SPECIFICATION

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SPEC. NO.: PS-52936-XXXXX-XXX **REVISION:** E

PRODUCT NAME: 2.54mm POWER CONN.

PRODUCT NO: 52936-XXXXX-XXX
52937-XXXXX-XXX

PREPARED:	CHECKED:	APPROVED:
HSU TI LUN	**CHEN CHUN YUAN**	**HUANG KUO HUA**
DATE: **2021/08/03**	DATE: **2021/08/03**	DATE: **2021/08/03**

1 Revision History

Rev.	ECN #	Revision Description	Prepared	Date
A	1811480	NEW PROJECT	CHEN CHUN YUAN	2018/12/13
B	1905110	Operating Temperature : -40℃ to +80℃ -> -40℃ to +85℃	CHEN CHUN YUAN	2019/5/17
C	1909009	High Power Contacts Current: 30 A/3 Contact (3 Beams) , Per Beam 10 A ->Current: 36 A/3 Contact (3 Beams) , Per Beam 12 A High Power Contacts Contact Resistance 1 mΩ Max.(initial)per contact 0.75mΩ Max. change allowed ADD Derating Curve	CHEN CHUN YUAN	2019/9/02
D	1911230	Add new applicable series 52937	HSU YI LUN	2019/11/14
E	ECN-004805	Voltage: 12 -> 70 Volts AC/DC Current: 30 A/per terminal ,10 A / per beam ->42 A/per terminal ,14 A / per beam	HSU YI LUN	2021/08/03

2 SCOPE

This specification covers performance, tests and quality requirements for 2.54 mm POWER CONN.

3 APPLICABLE DOCUMENTS

EIA-364: ELECTRONICS INDUSTRIES ASSOCIATION

4 REQUIREMENTS

4.1 Design and Construction

4.1.1 Product shall be of design, construction and physical dimensions specified on applicable product drawing.
4.1.2 All materials conform to R.o.H.S. and the standard depends on TQ-WI-140101.

4.2 Materials and Finish

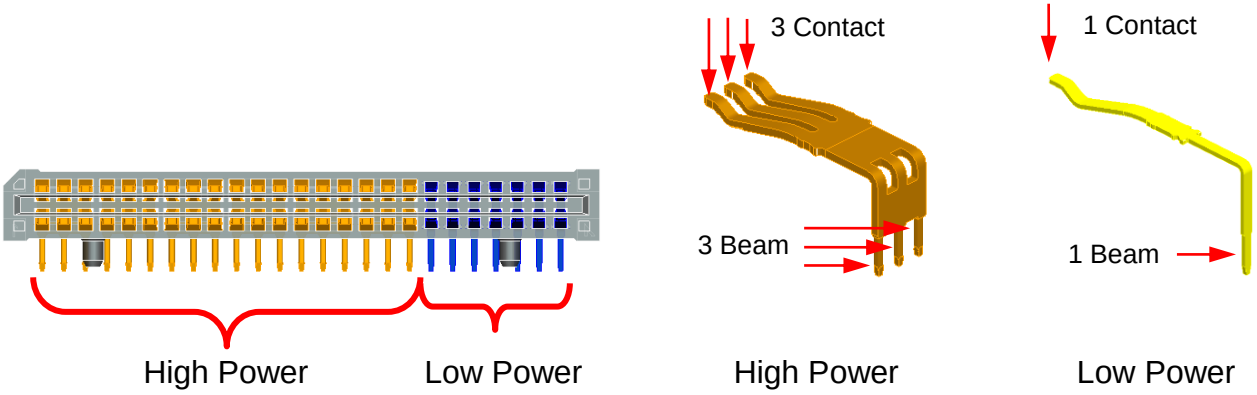
4.2.1 Contact: High performance copper alloy (Phosphor Bronze)
Finish: (a) Contact Area: Refer to the drawing.
(b) Under plate: Refer to the drawing.
(c) Solder area: Refer to the drawing.
4.2.2 Housing: Thermoplastic or Thermoplastic High Temp., UL94V-0

4.3 Ratings

4.3.1 Working Voltage Less than 36 Volts AC(Per Pin)
4.3.2 Voltage: 70 Volts AC/DC
4.3.3 Operating Temperature : -40℃ to +85℃

High Power Contacts
Current: 42 A/per terminal ,14 A / per beam

Low Power Contacts
4.3.4 Current: 5 A/per contact (beam)



5 Performance

5.1. Test Requirements and Procedures Summary

Item	Requirement	Standard
Examination of Product	Product shall meet requirements of applicable product drawing and specification.	Visual, dimensional and functional per applicable quality inspection plan.
ELECTRICAL		
Item	**Requirement**	**Standard**
Low Level Contact Resistance	High Power Contacts 1 mΩ Max.(initial)per contact 0.75mΩ Max. change allowed Low Power Contacts 20 m Ω Max.(initial)per contact 10 m Ω Max. change allowed	Mate connectors, measure by dry circuit, 20mV Max., 10mA Max. (EIA-364-23)
Insulation Resistance	5,000 M Ω Min.	Unmated connectors, apply 500 V DC for 2 minute. Test between adjacent contacts of unmated connectors. (EIA-364-21)
Dielectric Withstanding Voltage	No discharge, flashover or breakdown. Current leakage: 1 mA max.	1000 VAC Min. at sea level for 1 minute. Test between adjacent contacts of unmated connectors. (EIA-364-20)
Temperature rise	30℃ Max. Change allowed	Mate connector: measure the temperature rise at rated current until temperature stable. The ambient condition is still air at 25℃ (EIA-364-70,METHOD1,CONDITION1)
MECHANICAL		
Item	**Requirement**	**Standard**
Durability	200 cycles.	The sample should be mounted in the tester and fully mated and unmated the number of cycles specified at the rate of 25.4 ± 3mm/min. (EIA-364-09)
Mating/Unmating Forces	See heading 8	Operation Speed： 10 ± 3 mm/minute.. Measure the force required to mate/unmate connector. (EIA-364-13)

Terminal / Housing Retention Force (Rcpt. CONN.)	0.5 kgf MIN.	Apply axial pull out force at the speed rate of 25.4 ± 3 mm/minute. On the terminal assembled in the housing.
Vibration	1 μs Max.	The electrical load condition shall be 100 mA maximum for all contacts. Subject to a simple harmonic motion having amplitude of 0.76mm (1.52mm maximum total excursion) in frequency between the limits of 10 and 55 Hz. The entire frequency range, from 10 to 55 Hz and return to 10 Hz, shall be traversed in approximately 1 minute. This motion shall be applied for 2 hours in each of three mutually perpendicular directions. (EIA-364-28 Condition I)
Shock (Mechanical)	1 μs Max.	Subject mated connectors to 50 G's (peak value) half-sine shock pulses of 11 milliseconds duration. Three shocks in each direction shall be applied along the three mutually perpendicular axes of the test specimen (18 shocks). The electrical load condition shall be 100mA maximum for all contacts. (EIA-364-27, test condition A)

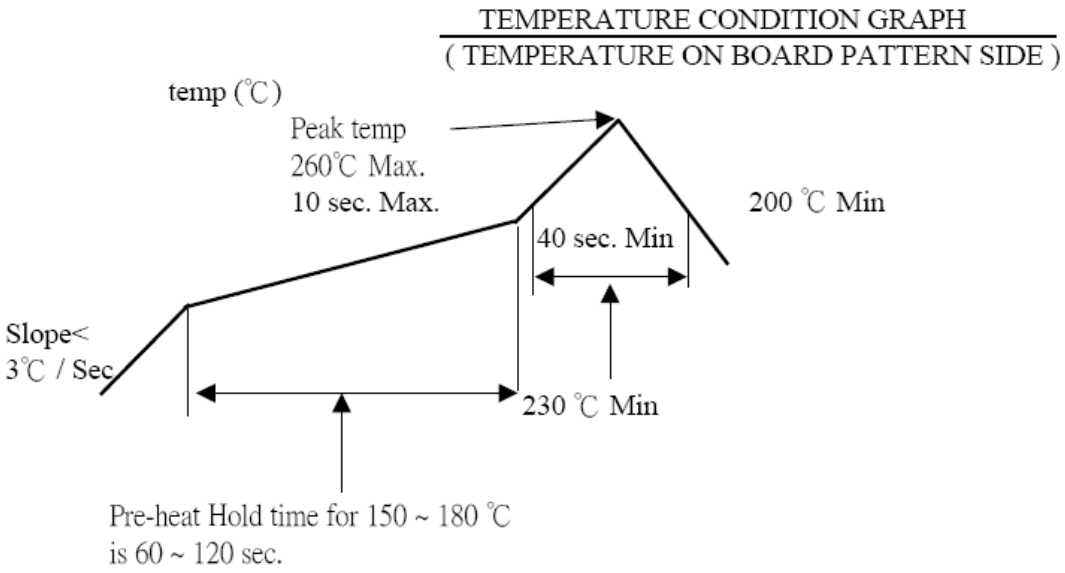
ENVIRONMENTAL		
Item	**Requirement**	**Standard**
Resistance to **Reflow** Soldering Heat	See Product Qualification and Test **(Lead Free)**	Pre Heat：150℃~180℃, 60~120sec. Heat：230℃ Min., 40sec Min. Peak Temp.：260℃Max, 10sec Max.
Thermal Shock	See Product Qualification and Test Sequence Group 4	Mate module and subject to follow condition for 25 cycles. 1 cycles: -55 +0/-3 ℃, 30 minutes +85 +3/-0 ℃, 30 minutes (EIA-364-32, test condition I)
Humidity	See Product Qualification and Test Sequence Group 4	Mated Connector 40℃, 90~95% RH, 96 hours. (EIA-364-31,Condition A, Method II)
Temperature life	See Product Qualification and Test	Subject mated connectors to

	Sequence Group 5	temperature life at 85℃ for 96 hours. (EIA-364-17, Method A Test condition 4)
Salt Spray (Only For Gold Plating)	See Product Qualification and Test Sequence Group 6	Subject mated/unmated connectors to 5% salt-solution concentration, 35℃ (I) Gold flash for 8 hours (II) Gold plating 3 u" for 48 hours. (EIA-364-26)
Solder ability	Tin plating: Solder able area shall have minimum of 95% solder coverage. Gold plating: Solder able area shall have minimum of 75% solder coverage	And then into solder bath, Temperature at 245 ±5℃, for 4-5 sec. (EIA-364-52)
Hand Soldering Temperature Resistance	Appearance: No damage	T≧350℃, 3sec at least.

Note. Flowing Mixed Gas shell be conduct by customer request.

6 INFRARED REFLOW CONDITION

6.1. Lead-Free Process



7 PRODUCT QUALIFICATION AND TEST SEQUENCE

Test or Examination	Test Group										
	1	2	3	4	5	6	7	8	9		
	Test Sequence										
Examination of Product	1,3	1	1	1、7	1、6	1、4			1,3		
Low Level Contact Resistance		2、6	2、5	2、8	2、7	2、5					
Insulation Resistance				3、9	3、8						
Dielectric Withstanding Voltage				4、10	4、9						
Temperature rise	2										
Mating / Unmating Forces		3、5									
Durability		4									
Vibration			3								
Shock (Mechanical)			4								
Thermal Shock				5							
Humidity				6							
Temperature life					5						
Salt Spray(Only For Gold Plating)						3					
Solder ability							1				
Terminal / Housing Retention Force (Rcpt. CONN.)								1			
Hand Soldering Temperature Resistance									2		
Sample Size	2	4	4	4	4	4	2	4	4		

8 MATTING/UNMATTING FORCE

Mating Force Unit : N/Kg

High Power Contact.		Lower Power Contacts		Note
Per Pin(gf) Max.		Per Pin(gf) Max.		
N	Kg	N	Kg	
5.88	0.6	1.96	0.2	

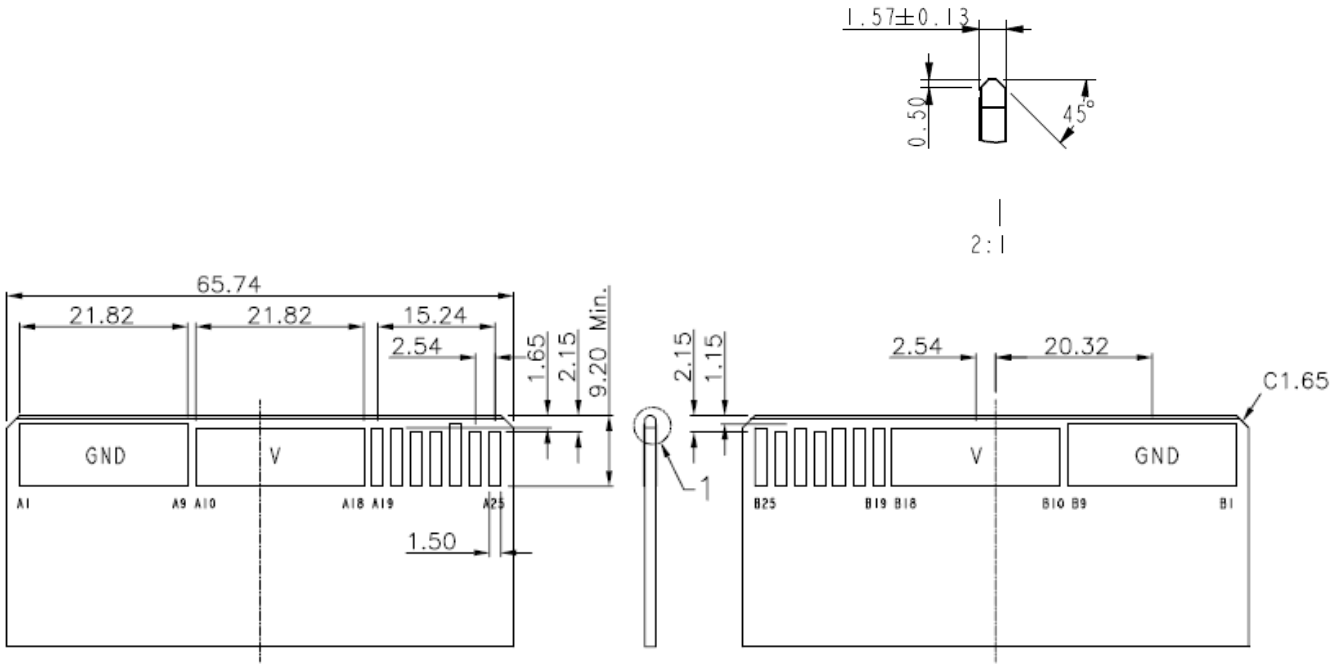
UNMating Force Unit : N/Kg

High Power Contact.		Lower Power Contacts		Note
Per Pin(gf) Min.		Per Pin(gf) Min.		
N	Kg	N	Kg	
0.588	0.06	0.196	0.02	

9. EDGE CARD LAYOUT

Test Board trace characterizations: 5 Oz

Test PCB Thickness is 1.57+/-0.13mm (Inclusive of two pads)



RECOMMEND EDGE CARD LAYOUT (TOP VIEW)
THICKNESS IS 1.57±0.13MM;DIMENSION
TOLERANCE:±0.05MM