

**LED DOT MATRIX**
**BL-M23X581**
**■ Features:**

- 60.60mm (2.3") Φ5.0 dot matrix LED display.
- 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
Row Cathode	Column Anode	Row Anode	Column Cathode	Emitted Color	Material	λ <sub>P</sub> (nm)	TYP.(mcd)
BL-M23A581S-XX		BL-M23B581S-XX		Hi Red	GaAlAs/GaAs,SH	660	280
BL-M23A581D-XX		BL-M23B581D-XX		Super Red	GaAlAs/GaAs,DH	660	320
BL-M23A581UR-XX		BL-M23B581UR-XX		Ultra Red	GaAlAs/GaAs,DDH	660	446
BL-M23A581E-XX		BL-M23B581E-XX		Orange	GaAsP/GaP	635	220
BL-M23A581Y-XX		BL-M23B581Y-XX		Yellow	GaAsP/GaP	585	220
BL-M23A581G-XX		BL-M23B581G-XX		Green	GaP/GaP	570	240

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

Part No		Chip			VF Unit:V		Iv
Row Cathode	Column Anode	Row Anode	Column Cathode	Emitted Color	Material	λ <sub>P</sub> (nm)	TYP.(mcd)
BL-M23A581UHR-XX		BL-M23B581UHR-XX		Ultra Red	AlGaInP	645	446
BL-M23A581UE-XX		BL-M23B581UE-XX		Ultra Orange	AlGaInP	630	400
BL-M23A581YO-XX		BL-M23B581YO-XX		Ultra Amber	AlGaInP	619	400
BL-M23A581UY-XX		BL-M23B581UY-XX		Ultra Yellow	AlGaInP	590	400
BL-M23A581UG-XX		BL-M23B581UG-XX		Ultra Green	AlGaInP	574	470
BL-M23A581PG-XX		BL-M23B581PG-XX		Ultra Pure Green	InGaN	525	500
BL-M23A581B-XX		BL-M23B581B-XX		Ultra Blue	InGaN	470	250
BL-M23A581W-XX		BL-M23B581W-XX		Ultra White	InGaN	/	400

--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 $I_{PF}$ (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 $T_{SOL}$	Max.260±5°C for 3 sec Max. (1.6mm from the base of the epoxy bulb)						°C

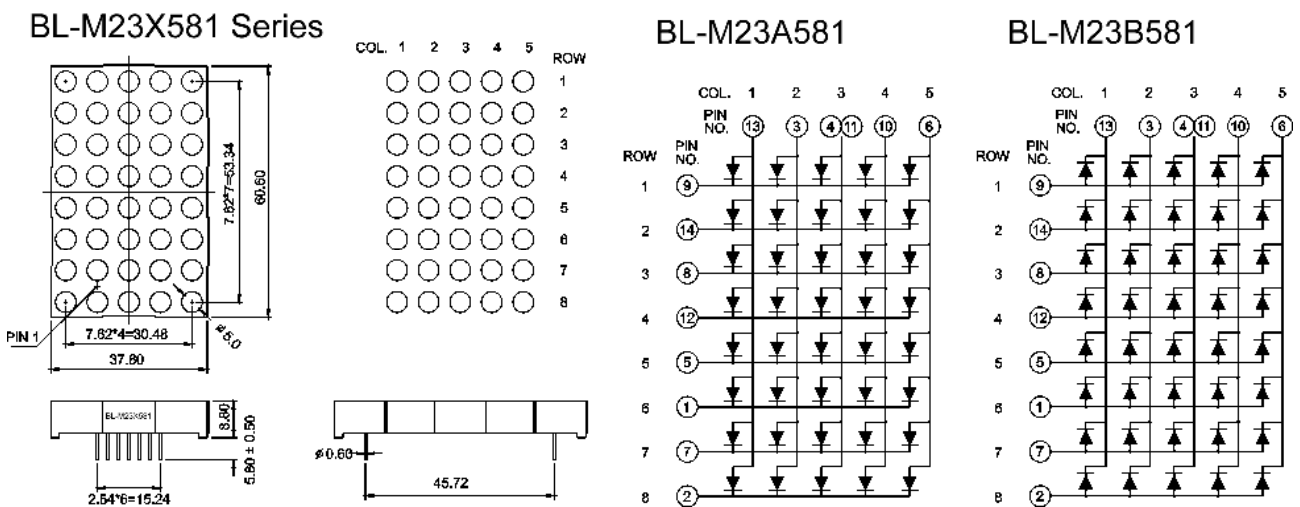
**■ Absolute maximum ratings (Ta=25°C)**

Parameter	UHR	UE	YO	UY	UG	PG	B	W	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 $I_{PF}$ (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 $T_{SOL}$	Max.260±5°C for 3 sec Max. (1.6mm from the base of the epoxy bulb)								°C

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### ■ Package configuration & Internal circuit diagram



#### 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.

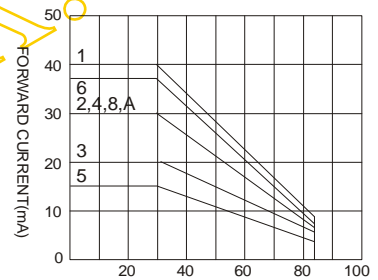
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### Typical electrical-optical characteristics curves:



- |   |                                      |
|---|--------------------------------------|
| (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) - InGaN/SiC 525nm/Ultra Green    |
| (8) - GaAsP/GaP 610nm/Super Red           |                                      |



NOTE:25°C free air temperature unless otherwise specified