PCI Express Card Edge Connector, Straddle Mount Type

1. SCOPE

1.1. Contents

This specification covers the performance, tests and quality requirements for the Tyco Electronics **PCI Express Card Edge connector, Straddle Mount Type**.

1.2. Qualification

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. TE Electronics Documents

- 109-1: General Requirements for Test Specifications
- 109-197：Test Specification（AMP test Specifications vs EIA and IEC Test Methods）
- TEC-109-201: Component Heat Resistance to Lead-Free Reflow Soldering.
- 501-57885：Test Report （Part numbers are as shown in Appendix. 1)

2.2. Industry Standard

- EIA-364：Electrical Connector/Socket Test Procedures Including Environmental Classifications.
- JESD22-B102D: Solderability Test Method.
- PCI Express Card Electromechanical Specification

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

- Voltage：50 VAC rms
- Current：1.1 A Max.
- Temperature：- 40℃ to 85℃

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.
ELECTRICAL REQUIREMENT			
2	Low Level Contact Resistance	30 mΩ Max. (Initial) 30 mΩ Max. (Final)	Subject mated contacts assembled in housing. Open circuit at 20mV Max, 100mA Max. EIA-364-23B, Figure-3
3	Dielectric Withstanding Voltage	No creeping discharge or flashover shall occur. Current leakage: 0.5 mA Max.	500 VAC for 1minute Test between adjacent circuits of unmated connector. EIA-364-20B, Method B, Condition II
4	Insulation Resistance	1,000 MΩ Min. (Initial) 1,000 MΩ Min. (Final)	Impressed voltage 500 VDC. Test between adjacent contacts of unmated connector for 1 minutes. EIA-364-21C.
5	Temperature rise.	1.1 A per pin minimum. The temperature rise above ambient shall not exceed 30°C. The ambient condition is still air at 25°C.	The sample size is a minimum of three mated connectors. The sample shall be soldered on a PC board with the appropriate footprint. Wire the eight power pins (B1, B2, B3, A2, A3, B8, A9, and A10) and the eight nearest ground pins (A4, B4, B7, A12, B13, A15, B16, and B18) in a series circuit. The mated add-in card is included in this circuit. The add-in card shall have 1 oz. copper traces and its mating geometry shall conform to the applicable PCI Express drawings. A thermocouple of 30 AWG or less shall be placed on the card edge finger pad (pins B2 and A9) as close to the mating contact as possible. Conduct a temperature rise vs. current test. EIA-364-70, Method 2

Figure 1（Continue）

TEST ITEM		REQUIREMENT	PROCEDURE
MECHANICAL REQUIREMENT			
6	Mating Force (Add-In Card)	117g per contact pair maximum.	Operation Speed：12.5 mm/min. Max. Measure the force required to mate connector. Using a steel gauge 1.70+0.00/-0.01 mm thickness. EIA-364-13B
7	Un-mating Force (Add-In Card)	15g per contact pair minimum.	Operation Speed：12.5 mm/min.Max. Measure the force required to unmate connector. Using a steel gauge 1.44+0.01/-0.00 mm thickness. EIA-364-13B
8	Durability	[See Note 1]	Operation Speed：200 cycle/hour Max. Number of cycles：200 cycles EIA-364-09C
9	Reseating.	See NOTE	Manually unplug/plug the connector. Perform 3 such cycles.
10	Vibration (random)	No electrical discontinuity greater than 1μ sec shall occur. [See Note 1]	Subject mated connectors. Vibration Frequency : 10 - 2,000 Hz (random) Accelerate Velocity：30.38 m/s2 （3.1G） Vibration Duration：15 min Vibration Direction：In each of 3 mutually perpendicular planes. .EIA-364-28D, Test Condition VII, Tester Legger D
11	Mating force (PCB)	120g per contact pair maximum.	Operation Speed：12.5 mm/min. Max. Measure the force required to mate connector. Using a PCB 1.80±0.1 mm thickness EIA-364-13B
12	Unmating force (PCB)	30g per contact pair minimum.	Operation Speed：12.5 mm/min.Max. Measure the force required to unmate connector. Using a PCB 1.80±0.1 mm thickness. EIA-364-13B

Figure 1（Continue）

TEST ITEM		REQUIREMENT	PROCEDURE
13	Solderability	The inspected area of each lead must have 95% solder coverage minimum.	Steam Aging Preconditioning： Intended for tin and tin-alloy leadfinishes for 93+3/-5℃、8hours±15min. Solder pot temperature: 245±5℃, 5sec. JESD22-B102D, Condition C
ENVIRONMENTAL REQUIREMENT			
14	Resistance to **Reflow** Soldering Heat [See Note 2]	No physical damage shall occur.	Moisture Soak precondition ：85℃, 85%RH for 168 hours. Pre Heat：150~200℃, 60~180sec. Peak Temp.：260+0/-5℃, 20~40sec. Ramp to peak：3℃ max. per second Ramp to cool down ：6℃ max. per second Time over liquids (217℃) ：60~150 sec Duration：3 cycles TE spec. 109-201, Test condition B, Refer to Figure 4.
15	Thermal Shock	[See Note 1]	Mated Connector -55+0/-3℃ (30 min.), +85+3/-0℃ (30 min.) Perform this cycle, repeat 10 cycles EIA-364-32C, Method A, Test condition I
16	Humidity Temperature Cycling	[See Note 1]	Mated Connector 25℃ to 65℃, 90% to 95% RH. Perform this cycle, repeat 10 cycles (10days) EIA-364-31B, Method III, Condition B,
17	Temperature Life (Heat Aging)	[See Note 1]	Mated Connector, 105℃, 168 hours. EIA-364-17B, Method A, Test condition 4 (w/o electrical load),
18	Temperature life (Preconditioning).	See NOTE	Mated Connector, 105℃, 92 hours. EIA-364-17B, Method A, Test condition 4 (w/o electrical load),
16	Salt Spray	No detrimental corrosion allowed in contact area and base metal exposed.	Subject mated connectors to 35+/-2 ℃ and 5+/-1% salt condition for 48hours. After test, rinse the sample with water and recondition the room temperature for 1 hour. EIA-364-26B

Figure 1（End）

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

3.6. Product Qualification and Requalification test

Test or Examination	Test Group								
	A	B	C	D	E	F	G	H	I
	Test Sequence (a)								
Examination of product	**1, 9**	**1, 8**	**1, 10**	**1, 8**	**1, 8**	**1, 3**	**1, 3**	**1, 3**	**1,4**
Low level contact resistance	**3, 7**	**2, 5, 7**	**2, 5, 7, 9**	**2, 5, 7**					
Dielectric withstanding voltage					**2, 6**				
Insulation resistance					**3, 7**				
Temperature rise								**2**	
Mating force (Add-In Card)	**2, 6**								
Unmating force (Add-In Card)	**4, 8**								
Durability	**5**	**3**	**3**	**3**					
Reseating		**6**	**8**						
Vibration (random)				**6**					
Mating force (PCB)									**2**
Unmating force (PCB)									**3**
Solderability						**2**			
Resistance to Reflow soldering heat							**2**		
Thermal shock			**4**		**4**				
Humidity-temperature cycling.			**6**		**5**				
Temperature life		**4**							
Temperature life (Preconditioning)				**4**					

NOTE：（a）Numbers indicate sequence in which tests are performed.

（b）Discontinuities shall not take place in this test group, during tests.

Figure 2

Figure 3. Low Level Contact Resistance

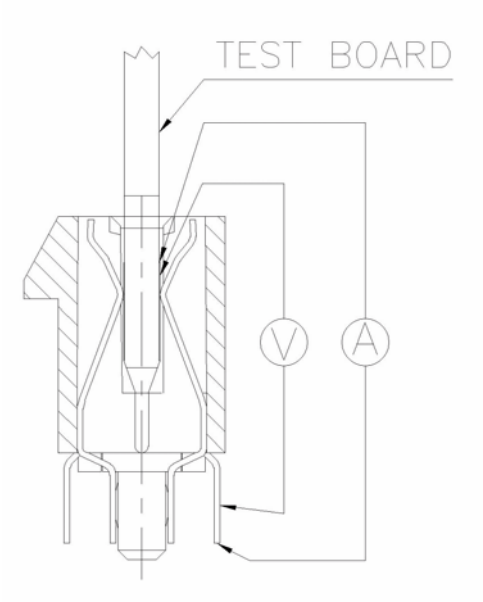
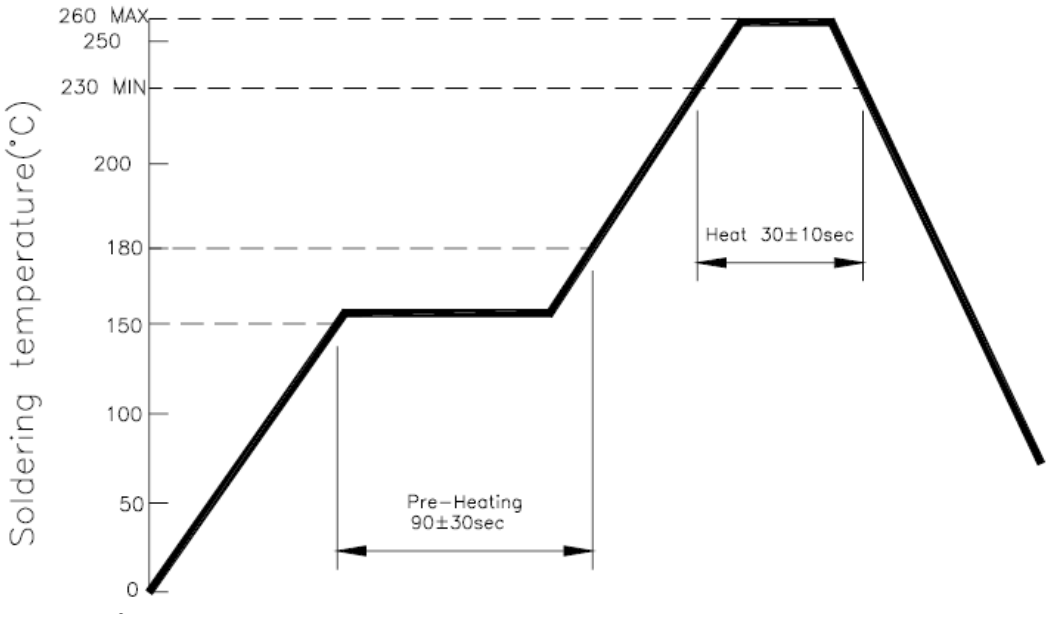


Figure 4. Temperature Profile of Reflow Soldering



单击下面可查看定价，库存，交付和生命周期等信息

>>TE Connectivity(泰科)