

Ceramic Packaged All-solid-state Batteries

Under Development

Next-generation power source,
in support of a sustainable society

Heat
resistant

Long life

High
reliability

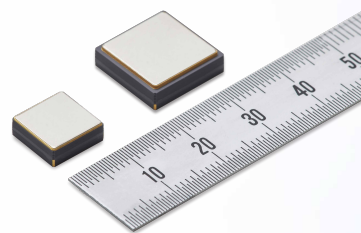
The ideal solution for applications
where conventional batteries have caused limitation

1961



Maxell continues to offer
innovative batteries to the world

2023



Ceramic Packaged All-solid-state Battery



Maxell's Ceramic Packaged All-solid-state Batteries

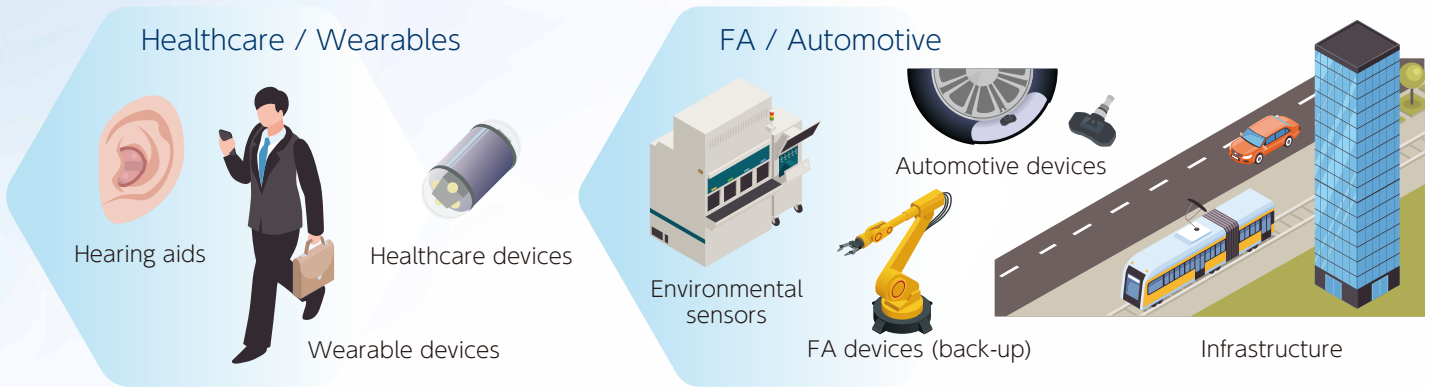
Summary

Maxell's proprietary technologies include surface treatment, mixing, dispersion, coating, molding, and encapsulation. These specialized technologies are what enable Maxell's all-solid-state batteries to achieve both high capacity and high load^{*1}. All-solid-state batteries inherently exceed conventional lithium-ion batteries in longevity^{*2} and heat resistance, making Maxell's all-solid-state battery apt for applications that were once inaccessible due to the limitations of conventional lithium-ion batteries. With ceramic packaged all-solid-state battery, reliability in a 250°C environment^{*3} can be maintained and surface mounting is enabled by reflow soldering.

Features



Application examples

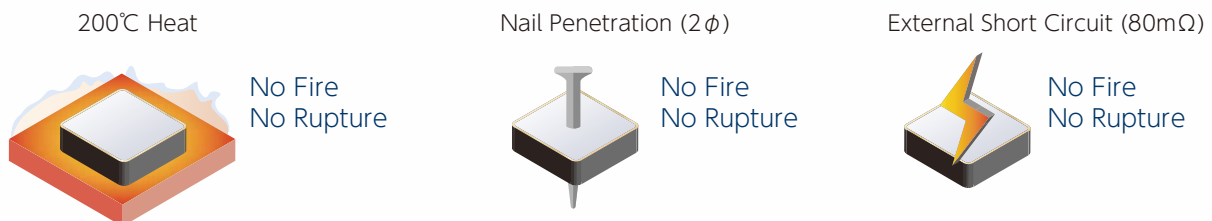


Specifications

		Ceramic Packaged Type	
Model		PSB401010H	PSB401515H
Size	Length (mm)	10.5 × 10.5	14.5 × 14.5
	Height (mm)	4.0	4.0
Weight (g)		1.4	2.7
Charge (CCCV)	Voltage(V)	2.6	2.6
	Current(mA)	4.0	8.0
	Temp. (°C)	-20 ~ +105	-20 ~ +105
Discharge (CC)	Voltage(V)	0.0	0.0
	Current *(mA)	30.0	60.0
	Temp. (°C)	-50 ~ +125	-50 ~ +125
Nominal Voltage (V)		2.3	2.3
Nominal Capacity (mAh)		8.0	16.0

* Maximum current (mA): maximum current that can maintain 1.8V or more after discharge for 1 second in fully charged state at 25°C
Note: Please note specifications are of sample product and may differ at mass production.

Safety



*1 Maxell's all-solid-state battery has equivalent characteristics to Maxell's coin type lithium-ion battery (927 size) which has the nominal capacity of 8mAh and the maximum discharge rate of 20mA.
*2 The number of the days that 90% capacity can be maintained is 10 days for Maxell's coin type lithium-ion battery (927 size), while that for all-solid-state battery is 100 days from the results of acceleration test at 60 °C storage.
*3 The reflow at the maximum temperature of 250°C does not show any deterioration in the basic characteristics such as capacity and load characteristics.
*4 Upper limit that 10% of recovery capacity is maintained after continuous storage for 10 years, derived by Maxell's life prediction based on various evaluations and analyses.
*5 The lifetime predicted based on the acceleration factor is 50-year level, which is longer than the life of general electronic parts (for example, insulating parts) of 5 years.
*6 Since the internal structure of Maxell's all-solid-state battery is simple, it is easy to miniaturize its size, compared to Maxell's coin type lithium-ion battery (4 mmφ can be designed as an example).
* "High reliability" , according to the result of over discharge performance compared to that of coin type lithium-ion battery with electrolyte solution.

