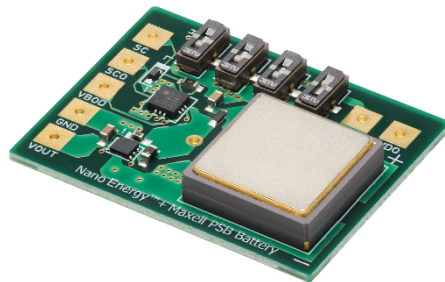


July 20, 2023

Maxell, Ltd.

Maxell develops energy harvesting-compatible evaluation kit using an all-solid-state battery in conjunction with the ROHM group

Power supply IC equipped with ROHM's Nano Energy™ and LAPIS Technology's charge control IC



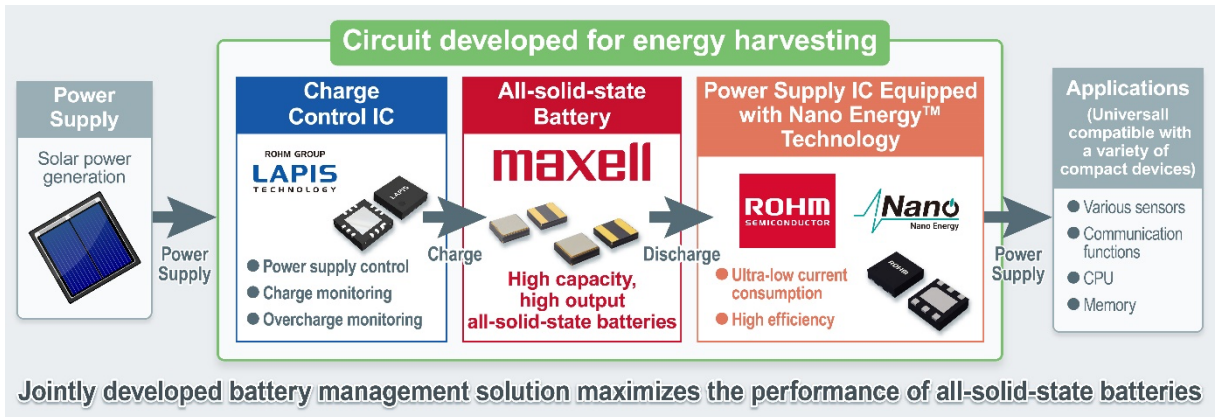
Energy harvesting compatible evaluation module kit

Maxell, Ltd. (President and Representative Director: Keiji Nakamura / hereinafter “Maxell”) has collaborated on the development of a low current consumption^{*1} evaluation module kit compatible with energy harvesting techniques such as solar electric generation, using a voltage-boosting DC-DC converter IC equipped with a ceramic packaged all-solid-state battery, LAPIS Technology Co., Ltd.'s (hereafter described as LAPIS Technology) charge control IC for energy harvesting, and ROHM Co., Ltd.'s (hereafter described as ROHM) Nano Energy™ ultra-low current consumption^{*1} technology.

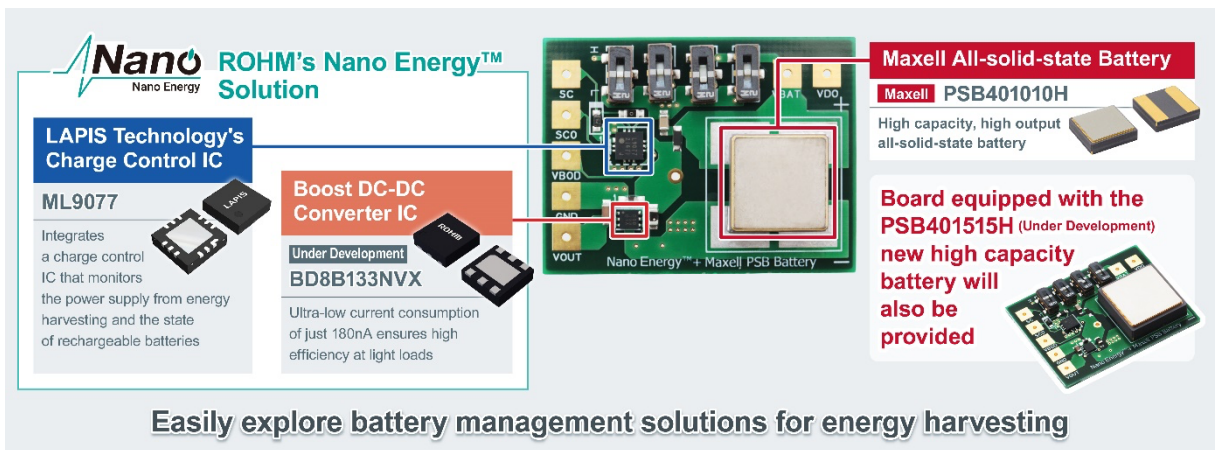
With this, the charging solution of the all-solid-state battery, which is compatible with power generation from sunlight and indoor lighting, can be easily examined. As it does not require a power supply, it is expected to be applicable in a wide range of fields from industrial applications to consumer products, such as monitoring devices for equipment and infrastructure, display devices, and wearable devices.

The low current consumption^{*1} energy harvesting-compatible evaluation module kit combines LAPIS Technology's ML9077 charge control IC for energy harvesting, the BD8B133NVX voltage-boosting DC-DC converter IC equipped with, ROHM's Nano Energy™ ultra-low current consumption^{*1} technology, and Maxell's PSB401010H and PSB401515H (currently under development)^{*2} ceramic packaged all-solid-state batteries.

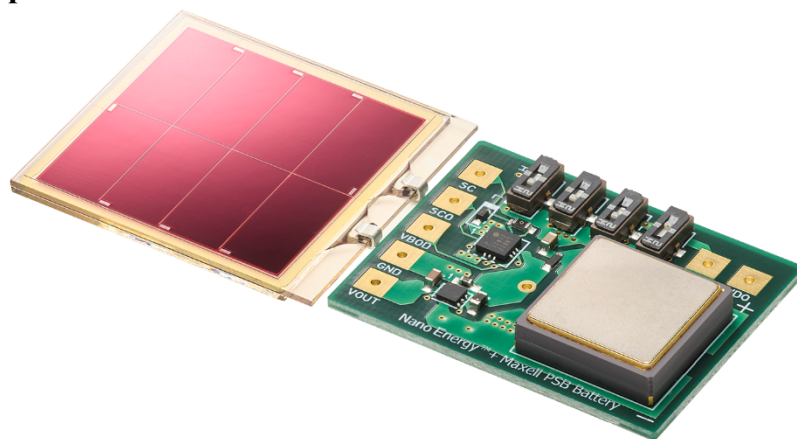
Low current consumption*1 energy harvesting-compatible evaluation module kit



Details of energy harvesting-compatible evaluation module kit



Example of application



Solar electric generation panel (left) and energy harvesting-compatible power-saving module kit (right)
Solar electric generation panel provided by Ricoh Co., Ltd.

Maxell's all-solid-state battery, which features wide operating temperature range^{*3}, and has a long lifetime^{*4} and a high safety level^{*5}, is attracting attention as a next-generation rechargeable battery.

Maxell will exhibit this low current consumption^{*1} energy harvesting-compatible evaluation module kit as a concept at "TECHNO-FRONTIER 2023" (Maxell booth: East Exhibition Hall 2H-05), which will be held at Tokyo Big Sight from Wednesday, July 26, 2023.

By facilitating evaluation at companies that examine adoption of all-solid-state batteries and energy harvesting-compatible power supplies, Maxell hopes they will be rapidly introduced in a wide variety of applications, helping to solve social issues.

*1 Low current consumption: The quiescent current (at non-switching) of the voltage boosting DC-DC converter IC (BD8B133NVX) is 180nA (Typ.). For details, please refer to the Nano Energy™ ultra-low current consumption technology product page.

*2 Nominal capacities of PSB401010H and PSB401515H (currently under development) are 8mAh and 16mAh respectively.

*3 Wide operating temperature range: Can be discharged at an environment temperature range from -50 to +125°C under Maxell's test conditions

*4 Long lifetime: Maxell's lifetime prediction result depending on various evaluations and analysis

*5 High safety level: No firing or smoking in various safety tests conducted by Maxell, such as +200°C heating, nail penetration, and external short circuiting

Trademark

- "Nano Energy™" is a trademark or registered trademark of ROHM Co., Ltd.
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LAPIS Technology's charge control IC product page

<https://www.rohm.com/products/power-management/battery-management/battery-charge-management-ics/ml9077-product#productDetail>

ROHM's Nano Energy™ ultra-low current consumption technology product page

< Technical explanation >

<https://www.rohm.com/support/nano#anc-02>

<Energy harvesting compatible evaluation module kit>

<https://www.rohm.com/reference-designs/reflvmbs003>

Maxell's All-solid-state battery product page

https://biz.maxell.com/en/rechargeable_batteries/allsolidstate.html

TECHNO-FRONTIER 2023 Exhibition information page

https://www.jma-onlineservice.com/7all/webguide_en_tfidf/company.php?no=98

Contacts regarding all-solid-state batteries

https://biz.maxell.com/en/rechargeable_batteries/inquiry_form_input1.html