



EVERLIGHT ELECTRONICS CO., LTD.

PART NO.: 42-21 VGC/TR8
1.8mm Round Subminiature LEDs

Device Number : DSE-421-001 REV. 1.1

ECN : Page: 1/8

Features:

- Package in 12mm tape on 7" diameter reel.
- Compatible with automatic placement equipment.
- Compatible with infrared and vapor phase reflow solder process.
- Mono-color type.

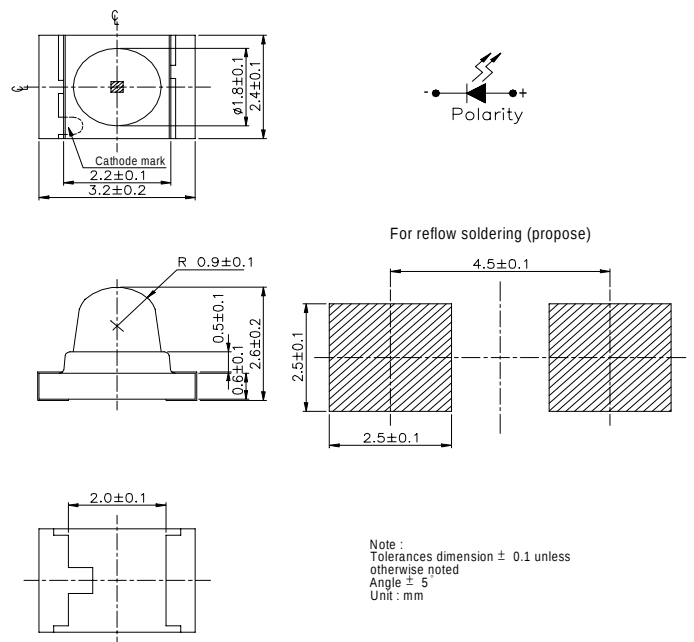
Descriptions:

- The 42-21 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.

Package Dimensions:



Notes :

Tolerances Unless Dimension ± 0.1 mm
Angle $\pm 0.5^\circ$ Unit = mm

PART NO.	Chip		Lens Color
	Material	Emitted Color	
42-21 VGC/TR8	GaP	Green	Water Clear

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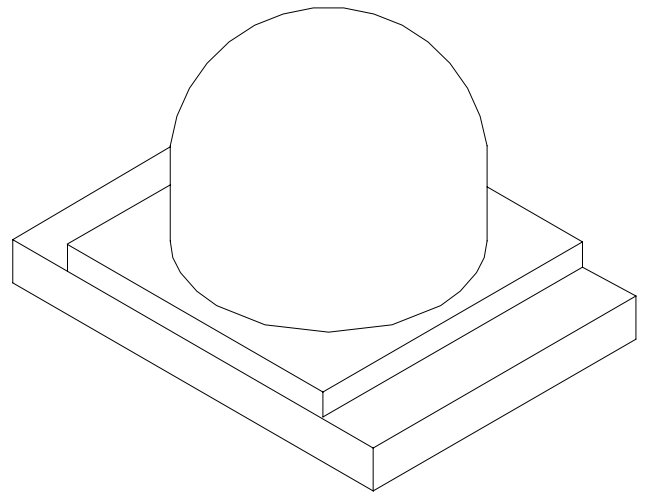
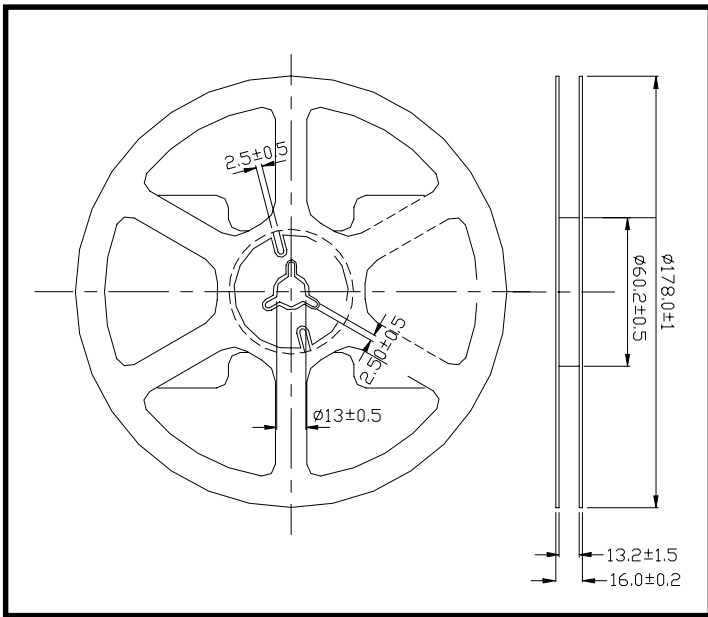
PART NO.: 42-21 VGC/TR8

Device Number : DSE-421-001 REV. 1.1

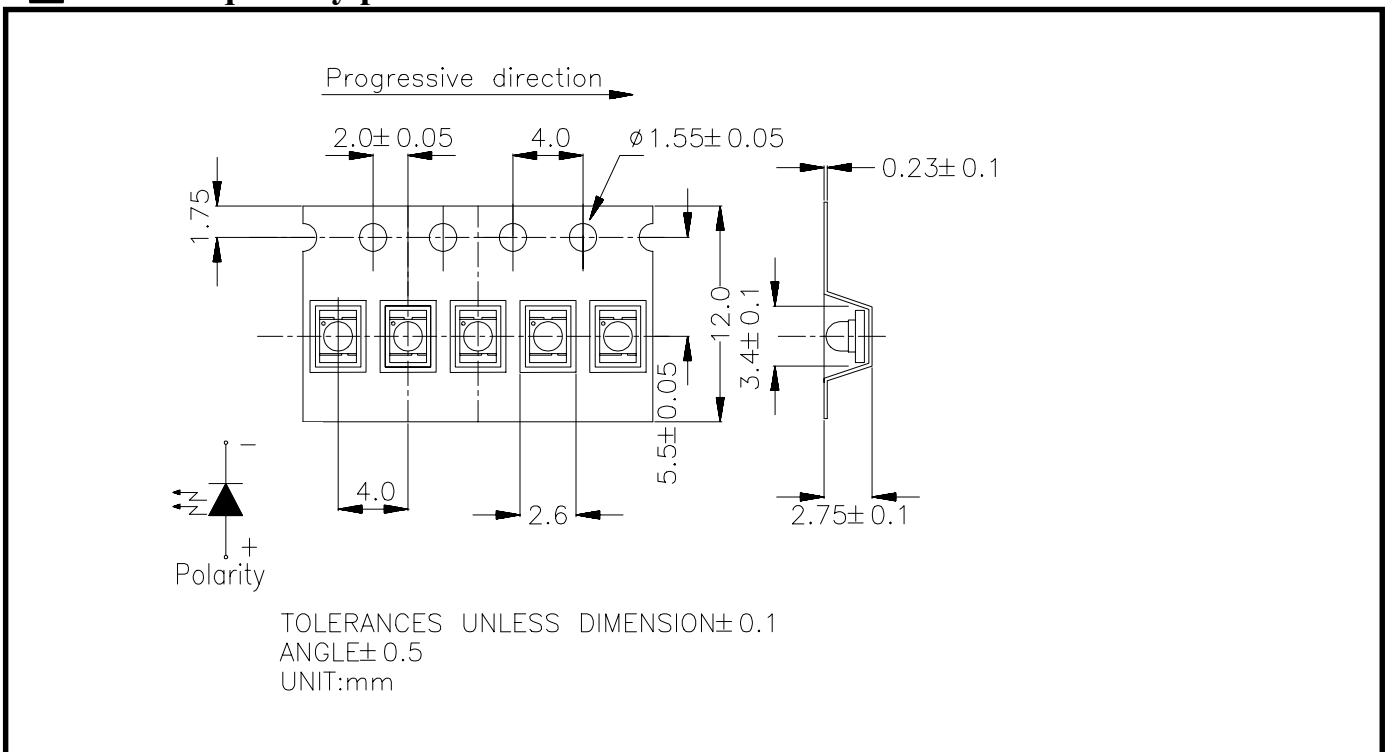
1.8mm Round Subminiature LEDs

ECN : Page: 2/8

■ Package Dimensions :



■ Loaded quantity per reel 1000 PCS/reel :





EVERLIGHT ELECTRONICS CO., LTD.

PART NO.: 42-21 VGC/TR8

Device Number : DSE-421-001 REV. 1.1

1.8mm Round Subminiature LEDs

ECN : Page: 3/8

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

Parameter	Symbol	Rating	Unit
Reverse Voltage	V _R	5	V
Forward Current	I _F	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	100	mW
Peak Forward Current(Duty 1/10 @ 1KHZ)	I _{F(Peak)}	160	mA

■ **Electronic Optical Characteristics :**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I _v	73	122	-----	mcd	I _F =20mA
Viewing Angle	2 θ 1/2	-----	30	-----	deg	I _F =20mA
Peak Wavelength	λ _p	-----	570	-----	nm	I _F =20mA
Dominant Wavelength	λ _d	-----	571	-----	nm	I _F =20mA
Spectrum Radiation Bandwidth	△ λ	-----	30	-----	nm	I _F =20mA
Forward Voltage	V _F	1.7	2.1	2.4	V	I _F =20mA
Reverse Current	I _R	-----	-----	10	μ A	V _R =5V



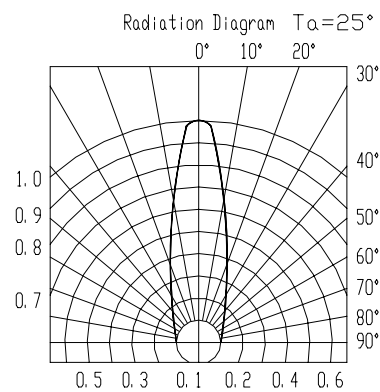
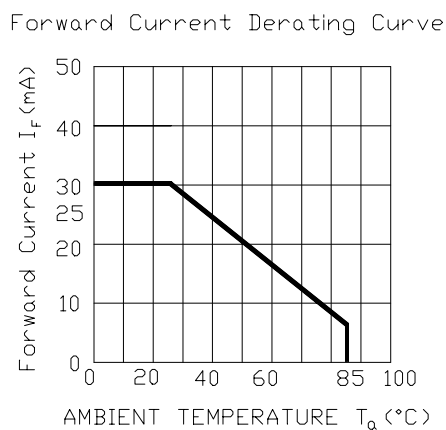
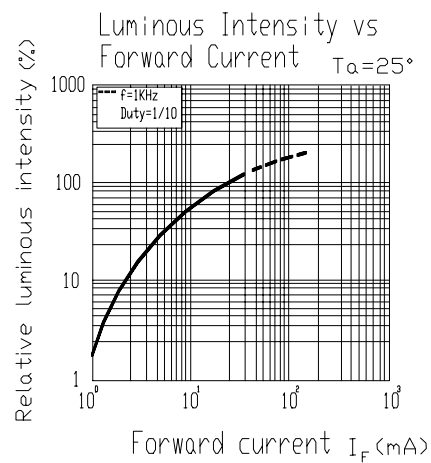
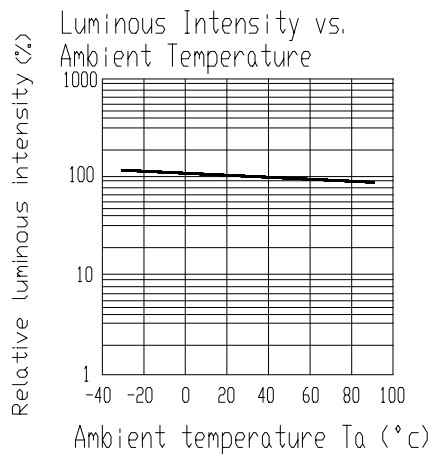
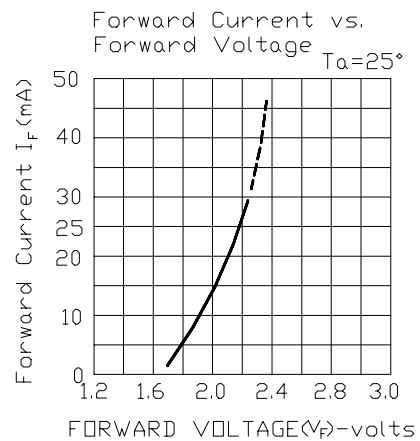
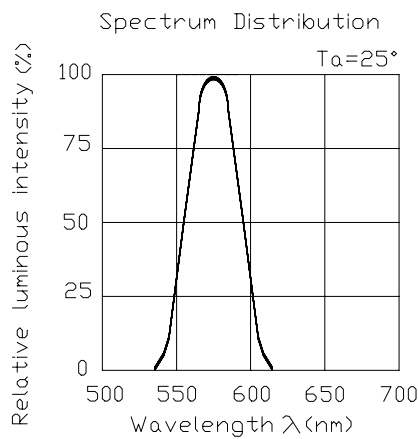
EVERLIGHT ELECTRONICS CO., LTD.

PART NO.: 42-21 VGC/TR8
1.8mm Round Subminiature LEDs

Device Number : DSE-421-001 REV. 1.1

ECN : _____ Page: 4/8

■ Typical Electro-Optical Characteristic Curves :





EVERLIGHT ELECTRONICS CO., LTD.

PART NO.: 42-21 VGC/TR8

Device Number : DSE-421-001 REV. 1.1

1.8mm Round Subminiature LEDs

ECN : Page: 5/8

■ 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 CYCLES	76 PCS	0/1
3	Thermal Shock	H : +100°C 5min. ∫ 10 sec. L : -10°C 5min.	50 CYCLES	76 PCS	0/1
4	High Temperature Storage	TEMP. : 100°C	1000 HR.	76 PCS	0/1
5	Low Temperature Storage	TEMP. : -55°C	1000 HR.	76 PCS	0/1
6	DC Operating Life	I _F = 20 mA	1000 HR.	76 PCS	0/1
7	High Temperature / High Humidity	85°C/RH85%	1000 HR.	76 PCS	0/1



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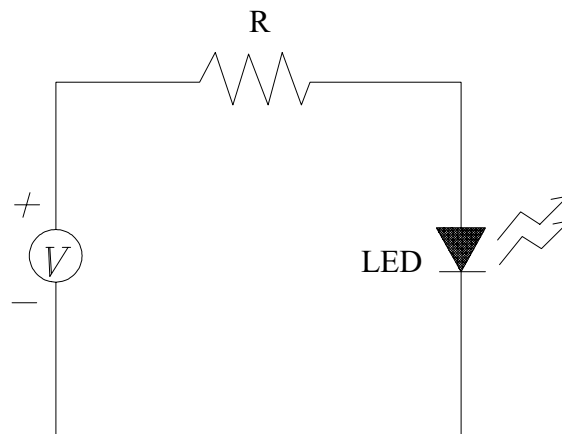
PART NO.: 42-21 VGC/TR8

Device Number : DSE-421-001 REV. 1.1

1.8mm Round Subminiature LEDs

ECN : Page: 6/8

■ **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 RH are : $5^{\circ}\text{C} \sim 35^{\circ}\text{C}$, RH60%.

2.2 Once the package is opened, the products should be used within a week. Otherwise, they should be keeping in a dampproof box with desiccants. 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 $5^{\circ}\text{C} \sim 35^{\circ}\text{C}$, RH60%, 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.



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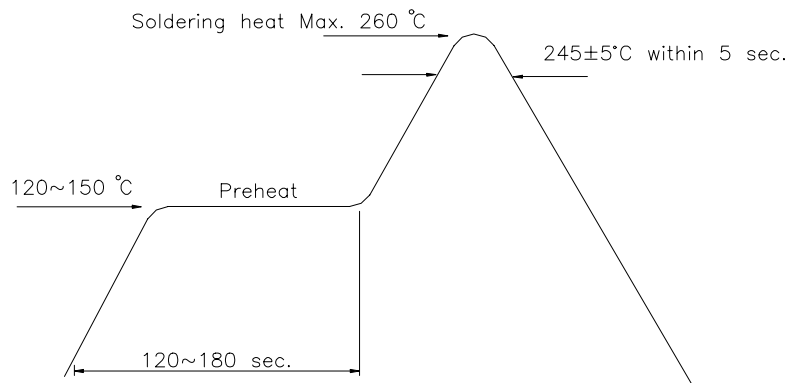
Device Number : DSE-421-001 REV. 1.1

1.8mm Round Subminiature LEDs

ECN : Page: 7/8

■ Soldering heat reliability (DIP)

Please refer to the following figure :

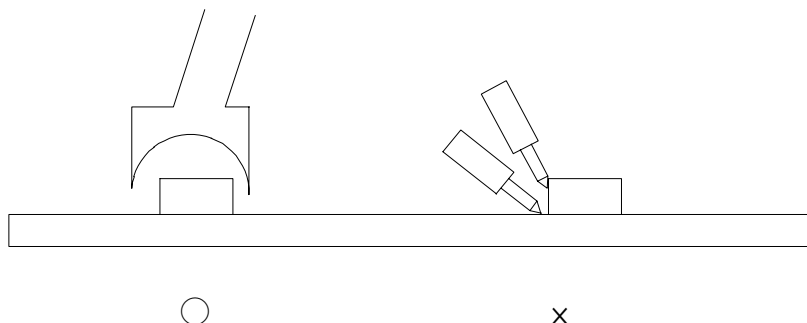


■ Soldering Iron

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. Copper foil can not be touched by the head of iron.
3. Twin-head type is preferred.





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Device Number : DSE-421-001 REV: 1.1

1.8mm Round Subminiature LEDs

ECN : Page: 8/8

■ Reflow Temp./Time :

