Product Specification

108-60031

Pre-Load Anti-uplift (PLA) SIM Reader Slide Type With Peg

1 Scope:

1.1 Contents

This specification covers the requirements for product performance, test methods and quality assurance provisions of PLA SIM Reader Slide Type With Peg.

The module is designed to make a connection between a Subscriber Identity Module (SIM) according to ISO 7816-2 and printed circuit board.

Applicable product description and part numbers are as shown in Appendix 1.

2. Applicable Documents:

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

A 109-5000 Test Specification, General Requirements for Test Methods

B 501-60001 Qualification Test Report

2.2 Other Documents:

A IEC 60512 Connectors used for frequencies below 3MHz

B IEC 60068 Basic environmental testing procedures for electric component and electronic equipment

C ISO7816-2 Identification Cards – Integrated

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B	D20050329012720_ 742926	I.W	03MAR 05	PAGE 1 of 9	TITLE SIM Reader Slide & Anti-Lift Type With Peg		
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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:

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

3.3 Ratings:

A. Voltage Rating: 15V MAX.

B. Current Rating: 1.2A MAX. /contact

C. Operating Temperature: - 25 °C to 70 °C

D. Durability: 1500 cycles

3.4 Performance Requirements and Test Descriptions :

The product shall be designed to meet the electrical, mechanical and environmental performance requirements specified in Fig. 1. All tests shall be performed in the room temperature, unless otherwise specified.

3.5 Test Requirements and Procedures Summary

Para.	Test Items	Requirements	Procedures
3.5.1	Examination of Product	Meets requirements of product drawing.	Visual inspection No physical damage In acc. with IEC 60512-1 test 1a Magnification 10X
		Electrical Requirements	
3.5.2	Termination Resistance (Low Level Contact Resistance) See para. 3.6.1	Initial: 50 mΩ Max. Final: 100 mΩ Max.	Subject mated contacts assembled in housing to 20 mV Max open circuit at 100 mA DC. See also para. 3.6.1 In acc. with IEC 60512-2 test 2a
3.5.3	Insulation Resistance	500 MΩ Min.	Impressed voltage 100 V DC. Unmated card. In acc. with IEC 60512-2 test 3a
3.5.4	Voltage proof	No creeping discharge no flashover shall occur.	500VAC for 1 minute. Unmated card. In acc. with IEC 60512-2 test 4a

Fig. 1 (CONT.)

Para.	Test Items	Requirements	Procedures
3.5.5	Electrical load and Temperature	Temperature at contact-point shall not exceed 70℃	Temperature at contact-point shall not exceed 70℃ Condition; 50℃Max. 1000hrs Electrical load; 0.8A Use Au-plated dummy card. Card thickness; 0.76mm In acc. With IEC 60512-5 Test 9b
3.5.6	Current / Temperature derating (Current carrying capacity)	Temperature limit at contact-point shall not exceed 70℃	Under loaded specified current or rating current. In acc. With IEC 60512-3 Test 5b
Mechanical Requirements			
3.5.7	Contact normal force	Normal force shall be measured at 0.17mm distance from housing top. Requirement; 0.35N min. 0.7N max.	Normal force test equipment (Force/ Deflection curve)
3.5.8	Vibration (Sinusoidal) See para. 3.6.2	No electrical discontinuity greater than 1 μ second shall occur. No physical damage.	Vibration Frequency: 10-50Hz / 0.8mm, 60-500Hz / 6G Vibration Direction: 3directions. Duration: 2 hours each In acc. with IEC 60512-4 test 6d
3.5.9	Mechanical Operation 1 See para. 3.6.2	Sequence Test Group 1	Operations shall be conducted manual at 70℃ dry heat Operation cycles; 20 Rate; 10-cycle/1 minute. Recovery time; 2 hrs Use Au-plated dummy card Card thickness; 0.76mm In acc. with IEC 60512-5 test 9a
3.5.10	Mechanical Operation 2 See para. 3.6.2	Sequence Test Group 1	Operations shall be conducted manual at -25℃ dry heat Operation cycles; 20 Rate; 10-cycle/1 minute. Recovery time; 2 hrs Use Au-plated dummy card Card thickness; 0.76mm In acc. with IEC 60512-5 test 9a

Fig. 1 (CONT.)

Para.	Test Items	Requirements	Procedures
3.5.11	Mechanical Operation 3 See para. 3.6.2	Sequence Test Group 2	Test shall be conducted using real cards. Operation cycles; 750 Rate; 10-cycle/1 minute. Speed; 10 mm/s In acc. with IEC 60512-5 test 9a
3.5.12	Physical Shock 1 See para. 3.6.2	No electrical discontinuity greater than 1 μ second shall occur. No physical damage.	Slide 0.76mm thick dummy card in the connector. Subject test frame to 40G half sine shock pluses 6ms duration. Endurance; 10shocks in both directions of 3 mutual perpendicular axis. In acc. with IEC 60512-4 test 6c
3.5.13	Physical Shock 2 See para. 3.6.2	No physical damage. Card shall not be ejected.	Slide a real card of 0.76±0.08mm thick in the connector. Subject test frame to 500G half-sine shock pluses of 1 ms duration. Endurance; 2 shocks in both directions of 3 mutual perpendicular axis. In acc. with IEC 60512-4 test 6c
Environmental Requirements			
3.5.14	Rapid change of temperature	Sequence Test Group 1	−40°C / 60 min. , 85°C /60 min. Making this a cycle, repeat 5 cycles. Recovery time 2 hours. Use Au-plated dummy card. Card thickness; 0.76mm In acc, with IEC 60068-2-14
3.5.15	Dry heat 1	Sequence Test Group 1	70°C, Duration: 16 hrs. Recovery time; 2 hours Sample 1 and 2 unmated Sample 3 and 4 mated: Use Au-plated dummy card. Card thickness; 0.76mm In acc. with IEC 60512-6 Test 11i

Fig. 1 (CONT.)

Para.	Test Items	Requirements	Procedures
3.5.16	Dry heat 2	Sequence Test Group 3	Temperature; 70°C, Duration: 1000 hrs. Use Au-plated dummy card. Card thickness; 0.76mm In acc. with IEC 60512-5 Test 9b
3.5.17	Damp/heat steady state	Sequence Test Group 1	Temperature; 40°C, R.H. 95 % Duration: 21 days In acc. with IEC 60512-5 Test 11m
3.5.18	Cold	Sequence Test Group 1	Temperature; -25℃ Duration: 2 hrs. Recovery time; 2 hours Use Au-plated dummy card. Card thickness; 0.76mm In acc. with IEC 60512-5 Test 11j
3.5.19	Solderability	Wet Solder Coverage is 95% Min.	Solder Temperature : 215 ± 3 °C Immersion Duration : 3 ± 0.3 seconds Ageing : 16 hrs at 155℃ In acc. with IEC 60068-2-20 test Ta
3.5.20	Resistance to Soldering Heat See para. 3.6.3	No physical damage shall occur. (Cracks, chips or melting)	2 cycles of heat curve covering IR soldering curve specified figure 4. In acc. with EIA-J RX-0102/102 para 3.3.4.
3.5.21	Cleaning liquid resistance	Sequence Test Group 6	Unmated card. Isopropyl alcohol; 5minutes. Without rubbing. In acc. with IEC 60068-2-45
3.5.22	Industrial atmosphere	Sequence Test Group 2	SO2; 100ppb / NO2; 200ppb H2S; 10 ppb / Cl2; 10ppb 30℃、70% Humidity; 10days. Sample1~2; Unmated Sample3~4; Mated Au-plated dummy card Sample5~6; Mated real card In acc. with EIA364-65A CLASS Ⅱ A

Fig. 1 (End)

3.6 Additional Testing Details

3.6.1 Terminal Resistance

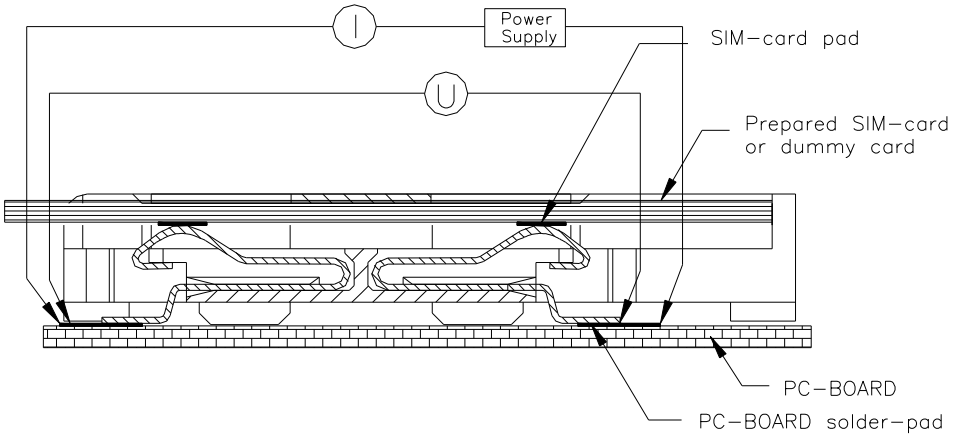

Figure 2.

3.6.2 The actual Phone Hand-sets shall be used for Mechanical Operation, Vibration and Physical Shock tests or else test frame(s) shall simulate the actual application as indicated in figures 3 (slide insertion).

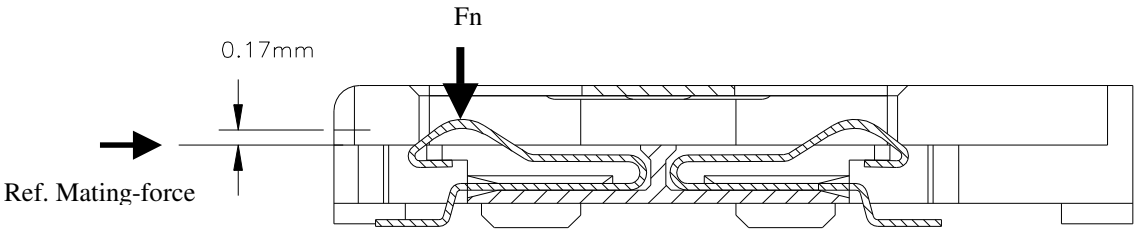

Figure 3.

3.6.3 IR Reflow Profile

Resistance to soldering heat test samples shall be placed on a bare surface of a Printed Circuit Board.

Test heat-curve shall cover the IR/Convection solder reflow conditions as Indicated In figure 4.

All temperatures refer to the topside of the package as measured on the PC-board surface.

Between exposures, parts shall be allowed to cool down to room temperature, for 5 minutes minimum.

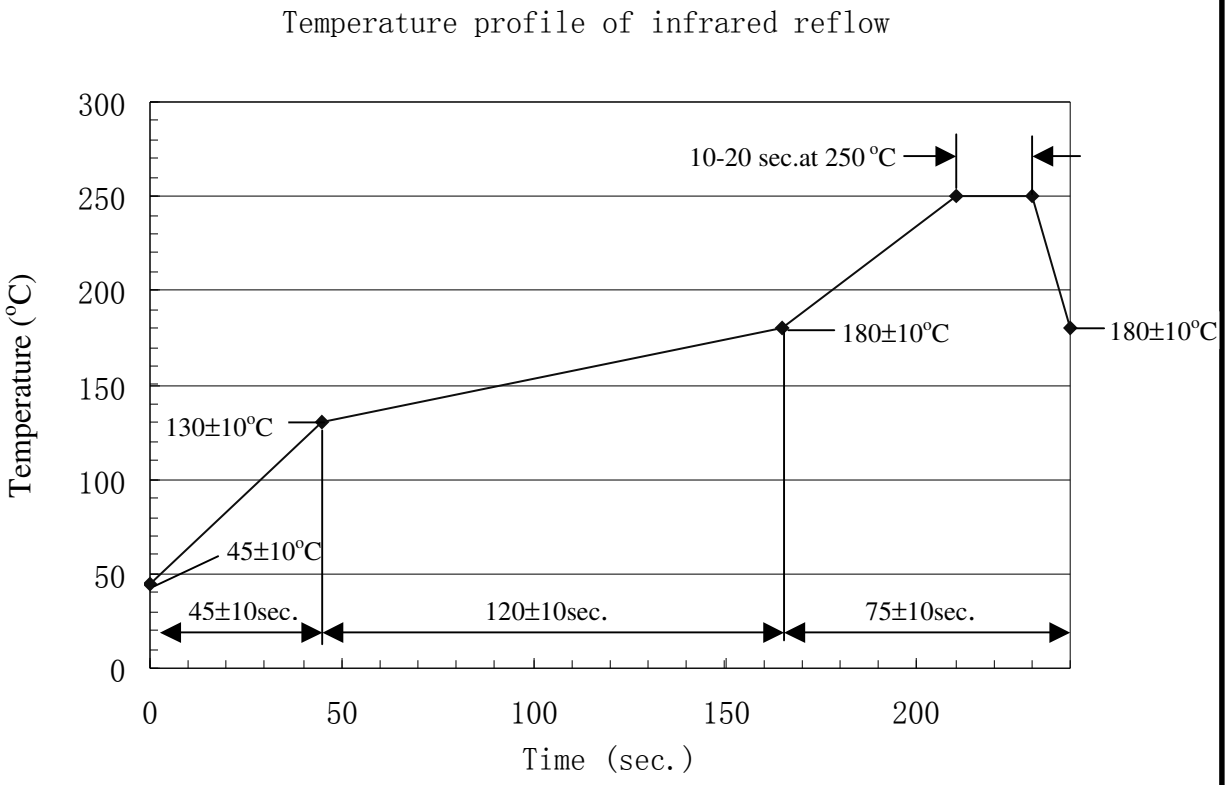

Figure 4.

4. Product Qualification Test Sequence

Test Items	Test Group					
	1	2	3	4	5	6
	Test Sequence (a)					
Examination of Product	1,3,11,16,26	1, 4, 7, 11	1, 12	1, 3	1, 3	1, 9
Termination Resistance	5, 14, 24	2, 5, 8, 10	2, 8			2, 6
Insulation Resistance	6, 13, 22		3, 10			3, 7
Voltage Proof	7, 15, 23		4, 11			4, 8
Electrical load & temperature			6			
Current carrying capacity				2		
Contact normal force	4, 25		5, 9			
Vibration (Sinusoidal)	8					
Mechanical Operation 1	18					
Mechanical Operation 2	21					
Mechanical Operation 3		3, 9				
Physical Shock 1	9					
Physical Shock 2	10					
Rapid change of temperature	12					
Dry Heat 1	17					
Dry Heat 2			7			
Damp / heat steady state	19					
Cold	20					
Solder ability					2	
Resistance to Soldering Heat	2					
Cleaning liquid resistance						5
Industrial atmosphere		6				

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

The applicable product descriptions and part numbers are as shown in Appendix. 1.

Product Part No.	Description
292280-1	PLA SIM Reader Slide Type With Pegs ASSY 6P H=2.7 mm.
292296-1	PLA SIM Reader Slide Type With Pegs ASSY 6P H=2.85 mm Max.
X-292292-X	PLA SIM Reader Slide Type With Pegs ASSY 6P (STD)
X-292373-X	PLA SIM Reader Slide Type With Pegs ASSY 6P Space Saving Type

Appendix. 1