

# EnerCera®

Expand what's possible:

**Smaller, Lighter, Thinner**

## Rechargeable Lithium-ion Battery



Thickness : 1.3 - 2mm  
Weight : Less than 1g - 3g



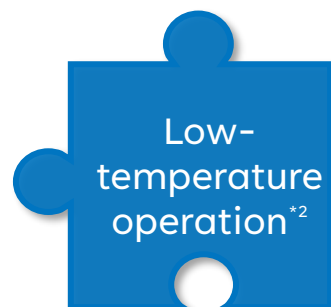
Thickness : 0.45mm  
Weight : Less than 1g



High  
safety<sup>\*1</sup>



Heat  
resistance<sup>\*2</sup>



Low-  
temperature  
operation<sup>\*2</sup>

\*1 At least certified by UN38.3 and IEC62133-2. \*2 Operating temp.: Depending on the part number, it can be used at -40°C, 105°C.

The electrolyte is in such a small amount that even if pierced with a nail, it will not ignite. This is a highly safe battery that you can use and wear without putting strain on the body.

With a thickness of 0.45mm and a weight of less than 1g, the lightweight **EnerCera Pouch** can be used in wearable devices and card-type devices without burdening the body!

The **EnerCera Coin**, with its high heat resistance and excellent float resistance, is ideal for backup power supplies.

EnerCera, with its various features, enhances product value!

Check the special website for lots of information!

[Contents]

- User guide
- Mounting method
- Use cases
- Reference electronic circuits
- Power supply IC
- Solutions for energy harvesting



<https://enercera.ngk-newvalue.com/en>

## Lineup

| Model Number                            |                                 | EnerCera <sup>®</sup> Pouch   |   |                 | EnerCera <sup>®</sup> Coin   |                               |
|---|---------------------------------|---|---|-----------------|--|-------------------------------|
|   |                                 | EC382704P-T   | EC382704P-Hr                                | ET382704P-H     | ET2016C-R  | ET1210C-H                     |
|   |                                 | <ul style="list-style-type: none"> <li>• Ultra thin (thickness: 0.45mm) and can be embedded in IC card by hot lamination process</li> <li>• Large current output (several 100mA)</li> </ul> |   |                 | <ul style="list-style-type: none"> <li>• Reflow soldering applicable (ET1210C-H)</li> <li>• No current control required</li> </ul> |                               |
| Features                                |                                 | High Power  | High heat resistance*1                      | Fast charging*2 | Reflow soldering unapplicable*3  | Reflow soldering applicable*4 |
| Point                                   |                                 | -   |   |                 | No current control required<br>Excellent float resistance and over-discharge resistance  |                               |
| Dimensions/Diameter (Without terminals) |                                 | 38 × 27mm   |   |                 | 20mm   | 12.5mm                        |
| Thickness (With terminals)              |                                 | 0.45mm  |   |                 | 2.05mm   | 1.3mm                         |
| Bendability                             |                                 | Conforming to ISO/IEC 10373-1 standard<br>No deterioration after bending and torsion tests  |   |                 | -  |                               |
| Nominal Capacity                        |                                 | 27mAh (4.3V)<br>24mAh (4.2V)  | 20mAh                                       | 20mAh           | 25mAh  | 4mAh                          |
| Nominal Voltage                         |                                 | 3.8V  |   |                 | 2.3V   |                               |
| Charge                                  | Charging Method                 | Constant Current (CC) –<br>Constant Voltage (CV) charging   |   |                 | Constant Voltage (CV) charging<br>(No current control required)  |                               |
|   | Charging Voltage                | 4.3V<br>4.2V  | 4.2V  | 2.7V            |  |                               |
|   | Standard Charge Current         | 13.5mA (4.3V)<br>12.0mA (4.2V)  | 10mA  | -               |  |                               |
| Discharge                               | End Voltage                     | 3.0V  |   |                 | 1.5V   |                               |
|   | Standard Discharge Current*5    | 27mA (4.3V)<br>24mA (4.2V)  | 10mA  | 40mA            | 2.5mA  | 0.8mA                         |
|   | (Ref.) Peak Discharge Current*6 | 560mA   | 130mA                                       | 300mA           | 60mA   | 20mA                          |
| Operation temperature                   |                                 | Discharge: -20°C~45°C<br>(Charge: 0°C~45°C)   | Discharge: -20°C~60°C<br>(Charge: 0°C~60°C) | -40°C~70°C      |  | -20°C*7~105°C                 |

\*1 Compatible with hot lamination for IC card manufacturing.

\*2 Can be charged from 0% to 80% capacity in 14min.

\*3 Applicable type under development.

\*4 Recommended conditions Max.240°C x 1 time.

Please check the user guide for details.

\*5 Current with which nominal capacity can be used

\*6 Voltage drop is less than 0.5V with continuous discharge for 0.1 sec. (at 25 °C)

\*7 From -40°C to 105°C for RTC backup applications.

IEC62133-2 certified.  
Contents may be changed without notice.

## Contact



Sales Department  
Electronic Devices Division  
Digital Society Business Group  
[enercera-sales@ngk.co.jp](mailto:enercera-sales@ngk.co.jp)

Corporate site

