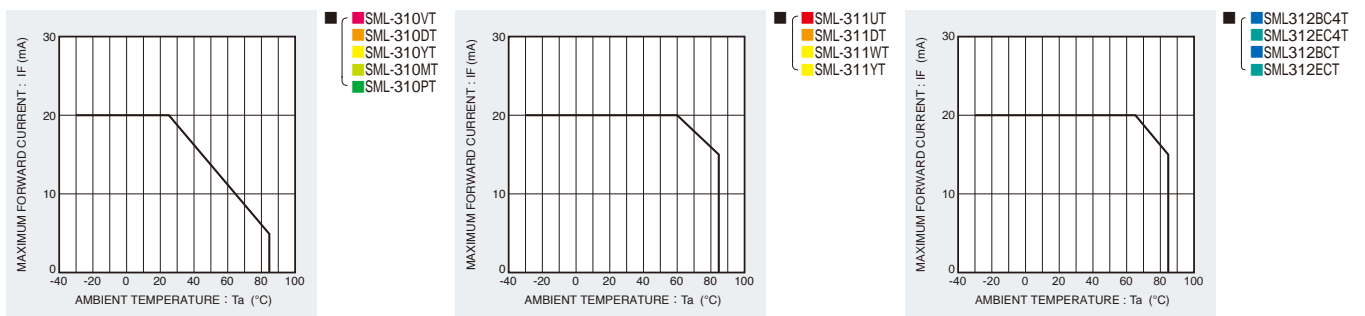
Luminous Intensity-Atmosphere Temperature



Luminous Intensity-Forward Current



Deratings



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 1600 |
| Mini-mold Chip LEDs | 1608 | 0.8 | SML-310MT [※] | | | | | | | | | | | | SML312ECT [※] | | | | |
| | | | SML-310PT [※] | | | | | | | | | SML312EC4T [※] | | | | | | | |

Blue (B)

(Ta=25°C, If=20mA)

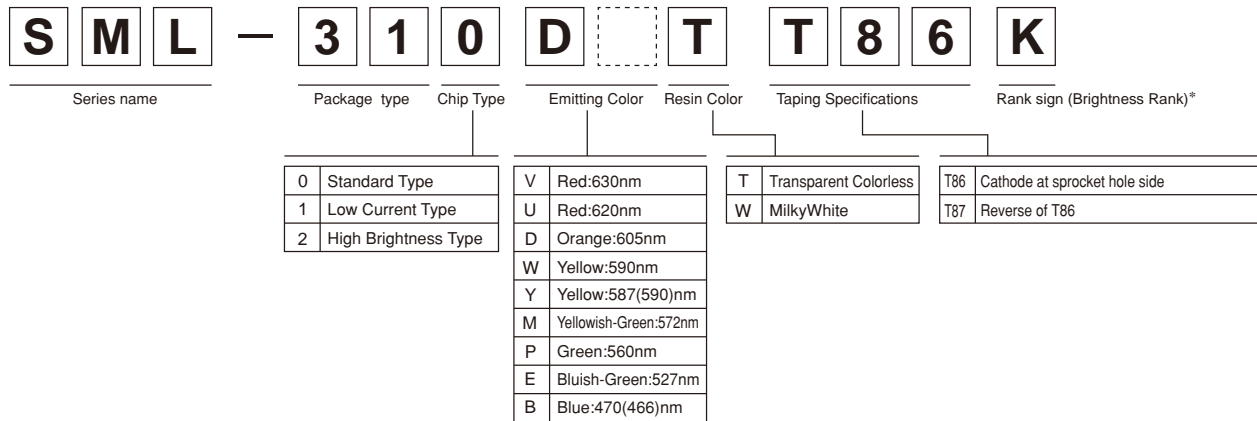
| Package size(mm) | Height(mm) | Luminous Intensity (mcd) | G | H | J | K | L | M | N | P | Q | R | S | T | U | V | W | |
|---------------------|------------|--------------------------|------------|------------|------------|------------|------------|---------|----------|----------|----------|------------|-----------|------------|------------|------------|------------|--|
| | | | 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 | | | | | | | | | | SML312BC4T | | | | | | |
| | | | | | | | | | | | | SML312BCT | | | | | | |

※Brightness on specification sheet include tolerance of within ±10%. ※1:If=2mA

Part No. Construction

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

Special Code will be applied for Emitting color B/E 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.

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.

Notes

- 1) The information contained herein is subject to change without notice.
- 2) Before you use our Products, please contact our sales representative and verify the latest specifications :
- 3) Although ROHM is continuously working to improve product reliability and quality, semiconductors can break down and malfunction due to various factors.
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