



EVERLIGHT ELECTRONICS CO., LTD.

MODEL NO: 93-22VRVGC

Device Number : DSE-932-001 REV. 1.1

High performance SMD LED with Reflector

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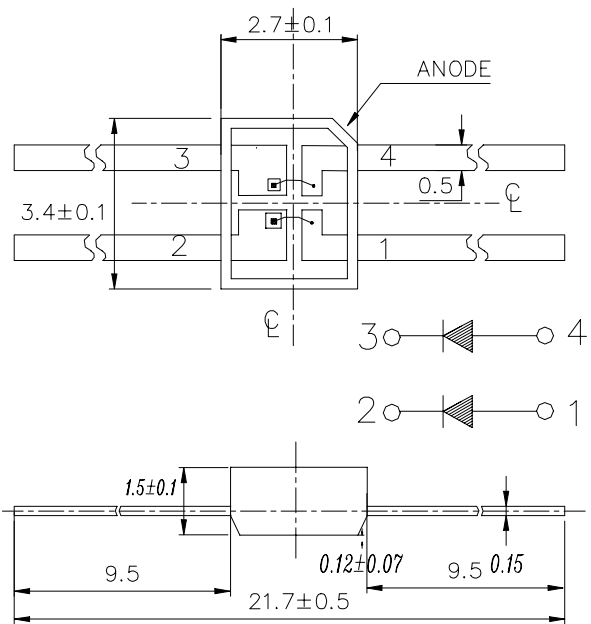
Features :

- Package in 12mm tape on 7" diameter reels.
- Compatible with automatic placement equipment.
- Compatible with infrared and vapor phase reflow solder process.
- Eia std package.
- IC compatible.

Applications :

- Automotive: backlighting in dashboard and switch.
- Telecommunication: indicator and backlighting in telephone and fax.
- Indicator and backlight for audio and video equipment.
- Indicator and backlight for battery driven equipment.
- Small indicator for outdoor applications.
- Indicator and backlight in office equipment.
- Flat backlight for LED, switches and symbol.
- General use.

Package Dimension :



Notes :

Tolerances Unless Dimension $\pm 0.1\text{mm}$

Angle $\pm 0.5^\circ$

Unit = mm

PART NO	CHIP		Lens Color
	Material	Emitted Color	
93-22VRVGC	GalAsP/GaP	Hi-Eff Red	Water
	GaP	Green	

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■ Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Rating	Unit
Reverse Voltage	Vr	5	V
Forward Current	If	VR: 30 VG: 30	mA
Operating Temperature	Topr	-40 ~ +85	°C
Storage Temperature	Tstg	-40 ~ +90	°C
Soldering Temperature	Tsol	245 (for 5 second)	°C
Power Dissipation	Pd	VR: 100 VG: 100	mW
Peak Forward Current(Duty 1/10 @ 1KHZ)	If(Peak)	VR: 160 VG: 160	mA



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■ Electronic Optical Characteristics :

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous intensity	I _v VR: VG:	7.0 12.0	12 20	-----	mcd	If=20mA
Viewing Angle	2 θ 1/2	-----	130	-----	deg	If=20mA
Peak Wavelength	λ _p VR: VG:	-----	640 570	-----	nm	If=20mA
Dominant Wavelength	λ _d VR: VG:	-----	625 571	-----	nm	If=20mA
Spectrum Radiation Bandwidth	△ λ VR: VG:	-----	20 30	-----	nm	If=20mA
Forward Voltage	V _f VR: VG:	1.7 1.7	2.0 2.1	2.6 2.4	V	If=20mA
Reverse Current	I _r	-----	-----	10	μ A	V _r =5V



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Reliability Test Item And Condition

NO	Item	Test Conditions	Test Hours/Cycle	Sample Size	Ac/Re
1	Solder Heat	TEMP : 260°C ± 5 °C	5 SEC	76 Pcs	0/1
2	Temperature Cycle	H : +85°C 30min ∫ 5 min L : -55°C 30min	50 CYCLE	76 Pcs	0/1
3	Thermal Shock	H : +100°C 5min ∫ 10 sec L : -10°C 5min	50 CYCLE	76 Pcs	0/1
4	High Temperature Storage	TEMP : 100°C	1000 HRS	76 Pcs	0/1
5	Low Temperature Storage	TEMP : -55°C	1000 HRS	76 Pcs	0/1
6	DC Operating Life	If = 20 mA	1000 HRS	76 Pcs	0/1
7	High Temperature / High Humidity	85°C/85% RH	1000 HRS	76 Pcs	0/1



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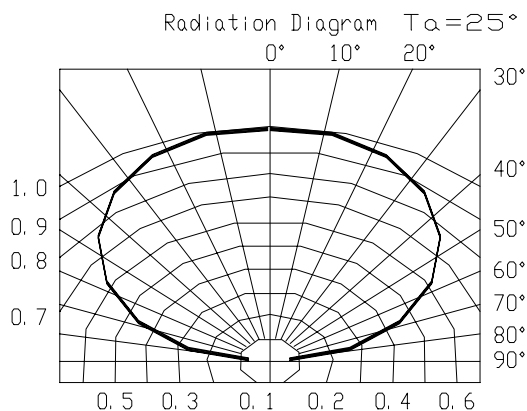
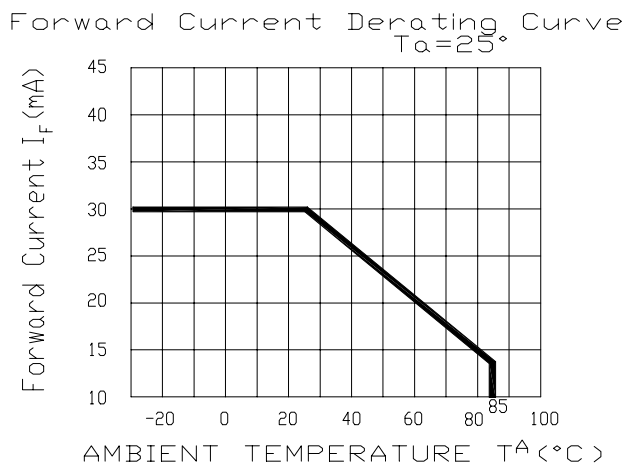
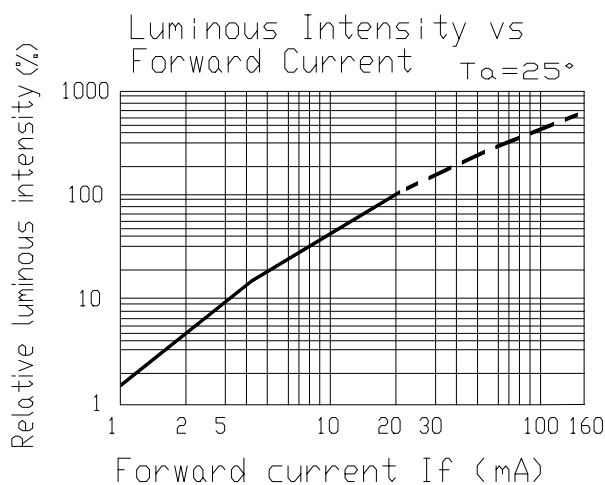
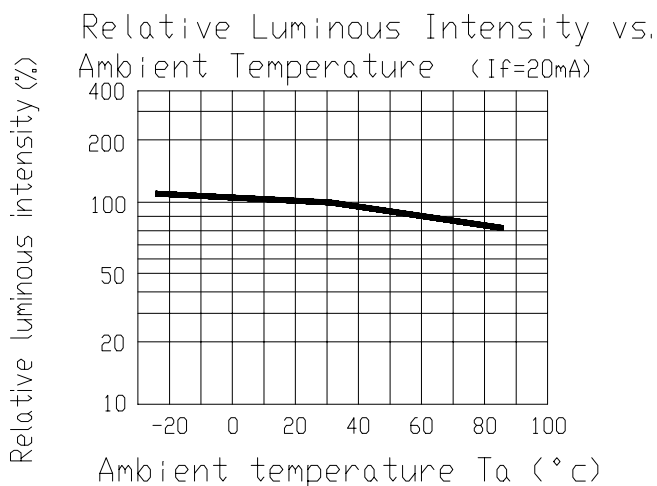
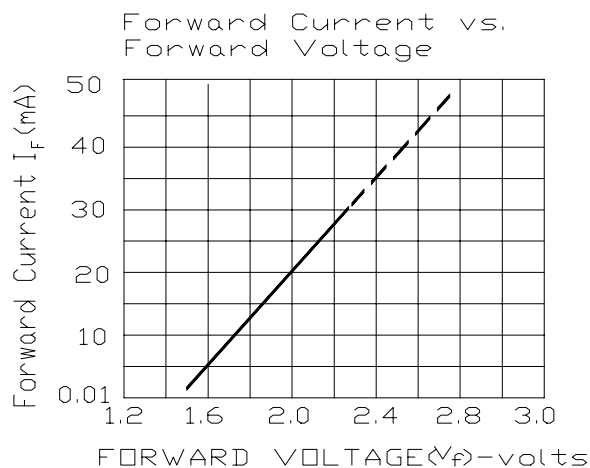
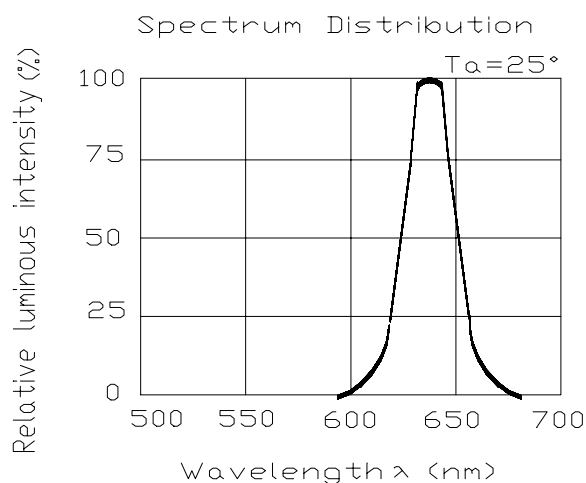
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Typical Electro-Optical Characteristic Curves(VR)





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Typical Electro-Optical Characteristic Curves(VG)

