



SML-Z1 Series

3528(1411)
3.5×2.8mm (t=1.9mm)

Features

- High brightness
- 20/50mA guaranteed specifications
- PLCC2 package

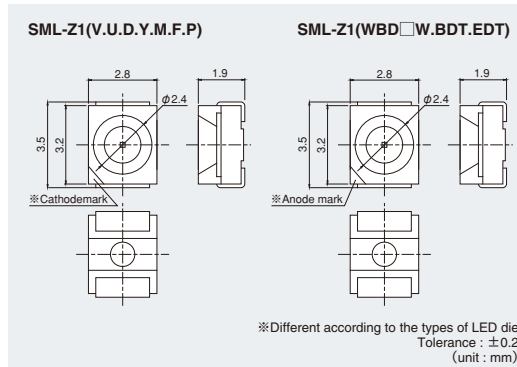


Specifications

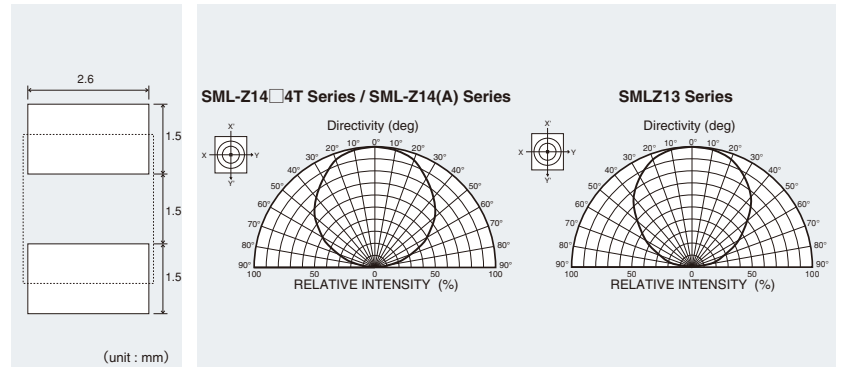
| Part No. | Chip Structure | Emitting Color | Absolute Maximum Ratings (Ta=25°C) | | | | | Electrical and Optical Characteristics (Ta=25°C) | | | | | | | | | | | | | | | | | |
|----------------|-----------------|-----------------|------------------------------------|-------------------------|---|------------------------------------|---------------------------------|--|---|-------------------------------------|--|------------------------------------|--|--|--|-------------------------------------|--|--|--|-----|-----|-----|---------------------|-----|-----|
| | | | Power Dissipation Pd (mW) | Forward Current If (mA) | Peak Forward Current I _{FP} (mA) | Reverse Voltage V _R (V) | Operating Temperature Topr (°C) | Storage Temperature Tsig (°C) | Forward Voltage V _F Typ. (V) | Forward Current I _F (mA) | Reverse Current I _R Max. (μA) | Reverse Voltage V _R (V) | Dominant Wavelength λ _D Min. ^{*2} (nm) | Dominant Wavelength λ _D Typ. (nm) | Dominant Wavelength λ _D Max. ^{*2} (nm) | Forward Current I _F (mA) | Luminous intensity I _v Min. (mcd) | Luminous intensity I _v Typ. (mcd) | Luminous intensity I _v (mA) | | | | | | |
| SML-Z14VT(A) | AlGaInP on GaAs | Red | 175 | 70 | - | 12 | -40 to +100 | -40 to +100 | 1.9 | | | | 625 | 630 | 635 | | 56 | 112 | | | | | | | |
| SML-Z14UT(A) | | | | | | | | | | | | | 615 | 620 | 625 | | 112 | 224 | | | | | | | |
| SML-Z14DT(A) | | Orange | | | | | | | 20 | 10 | 12 | 602 | 605 | 608 | 140 | 280 | 20 | | | | | | | | |
| SML-Z14YT(A) | | | | | | | | | | | | 586 | 589 | 592 | | | | | | | | | | | |
| SML-Z14MT(A) | | Yellowish Green | | | | | | | 2.0 | | | | | | 568 | 571 | 574 | 45 | 90 | | | | | | |
| SML-Z14FT(A) | | 561.5 | | | | | | | | | | | | | 564 | 566.5 | 22.4 | | | 45 | | | | | |
| SML-Z14PT(A) | | Green | | | | | | | 2.0 | | | | | | 557 | 560 | 563 | 11.2 | 22.4 | | | | | | |
| SML-Z14V4T | | Red | | | | | | | | | | | | | 625 | 630 | 635 | | | 140 | 280 | | | | |
| SML-Z14U4T | | | | | | | | | Orange | 50 | 100 | 12 | 615 | 620 | 625 | 280 | 560 | | | | | | | | |
| SML-Z14D4T | | 602 | | | | | | | | | | | 605 | 608 | 355 | 710 | | | | | | | | | |
| SML-Z14Y4T | | Yellow | | | | | | | 2.1 | | | | | | 587 | 590 | 593 | 50 | 112 | 224 | | | | | |
| SML-Z14M4T | | Yellowish Green | | | | | | | | | | | | | 569 | 572 | 575 | | | | 71 | 120 | | | |
| SML-Z14F4T | | Green | | | | | | | 2.1 | | | | | | 562 | 565 | 568 | 22.4 | 56 | | | | | | |
| SML-Z14P4T | | 558 | | | | | | | | | | | | | 561 | 564 | 22.4 | | | 56 | | | | | |
| SMLZ13EDT(A) | InGaN | Bluish Green | 120 | 30 | | 5 | -40 to +100 | -40 to +100 | 3.3 | 20 | 10 | 5 | 519 | 527 | 536 | 20 | 355 | 710 | 20 | | | | | | |
| SMLZ13BDT(A) | | Blue | | | | | | | 3.2 | | | | 464 | 470 | 476 | | 140 | 280 | | | | | | | |
| SMLZ13WBDW | | White | | | | | | | 115 | | | | 30 | 5 | -40 to +100 | | -40 to +100 | 3.2 | | 20 | 100 | 5 | (x, y) (0.36, 0.36) | 360 | 700 |
| SMLZ13WBDBW | | | | | | | | | | | | | | | | | | | | | | | (x, y) (0.44, 0.40) | | |
| SMLZ13WBDCW(A) | White | 115 | 30 | 5 | -40 to +100 | -40 to +100 | 3.2 | 20 | 10 | 100 | 5 | (x, y) (0.30, 0.28) | 900 | 1400 | | | | | | | | | | | |
| SMLZ13WBDDW(A) | | | | | | | | | | | | (x, y) (0.34, 0.34) | | | | | | | | | | | | | |

* 1: Duty1/10, 1kHz / * 2: Reference

Dimensions

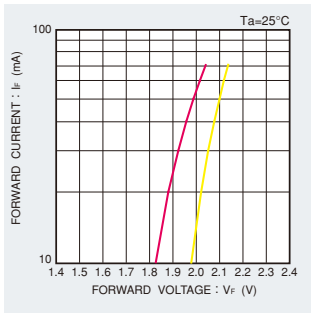


Recommended Solder Pattern Viewing Angle

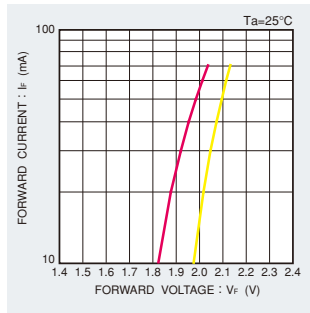


Electrical Characteristics Curves

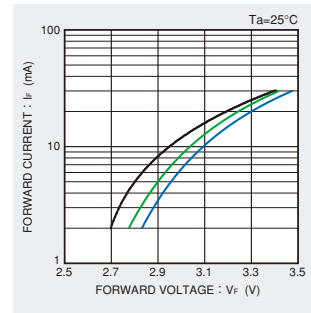
Forward Current-Forward Voltage



- SML-Z14VT(A)
- SML-Z14UT(A)
- SML-Z14DT(A)
- SML-Z14YT(A)
- SML-Z14MT(A)
- SML-Z14FT(A)
- SML-Z14PT(A)

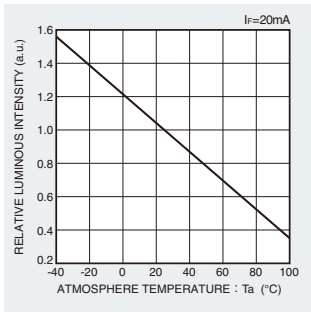


- SML-Z14V4T
- SML-Z14U4T
- SML-Z14D4T
- SML-Z14Y4T
- SML-Z14M4T
- SML-Z14F4T
- SML-Z14P4T

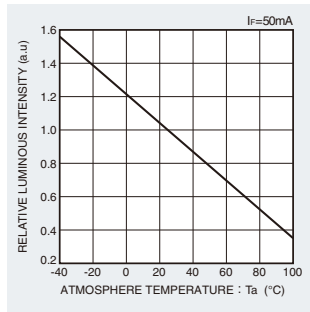


- SMLZ13WBD(A)
- SMLZ13WBDW(A)
- SMLZ13WDCW(A)
- SMLZ13EDT(A)
- SMLZ13BDT(A)

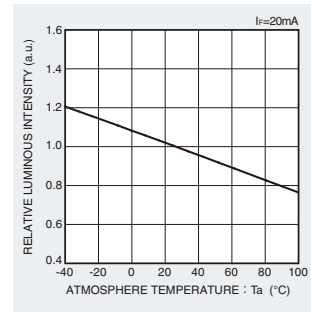
Luminous Intensity-Atmosphere Temperature



- SML-Z14VT(A)
- SML-Z14UT(A)
- SML-Z14DT(A)
- SML-Z14YT(A)
- SML-Z14MT(A)
- SML-Z14FT(A)
- SML-Z14PT(A)

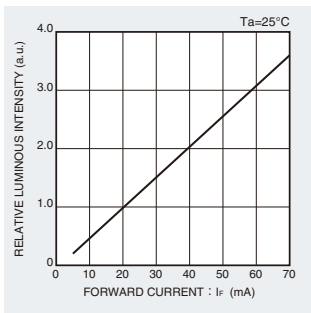


- SML-Z14V4T
- SML-Z14U4T
- SML-Z14D4T
- SML-Z14Y4T
- SML-Z14M4T
- SML-Z14F4T
- SML-Z14P4T

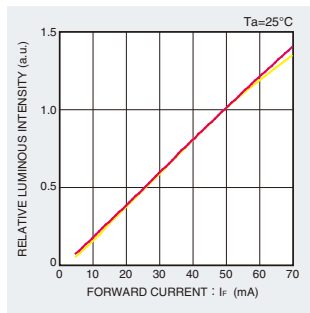


- SMLZ13WBD(A)
- SMLZ13WBDW(A)
- SMLZ13WDCW(A)
- SMLZ13EDT(A)
- SMLZ13BDT(A)

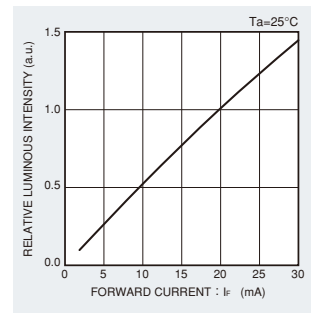
Luminous Intensity-Forward Current



- SML-Z14VT(A)
- SML-Z14UT(A)
- SML-Z14DT(A)
- SML-Z14YT(A)
- SML-Z14MT(A)
- SML-Z14FT(A)
- SML-Z14PT(A)

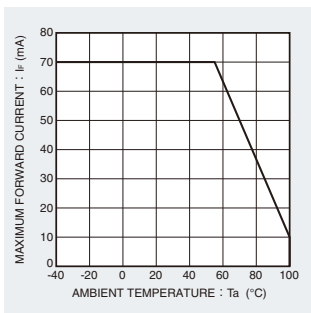


- SML-Z14V4T
- SML-Z14U4T
- SML-Z14D4T
- SML-Z14Y4T
- SML-Z14M4T
- SML-Z14F4T
- SML-Z14P4T

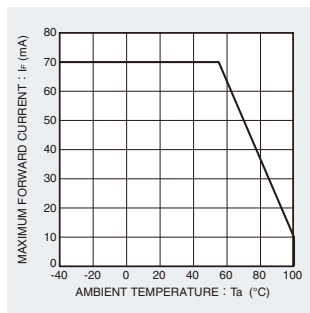


- SMLZ13WBD(A)
- SMLZ13WBDW(A)
- SMLZ13WDCW(A)
- SMLZ13EDT(A)
- SMLZ13BDT(A)

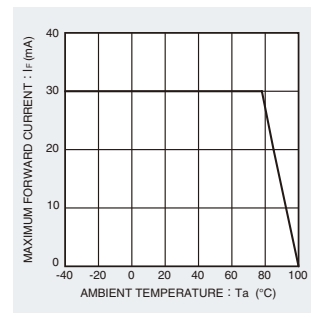
Derating



- SML-Z14VT(A)
- SML-Z14UT(A)
- SML-Z14DT(A)
- SML-Z14YT(A)
- SML-Z14MT(A)
- SML-Z14FT(A)
- SML-Z14PT(A)



- SML-Z14V4T
- SML-Z14U4T
- SML-Z14D4T
- SML-Z14Y4T
- SML-Z14M4T
- SML-Z14F4T
- SML-Z14P4T



- SMLZ13WBD(A)
- SMLZ13WBDW(A)
- SMLZ13WDCW(A)
- SMLZ13EDT(A)
- SMLZ13BDT(A)

SML-Z1 Series

Rank Reference of Brightness

SML-Z14 * T(A) Series

Red (V, U)

(Ta=25°C, If=20mA)

| Package size(mm) | Height(mm) | Luminous Intensity (mcd) | AH | AJ | AK | AL | AM | AN | AP | AQ | AR | AS | AT | AU | AV | AW | AX | AY | |
|------------------|------------|--------------------------|--------------|----------|------------|------------|------------|------------|----------|----------|----------|-----------|--------------|------------|------------|------------|------------|------------|--|
| | | | 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 | 224 to 280 | 280 to 355 | 355 to 450 | |
| PLCC2 | 3528 | 1.9 | SML-Z14VT(A) | | | | | | | | | | SML-Z14UT(A) | | | | | | |

Orange (D)

(Ta=25°C, If=20mA)

| Package size(mm) | Height(mm) | Luminous Intensity (mcd) | AH | AJ | AK | AL | AM | AN | AP | AQ | AR | AS | AT | AU | AV | AW | AX | AY | | |
|------------------|------------|--------------------------|------------|----------|------------|------------|------------|------------|----------|----------|----------|-----------|------------|------------|------------|--------------|------------|------------|--|--|
| | | | 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 | 224 to 280 | 280 to 355 | 355 to 450 | | |
| PLCC2 | 3528 | 1.9 | | | | | | | | | | | | | | SML-Z14DT(A) | | | | |

Yellow (Y)

(Ta=25°C, If=20mA)

| Package size(mm) | Height(mm) | Luminous Intensity (mcd) | AH | AJ | AK | AL | AM | AN | AP | AQ | AR | AS | AT | AU | AV | AW | AX | AY | | |
|------------------|------------|--------------------------|------------|----------|------------|------------|------------|------------|----------|----------|----------|-----------|------------|------------|------------|--------------|------------|------------|--|--|
| | | | 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 | 224 to 280 | 280 to 355 | 355 to 450 | | |
| PLCC2 | 3528 | 1.9 | | | | | | | | | | | | | | SML-Z14YT(A) | | | | |

Green (M, P, F)

(Ta=25°C, If=20mA)

| Package size(mm) | Height(mm) | Luminous Intensity (mcd) | AH | AJ | AK | AL | AM | AN | AP | AQ | AR | AS | AT | AU | AV | AW | AX | AY | |
|------------------|------------|--------------------------|--------------|----------|------------|------------|------------|------------|----------|--------------|----------|-----------|------------|------------|------------|------------|------------|------------|--|
| | | | 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 | 224 to 280 | 280 to 355 | 355 to 450 | |
| PLCC2 | 3528 | 1.9 | SML-Z14MT(A) | | | | | | | | | | | | | | | | |
| | | | SML-Z14PT(A) | | | | | | | SML-Z14FT(A) | | | | | | | | | |

SML-Z14 * 4T Series

Red (V, U)

(Ta=25°C, If=50mA)

| Package size(mm) | Height(mm) | Luminous Intensity (mcd) | AL | AM | AN | AP | AQ | AR | AS | AT | AU | AV | AW | AX | AY | AZ | BA | BB | BC | BD | | |
|------------------|------------|--------------------------|------------|------------|------------|----------|----------|----------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|--------------|--|--|
| | | | 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 | 224 to 280 | 280 to 355 | 355 to 450 | 450 to 560 | 560 to 710 | 710 to 900 | 900 to 1120 | 1120 to 1400 | | |
| PLCC2 | 3528 | 1.9 | SML-Z14V4T | | | | | | | | | | SML-Z14U4T | | | | | | | | | |

Orange (D)

(Ta=25°C, If=50mA)

| Package size(mm) | Height(mm) | Luminous Intensity (mcd) | AL | AM | AN | AP | AQ | AR | AS | AT | AU | AV | AW | AX | AY | AZ | BA | BB | BC | BD |
|------------------|------------|--------------------------|------------|------------|------------|----------|----------|----------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|--------------|
| | | | 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 | 224 to 280 | 280 to 355 | 355 to 450 | 450 to 560 | 560 to 710 | 710 to 900 | 900 to 1120 | 1120 to 1400 |
| PLCC2 | 3528 | 1.9 | SML-Z14D4T | | | | | | | | | | | | | | | | | |

Yellow (Y)

(Ta=25°C, If=50mA)

| Package size(mm) | Height(mm) | Luminous Intensity (mcd) | AL | AM | AN | AP | AQ | AR | AS | AT | AU | AV | AW | AX | AY | AZ | BA | BB | BC | BD |
|------------------|------------|--------------------------|------------|------------|------------|----------|----------|----------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|--------------|
| | | | 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 | 224 to 280 | 280 to 355 | 355 to 450 | 450 to 560 | 560 to 710 | 710 to 900 | 900 to 1120 | 1120 to 1400 |
| PLCC2 | 3528 | 1.9 | SML-Z14Y4T | | | | | | | | | | | | | | | | | |

Green (M, P, F)

(Ta=25°C, If=50mA)

| Package size(mm) | Height(mm) | Luminous Intensity (mcd) | AL | AM | AN | AP | AQ | AR | AS | AT | AU | AV | AW | AX | AY | AZ | BA | BB | BC | BD | | |
|------------------|------------|--------------------------|------------|------------|------------|----------|----------|----------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|--------------|--|--|
| | | | 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 | 224 to 280 | 280 to 355 | 355 to 450 | 450 to 560 | 560 to 710 | 710 to 900 | 900 to 1120 | 1120 to 1400 | | |
| PLCC2 | 3528 | 1.9 | SML-Z14F4T | | | | | | | | | | SML-Z14M4T | | | | | | | | | |
| | | | SML-Z14P4T | | | | | | | | | | | | | | | | | | | |

SMLZ13 * T(A) Series

Green (E)

(Ta=25°C, If=20mA)

| Package size(mm) | Height(mm) | Luminous Intensity (mcd) | AU | AV | AW | AX | AY | AZ | BA | BB | BC | BD | BE |
|------------------|------------|--------------------------|--------------|------------|------------|------------|------------|------------|------------|------------|-------------|--------------|--------------|
| | | | 140 to 180 | 180 to 224 | 224 to 280 | 280 to 355 | 355 to 450 | 450 to 560 | 560 to 710 | 710 to 900 | 900 to 1120 | 1120 to 1400 | 1400 to 1800 |
| PLCC2 | 3528 | 1.9 | SMLZ13EDT(A) | | | | | | | | | | |

Blue (B)

(Ta=25°C, If=20mA)

| Package size(mm) | Height(mm) | Luminous Intensity (mcd) | AU | AV | AW | AX | AY | AZ | BA | BB | BC | BD | BE |
|------------------|------------|--------------------------|--------------|------------|------------|------------|------------|------------|------------|------------|-------------|--------------|--------------|
| | | | 140 to 180 | 180 to 224 | 224 to 280 | 280 to 355 | 355 to 450 | 450 to 560 | 560 to 710 | 710 to 900 | 900 to 1120 | 1120 to 1400 | 1400 to 1800 |
| PLCC2 | 3528 | 1.9 | SMLZ13BDT(A) | | | | | | | | | | |

SMLZ1 * (White Series)

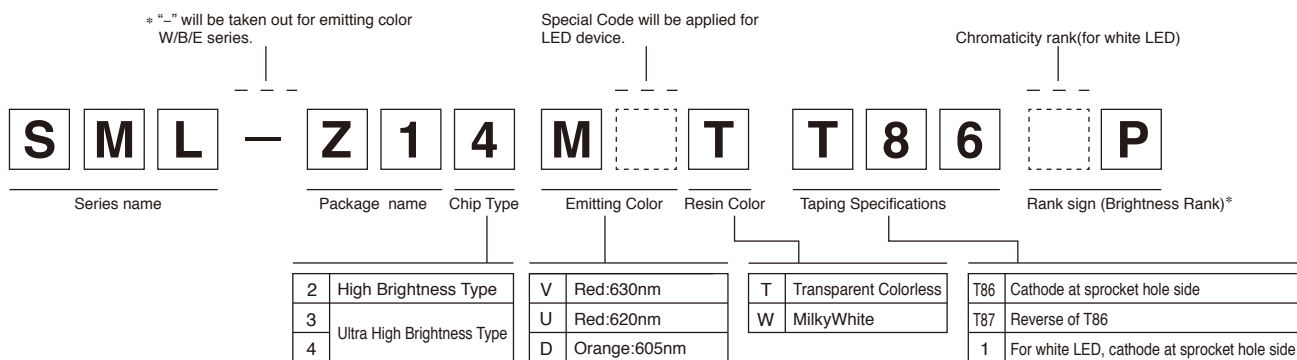
White (WB)

(Ta=25°C, If=20mA)

| Package size(mm) | Height(mm) | Luminous Intensity (mcd) | V | W | X1 | X2 | Y1 | Y2 | Z1 | | |
|------------------|------------|--------------------------|----------------|------------|-------------|--------------|--------------|--------------|--------------|--|--|
| | | | 360 to 560 | 560 to 900 | 900 to 1120 | 1120 to 1400 | 1400 to 1800 | 1800 to 2200 | 2200 to 2800 | | |
| PLCC2 | 3528 | 1.9 | SMLZ13WBDAW | | | | | | | | |
| | | | SMLZ13WBDBW | | | | | | | | |
| | | | SMLZ13WBDCW(A) | | | | | | | | |
| | | | SMLZ13WBDDW(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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