



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



- ▶ Ceramic High Power
- ▶ 3535 2.6t Series
- ▶ Natural White
(4470-5300K)

NOW39S10



Release Date: 13 January 2017 Version: A1.0



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.):** 125lm@350mA
- **Colour:** Natural White
- **Colour Temperature (CCT):** 4470-5300K
- **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	μ A
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

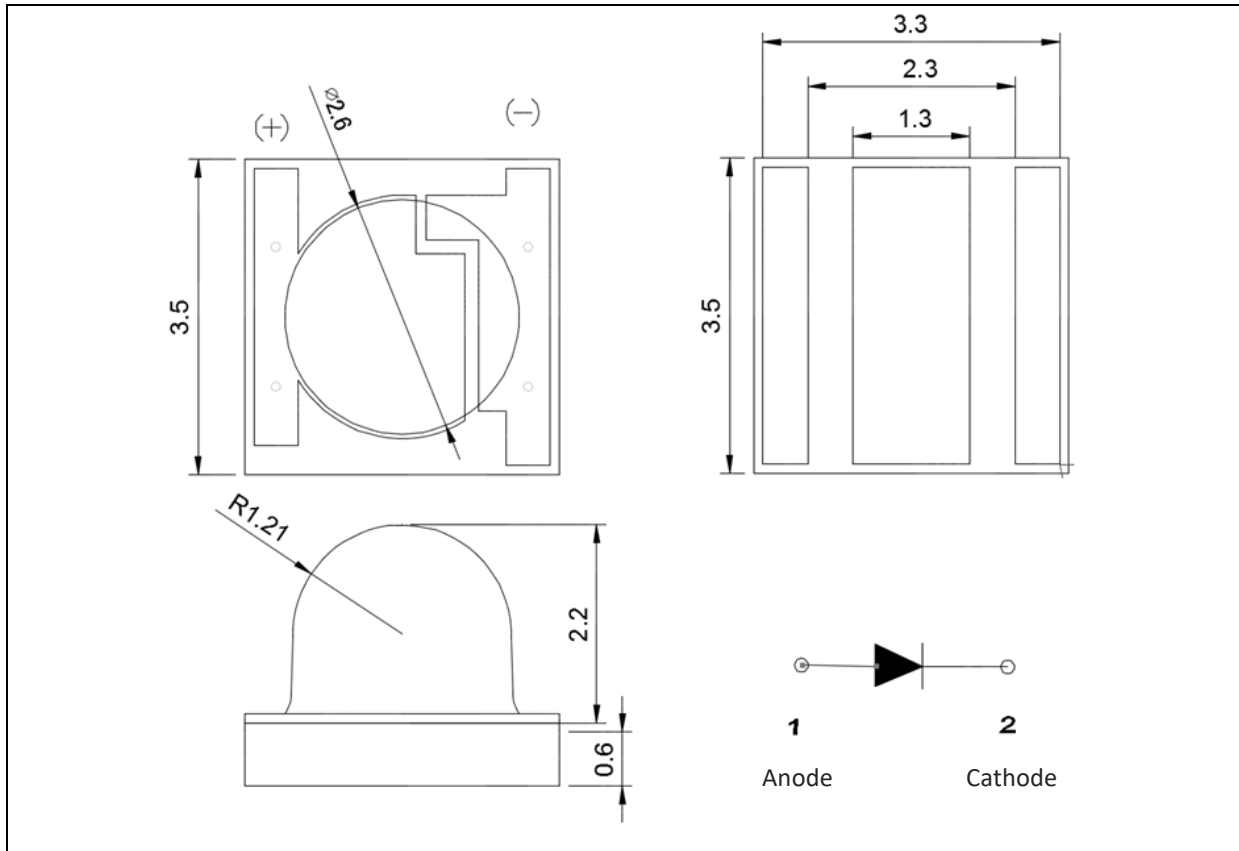
Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V_F	2.8	3.1	3.4	V	$I_F=350$ mA
Luminous Flux	Φ_V	110	---	140	lm	$I_F=350$ mA
Chromaticity Coordinates	X	0.3361	---	0.3668	---	$I_F=350$ mA
	Y	0.3245	---	0.3957		
Colour Temperature	CCT	4470	---	5300	K	$I_F=350$ mA
Viewing Angle	$2\theta_{1/2}$	---	60	---	deg	$I_F=350$ mA

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

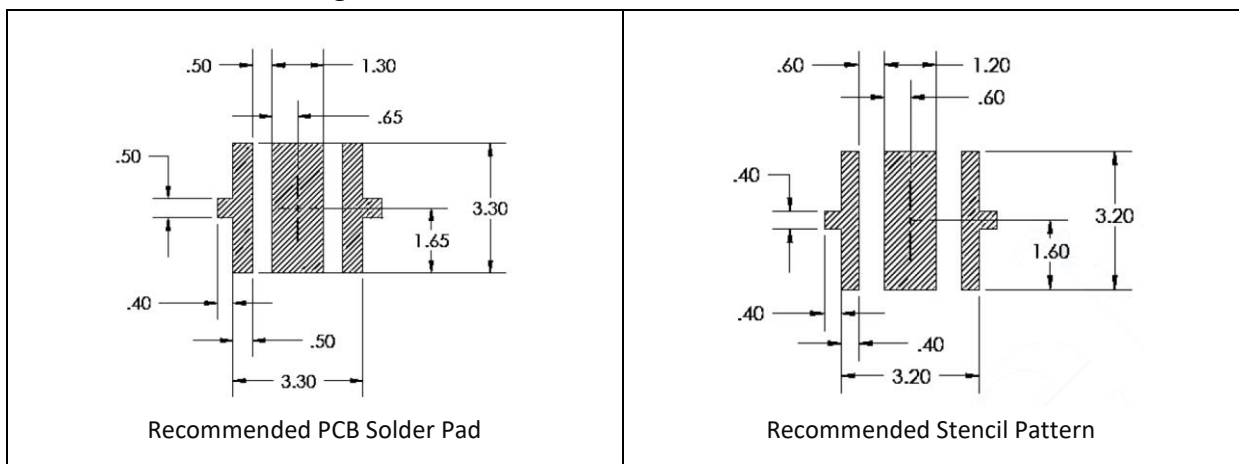
OUTLINE DIMENSION:

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 $\pm 0.5^\circ$.

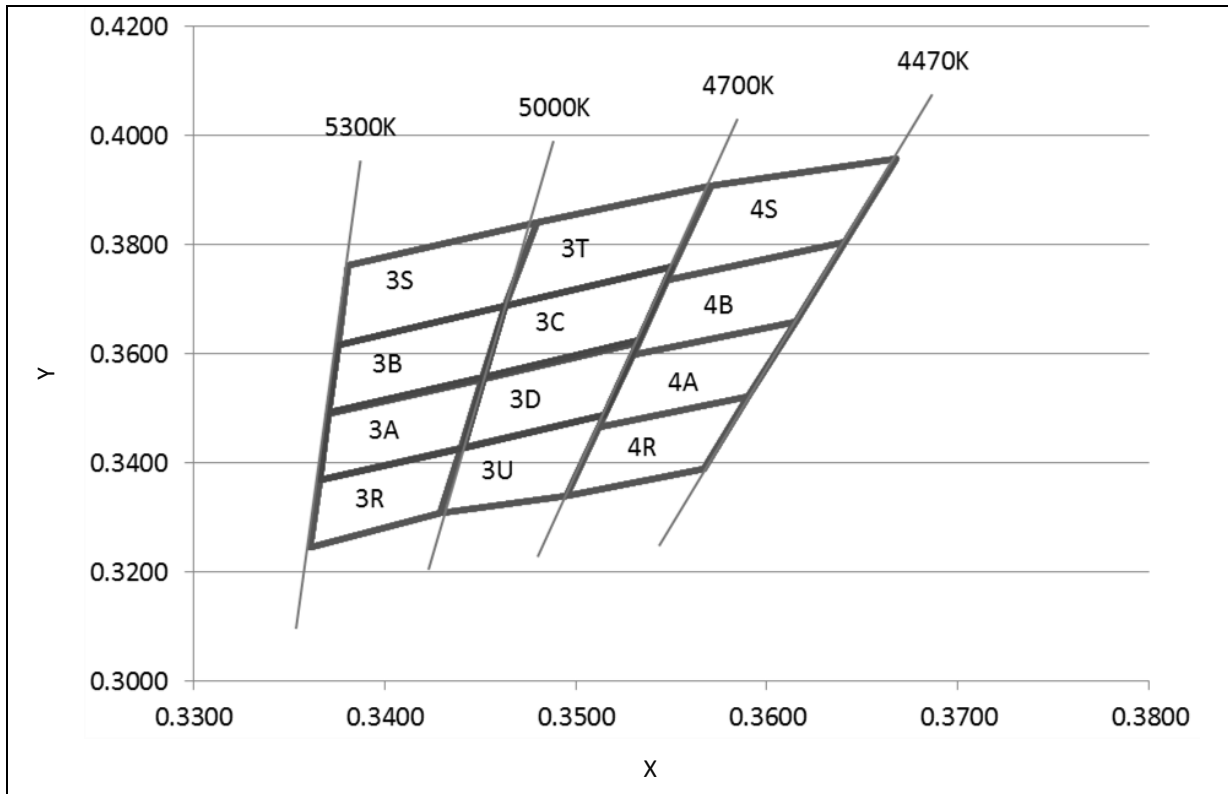
BINNING GROUPS:

 Forward Voltage Classifications ($I_F = 350\text{mA}$):

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

 Luminous Flux Classifications ($I_F = 350\text{mA}$):

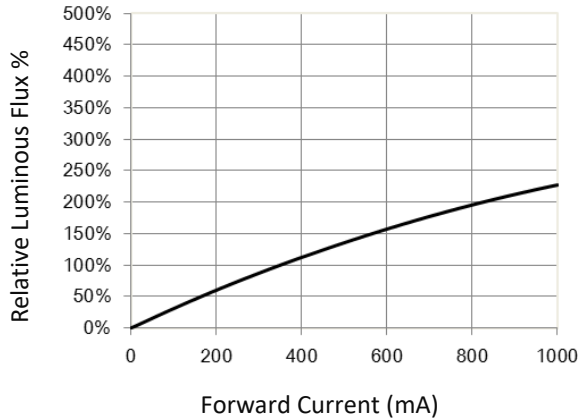
Code	Min.	Max.	Unit
W5	110	120	lm
W6	120	130	
W7	130	140	

CIE CHROMATICITY DIAGRAM:

Chromaticity Coordinates Classifications ($I_F = 350\text{mA}$):

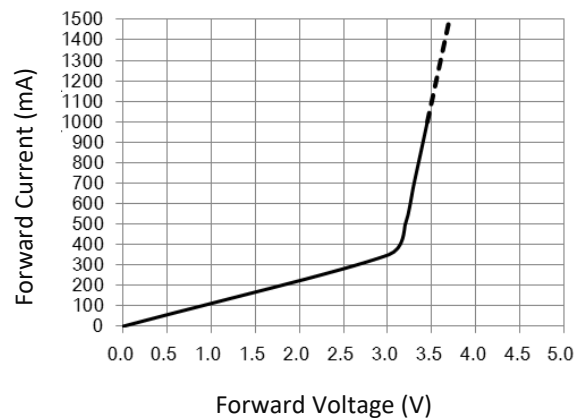
	1		2		3		4	
	X	Y	X	Y	X	Y	X	Y
3S	0.3381	0.3762	0.3480	0.3840	0.3463	0.3687	0.3376	0.3616
3B	0.3376	0.3616	0.3463	0.3687	0.3451	0.3554	0.3371	0.3490
3A	0.3371	0.3490	0.3451	0.3554	0.3440	0.3427	0.3366	0.3369
3R	0.3366	0.3369	0.3440	0.3428	0.3429	0.3307	0.3361	0.3245
3T	0.3480	0.3840	0.3571	0.3907	0.3551	0.3760	0.3463	0.3687
3C	0.3463	0.3687	0.3551	0.3760	0.3533	0.3620	0.3451	0.3554
3D	0.3451	0.3554	0.3533	0.3620	0.3515	0.3487	0.3440	0.3427
3U	0.3440	0.3428	0.3515	0.3487	0.3495	0.3339	0.3429	0.3307
4S	0.3571	0.3907	0.3668	0.3957	0.3641	0.3804	0.3548	0.3736
4B	0.3548	0.3736	0.3641	0.3804	0.3615	0.3659	0.3530	0.3597
4A	0.3530	0.3597	0.3615	0.3659	0.3590	0.3521	0.3512	0.3465
4R	0.3512	0.3465	0.3590	0.3521	0.3567	0.3389	0.3495	0.3339

ELECTRO-OPTICAL CHARACTERISTICS:

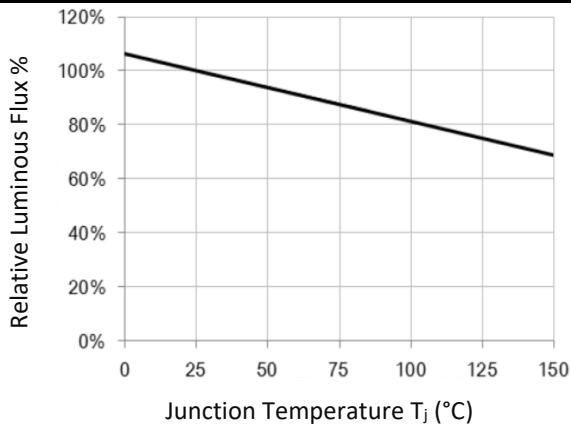
Relative Luminous Flux v.s. Forward Current



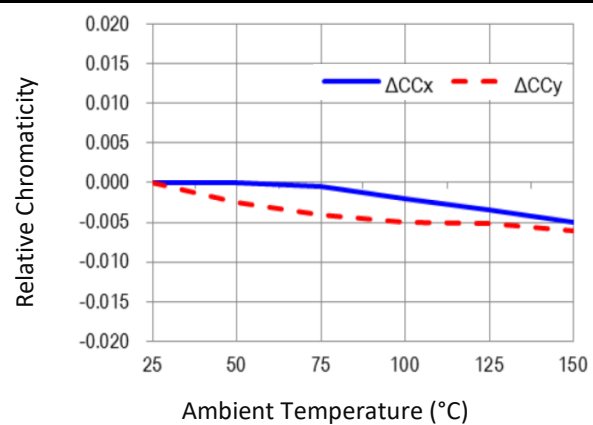
Forward Current v.s. Forward Voltage



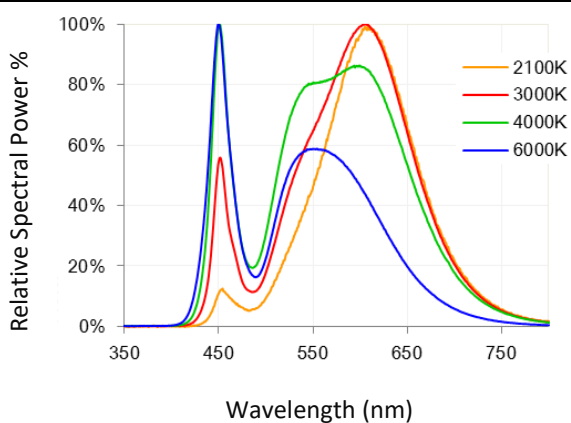
Relative Flux v.s. Junction Temperature



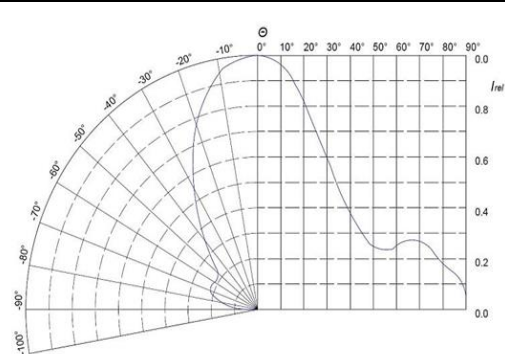
Relative Chromaticity v.s. Ambient Temperature



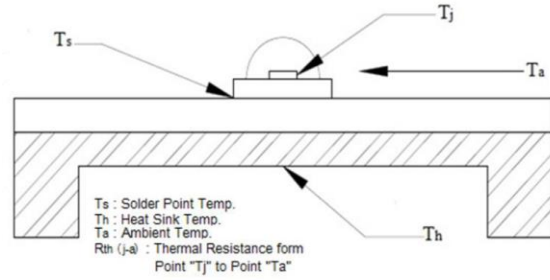
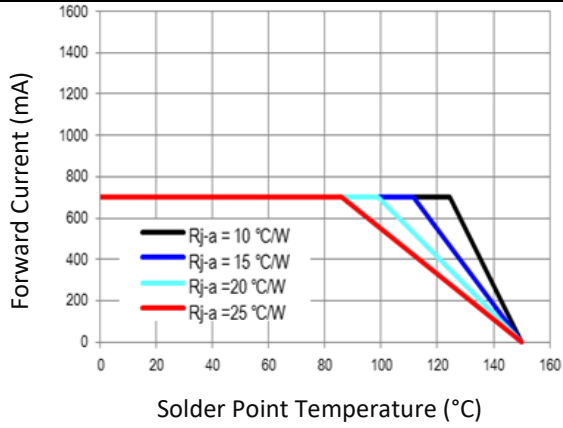
Relative Spectral Power v.s. Wavelength



Directive Radiation

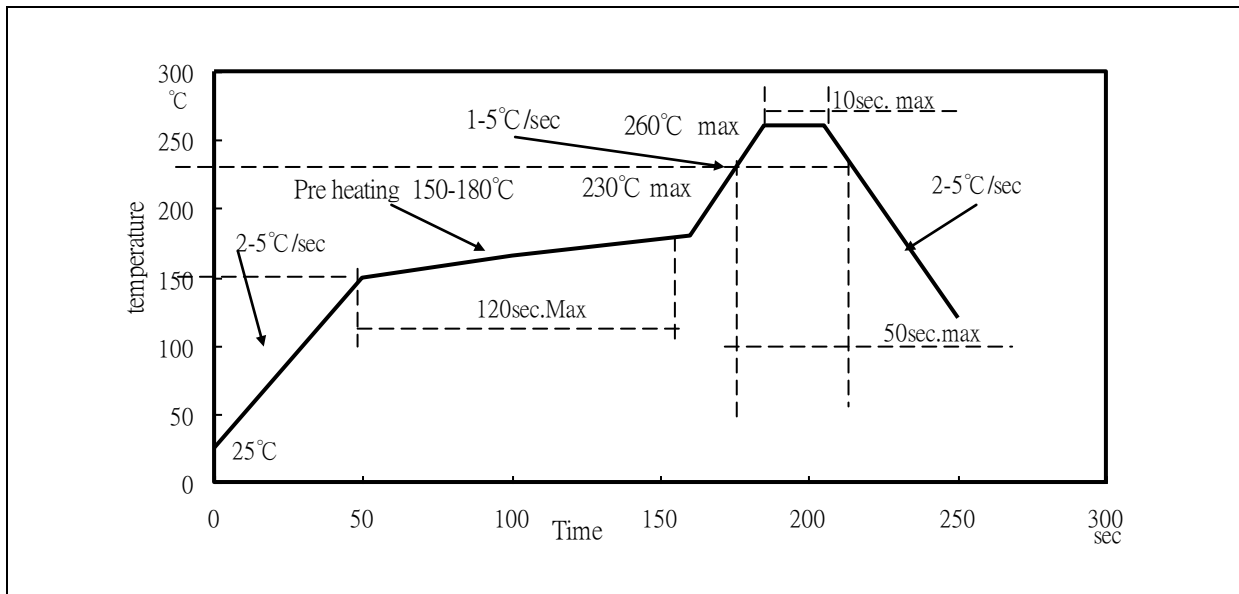


Forward Current Derating Curve



RECOMMENDED SOLDERING PROFILE:

Reflow Lead-free Solder:

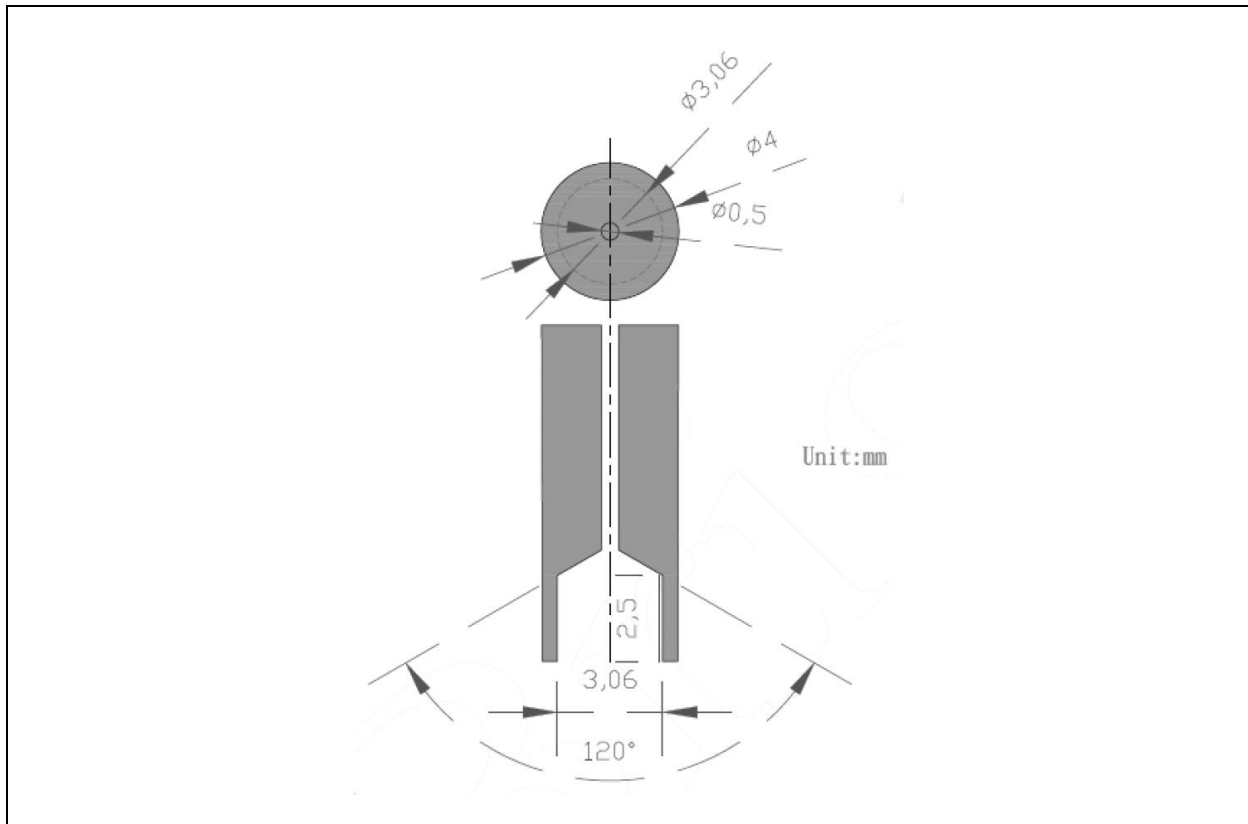


Note:

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:

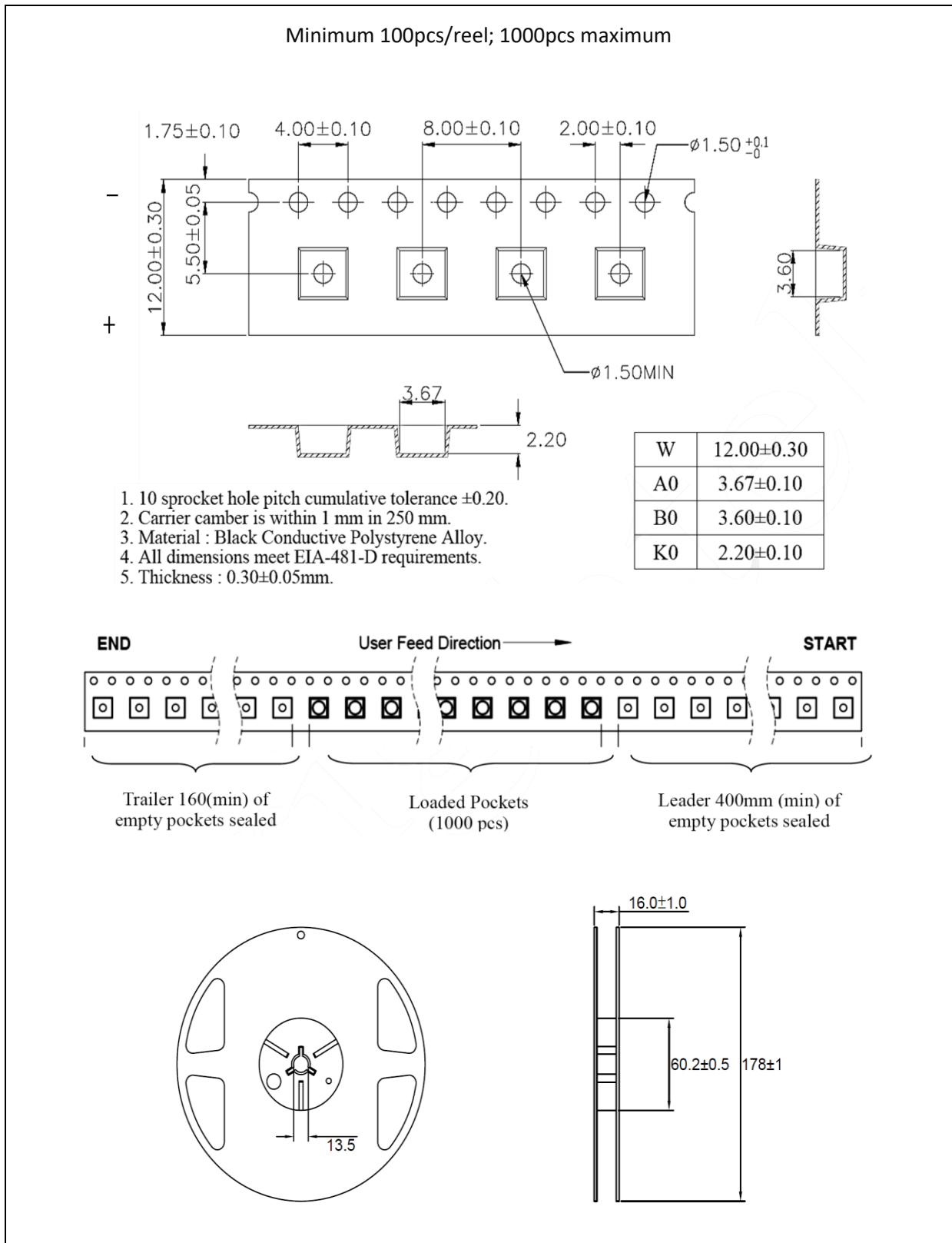
Recommended Pick & Place Nozzle:



1. All dimensions are in millimetre (mm).
2. Tolerance $\pm 0.1\text{mm}$, unless otherwise noted.

PACKING SPECIFICATION:

Reel Dimension:



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

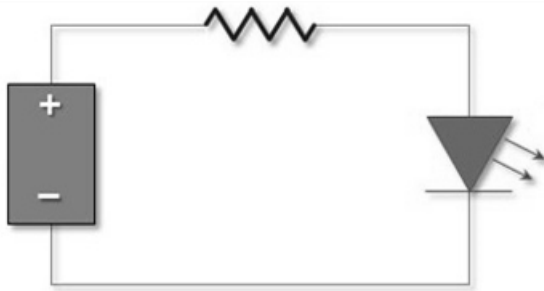
Baking:

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 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:

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