

## LED NUMERIC DISPLAY, 1 DIGIT

BL-S80X-14

### Features:

- Ø 20.20mm (0.8") Single digit Seven Segment LED display series
- Ø Low current operation.
- Ø Excellent character appearance.
- Ø Easy mounting on P.C. Boards or sockets.
- Ø I.C. Compatible.
- Ø ROHS Compliance.



### Super Bright

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

| Part No         |                 | Chip          |                 |                     | VF<br>Unit:V |      | Iv<br>TYP.(mcd) |
|-----------------|-----------------|---------------|-----------------|---------------------|--------------|------|-----------------|
| Common Cathode  | Common Anode    | Emitted Color | Material        | $\lambda_p$<br>(nm) | Typ          | Max  |                 |
| BL-S80A-14S-XX  | BL-S80B-14S-XX  | Hi Red        | GaAlAs/GaAs,SH  | 660                 | 1.85         | 2.20 | 50              |
| BL-S80A-14D-XX  | BL-S80B-14D-XX  | Super Red     | GaAlAs/GaAs,DH  | 660                 | 1.85         | 2.20 | 75              |
| BL-S80A-14UR-XX | BL-S80B-14UR-XX | Ultra Red     | GaAlAs/GaAs,DDH | 660                 | 1.85         | 2.20 | 85              |
| BL-S80A-14E-XX  | BL-S80B-14E-XX  | Orange        | GaAsP/GaP       | 635                 | 2.10         | 2.50 | 65              |
| BL-S80A-14Y-XX  | BL-S80B-14Y-XX  | Yellow        | GaAsP/GaP       | 585                 | 2.10         | 2.50 | 65              |
| BL-S80A-14G-XX  | BL-S80B-14G-XX  | Green         | GaP/GaP         | 570                 | 2.20         | 2.50 | 65              |

### Ultra Bright

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

| Part No          |                  | Chip             |          |                     | VF<br>Unit:V |      | Iv<br>TYP.(mcd) |
|------------------|------------------|------------------|----------|---------------------|--------------|------|-----------------|
| Common Cathode   | Common Anode     | Emitted Color    | Material | $\lambda_p$<br>(nm) | Typ          | Max  |                 |
| BL-S80A-14UHR-XX | BL-S80B-14UHR-XX | Ultra Red        | AlGaInP  | 645                 | 2.10         | 2.50 | 85              |
| BL-S80A-14UE-XX  | BL-S80B-14UE-XX  | Ultra Orange     | AlGaInP  | 630                 | 2.10         | 2.50 | 70              |
| BL-S80A-14YO-XX  | BL-S80B-14YO-XX  | Ultra Amber      | AlGaInP  | 619                 | 2.10         | 2.50 | 70              |
| BL-S80A-14UY-XX  | BL-S80B-14UY-XX  | Ultra Yellow     | AlGaInP  | 590                 | 2.10         | 2.50 | 70              |
| BL-S80A-14UG-XX  | BL-S80B-14UG-XX  | Ultra Green      | AlGaInP  | 574                 | 2.20         | 2.50 | 75              |
| BL-S80A-14PG-XX  | BL-S80B-14PG-XX  | Ultra Pure Green | InGaN    | 525                 | 3.80         | 4.50 | 97.5            |
| BL-S80A-14B-XX   | BL-S80B-14B-XX   | Ultra Blue       | InGaN    | 470                 | 2.70         | 4.20 | 65              |
| BL-S80A-14W-XX   | BL-S80B-14W-XX   | Ultra White      | InGaN    | /                   | 2.70         | 4.20 | 80              |

-XX: Surface / Lens color :

| Number            | 0           | 1              | 2            | 3              | 4               | 5 |
|-------------------|-------------|----------------|--------------|----------------|-----------------|---|
| Ref Surface Color | White       | Black          | Gray         | Red            | Green           |   |
| Epoxy Color       | Water clear | White diffused | Red Diffused | Green Diffused | Yellow Diffused |   |

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## Absolute maximum ratings (Ta=25°C)

| Parameter                                          |                                                                       | S   | D   | UR  | E   | Y   | G   | Unit |
|----------------------------------------------------|-----------------------------------------------------------------------|-----|-----|-----|-----|-----|-----|------|
| Forward Current $I_F$                              |                                                                       | 25  | 25  | 25  | 25  | 25  | 30  | mA   |
| Power Dissipation $P_d$                            |                                                                       | 60  | 60  | 60  | 60  | 60  | 65  | mW   |
| Reverse Voltage $V_R$                              |                                                                       | 5   | 5   | 5   | 5   | 5   | 5   | V    |
| Peak Forward Current $I_{PF}$<br>(Duty 1/10 @1KHZ) |                                                                       | 150 | 150 | 150 | 150 | 150 | 150 | mA   |
| Operation Temperature $T_{OPR}$                    | -40 to +80                                                            |     |     |     |     |     |     | °C   |
| Storage Temperature $T_{STG}$                      | -40 to +85                                                            |     |     |     |     |     |     | °C   |
| Lead Soldering Temperature<br>$T_{SOL}$            | Max.260±5°C for 3 sec Max.<br>(1.6mm from the base of the epoxy bulb) |     |     |     |     |     |     | °C   |

## Absolute maximum ratings (Ta=25°C)

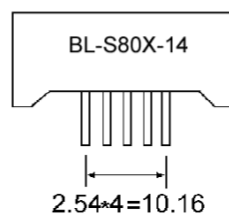
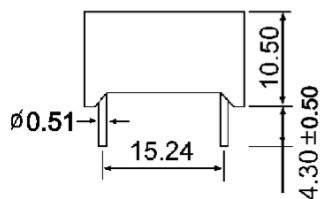
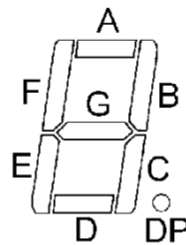
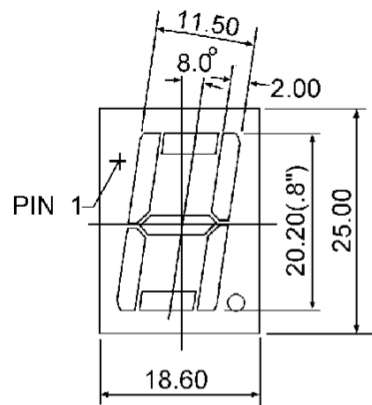
| Parameter                                          | UHR                                                                   | UE  | YO  | UY  | UG  | PG  | UB  | UW  | Unit |
|----------------------------------------------------|-----------------------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|------|
| Forward Current $I_F$                              | 30                                                                    | 30  | 30  | 30  | 30  | 30  | 30  | 30  | mA   |
| Power Dissipation $P_d$                            | 75                                                                    | 65  | 65  | 65  | 75  | 110 | 120 | 120 | mW   |
| Reverse Voltage $V_R$                              | 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 | 100 | 100 | mA   |
| Operation Temperature $T_{OPR}$                    | -40 to +80                                                            |     |     |     |     |     |     |     | °C   |
| Storage Temperature $T_{STG}$                      | -40 to +85                                                            |     |     |     |     |     |     |     | °C   |
| Lead Soldering Temperature<br>$T_{SOL}$            | Max.260±5°C for 3 sec Max.<br>(1.6mm from the base of the epoxy bulb) |     |     |     |     |     |     |     | °C   |

# LED NUMERIC DISPLAY, 1 DIGIT

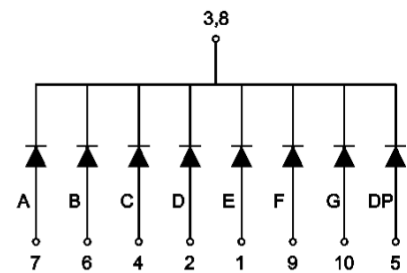
BL-S80X-14

## Package configuration & Internal circuit diagram

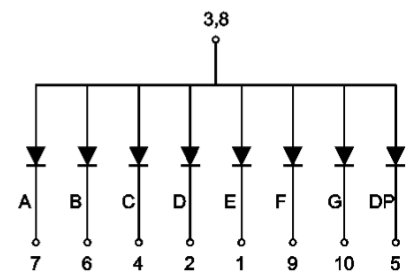
### BL-S80X-14 Series



### BL-S80A-14



### BL-S80B-14



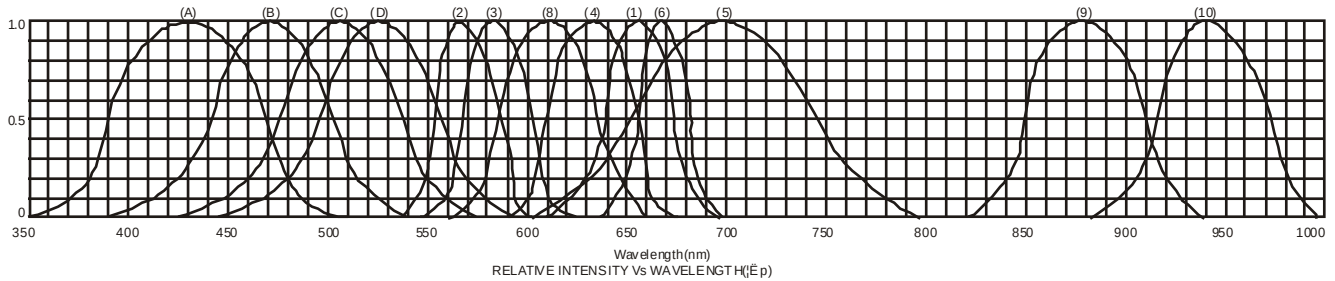
#### Notes:

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.

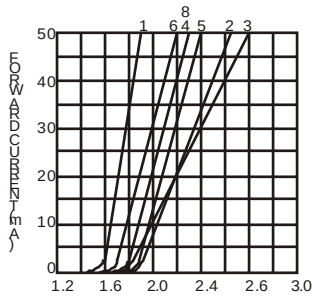
## LED NUMERIC DISPLAY, 1 DIGIT

BL-S80X-14

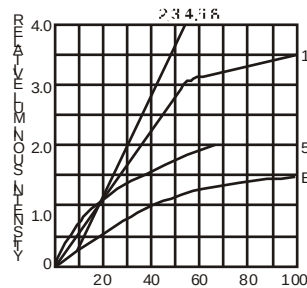
### Typical electrical-optical characteristics curves:



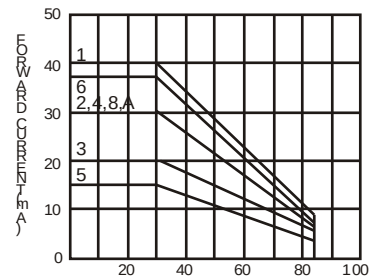
- |                                           |                                      |
|-------------------------------------------|--------------------------------------|
| (1) - GaAsP/GaAs 655nm/Red                | (9) - GaAlAs 880nm                   |
| (2) - GaP 570nm/Yellow Green             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



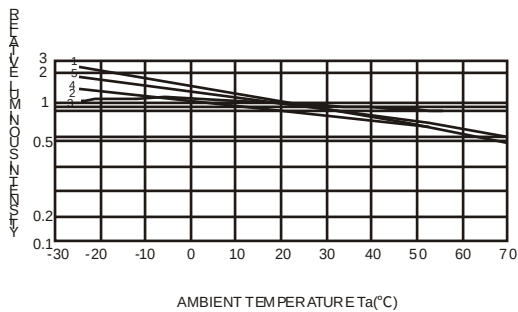
FORWARD VOLTAGE (V)  
FORWARD CURRENT VS.  
FORWARD VOLTAGE



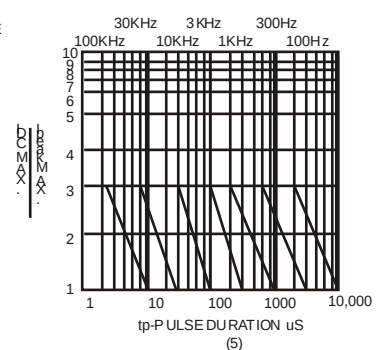
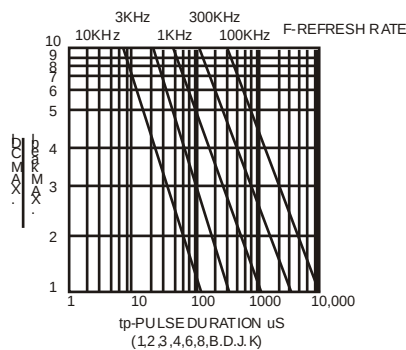
FORWARD CURRENT (mA)  
RELATIVE LUMINOUS  
INTENSITY VS. FORWARD  
CURRENT



AMBIENT TEMPERATURE T<sub>a</sub>(°C)  
FORWARD CURRENT VS. AMBIENT  
TEMPERATURE



AMBIENT TEMPERATURE T<sub>a</sub>(°C)



NOTE: 25°C free air temperature unless otherwise specified

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## Packing and weighting

