CeraCharge™

Battery in energy harvesting applications (Beacon)
CeraCharge™ as battery in energy harvesting applications (Beacon)

- **Beacon**: Stand alone systems that collect and broadcast data using for that, **harvested energy**
- **CeraCharge™**: is the ideal storage media to support the modern IC technology (MPUs, sensors)
  Those ICs are extremely **low energy demanding** and require **long operation lifetime**
- Smart home, medical and **Industry 4.0** are driving the demand on Beacon systems

### Features and benefits
- Miniaturized (SMD EIA1812) and maintenance free battery
- High number of cycles >1000
- Compatible with BLE 4.0 ICs
- Easy SMD mounting
- RoHs-conform

### Key questions
- Number of pulses between charges?
- Pulse current and pulse duration?
- Lifetime?

### Specifications
- **Nominal voltage**: 1.5 V
- **Operating voltage**: 0 to 1.6 V_{op}
- **Nominal capacity**: 100 µAh
- **Max. pulse capability**: 5 mA
- **Operating temperature**: -20 to +80 °C
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### Topology

- **Solar cell**
- **Piezo**
- **Thermoelectric**

### Circuit example

- **Solar cell**
  - BCS4630B9 (TDK)
  - VDD, VSTORE2, VSTORE1
  - PMIC Vout setting: e.g. 1.62 V ~ 3.24 V

- **CeraCharge™ unit**
  - e.g. 2S2P with 1 Meg R
  - BLE CYBLE-022001-00 (Cypress Semiconductor)

- **EDLC**
  - EDLC041720-050-2F-13 (TDK)

- **PMIC**
  - S6AE103A (Cypress Semiconductor)

- **Sensor**
- **MCU**
- **BLE**
- **Temperature & humidity sensor**

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