

## Round Type LED lamp

BL-L502

### Features:

- Ø 5mm Round Type LED lamp
- Ø Ultra brightness.
- Ø Choice of various viewing angles.
- Ø Diffused, Transparent and Water clear lens are available.
- Ø IC compatible /Low current capability.
- Ø RoHs Compliance



### Electrical-optical characteristics: (Ta=25°C) (Test Condition: IF=20mA)

| Part Number | Chip               |            |         | Lens Type   | Forward Voltage(VF)<br>Unit:V |      | Luminous Intensity (Iv)<br>Unit:mcd |       | Viewing Angle 2θ/2 (deg) |
|-------------|--------------------|------------|---------|-------------|-------------------------------|------|-------------------------------------|-------|--------------------------|
|             | Emitted Color      | Material   | λp (nm) |             | Typ                           | Max  | Min.                                | Typ.  |                          |
| BL-L502SRC  | Hi Red             | AlGaAs,SH  | 660     | Water Clear | 1.85                          | 2.20 | 50                                  | 250   | 20                       |
| BL-L502LRC  | Super Red          | AlGaAs,DH  | 660     |             | 1.85                          | 2.20 | 250                                 | 600   |                          |
| BL-L502URC  | Ultra Red          | AlGaAs,DDH | 660     |             | 1.95                          | 2.20 | 600                                 | 1000  |                          |
| BL-L502UEC  | Ultra Orange       | AlGaInP    | 630     |             | 2.10                          | 2.50 | 800                                 | 2000  |                          |
| BL-L502UYC  | Ultra Yellow       | AlGaInP    | 590     |             | 2.10                          | 2.50 | 1000                                | 2200  |                          |
| BL-L502UGC  | Ultra Green        | AlGaInP    | 574     |             | 2.20                          | 2.50 | 300                                 | 700   |                          |
| BL-L502PGC  | Ultra Pure Green   | InGaN      | 525     |             | 3.80                          | 4.50 | 2000                                | 5000  |                          |
| BL-L502BGC  | Ultra Bluish Green | InGaN      | 505     |             | 3.80                          | 4.50 | 1800                                | 4000  |                          |
| BL-L502BC   | Blue               | InGaN      | 430     |             | 3.80                          | 4.50 | 800                                 | 2000  |                          |
| BL-L502UBC  | Ultra Blue         | InGaN      | 470     |             | 2.70                          | 4.20 | 2000                                | 5000  |                          |
| BL-L502VC   | UV                 | InGaN      | 405     |             | 3.80                          | 4.50 | 80                                  | 150   |                          |
| BL-L502UWC  | Ultra White        | InGaN      | /       |             | 2.70                          | 4.20 | 3000                                | 10000 |                          |

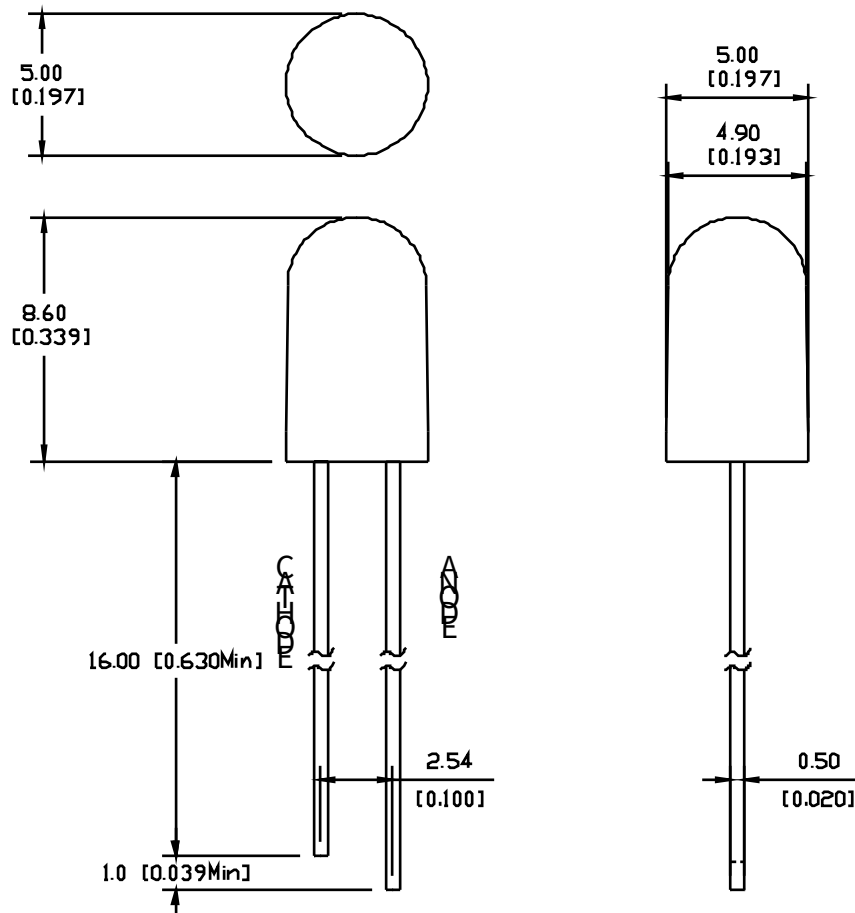
### Absolute maximum ratings (Ta=25°C)

| Parameter                                                 | SR                                                                    | LR  | UR  | UE  | UY  | UG  | PG  | BG  | B   | UB  | UV  | W   | Unit |
|-----------------------------------------------------------|-----------------------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| Forward Current I <sub>F</sub>                            | 25                                                                    | 25  | 25  | 30  | 30  | 30  | 30  | 30  | 30  | 30  | 30  | 30  | mA   |
| Power Dissipation P <sub>d</sub>                          | 60                                                                    | 60  | 60  | 65  | 65  | 75  | 110 | 110 | 120 | 120 | 120 | 120 | mW   |
| Reverse Voltage V <sub>R</sub>                            | 5                                                                     | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   | V    |
| Peak Forward Current I <sub>PF</sub><br>(Duty 1/10 @1KHZ) | 150                                                                   | 150 | 150 | 150 | 150 | 150 | 150 | 100 | 100 | 100 | 100 | 100 | mA   |
| Operation Temperature T <sub>OPR</sub>                    | -40 to +80                                                            |     |     |     |     |     |     |     |     |     |     |     | °C   |
| Storage Temperature T <sub>STG</sub>                      | -40 to +85                                                            |     |     |     |     |     |     |     |     |     |     |     | °C   |
| Lead Soldering Temperature TSOL                           | Max.260±5°C for 3 sec Max.<br>(1.6mm from the base of the epoxy bulb) |     |     |     |     |     |     |     |     |     |     |     | °C   |

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### Package configuration & Internal circuit diagram



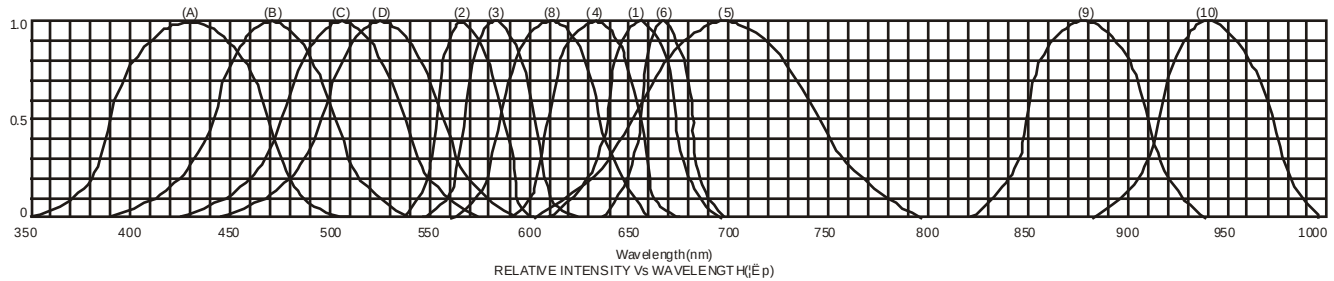
#### Notes:

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.

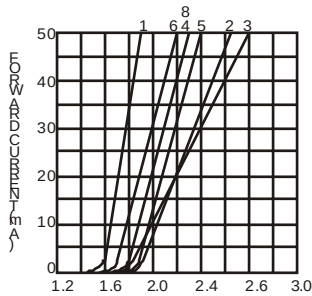
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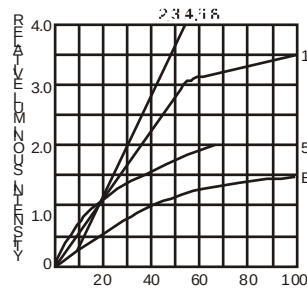
### Typical electrical-optical characteristics curves:



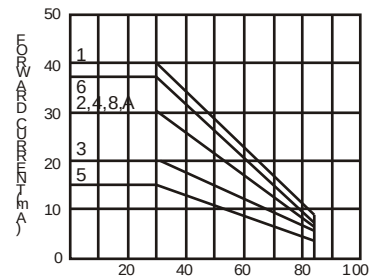
- |                                           |                                      |
|-------------------------------------------|--------------------------------------|
| (1) - GaAsP/GaAs 655nm/Red                | (9) - GaAlAs 880nm                   |
| (2) - GaP 570nm/Yellow Green              | (10) - GaAs/GaAs & GaAlAs/GaAs 940nm |
| (3) - GaAsP/GaP 585nm/Yellow              | (A) - GaN/SiC 430nm/Blue             |
| (4) - GaAsP/GaP 635nm/Orange & Hi-Eff Red | (B) - InGaN/SiC 470nm/Blue           |
| (5) - GaP 700nm/Bright Red                | (C) - InGaN/SiC 505nm/Ultra Green    |
| (6) - GaAlAs/GaAs 660nm/Super Red         | (D) - InGaAl/SiC 525nm/Ultra Green   |
| (8) - GaAsP/GaP 610nm/Super Red           |                                      |



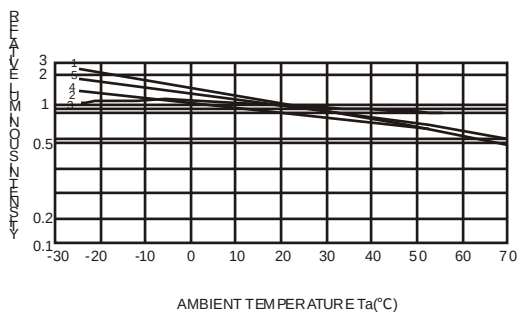
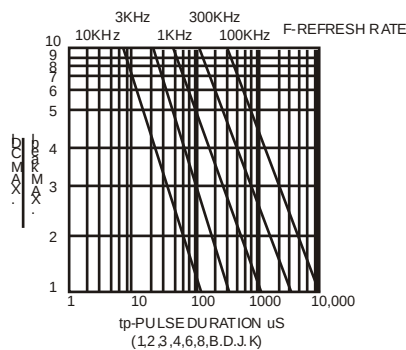
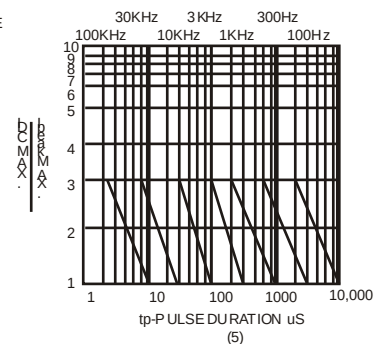
FORWARD VOLTAGE (Vf)  
FORWARD CURRENT VS.  
FORWARD VOLTAGE



FORWARD CURRENT (mA)  
RELATIVE LUMINOUS  
INTENSITY VS. FORWARD  
CURRENT



AMBIENT TEMPERATURE Ta(°C)  
FORWARD CURRENT VS. AMBIENT  
TEMPERATURE



NOTE: 25°C free air temperature unless otherwise specified

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### Packing and weighting

