

**LED DOT MATRIX**
**BL-M23X881XX**
**Features:**

- Ø 60.20mm (2.3") 1/5.0 dot matrix LED display, BI-COLOR
- Ø Low current operation.
- Ø Excellent character appearance.
- Ø Easy mounting on P.C. Boards or sockets.
- Ø I.C. Compatible.
- Ø ROHS Compliance.


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

| Part No                     |                             | Chip          |           |                  | VF Unit:V |      | Iv TYP.(mcd) |
|-----------------------------|-----------------------------|---------------|-----------|------------------|-----------|------|--------------|
| Row Cathode<br>Column Anode | Row Anode<br>Column Cathode | Emitted Color | Material  | $\lambda_p$ (nm) | Typ       | Max  |              |
| BL-M23A881SG-XX             | BL-M23B881SG-XX             | Super Red     | AlGaInP   | 660              | 2.10      | 2.50 | 280          |
|                             |                             | Green         | GaP/GaP   | 570              | 2.20      | 2.50 | 250          |
| BL-M23A881EG-XX             | BL-M23B881EG-XX             | Orange        | GaAsP/GaP | 635              | 2.10      | 2.50 | 255          |
|                             |                             | Green         | GaP/GaP   | 570              | 2.20      | 2.50 | 250          |
| BL-M23A881DUG-XX            | BL-M23B881DUG-XX            | Ultra Red     | AlGaInP   | 660              | 2.10      | 2.50 | 310          |
|                             |                             | Ultra Green   | AlGaInP   | 574              | 2.20      | 2.50 | 380          |
| BL-M23A881UEUG-X<br>X       | BL-M23B881UEUG-X<br>X       | Ultra Orange  | AlGaInP   | 630              | 2.10      | 2.50 | 255          |
|                             |                             | Ultra Green   | AlGaInP   | 574              | 2.20      | 2.50 | 380          |

-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 |   |

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

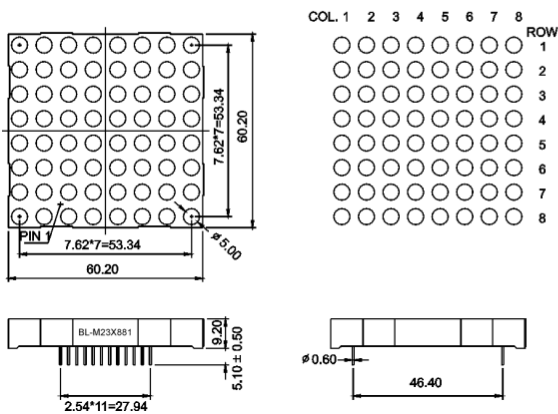
| Parameter  | S   | G   | E   | D   | UG  | UE  |  | Unit |
|--|---|-----|-----|-----|-----|-----|--|------|
| Forward Current $I_F$                              | 30  | 30  | 30  | 30  | 30  | 30  |  | mA   |
| Power Dissipation $P_d$                            | 75  | 80  | 80  | 75  | 75  | 65  |  | 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   |

## LED DOT MATRIX

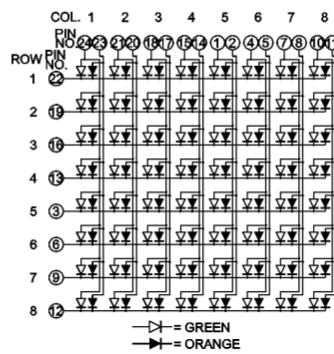
BL-M23X881XX

### Package configuration & Internal circuit diagram

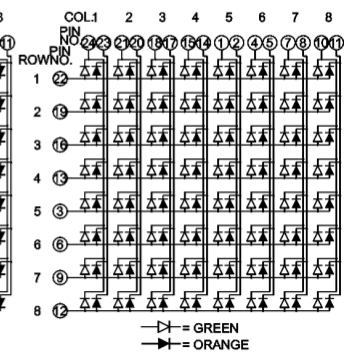
#### BL-M23X881 Series



#### BL-M23A881xx



#### BL-M23B881xx



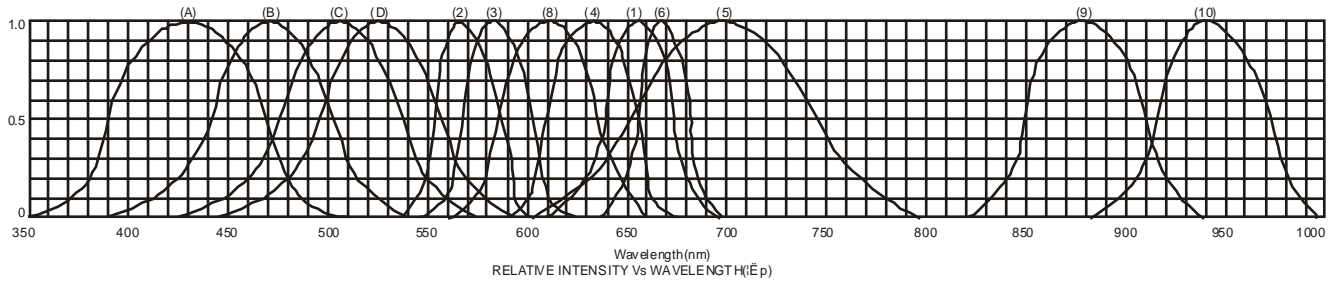
#### Notes:

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.

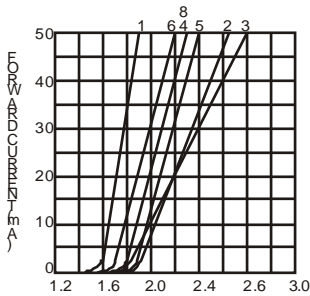
**LED DOT MATRIX**

**BL-M23X881 XX**

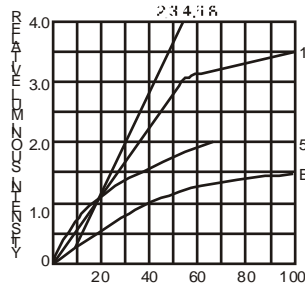
**Typical electrical-optical characteristics curves:**



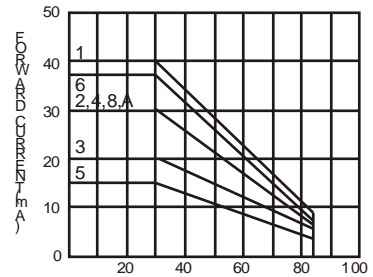
- (1) - GaAsP/GaAs 655nm/Red
- (2) - GaP 570nm/Yellow Green
- (3) - GaAsP/GaP 585nm/Yellow
- (4) - GaAsP/GaP 635nm/Orange & Hi-Eff Red
- (5) - GaP 700nm/Bright Red
- (6) - GaAlAs/GaAs 660nm/Super Red
- (8) - GaAsP/GaP 610nm/Super Red
- (9) - GaAlAs 880nm
- (10) - GaAs/GaAs & GaAlAs/GaAs 940nm
- (A) -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



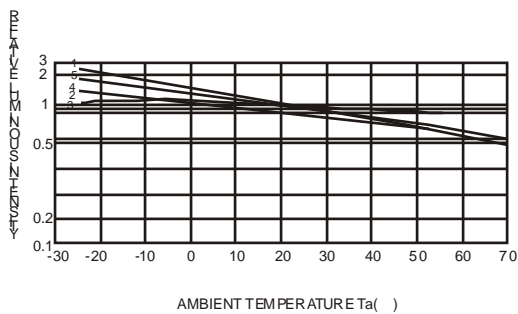
FORWARD VOLTAGE (Vf)  
FORWARD CURRENT VS. FORWARD VOLTAGE



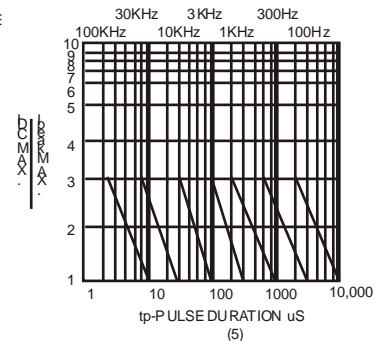
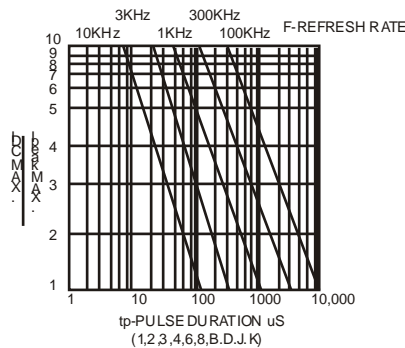
FORWARD CURRENT (mA)  
RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



AMBIENT TEMPERATURE Ta( )  
FORWARD CURRENT VS. AMBIENT TEMPERATURE



AMBIENT TEMPERATURE Ta( )



NOTE:25 free air temperature unless otherwise specified