USHIO Applying Light to Life



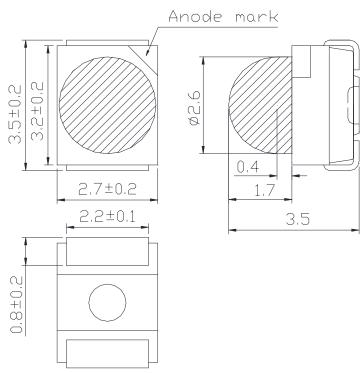
Data Sheet 2020.05

epitex

SMT1100D-23

1100nm High Performance Infrared TOP LED

Outline and Internal Circuit



(Unit: mm)

Features

• Chip Material : InGaAsP

• Chip Dimension: 350um * 350um

• Number of Chips : 1pce

Peak Wavelength : 1100nm typ.

• Lead Frame Die : Silver Plated

Package Resin : PA6T

• Lens : Silicone or Epoxy Resin

Application

Absolute Maximum Ratings (Tc=25°C)

| Item | Symbol | Ratings | Unit |
|-----------------------|--------|------------|------|
| Power Dissipation | PD | 150 | mW |
| Forward Current | lF | 100 | mA |
| Pulse Forward Current | IFP | 1000 | mA |
| Reverse Voltage | VR | 5 | V |
| Thermal Resistance | Rthja | 80 | K/W |
| Junction Temperature | Tj | 120 | °C |
| Operating Temperature | Topr | -40 ~ +100 | °C |
| Storage Temperature | Tstg | -40 ~ +100 | °C |
| Soldering Temperature | TSOL | 250 | °C |

[‡]Pulse Forward Current condition : Duty 1% and Pulse Width=10us.

Optical and Electrical Characteristics (Tc=25°C)

(*: 100% testing, **: reference value)

| | | | | (· 100% testing, · Telefence value) | | |
|----------------------|--------|------|-----|--------------------------------------|-------|----------------|
| Parameter | Symbol | Min | Тур | Max | Unit | Test Condition |
| Forward Voltage | VF | | 1.2 | 1.5 | V | IF=50mA* |
| | VFP | | 2.3 | | | IFP=1A** |
| Reverse Current | IR | | | 10 | uA | VR=5V* |
| Total Radiated Power | РО | 8.0 | 12 | | mW | IF=50mA* |
| | | | 60 | | | IFP=1A** |
| Radiant Intensity | ΙE | | 27 | | mW/sr | IF=50mA** |
| | | | 130 | | | IFP=1A** |
| Peak Wavelength | λр | 1070 | | 1130 | nm | IF=50mA* |
| Half Width | Δλ | | 55 | | nm | IF=50mA** |
| Viewing Half Angle | θ1/2 | | ±20 | | deg. | IF=50mA** |
| Rise Time | tr | | 60 | | ns | IF=50mA** |
| Fall Time | tf | | 30 | | ns | IF=50mA** |

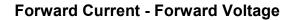
[‡] Radiated Power is measured by G8370-85.

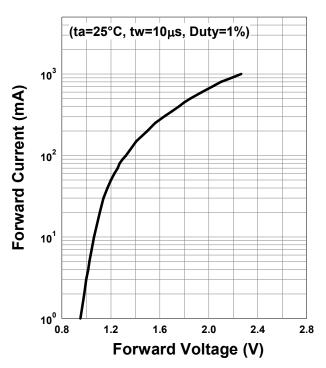
[‡]Soldering condition : Soldering condition must be completed with 5 seconds at 250°C.

[‡] Radiant Intensity is measured by ANDO Optical Multi Meter AQ2140 & AQ2743.

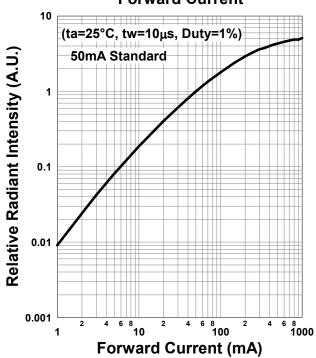
SMT1100D-23

Typical Characteristic Curves

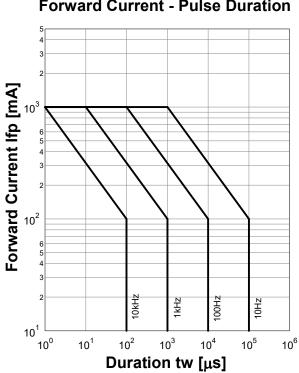




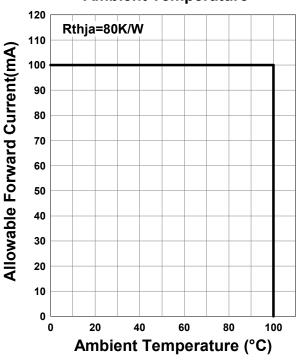
Relative Radiant Intensity -Forward Current

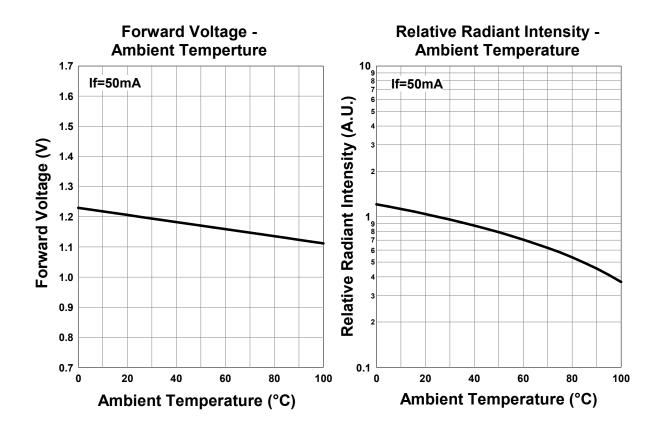


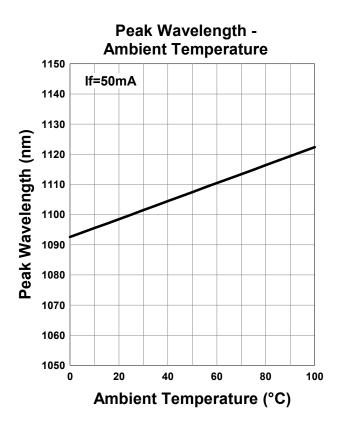
Forward Current - Pulse Duration

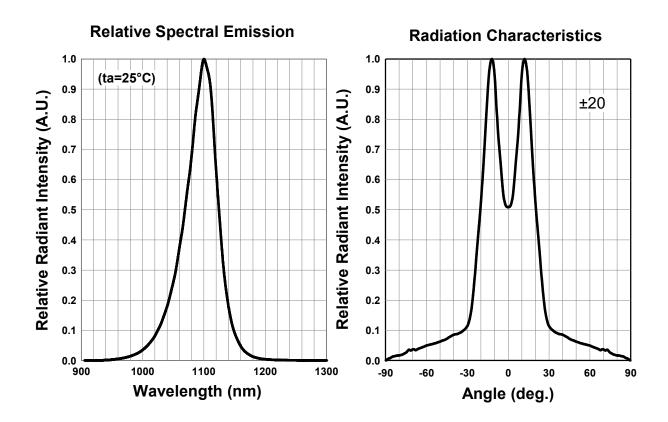


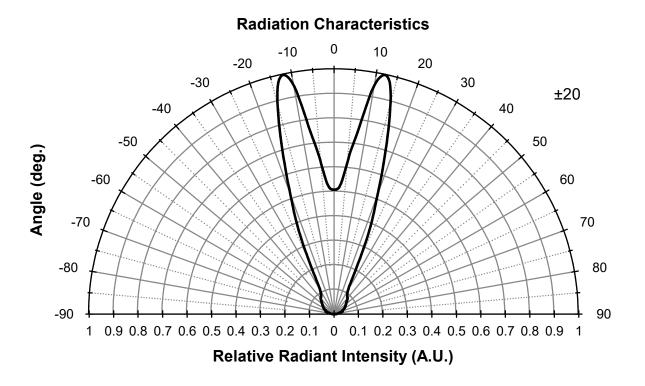
Allowable Forward Current -Ambient Temperature





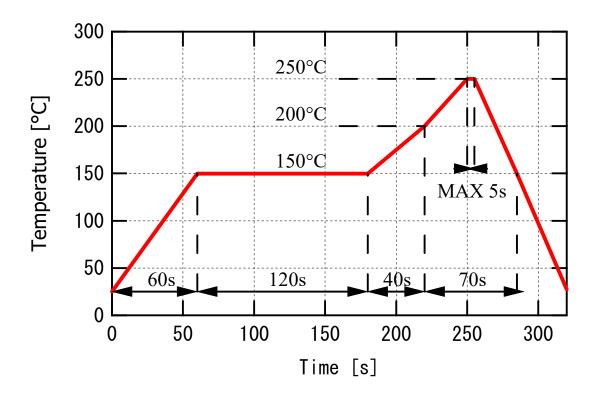






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Recommended Reflow Soldering Profile





Wrapping

Moisture barrier bag aluminum laminated film with a desiccant to keep out the moisture absorption during the transportation and storage.

SMD LED storage and handling precautions Storage Conditions before Opening a Moisture-Barrier Aluminum Bag

- Before opening a moisture-barrier aluminum bag, please store it at <30°C, <60%RH.
- Please note that the maximum shelf life is 12 months under these conditions.

Storage Conditions after Opening a Moisture-Barrier Aluminum Bag

- After opening a moisture-barrier aluminum bag, store the aluminum bag and silica gel in a desiccator.
- After opening the bag, please solder the LEDs within 72 hours in a room with 5 30°C, <50%RH.
- Please put any unused, remaining LEDs and silica gel back in the same aluminum bag and then vacuum-seal the bag.
- It is recommended to keep the re-sealed bag in a desiccator at <30%RH.</p>
- The 72-hour- long floor life does not include the time while LEDs are stored in the moisture-barrier aluminum bag. However, we strongly recommend to solder the LEDs as soon as possible after opening the aluminum bag.

Notes about Re-sealing a Moisture-Barrier Aluminum Bag

When vacuum-sealing an opened aluminum bag, if you find the moisture-indicator of the silica gel
has changed to pink from blue (indicating a relative humidity of 30 % or more), please do not use
the unused LEDs, the aluminum bag, or the silica gel.

Notes about Opening a Re-sealed Moisture-Barrier Aluminum Bag

 When opening a vacuumed and re-sealed aluminum bag in order to use the remaining LEDs stored in the bag, if you find that the moisture-indicator of the silica has changed to pink, please do not use the LEDs.



Disclaimer

Product specifications and data shown in this product catalog are subject to change without notice for the purposes of improving product performance, reliability, design, or otherwise.

Product data and parameters in this catalog are typical values based on reasonably up-to-date measurements. Product data and parameters may vary by user application and over time.

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