

PRELIMINARY SPEC

Part Number: KAD1-9090QB9ZC Blue



ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

Features

- SUPER HIGH FLUX OUTPUT AND HIGH LUMINANCE.
- DESIGNED FOR HIGH CURRENT OPERATION.
- LOW THERMAL RESISTANCE.
- LOW VOLTAGE DC OPERATED.
- SUPERIOR ESD PROTECTION.
- PACKAGE: 500PCS/REEL.
- NOT REFLOW COMPATIBLE.
- THE COMPONENT IS INTERNALLY PROTECTED WITH SILICONE GEL.
- RoHS COMPLIANT.

Application Note

Static electricity and surge damage the LEDs.

It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs.

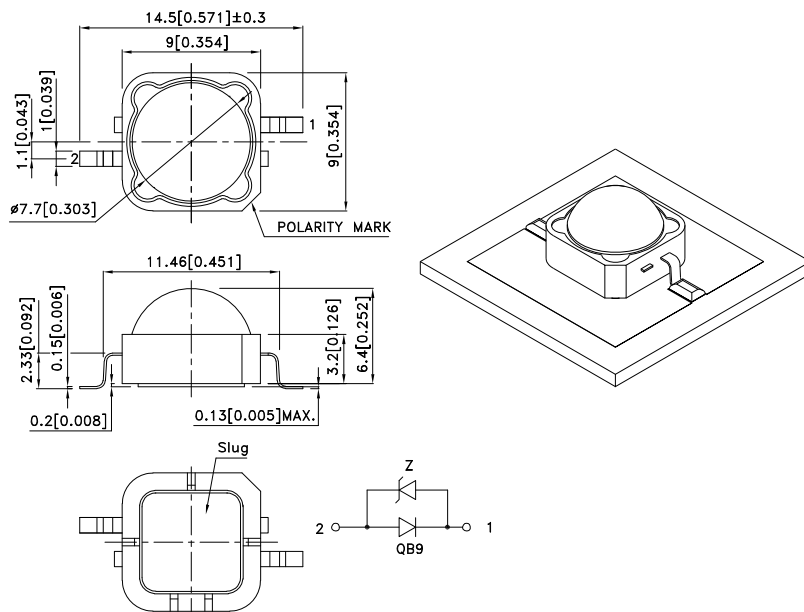
All devices, equipment and machinery must be electrically grounded.



Applications

- traffic signaling.
- backlighting (illuminated advertising , general lighting).
- interior and exterior automotive lighting.
- substitution of micro incandescent lamps.
- portable light source (e.g. bicycle flashlight).
- signal and symbol luminaire for orientation.
- marker lights (e.g. steps, exit ways, etc).
- decorative and entertainment lighting.
- indoor and outdoor commercial and residential architectural lighting.

Package Dimensions



Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is $\pm 0.25(0.01)$ unless otherwise noted.
3. Specifications are subject to change without notice.
4. The device has a single mounting surface. The device must be mounted according to the specifications.



Selection Guide

| Part No. | Dice | Lens Type | luminous Intensity [2] Iv(cd)@ 350 mA | | Φ_v (lm) [2] @ 350 mA | | Viewing Angle [1] |
|----------------|----------------|-------------|--|------|-------------------------------|------|----------------------|
| | | | Min. | Typ. | Min. | Typ. | 2 θ 1/2 |
| KAD1-9090QB9ZC | BLUE (AlInGaN) | WATER CLEAR | 1.8 | 3.5 | 8 | 13 | 100° |

Notes:

1. θ 1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.
2. Luminous intensity / luminous flux: +/-15%.

Absolute Maximum Ratings at TA=25°C

| Parameter | Symbol | Value | Unit |
|---|------------|---------------------|------|
| Power dissipation | Pt | 1.23 | W |
| Junction temperature | TJ | 110 | °C |
| Operating Temperature | Top | -40 To +100 | °C |
| Storage Temperature | Tstg | -40 To +100 | °C |
| DC Forward Current [1] | IF | 350 | mA |
| Peak Forward Current [2] | IFM | 500 | mA |
| Thermal resistance [1] | Rth j-slug | 9 | °C/W |
| Electrostatic Discharge Threshold (HBM) | | 8000 | V |
| Iron Soldering [3] | | 350°C For 3 Seconds | |

Notes:

1. Metal Core PCB is mounted on the heat Fins.
2. 1/10 Duty Cycle, 0.1ms Pulse Width.
3. 1.29mm below package base.

Electrical / Optical Characteristics at TA=25°C

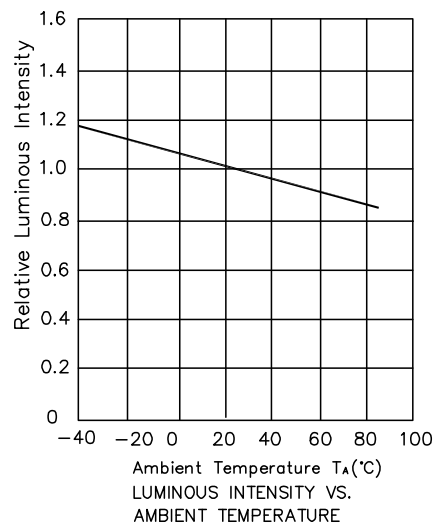
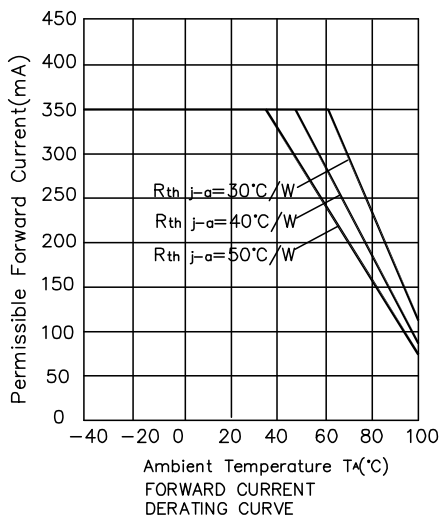
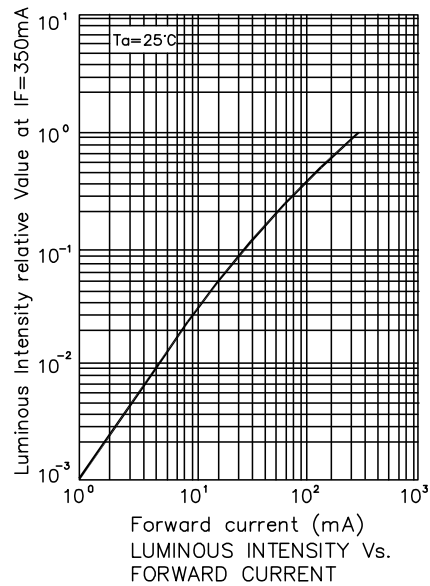
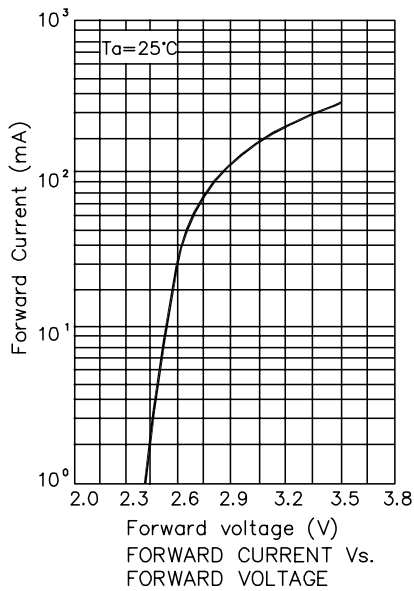
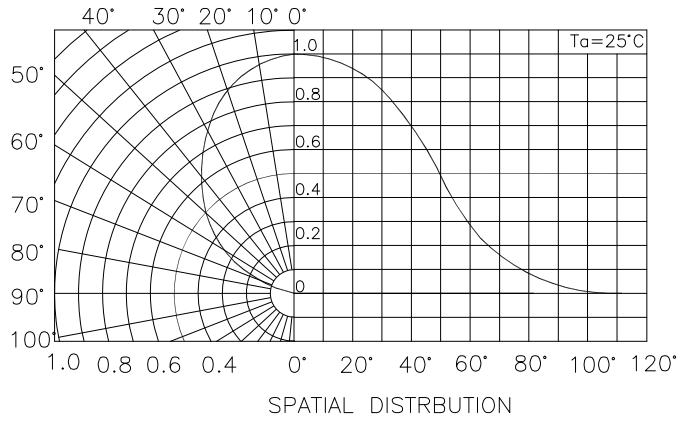
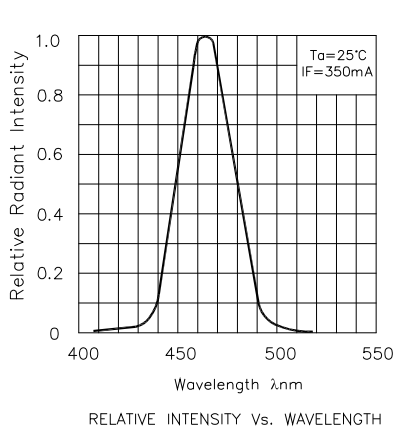
| Parameter | Symbol | Value | Unit |
|---|---------------------|-------|-------|
| Wavelength at peak emission IF=350mA [Typ.] | λ_{peak} | 464 | nm |
| Dominant Wavelength IF=350mA [Typ.] | λ_{dom} [1] | 466 | nm |
| Spectral bandwidth at 50% $\Phi_{REL MAX}$ IF=350mA [Typ.] | $\Delta\lambda$ | 30 | nm |
| Forward Voltage IF=350mA [Min.] | VF [2] | 2.7 | V |
| Forward Voltage IF=350mA [Typ.] | | 3.5 | |
| Forward Voltage IF=350mA [Max.] | | 3.8 | |
| Temperature coefficient of λ_{peak} IF=350mA, -10°C ≤ T ≤ 100°C [Typ.] | TC λ_{peak} | 0.15 | nm/°C |
| Temperature coefficient of λ_{dom} IF=350mA, -10°C ≤ T ≤ 100°C [Typ.] | TC λ_{dom} | 0.13 | nm/°C |
| Temperature coefficient of VF IF=350mA, -10°C ≤ T ≤ 100°C [Typ.] | TCV | -3.2 | mV/°C |

Notes:

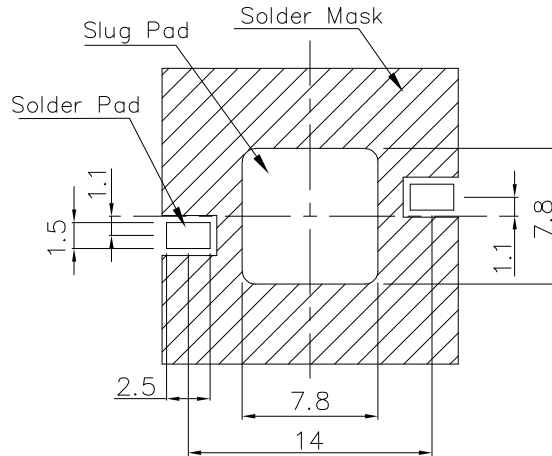
1. Wavelength: +/-1nm.
2. Forward Voltage: +/-0.1V.

Kingbright

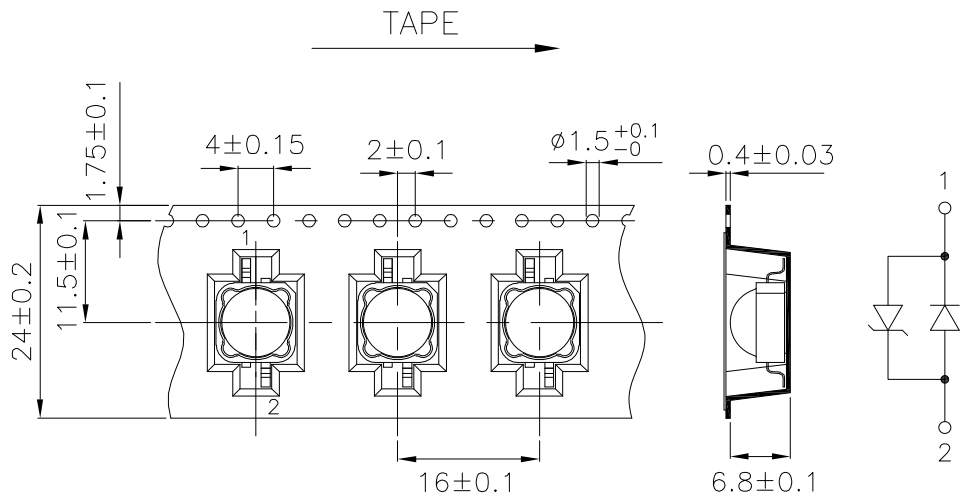
KAD1-9090QB9ZC



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Recommended Soldering Pattern
 (Units : mm; Tolerance: ± 0.1)



Tape Specifications
 (Units : mm)



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Recommended Solder Steps

