BRIGHTEK

BRIGHTEK (EUROPE) LIMITED

Brighten Up The World With LED !

ISO/TS 16949:2009 BS EN ISO 14001:2004 QC 080000 IECQ HSPM

PRODUCT DATASHEET

ATTENTION
OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES

- ▶ Ceramic High Power
- ▶ 3535 2.6t Series
- ▶ Warm White (3470-4300K)

Release Date: 13 January 2017 Version: A1.0

N0W39S11

3535FP 2.6t Series

3535 2.6t Series

RoHS Compliant

FEATURES:

- **Package:** Ceramic SMT Package with Silicon Lens
- **Forward Current:** 350~700mA
- **Forward Voltage (typ.):** 3.1V
- **Luminous Flux (typ.):** 120lm@350mA
- **Colour:** Warm White
- **Colour Temperature (CCT):** 3470-4300K
- **Viewing angle:** 60°
- **Materials:**
  - Die: Flip-Chip Phosphor-Converted InGaN
  - Resin: Silicon (Water Clear)
  - L/T Finish: Ag plated
- **Operating Temperature:** -40~+85°C
- **Storage Temperature:** -40~+100°C
- **Grouping parameters:**
  - Forward Voltage
  - Luminous Flux
  - CIE Chromaticity
- **Soldering methods:** IR Reflow Soldering
- **Preconditioning:** MSL3 according to J-STD020
- **Packing:** 12mm tape with 100pcs Min./reel, ø180mm (7'')

APPLICATIONS:

- Portable Lighting
- Outdoor Lighting
- Commercial Lighting
- Indoor Lighting
- Industrial Lighting
- Street and Tunnel Lighting

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
DC Forward Current	I_F	700	mA
Pulse Forward Current, D=0.01s Duty 1/10	I_{PF}	1500	mA
Reverse Current @5V	I_R	10	μA
Reverse Voltage	V_R	5	V
Junction Temperature	T_j	115	°C
Operating Temperature	T_{OPR}	-40~+85	°C
Storage Temperature	T_{STG}	-40~+100	°C
Soldering Temperature	T_{SOL}	260	°C
Colour Rendering Index	CRI	>70	---
Thermal Resistance - Junction to Solder Point	R_{th}	8	°C/W

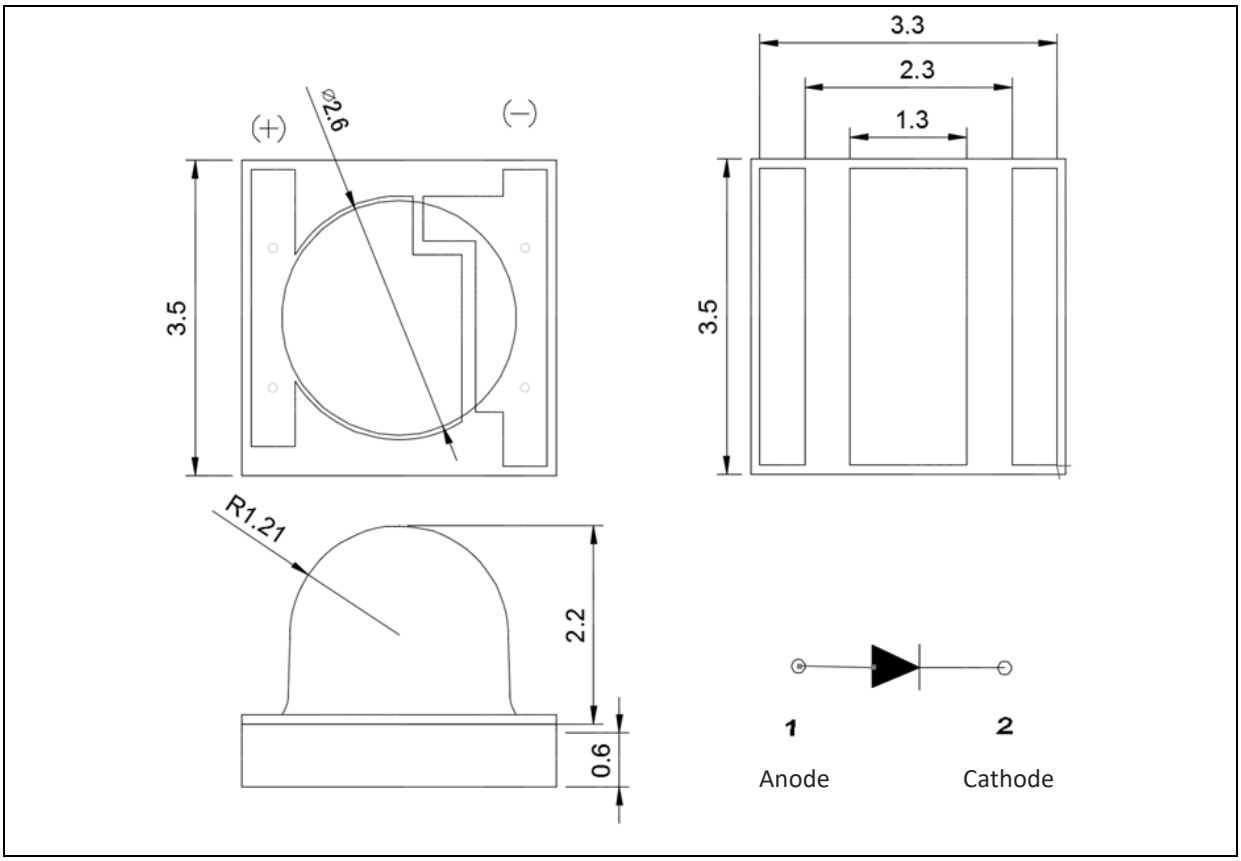
Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V_F	2.8	3.1	3.4	V	I_F=350mA
Luminous Flux	Φ_V	110	---	130	lm	I_F=350mA
Chromaticity Coordinates	X	0.3640	---	0.4217	---	I_F=350mA
	Y	0.3440	---	0.4273		
Colour Temperature	CCT	3470	---	4300	K	I_F=350mA
Viewing Angle	$2\theta_{1/2}$	---	60	---	deg	I_F=350mA

1. Luminous flux (Φ_V) ±7%, Forward Voltage (V_F) ±0.05V, Viewing angle($2\theta_{1/2}$) ±10°

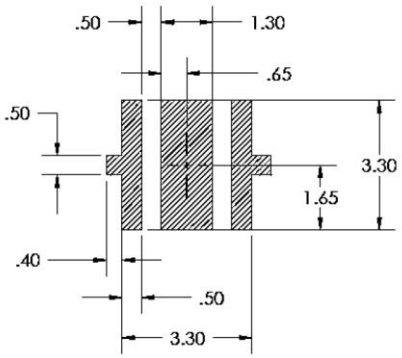
OUTLINE DIMENSION:

Package Dimension:

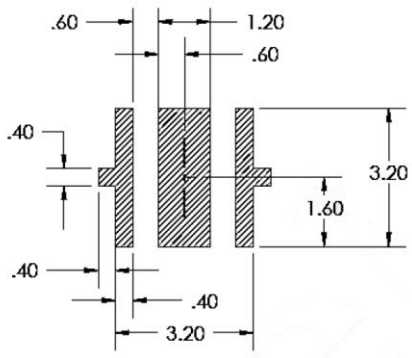


1. All dimensions are in millimetre (mm).
2. Tolerance ±0.13mm, unless otherwise noted.

Recommended Soldering Pad Dimension:



Recommended PCB Solder Pad



Recommended Stencil Pattern

1. Dimensions are in millimetre (mm).
2. Tolerance ±0.12mm with angle tolerance ±0.5°.

BINNING GROUPS:

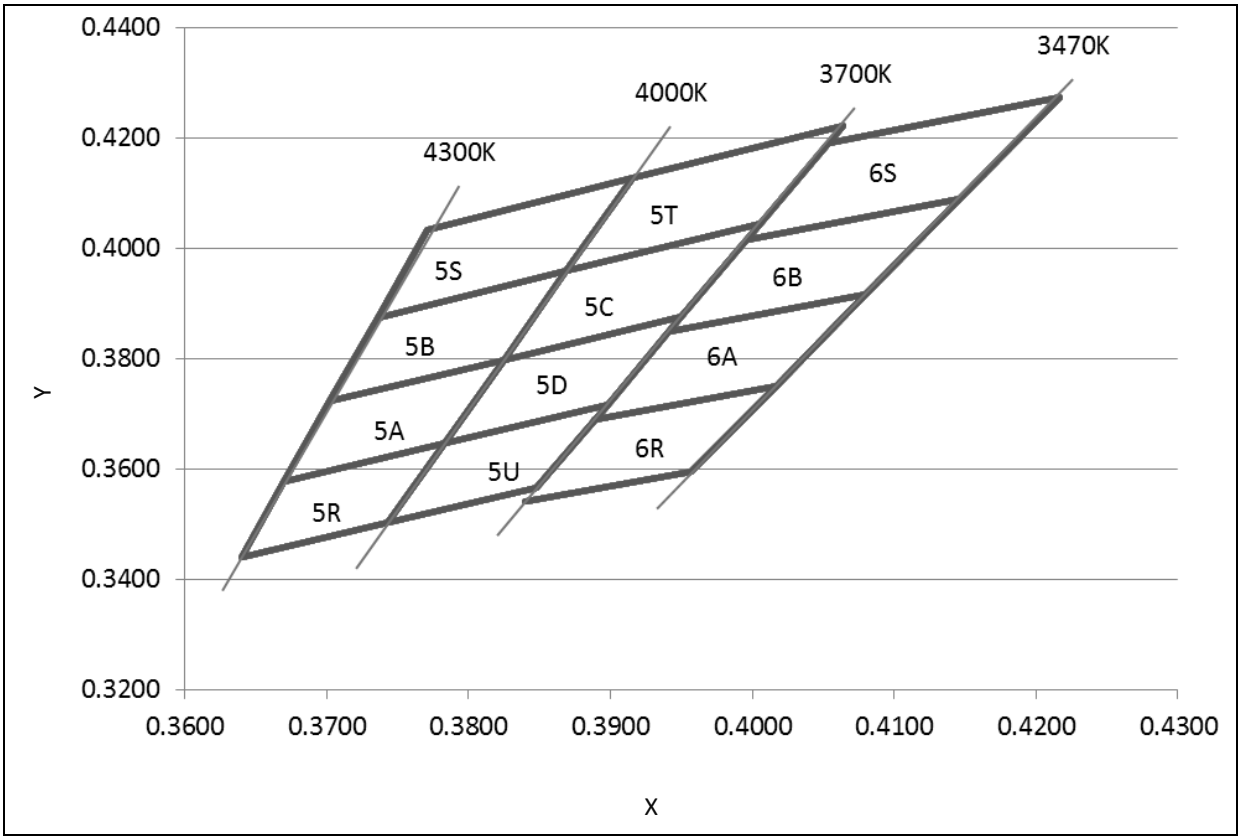
Forward Voltage Classifications (I_F = 350mA):

Code	Min.	Max.	Unit
V1	2.8	3.0	V
V2	3.0	3.2	
V3	3.2	3.4	

Luminous Flux Classifications (I_F = 350mA):

Code	Min.	Max.	Unit
W4	110	120	lm
W5	120	130	

CIE CHROMATICITY DIAGRAM:

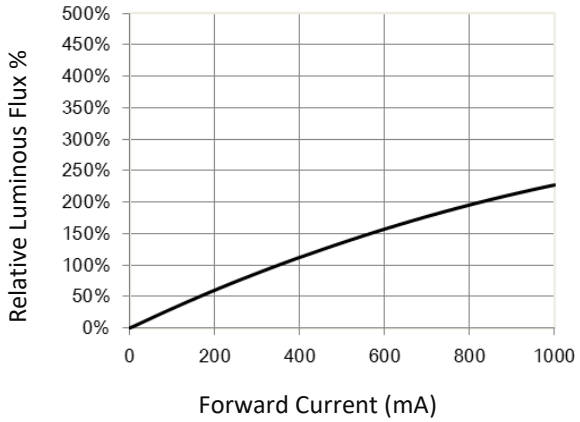


Chromaticity Coordinates Classifications (I_F = 350mA):

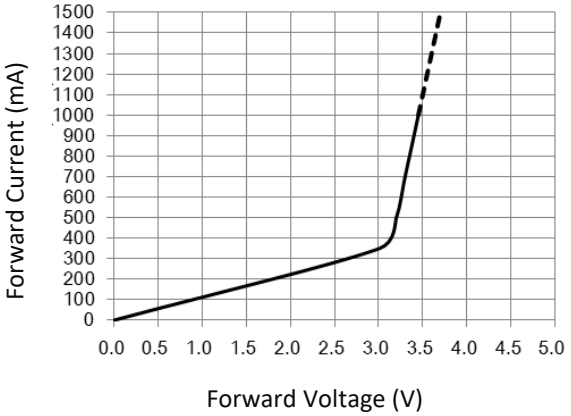
	1		2		3		4	
	X	Y	X	Y	X	Y	X	Y
5S	0.3771	0.4034	0.3916	0.4127	0.3869	0.3958	0.3736	0.3874
5B	0.3736	0.3874	0.3869	0.3958	0.3825	0.3798	0.3702	0.3722
5A	0.3702	0.3722	0.3825	0.3798	0.3783	0.3646	0.3670	0.3578
5R	0.3670	0.3578	0.3783	0.3646	0.3743	0.3502	0.3640	0.3440
5T	0.3916	0.4127	0.4064	0.4221	0.4006	0.4044	0.3869	0.3958
5C	0.3869	0.3958	0.4006	0.4044	0.3950	0.3875	0.3825	0.3798
5D	0.3825	0.3798	0.3950	0.3875	0.3898	0.3716	0.3783	0.3646
5U	0.3783	0.3646	0.3898	0.3716	0.3848	0.3565	0.3743	0.3502
6S	0.4054	0.4191	0.4217	0.4273	0.4146	0.4089	0.3996	0.4015
6B	0.3996	0.4015	0.4146	0.4089	0.4080	0.3916	0.3941	0.3848
6A	0.3941	0.3848	0.4080	0.3916	0.4017	0.3751	0.3889	0.3690
6R	0.3889	0.3690	0.4017	0.3751	0.3957	0.3596	0.3840	0.3540

ELECTRO-OPTICAL CHARACTERISTICS:

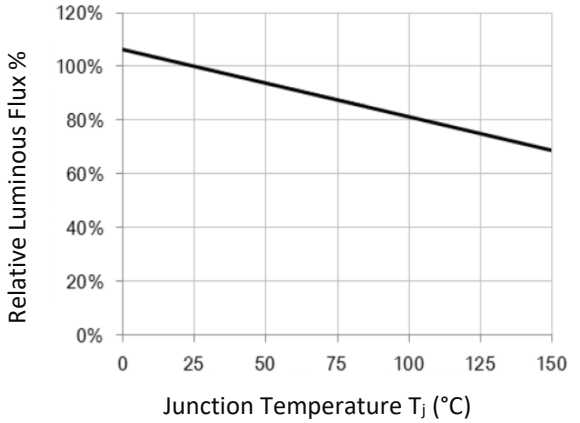
Relative Luminous Flux v.s. Forward Current



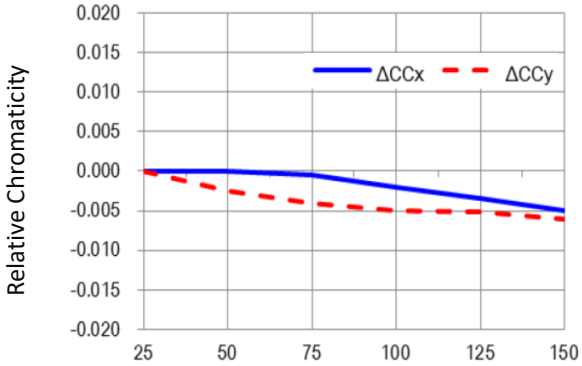
Forward Current v.s. Forward Voltage



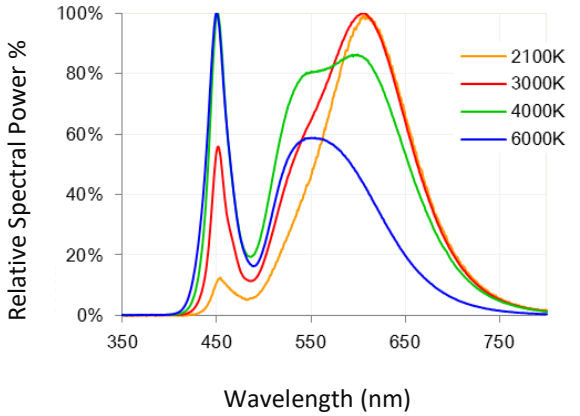
Relative Flux v.s. Junction Temperature



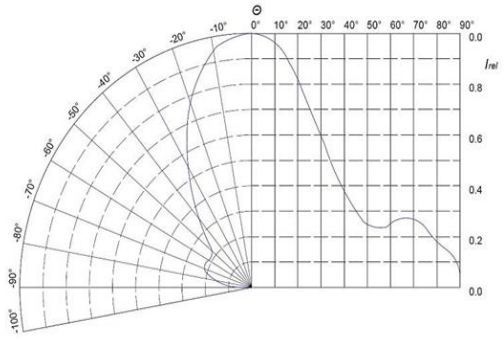
Relative Chromaticity v.s. Ambient Temperature



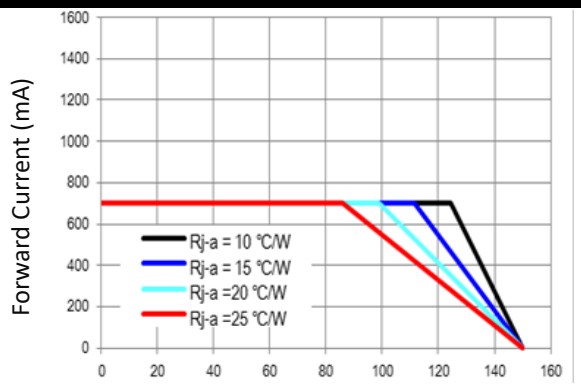
Relative Spectral Power v.s. Wavelength

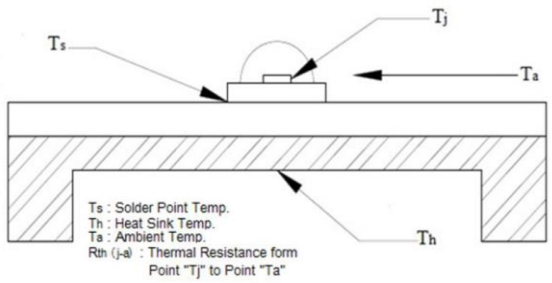


Directive Radiation



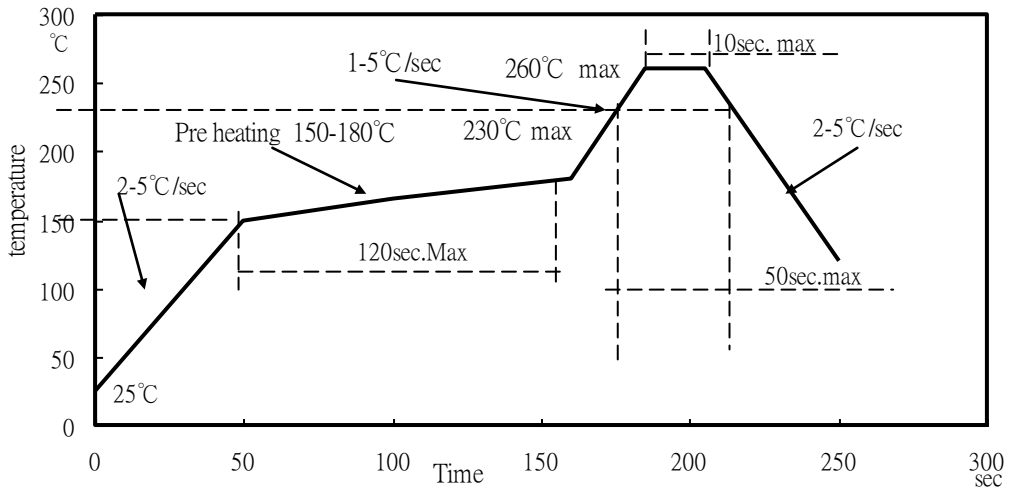
Forward Current Derating Curve





RECOMMENDED SOLDERING PROFILE:

Reflow Lead-free Solder:

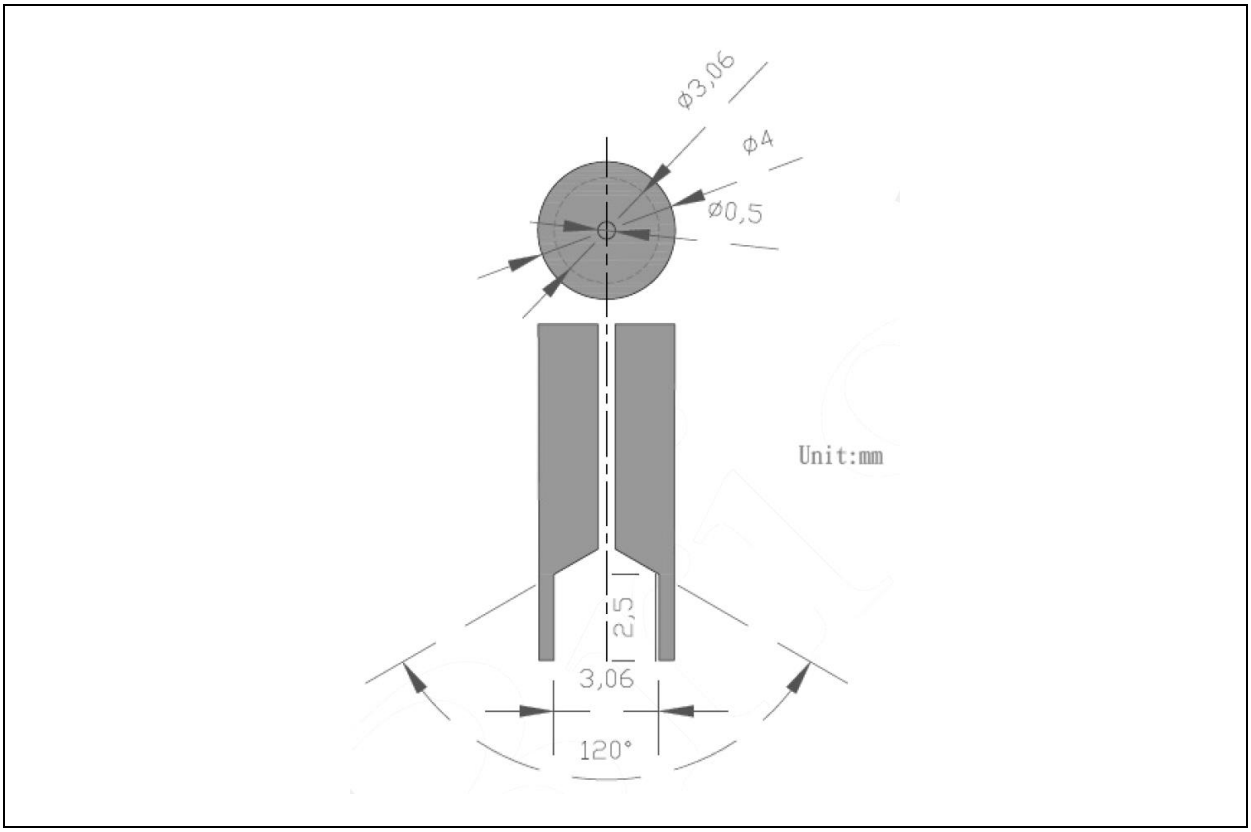


Note:

1. Maximum reflow soldering: 3 times.
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.

RECOMMENDED NOZZLE FOR SMT:

Recommended Pick & Place Nozzle:

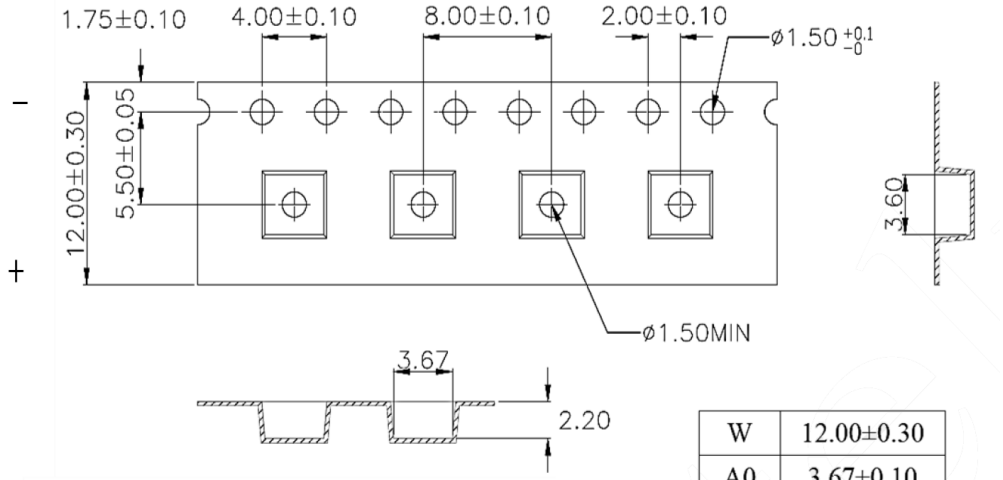


1. All dimensions are in millimetre (mm).
2. Tolerance ±0.1mm, unless otherwise noted.

PACKING SPECIFICATION:

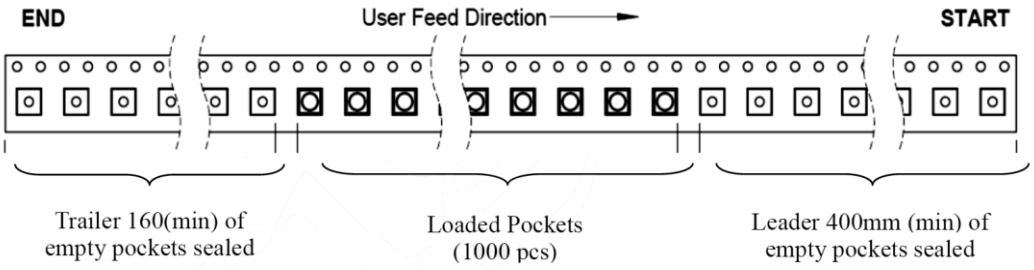
Reel Dimension:

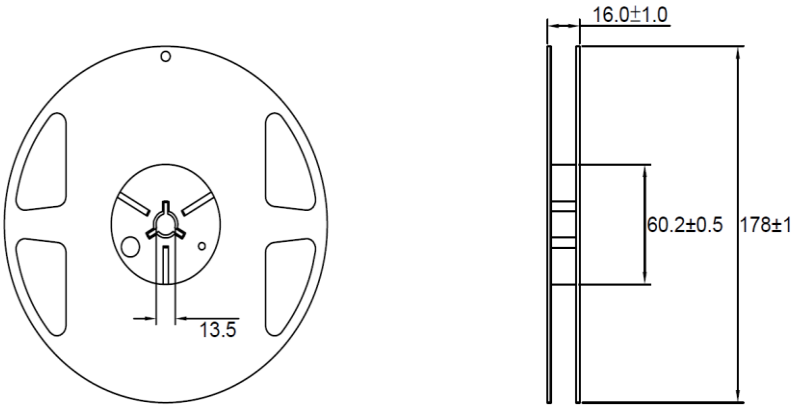
Minimum 100pcs/reel; 1000pcs maximum



W	12.00±0.30
A0	3.67±0.10
B0	3.60±0.10
K0	2.20±0.10

1. 10 sprocket hole pitch cumulative tolerance ±0.20.
2. Carrier camber is within 1 mm in 250 mm.
3. Material : Black Conductive Polystyrene Alloy.
4. All dimensions meet EIA-481-D requirements.
5. Thickness : 0.30±0.05mm.





PRECAUTIONS OF USE:

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 month 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 descanting agent and apply baking at 60°C±5°C for 15hrs before use.

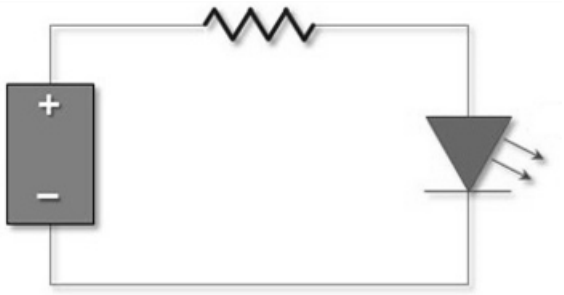
Baking:

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 15hrs 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-electrosatic glove is recommended when handing 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:

Version	Date	Summary of Revision
A1.0	13/01/2017	Datasheet set-up.