SPECIFICATION

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SPEC. NO.: PS-52972-XXXXXXX-XXX **REVISION:** O

PRODUCT NAME: PRESS-FIT 16MP+14SP POWER CONN.

PRODUCT NO: 52972 SERIES

PREPARED:	CHECKED:	APPROVED:
Liang,lin ji	**Lu,jing quan**	**Hsieh,fu yu**
DATE:**2018/01/10**	DATE: **2018/01/10**	DATE: **2018/01/10**

1 Revision History

Rev.	ECN #	Revision Description	Prepared	Date
1	ECN-1706160	PROPOSAL	TONY	2017/5/20
O	ECN-1802246	NEW SPEC	Liang,lin ji	2018/01/10

2 SCOPE

This specification provides information and requirements regarding application of the Press-Fit Power connector used in high power supply & system.

3 APPLICABLE DOCUMENTS

3.1 EIA-364-100 : Environmental test methodology for assessing the performance of electrical connectors and sockets used in business office applications
3.2 EIA-364-TP70: Electronics Industries Association
3.3 SAFETY AGENCY APPROVALS
CUL / UL File Number：
TUV File Number：

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.

4.2Materials and Finish

4.2.1 Contact: High performance copper alloy
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 High Temp., Resin, UL94V-0

4.3Ratings

4.3.1 Voltage: 12 Volts DC (Power) , 3.3Vollts DC (Signal)

4.3.2 Current Rating :
Power pin 17A and signal pin 1.0A full on compliant with UL specification

4.3.3 Operating Temperature : -40℃ to +105℃ (including T-rise from applied current)
Non- Operating Temperature : -40℃ to +105℃

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	Max. Change Signal Contact: 40 m Ω Max. △R 20 m Ω Max Power Contact: 1.0m Ω Max. △R 1.0 m Ω Max.	Mate connectors, apply max. voltage of 20mV and a current of 100mA (EIA-364-23)
Insulation Resistance	Initial 5,000 MΩ Min; and 500 MΩ Min. after test.	Apply with a test voltage of 500 VDC between the closet adjacent contacts. (EIA-364-21))
Dielectric Withstanding Voltage	No discharge, flashover or breakdown. Current leakage: 1.0 mA max.	Apply with a test voltage of 1500V /RMS for power contact and 500V/RMS for signal contact. (EIA-364-20)
Temperature rise	30℃ T-Rise Max.	Mate connector: measure the temperature rise at rated current until temperature stable. The ambient condition is still air at 30℃ (EIA-364-70,METHOD1,CONDITION1)

MECHANICAL		
Item	**Requirement**	**Standard**
Mating Force	0.22N per signal pin Max. 3.00Nper Power Contact Max.	Operation Speed： 25.4 ± 3 mm/min. Measure the force required to mate connector. The thickness of test card:1.57mm (EIA-364-13)
Unmating Force	0.06Nper signal pin Min. 0.36Nper Power Contact Min.	Operation Speed： 25.4 ± 3 mm/min. Measure the force required to unmating connector. The thickness of test card:1.57mm (EIA-364-13)
Retention Force Into The Housing	8.0 N per signal Pin Min. 8.0 N per Power Pin Min.	Pull Rate at 25.4 ±3mm/min
Durability	Max. Change Signal Contact: 40 m Ω Max. △R 20 m Ω Max Power Contact: 1.0 m Ω Max. △R 1.0 m Ω Max.	Mate connectors 200 cycles (EIA-364-09)
Vibration	Max. Change Signal Contact: 40 m Ω Max. △R 20 m Ω Max. Power Contact: 1.0 m Ω Max. △R 1.0 m Ω 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**
Thermal Shock	Max. Change Signal Contact: 40 m Ω Max. △R 20 m Ω Max. Power Contact: 1.0 m Ω Max. △R 1.0 m Ω Max.	Mate connectors, expose to 5 cycles. From -55 +0/-3 ℃, 30 minutes to +85 +3/-0 ℃, 30 minutes (EIA-364-32, test condition III)
Humidity	Max. Change Signal Contact: 40 m Ω Max. △R 20 m Ω Max. Power Contact: 1.0 m Ω Max. △R 1.0 m Ω Max.	Mate module and subject to follow condition for 24 cycles. 1 cycles: -25 +0/-3 ℃ 80% RH, 30 minutes +65 +3/-0 ℃, 80% RH 30 minutes (EIA-364-32, Test condition I)
Temperature life	Max. Change Signal Contact: 40 m Ω Max. △R 20 m Ω Max. Power Contact: 1.0 m Ω Max. △R 1.0 m Ω Max.	Mate connectors to temperature life at 105℃ for 180 hours. (EIA-364-17, Test condition A)
Salt Spray	See Product Qualification and Test Sequence Group 6	Subject mated/unmated connectors to 5% salt-solution concentration, 35℃ Au 3u" for 48 hours. Au 30u" for 96 hours (EIA-364-26)
Compliant Pin Insertion Force	30N per signal Pin Max. 120N per Power Pin Max.	To insert compliant pin into a plated through hole in a printed circuit board at a rate of 5.08mm/minute
Compliant Pin Retention Force	8N per signal Pin Min. 10N per Power Pin Min.	The retention force in the axial direction opposite that of insertion shall not be less than 10N for power pin and shall not be less than 8N for signal pin

6 PRODUCT QUALIFICATION AND TEST SEQUENCE

Test or Examination	Test Group											
	1	2	3	4	5	6	7	8	9			
	Test Sequence											
Examination of Product				1,7	1,6	1,4	1,3	1,3	1,3			
Low Level Contact Resistance		1,5	1,4	2,10	2,9	2,5						
Insulation Resistance				3,9	3,8							
Dielectric Withstanding Voltage				4,8	4,7							
Temperature rise	1											
Mating/ Unmating Forces		2,4										
Durability		3										
Vibration			2									
Shock (Mechanical)			3									
Thermal Shock				5								
Humidity				6								
Temperature life					5							
Salt Spray						3						
Retention Force into the Housing							2					
Retention force for Compliant pin								2				
Insertion force for Compliant pin									2			
Sample Size	2	4	4	4	4	2	2	2	2			