

	DESCRIPTION	DATE
A1	NEW FORM	2020/02/22

1. SCOPE

1.1. CONTENTS

This specification covers the performance, tests and quality requirements for the M.2 (NGFF) Connector Series, P/N : CX4-M40A-11 、CX4-M30A-11 、CX4-M40B-11 、CX4-M30B-11 、CX4-M40E-11 、CX4-M30E-11 、CX4-M40M-11 、CX4-M30M-11.

2. APPLICABLE DOCUMENT

The following CHUNXIN documents form a part of this specification to the extent specified herein. Unless otherwise specified, the latest edition of the document applies. 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.

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

Product shall be of the design, construction and physical dimensions specified on the applicable product drawing.

3.3. RATINGS

- A. Voltage Rating : 50V AC (per pin)
- B. Current Rating : 0.5A (per pin)
- C. Contact Resistance : 55mΩ Max (Initial). Δ 20mΩMax
- D. Withstanding Voltage : 300VAC
- E. Temperature : -40°C ~ +80°C



4. TEST METHOD AND PERFORMANCE

4.1. INDUSTRY STANDARDS

EIA-364 : Electrical Connector / Socket Test Procedures Including Environmental Classifications

4.2. TEST CONDITION

Temperature : 15°C ~35°C

Humidity : 45% ~ 75% RH.

Atmospheric Pressure : 86 ~ 106 kPa

4-3 APPEARANCE CHECK			
TEST ITEM		REQUIREMENT	PROCEDURE
4-3	Appearance	Must comply with product drawing.	Inspect and measure the contact.
4-4 ELECTRICAL REQUIREMENT			
4-4-1	Low level Contact Resistance	Initial : 55 mΩmax. Final : 20 mΩmax change allowed	Solder connectors on PCB and mate them together, measure by applying closed circuit current of 100mA maximum at open circuit voltage of 20mV maximum. EIA-364-23B [Reference to Figure]
4-4-2	Dielectric withstanding Voltage	No evidence of flash over or insulation shall take place. Current leakage:1mA Max.	300VAC for 1 minute. Test between adjacent circuits of unmated connector. EIA-364-20C
4-4-3	Insulation Resistance	Initial :500MΩ Min. Final :500MΩ Min.	Impressed voltage 500VDC. Test between adjacent circuits of unmated connector. EIA-364-21C
4-4-4	Temperature Rise	30°C Max change allowed at rated current.	Mate connectors, measure the temperature rise at rated current after 0.5A/Power contact. The temperature rise above ambient shall not exceed 30°C the ambient condition is still air at 25°C. EIA-364-70 Method 2 [Reference to Figure 12]



4-5 MECHANICAL REQUIREMENT

4-5-1	Mating/Unmating Force	60 cycles Mating Force: 20N Max. Unmating Force: 25N Max	Card mating/unmating sequence: a) Insert the card at the angle specified by the manufacture. b) Rotate the card into position. c) Reverse the installation sequence to unmating. Operation Speed: 25.4mm pre minute. Measure the force required to mate/unmate connector. EIA-364-13 Method A [Reference to Figure 3]
4-5-2	Durability	60 cycles No evidence of physical damage.	The sample should be mounted in the tester and fully mate and unmated the rate of 25.4mm per minute. EIA-364-09
4-5-3	Durability (Preconditioning)	5 cycles No evidence of physical damage	The sample should be mounted in the tester and fully mate and unmated the rate of 25.4mm per minute. EIA-364-09
4-5-4	Vibration	No electrical discontinuity greater than 1 μ sec shall occur. No evidence of physical damage.	2hours in each of 3 mutually perpendicular directions. Both mating halves should be rigidly fixed so as not to contribute to the relative motion of one contact against another. The method of fixturing should be detailed in the test report. Sinusoidal curve, Test condition VII, condition D EIA-364-28
4-5-5	Mechanical Shock (50G)	No electrical discontinuity greater than 1 μ sec shall occur. No evidence of physical damage.	Condition: 50G, 11ms ,Half sine No. of Drops: 3 drops each to normal and reversed directions of X, Y and Z axes, totally 18 drops. EIA-364-27B
4-5-6	Mechanical Shock (285G)	No electrical discontinuity greater than 1 μ sec shall occur. No evidence of physical damage.	Condition: 285G, 2ms, Non-operating environment. Half sine No. of Drops: 3 drops each to normal and reversed directions of X, Y and Z axes, totally 18 drops. EIA-364-27B



4-6 ENVIRONMENTAL REQUIREMENTS

4-6-1	Humidity Temperature Cycle	20 m Ω max change allowed (Final)	Mated Connector. Initial measurement, cold shock and vibration. Cycle the connector between 25 $\pm$ 3 $^{\circ}$ C at 80 $\pm$ 3%RH and 65 $\pm$ 3 $^{\circ}$ C at 50 $\pm$ 3%RH. Ramp times should be 0.5 hour and dwell times should be 1.0 hour. Dwell times start when the temperature and humidity have stabilized within the specified levels. Perform 24 such cycles. EIA-364-31,method III
4-6-2	Thermal Shock	20 m Ω max change allowed (Final)	Mated Connector. EIA-364-32, test condition I ,10 cycles
4-6-3	Temperature Life	20 m Ω max change allowed (Final)	Mated Connector, 105 $^{\circ}$ C, 120 hours EIA-364-17,method A
4-6-4	Temperature Life (Preconditioning)	20 m Ω max change allowed (Final)	Mated Connector, 105 $^{\circ}$ C, 72 hours EIA-364-17,method A
4-6-5	Reseating	20 m Ω max change allowed (Final)	Manually mating / unmating the connector. Perform 3 such cycles.
4-6-6	Mix Flowing Gas	20 m Ω max change allowed (Final)	EIA-364-65,class II A,120 hours to simulate 3 years field life. Option 4.
4-6-7	Thermal Disturbance	20 m Ω max change allowed (Final)	Cycle the connector between 15 $\pm$ 3 $^{\circ}$ C and 85 $\pm$ 3 $^{\circ}$ C, as measured on the part. Ramp times should be a minimum of 2 $^{\circ}$ C per minute, and dwell times should insure that the contacts reach the temperature extremes (a minimum of 5 minutes).Humidity is not controlled. Perform 10 such cycles.
4-6-8	Reflow Soldering Heat Resistance	No evidence of physical damage.	Pre-heat: 150 $\sim$ 215 $^{\circ}$ C, 30 $\sim$ 120 sec. Reflow: 230 $^{\circ}$ C Min, 40 sec Min. Peak temp: 245 $^{\circ}$ C Max, 10 sec Max. [Reference to Figure 14]



4.7. TEST SEQUENCE

Test or Examination		Test Group									
		A	B	C	D	E	F	G	H	I	J
		Test Sequence (a)									
1	Examination of Product	1,5	1,4	1	1	1,5	1,5	1,5	1,5	1,5	1,3
2	Low level contact resistance	2	3			2,4	2,4	2,4	2,4	2,4	
3	Dielectric withstanding voltage	4									
4	Insulation Resistance	3									
5	Temperature rise		2								
6	Mating/Unmating Force			2							
7	Durability				2						
8	Durability					3					
9	(Preconditioning)						3				
10	Vibration							3			
11	Mechanical Shock (50G,11ms)								3		
12	Mechanical Shock (285G,2ms)									3	
13	Humidity Temperature Cycling										
14	Thermal Shock										
15	Temperature Life										
16	Temperature Life										
17	(Preconditioning)										
18	Reseating										
19	Mix Flowing Gas										2
Quantities of Samples		1	2	2	5	2	2	2	2	2	2

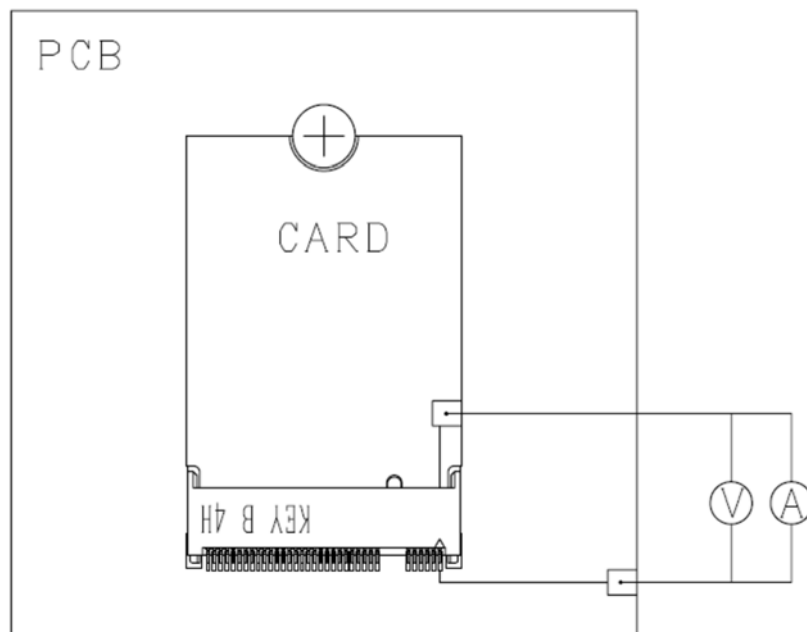


Figure 1

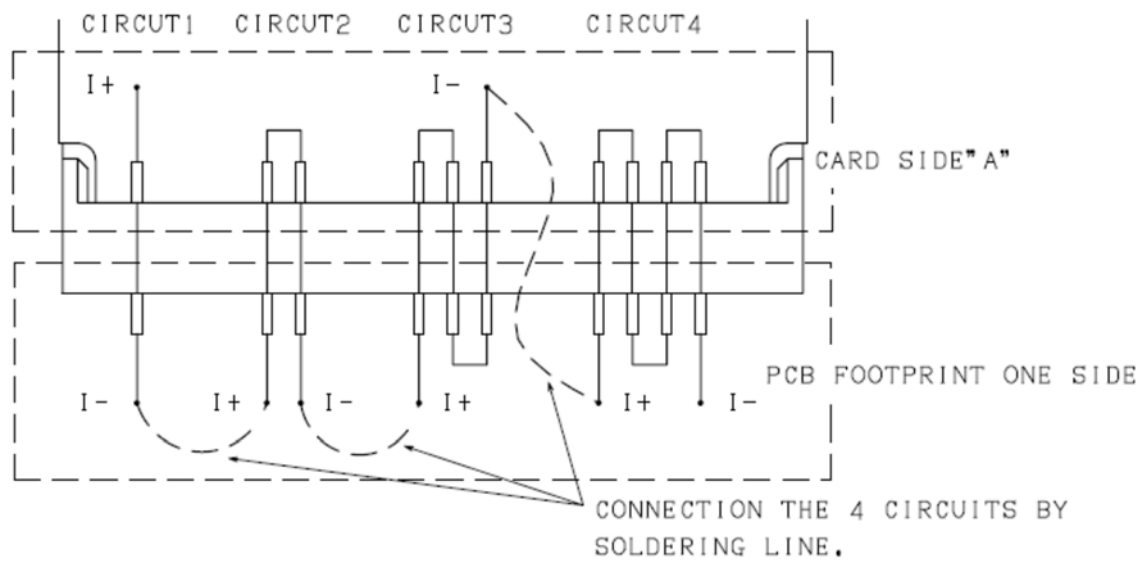


Figure 2

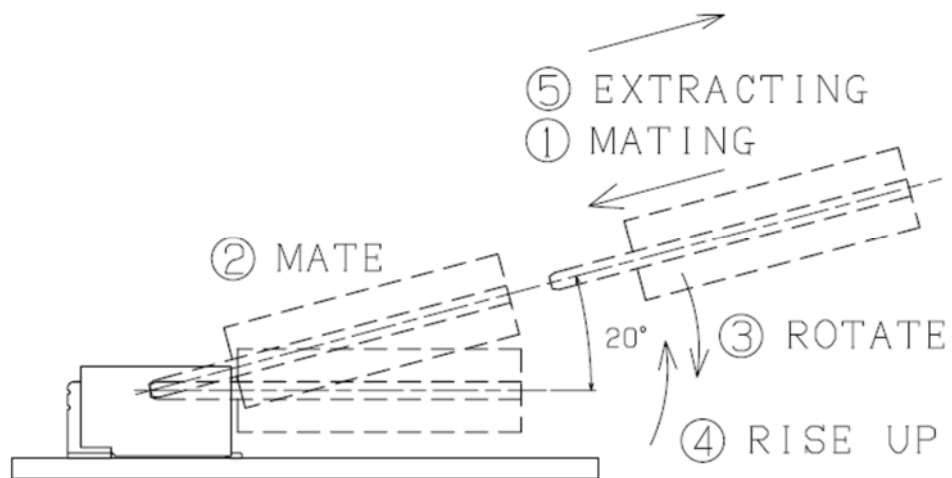


Figure 3

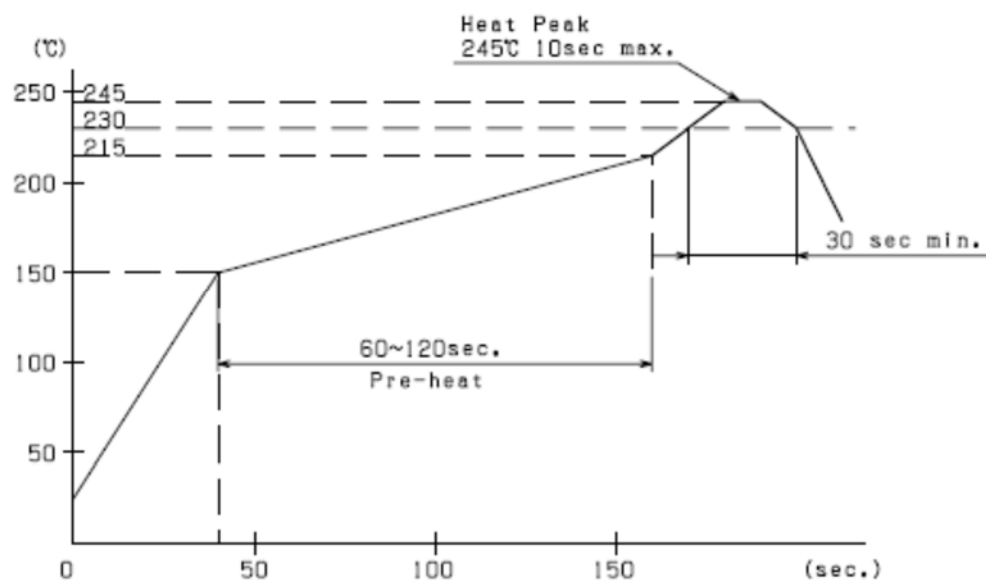


Figure 4