



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 Series
- ▶ Infrared (730nm)

PRELIMINARY
N0F29S35



Release Date: 28 August 2017 Version: A1.0



3535 2.0t Series

RoHS
 Compliant



FEATURES:

- **Package:** Ceramic SMT Package with Silicon Lens
- **Forward Current:** 350~700mA
- **Forward Voltage (typ.):** 2.0V
- **Radiant Power (typ.):** 250mW@350mA
- **Colour:** Infrared (IR)
- **Peak Wavelength:** 720-750nm
- **Viewing angle:** 120°
- **Materials:**
 - Die: AlGaInP
 - Resin: Silicon (Water Clear)
 - L/T Finish: Ag plated
- **Operating Temperature:** -40~+85°C
- **Storage Temperature:** -40~+100°C
- **Grouping parameters:**
 - Forward Voltage
 - Radiant Power
 - Peak Wavelength
- **Soldering methods:** IR Reflow
- **Preconditioning:** MSL2 according to J-STD020
- **Packing:** 12mm tape with Min. 100pcs /reel, ø180mm (7")

APPLICATIONS:

- Security Camera
- Motion Detection
- Night Viewer

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
DC Forward Current	I _F	700	mA
Reverse Voltage	V _R	5	V
Reverse Current @5V	I _R	10	μA
Electrostatic Discharge (HBM: MIL-STD-883 C 2)	ESD	2000	V
Operating Temperature	T _{OPR}	-40~+85	°C
Storage Temperature	T _{STG}	-40~+100	°C
Soldering Temperature	T _{SOL}	260	°C

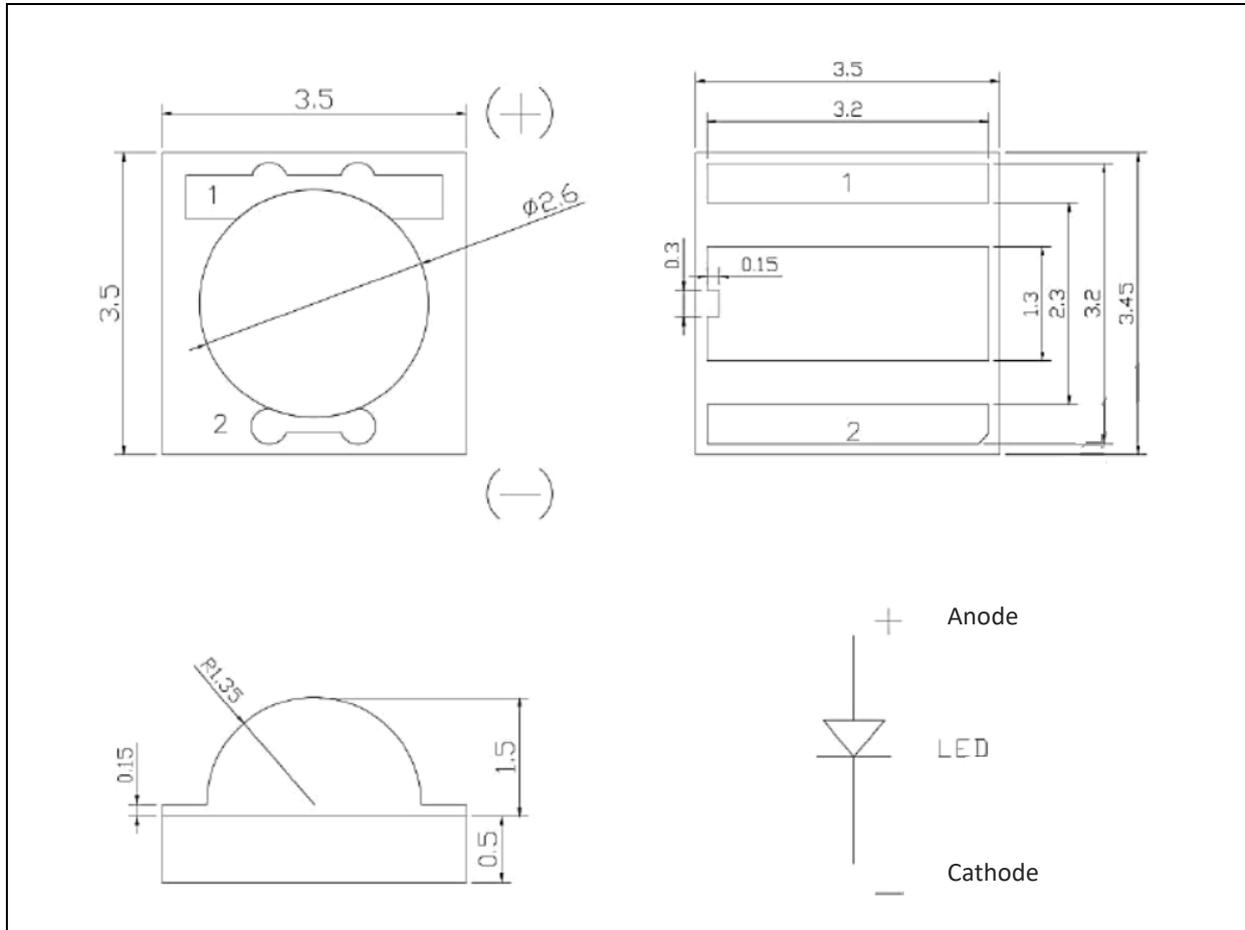
Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V _F	1.6	---	2.4	V	I _F =350mA
Radiant Power	P _O	---	250	---	mW	I _F =350mA
Dominant Wavelength	λ _P	720	---	750	nm	I _F =350mA
Viewing Angle	2θ _{1/2}	---	120	---	deg	I _F =350mA

1. Radiant Power (P_O) ±7%, Forward Voltage (V_F) ±0.05V, Viewing angle(2θ_{1/2}) ±10°

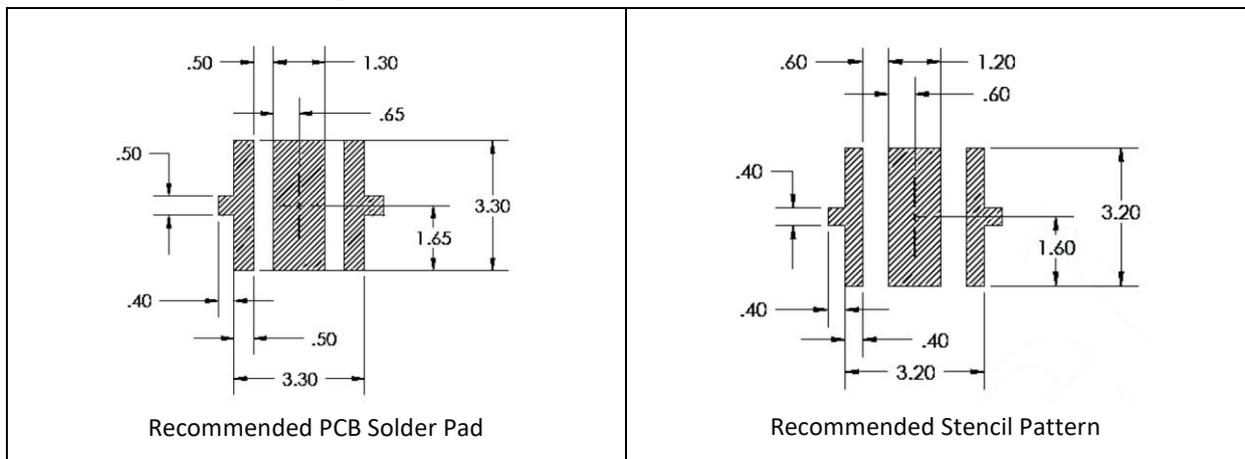
OUTLINE DIMENSION:

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

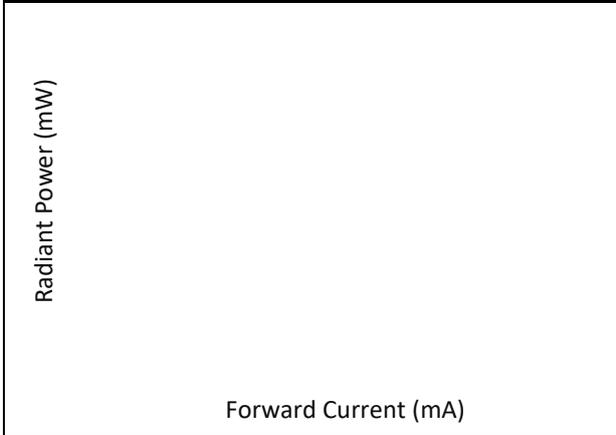
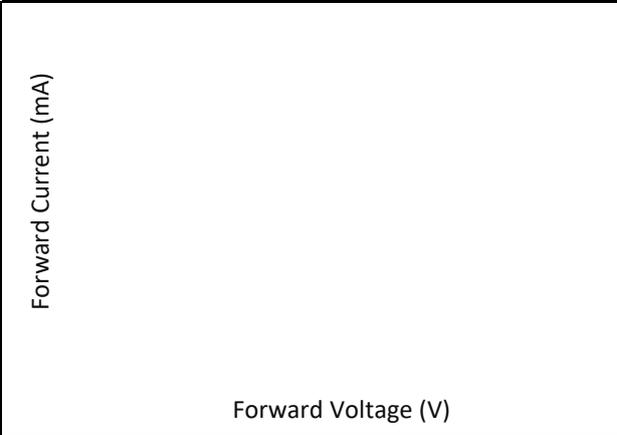
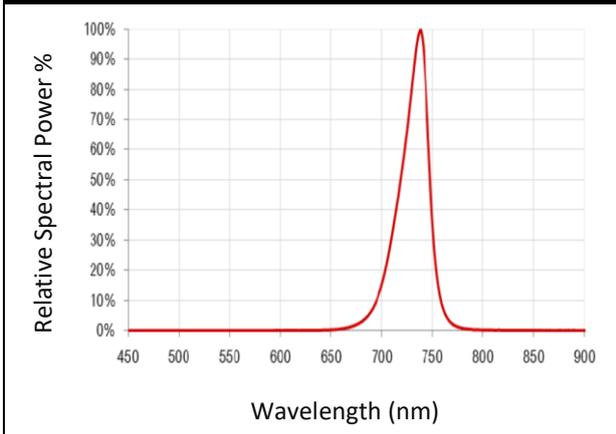
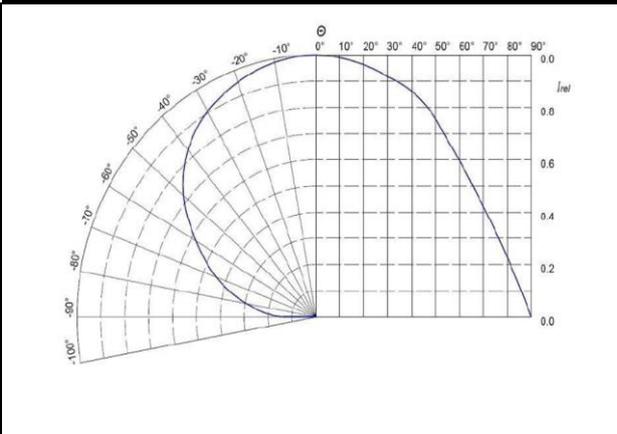
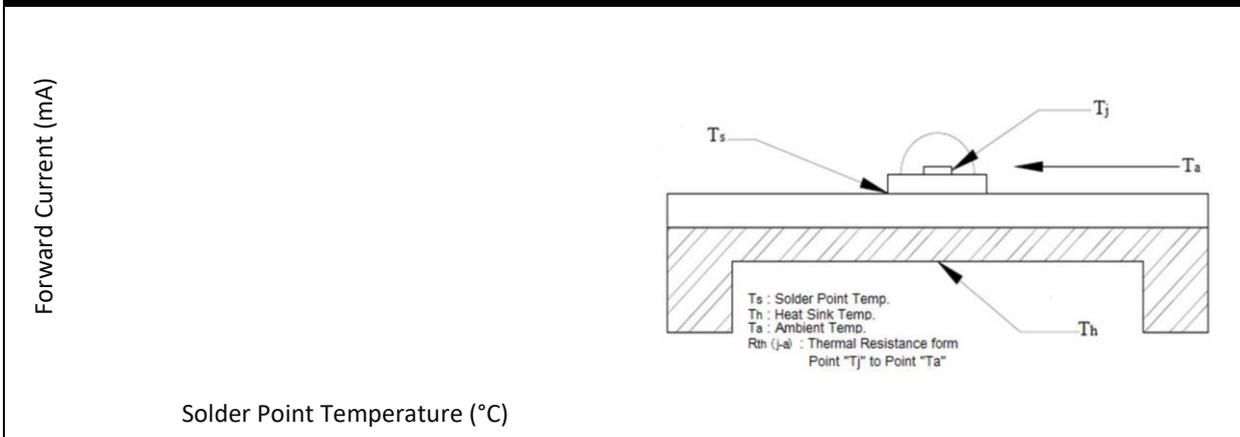
Code	Min.	Max.	Unit
V1618	1.6	1.8	V
V1820	1.8	2.0	
V2022	2.0	2.2	
V2224	2.2	2.4	

 Radiant Power Classifications ($I_F = 350\text{mA}$):

Code	Min.	Max.	Unit
P	100	350	mW

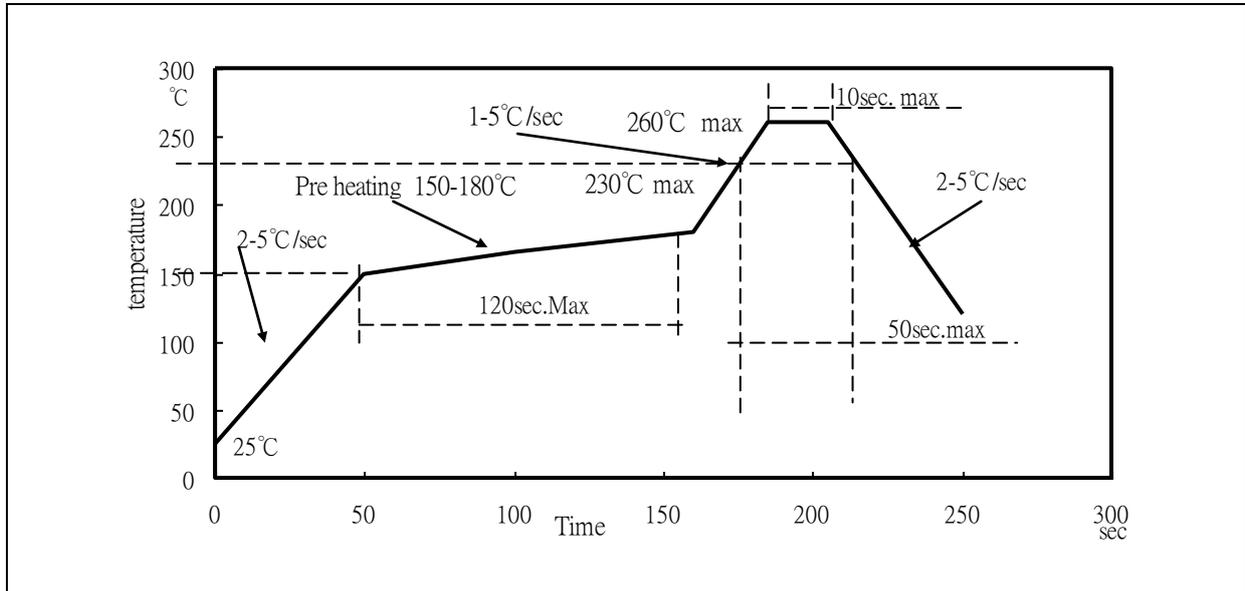
 Peak Wavelength Classifications ($I_F = 350\text{mA}$):

Code	Min.	Max.	Unit
IR1	720	750	nm

ELECTRO-OPTICAL CHARACTERISTICS:
Radiant Power Flux v.s. Forward Current

Forward Current v.s. Forward Voltage

Relative Spectral Power v.s. Wavelength

Directive Radiation

Forward Current Derating Curve


RECOMMENDED SOLDERING PROFILE:

Reflow Lead-free Solder:

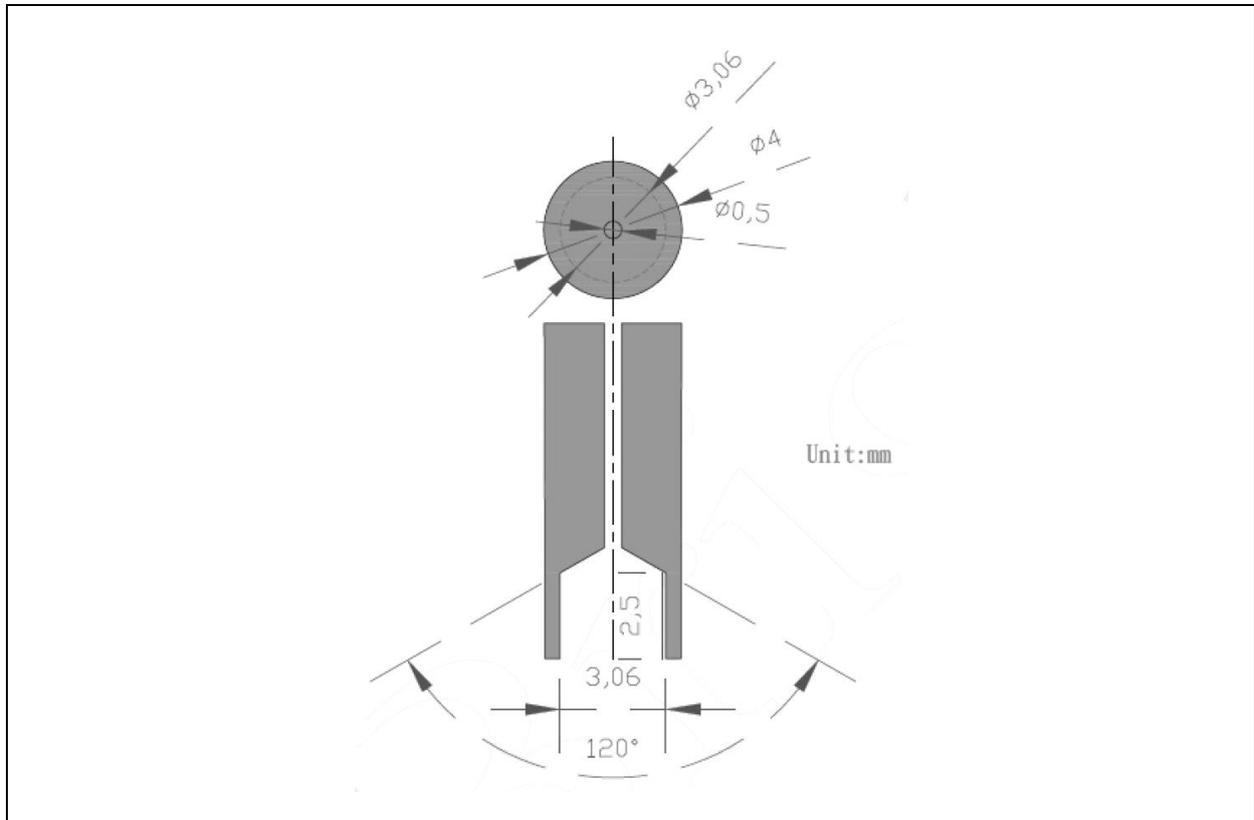


Note:

1. Maximum reflow soldering: 3 times.
2. Before, during, and after soldering, should not apply stress on the components and PCB board.

RECOMMENDED NOZZLE FOR SMT:

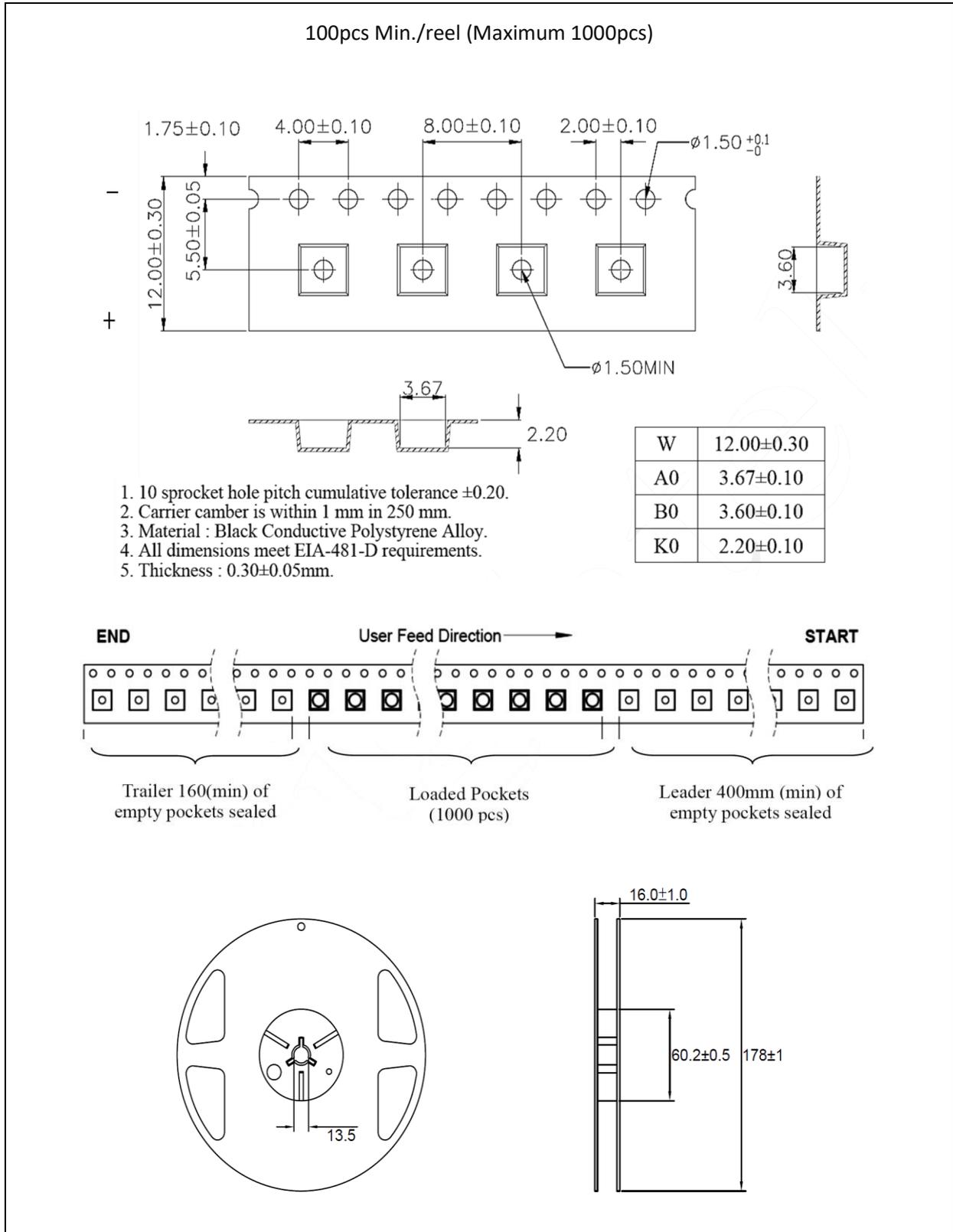
Recommended Pick & Place Nozzle:



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:

- 70±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	28/08/2017	Datasheet set-up.