BSPD230C20PF-02A

Order Code: BSPD230C20PF-02A

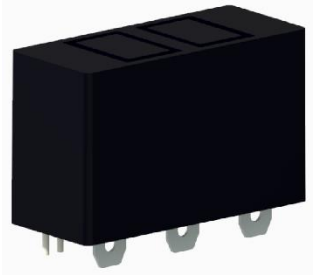
Bencent PCB SPD

Version: A1 2024-01-04

Features

- Size Design38.8×16.7×24（±0.5）mm
- High Current Handling Capability20kA @ 8/20μs
- Fast Response and Long Service Life
- Reliable to Protect Surge Voltage
- Possess SPD Disconnection
- Status indicator contacts
- Impulse Test Classification：class Ⅱ tests

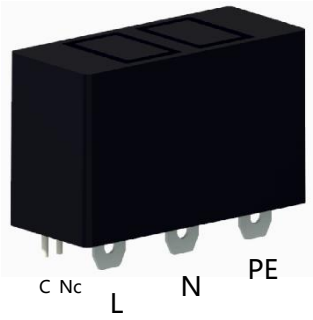
Exterior



Application information

- Single-phase AC Power

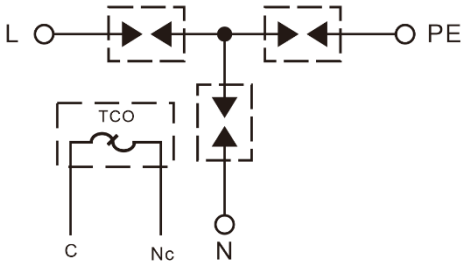
Package (Top View)



Agency Approvals

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

Schematics



Definitions

1、1.2/50 voltage impulse

Voltage impulse with a nominal virtual front time of 1.2μs and a nominal time to half-value of 50μs.

2、8/20 current impulse

Current impulse with a nominal virtual front time of 8μs and a nominal time to half-value of 20μs .

3、Maximum Continuous Operating Voltage

Maximum r.m.s. voltage, which may be continuously applied to the SPD's mode of protection.

4、Voltage Protection Level (U_p)

Maximum voltage to be expected at the SPD terminals due to an impulse stress with defined voltage steepness and an impulse stress with a discharge current with given amplitude and waveshape.s

5、Nominal Discharge Current (I_n)

Crest value of the current through the SPD having a current waveshape of 8/20.

6、mode of protection

An intended current path between terminals, that contains one or more protective components, for which the manufacturer declares a protection level.

7、follow current interrupting rating I_{fi}

Prospective short-circuit current that an SPD is able to interrupt by itself.

8、Degrees of protection provided by enclosure (IP code)

The extent of protection provided by an enclosure against access to hazardous parts, againstingress of solid foreign objects and/or against ingress of water (see lEC 60529).

9、Dielectric withstand

The dielectric withstand of the housing of the SPD shall be sufficient with respect to insulation breakdown and protection against direct contact.

Electrical Parameter

Technical Feature	Test connection	Technical Parameters	
		Test conditions	criterion
Rated operating voltage U_n	L→N/L→PE/N→PE	230 V_{AC}	
Maximum continuous operating voltage U_c 1)2)	L→N/L→PE/N→PE	320 V_{AC}	
Normal operating leakage current	L→N/L→PE/N→PE	320V_{AC} 2min	≤100uA
Nominal discharge current I_n 3)	L→N/L→PE/N→PE	8/20μs 15Time	20 kA
Impulse Spark-over Voltage	L→N/L→PE/N→PE	1kV/μs	≤2.5 kV
Front of wave spark-over voltage U_p 3)	L→N/L→PE/N→PE	1.2/50μs,6kV	≤2.5 kV
Dielectric withstand	C/Nc→L/N/PE	4500 V_{DC} 60s	No evidence of breakdown or flashover
Modes of protection	/	L-N、L-PE、N-PE	
Remote signaling failure manifestation	C→Nc	normal failure	Short circuit open circuit
Follow current extinguishing capability 3)	L→N/L→PE/N→PE	320V_{AC}	≥500 A
Operating and storage Temperature	/	-40 ~ +85℃	
TCO failure temperature	/	≥150℃	
IP Code	/	IP20	
Housing material3)	/	UL94 V0	

1) At delivery AQL 0.65 level II ISO 2859

2) In ionized mode

3) Terms and current waveforms in accordance with GB/T 18802.1-2011, IEC 61643-11：2011.

Part Numbering System

B SPD 230 C 20 P F - 02 A

(1) (2) (3) (4) (5) (6) (7) (8) (9)

(1) Bencent

(2) SPD Surge Protective Device

(3) Nominal Voltage：230VAC

(4) SPD Classifcation：C

(5) Nominal Discharge Current：20kA

(6) P Surge Protective Device Installed on PCB

(7) F Full mode protection

(8)“02”means the special structure of this type

(9) Indicates the upgraded version of the same series of products

Product Characteristics

Body Material	Ceramics Iron-nickelelectrode Epoxy
Terminal Material	Tinned Copper Wire

Environmental ReliabilityCharacteristics

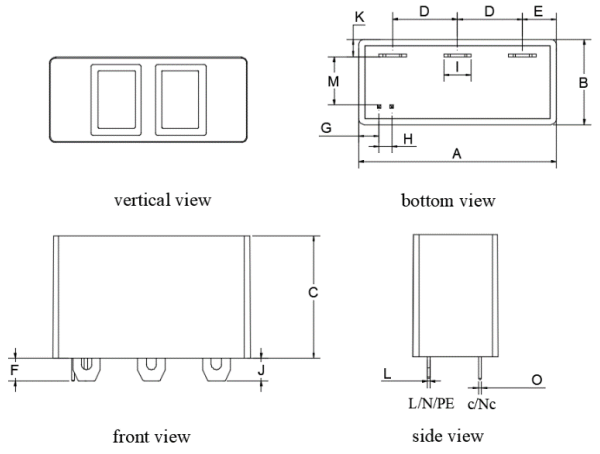
Testing items	Technical standards
High Temperature Storage Test	Temperature: 85℃ Time:2H
Low Temperature Storage Test	Temperature: -40℃ Time:2H
Thermal Cycle test	Temperature:-40～85℃ Cycle:5
Vibration	Frequency：10Hz～55Hz Acceleration：20m/s²（2g） Direction of vibration：x/y/z Time：30min
Resistance of soldering heat	Temperature: 260±5℃ Time of dip soldering：10s，1time

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

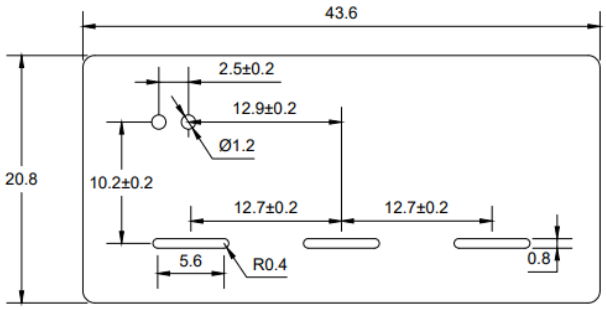


vertical view　bottom view

front view　side view

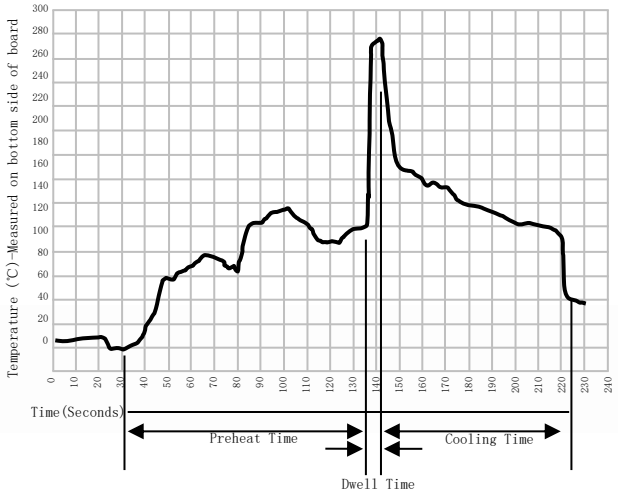
Code	Size （mm）	Code	Size （mm）
A	38.80±0.5	H	2.54±0.2
B	16.70±0.5	I	5.40±0.1
C	24.00±0.5	J	4.00-4.50
D	12.7±0.5	K	3.3±0.5
E	6.7±0.8	L	0.5±0.1
F	4.00-4.50	M	9.6±0.2
G	4.0±0.5	O	0.64±0.05

PCB Top Drilling Layer

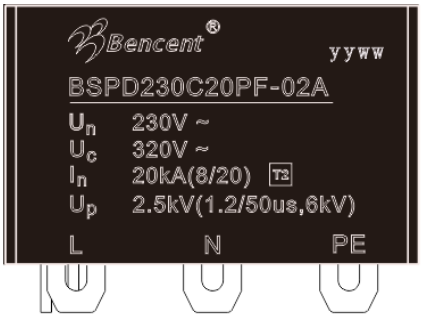
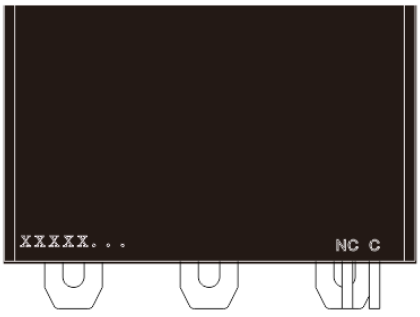


Wave Solderingprofile

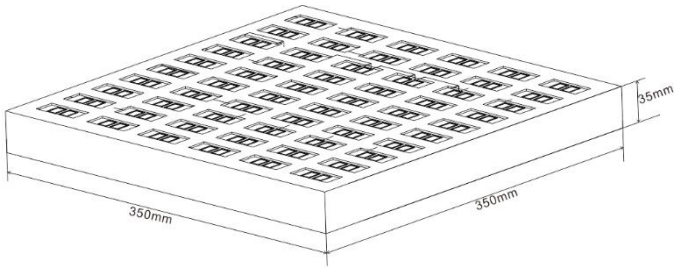
Wave Soldering Condition		Pb-Free assembly
Pre Heat	Temperature Min	100°C
	Temperature Max	150°C
	Time （min to max）	60 – 180 secs
Solder Pot Temperature		270℃ Max
Solder Dwell Time		2-5 seconds

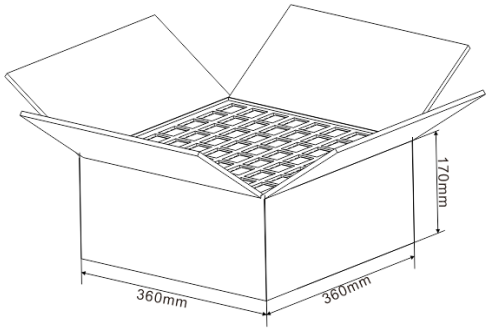


Marking on Product

Main marking	Remote signaling marking
	
Remark:yyww means year and week of production.	Remark: xxxxx... A variable-length numeric code that represents the batch code of a product and is used only for information product tracking within the company.

Package Information





Outline	Per Dish (PCS)	Per Carton (PCS)	Carton Size(mm)		
			L	W	H
Skin packing	60	240	360	360	170