



LIGITEK

LIGITEK ELECTRONICS CO.,LTD.  
Property of Ligitek Only

---

LED ARRAY



Lead-Free Parts

LA158B/VG.VYVG.DBK-PF

DATA SHEET

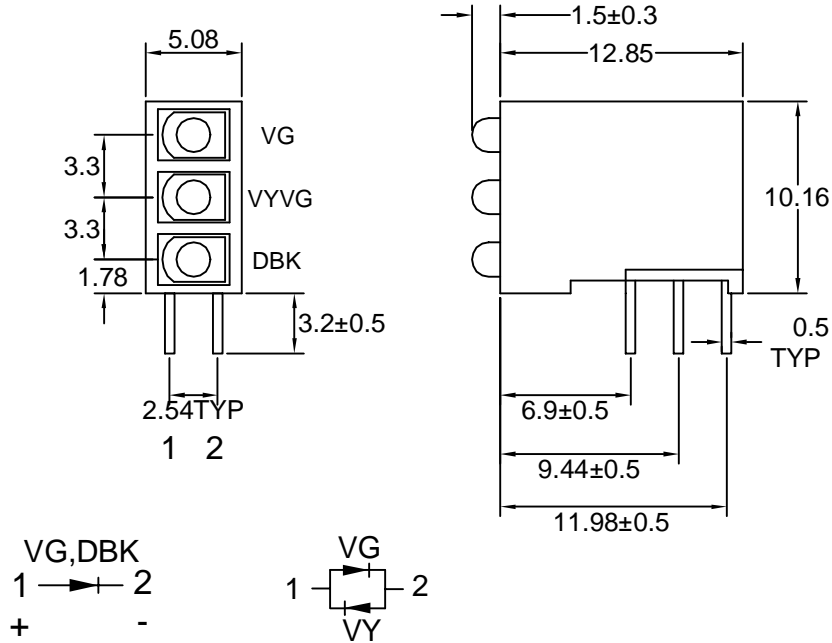
DOC. NO : QW0905-LA158B/VG.VYVG.DBK-PF

REV. : A

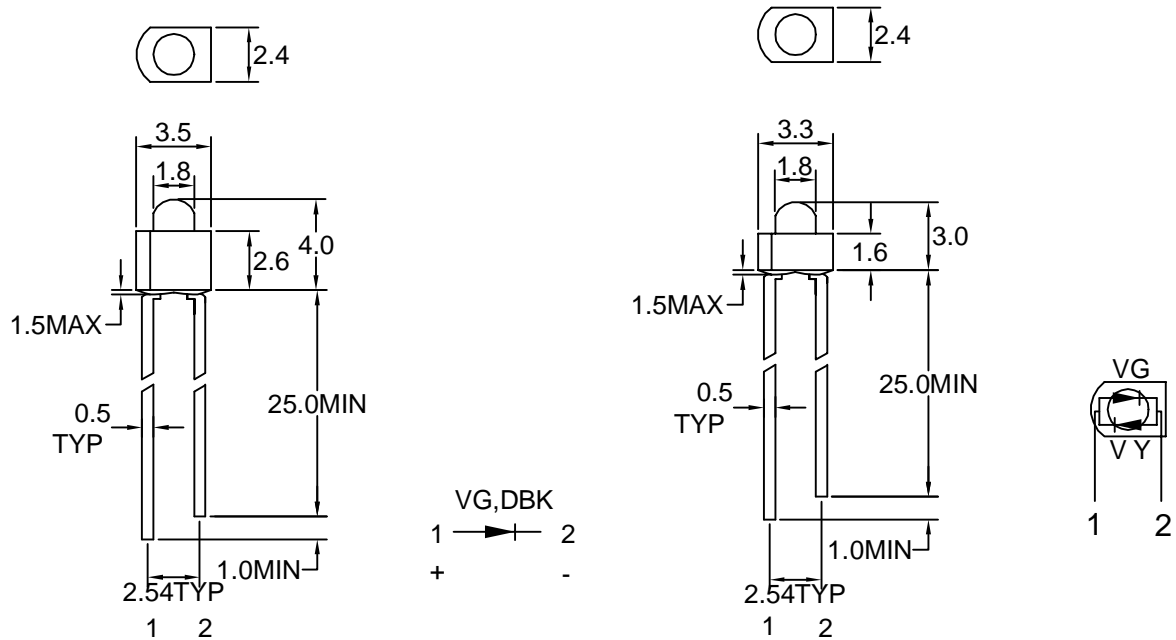
DATE : 03 - Oct - 2005



### Package Dimensions



### Package Dimensions



LVG21541-PF LDBK21541-PF

LVYVG11263/R1-PF

Note : 1.All dimension are in millimeter tolerance is ±0.25mm unless otherwise noted.  
 2.Specifications are subject to change without notice.



## Absolute Maximum Ratings at Ta=25

Parameter	Symbol	Ratings			UNIT
		VG	VY	DBK	
Forward Current	IF	30	30	30	mA
Peak Forward Current Duty 1/10@10KHz	IFP	120	60	100	mA
Power Dissipation	PD	100	75	120	mW
Reverse Current @5V	Ir	10	10	50	μ A
Electrostatic Discharge	ESD	2000		150	V
Operating Temperature	Topr	-20 ~ +80			
Storage Temperature	Tstg	-30 ~ +100			
Soldering Temperature	Tsol	Max 260 for 5 sec Max (2mm from body)			

## Typical Electrical &amp; Optical Characteristics (Ta=25 )

PART NO	MATERIAL	COLOR		Peak wave length Pnm	Dominant wave length Dnm	Spectral halfwidth nm	Forward voltage @20mA(V)			Luminous intensity @20mA(mcd)		Viewing angle 2 1/2 (deg)
		Emitted	Lens				Min.	Typ.	Max.	Min.	Typ.	
LA158B/VG.VYVG.DBK-PF	GaP	Green	Green Transparent	565	----	30	1.7	----	2.6	90	160	20
	AlGaInP	Amber	Water Clear	----	590	20	1.7	----	2.6	9.0	12	20
	GaP	Green		565	----	30	1.7	----	2.6	3.0	6.5	20
	InGaN/GaN	Blue	Blue Transparent	----	470	30	----	3.5	4.0	160	300	10

Note : 1. The forward voltage data did not including  $\pm 0.1V$  testing tolerance.  
2. The luminous intensity data did not including  $\pm 15\%$  testing tolerance.



### Typical Electro-Optical Characteristics Current

VG CHIP

Fig.1 Forward current vs. Forward Voltage

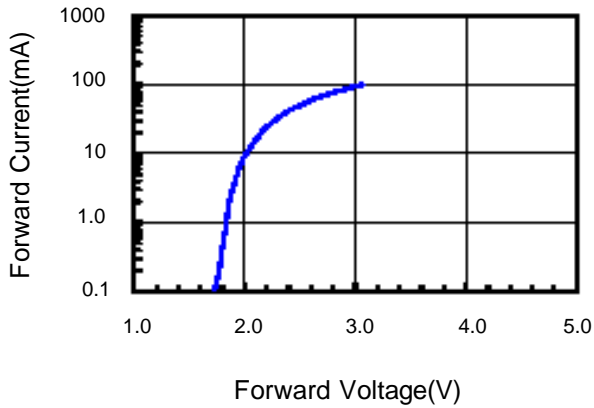


Fig.2 Relative Intensity vs. Forward Current

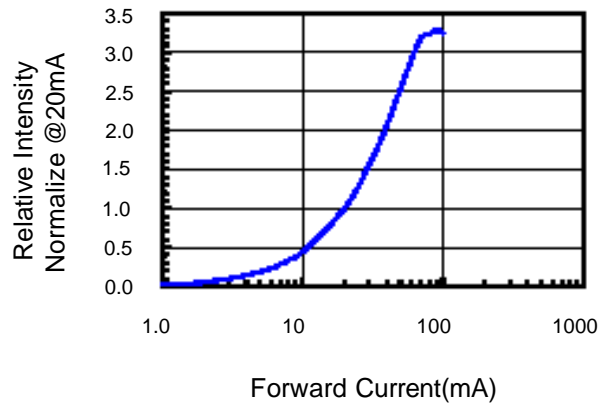


Fig.3 Forward Voltage vs. Temperature

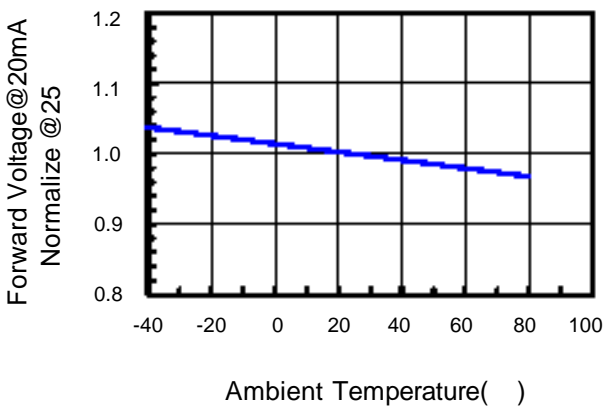


Fig.4 Relative Intensity vs. Temperature

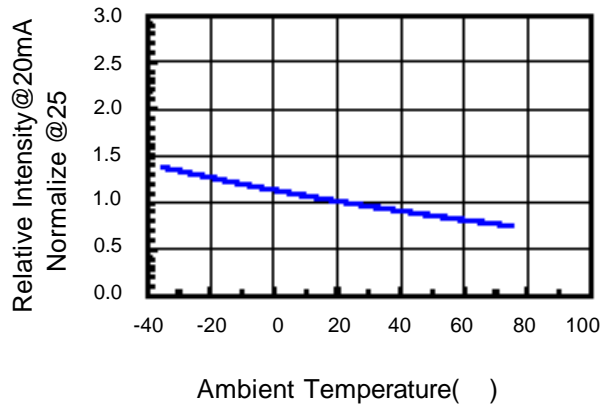
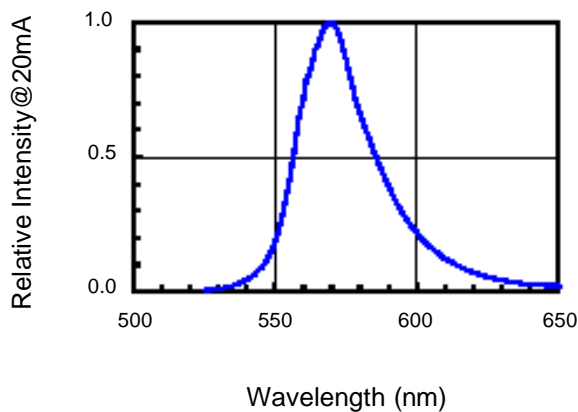


Fig.5 Relative Intensity vs. Wavelength





### Typical Electro-Optical Characteristics Curve

VY CHIP

Fig.1 Forward current vs. Forward Voltage

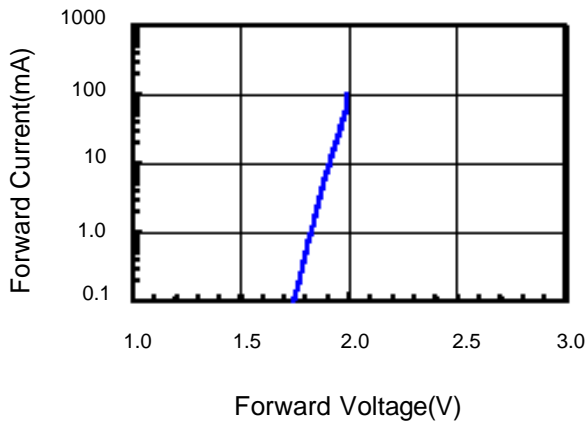


Fig.2 Relative Intensity vs. Forward Current

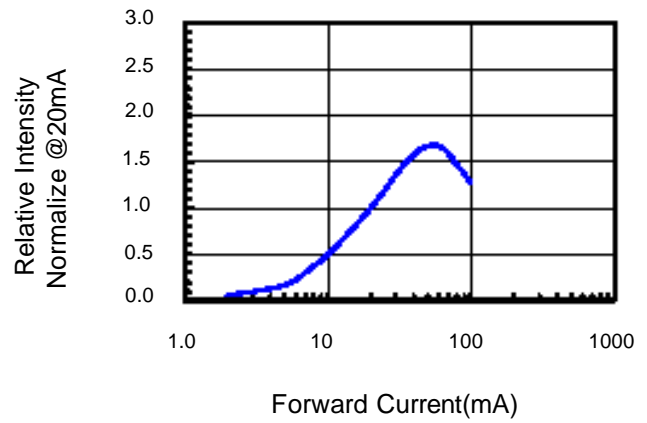


Fig.3 Forward Voltage vs. Temperature

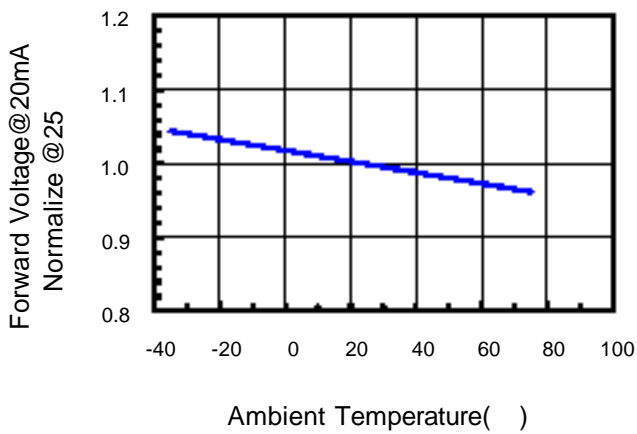


Fig.4 Relative Intensity vs. Temperature

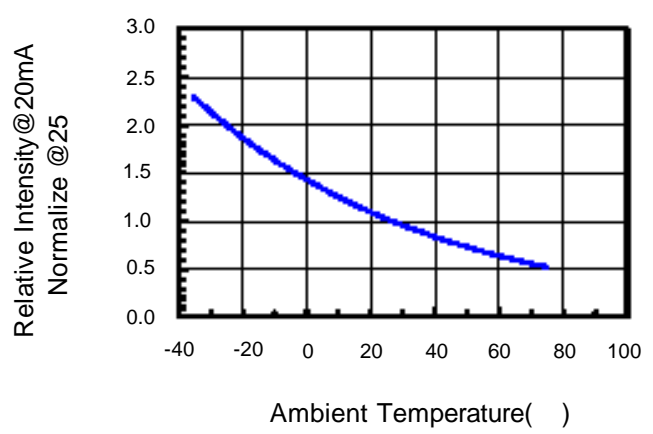
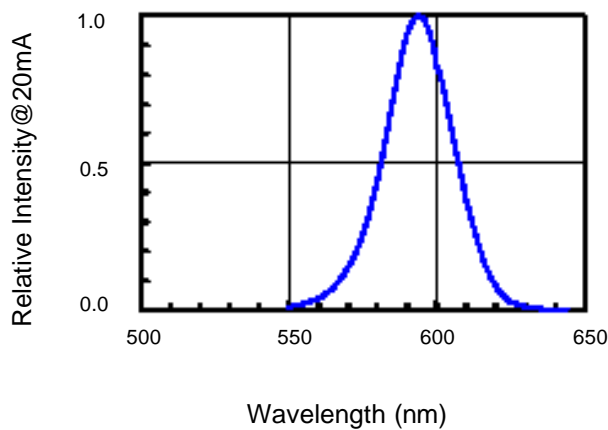


Fig.5 Relative Intensity vs. Wavelength





### Typical Electro-Optical Characteristics Curve

DBK CHIP

Fig.1 Forward current vs. Forward Voltage

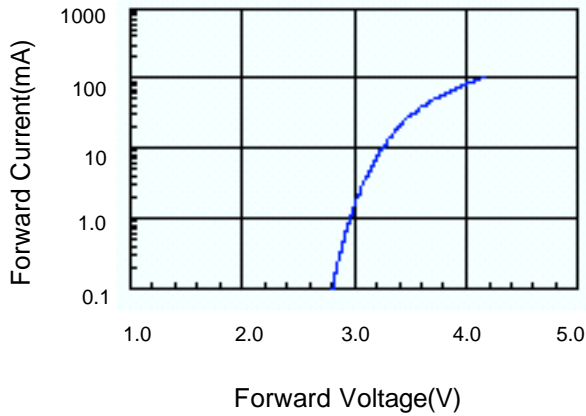


Fig.2 Relative Intensity vs. Forward Current

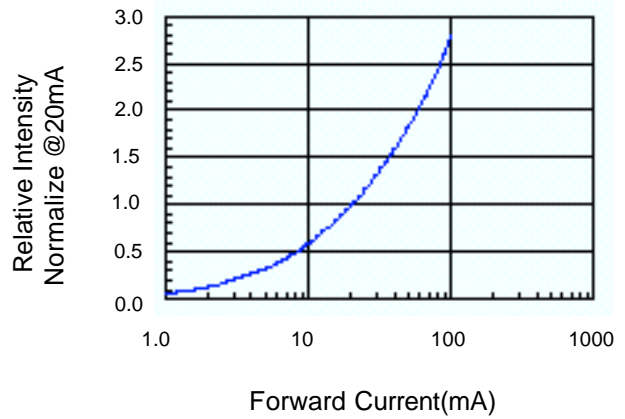


Fig.3 Forward Voltage vs. Temperature

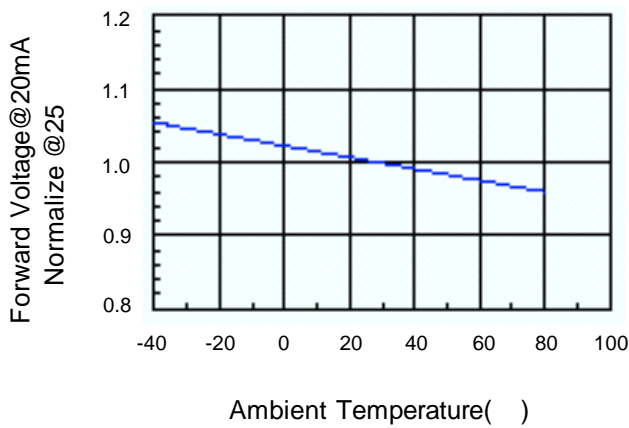


Fig.4 Relative Intensity vs. Temperature

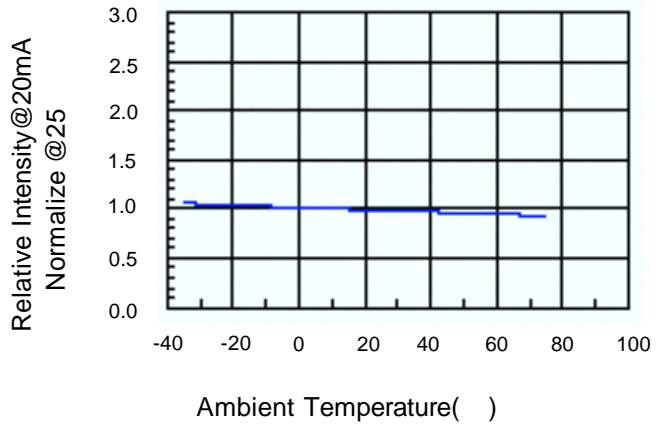
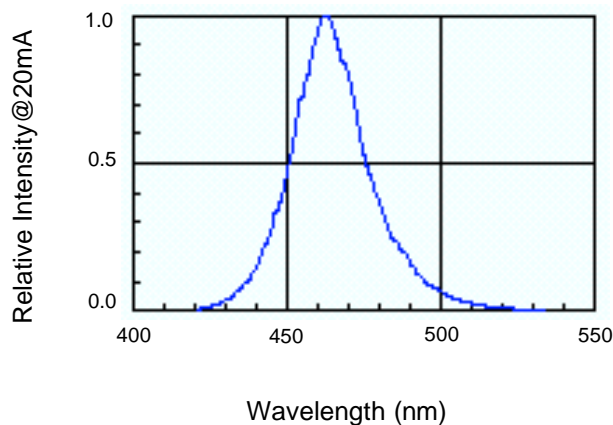


Fig.5 Relative Intensity vs. Wavelength





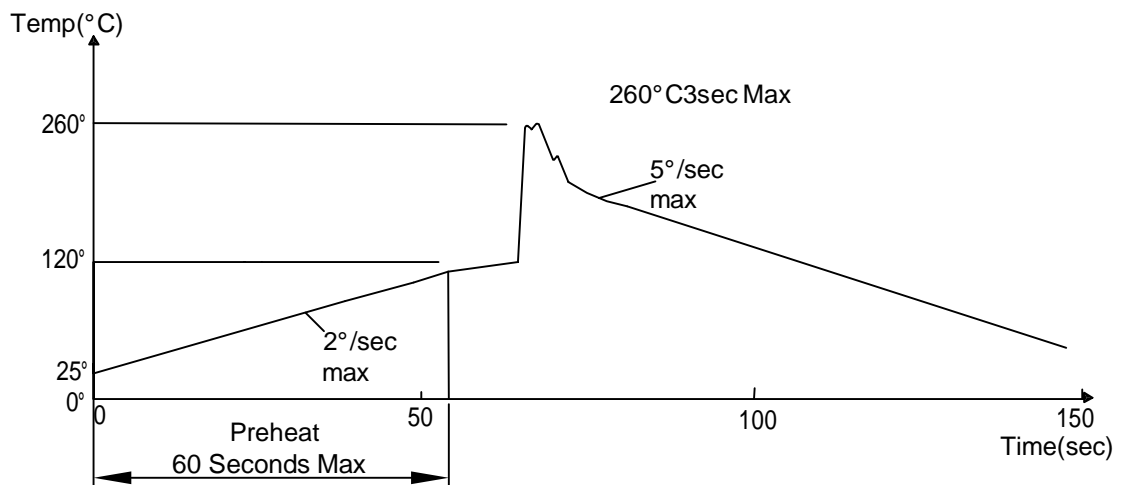
### Soldering Condition(Pb-Free)

#### 1.Iron:

- Soldering Iron:30W Max
- Temperature 350° C Max
- Soldering Time:3 Seconds Max(One Time)
- Distance:2mm Min(From solder joint to body)

#### 2.Wave Soldering Profile

- Dip Soldering
- Preheat: 120° C Max
- Preheat time: 60seconds Max
- Ramp-up
- 2° C/sec(max)
- Ramp-Down:-5° C/sec(max)
- Solder Bath:260° C Max
- Dipping Time:3 seconds Max
- Distance:2mm Min(From solder joint to body)



**Reliability Test:**

Test Item	Test Condition	Description	Reference Standard
Operating Life Test	1.Under Room Temperature 2.If=20mA 3.t=1000 hrs (-24hrs, +72hrs)	This test is conducted for the purpose of determining the resistance of a part in electrical and thermal stressed.	MIL-STD-750: 1026 MIL-STD-883: 1005 JIS C 7021: B-1
High Temperature Storage Test	1.Ta=105 ±5 2.t=1000 hrs (-24hrs, +72hrs)	The purpose of this is the resistance of the device which is laid under condition of high temperature for hours.	MIL-STD-883:1008 JIS C 7021: B-10
Low Temperature Storage Test	1.Ta=-40 ±5 2.t=1000 hrs (-24hrs, +72hrs)	The purpose of this is the resistance of the device which is laid under condition of low temperature for hours.	JIS C 7021: B-12
High Temperature High Humidity Test	1.Ta=65 ±5 2.RH=90%~95% 3.t=240hrs ±2hrs	The purpose of this test is the resistance of the device under tropical for hours.	MIL-STD-202:103B JIS C 7021: B-11
Thermal Shock Test	1.Ta=105 ±5 & -40 ±5 (10min) (10min) 2.total 10 cycles	The purpose of this is the resistance of the device to sudden extreme changes in high and low temperature.	MIL-STD-202: 107D MIL-STD-750: 1051 MIL-STD-883: 1011
Solder Resistance Test	1.T.Sol=260 ±5 2.Dwell time= 10 ±1sec.	This test intended to determine the thermal characteristic resistance of the device to sudden exposures at extreme changes in temperature when soldering the lead wire.	MIL-STD-202: 210A MIL-STD-750: 2031 JIS C 7021: A-1
Solderability Test	1.T.Sol=230 ±5 2.Dwell time=5 ±1sec	This test intended to see soldering well performed or not.	MIL-STD-202: 208D MIL-STD-750: 2026 MIL-STD-883: 2003 JIS C 7021: A-2