立威科技股份有限公司 Attend Technology Inc.
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SPECIFICATION AND PERFORMANCE

Series	123A Series	File	123A-XXX00_SPEC_1.1	Date	2019/12/06

Scope:

This specification covers the requirements for product performance, test methods and quality assurance provisions of below

P/N	Descriptions
123A-21A00	M.2 Socket, H2.1 A Key 0.5 Pitch G/F, Black, Reel
123A-21B00	M.2 Socket, H2.1 B Key 0.5 Pitch G/F, Black, Reel
123A-21E00	M.2 Socket, H2.1 E Key 0.5 Pitch G/F, Black, Reel
123A-21M00	M.2 Socket, H2.1 M Key 0.5 Pitch G/F, Black, Reel
123A-30A00	M.2 Socket, H3.0 A Key 0.5 Pitch G/F, Black, Reel
123A-30B00	M.2 Socket, H3.0 B Key 0.5 Pitch G/F, Black, Reel
123A-30E00	M.2 Socket, H3.0 E Key 0.5 Pitch G/F, Black, Reel
123A-30M00	M.2 Socket, H3.0 M Key 0.5 Pitch G/F, Black, Reel
123A-40A00	M.2 Socket, H4.0 A Key 0.5 Pitch G/F, Black, Reel
123A-40B00	M.2 Socket, H4.0 B Key 0.5 Pitch G/F, Black, Reel
123A-40E00	M.2 Socket, H4.0 E Key 0.5 Pitch G/F, Black, Reel
123A-40M00	M.2 Socket, H4.0 M Key 0.5 Pitch G/F, Black, Reel

Performance and Descriptions:

The product is designed to meet the electrical, mechanical and environmental performance requirements specification. Unless otherwise specified, all tests are performed at ambient environmental conditions.

RoHS:

All material in according with the RoHS environment related substances list controlled.

MATERIALS		
NO.	PART NAME	DESCRIPTION
1	Insulator	LCP, UL94V-0, Black
2	Upper contact	Phosphor Bronze C5210, contact area gold flash, solder area gold flash, all under plating 50u" nickel.
3	Lower contact	Phosphor Bronze C5210, contact area gold flash, solder area gold flash, all under plating 50u" nickel.
4	Hold down	Brass C2680, 100u" matte tin over 50u" nickel plating

RATING	
Rated Voltage	50VAC
Rated Current	0.5A
Operating Temperature	-40°C~+85°C
Storage Temperature	-40°C~+85°C
Durability	60 mating cycles

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ELECTRICAL		
Item	**Requirement**	**Test Condition**
Low Level Contact Resistance	Initial: 55mΩ max. After: Δ20mΩ max.	Solder connectors on PCB and mate them together, measure by applying closed circuit current of 100mA maximum at open circuit voltage of 20mV (max). (JIS C5402 5.4)
Dielectric withstanding Voltage	No breakdown	Mate connectors; apply 300V AC at 60 Hz(rms.) between two adjacent for 1 minute. (Trip current:0.5mA) (MIL-STD-202 METHOD 301)
Insulation Resistance	500 MΩ Min.	Apply 500V DC between adjacent contacts, or contact and ground. (MIL-STD-202 METHOD 302)
Temperature Rating	30°C Max.	Mate connector: measure the temperature rise at rated current after 0.5A/Power contact. .(EIA-364-70 Method 2.)

MECHANICAL		
Item	**Requirement**	**Test Condition**
Mating/ Unmating Force	Mating: 20N Max. Unmating: 25N Max.	Card mating/unmating sequence: a) Insert the card at the angle specified by the manufacturer b) Rotate the card into position c) Reverse the installation sequence to unmated Operation Speed:25mm/min. Measure the force required to mating/unmating connector. (EIA-364-13, Method A.)
Durability	Finish 1.Contact Resistance: 20mΩ Max. change 2.No Damage	After 60 mating and unmating cycles with 1.0mm thick board at the rate of 25±3mm/min. The connector shall be of no damage to the housing or contacts. The connector shall also meet the requirements of contact resistance in the paragraph 5.1. (EIA364-09)
Vibration	Finish 1. No electrical discontinuity more than 0.1μs. 2 .No Damage 3 .Contact Resistance: 20mΩ Max. change	Mate dummy card and subject to the following vibration conditions, for a period of 30 minutes in each of 3 mutually perpendicular axis, passing DC 1 mA during the test. Amplitude: 1.52 mm P-P or 19.6 m/s² Frequency: 10-55-10Hz Shall be traversed in 1minute. (MIL-STD-202 METHOD 201)
Shock	Finish 1. No electrical discontinuity more than 0.1μs. 2 .No Damage 3 .Contact Resistance: 20mΩ Max. change	Solder connectors on PCB and mate them together, subject to he following shock conditions, 3 shocks shall be period along 3 mutually perpendicular axis, passing DC 1mA current during the test. A (50G,11ms Half-sine) (MIL-STD-202 METHOD 213)

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ENVIRONMENTAL

Item	Requirement	Test Condition		
Thermal Shock	Finish 1. Contact Resistance: 20mΩ Max change 2. No abnormality	Stage	Temp. ±5°(°C)	Time (Minute)
		t1	-55°C	30
		t2	-55°C~+85°C	5
		t3	+85°C	30
		t4	+85°C~-55°C	5
		Test time: 5 cycles (MIL-STD-202 METHOD 107)		
Temperature Life	Contact Resistance: 20mΩ Max. change	Mated Connector 105°C, 120 hours, (EIA-364-17, Method A.)		
Cold Resistance	Contact Resistance: 20mΩ Max. change	Solder connectors on PCB and mate them together, expose to -55 for 96hrs. Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 of 2hrs, after which the specified measurements shall be performed.(EIA364-59)		
Humidity	Contact Resistance: 20mΩ Max change Insulation Resistance: 100MΩ (Min)	Humidity storage at +40±3°C with 90±5% RH for 96 hours. (EIA364-31)		
Salt Spray	Contact Resistance: 20mΩ Max change No Damage	5±1% salt solutions, at 35±2°C duration 24 hours. Connectors detached (MIL-STD-1344)		

SOLDER ABILITY

Item	Requirement	Test Condition
Solder ability	95% of immersed area must show no voids , pin holes.	Dip solder tails into the molten solder(held at 245 ±5°C) up to 0.5mm from the tip of tails for 3±0.5 seconds. (MIL-STD-202 METHOD 208)
Resistance to soldering heat	No melting, cracks or functional damage allowed	All connectors designed for PCB soldering within this specification must be able to withstand the heat from solder oven according to the graph below. The cycle should be repeated twice. (MIL-STD-202 METHOD 210)

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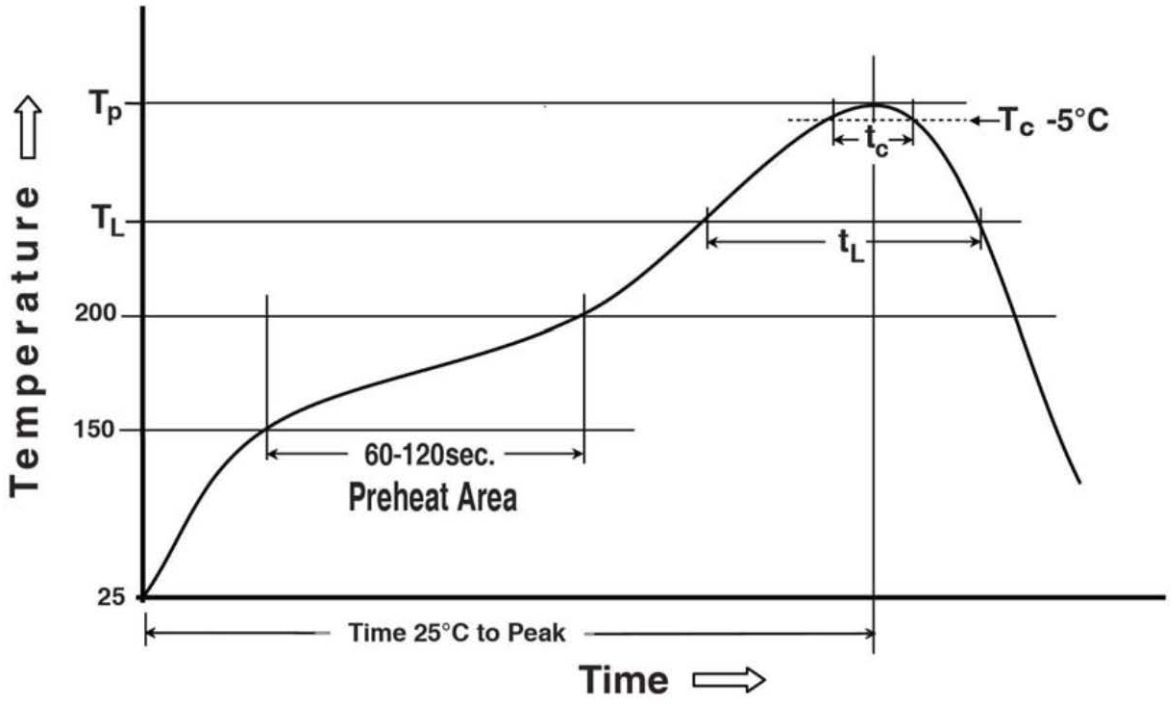

Preheating temperature: 150 ~ 200°C, 60~120 seconds
Liquidus temperature (TL): 217°C, 60~150 seconds
Peak temperature: 260°C 5 seconds
Time within 5 °C of peak temperature (Tc): 255°C, 30seconds

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Table: Products Qualification Test Sequence

No.	Test item	Test Group and Sequence										
		A	B	C	D	E	F	G	H	I	J	K
1	Contact Resistance	1,6	1,3	1,3	1,3	1,3	1,3	1,3	1,4	1,3		
2	Insulation Resistance								2,5			
3	Dielectric Withstanding Voltage	2										
4	Temperature Rise		2									
5	Mating/ Unmating Force	3,5										
6	Durability	4										
7	Vibration			2								
8	Shock				2							
9	Thermal Shock					2						
10	Temperature Life						2					
11	Cold Resistance							2				
12	Humidity								3			
13	Salt Spray									2		
14	Solder Ability										1	
15	Resistance to Soldering Heat											1
Sample Quantity		4	4	4	4	4	4	4	4	4	4	4