# LA TM120RBG

120° Royal Blue TO46 LED (465 nm)

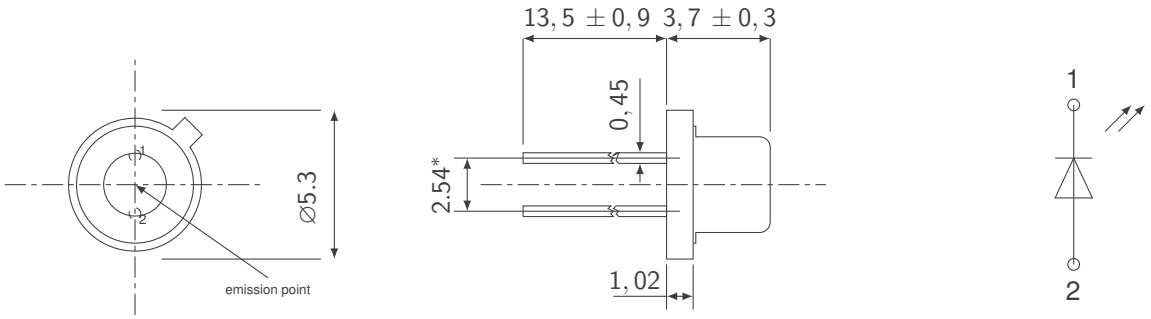
LIGHT AVENUE
A Brand of Chips 4 Light GmbH

The TO46 LED series is designed for high power and high temperature applications. Due to the high quality chips used the maximum operating current can be extended considerably compared to other devices. Junctions temperatures up to 125° C can be applied. A highly automated production process ensures high volume capability and competitive pricing.

## Features

- Optical power 8 mW
- Peak wavelength 465 nm
- High operating temperatures
- TO46 package

## Dimensions




all dimensions in mm. Tolerance ±0, 2 except given ones
* at the bottom of the LED

## Ordering information

| ORDERING NUMBER | ORDERING DESCRIPTION |
|---|---|
| LA TM120RBG-1418-X | LED Component, TO46 , 455 - 475 nm, 5 - 16 mW, 120° Viewing Angle |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### Electro-optical characteristics ($T_A = 25°C$)[2]

| Parameter | Symbol | Condition | Min. | Typ.[1] | Max. | Unit |
|---|---|---|---|---|---|---|
| Radiant power | $\Phi_e$ | $I_f = 20$ mA | 5 | 8 | 16 | mW |
| Radiant intensity | $I_e$ | $I_f = 20$ mA | | 1.6 | | mW/sr |
| Forward voltage | $V_F$ | $I_f = 20$ mA | 2.55 | 3.00 | 3.55 | V |
| Peak wavelength | $\lambda_{peak}$ | $I_f = 20$ mA | 455 | 465 | 475 | nm |
| Spectral width | $RMS$ | $I_f = 20$ mA | | 20 | | nm |
| Beam Divergence Angle | $\theta$ | $I_f = 20$ mA | | 120 | | ° |

### Maximum ratings ($T_A = 25°C$)

| Parameter | Symbol | Condition | Minimum | Maximum | Unit |
|---|---|---|---|---|---|
| Operating Current | $I_{f,max}$ | | | 50 | mA |
| Operating Pulse Current | $I_{fp,max}$ | $t_p = 10\mu$s, D = 2% | | 300 | mA |
| Operating Temperature | $T_{op}$ | | -40 | 100 | ° C |
| Storage Temperature | $T_{st}$ | | -50 | 125 | ° C |
| Junction Temperature | $T_j$ | | | 125 | ° C |
| Reverse Voltage | $V_R$ | | 10 | | V |
| Power Consumption | $P_{tot}$ | | | 200 | mW |

### Thermal characteristics

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Thermal resistance junction ambient | $R\Theta_{JA}$ | 350 | K/W |
| Soldering temperature (3 seconds maximum) | $T_{sold}$ | 320 | °C |

### Material data

| Description | Material | Finish |
|---|---|---|
| LED chip | InGaN | |
| Stem | Kovar | Au plated |
| Cap | NiFe | Ni-plated |
| Lead Pins | Kovar | Au plated |
| Window | Glass AR coated | |


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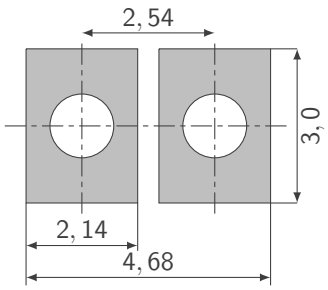
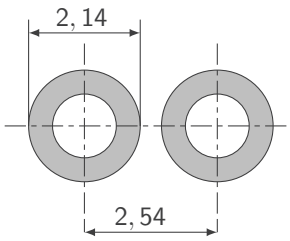
### Recommended Solderpad




all dimensions in mm. Tolerance ±0, 1 except given ones

### Soldering

| METHOD | SOLDERING CONDITIONS | REMARK (VALID FOR TTW AND LEAD FREE SOLDERING) |
|---|---|---|
| TTW soldering | Bath temperature 250°C, Immersion time: within 5 sec. | Soldering according to IEC-61760-1 TTW |
| Soldering iron | 30W or smaller, temperature at tip of iron maximum 300°C, soldering time within 3 sec. | During soldering take care not to press the tip of iron against the lead. To prevent heat from being transferred directly to the lead hold the lead with a pair of tweezers while soldering. |

Actual solder profile is very much depending on wave type, machine configuration, geometrical configuration, board shape etc. It is strongly recommended to optimize and evaluate the actual soldering conditions carefully for each individual project before releasing the soldering process.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### Important Usage and Application Information

Lead free product - RoHS compliant.
All products, product specifications and data to improve reliability, function, design or otherwise are subject to change without notice. The information describes the type of component and shall not be considered as assured characteristics.
Due to technical requirements components may contain dangerous substances. For information on the types in question please contact our Sales Organization.
The light output of the products may cause injuries to human eyes in circumstances where the products are viewed directly with unshielded eyes. LEDs can emit highly concentrated light which can be hazardous to the human eye. Products which incorporate these devices have to follow the safety precautions given in IEC 60825-1 and IEC 62471.

### Handling and Storage Conditions

This product is sensitive to electrostatic discharge (ESD).
Storage ambient conditions for all LEDs in sealed packages must be within $T_A = 10...40°C$ and relative humidity < 60%.

### Packing

LEDs are packaged in trays. Labels for identification are placed on the box. The label shows company name and address, LED type, quantity and lot number. The box is hermetically sealed in a plastic bag for shipment.

### Returns and Complaints

For complaints and returns of material a RMA-number is necessary. Samples for analysis purposes can be send to us without credit.

### Shipping Conditions

If not otherwise arranged, the "General Terms of Business of Chips 4 Light GmbH" apply for any shipment. If this document is not familiar to you, please request it at our nearest sales office.


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Published by:
Chips 4 Light GmbH
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[2]Light Measurements are done with an accuracy of ±15%. Voltage and wavelength are measured with an accuracy of ± 0.1 V and ± 1 nm. Correlation to customer's equipment and products is required.
[3]A critical component is a component used in a life-support device or system whose failure can reasonably be expected to cause the failure of that life-support device or system, or to affect its safety or the effectiveness of that device or system.
[4]Life support devices or systems are intended(a) to be implanted in the human body,or(b) to support and/or maintain and sustain human life.If they fail, it is reasonable to assume that the health and the life of the user may be endangered..


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