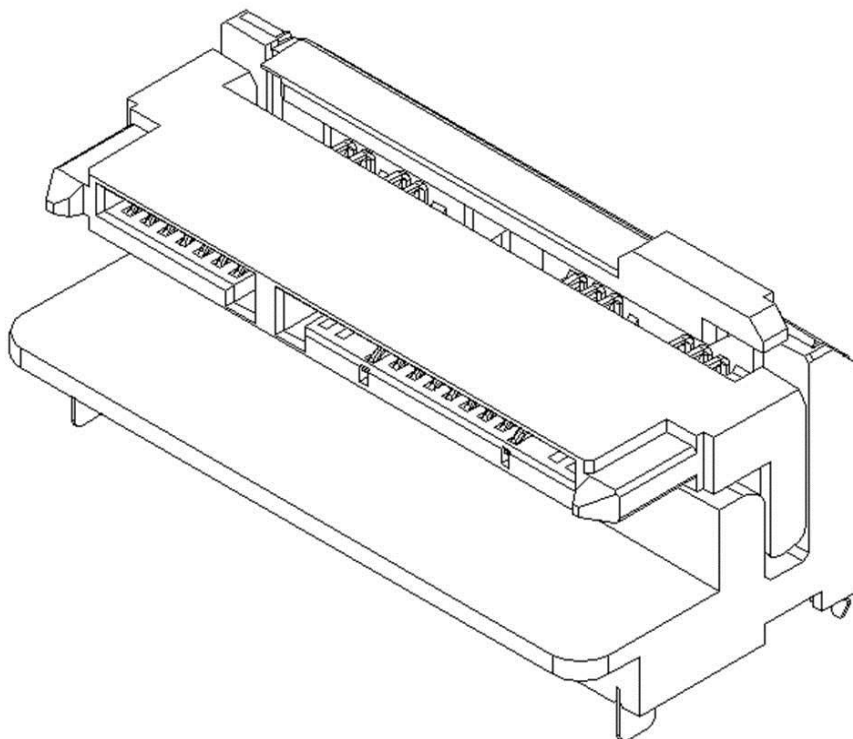




PRODUCT SPECIFICATION



育鼎精密工業股份有限公司

ACRON PRECISION INDUSTRIAL CO., LTD

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(ACRON)

☒ 東莞愷興電子科技電子有限公司
(NUCONN)

REVISION:	ECR/ECN INFORMATION:		PRODUCT NO	SAT29-N3-1607320	SHEET No
A	EC No:	New SPEC	PRODUCT NAME	S-ATA CONNECTOR PECEPTACLE A-FREE BOTTOM MOUNT TYPE	1 of 9
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DOCUMENT NUMBER:		PS-SATA-0004	ANDELEE.YANG		JERRY.TUNG
					APPROVED BY:
					KIMI.HSU



PRODUCT SPECIFICATION

1.0 SCOPE

This specification defines the performances for alignment free Serial ATA connector.

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND SERIES NUMBER(S)

S-ATA CONNECTOR PECEPTACLE A-FREE BOTTOM MOUNT TYPE.

2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

See appropriate sales drawings for details on dimensions, materials, plating and markings.

2.3 SAFETY AGENCY APPROVALS

See appropriate sales drawings

2.4 PRODUCT WEIGHT

The product weight is 6.85g

2.5 PRODUCING PLANT FACTORY AND ADDRESS

Producing plant factory: Nuconn Industry CORP

Dong Guan Nuconn Industry CORP Address:

No.32, Rong Fu Road, Shang Sha 3th Ind. District, ChangAn Town,

DongGuan City, GuangDong, China

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

Please refer to the Sales Drawings , and other sections of this Specification for specific references to applicable documents and specifications. In cases where the Product Specification differs from the Sales Drawings, the Sales Drawing will take precedence

4.0 RATINGS:

A. Operating temperature range at rated voltage and current: -55°C to +85°C

B. Storage Temperature Range: -55°C to +85°C

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5.0 PERFORMANCE

Test Requirements and procedures Summary

Mechanical Requirements

ITEM	Test Items	Requirement	Procedures
1	Examination of Product	Meets requirement of product drawing. Flaws/ Contaminations/ Discolorations which does not occur functional defect are allowable.	Visual inspection No physical damage

Electrical Requirements

ITEM	Test Items	Requirement	Procedures
2	Current rated Voltage rated	1.5A per terminal 30V AC per contact	
3	Contact current rating (power segment)	1.5A per pin minimum. The temperature rise above ambient shall not exceed 30°C at any point in the connector when contact positions are powered. The ambient condition is still air at 25°C.	Mount the connector to a test PCB. Wire power pins P1,P2,P8,and P9 in parallel for power. Wire ground pins P4,P5,P6, P10, and P12 in parallel for return. Supply 6 A total DC current to the power pins in parallel, returning form the parallel ground pins(P4,P5,P6,P10,and P12) Record temperature rise when thermal equilibrium is reached.

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4	Termination Resistance	Initial: 30mΩ Max. Final: Δ R=15mΩ Max.	Subject mated contacts assembled in housing to 20 mV maximum open circuit at 100 mA Max. Refer to figure 2. EIA-364-23
5	Insulation Resistance	1000 MΩ Min.	After 500V DC for 1 minute, measure the insulation resistance between the adjacent contact of mated and unmated connector assemblies.
6	Dielectric withstanding Voltage	The dielectric shall withstand 500V AC for 1 minute at sea level Leakage current shall not exceed 0.5mA.	Test between adjacent contacts of mated and unmated connector assemblies EIA-364-20 Method B

Environment Requirements and Endurance Characteristics

ITEM	Test Items	Requirement	Procedures
7	Vibration (Random)	No discontinuities of 1 μ s longer duration	Test Letter A Subject mated connectors to 5.35 g' s RMS 30 minutes in each of three mutually perpendicular planes Load: 100 mA EIA-364-28 Condition V

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8	Insertion force	20 N Max	Measure the force necessary to mate the connector assemblies at a max. rate of 12.5mm/min. EIA-364-13
9	Withdrawal force	2 N Min	Measure the force necessary to un-mate the connector assemblies at a max. rate of 12.5mm/min. EIA-364-13
10	Durability	No physical damage. Meet requirements of additional tests as specified in the test sequence	5000 cycles Test done at a maximum rate of 200 cycles / hr. EIA-364-09
11	Physical shock	No discontinuities of 1 μ s or longer duration. No physical damage.	Subject mated connector to 30 g' s half-sine shock pulses of 11 msec duration. Three shocks in each direction applied along three mutually perpendicular planes for a total of 18 shocks. EAI-364-27 Condition H
12	Thermal shock	Contact resistance: 15 m Ω Max. changed from initial value. And without distinct damage.	Test the mated connector with 10 temperature cycles. Condition as following: 1. -55°C+0/-3°C for 0.5hours. 2. 25°C+10/-5°C for 5 MAX 3. 85°C+3/-0°C for 0.5hours. 4. 25°C+10/-5°C for 5 MAX

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			1→2→3→4 is one cycle See Table 1. EIA-364-32
13	Durability of alignment free mechanism	See note 1	Vertical direction or Horizontal direction displacement $\pm 1.0\text{mm}$ 5000 cycles. Refer to figure 3.
14	Humidity	See note 1	Subject mated connectors to humidity at $40\pm 2^{\circ}\text{C}$ with 90~95% R.H. for 240h EIA-364-31
15	Temperature life	See note 1	Subject mated connectors to temperature life at $85\pm 2^{\circ}\text{C}$ for 500 hours. EIA-364-17
16	Industrial gas (SO ₂)	See note 1	Subject mated connectors to SO ₂ gas 10 ppm, $25\pm 2^{\circ}\text{C}$, 90~95% R.H. for 24h
17	Solder ability	Wet solder coverage: 95% Min. Flux must not rise at contact point	Solder temperature: $245\pm 3^{\circ}\text{C}$ Immersion Duration in Flux: 3 ± 0.5 sec EIA-364-52/ SS-00254-1
18	Resistance to soldering heat	No physical damage.	Test connector on PWB, Flow soldering: Temperature: $260\pm 3^{\circ}\text{C}$ Time: 10 ± 2 sec Manual soldering: Temperature: $350\pm 10^{\circ}\text{C}$ Time: 3 ± 1 sec

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			Soldering times: Twice
19	Moisture resistance	See note 1.	Subject mated connectors to moisture at 25~65°C,90~95% RH for 10 cycles. MIL-STD-202 Method 106
20	Retention force	3N MIN	Axial pullout force on the terminal and nail in the housing at a rate of 12.5mm/min. EIA-364-29
21	Temperature Life (Cold Aging)	Contact resistance: 15 mΩ Max changed from initial value And without distinct damage.	Product in following state: -40±2°C,250 h. After test, place room situation for 1h EIA-364-17/ JIS C 0020
22	Salt mist	By visual inspection without noticeable rust	Test the mated connector to a fine mist of salt solution at a temperature of 35±2°C for 48h. Salt solution : 5 ±1 % After treatment, place room situation for 1h. And check if meet requirement.
23	Stress corrosion cracking of copper or copper alloy	Contact resistance: 15mΩ Max changed from initial value. And without distinct damage on appearance.	Refer to SS-00126-6 test standard

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24	Whisker Test	Whisker length:50μ m Max With a metal microscope or a zoom stereo one, with which you can see an image that is 100 to 200 times larger than original, observe whether whiskers appear and the lengths of the appearing whisker. If you have difficulty in observing in two matters, use a scanning electron microscope (SEM).Set the magnification at one between 300 and 1000 times.	Condition 1) Room temperature Temp:25±2°C Hum:50% RH or less Test time:1000h Condition 2) Temperature cycle Temp:-40±2°C~85±2°C Storage time: At least 7 min Number of cycles:1500 Condition 3) Temperature-Humidity Temp: 60±2°C Hum:90~95% RH Test time:1000h Condition 4) High Temperature Temp:50±2°C Test time:1000h Sony Technical Standards. SS-00254-8
25	Fretting Corrosion	Contact resistance: Fifth or less from the previously specified value Discontinuity: 1 μ s or less	Refer to Sony Technical Standard STM-1126-05 “ Parts Design Standards-test Method for Electronic Component PART 5 Test Method For Fretting Corrosion.”

NOTE-1

Shall meet EIA-364-18 Visual Examination requirements, show no physical damage, and

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shall meet requirements of additional tests as specified in the test group

Table 1 Thermal Shock Step

Step	Temperature (°C)	Time (min)
1 cycle	1 -55 +0/-3	30
	2 25 +10/-5	5 Max
	3 85 +3/-0	30
	4 25 +10/-5	5 Max

(Excerpt of EIA-364-32 Test Condition I)

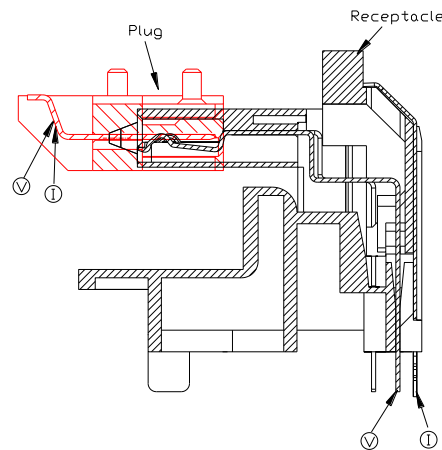


Fig.2 Termination resistance measurement point

1. Solder test sample with PCB
2. Move Upper housing vertically(Z-Direction)or horizontally(X- Direction) $\pm 1.0\text{mm}$ 5000 cycles
Test should be performed with keeping Upper housing horizontal, Operating speed in 100mm/min.

Fig.3 Test method of Durability of alignment free mechanism

The specification of floating force : X-Direction 4N max and Z-Direction 8N max.

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