



BRIGHTTEK
BRIGHTTEK (EUROPE) LIMITED

Brighten up The World With LED!



ISO/TS 16949:2009

BS-EM ISO 14001:2004

QC 900000 IECQ HSP98

PRODUCT DATASHEET

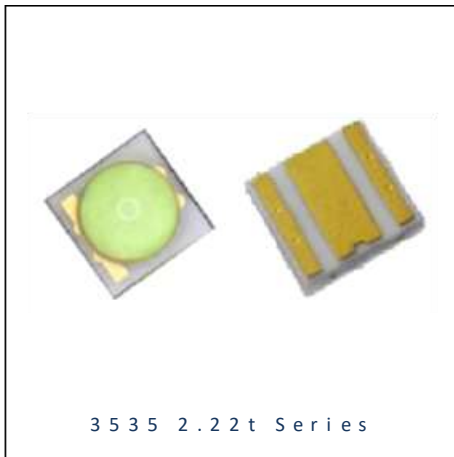


- ▶ Ceramic High Power
- ▶ 3535 2.22t Series
- ▶ Sky White Ice Blue

NOW45S30



Release Date: 25 August 2018 Version: A1.0



3535 2.22t Series



FEATURES:

- **Package:** Ceramic SMT Package with Silicon Lens
- **Forward Current:** 350~700mA
- **Forward Voltage (typ.):** 3.1V
- **Luminous Flux (typ.):** 70lm@350mA
- **Colour:** Sky White Ice Blue
- **Viewing angle:** 90°
- **Materials:**
 - Die: Phosphor-Converted InGaN
 - Resin: Silicon (Yellow Diffused)
 - L/T Finish: Au plated
- **Operating Temperature:** -40~+105°C
- **Storage Temperature:** -40~+105°C
- **Grouping parameters:**
 - Forward Voltage
 - Luminous Flux
 - CIE Chromaticity
- **Soldering methods:** Reflow Soldering
- **Preconditioning:** MSL2 according to J-STD020
- **Packing:** 12mm tape with Max.1000pcs/reel, ø180mm (7")

APPLICATIONS:

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

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
DC Forward Current	I_F	1000	mA
Pulse Forward Current	I_{PF}	1500	mA
Reverse Voltage	V_R	5	V
Reverse Current @5V	I_R	10	μ A
Junction Temperature	T_j	150	°C
Electrostatic Discharge (HBM: MIL-STD-883 C2)	ESD	2000	V
Operating Temperature	T_{OPR}	-40~+105	°C
Storage Temperature	T_{STG}	-40~+105	°C
Soldering Temperature	T_{SOL}	260	°C
Thermal Resistance - Junction to Solder Point	R_{th}	10	°C/W

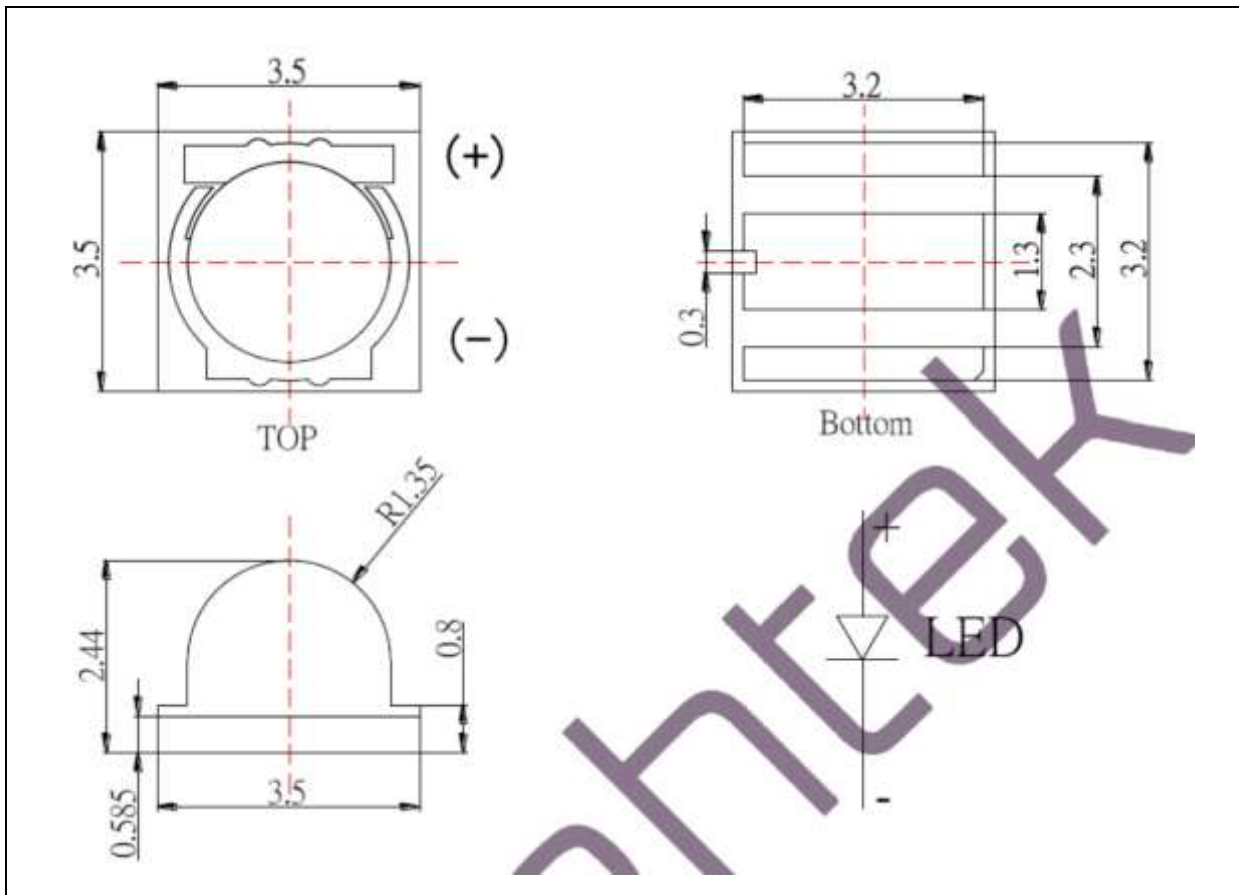
Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V_F	2.8	---	3.4	V	$I_F=350$ mA
Luminous Flux	Φ_V	55	---	80	lm	$I_F=350$ mA
Chromaticity Coordinates	X	0.1405	---	0.2062	---	$I_F=350$ mA
	Y	0.1452	---	0.2154		
Viewing Angle	$2\theta_{1/2}$	---	90	---	deg	$I_F=350$ mA

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

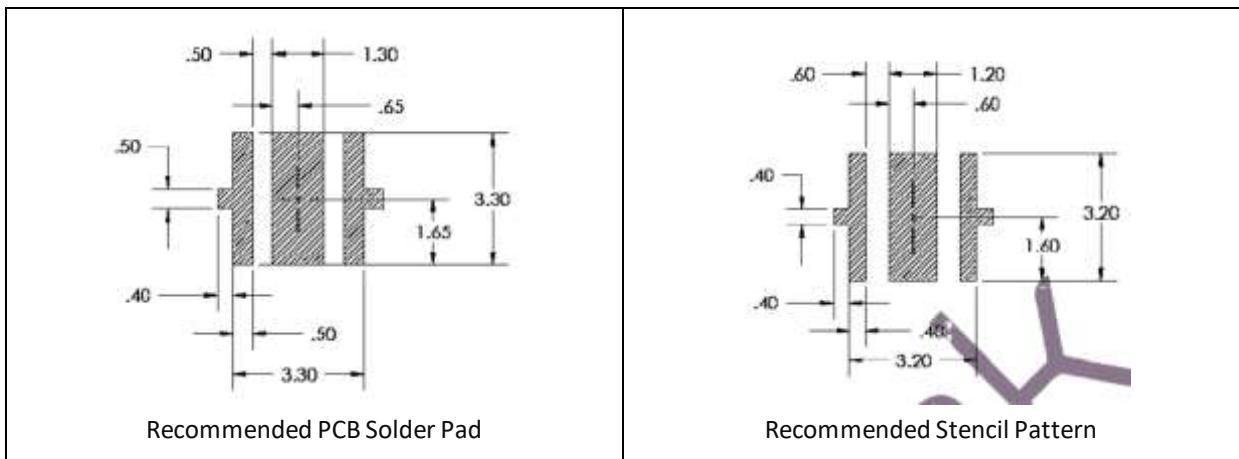
OUTLINE DIMENSION:

Package Dimension:



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

Recommended Soldering Pad Dimension:



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

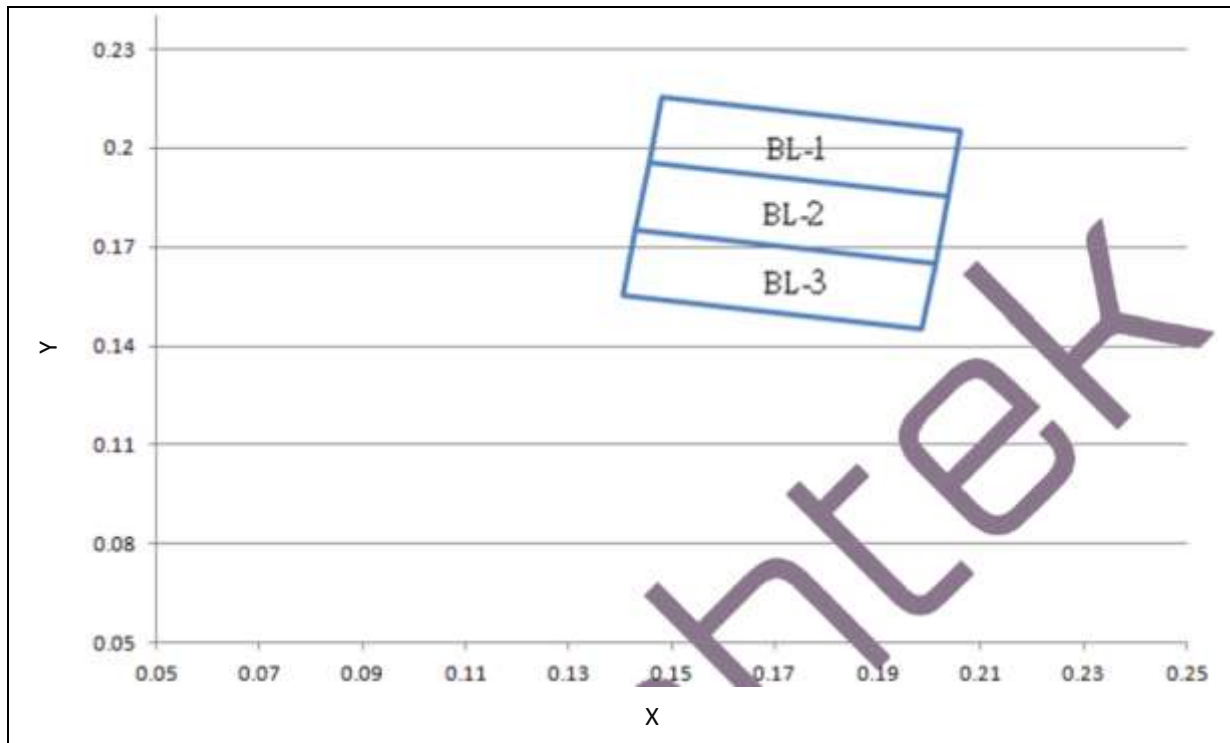
BINNING GROUPS:

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

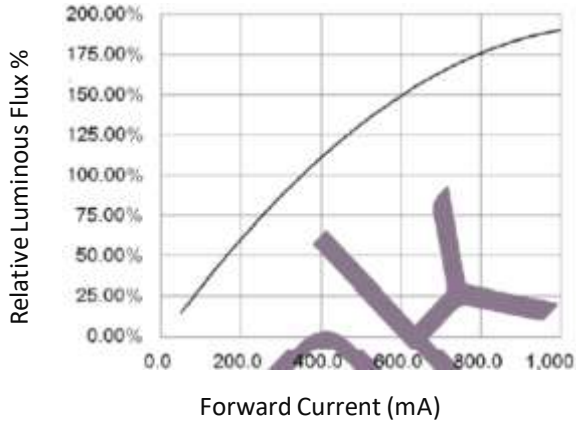
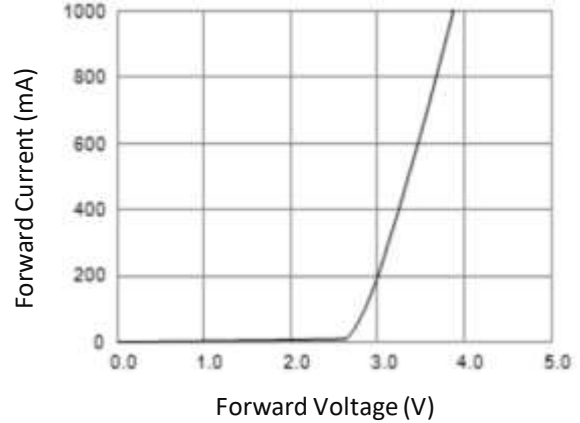
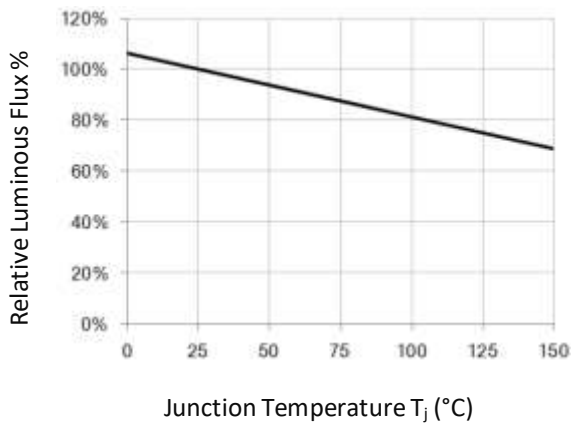
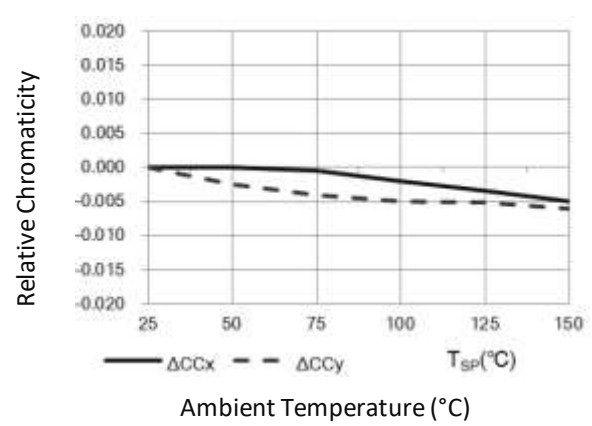
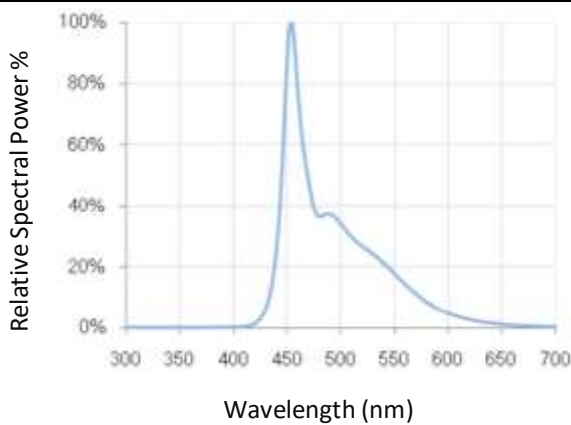
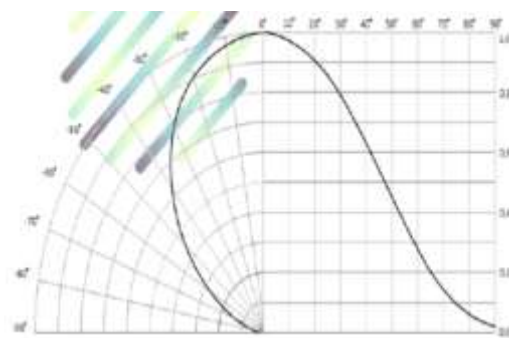
Code	Min.	Max.	Unit
V2830	2.8	3.0	V
V3032	3.0	3.2	
V3234	3.2	3.4	

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

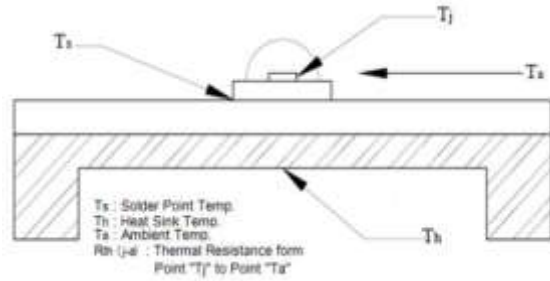
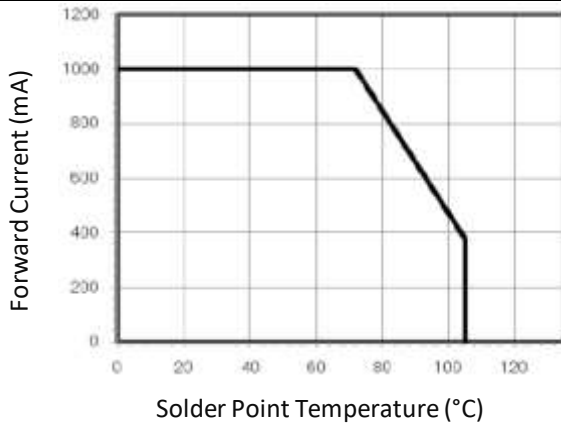
Code	Min.	Max.	Unit
B26	55	60	lm
B27	60	65	
B28	65	70	
B29	70	75	
B30	75	80	

CIE CHROMATICITY DIAGRAM:

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

	1		2		3		4	
	X	Y	X	Y	X	Y	X	Y
BL-1	0.1482	0.2154	0.2062	0.2052	0.2036	0.1852	0.1456	0.1954
BL-2	0.1456	0.1954	0.2036	0.1852	0.2011	0.1652	0.1431	0.1754
BL-3	0.1431	0.1754	0.2011	0.1652	0.1985	0.1452	0.1405	0.1554

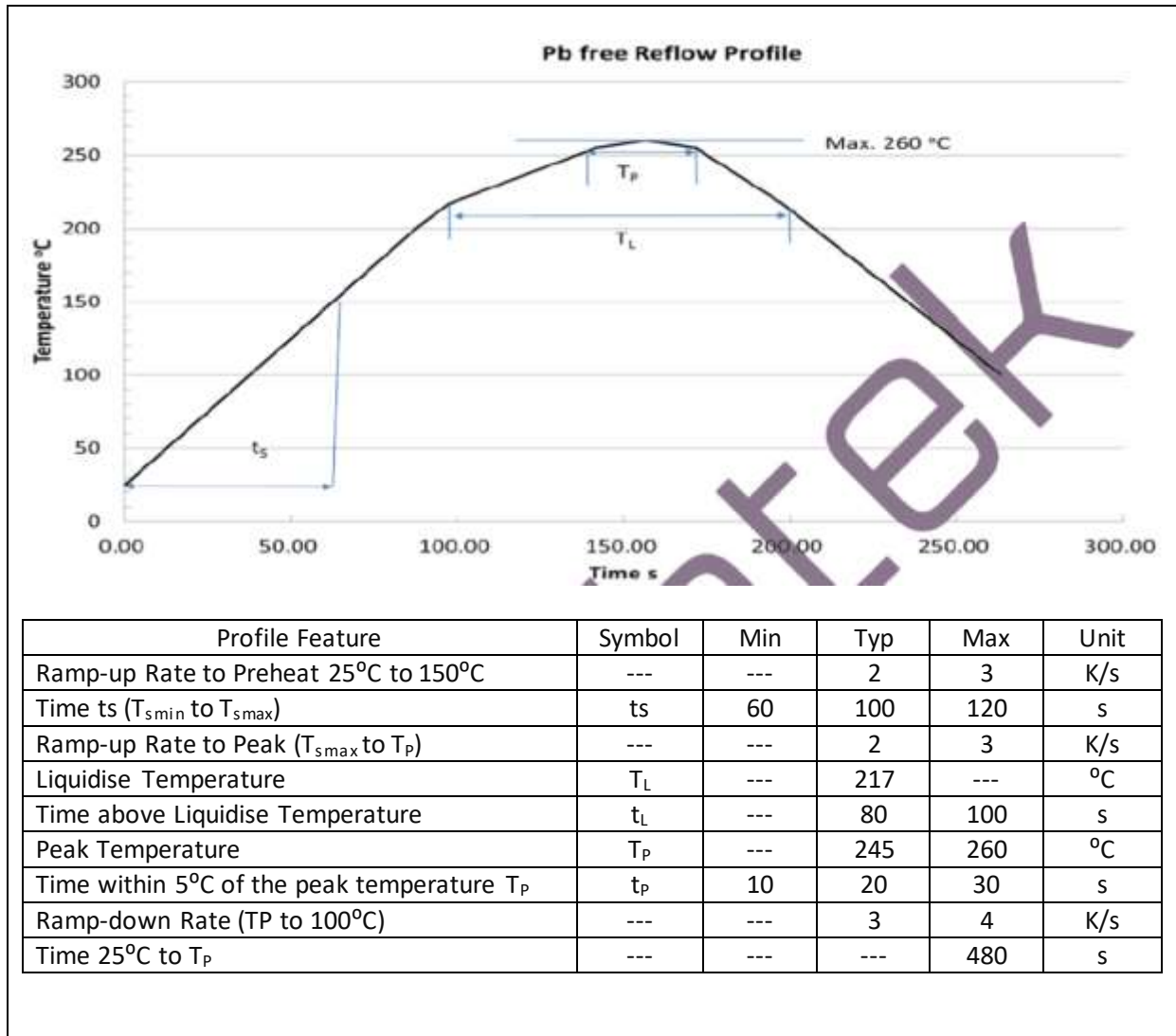
ELECTRO-OPTICAL CHARACTERISTICS:
Relative Luminous Flux v.s. Forward Current

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:

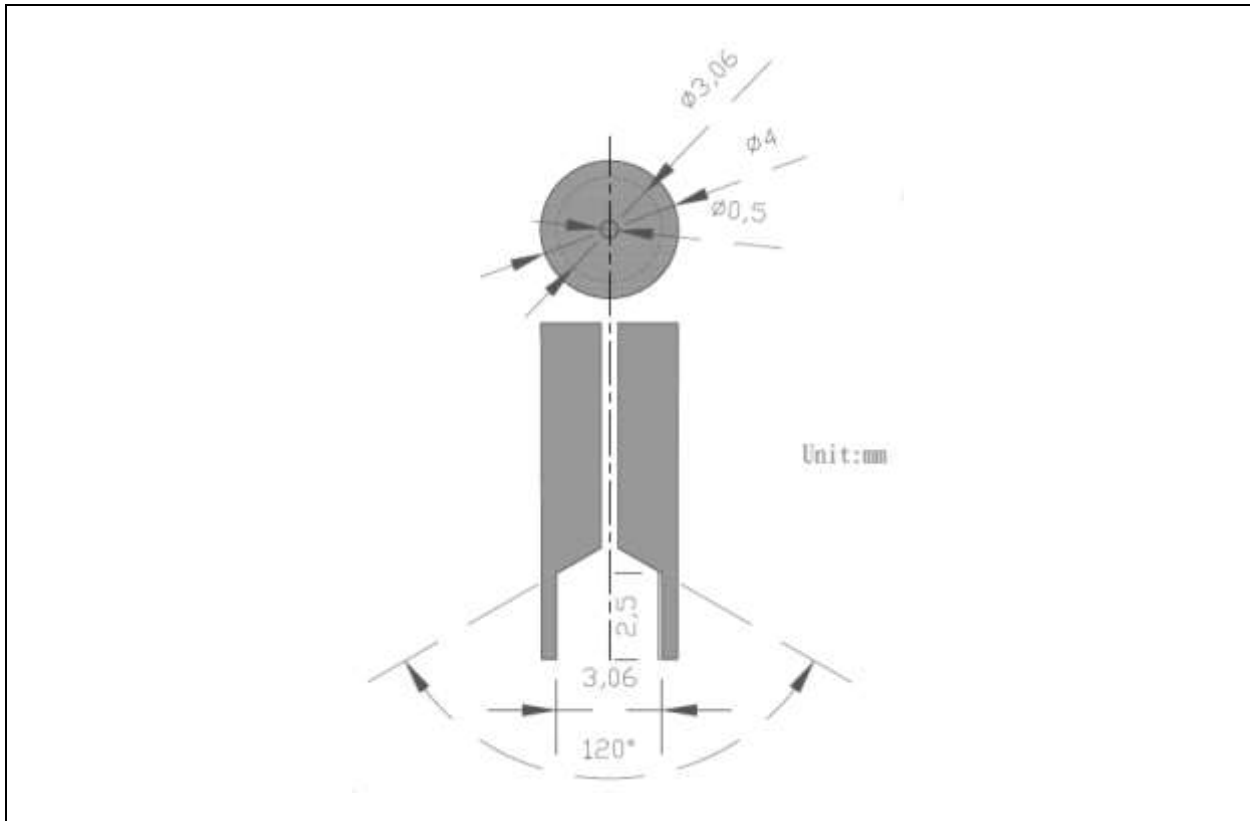


Note:

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:

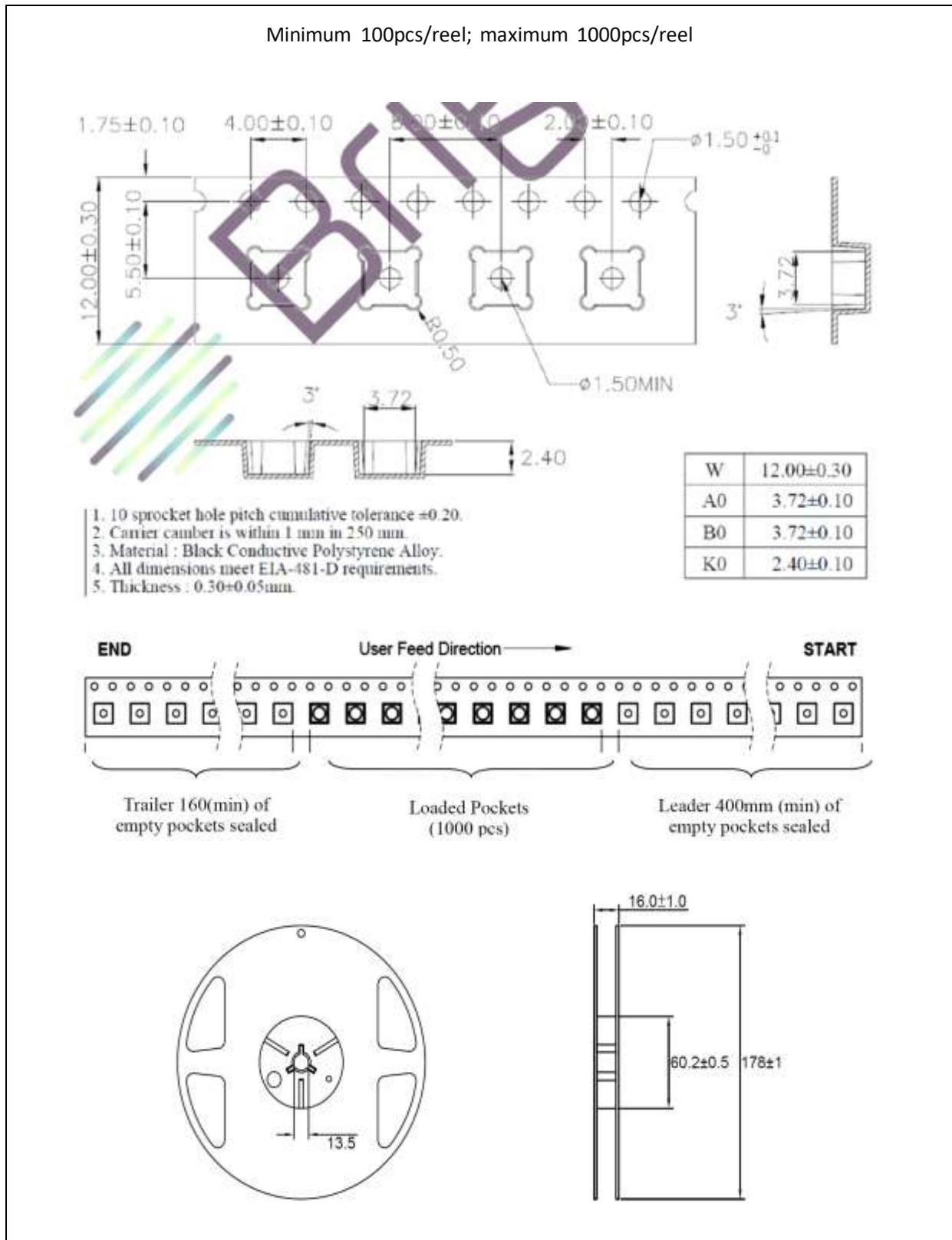
Recommended Pick & Place Nozzle:



1. All dimensions are in millimetre (mm).
2. Tolerance ± 0.1 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 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 and apply baking at 60°C±5°C for 15hrs before use.

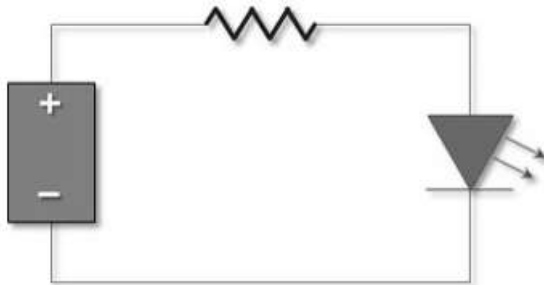
Baking:

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 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-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	25/08/2018	Datasheet set-up.