



## *SPECIFICATION FOR LED LAMP*

*PART NO. : LT9541R-81-LC*

*4.7mm CYLINDRIC LAMP*

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# 4.7mm CYLINDRIC LAMP

## PART NO. : LT9541R-81-LC

Page : 1/4

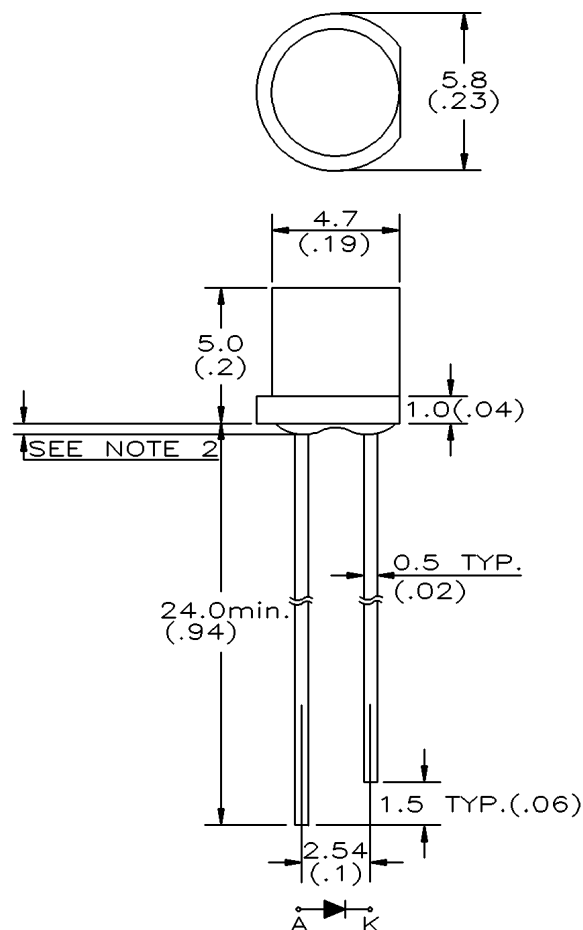
### Features

- \* High intensity
- \* Reliable and rugged
- \* Low current requirement
- \* IC compatible

### Description

The orange lamps are made with GaAsP chips and red diffused epoxy resin.

### Package Dimensions



#### Notes :

1. All dimensions are in millimeters (inches).
2. Protruded resin under flange is 1.0mm (.04" )max.
3. Tolerance is  $\pm 0.25\text{mm}$  (0.10" )unless otherwise noted.

| Part No.      | Led Chip |                | Lens Color   |
|---------------|----------|----------------|--------------|
|               | Material | Emitting Color |              |
| LT9541R-81-LC | GaAsP    | Orange         | Red Diffused |



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**PART NO. : LT9541R-81-LC**

Page : 2/4

### Absolute Maximum Ratings at Ta=25°C :

| Parameter                                            | Symbol    | Rating      | Unit |
|------------------------------------------------------|-----------|-------------|------|
| Power Dissipation                                    | Pd        | 72          | mW   |
| Reverse Voltage                                      | Vr        | 5           | V    |
| D.C. Forward Current                                 | If        | 30          | mA   |
| Peak Current (1/10 Duty Cycle,0.1ms pulse width)     | If (Peak) | 100         | mA   |
| Operating Temperature Range                          | Topr      | -25 to +85  | °C   |
| Storage Temperature Range                            | Tstg      | -40 to +100 | °C   |
| Lead Soldering Temp. (1.6mm from body) for 5 seconds |           | 260         | °C   |

### Electrical and Optical Characteristics :

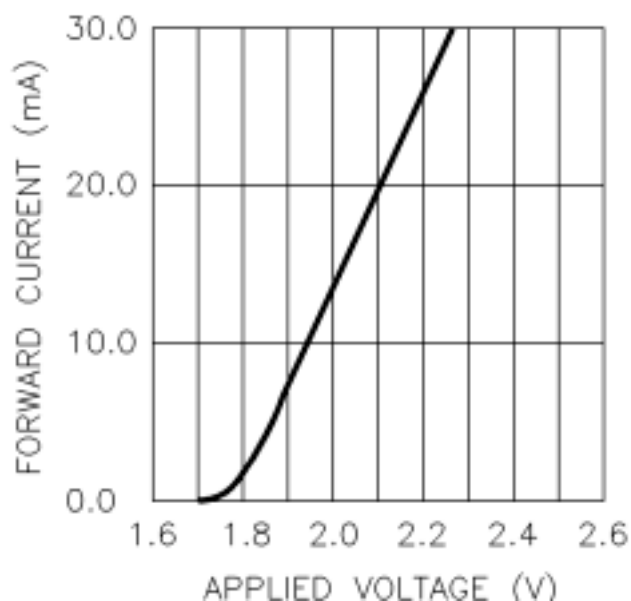
| Parameter               | Symbol          | Condition | Min. | Typ. | Max. | Unit    |
|-------------------------|-----------------|-----------|------|------|------|---------|
| Luminous Intensity      | Iv              | If=2mA    | 0.6  | 0.9  |      | mcd     |
| Forward Voltage         | Vf              | If=2mA    |      | 1.8  | 2.2  | V       |
| Peak Wavelength         | $\lambda_p$     | If=20mA   |      | 630  |      | nm      |
| Dominant Wavelength     | $\lambda_d$     | If=20mA   |      | 625  |      | nm      |
| Reverse Current         | Ir              | Vr=5V     |      |      | 100  | $\mu A$ |
| Viewing Angle           | $2\theta_{1/2}$ | If=20mA   |      | 85   |      | deg     |
| Spectrum Line Halfwidth | $\Delta\lambda$ | If=20mA   |      | 35   |      | nm      |

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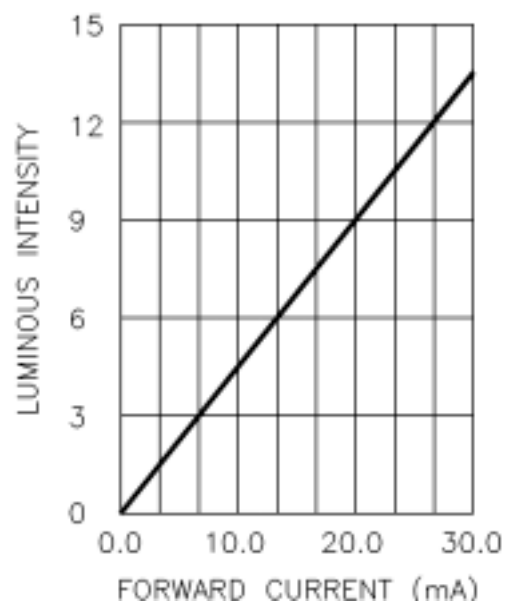
PART NO. : LT9541R-81-LC

Page : 3/4

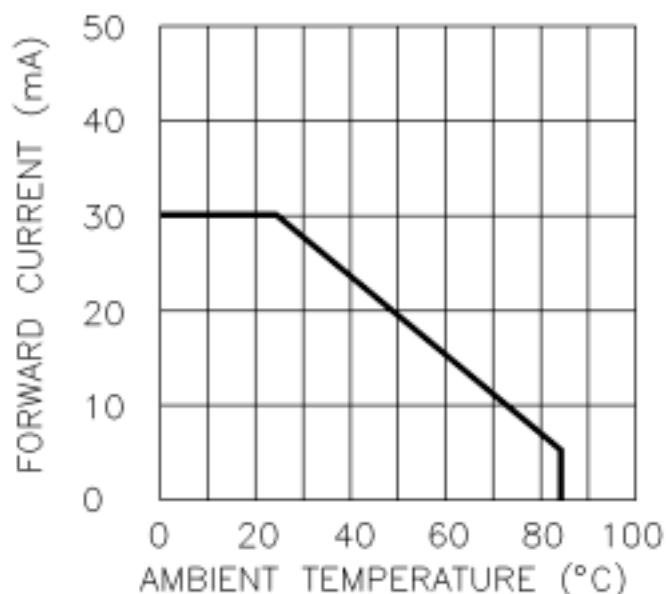
### Typical Electrical / Optical Characteristics Curves :



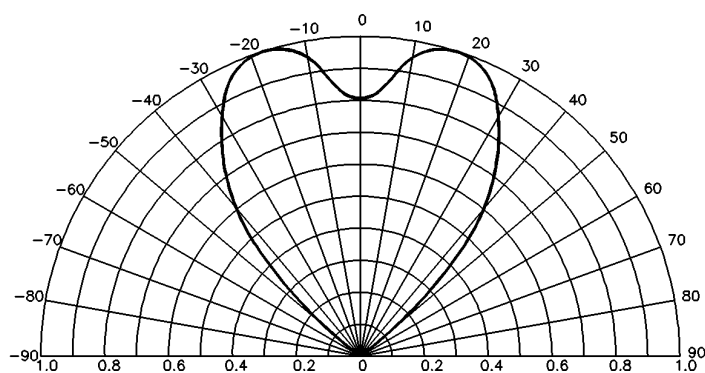
Forward Current vs. Forward Voltage



Forward Current vs. Luminous Intensity



Ambient Temperature vs. Forward Current



Radiation Diagram



## 4.7mm CYLINDRIC LAMP

### PART NO. : LT9541R-81-LC

Page : 4/4

#### Reliability Test Method :

| Test Item                                 | Test Condition                    | Duration Time |
|-------------------------------------------|-----------------------------------|---------------|
| Operation Life                            | If=20mA / Ta=25°C                 | 168 hrs       |
| Storage at High Temperature               | Ta=100°C                          | 168 hrs       |
| Storage at Low Temperature                | Ta=-40°C                          | 168 hrs       |
| Storage at High Temperature/High Humidity | Ta=85°C<br>/ RH=85%               | 168 hrs       |
| Operating at High Temperature             | Ta=85°C<br>/ If=20mA              | 168 hrs       |
| Operating at Low Temperature              | Ta=-25°C<br>/ If=20mA             | 168 hrs       |
| Thermal Shock                             | Ta/T=100°C/30min~<br>- 40°C/30min | 10 cycles     |
| Solderability                             | Tsol=260°C                        | 5 sec         |

#### Criteria for Judging The Damage :

| Item               | Symbol | Test Condition | Criteria for Judgment |                   |
|--------------------|--------|----------------|-----------------------|-------------------|
|                    |        |                | Min.                  | Max.              |
| Forward Voltage    | Vf     | If=20mA        | — — —                 | Initial Data x1.1 |
| Reverse Current    | Ir     | Vr=5V          | — — —                 | 100 $\mu$ A       |
| Luminous Intensity | Iv     | If=20mA        | Initial Data x0.8     | — — —             |