SPECIFICATION

宏致電子股份有限公司

桃園縣中壢市東園路13號

No.13, Dongyuan Rd., Jhongli City,

Taoyuan County 320, Taiwan (R.O.C.)

TEL: +886-3-463-2808
FAX: +886-3-463-1800

SPEC. NO.: PS-52931-XXXXX-XXX **REVISION:** O

PRODUCT NAME: POWER EDGE CARD CONNECTOR

PRODUCT NO: 5293X SERIES

PREPARED:	CHECKED:	APPROVED:
MARK	**ERIC**	**JASON**
DATE: **2012/11/23**	DATE: **2012/11/23**	DATE: **2012/11/23**

1 Revision History

Rev.	ECN #	Revision Description	Prepared	Date
1	ECN-1206266	NEW SPEC	SIMON	2012.06.13
O	ECN-1211290	RELEASE	SIMON	2012.11.23

2 SCOPE

This specification defines the performance, test, quality and reliability requirements of Right Angle (R/A) Power Edge Card connector product that will mate to a separable power edge card at end application.

3 APPLICABLE DOCUMENTS

3.1 EIA-364-TP70: ELECTRONICS INDUSTRIES ASSOCIATION

3.2 SAFETY AGENCY APPROVALS
CUL / UL File Number **:** TBD

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

The material for each part shall be as specified herein or equivalent. The substitute material shall meet the performance requirement of this specification.

4.2.1 Power Contact: High conductivity 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 Signal Contact: Phosphor bronze
Finish: (a) Contact Area: Refer to the drawing.
(b) Under plate: Refer to the drawing.
(c) Solder area: Refer to the drawing.

4.2.3 Housing dielectric material:
(a) Material: High temperature thermoplastic, glass-filled.
(b) Flame level: UL94V-0 rated.

4.3 Ratings

4.3.1 Voltage: 48 Volts AC / DC

4.3.2 Current Rating :
4.3.2.1 Power pin 7A full on compliant with UL certification
4.3.2.2 Power pin 7A full on compliant with CUL certification

4.3.3 Operating Temperature : -40℃ to +125℃ (including T-rise from applied current)
Non- Operating Temperature : -40℃ to +125℃

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		
Low Level Contact Resistance	Not exceed 25 mΩ, initial; and less than 20 mΩ changes after test.	Mate connectors, measure by dry circuit, 20mV Max., 100mA Max. (EIA-364-70)
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: 0.5 mA max.	Apply with a test voltage of 1000V /RMS 60Hz for power contact and 500V/RMS 60Hz for signal contact. (EIA-364-20)

MECHANICAL		
Item	**Requirement**	**Standard**
Contact Retention Force	200gf Min.	Operation Speed: 25.4 ± 3 mm/minute. Measure the contact retention force with Tensile strength tester.
Normal force	150gf Min.	Apply perpendicular force to terminal at rate of 25.4 ± 3mm/min.
Durability	There shall be no damage after 20 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 force	15Kgf Max.	Operation Speed: 25.4 ± 3 mm/minute.. Measure the force required to mate/Unmate connector. (EIA-364-13)
Unmating force	950gf Min.	Operation Speed: 25.4 ± 3 mm/minute.. Measure the force required to mate/Unmate connector. (EIA-364-13)
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)
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)

ENVIRONMENTAL		
Item	**Requirement**	**Standard**
Thermal Shock	No physical damages See Product Qualification and Test Sequence Group 3	Mate module and subject to follow condition for 5 cycles. 1 cycles: -55 +0/-3 ℃, 30 minutes +85 +3/-0 ℃, 30 minutes (EIA-364-32, test condition I)
Humidity	No physical damages See Product Qualification and Test Sequence Group 3	Mated Connector 40℃, 90~95% RH, 96 hours. (EIA-364-31,Condition A, Method II)
Salt spray	No physical damages See Product Qualification and Test Sequence Group 5	Subject mated/unmated connectors to 5% salt-solution concentration, 35℃ for 48 hours. (EIA-364-26)
Temperature life	No physical damages See Product Qualification and Test Sequence Group 4	Subject mated connectors to temperature life at 85℃ for 96 hours. (EIA-364-17, Test condition A)
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)

6 PRODUCT QUALIFICATION AND TEST SEQUENCE

Test or Examination	Test Group								
	1	2	3	4	5	6	7		
	Test Sequence								
Examination of Product			1,7	1,6	1,4				
Low Level Contact Resistance	1,7	1,4	2,10	2,9	2,5				
Insulation Resistance			3,9	3,8					
Dielectric Withstanding Voltage			4,8	4,7					
Contact Retention Force							1		
Normal Force							2		
Durability	4								
Mating Force	2,5								
Unmating Force	3,6								
Shock (Mechanical)		3							
Vibration		2							
Thermal Shock			5						
Humidity			6						
Salt Spray					3				
Temperature Life				5					
Solder ability						1			
Sample Size	4	4	4	4	2	2	2		