

ENGINEERING DEPT	PRODUCT SPECIFICATION	SPECNo: GS-BF-EN-xxx
	FOR BATTERY SERIES CONNECTOR	REV:A Page 1 of 6

W1.0 SCOPE

This Product Specification covers the Battery Series connector.

2.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

See sales drawings and other sections of this specification for the relevant reference documents. In cases where the specification different from the drawings, the drawings take precedence.

3.0 DESIGN AND CONSTRUCTION

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

4.0 MATERIALS

See attached drawings

5.0 RATINGS

Rated current: 0.5A max

Rated voltage: 30 V

Operating Temperature:-40 °C to +85°C

Storage Temperature: -5 °C to +80°C

APPROVED BY: Haiyong luo **CHECKED BY:** Nick yu **VERIFIED:** Andy

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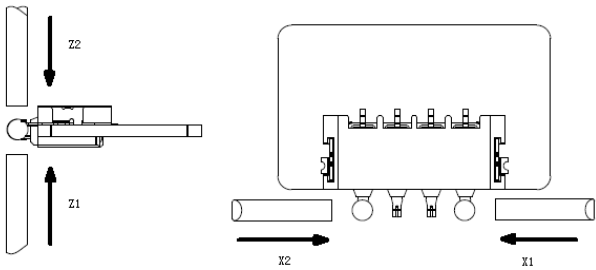
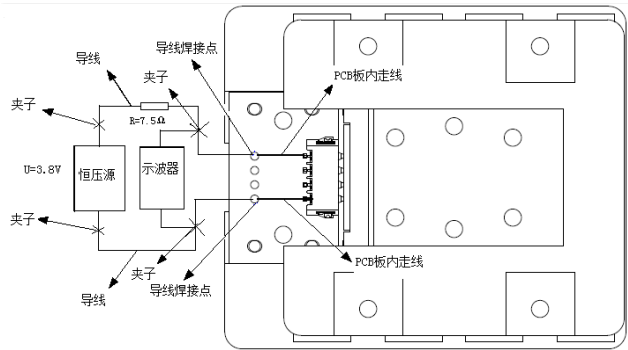
6. ELECTRICAL REQUIREMENTS

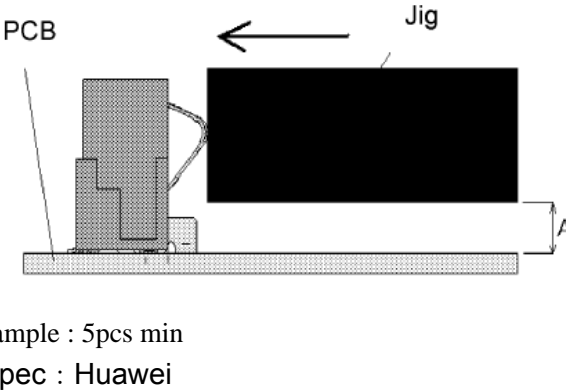
ITEM	DESCRIPTION	TEST CONDITIN	REQUIREMENT
6.1	Contact Resistance	Mate connectors with dry circuit(20mV,100mA Max)at minimum deflection 100mA;Spec: EIA-364-23B	Less than 30m Ω
6.2	Insulation Resistance	When applied DC 500V between adjacent terminal or ground Spec: EIA-364-21C	More than 1000M Ω
6.3	Dielectric strength	When applied AC 500V 1 minute between adjacent terminal Spec: EIA-364-23B	No change No flash over

7.MECHANICAL REQUIREMENT

ITEM	DESCRIPTION	TEST CONDITIN	REQUIREMENT
7.1	Durability	Operation Speed: 10 cycles/ Minute Durability Cycles: 5000 Cycle Down stroke : 1.2mm min sample : 10pcs min SPEC: Huawei	Contact Resistance 30m Ω Max No evidence of physical damage
7.2	Contact Normal Force	Separation is conducted between connector and battery. Down stroke 1.25, return forward force 120g min. 280g max Down stroke 0.95, return forward force 100g.min Down stroke 0.65, return forward force 80g. min Force displacement curve can not appear above the inflection point of 10g sample : 5pcs min Spec: Huawei	After pulling out 5000 Cycle, the forward power loss of the 3 stroke position is not more than 20%.
7.3	Contact Retention Force	Axial pullout force on the terminal in the housing at a rate of 25±3mm/Min per minute Spec: EIA-364-13B	1.50N /PIN Min. {150gf/pin. Min.}
7.4	Vibration	Solder connectors on PCB, subject to the following vibration conditions, for a period of 2 hours in each of 3 mutually perpendicular axes, passing DC 1mA Current during test. Amplitude: 1.52 mm P-P Sweep Frequency. : 10 – 55 – 10 Hz /min (Shall be traversed in 1 minutes) Spec: EIA-364-13B	No evidence of physical damage current discontinuity ≅ 50us

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7.5	Mechanical shock	<p>Solder connectors on PCB, subject to the following shock conditions, 3 shocks shall be period along 3 mutually perpendicular axis, passing DC 100mA current during the test. (Total of 18 shocks)</p> <p>Test Pulse: Half sinusoidal-Peak 400 m/s² (30G)</p> <p>Duration: 11m sec.</p> <p>sample : 5pcs min</p> <p>Spec : Huawei</p>	<p>No evidence of physical damage</p> <p>Meet the 7.2 normal stress test standards</p> <p>Contact Resistance 30m Ω Max current discontinuity ≅ 50us</p>
7.6	Shrapnel strength test	<p>Shrapnel under (Z1), (Z2), (X1), (X2) the destructive force of 4 directions, it will cause damage.</p>  <p>sample : 5pcs min</p> <p>Spec : Huawei</p>	<p>No evidence of physical damage</p> <p>Meet the 7.2 normal stress test standards</p> <p>Contact Resistance 30m Ω Max Positive position 0.2 MAX</p>
7.7	Drop test	<p>The test sample is fixed on the drop test bed, according to the 1.2m height, the 6 surface is dropped 3 times; Reference wiring method:</p>  <p>sample : 3pcs min</p> <p>Spec : Huawei</p>	<p>No evidence of physical damage</p> <p>Meet the 7.2 normal stress test standards</p> <p>Contact Resistance 30m Ω Max current discontinuity ≅ 50us</p>
7.8	Peel strength	<p>Fixed connector test base, respectively, from the 4 side of the PCB plane from the sides of the minimum external force (with a fixed PIN: in accordance with the 100N set; no fixed PIN: according to the 30N set), and stay for 10 seconds. A size is approximately the height of the 1/3 on the connector board, record the stroke and peel strength of compression and resilience.</p> <p>Test speed: 5mm/min</p>	<p>No evidence of physical damage</p>

7.8		 <p style="text-align: center;">sample : 5pcs min Spec : Huawei</p>	
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8. ENVIRONMENTAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITIN	REQUIREMENT										
8.1	Cold Resistance	Solder connectors on PCB ,expose to $-40\pm 3^{\circ}\text{C}$ for 48 hours. Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 of 2 hours, after which the specified measurements shall be performed.	No evidence of physical damage Contact Resistance 30m Ω Max										
8.2	Thermal Shock	Samples shall be placed in the test chamber with the test condition for 5 cycles <table border="1" style="margin: 10px auto; border-collapse: collapse;"> <tr> <td style="text-align: center;">Temperature ($^{\circ}\text{C}$)</td> <td style="text-align: center;">-55</td> <td style="text-align: center;">+25</td> <td style="text-align: center;">+85</td> <td style="text-align: center;">+25</td> </tr> <tr> <td style="text-align: center;">Time(minute)</td> <td style="text-align: center;">30</td> <td style="text-align: center;">5</td> <td style="text-align: center;">30</td> <td style="text-align: center;">5</td> </tr> </table> Spec: EIA 364-32A	Temperature ($^{\circ}\text{C}$)	-55	+25	+85	+25	Time(minute)	30	5	30	5	No evidence of physical damage Contact Resistance 30m Ω Max insulation resistance 1000M Ω min
Temperature ($^{\circ}\text{C}$)	-55	+25	+85	+25									
Time(minute)	30	5	30	5									
8.3	Humidity Life	Solder connectors on PCB, expose to $40\pm 2^{\circ}\text{C}$ with 90~95% RH for 96 hours. Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 of 2 hours, after which the specified measurements shall be performed. Spec: EIA-364-31B	No evidence of physical damage Contact Resistance 30m Ω Max insulation resistance 1000M Ω min										

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8.4	Temperature Life(Heat Aging)	Mated Connector 85°C , 96 hours Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 of 2 hours, Spec: EIA-364-17B.	No evidence of physical damage Contact Resistance 30m Ω Max
8.5	Salt Spray	The NaCl solution with a concentration of 5% at 35 C for 48 hours and then removed for 2 hours to dry. The concentration of the salt mist was 5% NaCl solution, and the solution was sprayed at 35 C for 8 hours, then removed for 16 hours to dry. (avoid condensation after brine flow through the holes into the internal hole of the contact position of the product can not be to clamp) sample : 10pcs min (After plugging 100 times) Spec:Huawei	No detrimental corrosion allowed Contact Resistance 30m Ω Max insulation resistance 1000M Ω min

ITEM	DESCRIPTION	TEST CONDITIN	REQUIREMENT
8.6	Solder ability	255°C±2°C. At 5±0.5sec Spec:J-STD-002B	No evidence of physical damage, Wet solder coverage: 95%
8.7	Resistance to soldering heat	<p>test condition for reflow soldering MIL-STD-202 F, Method 210 A</p>	No evidence of physical damage Flatness requirements 0.08mm high temperature, 0.10mm after high temperature

