

## Round LED lamp, 12mm long lens head

BL-L413H12

### Features:

- 4.0mm Round Type LED lamp , 12mm long lens head
- Ultra brightness.
- Choice of various viewing angles.
- Diffused, Transparent and Water clear lens are available.
- IC compatible /Low current capability.
- 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 2θ1/2 (deg) |
|---------------|--------------------|------------|------------------|-------------|-------------------------------|------|-------------------------------------|-------|---------------------------|
|               | Emitted Color      | Material   | $\lambda_P$ (nm) |             | Typ                           | Max  | Min.                                | Typ.  |                           |
| BL-L413H12SRC | Hi Red             | AlGaAs,SH  | 660              | Water Clear | 1.85                          | 2.20 | 80                                  | 300   | 25                        |
| BL-L413H12LRC | Super Red          | AlGaAs,DH  | 660              |             | 1.85                          | 2.20 | 250                                 | 700   |                           |
| BL-L413H12URC | Ultra Red          | AlGaAs,DDH | 660              |             | 1.95                          | 2.20 | 550                                 | 1000  |                           |
| BL-L413H12UEC | Ultra Red          | AlGaInP    | 630              |             | 2.10                          | 2.50 | 900                                 | 1900  |                           |
| BL-L413H12UYC | Ultra Yellow       | AlGaInP    | 590              |             | 2.10                          | 2.50 | 900                                 | 2100  |                           |
| BL-L413H12UGC | Ultra Green        | AlGaInP    | 574              |             | 2.20                          | 2.50 | 220                                 | 650   |                           |
| BL-L413H12PGC | Ultra Pure Green   | InGaN      | 525              |             | 3.80                          | 4.50 | 1200                                | 4000  |                           |
| BL-L413H12BGC | Ultra Bluish Green | InGaN      | 505              |             | 3.80                          | 4.50 | 900                                 | 3500  |                           |
| BL-L413H12BC  | Blue               | InGaN      | 430              |             | 3.80                          | 4.50 | 400                                 | 1000  |                           |
| BL-L413H12UBC | Ultra Blue         | InGaN      | 470              |             | 2.70                          | 4.20 | 500                                 | 4000  |                           |
| BL-L413H12VC  | UV                 | InGaN      | 405              |             | 3.80                          | 4.50 | 100                                 | 160   |                           |
| BL-L413H12UWC | Ultra White        | InGaN      | /                |             | 2.70                          | 4.20 | 3000                                | 10000 |                           |

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

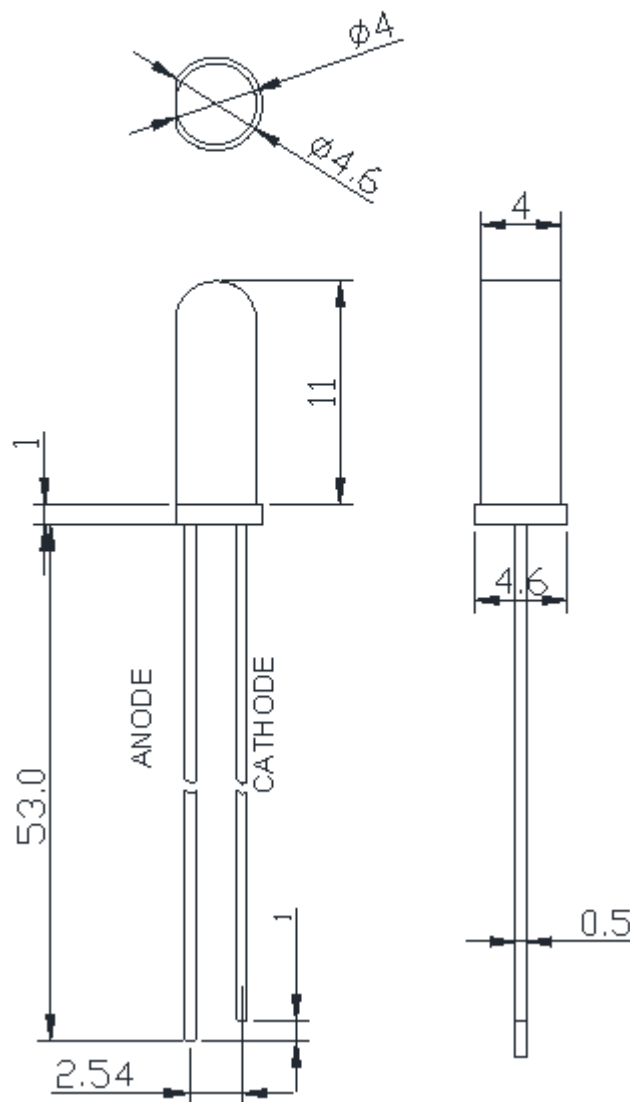
| Parameter                                          | SR                                                                    | LR  | UR  | UE  | UY  | UG  | PG  | BG  | B   | UB  | UV  | W   | Unit |
|----------------------------------------------------|-----------------------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| Forward Current $I_F$                              | 25                                                                    | 25  | 25  | 30  | 30  | 30  | 30  | 30  | 30  | 30  | 30  | 30  | mA   |
| Power Dissipation $P_d$                            | 60                                                                    | 60  | 60  | 65  | 65  | 75  | 110 | 110 | 120 | 120 | 120 | 120 | mW   |
| Reverse Voltage $V_R$                              | 5                                                                     | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   | V    |
| Peak Forward Current $I_{PF}$<br>(Duty 1/10 @1KHZ) | 150                                                                   | 150 | 150 | 150 | 150 | 150 | 150 | 100 | 100 | 100 | 100 | 100 | mA   |
| Operation Temperature $T_{OPR}$                    | -40 to +80                                                            |     |     |     |     |     |     |     |     |     |     |     | °C   |
| Storage Temperature $T_{STG}$                      | -40 to +85                                                            |     |     |     |     |     |     |     |     |     |     |     | °C   |
| Lead Soldering Temperature<br>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

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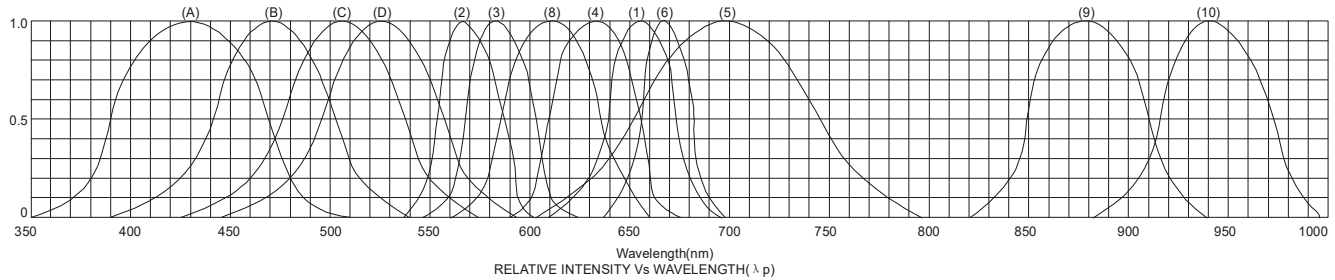
### Notes:

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.

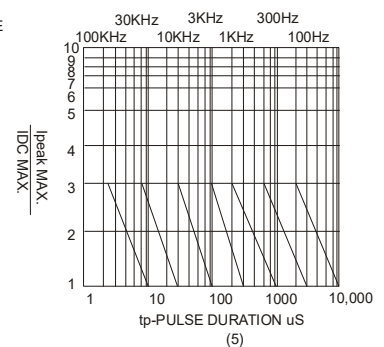
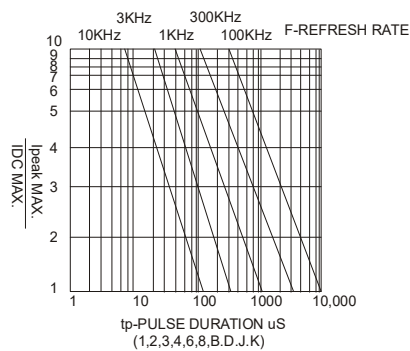
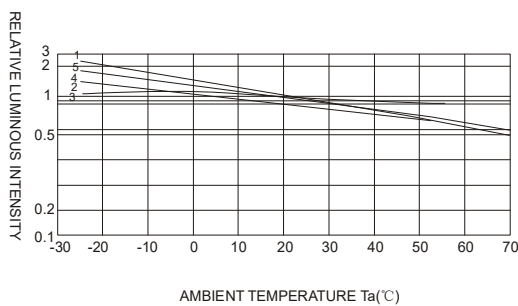
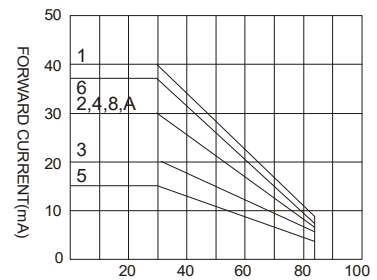
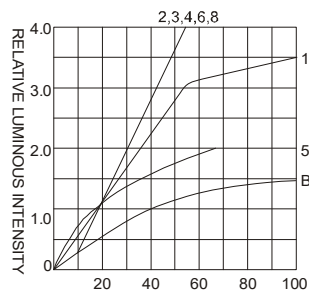
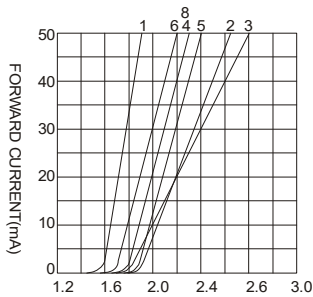
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### ■ Typical electrical-optical characteristics curves:



- |                                           |                                      |
|-------------------------------------------|--------------------------------------|
| (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           |                                      |



NOTE: 25°C free air temperature unless otherwise specified

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■ **Packing and weighting**

