



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
- ▶ 1204SV (3010) 2.0t
- ▶ Photo-Transistor

NOP45S18SV



Release Date: 29 November 2022 Version: A1.0



1204SV (3010) 2.0t

RoHS
Compliant



FEATURES:

- **Package:** PCB / CHIP Surface Mount Side View LED
- **Type:** Photo-Transistor
- **Collector-Emitter Breakdown Voltage:** 30V (min.)
@ $I_{CEO}=100\mu A$
- **Emitter-Collector Breakdown Voltage:** 5V (min.)
@ $I_{ECO}=100\mu A$
- **Collector-Emitter Saturation Voltage:** 0.3V (max.)
@ $I_C=2mA / I_B = 100\mu A$
- **Collector Dark Current:** 100nA (max.)
- **Materials:**
 - Die: Silicon
 - Resin: Epoxy (Water Clear)
- **Operating Temperature:** -40~+80°C
- **Storage Temperature:** -40~+85°C
- **Soldering methods:** Reflow
- **MSL Level:** 3 acc. to JEDEC
- **Packing:** 8mm tape with 3000/reel, $\phi 180mm$ (7")

APPLICATIONS:

- Light Sensor
- IR Receiver
- 3C Consumer Goods
- Switch

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

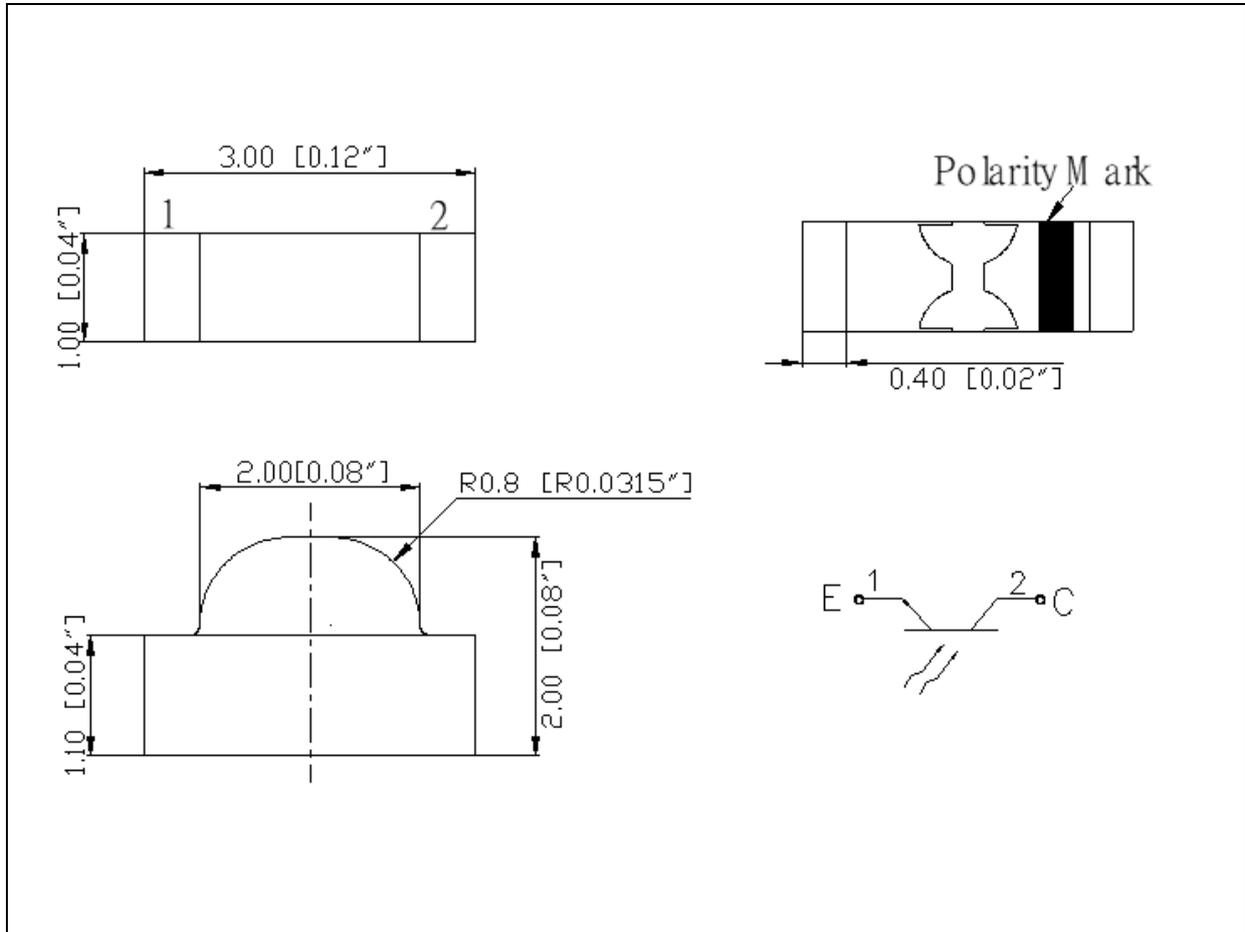
Parameter	Symbol	Ratings	Unit
Collector-Emitter Voltage	V_{CE0}	30	V
Emitter-Collector Voltage	V_{ECO}	5	V
Power Dissipation	P_D	100	mW
Operating Temperature	T_{OPR}	-40~+80	°C
Storage Temperature	T_{STG}	-40~+85	°C

Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	30	---	---	V	$I_{CEO}=100\mu A$ $I_B=0$
Emitter-Collector Breakdown Voltage	$V_{(BR)ECO}$	5	---	---	V	$I_{ECO}=100mA$ $I_B=0$
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	---	---	0.3	V	$I_C=2mA$ $I_B=100\mu A$
Rise Time	T_R	---	15	---	μS	$V_{CE}=5V$ $I_C=1mA$ $R_L=1000\Omega$
Fall Time	T_F	---	15	---	μS	
Collector Dark Current	I_{CEO}	---	---	100	nA	$V_{CE}=20V$ $E_e=0mW/cm^2$
On State Collector Current $I_{LED}=20mA, P_D=0.5mW, \lambda=940nm$	$I_{(ON)}$	1.0	2.0	---	mA	$V_{CE}=5V$ $D=6mm$

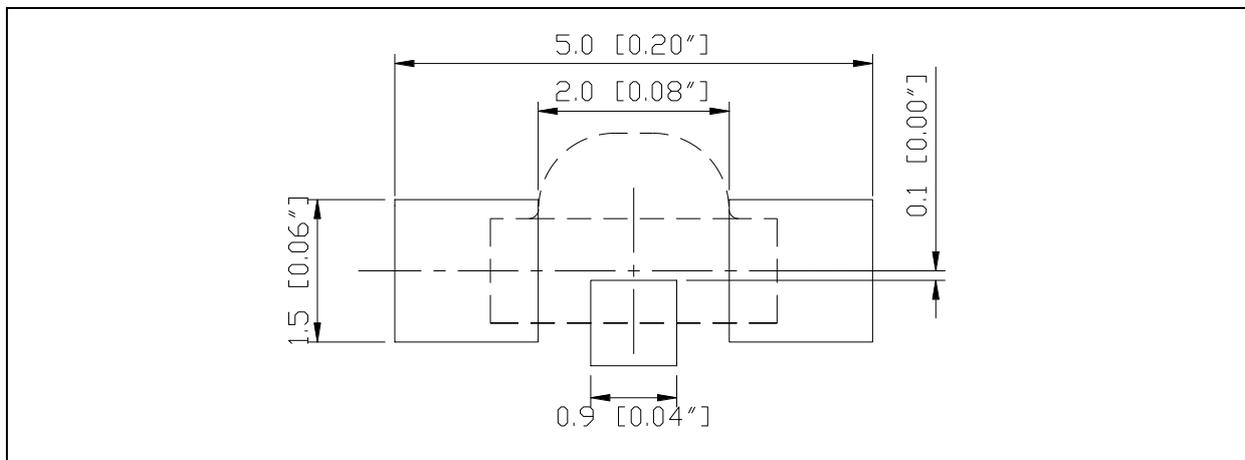
OUTLINE DIMENSION:

Package Dimension:



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

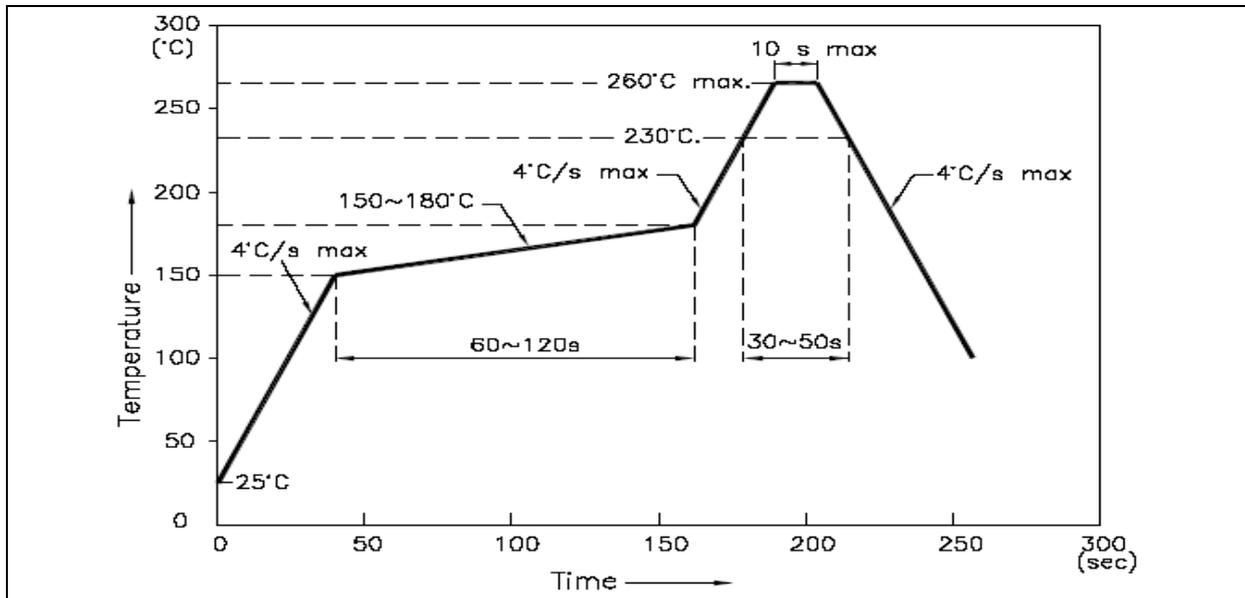
Recommended Soldering Pad Dimension:



1. Dimensions are in millimetre (mm).
2. Tolerance $\pm 0.1\text{mm}$ with angle tolerance $\pm 0.5^\circ$.

RECOMMENDED SOLDERING PROFILE:

Reflow Solder:

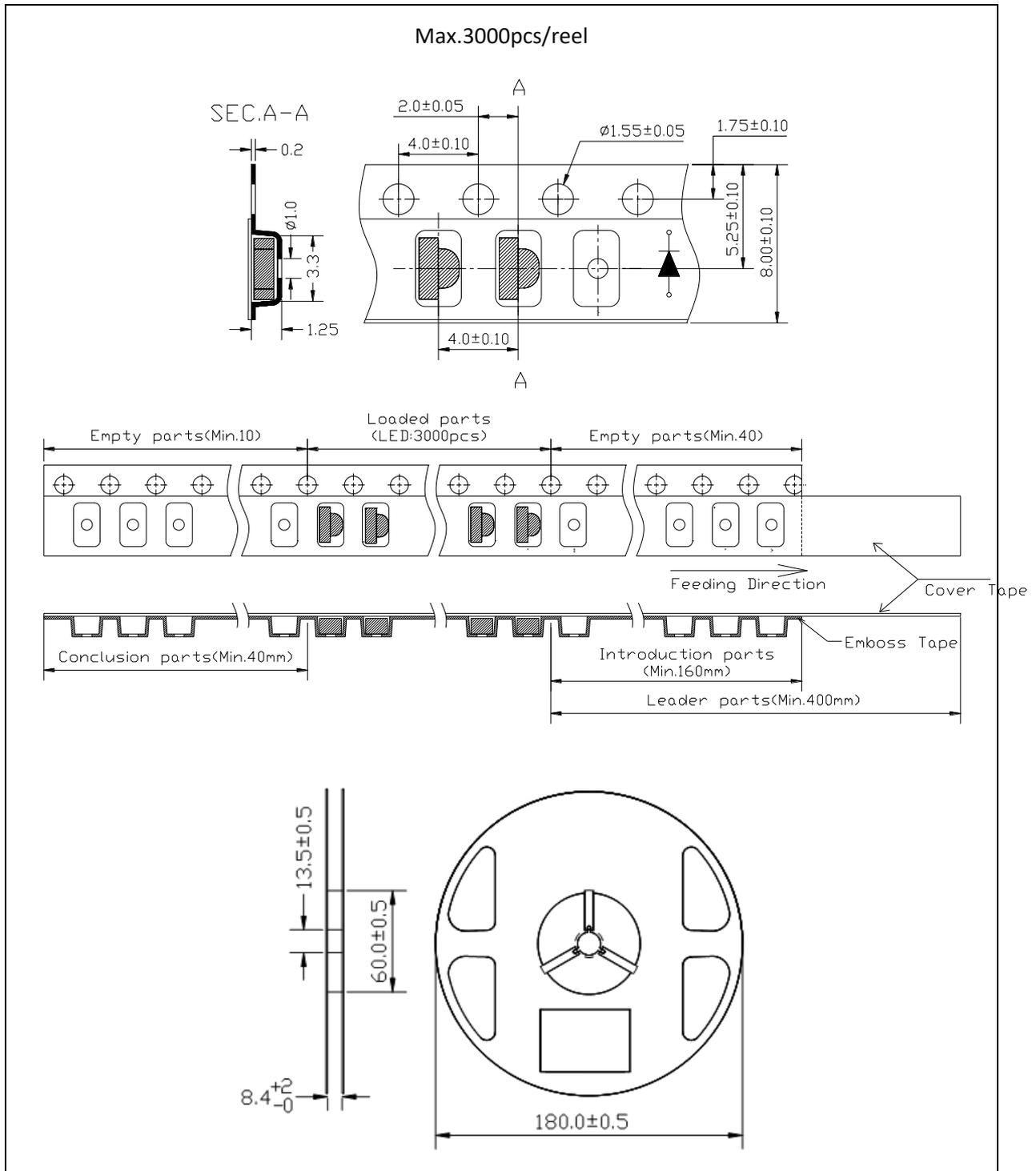


Note:

1. Recommend reflow temperature 245°C. The maximum soldering temperature should be limited to 260°C.
2. Maximum reflow soldering: 2 times.
3. 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.

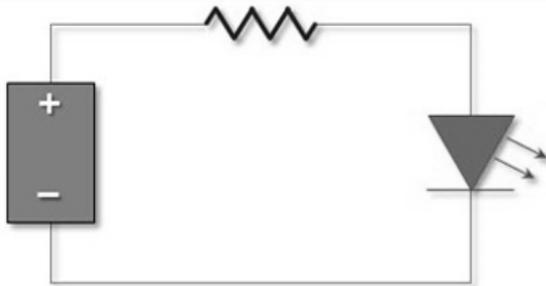
Baking:

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 36hrs 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	29/11/2022	Datasheet set-up.