



**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



- ▶ SMC High Power
- ▶ 3030 SMC 3.0t Series
- ▶ Red (616nm)

NOR43S20



Release Date: 06 April 2018 Version: A1.0



### 3030 SMC Series

**RoHS Compliant**



#### FEATURES:

- **Package:** TOP View SMC Package with Silicon Lens
- **Forward Current:** 70mA
- **Forward Voltage (typ.):** 2.3V
- **Luminous Flux (typ.):** 14lm@70mA
- **Colour:** Red
- **Wavelength:** 616nm
- **Viewing angle:** 30°
- **Materials:**
  - Die: AlInGaP
  - Resin: Silicon (Water Clear)
  - L/T Finish: Ag plated
- **Operating Temperature:** -40~+80°C
- **Storage Temperature:** -40~+100°C
- **Grouping parameters:**
  - Forward Voltage
  - Luminous Flux
  - Dominant Wavelength
- **Soldering methods:** IR Reflow
- **Preconditioning:** MSL2 according to J-STD020
- **Packing:** 12mm tape with Max.500pcs/reel, ø180mm (7")

#### APPLICATIONS:

- Decorative Lighting
- Portable Lighting
- Outdoor Lighting
- Commercial Lighting
- Architectural Lighting
- Industrial Lighting

## CHARACTERISTICS:

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

Parameter	Symbol	Ratings	Unit
DC Forward Current	I <sub>F</sub>	100	mA
Reverse Voltage	V <sub>R</sub>	5	V
Reverse Current @5V	I <sub>R</sub>	10	μA
Junction Temperature	T <sub>J</sub>	125	°C
Electrostatic Discharge (HBM: MIL-STD-883 C2)	ESD	2000	V
Operating Temperature	T <sub>OPR</sub>	-40~+80	°C
Storage Temperature	T <sub>STG</sub>	-40~+100	°C
Soldering Temperature	T <sub>SOL</sub>	260	°C

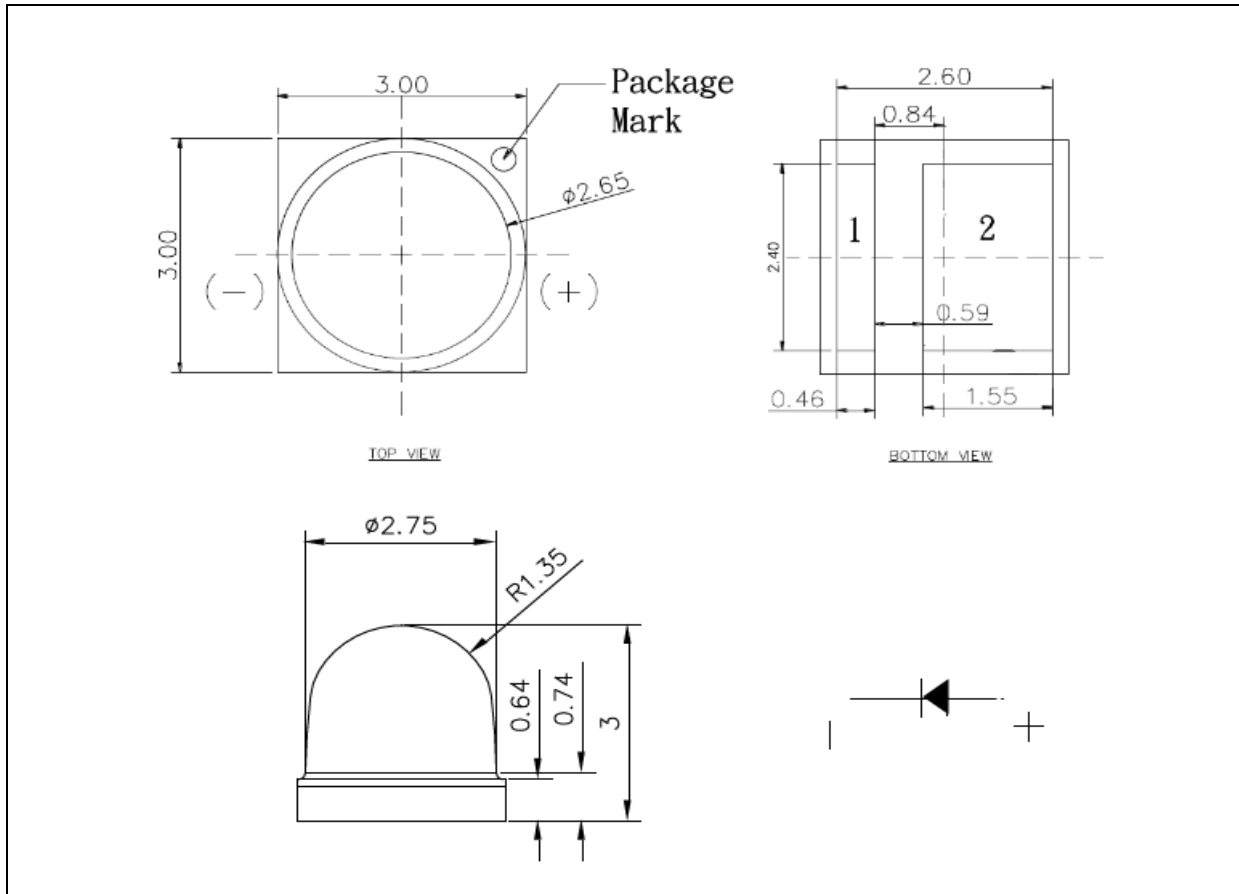
### Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V <sub>F</sub>	2.0	---	2.6	V	I <sub>F</sub> =70mA
Luminous Flux	Φ <sub>V</sub>	10	---	18	lm	I <sub>F</sub> =70mA
Dominant Wavelength	λ <sub>D</sub>	612	---	620	nm	I <sub>F</sub> =70mA
Viewing Angle	2θ <sub>1/2</sub>	---	30	---	deg	I <sub>F</sub> =70mA

1. Luminous flux (Φ<sub>V</sub>) ±7%, Forward Voltage (V<sub>F</sub>) ±0.1V, Viewing angle(2θ<sub>1/2</sub>) ±10°

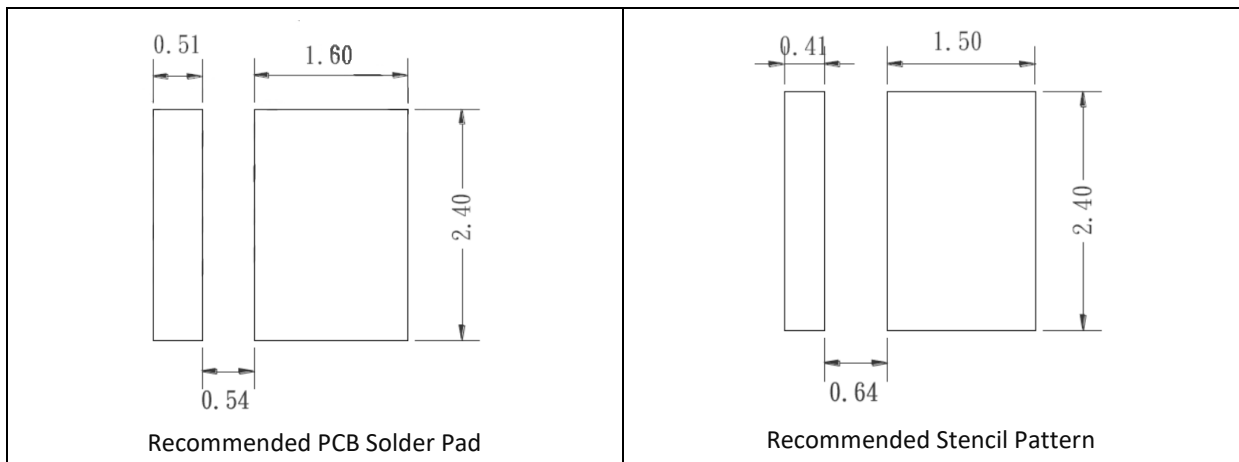
## OUTLINE DIMENSION:

Package Dimension:



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

Recommended Soldering Pad Dimension:



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

**BINNING GROUPS:**


---

 Forward Voltage Classifications ( $I_F = 70\text{mA}$ ):

Code	Min.	Max.	Unit
V2022	2.0	2.2	V
V2224	2.2	2.4	
V2426	2.4	2.6	

 Luminous Flux Classifications ( $I_F = 70\text{mA}$ ):

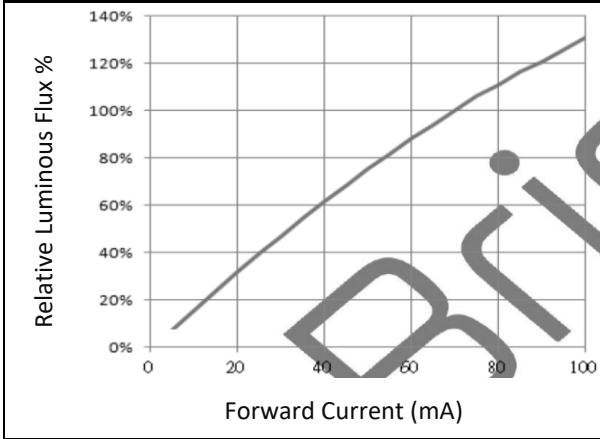
Code	Min.	Max.	Unit
B11	10	12	lm
B12	12	14	
B13	14	16	
B14	16	18	

 Dominant Wavelength Classifications ( $I_F = 70\text{mA}$ ):

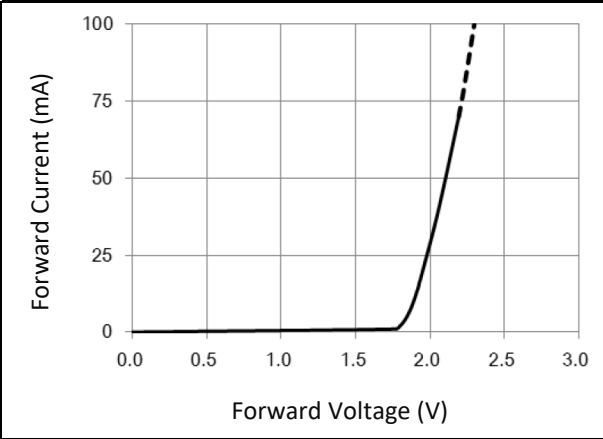
Code	Min.	Max.	Unit
R612A	612	616	nm
R616A	616	620	

## ELECTRO-OPTICAL CHARACTERISTICS:

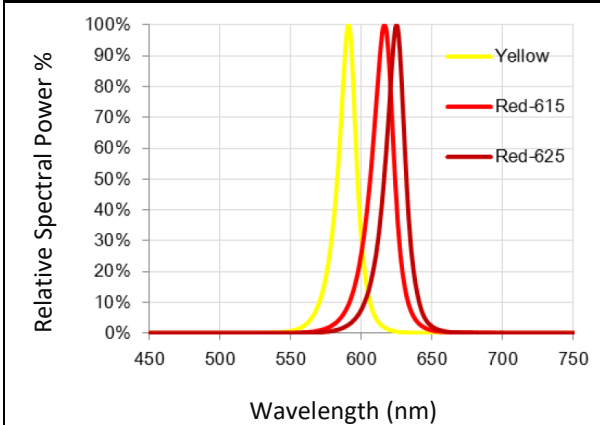
Relative Luminous Flux v.s. Forward Current



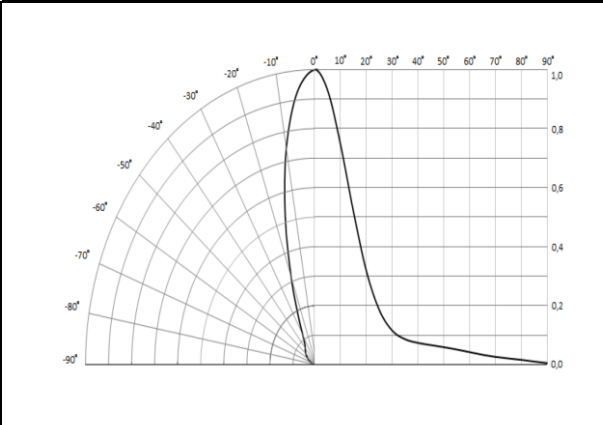
Forward Current v.s. Forward Voltage



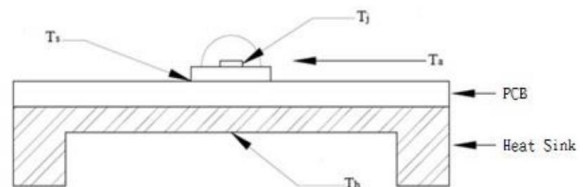
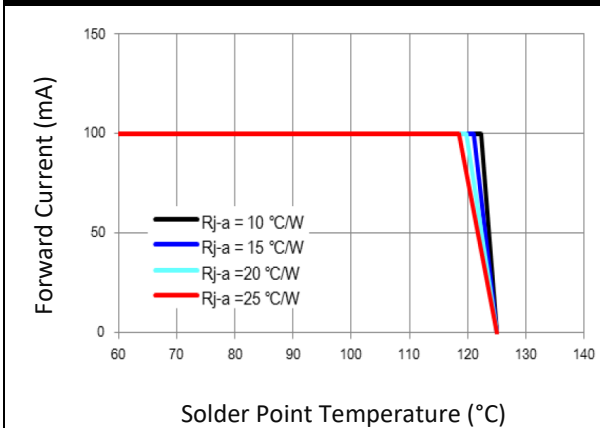
Relative Spectral Power v.s. Wavelength



Directive Radiation



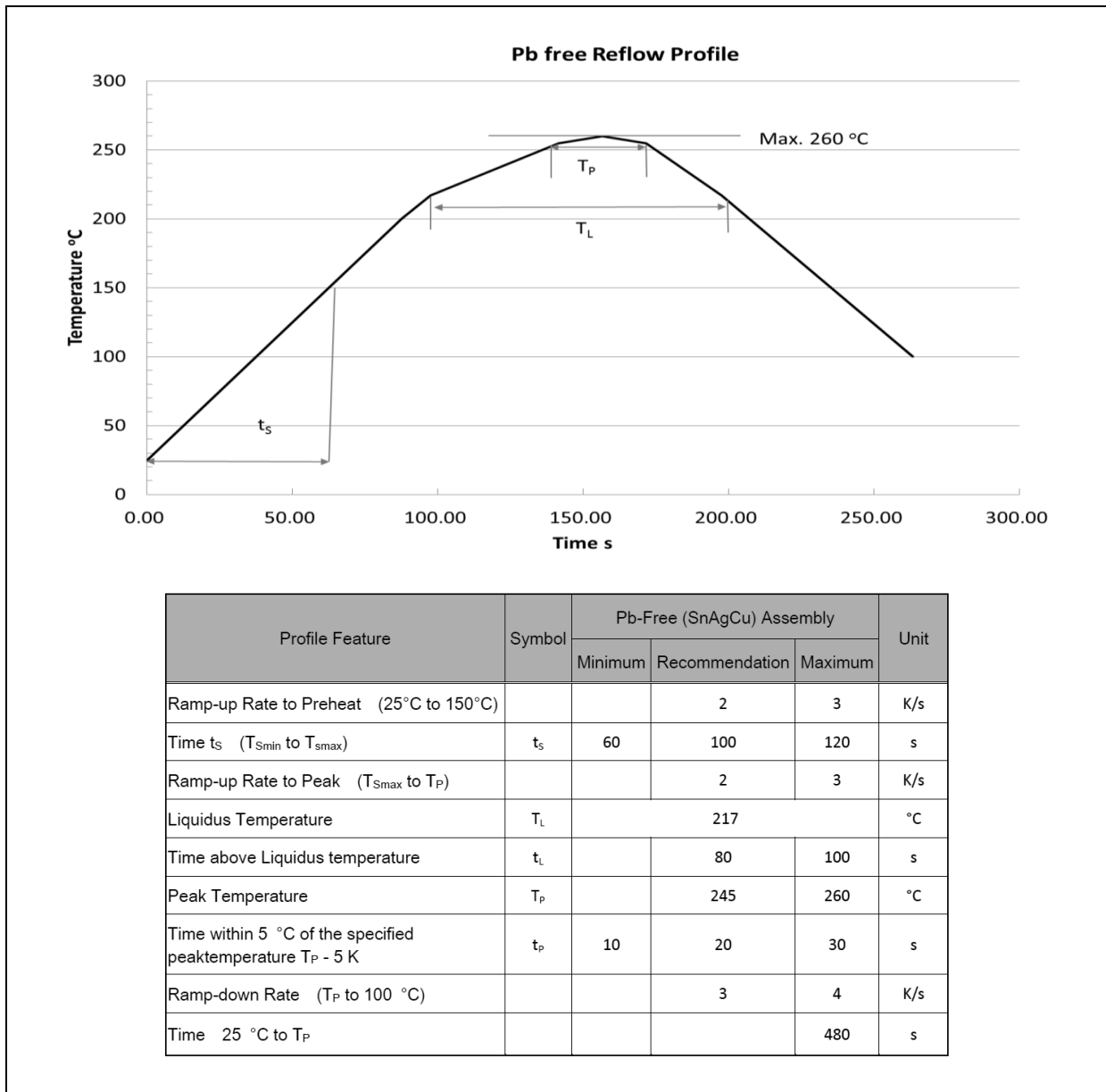
Forward Current Derating Curve



$T_j$ : LED junction Temp.  
 $T_s$ : Solder Point Temp.  
 $T_h$ : Heat Sink Temp.  
 $T_a$ : Ambient Temp.  
 $R_{j-a}$ : Thermal Resistance from  $T_j$  to  $T_a$

## RECOMMENDED SOLDERING PROFILE:

IR Reflow Lead-free Solder:

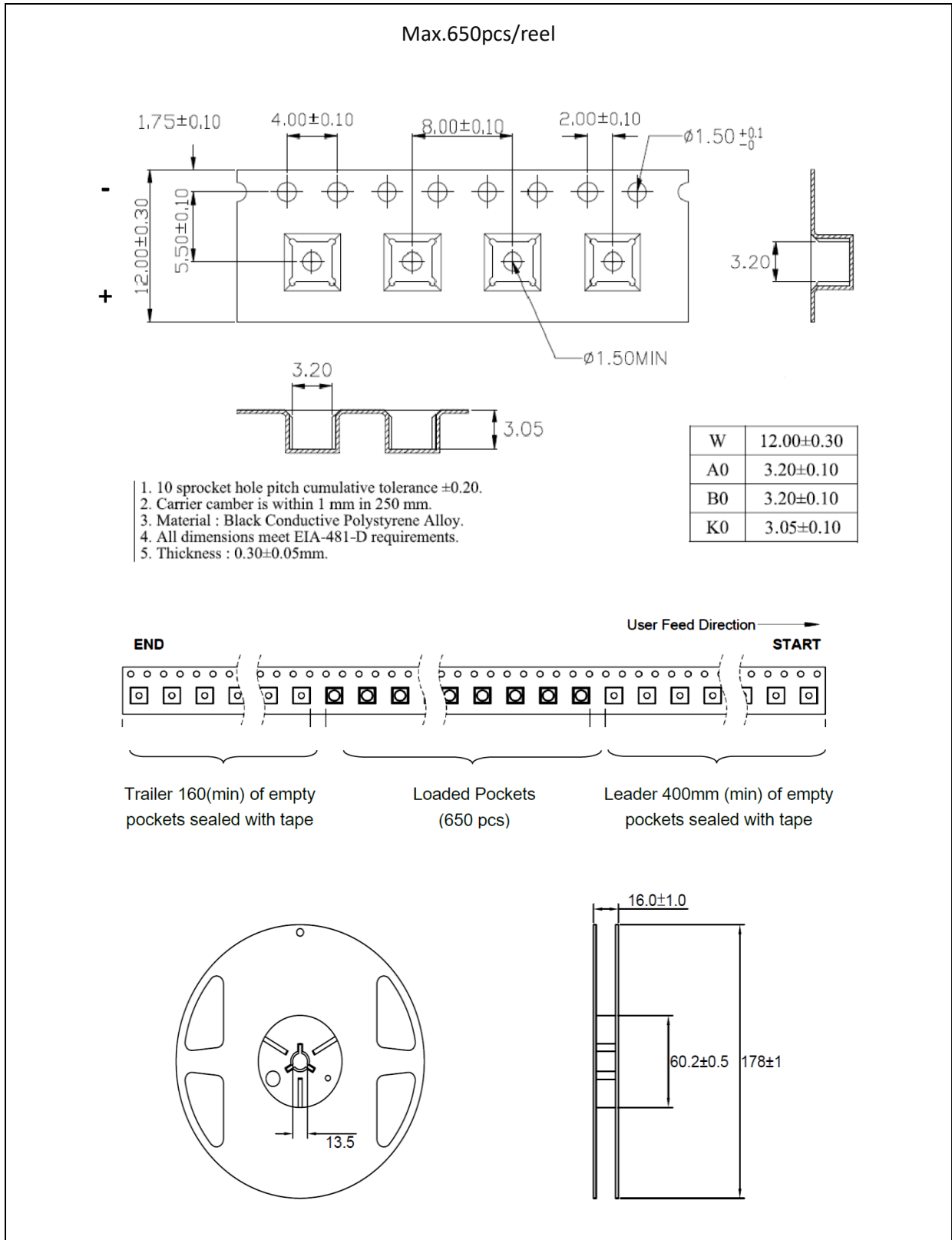


Note:

1. Maximum reflow soldering: 3 times.
2. The recommended soldering temperature is 245°C. 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:



## 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.

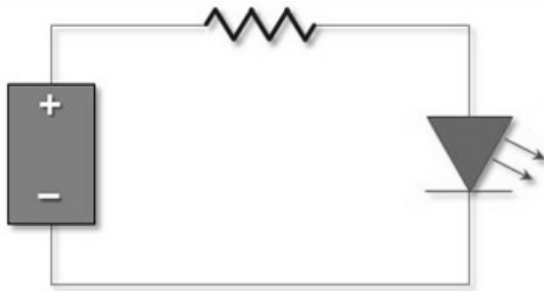
### Baking:

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-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:**

---

Version	Date	Summary of Revision
A1.0	06/04/2018	Datasheet set-up.