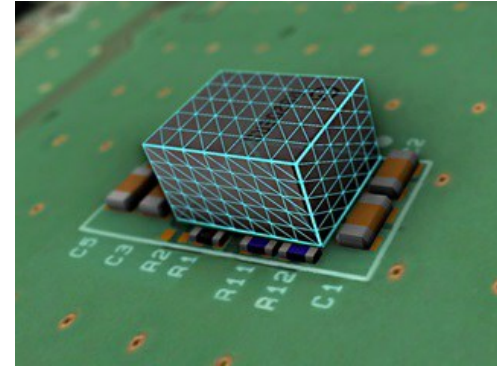


Compact, low-noise DC-DC converter MonoBK(TM)

Murata has designed compact, low-noise DC-DC converter modules, MonoBK™, which include not only products but also add-on components as well.

Murata's MonoBK™ solves the issue of equipment space



- [■ What is a DC-DC converter?](#)
- [■ Reason for choosing Murata](#)
- [■ Product lineup](#)
- [■ Evaluation kit](#)

[The power supply solutions for PCIe are described here. >](#)

What is a DC-DC converter?

A DC-DC converter is equipment that converts DC into DC.

Each IC or other component mounted on the board of the set has an intrinsic working voltage range, and in addition the required voltage accuracy differs from one component to another.

When power is supplied from a power source that does not produce a stable voltage, issues such as malfunctioning will occur. It is therefore necessary to use a DC-DC converter to convert the voltage to the correct value and to stabilize it.

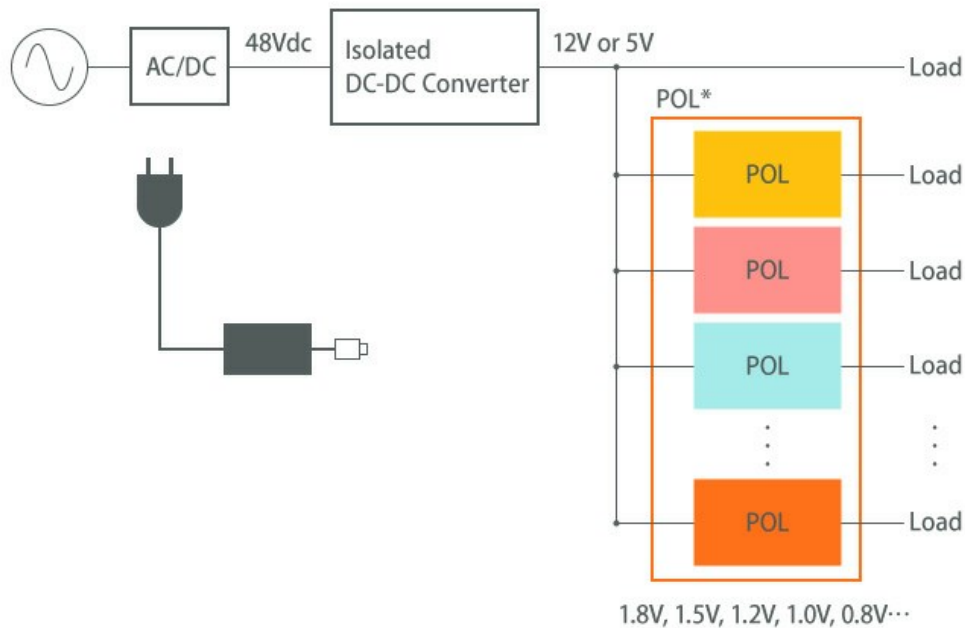
■ Kinds of DC-DC converters

Generally, there are four kinds of DC-DC converters. Their names are as follows.

Kind	Generic name
Power supply equipment that reduces the voltage	Buck converter, Step-down converter
Power supply equipment that increases the voltage	Boost converter, Step-up converter
Power supply equipment that increases and decreases the voltage	Buck-Boost converter

Kind	Generic name
Power supply equipment that generates a negative voltage	Negative voltage converter, Inverting converter

■ Composition of a general power supply



*What is POL?

POL is a DC-DC converter installed in the immediately vicinity of a microprocessor or an LSI (Large-Scale Integrated circuit) such as a DSP, FPGA or ASIC.

POL Trends

In recent mega-trends represented by 5G or IoT, equipment such as a base station or a server must be processed to enable it to operate at high speed and to ensure that it has large capacity.

To this end, the LSI is manufactured using a more precision process, thus enhancing the performance of the chip.

Along with the refinement of the process, demands will arise to decrease the voltage and increase the current supplied to the power supply circuit that supplies electric power to the LSI.

When using reduced voltage, it is necessary to increase the voltage accuracy and increase the high-speed response to load fluctuations, in order to prevent malfunctioning of the LSI.

When using large current, power from the switching power supply is output from the LDO. This makes the circuit difficult to design, even though it could previously be designed compactly and with ease.

In addition, when the switching power is generated, the issue of noise arises.

In the light of this background, POL is required to have “voltage accuracy,” “load fluctuation transient response,” “low radiation noise,” and “compactness.”

Reasons why you should choose Murata's MonoBK™ DC-DC converter

Contribution to space-saving in the power supply

- The total solution size is small.
- The product is a low-profile type that permits space saving and rear-face mounting.

Simple design

- A noise filter can be reduced or is unnecessary

- Supports high temperature operation.

Main features of MonoBK™

Compact

The product can be reduced in size by means of 3D construction design and molding technology.

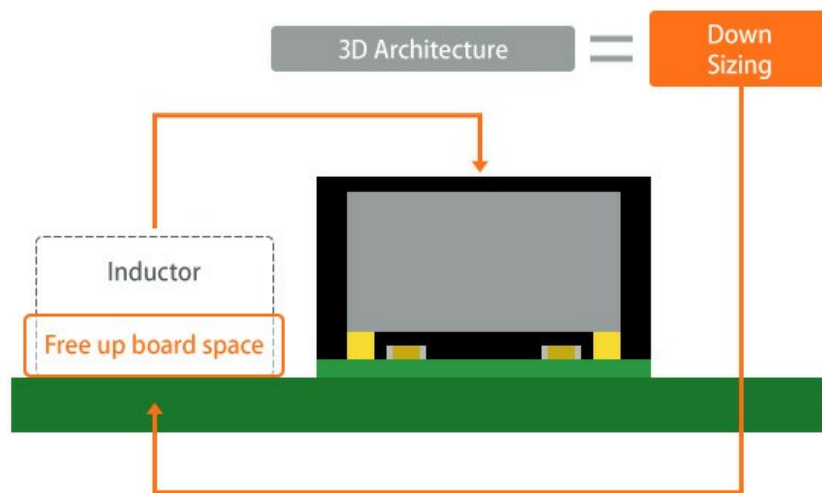
High-speed response

The number of add-on components and the solution size have been reduced due to high-grade circuit technology.

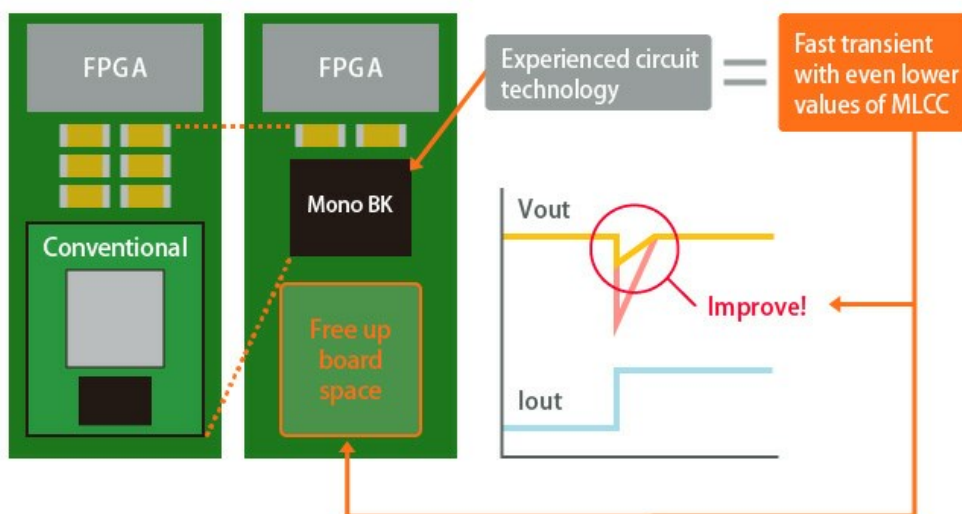
Low noise

Low noise has been realized by 3D construction design and by using simulation technology


Compact



High-speed response



Low noise

Appearance	
Feature	Non-isolated DC-DC converter evaluation kit 8V-14Vin, 0.7V-1.8Vout, 20Amax
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