BRIGHTEK
BRIGHTEK (EUROPE) LIMITED
Brighten Up The World With LED !

PRODUCT DATASHEET

ATTENTION OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES

► SMD Display

► 0.39'' (10mm) 8.

► Blue 470nm
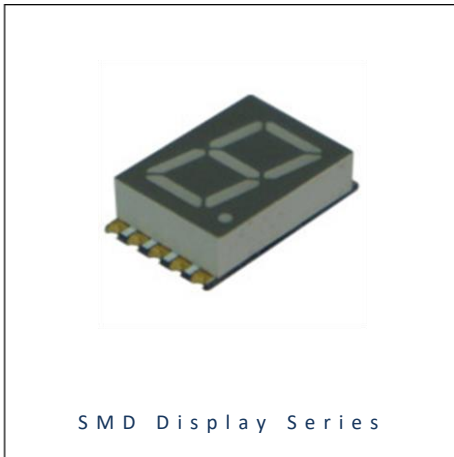
N0B51D69GS
N0B51D70GS

SMD Display Series RoHS Compliant

S M D   D i s p l a y   S e r i e s

APPLICATIONS:

- 7-Segment Display
- Signal Display
- Information Board
- Counter

FEATURES:

- **Package:** SMD Numeral Single Digit Display
- **Forward Current:** 20mA per diode
- **Pulse Current:** 100mA per diode
- **Forward Voltage (typ.):** 3.2V per diode
- **Luminous Intensity (typ.):** 40mcd@20mA per diode
- **Colour:** Blue
- **Wavelength:** 470nm
- **Materials:**
  - Die: InGaN
  - Resin: Epoxy (White Diffused)
- **Operating Temperature:** -40~+105°C
- **Storage Temperature:** -40~+105°C
- **Grouping parameters:**
  - Forward voltage
  - Luminous intensity
  - Dominant wavelength
- **Soldering methods:** Reflow
- **Preconditioning:** acc. to JEDEC Level 3
- **Packing:** 37mm tape with max.1000/reel, ø381mm (15'')

www.brightekeurope.com

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Forward Current *	I_F	30	mA
Peak Forward Current Duty 1/10 @10KHz	I_{FP}	100	mA
Reverse Current @5V	I_R	10	µA
Power Dissipation	P_D	120	mW
Debating Liner per Segment (from 25°C)	---	0.3	mA/°C
Operating Temperature	T_{OPR}	-40~+105	°C
Storage Temperature	T_{STG}	-40~+105	°C

1. All parameters are per diode.

Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V_F	---	3.2	4.0	V	I_F=20mA
Luminous Intensity	I_V	---	40	---	mcd	I_F=20mA
Dominant Wavelength	λ_D	---	470	---	nm	I_F=20mA
Spectral Line Half Bandwidth	$\Delta\lambda$	---	30	---	nm	I_F=20mA

1. Luminous intensity (I_V) ±15%, Forward Voltage (V_F) ±0.1V

OUTLINE DIMENSION:

Package Dimension:
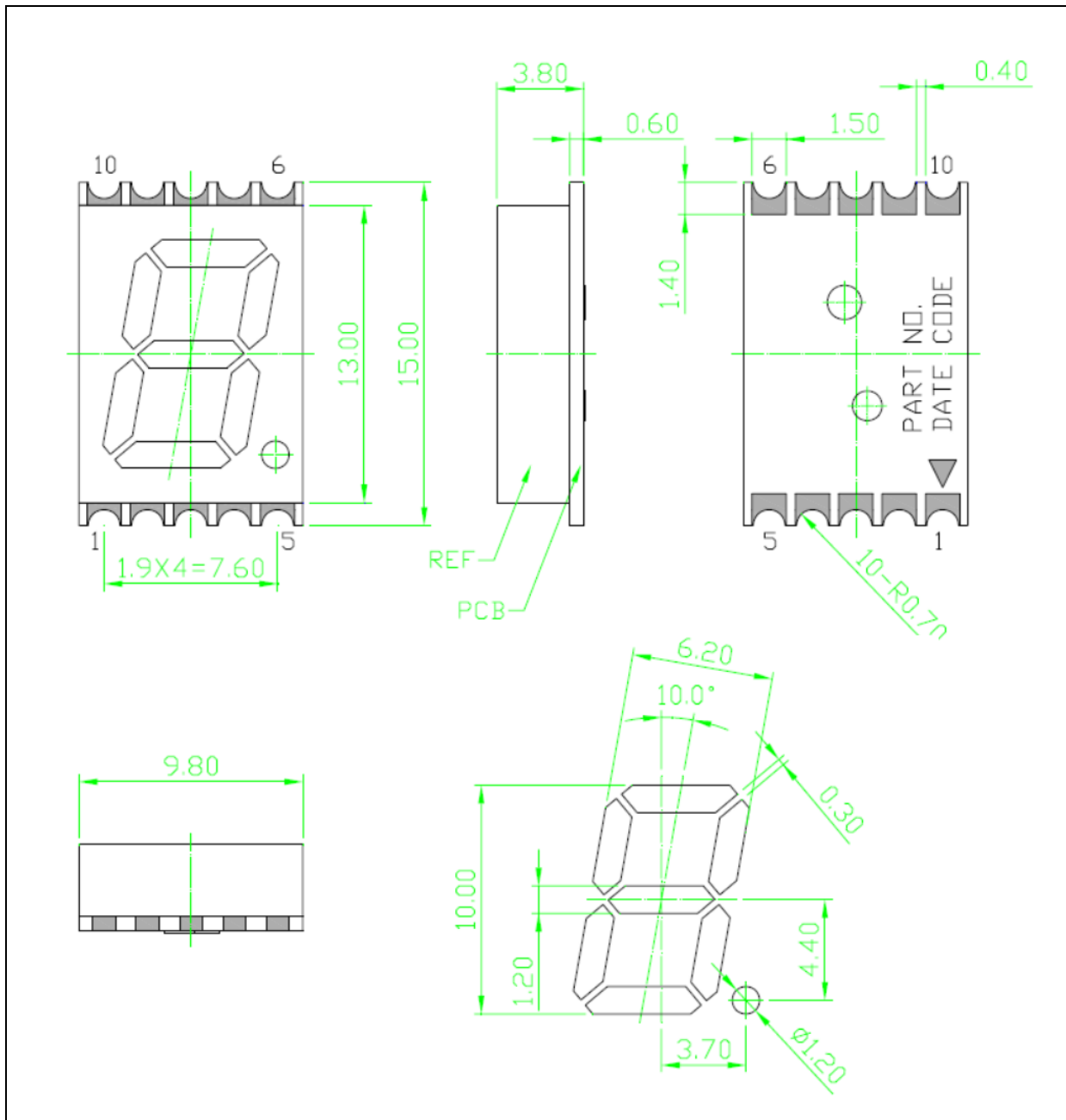
1. All dimensions are in millimetre (mm).
2. Tolerance ±0.25mm, unless otherwise noted.

www.brightekeurope.com

Circuit Diagram:

Internal Circuit:

N0B51D69GS
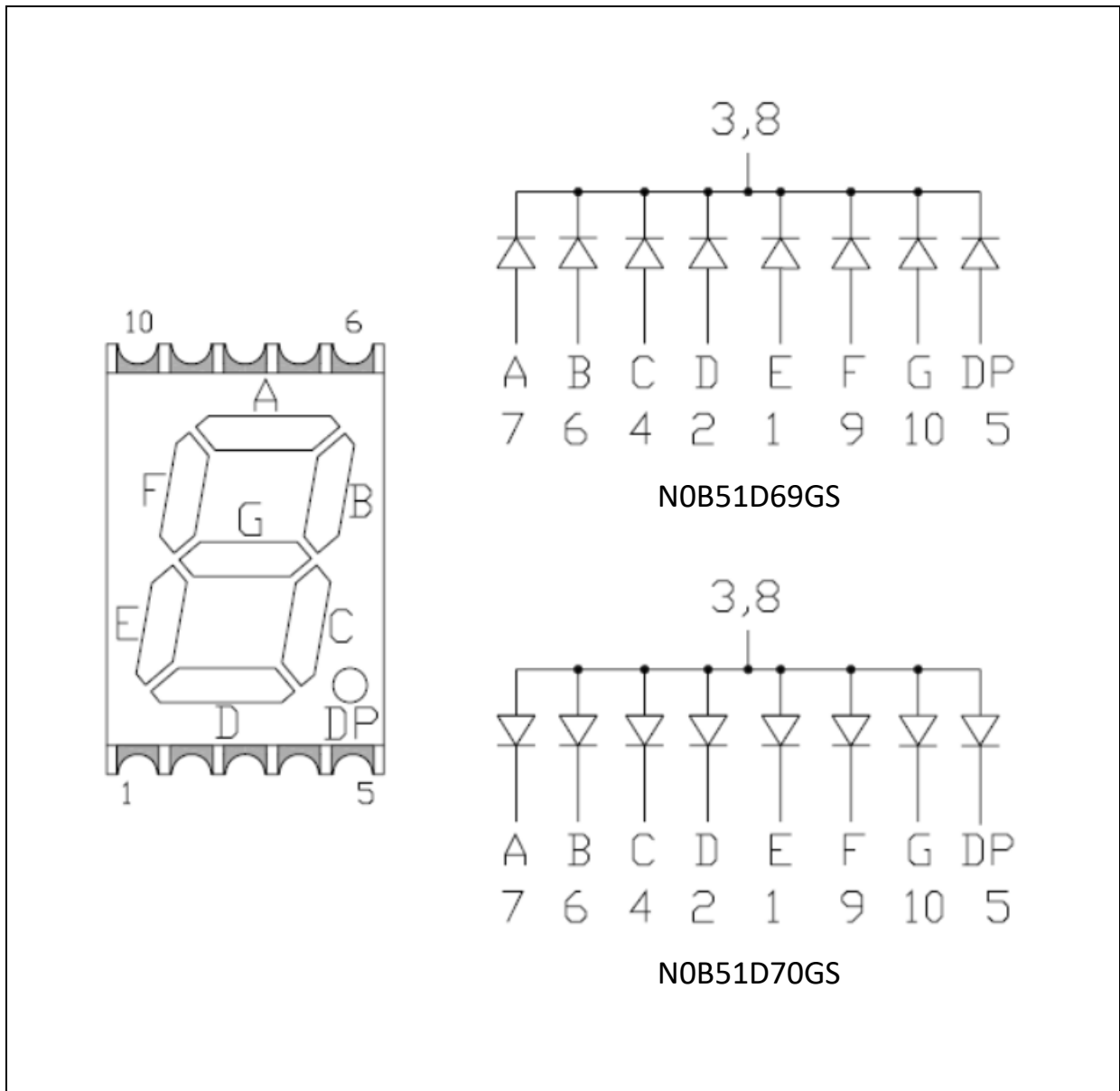
N0B51D70GS

Electrical Connection:

N0B51D69GS:

Pin no.	Function	Pin no.	Function
1	Anode E	6	Anode B
2	Anode D	7	Anode A
3	Common Cathode	8	Common Cathode
4	Anode C	9	Anode F
5	Anode DP	10	Anode G

N0B51D70GS:

Pin no.	Function	Pin no.	Function
1	Cathode E	6	Cathode B
2	Cathode D	7	Cathode A
3	Common Anode	8	Common Anode
4	Cathode C	9	Cathode F
5	Cathode DP	10	Cathode G

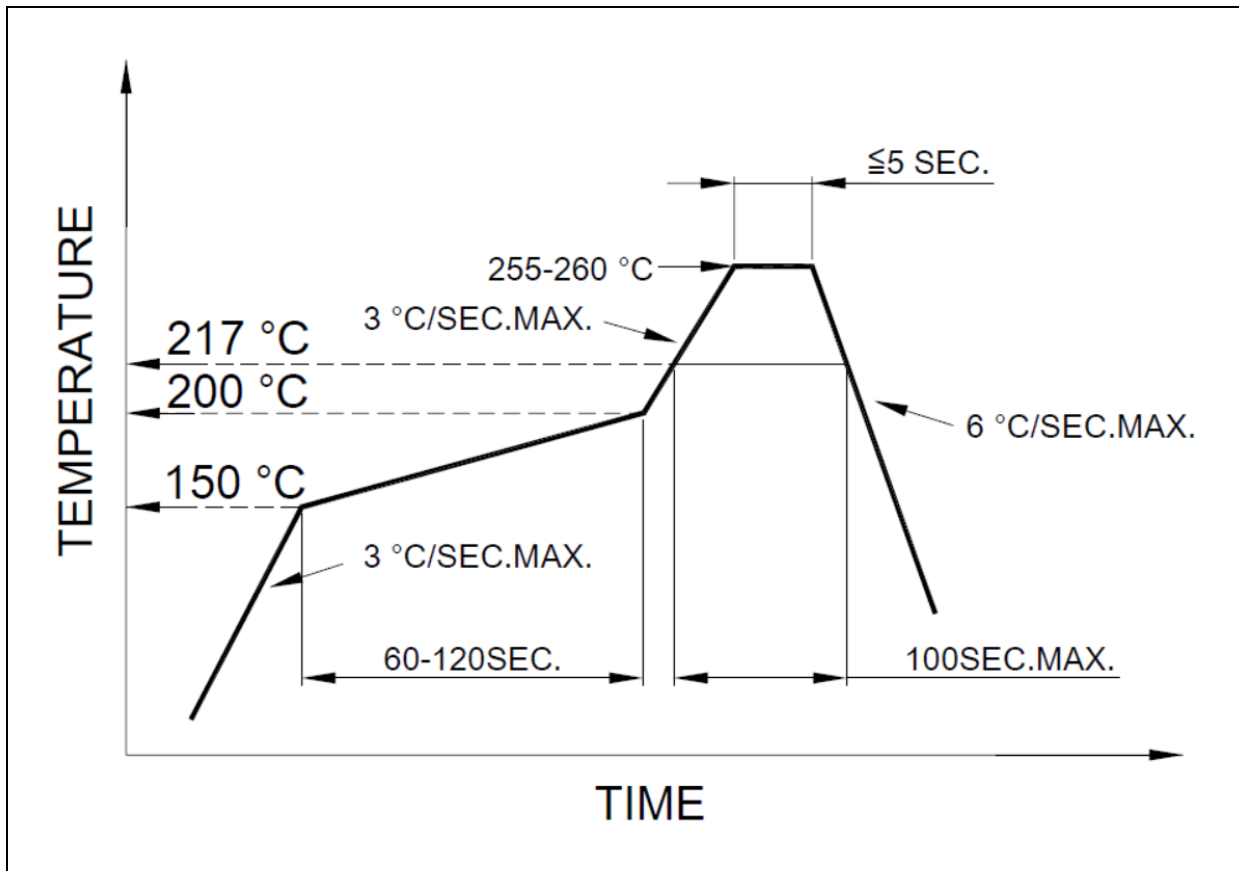Recommended Soldering Pad:

www.brightekeurope.com
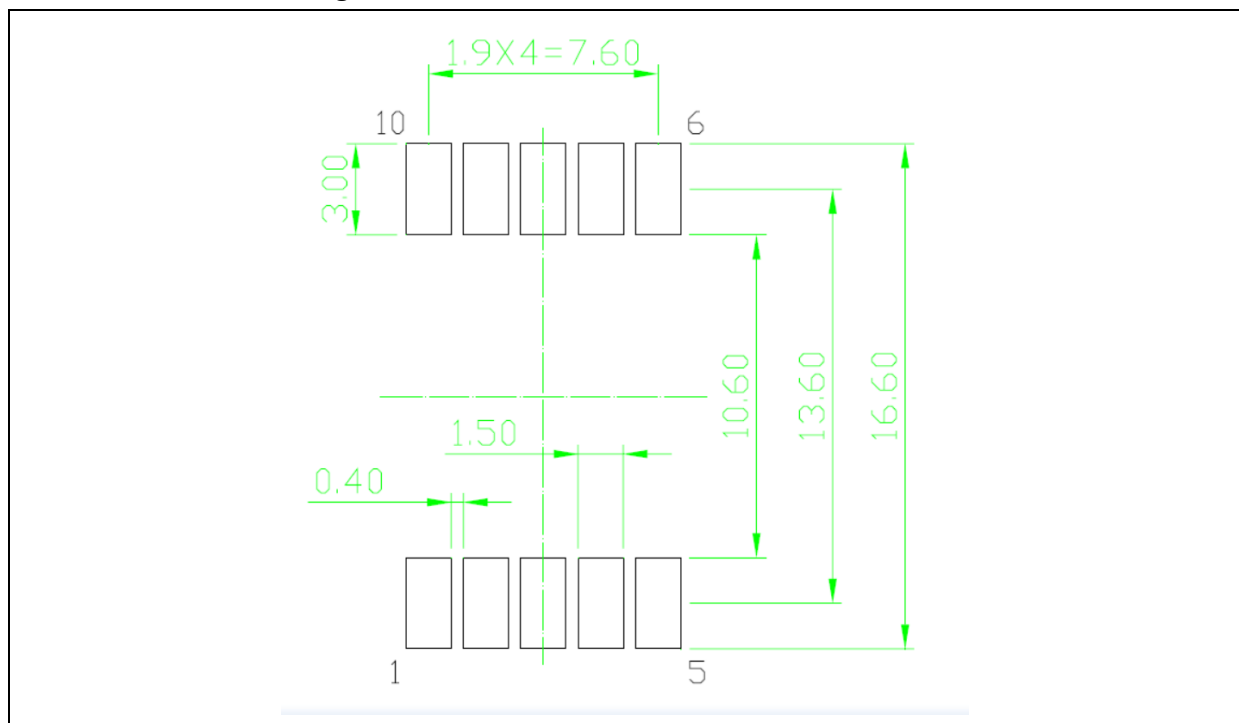
ELECTRO-OPTICAL CHARACTERISTICS:

Relative Intensity v.s. Forward Current	Forward Current v.s. Forward Voltage
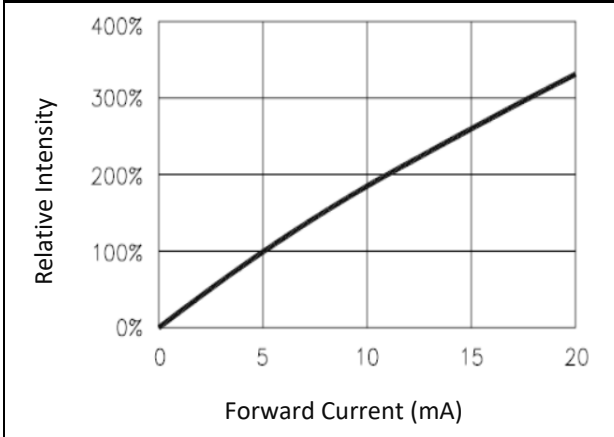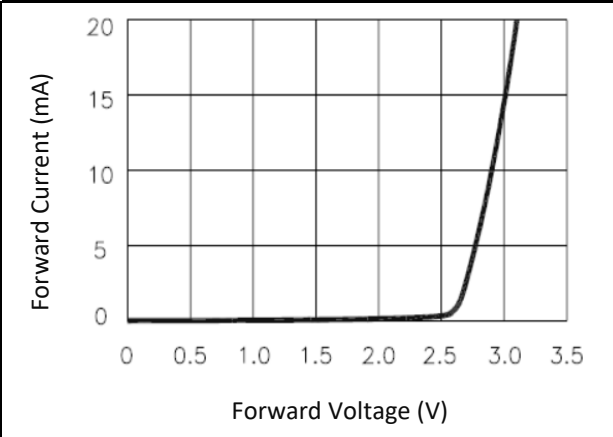
Relative Spectral Distribution	Max. Forward Current v.s. Temperature
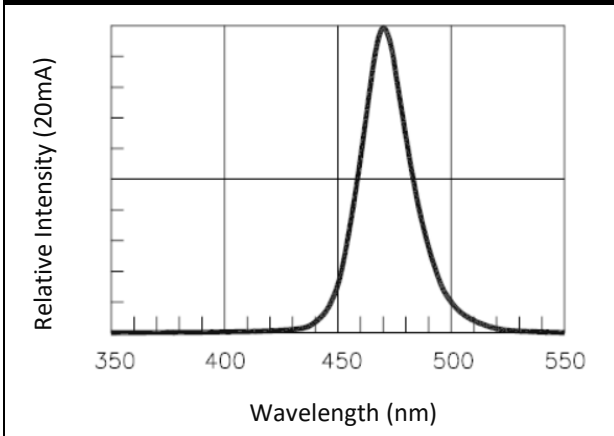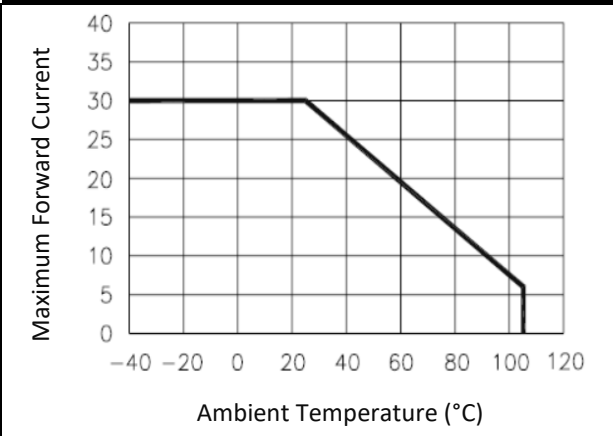
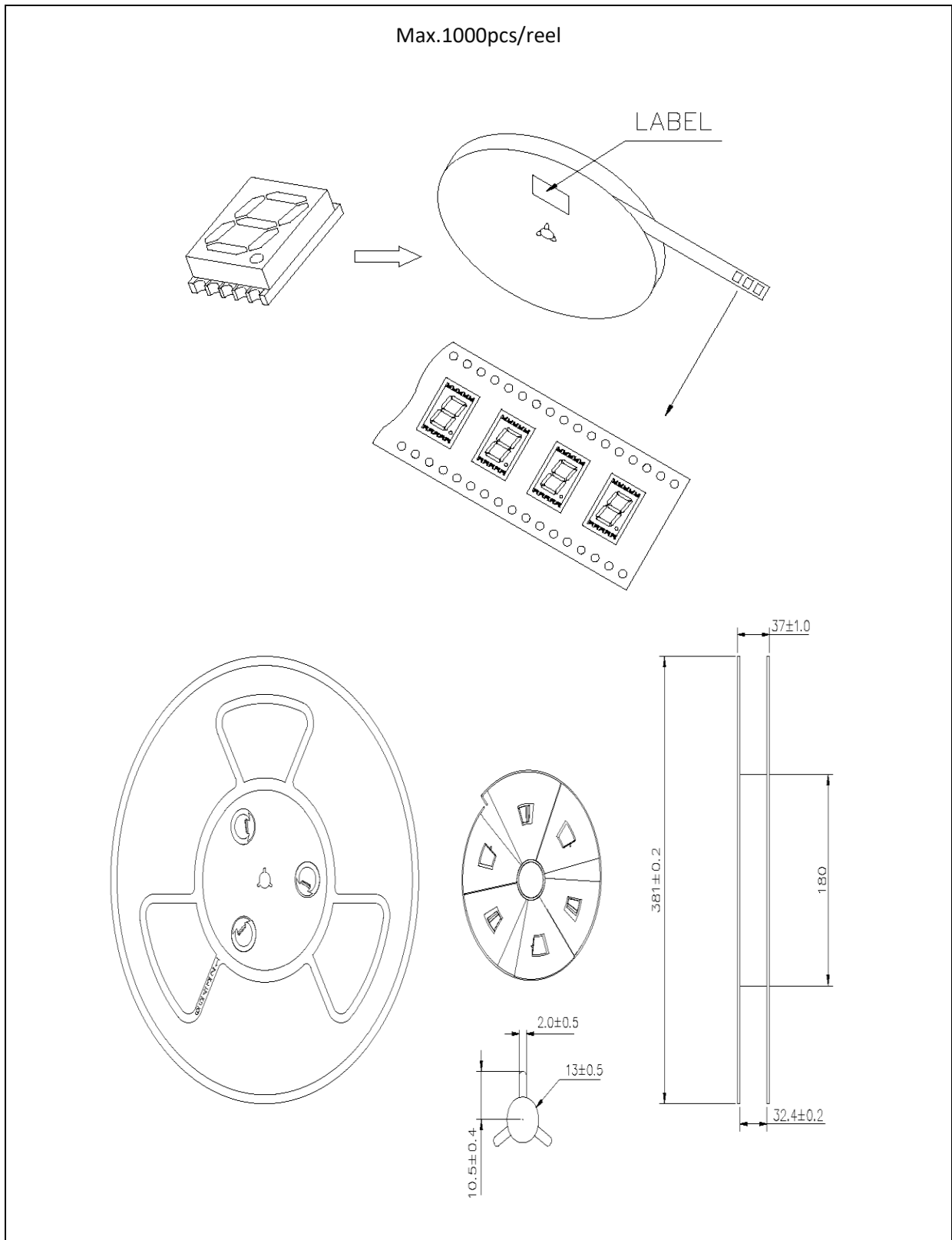| Relative Intensity v.s. Temperature |
|---|
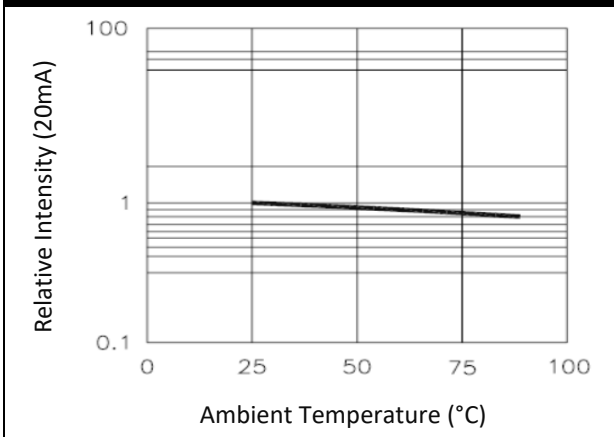
RECOMMENDED SOLDERING PROFILE:

Reflow Solder:

Note:
1. Recommend reflow temperature 245°C. Maximum soldering temperature should be limited to 260°C.
2. Maximum reflow soldering: 1 time.
3. Before, during, and after soldering, should not apply stress on the components and PCB board.

www.brightekeurope.com

PACKING SPECIFICATION:

Max.1000pcs/reel

LABEL

37±1.0

180

381±0.2

32.4±0.2

2.0±0.5

13±0.5

10.5±0.4

8

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 descanting agent <10% R.H. and apply baking before use.
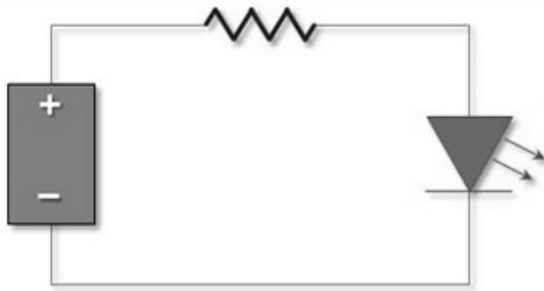
Baking:

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-electrosatic glove is recommended when handing 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.

www.brightekeurope.com

REVISION RECORD:

Version	Date	Summary of Revision
A1.0	29/06/2020	Datasheet set-up.