
Connector, Card Edge, .050 Centerline

1. SCOPE

1.1. Content

This specification covers performance, tests and quality requirements for the TE Connectivity (TE) .050 centerline card edge connector. This connector is a multi-contact edge board type having contacts for solder applications.

1.2. Qualification

When tests are performed on subject product line, procedures specified in Figure 1 shall be used. All inspections shall be performed using applicable inspection plan and product drawing.

2. APPLICABLE DOCUMENTS

The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, latest edition of the document applies. 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 shall take precedence.

2.1. TE Documents

- 109-1: General Requirements for Test Specifications
- 109 Series: Test Specifications as indicated in Figure 1
- 114-13148: Application Specification (.050 Series Standard Edge Peripheral Computer Interconnect (PCI) Surface Mount Connector Assemblies)
- 114-26012: Application Specification (Card Edge Connectors with Contacts on .050 Inch Centers)
- 501-203: Qualification Test Report (Connector, Card Edge, .050 Series)

3. REQUIREMENTS

3.1. Design and Construction

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

3.2. Materials

- Contact: Phosphor bronze, gold or gold flash/palladium nickel over nickel plating
- Housing: PPS or PCT

3.3. Ratings

- Voltage: 203 volts AC
- Current: Signal application only
- Temperature: -55 to 85°C
- Flammability: UL94V-0

3.4. Performance and Test Description

Product is designed to meet electrical, mechanical and environmental performance requirements specified in Figure 1. Unless otherwise specified, all tests shall be performed at ambient environmental conditions per Test Specification 109-1.

3.5. Test Requirements and Procedures Summary

Test Description	Requirement	Procedure
Examination of product.	Meets requirements of product drawing and Application Specifications 114-13148 and 114-26012.	Visual, dimensional and functional per applicable quality inspection plan.
ELECTRICAL		
Termination resistance.	20 milliohms maximum initial. ΔR 10 milliohms maximum final.	TE 109-6-1. Subject mated contacts assembled in housing to 50 mv maximum open circuit at 100 ma maximum. See Figure 4.
Insulation resistance.	1000 megohms minimum.	TE Spec 109-28-4. Test between adjacent contacts of unmated samples.
Dielectric withstanding voltage.	500 volts AC at sea level.	TE Spec 109-29-1. Test between adjacent contacts of unmated samples.
MECHANICAL		
Vibration, random.	No discontinuities of 1 microsecond or longer duration. See Note.	TE Spec 109-21-7, Condition A. Subject mated samples to 5 to 500 Hz. Fifteen minutes in each of 3 mutually perpendicular planes.
Physical shock.	No discontinuities of 1 microsecond or longer duration. See Note.	TE Spec 109-26-9. Subject mated samples to 100 G's sawtooth shock pulses of 6 milliseconds duration. Three shocks in each direction applied along 3 mutually perpendicular planes, 18 total shocks.
Durability.	See Note.	TE Spec 109-27. Mate and unmate samples for 100 cycles at maximum rate of 500 cycles per hour.
Mating force.	8 ounces maximum per contact pair.	TE Spec 109-35. Measure force necessary to mate printed circuit board to samples using free floating fixtures at maximum rate of .5 inch per minute.

Figure 1 (continued)

Test Description	Requirement	Procedure
Unmating force.	0.5 ounce minimum per contact pair.	TE Spec 109-35. Measure force necessary to unmate printed circuit board from samples at maximum rate of .5 inch per minute.
ENVIRONMENTAL		
Thermal shock.	See Note.	TE Spec 109-22. Subject unmated samples to 5 cycles between -55 and 85°C.
Humidity/temperature cycling.	See Note.	TE Spec 109-23-3, Condition B. Subject unmated samples to 10 cycles between 25 and 65°C at 95% RH.
Temperature life.	See Note.	TE Spec 109-43. Subject mated samples to temperature life at 85°C for 1000 hours.
Mixed flowing gas.	See Note.	TE Spec 109-85-2. Subject mated samples to environmental class II for 14 days.

NOTE

Shall meet visual requirements, show no physical damage and shall meet requirements of additional tests as specified in Test Sequence in Figure 2.

Figure 1 (end)

3.6. Product Qualification and Requalification Test Sequence

Test or Examination	Test Group (a)			
	1	2	3	4
	Test Sequence (b)			
Examination of product	1,9	1,5	1,5	1,8
Termination resistance	3,7	2,4	2,4	
Insulation resistance				2,6
Dielectric withstanding voltage				3,7
Vibration	5			
Physical shock	6			
Durability	4			
Mating force	2			
Unmating force	8			
Thermal shock				4
Humidity/temperature cycling				5
Temperature life		3(c)		
Mixed flowing gas			3(c)	

NOTE

- (a) See paragraph 4.1.A.
- (b) Numbers indicate sequence in which tests are performed.
- (c) Precondition samples with 3 cycles durability.

Figure 2

4. QUALITY ASSURANCE PROVISIONS

4.1. Qualification Testing

A. Sample Selection

Samples shall be prepared in accordance with applicable Instruction Sheets and shall be selected at random from current production. All test groups shall consist of 5 samples each.

B. Test Sequence

Qualification inspection shall be verified by testing samples as specified in Figure 2.

4.2. Requalification Testing

If changes significantly affecting form, fit or function are made to product or manufacturing process, product assurance shall coordinate requalification testing, consisting of all or part of original testing sequence as determined by development/product, quality and reliability engineering.

4.3. Acceptance

Acceptance is based on verification that product meets requirements of Figure 1. Failures attributed to equipment, test setup or operator deficiencies shall not disqualify product. When product failure occurs, corrective action shall be taken and samples resubmitted for qualification. Testing to confirm corrective action is required before resubmittal.

4.4. Quality Conformance Inspection

Applicable quality inspection plan will specify sampling acceptable quality level to be used. Dimensional and functional requirements shall be in accordance with applicable product drawing and this specification.

