

INTOTEL OY

SPECIFICATION
LITHIUM BATTERY
BR435

MATSUSHITA BATTERY INDUSTRIAL CO., LTD.
LITHIUM AND MICRO BATTERY BUSINESS UNIT



S P E C I F I C A T I O N

Lithium Battery BR435 [Li/(CF)n]

1. Model No. : BR435
2. Nominal Voltage : 3 V
3. Nominal Capacity : 50 mAh
4. Recommend Drain : < 1mA
5. Approx. Weight : 0.85g
6. Dimensions : Shown in Figure
7. Terminal : + Case , - Pin
8. Characteristics :

- 1) Off-Load Voltage : Shown in Table
- 2) Internal Resistance : Shown in Table
- 3) Discharge Duration : Shown in Table
- 4) Temperature Range : -20°C to +60°C

Please contact us if you use the battery consecutively at high temperature.

- 5) Leakage :
Battery shall be tested under the leakage test condition(Shown in Figure).
After conducting 42-time cycles test, there should be no sign of electrolyte leakage. It is checked with naked eyes.

9. Appearance :
Any dirt, scratch or deformation which cause any trouble at usage, does not show on the battery.

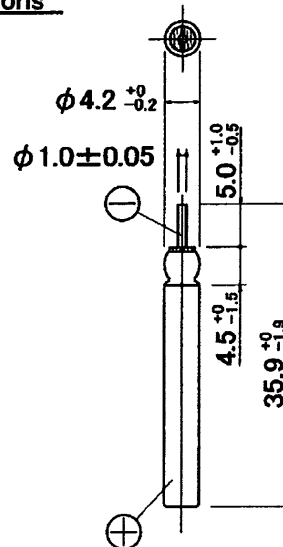
10. Marking : Including following informations.

- 1) Model No. : BR435
- 2) Nominal Voltage : 3V
- 3) Polarity : +
- 4) Date Code. : (ex.000523)
(May 23,2000)
- 5) Manufacturer : National

11. Precautions in using :
See another sheet.

The evaluation should be tested at 20°C.

Dimensions



* The dimensions without tolerance have only reference value.

Terminal Material

- + terminal : Aluminium
- terminal : Stainless Steel

Leakage test condition

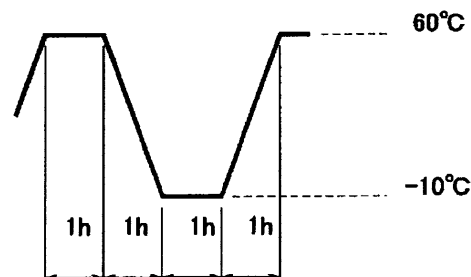


Table	Item	Method		Load	Cut Off V	Initial	After 1 year	After 3 years
	Off-load Voltage		min.			3.2V	3.2V	3.2V
	Internal resistance	Sine wave alternating current method,1kHz	max.			60 Ω	——	——
	Discharge duration	Continuous Discharge	standard	2.5k Ω	1.8V	52h	50h	48h
			min.			46h	45h	43h
7								
6								
5								
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3								
2								
1								
Sym.	Date of Revision	Remarks						
Date of stipulation		Stipulated				Described		
May. 23 . 2000		K. Aoki		T. Ishikawa		G. Hyama		

S P E C I F I C A T I O N

Precautions for Use

Please pay attention to the following points in order to maintain satisfactory operating conditions.

- * Use nickel plated(steel or stainless steel) for power terminal contacts.
- * To ensure stable contact, the contact pressure for power terminals must be at least 50 grams.
- * When measuring battery voltage, use a meter with an internal resistance of 1 MΩ or greater. Correct voltage measurements cannot be obtained otherwise.
- * Batteries are extremely sensitive to the adverse effects of humidity. Be sure to store them in a place which is dry and subject to little temperature change.
- * Do not place near the boiler or radiator, nor expose to the direct sunlight.
- * If button-type batteries are kept in contact with each other, the (+) and (-) terminals may short-circuit, greatly shortening their serviceable life.
- * Button-type batteries may expand slightly during use. Therefore, sufficient space must be provided for this expansion when designing equipment.
- * Before inserting batteries, check to confirm that the terminal contact surfaces on both the equipment and the batteries are clean and that they are not deformed. If the contact surfaces are dirty, clean and dry them thoroughly before inserting batteries.
- * Batteries of the same size and shape may differ in type and grade. When exchanging batteries, confirm that they are the correct type by checking the identification symbol (designated by I.E.C. standards) provided on the battery.
- * Alkaline primary batteries continue to register high voltage even toward the end of their serviceable life. As such, they may be mistakenly judged as yet being strong. If one of several batteries being used in a set is found to be exhausted, it can be assumed that there is very little life remaining in the others even though they may continue to register high voltage.
It is therefore advisable to exchange all of the batteries at the same time.
- * The direction of polarity in a battery may reverse as it nears the end of its serviceable life. This occurs when it is the first among several batteries being used in a set to be exhausted. It is not due to an abnormality in the battery itself.
- * When a lithium battery is short-circuited, even slightly, a certain amount of time is required for its voltage output to recover completely. If the electrical characteristics of the battery are measured before a sufficient amount of time has passed, the battery may appear to be malfunctioning when actually it is merely in a state of recovery.

The batteries should be used correctly, otherwise the set may be damaged due to leakage trouble. Therefore, keep the following precautions in mind.

- * Do not charge, short-circuit, disassemble, heat or dispose the batteries in fire.
- * Insert the batteries in correct polarity position.
- * Do not directly solder to batteries.
- * Do not use spent batteries with new ones.

Small-sized batteries can easily be swallowed.
They must be kept out of the reach of small children.
Also, in the design of battery powered equipment, Care should be taken to ensure that batteries cannot be easily removed by children.

3				
2				
1				
Sym.	Date of Revision	Remarks		
Date of stipulation	Stipulated			Described
May . 4. 1984				<i>H. Hattori</i>

MATSUSHITA BATTERY INDUSTRIAL CO., LTD.

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