

## Round Type LED lamp,21mm long lens head

BL-L513H22

### Features:

- 5mm Round Type LED lamp,22mm 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)

| 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<br>2θ1/2 (deg) |
|                                                                        | Emitted Color      | Material   | λP (nm) |             |                               |      |                                     |       |                              |
|                                                                        |                    |            |         |             | Typ                           | Max  | Min.                                | Typ.  |                              |
| BL-L513H22SRC                                                          | Hi Red             | AlGaAs,SH  | 660     | Water Clear | 1.85                          | 2.20 | 50                                  | 250   | 20                           |
| BL-L513H22LRC                                                          | Super Red          | AlGaAs,DH  | 660     |             | 1.85                          | 2.20 | 250                                 | 600   |                              |
| BL-L513H22URC                                                          | Ultra Red          | AlGaAs,DDH | 660     |             | 1.95                          | 2.20 | 600                                 | 1000  |                              |
| BL-L513H22UEC                                                          | Ultra Red          | AlGaInP    | 630     |             | 2.10                          | 2.50 | 800                                 | 3000  |                              |
| BL-L513H22UYC                                                          | Ultra Yellow       | AlGaInP    | 590     |             | 2.10                          | 2.50 | 1000                                | 3200  |                              |
| BL-L513H22UGC                                                          | Ultra Green        | AlGaInP    | 574     |             | 2.20                          | 2.50 | 300                                 | 1700  |                              |
| BL-L513H22PGC                                                          | Ultra Pure Green   | InGaN      | 525     |             | 3.80                          | 4.50 | 2000                                | 7000  |                              |
| BL-L513H22BGC                                                          | Ultra Bluish Green | InGaN      | 505     |             | 3.80                          | 4.50 | 1800                                | 6000  |                              |
| BL-L513H22UBC                                                          | Ultra Blue         | InGaN      | 470     |             | 2.70                          | 4.20 | 2000                                | 7000  |                              |
| BL-L513H22UVC                                                          | UV                 | InGaN      | 405     |             | 3.80                          | 4.50 | 80                                  | 150   |                              |
| BL-L513H22UWC                                                          | Ultra White        | InGaN      | /       |             | 2.70                          | 4.20 | 3000                                | 10000 |                              |
| BL-L513H22SRD                                                          | Hi Red             | AlGaAs,SH  | 660     | Diffused    | 1.85                          | 2.20 | 20                                  | 80    | 60                           |
| BL-L513H22LRD                                                          | Super Red          | AlGaAs,DH  | 660     |             | 1.85                          | 2.20 | 50                                  | 120   |                              |
| BL-L513H22URD                                                          | Ultra Red          | AlGaAs,DDH | 660     |             | 1.95                          | 2.20 | 100                                 | 220   |                              |
| BL-L513H22UED                                                          | Ultra Red          | AlGaInP    | 630     |             | 2.10                          | 2.50 | 1200                                | 2000  |                              |
| BL-L513H22UYD                                                          | Ultra Yellow       | AlGaInP    | 590     |             | 2.10                          | 2.50 | 1200                                | 2200  |                              |
| BL-L513H22UYOD                                                         | Ultra Yellow       | AlGaInP    | 619     |             | 2.10                          | 2.50 | 1200                                | 2200  |                              |
| BL-L513H22UGD                                                          | Ultra Green        | AlGaInP    | 574     |             | 2.20                          | 2.50 | 1450                                | 1000  |                              |
| BL-L513H22PGD                                                          | Ultra Pure Green   | InGaN      | 525     |             | 3.80                          | 4.50 | 1400                                | 1900  |                              |
| BL-L513H22BGD                                                          | Ultra Bluish Green | InGaN      | 505     |             | 3.80                          | 4.50 | 1300                                | 1800  |                              |
| BL-L513H22UBD                                                          | Ultra Blue         | InGaN      | 470     |             | 2.70                          | 4.20 | 1400                                | 1900  |                              |
| BL-L513H22UWW                                                          | Ultra White        | InGaN      | /       |             | 2.70                          | 4.20 | 2000                                | 4000  |                              |

## Round Type LED lamp,21mm long lens head

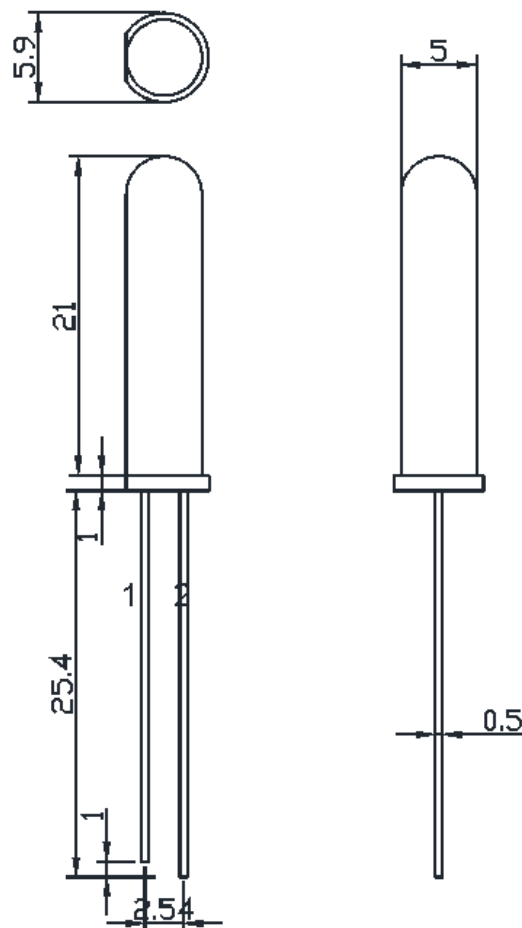
BL-L513H22

### ■ 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   |

### ■ Package configuration & Internal circuit diagram

BL-L513H22 Series



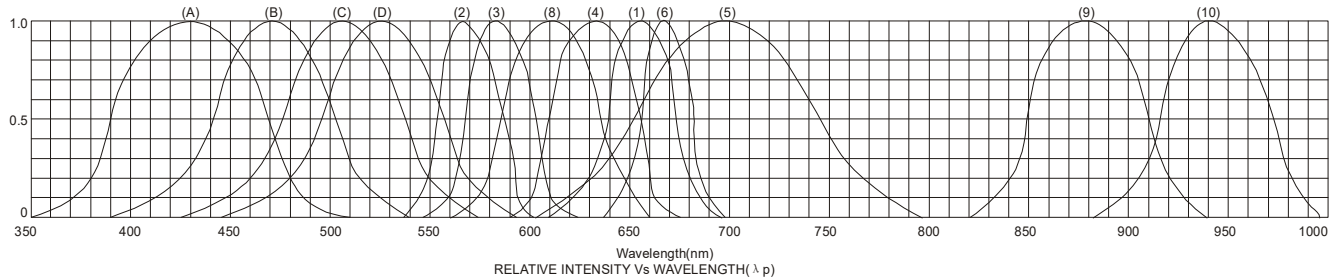
#### Notes:

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.

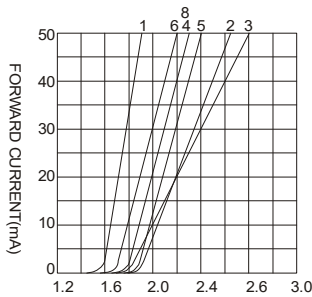
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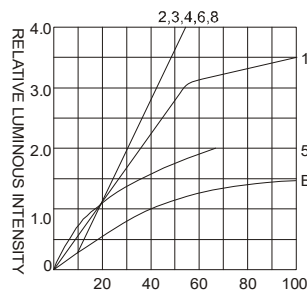
### ■ Typical electrical-optical characteristics curves:



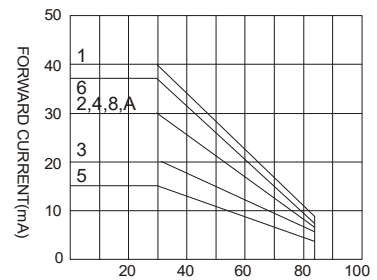
- |                                           |                                      |
|-------------------------------------------|--------------------------------------|
| (1) - GaAsP/GaAs 655nm/Red                | (9) - GaAlAs 880nm                   |
| (2) - GaP 570nm/Yellow Green              | (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           |                                      |



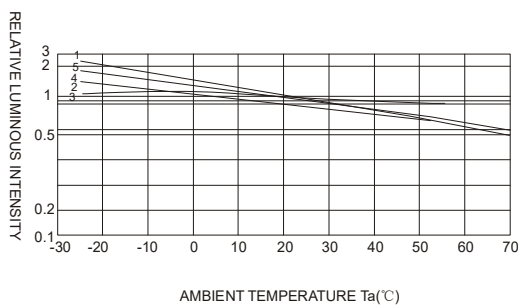
FORWARD VOLTAGE (Vf)  
FORWARD CURRENT VS.  
FORWARD VOLTAGE



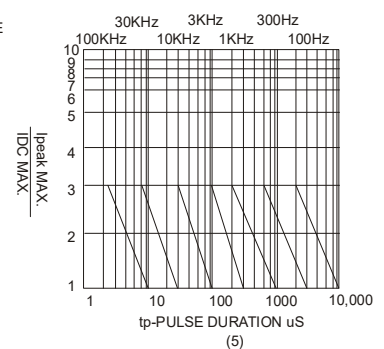
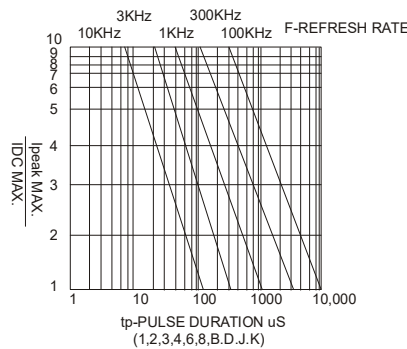
FORWARD CURRENT (mA)  
RELATIVE LUMINOUS  
INTENSITY VS. FORWARD  
CURRENT



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



AMBIENT TEMPERATURE Ta(°C)



NOTE: 25°C free air temperature unless otherwise specified

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### ■ Packing and weighting

