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Powering Innovation

UT Series
Printed Batteries

Blue Spark Technologies' UT Series batteries represents Blue Spark's thinnest and most flexible printed power platform. Based on core technology sourced from Energizer, UT Series batteries are the ideal choice for applications requiring the thinnest and most flexible form factors.

Target Applications:

- Battery Assisted Passive RFID
- RF Sensors
- Interactive Printed Media
- Smart Packaging
- Medical Devices
- Powered Cards

Advantages

- Less than 500 micron (0.020") thickness
- Sealed cell construction allowing the battery to function effectively in severe environments
- Co-planar architecture allows easy attachment to the host device
- Proven battery chemistry that is environmentally friendly
- Thin flexible form factor
- Disposable
- Highly customizable - Custom options include: voltage, size, shape, capacity and polarity

Properties

Battery Type:	Carbon Zinc (primary cell - non-rechargeable)
Chemical System:	Zinc - Manganese Dioxide (Zn/MnO_2) (No Added Mercury or Cadmium)
Initial Voltage:	Multiples of 1.5 Volts (Actual Voltage: ≥1.6 Volts)
Peak Drain Current:	1 to 2 mA
Operating Temperature:	-30°C to 65°C (-22°F to 150°F)
Construction:	Sealed unit cell
Exterior Casing:	Polymer Laminate
Battery Terminals:	Carbon black ink
Environmentally Friendly:	No heavy metal components, such as Mercury, Lead or Cadmium

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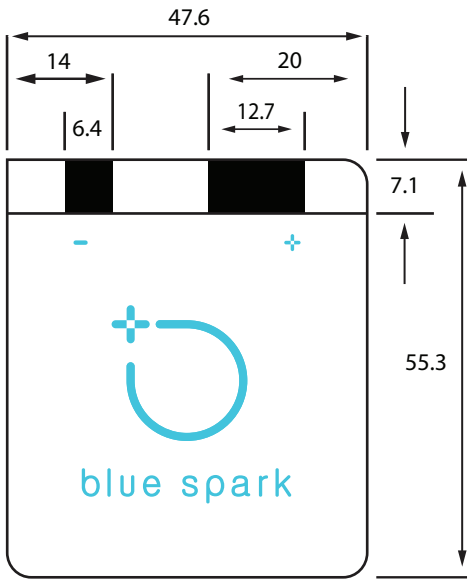
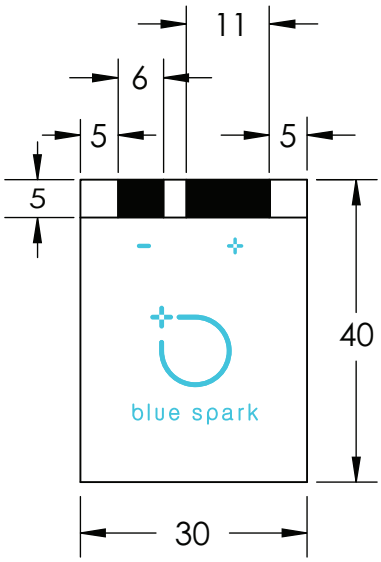
Product Line Matrix

Part Number	Voltage	Input Capacity[1]	Peak Drain Current[2]	Height mm (in)	Length mm (in)	Thickness microns (in)
101-UT1	1.5	20 mAh	1 - 2 mA	55 (2.17)	47 (1.87)	500 (0.020)
103-UT1	1.5	10 mAh	1 - 2 mA	40 (1.58)	30 (1.16)	500 (0.020)
104-UT1	1.5	37 mAh	1 - 2 mA	79 (3.10)	47 (1.87)	500 (0.020)
107-UT1	1.5	10 mAh	1 - 2 mA	63 (2.50)	26 (1.03)	500 (0.020)
113-UT3	3.0	5 mAh	1 - 2 mA	30 (1.2)	80 (3.15)	500 (0.020)

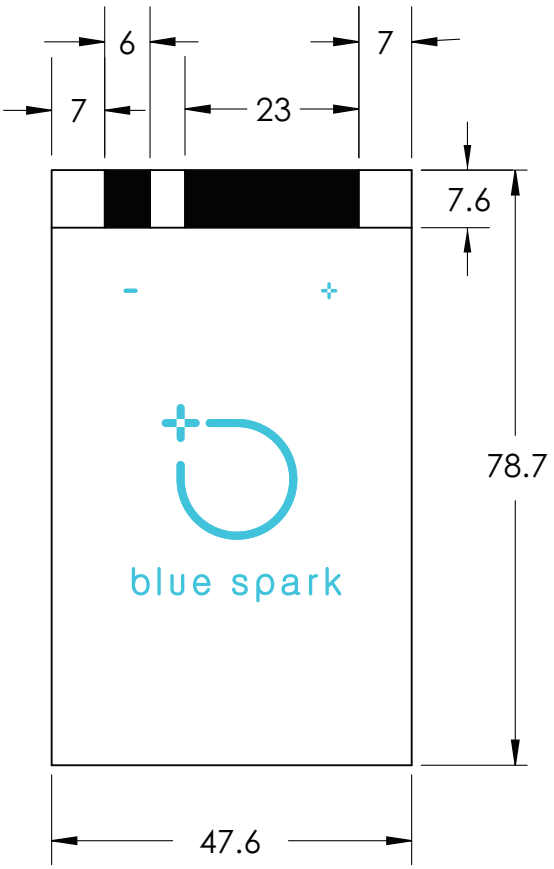
1 - Note: Total output capacity is dependent on operating conditions such as temperature, along with the size and duration of battery load. Detailed discharge and test data available on request. Actual performance varies by design.
2 - Note: May support higher peak current for short pulse load applications..



101-UT1



103-UT1



104-UT1

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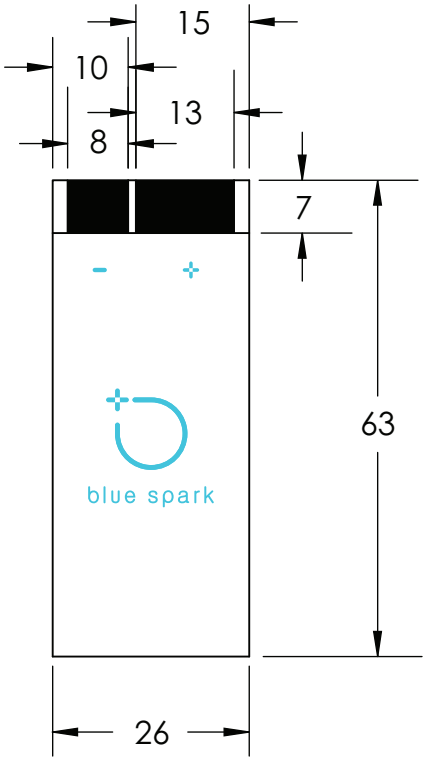
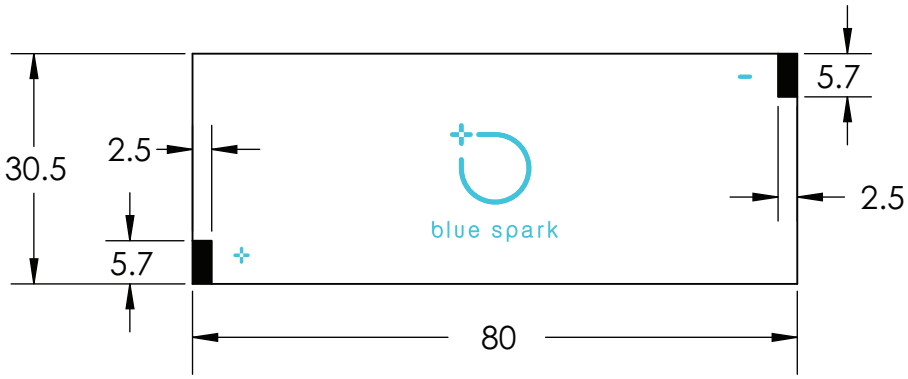


107-UT1



113-UT3

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BATTERY CHARACTERISTICS

Blue Spark Zinc-Manganese Dioxide batteries have an anode of zinc, a cathode of manganese dioxide, and a zinc chloride electrolyte. They provide an economical power source for devices requiring light to moderate drain because of the use of inexpensive materials and time proven printing / converting techniques. The open circuit voltage of a fresh Blue Spark battery is typically over 1.6 volts.

The Blue Spark battery is similar to household batteries in several respects. The closed circuit voltage declines gradually as a function of the depth of discharge. The capacity is not a fixed number of milliampere hours because the battery functions at different efficiencies depending upon the conditions imposed upon it. The service varies with current drain, operating schedule, and cutoff voltage. The battery is also affected by the operating temperature and storage conditions. Users should test for suitability and performance under actual operating conditions. Optimum performance is achieved by following the handling and use recommendations listed below.

HANDLING AND USE RECOMMENDATIONS

Storage and Shelf Life:
Store in a cool, non-condensing, well ventilated area. Elevated storage temperatures will result in shortened battery life. Conversely, storage of this battery at temperatures below 21°C will increase its shelf life. While freezer storage (-20°C) of a Blue Spark zinc-manganese dioxide battery is not harmful, storage at 0°C to 5°C is effective and will prolong useful battery life. At room temperature (21°C) the battery will provide 75% of its capacity after three years storage.

Handling:
Accidental short circuit for a few seconds will not seriously affect the battery. Prolonged short circuits will cause the battery to loose energy.

Charging:
This battery is manufactured in a charged state. It is not designed for recharging. NOTE: RECHARGING CAN CAUSE BATTERY LEAKAGE AND FAILURE.

Disposal:
Dispose in accordance with all applicable national, state and local regulations.

NOTICE

Information presented in this product data sheet is considered reliable, but conditions and methods of use, which are beyond our control, may modify results. Specifications subject to change without notice. Before adopting our products for commercial use the user should confirm their suitability. In no case should recommendations or suggestions for the use of our products be understood to sanction violation of any patent. BLUE SPARK TECHNOLOGIES, INC. MAKES NO REPRESENTATION OR WARRANTIES, EXPRESSED OR IMPLIED, CONCERNING THE SUITABILITY OF THESE PRODUCTS FOR USE IN IMPLANTATION IN THE HUMAN BODY OR IN CONTACT WITH INTERNAL BODY FLUIDS OR TISSUES, OR FOR ANY OTHER USE. These products are not designed or
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