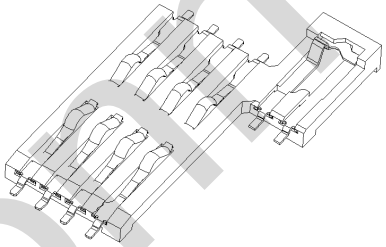
Smart CARD Connector Product Specification	Approved by	L.M. J	Reported by	Z. Ping
	Report No.	Spec-029	VER	B
	PAGE	1/7		
	ISSUD DATE	2020.04.20		
	REVISED DATE			

1. Scope

This product specification is applied for Moarconn Electronics CO., LTD. Smart CARD Connector.

The Smart CARD is in strict accordance with ISO7816 international recognized standard，It is designed for high performance and flexibility to give prospective customers a quick application of the individual device in their product series.



2. Rating

(1)Rating voltage：5V AC/DC

(2)Rating current：0.5A

(3)Temperature range：-25~+85℃.

3. Environmental condition

All performance test. Unless otherwise specified. Is taken as per following environmental condition.

Ambient temperature：15~35℃.

Ambient humidity：50~85%RH.

However, if doubts arise concerning judgments, perform under the following standard conditions.

Temperature：23±1℃.

Humidity：50%±2% RH.

Air Pressure：86~106kPa

4.Configurations dimensions and materials

See the product drawing attached.

5. RATINGS

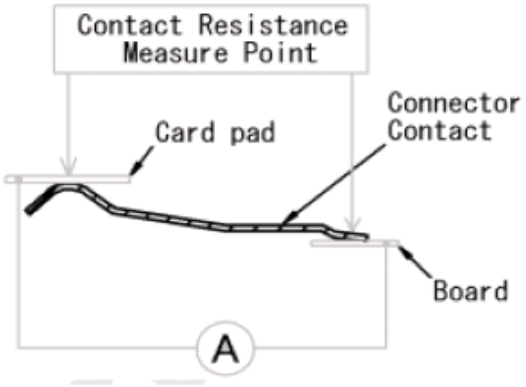
ITEM	RATINGS
Rated current	0.5mA AC/DC max.
Dielectric withstanding voltage	500V AC/DC
Insulation Resistance	1000 MΩ Min.
Contact Resistance	100 mΩ Max.
Operating Temperature	-25℃~60℃
Storage Temperature	-40℃~75℃
Humidity	95% RH MAX.
Flammability	Insulator Material UL94V-0

6. Revision History

Date	Version	Change compared to previous Issue
April 20,2017	A	The first release
November 15,2023	B	Change Durability Test cycles

7. Performance

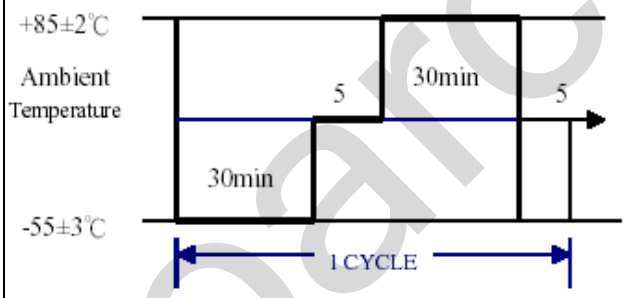
7-1. Electronics performance

No	Items	Test Conditions	Specifications
1	Contact Resistance	It shall be measured by the dry electric circuit specified as follow: 1mA.20mV, 1kHz, frequency Measured in accordance with IEC 512-2-2A 	Initial：100mΩ Max After each test： 40mΩ max change
2	Dielectric Withstanding Voltage	It shall be measured when AC 500 V shall be applied for one minute to between next terminals. Measured in accordance with IEC 512-2-4A MIL-STD-202 method 301.	Should not have any changes
3	Insulation Resistance	It shall be measured when 500 V DC is applied for one minute to between next terminals. Measured in accordance with IEC 512-2-3A MIL-STD-202 method 302.	Initial：1000MΩ Min After each test：100MΩ Min
4	Appearance	Visual.	Should not have any flaw Scratch discoloration and crushed

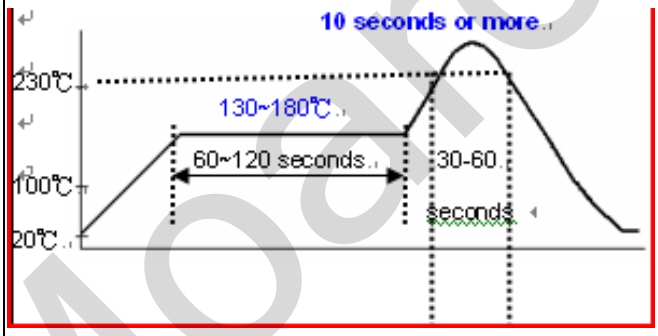
7-2. Functional performance

No	Items	Test Conditions	Specifications
1	Insertion / Extraction force	The contact and card shall be mated and unmated at a rate of 25mm/minute and measured the insertion and extraction force.	Insertion：40N Max Extraction：1-8N
2	Durability Test	The contact and card shall be mated and mated total 10,000 times at a rate of 400 to 600 times per hour and measured the contact resistance after the test.	(1) Contact Resistance: See 7-1.1 (2) Insertion & Extraction Force: See 7-2.1
3	Vibration test	Vibration Wave：Sine wave Mechanical frequency range: 10...2000 Hz. Acceleration：2 g. Measured in accordance with IEC 512 part 2 and 4 / IEC 512-4-6D.	Function and performance shall be as specified. Not to change for Physical appearance. b. Contact Resistance: See 7-1.1 c. Discontinuity：100μs Max
4	Shock test	Acceleration：50 g. Standard holding time： 11ms Shock Wave：Semi-sine wave. Impact frequency：Apply impact three times on each surface along the three axes (a total of 18 times) Measured in accordance with SD Memory Card / Multi Media Card Test Standard / IEC 512 4-6C.	Function and performance shall be as specified. Not to change for Physical appearance. b. Contact Resistance: See 7-1.1 c. Discontinuity：100μs Max

7-3. Environmental performance

No	Items	Test Conditions	Specifications
1	High Temperature	The contact and card is exposed in the heat chamber 85℃ for 96 hours. Measured in accordance with Multi Media Card test Standard.	Contact Resistance: See 7-1.1
2	Low Temperature	The contact and card is exposed in the cold chamber -25℃ for96 hours. Measured in accordance with Multi Media Card test Standard.	Contact Resistance: See 7-1.1
3	Thermal shock test.	-55℃ to +85℃. 5 cycles (1 cycles=1 hour) with connectors engaged. Measured in accordance with IEC-512-6-11D. 	(1) Function and performance shall be as specified. Not to change for physical appearance. (2) Contact Resistance: See 7-1.1
4	Humidity resistance	Steady State 40℃, 90 to 95% RH for 96hours or more. Then inspect appearance and measure contact resistance and insulation resistance.	(1) Contact Resistance: See 7-1.1 (2) Insulation Resistance: See 7-1.3
5	Salty spray test	mated connectors to 35+/-1 ℃, PH value:6.5~7.2 and 5+/-1% salt condition for 24hours. After test, rinse the sample with water and recondition the room temperature for 1~2 hours test CR and IR. EIA-364-26B.	(1) Appearance shall no rust, oxidation, corrosion and other undesirable phenomena (2) Contact Resistance：See 7-1.1 (3) Insulation Resistance: See 7-1.3

7-4. Other performance

No	Items	Test Conditions	Specifications
1	Solder ability	The contact of terminal shall be put into the flux and dipped solder bath 260±5℃,5±0.5 sec.	Solder shall be covered 95% or more of the area that is dipped into the solder bath
2	Resistance to soldering heat	The contact of terminal shall be tested resistance to soldering heat in the following conditions. In case of solder iron (2 times) Temperature: +350℃+/-5℃ Time:5s+/-1s	Should not have any flaw scratch and crack.
3.	IR-reflow	MIL-STD-202G method 210F Peak temperature: 260±5℃ minimum Peak temperature time (260±5℃): 10 sec or more. Duration：2 cycles Lead-Free Solder：Sn96.5Ag3Cu0.5 T-peak 260℃ 	(1) Should not have any flaw scratch and crack. (2) No visual damage to insulator.

8. Test Sequences

Test or examination	Test group									
	A	B	C	D	E	F	G	H	I	
Examination of Product	1,7	1,5	1,5	1,5	1,9	1,5	1,6	1,3	1,4	
Contact Resistance	3,6	2,4	2,4	2,4	2,6	2,4	2,5			
Insulation Resistance					3,7					
Dielectric Withstanding Voltage					4,8					
Insertion / Extraction force	2,5									
Durability Test	4									
Vibration test							3			
Shock test							4			
Thermal shock test		3								
High temperature			3							
Low temperature				3						
Humidity Test					5					
Salty spray test						3				
Solder ability								2		
Resistance to soldering heat									3	
IR-reflow									2	