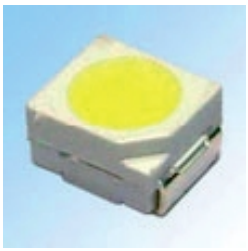
ATTENTION
OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC DISCHARGE SENSITIVE DEVICES

arlight

ARL-1210UWC (3528H238W-S)



Features

- PLCC-2 Package
- Extremely wide viewing angle
- Suitable for all SMT assembly and solder process
- Available on tape and reel
- Moisture sensitivity level: Level 4
- Package: 2000 pcs/reel
- RoHS compliant

Description

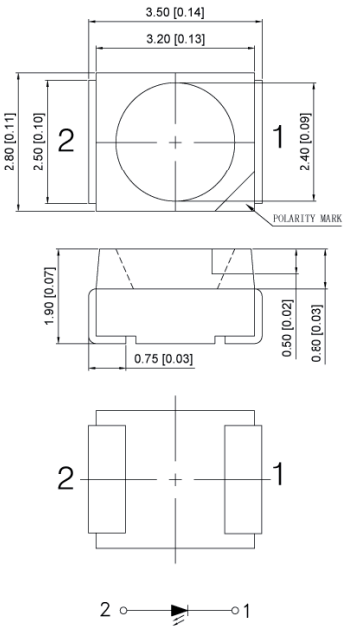
- The White LED which was fabricated using a blue chip and the phosphor.

Applications

- Optical indicator
- Indoor display
- Interior automotive lighting
- Backlight for LCD, switch and Symbol, display
- Light pipe application
- General use

Package Dimensions

1.All dimension units are millimeters.
2.All dimension tolerance is ±0.15mm unless otherwise noted.



Selection Guide

Part No.	Dice	Lens Type	Luminous intensity (mcd) @ 20mA		Luminous flux (lm) @ 20mA		Viewing Angle
			Min.	Typ.	Min.	Typ.	2θ1/2
ARL-1210UWC	WHITE (InGaN)	Yellow Diffused	1300	1600	4.5	5.0	120°
			1600	1900			

Notes
1. θ1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.
2. The above luminous intensity measuremet allowance tolerance ±10%.

Absolute Maximum Rating at TA=25°C

Parameter	Symbol	Rating	Units
Power Dissipation	PD	105	mW
DC Forward Current	IF	30	mA
Peak Forward Current [1]	IFP	100	mA
Reverse Voltage	VR	5	V
Electrostatic Discharge (HBM)	ESD	1000	V
Operating Temperature	Topr	-40 ~ +85	°C
Storage Temperature	Tstg	-40 ~+100	°C

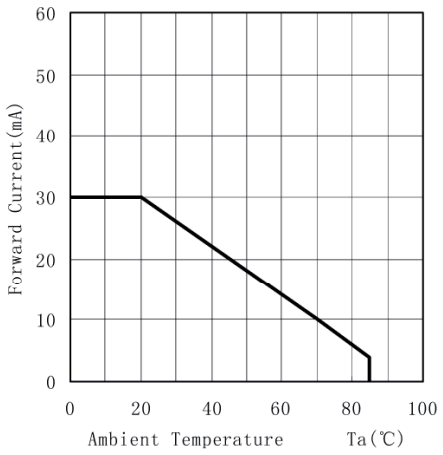
Note:
1. 1/10 Duty Cycle, 0.1ms Pulse Width.

Electrical / Optical Characteristics at TA=25°C

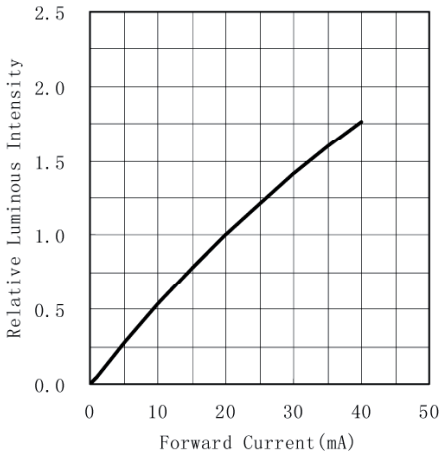
Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
VF	Forward Voltage	2.8	--	3.4	V	IF=20mA
IR	Reverse Current	--	--	10	uA	VR = 5V
X	Color Coordinates	--	0.31	--	--	IF=20mA
Y		--	0.32	--	--	IF=20mA
Tc	Color Temperature	--	6500	--	K	IF=20mA
CRI	Color Rendering Index	--	70	--	Ra	IF=20mA

Typical optical characteristics curves

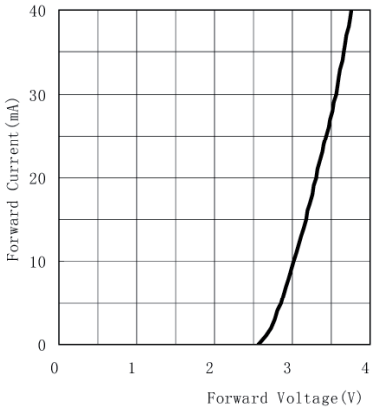
Ambient Temperature VS. Forward Current



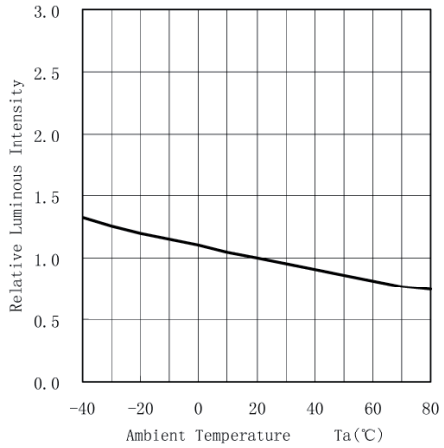
Forward Current VS. Relative Intensity



Forward Voltage VS. Forward Current



Ambient Temperature VS. Relative Intensity



Relative spectral emission

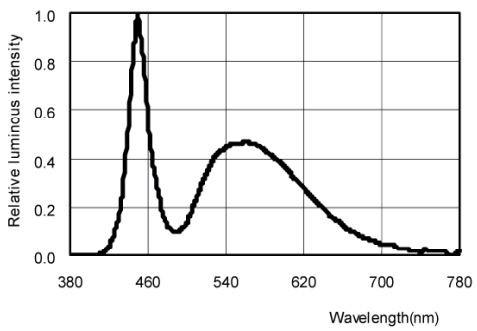
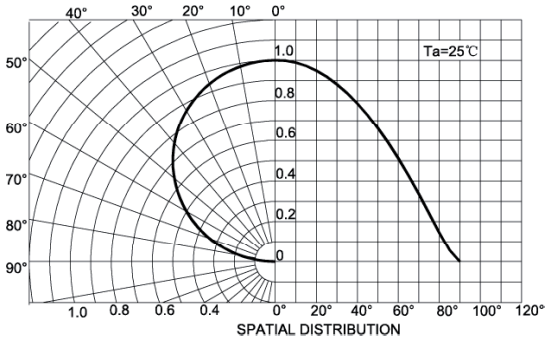
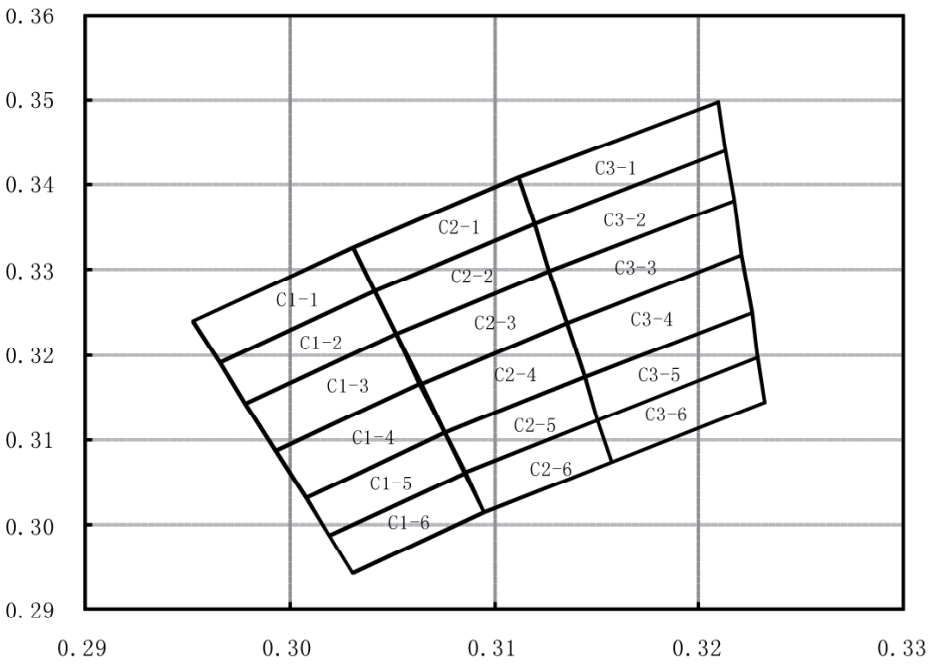


Diagram characteristics of radiation



Cie chromaticity diagram



C1-1 7000-7500K					C1-2 7000-7500K				
X	0.2953	0.3031	0.3042	0.2966	X	0.2966	0.3042	0.3052	0.2978
Y	0.3240	0.3327	0.3276	0.3192	**Y**	0.3192	0.3276	0.3224	0.3143
C1-3 7000-7500K					**C1-4 7000-7500K**				
X	0.2978	0.3052	0.3064	0.2993	X	0.2993	0.3064	0.3076	0.3008
Y	0.3143	0.3224	0.3166	0.3088	**Y**	0.3088	0.3166	0.3108	0.3033
C1-5 7000-7500K					**C1-6 7000-7500K**				
X	0.3008	0.3076	0.3086	0.3020	X	0.3020	0.3086	0.3095	0.3031
Y	0.3033	0.3108	0.3062	0.2989	**Y**	0.2989	0.3062	0.3015	0.2944

C2-1 6500-7000K					C2-2 6500-7000K				
X	0.3031	0.3112	0.3120	0.3042	X	0.3042	0.3120	0.3127	0.3052
Y	0.3327	0.3408	0.3354	0.3276	**Y**	0.3276	0.3354	0.3299	0.3224
C2-3 6500-7000K					**C2-4 6500-7000K**				
X	0.3052	0.3127	0.3136	0.3064	X	0.3064	0.3136	0.3144	0.3076
Y	0.3224	0.3299	0.3237	0.3166	**Y**	0.3166	0.3237	0.3174	0.3108
C2-5 6500-7000K					**C2-6 6500-7000K**				
X	0.3076	0.3144	0.3151	0.3086	X	0.3086	0.3151	0.3157	0.3095
Y	0.3108	0.3174	0.3124	0.3062	**Y**	0.3062	0.3124	0.3074	0.3015

C3-1 6000-6500K					C3-2 6000-6500K				
X	0.3112	0.3209	0.3213	0.3120	X	0.3120	0.3213	0.3217	0.3127
Y	0.3408	0.3498	0.3440	0.3354	**Y**	0.3354	0.3440	0.3382	0.3299
C3-3 6000-6500K					**C3-4 6000-6500K**				
X	0.3127	0.3217	0.3221	0.3136	X	0.3136	0.3221	0.3226	0.3144
Y	0.3299	0.3382	0.3317	0.3237	**Y**	0.3237	0.3317	0.3251	0.3174
C3-5 6000-6500K					**C3-6 6000-6500K**				
X	0.3144	0.3226	0.3229	0.3151	X	0.3151	0.3229	0.3232	0.3157
Y	0.3174	0.3251	0.3198	0.3124	**Y**	0.3124	0.3198	0.3145	0.3074

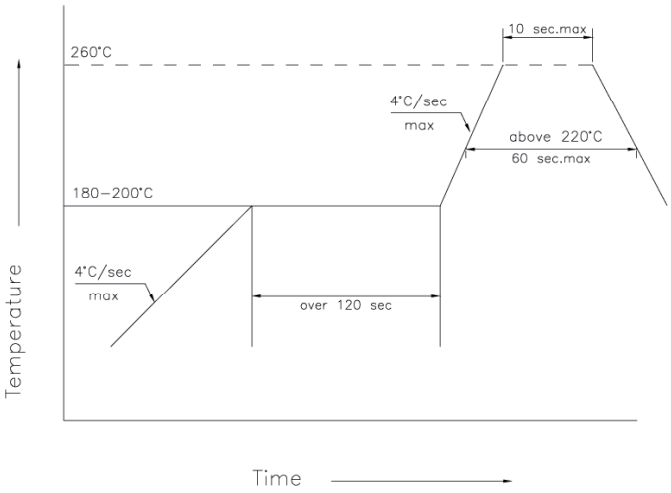
Reliability Test Items And Conditions

The reliability of products shall be satisfied with items listed below.
Confidence level :90% LTPD :10%

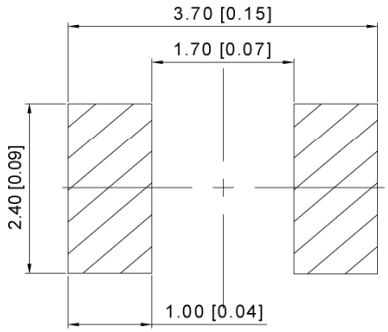
No.	Items	Ref. Standard	Test Condition	Test Hours/ Cycles	Sample Size	Ac/Rc
1	Reflow	JESD22-B106	Temp: 260°C max T=10 sec.	3 times.	22Pcs.	0/1
2	Temperature Cycle	JESD22-B104	100°C±5°C 30 min. ↑↓5 min -40°C±5°C 30 min.	100 Cycles	22Pcs.	0/1
3	Thermal Shock	JESD22-B106	100°C±5°C 5 min. ↑↓ -40°C±5°C 5 min.	100 Cycles	22Pcs.	0/1
4	High Temperature Storage	JESD22-B103	Temp.: -100°C±5°C	1000Hrs.	22Pcs.	0/1
5	Low Temperature Storage	JESD22-B119	Temp.: -40°C±5°C	1000Hrs.	22Pcs.	0/1
6	DC Operating Life	JESD22-B108	Ta=25°C±5°C IF=20mA	1000Hrs.	22Pcs.	0/1
7	High Temperature High Humidity	JESD22-B101	85°C±5°C/ 85%RH IF=5mA	1000Hrs.	22Pcs.	0/1

*The technical information shown in the data sheets are limited to the typical characteristics and circuit examples of the referenced products. It does not constitute the warranting of industrial property nor the granting of any license.

SMT Reflow Soldering Instructions



Recommended Soldering Pattern



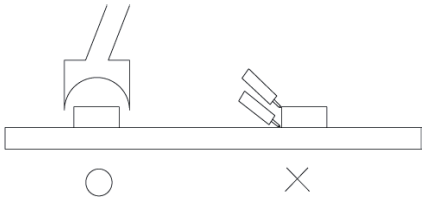
1. Reflow soldering should not be done more than two times
2. When soldering , do not put stress on the LEDs during heating

Soldering iron

1. When hand soldering, the temperature of the iron must less than 300°C for 3 seconds
2. The hand solder should be done only one times

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 LEDs will or will not be damaged by repairing.

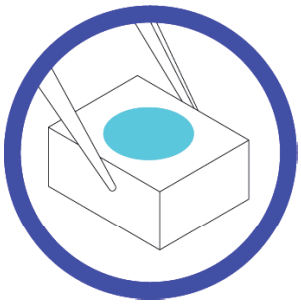


Cautions

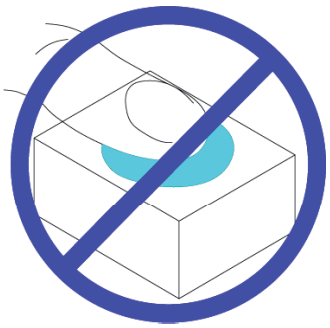
The encapsulated material of the LEDs is silicone. Therefore the LEDs have a soft surface on the top of package. The pressure to the top surface will be influence to the reliability of the LEDs. Precautions should be taken to avoid the strong pressure on the encapsulated part. So when use the picking up nozzle, the pressure on the silicone resin should be proper.

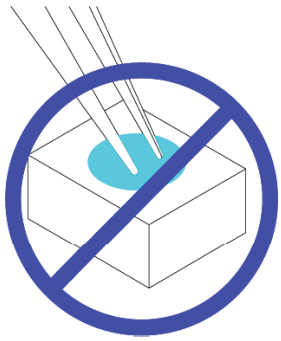
Handling Precautions

Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although its characteristic significantly reduces thermal stress, it is more susceptible to damage by external mechanical force . As a result, special handling precautions need to be observed during assemble using silicone encapsulated LED products, Failure to comply might leads to damage and premature failure of the LED.



1. Handle the component along the side surface by using forceps or appropriate tools
2. Do not directly touch or handle the silicone lens surface. It may damage the internal circuitry

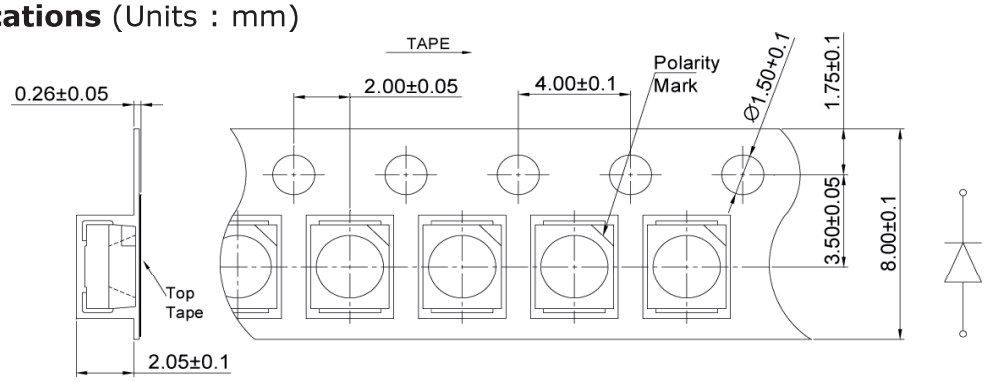




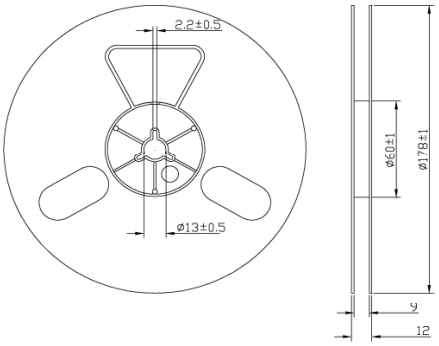
3. Do not stack together assembled PCBs containing LEDs. Impact may scratch the silicone lens or damage
4. Not available in the situation of acidity for PH

5. LED operating environment and sulfur element composition cannot be over 100PPM in the LED mating usage material.

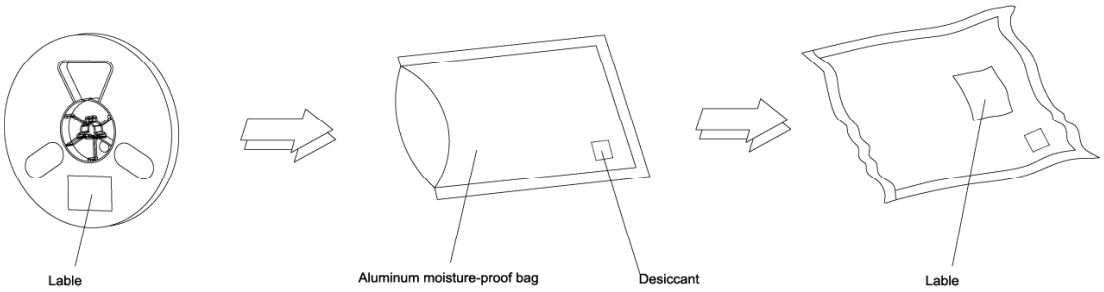
Tape Specifications (Units : mm)



Reel Dimensions



Moisture Resistant Packaging



Note: The tolerances unless mentioned is ±0.1mm , Unit: mm