

1.6mm Round Subminiature Reverse Package Super Red LED

Features

- Package in 8mm tape on 7" diameter reels
- Compatible with automatic placement equipment
- Compatible with infrared and vapor phase reflow solder process
- Mono-color type
- RoHS



M3216

Descriptions

- The SMD series enable smaller board size, higher packing density, reduced storage space, and small equipment.
- Besides, light weight makes them ideal for miniature applications, etc.

Applications

- Automotive: backlighting in dashboards and switches.
- Telecommunication: Indicator and backlighting in the telephone and fax.
- Flat backlight for LCD, switch and symbol.
- General use.

Device Selection Guide

| Part No. | Chip | | Lens Color |
|---------------|----------|---------------|-------------|
| | Material | Emitted Color | |
| TSP3-QR3216A3 | AllnGaP | Super Red | Water Clear |

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TSP3-QR3216A3

Absolute Maximum Ratings (Ta=25°C)

| Parameter | Symbol | Rating | Unit |
|---|--------|---|------|
| Reverse Voltage | VR | 5 | V |
| Forward Current | IF | 25 | mA |
| Peak Forward Current (Duty 1/10 @1KHz) | IFP | 60 | mA |
| Power Dissipation | Pd | 60 | mW |
| Electrostatic Discharge | ESD | 2000 | V |
| Operating Temperature | Topr | -40 ~ +85 | °C |
| Storage Temperature | Tstg | -40 ~ +90 | °C |
| Soldering Temperature | Tsol | Reflow Soldering: 260 °C for 10 seconds | |
| | | Hand Soldering: 350 °C for 3 seconds | |

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Electro-Optical Characteristics (Ta=25°C)

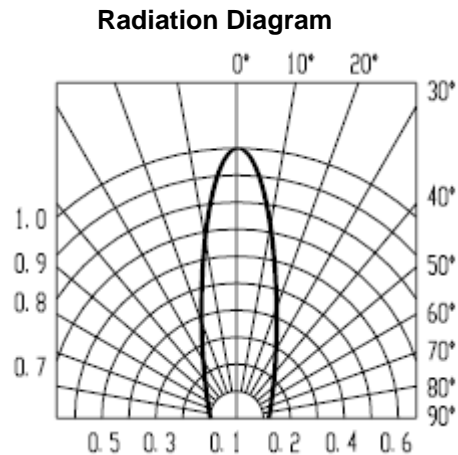
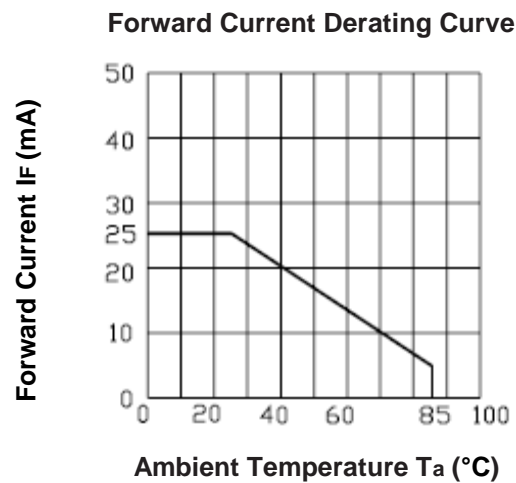
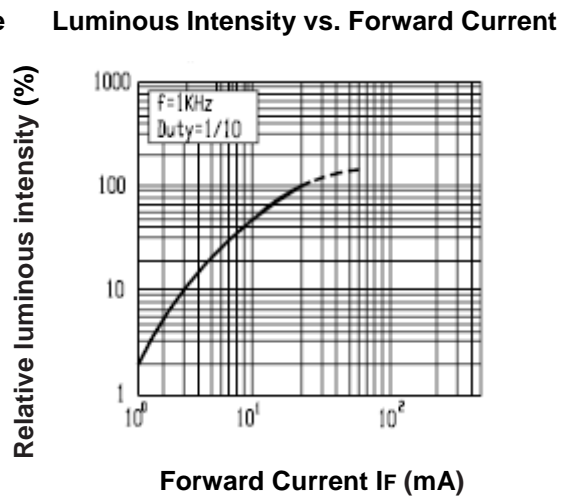
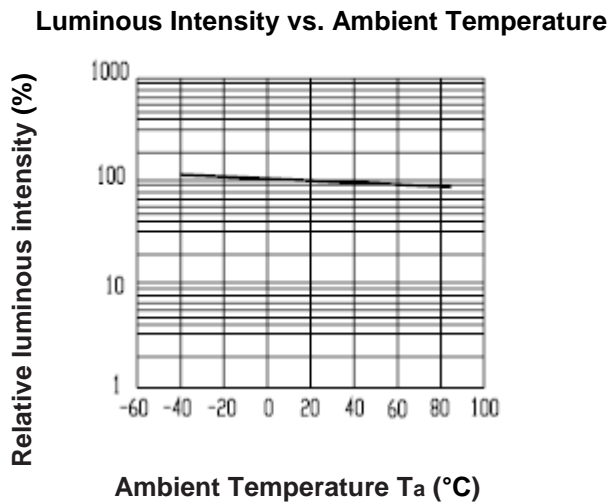
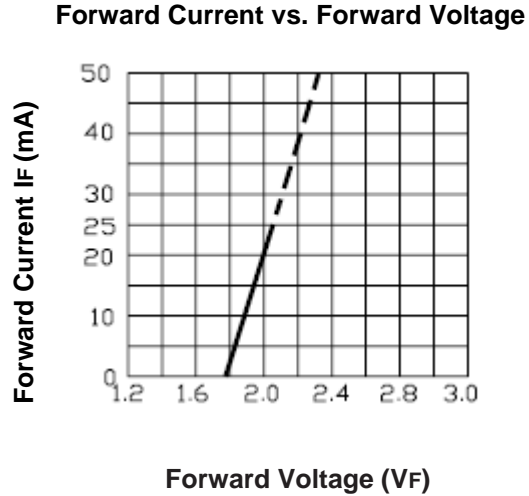
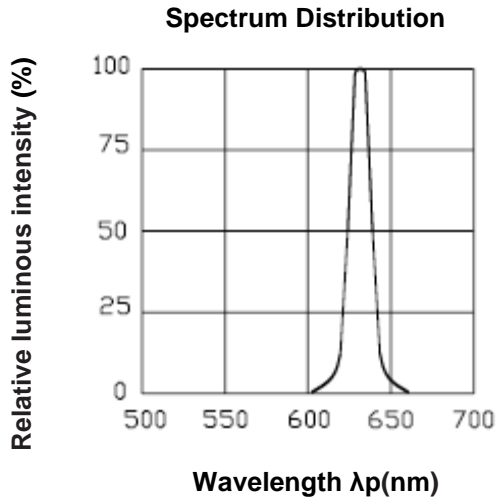
| Parameter | Symbol | Min. | Typ. | Max. | Unit | Condition |
|------------------------------|--------|-------|-------|-------|------|-----------|
| Luminous Intensity | Iv | 285 | 560 | ----- | mcd | IF=20mA |
| Viewing Angle | 2θ1/2 | ----- | 30 | ----- | deg | |
| Peak Wavelength | λp | ----- | 632 | ----- | nm | |
| Dominant Wavelength | λd | ----- | 624 | ----- | nm | |
| Spectrum Radiation Bandwidth | Δλ | ----- | 20 | ----- | nm | |
| Forward Voltage | VF | 1.7 | 2.0 | 2.4 | V | |
| Reverse Current | IR | ----- | ----- | 10 | μA | VR=5V |

Notes: Tolerance of Luminous Intensity: ±10%
Tolerance of Dominant wavelength: ±1.0nm
Tolerance of Forward Voltage: ±0.1V

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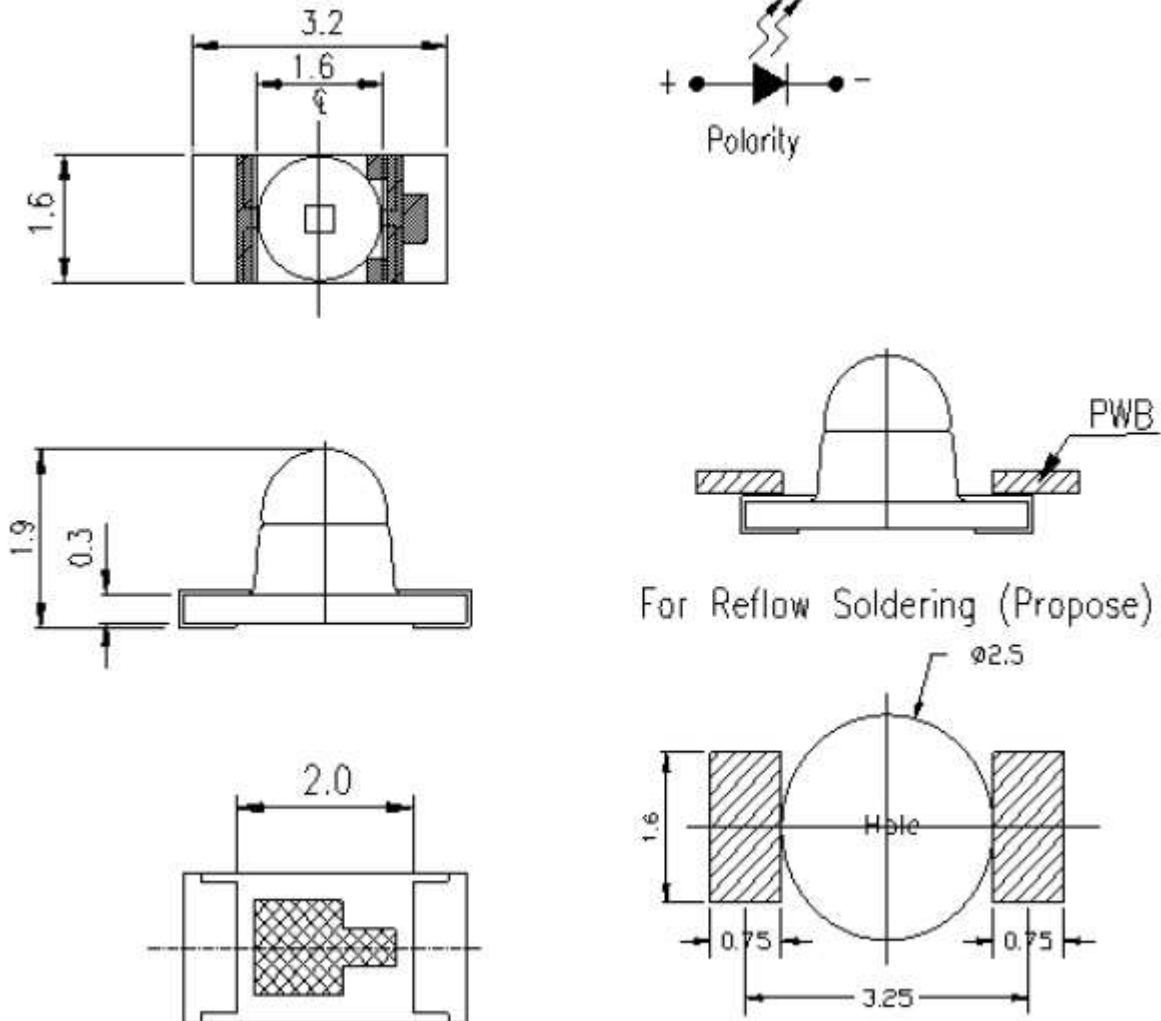
Typical Electro-Optical Characteristics Curves (Ta=25°C)



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Package Outline Dimensions (Unit=mm)

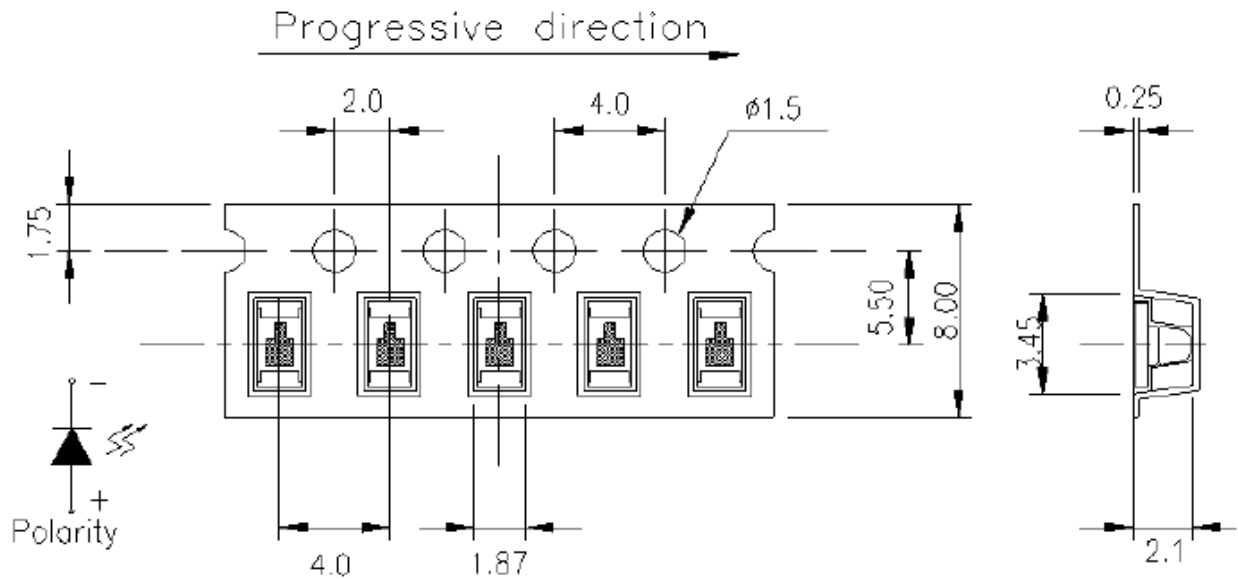


Note: The tolerances unless mentioned is ± 0.1 mm, Unit = mm

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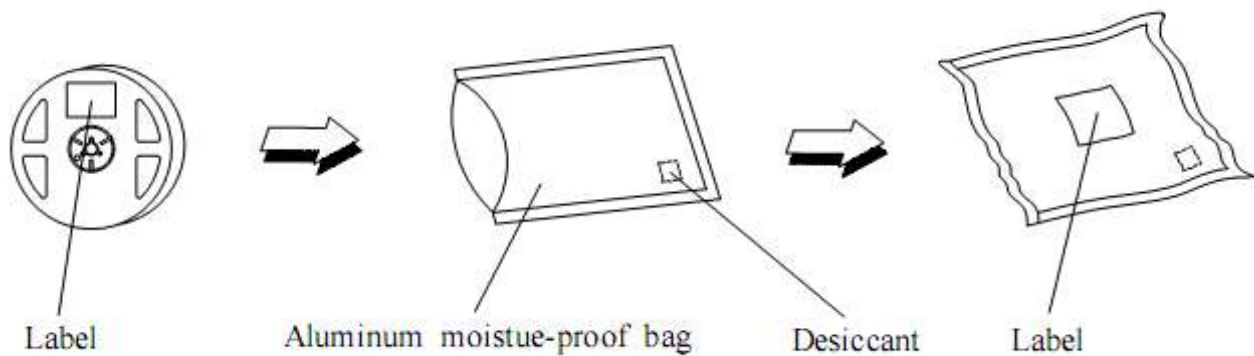
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Carrier Tape Dimensions (Unit=mm): Loaded quantity 1500pcs per reel



Note: The tolerances unless mentioned is $\pm 0.1\text{mm}$.

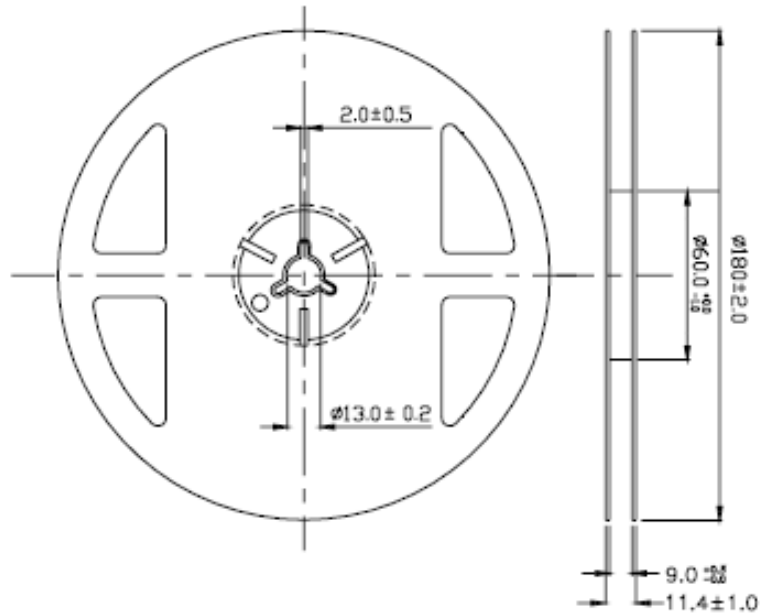
Moisture Resistant Packaging



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Reel Dimensions (Unit=mm):



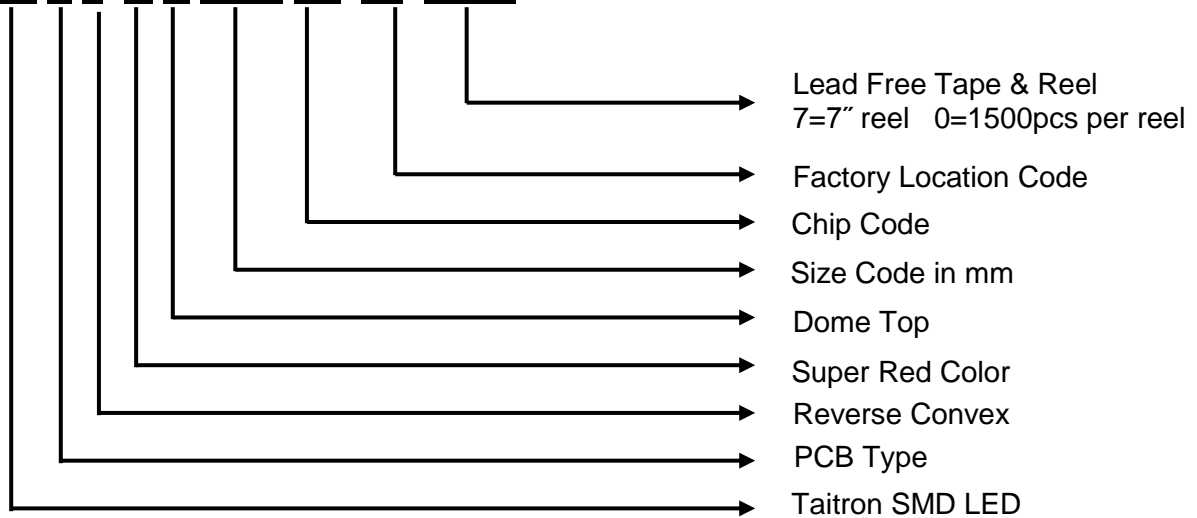
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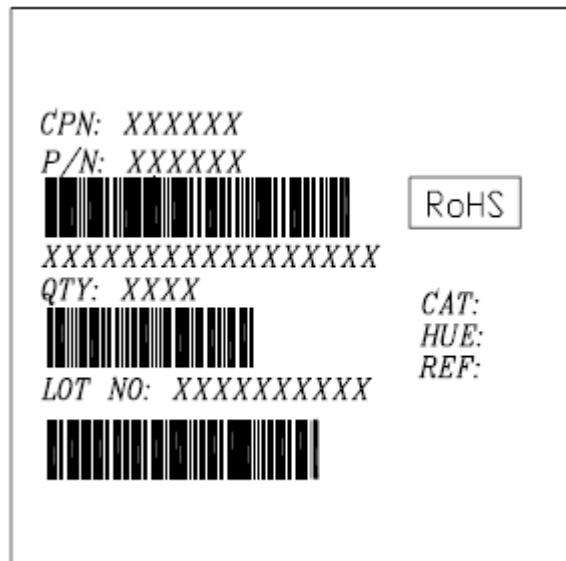
Ordering Information

TS P 3-Q R 3216 A3-92-TR70



Label Explanation

- CAT: Luminous Intensity Rank
- HUE: Dominant Wavelength Rank
- REF: Forward Voltage Rank



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