

Eight Discipline Report (8D Report)

To:	8D report No.:
From: : Chicony Power Technology	RMA claim No.: N/A
CC :	Chicony Power P/N: A180AP01Q-FW01
	Customer P/N: PK37A019500
Submit date: 2023/8/18	Product description: 180W PD
Receive date: 2023/7/20	Defect D/C or Lot No.:
Subject : 客戶通知有一台 adapter 無輸出也無溝通	

D1.) 問題解決成員:Use Team Approach

主持者 (Team Leader) : **Cf Liu**

內部成員 (Internal Team Members):

CQS: Jack Wang

QE: Kitty Zhang

MFG: Xiaohui Du

PE: Yong Liu

Sales: Gordon Wang

RD: Chris Wu

外部成員 (External Team Member):

D2.)問題說明:Problem Description:

(Note: Use **who, what, when, where, why, how, how many** to specify the Customer's problem.)

2023/7/20 客戶告知:

我們這邊有一顆 **Adapter** 壞掉了，不論怎麼插拔都沒有辦法回覆，連溝通都沒有了

Adapter 就插著充電，突然就沒有充電了

產品序號:<https://fr.mw/FRANCNCH71312100BY> 檢視樣機外觀並無異常。



D3.)內部或客戶的暫時解決辦法及實施日期:Implement and Verify Containment Action:

(Note: Internal / external containment action effectiveness and date.)

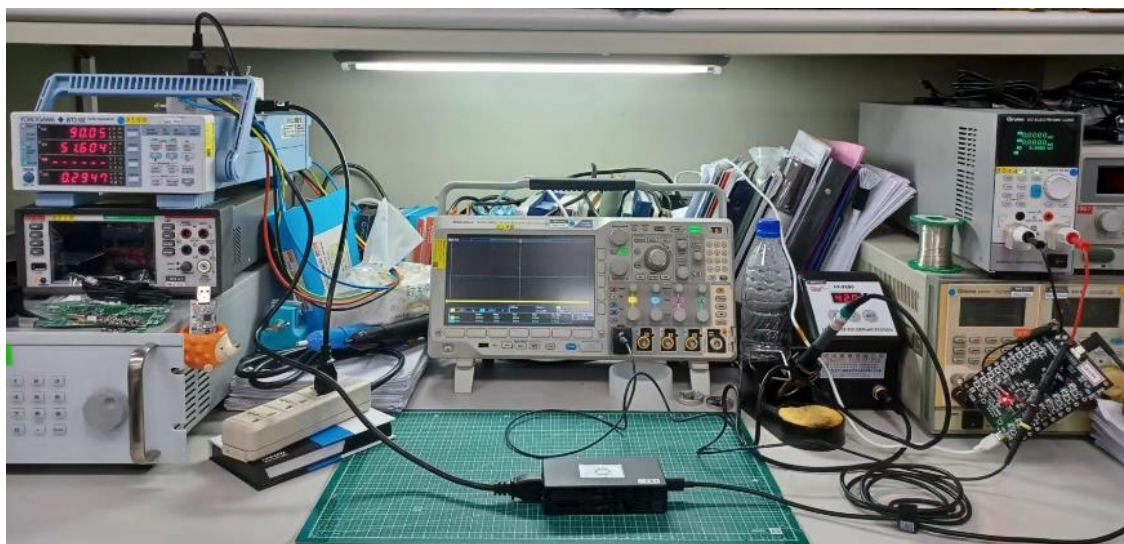
1. 從客戶端拿到了樣機並做進一步分析
2. 將一台好的樣機給客戶進行更換

Date:2023/7/24

D4.)不良原因確認: Define and Verify Root Causes:

(Note: Identify and verify all suspect causes, which needs explain why the problem occurred.)

1. 透過追蹤我們SFCS中的SN (FRANCNCH71312100BY)，該樣機通過了生產線中的所有測試站。
2. AC Source送電開機亦無輸出，與客戶反應的狀況一致。

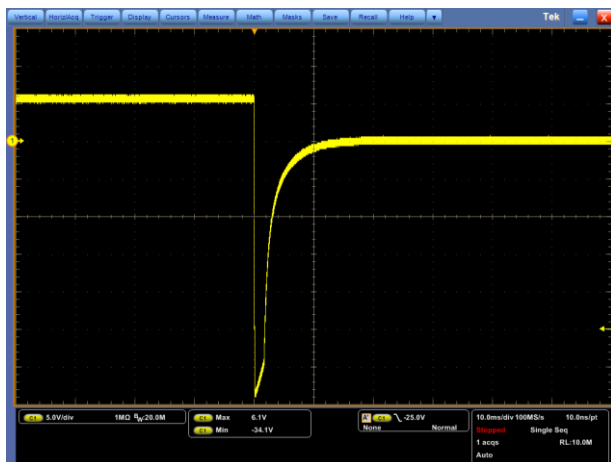


3. 打開外殼，觀察元件面跟鉚錫面，元件面看起來無異常，鉚錫面挖膠後明顯發現U1, S1, S3 損壞

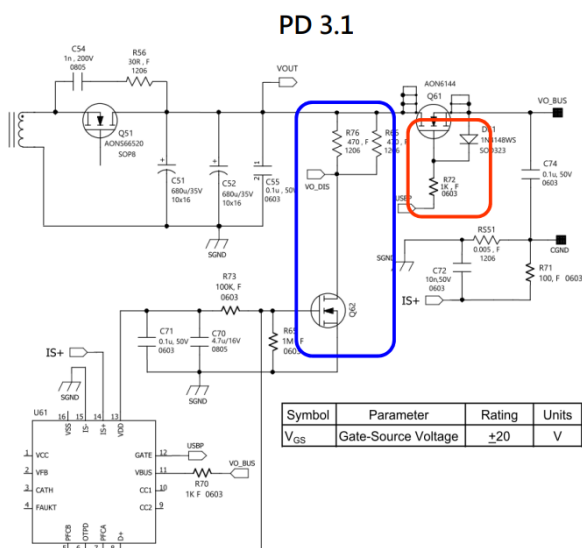


4. 問題復現: Adapter開機到 36V輸出後, 在DC cable unplug時, 量測 Q61 (Blocking MOS)

V_{gs}=-34.1V，超出零件規格 (規格為-20V)，導致 S1 & S3 short through，造成 PSU 損壞

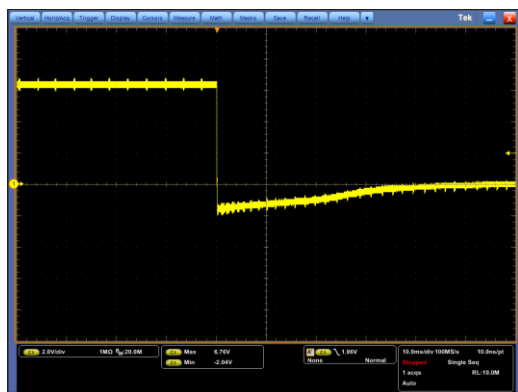


5. 解決對策: 180W PD 輸出電壓規格最大為36V，當DC cable unplug 時，瞬間逆向電壓較大，故須使用二極體及放小 R_g 電阻，讓 Q61 V_{gs} 快速放電



1. R73 1M → 1N4148WS
2. R72=30K → 10K

6. 對策驗證Q61(Blocking mos) V_{gs}:-2.04V，符合規格: +/-20V





➤ **結論:**

1. 客戶反饋 **180W PD adapter** 有一台樣機插著充電, 突然就不充電
收到不良品確認無輸出, 開蓋後明顯發現 **U1, S1, S3** 損壞
2. 問題復現: **Adapter** 開機到 **36V** 輸出後, 在 **DC cable unplug** 時, 量測 **Q61 (Blocking MOS) Vgs=-34.1V**, 超出零件規格 (規格為-20V), 導致 **S1 & S3 short through**, 造成 **PSU** 損壞.
3. 解決對策: 當 **DC cable unplug** 時, 瞬間逆向電壓較大, 故須使用二極體及放小 **Rg** 電阻, 讓 **Q61 Vgs** 快速放電. **R73 1M-->1N4148WS**, **R72=30K-->10K**
4. 對策驗證:更換 **R73,R72** 後測試當 **36V** 輸出 **DC cable unplug** , 量測 **Q61(Blocking mos)Vgs:-2.04V**, 符合+/-20V 規格。

D5.)改善措施:Corrective Action Verification:

(Note: Be make sure the corrective actions is effective in process as well as able to fix the customer complaint problem)

1. 修改:**R73 1M-->1N4148WS**, **R72=30K-->10K**

2. 此解決對策要求在 **DVT1** 後導入

Date:2023/08/18

D6.)改善措施實施日期:Implement Permanent Corrective Actions:

(Note: Be provide the phase-in date or lot# of corrective actions **implementation** in process)

Immediately

D7.)預防再發生措施:Prevent Recurrence:

(Note: Modified the management, operating systems, practices, and procedures to prevent recurrence for the problems as well as lessons learned cases.)

Same as D5

D8.)確認並感謝問題解決成員:Check and Congratulate the Team:

(Note: Recognize the collective efforts of the team.)

Thanks to you all ! ! !

CQS: Jack Wang QE: Kitty Zhang MFG: Xiaohui Du PE: Yong Liu Sales: Gordon Wang

RD: Chris Wu



Signature Team Leader:	Cf_Liu
	Name – Title
Signature by Approver:	Wade_Lo
	Name-Title