

# SMT735/890

High Performance Bi-color TOP LED

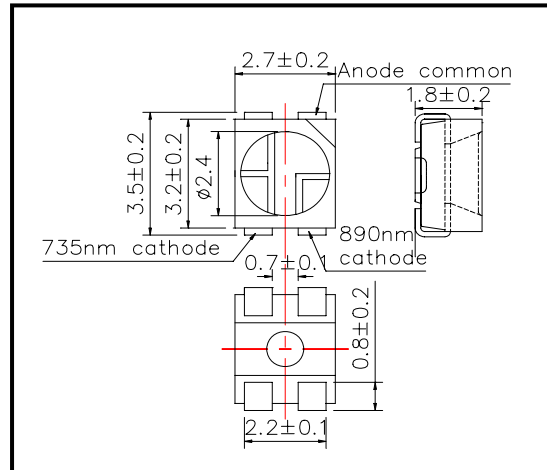
Bi-color LED of SMT735/890 consists of AlGaAs LEDs mounted on the lead frame as TOP LED package and is sealed with epoxy resin.

It emits a spectral band of radiation at 735nm and 890nm at anode common.

◆ Outer dimension (Unit:mm)

◆ Specifications

|                     |                  |
|---------------------|------------------|
| 1) Product Name     | Bi-color TOP LED |
| 2) Type No.         | SMT735/890       |
| 3) Chip             |                  |
| (1) Chip Material   | AlGaAs           |
| (2) Peak Wavelength | 735nm/890nm      |
| 4) Package          |                  |
| (1) Lead Frame Die  | Silver Plated    |
| (2) Package Resin   | PPA Resin        |
| (3) Lens            | Epoxy Resin      |



◆ Absolute Maximum Rating

| Item                  | Symbol            | Maximum Rated Value |       | Unit | Ambient Temperature  |
|-----------------------|-------------------|---------------------|-------|------|----------------------|
|                       |                   | 735nm               | 890nm |      |                      |
| Power Dissipation     | P <sub>D</sub>    | 100                 | 150   | mW   | T <sub>a</sub> =25°C |
| Forward Current       | I <sub>F</sub>    | 50                  | 100   | mA   | T <sub>a</sub> =25°C |
| Reverse Voltage       | V <sub>R</sub>    | 5                   |       | V    | T <sub>a</sub> =25°C |
| Junction Temperature  | T <sub>J</sub>    | 100                 |       | °C   |                      |
| Thermal Resistance    | R <sub>thja</sub> | 190                 |       | K/W  |                      |
| Operating Temperature | T <sub>OPR</sub>  | -20 ~ +80           |       | °C   |                      |
| Storage Temperature   | T <sub>STG</sub>  | -30 ~ +80           |       | °C   |                      |
| Soldering Temperature | T <sub>SOL</sub>  | 255                 |       | °C   |                      |

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

‡Soldering condition: Soldering condition must be completed within 10 seconds at 255°C

◆ Electro-Optical Characteristics [T<sub>a</sub>=25°C]

| Item                 | Symbol           | Condition            | Minimum |       | Typical |       | Maximum |       | Unit  |
|----------------------|------------------|----------------------|---------|-------|---------|-------|---------|-------|-------|
|                      |                  |                      | 735nm   | 890nm | 735nm   | 890nm | 735nm   | 890nm |       |
| Forward Voltage      | V <sub>F</sub>   | I <sub>F</sub> =50mA |         |       | 1.90    | 1.45  | 2.30    | 1.70  | V     |
| Reverse Current      | I <sub>R</sub>   | V <sub>R</sub> =5V   |         |       |         |       | 10      |       | uA    |
| Total Radiated Power | P <sub>O</sub>   | I <sub>F</sub> =50mA | 5.0     | 4.0   | 10.0    | 8.0   |         |       | mW    |
| Radiant Intensity    | I <sub>E</sub>   | I <sub>F</sub> =50mA | 2.0     | 2.0   | 5.0     | 4.0   |         |       | mW/sr |
| Peak Wavelength      | λ <sub>P</sub>   | I <sub>F</sub> =50mA | 725     | 875   | 735     | 885   | 745     | 895   | nm    |
| Half Width           | Δλ               | I <sub>F</sub> =50mA |         |       | 20      | 75    |         |       | nm    |
| Viewing Half Angle   | θ <sub>1/2</sub> | I <sub>F</sub> =50mA |         |       | ±55     |       |         |       | deg.  |

‡Total Radiated Power is measured by Photodyne #500

‡Radiant Intensity is measured by Tektronix J-6512.

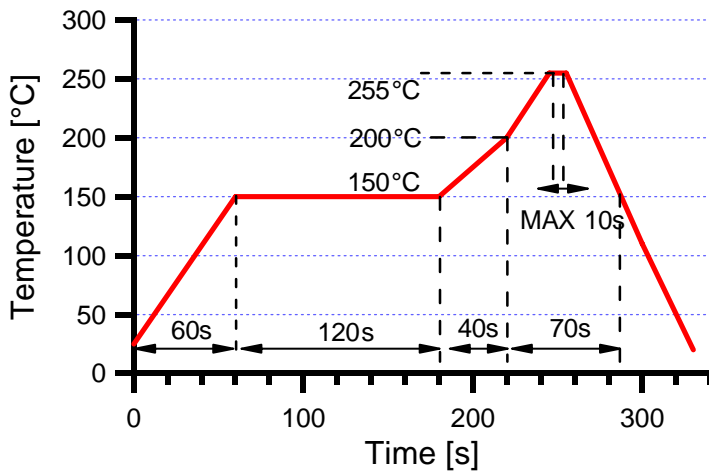
**USHIO EUROPE B.V.** ([www.ushio.eu](http://www.ushio.eu))

Sky Park, Breguetlaan 16-18, 1438 BC, Oude Meer, The Netherlands

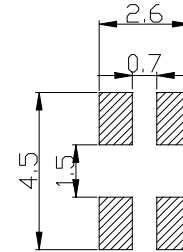
Tel: +31-20-4469-333 Fax: +31-20-4469-360 E-mail: [led@ushio-europe.nl](mailto:led@ushio-europe.nl)

◆ SMD Application

Recommended reflow soldering profile



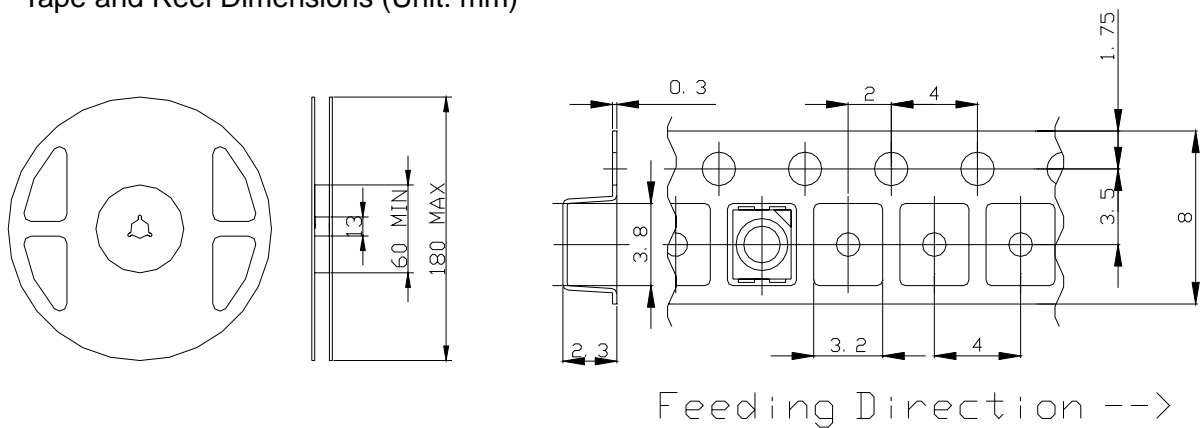
Recommended Land Layout (Unit: mm)



Don't put stress on SMD and a circuit board after soldering.

◆ SMD Packing

Tape and Reel Dimensions (Unit: mm)



◆ Wrapping

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