V_F = 1.5 V
Surface Mount LED

SEC1G03C

Data Sheet

Description

The SEC1G03C is a surface mount infrared LED.

Features

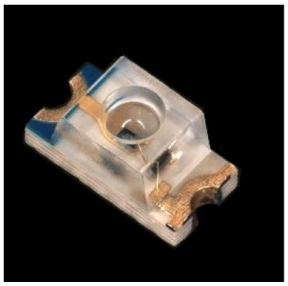
- Color ---------- Infrared
- Lens Color ---------- Clear
- Forward Voltage, V_F --------- 1.5 V (typ.) (I_F = 50 mA)
- Peak Wavelength, λ_P ---------- 850 nm
- Viewing Angle, $2\theta_{1/2}$ ---------- 60 deg
- MSL 5
- RoHS Compliant
- Pb-free, Reflow Soldering
- High Reliability

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 °C.

Parameter	Symbol	Conditions	Rating	Unit
Forward Current	I_F		100	mA
Forward Current Reduction	ΔI_F	$T_A \geq 25$ °C	−1.33	mA/°C
Pulse Forward Current	I_{FP}	Frequency = 1 kHz Pulse Width ≤ 10 μs	300	mA
Reverse Voltage	V_R		3	V
Operating Temperature	T_{OP}		−30 to 85	°C
Storage Temperature	T_{STG}		−30 to 100	°C

Electrical / Optical Characteristics

Unless specifically noted, T_A = 25 °C.

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

Derating Curves

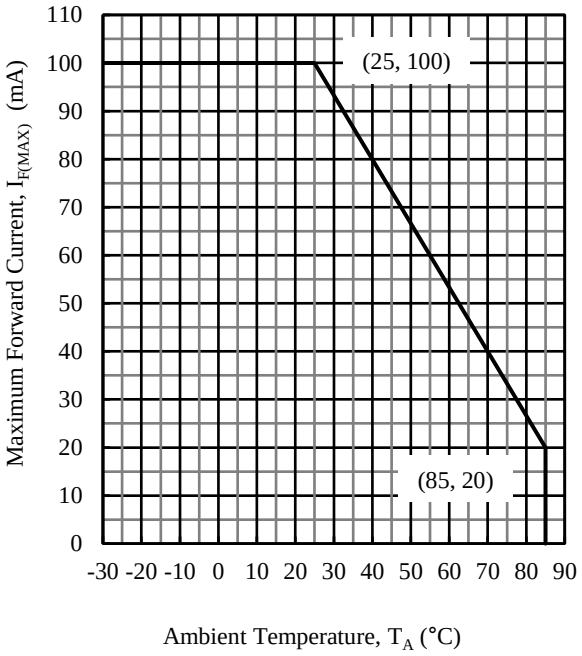


Figure 1. $I_{F(MAX)}$ vs. T_A

Characteristic Curves

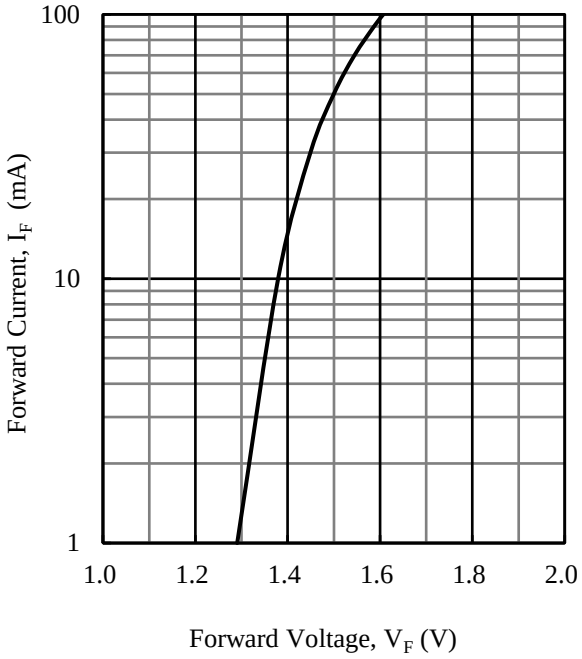


Figure 2. I_F vs. V_F

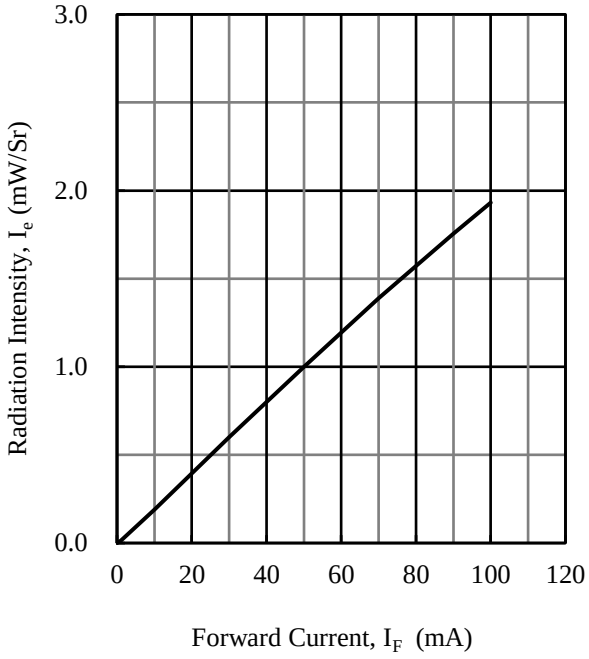


Figure 3. I_e vs. I_F

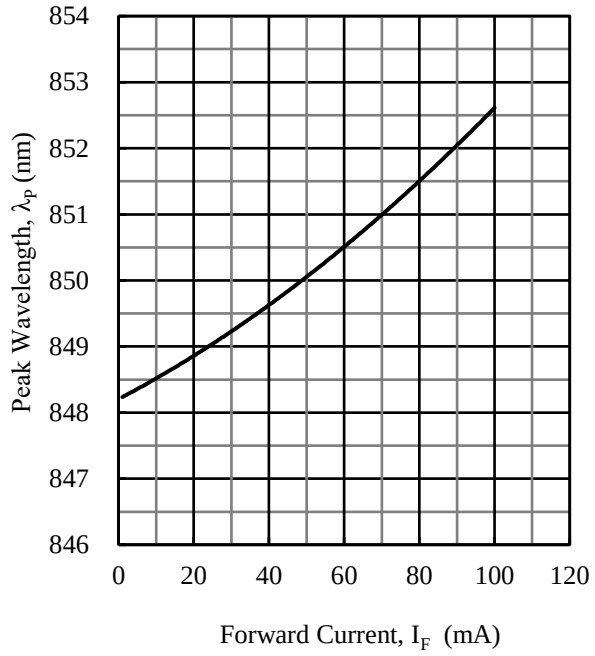


Figure 4. λ_P vs. I_F

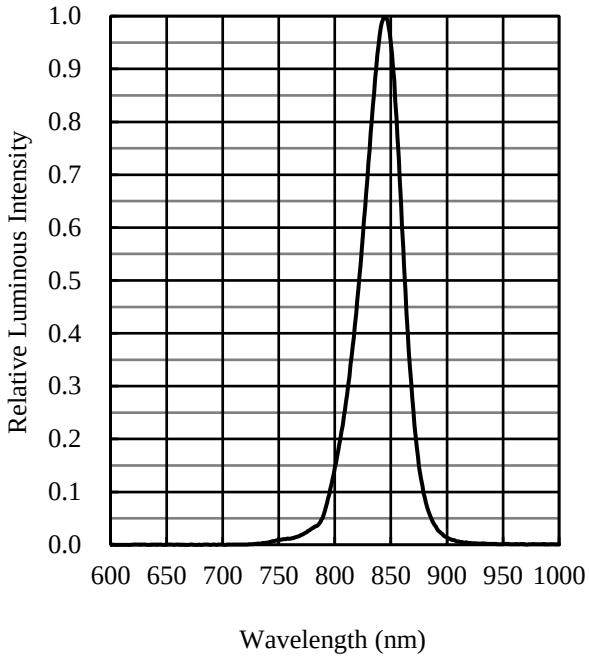


Figure 5. Spectrum

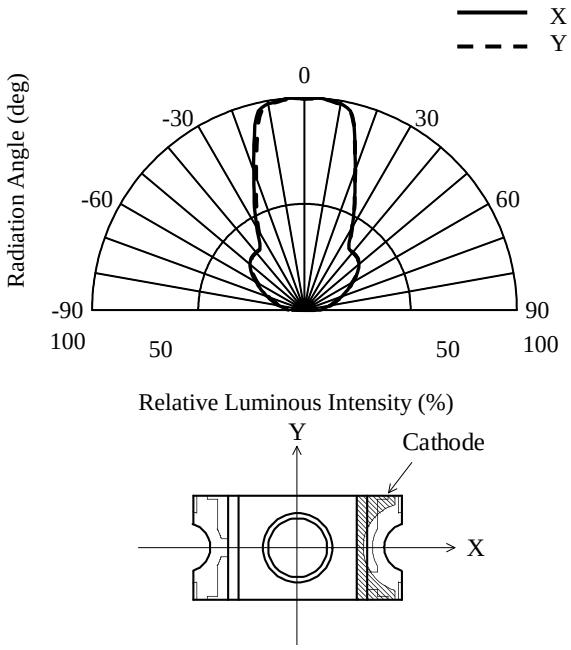
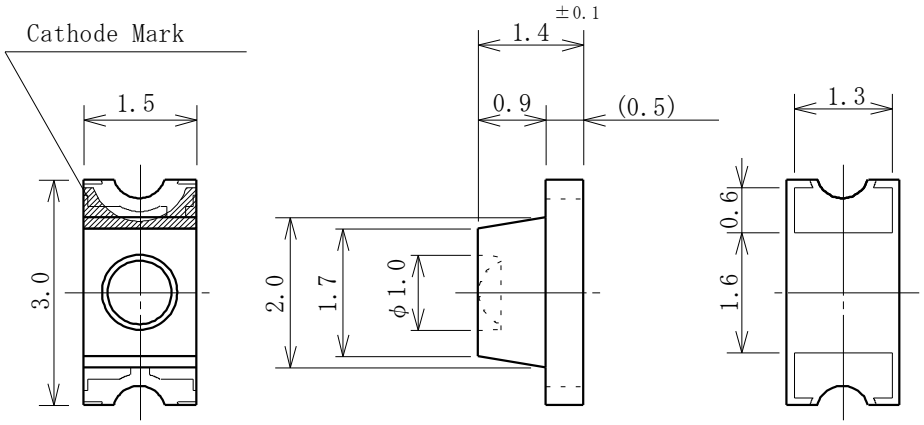


Figure 6. Directivity

Physical Dimensions

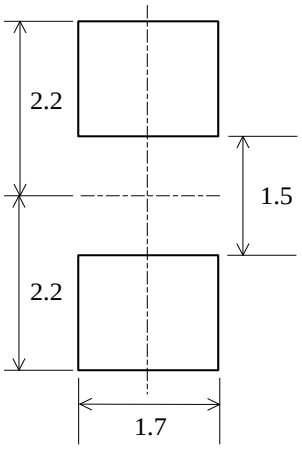
● **Surface Mount (3.0 × 1.5× 1.4 mm) Inner Lens Type**



NOTES:

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

● **Land Pattern Example**



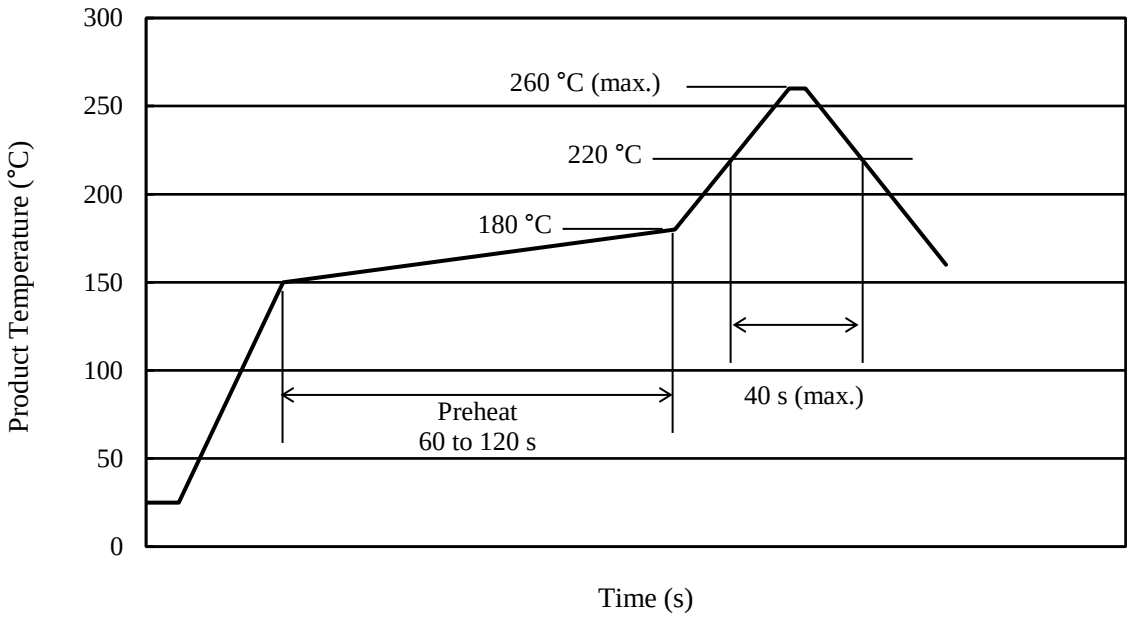
Unit: mm

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.

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