

Power Current Protector (PCP) - PSJ series Datasheet -

Dexerials Corporation

2025/11/27 Rev0



Table of Contents

	Pages
Table of Contents	2
PSJ series Specification	3
Dimensions & Equivalent Circuit	4
Terminal Size & Reflow Soldering profile	5
Current Operation	6
Current Carrying Capacity	7
Handling of data in this document	8
Notice	9

PSJ-020012A Series Specification

● Products Lineup

Product		PSJ-020012A
Rated Current		12A
Size		$4.0^{+0.3/-0.2} \times 3.0^{+0.3/-0.2} \times 0.58^{\pm 0.07}$ mm
Fuse Resistance	Product terminals	1.7 ± 0.5 m-ohm
	Mounted	Max 3.0 m-ohm

Items	General Specification
Environmental Compliance	Compliance with RoHS
Halogen Free	Bromine (Br)=900 ppm or less, Chlorine (Cl)=900 ppm or less, Br+Cl=1500 ppm or less (By weight)
Antimony Free	700 ppm or less
Lead Free	1000 ppm or less
Rated Breaking Capacity Rated Voltage	UL File No. E167588 TUV Certificate No. 50384089 50 A at 20 VDC
Reflow Temp. (MAX)	260 °C

*Notice: The specification may be subject to change without prior notice in the future.

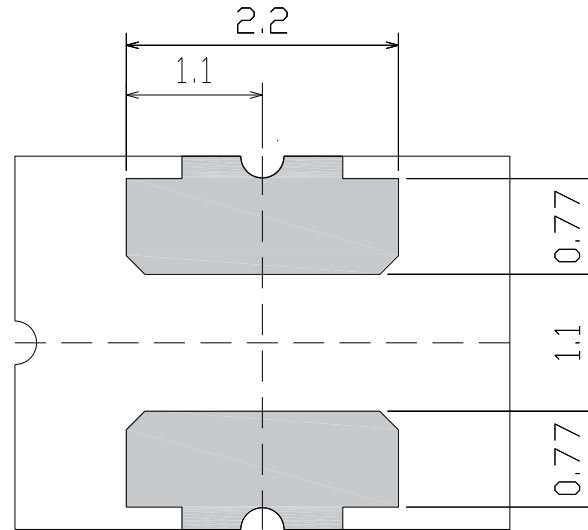
External View & Equivalent Circuit

Series Name	Dimensions	Equivalent Circuit
<p style="text-align: center;">PSJ Series</p>	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p><Top View></p> </div> <div style="text-align: center;"> <p><Side View></p> </div> </div> <p style="text-align: center;">Unit : mm</p>	

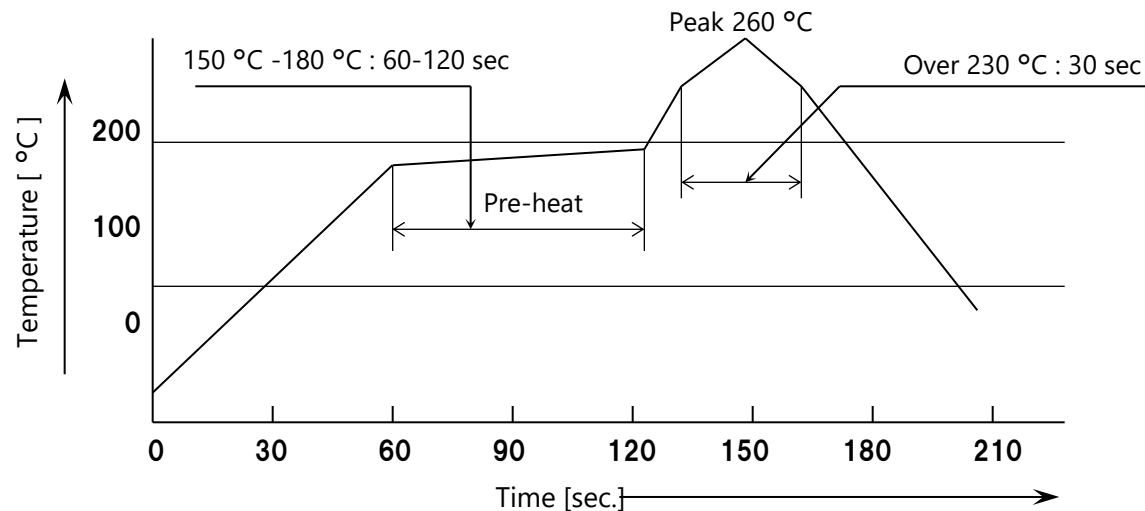
*Notice: The specification may be subject to change without prior notice in the future.

Terminal Size & Reflow Soldering

● Terminal Size (Unit: mm. Not in scale.)

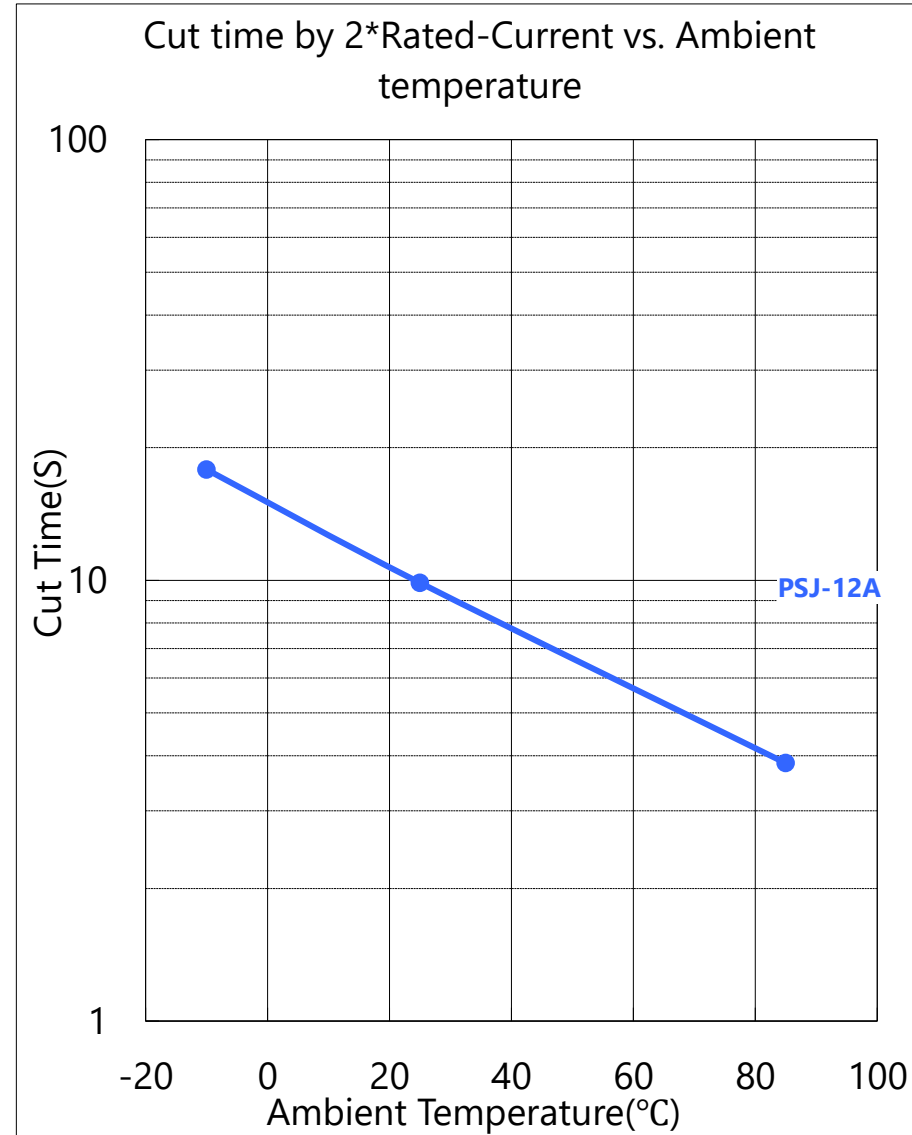
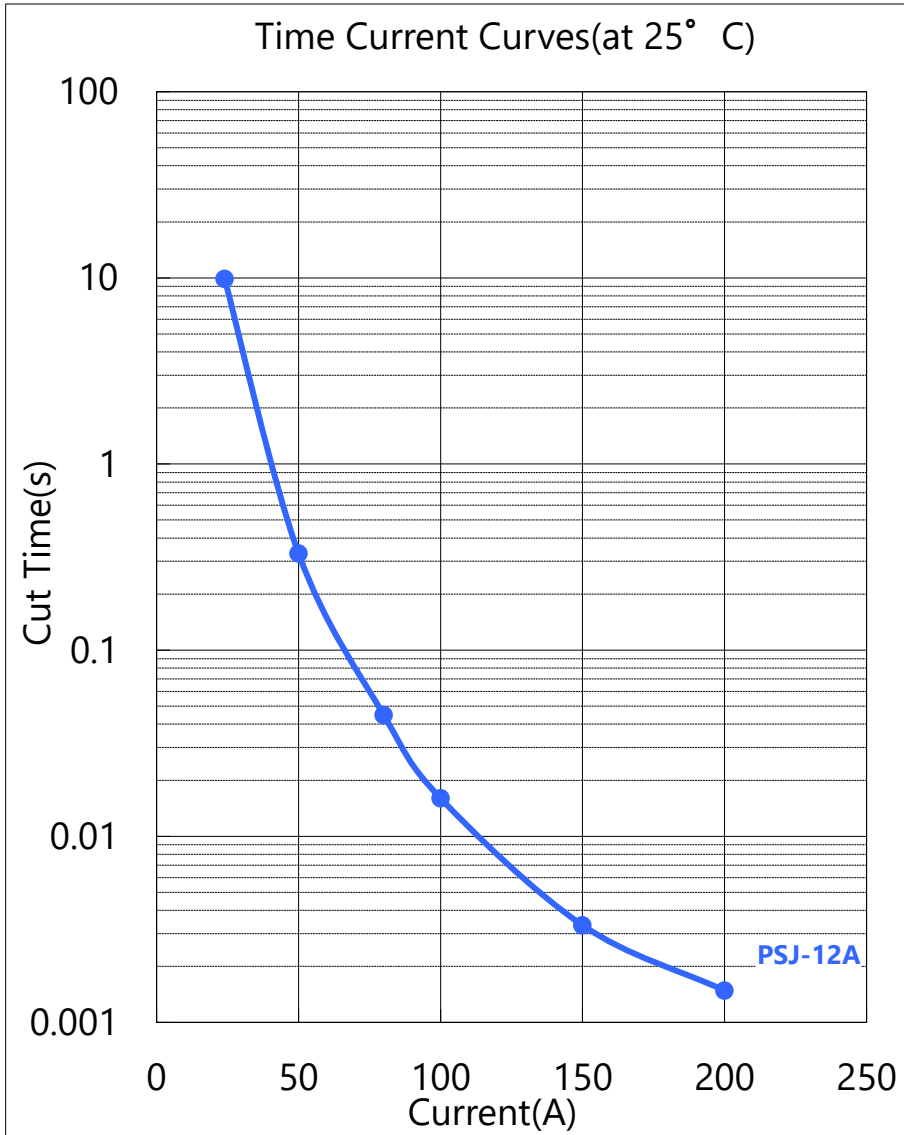


● Reflow Soldering Profile (Temperature shown below is measured at the electrode portion of PCP.)



*Notice: The specification may be subject to change without prior notice in the future.

Current Operation



(*Note) This is the typical evaluation value with our PCB (0.6 mm thickness glass-epoxy single-sided copper-clad laminates).

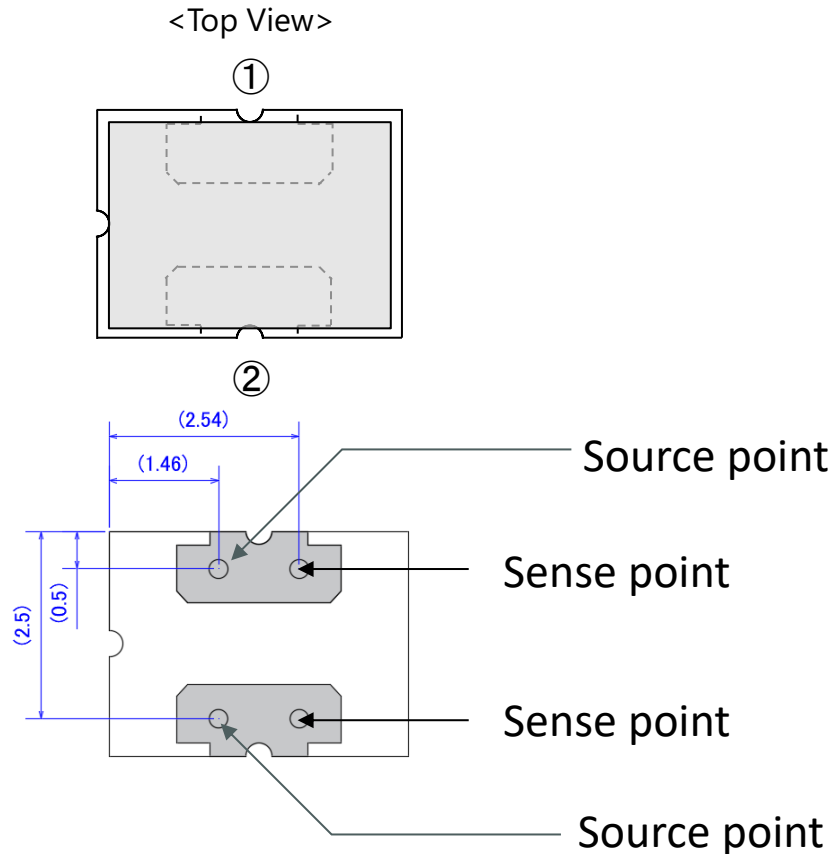
Current Carrying Capacity

Product Name	Nominal Rated current	Current-Carrying Capacity ^(*1)			Current Rush Withstand ^(*2)
		25 °C	40 °C	60 °C	
PSJ-020012A	12 A	13.0 A	11.5 A	9.5 A	80 A-10 ms

- (*Note)
- This is the standard value derived from a temperature of 100 degrees Celsius, a temperature at which we have verified the reliability using our company's standard PCB (0.6 t Glass Epoxy single-sided copper-clad laminates). The thermal capacity of the PCB can affect it, so we recommend verifying it with your specific PCB.
 - > 25 °C, 40 °C and 60 °C are ambient temperature.
 - > The temperature at which we verified reliability is not a critical condition. PCP fusing-off temperature is 200 °C or more.
 - > The current-carrying capacity is measured under thermal equilibrium conditions. Therefore, if the duration of current-carrying is short, the current-carrying capacity will increase.
 - Reliability was confirmed under the test conditions (10 ms-On, 9990 ms-Off, 500 cycle). However, this does not mean critical conditions for PCP.

Fuse resistance Measurement Conditions

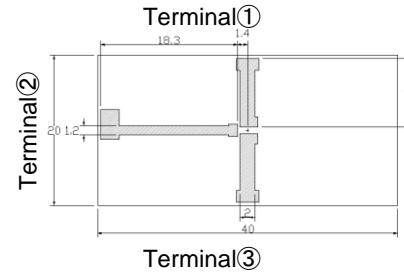
- Method: 4 Terminal-Method
- Condition: Measured with Single Item.
- Measurement point: Terminal 1 and terminal 2.



Handling of data in this document

Dexerials PCB

For PSJ-12A(Cu:70um)



1. Please confirm the latest product information before a design.

- You can confirm the latest information about PCP on the following website.
- <http://www.dexerials.jp/en/products/c3/>

2. PCP complies with following environmental regulation.

- 1) RoHS.
- 2) General requirement for Halogen Free.

3. These data are typical values.

- 1) These data is not a guaranteed value.
- 2) These data is measured with our company's standard PCB (0.6t Glass Epoxy single-sided copper-clad laminates). The characteristics are influenced by thermal capacity of PCB. Generally, as the thermal capacity of the PCB increases, the current-carrying capacity will also increase, and the clearing time will be longer.

4. Please select the product on the basis of [Current-carrying capacity] and [Heater operation characteristics].

- 1) Nominal rated current is provided on the basis of UL standard (The maximum temperature rise on body or contact that is passed the current shall not exceed 75 °C) and so it is not Current-carrying capacity. Therefore, please select a product on the basis of Current-carrying capacity instead of Nominal rated current.
- 2) [Current-carrying capacity] is influenced by thermal capacity of PCB and so on. Therefore, we recommend checking it on your PCB.
- 3) We can perform tests using your printed circuit boards (current-carrying characteristics, clearing characteristics, etc.).Please feel free to contact us.

5. Current-carrying capacity

- 1) The current-carrying capacity is the value at which PCP reaches the temperature that we have verified for reliability within our company.
- 2) The temperature at which we have confirmed reliability is 100 degrees Celsius. However, this is not a critical condition for PCP. For instance, if PCP's temperature exceeds this, it does not immediately fuse off like a typical thermal fuse. PCP's fusing-off temperature is 200 degrees Celsius or higher, indicating that it has a significant capacity to withstand temperature increases.
- 3) The current-carrying capacity is measured under thermal equilibrium conditions. Therefore, if the duration of current-carrying is short, the current-carrying capacity will increase.

6. Precautions regarding handling

- 1) When this product is energized or is in a fusing operation, it generates joule heat, so please confirm that the heat does not adversely affect the peripheral parts and the solder that connects this product to the board, in the actual condition.
- 2) Please avoid contacting PCP and resin-mold. The resin might infiltrate into the product, and it doesn't meet the specification when the resin-mold is done to this product. These products after resin-mold will not be guaranteed.
- 3) Please do not re-use of the PCP removed by the solder correction.
- 4) PCP should be stored in a shaded, low-dust area with a temperature of 40°C or lower, without sudden temperature changes. The relative humidity should be 60% or less, and the air should be free of corrosive gases. Under these conditions, the maximum storage period is 1 year from the delivery date.

Notice

The test fixtures and test results described in this document are reference information provided by Dexerials Corporation for the benefit of customers purchasing this product.

Dexerials Corporation does not warrant to the Customer or any third party that the test results, etc. are error-free. Dexerials Corporation shall not be liable for any loss or damage incurred by customer or any third party due to errors in the test results, etc., unless such errors are caused by Dexerials Corporation's willful misconduct or gross negligence.

If you require a delivery specification sheet describing the shipping inspection data of this product, please contact Dexerials Corporation.

Before using this product, please read this document carefully to ensure that you fully understand its contents. The contents of this document are correct at the time of publication and are subject to change without notice. Please be sure to confirm the contents of the latest version.

In the event of any conflict between the contents of this document and any other contents (whether written or oral), the contents of this document shall prevail.

Dexerials Corporation assumes no responsibility for any malfunction, failure, or accident resulting from the use of this product in violation of the precautions described in this document or in the instruction manual of this product.

When considering the use of the product in equipment or devices (medical equipment, transportation equipment, traffic equipment, aerospace equipment, nuclear power control equipment, fuel control, various safety devices, etc.) that require extremely high reliability and whose failure or malfunction could result in danger or damage to human life or body, or other serious damage, the product should be fully verified through prior evaluation and considered for implementation at the customer's own risk.

This product is not designed to be mounted on weapons, weapons of mass destruction, parts or accessories of weapons.

This material is copyrighted by Dexerials Corporation.

Unauthorized reproduction or distribution of this material is prohibited.