

Coin-type Lithium Batteries for High Temperature

Panasonic Energy Co.,Ltd.

Coin-type Lithium batteries for High Temperature

High performance available under severe conditions

■ Value Proposition

- 1) Enables to use for automotive applications under severe conditions
- 2) Stable output for a long time by technologies preventing swollen batteries
- 3) Wide lineup of sizes and operating temperatures

■ Panasonic Original Technique

- 1) Original negative electrode surface treatment technology to maintain high voltage under low temperatures
- 2) Maintains the sealing property inside battery by heat-resistant gasket
- 3) Prevents gas evolution at high temperatures by original electrolyte formulation

Panasonic
Only

Benchmark

Item \ Product	Panasonic CR coin type for high temperature	Panasonic CR standard battery	Panasonic BR battery	A company CR battery for high temperature
High temperature storage	○ 125°C	× 85°C	◎ 125°C	○125°C (短期)
Discharge characteristics under low temperatures	◎ -40°C	△ -30°C	○ -40°C	○-40°C
Material price	○	◎	△	○

Application

- TPMS
- ETC
- Automotive electric components
- IoT applications using outdoor etc.

Schedule

Mass
Production

Before

CR series coin-type lithium battery

Limited operating temperature range
(-30°C~85°C)



Insufficient performance
required for automotive
applications



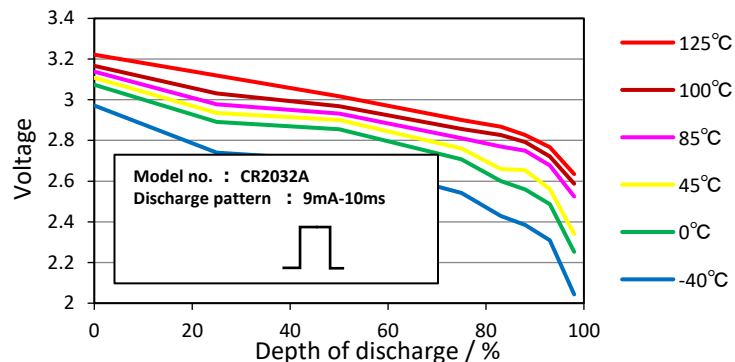
After

CR series coin-type lithium battery for high temperature

2032/2050 size : -40~125°C

2450 size : -40~105°C (Under development of 125°C product)

◎ Enables to use from low to high temperatures

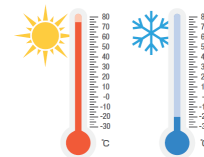


◎ Heat-resistant technology by original electrolyte formulation

◎ Highly improved low temperature characteristics by surface treatment technology of negative electrode

Comparison of Coin-type Lithium Batteries temperature range

Coin-type lithium batteries for high temperature enable to operate from low to high temperatures required for automotive applications

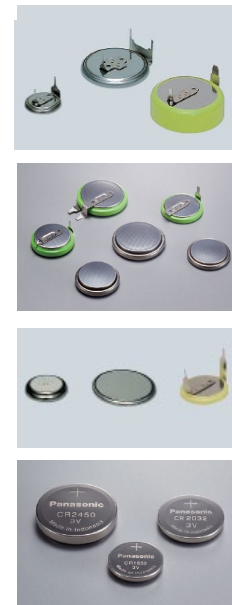
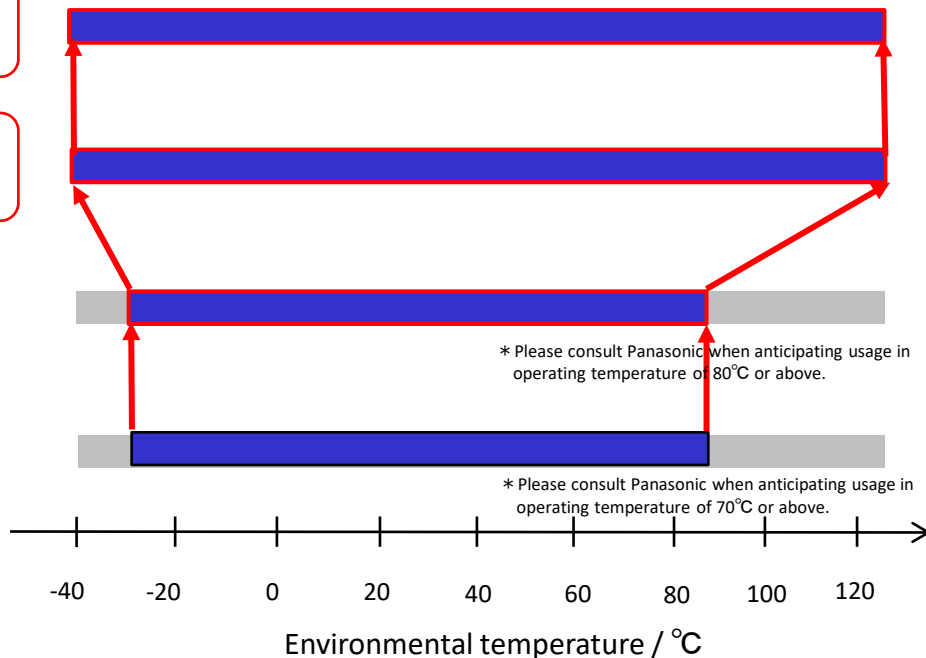


BR series coin-type lithium batteries for high temperature

CR series coin-type lithium batteries for high temperature

BR series coin-type lithium batteries

CR series coin-type lithium batteries



Comparison of CR series and BR series Coin-type Lithium Batteries for High Temperature Panasonic ENERGY

		BR Series	CR Series
Material	Positive electrode	Poly-carbonmonofluoride (CF) _n	Manganese dioxide MnO ₂
	Negative electrode	Lithium	
	Electrolyte	Organic electrolyte	
Characteristic	Discharge capacity	BR ≐ CR	
	Sustaining voltage during discharge	BR < CR (~50%DOD : Higher)	
	Load characteristic	BR < CR (~50%DOD : Better)	
	Long-term usage	(Stable) BR > CR	
	Storage characteristic (Storage deterioration) < 60°C > 60°C	(Stable) BR ≧ CR (Stable) BR > CR	
Merit		Achieves long-term usage and excellent storage characteristics under high temperature.	CR maintains high voltage during discharge and achieve excellent discharge characteristic

Lineup of Coin-type Lithium batteries for High Temperature Panasonic ENERGY

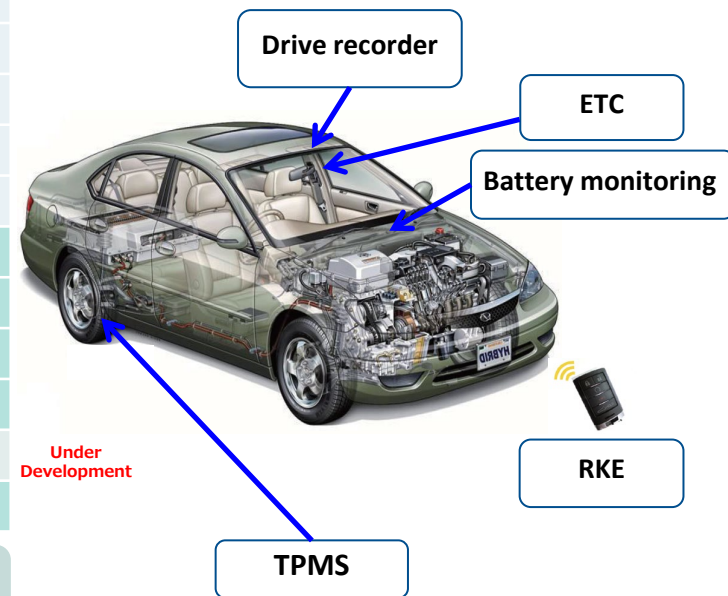
Lineup

Model No.	Nominal voltage (V)	Nominal capacity (mAh)	Continuous drain (mA)	Diameter (mm)	Height (mm)	Mass 約 (g)	Operating temperature range (°C)
BR1225A	3	48	0.03	12.5	2.5	0.8	-40 ~ 125
BR1632A	3	120	0.03	16.0	3.2	1.5	-40 ~ 125
BR2330A	3	255	0.03	23.0	3.0	3.2	-40 ~ 125
BR2450A	3	550	0.03	24.5	5.0	4.9	-40 ~ 125
BR2477A	3	1000	0.03	24.5	7.7	7.9	-40 ~ 125
CR2032A	3	210	0.2	20.0	3.2	3.0	-40 ~ 125
CR2032B	3	210	0.2	20.0	3.2	3.0	-40 ~ 120
CR2050A	3	345	0.2	20.0	5.0	4.1	-40 ~ 125
CR2050B2	3	345	0.2	20.0	5.0	4.1	-40 ~ 120
CR2450A	3	550	0.2	24.5	5.0	6.2	-40 ~ 125
CR2450B	3	560	0.2	24.5	5.0	6.2	-40 ~ 105

NEW

Underdevelopment of CR series 2450 size 125°C product

Applications



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Please feel free to contact us

Panasonic Energy Lithium Batteries HP

<https://industrial.panasonic.com/ww/products/pt/lithium-batteries>

Panasonic ENERGY

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