

ARON 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

□東莞睦永電子有限公司 (AMMI)				□東莞育鼎電子有限公司 (ACRON)			■東莞愷興電子科技電子有限公司 (NUCONN)		
REVISION:	ECR/ECN	N INFORMATI	ON:	PRODUCT NO	BTM46 SERIES				
Α	<u>EC No:</u> DATE:	2012/09/	03	PRODUCT NAME		6 PIN E CONN	१Y २	1 of 8	
DOCUMENT NUMBER: CRE			CRE	EATED / REVISED BY:		D BY: CHECKED BY: APPRO		<u>APPROV</u>	ED BY:
PS-BC-0071				Allen. Yang Kenny.			Chen	Devin.	Chen



ACROR PRODUCT SPECIFICATION

1.0 SCOPE

This Product Specification covers the performance requirements for 4pin 2.50mm pitch battery connector series. .

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND SERIES NUMBER(S) 6 pin battery connector BTM46 series

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

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 TEST METHODS FOR ELECTRICAL CONNECTORS EIA-364

4.0 RATINGS

4.1 VOLTAGE

15 Volts DC

4.2 CURRENT

3.0 A Max.

4.3 TEMPERATURE

Operating Temperature Range: - 40°C to + 85°C Storage Temperature Range: - 40°C to + 85°C

REVISION:	ECR/ECN INFORMATION:			PRODUCT NO			SHEET No		
	EC No:			PRODUCT		RY	0.0		
A	DATE:	2012/09/03		NAME		CONNECTOR	र	2 OF 0	
DOCUM	IENT NUME	<u>BER:</u>	CRE	ATED / REVISE	ED BY:	CHECKED BY:	APPROV	ED BY:	
PS-BC-0071 Aller			Allen. Yang		Kenny. Chen	Devin.	Chen		



5.0 PERFORMANCE

ltem	Test Items	Requirement	Procedures
1	Examination of Product	Meets requirements of product drawing. No physical damage.	Specimens shall be investigated by 10x (or higher) microscope.

	Electrical Requirements										
2	Contact Resistance (LLCR)	20 milliohms Max(Initial)	Subject mated contacts assembled in housing to 20mV maximum open circuit at 100mA maximum. EIA 364-23;								
3	Insulation Resistance	1000 Mega Ohm Min.	After 500 VDC for 1 minute, measure the insulation resistance between the adjacent contacts of mated and unmated connector assemblies. EIA 364-21								
4	Dielectric Withstanding Voltage	No breakdown; current leakage < 5mA	Apply a voltage 500 V DC for 1 minute between adjacent terminals and between terminals to ground. EIA 364-20								
5	Current Rating	Temperature rise: 30°C Max.	Apply the rated current to connector, EIA 364-70								

				Ме	chanical	Rec	quirements				
·	6	Durabil	ty	△R: 10 (chang) milliohms M e from initial)	ax	Operation Speed: 500 cycles/hr. Durability Cycles: 5000 Cycles Check Point : 500 cycles (Compress pin until Maximum displacement) EIA 364-09.				
	7-1	Vibratic (Rando Simulat Operati	n m, e ng State)	△R: 10 (chang No electric discont than 1µ	D milliohms M e from initial) ctrical tinuity greater usec.	ax &	Subject mated connectors to 10-200-500 Hz traversed in 1minutes at 1.52mm amplitude for 0.5 Hour each of 3 mutually perpendicular planes.1.67Grms ELA 364-28: Test condition I				
	7-2	Vibratic (Rando Simulat Operati	n m, e Non- ng State)		0 milliohms M e from initial) ctrical tinuity greater usec.	ax &	Test subject mated connectors by below requirement. Frequency traversed in 1minutes at 1.52mm amplitude 10 minutes each of 3 mutually perpendicular planes. 6.06Grms Frequency (Hz) A.S.D (G^2/Hz) 20 0.0098 80 0.04 350 0.04 2000 0.0069				
RE	VISION	I: ECR		<u>MATION:</u>	PRODUCT NO		BTM46 SE	ERIES		SHEET No	
	Α	<u>EC N</u> DATE	<u>lo:</u> <u>2012</u>	/09/03	PRODUCT NAME		6 PIN BAT CONNEC	TEF TOF	१Y २	3 of 8	
	DOC P	CUMENT N	UMBER: 0071	CRE	ATED / REVISE	<u>ED BY:</u>	CHECKED BY: Kenny. Chen	<u>:</u> 1	APPROVI Devin. (ED BY: Chen	
							1		1		



ACRON PRODUCT SPECIFICATION

7-3	Vibration (Operating Sine State)	 △R: 10 milliohms Max (change from initial) & No electrical discontinuity greater than 1µsec. 	Test subject mated connectors by belowrequirement. Sweep rate:0.5 octave/min,3axes,3 sweeps/per axis.Frequency (Hz)Amplitude5-96-6 mm(P-P)9-2001.0 G200-5001.5 GEIA 364-28;				
8-1	Mechanical Shock (Simulate Operating State)	 △R: 10 milliohms Max (change from initial) & No electrical discontinuity greater than 1µsec. 	Accelerate Velocity: 490m/ s ² (50G) Waveform: 11ms Half-sine shock Velocity Change: 3.4m/s No. of Drops: 3 drops each to normal and reversed directions of X,Y and Z axes, totally 18 drops, passing 1mA current during the test. EIA 364-27;Test Condition C				
8-2	Mechanical Shock (Simulate Non- Operating State)	 △R: 10 milliohms Max (change from initial) & No electrical discontinuity greater than 1µsec. 	Accelerate Velocity: 4900m/ s ² (500G) Waveform: 2ms Half-sine shock Velocity Change: 3.4m/s No. of Drops: 3 drops each to normal and reversed directions of X,Y and Z axes, totally 18 drops, passing 1mA current during the test. EIA 364-27;Test Condition C				
9	Normal Force	1.5N Min. /pin	Apply a perpendicular force at 1.20mm from housing.				
10	Terminal Retention Force (in Housing)	500 gf/Pin Min.	Axial pullout force on the terminal and nail in the housing at a rate of 25 mm per minute. EIA 364-29				
10-1	Latch Retention Force (in Housing)	500 gf/Pin Min.	Axial pullout force on the terminal and nail in the housing at a rate of 25 mm per minute. EIA 364-29				
11	Pin compression strength for oblique insertion Test	500g / 20sec	Compress the contact pin of battery connector for tilt angle 45				
12	Fully compression	Appearance: no damage	compress connector to 0mm from housing by hand for 10sec				

REVISION:	ECR/EC	N INFORMAT	ION:	PRODUCT NO		BTM46	SERIES		<u>SHEET No</u>	
٨	EC No:			PRODUCT		6 PIN B	ATTER	Y	1 of 0	
A	DATE:	DATE: 2012/09/03		NAME		CONNECTOR			4 01 0	
DOCUN	IENT NUME	<u>BER:</u>	CRE	ATED / REVISE	<u>ED BY:</u>	<u>CHECKED</u>	BY:	APPROV	ED BY:	
PS-	BC-007	'1		Allen. Yang	g Kenny. Chen Devin.			Chen		



		Environment Re	quirements
13	Thermal Shock (Simulate Non- Operating State)	$\triangle R$: 10 milliohms Max. (change from initial) & Appearance: no damage	Place free situation samples in chamber with 10 cycles, and one duration is - $40^{\circ}C/(1.5h) \approx 85^{\circ}C/(1.5h)$. EIA-364-32
13-1	Static Humidity (Simulate Operating State)	$\triangle R$: 10 milliohms Max. (change from initial) & Appearance: no damage	Test mated connector in chamber and expose to a temperature of $60 \pm 2^{\circ}$ C with a relative humidity of 95% for 240 hours. Note: Remove surface moisture and air dry for 1 hour prior to measurements. EIA 364- 31
13-2	Static Humidity (Simulate Non- Operating State)	$\triangle R$: 10 milliohms Max. (change from initial) & Appearance: no damage	Place free situation samples in chamber and expose to a temperature of 70 ± 2°C with a relative humidity of 90% for 240 hours. Note: Remove surface moisture and air dry for 1 hour prior to measurements. EIA 364- 31
14	Solder ability	Solder coverage: 95 % MINIMUM	Dip solder tails into the molten solder(held at $245\pm5^{\circ}$ C for 3 ±0.5 sec. EIA 364-52
15	Solder Heat Resistance	Visual: No Damage to insulator material	Place connector o applicable P.C.B footprint and float on solder bath at 260±5 °C for 10±2 seconds. EIA 364-56; Refer to Fig.1
16	Salt Spray	$\triangle R$: 10 milliohms Max. (change from initial) & Appearance: no damage	Duration: 48 hours exposure; Atmosphere:salt spray from a 5% solution. Temperature: 35 +1/-2°C EIA 364-26
17	Heat Temperature Life (Simulate Operating State)	$\triangle R$: 10 milliohms Max. (change from initial) & Appearance: no damage	Simulate mated situation samples at 70°C for 240 hours. EIA 364-17
17-1	Heat Temperature Life (Simulate non- operating State)	$\triangle R$: 10 milliohms Max. (change from initial) & Appearance: no damage	Treat samples with 85°C for 240 hours EIA 364-17
18	Cold Temperature Life (Simulate Operating State)	$\triangle R$: 10 milliohms Max. (change from initial) & Appearance: no damage	Simulate mated situation samples at -20°C for 240 hours EIA 364-17

REVISION:	ECR/ECI	N INFORMAT				BTM46 SERIES	;	SHEET No		
Α	<u>EC No:</u> DATE:	2012/09/	PROE 03 NA		6 PIN BATTERY CONNECTOR					
DOCUMENT NUMBER: CR			CREATED /	ATED / REVISED BY: <u>CHECKED BY:</u> A			<u>APPROV</u> Devin.	ED BY: Chen		
		-			. rang Kenny: chen Devin. (



18-1	Cold Temperature Life (Simulate non- operating State)	 △R: 10 milliohms Max. (change from initial) & Appearance: no damage 	Treat samples with -40°C for 240 hours EIA 364-17
19	Resistance to Sulfuration	△R: 10 milliohms Max. (change from initial)	The connector shall be stored at a sulfuration gas ambience (H ₂ S 3±1ppm) temperature of 40±2°C and relative humidity of 75~ 80%RH for 24h continuously. After test, place room situation for 60 minutes. Refer to SS-00126-4 test standard.

6.0 PACKAGING

Parts shall be packaged to protect against damage during handling, transit and storage. See packaging appropriate drawings

7.0 RECOMMENDED REFLOW PROFILE





ACRON PRODUCT SPECIFICATION

8.0 TEST GROUPINGS

					Те	est (Grou	р					
Test Items		2	3	4	5	6	7	8	9	10	11	12	13
					Tes	t Se	que	nce					
1 Examination of product	1,8	1,12	1,9	1,8	1,10	1,10	1,10	1,6	1,6	1,6	1,6	1,3	1,3
2 Contact Resistance (LLCR)	2,7	3,11	3,8	3,7	3,9	3,9	3,9	2,5	2,5	2,5	2,5		
3 Insulation Resistance		4,10	4	4	4,8	4,8	4,8						
4 Dielectric Withstanding Voltage		5,9	7	6	5,7	5,7	5,7						
5 Current Rating													
6 Durability		7											
7-1 Vibration(Random,Simulate								4					
Non-Operating State)													
7-2 Vibration(Random,Simulate													
Non-Operating State)													
7-3 Vibration										Λ			
(Operating Sine State)										4			
8-1 Mechanical Shock	1										4		
(Simulate Operating State)	4										4		
8-2 Mechanical Shock													
(Simulate Non-Operating State)													
9 Normal Force	5	6,8											
10 Terminal Retention Force													
(in Housing)													
11 Pin compression strength for oblique insertion Test												2	
12 Fully compression													2
13 Thermal Shock			5										
13-1 Static Humidity			6										
(Simulate Operating State)			0										
13-2 Static Humidity				F									
(Simulate Non-Operating State)				5									
14 Solder ability													
15 Solder Heat Resistance	3	2	2	2	2	2	2	3	3	3	3		

REVISION:	ECR/EC	N INFORMAT	ION:	PRODUCT NO	CT BTM46 SERIES				SHEET No	
	EC No:			PRODUCT		6 PIN B	ATTER	Y	7 (0	
A	DATE:	2012/09/03		NAME		CONNECTOR			<i>i</i> of o	
DOCUM	IENT NUME	<u>BER:</u>	CRE	ATED / REVISE	<u>ED BY:</u>	<u>CHECKED</u>	BY:	APPROV	ED BY:	
PS-	BC-007	′ 1		Allen. Yang	g Kenny. Chen Devin.			Chen		



ACRON PRODUCT SPECIFICATION

16 Salt Spray					6								
17 Heat Temperature Life						c							
(Simulate Operating State)						0							
17-1 Heat Temperature Life													
(Simulate non-operating State)													
18 Cold Temperature Life							6						
(Simulate Operating State)							0						
18-1 Cold Temperature Life													
(Simulate non-operating State)													
19 Resistance to Sulfuration													
Sample Size	8	8	8	8	8	8	8	8	8	8	8	10	10

REVISION:	ECR/ECN INFORMATION:			PRODUCT NO		SHEET No				
•	EC No:			PRODUCT		6 PIN B	ATTER	Y	0 (0	
A	DATE: 2012/09/03		03	NAME		CONN	0 01 0			
DOCUM	IENT NUME	BER:	CRE	ATED / REVISE	ED BY:	<u>CHECKED</u>	BY:	APPROV	ED BY:	
PS-	BC-007	71		Allen. Yang		Kenny. C	hen	Devin.	Chen	
							·			