


Features

- Size Design 34.2 × 14.3 × 30.3mm
- High Current Handling Capability 20kA @ 8/20μs
- Flame retardant
- Reliable to Protect Surge Voltage
- With overcurrent and overheat protection
- With failure alarm function

Application information

- Secondary and tertiary surge protection for low-voltage AC and DC power supply and distribution system and electrical equipment

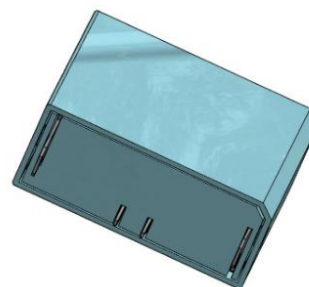
Agency Approvals

| Icon | Description |
|---|------------------------------------|
| RoHS | Compliance with 2011/65/EU |
| HF | Compliance with IEC61249-2-21:2003 |
|  | Mean lead free |

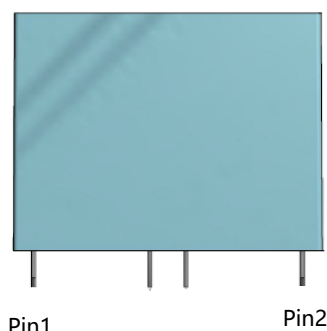
Test reference standards

- 1) GB / T 18802.31-2021: Low-voltage surge protective devices-Part 31: Surge protective devices connected to photovoltaic installations-Requirements and test methods.
- 2) IEC 61643-31:2019 :Low-voltage surge protective devices - Part 31: Requirements and test methods for SPDs for photovoltaic installations
- 3) IEC 61643-1 Edition 1.1 Surge protective devices connected to low-voltage power distribution systems -Part 1: Performance requirements and testing methods

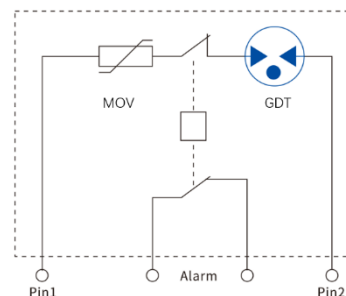
Exterior



Package (Top View)



Schematics



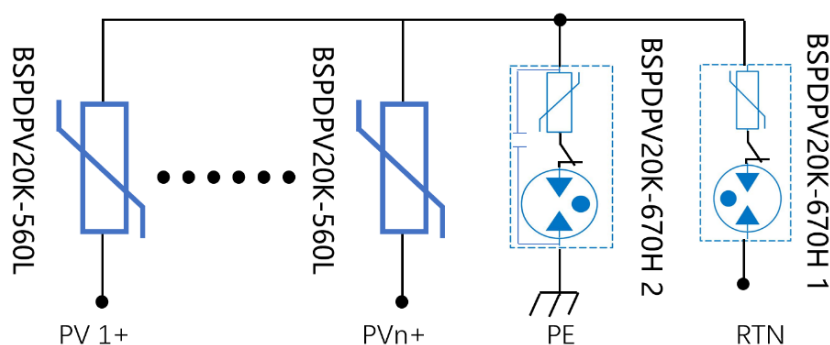
Electrical Parameter

| Items | Technical parameter |
|---|---------------------------------------|
| Product Model | BSPDPV20K-670H1 |
| MOV Voltage (1mA) | 600-712V |
| GDT DC breakdown voltage (1mA) | 1680V±20% |
| GDT Impulse breakdown voltage (1KV/μs) | ≤3.0KV |
| SPD according to IEC 61643-11:2011 | Class- II |
| SPD according to EN 61643-11:2012 | Type 2 |
| Maximum continuous operating voltage Uc | 510VAC/670VDC |
| Maximum continuous operating voltage of photovoltaic application Ucpv | 670V |
| Nominal discharge current In (8/20μs) | 10KA |
| Max discharge current Imax (8/20μs) | 20KA |
| Voltage protection level Up | Peak voltage≤4.0KV ¹⁾ |
| | Platform vottage≤1.80KV ²⁾ |
| Rated short-circuit current of photovoltaic application Iscpv | 50A |
| Operating and storage Temperature | -40~+95℃ |
| Modes of protection | Refer to Application Principle Chart |
| IP Code of enclosure | IP20 |
| Flame retardant grade of enclosure | UL94 V0 |
| Housing material | PA66+25wt%glass fiber |
| Appearance color | Blue |
| Warning device | Normal closed, abnormal open |

1) Refer to GB / T 18802.31-2021

2) Manufacturer claims

Application Principle Chart



Part Numbering System

| | | | | |
|------|-----|-----|------|-----|
| BSPD | PV | 20K | -670 | H1 |
| (1) | (2) | (3) | (4) | (5) |

(1) BSPD:Bencent SPD

(2) PV:Photovoltaic Module

(3) 20K: Max discharge current I_{max} (8/20 μ s) 20KA

(4) 670: Maximum continuous operating voltage of photovoltaic application $U_{cpv640V}$

(5) H1: [680V(1mA)MOV+1680V(1mA) GDT]

Applicable environment and safety regulations

| Items | Requirement Specification |
|---|---------------------------|
| Operating temperature | -40℃~95℃ |
| Storage temperature | -40℃~95℃ |
| relative humidity | 5%~95% |
| Applicable altitude | ≤5000m |
| The alarm circuit of this lightning protection module complies with the requirements of EN60950-1 for enhanced insulation, and the remote signaling alarm interface and main circuit. The insulation withstand voltage is 3750Vrms. | |

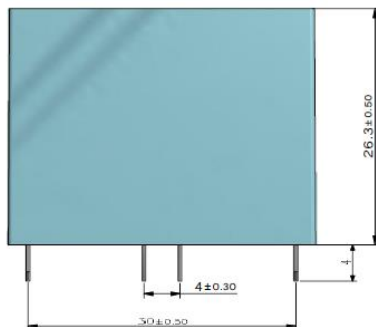
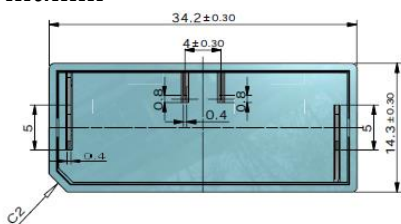
Note: Up-screen program can be specified by customer's request via contacting Bencent service

Solderability test

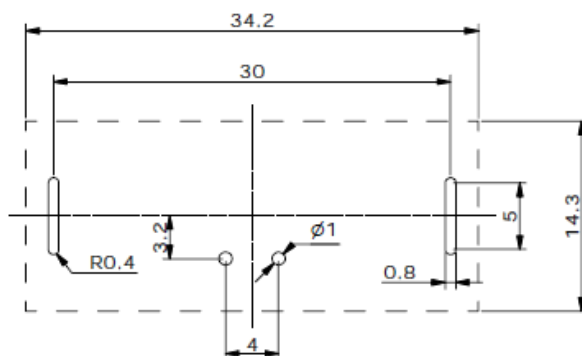
| | | |
|---------------|-------------------------|-------------|
| Solderability | Solder Pot Temperature: | 245℃±5℃ |
| | Solder Dwell Time: | 4-6 seconds |

Product Dimensions

Unit:mm



PCB Top Drilling Layer




BSPDPV20K-670H1

Ucpv:670V PV T2

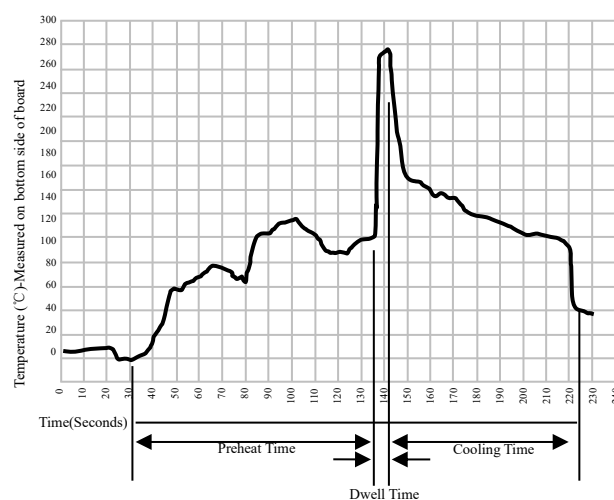
In:10kA T2

Up:1.80kV

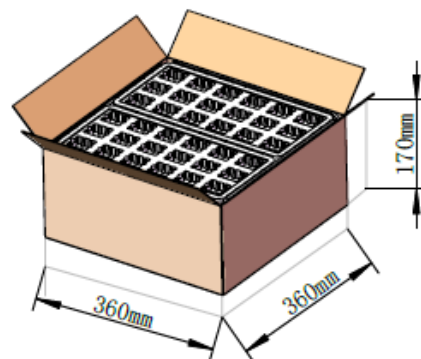
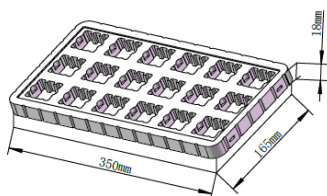
Wave Soldering profile

| Wave Soldering Condition | | Pb-Free assembly |
|--------------------------|-------------------|------------------|
| Pre Heat | Temperature Min | 100°C |
| | Temperature Max | 150°C |
| | Time (min to max) | 60 – 180 secs |
| Solder Pot Temperature | | 265°C Max |
| Solder Dwell Time | | 2-5 seconds |

Products can be welded manually or using wave soldering; It is recommended to use a thermostatic soldering iron of 100W at a temperature of Set $420^{\circ}\text{C} \pm 5^{\circ}\text{C}$, and the welding time is 1-3 seconds. It is recommended to use normal temperature solder wire for soldering.



Package Information



| Outline | Per Dish (PCS) | Per Carton (PCS) | Carton Size(mm) | | |
|--------------|----------------|------------------|-----------------|-----|-----|
| | | | L | W | H |
| Skin packing | 18 | 324 | 360 | 360 | 170 |