


NUMBER GS-12-1111	TYPE PRODUCT SPECIFICATION		
TITLE Mini PCI Express Connector, 52 Pin		PAGE 1 of 6	REVISION B
		AUTHORIZED BY Kenny Tai	DATE 2015-04-24
		CLASSIFICATION UNRESTRICTED	

1. SCOPE

1.1. Contents

When tests are performed on the subject product line, the procedures specified in Figure 1 shall be used.

All inspections shall be performed using the applicable inspection plan and product drawing.

2. APPLICABLE DOCUMENT

The following documents form a part of this specification to the extent specified herein.

Unless otherwise specified, the latest edition of the document applies. In the event of conflict between the requirements of this specification and the product drawing, the product drawing shall take precedence. In the event of conflict between the requirements of this specification and the referenced documents, this specification shall take precedence.

2.1. Documents

General Requirements for Test Specifications

Test Specification (EIA and IEC Test Methods)

2.2. Industry Standard

EIA-364: Electrical Connector/Socket Test Procedures Including Environmental Classifications.

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. Materials

Materials used in the construction of product shall be as specified on the applicable product drawing.

3.3. Ratings

A. Voltage: 50 VAC rms.

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B. Current: 0.5 A Max.


C. Operating Temperature: - 55°C to 85°C

3.4. Performance and Test description

The product is designed to meet the electrical, mechanical and environmental performance requirements specified in Figure 1. Unless otherwise specified, all tests shall be performed at ambient environmental conditions per EIA-364.


3.5. Test Requirements and Procedures Summary

TEST ITEM		REQUIREMENT	PROCEDURE
1	Examination of Product	Meets requirements of product drawing. No physical damage.	Visual inspection. No physical damage
ELECTRICAL REQUIREMENT			
2	Termination Resistance (Low Level)	[55] m Ohm Max (Initial) [ΔR=20] m Ohm Max (Final)	Subject mated contacts assembled in housing to 20mV Max open circuit at 100mA Max. EIA-364-23.
3	Dielectric withstanding Voltage	No creeping discharge or flashover shall occur. Current leakage: 0.5 mA Max.	[0.3]KVAC for 1minute Test between adjacent circuits of unmated connector EIA-364-20
4	Insulation Resistance	[500] M Ohm Min. (Initial) [500] M Ohm Min. (Final)	Impressed voltage 500 VDC. Test between adjacent circuits of unmated connector. EIA-364-21.
5	Temperature Rising	30°C Max. Under loaded rating current.	Contact series-wired, apply test current of loaded rating current to the circuit, and measure the temperature rising by probing on soldered areas of contacts, after the temperature becomes stabilized deduct ambient temperature from the measured value.
MECHANICAL REQUIREMENT			
6	Vibration	No electrical discontinuity greater than 1μsec shall occur. See Note 1.	Subject mated connectors to 10-55-10Hz traversed in 1minutes at 1.52mm amplitude 2 Hours each of 3 mutually perpendicular planes. EIA-364-28

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7	Physical Shock (Normal test)	No electrical discontinuity greater than 1μsec. shall occur. ΔR=20 mΩ Max. (Final)	Accelerated Velocity: 490 m/s ² (50 G) Waveform: Half sine Duration: 11 m sec. Number of Drops: 3 drops each to normal and reversed directions of X, Y and Z axes, totally 18 drops. EIA-364-27 Condition A
8	Module Board Mating Force	22.5N (2.3kgf) Max.	Measure force necessary to mate the connector assemblies at a rate of 25.4 mm/minute EIA-364-13
9	Durability	See Note1	Mated and unmated connector assemblies for 50 cycles at a maximum rate of 200 cycles/hour. EIA-364-09
10	Reseating	No physical damage	Manually unplug/plug the connector. Perform 3 such cycles.

ENVIRONMENTAL REQUIREMENTS			
TEST ITEM		REQUIREMENT	PROCEDURE
11	Solderability	Wet Solder Coverage: 95 % Min.	Subject contacts to solderability testing temperature of 245±5°C for 5±0.5 seconds. MIL-STD-202 Method 208H
12	Resistance to Reflow Soldering Heat	No physical damage shall occur	Pre-soak condition, 85°C/85% R.H. for 168 hours. Pre Heat: 150 ~ 180°C, 90±30 sec. Heat: 230°C Min., 30±10 sec. Peak Temp.: 260+0/-5°C, 20 ~ 40 sec. Refer to Fig.3 Duration: 3 cycles
13	Thermal Shock	See Note 1	Mated connector -55 +0/-3°C / 30 min., 85 +3/-0°C / 30 min. Making this a cycle, repeat 10 cycles. EIA-364-32, Condition A
14	Humidity-Temperature Cycling	See Note 1	Subject mated connectors to 24 cycles between 25°C at 80% R.H. and 65°C at 50% R.H. EIA-364-31
15	Temperature Life (Heat Aging)	See Note 1	Subject mated connectors to temperature life at 105°C for 120 hours. EIA-364-17 Method A

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16	Temperature Life (Preconditioning)	No physical damage	Subject mated connectors to temperature life at 105°C for 72 hours. EIA-364-17 Method A
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Figure 1

Note 1 : Shall meet visual requirements, show no physical damage, and meet requirement of additional tests as specified in the test sequence in Figures 2.

Note 2 : Resistance to soldering process is indicated on notes of customer drawing. Select the appropriate test type which drawing notes are matched with.

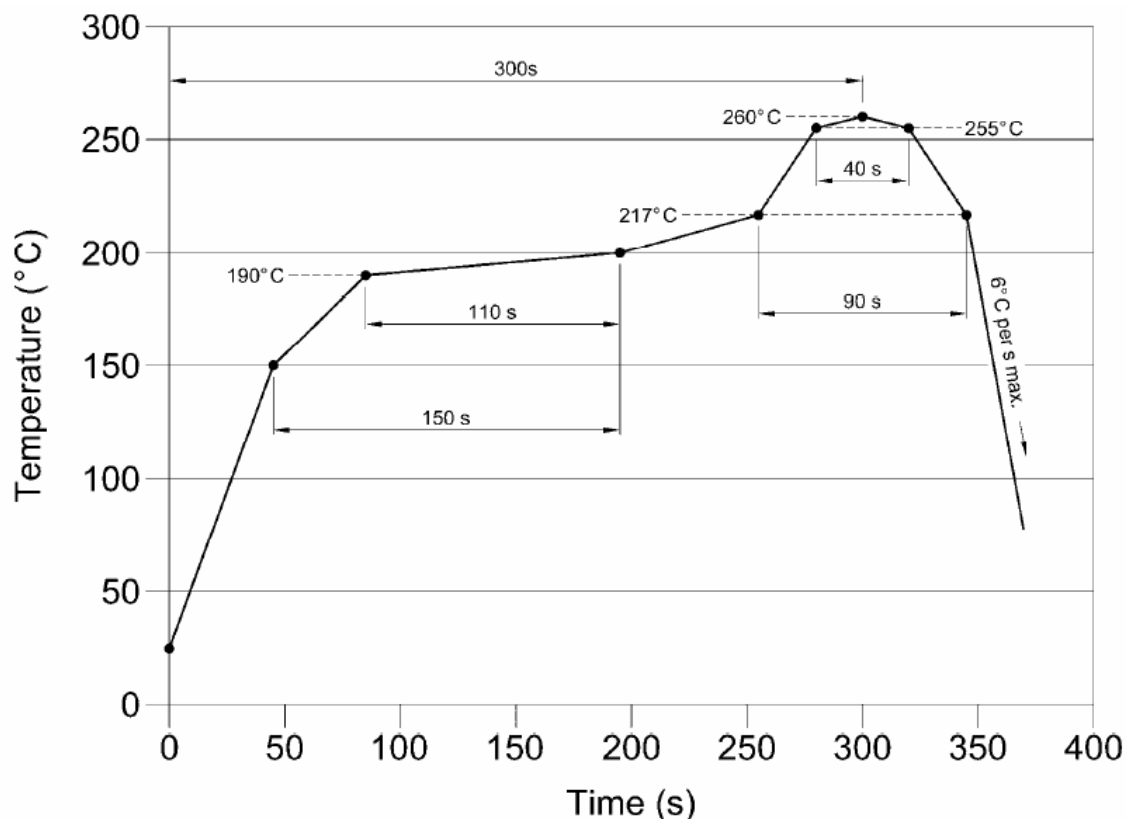



Figure 3. Resistance to flow solder heat


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3.6. Product Qualification and Requalification test

Test Examination	Test Group									
	A	B	C	D	E	F	G	H	I	J
	Test Sequence (a)									
Examination of Product	1, 5	1,3	1,5,8	1, 4	1,3	1, 4	1, 3	1, 3	1, 5, 8, 11	1, 5, 8
Termination Resistance (Low Level)			2, 6, 9	2, 5		2, 5			2, 6, 9, 12	2, 6, 9
Dielectric withstanding Voltage	2, 6									
Insulation Resistance	3, 7									
Temperature Rising		2								
Vibration (Random)			7							
Physical Shock				3						
Module Board Mating Force					2					
Durability (Repeated Mate/Unmating)						3				
Durability (Preconditioning)			3						3	3
Reseating									10	7
Solderability							2			
Resistance to Reflow Soldering Heat								2		
Temperature Humidity Cycling	4								7	
Thermal Shock									4	
Temperature Life (Heat Aging)										4
Temperature Life (Proconditioning)			4							

Figure 2

NOTE: (a) Numbers indicate sequence in which tests are performed.
(b) Discontinuities shall not take place in this test group, during tests.

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REVISION RECORD

<u>Rev</u>	<u>Page</u>	<u>Description</u>	<u>EC#</u>	<u>Date</u>
A	ALL	NEW RELEASE		2013/01/17
B	2	Change Operating Temperature from -55°C~80°C to - 55°C~85°C	ELX-T-20746	2015-04-24

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