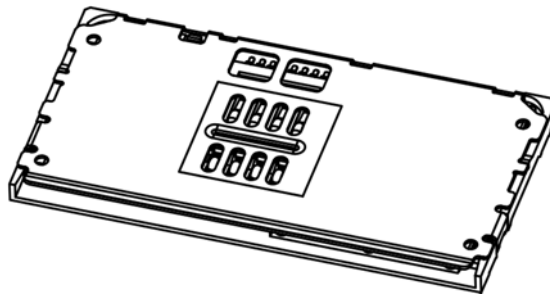


# PRODUCT SPECIFICATION

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## 1.0 SCOPE.

This specification covers performance, tests and quality requirements for the Smart Card Connector SCC050

## 2.0 PRODUCT NAME AND PART NUMBER.

Smart Card Connector, Friction Type, 8 Contact, Standard Mount, with Normally Open Sealed Switch: SCC050.

## 3.0 PRODUCT SHAPE, DIMENSIONS AND MATERIAL.

Please refer to drawings.

## 4.0 RATINGS.

Current rating .....	1 Amp Max
Voltage rating .....	30 Volts Max.
Operating Temperature Range .....	-40°C to +85°C
Storage Temperature .....	-25°C to +85°C
Storage Humidity.....	Relative Humidity: ≤80%

## 5.0 TEST AND MEASUREMENT CONDITIONS.

Product is designed to meet electrical, mechanical and environmental performance requirements specified in Paragraph 6.0. All tests are performed at ambient environmental conditions unless otherwise specified.

## 6.0 PERFORMANCE.

Item	Test Condition	Requirement
Examination of Product	Visual, dimensional and functional inspection as per quality plan.	Product shall meet requirements of product drawing and specification.

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## 6.1 Electrical Performance.

Item	Test Condition	Requirement
Contact Resistance	Measure and record contact resistance of mated connector using test current of 10mA max and 20 mV open circuit voltage in accordance with EIA-364-23.	50 mΩ max initial
Insulation Resistance	Measure by applying test potential between the adjacent contacts, and between the contacts and ground in the mated connector. In accordance with EIA-364-21.	1000 MΩ minimum @500V DC for 1 minute
Dielectric Strength	Measure by applying test potential between the adjacent contacts, and between the contacts and ground in the mated connector. In accordance with EIA-364-20.	Connector must withstand test potential of 500 V AC for 1 minute. Current leakage must be 1.0 mA Max.

## 6.2 Mechanical Performance.

Item	Test Condition	Requirement
Durability	Insert & remove smart card for 500,000 cycles. The insertion force under 10N, and the extraction force meet 1~10N In accordance with EIA-364-09.	Contact Resistance: 100 mΩ max. And insertion/extraction force must meet the association specification. After testing.
Vibration	Vibration conditions, for a period of 2 hours in each of 3 mutually perpendicular axes, Amplitude: 1.52mm P-P or 19.6m/s <sup>2</sup> (2G) Frequency: 10-55-10 Hz In accordance with EIA-364-28	No electrical discontinuity greater than 1 μsec (s) shall occur. Contact resistance: 100mΩ max.
Mechanical Shock	Mate card and subjected to the following shock conditions. 3 mutually perpendicular axes. (Total of 18 shocks) Test pulse: Half sine peak value: 490m/s <sup>2</sup> (50G) duration : 11ms In accordance with EIA-364-27.	No electrical discontinuity greater than 1 μsec. shall occur. No damage to product.

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## 6.3 Environmental Performance and Others.

Item	Test Condition	Requirement
Thermal Shock	The card shall be mated and exposed to the following condition for 5 cycles. 1 cycle a) -55±3 for 30 minutes b) +85±2 for 30 minutes transit time shall be within 3 minutes Recovery time 1~2 hours. In accordance with EIA-364-32	No damage, Contact Resistance (Low Level) (Final) 100 mΩ max
Humidity Test	The card shall be mated and exposed to the condition of +60±2 @ 90~95% humidity for 96 hours Recovery time 1~2 hours. In accordance with EIA-364-31.	No damage, Contact Resistance (Low Level) (Final) 100 mΩ max.. Dielectric Strength should be OK, Insulation Resistance should be 100 MΩ min.
Salt Water Spray	5±1% salt concentration 48 hours 35±2°C MIL-STD-202, Method 101 Condition B.	No rusty cracks found. Contact Resistance (Low Level) (Final) 100 mΩ max
Temperature Life (High)	Subject product to 85±2°C for 96 hours continuously. MIL-STD-202, Method 108.	Contact resistance: 100 mΩ max
Temperature Rise	Mate card and measure the temperature rise of contact, when rated current is passed. In accordance with EIA-364-70 Method 1.	30°C Max
Solderability	Dip solders tails into molten solder, held at a temperature of 250±5°C up to 0.5mm from the tip of the tails for 3±0.5 seconds. To meet MIL-STD202F Standard	Contact solder pad has a min. 95% solder coverage
Resistance to Hand Soldering Heat	Soldering iron method Soldering Time: 5 sec. Solder Temperature: 370-400°C 0.5mm from terminal tip	No damage
Resistance to Wave Soldering Heat	Increase in temp. to not exceed 4°C/ sec. Final preheat temp. within 125°C of solder temp. Device leads exposed to solder wave at 250°C for 5 secs max. Cool down in ambient air at approx 20°C to 25°C.	No damage
Infrared Reflow	Increase in temperature to not exceed 4°C/ sec. Max. allowable time above reflow temp. of 183°C for 90 sec. Max. temp. in this interval is 250°C. Cool down shall not exceed 6°C per sec.	No damage

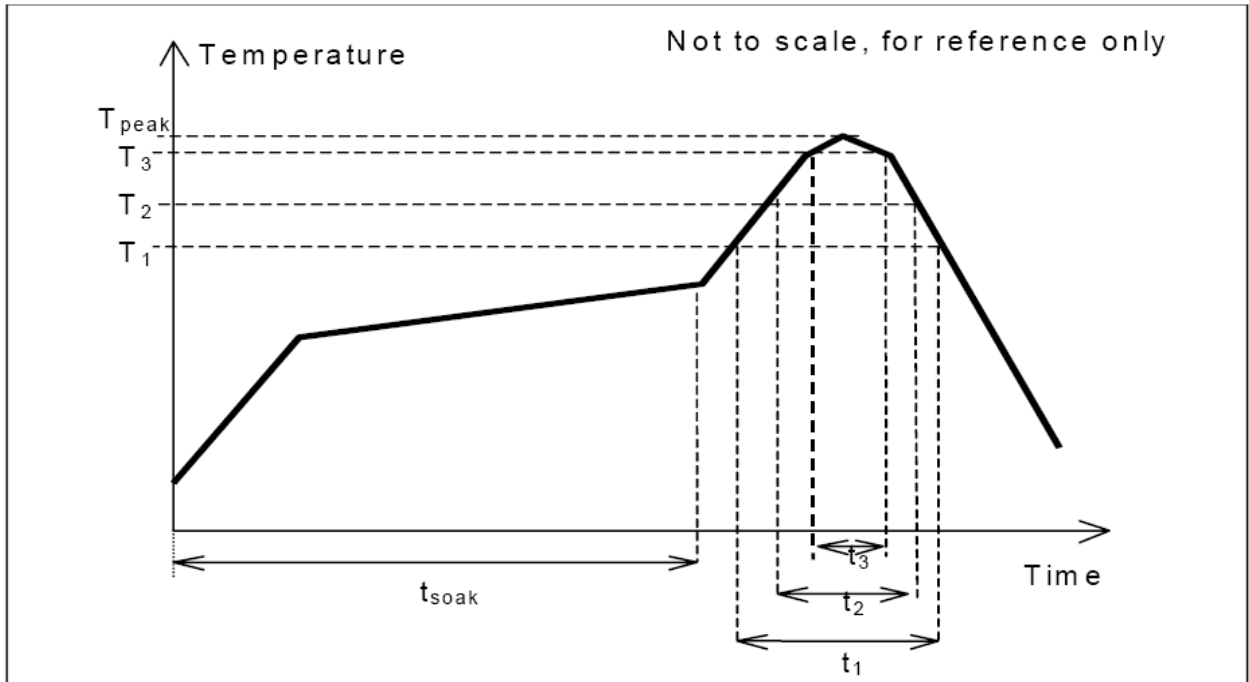
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## 6.4 REFLOW SOLDERING PROFILE

Pb-free reflow profile requirements

Parameter	Reference	Specification
Average temperature gradient in preheating		2.5°C/s
Soak time	$T_{soak}$	120-180 seconds
Time above 217°C	$t_1$	60 seconds
Time above 230°C	$t_2$	50 seconds
Time above 250°C	$t_3$	5 seconds
Peak temperature in reflow	$T_{peak}$	255°C (-0/+5°C)
Temperature gradient in cooling		Max -5°C/s



This profile is the minimum requirement for evaluating soldering heat resistance of components. Heat transfer method used for reflow soldering is hot air convection. The actual air temperatures used to achieve the specified profile is higher and largely dependent on the reflow equipment.

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## 7.0 PRODUCT QUALIFICATION AND TEST SEQUENCE

Test Item	Group									
	A	B	C	D	E	F	G	H	I	J
Examination of Product	1,7	1,4	1,5	1,5	1,8	1,8	1	1	1,8	1,8
Contact Resistance	2,6	2	2,4	2,4	2,6	2,6			2,6	2,6
Insulation Resistance	3				3,7	3,7			3,7	3,7
Dielectric Withstanding Voltage	4				4	4			4	4
Durability	5									
Temperature Rise		3								
Vibration			3							
Mechanical Shock				3						
Thermal Shock					5					
Humidity						5				
Solderability							2			
Resistance to Soldering Heat								2		
Salt Spray									5	
High Temperature										5

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Revision details

Revision	Information	Page	Release Date
A	Specification Released	-	01/05/2015