Sliver 280 Position Card Edge Connector

1. SCOPE

1.1. Content

This specification defines performance, test and quality requirements for the Sliver 280 Position Card Edge Connector.

1.2. Qualification

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

1.3. Qualification Test Results

Successful qualification testing on the subject product line was completed on August 16, 2019. The qualification test report number is 501-134097. This documentation is on file and available from Engineering Practices and Standards.

2. APPLICABLE DOCUMENTS AND FORMS

The following documents and forms constitute a part of this specification to the extent specified herein. Unless otherwise indicated, the latest edition of the document applies.

2.1. TE Documents

- 114-130011: Application Specification Sliver 280 Position Card Edge Connector
- 108-130021: Product Specification Sliver 2.0 Card Edge Platform Connectors
- 501-134097: Qualification Test Report Sliver 280 Position Card Edge Connector

2.2. Industry Documents

- EIA-364 Electrical Connector/Socket Test Procedures Including Environmental Classifications
- EIA-638 Surface Mount Solderability

2.3. Reference Document

- 109-197 Test Specification (TE Test Specification vs EIA and IEC Test Methods)

3. REQUIREMENTS

3.1. Design and Construction

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

3.2. Ratings

Voltage	Current	Temperature
30 VDC	Signal application only	-55 to 105°C

3.3. Test Requirements and Procedures Summary

Unless otherwise specified, all tests shall be performed at ambient environmental conditions.

Test Description	Requirement	Procedure
Initial examination of product	Meets requirements of product drawing.	EIA-364-18. Visual examination and dimensional (C of C) inspection per product drawing.
Final examination of product	Meets visual requirements.	EIA-364-18. Visual examination.
ELECTRICAL		
Low Level Contact Resistance (LLCR)	ΔR 20 mΩ maximum after completion of test group	EIA-364-23. Max. open voltage 20mV. Max current 100 mA DC. Measure a minimum of 40 contacts, half from each connector side.
MECHANICAL		
Random vibration	No discontinuity ≥ 1 microsecond See Note.	EIA-364-28, Test Condition VII, Test Condition Letter D. Subject mated specimens to 3.10 G RMS between 20 to 500 Hz. Fifteen minutes in each of 3 mutually perpendicular planes.
Mechanical shock	Contact discontinuity 1 microsecond maximum See Note.	EIA-364-27, Test Condition A. Subject mated specimens to 50 Gs half-sine shock pulses of 11 milliseconds duration. Three shocks in each direction applied along 3 mutually perpendicular planes, 18 total shocks.
Durability	See Note.	EIA-364-9. Mate and unmate specimens. Operation cycles: 50 or 200.
Mating Force	0.55 N per contact.	EIA-364-13 Axial Tension/ Compression machine such as an Instron Tensile Tester. Max Rate 25.4mm/min.
Un-Mating Force	0.05 N per contact.	EIA-364-13 Axial Tension/ Compression machine such as an Instron Tensile Tester. Max Rate 25.4mm/min.
Minute disturbance	See Note.	Manually unmate and mate the specimen 3 times.
ENVIRONMENTAL		
Solderability	95% minimum wetting	IPC/ECA J-STD-002, Test S1 Preheat: 150° to180°C / 60-120 seconds Reflow: 230° to 260°C / 30-60 seconds
Resistance to reflow soldering heat	See Note.	TEC-109-201 Method-B, Condition-B. Subject SMD connector to 3x reflow curve 260°C peak.

Figure 1

NOTE
Shall meet visual requirements, show no physical damage, and meet requirements of additional tests as specified in the Product Qualification and Requalification Test Sequence shown in Figure 2.

3.4. Product Qualification and Requalification Test Sequence

Test or Examination	Test Group (a)		
	1	2	3
	Test Sequence (b)		
Initial examination of product	1	1	1
Low Level Contact Resistance	4,6,10		
Random vibration	7		
Mechanical shock	8		
Durability	5		
Connector Mating Force	3		
Connector Un-Mating Force	11		
Connector solderability		2	
Resistance to reflow soldering heat			2
Minute disturbance	2,9		
Final examination of product	12	3	3

Figure 2

NOTE

(a) Samples shall be prepared in accordance with applicable instructions and shall be selected at random from current production. Unless otherwise stated all test groups shall consist of a minimum of 6 connectors of which all contacts shall be tested.

(b) Numbers indicate sequence in which tests are performed

4. QUALITY ASSURANCE PROVISIONS

4.1. Qualification testing

A. Sample selection

Samples shall be prepared in accordance with applicable instructions and shall be selected at random from current production. Unless otherwise specified, all test groups shall consist of a minimum of 5 connectors of which 40 contacts minimum shall be tested.

B. Test sequence

Qualification inspection shall be verified by testing samples as specified in Paragraph 3.4

4.2. Acceptance

Acceptance is based upon verification that product meets requirements of Paragraph 3.4. Failures attributed to equipment, test set-up, applied customer components or operator deficiencies shall not disqualify the product. If product failure occurs, corrective action shall be taken and samples resubmitted for requalification. Testing to confirm corrective action is required before resubmittal.

4.3. 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.