



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



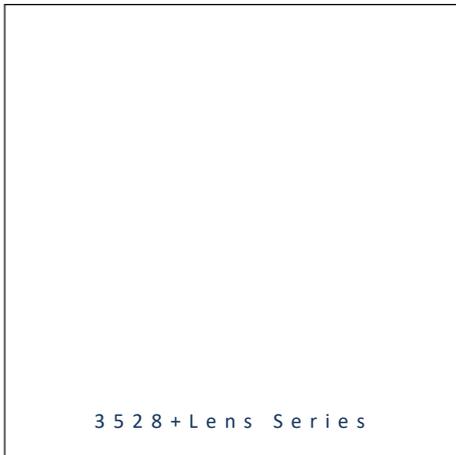
- ▶ PLCC2 Top View
- ▶ 3528+Lens 3.6t Series
- ▶ True Green (525nm)

NOG18S45BF (13" reel)

NOG18S45BFSR (7" reel)



Release Date: 21 October 2022 Version: A1.2



3528+Lens Series

3528+Lens Series

RoHS
Compliant



FEATURES:

- **Package:** PLCC2 SMT Package Full Black Body with Lens
- **Forward Current:** 20mA
- **Forward Voltage (typ.):** 2.7V
- **Luminous Intensity (typ.):** 13500mcd@20mA
- **Colour:** True Green
- **Wavelength (typ.):** 520-530nm
- **Viewing angle:** 30°
- **Materials:**
 - Die: InGaN
 - Resin: Epoxy (Water Clear)
 - L/F Finish: Ag Plated
- **Operating Temperature:** -40~+80°C
- **Storage Temperature:** -40~+85°C
- **Grouping parameters:**
 - Forward voltage
 - Luminous intensity
 - Dominant Wavelength
- **Soldering methods:** Reflow soldering
- **Preconditioning:** acc. to JEDEC Level 3
- **Packing:** 12mm tape with max.2000pcs/reel, ø330mm (13") or max.600pcs/reel ø180mm (7")

APPLICATIONS:

- LED Display
- Indicator
- Traffic Display
- Decoration Lighting

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Forward Current	I_F	30	mA
Peak Forward Current Duty 1/8@1KHz	I_{FP}	125	mA
Reverse Voltage	V_R	5	V
Reverse Current @5V	I_R	10	μ A
Power Dissipation	P_D	102	mW
Operating Temperature	T_{OPR}	-40~+80	°C
Storage Temperature	T_{STG}	-40~+85	°C

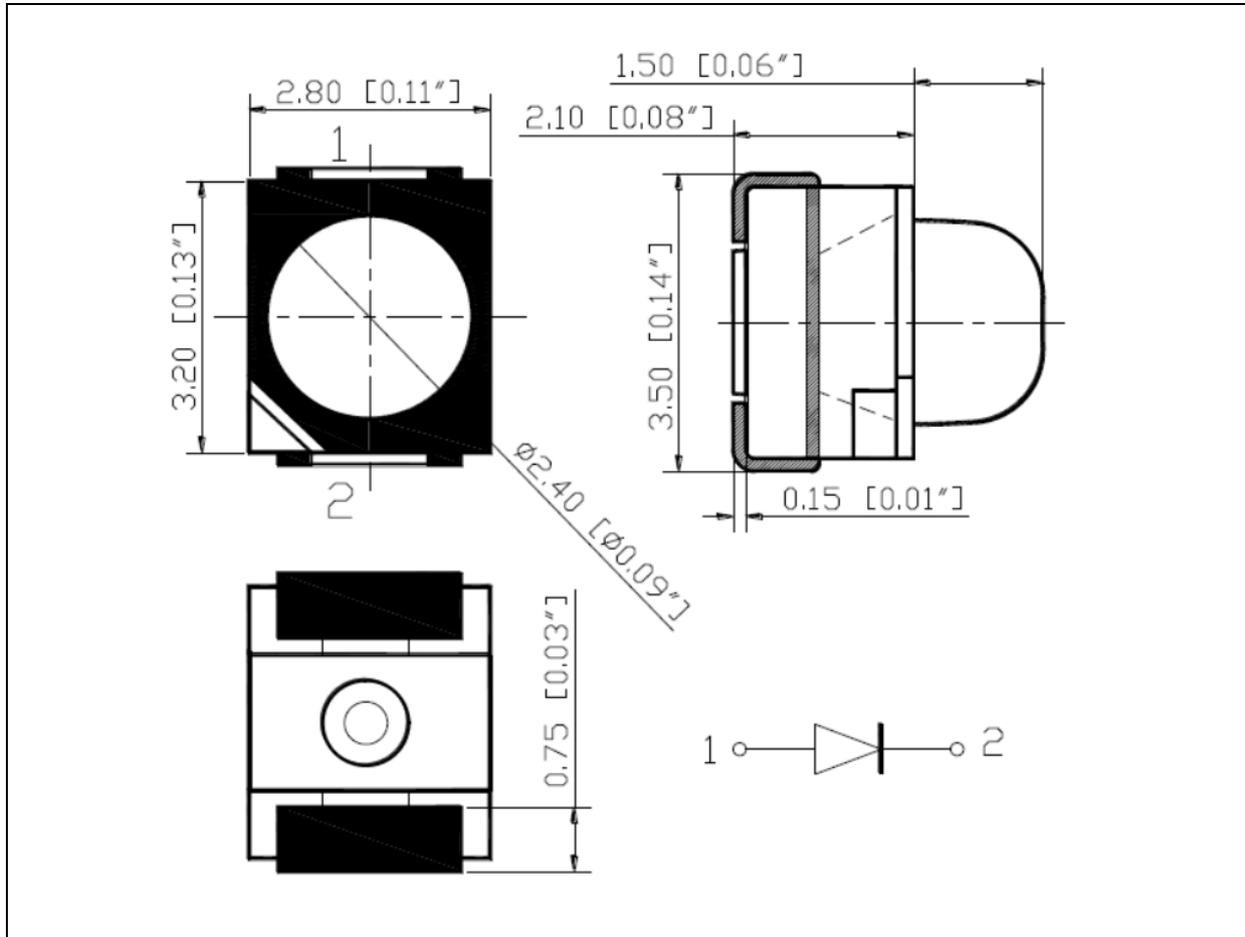
Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V_F	2.5	2.7	3.4	V	$I_F=20mA$
Luminous Intensity	I_v	6800	13500	22500	mcd	$I_F=20mA$
Dominant Wavelength	λ_D	520	525	530	nm	$I_F=20mA$
Peak Wavelength	λ_P	---	520	---	nm	$I_F=20mA$
Spectral Half Bandwidth	$\Delta\lambda$	---	29	---	nm	$I_F=20mA$
Viewing Angle	$2\theta_{1/2}$	---	30	---	deg	$I_F=20mA$

- Luminous intensity (I_v) $\pm 15\%$, Forward Voltage (V_f) $\pm 0.1V$, Viewing angle($2\theta_{1/2}$) $\pm 5\%$

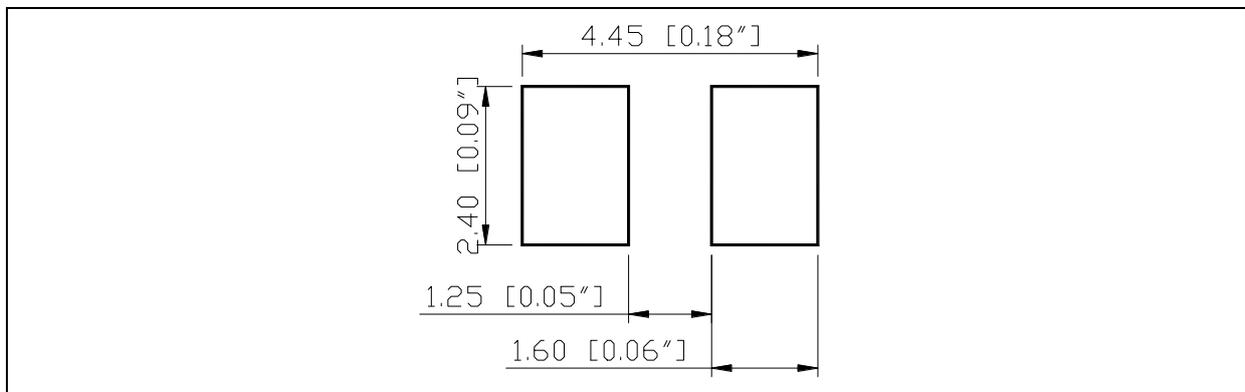
OUTLINE DIMENSION:

Package Dimension:



1. All dimensions are in millimetre (mm).
2. Tolerance $\pm 0.2\text{mm}$, 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:

 Forward Voltage Classifications ($I_F = 20\text{mA}$):

Code	Min.	Max.	Unit
e	2.5	2.8	V
f	2.8	3.1	
g	3.1	3.4	

 Luminous Intensity Classifications ($I_F = 20\text{Ma}$):

Code	Min.	Max.	Unit
b	6800	8800	mcd
c	8800	11200	
d	11200	14200	
e	14200	18000	
f	18000	22500	

 Wavelength Classifications ($I_F = 20\text{Ma}$):

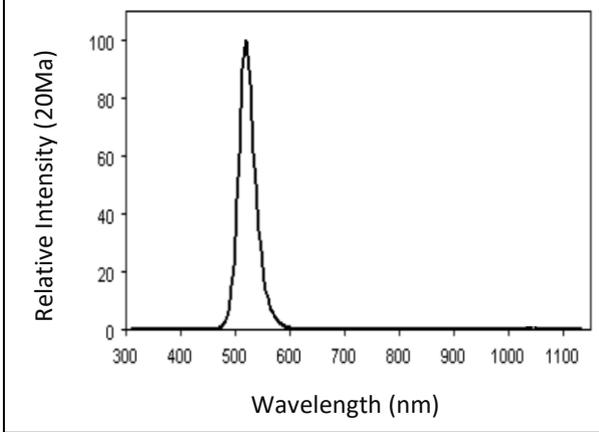
Code	Min.	Max.	Unit
U	520	522.5	nm
V	522.5	525	
W	525	527.5	
X	527.5	530	

Example Binning Information on Label:

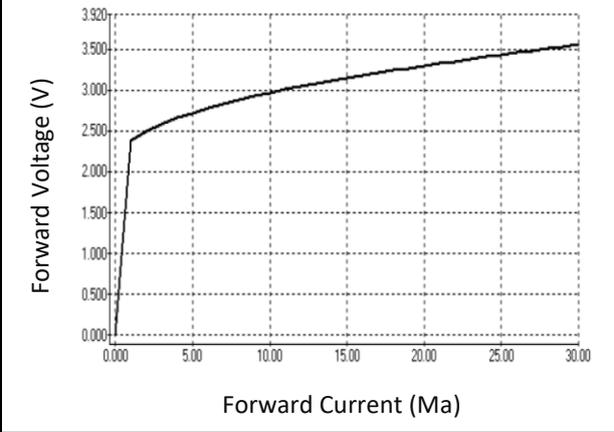
Code	Vf (V)	Iv (mcd)	λ_d (nm)	Test Condition
gdV 20	g= 3.1~3.4	d= 11200~14200	V= 522.5~525	20= 20Ma

ELECTRO-OPTICAL CHARACTERISTICS:

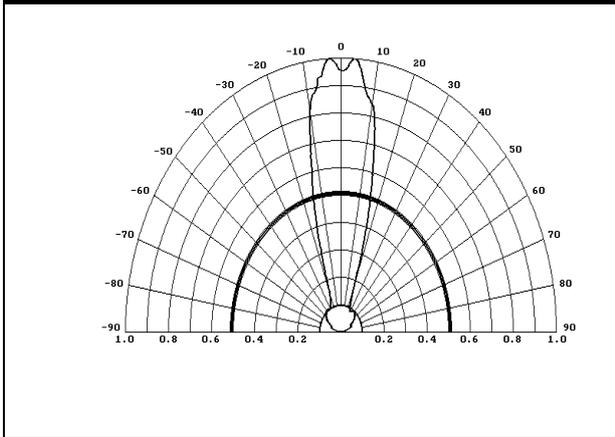
Relative Spectral Distribution



Forward Current v.s. Forward Voltage

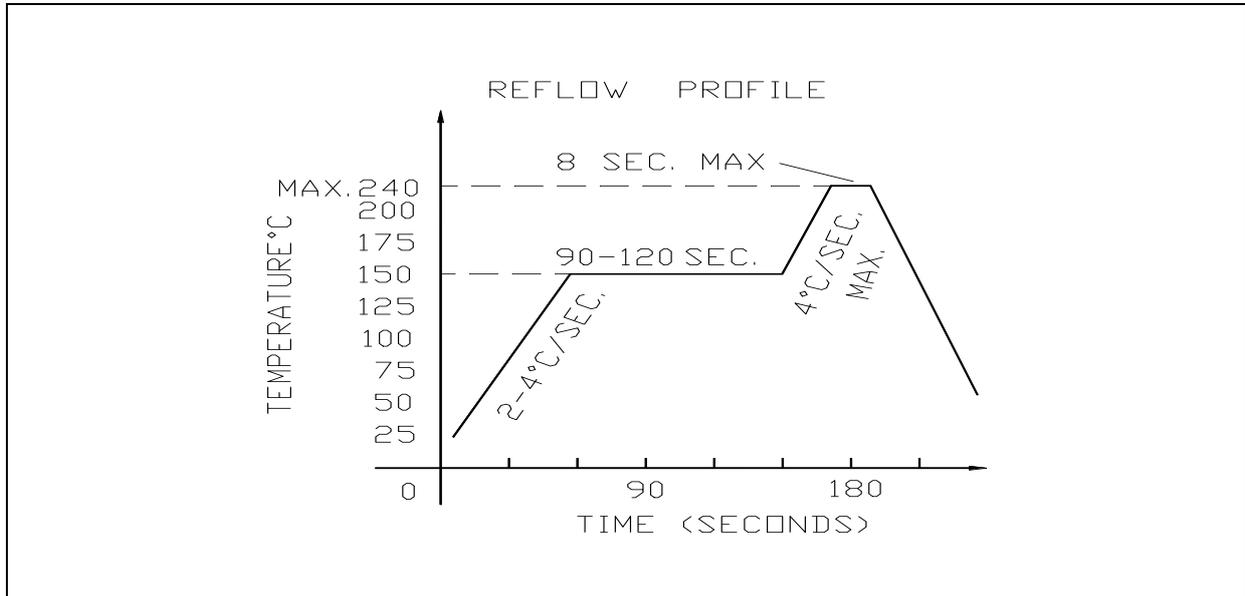


Directive Radiation



RECOMMENDED SOLDERING PROFILE:

Lead-free Solder:

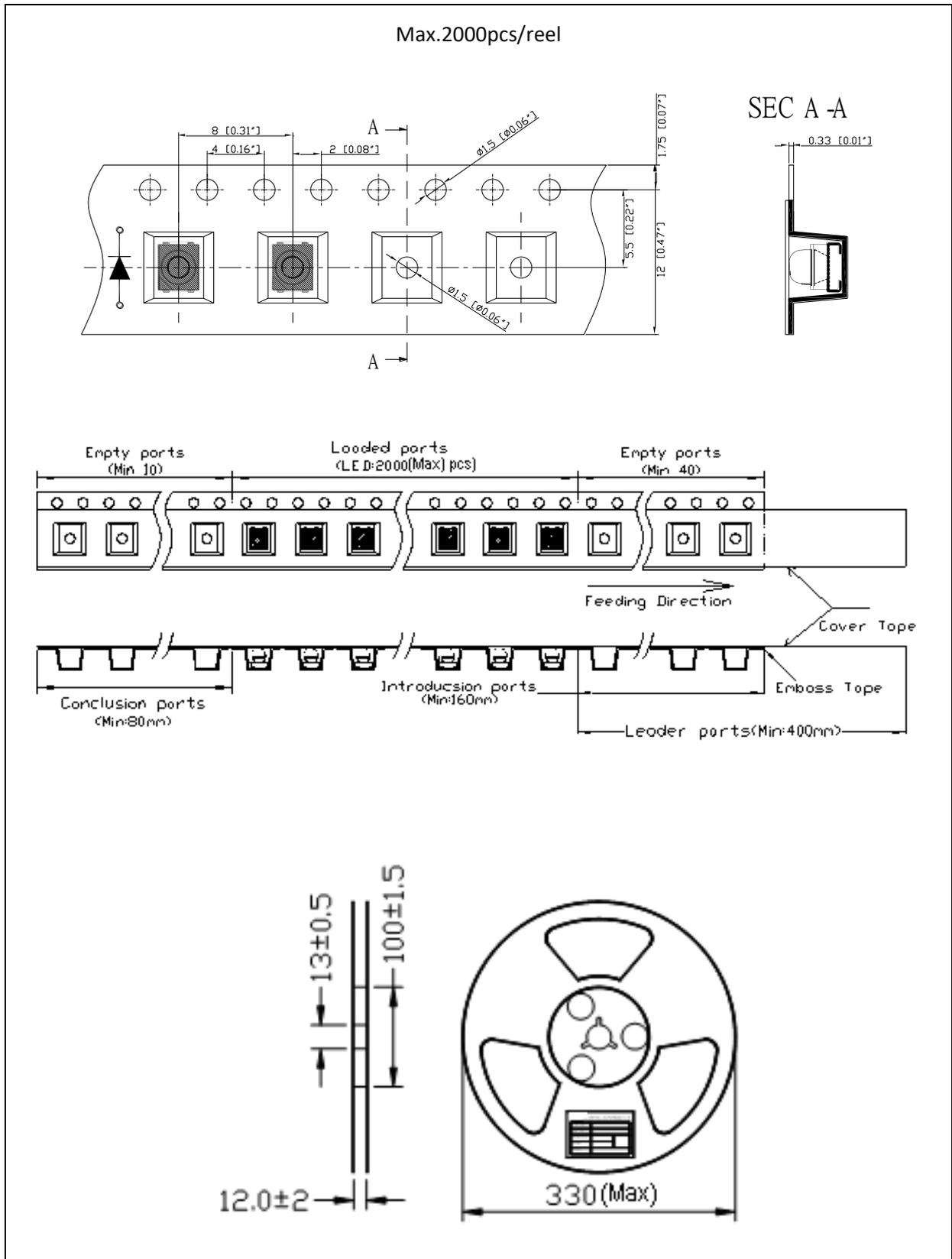


Note:

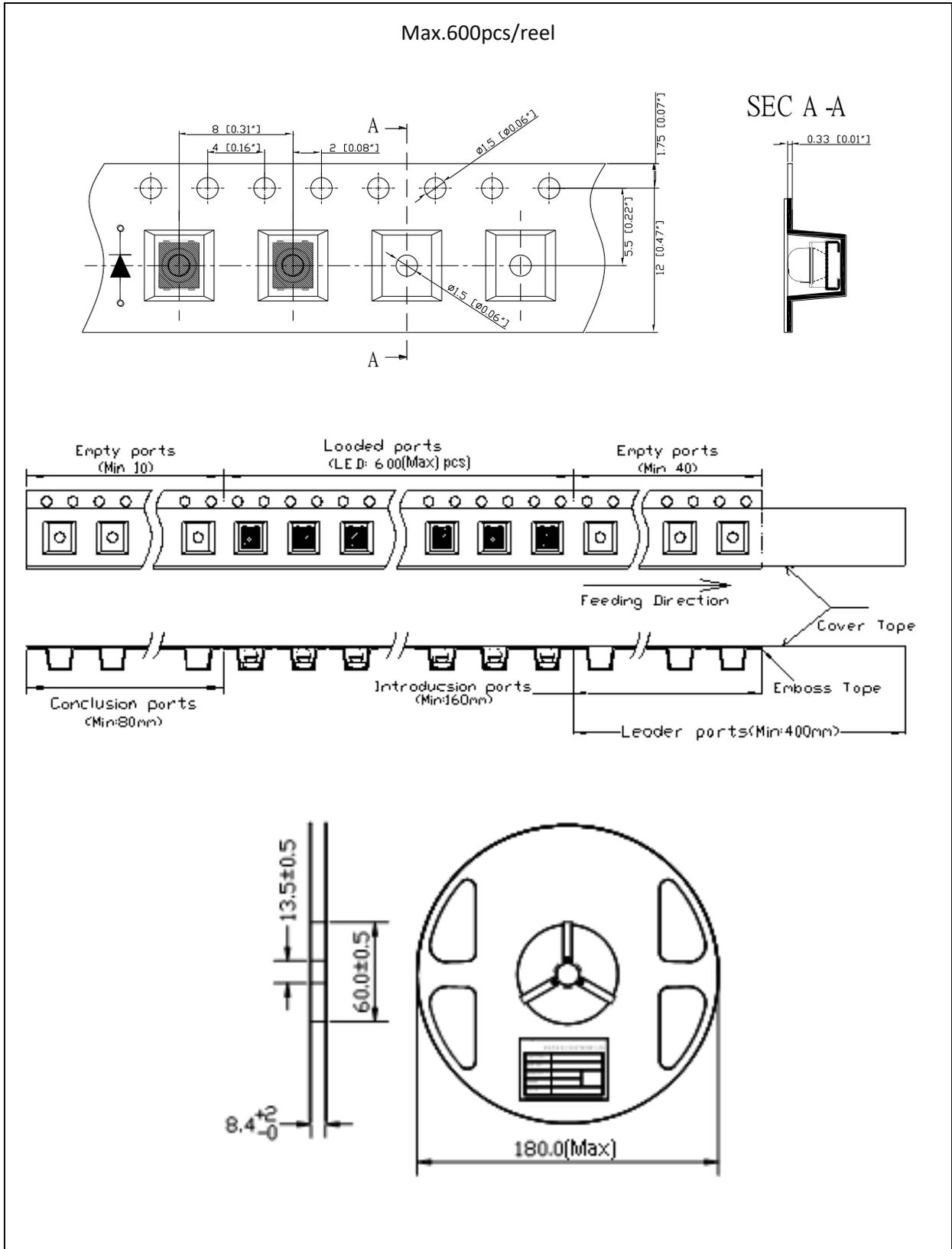
1. Maxima reflow soldering: 1 time.
2. The maxima soldering temperature is 240°C.
3. Before, during, and after soldering, should not apply stress on the components and PCB board.

PACKING SPECIFICATION:

NOG18S45BF – 13'' Reel Dimension:



NOG18S45BFSR – 7" 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 <10% R.H. and apply baking before use.

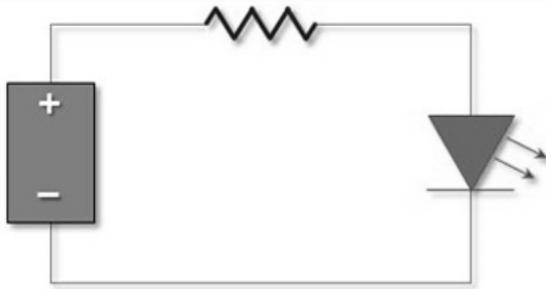
Baking:

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±5°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	14/07/2016	Datasheet set-up.
A1.1	18/10/2022	Update voltage range.
A1.2	21/10/2022	Update typical lumen and power dissipation value.