

1.Scope :

1.1 Contents

This specification covers the requirements for product performance, test methods and quality assurance provisions of PUSH-PUSH Micro SIM CONNECTOR. 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 TE connectivity Specification :

- A. 109-5000 : Test Specification, General
Requirements for Test Methods
- B. 501-78478 : Test Report

2.2 Commercial Standards and Specification :

- A. Military Standard : MIL STD-202
- B. International Electrotechnical Commission (IEC)
- C. Electronic Industries Alliance (EIA)

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 :

A. Contact :

Material : Copper Alloy

Finish : Au Plating at contact area ,probe area,and Soldering area

Nickel plating under coat all over

B. Housing, Slider :

Material : Thermoplastic resin

Flammability : UL94V-0, Color : Black

C. Cam rod

Material : Stainless steel

D. Coil spring

Material : SWP

E. Shell

Material : Stainless steel

Finish : Au Plating at soldering area and switch contact area

Nickel plating under coat all over

3.3 Ratings :

A. Voltage Rating : Max. 10 V DC

B. Current Rating : Max. 0.5 A per contact

C. Operating Environment

Operating Temperature Rating : -30 °C to +85 °C

Relative Humidity: 95% Max.(non-condensing)

※High Limit temperature includes Raised Temperature by Operation.

D. Storage Environment

Storage Temperature Rating : -5 °C to +40 °C(with Packing)

Relative Humidity: 15% to 70% RH

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(5~35°C),relative humidity(45~85%)、 Air pressure(86~106kPa), and Special Case temperature(18~22°C),relative humidity(60~70%), unless otherwise specified.

3.5 Test Requirements and Procedures Summary

Para.	Test Items	Requirements	Procedures
3.5.1	Examination of product	No physical damage	Visual inspection No physical damage
Electrical Requirements			
3.5.2	Contact resistance (low level)	Initial contact resistance 150mΩ Max. Max contact resistance after group testing 150mΩ Max. Contact resistance includes also the bulk resistance due to terminal After any environmental test for every contact Detection switch: 500mΩ Max.	Mate connector with dry circuit (20mV, 100mA Max.) at min. deflection position 4-wire measurement required Measure resistance with minimum thickness memory card or PWB Refer to fig.4 (IEC 60512-2-1)
3.5.3	Insulation resistance	1000MΩ Min.	Unmated connector with 500 VDC between adjacent contact for 1 minute (IEC 60512-3-1)
3.5.4	Dielectric strength	No voltage breakdown Current leakage: 0.5mA Max.	Unmated connector with 500 VAC between adjacent contact for 1 minute (IEC 60512-3-1)
3.5.5	Temperature rise	30°C Max under loaded rating Current (0.5A)	Contacts series-, apply test current of loaded rating current of 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

Fig. 1 (CONT.)

Para.	Test Items	Requirements	Procedures
Mechanical Requirements			
3.5.6	Durability (1500 cycle)	Contact resistance: 150mΩ Max. No mechanical damage for connector as well as Micro SIM cards Eject length : 2.8mm REF.	Mating contacts at 4-10 cycles/minute, including pause between mate/unmate to 1500 cycles After every 10 (max.) cycles blow with dry air
3.5.7	Wrongly insertion test card upside down	25N Min.	No mechanical damage The card cannot be stuck in the reader
Environmental Requirements			
3.5.8	Dry cold (steady state)	No mechanical damage No change to performance Contact resistance: 150mΩ Max.(Data)	- 40°C for 96hours; recovery period 1-2hours under ambient atmospheric conditions (IEC60068-2-1Ab)
3.5.9	Dry heat (steady state)	No mechanical damage No change to performance Contact resistance: 150mΩ Max.(Data)	+85°C for 96 hours; recovery period 1-2hours under ambient atmospheric conditions (IEC60068-2-2Bb)
3.5.10	Thermal Shock (change of temperature)	No mechanical damage No change to performance Contact resistance: 150mΩ Max.(Data)	25 cycle at T _a = - 55 °C for 0.5 hours; then change of temp=25°C maximum 5 min; then T _b =+85°C for 0.5 hours; then cool to ambient Recovery: 2 hours at ambient atmosphere (IEC60068-2-14 Test Na)
3.5.11	Humidity - temperature cycling	No change to performance Contact resistance: 150 mΩ Max. Insulation Resistance should be measured Measure the resistance without opening the mating after test	Temp 25-65°C, RH 50-80% for 10 cycles Cold shock -10°C performed (EIA-364-31)

Fig. 1 (CONT.)

Para.	Test Items	Requirements	Procedures
3.5.12	SO ₂ Gas	<p>No mechanical damage</p> <p>No change to performance</p> <p>Contact resistance: 150mΩ Max. (Data)</p>	<p>10±3ppm, Damp 75% at 40±2°C, 48hours</p>
3.5.13	Vibration (random)	<p>Discontinuity during testing < 1 μ s with all contacts in series</p> <p>No mechanical damage</p> <p>No change to performance</p> <p>Contact resistance: 150mΩ Max.</p>	<p>Frequency: 10 -100 Hz 3m2/S3(0.0132g2/Hz) ; 100 - 500Hz; -3dB/Oct. for 3 x 60 min (X- Y and Z-axis)</p> <p>IEC60068-2-64Fh)</p>
3.5.14	Shock (specified pulse)	<p>Discontinuity during testing < 1 μ s with all contacts in series</p> <p>No mechanical damage</p> <p>No change to performance</p> <p>Contact resistance: 150mΩ Max.</p>	<p>Pulse shape=half sine</p> <p>Peak acceleration =50G</p> <p>Duration of pulse=11ms</p> <p>Apply 3 shocks in each direction along the 3 mutually perpendicular axes (18 shocks)</p> <p>(IEC60068-2-27Ea)</p>

Fig. 1 (End)

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

Product Part No.	Description
2174803-2	PUSH-PUSH Micro SIM CONNECTOR

Appendix 1

4. Product Qualification Test Sequence

Para.	Test Examination	Test Group								
		1	2	3	4	5	6	7	8	9
3.5.1	Examination of product	1,7	1,5	1,5	1,5	1,5	1,5	1,6	1,3	1,3
3.5.2	Contact resistance (low level)		2,4	2,4	2,4	2,4	2,4	2,5		
3.5.3	Insulation resistance	2,5								
3.5.4	Dielectric strength	3,6								
3.5.5	Temperature rise								2	
3.5.6	Durability						3			
3.5.7	Wrongly Insertion test card upside down									2
3.5.8	Dry cold (steady state)		3							
3.5.9	Dry heat (steady state)			3						
3.5.10	Thermal shock (change of temperature)				3					
3.5.11	Humidity-temperature cycling	4								
3.5.12	SO ₂ gas					3				
3.5.13	Vibration (random)							3		
3.5.14	Shock (specified pulse)							4		

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

Fig. 2

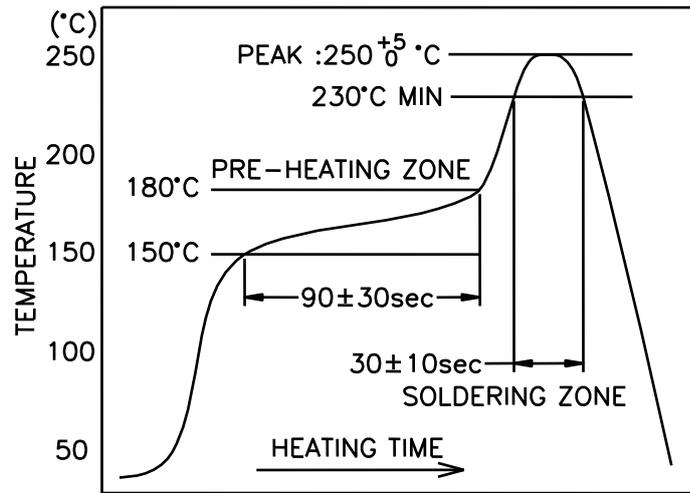


Fig.3 Reflow temperature profile

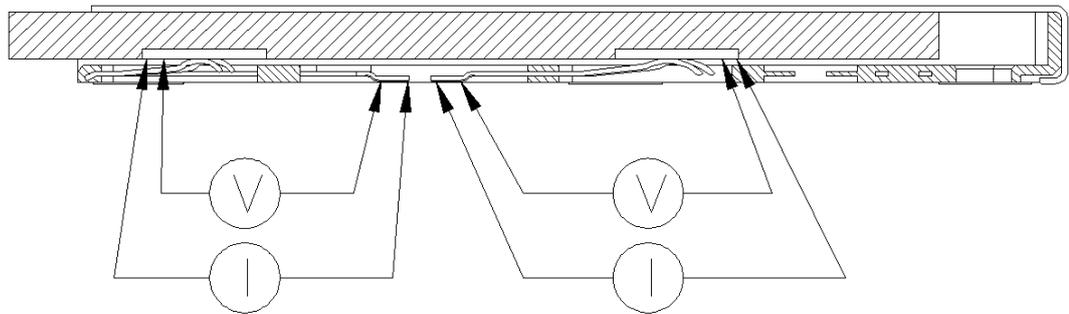


Fig.4 Measurement points of contact resistance