Revision History

Version Number	Revision Date	Page	Description of Changes
A0	9/19/2021	/	/

PROPRIETARY NOTE

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1. Scope

This specification covers the material and performance requirements for the 2P4S | PDC07 & PDC08 Power Connector.

2. Applicable documents

In the event of conflict between requirements of this specification and product drawing, product drawing shall take precedence. In the event of conflict between requirements of this specification and referenced documents, this specification take precedence.

3. Requirements

3.1 Design and Construction

Product shall be of the design, construction and physical dimensions specified on the applicable product drawing.

3.2 Material

Must be compatible with lead-free soldering process

Housing: High Temperature Thermoplastic UL94-V0/V2;

Contact: High Conductivity Copper Alloy,

Gold plated at mating area & Sn plated at solder tail, all over Nickel;

3.3 Ratings

Voltage Rating: 100V DC @ Power Pin, 60V AC/DC @ Signal Pin

Current Rating: 35 A max. @ Power Blade, 1.0A @ Signal Pin

Operating Temperature: -40℃ ~ +125℃.

4. Test requirement and procedures summary

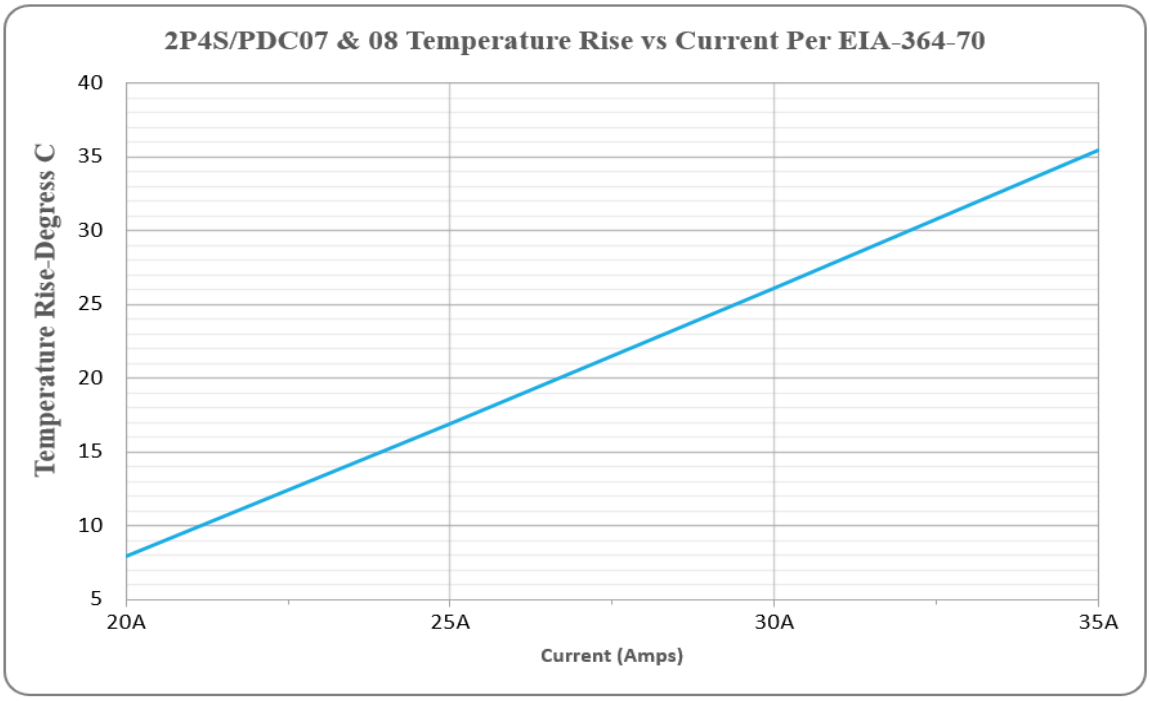
4.1 Examination of product

Test	Requirements	Test Procedure
Examination of product	Meets requirements of applicable product drawing and specification	Visual, dimensional and functional per applicable quality inspection plan

4.2 Electrical Performance requirements

Test	Requirements	Test Procedure
Contact Resistance (Low Level)	1.0 mΩ Max @ Power Blade , 10 mΩ Max @Signal Pin (initial); 2.0 mΩ Max @ Power Blade , 20 mΩ Max @ Signal Pin (final);	Mated contacts assembled in housing; 20mV Max, 100mA max. (EIA-364-23)
Insulation Resistance	5000 MΩ Min @ Power Blade; 500 MΩ Min @ Signal Pin	Impress Voltage 500V DC. Test between adjacent circuits of unmated connectors. (EIA-364-21)

Dielectric withstanding Voltage	1500 VDC RMS @ Power Blade; 500V DC RMS @ Signal Pin,No discharge, flashover or breakdown.	Test between adjacent circuits of unmated connectors for 1 minutes. (EIA-364-20)
Temperature rise	Mate connectors Measure T-Rise @ Rated Current After 0.5 Hours min.	EIA-364-70



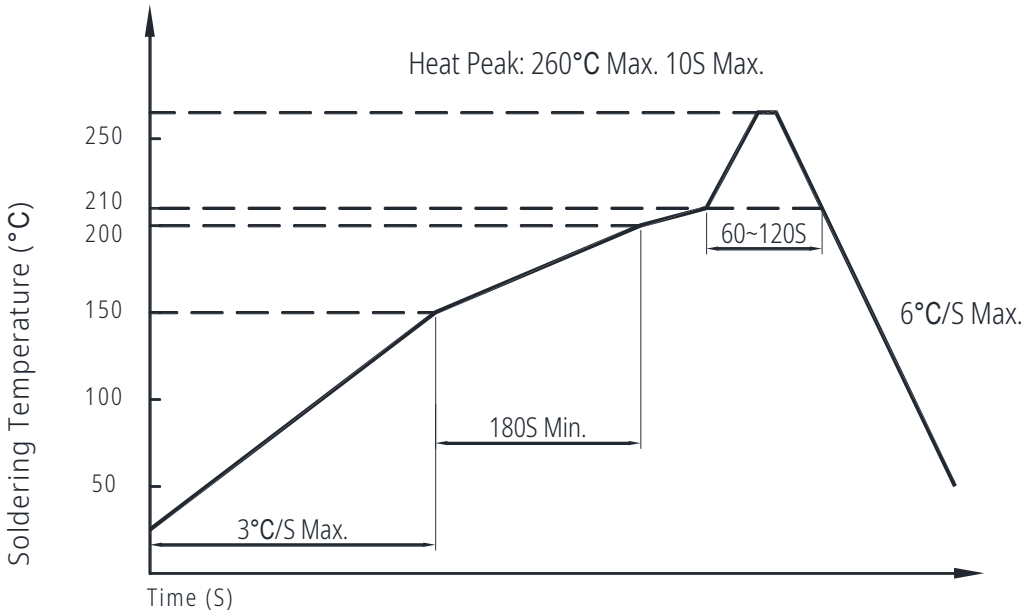
4.3 Mechanical performance requirements

Test	Requirements	Test Procedure
Mating force	49N (5.0Kgf) max.	Operation speed: 25.4mm/ minute Measure the force required to mate connector. (EIA-364-13)
Withdrawal force	4.9~39.2N.(0.5~4.0Kgf)	Operation speed: 25.4mm/ minute Measure the force required to mate connector. (EIA-364-13)
Anti-pulling force	49N (5.0kgf) min.	Operation speed: 25.4mm/ minute Measure the force required to mate connector. (EIA-364-13)
Durability	2.0 mΩ Max @ Power Blade , 20 mΩ Max @ Signal Pin Mating force: 49N Max. Withdrawal force: 4.9~39.2 N	Mating/Unmating 1,000 cycles min. (Reference, confirm after the test results) at a max rate of 10 cycles per minute (EIA-364-09)
Durability (preconditioning)	No evidence of physical damage	Mating/Unmating 50 cycles at a max rate of 10 cycles per minute (EIA-364-09)

Test	Requirements	Test Procedure
Reseating	1.Contact Resistance: 2.0 mΩ Max @ Power Blade, 20 mΩ Max @ Signal Pin 2.No evidence of physical damage	Manually unplug/plug the connector or socket. Perform 3 such cycles.
Contact Retention	13.0N (1.3Kgf) Min	Axial pullout force on the terminal in the housing at a rate of 25.4±6 mm/minute (EIA-364-29)
Thermal Shock	1.Contact Resistance: 2.0 mΩ Max @ Power Blade, 20 mΩ Max @ Signal Pin 2.No evidence of physical damage	Mated connectors. -55℃ ~ +85℃ for 30 Minutes/cycle, repeat 10 cycles. (EIA-364-32 test condition I)
Temperature Life	1.Contact Resistance: 2.0 mΩ Max @ Power Blade, 20 mΩ Max @ Signal Pin 2.No evidence of physical damage	Mated connector. 105℃ Duration: 240H (EIA-364-17)
Temperature Life (Preconditioning)	1.Contact Resistance: 2.0 mΩ Max @ Power Blade, 20 mΩ Max @ Signal Pin 2.No evidence of physical damage	Mated connector. 105℃ Duration: 120H (EIA-364-17)
Thermal Disturbance	1.Contact Resistance: 2.0 mΩ Max @ Power Blade, 20 mΩ Max @ Signal Pin 2.No evidence of physical damage	Cycle the connector between 15℃+/-3℃ and 85℃+/-3℃, as measured on the part. Ramps should be a minimum of 2℃/Min., And dwell times should insure that the contacts reach the temperature Extremes (a minimum of 5 minutes) Humidity is not controlled. Perform 10 such cycles.
Temperature-Humidity Cycle test	1.Contact Resistance: 2.0 mΩ Max @ Power Blade , 40 mΩ Max @ Signal Pin 2.No evidence of physical damage	Mated Connector Initial measurement, cold shock and vibration. Except cycle the connector between 25℃ ±3℃ at 80%±3%RH and 65℃ ±3℃ at 50%±3%RH. Ramp times should be 0.5 hour and dwell times should be 1.0 hour. Dwell times start when the temperature and humidity have stabilized within the specified levels. Perform 24 such cycles. EIA-364-31, method III

Test	Requirements	Test Procedure
Salt Spray	Contact Resistance: 2.0 mΩ Max @ Power Blade , 20 mΩ Max @ Signal Pin	Subject mated connectors to 5% salt concentration for 48 hours. (EIA-364-26)
Solderability	Wet Solder Coverage: 95%Min.	Dip Test: Solder temperature: 245±5℃, Immersion Duration: 3±0.5 seconds (EIA-364-56)
		Hand soldering, 60~100W electric ferrochrome, 370~430℃,2~4 seconds
Resistance to Reflow Soldering Heat	No physical damage shall occur	IR Reflow: Test connector on PCB Pre-Heat 150~200℃: 180sec.Min. Heat 210℃ Min.: 60~120sec. Heat Peak 260℃ Max. 10sec. Max. (EIA-364-56)
		Wave solder: Temperature(solder): 260+0℃/-5℃ Duration: 10±1 seconds (EIA-364-56)

Figure-1 Soldering Profile with Female Part / 板端母座建议参数设定



IR Reflow Temperature Profile

4.5 Product qualification and requalification test

Test or Examination	Test Group							
	A	B	C	D	E	F	G	H
Examination of product	1,10, 13	1,7,11, 15,18	1,7,11, 15,18	1,7,11, 14	1,6,11	1,7	1,4	1,3
Contact Resistance (low level)	3,11	3,8,12, 16	3,8,12, 16	3,8,12	2,7,12	2,8		
Insulation Resistance					3,8,13	3,9		
Dielectric withstanding Voltage					4,9,14	4, 10		
Temperature rise (Current Rating)	4,12	4,9,13, 17	4,9,13, 17	4,9,13				
Mating force	5,8							
Withdrawal force	6,9							
Durability	7							
Durability (preconditioning)		5	5	5	5	5		
Reseating		14	14	10				
Contact Retention								2
Thermal Shock			6					
Temperature Life				6	10			
Temperature Life (Preconditioning)		6						
Thermal Disturbance		10						
Temperature-Humidity Cycle test			10					
Salt Spray						6		
Solder ability (Hand)	2	2	2	2				
Solderability							3	
Resistance to Reflow Soldering Heat							2	

Note:

1. Need a minimum of 3sets samples for group A~G ,
   Need a minimum of 4sets samples for group H ,
2. Group A~D Soldering with test PCB, solder by hand;