

## LED NUMERIC DISPLAY, 4 DIGIT

BL-Q39X-41

### ■ Features:

- 9.90mm (0.39") Four digit and Over numeric display series.
- Low current operation.
- Excellent character appearance.
- Easy mounting on P.C. Boards or sockets.
- I.C. Compatible.
- ROHS Compliance.



### Super Bright

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

| Part No         |                 | Chip          |                 |                  | VF Unit:V |      | IV TYP.(mcd) |
|-----------------|-----------------|---------------|-----------------|------------------|-----------|------|--------------|
| Common Cathode  | Common Anode    | Emitted Color | Material        | $\lambda_p$ (nm) | Typ       | Max  |              |
| BL-Q39I-41S-XX  | BL-Q39J-41S-XX  | Hi Red        | GaAlAs/GaAs,SH  | 660              | 1.85      | 2.20 | 105          |
| BL-Q39I-41D-XX  | BL-Q39J-41D-XX  | Super Red     | GaAlAs/GaAs,DH  | 660              | 1.85      | 2.20 | 115          |
| BL-Q39I-41UR-XX | BL-Q39J-41UR-XX | Ultra Red     | GaAlAs/GaAs,DDH | 660              | 1.85      | 2.20 | 160          |
| BL-Q39I-41E-XX  | BL-Q39J-41E-XX  | Orange        | GaAsP/GaP       | 635              | 2.10      | 2.50 | 115          |
| BL-Q39I-41Y-XX  | BL-Q39J-41Y-XX  | Yellow        | GaAsP/GaP       | 585              | 2.10      | 2.50 | 115          |
| BL-Q39I-41G-XX  | BL-Q39J-41G-XX  | Green         | GaP/GaP         | 570              | 2.20      | 2.50 | 120          |

### Ultra Bright

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

| Part No          |                  | Chip             |          |         | VF Unit:V |      | IV TYP.(mcd) |
|------------------|------------------|------------------|----------|---------|-----------|------|--------------|
| Common Cathode   | Common Anode     | Emitted Color    | Material | IP (nm) | Typ       | Max  |              |
| BL-Q39I-41UHR-XX | BL-Q39J-41UHR-XX | Ultra Red        | AlGaInP  | 645     | 2.10      | 2.50 | 160          |
| BL-Q39I-41UE-XX  | BL-Q39J-41UE-XX  | Ultra Orange     | AlGaInP  | 630     | 2.10      | 2.50 | 140          |
| BL-Q39I-41YO-XX  | BL-Q39J-41YO-XX  | Ultra Amber      | AlGaInP  | 619     | 2.10      | 2.50 | 140          |
| BL-Q39I-41UY-XX  | BL-Q39J-41UY-XX  | Ultra Yellow     | AlGaInP  | 590     | 2.10      | 2.50 | 135          |
| BL-Q39I-41UG-XX  | BL-Q39J-41UG-XX  | Ultra Green      | AlGaInP  | 574     | 2.20      | 2.50 | 140          |
| BL-Q39I-41PG-XX  | BL-Q39J-41PG-XX  | Ultra Pure Green | InGaN    | 525     | 3.80      | 4.50 | 195          |
| BL-Q39I-41B-XX   | BL-Q39J-41B-XX   | Ultra Blue       | InGaN    | 470     | 2.70      | 4.20 | 125          |
| BL-Q39I-41W-XX   | BL-Q39J-41W-XX   | Ultra White      | InGaN    | /       | 2.70      | 4.20 | 160          |

■ -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)

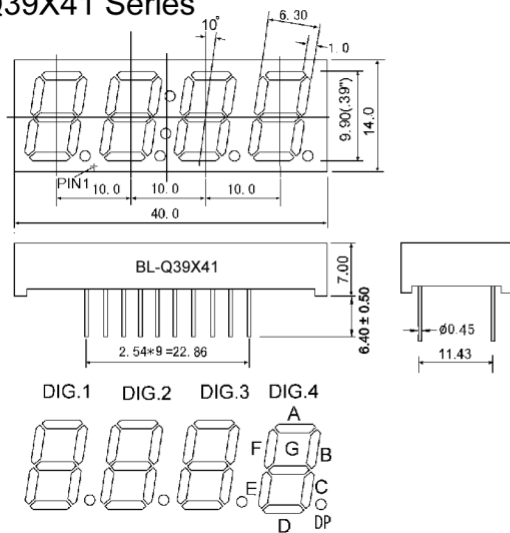
| Parameter                                          | UHR                                                                   | UE  | YO  | UY  | UG  | PG  | UB  | UW  | Unit |
|----------------------------------------------------|-----------------------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|------|
| 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   |

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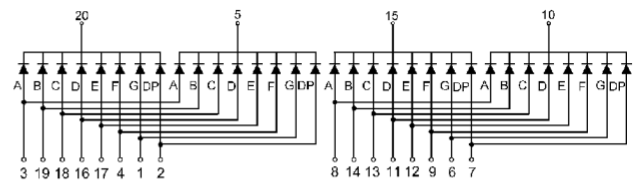
BL-Q39X-41

### Package configuration & Internal circuit diagram

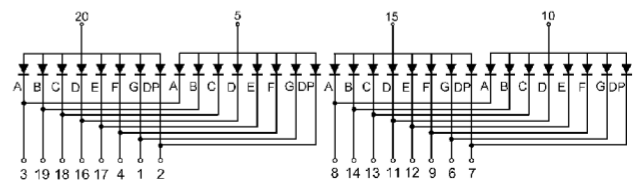
#### BL-Q39X41 Series



#### BL-Q39I41



#### BL-Q39J41



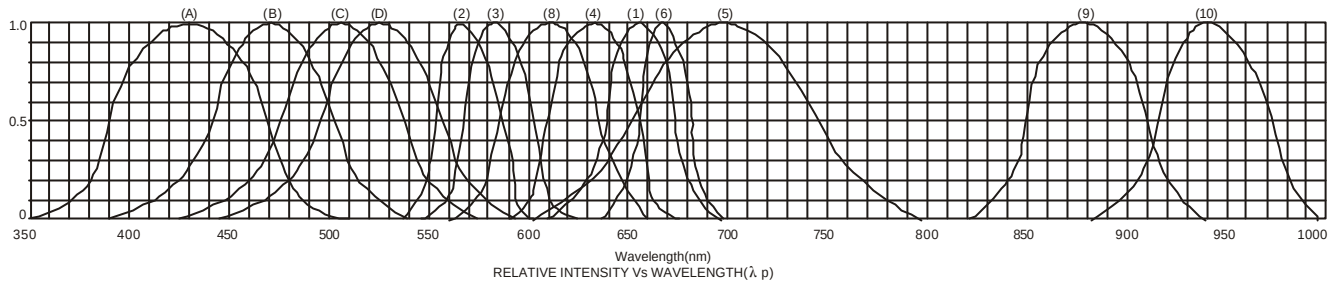
#### Notes:

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.

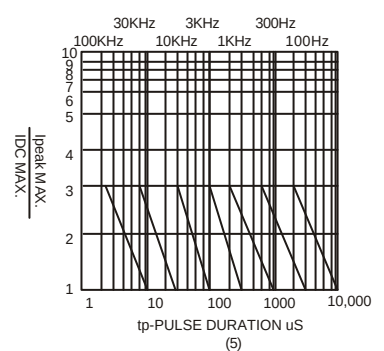
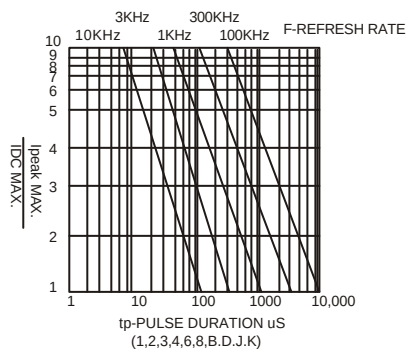
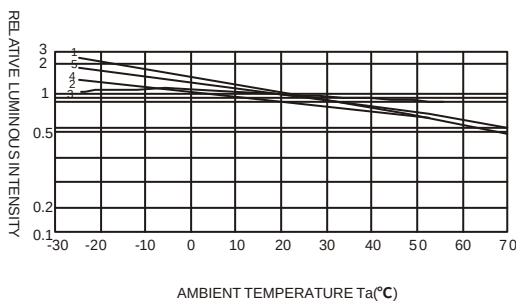
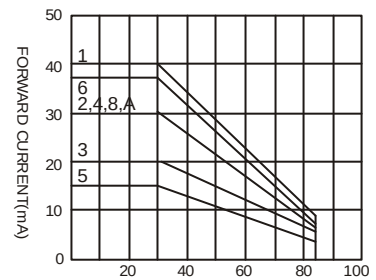
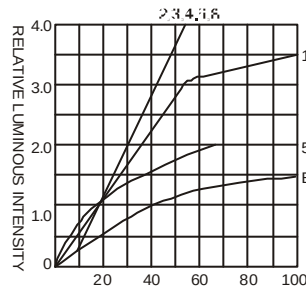
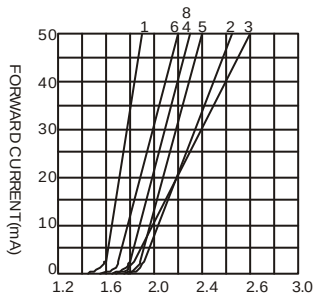
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### Typical electrical-optical characteristics curves:



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