



**BRIGHTTEK**  
BRIGHTTEK (EUROPE) LIMITED

*Brighten up The World With LED!*



ISO/TS 16949:2009



BSI  
BS EN ISO 14001:2004



QC 800000 IECQ HSP98

## PRODUCT DATASHEET



- ▶ PCB / CHIP LED
- ▶ 0606 (1615) 0.55t
- ▶ Red / Green / Blue

Release Date: 27 May 2022 Version: A1.1

# NOM01S15-5MA



### APPLICATIONS:

- Switch Light
- 3C Application
- Decoration Lighting
- Signal Lighting
- Display

## 0606 (1615) 0.55t



### FEATURES (Red/Green/Blue):

- **Package:** PCB / CHIP Top View Common Anode RGB
- **Forward Current:** 5/5/5mA\*
- **Forward Voltage (typ.):** 2.0/3.0/2.9V
- **Luminous Flux (typ.):** 45/200/35mcd@5mA
- **Colour:** Red/True Green/Blue
- **CCT/Wavelength:** 620/530/470nm
- **Viewing angle:** 140/140/140°
- **Materials:**
  - Resin: Epoxy (Water Clear)
- **Operating Temperature:** -40~+85°C
- **Storage Temperature:** -40~+100°C
- **ESD:** 1000V (HBM)
- **Grouping parameters:**
  - Forward voltage
  - Luminous intensity
  - Dominant Wavelength
- **Soldering methods:** Reflow soldering
- **Preconditioning:** MSL 2a according to JEDEC
- **Packing:** 8mm tape with max.4000pcs/reel, ø180mm (7")

\* in order of Red/Green/Blue

## CHARACTERISTICS:

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

Parameter	Symbol	Ratings	Unit
Forward Current	I <sub>F</sub>	50/30/30*	mA
Pulse Forward Current (duty 1/10; width 0.1ms)	I <sub>MAX</sub>	100/100/100	mA
Power Dissipation	P <sub>D</sub>	100/100/100	mW
Reverse Voltage	V <sub>R</sub>	5	V
Reverse Current @5V	I <sub>R</sub>	10	μA
Electrostatic Discharge (HBM)	ESD	1000	V
Junction Temperature	T <sub>j</sub>	110	°C
Soldering Temperature	T <sub>sol</sub>	260	°C
Operating Temperature	T <sub>OPR</sub>	-40~+80	°C
Storage Temperature	T <sub>STG</sub>	-40~+100	°C

1. \* In the order of Red/Green/Blue.

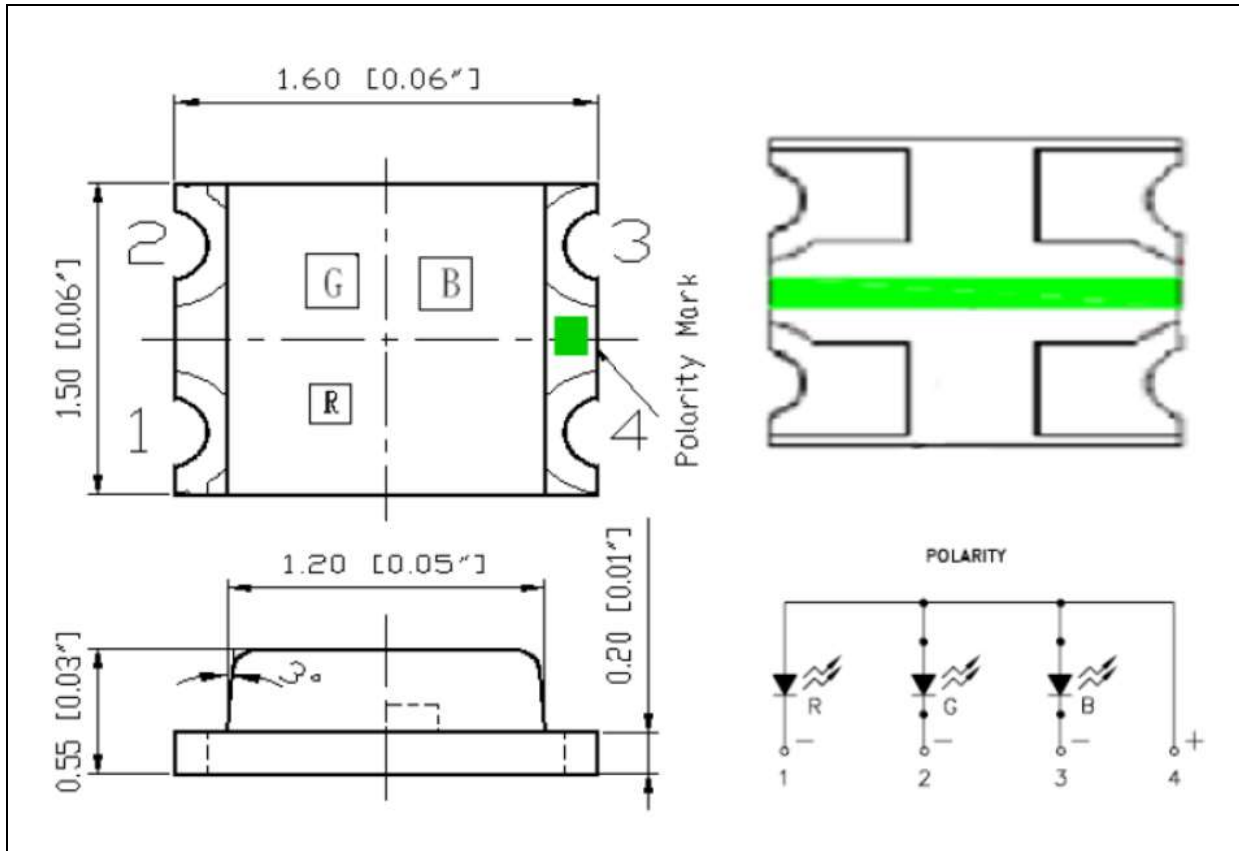
## Electrical &amp; Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Red - Forward Voltage	V <sub>F</sub>	1.7	2.0	2.5	V	I <sub>F</sub> =5mA
Red - Luminous Intensity	I <sub>v</sub>	---	45	---	mcd	I <sub>F</sub> =5mA
Red - Wavelength	W <sub>D</sub>	615	---	630	nm	I <sub>F</sub> =5mA
Green - Forward Voltage	V <sub>F</sub>	2.7	3.0	3.5	V	I <sub>F</sub> =5mA
Green - Luminous Intensity	I <sub>v</sub>	---	200	---	mcd	I <sub>F</sub> =5mA
Green - Wavelength	W <sub>D</sub>	525	---	540	nm	I <sub>F</sub> =5mA
Blue - Forward Voltage	V <sub>F</sub>	2.7	2.9	3.5	V	I <sub>F</sub> =5mA
Blue - Luminous Intensity	I <sub>v</sub>	---	35	---	mcd	I <sub>F</sub> =5mA
Blue - Wavelength	W <sub>D</sub>	460	---	475	nm	I <sub>F</sub> =5mA
Viewing Angle	2θ <sub>1/2</sub>	---	140	---	deg	I <sub>F</sub> =5mA

1. Luminous intensity (I<sub>v</sub>) ±10%, Forward Voltage (V<sub>F</sub>) ±0.1V, Viewing angle(2θ<sub>1/2</sub>) ±5%, Wavelength (λ) ±1nm

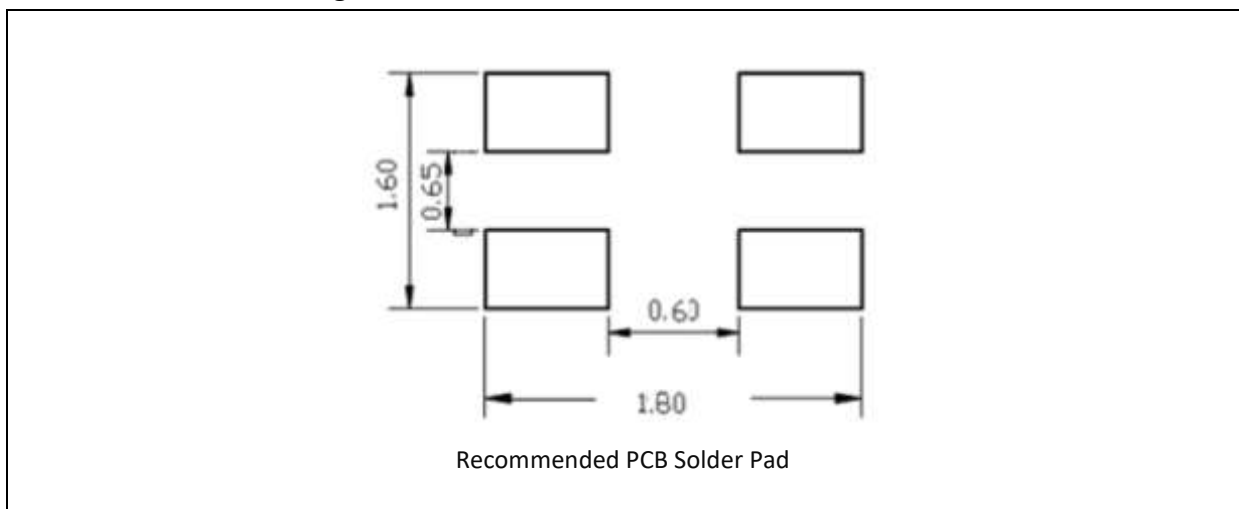
## OUTLINE DIMENSION:

Package Dimension:



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

Recommended Soldering Pad Dimension:



1. Dimensions are in millimetre (mm).
2. Tolerance  $\pm 0.1\text{mm}$  with angle tolerance  $\pm 0.5^\circ$ .

**BINNING GROUPS:**


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 Forward Voltage Classifications ( $I_F = 5\text{mA}$ ):

Code		Min.	Max.	Unit
□	Red	1.7	2.5	V
	Green	2.7	3.5	
	Blue	2.7	3.5	

 Luminous Intensity Classifications ( $I_F = 5\text{mA}$ ):

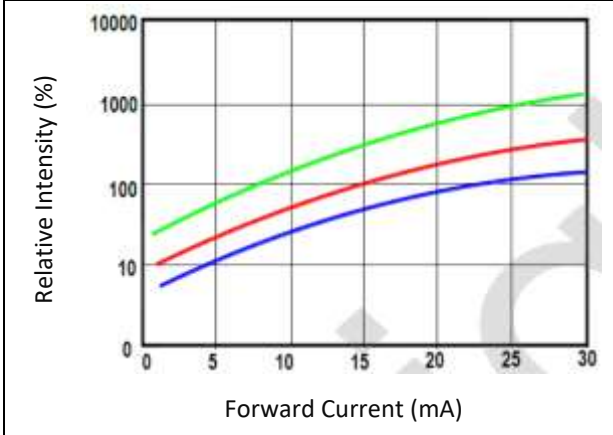
Code		Min.	Max.	Unit
Red	2	30	36	mcd
	3	36	44	
	4	44	53	
	5	53	62.5	
Green	3	140	170	mcd
	4	170	205	
	5	205	245	
	6	245	295	
Blue	1	25	30	mcd
	2	30	35	
	3	35	40	
	4	40	45	

 Wavelength Classifications ( $I_F = 5\text{mA}$ ):

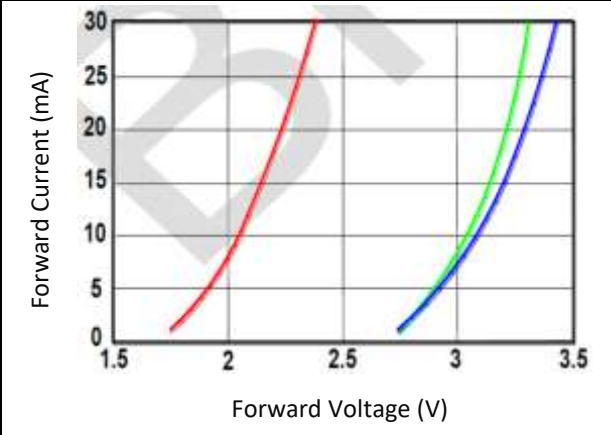
Code		Min.	Max.	Unit
Red	2	615	620	nm
	3	620	625	
	4	625	630	
Green	3	525	530	nm
	4	530	535	
	5	535	540	
Blue	2	460	465	nm
	3	465	470	
	4	470	475	

## ELECTRO-OPTICAL CHARACTERISTICS:

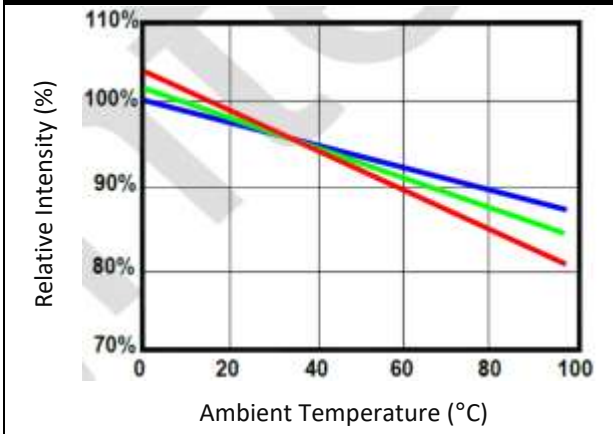
Relative Intensity v.s. Forward Current



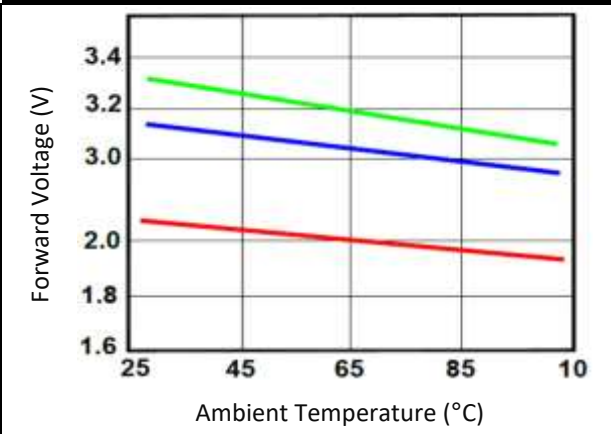
Forward Current v.s. Forward Voltage



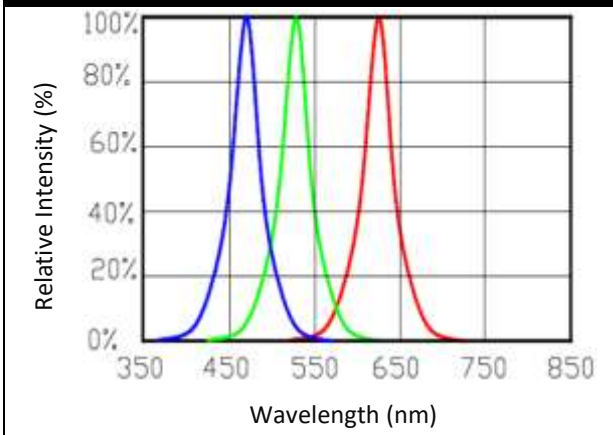
Relative Intensity v.s. Ambient Temperature



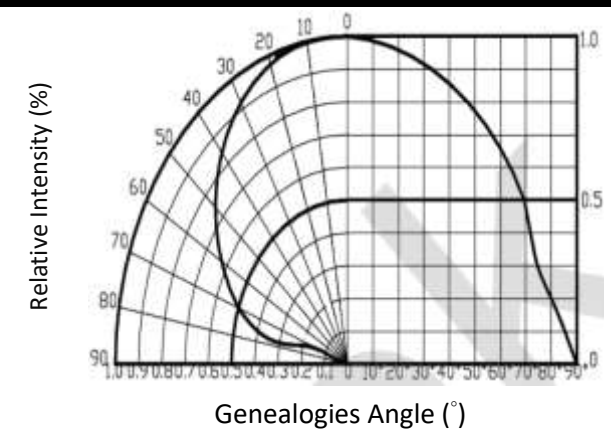
Forward Voltage v.s. Ambient Temperature



Relative Spectral Distribution

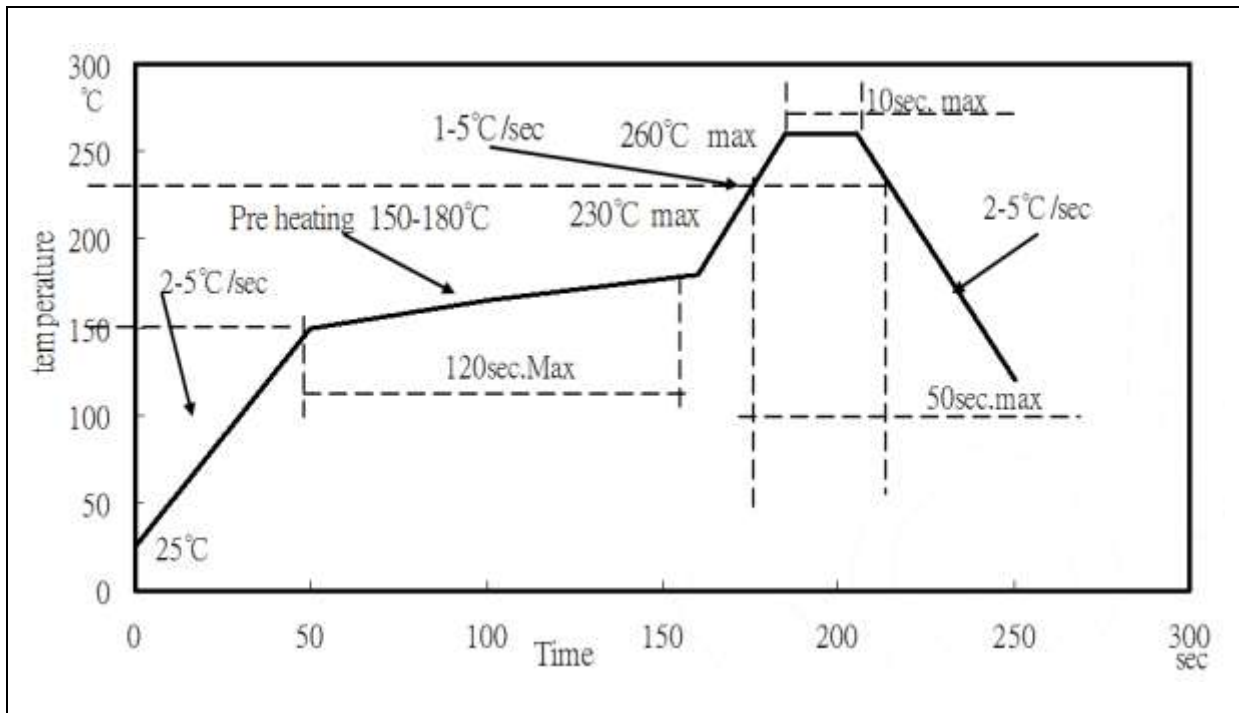


Directive Radiation



## RECOMMENDED SOLDERING PROFILE:

Lead-free Solder:

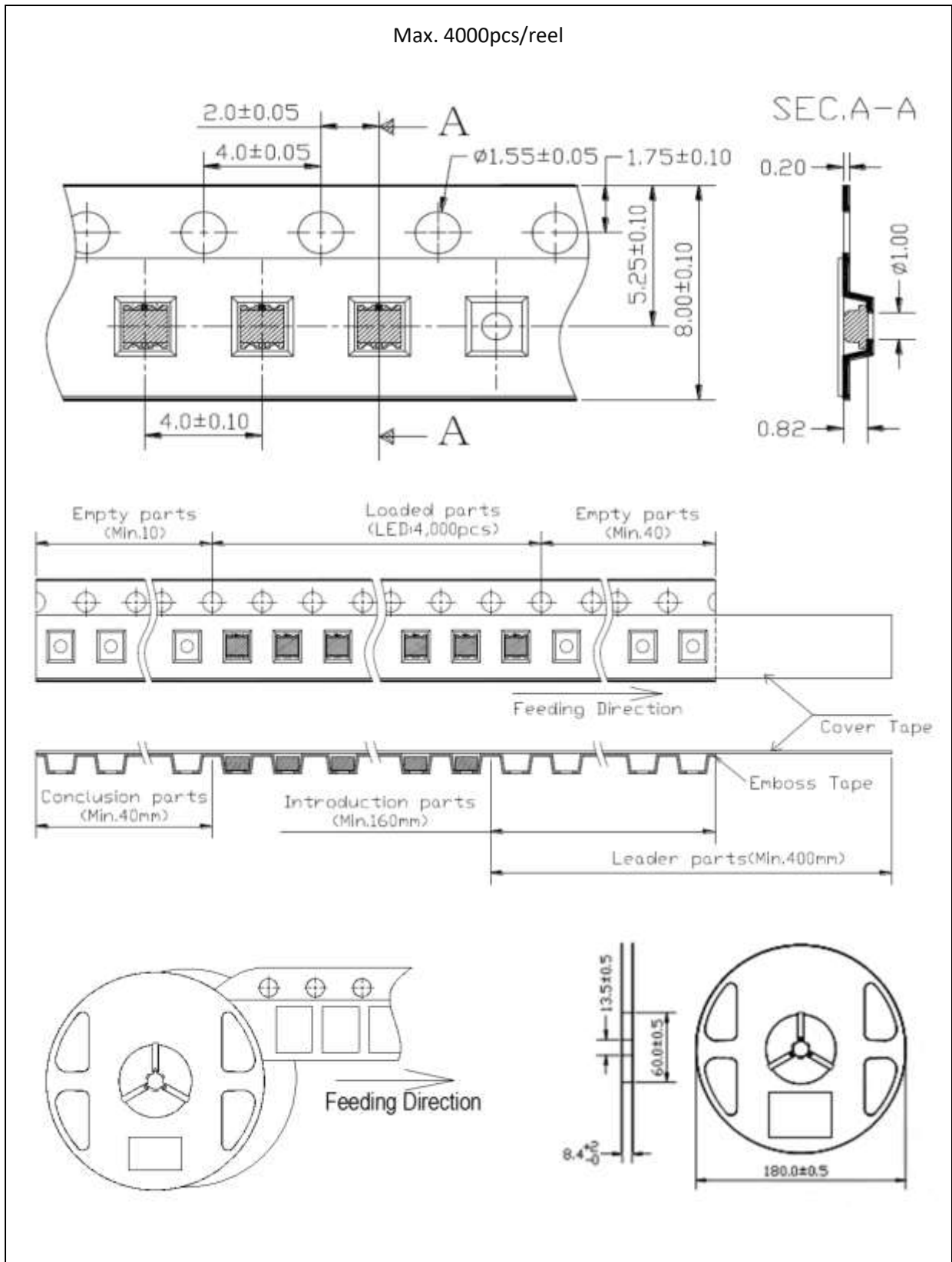


Note:

1. Recommended reflow temperature is 240°C; the maximum soldering temperature should be limited to 260°C.
2. Maximum reflow soldering: 3 times.
3. Before, during, and after soldering, should not apply stress on the components and PCB board.

**PACKING SPECIFICATION:**

Reel Dimension:





## PRECAUTIONS OF USE:

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### 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 <10% R.H. and apply baking 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 6hrs 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:**

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Version	Date	Summary of Revision
A1.0	20/05/2016	Datasheet set-up.
A1.1	27/05/2022	New datasheet format.