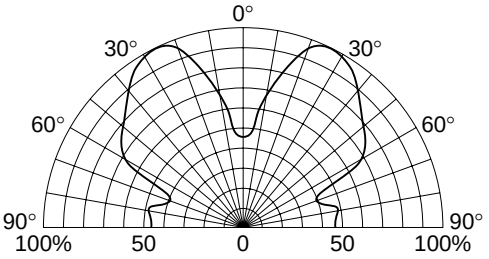
## ■3$\phi$ Inverted-Cone LEDs (for lighting-panels and illumination)

SEL2013 Series

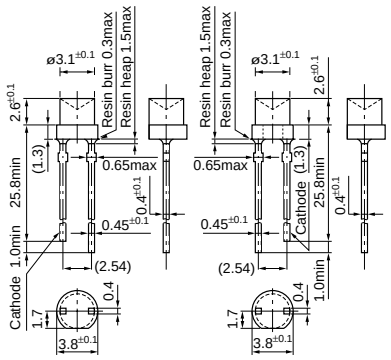
| Part Number | Emitting Color | | Lens Color | Forward Voltage VF (V) TYP | Forward Voltage VF (V) MAX | Conditions IF (mA) | Luminous Intensity Iv (mcd) TYP | Conditions IF (mA) | Peak Wavelength λP (nm) TYP | Conditions IF (mA) | Dominant Wavelength λd (nm) TYP | Conditions IF (mA) | Spectrum Half Bandwidth Δλ (nm) TYP | Conditions IF (mA) | Chip Material |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SEL2613CS-S | High luminosity red | | Transparent light red | 1.75 | 2.2 | 10 | 20 | 20 | 660 | 10 | 642 | 10 | 30 | 10 | GaAlAs |
| SEL2213C | Red | | Water clear | 1.9 | 2.5 | 10 | 7.0 | 20 | 630 | 10 | 620 | 10 | 35 | 10 | GaAsP |
| SEL2813A | Amber | | Transparent orange | 1.9 | 2.5 | 10 | 8.0 | 20 | 610 | 10 | 605 | 10 | 35 | 10 | GaAsP |
| SEL2913K | Orange | | Transparent light orange | 1.9 | 2.5 | 10 | 8.0 | 20 | 587 | 10 | 590 | 10 | 33 | 10 | GaAsP |
| SEL2713K | Yellow | | Transparent yellow | 2.0 | 2.5 | 10 | 17 | 20 | 570 | 10 | 571 | 10 | 30 | 10 | GaP |
| SEL2413E | Green | | Transparent green | 2.0 | 2.5 | 10 | 14 | 20 | 560 | 10 | 567 | 10 | 20 | 10 | GaP |
| SEL2413G | Green | | Diffused green | 2.0 | 2.5 | 10 | 12 | 20 | 560 | 10 | 567 | 10 | 20 | 10 | GaP |
| SEL2513E | Pure green | | Transparent green | 2.0 | 2.5 | 10 | 5.0 | 20 | 555 | 10 | 559 | 10 | 20 | 10 | GaP |
| SELT2E13C | Ultrahigh luminosity | Blue | Water clear | 3.1 | 4.0 | 20 | 150 | 20 | 458 | 20 | 465 | 20 | 25 | 20 | InGaN |
| SELT2WA13C | | White | Water clear | 3.1 | 4.0 | 20 | 280 | 20 | Chromaticity: x=0.300, y=0.295 | | | | | | InGaN |
| SELT2WC13C | | Bulb Light | Water clear | 3.1 | 4.0 | 20 | 220 | 20 | Chromaticity: x=0.452, y=0.412 | | | | | | InGaN |
| SELT2WD13C | | Fancy blue green | Water clear | 3.1 | 4.0 | 20 | 200 | 20 | Chromaticity: x=0.170, y=0.365 | | | | | | InGaN |
| SELT2WE13C | | Light pink | Water clear | 3.1 | 4.0 | 20 | 240 | 20 | Chromaticity: x=0.356, y=0.289 | | | | | | InGaN |
| SELT2WF13C | | Light blue green | Water clear | 3.1 | 4.0 | 20 | 280 | 20 | Chromaticity: x=0.200, y=0.300 | | | | | | InGaN |
| SELT2WH13C | | Fancy green | Water clear | 3.1 | 4.0 | 20 | 320 | 20 | Chromaticity: x=0.260, y=0.460 | | | | | | InGaN |
| SELT2WJ13C | | Fancy pink | Water clear | 3.1 | 4.0 | 20 | 200 | 20 | Chromaticity: x=0.382, y=0.268 | | | | | | InGaN |
| SELT2WK13C | | Fancy red purple | Water clear | 3.1 | 4.0 | 20 | 150 | 20 | Chromaticity: x=0.421, y=0.221 | | | | | | InGaN |

**Directional Characteristics (representative example)**




**External Dimensions** (Unit: mm)

Dimensional Tolerance: ±0.3




Product Mass: Approx. 0.11 g

## Absolute Maximum Ratings

●Visible Light Unicolor Lamp

| Parameter | Unit | Ratings | | | | | | Conditions |
|---|---|---|---|---|---|---|---|---|
| | | GaP | GaAsP | GaAlAs | AlGaInP | InGaN | GaN | |
| $P_D$ | mW | 75 | | | | 120 | | |
| $I_F$ | mA | 30 | | | | | | |
| ΔIF | mA/°C | −0.45 | | | | | | 25°C or higher |
| IFP | mA | 100 | | | | | 70 | f=1kHz, tw≤100μs |
| VR | V | 3 | | | 5 | | | |
| Top | °C | −30 to +85 | | | | | −30 to +80 | |
| Tstg | °C | −30 to +100 | | | | | | |

●Visible Light Bicolor Lamp

| Parameter | Unit | Ratings | | | | | Conditions |
|---|---|---|---|---|---|---|---|
| | | GaP | GaAsP | GaAlAs | AlGaInP | InGaN | |
| $P_D$ | mW | 75 | | | | 120 | Same conditions for simultaneous lighting |
| $I_F$ | mA | 30 | | | | | |
| ΔIF | mA/°C | −0.45 | | | | | 25°C or higher |
| IFP | mA | 100 | | | | | f=1kHz, tw≤100μs |
| VR | V | 4 | | | 5 | | |
| Top | °C | −30 to +85 | | | | | |
| Tstg | °C | −30 to +100 | | | | | |

●Visible Light Unicolor Surface Mount LEDs

| Parameter | Unit | Ratings | | | | | | Conditions |
|---|---|---|---|---|---|---|---|---|
| | | GaP | GaAsP | GaAlAs | AlGaInP | InGaN | GaN | |
| $I_F$ | mA | 30 | | | | 20 | | |
| ΔIF | mA/°C | −0.45 | | | | −0.27 | | 25°C or higher |
| IFP | mA | 100*1 | | | | 70*2 | | f=1kHz, tw≤100μs |
| VR | V | 3 | | | 5 | | | |
| Top | °C | −30 to +85 | | | | −30 to +80 | | |
| Tstg | °C | −30 to +100 | | | | | | |

*1: 70mA for SEC1005/1007 Series
*2: 50mA for SEC1005/1007 Series

●Visible Light Bicolor Surface Mount LEDs

| Parameter | Unit | Ratings | Conditions |
|---|---|---|---|
| | | SEC2002/2004 | |
| $P_D$ | mW | 75 | |
| | | (Same conditions for simultaneous lighting) | |
| $I_F$ | mA | 30 | |
| ΔIF | mA/°C | −0.45 | 25°C or higher |
| IFP | mA | 70 | f=1kHz, tw≤100μs |
| VR | V | 4 | |
| Top | °C | −30 to +85 | |
| Tstg | °C | −30 to +100 | |

●Visible Light Three Element Surface Mount LEDs

| Parameter | Unit | Ratings | | Conditions |
|---|---|---|---|---|
| | | SECT3M02C-S | | |
| | | Red | Green/Blue | |
| $P_D$ | mW | 75 | 120 | When one chip lights up<br>(same as green/blue for simultaneous lighting) |
| $I_F$ | mA | 30 | | |
| ΔIF | mA/°C | −0.45 | | 25°C or higher |
| IFP | mA | 70 | 50 | f=1kHz, tw≤100μs |
| VR | V | 5 | | |
| Top | °C | −30 to +80 | | |
| Tstg | °C | −30 to +100 | | |