Product Specification

PBC02 Ultra Mini Edge Card Slot Specification

Revision: A0

PROPRIETARY NOTE

this document contains information confidental and proprietary to Prolanv and shall not be reproudced of transfeerred to other documents ordisclosed to others or used for any purpose other than that for which it was obtained without the expressed and writen consent of Prolanv.

1. Scope

This specification covers the material and performance requirements for the **PBC02** Ultra Mini Edge Card Slot.

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;

Contact: High Conductivity Copper Alloy,

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

3.3 Ratings

Voltage Rating: 54V DC @ Power Pair Pin, 20V DC @ Signal Pin

Current Rating: 40 A @ Power Pair Pin, 0.5A @ Signal Pin

Operating Temperature: -30°C ~ +120°C.

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

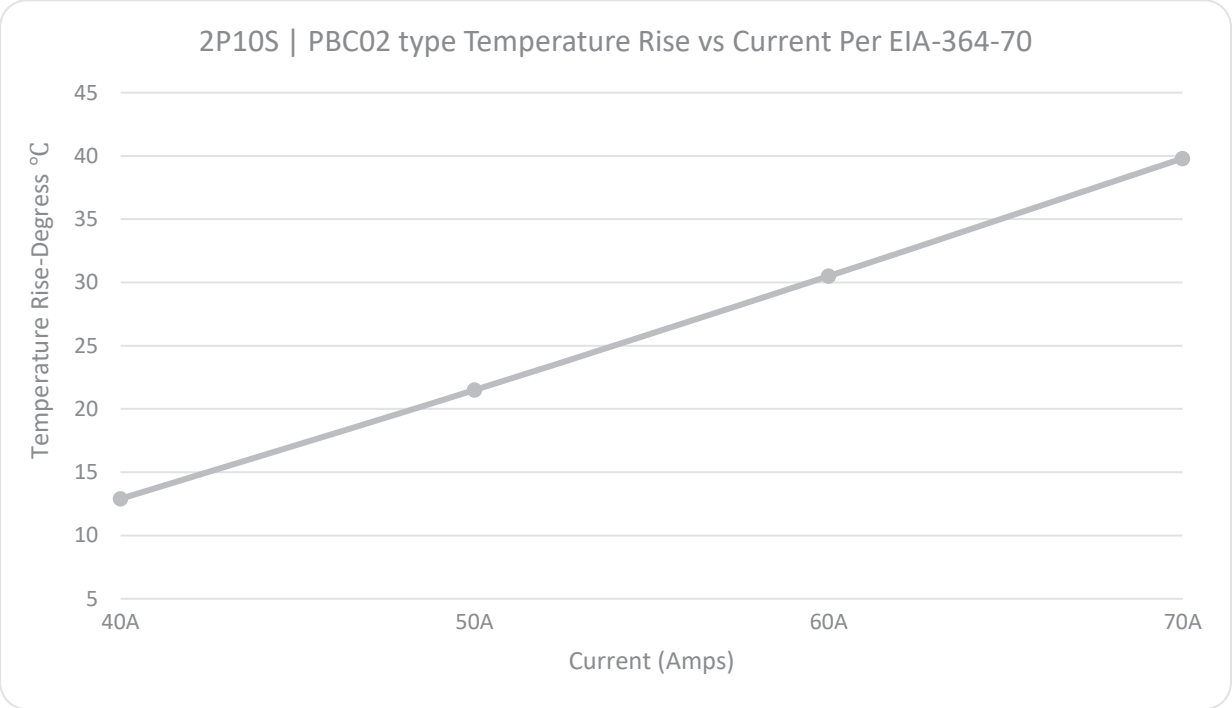
4.2 Electrical Performance

Test	Requirements	Test Procedure
Contact Resistance (Low Level)	0.5 mΩ Max @ Power Pair Pin , 10 mΩ Max @Signal Pin (initial); 1.0 mΩ Max change @ Power Pair Pin, 20 mΩ Max change @ Signal Pin (final);	Mated contacts assembled in housing; 20mV Max, 100mA max. (EIA-364-23)
Insulation Resistance	500 MΩ Min @ Power Pair Pin; 100 MΩ Min @ Signal Pin	Impress Voltage 500V DC. Test between adjacent circuits of unmated connectors. (EIA-364-21)

4.2 Electrical Performance (continued)

Test	Requirements	Test Procedure
Dielectric withstanding Voltage	500VDC RMS @ Power Pair Pin; 100VDC RMS @ Signal Pin, No discharge, flashover or breakdown.	Test between adjacent circuits of unmated connectors for 1 minutes. (EIA-364-20)
Temperature rise	Temperature rise is 35°C maximum over ambient temperature after 30 minutes.	EIA-364-70 method 2

Figure-1 Temperature rise graph (test data by T1.6mm PCB card @ 5# AWG cable)



4.3 Mechanical performance

Test	Requirements	Test Procedure
Mating force	49N (5.0kgf) max. @ T1.60mm Moudle Card	Operation speed: 25.4mm/ minute measure the force required to mate/unmate connector. (EIA-364-13)
Withdrawal force	4.9N (0.5kgf) min. @ T1.60mm Moudle Card	
Durability (preconditioning)	No evidence of physical damage	Mating/Unmating 50 cycles at a maximum rate of 10 cycles per minute (EIA-364-09)
Durability	Contact Resistance : 1.0 mΩ Max change @ Power Blade , 20 mΩ Max change @ Signal Pin	Mating/Unmating 2,000 cycles maximum. (Reference, confirm after the test results) at a max rate of 10 cycles per minute. (EIA-364-09)

4.3 Mechanical performance (continued)

Test	Requirements	Test Procedure
Reseating	1. Maximum Change: 1.0 mΩ @ Power Pair Pin, 20 mΩ @Signal Pin 2.No evidence of physical damage	Manually Unmated/Mated the Connectors perform 3 such cycles.
Contact Retention in Housing	13.0N (1.3Kgf) Min @ Power Pin. 4.9N (0.5 Kgf) Min @ Signal Pin.	Axial pullout force on the terminal in the housing at a rate of 25.4±6 mm/minute (EIA-364-29)

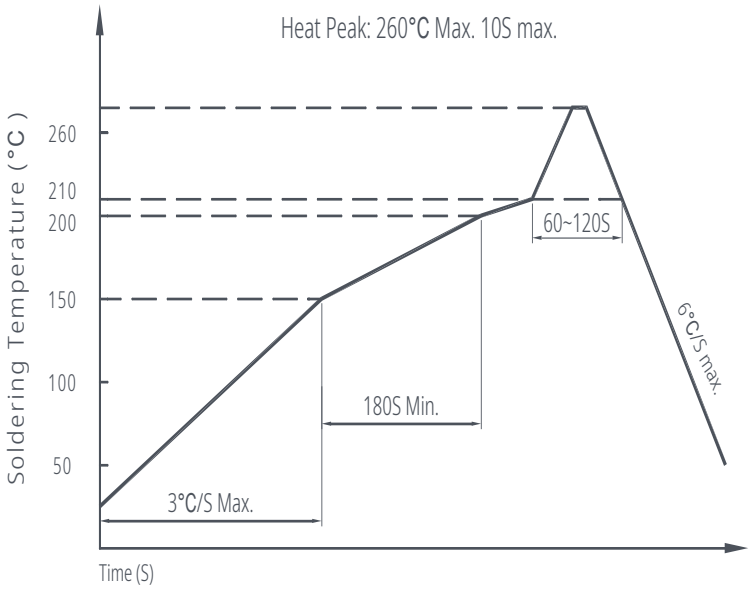
4.4 Environmental Performance

Vibration	1. Maximum Change: 1.0 mΩ @ Power Pair Pin, 20 mΩ @Signal Pin 2.No evidence of physical damage	Mate Connectors and vibration per EIA-364-28 test condition VII. 15 minutes each axis.
Thermal Shock	1. Maximum Change: 1.0 mΩ @ Power Pair Pin, 20 mΩ @Signal Pin 2.No evidence of physical damage	Mated connectors. -55°C ~ +85°C for 30 Minutes/cycle, repeat 10 cycles. (EIA-364-32 test condition I)
Temperature Life (Preconditioning)	1. Maximum Change: 1.0 mΩ @ Power Pair Pin, 20 mΩ @Signal Pin 2.No evidence of physical damage	Mated connector. 105°C Duration: 120H (EIA-364-17)
Temperature Life	1. Maximum Change: 1.0 mΩ @ Power Pair Pin, 20 mΩ @Signal Pin 2.No evidence of physical damage	Mated connector. 105°C Duration: 240H (EIA-364-17)
Thermal Disturbance	1. Maximum Change: 1.0 mΩ @ Power Pair Pin, 20 mΩ @Signal Pin 2.No evidence of physical damage	Cycle the Connectors between 15°C ±3°C and 85°C ±3°C, as measured on the part, Ramps should be a minmum or 2°C /min. And dwell times should insure that the contacts reach the temperature extremes (a minmum of 5 minutes) Humidity is not controlled. Perform 10 such cycles.

4.4 Environmental Performance (continued)

Test	Requirements	Test Procedure
Temperature-Humidity Cycle test	1. Maximum Change: 1.0 mΩ @ Power Pair Pin, 20 mΩ @Signal Pin 2.No evidence of physical damage	Mated Connector Initial measurement, cold shock and vibration. Except cycle the connector between 25°C ±3°C at 80%±3%RH and 65°C ±3°C 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
Salt Spray	Contact Resistance: 1.5 mΩ Max @ Power Pair Pin. 30 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°C, Immersion Duration: 3±0.5 seconds (EIA-364-56)
		Hand soldering, 60~100W electric ferrochrome, 370~430°C,2~4 seconds
Resistance to Reflow Soldering Heat	No physical damage shall occur	IR Reflow:Test connector on PCB, Pre-Heat 150~200°C: 180sec.Min. Heat 210°C Min.: 60~120sec. Heat Peak 260°C Max. 10sec. Max. (EIA-364-56)
		Wave solder: Temperature(solder): 260±5°C Duration: 10±1 seconds (EIA-364-56)

Figure-2 IR Reflow Temperature Profile



4.5 Test Sequence Groups

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 (preconditioning)		5	5	5	5	5		
Durability	7							
Reseating		14	14	10				
Contact Retention								2
Vibration (Random)								
Thermal Shock			6					
Temperature Life (Preconditioning)		6						
Temperature Life				6	10			
Thermal Distrubance		10						
Temperature-Humidity Cycle test			10					
Salt Spray						6		
Solderability (Hand)	2	2	2	2				
Solderability							3	
Resistance to Reflow Soldering Heat							2	