BRIGHTEK

BRIGHTEK (EUROPE) LIMITED

Brighten Up The World With LED!

ISO/TS 16949:2009 BS EN ISO 14001:2004 QC 080000 IECQ HSPM

PRODUCT DATASHEET

- ▶ PLCC6 SMD Top View
- ▶ 5050 1.8t Series
- ▶ Amber (605nm)

Release Date: 30 August 2022 Version: A1.1

N0A50S70

5050 1.8t Series

RoHS Compliant

FEATURES:

- **Package:** PLCC6 Top View SMT Package
- **Forward Current:** 20mA*3
- **Forward Voltage (typ.):** 2.0V
- **Luminous Intensity (typ.):** 780mcd@20mA*3
- **Colour:** Amber
- **Wavelength:** 600-610nm
- **Viewing angle:** 120°
- **Materials:**
  - Die: AlGaInP/GaAs
  - Resin: Silicon (Water Clear)
- **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.3000/reel, ø330mm (13'')

APPLICATIONS:

- Signal Light
- Display
- Indication Light
- Decorative Light

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Forward Current	I_F	30*3	mA
Peak Forward Current Duty 1/8@1KHz	I_{FP}	125	mA
Rverse Voltage	V_R	5	V
Reverse Current @5V	I_R	10	μA
Power Dissipation	P_D	225	mW
Operating Temperature	T_{OPR}	-40~+80	°C
Storage Temperature	T_{STG}	-40~+85	°C

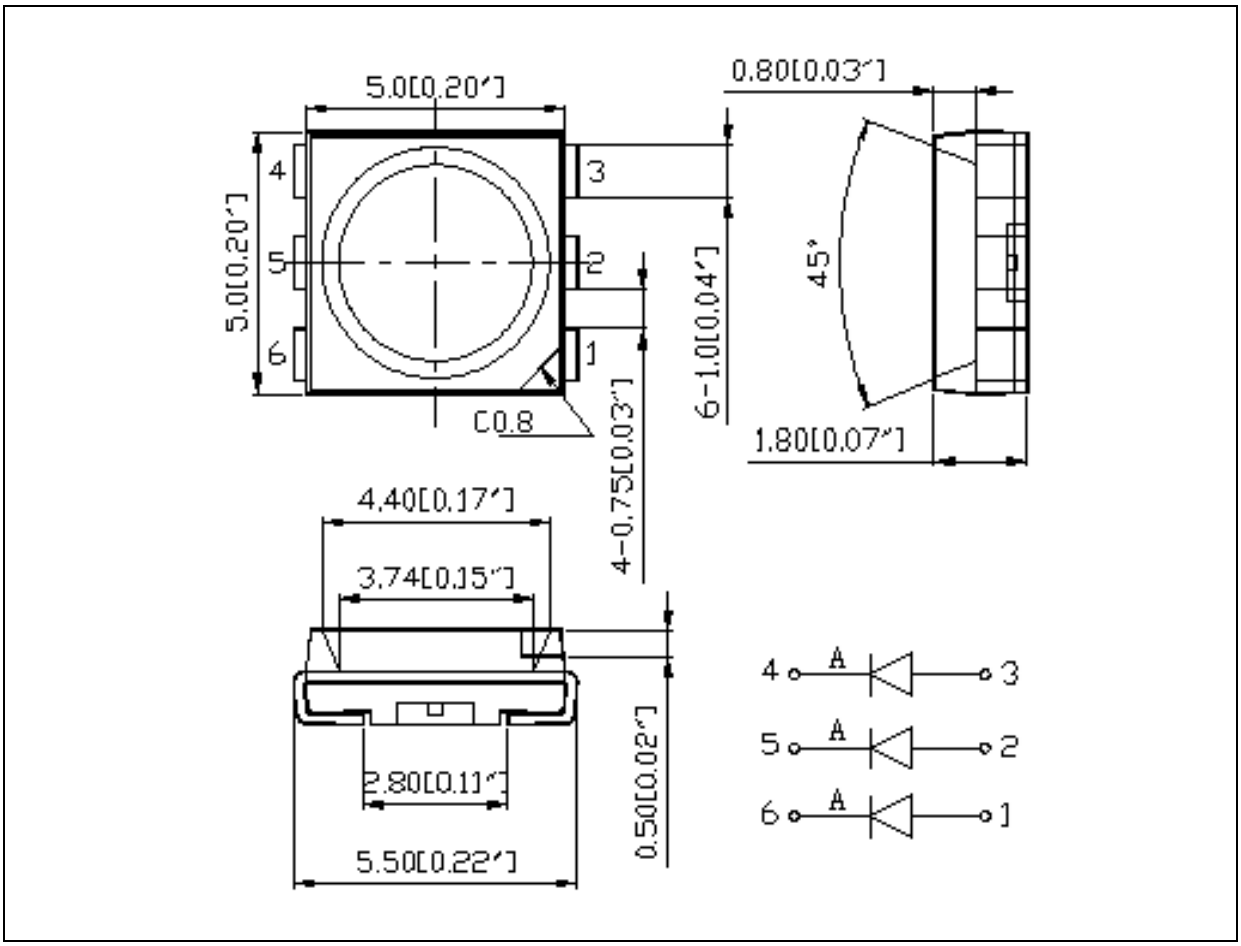
Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V_F	1.7	2.0	2.5	V	I_F=20mA*3
Luminous Intensity	I_V	350	780	1300	mcd	I_F=20mA*3
Dominant Wavelength	λ_D	600	605	610	nm	I_F=20mA*3
Peak Wavelength	λ_P	---	610	---	nm	I_F=20mA*3
Spectral Line Half Bandwidth	$\Delta\lambda$	---	17	---	nm	I_F=20mA*3
Viewing Angle	$2\theta_{1/2}$	---	120	---	deg	I_F=20mA*3

1. Luminous intensity (I_V) ±15%, Forward Voltage (V_F) ±0.1V, Viewing angle($2\theta_{1/2}$) ±5%, Wavelength ±1nm.

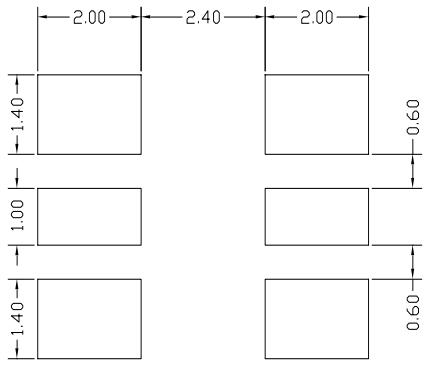
OUTLINE DIMENSION:

Package Dimension:



1. All dimensions are in millimetre (mm).
2. Tolerance ±0.2mm, unless otherwise noted.

Recommended Soldering Pad Dimension:



1. Dimensions are in millimetre (mm).
2. Tolerance ±0.1mm with angle tolerance ±0.5°.

BINNING GROUPS:

Forward Voltage Classifications (I_F = 20mA):

Code	Min.	Max.	Unit
☐	1.7	2.5	V

Luminous Intensity Classifications (I_F = 20mA):

Code	Min.	Max.	Unit
11	350	460	mcd
12	460	600	
13	600	780	
14	780	1000	
15	1000	1300	

Dominant Wavelength Classifications (I_F = 20mA):

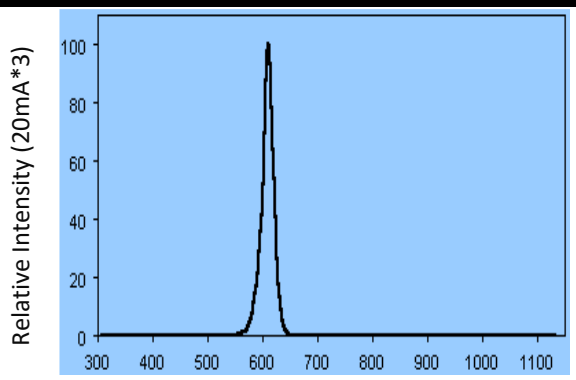
Code	Min.	Max.	Unit
p	600	605	nm
q	605	610	

Example Group Name on Label:

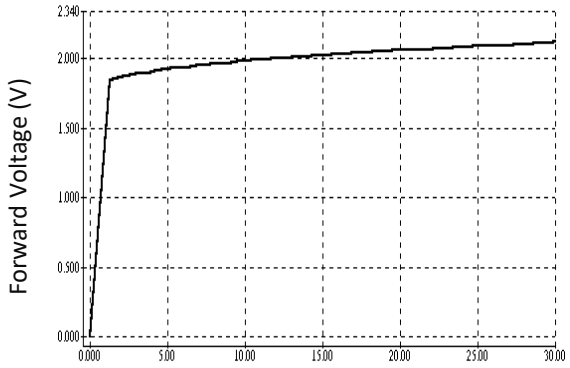
- ☐ **13p 60** = ☐ (1.7~2.5V) ► **13** (600~780mcd) ► **p** (600~605nm) ► **60** (IF=20mA*3)

ELECTRO-OPTICAL CHARACTERISTICS:

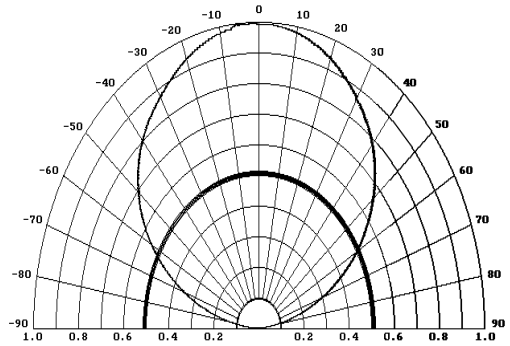
Relative Spectral Distribution



Forward Current v.s. Forward Voltage

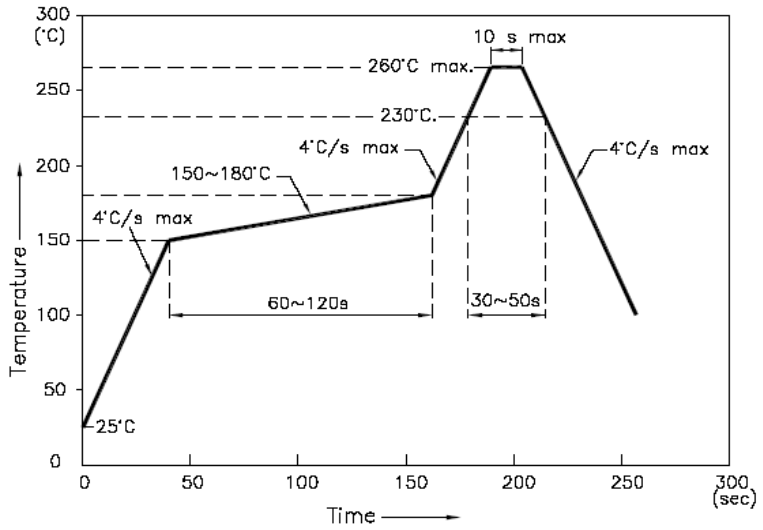


Directive Radiation



RECOMMENDED SOLDERING PROFILE:

Reflow Solder:



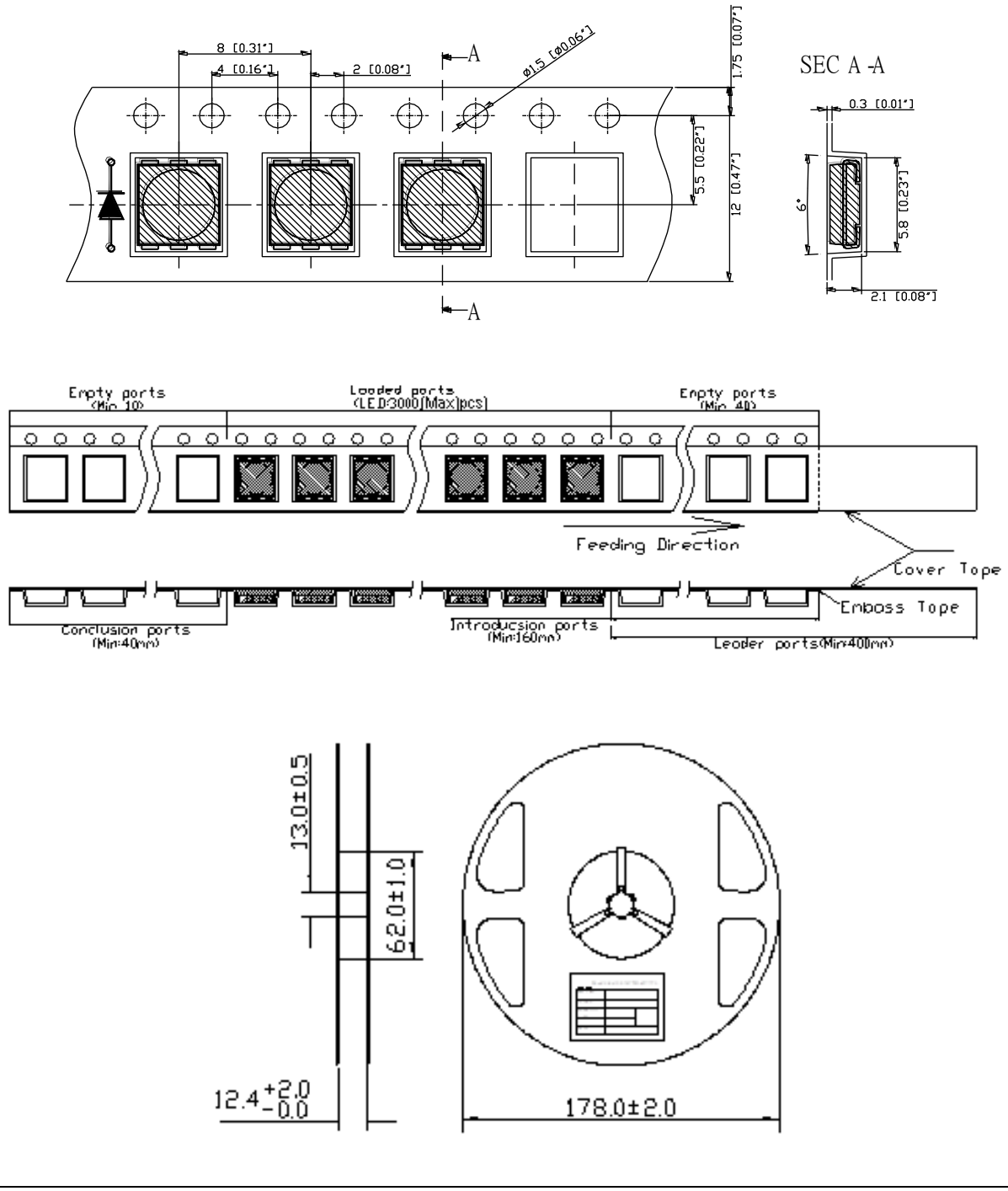
Note:

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

PACKING SPECIFICATION:

Reel Dimension:

Max.3000pcs/reel



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.

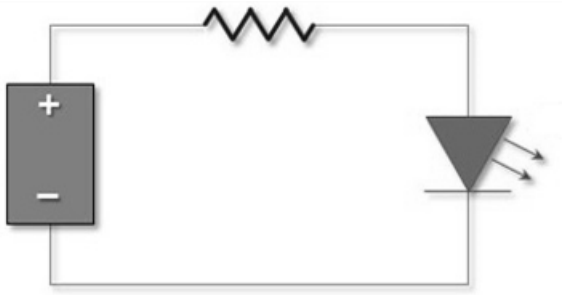
Baking:

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 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.

REVISION RECORD:

Version	Date	Summary of Revision
A1.0	19/12/2019	Datasheet set-up.
A1.1	30/08/2022	New datasheet format.