



# IR Emitter and Detector

## Product Data Sheet

### LTE-209

Spec No. : DS-50-92-0001

Effective Date: 02/09/2001

Revision: C

**LITE-ON ENG**

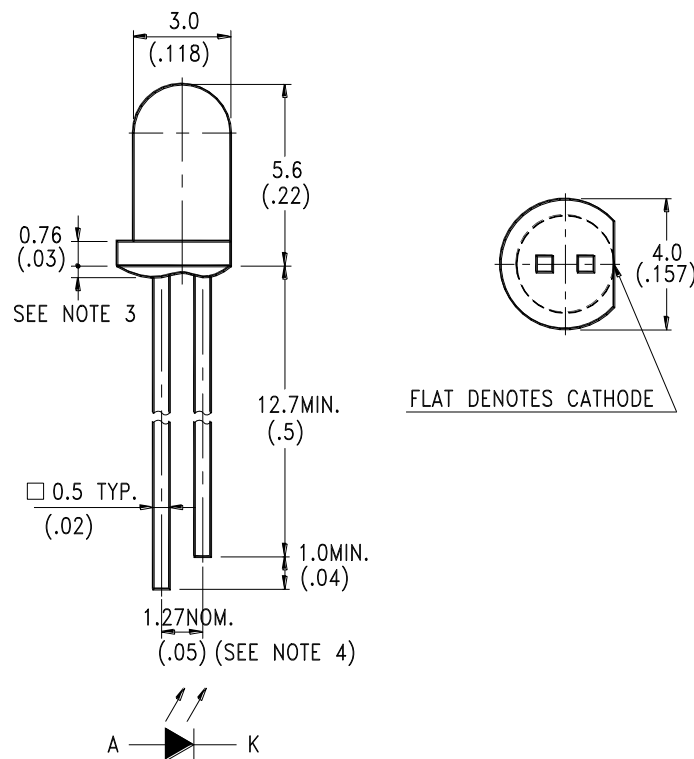
**03/14/2014**

**PRELIMINARY**

## FEATURES

- \* SELECTED TO SPECIFIC ON-LINE INTENSITY AND RADIANT INTENSITY RANGES
- \* LOW COST MINIATURE PLASTIC END LOOKING PACKAGE
- \* MECHANICALLY AND SPECTRALLY MATCHED TO THE LTR-4206 SERIES OF PHOTOTRANSISTOR
- \* THE LTE-209 SERIES ARE MADE WITH GALLIUM ALUMINUM ARSENIDE WINDOW LAYER ON GALLIUM ARSENIDE INFRARED EMITTING DIODES

## PACKAGE DIMENSIONS



### NOTES:

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.25\text{mm}(.010")$  unless otherwise noted.
3. Protruded resin under flange is 1.0mm(.039") max.
4. Lead spacing is measured where the leads emerge from the package.
5. Specifications are subject to change without notice.

**ABSOLUTE MAXIMUM RATINGS AT TA=25°C**

| PARAMETER                                              | MAXIMUM RATING      | UNIT |
|--------------------------------------------------------|---------------------|------|
| Power Dissipation                                      | 90                  | mW   |
| Peak Forward Current (300pps, 10 $\mu$ s pulse)        | 1                   | A    |
| Continuous Forward Current                             | 60                  | mA   |
| Reverse Voltage                                        | 5                   | V    |
| Operating Temperature Range                            | -40°C to + 85°C     |      |
| Storage Temperature Range                              | -55°C to + 100°C    |      |
| Lead Soldering Temperature<br>[1.6mm(.063") From Body] | 260°C for 5 Seconds |      |

**ELECTRICAL OPTICAL CHARACTERISTICS AT TA=25°C**

| PARAMETER                  | SYMBOL           | MIN.  | TYP. | MAX. | UNIT               | TEST CONDITION        |
|----------------------------|------------------|-------|------|------|--------------------|-----------------------|
| Aperture Radiant Incidence | Ee               | 0.184 |      |      | mW/cm <sup>2</sup> | I <sub>F</sub> = 20mA |
| Radiant Intensity          | I <sub>E</sub>   | 1.383 |      |      | mW/sr              | I <sub>F</sub> = 20mA |
| Peak Emission Wavelength   | $\lambda_{Peak}$ |       | 940  |      | nm                 | I <sub>F</sub> = 20mA |
| Spectral Line Half-Width   | $\Delta \lambda$ |       | 50   |      | nm                 | I <sub>F</sub> = 20mA |
| Forward Voltage            | V <sub>F</sub>   |       | 1.2  | 1.6  | V                  | I <sub>F</sub> = 20mA |
| Reverse Current            | I <sub>R</sub>   |       |      | 100  | $\mu$ A            | V <sub>R</sub> = 5V   |
| Viewing Angle (See FIG.6)  | $2 \theta_{1/2}$ |       | 16   |      | deg.               |                       |

## TYPICAL ELECTRICAL / OPTICAL CHARACTERISTICS CURVES

(25°C Ambient Temperature Unless Otherwise Noted)

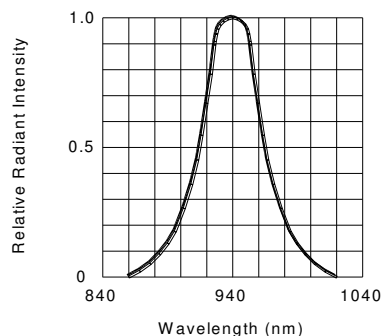


FIG.1 SPECTRAL DISTRIBUTION

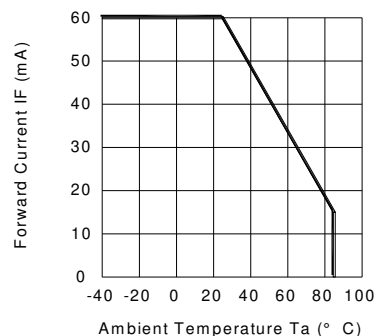


FIG.2 FORWARD CURRENT VS. AMBIENT TEMPERATURE

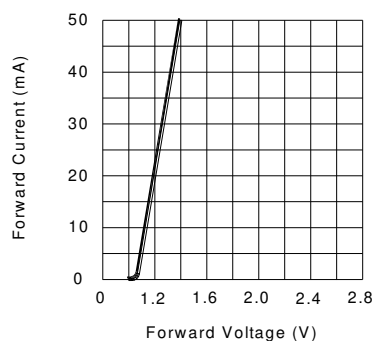


FIG.3 FORWARD CURRENT VS. FORWARD VOLTAGE

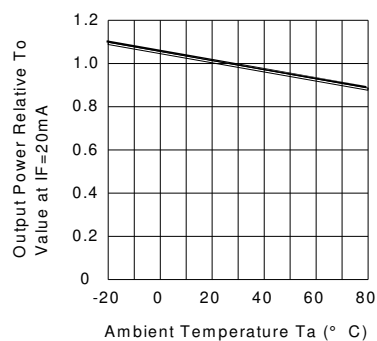


FIG.4 RELATIVE RADIANT INTENSITY VS. AMBIENT TEMPERATURE

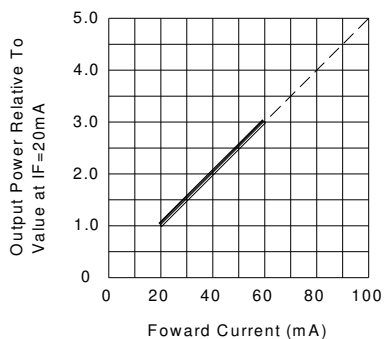


FIG.5 RELATIVE RADIANT INTENSITY VS. FORWARD CURRENT

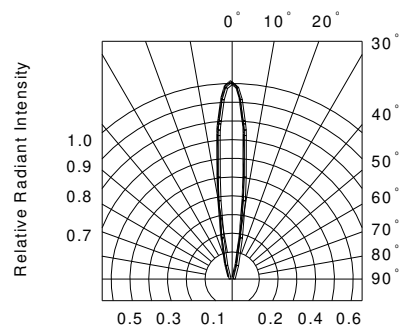


FIG.6 RADIATION DIAGRAM