LED NUMERIC DISPLAY, 2 DIGIT, SMD DISPLAY

BL-DS20x-21

Features:

- 5.08mm (0.20") Dual digit numeric display series. SMD TYPE
- 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
Common Cathode	Common Anode	Emitted Color	Material	λ_P (nm)	Typ	Max	TYP.(mcd)
BL-DS20A-21S-XX	BL-DS20B-21S-XX	Hi Red	GaAlAs/GaAs,SH	660	1.85	2.20	100
BL-DS20A-21D-XX	BL-DS20B-21D-XX	Super Red	GaAlAs/GaAs,DH	660	1.85	2.20	110
BL-DS20A-21UR-XX	BL-DS20B-21UR-XX	Ultra Red	GaAlAs/GaAs,DDH	660	1.85	2.20	150
BL-DS20A-21E-XX	BL-DS20B-21E-XX	Red	GaAsP/GaP	635	2.10	2.50	45
BL-DS20A-21Y-XX	BL-DS20B-21Y-XX	Yellow	GaAsP/GaP	585	2.10	2.50	45
BL-DS20A-21G-XX	BL-DS20B-21G-XX	Green	GaP/GaP	570	2.20	2.50	45

■ **Ultra Bright**

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

Part No		Chip			VF Unit:V		Iv
Common Cathode	Common Anode	Emitted Color	Material	λP (nm)	Typ	Max	TYP.(mcd)
BL-DS20A-21UHR-XX	BL-DS20B-21UHR-XX	Ultra Red	AlGaInP	645	2.10	2.50	150
BL-DS20A-21UE-XX	BL-DS20B-21UE-XX	Ultra Red	AlGaInP	630	2.10	2.50	130
BL-DS20A-21YO-XX	BL-DS20B-21YO-XX	Ultra Amber	AlGaInP	619	2.10	2.50	130
BL-DS20A-21UY-XX	BL-DS20B-21UY-XX	Ultra Yellow	AlGaInP	590	2.10	2.50	120
BL-DS20A-21UG-XX	BL-DS20B-21UG-XX	Ultra Green	AlGaInP	574	2.20	2.50	90
BL-DS20A-21PG-XX	BL-DS20B-21PG-XX	Ultra Pure Green	InGaN	525	3.80	4.50	180
BL-DS20A-21B-XX	BL-DS20B-21B-XX	Ultra Blue	InGaN	470	2.70	4.20	70
BL-DS20A-21W-XX	BL-DS20B-21W-XX	Ultra White	InGaN	/	2.70	4.20	70

■ -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)**

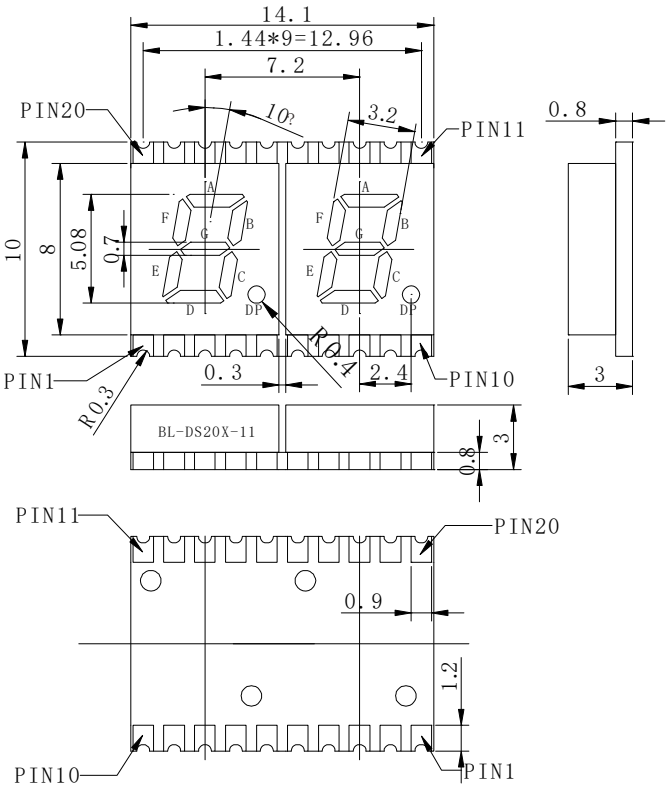
Parameter		**S**	**D**	**UR**	**E**	**Y**	**G**	**Unit**
Forward Current I_F		25	25	25	25	25	30	mA
Power Dissipation P_d		60	60	60	60	60	65	mW
Reverse Voltage V_R		5	5	5	5	5	5	V
Peak Forward Current I_{PF} (Duty 1/10 @1KHZ)		150	150	150	150	150	150	mA
Operation Temperature T_{OPR}	-40 to +80							°C
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)**

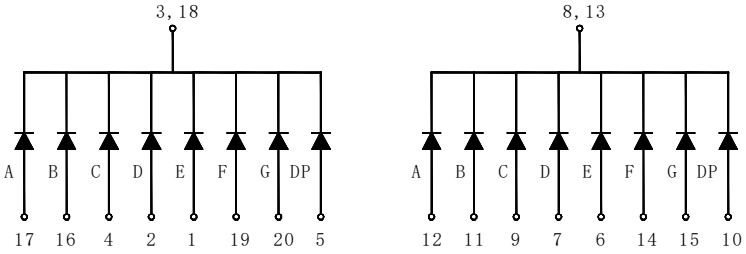
Parameter	**UHR**	**UE**	**YO**	**UY**	**UG**	**PG**	**UB**	**UW**	**Unit**
Forward Current I_F	30	30	30	30	30	30	30	30	mA
Power Dissipation P_d	75	65	65	65	75	110	120	120	mW
Reverse Voltage V_R	5	5	5	5	5	5	5	5	V
Peak Forward Current I_{PF} (Duty 1/10 @1KHZ)	150	150	150	150	150	150	100	100	mA
Operation 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

■ Package configuration & Internal circuit diagram

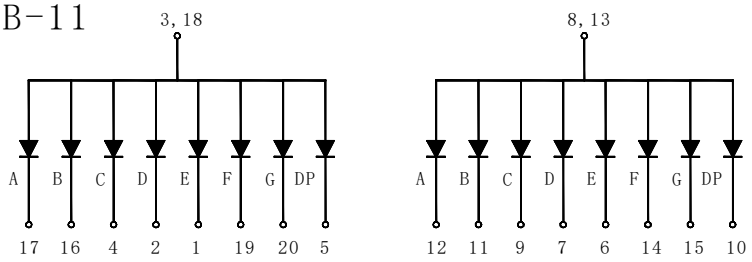
BL-DS20X-11 Series



BL-DS20A-11

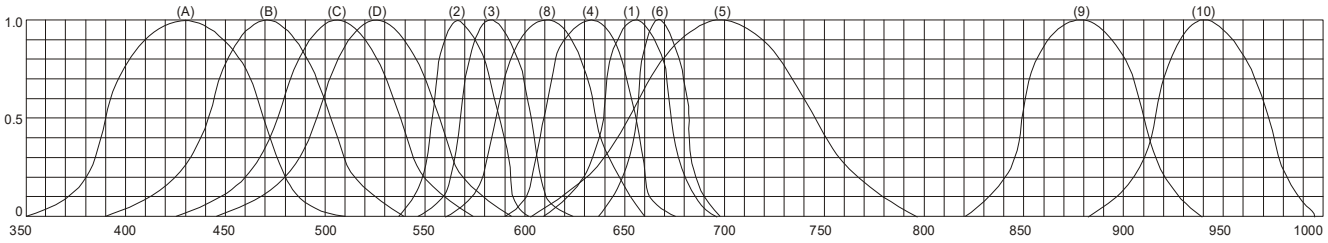


BL-DS20B-11



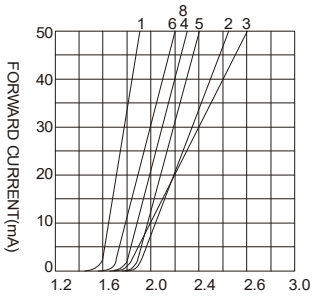
Notes:
1. All dimensions are in millimeters (inches)
2. Tolerance is ±0.25(0.01")unless otherwise noted.
3. Specifications are subject to change without notice.

■ Typical electrical-optical characteristics curves:

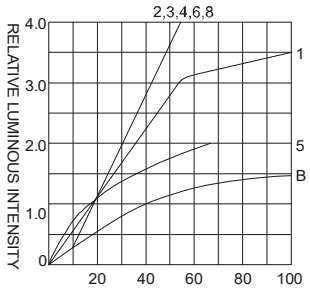


RELATIVE INTENSITY Vs WAVELENGTH(λ p)

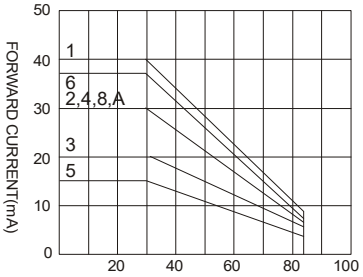
(1) - GaAsP/GaAs 655nm/Red
(2) - GaP 570nm/Yellow Green
(3) - GaAsP/GaP 585nm/Yellow
(4) - GaAsp/GaP 635nm/Orange & Hi-Eff Red
(5) - GaP 700nm/Bright Red
(6) - GaAlAs/GaAs 660nm/Super Red
(8) - GaAsP/GaP 610nm/Super Red
(9) - GaAlAs 880nm
(10) - GaAs/GaAs & GaAlAs/GaAs 940nm
(A) - GaN/SiC 430nm/Blue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



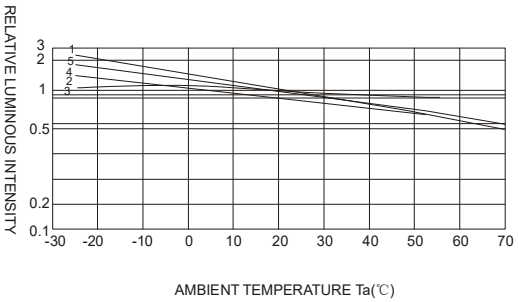
FORWARD VOLTAGE (Vf)
FORWARD CURRENT VS.
FORWARD VOLTAGE



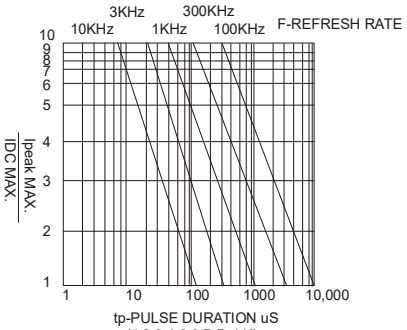
FORWARD CURRENT (mA)
RELATIVE LUMINOUS
INTENSITY VS. FORWARD
CURRENT



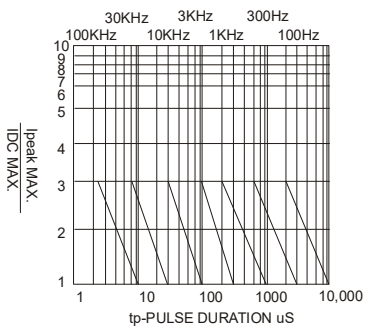
AMBIENT TEMPERATURE Ta(℃)
FORWARD CURRENT VS. AMBIENT
TEMPERATURE



AMBIENT TEMPERATURE Ta(℃)



tp-PULSE DURATION uS
(1,2,3,4,6,8,B.D.J.K)



tp-PULSE DURATION uS
(5)

NOTE:25℃ free air temperature unless otherwise specified