

Technical Data Sheet

High Power Infrared LED

YL-3535F-810nM(A)



Features

- IR lightsource with high efficiency
- Double stack emitter
- Peak wavelength $\lambda_p=810\text{nm}$
- Soldering methods : SMT
- Pb free
- The product itself will remain within RoHS compliant version.
- Narrow half angle (+/- 15°)

Description

- YL-3535F-810nM(A) series is an infrared emitting diode in miniature SMD package which is molded in a water clear silicone with spherical top view lens.
- The device is spectrally matched with silicon photodiode, Phototransistor.

Applications

- Infrared Illumination
- Infrared applied system

Device Selection Guide

| | |
|-------------------|---------------|
| LED Part No. | Chip Material |
| YL-3535F-810nm(A) | GaAlAs |

Absolute Maximum Ratings (Ta=25°C)

| Parameter | Symbol | Rating | Unit |
|---|----------|------------|------|
| Continuous Forward Current | I_F | 500 | mA |
| Peak Forward Current*1 | IFP | 1.0 | A |
| Reverse Voltage | VR | 5 | V |
| Operating Temperature | Topr | -40~ +85 | °C |
| Storage Temperature | Tstg | -40 ~ +100 | °C |
| Junction temperature | Tj | 115 | °C |
| Thermal resistance (junction to leadframe) | Rth(j-L) | TBD | °C/W |
| Power Dissipation @IF=500mA | Pd | 1 | W |

Notes: *1:IFP Conditions--Pulse Width $\leq 100\mu s$ and Duty $\leq 1\%$.

*2We suggest that customer should add the heat sink with YL-3535F-810nm(A) to exclude the heat.

Electro-Optical Characteristics (Ta=25°C)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Condition |
|---|-----------------|------|------|------|---------|-----------|
| Total Radiated Power (Pulse Mode) <i>(IF = 1 A, tp = 10 ms)</i> | Po | -- | 200 | -- | mW | IF=350mA |
| | | -- | 600 | -- | | IF=1000mA |
| Total Radiated Power (Pulse Mode) <i>(IF = 1 A, tp = 100 μs)</i> | Po | -- | 680 | -- | mW | IF=1000mA |
| Radiant Intensity (Pulse Mode) | IE | -- | 1800 | -- | mW/sr | IF=1000mA |
| Peak Wavelength | λ_p | -- | 810 | -- | nm | IF=1000mA |
| Spectral Bandwidth | $\Delta\lambda$ | -- | 30 | -- | nm | IF=1000mA |
| Forward Voltage | VF | -- | 3.2 | -- | V | IF=1000mA |
| Reverse Current | IR | -- | -- | 10 | μA | VR=5V |
| View Angle | 2 θ 1/2 | -- | 30 | -- | deg | IF=20mA |

Bin Code List

Condition : IF=350mA

Unit : mW

Radiated Power

| Bin Number | A | B | C | D | E |
|------------|-----|-----|-----|-----|-----|
| Min | 120 | 170 | 218 | 264 | 305 |
| Max | 190 | 242 | 295 | 345 | 385 |

Including test tolerance $\pm 10\%$

Typical Electro-Optical Characteristics Curves

Fig.1 Forward Current vs. Ambient Temperature

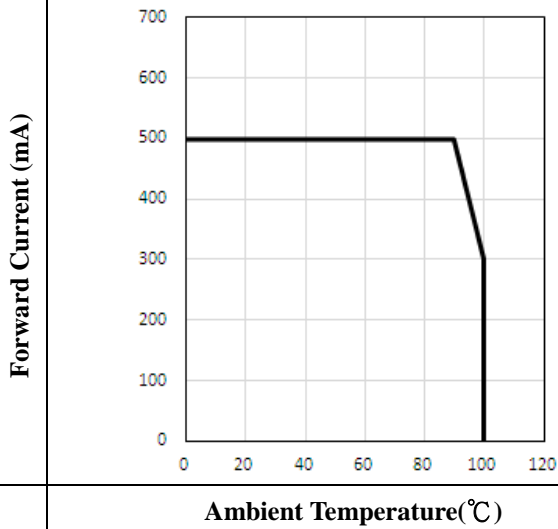


Fig.2 Spectral Distribution

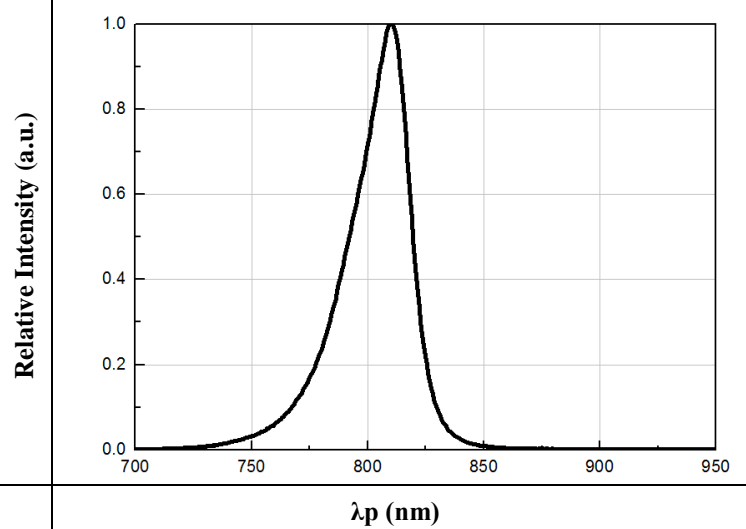


Fig.3 Radiant Intensity vs. Forward Current

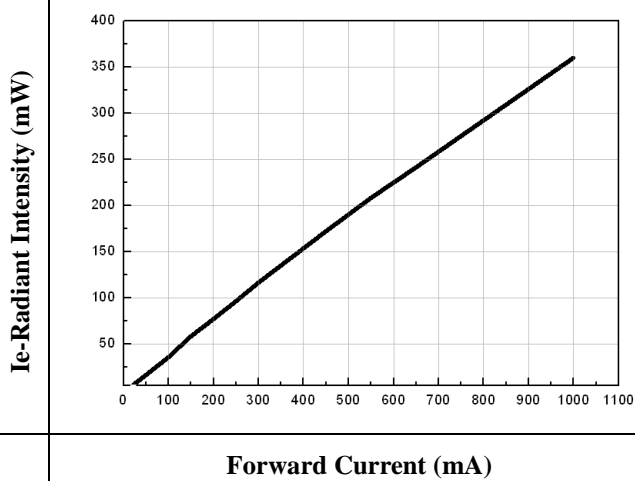


Fig.4 Relative Radiant Intensity vs. Angular Displacement

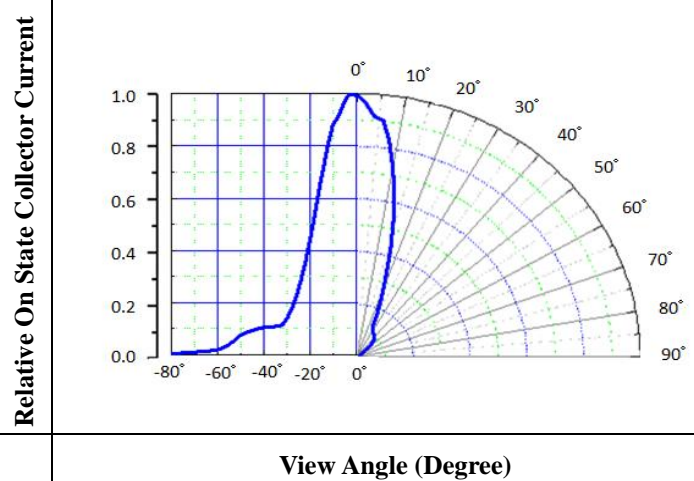
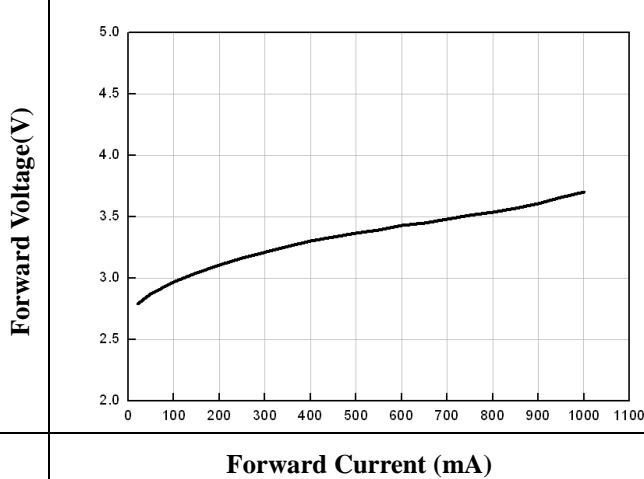
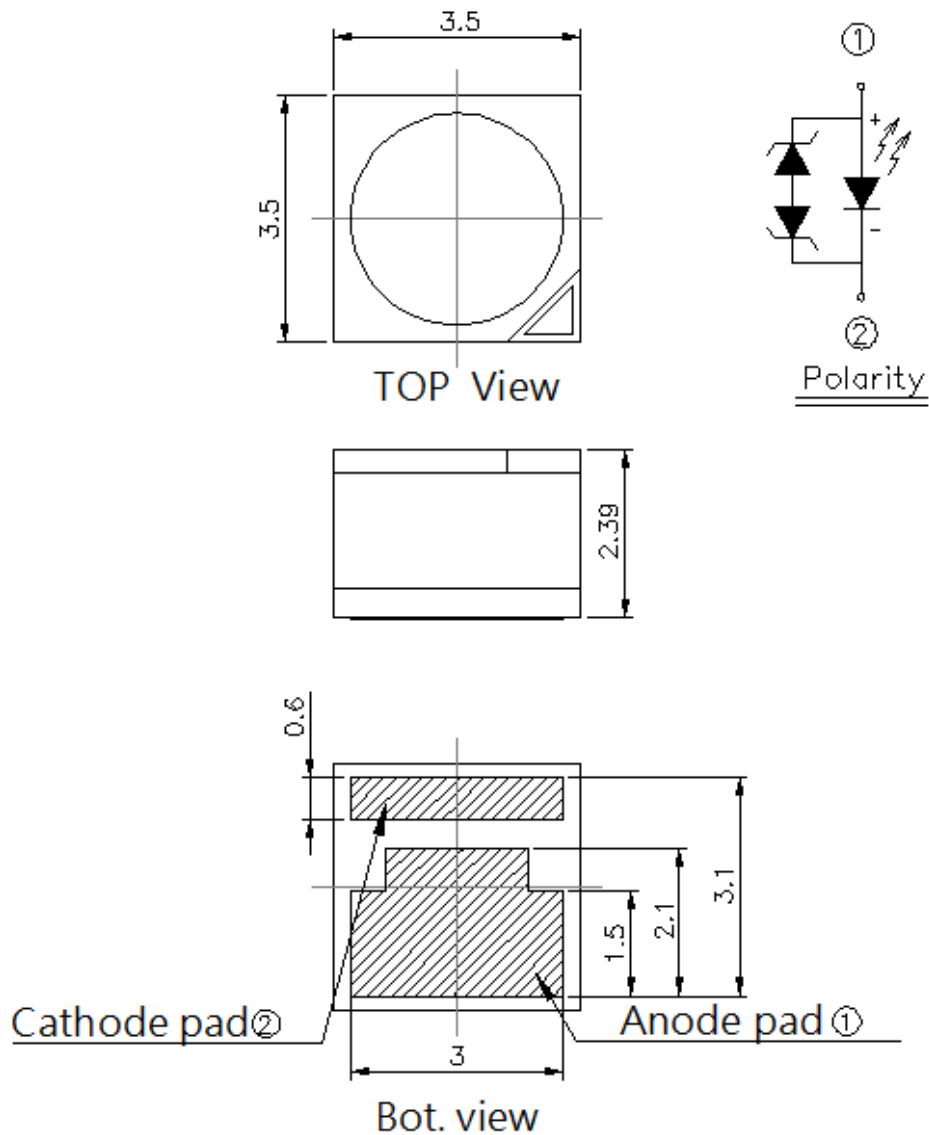


Fig.5 Forward Voltage vs. Forward Current



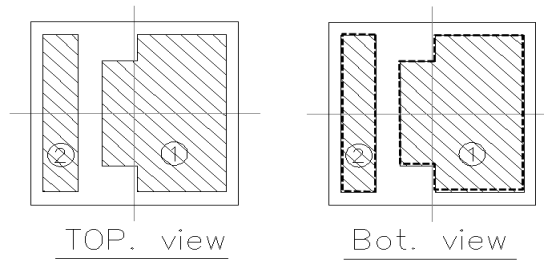
Package Dimension



Note:

1. Dimensions are in millimeters.
2. Tolerances unless mentioned are $\pm 0.1\text{mm}$.
3. Do not handle the device by the lens. Incorrect force applied to the lens may lead to the failure of devices.

Pad Configuration

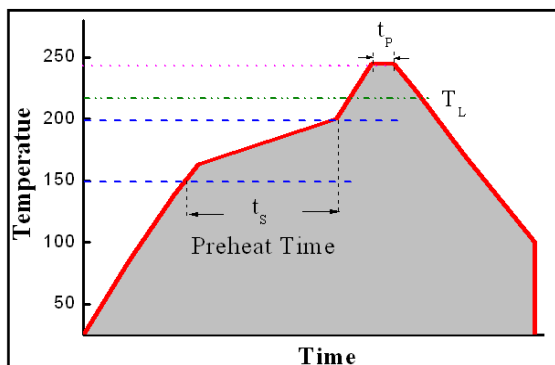


| PAD | FUNCTION |
|-----|----------|
| 1 | ANODE |
| 2 | CATHODE |

Reflow Soldering Characteristics

For Reflow Process

- C19M series are suitable for SMT processes.
- Curing of glue in oven must be according to standard operation flow processes.



| Profile Feature | Lead Free Assembly |
|------------------------------|--------------------|
| Ramp-Up Rate | 2-3 °C/S |
| Preheat Temperature | 150-200 °C |
| Preheat Time (t_s) | 60-120 S |
| Liquid Temperature (T_L) | 217 °C |
| Time maintained above T_L | 60-90 S |
| Peak Temperature (T_P) | 240±5 °C |
| Peak Time (t_p) | Max 20 S |
| Ramp-Down Rate | 3-5 °C/S |

- Reflow soldering should not be done more than twice.
- In soldering process, stress on the LEDs during heating should be avoided.
- After soldering, do not bend the circuit board.

Moisture Resistant Packing Materials Product Labeling

- CPN : Customer's Product Number
- P/N : YesLED Product Number
- QTY : Packing Quantity
- CAT : Luminous Flux (Brightness) Bin
- HUE : Color Bin
- REF : Forward Voltage Bin
- LOT No : Lot Number

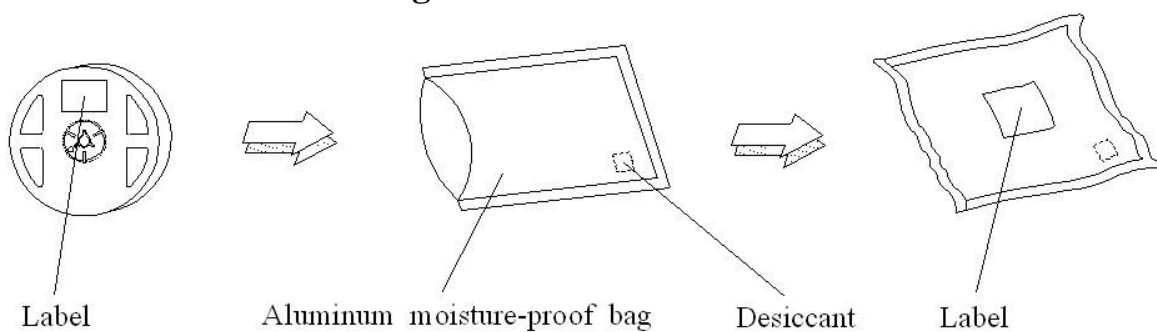
Carrier Tape Dimensions: Loaded Quantity 1000 pcs Per Reel

TBD

Notes:

1. Dimensions are in millimeters.
2. Tolerances for fixed dimensions are ± 0.1 mm.

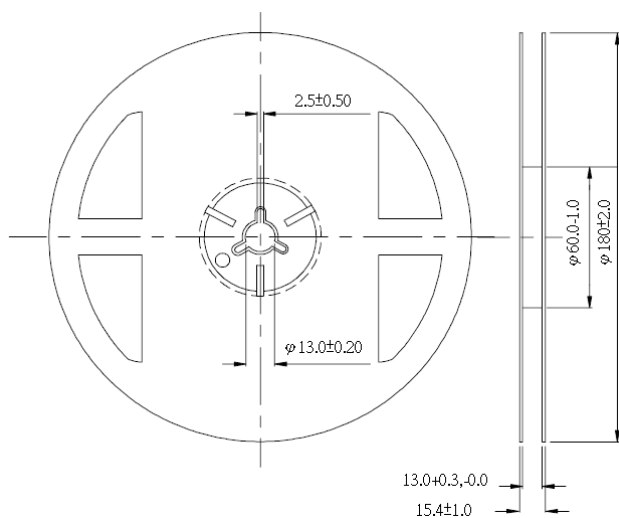
Moisture Resistant Packing Process



Notes:

1. Dimensions are in millimeters.
2. Tolerances unless mentioned are ± 0.1 mm.

Emitter Reel Dimensions



Notes:

1. Dimensions are in millimeters.
2. Tolerances unless mentioned are ± 0.1 mm.

Notes

1. Above specification may be changed without notice. YesLED will reserve authority on material change for above specification.
2. When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. YesLED assumes no responsibility for any damage resulting from use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.
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