

# Primary Lithium Batteries



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Panasonic Energy Co., Ltd.



## 1. Wide product range

Panasonic offers a wide range of Primary Lithium Batteries which meet your requests such as main battery for small devices, backup battery for emergency, etc

## 2. High quality based on many years of production

Over 40 years of technical development and manufacturing experiences

## 3. Excellent durability under severe conditions

Superior characteristics in a wide temperature range, and long term reliability suitable for outdoor devices(e.g. meters) which are difficult to maintain for a long time

# Market Sectors

✓ Primary Lithium Batteries are used in various industries such as automotive, infrastructure and IoT

## Automotive



RKE



TPMS



eCall



## Infrastructure



Gas/Water meters



Fire alarms



AED



Manufacturing Machine



## IoT



Construction machinery



Agricultural machinery



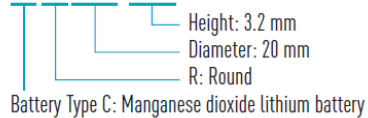
Water level sensor



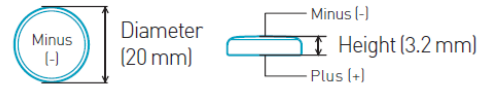
Primary Lithium Batteries (Non-chargeable)	Coin-type Lithium Batteries	CR Series (Manganese Dioxide Lithium Batteries)
		BR Series (Poly-carbonmonofluoride Lithium Batteries)
	Cylindrical-type Lithium Batteries	CR Series (Manganese Dioxide Lithium Batteries)
		BR Series (Poly-carbonmonofluoride Lithium Batteries)
	Pin-type Lithium-ion Batteries	BR Series (Poly-carbonmonofluoride Lithium Batteries)

Example Lithium  
Battery Model-Number  
Composition  
(Coin Type)

Example: **CR2032**



Size



# CR series Primary Lithium Batteries



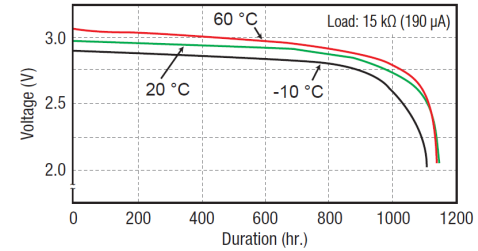
## Features

- High rate pulse discharge
- Wide lineup from thin-type to high-drain models
- Excellent low-temperature performance enhanced by manganese-dioxide positive pole

## Applications

RKE, memory backup, security price tag, etc

■ Discharge temperature characteristics (e.g. CR2032)



Model No.	Nominal voltage (V)	Nominal capacity (mAh) <sup>*1</sup>	Continuous drain (mA)	Dimensions (mm)		Mass (g)	Operating temperature range <sup>*2</sup>	
				Diameter	Height			
CR1025	3	30	0.1	10.0	2.5	0.6	-30 °C to 85 °C	
CR1216		25		12.5	1.6	0.7		
CR1220		35		12.5	2.0	0.9		
CR1616		55		16.0	1.6	1.0		
CR1620		75		16.0	2.0	1.3		
CR1632		140		16.0	3.2	1.9		
CR2012		55		20.0	1.2	1.4		
CR2016		90			1.6	1.6		
CR2025		165			2.5	2.3		
CR2032		225			3.2	2.8		
CR2330		265			23.0	3.0		3.7
CR2354		560				5.4		5.7
CR2412		100				1.2		2.0
CR2450		620				5.0		6.2
CR2477		1,000			24.5	7.7		10.5
CR3032		500				30.0		3.2

\*1. Nominal capacity shown above is based on standard drain and cutoff voltage down to 2.0V at 20°C

\*2. Please consult Panasonic when anticipating usage in operating temperature of 70°C or above.

# CR series Primary Lithium Batteries for High Temperature



## Features

- Superior discharge characteristics
- Enables to use in high temperature(Max. 125°C)

## Applications

TPMS, ETC, meters(hot water, electricity), etc

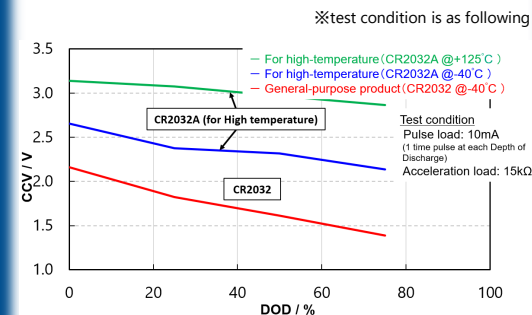
Model No.*1	Nominal voltage (V)	Nominal capacity (mAh)*2	Continuous drain (mA)	Dimensions (mm)		Mass (g)	Operating temperature range
				Diameter	Height		
CR2032A	3	210	0.2	20.0	3.2	3.0	-40 °C to 125 °C
CR2032B					3.0		-40 °C to 120 °C
CR2050A		5.0		345	4.1	6.2	-40 °C to 125 °C
CR2050B2							-40 °C to 120 °C
CR2450B							-40 °C to 105 °C

\*1. Tabbed type batteries only

\*2. Nominal capacity shown above is based on standard drain and cutoff voltage down to 2.0V at 20°C

Deliver excellent discharge characteristics in a wide range of temperature

Enables to use from low to high temperature  
**-40 to 125°C**



# BR series Primary Lithium Batteries



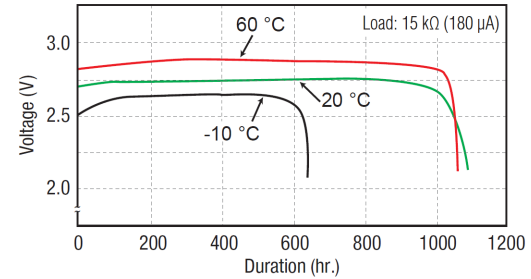
## Features

- BR series developed with exclusive Panasonic technology
- Exhibits stable performance after long periods in storage due to low self discharge characteristics
- Suitable for backup power in low drain applications

## Applications

Commercial equipment (communication/measurement devices), electricity meters, memory backup, ETC, etc

■ Discharge temperature characteristics (e.g. BR2032)

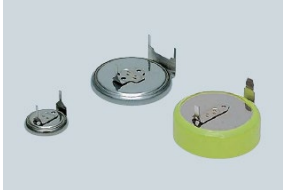


Model No.	Nominal voltage (V)	Nominal capacity (mAh)*1	Continuous drain (mA)	Dimensions (mm)		Mass (g)	Operating temperature range*2	
				Diameter	Height			
BR1220	3	35	0.03	12.5	2.0	0.7	-30 °C to 85 °C	
BR1225		48			2.5	0.8		
BR1632		120			16.0	1.5		
BR2032		200			20.0	2.6		
BR2325		165			23.0	2.5		3.0
BR2330		255				3.0		3.2
BR3032		500			30.0	3.2		5.7

\*1. Nominal capacity shown above is based on standard drain and cutoff voltage down to 2.0V at 20°C

\*2. Please consult Panasonic when anticipating usage in operating temperature of 80°C or above.

# BR series Primary Lithium Batteries for High Temperature



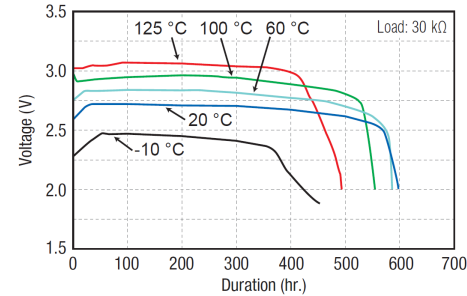
## Features

- In addition to the appeal of normal BR series, this batteries can operate in temperature up to 125° C

## Applications

TPMS, ETC, meters(gas, water), memory backup, etc

■ Discharge temperature characteristics(e.g. BR1225A)



Model No.*1	Nominal voltage (V)	Nominal capacity (mAh)*2	Continuous drain (mA)	Dimensions (mm)		Mass (g)	Operating temperature range
				Diameter	Height		
BR1225A	3	48	0.03	12.5	2.5	0.8	-40 °C to 125 °C
BR1632A		120		16.0	3.2	1.5	
BR2330A		255		23.0	3.0	3.2	
BR2450A		550		24.5	5.0	4.9	
BR2477A		1,000		24.5	7.7	7.9	

\*1. Tabbed type batteries only

\*2. Nominal capacity shown above is based on standard drain and cutoff voltage down to 2.0V at 20°C



# CR series Primary Lithium Batteries (Standard Type)



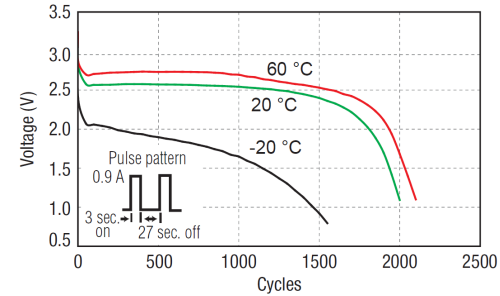
## Features

- Offer super high rate discharge, and suitable for cameras, lights, etc.
- Also available in the consumer market

## Applications

Lights, Security devices(door lock, fire alarms), eCall, AED etc

## ■ Discharge temperature characteristics(e.g. CR123A)



Model No.	Nominal voltage (V)	Nominal capacity (mAh)*1	Continuous drain (mA)	Dimensions (mm)			Mass (g)	Operating temperature range*3
				Diameter	Height			
CR2	3	850	20	15.6	27.0		11	-40 °C to 70 °C
CR123A		1,550		17.0	34.5			
Model No.	Nominal voltage (V)	Nominal capacity (mAh)*2	Continuous drain (mA)	Length	Width	Height	Mass (g)	Operating temperature range*3
2CR5	6	1,550	20	34.0	17.0	45.0	38	-40 °C to 70 °C
CR-P2				35.0	19.5	36.0	37	

\*1. Nominal capacity shown above is based on standard drain and cutoff voltage down to 2.0V at 20°C

\*2. Nominal capacity shown above is based on standard drain and cutoff voltage down to 4.0V at 20°C

\*3. Please consult Panasonic when anticipating usage in operating temperature -40 to -20°C, or 60 to 70°C.

# CR series Primary Lithium Batteries (Long-life Type)



## Features

- Superior discharge characteristics and long-life
- Suitable for power of automotive devices due to superior low temperature discharge characteristics and compact design

## Applications

Security devices(door lock, fire alarms), automotive electric components(tracking system, security alarms), meters(gas, water), AED, etc

Model No.*1	Nominal voltage (V)	Nominal capacity (mAh)*2	Continuous drain (mA)	Dimensions (mm)		Mass (g)	Operating temperature range*3	
				Diameter	Height			
CR-AGZ	3	2,700	2.5	17.0	45.5	23	-40 °C to 85 °C	
CR-AG		2,400			22			
CR-2/3AU		1,600		33.5	15.6	27.0		11
CR-2/3AZ								
CR2Z		1,000		100	14.5	50.5		18
CR2U		1,800						
CR-AAU		1,650						
CR-AAK								

NEW

- \*1. provided with terminals or lead wire and connectors
- \*2. Nominal capacity shown above is based on standard drain and cutoff voltage down to 2.0V at 20°C
- \*3. Please consult Panasonic when anticipating usage in operating temperature of 70°C or above.
- \*4. Mass production from January 2022

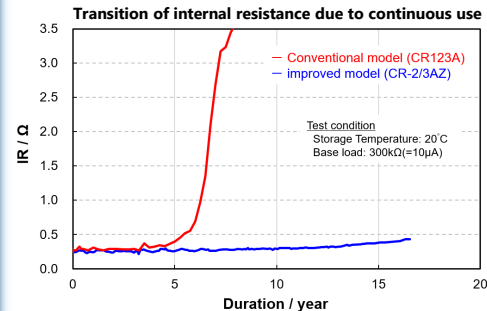
**Achieve long time reliability and superior discharge characteristics**

Conventional model:  
**less than 5 years**



Improved model:  
**More than 10 years**

\*Test condition is as followings



# BR series Primary Lithium Batteries



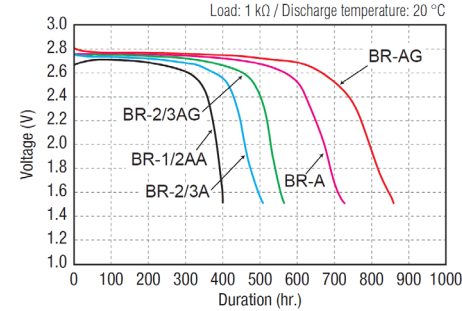
## Features

- Suitable for backup battery of metering devices due to superior long-storage life

## Applications

Commercial equipment (communication/measurement devices), meters (gas, water), memory backup (manufacturing machine), automotive electric components (security alarms), etc

## Example of discharge characteristic



Model No.*1	Nominal voltage (V)	Nominal capacity (mAh)*2	Continuous drain (mA)	Dimensions (mm)		Mass (g)	Operating temperature range
				Diameter	Height		
BR-1/2AA	3	1,000	2.5	14.5	25.5	8	-40 °C to 100 °C
BR-2/3A		1,200			17.0		
BR-2/3AG		1,450		45.5		18	
BR-A		1,800					
BR-AG		2,200		50.5		41	
BR-C		5,000	26.0		50.5		

\*1. provided with terminals or lead wire and connectors

\*2. Nominal capacity shown above is based on standard drain and cutoff voltage down to 2.0V at 20°C

# Pin-type Primary Lithium Batteries



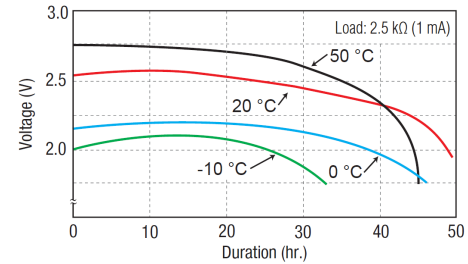
## Features

- Panasonic original design
- Enable to generate power for LED lights

## Applications

Electric fishing-float light, small transmitters, etc

## Discharge temperature characteristics(e.g. BR435)



Model No.	Nominal voltage (V)	Nominal capacity (mAh)*1	Continuous drain (mA)	Dimensions (mm)		Mass (g)	Operating temperature range
				Diameter	Height		
BR425	3	25	0.5	4.2	25.9	0.5	-30 °C to 80 °C
BR435		50	1.0		35.9		

\*1. Nominal capacity shown above is based on standard drain and cutoff voltage down to 2.0V at 20°C

# About Terminals

- ✓ Panasonic offers a variety of tab terminals to meet your requests.
- ✓ Please note that it will be a customized solution if you need another tab terminal which is not shown on the website.



Please feel free to contact us

[Panasonic Energy Website for Business Products](#)

