

Data Sheet

Customer: C1A001151

Part No: CL-SFZ685DBW-10K-01

Sample No:

Description: 3528 White SMD

Item No:

Customer			
Check	Inspection	Approval	Date

CL			
Drawn	Check	Approval	Date
			2022/12/6

Features:

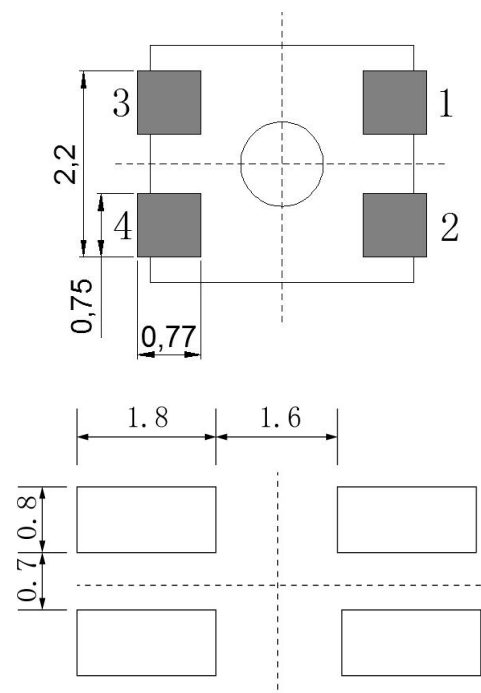
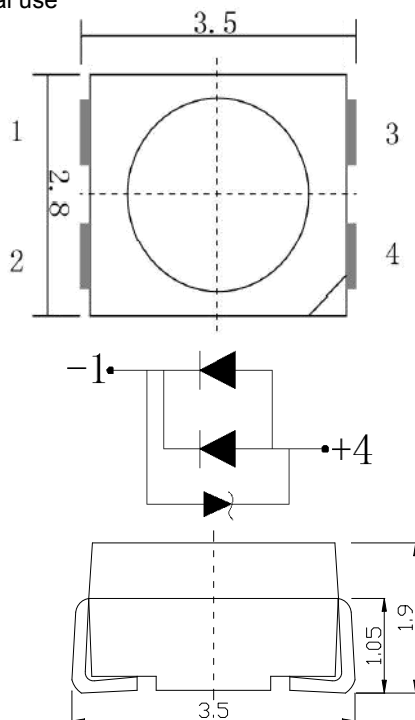
- . Material: White-InGaN(Yellow Diffused)
- . Wide Viewing Angle 120°
- . Reflow Solderable
- . High Luminous Intensity and Low Power Dissipation
- . Good Reliability and Long Life
- . Complied With RoHS Directive

Technical Data Sheet

This product is generally used as indicator and luminary for electronic equipment such as household appliance, communication equipment, and dashboard.

Applications

- Optical indicator
- Indoor display
- Backlighting in dashboard and switch
- Flat backlighting for LCD, symbol and display
- General use



Notes:

- 1 . All dimension units are millimeters.
- 2 . All dimension tolerance is $\pm 0.2\text{mm}$ unless otherwise noted.

Selection Guide

Part No.	Emitting Color	Lens Type	Luminous intensity(LM) @ 60mA			Viewing Angle
			Min	Typ	Max	2θ1/2
CL-SFZ685DBW-10K-01	White	Yellow Diffused	23	--	27	120

Note:

- 1.2θ1/2 is the angle from optical centerline where the luminous intensity is 2θ1/2 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	2.8	--	3.4	V	IF=60mA
Reverse Current	IR	--	--	10	uA	VR = 5V
Color Rndering Index	CRI	80	--	--	/	IF=60mA

Absolute Maximum Ratings at Ta=25°C

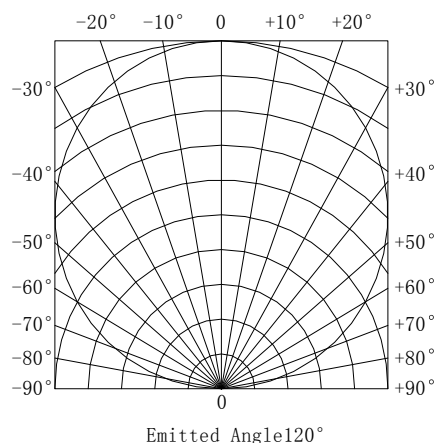
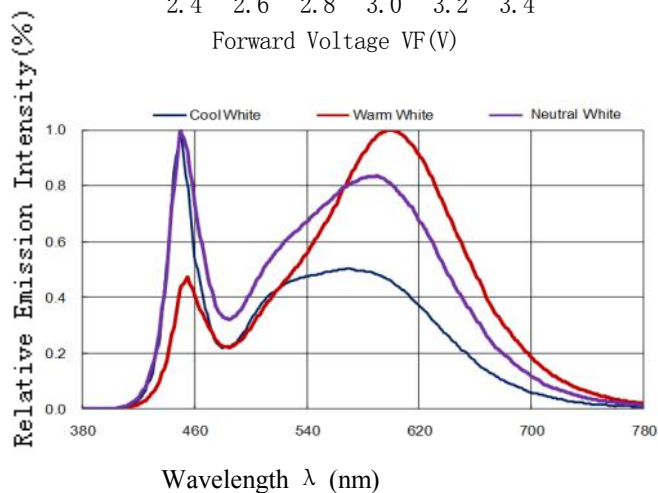
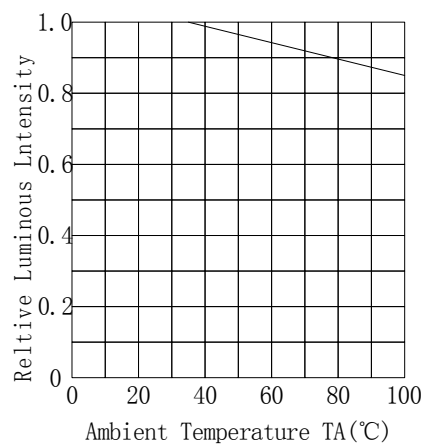
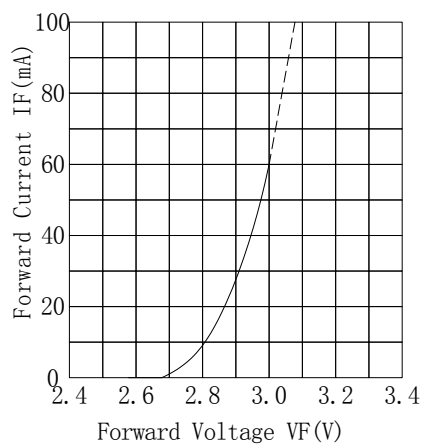
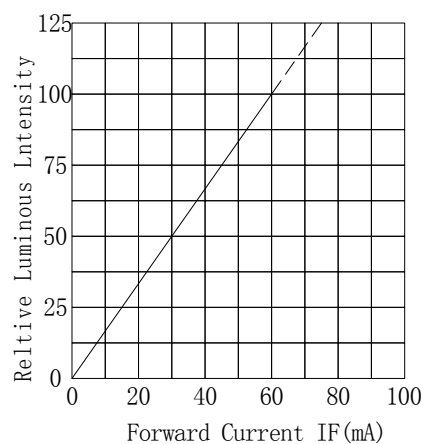
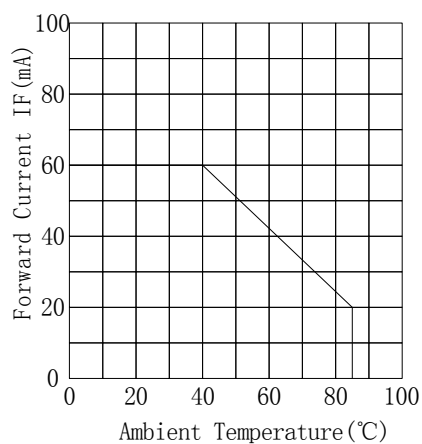
Parameter	Symbol	Rating	Units
Power Dissipation	Pd	204	mW
DC Forward Current	IF	60	mA
Peak Forward Current [1]	IFP	100	mA
Reverse Voltage	VR	5	V
Electrostatic Discharge (HBM)	ESD	2000	V
Operating Temperature	Topr	-40~+85	C°
Storage Temperature	Tstg	-40~+100	C°

Note:

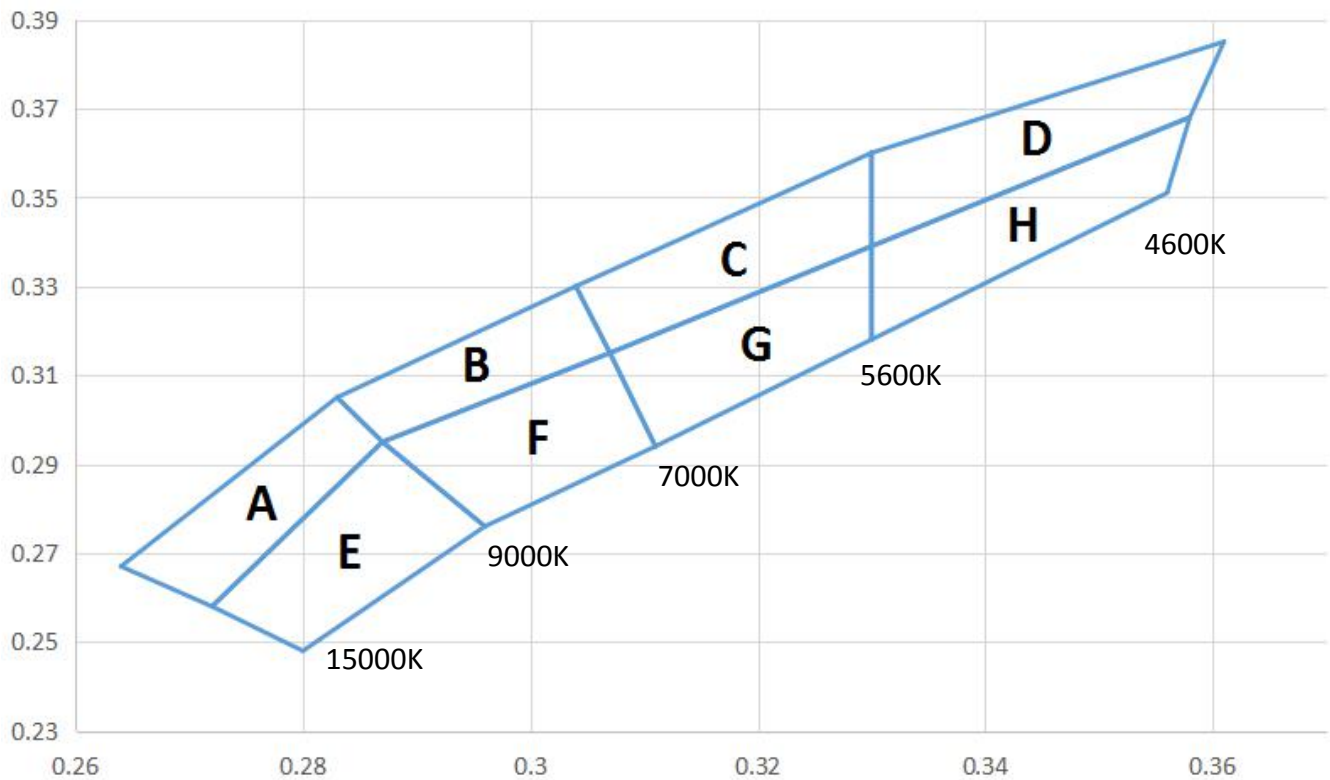
1. 1/10 Dut cycle,0.1ms pulse width.
2. The above forward voltage measurement allowance tolerance $\pm 0.1V$.

Typical optical characteristics curves

Ambient Temperature VS. Forward Current



Bin Color



BIN	X1	Y1	X2	Y2	X3	Y3	X4	Y4
A	0.264	0.267	0.272	0.258	0.287	0.295	0.283	0.305
B	0.283	0.305	0.287	0.295	0.307	0.315	0.304	0.33
C	0.307	0.315	0.33	0.339	0.33	0.36	0.304	0.33
D	0.33	0.36	0.33	0.339	0.358	0.368	0.361	0.385
E	0.272	0.258	0.28	0.248	0.296	0.276	0.287	0.295
F	0.296	0.276	0.311	0.294	0.307	0.315	0.287	0.295
G	0.311	0.294	0.33	0.318	0.33	0.339	0.307	0.315
H	0.33	0.318	0.33	0.339	0.358	0.368	0.356	0.351

Measurement Errors:Color Coordinates(x, y) ± 0.01

Reliability Test Items And Conditions

Test Items	Ref.Standard	Test conditions	Time	Quantity	Ac/Re
Reflow	JESD22-B106	Temp:260℃max T=10 sec	3 times.	22Pcs.	0/1
Temperature Cycle	JESD22-A104	100℃±5℃ 30 min. ↑↓5 min -40℃±5℃ 30 min.	100 Cycles	22Pcs.	0/1
High Temperature Storage	JESD22-A103	Temp:100℃±5℃	1000Hrs	22Pcs.	0/1
Low Temperature Storage	JESD22-A119	Temp:-40℃±5℃	1000Hrs	22Pcs.	0/1
Life Test	JESD22-A108	Ta=25℃±5℃ IF=20mA	1000Hrs	22Pcs.	0/1
High temperature and high humidity storage experiment	JESD22-A101	85℃±5℃/ 85%RH	1000Hrs	22Pcs.	0/1

Criteria For Judging Damage

Test Items	Symbol	Test conditions	Criteria For Judgement	
			Min.	Max.
Forward Voltage	VF	IF=20mA		U.S.L*)x1.1
Reverse Current	IR	VR = 5V		U.S.L*)x2.0
Luminous intensity	IV	IF=20mA	L.S.L*)x0.7	

U.S.L: Upper standard level

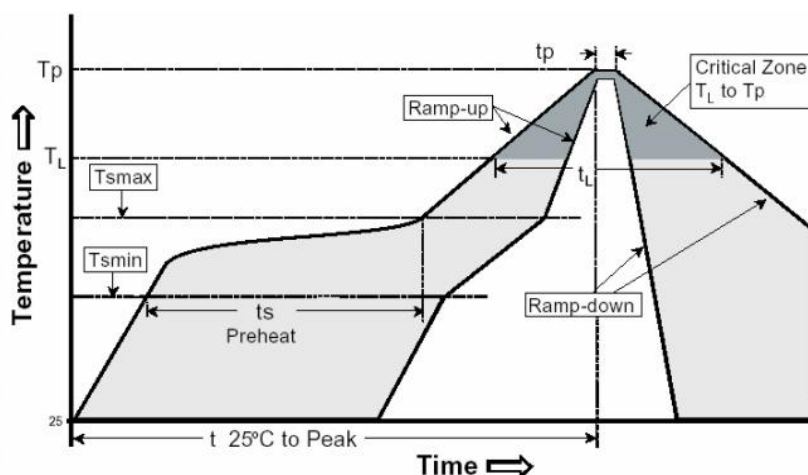
L.S.L: Lower standard level

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. The number of reflow soldering shall not exceed two times, and the time from the second processing to the first completion shall not exceed 24H
2. When soldering, do not put stress on the LEDs during heating.
3. Reflow temperature distribution (Acc.to J-STD-020D)

Profile Feature	Sn-Pb Eutectic Assembly		Pb-Free Assembly	
	Large Body	Small Body	Large Body	Small Body
Average ramp-up rate (TL to Tp)	3°C/second max.		3°C/second max.	
Preheat				
-Temperature Min(TSmin)	100°C		150°C	
-Temperature Max(TSmax)	150°C		200°C	
-Time(min to max)(ts)	60-120 seconds		60-180 seconds	
Tsmax to TL			3°C/second max.	
-Ramp-up Rate				
Time maintained above:				
-Temperature(TL)	183°C		217°C	
-Time(tL)	60-150 seconds		60-150 seconds	
Peak Temperature(Tp)	225+0/-5°C	240+0/-5°C	245+0/-5°C	260+0/-5°C
Time within 5°C of actual Peak Temperature(tp)	10-30 seconds	10-30 seconds	10-30 seconds	20-40 seconds
Ramp-down Rate	6°C/second max.		6°C/second max.	
Time 25°C to Peak Temperatur	6 minutes max.		8 minutes max.	

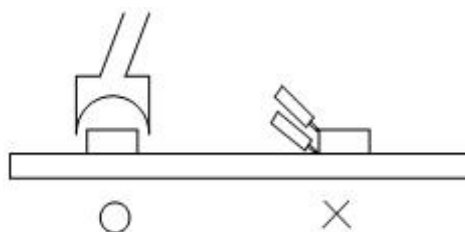


Soldering iron

1. When hand soldering, the temperature of the iron must be less than 350°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 in advance whether the characteristics of LEDs will or will not be damaged by repairing.



Storage

Before the package being opened:
should be kept lower 60%RH.

2.The quality guarantee period is 3 months with the package intact. You have to follow the point 4 if you need to reuse the LEDs, which the LEDs need to be dishumidified if it's kept more than 3 months with unpacking.

After the package being opened:

1. The products can be used in 24hours after the package being opened.
- 2.Usable enviroment condition: enviroment temperature should be kept between $\leq 30^{\circ}\text{C}$,relative enviroment humidity should be kept lower 60%RH.
- 3.If the package be opened over 24hours, the products have to be put back in the oven, being dehumidified in $65^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for 24hours,then it can be used again.

ESD

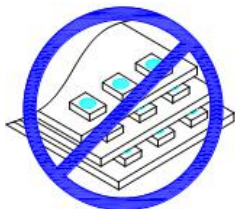
Static Electriscity will damage the LED.

The following procedures may decrease the possibility of ESD damage.

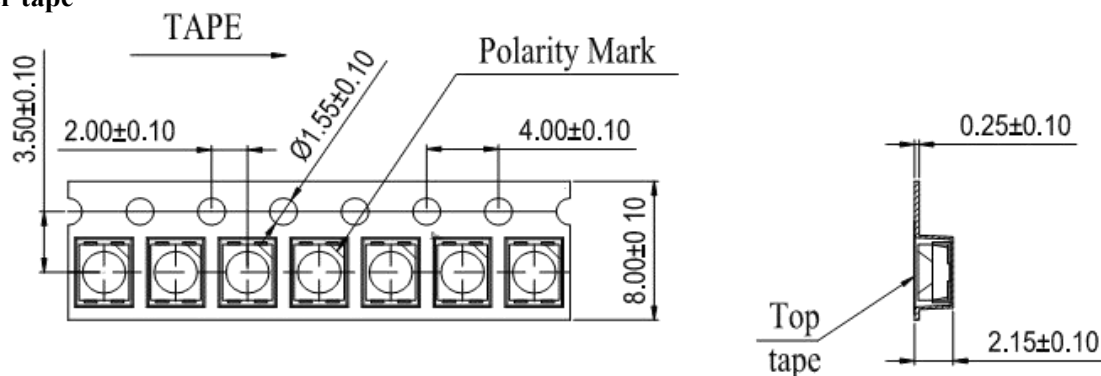
- 1.All productive machinery and test instruments must be electrically grounded.
- 2.Use a condusive wrist band or anti-electostatic glove when handling these LEDs.
- 3.Manintain a humidity level of 50%RH or higher in production areas.
- 4.Use anti-static packaging for transport and storage.

Handling Precautions

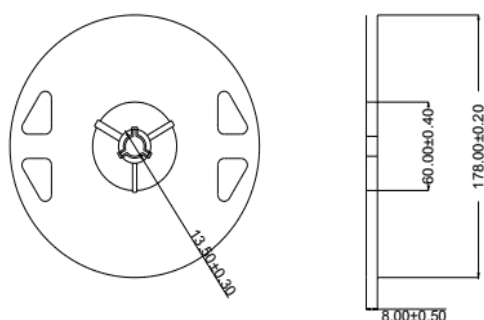
- 1.Do not stack together assembled PCBs containing LEDs. Impact may scratch the silicone lens or damage.
- 2.Not available in the situation of acidity for PH.
- 3.Electrostatic sensitive device



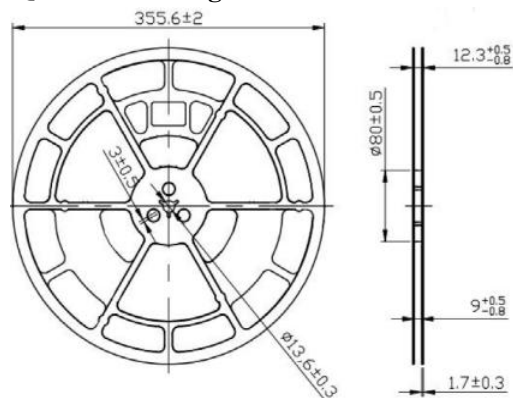
Carrier tape



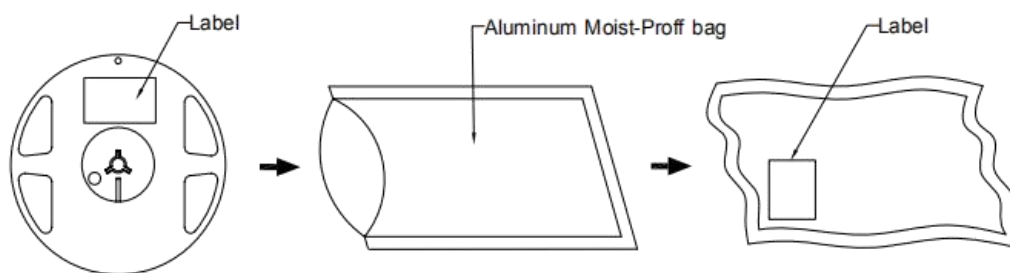
MPQ:2000PCS/Small reel



MPQ:10000PCS/Big reel

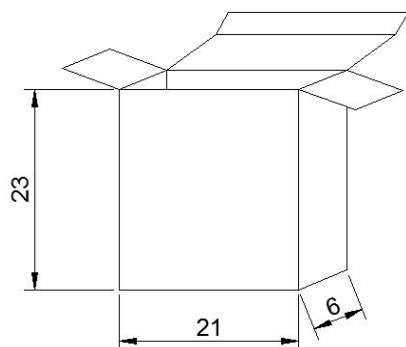


Moisture Resistant Packaging



Cardboard Box

Maximum packing quantity (5 packs of material)



Maximum packing quantity (27 bags of material or 5 small boxes)

