



## Eight Discipline Report (8D Report)

To:	8D report No.:
From: : <b>Chicony Power Technology</b>	RMA claim No.: <b>N/A</b>
CC :	Chicony Power P/N: <b>A180AP01Q-FW01</b>
	Customer P/N: <b>PK37A019500</b>
Submit date: <b>2023/8/18</b>	Product description: <b>180W PD</b>
Receive date: <b>2023/7/20</b>	Defect D/C or Lot No.:
<b>Subject : 客戶通知有一台 adapter 無輸出也無溝通 (MOSFET)</b>	
<b>D1.) 問題解決成員: Use Team Approach</b>	
主持者 (Team Leader) : <b>Cf Liu</b> 內部成員 (Internal Team Members): <div style="text-align: center; margin-top: 10px;"> <b>CQS: Jack Wang</b>  <b>QE: Kitty Zhang</b>  <b>MFG: Xiaohui Du</b>  <b>PE: Yong Liu</b>  <b>Sales: Gordon Wang</b>  <b>RD: Chris Wu</b> </div> 外部成員 (External Team Member):	
<b>D2.) 問題說明: Problem Description:</b>	
(Note: Use <b>who, what, when, where, why, how, how many</b> to specify the Customer's problem.)	
<b>2023/7/20 客戶告知:</b> <p style="margin-top: 10px;">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</p> <p>Adapter 就插著充電，突然就沒有充電了</p> <p>產品序號: <a href="https://fr.mw/FRANCNCH71312100BY">https://fr.mw/FRANCNCH71312100BY</a> 檢視樣機外觀並無異常。</p>	



**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.)

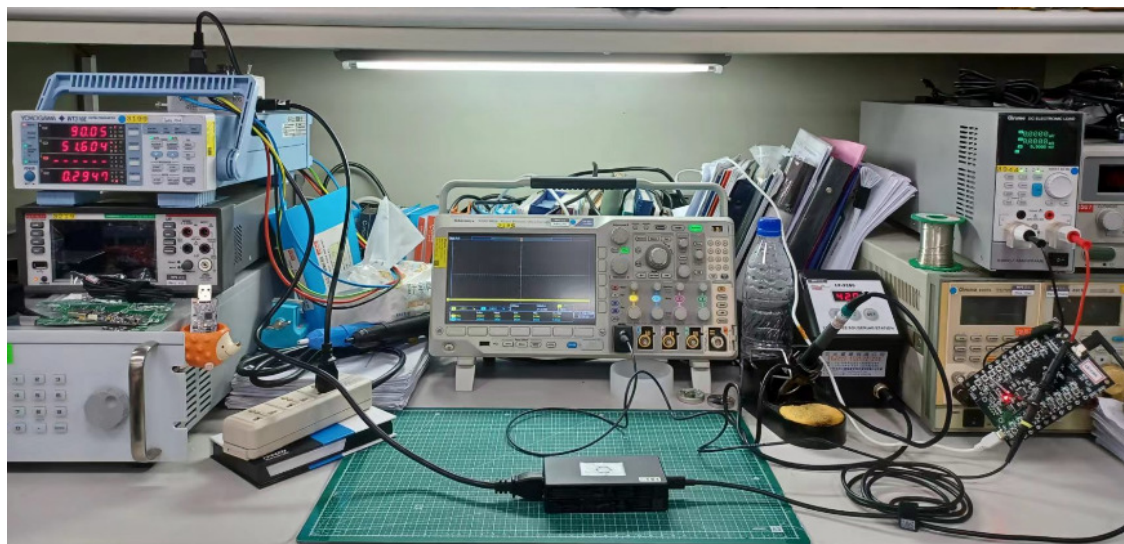
1. 從客戶端拿到了樣機並做進一步分析
2. 將一台好的樣機給客戶進行更換

Date:2023/7/24

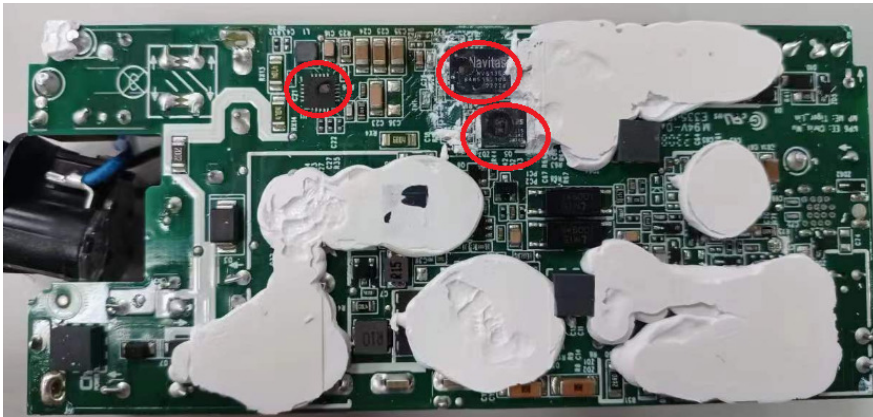
**D4.)**不良原因確認: Define and Verify Root Causes:

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

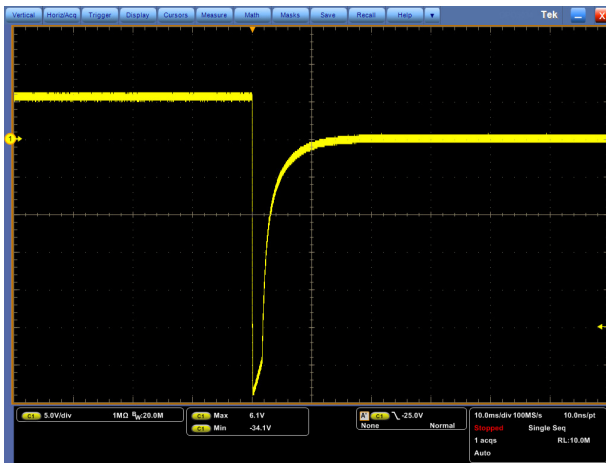
1. 透過追蹤我們SFCS中的SN (FRANCNCH71312100BY)，該樣機通過了生產線中的所有測試站。
2. AC Source送電開機亦無輸出，與客戶反應的狀況一致。



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

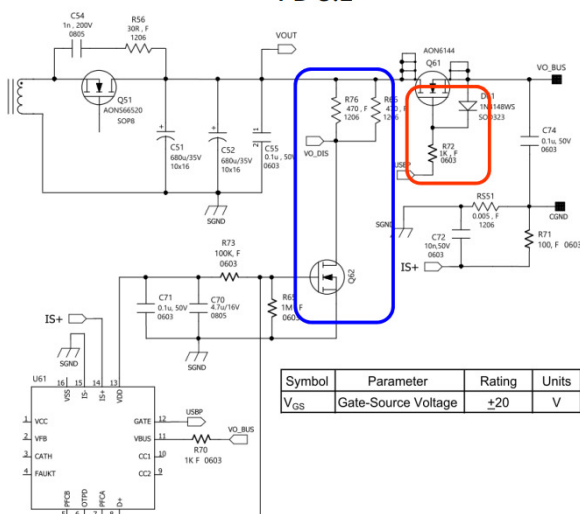


4. 問題復現: Adapter開機到 36V輸出後, 在DC cable unplug時, 量測 Q61 (Blocking MOS )  
Vgs=-34.1V, 超出零件規格 (規格為-20V), 導致 S1 & S3 short through , 造成 PSU 損壞



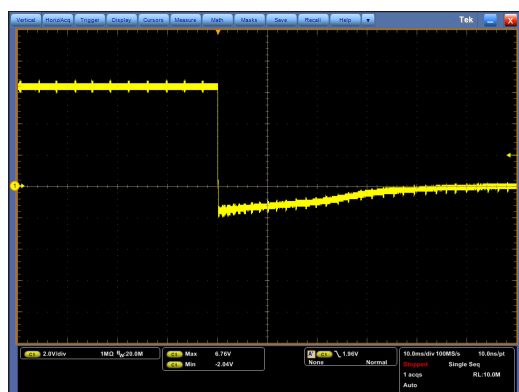
5. 解決對策: 180W PD 輸出電壓規格最大為36V, 當DC cable unplug 時, 瞬間逆向電壓較大, 故須使用二極體及放小 Rg 電阻, 讓 Q61 Vgs 快速放電

### PD 3.1



1. R73 1M→1N4148WS
2. R72=30K→10K

### 6. 對策驗證Q61(Blocking mos )Vgs:-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**

<b>Signature</b>	<b>Cf_Liu</b>
<b>Team Leader:</b>	
	Name – Title
<b>Signature by Approver:</b>	<b>Wade_Lo</b>
	Name-Title