



功得電子工業股份有限公司
CONQUER ELECTRONICS CO.,LTD.

規格書

Spec. No. SFA052

Specification For Approval

品名：PTU 系列 慢速型瓷管保險絲

Type：PTU *Time-Lag*

Ceramic Tube Fuse with Pig-Tail Series

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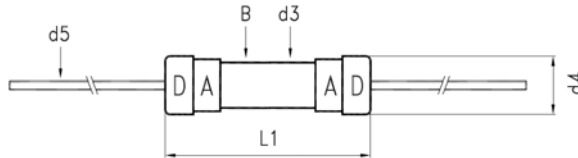
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～ 筒管狀保險絲 ～

Fuses for Instrument, Power and Telephone (Non-indicating)

- 1 **適用範圍**: 本標準適用於保護儀器、電源供應器和電話機用之筒管式熔斷保險絲。
Available Range: For protecting instruments, power supplies and telephone sets.
- 2 **形狀及尺寸如下圖** 單位: mm
Shape & Size as following illustrations.



PTU Series

- 2.1 **構造形狀 Structure & Shape**: 如上圖 As shown in figure above
- 2.2 **額定電壓 Rated Voltage**: 250V AC
- 2.3 **額定電流 Rated Current**: 250mA~6.3A
- 3 **材料 Material**:
 - 3.1 **筒管本體**: 不透明瓷管不可破裂或變形。
Tube (Body): Non-Transparent ceramic tube fuse. No breaking or deformation is allowed.
 - 3.2 **兩端銅蓋**: 需以導電率良好之黃銅為材料。
Two brass end caps: Made of brass of good conductivity.
 - 3.3 **銅蓋處理**: 銅蓋部份鍍鎳，標示最後若加 "S" 者，表示須鍍銀。
Coating of brass caps: Plating the surface with nickel. If the indication is added with "S", it needs to be plated with silver.

PTU Series

NO.	Part Name 部品名稱	Volume 數量
A	Brass Cap - Nickel Plating 銅帽 - 鍍鎳	2
B	Ceramic Tube - Non-Transparent Ceramic Tube 瓷管 - 不透明瓷管	1
C	Fuse Element 可熔體	1
D	Cap-on Lead-Cap - Tinned Copper Wire and Cap 銅帽附腳 - 銅蓋加鍍錫銅線	2
d3	Dia. of Ceramic - 3.00±0.2 mm 瓷管直徑	
d4	Dia. of Cap - 3.90±0.2 mm 銅帽直徑	
d5	Dia. of Lead Wire - (註1)±0.05mm 附腳直徑 Length of Lead Wire - 30±2mm 長度	
L	Body of Fuse - 10.50±0.75mm 本體尺寸	
L1	Total Length W/Cap-on on Both Ends 11.00±0.75mm	



4 電氣特性Electrical Characteristics:

- 4.1 負載容量: 通過額定電流值 150 % (亦即 $1.5 \times I_n$ A), 能繼續通電至少 1 小時無任何熔化現象。
Loading Capacity: Loading 150% Rated Current (i.e. $1.5 \times I_n$ A) for flowing, and it's available to let current keep on flowing at least 1 hour without any melting. (Can keep 1 Hour minimum)
- 4.2 壓降測量: 以額定電流, 通過保險絲, 其兩端壓降值不得超過最大值, 可參考 IEC60127-3 Sheet 4。
Voltage drop: Loading 100% of rated current.(ie $1.0 \times I_n$), the voltage drops across the fuse-links shall not exceed the maximum values given on the relevant standard sheet (IEC60127-3 Sheet 4)
- 4.3 過載熔斷: 請參照下表。Melting due to overloading: Details as follows Table.

※最大熔斷時限Operating Characteristics

安培數 Rating	150% Rating		210% Rating		275% Rating		400% Rating		1000% Rating	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
250mA~6.3A	60 min			2 min	400 ms	10 sec	150 ms	3 sec	20 ms	150 ms

5 機械特性 Mechanical Properties:

- 5.1 拉力強度: 當施加軸拉力 1.2 公斤於兩端附腳(或銅帽), 無鬆動或損壞現象發生。
Terminal Strength: Leads and/or caps are soldered (adhered) to withstand axial pulling force of 1.2kg without loosening or any harmfulness to firmly attachment.
- 5.2 彎折強度 Bending Strength:
(1) 銅帽附腳腳徑 1.0mm(含)以下, 經過兩次反向之彎折後(彎折 90 度再折回原位謂之一次彎折)不發生損壞。
Diameter of lead wire ≤ 1.0 mm: After two bends of opposite directions (bending through an angle of 90° and back is defined as one bend) of lead, no damage is to be visualized.
(2) 銅帽附腳腳徑 1.2mm(含)以上, 距離銅帽附腳卯合處 10mm 以上, 作一次 90 度之彎折, 不發生損壞。
Diameter of lead wire ≥ 1.2 mm: Only one bend of an angle of 90° without back shall be tested for each lead wire and the bending position shall be at least 10mm a way from the cap-on. After the test there shall be no damage to be visualized.

6 突波實驗: 為適應電感或電容性電路所產之暫態電流, 本品可承受最少 20ms 10 In 電流之突波。

Surge Test: In order to stand transient current caused by inductive or capacitive, the fuses are designed to have minimum clearing time of 20 millisecond at 1000% rated current.



7 **耐久實驗** Endurance(On-Off Test):

7.1 於額定電流 (1.0 x In) , 1小時ON , 15分鐘OFF , 共100次。

Loading 100% rated current (1.0 x In), 1 hour ON, 15 minutes OFF. Keep 100 cycles.

7.2 接著以1.5倍之額定電流(1.5 x In) 通過1小時。

Followed by 1 Hour at 1.5 times the rated current (1.5 x In).

7.3 再以4.2之方式量測壓降值, 所測得之壓降值不可比原值增加10%以上。

The voltage drop across the fuse-link after the test shall not have increased by more than 10% of the original value measured before the test

8 **高溫環境試驗:** 本品置於70°C之高溫中, 能以額定電流 (1.0 x In)通過1小時。

Derating Test: In an air circulating oven at 70°C, the fuses can load 100% rated current for 1 hour and they shall not operate.

9 **遮斷能力** Breaking Capacity(Interrupting rating):

35 amperes or 10 × rated current ; whichever is greater at 250V AC.

10 **包裝:** PTU-1000 PCS/盒 內盒印明下列標示:料號、額定(電壓、電流、遮斷能力)及安規名稱。

包裝材料均符合RoHS或者HF的環保要求, 且包裝材料不會和零件發生化學反應, 造成不良。

Packing : PTU-1000 pcs in an inner box. The following

items indicated on the box. Mark: Catalog number; ratings (voltage, current, interrupting capacity), and safety mark. The packing material conforms to ROHS or the HF environmental protection request. And the packing material can't have the chemical reaction with the components.

11 **其他** Other:

11.1 除非另有指定, 上述機械、電器特性, 係於常溫, 標準狀況下測試之。

Unless otherwise, specified, all tests to be performed at 25±5°C and 35-75% RH.

11.2 於標準狀況下儲放一年, 本品乃確保上述機械與電氣之特性。

After one year's storage under normal condition, this item is guaranteed to meet the requirements mentioned above.



12 標記/安規認證 Mark/ Safety certification:

PTU Series

Mark Approvals	VDE	UL	SF	CCC	KC	Nominal Resistance Cold Ohms
250 mA	**	**	**	**	*	0.731
315 mA	**	**	**	**	*	0.472
400 mA	**	**	**	**	*	0.316
500 mA	**	**	**	**	*	0.256
630 mA	**	**	**	**	*	0.170
800 mA	**	**	**	**	*	0.113
1 A	**	**	**	**	*	0.086
1.25 A	**	**	**	**	*	0.064
1.6 A	**	**	**	**	*	0.046
2 A	**	**	**	**	*	0.031
2.5 A	**	**	**	**	*	0.026
3.15 A	**	**	**	**	*	0.019
4 A	**	**	**	**	*	0.014
5 A	**	**	**	**	*	0.010
6.3 A	**	**	**	**	*	0.008

*: 有安規認證 Have safety certify

** : 有安規認證及銅帽上有安規印字標記 Have safety certify and safety mark on the cap

13 系列品名列表 series model list :

品名	安培數
VUC PTU ___A ___V(PF)	250mA~6.3A

例: VUC PTU A 250V (PF)
 1 2 3 4 5

- 1 安規認證 Safety Approval
- 2 系列品名 Series Model : PTU
- 3 安培數 Ampere Rating : 250mA~6.3A
- 4 伏特數 Voltage : 250V
- 5 無鉛標示 Pb Free : (PF)

※註1 (Note1)

安培數 Ampere Rating	腳徑 Lead Wire
250mA~4A	φ 0.6 mm
5A~6.3A	φ 0.8 mm

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14 建議生產參數(無鉛焊錫使用)：

Recommended Process Parameters(for the action to Lead-free solder alloy)：

14.1 波峰參數 Wave Parameter	預熱溫度 Preheat temperature 最低溫度：100度 Temperature Minimum：100°C 最高溫度：150度 Temperature Maximum：150°C	錫槽溫度 Solder Pot Temperature 260度 Maximum 260°C Maximum 焊接時間 2~3 seconds Solder Dwell Time: 2~3 seconds
14.2 建議手持烙鐵焊接參數 Recommended Hand-Solder Parameters	烙鐵溫度：350°C +/- 5°C Solder Iron Temperature：350°C +/- 5°C 加熱時間：3 seconds max. Heating Time：3 seconds max.	

15 備註: Note:

15.1 建議焊接方式 Recommend soldering method:

