



MODEL NO: 11-22VRVGC/S10/TR8

Device Number : DSE-112-014 REV. 1.1

Chip LEDs with Bi-Color(Multi-Color)

ECN : Page: 1/10

Features :

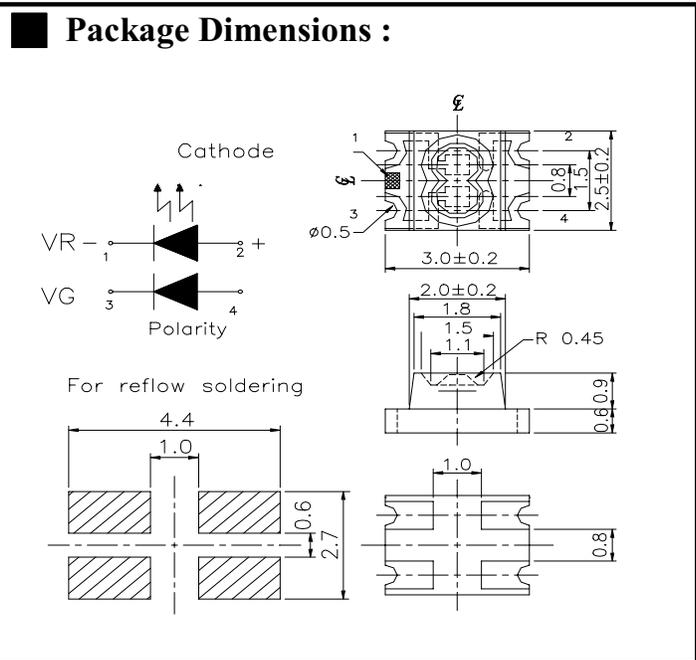
- Package in 8mm tape on 7" diameter reel.
- Compatible with automatic placement equipment.
- Compatible with infrared and vapor phase reflow solder process.
- Multi-color type.

Descriptions :

- The 11-22 SMD Taping is much smaller than lead frame type components, thus enable smaller board size, higher packing density, reduced storage space and finally smaller equipment to be obtained.
- Besides, lightweight makes them ideal for miniature applications, etc.

Applications :

- Automotive: backlighting in dashboard and switch.
- Telecommunication: indicator and backlighting in telephone and fax.
- Flat backlight for LCD, switch and symbol.
- General use.



Notes :

Tolerances Unless Dimension $\pm 0.1\text{mm}$
 Angle $\pm 0.5^\circ$
 Unit = mm

PART NO	Chip		Lens Color
	Material	Emitted Color	
11-22VRVGC/S10/TR8	VR:	GaAsP/GaP	Water Clear
	VG:	GaP	

Office: NO. 25, Lane 76, Sec.3, Chung Yang Rd., Tucheng 236, Taipei, Taiwan, R.O.C.

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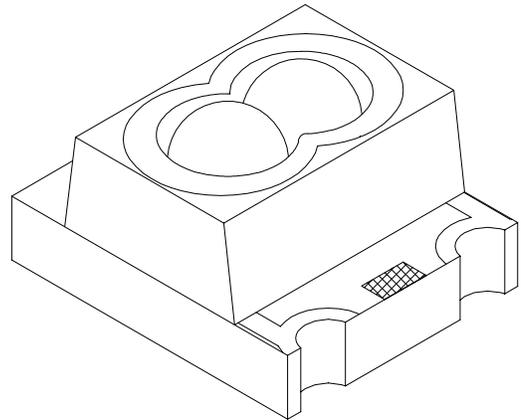
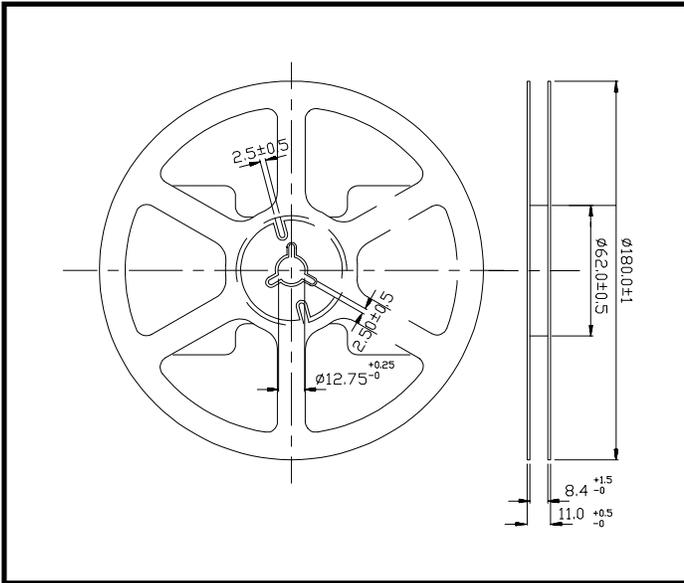
MODEL NO: 11-22VRVGC/S10/TR8

Device Number : DSE-112-014 REV. 1.1

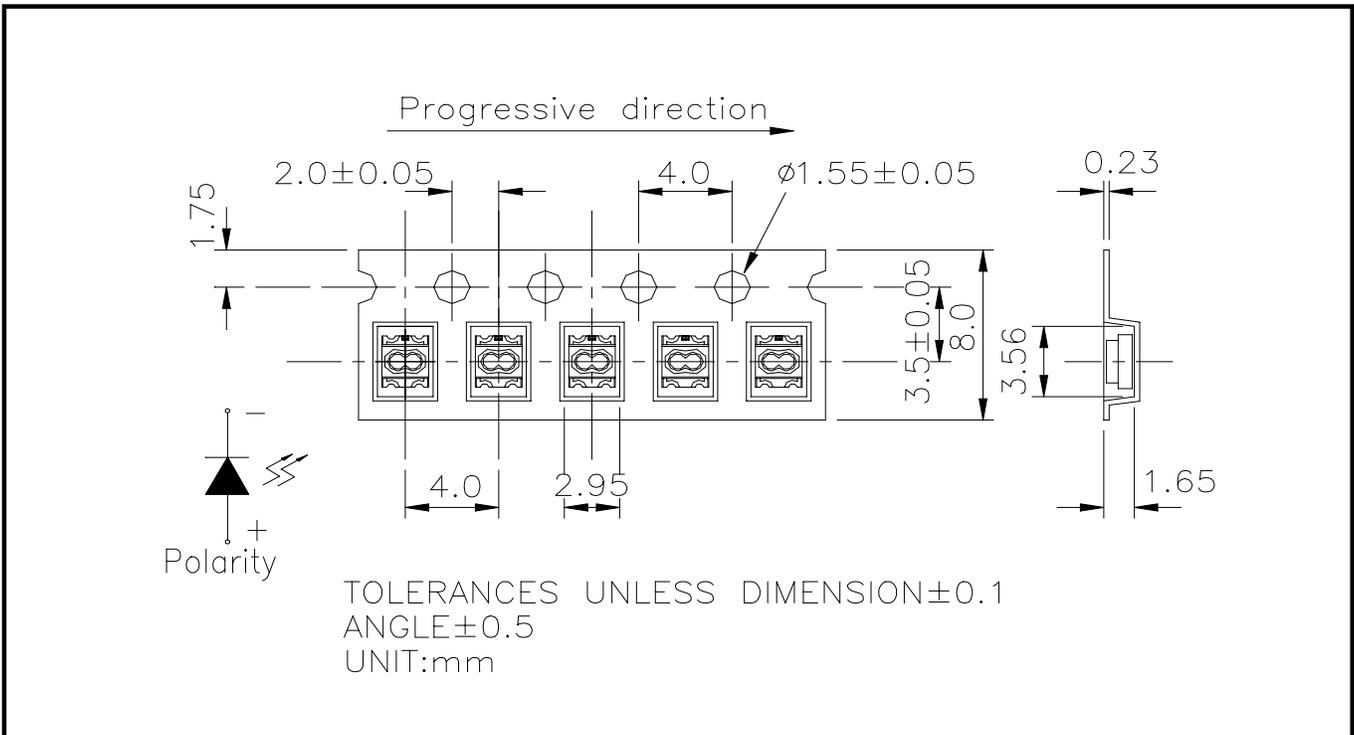
Chip LEDs with Bi-Color(Multi-Color)

ECN : Page: 2/10

■ Package Dimensions :



■ Loaded quantity per reel 2000 PCS/reel :





EVERLIGHT ELECTRONICS CO., LTD.

MODEL NO: 11-22VRVGC/S10/TR8 Device Number : DSE-112-014 REV. 1.1

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ECN : Page: 3/10

■ **Absolute Maximum Ratings at Ta = 25°C:**

Parameter	Symbol	Rating	Unit
Reverse Voltage	V _R	5	V
Forward Current	I _F	VR: 30 VG: 30	mA
Operating Temperature	T _{opr}	-40 ~ +85	°C
Storage Temperature	T _{stg}	-40 ~ +90	°C
Soldering Temperature	T _{sol}	260 (for 5 second)	°C
Power Dissipation	P _d	VR: 100 VG: 100	mW
Peak Forward Current(Duty 1/10 @ 1KHZ)	I _{F(Peak)}	VR: 160 VG: 160	mA



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ECN : _____ Page: 4/10

■ **Electronic Optical Characteristics :**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I _v VR: VG:	7.0	12.0	-----	mcd	I _F =20mA
		14.0	21.0			
Viewing Angle	2θ 1/2	-----	90	-----	deg	I _F =20mA
Peak Wavelength	λ _p VR: VG:	-----	640	-----	nm	I _F =20mA
		-----	570			
Dominant Wavelength	λ _d VR: VG:	-----	625	-----	nm	I _F =20mA
		-----	571			
Spectrum Radiation Bandwidth	Δλ VR: VG:	-----	45	-----	nm	I _F =20mA
		-----	30			
Forward Voltage	V _F VR: VG:	1.7	2.0	2.6	V	I _F =20mA
		1.7	2.1	2.4		
Reverse Current	I _R	-----	-----	10	μA	V _R =5V



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MODEL NO: 11-22VRVGC/S10/TR8

Device Number : DSE-112-014 REV. 1.1

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ECN : Page: 5/10

■ Reliability Test Items And Conditions :

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	I _F = 20 m A	1000 HRS	76 PCS	0/1
7	High Temperature / High Humidity	85°C/85% RH	1000 HRS	76 PCS	0/1



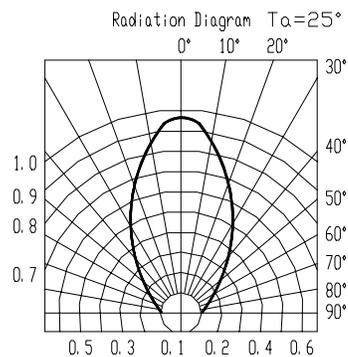
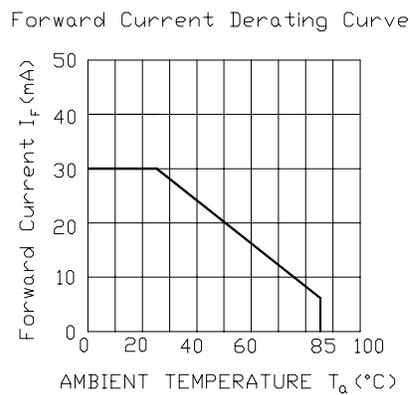
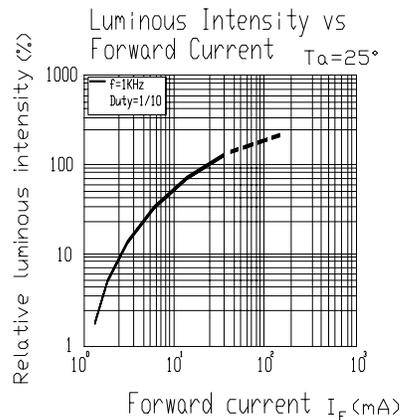
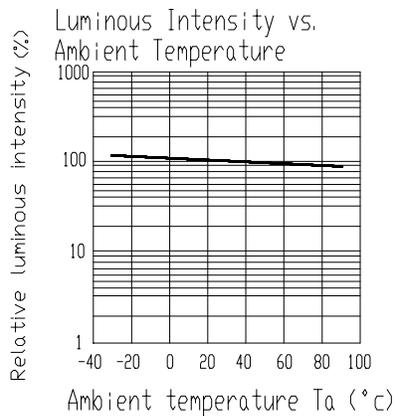
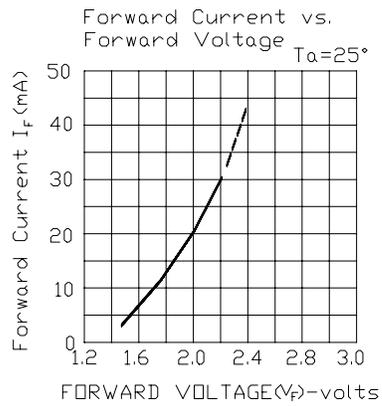
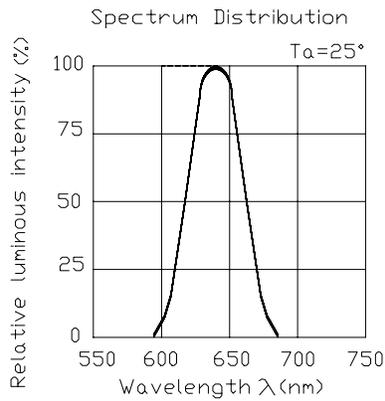
MODEL NO: 11-22VRVGC/S10/TR8
Chip LEDs with Bi-Color(Multi-Color)

Device Number : DSE-112-014 REV. 1.1

ECN : Page: 6/10

Typical Electro-Optical Characteristic Curves :

VR





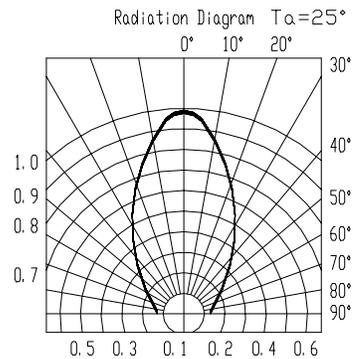
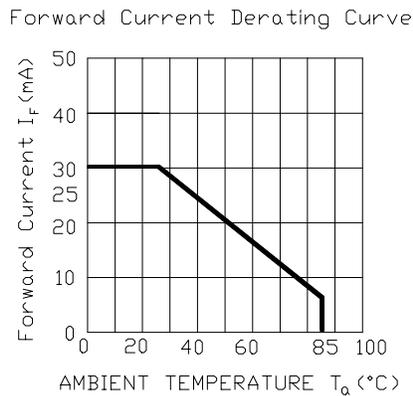
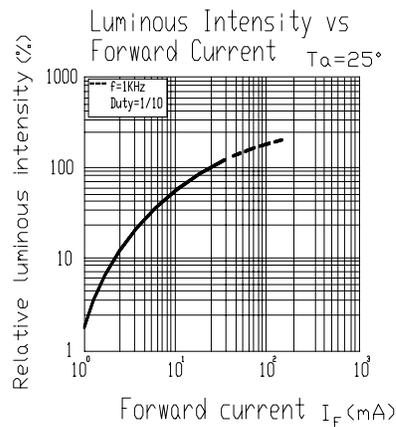
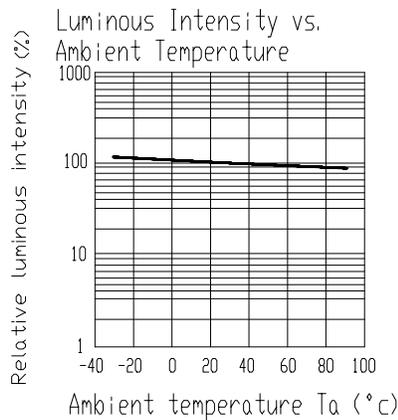
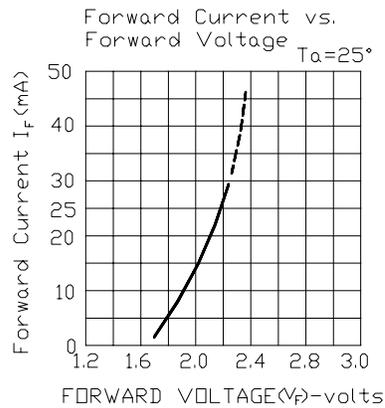
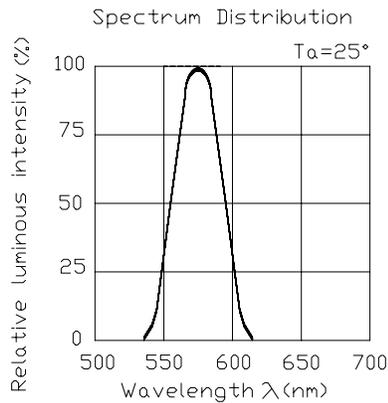
MODEL NO: 11-22VRVGC/S10/TR8
Chip LEDs with Bi-Color(Multi-Color)

Device Number : DSE-112-014 REV. 1.1

ECN : Page: 7/10

Typical Electro-Optical Characteristic Curves :

VG





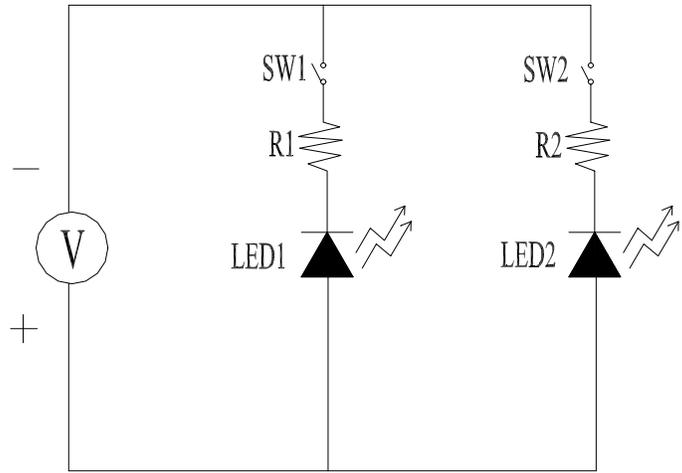
MODEL NO: 11-22VRVGC/S10/TR8

Device Number : DSE-112-014 REV. 1.1

Chip LEDs with Bi-Color(Multi-Color)

ECN : Page: 8/10

■ **Test Circuit :**



■ **Precautions For Use :**

1. Over-current-proof

Customer must apply resistors for protection , otherwise slight voltage shift will cause big current change (Burn out will happen).

2. Storage time

2.1 The operation of temperature and R.H. are : $5^{\circ}\text{C}\sim 35^{\circ}\text{C}$, R.H.60%.

2.2 Once the package is opened, the products should be used within a week.

Otherwise, they should be keeping in a damp proof box with desiccating agent.

Considering the tape life , we suggest our customers to use our products within a year(from production date).

2.3 If opened more than one week in an atmosphere $5^{\circ}\text{C}\sim 35^{\circ}\text{C}$, R.H.60%, they should be treated at $60^{\circ}\text{C}\pm 5^{\circ}\text{C}$ for 15hrs.

2.4 When you discover that the desiccant in the package has a pink color (Normal = blue), you should treat them in the same conditions as 2.3.

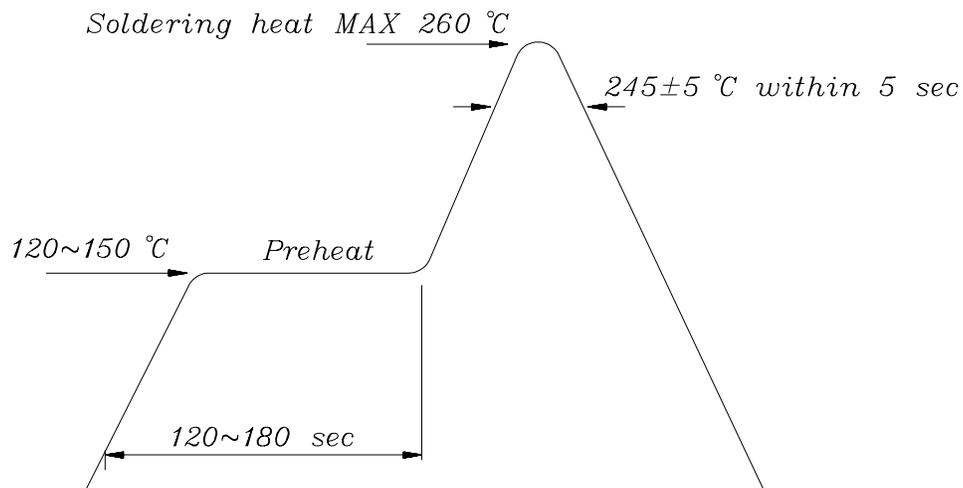
MODEL NO: 11-22VRVGC/S10/TR8Device Number : DSE-112-014 REV. 1.1**Chip LEDs with Bi-Color(Multi-Color)**

ECN :

Page: 9/10

■ Soldering heat reliability (DIP) :

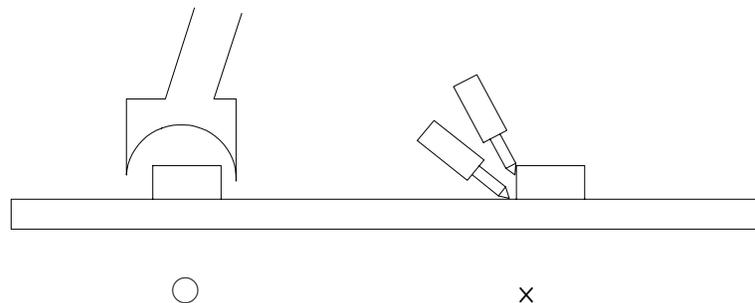
Please refer to the following figure :

**■ Soldering Iron :**

Basic spec is ≤ 5 sec when 260°C. If temperature is higher, time should be shorter (+10°C → -1sec). Power dissipation of iron should be smaller than 15 W , and temperature should be controllable. Surface temperature of the device should be under 230 °C.

■ Rework :

1. Customer must finish rework within 5 sec under 260°C.
2. The head of iron can not touch copper foil.
3. Twin-head type is preferred.





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ECN : Page: 10/10

■ Reflow Temp / Time :

