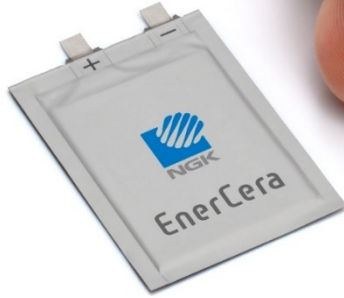
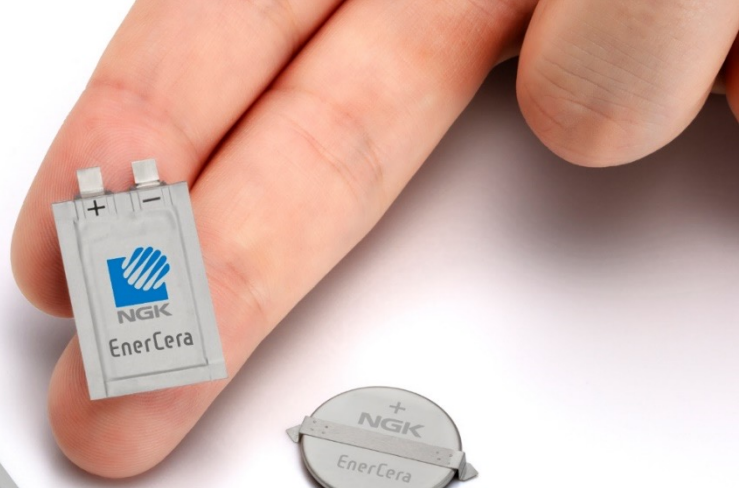


EnerCera[®]

Rechargeable Li-ion Batteries



EnerCera[®] Pouch

- Ultra thin and bendable pouch type cell (0.45mm thick)
- Can be embedded in IC cards by hot lamination process
- High current output (several 100 mA)

EnerCera[®] Coin

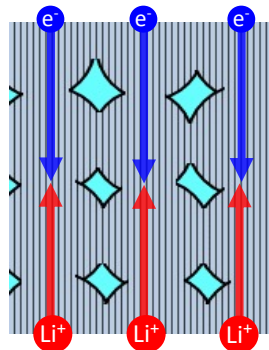
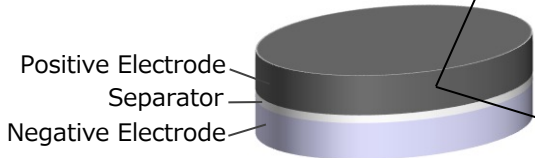
- Heat resistant coin type cell (Operating temperature up to 105°C)
- Can be mounted on board by Reflow Soldering
- High current output (several 10 mA)

NGK's Key Technology

Semi-Solid State Battery

Small amount of electrolyte is immersed into the crystal oriented ceramic plate

⇒ High heat resistance



Cross-sectional view of positive electrode

Crystal Oriented Ceramic Electrode Plate

Formed only with active material by sintering

⇒ Li-ion move smoothly inside NGK Ceramic Electrode Plate

Electrolyte








- ✓ High Energy Density
- ✓ High Heat Resistance
- ✓ Low Internal Resistance
- ✓ Long Life

Surprising Ceramics.

 **NGK INSULATORS**

EnerCera[®] Pouch

New!
Coming soon

Model Number	EC382704P-T	EC382504P-P	EC382704P-C	EC382204P-C	EC302304P-C	EC382704P-H	ET271704P-H
Appearance							
Dimensions	38 x 27mm	38 x 25mm	38 x 27mm	38 x 22mm	30 x 23mm	38 x 27mm	27 x 17mm
Thickness	0.45mm						
Nominal Capacity (Charging Voltage)	27mAh (4.3V) 24mAh (4.2V)	20mAh (4.2V)	27mAh (4.3V) 24mAh (4.2V)	20mAh (4.3V) 18mAh (4.2V)	15mAh (4.3V) 14mAh (4.2V)	20mAh (4.2V)	5mAh (2.7V)
Nominal Voltage	3.8V						2.3V
Charging Condition	Constant current (CC) - Constant Voltage (CV) charging						CV charging
(Ref.) Peak Discharge Current*1	560mA	500mA	260mA	200mA	130mA	130mA	100mA
Bendability	Conforming to ISO 14443-1 standard No deterioration after bending and torsion tests						
Operation Temp.	Discharge : -20°C ~ 45°C (Charge : 0°C~45°C)					Discharge : 20°C~60°C (Charge : 0°C ~ 60°C)	-40 ~ 70°C
Heatproof Temp. (in process)	80°C					135°C	
Features	High Power		High capacity			High heat resistance	Fast charging*2




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

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

IEC62133 certified

Contents may be changed without notice.

EnerCera[®] Coin

Model Number	ET2016C-R	ET1210C-H	ET2016C-H
Appearance			
Size	Φ20 x 1.6mm	Φ12.5 x 1.0mm	Φ20 x 1.6mm
Nominal Capacity (2.7V charge)	25mAh	4mAh	20mAh
Nominal Voltage	2.3V		
Charging Condition	Constant Voltage (CV) charging (No current control required)		
(Ref.) Peak Discharge Current*1	60mA	20mA	45mA
Operation Temp.	-40°C ~ 60°C	-20°C*2 ~ 105°C	
Implementation specifications	Reflow soldering applicable*3		

125°C type
Under development

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

*2 -40°C to 105°C for RTC backup applications.

*3 Please check with us for the conditions.

IEC62133 certified

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