

# LEDs

Leuchtdioden

Diode Luminescente



**Indicator Lights**  
Signalleuchten  
Voyants Lumineux




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PRECISION OPTOELECTRONICS

**Based LEDs**  
Gesockelte LEDs  
LED à Culot






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**Emer.-Exit light**  
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Eclairage des sorties




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|-------|------------|----|
| ∅ 3mm | blue       | 4  |
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### THT LED Spacer

|           |                       |    |
|-----------|-----------------------|----|
| ∅ 3 + 5mm | length from 3 to 25mm | 15 |
|-----------|-----------------------|----|

### SMD LED

|            |   |    |
|------------|---|----|
| type 0603  | blue / green / warm-white / red / white / yellow                      | 16 |
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### Power LED

|          |                    |    |
|----------|--------------------|----|
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|----------|--------------------|----|

### Precautions for Electro Static Damage ESD



25

## THT LED

Ø 3mm blue

- high luminosity
- long lifetime up to 75'000 hours
- high quality for professional application
- RoHS compliant



| Part Number    | Old Part Number | Peak Wavelength | Intensity (mcd) |      |      | Angle (deg) | Voltage (V) |     | Lens Colour | Type |
|----------------|-----------------|-----------------|-----------------|------|------|-------------|-------------|-----|-------------|------|
|                |                 |                 | min             | typ  | max  |             | typ         | max |             |      |
| SLO-233B-00003 | L3-B41G-WTU     | ● 462nm         | 1380            | 2500 | 2760 | 30°         | 3.2         | 3.5 | waterclear  | 2    |
| SLO-233B-00004 | L3-B71G-WVV     | ● 470nm         | 4400            | 6220 | 8750 | 15°         | 3.2         | 3.5 | waterclear  | 1    |

### Electro-Optical-Characteristics Ta=25°C, Forward Current: IF Typical = 20mA,

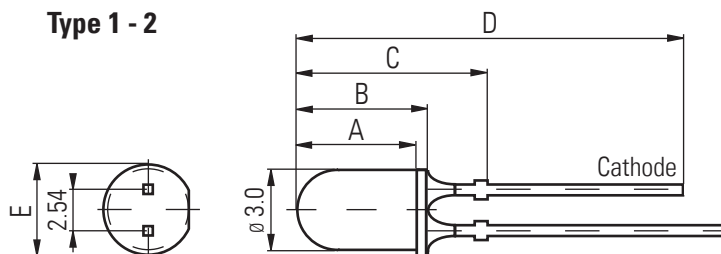
1/10 Duty Cycle, 10ms Pulse Width: up to 110mA, depending on type number.

Storage Temp. -40 ~+100 (°C) Operating Temp. -30 ~+85 (°C)

Detailed data sheets are available on request

Packaging: 500pcs/bulk

### Dimensions (mm)



| Type | A   | B   | C    | D    | E   |
|------|-----|-----|------|------|-----|
| 1    | 5.0 | 6.0 | 11.0 | 27.5 | 3.8 |
| 2    | 4.4 | 5.4 | 10.4 | 26.9 | 3.8 |

## THT LED

Ø 3mm green

- high luminosity
- long lifetime up to 75'000 hours
- high quality for professional application
- RoHS compliant



| Part Number    | Old Part Number | Peak Wavelength | Intensity (mcd) |       |       | Angle (deg) | Voltage (V) |     | Lens Colour | Type |
|----------------|-----------------|-----------------|-----------------|-------|-------|-------------|-------------|-----|-------------|------|
|                |                 |                 | min             | typ   | max   |             | typ         | max |             |      |
| SLO-233G-00006 | L3-G301         | ● 568nm         | 22              | -     | 55    | 50°         | 2.2         | 2.6 | diffused    | 4    |
| SLO-233G-00009 | L3-G310-1       | ● 555nm         | 14              | 30    | -     | 35°         | 2.1         | 2.6 | waterclear  | 3    |
| SLO-233G-00014 | L3-G41N-GVW     | ● 522nm         | 24640           | 36100 | 49500 | 15°         | 3.2         | 3.6 | waterclear  | 1    |
| SLO-233G-00015 | L3-G51N-GUV     | ● 522nm         | 7400            | 10800 | 14800 | 30°         | 3.2         | 3.5 | waterclear  | 2    |

### Electro-Optical-Characteristics Ta=25°C, Forward Current: IF Typical = 20mA,

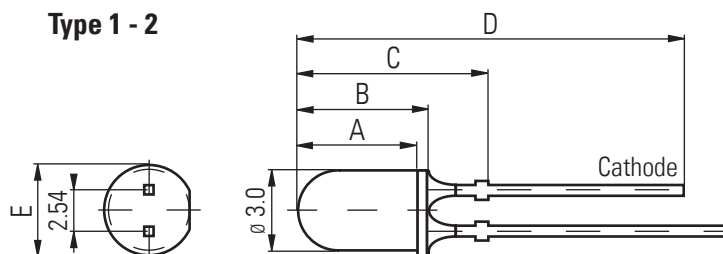
1/10 Duty Cycle, 10ms Pulse Width: up to 110mA, depending on type number.

Storage Temp. -40 ~+100 (°C) Operating Temp. -30 ~+85 (°C)

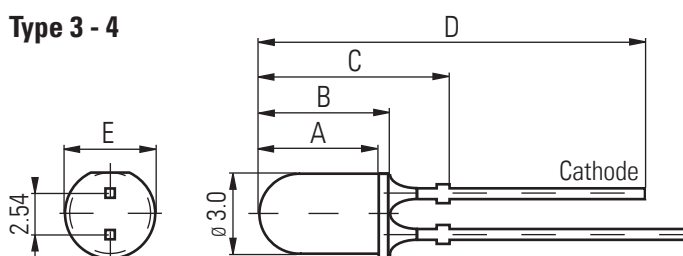
Detailed data sheets are available on request

Packaging: 500pcs/bulk

### Dimensions (mm)



| Type | A   | B   | C    | D    | E   |
|------|-----|-----|------|------|-----|
| 1    | 5.0 | 6.0 | 11.0 | 27.5 | 3.8 |
| 2    | 4.4 | 5.4 | 10.4 | 26.9 | 3.8 |
| 3    | 4.0 | 4.7 | NA   | 32.0 | 3.8 |
| 4    | 4.5 | 5.3 | NA   | 30.7 | 3.8 |



1. All dimensions are in millimetres
2. Tolerance is ±0.25mm unless otherwise specified
3. Specifications are subject to change without notice

## THT LED

Ø 3mm red

- high luminosity
- long lifetime up to 75'000 hours
- high quality for professional application
- RoHS compliant



| Part Number    | Old Part Number | Peak Wavelength | Intensity (mcd) |      |      | Angle (deg) | Voltage (V) |     | Lens Colour | Type |
|----------------|-----------------|-----------------|-----------------|------|------|-------------|-------------|-----|-------------|------|
|                |                 |                 | min             | typ  | max  |             | typ         | max |             |      |
| SLO-233R-00004 | L3-R30U         | ● 635nm         | 2800            | 5500 | -    | 40°         | 2.25        | 2.6 | waterclear  | 2    |
| SLO-233R-00005 | L3-R301         | ● 700nm         | -               | 8    | -    | 35°         | 2.20        | 2.6 | diffused    | 4    |
| SLO-233R-00010 | L3-R310-1       | ● 660nm         | 45              | 100  | -    | 35°         | 1.80        | 2.2 | waterclear  | 3    |
| SLO-233R-00012 | L3-R32U         | ● 638nm         | 1000            | 1900 | -    | 35°         | 2.25        | 2.6 | waterclear  | 1    |
| SLO-233R-00016 | L3-R41Q         | ● 640nm         | 1500            | 2500 | 4000 | 24°         | 1.90        | 2.4 | waterclear  | 1    |

### Electro-Optical-Characteristics Ta=25°C, Forward Current: IF Typical = 20mA,

1/10 Duty Cycle, 10ms Pulse Width: up to 110mA, depending on type number.

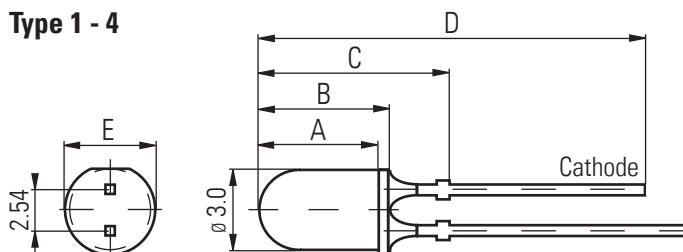
Storage Temp. -40 ~+100 (°C) Operating Temp. -30 ~+85 (°C)

Detailed data sheets are available on request

Packaging: 500pcs/bulk

### Dimensions (mm)

Type 1 - 4



| Type | A   | B   | C  | D    | E   |
|------|-----|-----|----|------|-----|
| 1    | 4.3 | 5.3 | NA | 29.7 | 3.9 |
| 2    | 3.4 | 4.4 | NA | 28.8 | 3.1 |
| 3    | 4.0 | 4.7 | NA | 32.0 | 3.8 |
| 4    | 4.5 | 5.3 | NA | 30.7 | 3.8 |

1. All dimensions are in millimetres

2. Tolerance is ±0.25mm unless otherwise specified

3. Specifications are subject to change without notice

## THT LED

Ø 3mm yellow

- high luminosity
- long lifetime up to 75'000 hours
- high quality for professional application
- RoHS compliant



| Part Number    | Old Part Number | Peak Wavelength | Intensity (mcd) |      |      | Angle (deg) | Voltage (V) |     | Lens Colour | Type |
|----------------|-----------------|-----------------|-----------------|------|------|-------------|-------------|-----|-------------|------|
|                |                 |                 | min             | typ  | max  |             | typ         | max |             |      |
| SLO-233Y-00003 | L3-Y30U         | ● 592nm         | 600             | 1200 | -    | 40°         | 2.00        | 2.4 | waterclear  | 2    |
| SLO-233Y-00005 | L3-Y301         | ● 585nm         | -               | 30   | -    | 35°         | 2.10        | 2.6 | diffused    | 4    |
| SLO-233Y-00008 | L3-Y310-1       | ● 580nm         | 40              | 60   | -    | 23°         | 2.20        | 2.8 | waterclear  | 3    |
| SLO-233Y-00009 | L3-Y32U         | ● 592nm         | 1100            | 2200 | 3080 | 35°         | 2.25        | 2.6 | waterclear  | 1    |
| SLO-233Y-00011 | L3-Y33U         | ● 592nm         | 2100            | 4200 | -    | 14°         | 2.25        | 2.6 | waterclear  | 1    |
| SLO-233Y-00012 | L3-Y41Q         | ● 597nm         | 1000            | 2500 | 4000 | 24°         | 2.00        | 2.6 | waterclear  | 1    |

### Electro-Optical-Characteristics Ta=25°C, Forward Current: IF Typical = 20mA,

1/10 Duty Cycle, 10ms Pulse Width: up to 110mA, depending on type number.

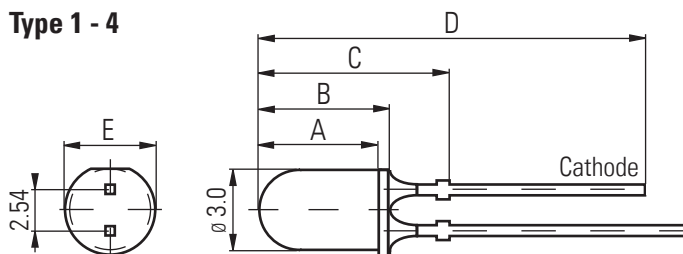
Storage Temp. -40 ~+100 (°C) Operating Temp. -30 ~+85 (°C)

Detailed data sheets are available on request

Packaging: 500pcs/bulk

### Dimensions (mm)

Type 1 - 4



| Type | A   | B   | C  | D    | E   |
|------|-----|-----|----|------|-----|
| 1    | 4.3 | 5.3 | NA | 29.7 | 3.9 |
| 2    | 3.4 | 4.4 | NA | 28.8 | 3.1 |
| 3    | 4.0 | 4.7 | NA | 32.0 | 3.8 |
| 4    | 4.5 | 5.3 | NA | 30.7 | 3.8 |

1. All dimensions are in millimetres

2. Tolerance is ±0.25mm unless otherwise specified

3. Specifications are subject to change without notice

## THT LED

Ø 3mm cold-white

- high luminosity
- long lifetime up to 75'000 hours
- high quality for professional application
- RoHS compliant



| Part Number    | Old Part Number | Colour Temp.<br>(°K) | Intensity (mcd) |       |       | Angle<br>(deg) | Voltage (V) |     | Lens Colour | Type |
|----------------|-----------------|----------------------|-----------------|-------|-------|----------------|-------------|-----|-------------|------|
|                |                 |                      | min             | typ   | max   |                | typ         | max |             |      |
| SLO-233W-00001 | L3-W32N-BVW     | ☉ 5500-9000          | 2520            | 3400  | 5040  | 60°            | 3.2         | 3.5 | diffused    | 2    |
| SLO-233W-00002 | L3-W36N-BVW     | ☉ 5500-9000          | 4610            | 6200  | 9220  | 50°            | 3.2         | 3.5 | waterclear  | 2    |
| SLO-233W-00004 | L3-W37N-BVW     | ☉ 5500-9000          | 9480            | 12900 | 18960 | 20°            | 3.2         | 3.5 | waterclear  | 1    |

### Electro-Optical-Characteristics Ta=25°C, Forward Current: IF Typical = 20mA,

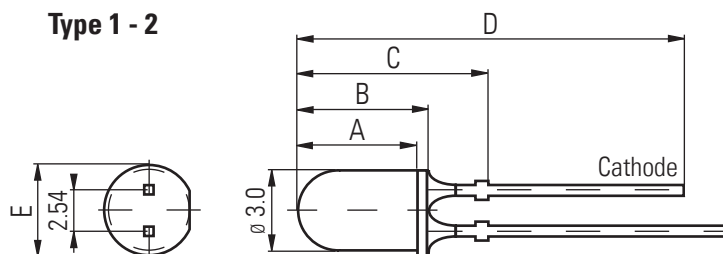
1/10 Duty Cycle, 10ms Pulse Width: up to 110mA, depending on type number.

Storage Temp. -40 ~+100 (°C) Operating Temp. -30 ~+85 (°C)

Detailed data sheets are available on request

Packaging: 500pcs/bulk

### Dimensions (mm)



| Type | A   | B   | C    | D    | E   |
|------|-----|-----|------|------|-----|
| 1    | 5.0 | 6.0 | 11.0 | 27.5 | 3.8 |
| 2    | 4.4 | 5.4 | 10.4 | 26.9 | 3.8 |

1. All dimensions are in millimetres
2. Tolerance is ±0.25mm unless otherwise specified
3. Specifications are subject to change without notice



## THT LED

Ø 5mm blue

- high luminosity
- long lifetime up to 75'000 hours
- high quality for professional application
- RoHS compliant



| Part Number    | Old Part Number | Peak Wavelength | Intensity (mcd) |      |       | Angle (deg) | Voltage (V) |     | Lens Colour | Type |
|----------------|-----------------|-----------------|-----------------|------|-------|-------------|-------------|-----|-------------|------|
|                |                 |                 | min             | typ  | max   |             | typ         | max |             |      |
| SLO-234B-00005 | L5-B21G-WVV     | ● 475nm         | 3010            | 4700 | 6020  | 30°         | 3.2         | 3.5 | waterclear  | 2    |
| SLO-234B-00007 | L5-B5SC         | ● 480nm         | 1000            | 2500 | 4000  | 30°         | 3.5         | 3.8 | waterclear  | 3    |
| SLO-234B-00010 | L5-B91G-WUV     | ● 465nm         | 4880            | 9300 | 13950 | 15°         | 3.2         | 3.5 | waterclear  | 1    |

### Electro-Optical-Characteristics Ta=25°C, Forward Current: IF Typical = 20mA,

1/10 Duty Cycle, 10ms Pulse Width: up to 110mA, depending on type number.

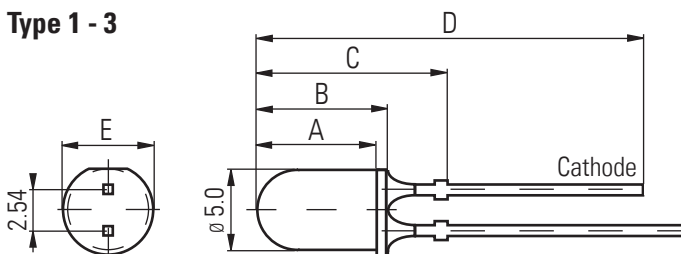
Storage Temp. -40 ~+100 (°C) Operating Temp. -30 ~+85 (°C)

Detailed data sheets are available on request

Packaging: 500pcs/bulk

### Dimensions (mm)

#### Type 1 - 3



| Type | A   | B   | C    | D    | E   |
|------|-----|-----|------|------|-----|
| 1    | 7.6 | 8.6 | 12.4 | 28.9 | 5.6 |
| 2    | 7.3 | 8.3 | 12.1 | 28.6 | 5.6 |
| 3    | 7.6 | 8.6 | NA   | 34.1 | 5.8 |

1. All dimensions are in millimetres

2. Tolerance is ±0.25mm unless otherwise specified

3. Specifications are subject to change without notice

## THT LED

Ø 5mm green

- high luminosity
- long lifetime up to 75'000 hours
- high quality for professional application
- RoHS compliant



| Part Number    | Old Part Number | Peak Wavelength | Intensity (mcd) |       |       | Angle (deg) | Voltage (V) |     | Lens Colour | Type |
|----------------|-----------------|-----------------|-----------------|-------|-------|-------------|-------------|-----|-------------|------|
|                |                 |                 | min             | typ   | max   |             | typ         | max |             |      |
| SLO-234G-00009 | L5-G501         | ● 574nm         | 80              | 250   | -     | 44°         | 2.4         | 2.8 | diffused    | 4    |
| SLO-234G-00018 | L5-G61N-GVW     | ● 524nm         | 10500           | 16000 | 21000 | 30°         | 3.2         | 3.5 | waterclear  | 2    |
| SLO-234G-00021 | L5-G71N-GUV     | ● 523nm         | 3320            | 6500  | 9200  | 45°         | 3.2         | 3.5 | waterclear  | 3    |
| SLO-234G-00024 | L5-G81N-GUV     | ● 525nm         | 21650           | 37700 | 43300 | 15°         | 3.2         | 3.5 | waterclear  | 1    |

### Electro-Optical-Characteristics Ta=25°C, Forward Current: IF Typical = 20mA,

1/10 Duty Cycle, 10ms Pulse Width: up to 110mA, depending on type number.

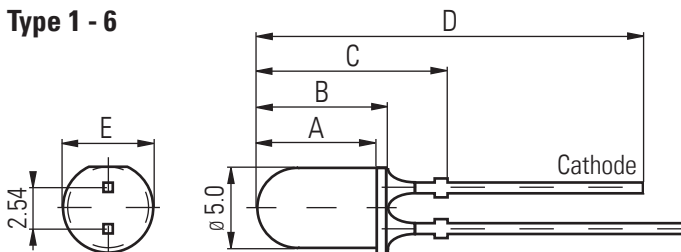
Storage Temp. -40 ~+100 (°C) Operating Temp. -30 ~+85 (°C)

Detailed data sheets are available on request

Packaging: 500pcs/bulk

### Dimensions (mm)

#### Type 1 - 6



| Type | A   | B   | C    | D    | E   |
|------|-----|-----|------|------|-----|
| 1    | 7.6 | 8.6 | 12.4 | 28.9 | 5.6 |
| 2    | 7.3 | 8.3 | 12.1 | 28.6 | 5.6 |
| 3    | 6.6 | 7.6 | 11.3 | 27.8 | 5.6 |
| 4    | 7.7 | 8.7 | NA   | 31.2 | 5.9 |
| 5    | 7.9 | 8.9 | 13.2 | 29.7 | 5.6 |
| 6    | 7.1 | 8.3 | 12.1 | 28.6 | 5.6 |

1. All dimensions are in millimetres

2. Tolerance is ±0.25mm unless otherwise specified

3. Specifications are subject to change without notice

## THT LED

Ø 5mm red

- high luminosity
- long lifetime up to 75'000 hours
- high quality for professional application
- RoHS compliant



| Part Number    | Old Part Number | Peak Wavelength | Intensity (mcd) |      |       | Angle (deg) | Voltage (V) |     | Lens Colour | Type |
|----------------|-----------------|-----------------|-----------------|------|-------|-------------|-------------|-----|-------------|------|
|                |                 |                 | min             | typ  | max   |             | typ         | max |             |      |
| SLO-234R-00006 | L5-R50U         | ● 627nm         | 2500            | 3200 | 5500  | 30°         | 2.20        | 2.5 | waterclear  | 2    |
| SLO-234R-00012 | L5-R52U         | ● 620nm         | 4200            | -    | 7200  | 30°         | 2.10        | 2.4 | waterclear  | 2    |
| SLO-234R-00014 | L5-R521         | ● 635nm         | 65              | 80   | -     | 22°         | 2.00        | 2.6 | diffused    | 3    |
| SLO-234R-00015 | L5-R54U         | ● 635nm         | 12000           | -    | 27300 | 15°         | 2.10        | 2.4 | waterclear  | 2    |
| SLO-234R-00016 | L5-R55N-RSTU    | ● 635nm         | 3400            | 5000 | 9600  | 30°         | 2.10        | 2.5 | waterclear  | 4    |
| SLO-234R-00019 | L5-R81Q-2       | ● 660nm         | 1000            | -    | 4000  | 22°         | 1.80        | 2.4 | waterclear  | 5    |
| SLO-234R-00021 | L5-R91H         | ● 621nm         | 9300            | -    | 27000 | 8°          | 1.94        | 2.4 | waterclear  | 1    |

### Electro-Optical-Characteristics Ta=25°C, Forward Current: IF Typical = 20mA,

1/10 Duty Cycle, 10ms Pulse Width: up to 110mA, depending on type number.

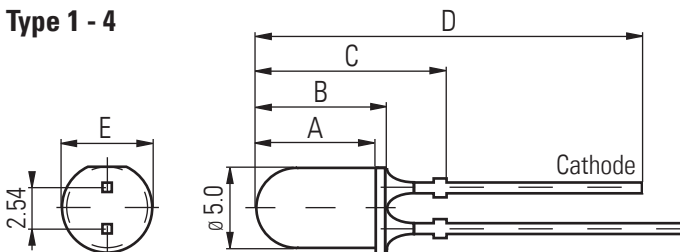
Storage Temp. -40 ~+100 (°C) Operating Temp. -30 ~+85 (°C)

Detailed data sheets are available on request

Packaging: 500pcs/bulk

### Dimensions (mm)

Type 1 - 4



| Type | A   | B   | C    | D    | E   |
|------|-----|-----|------|------|-----|
| 1    | 7.6 | 8.7 | NA   | 31.6 | 5.8 |
| 2    | 7.6 | 8.6 | NA   | 33.0 | 5.7 |
| 3    | 7.6 | 8.6 | NA   | 34.0 | 5.7 |
| 4    | 7.1 | 8.3 | 12.1 | 28.6 | 5.6 |
| 5    | 7.6 | 8.6 | NA   | 25.5 | 5.7 |

1. All dimensions are in millimetres

2. Tolerance is ±0.25mm unless otherwise specified

3. Specifications are subject to change without notice

# THT LED

Ø 5mm yellow

- high luminosity
- long lifetime up to 75'000 hours
- high quality for professional application
- RoHS compliant



| Part Number    | Old Part Number | Peak Wavelength | Intensity (mcd) |      |       | Angle (deg) | Voltage (V) |     | Lens Colour | Type |
|----------------|-----------------|-----------------|-----------------|------|-------|-------------|-------------|-----|-------------|------|
|                |                 |                 | min             | typ  | max   |             | typ         | max |             |      |
| SLO-234Y-00005 | L5-Y50U         | ● 591nm         | 3000            | 5500 | -     | 40°         | 2.10        | 2.5 | waterclear  | 1    |
| SLO-234Y-00007 | L5-Y501         | ● 591nm         | 200             | 500  | -     | 40°         | 1.90        | 2.4 | diffused    | 4    |
| SLO-234Y-00010 | L5-Y52U         | ● 592nm         | 1200            | 3000 | 4200  | 30°         | 2.00        | 2.5 | waterclear  | 2    |
| SLO-234Y-00012 | L5-Y54U         | ● 593nm         | 12000           | -    | 27300 | 15°         | 2.10        | 2.4 | waterclear  | 3    |
| SLO-234Y-00013 | L5-Y71Q-2       | ● 592nm         | 1000            | 3000 | 4000  | 18°         | 1.80        | 2.5 | waterclear  | 2    |
| SLO-234Y-00015 | L5-Y91H         | ● 592nm         | 7200            | -    | 21000 | 8°          | 2.02        | 2.4 | waterclear  | 1    |

**Electro-Optical-Characteristics Ta=25°C, Forward Current: IF Typical = 20mA,**

1/10 Duty Cycle, 10ms Pulse Width: up to 110mA, depending on type number.

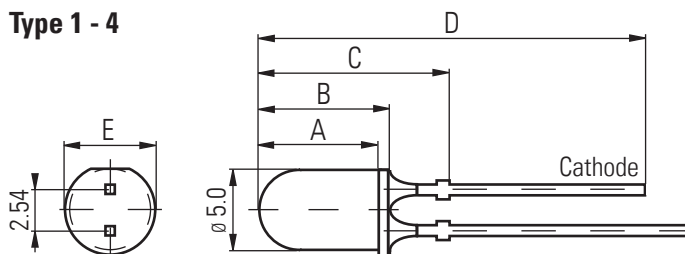
Storage Temp. -40 ~+100 (°C) Operating Temp. -30 ~+85 (°C)

Detailed data sheets are available on request

Packaging: 500pcs/bulk

**Dimensions (mm)**

Type 1 - 4



| Type | A   | B   | C  | D    | E   |
|------|-----|-----|----|------|-----|
| 1    | 7.7 | 8.7 | NA | 31.2 | 5.9 |
| 2    | 7.6 | 8.6 | NA | 33.0 | 5.7 |
| 3    | 7.6 | 8.6 | NA | 34.0 | 5.7 |
| 4    | 7.7 | 8.7 | NA | 36.7 | 5.8 |

1. All dimensions are in millimetres  
 2. Tolerance is ±0.25mm unless otherwise specified  
 3. Specifications are subject to change without notice

## THT LED

Ø 5mm warm-white

- high luminosity
- long lifetime up to 75'000 hours
- high quality for professional application
- RoHS compliant



| Part Number    | Old Part Number | Colour Temp. (°K) | Intensity (mcd) |       |       | Angle (deg) | Voltage (V) |     | Lens Colour | Type |
|----------------|-----------------|-------------------|-----------------|-------|-------|-------------|-------------|-----|-------------|------|
|                |                 |                   | min             | typ   | max   |             | typ         | max |             |      |
| SLO-234N-00001 | L5-N52N-FTU     | ☉ 2500-3500       | 3000            | 4700  | 6000  | 50°         | 3.2         | 3.5 | waterclear  | 2    |
| SLO-234N-00003 | L5-N55N-FUV     | ☉ 2500-3500       | 15500           | 22000 | 31000 | 15°         | 3.2         | 3.5 | waterclear  | 1    |

### Electro-Optical-Characteristics Ta=25°C, Forward Current: IF Typical = 20mA,

1/10 Duty Cycle, 10ms Pulse Width: up to 110mA, depending on type number.

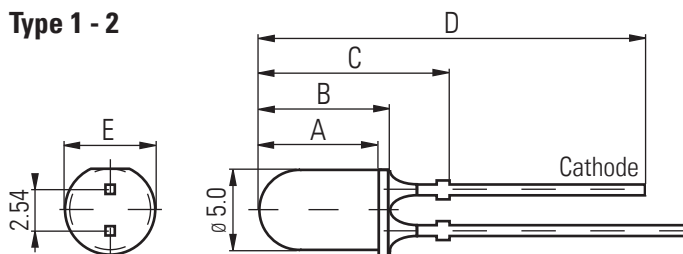
Storage Temp. -40 ~+100 (°C) Operating Temp. -30 ~+85 (°C)

Detailed data sheets are available on request

Packaging: 500pcs/bulk

### Dimensions (mm)

Type 1 - 2



| Type | A   | B   | C    | D    | E   |
|------|-----|-----|------|------|-----|
| 1    | 7.6 | 8.6 | 12.4 | 28.9 | 5.6 |
| 2    | 7.3 | 8.3 | 12.1 | 28.6 | 5.6 |

## THT LED

Ø 5mm cold-white

- high luminosity
- long lifetime up to 75'000 hours
- high quality for professional application
- RoHS compliant



| Part Number    | Old Part Number | Colour Temp. (°K) | Intensity (mcd) |       |       | Angle (deg) | Voltage (V) |     | Lens Colour | Type |
|----------------|-----------------|-------------------|-----------------|-------|-------|-------------|-------------|-----|-------------|------|
|                |                 |                   | min             | typ   | max   |             | typ         | max |             |      |
| SLO-234W-00001 | L5-W50N-BVW     | ☉ 5500-9000       | 1610            | 2380  | 3220  | 65°         | 3.2         | 3.5 | diffused    | 2    |
| SLO-234W-00002 | L5-W53N-BVW     | ☉ 5500-9000       | 5200            | 6150  | 10400 | 45°         | 3.2         | 3.5 | waterclear  | 2    |
| SLO-234W-00006 | L5-W55N-BVW     | ☉ 5500-9000       | 22000           | 27000 | 44000 | 20°         | 3.2         | 3.5 | waterclear  | 1    |

### Electro-Optical-Characteristics Ta=25°C, Forward Current: IF Typical = 20mA,

1/10 Duty Cycle, 10ms Pulse Width: up to 110mA, depending on type number.

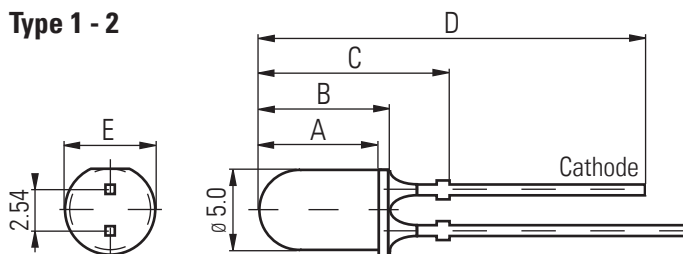
Storage Temp. -40 ~+100 (°C) Operating Temp. -30 ~+85 (°C)

Detailed data sheets are available on request

Packaging: 500pcs/bulk

### Dimensions (mm)

Type 1 - 2



| Type | A   | B   | C    | D    | E   |
|------|-----|-----|------|------|-----|
| 1    | 7.6 | 8.6 | 12.4 | 28.9 | 5.6 |
| 2    | 7.3 | 8.3 | 12.1 | 28.6 | 5.6 |

## THT LED spacer

for Ø 3 + 5mm

- temperature resistance of approx. 140°C
- material: polycarbonat (PC) and glass fibre (GF)
- colour: grey
- RoHS compliant

This product contains the substance of very high concern  
(REACH Regulation (EC) No 1907/2006 Art. 59):

Potassium Perfluorobutanesulfonate - CAS No. 29420-49-3 - EC No. 249-616-3

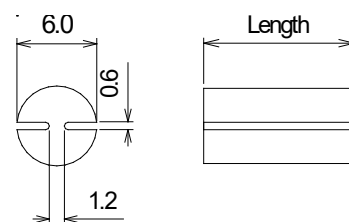
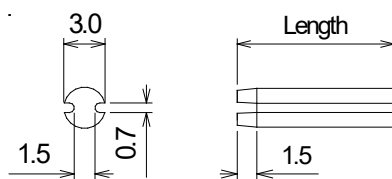


### 3mm LED Spacers

| Part No.  | Length (mm) |
|-----------|-------------|
| 546.71.03 | 3.0         |
| 546.71.04 | 4.0         |
| 546.71.05 | 5.0         |
| 546.71.06 | 6.0         |
| 546.71.07 | 7.0         |
| 546.71.08 | 8.0         |
| 546.71.09 | 9.0         |
| 546.71.10 | 10.0        |
| 546.71.11 | 11.0        |
| 546.71.12 | 12.0        |
| 546.71.13 | 13.0        |
| 546.71.14 | 14.0        |
| 546.71.15 | 15.0        |
| 546.71.16 | 16.0        |
| 546.71.17 | 17.0        |
| 546.71.18 | 18.0        |
| 546.71.19 | 19.0        |
| 546.71.20 | 20.0        |
| 546.71.21 | 21.0        |
| 546.71.22 | 22.0        |
| 546.71.23 | 23.0        |
| 546.71.24 | 24.0        |
| 546.71.25 | 25.0        |

### 5mm LED Spacers

| Part No.  | Length (mm) |
|-----------|-------------|
| 325.71.02 | 2.0         |
| 325.71.03 | 3.0         |
| 325.71.04 | 4.0         |
| 325.71.05 | 5.0         |
| 325.71.06 | 6.0         |
| 325.71.07 | 7.0         |
| 325.71.08 | 8.0         |
| 325.71.09 | 9.0         |
| 325.71.10 | 10.0        |
| 325.71.11 | 11.0        |
| 325.71.12 | 12.0        |
| 325.71.13 | 13.0        |
| 325.71.14 | 14.0        |
| 325.71.15 | 15.0        |
| 325.71.16 | 16.0        |
| 325.71.17 | 17.0        |
| 325.71.18 | 18.0        |
| 325.71.19 | 19.0        |
| 325.71.20 | 20.0        |
| 325.71.21 | 21.0        |
| 325.71.22 | 22.0        |
| 325.71.23 | 23.0        |
| 325.71.24 | 24.0        |
| 325.71.25 | 25.0        |

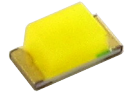








1. All dimensions are in millimetres
2. Tolerance is  $\pm 0.10$ mm unless otherwise specified
3. Specifications are subject to change without notice

## SMD LED

type 0603

- top LED
- dimension 1.6x0.8x0.68mm
- viewing angle: 120°
- RoHS compliant



| Part Number    | Old Part Number | Peak Wavelength   | Intensity (mcd) |     |     | Angle (deg) | Voltage (V) |     | Lens Colour |
|----------------|-----------------|---|-----------------|-----|-----|-------------|-------------|-----|-------------|
|                |                 |   | min             | typ | max |             | typ         | max |             |
| SLO-230B-00006 | SMD-B0603-02    |  460nm         | 70              | 100 | -   | 130°        | 2.7         | 3.3 | waterclear  |
| SLO-230G-00007 | SMD-G0603-02    |  510nm         | 600             | 800 | -   | 130°        | 2.6         | 3.3 | waterclear  |
| SLO-230R-00006 | SMD-R0603-02    |  630nm         | 50              | 70  | -   | 130°        | 1.7         | 2.3 | waterclear  |
| SLO-230Y-00004 | SMD-Y0603-02    |  588nm       | 90              | 120 | -   | 130°        | 1.8         | 2.0 | waterclear  |
| SLO-230N-00005 | SMD-N0603-02    |  3000-3500°K | 460             | 600 | -   | 120°        | 2.7         | 3.3 | diffused    |
| SLO-230W-00007 | SMD-W0603-02    |  6000-7000°K | 460             | 600 | -   | 130°        | 2.7         | 3.3 | diffused    |

### Electro-Optical-Characteristics Ta=25°C, Forward Current: IF Typical = 20mA,

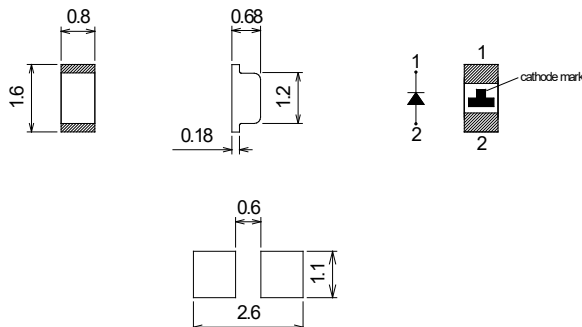
1/10 Duty Cycle, 10ms Pulse Width: up to 160mA, depending on colour.

Storage Temp. -40 ~+100 (°C) Operating Temp. -40 ~+85 (°C)

Detailed data sheets are available on request

Packaging: 4000pcs/reel

### Dimensions (mm)



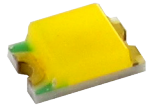
1. All dimensions are in millimetres
2. Tolerance is  $\pm 0.25$ mm unless otherwise specified
3. Specifications are subject to change without notice









## SMD LED

type 0805

- top LED
- dimension 2.0x1.25x0.68mm
- viewing angle: 120°
- RoHS compliant



| Part Number    | Old Part Number | Peak Wavelength   | Intensity (mcd) |     |     | Angle (deg) | Voltage (V) |     | Lens Colour |
|----------------|-----------------|---|-----------------|-----|-----|-------------|-------------|-----|-------------|
|                |                 |   | min             | typ | max |             | typ         | max |             |
| SLO-230B-00007 | SMD-B0805-02    |  460nm         | 160             | 220 | -   | 140°        | 2.8         | 3.4 | waterclear  |
| SLO-230G-00008 | SMD-G0805-02    |  525nm         | 355             | 550 | -   | 120°        | 3.2         | -   | waterclear  |
| SLO-230R-00007 | SMD-R0805-02    |  630nm         | 70              | 110 | -   | 120°        | 1.9         | -   | waterclear  |
| SLO-230Y-00005 | SMD-Y0805-02    |  595nm       | 160             | 230 | -   | 120°        | 2.0         | -   | waterclear  |
| SLO-230N-00006 | SMD-N0805-02    |  3000-3500°K | 600             | 800 | -   | 120°        | 3.2         | -   | diffused    |
| SLO-230W-00008 | SMD-W0805-02    |  6000-7000°K | 600             | 800 | -   | 120°        | 3.2         | -   | diffused    |

### Electro-Optical-Characteristics Ta=25°C, Forward Current: IF Typical = 20mA,

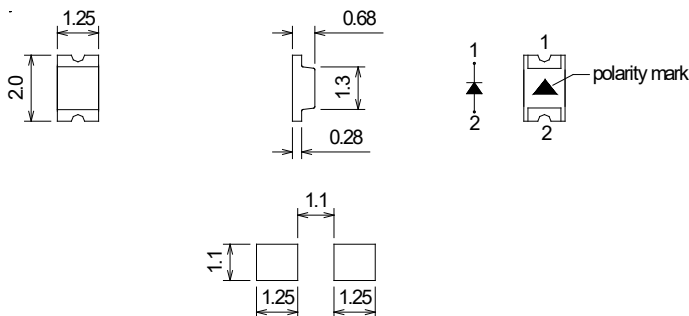
1/10 Duty Cycle, 10ms Pulse Width: up to 180mA, depending on colour.

Storage Temp. -40 ~+100 (°C) Operating Temp. -40 ~+85 (°C)

Detailed data sheets are available on request

Packaging: 3000pcs/reel

### Dimensions (mm)

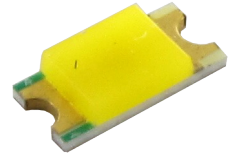








1. All dimensions are in millimetres
2. Tolerance is  $\pm 0.25$ mm unless otherwise specified
3. Specifications are subject to change without notice

## SMD LED

## type 1206

- top LED
- dimension 3.2x1.6x0.68mm
- viewing angle: 120°
- RoHS compliant



| Part Number    | Old Part Number | Dominate Wavelength   | Intensity (mcd) |      |      | Angle (deg) | Voltage (V) |     | Lens Colour |
|----------------|-----------------|---|-----------------|------|------|-------------|-------------|-----|-------------|
|                |                 |   | min             | typ  | max  |             | typ         | max |             |
| SLO-230B-00008 | SMD-B1206-02    |  460nm         | 160             | 210  | -    | 140°        | 2.8         | 3.4 | waterclear  |
| SLO-230G-00009 | SMD-G1206-02    |  518nm         | 600             | 800  | -    | 140°        | 2.6         | 3.4 | waterclear  |
| SLO-230R-00008 | SMD-R1206-02    |  628nm         | 70              | 100  | -    | 120°        | 1.9         | -   | waterclear  |
| SLO-230Y-00006 | SMD-Y1206-02    |  588nm       | 120             | 210  | -    | 120°        | 1.8         | 2.4 | waterclear  |
| SLO-230N-00007 | SMD-N1206-02    |  3000-3500°K | 1015            | -    | 1715 | 120°        | 3.0         | -   | diffused    |
| SLO-230W-00009 | SMD-W1206-02    |  6000-7000°K | 1000            | 1300 | -    | 140°        | 2.8         | 3.4 | diffused    |

### Electro-Optical-Characteristics Ta=25°C, Forward Current: IF Typical = 20mA,

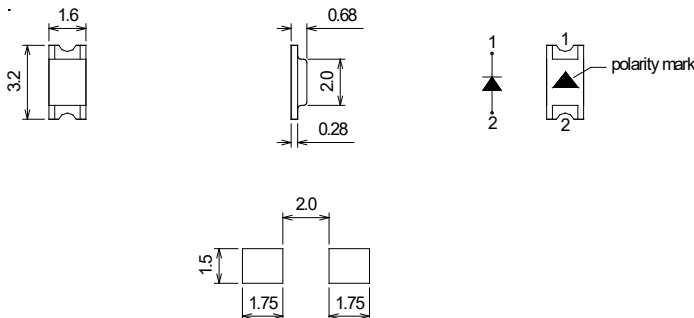
1/10 Duty Cycle, 10ms Pulse Width: up to 180mA, depending on colour.

Storage Temp. -40 ~+100 (°C) Operating Temp. -40 ~+85 (°C)

Detailed data sheets are available on request

Packaging: 3000pcs/reel

### Dimensions (mm)










1. All dimensions are in millimetres
2. Tolerance is  $\pm 0.25$ mm unless otherwise specified
3. Specifications are subject to change without notice

## SMD LED

## type PLCC2

- top LED
- dimension 2.8x3.2x1.9mm
- viewing angle: 120°
- RoHS compliant



| Part Number    | Old Part Number | Peak Wavelength   | Intensity (mcd) |      |      | Angle (deg) | Voltage (V) |     | Lens Colour | Type |
|----------------|-----------------|---|-----------------|------|------|-------------|-------------|-----|-------------|------|
|                |                 |   | min             | typ  | max  |             | typ         | max |             |      |
| SLO-230B-00011 | SMD-BPLCC-02    |  470nm         | 220             | 320  | -    | 120°        | 3.2         | -   | waterclear  | 1    |
| SLO-230G-00002 | SMD-GPLCC-04    |  515nm         | 1000            | 1600 | -    | 120°        | 2.8         | 3.4 | waterclear  | 1    |
| SLO-230R-00009 | SMD-RPLCC-04    |  630nm         | 600             | 780  | -    | 120°        | 1.8         | 2.4 | waterclear  | 1    |
| SLO-230Y-00001 | SMD-YPLCC-02    |  593nm       | 160             | 210  | -    | 120°        | 1.8         | 2.4 | waterclear  | 1    |
| SLO-230N-00001 | SMD-NPLCC-02    |  2800-3100°K | 600             | -    | 820  | 120°        | 3.2         | -   | diffused    | 2    |
| SLO-230S-00001 | SMD-SPLCC-02    |  3800-5000°K | 2100            | 2200 | 2300 | 120°        | 2.8         | 3.4 | diffused    | 2    |
| SLO-230W-00002 | SMD-WPLCC-02    |  5500-7000°K | 1000            | 1300 | -    | 120°        | 3.0         | 3.2 | diffused    | 2    |

### Electro-Optical-Characteristics Ta=25°C, Forward Current: IF Typical = 20mA,

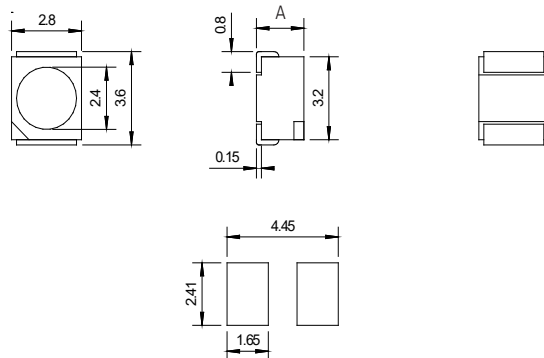
1/10 Duty Cycle, 10ms Pulse Width: up to 180mA, depending on colour.

Storage Temp. -40 ~+100 (°C) Operating Temp. -40 ~+85 (°C)

Detailed data sheets are available on request

Packaging: 2000pcs/reel

### Dimensions (mm)



| Type | A   |
|------|-----|
| 1    | 1.9 |
| 2    | 1.4 |

1. All dimensions are in millimetres
2. Tolerance is  $\pm 0.25$ mm unless otherwise specified
3. Specifications are subject to change without notice

## SMD LED

## type PLCC6

- top LED
- dimension 5.0 x 5.0 x 1.5mm
- viewing angle: 120°
- RoHS compliant



| Part Number    | Old Part Number | Peak Wavelength | Intensity (mcd) |      |      | Angle (deg) | Voltage (V) |     | Lens Colour |
|----------------|-----------------|-----------------|-----------------|------|------|-------------|-------------|-----|-------------|
|                |                 |                 | min             | typ  | max  |             | typ         | max |             |
| SLO-230B-00010 | SMD-BPLCC6-02   | ● 465nm         | 780             | 1000 | -    | 120°        | 2.8         | 3.2 | waterclear  |
| SLO-230G-00005 | SMD-GPLCC6-02   | ● 520nm         | 1800            | -    | 3500 | 120°        | 2.8         | 3.2 | waterclear  |
| SLO-230R-00004 | SMD-RPLCC6-02   | ● 630nm         | 1300            | 1700 | -    | 120°        | 1.8         | 2.4 | waterclear  |
| SLO-230Y-00003 | SMD-YPLCC6-02   | ● 586nm         | 460             | 660  | -    | 120°        | 2.0         | -   | waterclear  |
| SLO-230N-00004 | SMD-NPLCC6-02   | ● 2800-3100°K   | 3370            | 6370 | 6370 | 120°        | 3.0         | 3.2 | diffused    |
| SLO-230S-00002 | SMD-SPLCC6-02   | ● 3800-5000°K   | 5300            | -    | 7600 | 120°        | 2.8         | 3.4 | diffused    |
| SLO-230W-00005 | SMD-WPLCC6-02   | ● 5500-7000°K   | 3770            | -    | 6370 | 120°        | 3.0         | 3.2 | diffused    |
| SLO-2351-00003 | SMD-FPLCC6-02   | ● 630nm         | 350             | 460  | -    | 120°        | 1.8         | 2.4 | waterclear  |
|                |                 | ● 518nm         | 1000            | 1300 | -    | 120°        | 2.8         | 3.4 |             |
|                |                 | ● 462nm         | 210             | 270  | -    | 120°        | 2.8         | 3.4 |             |

### Electro-Optical-Characteristics Ta=25°C, Forward Current: IF Typical = 20mA (x3),

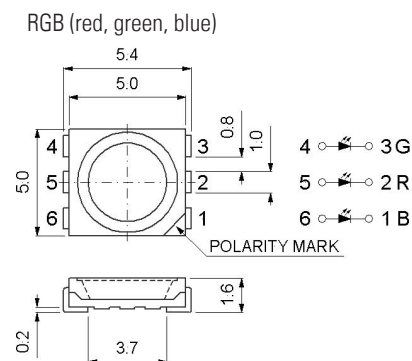
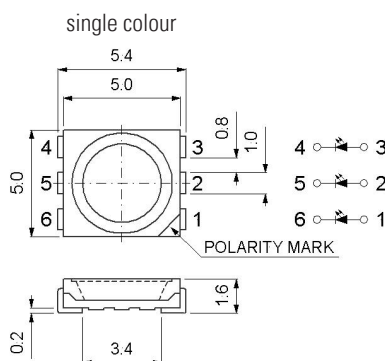
1/10 Duty Cycle, 10ms Pulse Width: up to 180mA, depending on colour.

Storage Temp. -40 ~+100 (°C) Operating Temp. -40 ~+85 (°C)

Detailed data sheets are available on request

Packaging: 1000pcs/reel

### Dimensions (mm)



1. All dimensions are in millimetres
2. Tolerance is  $\pm 0.25$ mm unless otherwise specified
3. Specifications are subject to change without notice

## Power LED

## type PL1

- high luminosity
- high quality or professional application
- reflow soldering
- RoHS compliant



| Part Number    | Old Part Number | Colour Temp.<br>(°K) | Intensity (mcd) |     |     | Angle<br>(deg) | Voltage (V) |     | Lens Colour |
|----------------|-----------------|----------------------|-----------------|-----|-----|----------------|-------------|-----|-------------|
|                |                 |                      | min             | typ | max |                | typ         | max |             |
| SLO-231N-00002 | PL1-NL11-01     | ☉ 2700               | 70              | 95  | 100 | 120°           | 3.5         | 4.0 | diffused    |
| SLO-231W-00004 | PL1-WL11-00     | ☁ 4500-5500          | 100             | 110 | 120 | 120°           | 3.5         | 4.0 | diffused    |
| SLO-231N-00005 | PL1-NL11-00     | ☉ 3000               | 70              | 95  | 100 | 120°           | 3.5         | 4.0 | diffused    |

### Electro-Optical-Characteristics Ta=25°C, Forward Current: IF Typical = 350mA,

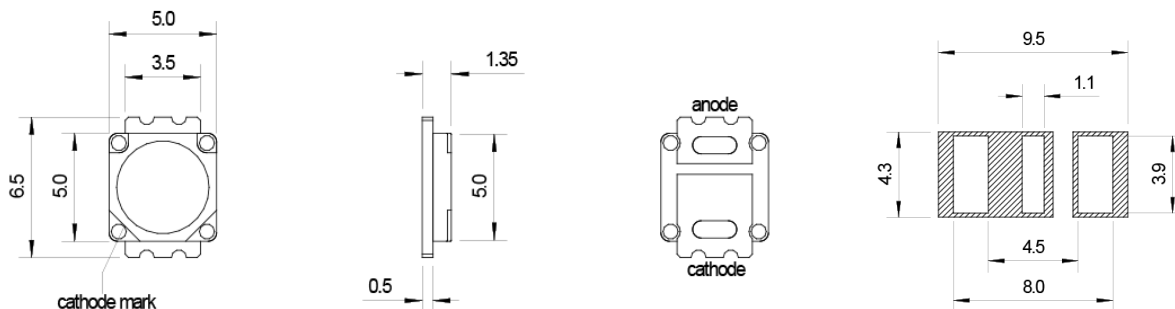
1/10 Duty Cycle, 10ms Pulse Width: up to 600mA, depending on colour.

Storage Temp. -40 ~+100 (°C) Operating Temp. -40 ~+85 (°C)

Detailed data sheets are available on request

Packaging: 1400pcs/reel

### Dimensions (mm)



1. All dimensions are in millimetres
2. Tolerance is  $\pm 0.25$ mm unless otherwise specified
3. Specifications are subject to change without notice

## Precautions for Electro Static Damage ESD

LEDs and LED products are sensitive for static electricity. There are several precautions for proper ESD safe handling.

### Handling:

Make sure working persons are trained in ESD safe handling of LEDs and LED products and are always properly grounded when working with LEDs and LED products.

We suggest to always use the following equipment when working with LEDs and LED products:

- Grounded conductive floor mats
- Grounded conductive table mats (with the same potential as the floor)
- Conductive shoes or slippers to be worn by the persons handling the LEDs
- Grounded conductive wrist band to be worn by the persons handling the LEDs
- Anti-electrostatic gloves to handle the LEDs (these will also help to protect the LEDs from contamination with dirt and other substances)
- Grounded working equipment, e.g. soldering irons, calibration equipment and other tools
- Anti-electrostatic clothing to be worn by persons handling the LEDs
- Ionized air blower
- Humidifier (especially in a dry working environment)

### Delivery:

The LEDs and LED products have to be transported in a conductive container.

### Storage:

The LEDs and LED products have to be stored in a conductive container located on a grounded surface.

### Operation:

Prevent LEDs and LED products from electrostatic discharge.

Only use EMC approved power supplies.

Use additional EMC protective electronic components, if your application or environment requires it.

## Major application fields:

### **Automotive/Special vehicles:**

Warning lights, emergency indicators, car immobilizing systems, car factory automation.

Blue LED flashers for Police cars, Diplomacy cars, special forces vehicles.

### **Consumer electronics:**

Microwave ovens, toasters, coffee machines, Irons, refrigerators.

### **Industrial controls / Traffic controls:**

Panel indicators, elevators, photo-processing darkroom lights, traffic control, railway track diagram indicators, power stations.

LED clusters for railway use.

### **Telecommunication:**

PCB line indicators, status indicators, portable communication equipment.

### **Defence:**

Tank/tank missiles, combat aircrafts, mine detectors warning lights, submarine engine control, fire coordination systems for tanks.

28 NATO Numbers.

NATO Manufacturer Code S3643.

French Army „GAM T1“ listed.

### **Aviation:**

Commercial and military, cockpit lights, stewardess call systems.

### **Security:**

Safety control panels surveillance, emergency lights.

### **Medical:**

Fault indicators, sealed indicators for surgery equipment,

blood analyser, nurse-call systems, dentist equipment.

**We strive to be a Total Quality company that anticipates and responds to our customer's needs, continuously improving our products and processes.**



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