



ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

arlight

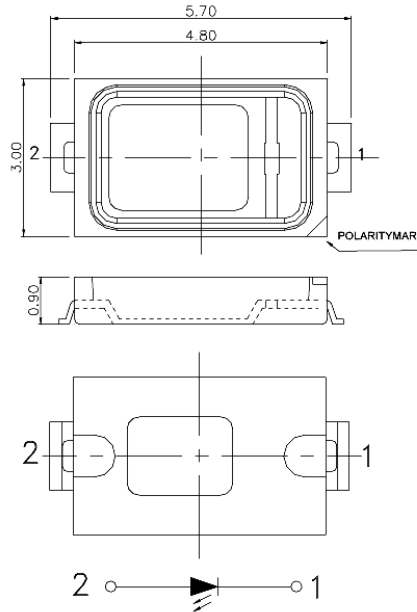
ARL-5730D21W-S 0.5W White



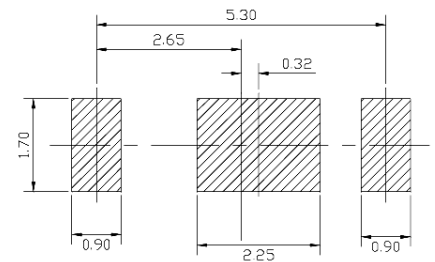
Features

- 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
- RoHS compliant

Package Dimensions



Recommended Soldering Pattern



Description

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

Application

- Lighting
- Backlight for TV

1. All dimension units are millimeters.
2. All dimension tolerance is $\pm 0.15\text{mm}$ unless otherwise noted.

Part No.	Dice	Lens Type	Luminous intensity (mcd) @ 150mA			Luminous flux (lm) @ 150mA		Viewing Angle
			Rank	Min.	Max.	Min	Typ	
ARL-5730D21W-S 0.5W White	WHITE (InGaN)	Yellow Diffused	Z2	8280	10750	Min	Typ	2q1/2
			Z3	10750	14000	28	33	120°

- Notes
1. $\theta_{1/2}$ is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.
 2. The above luminous intensity measurement allowance tolerance $\pm 10\%$.

Electrical / Optical Characteristics at Ta=25°C

Parameter	Symbol	Min.	Typ.	Max.	Units	Test Conditions
Forward Voltage	VF	3.2	3.5	--	V	IF=150mA
Reverse Current	IR	--	--	10	μA	VR = 5V
Color Coordinates	X	--	0.31	--	--	IF=150mA
	Y	--	0.32	--	--	IF=150mA
Color Temperature	Tc	--	6500	--	K	IF=150mA
Color Rendering Index	CRI	--	73	--	Ra	IF=150mA

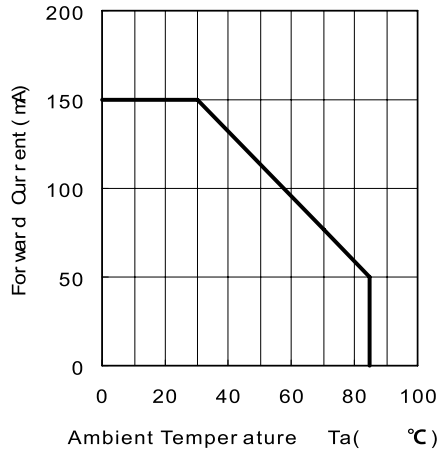
Absolute Maximum Rating at Ta=25°C

Parameter	Symbol	Rating	Units
Power Dissipation	Pd	500	mW
DC Forward Current	IF	150	mA
Peak Forward Current [1]	IFP	200	mA
Reverse Voltage	VR	5	V
Electrostatic Discharge (HBM)	ESD	1000	V
Operating Temperature	Topr	-40 ~ +85	°C
Storage Temperature	Tstg	-40 ~ +100	°C

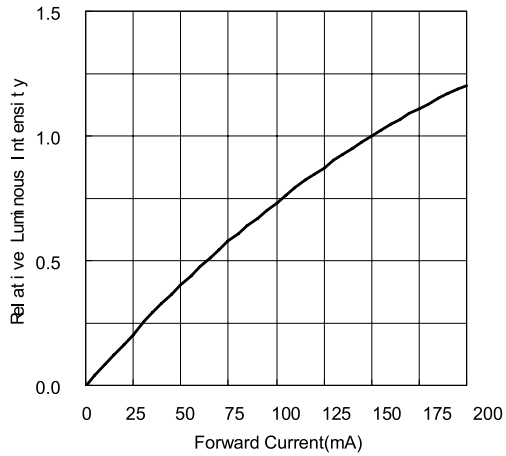
- Note:
1. 1/10 Duty Cycle, 0.1ms Pulse Width.

Typical optical characteristics curves

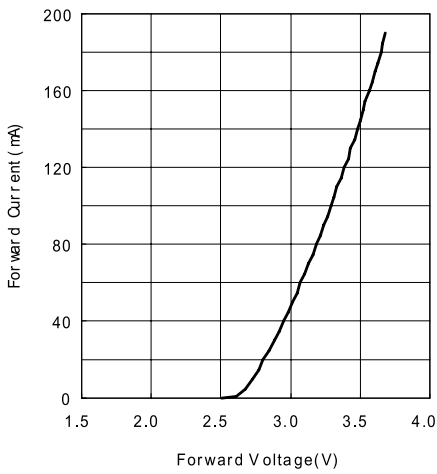
Ambient Temperature VS. Forward Current



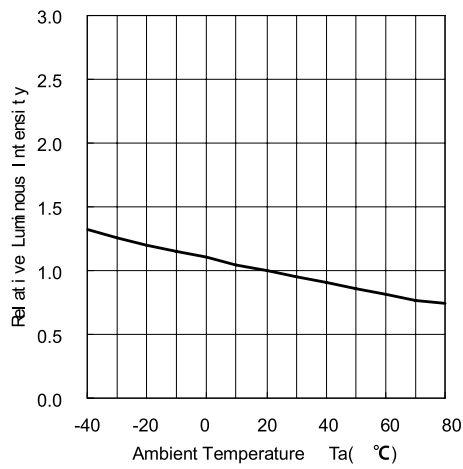
Forward Current VS. Relative Intensity



Forward Voltage VS. Forward Current



Ambient Temperature VS. Relative Intensity



Relative spectral emission

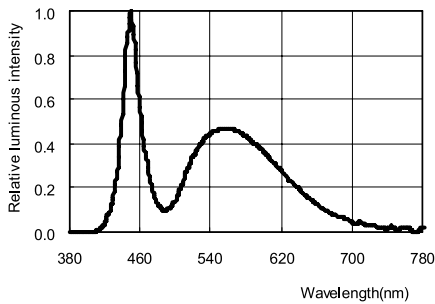
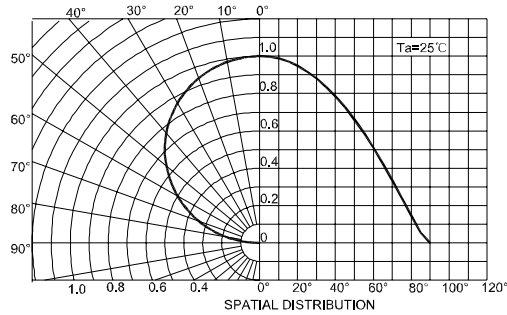
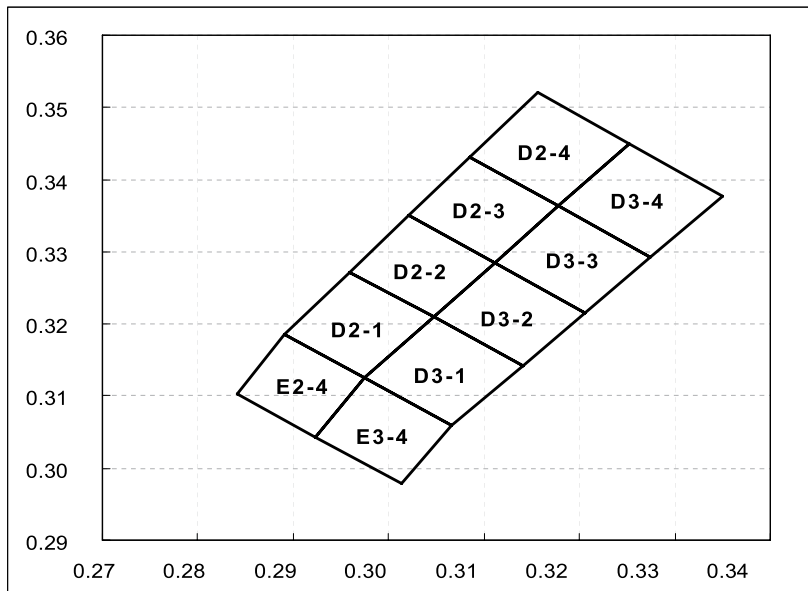


Diagram characteristics of radiation



CIE Chromaticity Diagram



E2-4				
X	0.284	0.292	0.298	0.289
Y	0.310	0.304	0.313	0.319

E3-4				
X	0.292	0.301	0.307	0.298
Y	0.304	0.298	0.306	0.313

D2-1				
X	0.296	0.289	0.298	0.305
Y	0.327	0.319	0.313	0.321

D2-2				
X	0.302	0.296	0.305	0.311
Y	0.335	0.327	0.321	0.328

D2-3				
X	0.309	0.302	0.311	0.318
Y	0.343	0.335	0.328	0.336

D2-4				
X	0.316	0.309	0.318	0.325
Y	0.352	0.343	0.336	0.345

D3-1				
X	0.305	0.298	0.307	0.314
Y	0.321	0.313	0.306	0.314

D3-2				
X	0.311	0.305	0.314	0.321
Y	0.328	0.321	0.314	0.322

D3-3				
X	0.318	0.311	0.321	0.327
Y	0.336	0.328	0.322	0.329

D3-4				
X	0.325	0.318	0.327	0.335
Y	0.345	0.336	0.329	0.338

Reliability Test Items And Conditions

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

Confidence level :90%

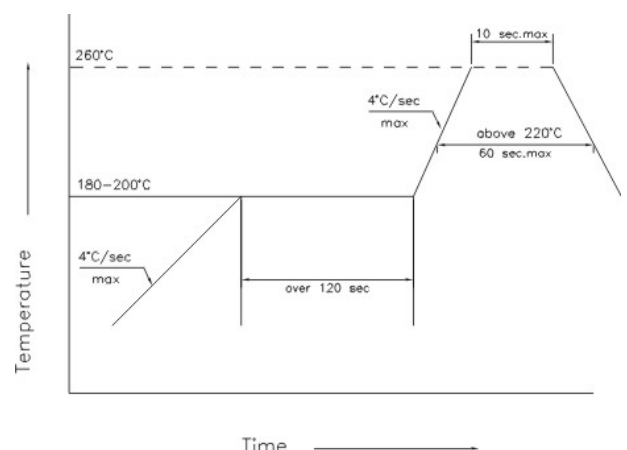
LTPD :10%

No.	Items	Ref.Standard	Test Condition	Test Hours/ Cycles	Sample Size	Ac/ Re
1	Reflow	JESD22-B106	Temp: 260°C max T=10 sec	3 times.	22Pcs.	0/1
2	Temperature Cycle	JESD22-A104	100°C±5°C 30 min. 5 min -40°C±5°C 30 min.	100 Cycles	22Pcs.	0/1
3	Thermal Shock	JESD22-A106	100°C±5°C 5 min. -40°C ±5°C 5 min.	100 Cycles	22Pcs.	0/1
4	High Temperature Storage	JESD22-A103	Temp: 100°C±5°C	1000Hrs.	22Pcs.	0/1
5	Low Temperature Storage	JESD22-A119	Temp: -40°C±5v	1000Hrs.	22Pcs.	0/1
6	DC Operating Life	JESD22-A108	Ta=25°C±5°C IF=150mA	1000Hrs.	22Pcs.	0/1
7	High Temperature High Humidity	JESD22-A101	85°C±5°C/ 85%RH IF=50mA	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

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

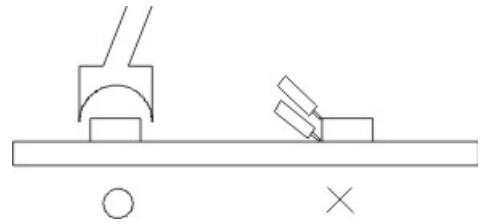


Soldering iron

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

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.



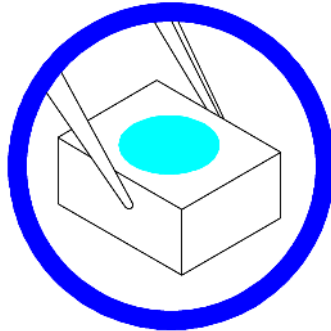
Cautions

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 influenced to the reliability of the LEDs. Precautions should be taken to avoid the strong pressure on the encapsulated part. So when using the picking up nozzle, the pressure on the silicone resin should be proper.

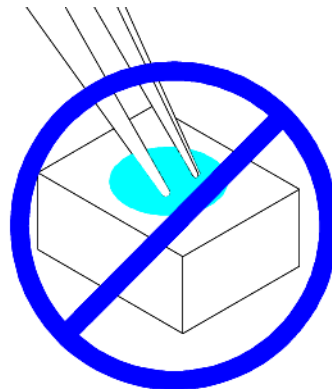
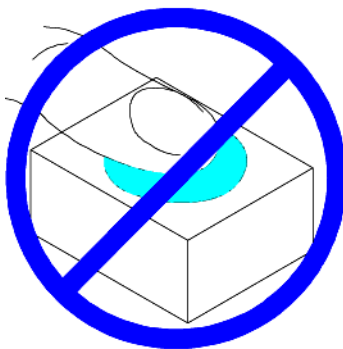
Handling Precautions

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,

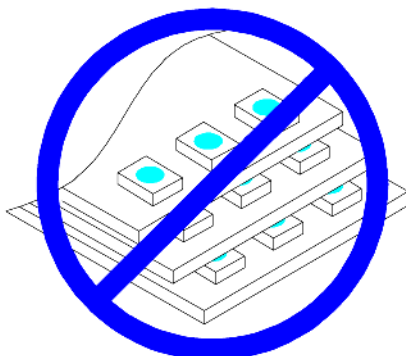
1. Handle the component along the side surface by using forceps or appropriate tools



2. Do not directly touch or handle the silicone lens surface. It may damage the internal circuitry



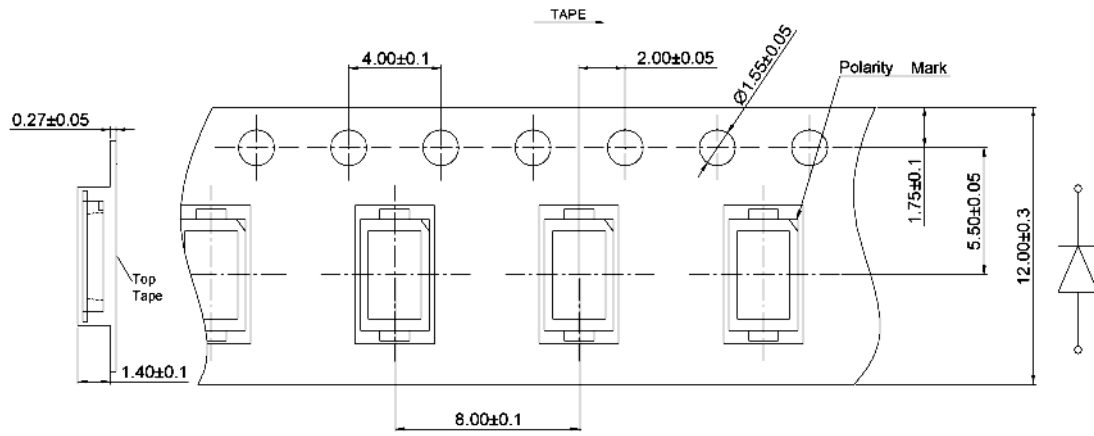
3. Do not stack together assembled PCBs containing LEDs. Impact may scratch the



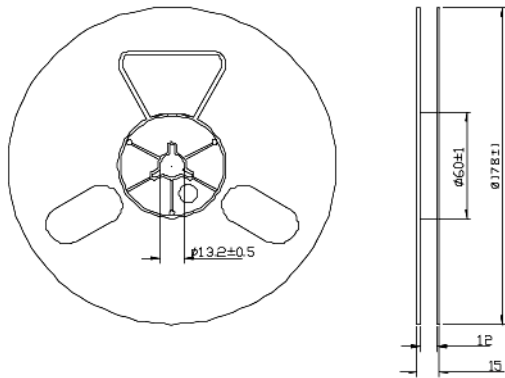
4. Not available in the situation of acidity for PH



Tape Specifications (Units : mm)



Moisture Resistant Packaging



Reel Dimensions

