

**V<sub>F</sub> = 1.5 V**  
**Surface Mount LED**  
**SEC1G03C**

**Description**

The SEC1G03C is a surface mount infrared LED.

**Features**

- Color ----- Infrared
- Lens Color ----- Clear
- Forward Voltage, V<sub>F</sub> ----- 1.5 V (typ.) (I<sub>F</sub> = 50 mA)
- Peak Wavelength, λ<sub>p</sub> ----- 850 nm
- Viewing Angle, 2θ<sub>1/2</sub> ----- 60 deg
- MSL 5
- RoHS Compliant
- Pb-free, Reflow Soldering
- High Reliability

**Applications**

- Communication Equipment
- Sensor
- Infrared Light Source

**Package**

Dimensions (L × W × H): 3.0 × 1.5 × 1.4 mm  
Inner Lens Type



(1) Cathode  
(2) Anode

Not to scale

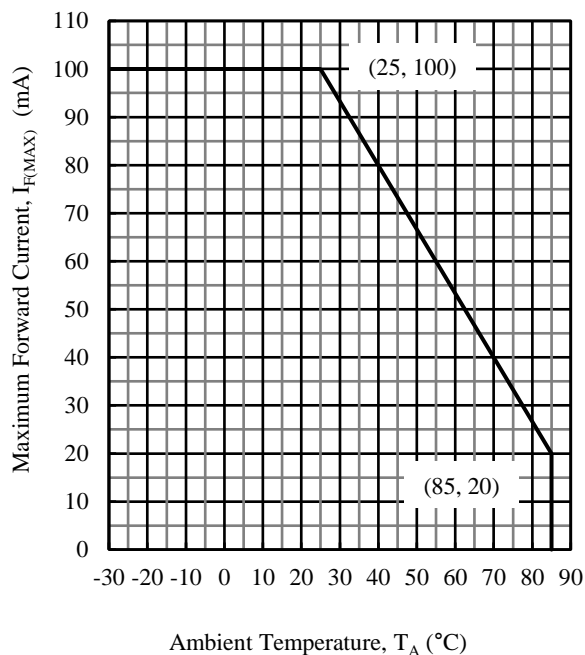
**Absolute Maximum Ratings**Unless specifically noted,  $T_A = 25\text{ }^{\circ}\text{C}$ .

Parameter	Symbol	Conditions	Rating	Unit
Forward Current	$I_F$		100	mA
Forward Current Reduction	$\Delta I_F$	$T_A \geq 25\text{ }^{\circ}\text{C}$	-1.33	mA/ $^{\circ}\text{C}$
Pulse Forward Current	$I_{FP}$	Frequency = 1 kHz Pulse Width $\leq 10\text{ }\mu\text{s}$	300	mA
Reverse Voltage	$V_R$		3	V
Operating Temperature	$T_{OP}$		-30 to 85	$^{\circ}\text{C}$
Storage Temperature	$T_{STG}$		-30 to 100	$^{\circ}\text{C}$

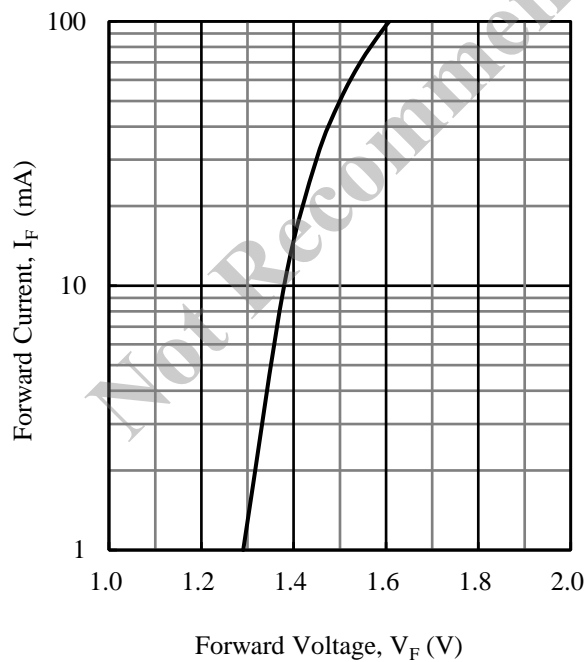
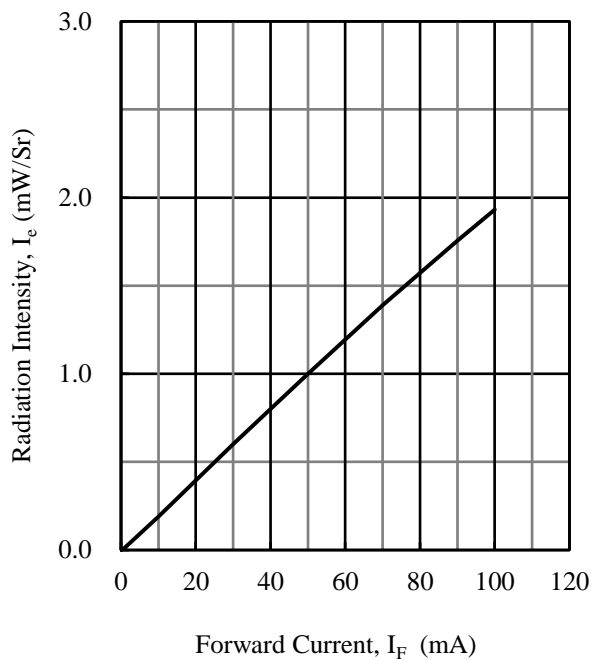
**Electrical / Optical Characteristics**Unless specifically noted,  $T_A = 25\text{ }^{\circ}\text{C}$ .

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Forward Voltage	$V_F$	$I_F = 50\text{ mA}$	—	1.5	1.8	V
Reverse Current	$I_R$	$V_R = 3\text{ V}$	—	—	10	$\mu\text{A}$
Radiation Intensity	$I_e$	$I_F = 50\text{ mA}$	3.0	—	—	mW/Sr
Peak Wavelength	$\lambda_P$	$I_F = 50\text{ mA}$	—	850	—	nm
Viewing Angle	$2\theta_{1/2}$	$I_F = 50\text{ mA}$	—	60	—	deg

## Derating Curves

Figure 1.  $I_{F(MAX)}$  vs.  $T_A$ 

## Characteristic Curves

Figure 2.  $I_F$  vs.  $V_F$ Figure 3.  $I_e$  vs.  $I_F$

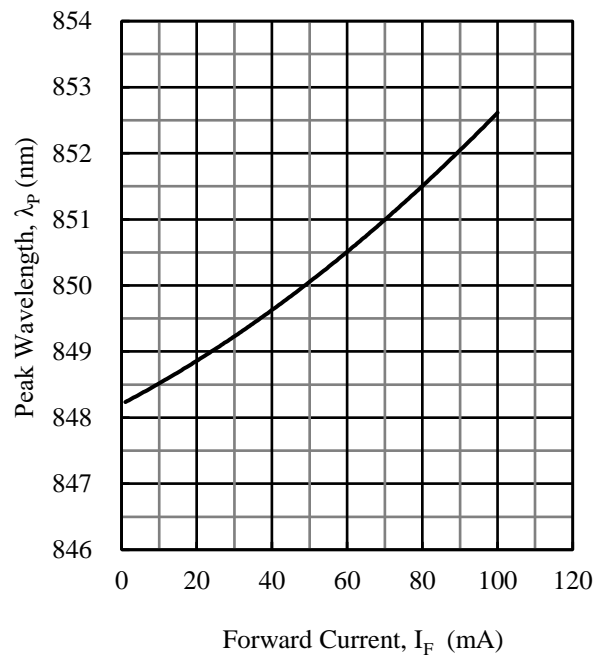


Figure 4.  $\lambda_p$  vs.  $I_F$

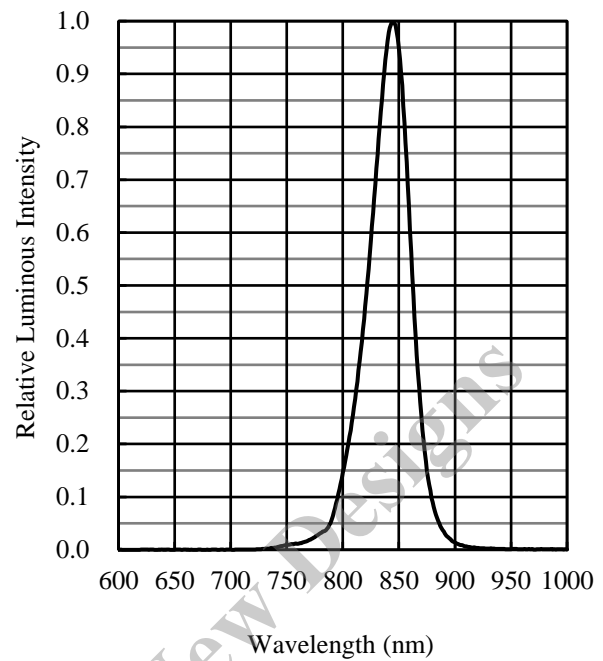


Figure 5. Spectrum

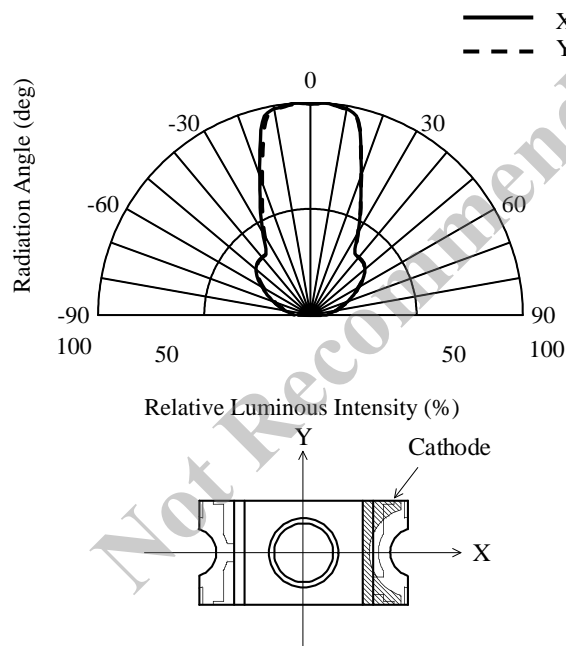
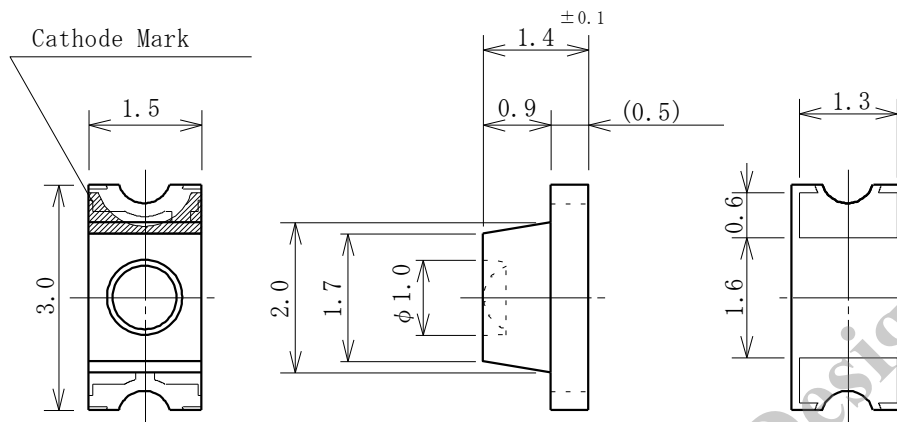


Figure 6. Directivity

## Physical Dimensions

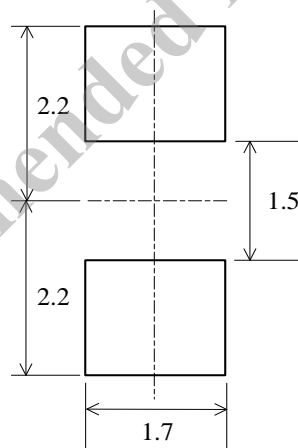
### • Surface Mount (3.0 × 1.5 × 1.4 mm) Inner Lens Type



#### NOTES:

- Dimensions in millimeters
- Unless otherwise specified, tolerance is  $\pm 0.2$ .
- RoHS compliant
- MSL 5 (Moisture Sensitivity Level 5)

### • Land Pattern Example



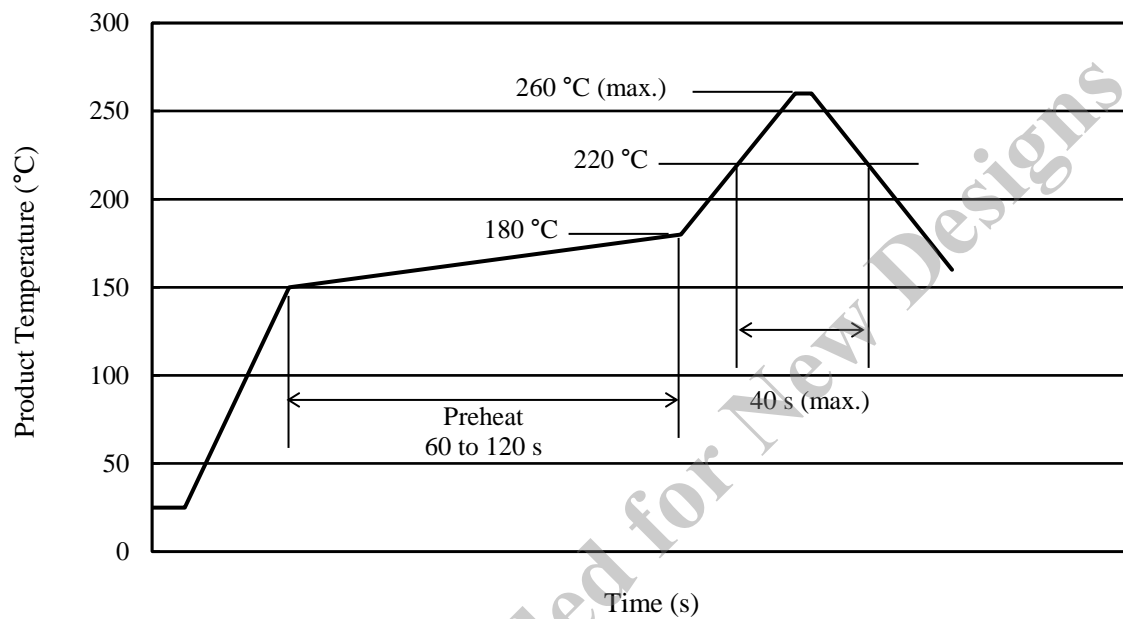
Unit: mm

## Soldering Conditions

When soldering the products, it is required to minimize the working time within the following limits:

- Reflow:  
Preheat: 150 to 180 °C / 60 to 120 s  
Solder heating: 220 °C / 40 s (260 °C peak, 2 times)
- Soldering iron: 350 ±10 °C / 3 s, 1 time

### ● Reference Reflow Profile



### Precautions for Use

- After soldering the product, care should be taken not to apply mechanical stress or excessive vibration until it cools to room temperature.
- Do not cool the product rapidly.
- When mounting the product on a board, mounting position and orientation should be taken into account so that any stress due to board warpage is not applied to the product.
- Do not touch the encapsulating resin of the product with sharp objects such as a tweezer or fingernails. Also, do not use the product again after removal.
- Do not touch the product after mounting it on a board.
- Use the product at rated current (sorting current) as much as possible. When the product is used at a current lower than the rated current (sorting current), a variation in forward voltage or luminous intensity may increase. Therefore, care should be taken for such variation when you use the product at low current.
- As the product uses gallium arsenide (GaAs), the following must be considered dangerous and be avoided: burning or crushing the product; inhaling or swallowing the liquid or gas generated by any chemical treatment on the product.

Not Recommended for New Designs

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