

Technical Data Sheet**Side View LEDs (Height 0.4 mm)****EVERLIGHT****99-218UM2C/3235S7E/TR8-T****Features**

- Side view white LED.
- White SMT package.
- Lead frame package with individual 2 pins.
- Wide viewing angle.
- Soldering methods: IR reflow soldering.
- Pb-free.
- The product itself will remain within RoHS compliant version.

**Descriptions**

- Due to the package design, 99-218 has wide viewing angle , low power consumption and white LEDs are devices which are materialized by combing Blue LEDs and special phosphors . This feature makes the LED ideal for light guide application.

Applications

- Mobile phones .
- Indicators.
- Illuminations.
- Switch Lights.

Device Selection Guide

Chip	Emitted Color	Resin Color
Material		
InGaN	Pure White	Water Clear

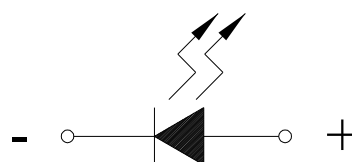
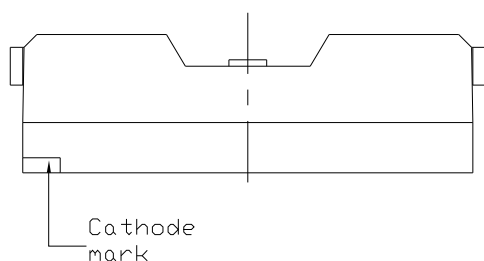
Technical Data Sheet

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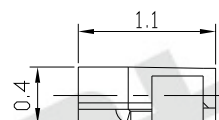
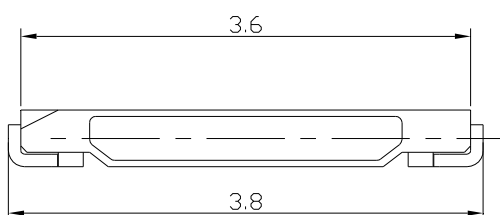
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99-218UM2C/3235S7E/TR8-T

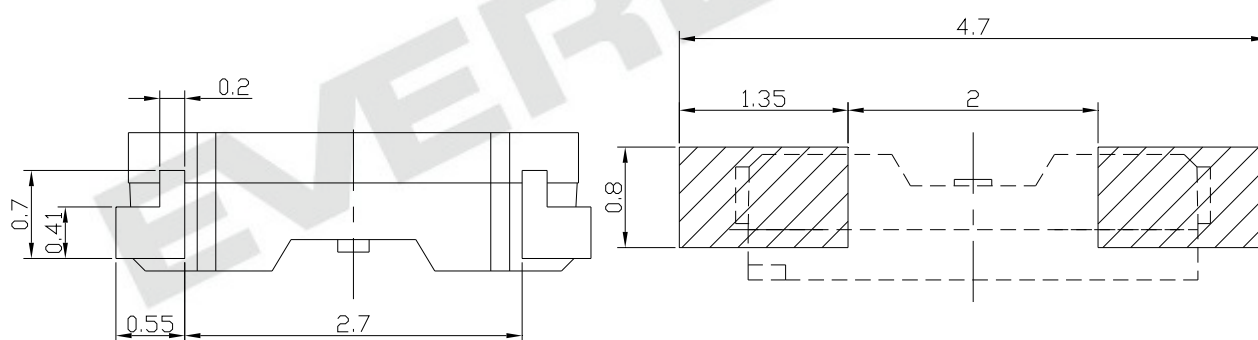
Package Outline Dimensions



Polarity



Recommended soldering pad design



Note:

The tolerances unless mentioned is $\pm 0.1\text{mm}$, Unit = mm.

Technical Data Sheet

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EVERLIGHT**99-218UM2C/3235S7E/TR8-T****Absolute Maximum Ratings (Ta=25 °C)**

Parameter	Symbol	Rating	Unit
Reverse Voltage	V_R	5	V
Forward Current	I_F	30	mA
Peak Forward Current (Duty 1/10 @10ms)	I_{FP}	100	mA
Power Dissipation	P_d	110	mW
Electrostatic Discharge(HBM) ^{*1}	ESD	2000	V
Operating Temperature	T_{opr}	-40 ~ +85	
Storage Temperature	T_{stg}	-40 ~ +90	
Soldering Temperature	T_{sol}	Reflow Soldering : 260 °C for 10 sec. Hand Soldering : 350 °C for 3 sec.	

Note: 1. The products are sensitive to static electricity and must be carefully taken when handling products.

Electro-Optical Characteristics (Ta=25 °C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I_V	1700	-----	1900	mcd	$I_F=20mA$
Viewing Angle	2θ1/2	-----	110	-----	deg	$I_F=20mA$
Forward Voltage	V_F	2.9	-----	3.4	V	$I_F=20mA$
Reverse Current	I_R	-----	-----	50	μA	$V_R=5V$

Notes:

1. Tolerance of Luminous Intensity: ± 7%
2. Tolerance of Forward Voltage: ± 0.05V

Technical Data Sheet

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EVERLIGHT**99-218UM2C/3235S7E/TR8-T****Bin Range of Luminous Intensity**

Bin Code	Min.	Max.	Unit	Condition
32	1700	1750	mcd	$I_F=20\text{mA}$
33	1750	1800		
34	1800	1850		
35	1850	1900		

Note: Tolerance of Luminous Intensity: $\pm 7\%$ **Bin Range of Forward Voltage**

Bin Code	Min.	Max.	Unit	Condition
5-2-3	2.9	3.0	V	$I_F=20\text{mA}$
6-1-3	3.0	3.1		
6-2-3	3.1	3.2		
7-1-3	3.2	3.3		
7-2-3	3.3	3.4		

Note: Tolerance of Forward Voltage: $\pm 0.05\text{V}$

Technical Data Sheet

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**99-218UM2C/3235S7E/TR8-T****Bin Code of Chromaticity Coordinates**

Bin Code	CIE_x	CIE_y	Bin Code	CIE_x	CIE_y
NA0-3-1	0.2760	0.2530	NA0-3-2	0.2805	0.2600
	0.2720	0.2580		0.2770	0.2650
	0.2770	0.2650		0.2820	0.2720
	0.2805	0.2600		0.2850	0.2670
NA0-3-3	0.2800	0.2480	NA0-3-4	0.2840	0.2550
	0.2760	0.2530		0.2805	0.2600
	0.2805	0.2600		0.2850	0.2670
	0.2840	0.2550		0.2880	0.2620
NA0-4-1	0.2850	0.2670	NA0-4-2	0.2893	0.2743
	0.2820	0.2720		0.2865	0.2795
	0.2865	0.2795		0.2910	0.2870
	0.2893	0.2743		0.2935	0.2815
NA0-4-3	0.2880	0.2620	NA0-4-4	0.2920	0.2690
	0.2850	0.2670		0.2893	0.2743
	0.2893	0.2743		0.2935	0.2815
	0.2920	0.2690		0.2960	0.2760

Note: Tolerance of Chromaticity Coordinates: ± 0.01

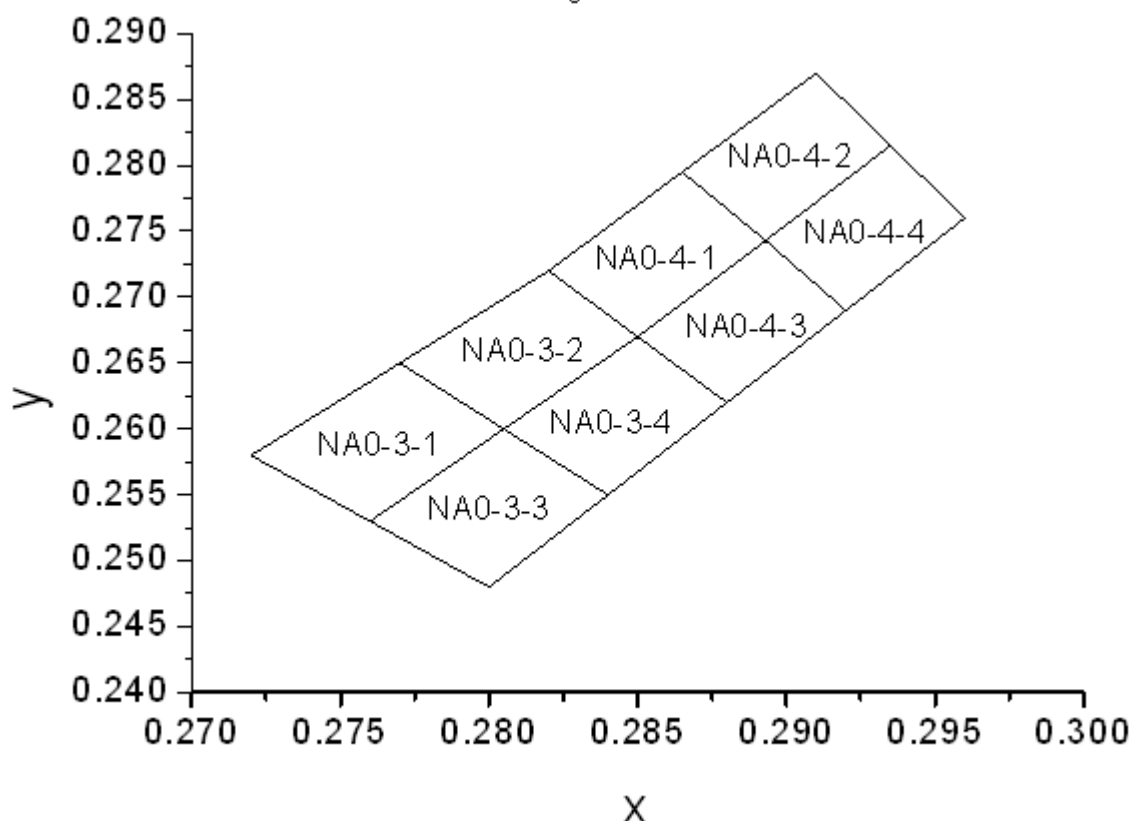
Technical Data Sheet

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99-218UM2C/3235S7E/TR8-T

The C.I.E. 1931 Chromaticity Diagram

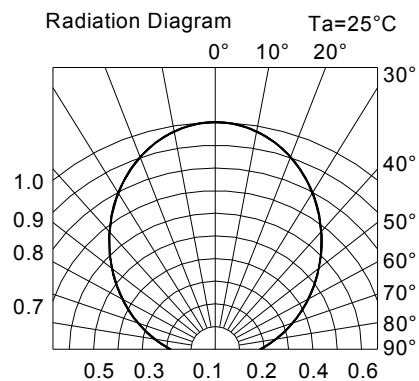
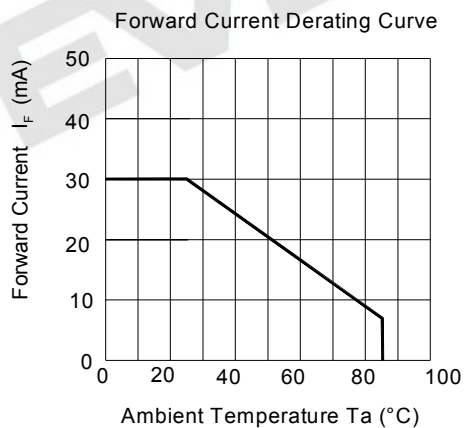
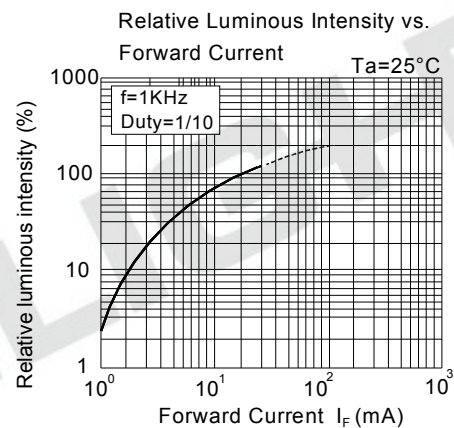
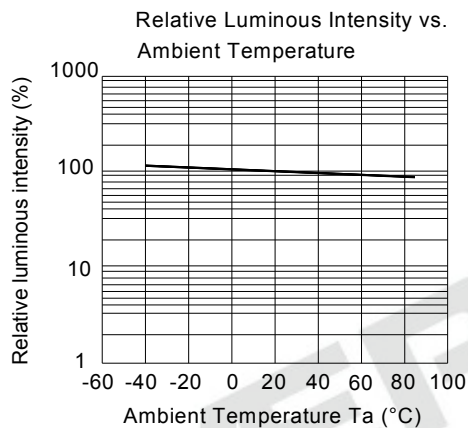
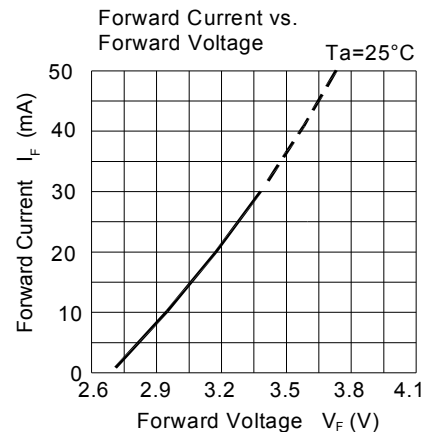
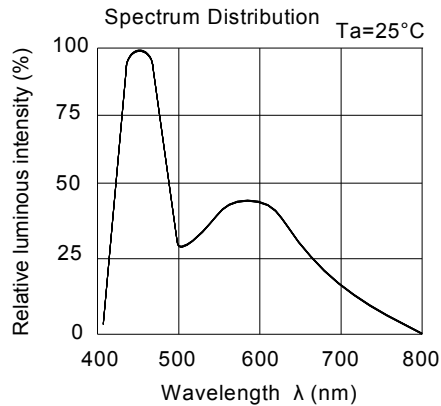


Technical Data Sheet

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EVERLIGHT**99-218UM2C/3235S7E/TR8-T**

Typical Electro-Optical Characteristics Curves



Technical Data Sheet

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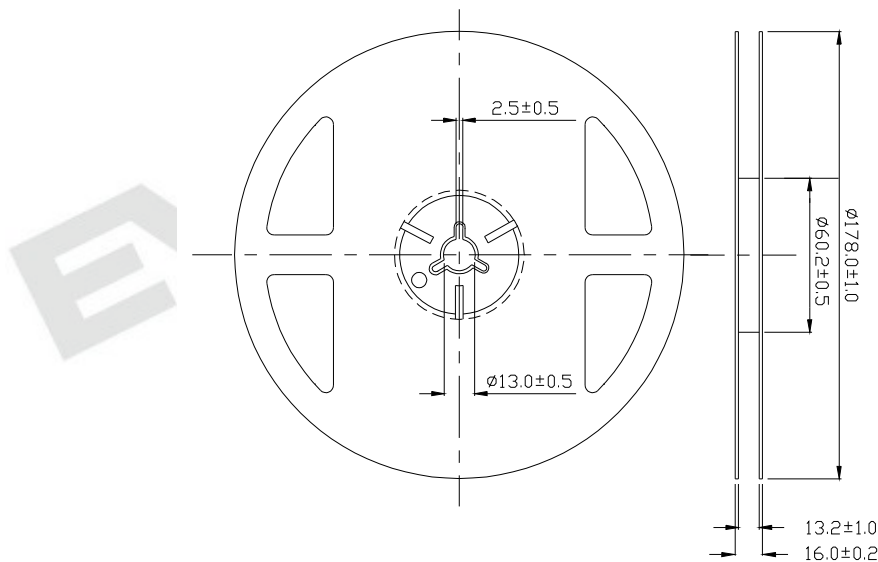
99-218UM2C/3235S7E/TR8-T

Label Explanation

CAT: Luminous Intensity Rank
HUE: Chromaticity Coordinates
REF: Forward Voltage Rank



Reel Dimensions



Note:

The tolerances unless mentioned is $\pm 0.1\text{mm}$, Unit = mm.

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**99-218UM2C/3235S7E/TR8-T****Reliability Test Items and Conditions**

The reliability of products shall be satisfied with items listed below.

Confidence level : 90%

LTPD : 10%

No.	Item	Test Conition		Test Hours/ Times	Criteria (at std. IF)
		Temp./ Humidity	IF (mA)		
1	Reflow Soldering	Temp.: 260 ±5 Max. 10 sec.		2 times	Iv < ±5% VF < ±5%
2	Thermal Cycle	-40 ~ 100 30min. (5min.) 30min.		200 cycles	Iv > 70%, VF < 110%,
3	Thermal Shock	-10 ~ 100 20min. (<15sec.) 20min.		200 cycles	
4	Low Temp. Storage	TA=-40	--	1000 hrs	
5	High Temp. Storage	TA=100	--	1000 hrs	
6	Temp. Humidity Storage	TA=60 / 90%RH	--	1000 hrs	
7	Steady State Operating Life of Low Temp.	TA=-40	20	1000 hrs	
8	Steady State Operating Life Condition 1	TA=25 / Room Hum.	20	1000 hrs	
9	Steady State Operating Life Condition 2	TA=60	20	1000 hrs	
10	Steady State Operating Life of High Temp.	TA=85	5	1000 hrs	
11	Steady State Operating Life of High Humidity Heat	TA=60 / 90%RH	20	1000 hrs	

Sampling for each test item: 22 (pcs.)

Technical Data Sheet**Side View LEDs (Height 0.4 mm)****EVERLIGHT****99-218UM2C/3235S7E/TR8-T****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

2.1 Do not open moisture proof bag before the products are ready to use.

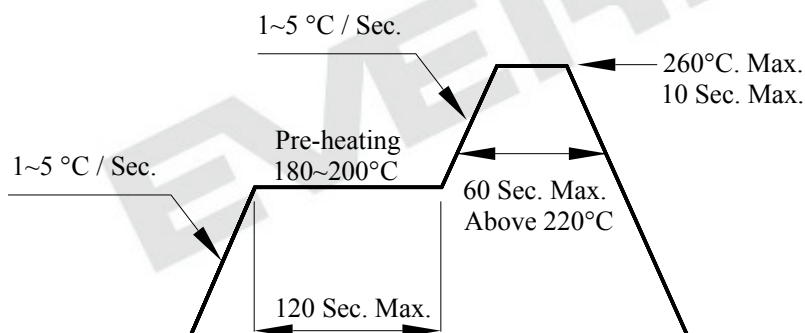
2.2 Before opening the package: The LEDs should be kept at 30 °C or less and 90%RH or less.

2.3 After opening the package: The LED's floor life is 1 year under 30 °C or less and 60% RH or less.

If unused LEDs remain, it should be stored in moisture proof packages.

2.4 If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions.

Baking treatment : 60±5 °C for 24 hours.

3. Soldering Condition**3.1 Pb-free solder temperature profile**

3.2 Reflow soldering should not be done more than two times.

3.3 When soldering, do not put stress on the LEDs during heating.

3.4 After soldering, do not warp the circuit board.

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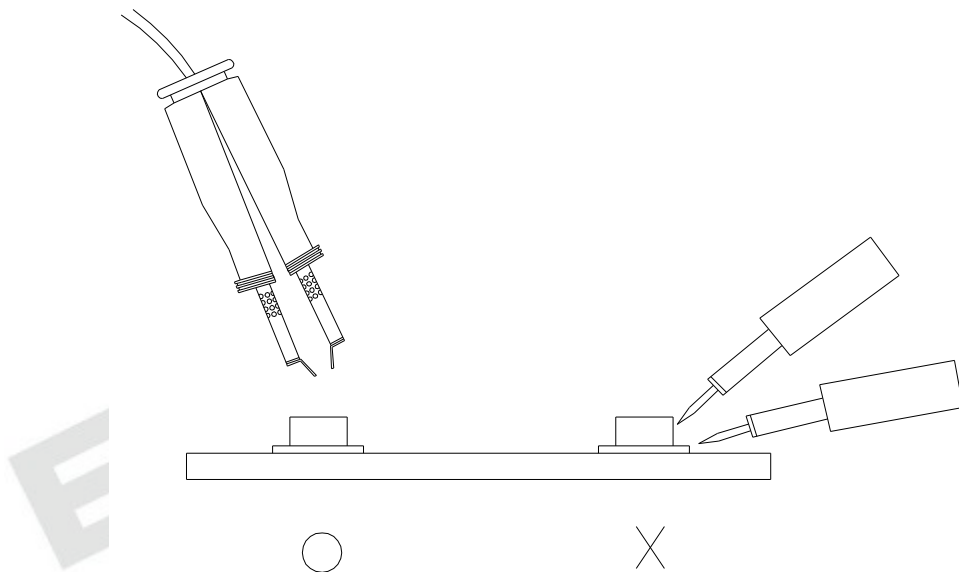
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4. Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 350 for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.

5. Repairing

Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.



6. Handling Indications

During processing, mechanical stress on the surface should be minimized as much as possible. Sharp objects of all types should not be used to pierce the sealing compound

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