



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

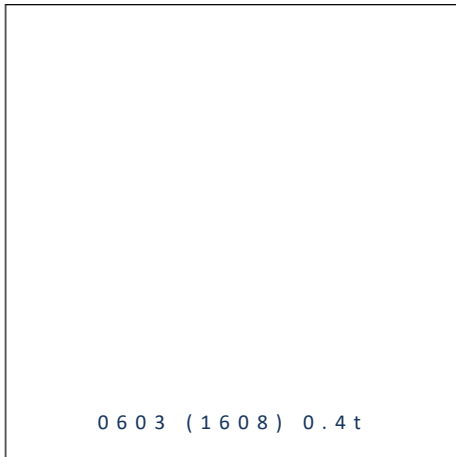


- ▶ PCB / Chip LED
- ▶ 0603 (1608) 0.4t
- ▶ Red (625nm) / Yellow (590nm)

NOD32S70



Release Date: 25 April 2023 Version: A1.0



0603 (1608) 0.4t

0603 (1608) 0.4t

RoHS Compliant



FEATURES (Red/Yellow):

- **Package:** PCB Top View SMT Package
- **Forward Current:** 20/20mA*
- **Forward Voltage (typ.):** 2.1/2.1V
- **Luminous Intensity (typ.):** 350/350mcd @20mA
- **Colour:** Red/Yellow
- **Dominant Wavelength (typ.):** 625/590nm
- **Viewing Angle:** 130/130°
- **Materials:**
 - Die: AlGaInP/AlGaInP
 - Resin: Epoxy (Water Clear)
- **Operating Temperature:** -40~+85°C
- **Storage Temperature:** -40~+90°C
- **ESD:** 2000/2000V
- **Grouping Parameters:**
 - Forward voltage
 - Luminous intensity
 - Dominant Wavelength
- **Soldering Methods:** Reflow
- **MSL Level:** acc. to JEDEC Level 3
- **Packing:** 8mm tape with max.4000/reel, ø180mm (7")

APPLICATIONS:

- Indication Light
- Switch light
- Dashboard
- Keyboard
- 3C Consumer Goods

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Forward Current	I _F	30/30*	mA
Peak Forward Current Duty 1/10@10KHz	I _{FP}	60/60	mA
Reverse Current @5V	I _R	10/10	μA
Power Dissipation	PD	78/78	mW
Electrostatic Discharge	ESD	2000/2000	V
Operating Temperature	T _{OPR}	-40~+85	°C
Storage Temperature	T _{STG}	-40~+90	°C

- * In the order of Red/Yellow.

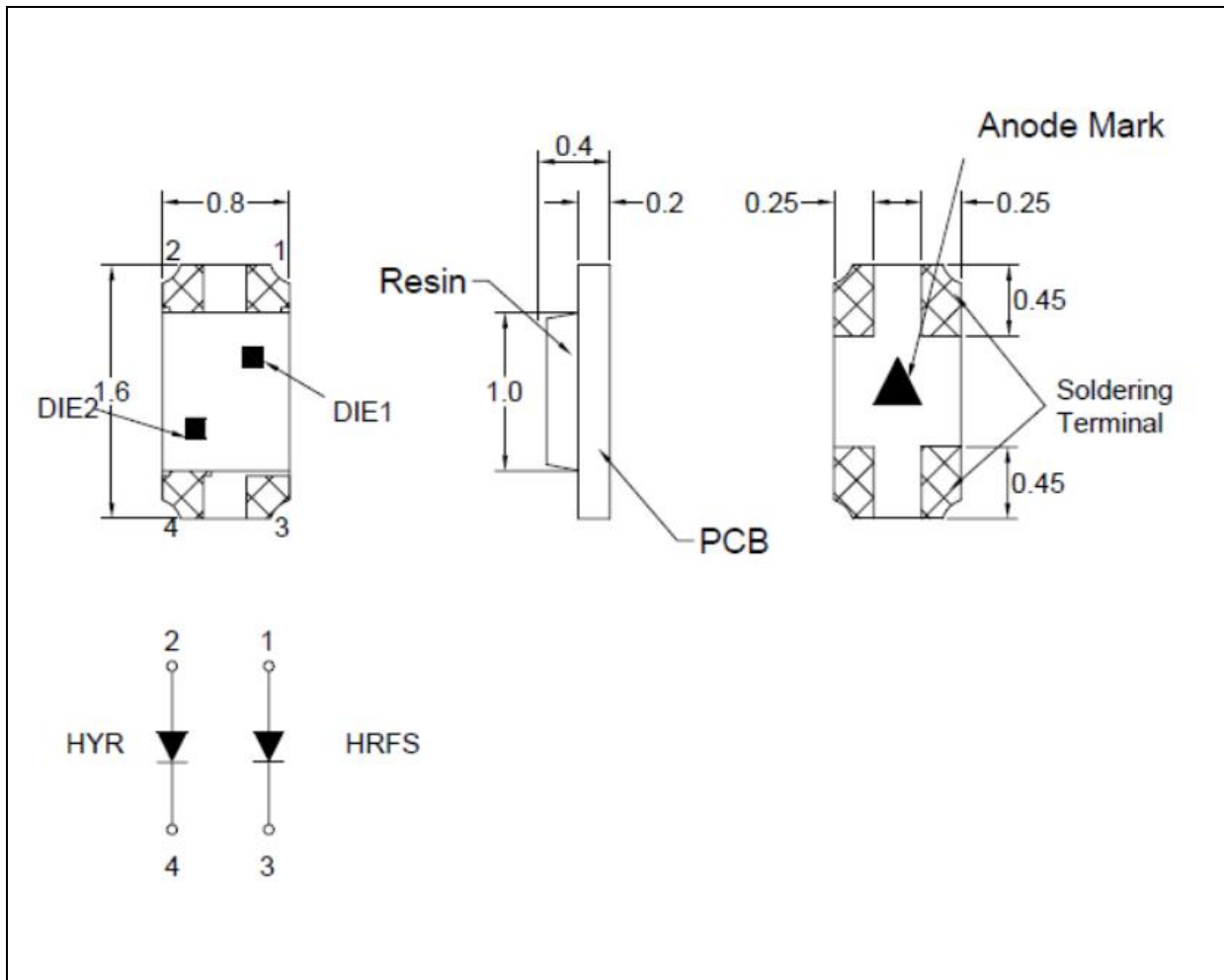
Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V _F	1.7/1.7	---	2.6/2.6*	V	I _F =20mA
Luminous Intensity	I _v	200/200	---	500/500	mcd	I _F =20mA
Dominant Wavelength	λ _D	621/585	---	630/595	nm	I _F =20mA
Spectral Line Half Bandwidth	Δλ	---	20/20	---	nm	I _F =20mA
Viewing Angle	2θ _{1/2}	---	130/130	---	deg	I _F =20mA

- * In the order of Red/Yellow.
- Luminous intensity (I_v) ±15%, Forward Voltage (V_F) ±0.1V

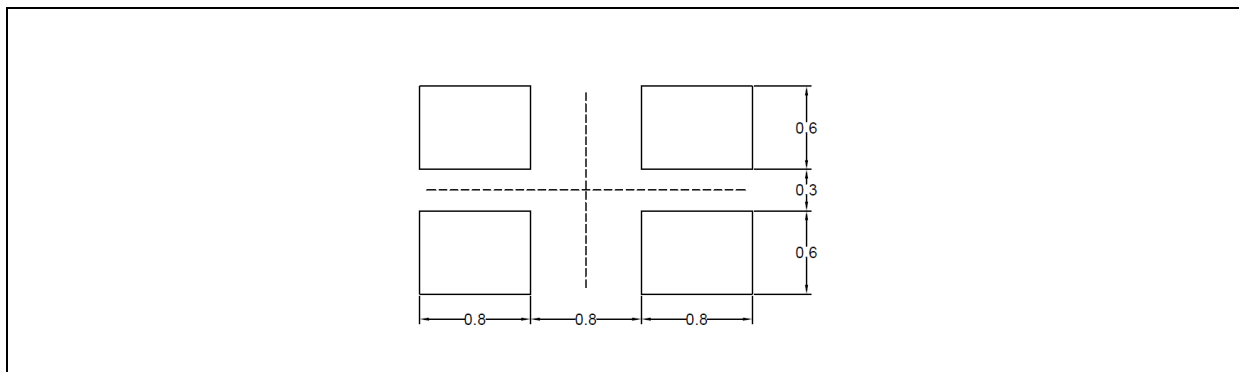
OUTLINE DIMENSION:

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
Red	1.7	2.6	V
Yellow	1.7	2.6	V

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

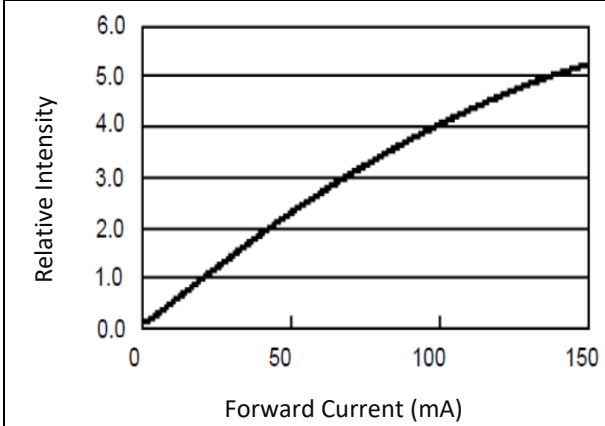
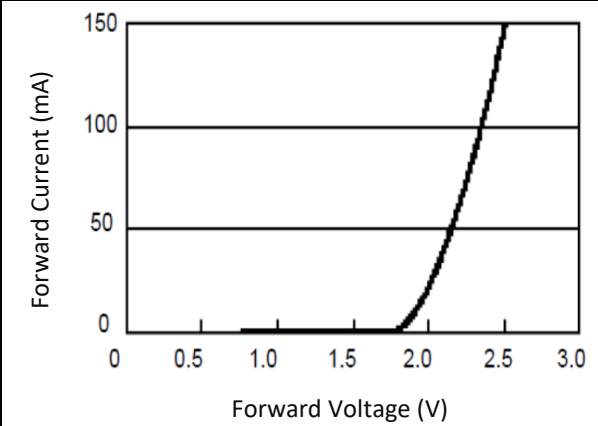
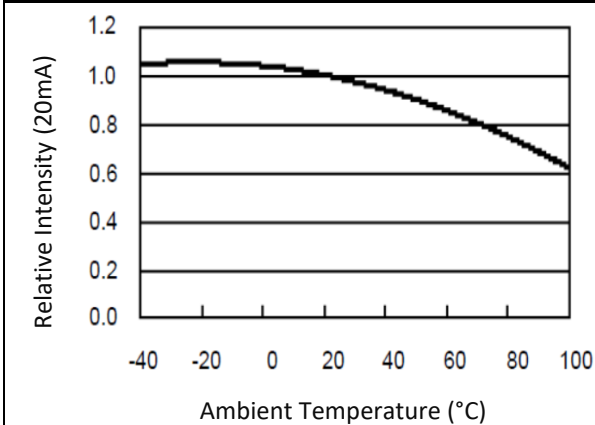
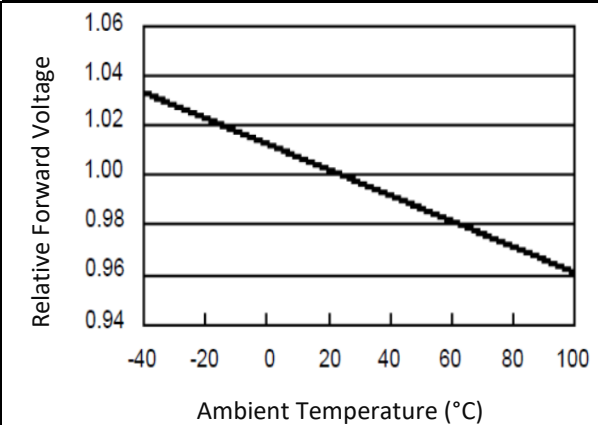
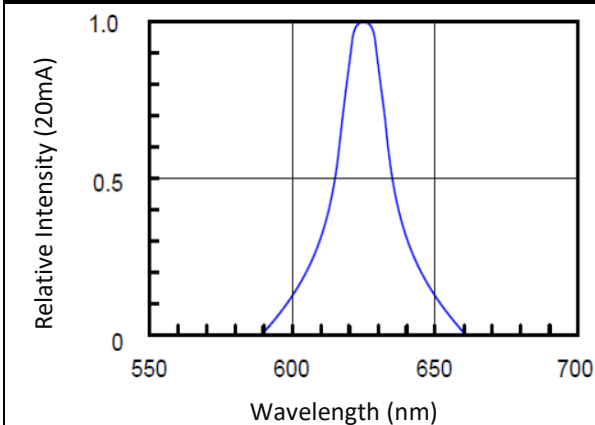
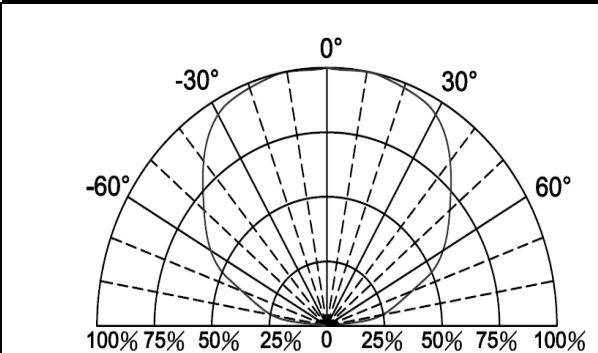
Code	Min.	Max.	Unit
Red	S	200	mcd
	T	320	

Code	Min.	Max.	Unit
Yellow	S	200	mcd
	T	320	

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

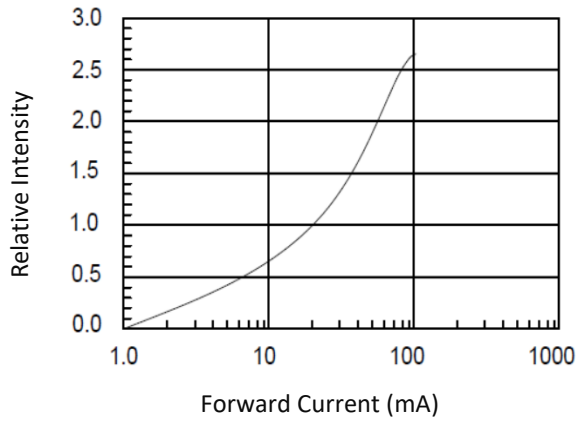
Code	Min.	Max.	Unit
Red	28	621	nm
	29	624	
	30	627	

Yellow	15	585	nm
	16	587	
	17	589	
	18	592	

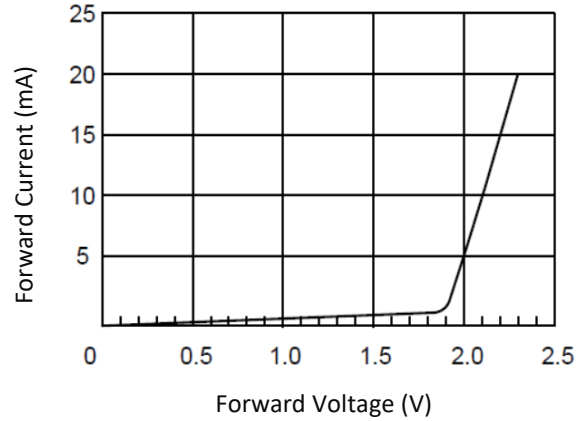
ELECTRO-OPTICAL CHARACTERISTICS (RED):
Relative Intensity v.s. Forward Current

Forward Current v.s. Forward Voltage

Relative Intensity v.s. Temperature

Relative Voltage v.s. Temperature

Relative Intensity v.s. Wavelength

Directive Radiation


ELECTRO-OPTICAL CHARACTERISTICS (YELLOW):

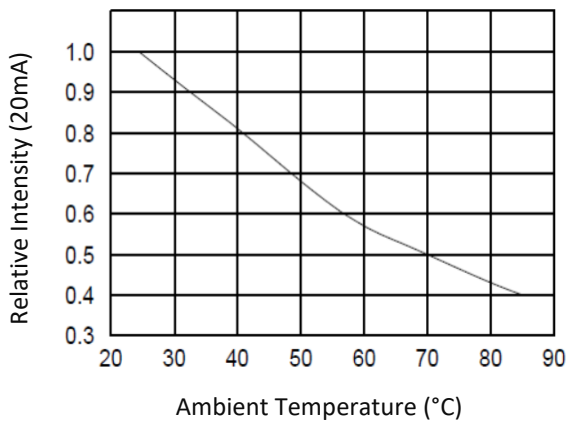
Relative Intensity v.s. Forward Current



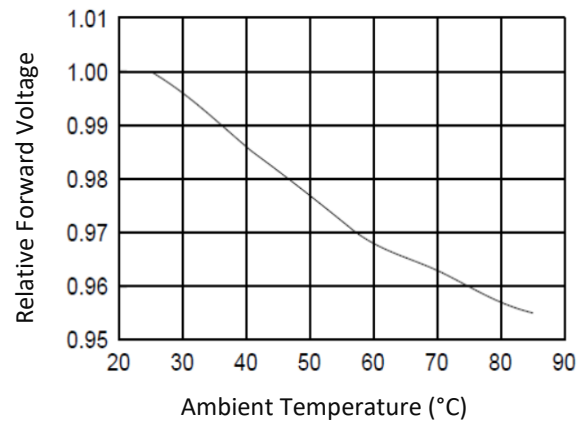
Forward Current v.s. Forward Voltage



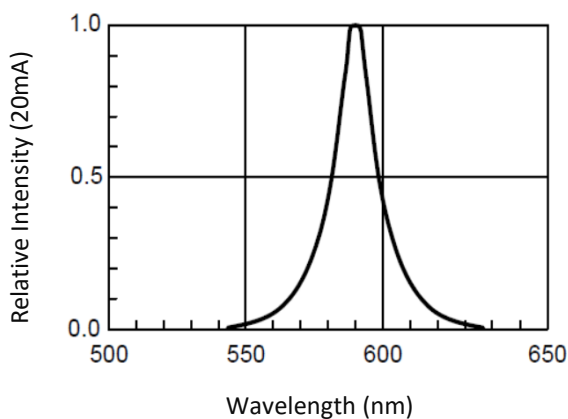
Relative Intensity v.s. Temperature



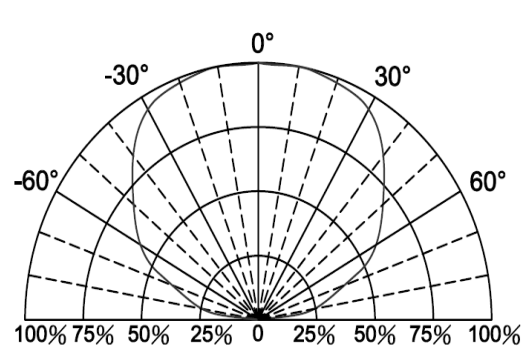
Relative Voltage v.s. Temperature



Relative Intensity v.s. Wavelength

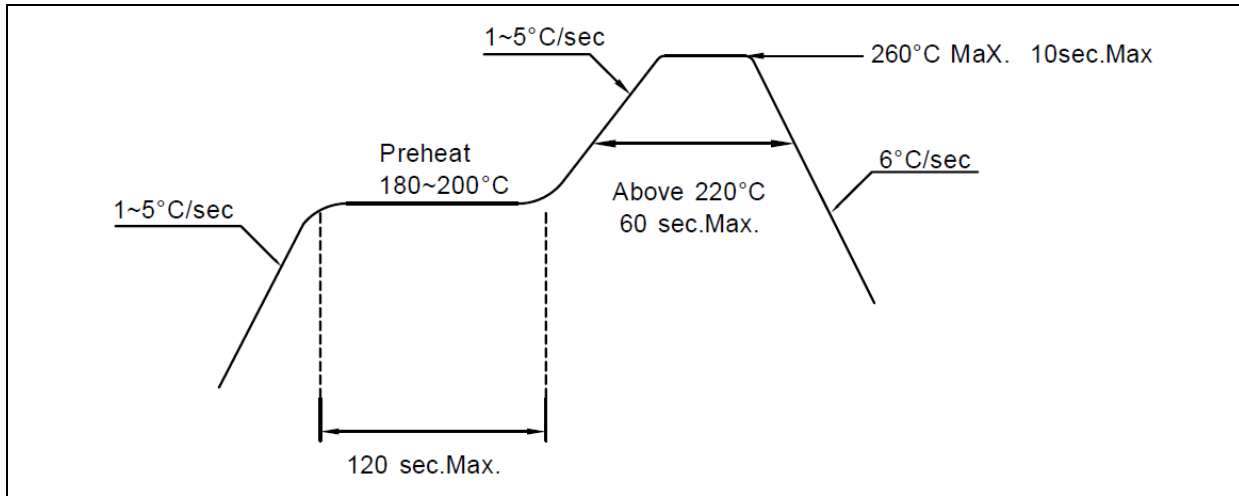


Directive Radiation



RECOMMENDED SOLDERING PROFILE:

Lead-free Solder:

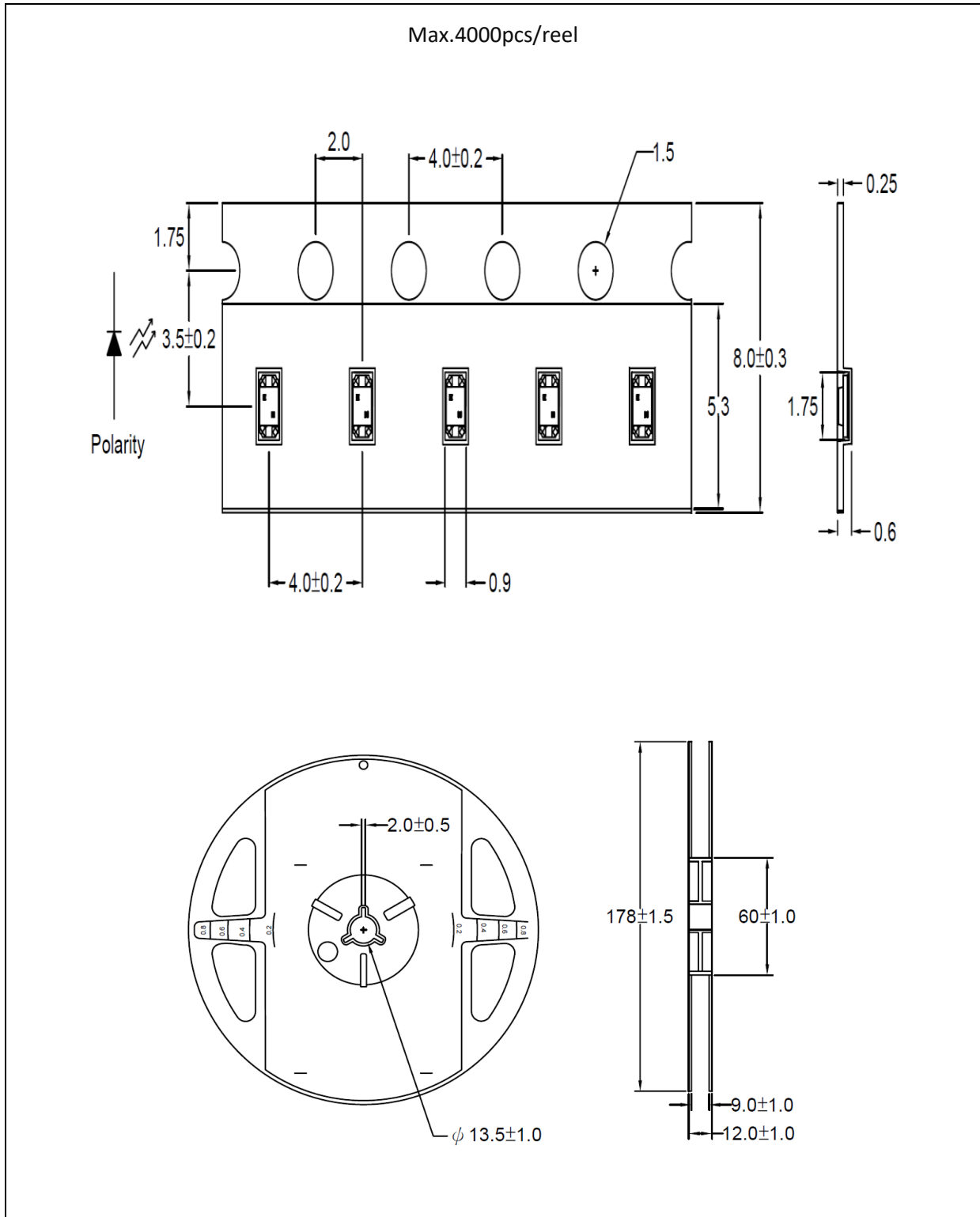


Note:

1. Maximum reflow soldering: 2 times.
2. 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 <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 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	25/04/2023	Datasheet set-up.