BRIGHTEK

BRIGHTEK (EUROPE) LIMITED

Brighten Up The World With LED!

PRODUCT DATASHEET

- ► PCB / CHIP LED
- ► 0805 (2012) (1.1t)
- ► Infrared (940nm)

Release Date: 06 December 2018 Version: A1.0

N0F47S76

0805 1.1t Series

RoHS Compliant

FEATURES:

- **Package:** PCB / CHIP Top View Infrared LED
- **Forward Current:** 20mA
- **Forward Voltage (typ.):** 1.2V
- **Radiant Incidence (typ.):** 0.55mW/cm^2@20mA
- **Colour:** Infrared (IR)
- **Wavelength:** 940nm
- **Viewing angle:** 140°
- **Materials:**
  - Die: AlGaAs/AlGaAs
  - Resin: Epoxy (Water Clear)
- **Operating Temperature:** -40~+80°C
- **Storage Temperature:** -40~+85°C
- **Grouping parameters:**
  - Forward voltage
  - Radiant incidence
  - Peak wavelength
- **Soldering methods:** Reflow
- **Preconditioning:** acc. to JEDEC Level 3
- **Packing:** 8mm tape with Max.3000/reel, ø180mm (7'')

APPLICATIONS:

- Sensor
- Remote Control
- Consumer Goods

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Forward Current	I_F	50	mA
Peak Forward Current Duty 1%; Width 100μS	I_{FP}	1	A
Reverse Voltage	V_R	5	V
Reverse Current @5V	I_R	10	μA
Power Dissipation	P_D	80	mW
Operating Temperature	T_{OPR}	-40~+80	°C
Storage Temperature	T_{STG}	-40~+85	°C

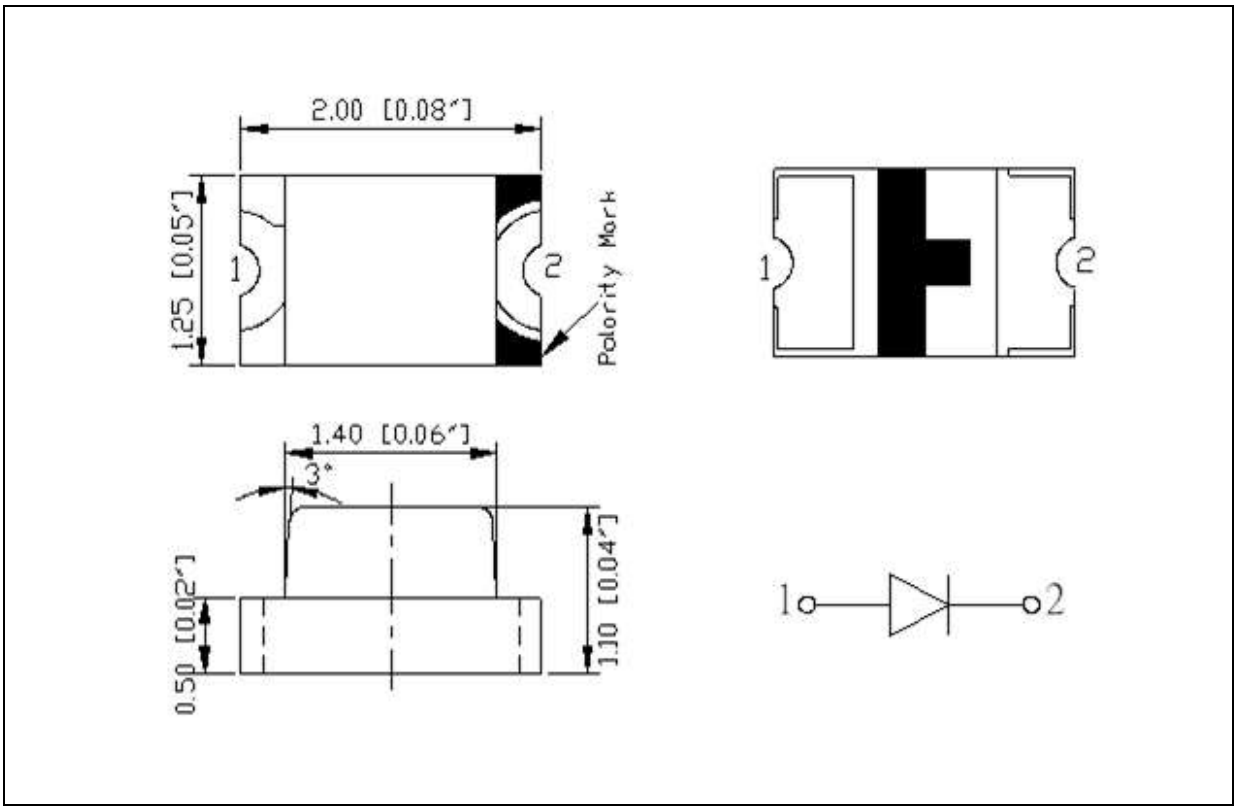
Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V_F	0.8	1.2	1.6	V	I_F=20mA
Radiant Incidence	E_e	0.1	0.56	1.1	mW/cm^2	I_F=20mA
Peak Wavelength	λ_P	930	940	950	nm	I_F=20mA
Spectral Line Half Bandwidth	$\Delta\lambda$	---	40	---	nm	I_F=20mA
Viewing Angle	$2\theta_{1/2}$	---	140	---	deg	I_F=20mA

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

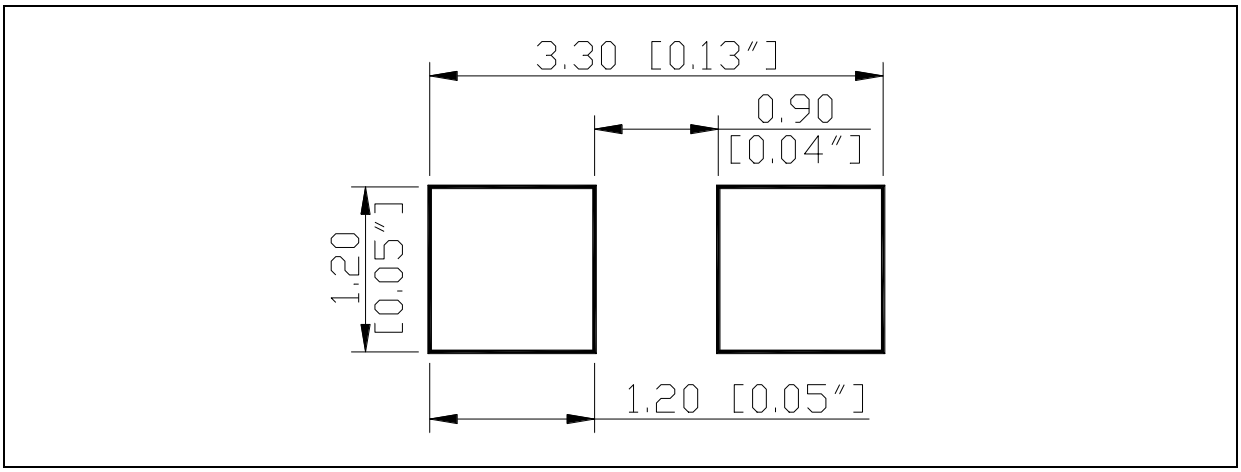
OUTLINE DIMENSION:

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
☐	0.8	1.6	V

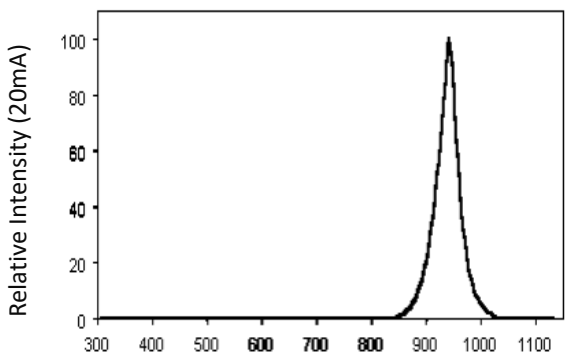
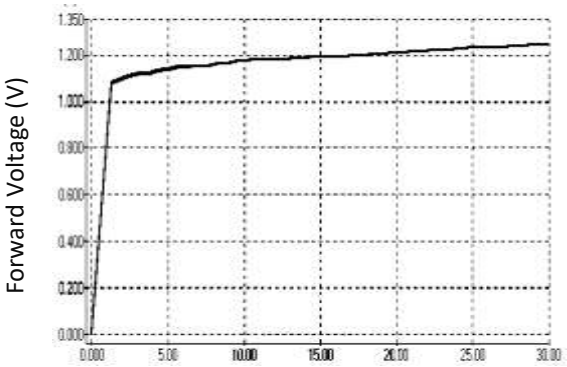
Radiant Incidence Classifications (I_F = 20mA):

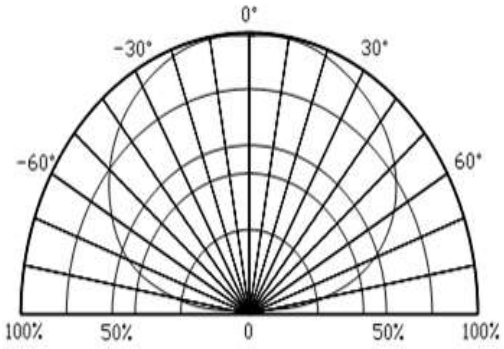
Code	Min.	Max.	Unit
A	0.1	0.6	mW/cm^2
B	0.6	1.1	

Peak Wavelength Classifications (I_F = 20mA):

Code	Min.	Max.	Unit
☐	930	950	nm

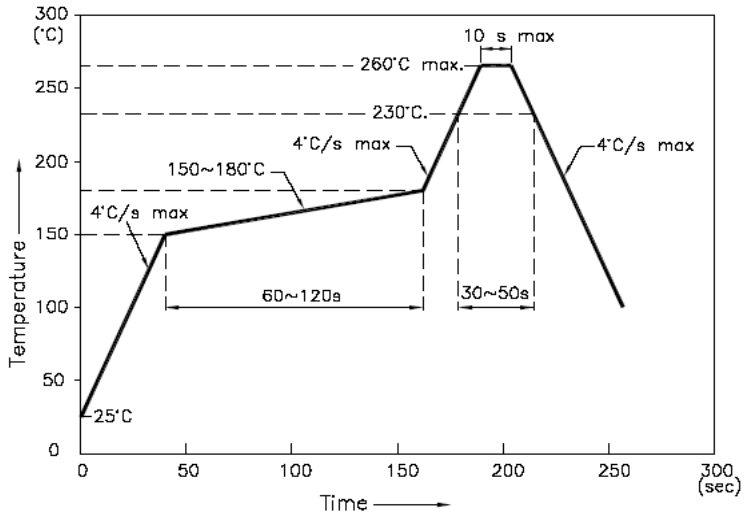
ELECTRO-OPTICAL CHARACTERISTICS:

Relative Spectral Distribution	Forward Current v.s. Forward Voltage
	

Directive Radiation


RECOMMENDED SOLDERING PROFILE:

Reflow Solder:



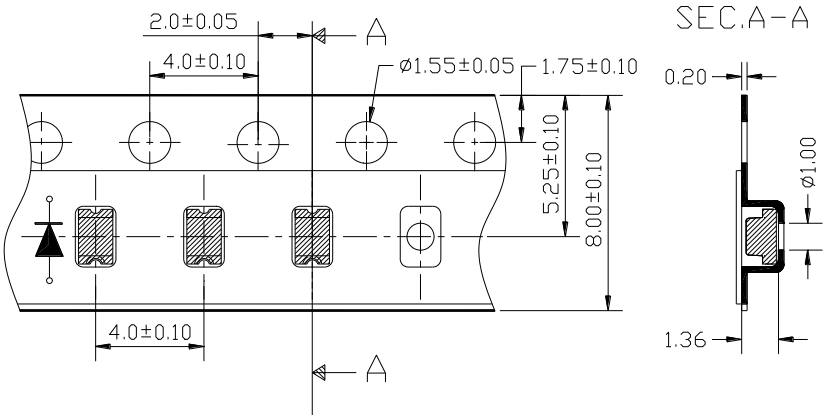
Note:

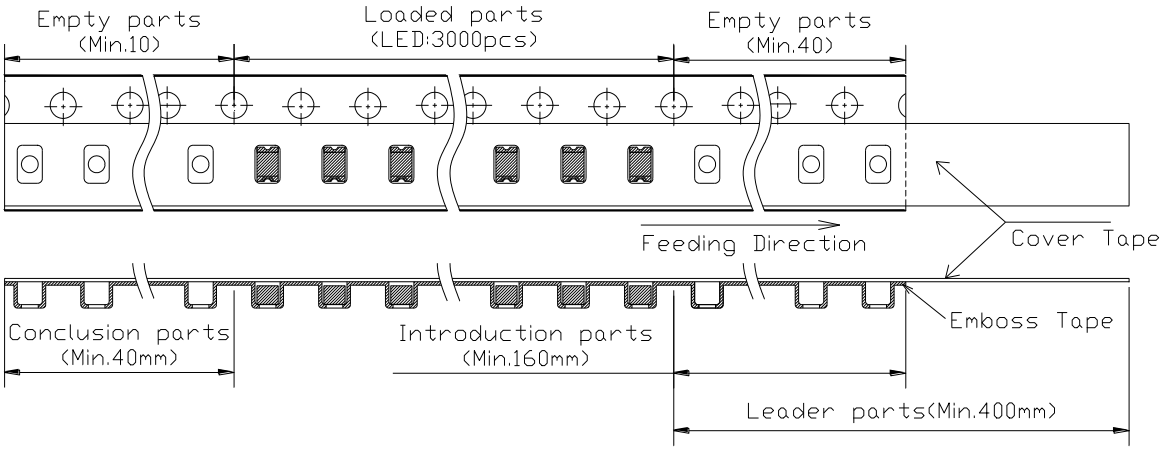
1. Recommend reflow temperature 245°C. The maximum soldering temperature should be limited to 260°C.
2. Maximum reflow soldering: 2 times.
3. Before, during, and after soldering, should not apply stress on the components and PCB board.

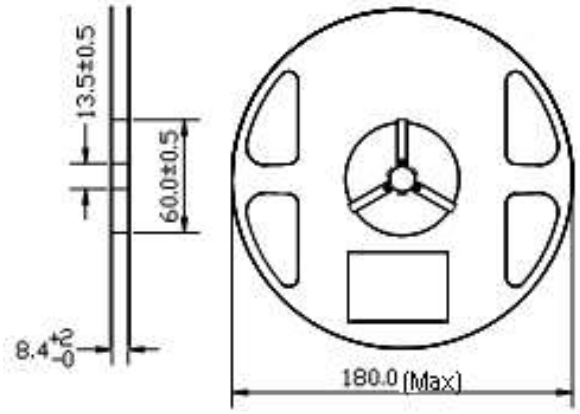
PACKING SPECIFICATION:

Reel Dimension:

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 and apply baking at 60°C±5°C for 15hrs before use.

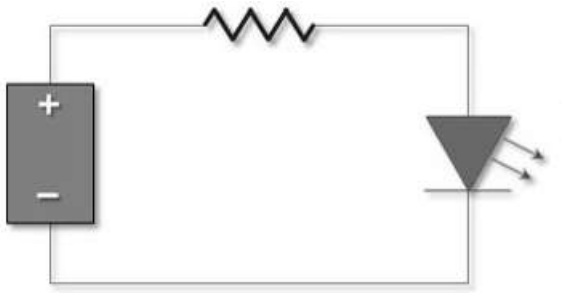
Baking:

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±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	06/12/2018	Datasheet set-up.