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 harvested energy.
- **CeraCharge™**: 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<sub>op</sub>
- **Nominal capacity**: 100 µAh
- **Max. pulse capability**: 5 mA
- **Operating temperature**: -20 to +80 °C
CeraCharge™ as battery in energy harvesting applications (Beacon)

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**Topology**

- Solar cell
- Piezo
- Thermoelectric

**Circuit example**

- **Solar cell**: BCS463089 (TDK)
- **CeraCharge™ unit**: e.g. 2S2P with 1 Meg R
- **EDLC**: EDLC041720-050-2F-13 (TDK)
- **PMIC**: S6AE103A (Cypress Semiconductor)
- **BLE**: CYBLE-022001-00 (Cypress Semiconductor)
- **Application**: BLE CYBLE-022001-00 (Cypress Semiconductor)

**PMIC Vout setting**: e.g. 1.62 V ~ 3.24 V