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LED ARRAY



Lead-Free Parts

LA158B/SBKS.VY.VG-R1-PF

DATA SHEET

DOC. NO : QW0905-LA158B/SBKS.VY.VG-R1-PF

REV. : A

DATE : 12 - Dec. - 2005



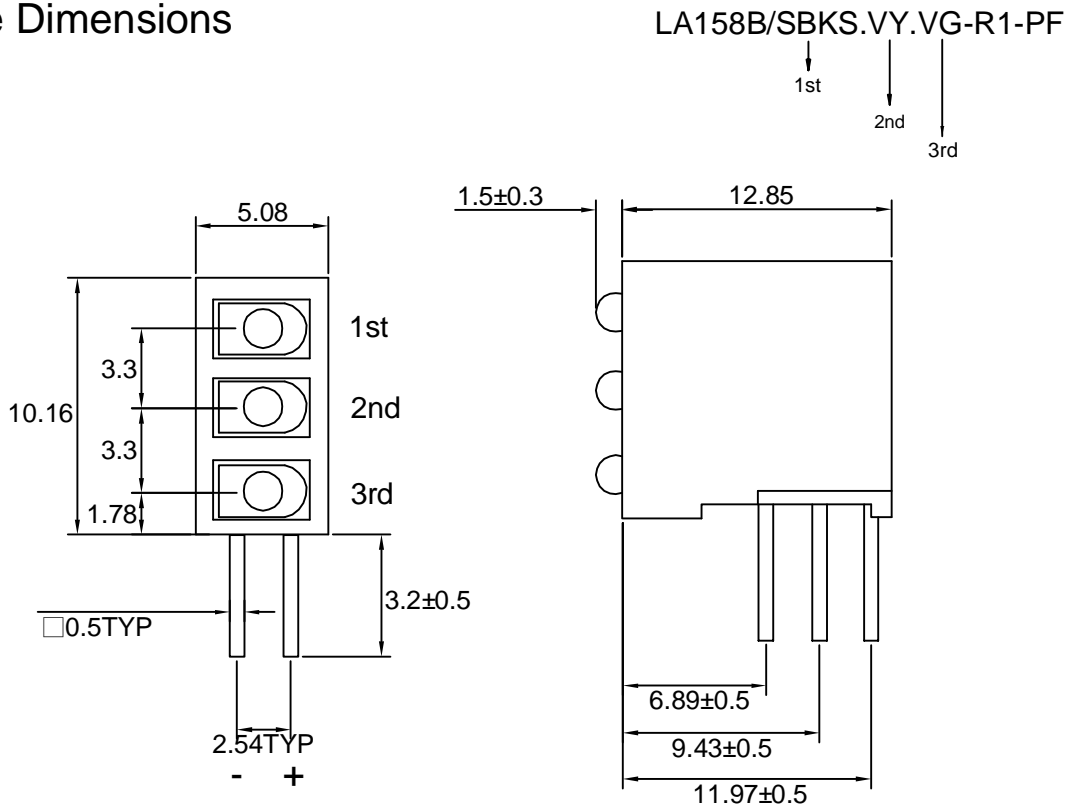
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PART NO. LA158B/SBKS.VY.VG-R1-PF

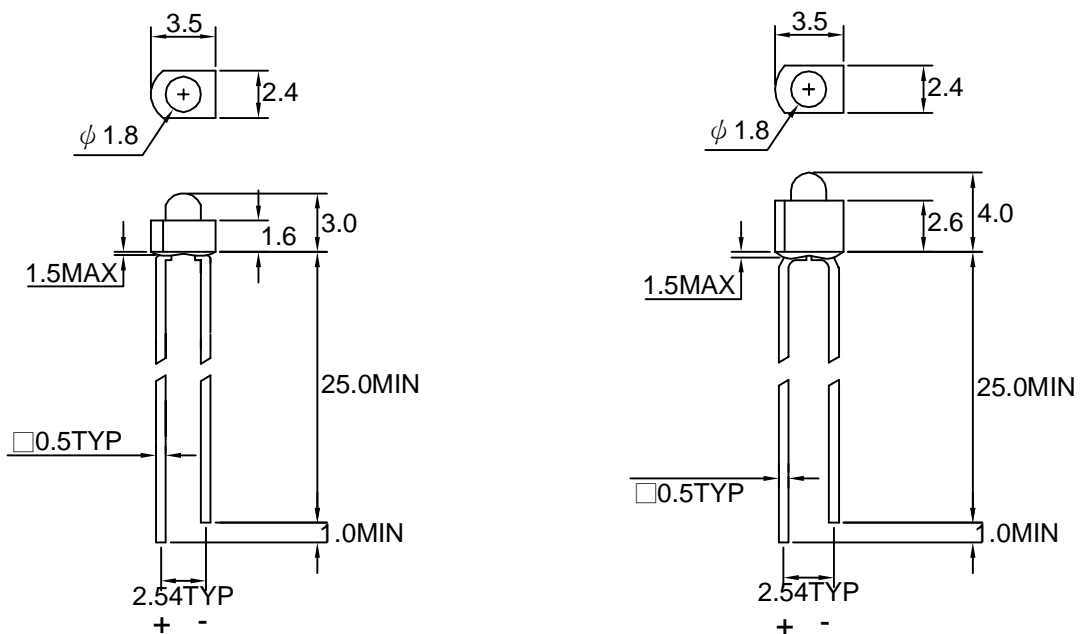
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### Package Dimensions



LVY11241-PF

LVG21541-PF  
LSBK21541S



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 °C

Parameter	Symbol	Absolute Maximum Ratings			UNIT
		SBKS	VY	VG	
Forward Current	IF	30	30	30	mA
Peak Forward Current Duty 1/10@10KHz	IFP	100	60	120	mA
Power Dissipation	PD	120	75	100	mW
Reverse Current @5V	Ir	50	10	10	μA
Electrostatic Discharge( * )	ESD	500	2000	----	V
Operating Temperature	Topr	-20 ~ +80			°C
Storage Temperature	Tstg	-30 ~ +100			°C

★ Static Electricity or power surge will damage the LED. Use of a conductive wrist band or anti-electrostatic glove is recommended when handling these LED. All devices, equipment and machinery must be properly grounded.

Typical Electrical & Optical Characteristics (Ta=25 °C)

PART NO	MATERIAL	COLOR		Peak wave length λ Pnm	Dominant wave length λ Dnm	Spectral halfwidth Δ λ nm	Forward voltage @20mA(V)			Luminous intensity @20mA(mcd)		Viewing angle 2 θ 1/2 (deg)
		Emitted	Lens				Min.	Typ.	Max.	Min.	Typ.	
LA158B/SBKS.VY.VG-R1-PF	InGaN/SiC	Blue	Blue Transparent	----	475	26	----	3.5	4.2	120	280	20
	AlGaInP	Yellow	Yellow Transparent	----	590	20	1.7	2.6	----	900	2008	20
	Gap	Green	Green Transparent	565	----	30	1.7	----	2.6	90	160	20

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



### Typical Electro-Optical Characteristics Curve

SBK-S CHIP

Fig.1 Forward current vs. Forward Voltage

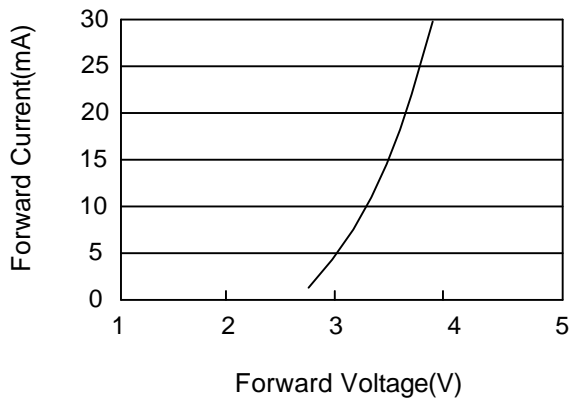


Fig.2 Relative Intensity vs. Forward Current

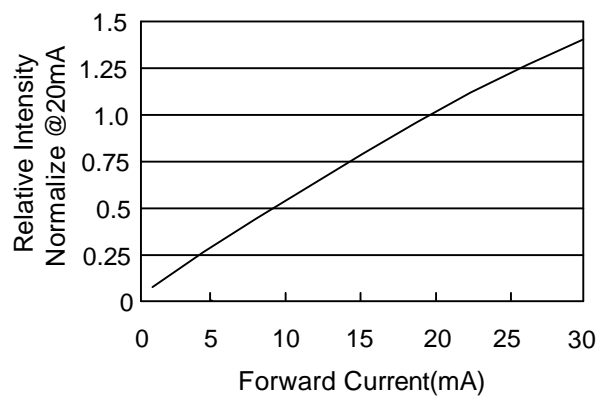


Fig.3 Forward Current vs. Temperature

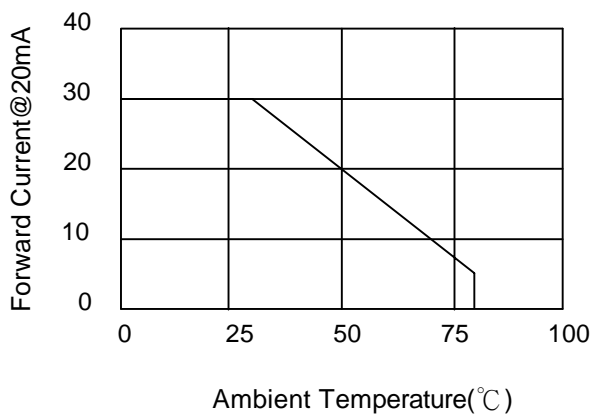
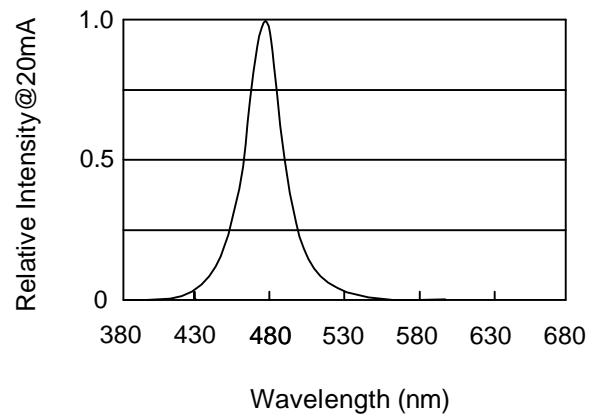


Fig.4 Relative Intensity vs. Wavelength





### Typical Electro-Optical Characteristics Curve

VY CHIP

Fig.1 Forward current vs. Forward Voltage

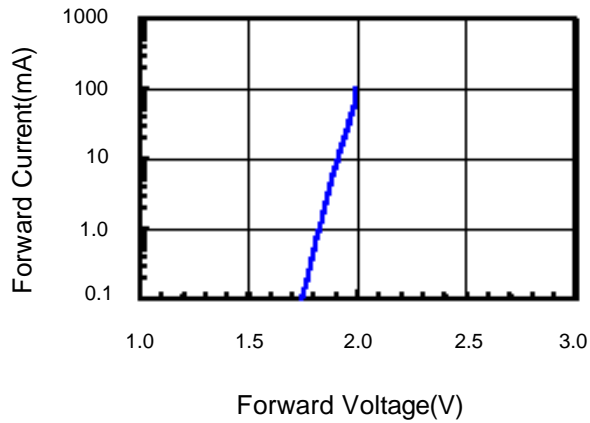


Fig.2 Relative Intensity vs. Forward Current

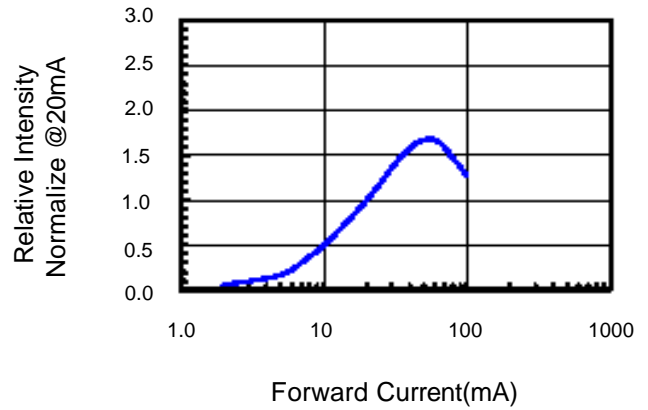


Fig.3 Forward Voltage vs. Temperature

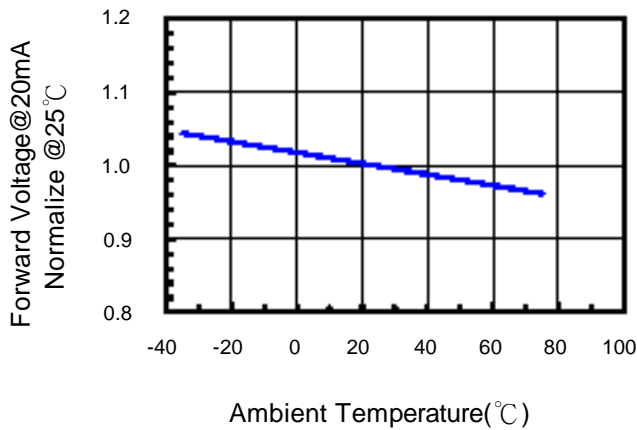


Fig.4 Relative Intensity vs. Temperature

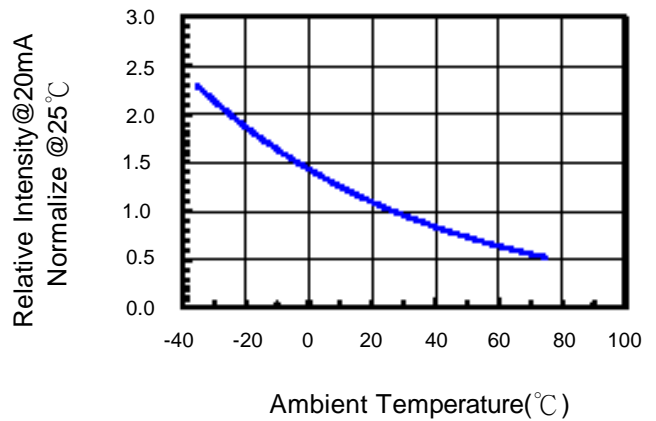
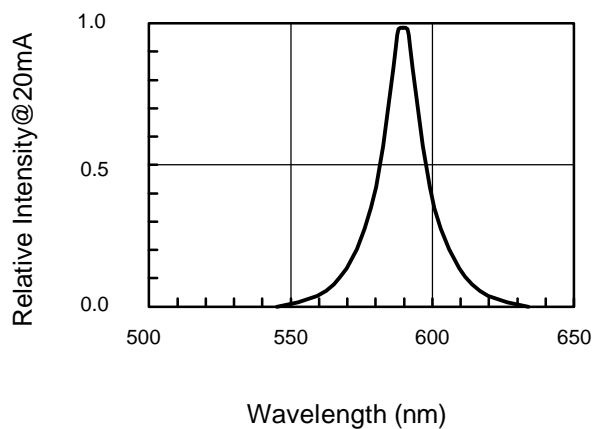


Fig.5 Relative Intensity vs. Wavelength





### Typical Electro-Optical Characteristics Curve

VG CHIP

Fig.1 Forward current vs. Forward Voltage

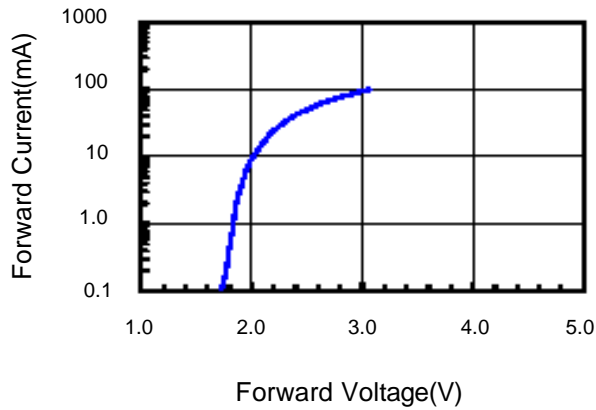


Fig.2 Relative Intensity vs. Forward Current

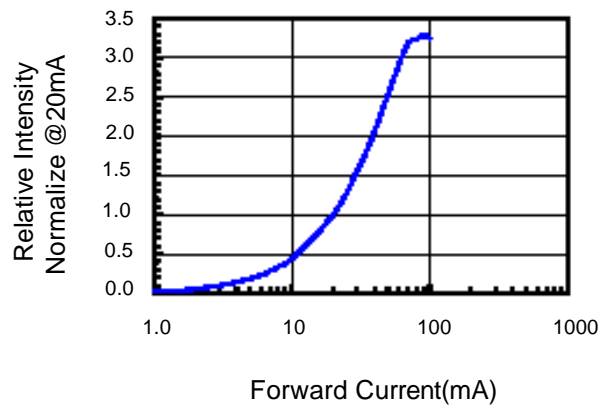


Fig.3 Forward Voltage vs. Temperature

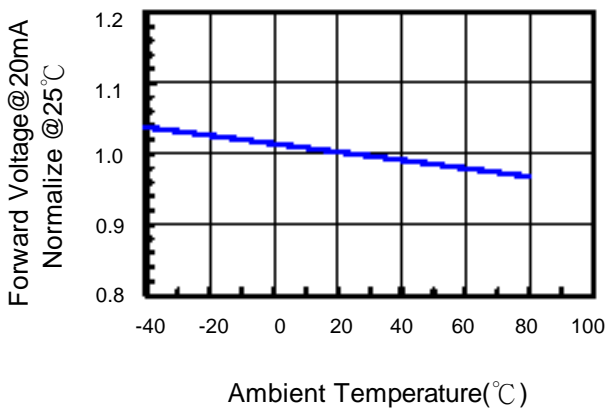


Fig.4 Relative Intensity vs. Temperature

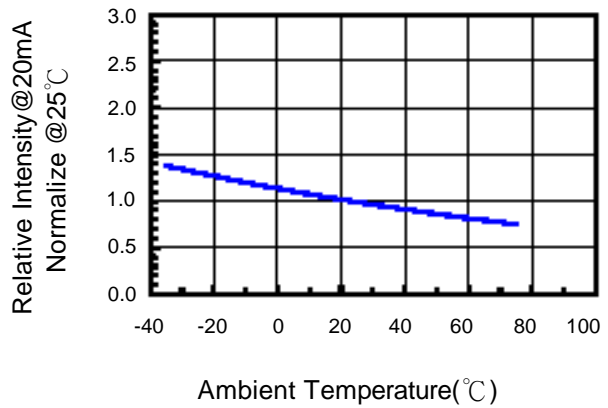
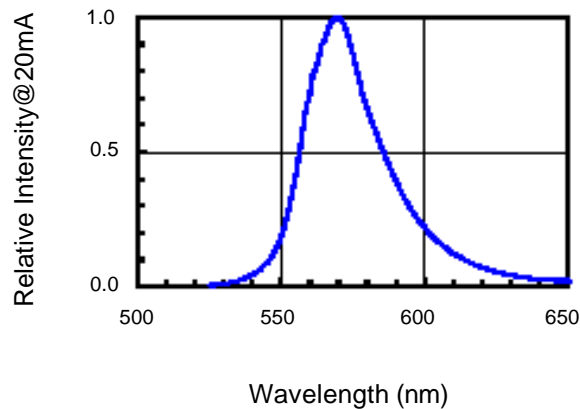


Fig.5 Relative Intensity vs. Wavelength





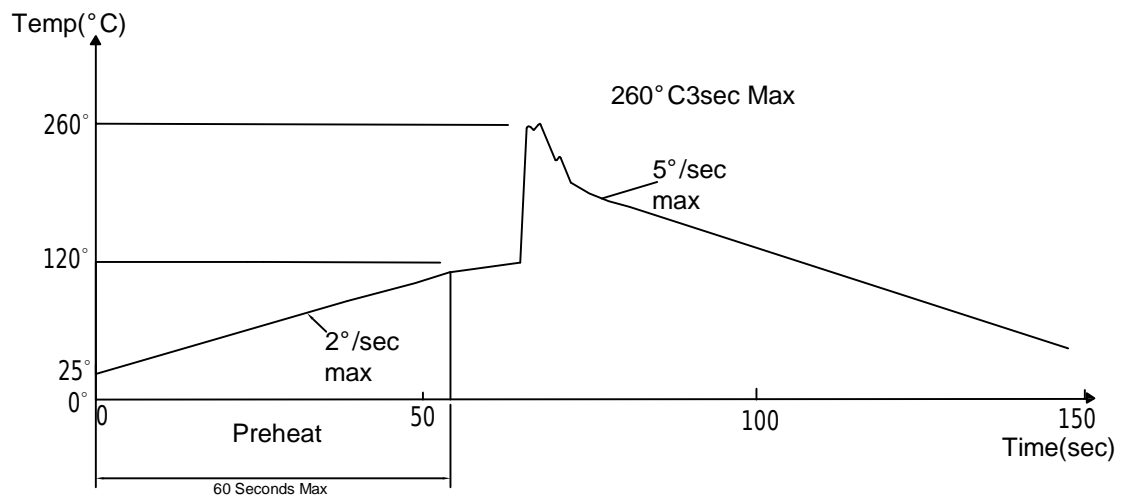
### Soldering Condition(Pb-Free)

#### 1.Iron:

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

#### 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 case)





Reliability Test:

Test Item	Test Condition	Description	Reference Standard
Operating Life Test	1.Under Room Temperature 2.If=10mA 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°C±5°C 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°C±5°C 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°C±5°C 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°C±5°C & -40°C±5°C (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°C±5°C 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°C±5°C 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