Eight Discipline Report (8D Report)

To:	8D report No.:
From:：**Chicony Power Technology**	RMA claim No.: **N/A**
CC：	Chicony Power P/N:
	Customer P/N:
Submit date: **2023/7/14**	Product description: **65W PD**
Receive date: **2023/7/24**	Defect D/C or Lot No.:
Subject：客戶 **7/14** 反應 **sample** 樣機測試殼溫 **fail**	

D1.) 問題解決成員:Use Team Approach

主持者 (Team Leader)：**Edward Ho**

內部成員 (Internal Team Members):

RD: Will Wu

外部成員 (External Team Member):

D2.)問題說明:Problem Description:

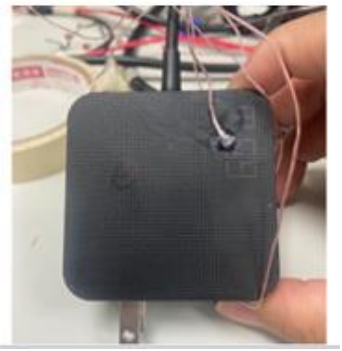
(**Note**: Use **who**, **what**, **when**, **where**, **why**, **how**, **how many** to specify the Customer's problem.)

2023/7/14 客戶告知:

下面為 **WM** 機種殼溫測試數值，發現 **Top** 面 **ΔT>40** 度，**Fail**

請確認量測的熱點是否不是最 **worst**，**fail** 的部分盡快釐清

	100V	ΔT
1. TOP	67.4	40.7
2. Right	63.3	36.6
3. Inlet	62.8	36.1
4. Output	62.3	35.6
5. Left	58.8	32.1
6. Bottom	65.1	38.4
Amb	26.7	



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

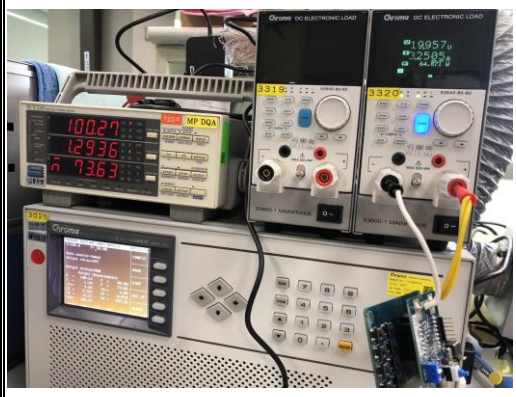
Date:2023/7/17

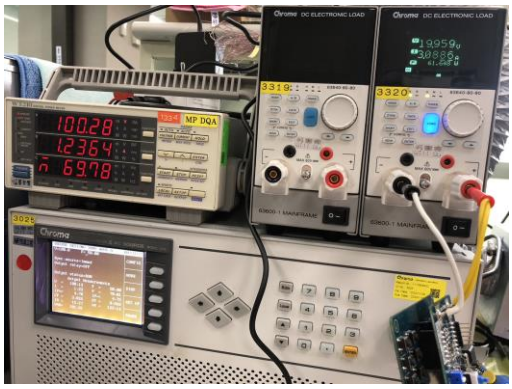
D4.)不良原因確認: Define and Verify Root Causes:

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

1. 樣機100%load 、95%load效率測試，線端效率無異常。

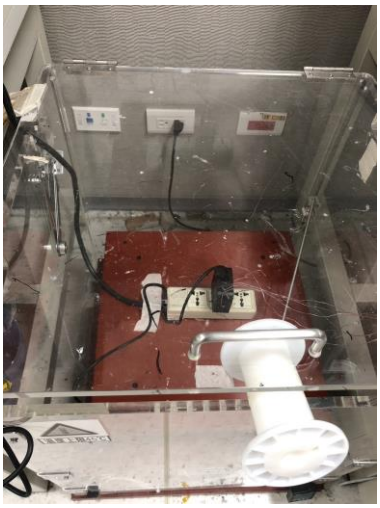
100%load 效率: 88.1%　　95%load 效率: 88.34%



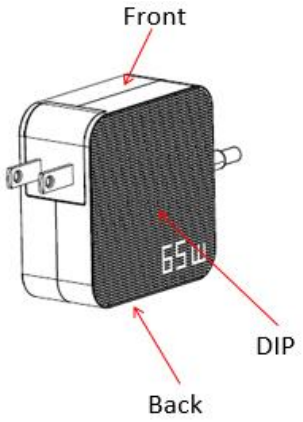


2. 殼溫測試

1.	**Equipment :**	
	(1)	AC Source : Chroma 6512
	(2)	DC Load : Chroma 63630-80-60
	(3)	Thermal Recorder : Keysight 34970A
2.	**Test Condition :**	
	(1)	Input Voltage : 100Vac
	(2)	Input Frequency : 50Hz
	(3)	Load Condition : 95% Load
	(4)	Temperature : 25℃.
3.	**Spec. :**	
	3.6 CASE TEMPERATURE RISE:	
	At input voltage 100Vac/240Vac 50Hz, case temperature rises≦40℃ at 95% loading.	

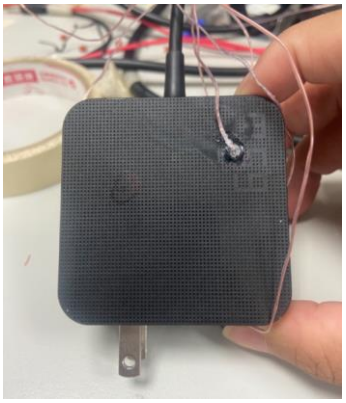


3. 殼溫測試結果，與客戶反應的狀況一致。



CPT 測試 fail 面：SMD

客戶測試 fail 面：Top



CPT測試數據	
Input Power	100V / 50Hz
	69.00W
Load	19.95V / 3.082A
	61.39W

Location	Temp (℃)	ΔT(℃)
DIP	60.8	36.6
Front	52.2	28.0
AC	60.1	36.0
DC	61.8	37.7
Back	57.4	33.2
SMD	66.3	42.1
Ambient	24.2	

客戶測試數據	
Input Power	100V / 50Hz
Load	20V / 95%載

Location	Temp (℃)	ΔT(℃)
Top	67.4	40.7
Right	63.3	36.6
Inlet	62.8	36.1
Output	62.3	35.6
Left	58.8	32.1
Bottom	65.1	38.4
Ambient	26.7	

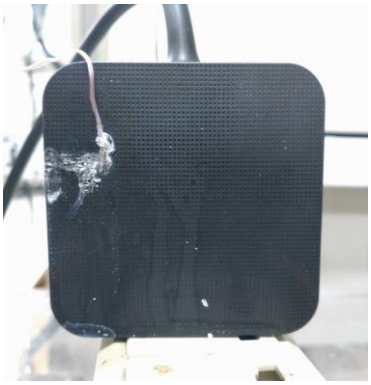
1. 升溫線架設方式驗證：

升溫線架設方式會影響殼溫的測試結果，差異約在 **3.7** 度左右。

依照結果推估原因，應該是升溫線的感測端垂直平貼熱源，又因熱空氣上升，導致升溫線偵測端受熱，所以偵測的溫度較高。

另外固定升溫線點膠的膠量過多，也會造成升溫線偵測端產生積熱現象。

升溫線往水平方向架設



升溫線往垂直方向架設

Original(線往Back side)	
Input Power	100V / 50Hz
	69.66W
Load	19.95V /3.0872A
	61.65W

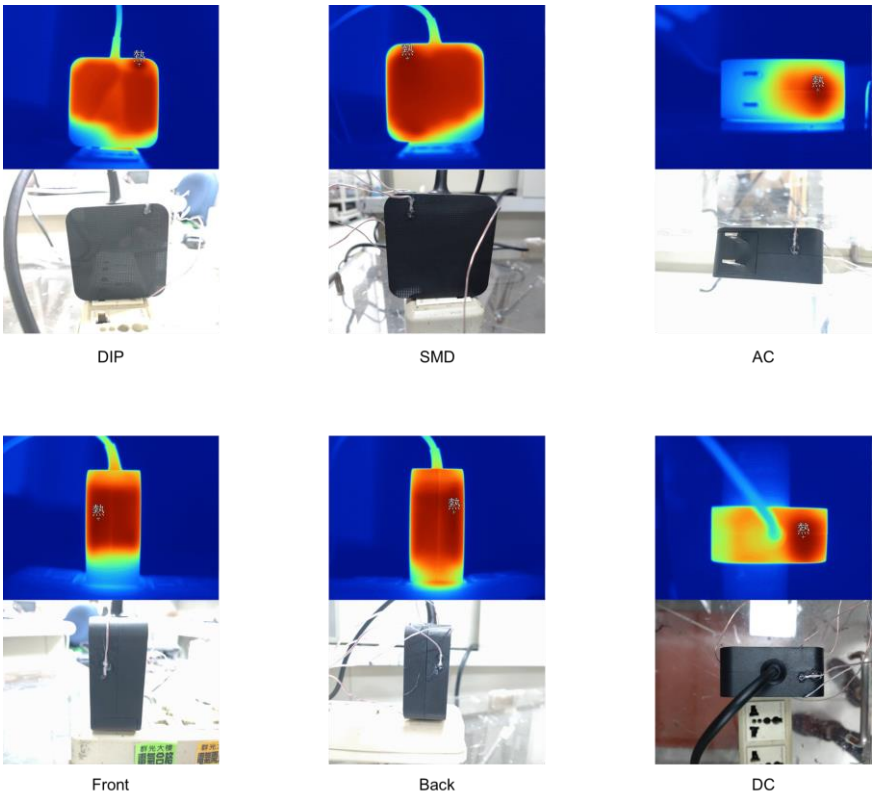
Location	Temp (℃)	ΔT(℃)
SMD	60.3	35.3
Ambient	25.0	

客戶(線往DC side)	
Input Power	100V / 50Hz
	69.66W
Load	19.95V /3.0872A
	61.65W

Location	Temp (℃)	ΔT(℃)
SMD	63.9	39.0
Ambient	24.9	

2. 解決對策：增加 Shielding 和 Case 之間點膠面積

3. 溫升線點線方式和 IR 測試點



4. 增加 Shielding 和 Case 之間點膠面積驗證結果

Original

100V/50Hz	
Input Power	100V / 50Hz
	69.00W
Load	19.95V /3.082A
	61.39W

Location	Temp (℃)	ΔT(℃)
DIP	60.8	35.3
SMD	67.6	42.1
Front	55.7	30.2
Back	63.7	38.2
AC	60.6	35.1
DC	60.8	35.2
Ambient	25.5	

Improved

100V/50Hz	
Input Power	100V / 50Hz
	69.00W
Load	19.96V /3.082A
	61.66W

Location	Temp (℃)	ΔT(℃)
DIP	57.7	32.9
SMD	59.3	34.5
Front	56.1	31.3
Back	59.7	34.9
AC	57.4	32.6
DC	62.1	37.3
Ambient	24.8	

SMD Side 殼溫改善了7.6度

➢ 結論：

1.CPT 將樣機重新測試，殼溫一樣 Fail.

2.驗證升溫線不同架設方式，殼溫測試結果差異約 3.7 度。

3.增加 Shielding 和 Case 之間的點膠面積，並重新驗證殼溫，測試結果均符合客戶規格。

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. 增加 Shielding 和 Case 之間的點膠面積，並重新驗證殼溫，測試結果均符合客戶規格。

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！！！ **RD: Chris Wu**

Signature **Team Leader**:	**Edward_Ho**
	Name – Title
Signature by Approver:	**Mark_Meng**
	Name-Title