BRIGHTEK

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

# PRODUCT DATASHEET


- ▶ Ceramic High Power
- ▶ 6868 1.7t Series
- ▶ IR Laser 940nm

Release Date: 09 September 2022 Version: A1.0

## N0F62S53Z


## 6868 1.7t Series

RoHS Compliant

### FEATURES:

- **Package:** Ceramic IR CHIP SMT Package
- **Forward Current:** 1A
- **Forward Voltage (typ.):** 7V
- **Radiant Power (typ.):** 3000mW@1A
- **Colour:** Infrared (IR)
- **Peak Wavelength:** 940nm
- **Viewing angle:** 24°
- **Materials:**
  - Substrate: AlN
  - Lens: Crystal Glass
  - L/F: Ceramic
- **Operating Temperature:** -40~+80°C
- **Storage Temperature:** -40~+100°C
- **Grouping parameters:**
  - Forward Voltage
  - Radiant Power
  - Peak Wavelength
- **Soldering methods:** IR Reflow soldering
- **MSL:** Level 4 according to J-STD020
- **Packing:** 16mm tape with max.350pcs/reel, ø178mm (7'')

### APPLICATIONS:

- Security Camera
- Medical Device
- Fluorochemistry
- Bacterial Identification
- Cosmetology
- Magnetic Particle Inspection
- Clean Room Inspection
- Mineralogy

## CHARACTERISTICS:

### Absolute Maximum Characteristics (Ta=25°C)

| Parameter | Symbol | Ratings | Unit |
|---|---|---|---|
| DC Forward Current | $I_F$ | 1000 | mA |
| Pulse Forward Current D=0.01s; Duty 1/10 | $I_{PF}$ | 3000 | mA |
| Reverse Voltage | $V_R$ | 20 | V |
| Leakage Current @5V | $I_R$ | 10 | μA |
| Junction Temperature | $T_j$ | 105 | °C |
| Thermal Resistance Junction to Solder Point | $R_{thj-sp}$ | 3 | °C/W |
| Electrostatic Discharge (HBM) | ESD | 8 | KV |
| Operating Temperature | $T_{OPR}$ | -40~+80 | °C |
| Storage Temperature | $T_{STG}$ | -40~+100 | °C |

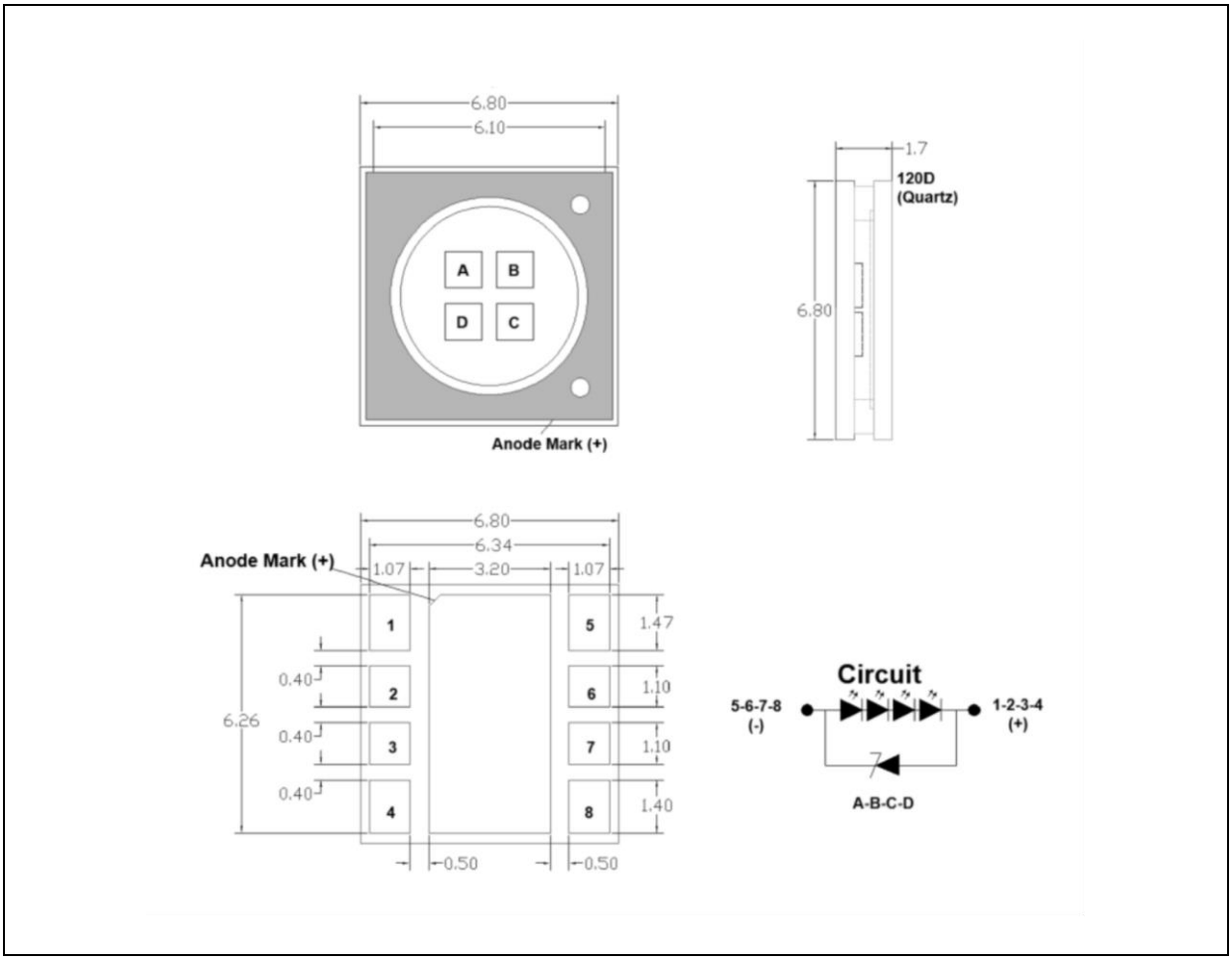
### Electrical & Optical Characteristics (Ta=25°C)

| Parameter | Symbol | Values | | | Unit | Test Condition |
|---|---|---|---|---|---|---|
| | | Min. | Typ. | Max. | | |
| Forward Voltage | $V_F$ | 6 | --- | 8 | V | $I_F$=1A |
| Radiant Power | $P_O$ | 2000 | --- | 4000 | mW | $I_F$=1A |
| Peak Wavelength | $W_P$ | 930 | --- | 950 | nm | $I_F$=1A |
| Viewing Angle | $2\theta_{1/2}$ | --- | 24 | --- | deg | $I_F$=1A |

1. Radiant Power ($P_O$) ±10%, Forward Voltage ($V_F$) ±0.05V, Wavelength (nm) ±2nm

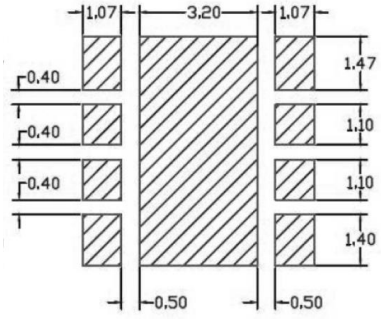
## OUTLINE DIMENSION:

Package Dimension:

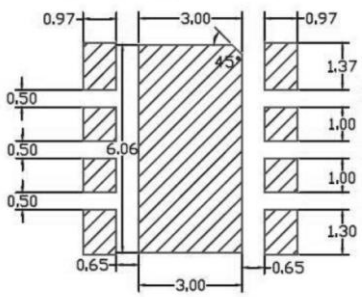



1. All dimensions are in millimetre (mm).
2. Tolerance ±0.13mm, unless otherwise noted.

Recommended Soldering Pad Dimension:




Recommended PCB Solder Pad



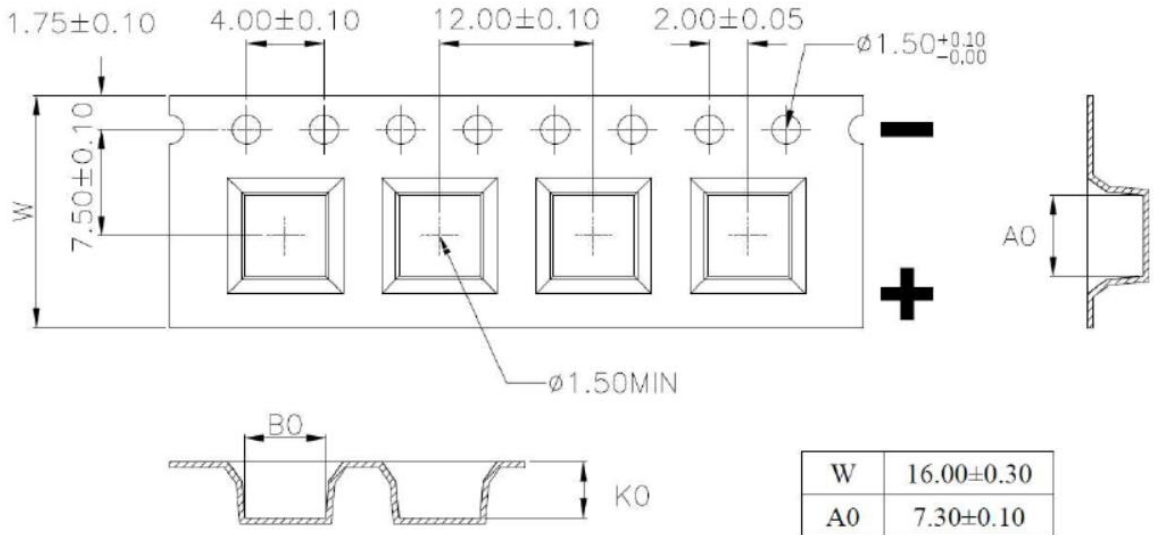

Recommended Stencil Pattern

1. Dimensions are in millimetre (mm).
2. Tolerance ±0.12mm with angle tolerance ±0.5°.

## PACKING SPECIFICATION:

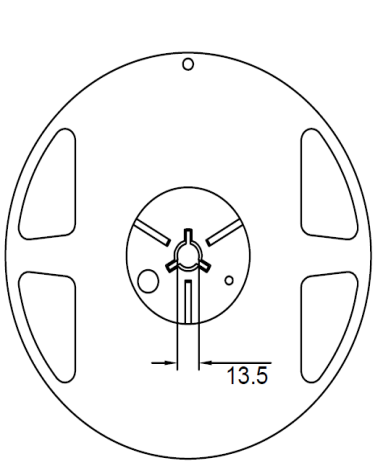
Reel Dimension:

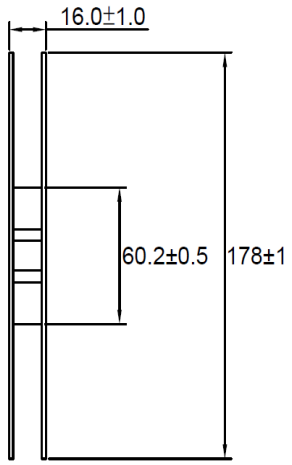
Max.350pcs/reel




| | |
|---|---|
| W | 16.00±0.30 |
| A0 | 7.30±0.10 |
| B0 | 7.30±0.10 |
| K0 | 4.30±0.10 |

1. 10 sprocket hole pitch cumulative tolerance ±0.20.
2. Carrier camber is within 1 mm in 250 mm.
3. Material : Black Conductive Polystyrene Alloy.
4. All dimensions meet EIA-481-D requirements.
5. Thickness : 0.30±0.05mm.
6. Packing length per 22 " reel : 45.5Meters(1:3),22" reel : 240.0Meters(1:16) W=105.
7. Component load per 13" reel : minimum 100 pcs and maximum 350 pcs



## 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.

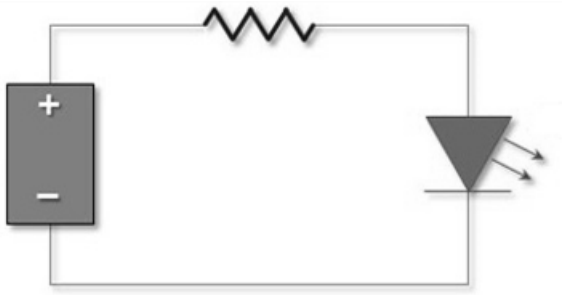
### Baking:

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:

- 65±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.

## REVISION RECORD:

| Version | Date | Summary of Revision |
|---|---|---|
| A1.0 | 09/09/2022 | Datasheet set-up. |