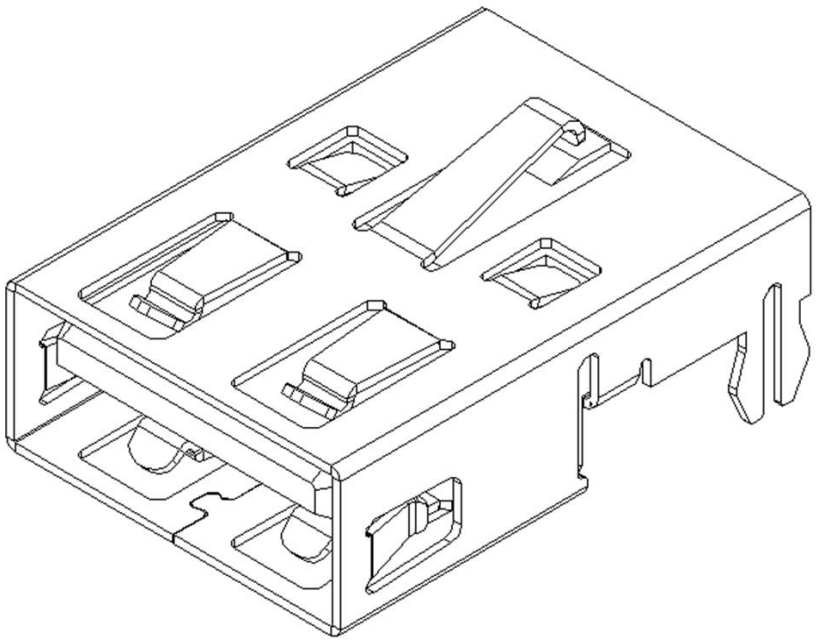
PRODUCT SPECIFICATION



育鼎精密工業股份有限公司

ACRON PRECISION INDUSTRIAL CO., LTD

桃園縣八德市廣德里新興路 55 號

No.55, SinSing Road., Bade City, Taoyuan County 334, Taiwan(R.O.C)

TEL : 886-3-3629889 FAX : 886-3-3664917

□東莞睦永電子五金廠 （AMMI）	□東莞育鼎電子五金廠 （ACRON）	■東莞愷興電子科技電子有限公司 （NUCONN）

1. SCOPE

REVISION:	ECR/ECN INFORMATION:		PRODUCT NO	USR10-N3-0419120	SHEET No
A	EC No: DATE:	PDR-D160002 2016/01/15	PRODUCT NAME	USB A TYPE Connector	1 of 7

DOCUMENT NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPROVED BY:
PS-US-0018	ANDELEE.YANG	JERRY.TUNG	KIMI.HSU

This specification defines the performances for USB A Type Connector.

2. PRODUCT DESCRIPTION:

2.1 PRODUCT NAME AND SERIES NUMBER(S)
USB A TYPE Connector Series Acron Part No.USR10-N3-0419120

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 1.64g

3. APPLICABLE DOCUMENTS AND SPECIFICATIONS
See product drawing and other sections of this specification for the relevant reference documents and specification. In cases where the specification differs from the product drawings, the product drawings take precedence. In the event of conflict between the requirements of this specification and the referenced documents, the specification shall take precedence.

4. RATINGS:
A. Operating temperature range at rated voltage and current: -20℃ to +70℃
B. Storage Temperature Range: -25℃ to +80℃
C. Current rating: 1A Max. per contact
D. Voltage rating: 30V AC Max per contact
3. Air pressure: 86KPa to 106KPa

5. PERFORMANCE

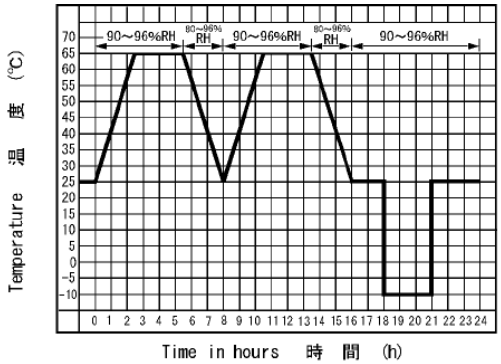
Item	Test Items	Requirement	Procedures
1	**Examination of Product**	Meets requirements of product drawing. No physical damage.	Visual, dimensional and functional per applicable quality inspection plan.

Electrical Requirements			
	Test Items	**Requirement**	**Procedures**

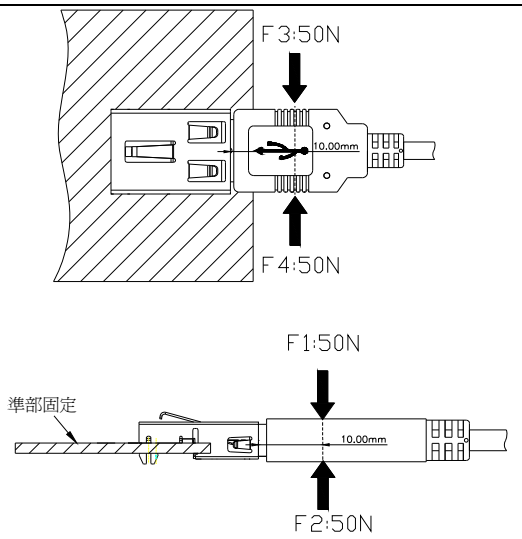
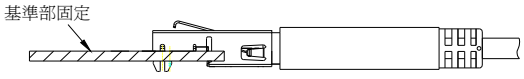
2	**Rated voltage / rated current**	1A Max. per contact 30V AC Max. per contact	The rated current shall be measured by the current when the temperature rise of the terminal reaches 30℃ with resistive load.
3	**Contact Resistance**	30 mΩ Max.(Initial)	Subject mated contacts assembled in housing to 20mV Max open circuit at 100mA MAX.
4	**Insulation Resistance**	1000 MΩ Min.	Insulation resistance between any adjacent open contacts of mated and unmated connectors shall not be less than a value as specified below with a 500V d.c. insulation resistance test.
5	**Withstanding Voltage**	No breakdown	A potential of 500v a.c. shall be applied between any adjacent open contacts, between any contact and shall of mated and unmated connectors , for 1 minute Trip current:2mA

Mechanical Requirements			
	Test Items	**Requirement**	**Procedures**
6	**Appearance**	Meets requirements of product drawing.	Visual inspection No physical damage
7	**Mating force and un mating force**	Refer to the standard table clause 6	The measurement of the inserting force in done initially where as the measurement of the withdrawal force in done after inserting and withdrawing 30 times.
8	**Terminal strength (contact part)**	No breakdown	The set shall be subjected to 1 bent through an angle of 45° in the right and left directions of terminal thickness.

Environment Requirements and Endurance Characteristics			
	Test Items	**Requirement**	**Procedures**
9	**Temperature Life (Cold Aging)**	Contact resistance Twice or less from the previously specified value Appearance Without distinct damage	Product in following state: -25±3℃, 48h after test, place room situation for 1h JIS C 60068-2-1
10	**Dry heat**	Contact resistance Twice or less from the previously specified	USB connectors shall be stored at temperature of 85±2℃ for 96h. Then it shall be subjected to standard

		value Appearance Without distinct damage	atmosphere ic conditions for 1 h, after which measurement shall be made. JIS C 60068-2-2
11	**Damp heat**	Contact resistance Twice or less from the previously specified value Appearance Without distinct damage meet item 3,4,	Product in following state: 90~95%.R.H. 40±2℃ for 96h After test, place room situation for 1h IEC 60068-2-78
12	**Composite Temperature/ Humidity Cycle Test**	Contact resistance Twice or less from the previously specified value	The repetition of the insertion and the withdrawing of USB connectors and the mating shall be subjected to 30 cycles without load at a speed of 10cycles per min. Then following cyclic test shall be operated for 5cycles in mating condition. Then USB connectors shall be subjected to ambient Temperature for 1 h or 2h, after which measurement shall be made. Temperature reduced from 25℃ to -10 ℃ within 30 min. Humidity uncontrolled at a temperature less than 25℃  JIS C 60068-2-38
13	**Change of temperature**	Contact resistance Twice or less from the previously specified value Appearance Without distinct damage	USB connectors shall be subjected continuously to 5 successive changes of temperature cycles, each as shown in figure below. Then it shall be subjected to standard atmospheric condition for 1 h after which measurements shall be made.

			Step 段階 / Temperature 温度 / Duration 放置時間 1 / -55 ±3℃ / 30 min 分 2 / Standard atmospheric conditions 常温 / 10 to 15 min 分 3 / 85 ±2℃ / 30 min 分 4 / Standard atmospheric conditions 常温 / 10 to 15 min 分 IEC 60068-2-14
14	**Vibration**	Contact resistance Twice or less from the previously specified value Discontinuity 1μ or less MAX. Appearance Without distinct damage.	Each terminal shall be connected in series and then 0.1 A d.c. shall be applied Only endurance conditioning by a frequency sweep shall be made. The entire frequency range, from 10 Hz to 55 Hz and return to 10Hz, shall be transversed in 1min. Amplitude (total excursion)1.5mm This motion shall be applied for period of 2h in each of 3 mutually perpendicular axis(a total of 6 h) IEC 60068-2-6.
15	**Resistance to sulfur ation**	Contact resistance Twice or less from the previously specified value	Refer to STM-1126-04 “Test Methods for Electronic Components Parts Design Standards Part 4: Sulfur ation Test Method.
16	**Shock**	Contact resistance Twice or less from the previously specified value Discontinuity 1μ or less MAX. Appearance Without distinct damage.	Waveform: Half-sine shock Accelerated Velocity: 490m/s^2 Duration: 11m sec. Number of drops: 3 drops each to normal and reversed directions of X, Y, Z axis. (total 18 drops.) IEC-60068-2-27.
17	**Operating endurance**	Electrical characteristics shall be satisfied Mechanical characteristics shall be satisfied Appearance Without distinct damage.	Operation Speed: 200 cycles /hr. No. of cycles: 1500 cycles EIA-364-09
18	**Torsion strength**	Contact resistance 30 mΩ MAX	After connected, as tatic load of 50 N (5.1kgf) shall be applied to the plug end for 1 minute in any direction.

			
19	**Resistance to soldering heat**	Meet all electrical and mechanical requirements. And without distinct deformation in appearance	Test connector on PWB, thickness of PWB is 1.6mm. Dip soldering method: Solder Temperature:260±3℃ Immersion Duration: 5+1/-0 sec Number of cycles:2 cycles Immersion depth: up to the surface of board Manual soldering iron method: Temperature: 380±10℃ For 3+1/-0 Seconds. JIS C 60068-2-20.
20	**Solder ability**	Mechanical characteristics shall be satisfied.	Refer to STM-1254-01 “Test Methods for Electronic Components, Lead-Free Soldering Parts Design Standards Part 1: Solder ability Test for TMD s. Lead-Free Soldering.” Preconditioning is for 16h In case of sealing packages which are not exposed to the air, it its for 4h. In case of silver alloy-finished terminals whose silver content is 5 wt% or more, refer to sub-clause 5 “Preconditioning”
21	**Contact retention force**	No breakdown	Contacts shall withstand a steady straight pull of 10N in the direction of contact breakout for 1 minute. 

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℃ 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 Twice or less from the previously specified value Discontinuity And without distinct damage on appearance	Refer to STM-1126-06 “test Methods for Electronic Components Parts Design Standards Part 6: Sulfur ation Test Method.
24	**Resistance to flux penetration**	Flux shall not flow into the component Electrical characteristics and Mechanical Characteristics shall be satisfied	For test method refer to Test Method For Resistance to Flux Penetration Nominal board thickness:1.6mm (Testing method refer to note 1.)
25	**Solder joint endurance**	Mechanical characteristics Shall be satisfied	TMD Refer to STM-1254-06 test Methods for Electronic Components, Lead-Free Soldering Parts Design Standards Part 6: Solder Joint Endurance Test for TMDs. Lead-Free soldering. Preconditioning is for 16h.