



# BRIGHTTEK

BRIGHTTEK (EUROPE) LIMITED

*Brighten up The World With LED!*



ISO/TS 16949:2009



BS EN ISO 14001:2004



QC 080000 IECQ HSPM

## PRODUCT DATASHEET

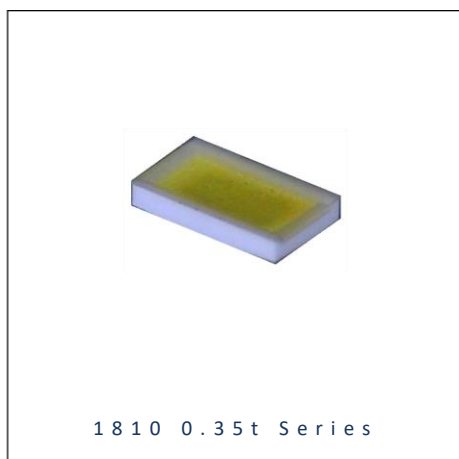


- ▶ CSP CHIP LED
- ▶ 1810 0.35t Series
- ▶ Sky White (13000K)

# NOW53S63



Release Date: 27 September 2021 Version: A1.1



1810 0.35t Series

## 1810 0.35t Series

**RoHS**  
Compliant



### FEATURES:

- **Package:** Ceramic High Power CSP Package
- **Forward Current:** 200~400mA
- **Forward Voltage (typ.):** 3.1V
- **Luminous Flux (typ.):** 70lm@200mA
- **Colour:** Sky White
- **CCT/Colour Temperature (typ.):** 7000~75000K
- **Viewing angle:** 120°
- **Materials:**
  - Die: Flip-Chip InGaN
  - Resin: Silicon (Yellow Diffused)
  - L/T Finish: Au plated
- **Operating Temperature:** -40~+125°C
- **Storage Temperature:** -40~+125°C
- **Grouping parameters:**
  - Forward Voltage
  - Luminous Flux
  - CIE Chromaticity
- **Soldering Method:** IR Reflow
- **Recommended Soldering Paste:** SAC305
- **Preconditioning:** MSL2 according to J-STD020
- **Packing:** 8mm tape with Max.1000pcs /reel, ø180mm (7")

### APPLICATIONS:

- Decorative Lighting
- Portable Lighting
- Outdoor Lighting
- Commercial Lighting
- Indoor Lighting
- Industrial Lighting

## CHARACTERISTICS:

### Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
DC Forward Current	I <sub>F</sub>	400	mA
Peak Pulsed Current *	I <sub>PF</sub>	800	mA
Power Dissipation	P <sub>D</sub>	1.36	W
Reverse Voltage	V <sub>R</sub>	5	V
Junction Temperature	T <sub>j</sub>	150	°C
Operating Temperature	T <sub>OPR</sub>	-40~+125	°C
Storage Temperature	T <sub>STG</sub>	-40~+125	°C

\* 1/10 duty cycle @1KHz

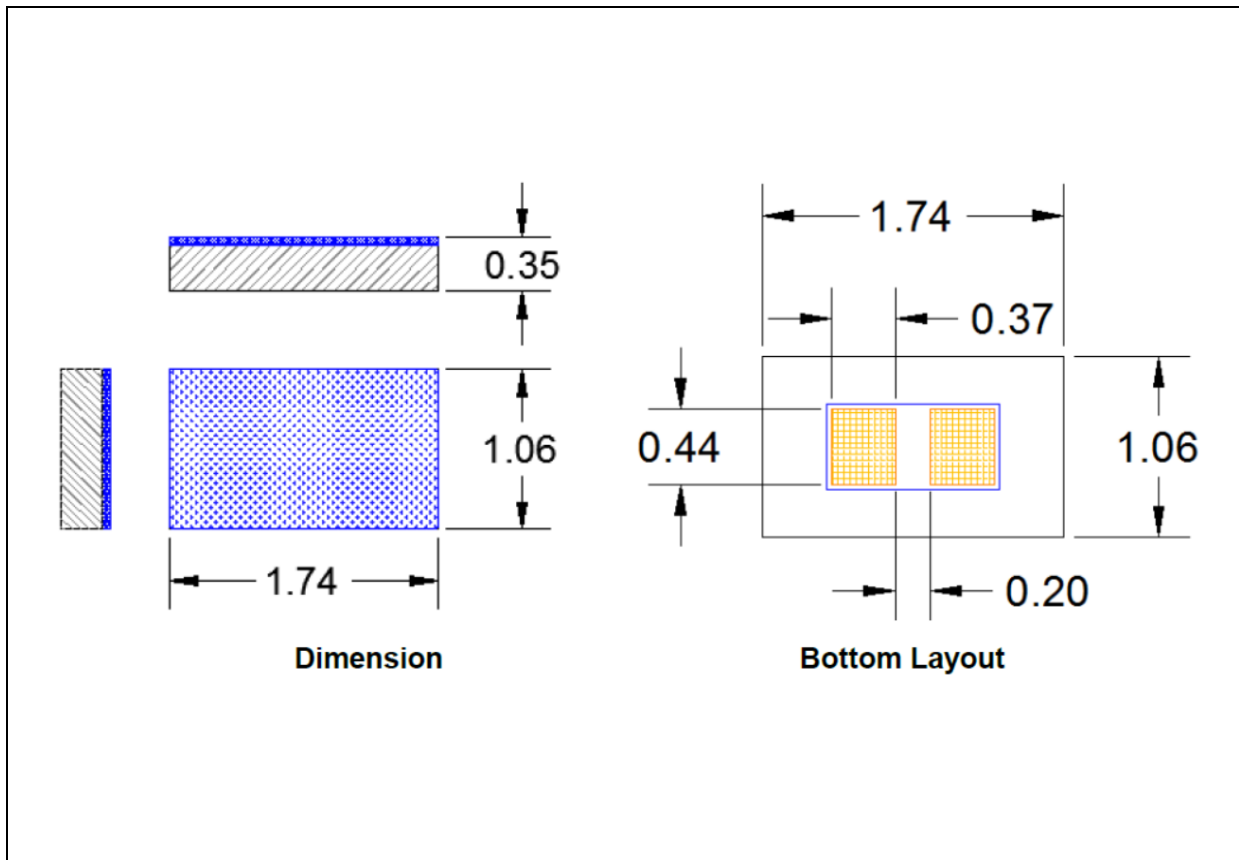
### Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V <sub>F</sub>	2.9	3.1	3.3	V	I <sub>F</sub> =200mA
Luminous Flux	Φ <sub>v</sub>	55	70	80	lm	I <sub>F</sub> =200mA
Chromaticity Coordinates	X	0.2516	---	0.3065	---	I <sub>F</sub> =200mA
	Y	0.2094	---	0.3113		
CCT	---	---	13000	---	K	I <sub>F</sub> =200mA
Viewing Angle	2θ <sub>1/2</sub>	---	120	---	deg	I <sub>F</sub> =200mA

1. Luminous flux (Φ<sub>v</sub>) ±7%, Forward Voltage (V<sub>F</sub>) ±0.05V, Viewing angle(2θ<sub>1/2</sub>) ±10°, CRI ±2

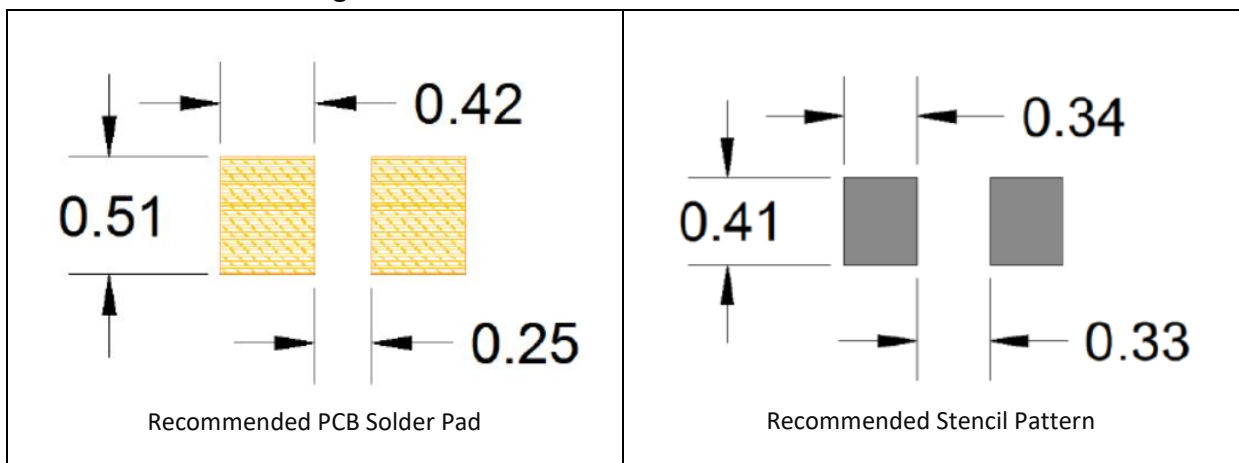
## OUTLINE DIMENSION:

Package Dimension:



1. All dimensions are in millimetre (mm).
2. Tolerance  $\pm 0.13\text{mm}$ , unless otherwise noted.

Recommended Soldering Pad Dimension:



1. Dimensions are in millimetre (mm).
2. Tolerance  $\pm 0.12\text{mm}$  with angle tolerance  $\pm 0.5^\circ$ .

## BINNING GROUPS:

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Forward Voltage Classifications ( $I_F = 200\text{mA}$ ):

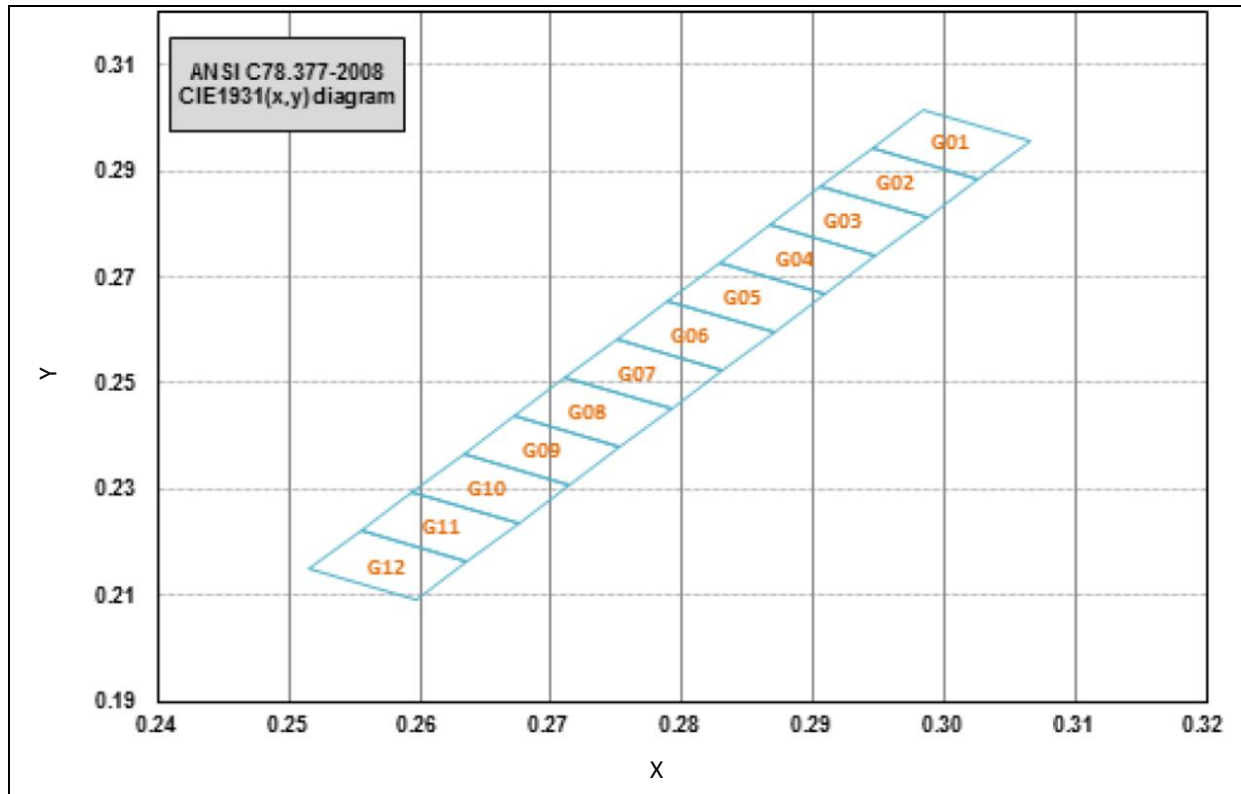
Code	Min.	Max.	Unit
M9	2.8	3.0	V
MA	3.0	3.2	
MB	3.2	3.4	

Luminous Flux Classifications ( $I_F = 200\text{mA}$ ):

Code	Min.	Max.	Unit
A11	55	60	lm
A12	60	65	
A14	65	70	
A14	70	75	
A15	75	80	



## CIE CHROMATICITY DIAGRAM:

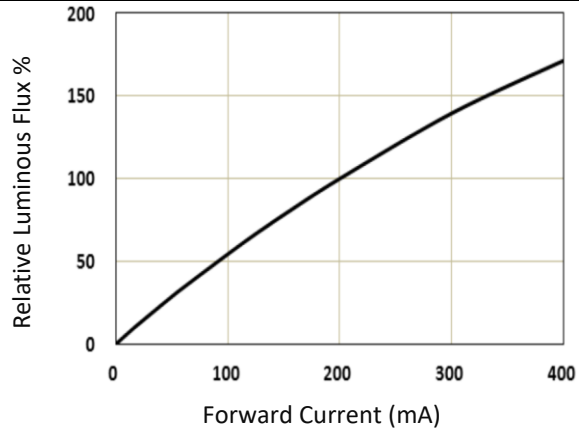


Chromaticity Coordinates Classifications ( $I_F = 60\text{mA}$ ):

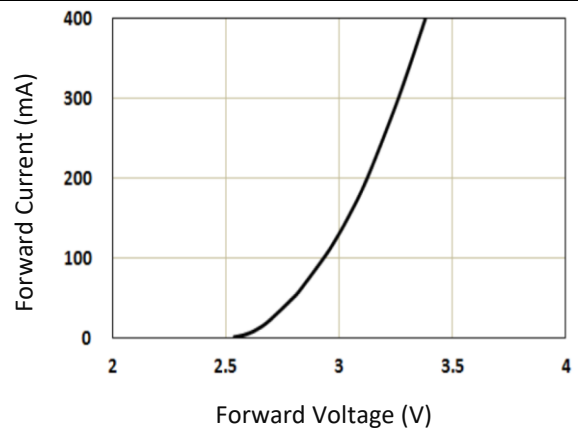
	1		2		3		4	
	X	Y	X	Y	X	Y	X	Y
G01	0.2984	0.3016	0.2945	0.2944	0.3026	0.2886	0.3065	0.2958
G02	0.2945	0.2944	0.2906	0.2872	0.2987	0.2814	0.3026	0.2886
G03	0.2906	0.2872	0.2867	0.2800	0.2948	0.2742	0.2987	0.2814
G04	0.2867	0.2800	0.2828	0.2728	0.2909	0.2670	0.2948	0.2742
G05	0.2828	0.2728	0.2789	0.2656	0.2870	0.2598	0.2909	0.2670
G06	0.2789	0.2656	0.2750	0.2584	0.2831	0.2526	0.2870	0.2598
G07	0.2750	0.2584	0.2711	0.2512	0.2792	0.2454	0.2831	0.2526
G08	0.2711	0.2512	0.2672	0.2440	0.2753	0.2382	0.2792	0.2454
G09	0.2672	0.2440	0.2633	0.2368	0.2714	0.2310	0.2753	0.2382
G10	0.2633	0.2368	0.2594	0.2296	0.2657	0.2338	0.2714	0.2310
G11	0.2594	0.2296	0.2555	0.2224	0.2636	0.2166	0.2675	0.2238
G12	0.2555	0.2224	0.2516	0.2152	0.2597	0.2094	0.2636	0.2166

## ELECTRO-OPTICAL CHARACTERISTICS:

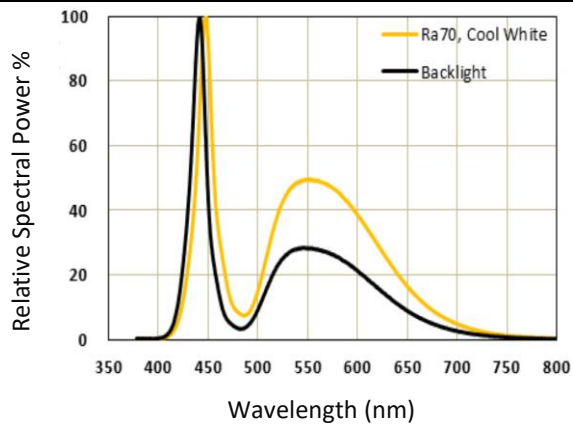
Relative Luminous Flux v.s. Forward Current



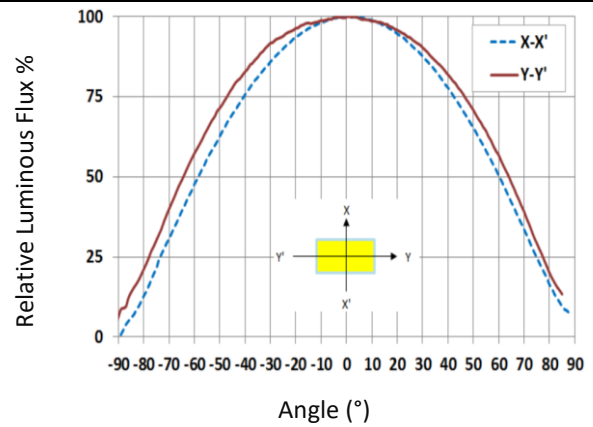
Forward Current v.s. Forward Voltage



Relative Spectral Power v.s. Wavelength



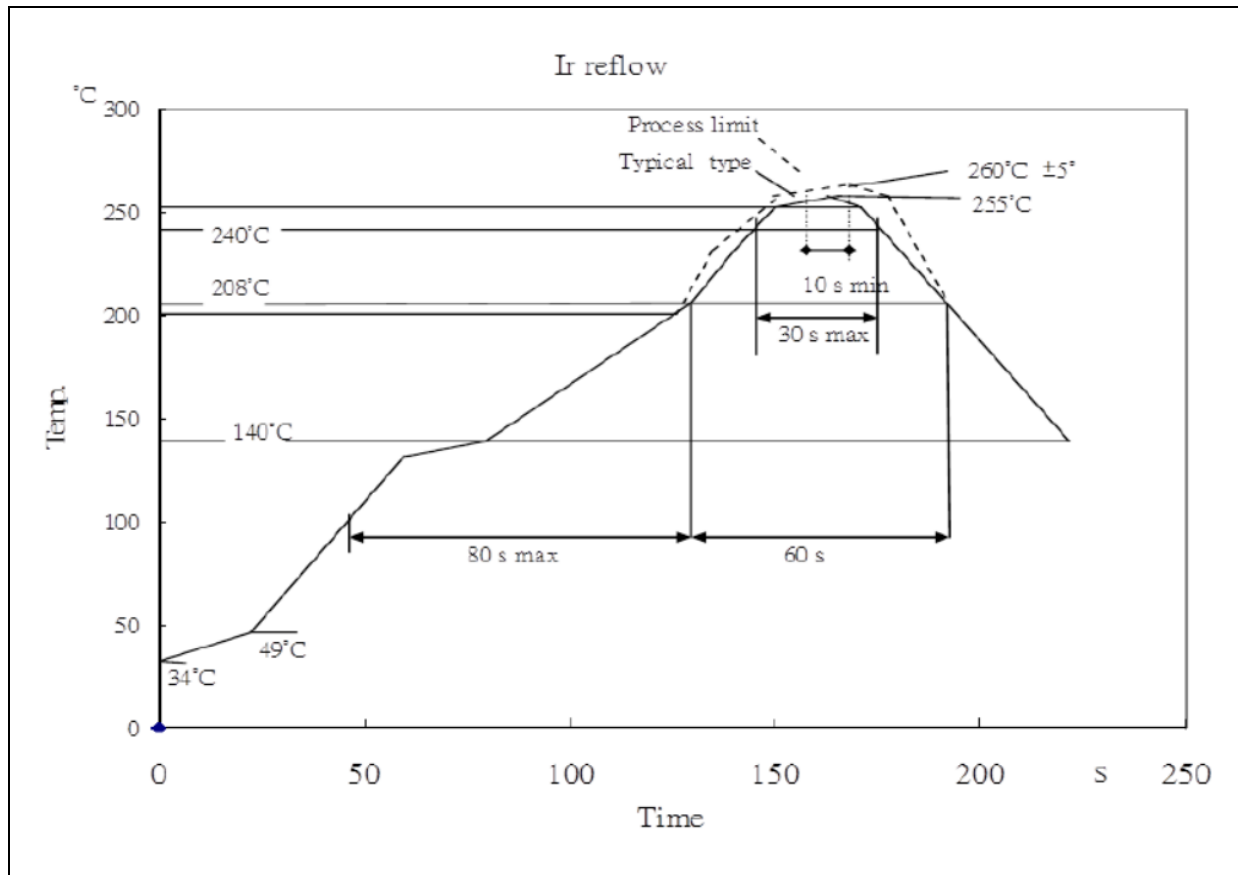
Directive Radiation





## RECOMMENDED SOLDERING PROFILE:

Reflow Lead-free Solder:



Note:

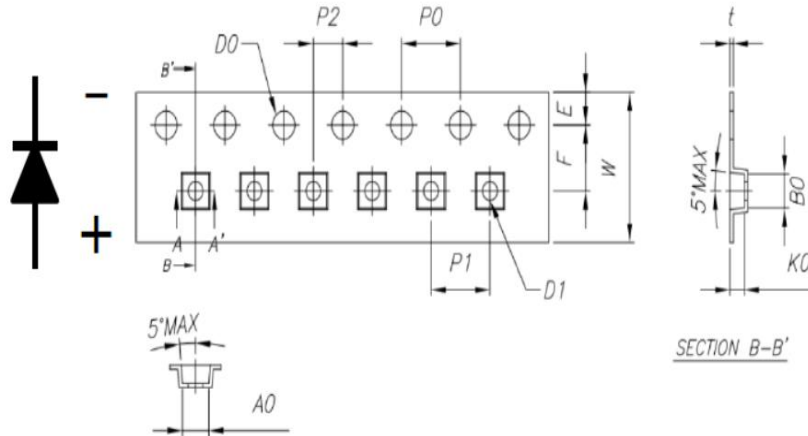
1. Maxima reflow soldering: 1 time.
2. The recommended reflow temperature is 240°C. The maximum soldering temperature should be limited to 260°C.
3. Before, during, and after soldering, should not apply stress on the components and PCB board.



## PACKING SPECIFICATION:

### Reel Dimension:

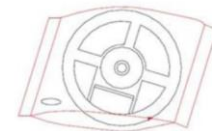
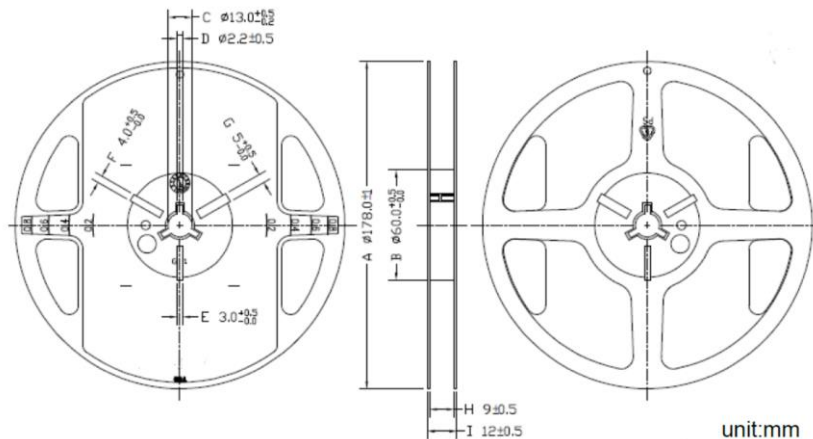
Max.1000pcs/reel



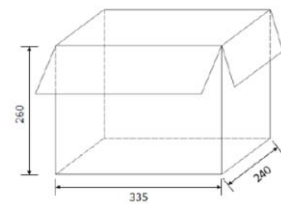
Item	Specification	Tol. (+/-)
W	8.00	$\pm 0.20$
E	1.75	$\pm 0.10$
F	3.50	$\pm 0.05$
D0	1.50	$+0.10, -0$
D1	0.50	$\pm 0.10$
P0	4.00	$\pm 0.05$
P1	4.00	$\pm 0.10$
P2	2.00	$\pm 0.05$
P0 x 10	40.00	$\pm 0.20$

t	0.20	$\pm 0.03$
A0	1.12	$\pm 0.05$
B0	1.97	$\pm 0.05$
K0	0.55	$\pm 0.05$

Note: Keep 110pcs of empty carrier in front and end of each reel.



1 Anti-Static Reel in 1 Moisture proof Foil Bag.  
(Within Moisture Absorbent Material)



20 Moisture proof Foil Bags in Box.



## PRECAUTIONS OF USE:

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### Storage:

It is recommended to store the products in the following conditions:

- Humidity: 60% R.H. Max.
- Temperature: 5°C~30°C (41°F ~86°F).

Shelf life in sealed bag: 12 months at 5°C~30°C and <60% R.H.

Once the package is opened, the products should be used within a week. Otherwise, they should be kept in a damp-proof box with desiccating agent <10% R.H. and apply baking before use.

### Baking:

It is recommended to bake the LED before soldering if the pack has been unsealed for longer than 24hrs. The suggested baking conditions are as followings:

- 60±3°C x 24hrs and <5%RH, taped / reel package.

It's normal to see slight color fading of carrier (light yellow) after baking in process.

### Testing Circuit:



Must apply resistor(s) for protection (over current proof).

### Cleaning:

Use alcohol-based cleaning solvents such as isopropyl alcohol to clean the LED carrier / package. Avoid putting any stress force directly on to the LED lens.

### ESD (Electrostatic Discharge):

Static Electricity or power surge will damage the LED. Use of a conductive wrist band or anti-electrostatic glove is recommended when handling the LED all time. All devices, equipment, machinery, work tables, and storage racks must be properly grounded.

In the events of manual working in process, make sure the devices are well protected from ESD at any time.

**REVISION RECORD:**

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Version	Date	Summary of Revision
A1.0	15/10/2020	Datasheet set-up.
A1.1	27/09/2021	New datasheet format.