



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

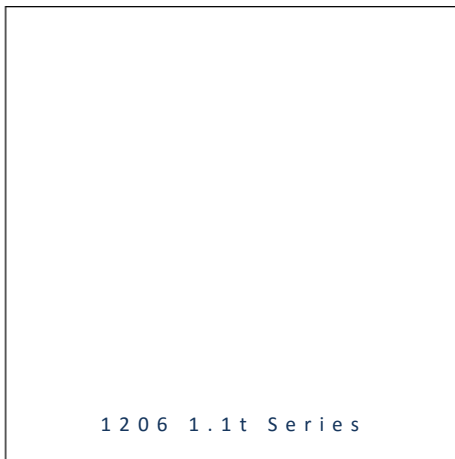


- ▶ PCB / CHIP LED
- ▶ 1206 1.1t Series
- ▶ Red (630nm) / Yellow (590nm)

NOD32S69



Release Date: 24 October 2016 Version: A1.0



1206 1.1t Series

1206 1.1t Series

RoHS
Compliant



FEATURES:

- **Package:** PCB SMT Package Top View Duo Colours
- **Forward Current:** 20/20mA*
- **Forward Voltage (typ.):** 1.9/2.1V
- **Luminous Intensity (typ.):** 40/60mcd@20mA
- **Colour:** Red/Yellow
- **Wavelength:** 630/590nm
- **Viewing angle:** 140/140°
- **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:** Wave Solder / Reflow
- **Preconditioning:** acc. to JEDEC Level 3
- **Packing:** 8mm tape with 3000/reel, ø180mm (7")

* in the order of Red/Yellow

APPLICATIONS:

- Indication Light
- Switch light
- Dashboard
- Keyboard
- 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}	90/60	mA
Reverse Current @5V	I_R	10/10	μ A
Power Dissipation	PD	72/78	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

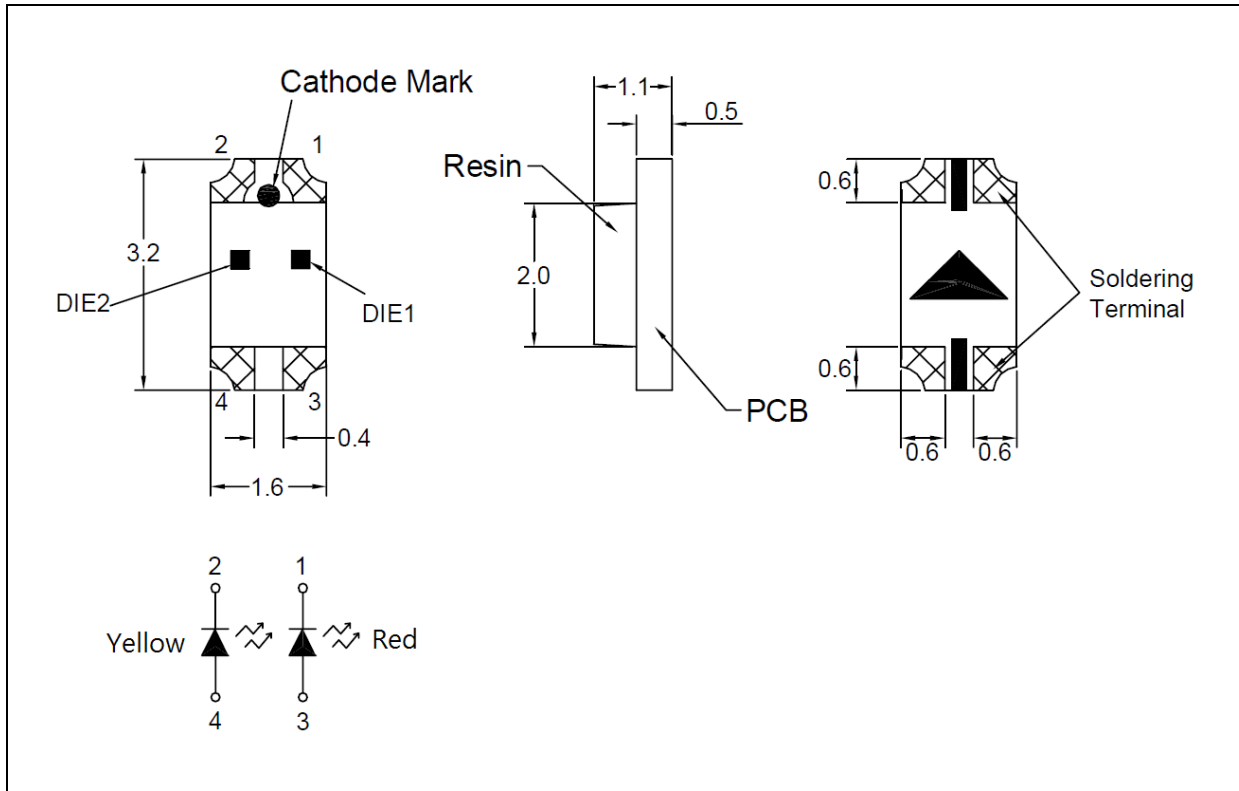
Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V_F	1.5/1.7	---	2.4/2.6	V	$I_F=20mA$
Luminous Intensity	I_V	20/32	40/60	---	mcd	$I_F=20mA$
Dominant Wavelength	λ_D	---	630/590	---	nm	$I_F=20mA$
Peak Wavelength	λ_P	---	642/593	---	nm	$I_F=20mA$
Spectral Line Half Bandwidth	$\Delta \lambda$	---	20/20	---	nm	$I_F=20mA$
Viewing Angle	$2\theta_{1/2}$	---	140/140	---	deg	$I_F=20mA$

1. Luminous intensity (I_V) $\pm 15\%$, Forward Voltage (V_F) $\pm 0.1V$

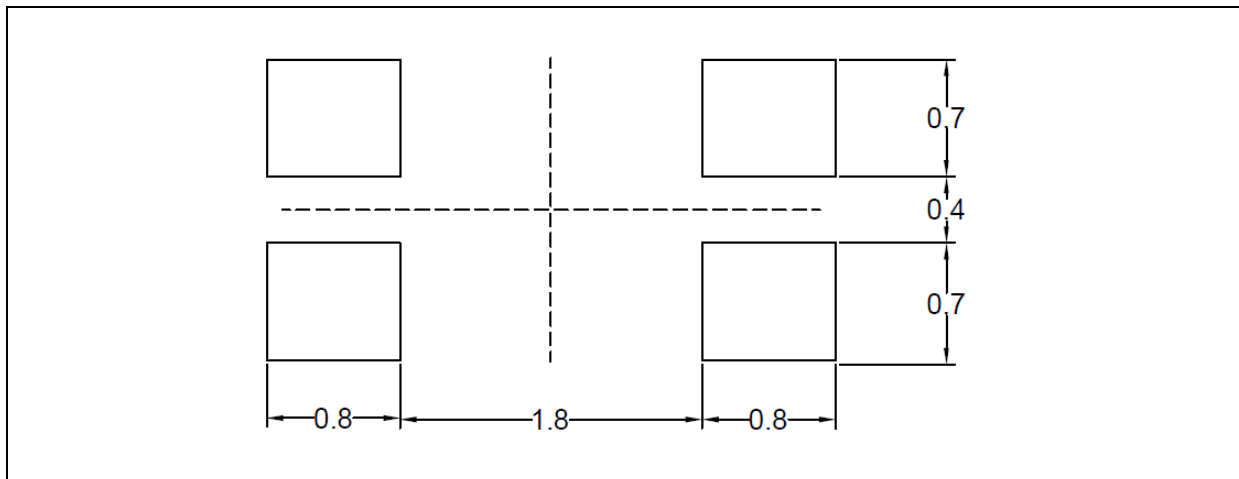
OUTLINE DIMENSION:

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:

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

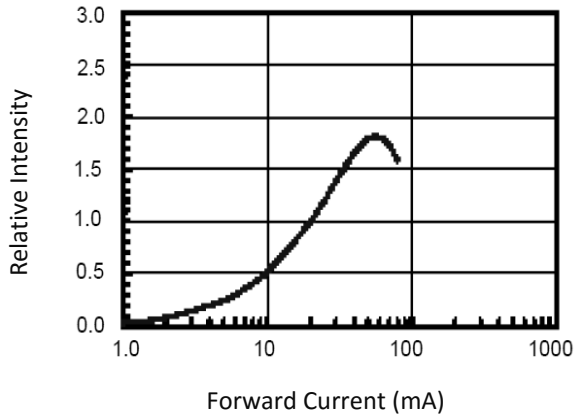
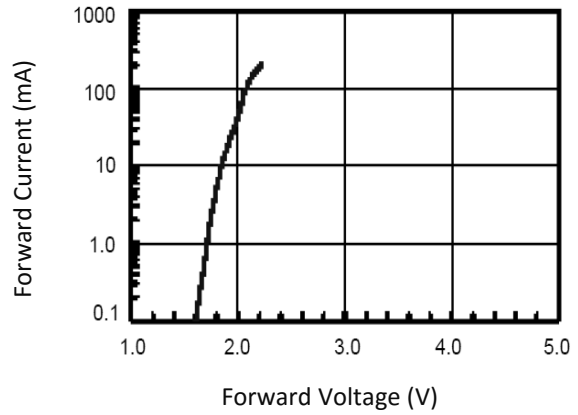
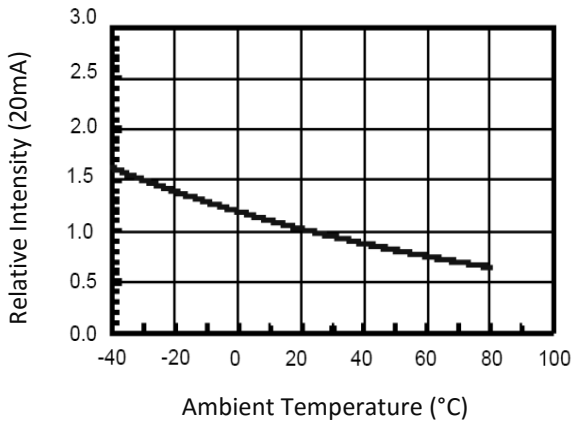
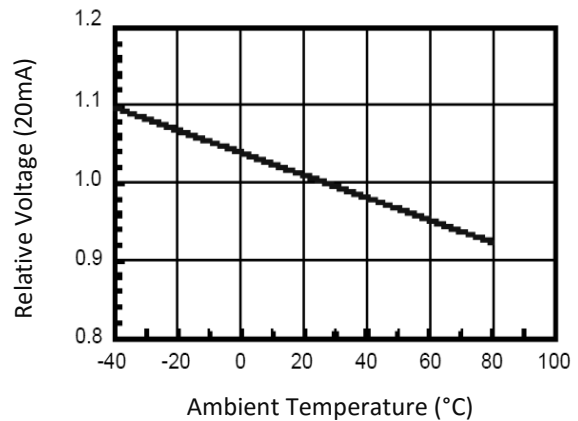
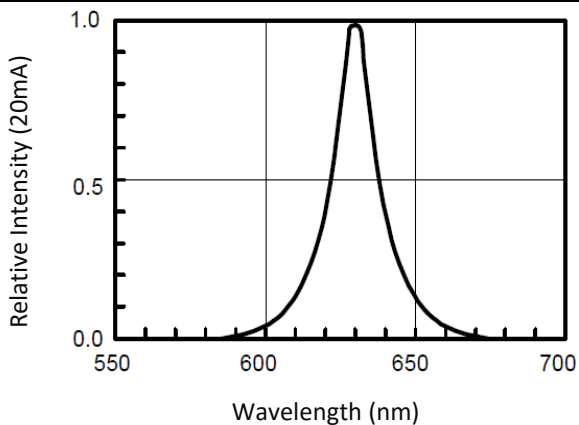
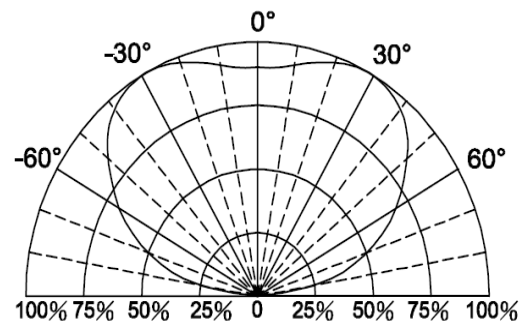
Code		Min.	Max.	Unit
Red		1.5	2.4	V
Green		1.7	2.6	

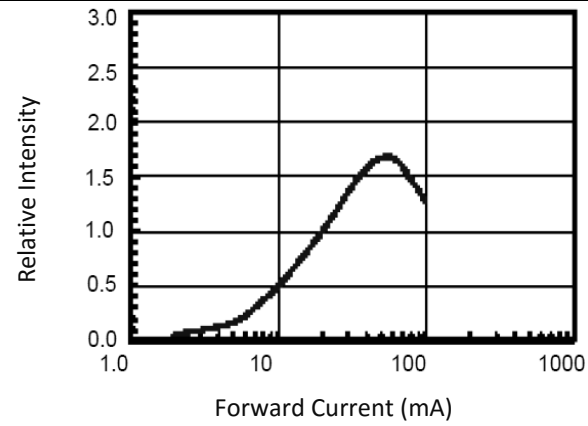
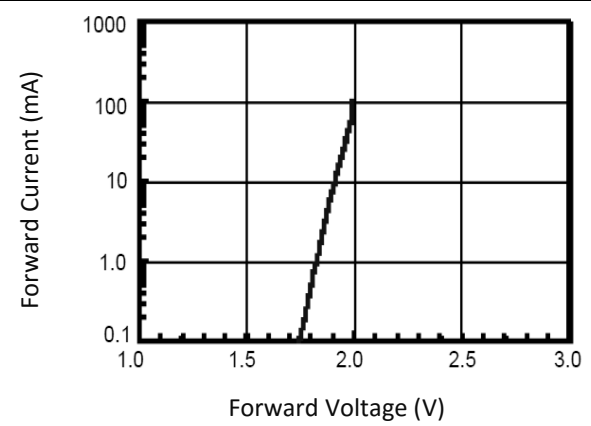
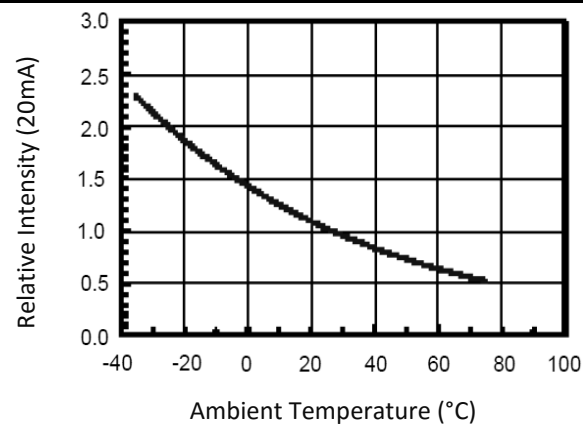
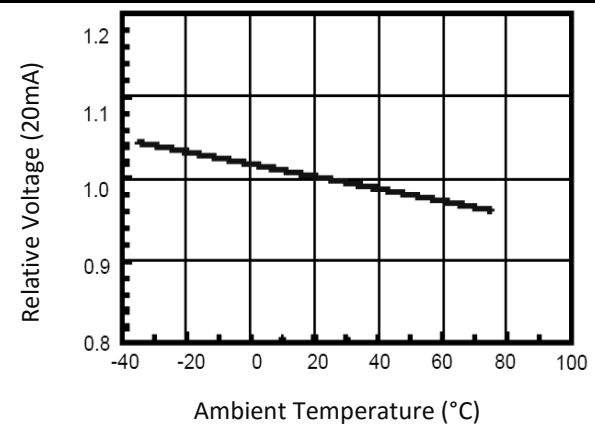
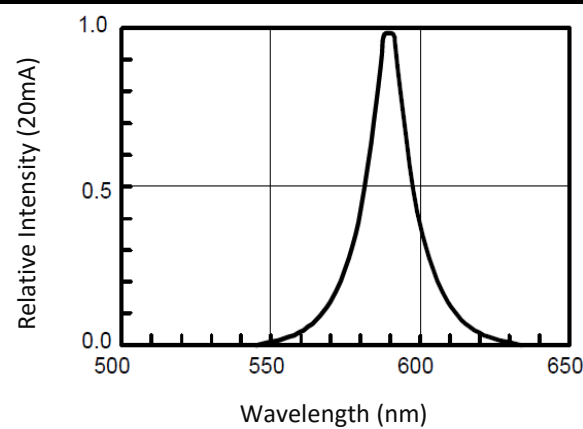
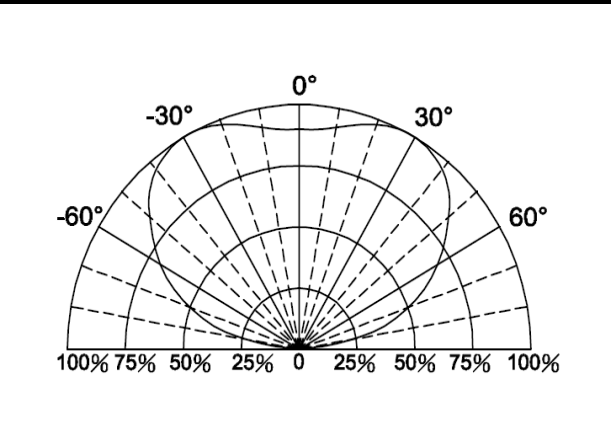
 Luminous Intensity Classifications ($I_F = 20\text{mA}$):

Code		Min.	Max.	Unit
Red	RI	20	70	mcd
Yellow	YI	32	100	

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

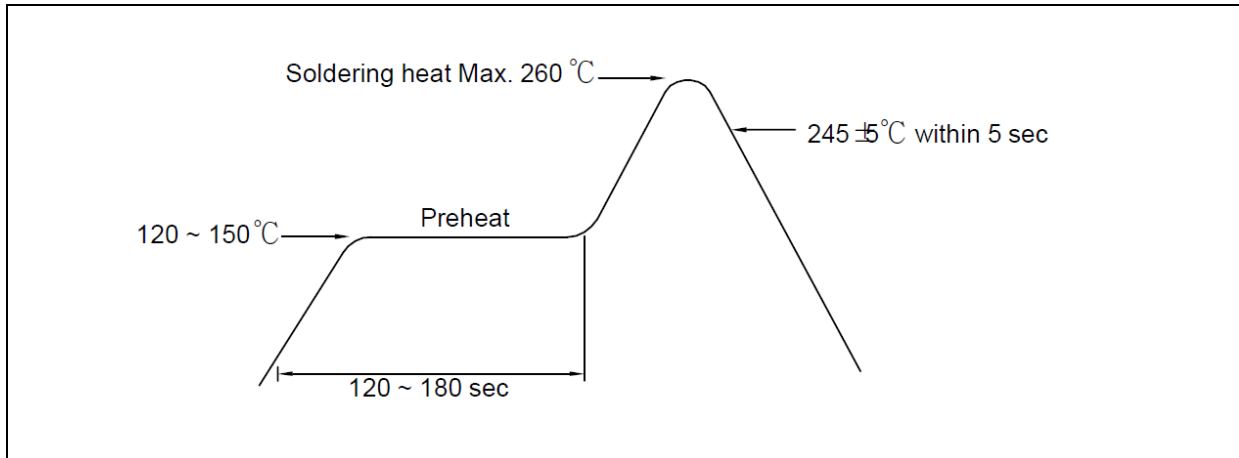
Code		Min.	Max.	Unit
Red	RL	620	640	nm
Yellow	YL	580	599	

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

Forward Current v.s. Forward Voltage

Relative Intensity v.s. Temperature

Relative Forward Voltage v.s. Temperature

Relative Intensity v.s. Wavelength

Directive Radiation


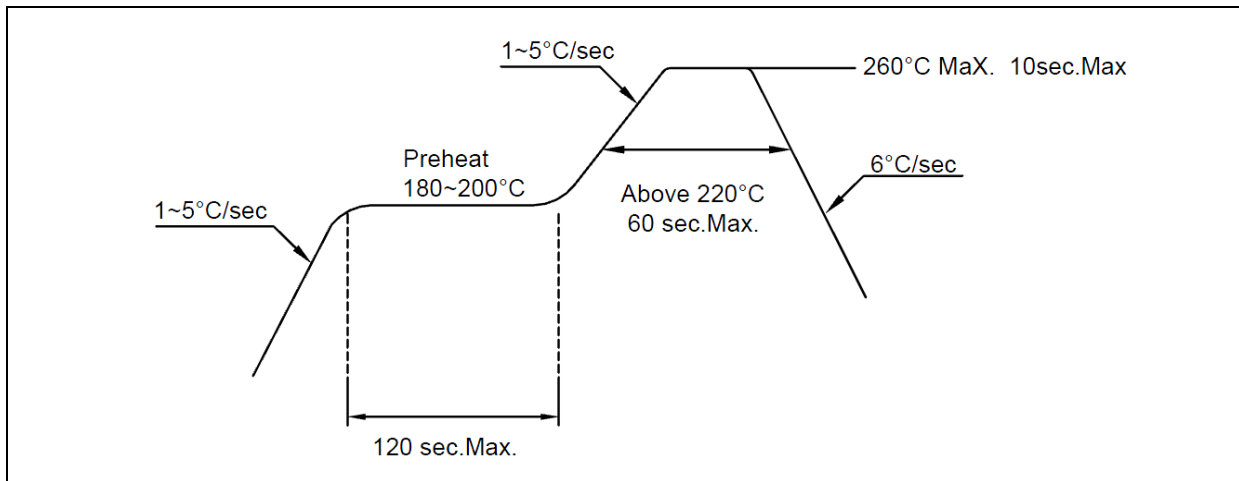
ELECTRO-OPTICAL CHARACTERISTICS (YELLOW):
Relative Intensity v.s. Forward Current

Forward Current v.s. Forward Voltage

Relative Intensity v.s. Temperature

Relative Forward Voltage v.s. Temperature

Relative Intensity v.s. Wavelength

Directive Radiation


RECOMMENDED SOLDERING PROFILE:

Wave Solder:



Lead-free Solder:

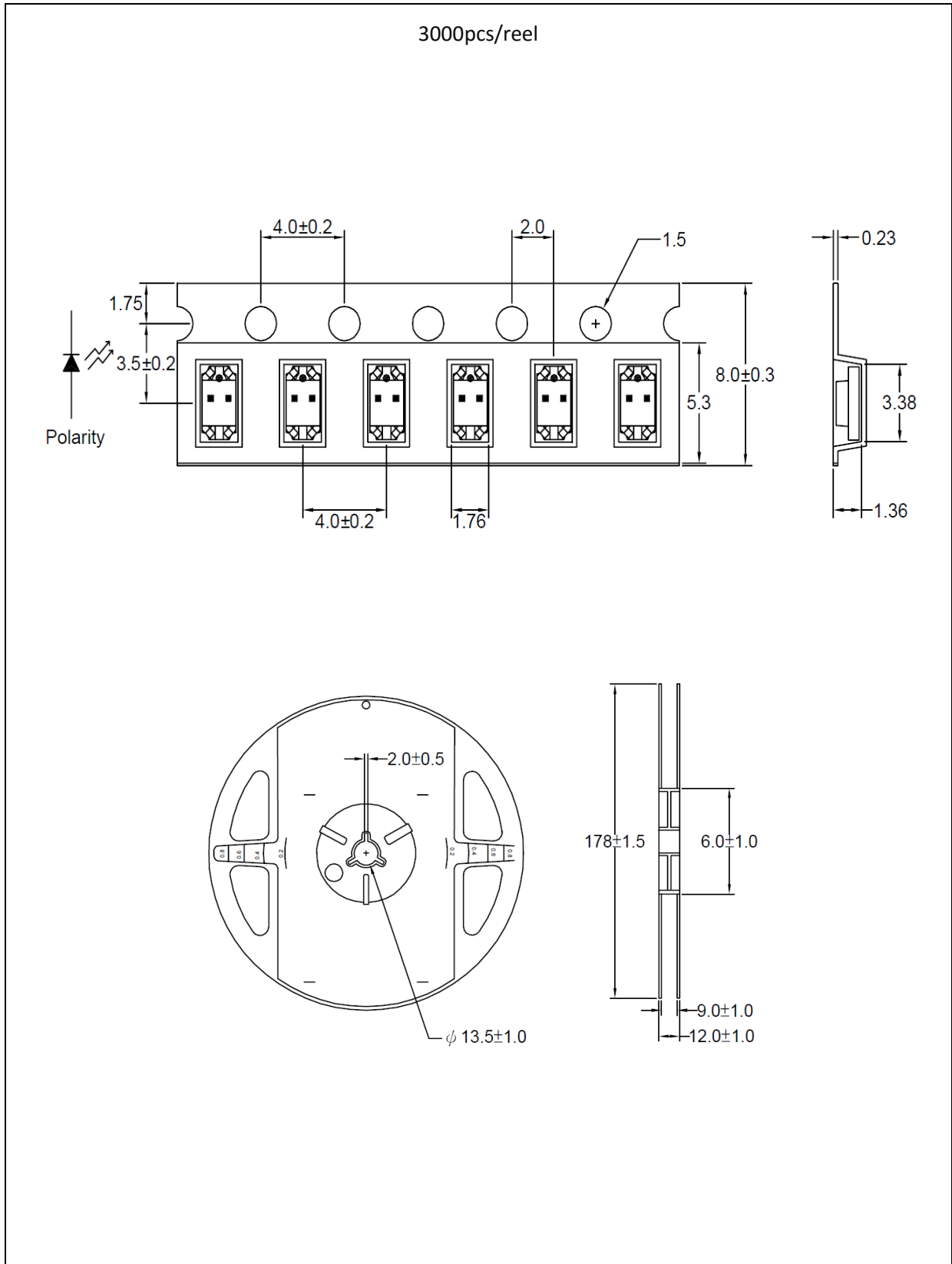


Note:

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~35°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.

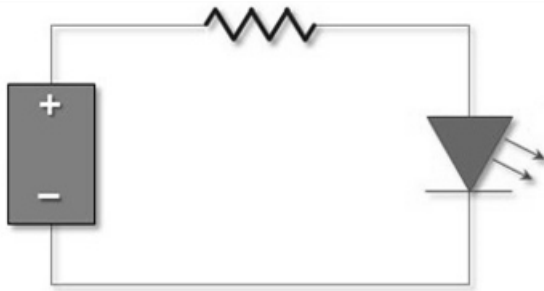
Baking:

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:

- 60±3°C x 15hrs 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	24/10/2016	Datasheet set-up.