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1. Scope

This specification covers the material and performance requirements for the Mini PCI Express Card Socket.

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

A. Connector

Housing: High Temperature Thermoplastic UL94-V0;

Contact: Copper Alloy, Gold plated, all over Nickel;

Solder: Copper Alloy, Sn plated;

B. Holder

Bracket: High Temperature Thermoplastic UL94-V0;

Fastener: High Temperature Thermoplastic UL94-V0;

Solder: Copper Alloy, Sn plated;

3.3 Ratings

Voltage Rating: 50V AC;

Current Rating: 0.5 A

Operating Temperature: -25 °C ~ +90 °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 requirements		
Test	Requirements	Test Procedure
Contact Resistance (low level)	55 mΩ Max (initial) 20 mΩ Max change allowed final	Mated contacts assembled in housing; 20mV Max, 100mA max. (EIA-364-23)
Insulation Resistance	500 MΩ (Min), 500V DC	Impress Voltage 500V DC. Test between adjacent circuits of unmated connectors. (EIA-364-21)



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Test	Requirements	Test Procedure
Dielectric withstanding Voltage	300V AC RMS (min) at sea level No discharge, flashover or breakdown.	300V AC for 1 min. Test between adjacent circuits of unmated connectors. (EIA-364-20)
Current Rating	0.5A/power contact (continuous) The temperature rise above ambient shall not exceed 30 °C, The ambient condition is still air at 25 °C.	EIA-364-70 method 2
4.3 Mechanical performance requirements		
Test	Requirements	Test Procedure
Total mating force	2.3 kgf Max. 1. Insert the card at 30° 2. Rotate the card into position	Operation speed: 100mm/min. Measure the force required to mate connector. (EIA-364-13)
Total unmating force	2.3 kgf Max. Reverse the installation sequence to unmating	Operation speed: 100mm/min. Measure the force required to unmate connector (EIA-364-13)
Durability	Contact Resistance 20 mΩ Max change allowed final	Mating/unmating 50 cycles (EIA-364-09)
Physical Shock	No electrical discontinuity of 0.1 μsec. or longer duration.	Accelerated Velocity: 50G Wave form: Half sin, Duration: 11msec. Number of Drops: 6 drops each to normal and reversed directions of X, Y and Z axes, totally 18 drops. (EIA-364-27)
Vibration	No electrical discontinuity of 0.1 μsec. or longer duration.	Amplitude: 1.52mm P-P, Sweep time: 10-55-10Hz in 1min. Duration: 2 hours in each of 3 mutually perpendicular planes. 100 mA applied. (EIA-364-28)
4.4 Environmental performance requirements		
Thermal Shock	Contact Resistance 20 mΩ Max change allowed	Mated connectors. -55 °C & 105 °C for 30 minutes/cycle, repeat 5 cycles. (EIA-364-32)
Temperature Life	Contact Resistance 20 mΩ Max change allowed	Mated connector. 85 °C Duration: 2days (EIA-364-17)



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Test	Requirements	Test Procedure
Salt Spray	20 mΩ Max change allowed final	Subject mated connectors to 5% salt concentration for 24 hours. (EIA-364-26)
Temperature-Humidity Cycle test	20 mΩ Max change allowed final	Mated connector, 25~65 ℃, 90% ~ 95% R.H. 10 cycles. (EIA-364-31)
Solderability	Wet Solder Coverage: 95%Min.	Solder Temperature: 265±5 ℃, Immersion Duration: 3±0.5 seconds (EIA-364-56)
Mixed flowing gas	5 years	EIA-364-65, class IIA (7days to simulate)
Resistance to Reflow Soldering Heat	No physical damage shall occur	Test connector on PCB Pre-Heat 100~150 ℃, : 60sec.Max. Heat 220 ℃, Min.: 30sec.Max Heat Peak 265 ℃, Max. See figure-1 (EIA-364-56)

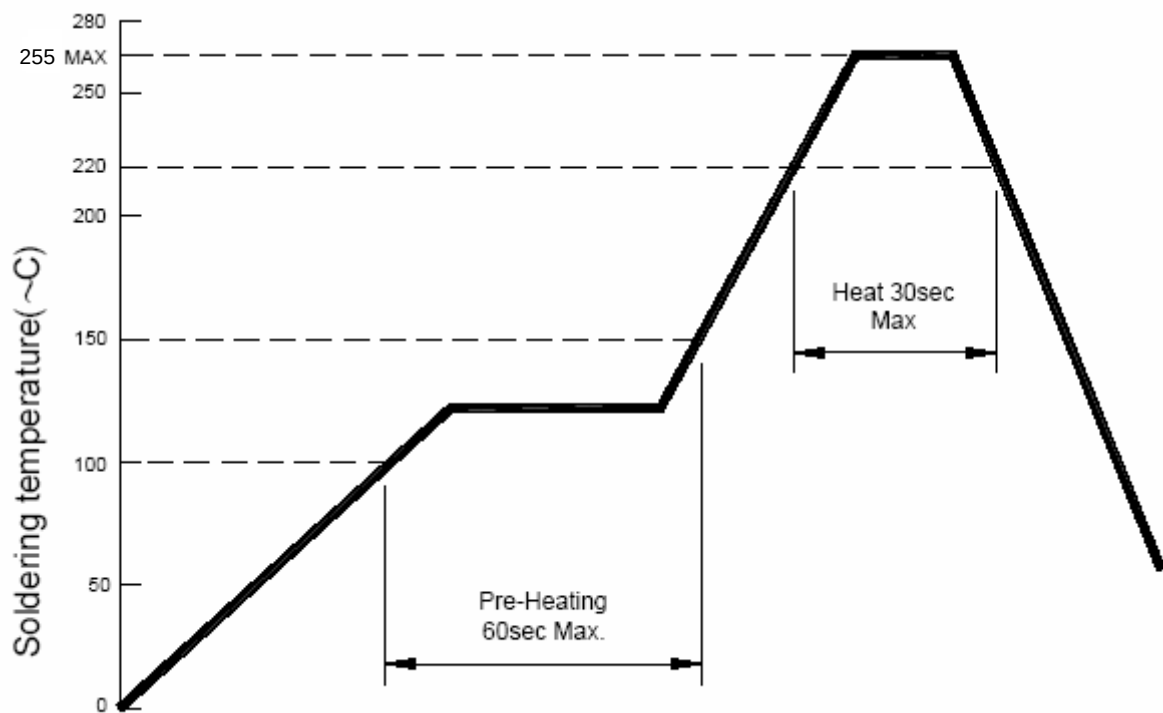


Figure-1



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4.5 Product qualification and requalification test

Test or Examination	Test Group						
	1	2	3	4	5	6	7
Examination of product	1,9	1,6	1,5	1,5	1,5	1,5	1,10
Contact Resistance (low level)	3,7	2,4	2,4	2,4	2,4	2,4	2,9
Insulation Resistance							3,7
Dielectric withstanding Voltage							4,8
Current Rating							6
Total mating force	2						
Total unmating force	8						
Durability	4						
Physical Shock	6						
Vibration	5						
Thermal Shock		5					
Temperature Life (Heat Aging)			3				
Salt Spray					3		
Temperature-Humidity Cycle test		3					
Solderability						3	
Mixed flowing gas				3			
Resistance to Reflow Soldering Heat							5

Note: Test 5pcs samples/test group