

Built-in power MOSFET

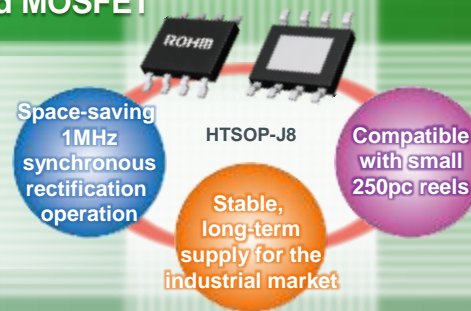
New Step-Down Switching Regulators

BD9Exxx Series

4th Generation

12V/24V input compatible
High voltage • Energy-efficient • Space-saving
DC/DC converters with integrated MOSFET

The BD9Exxx series of buck DC/DC converters is optimized for industrial equipment requiring 40V input. Synchronous rectification eliminates the need for an external diode, while high (1MHz) switching frequency allows a compact inductor to be used. As a result, mounting area is reduced considerably compared with conventional asynchronous products. 1A and 2.5A pin-compatible models are available, making it possible to select the ideal solution based on set requirements.



BD9Exxx Series Lineup

Part No.	Input Voltage	Output Current	Switching Frequency	Package
BD9E100FJ-LB	7.0 to 36.0	1.0	1MHz	SOP-J8
BD9E101FJ-LB			570kHz	
BD9E300EFJ-LB	7.0 to 36.0	2.5	1MHz	HTSOP-J8
BD9E301EFJ-LB			570kHz	

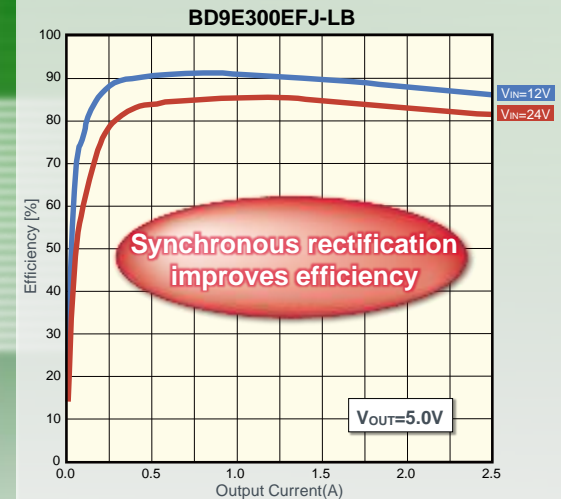
Applications

- Industrial equipment
- Consumer devices such as home appliances
- Distributed power systems
- Secondary power supplies

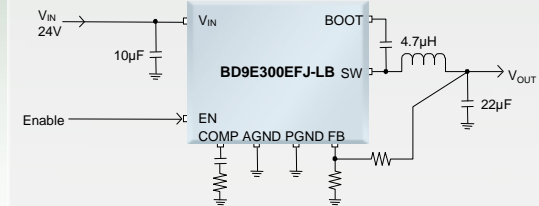
Key Features

- Input Voltage Range : 7.0V to 36V
- Output Voltage Range : 1.0V to ($V_{IN} \times 0.7$)V
- Reference Voltage : $1.0V \pm 2\%$
- MOSFET ON Resistance : 170m Ω /140m Ω
- Operating Junction Temp. Range : -40°C to +150°C
- Current Mode Control
- Supports ceramic output capacitors
- Synchronous rectification eliminates the need for an external diode
- Soft start function prevents inrush current during power ON
- Multiple protection functions
 - Overcurrent protection (OCP)
 - Short-circuit protection (SCP)
 - Thermal shut down (TSD)
 - Under voltage lock out (UVLO)

Power Conversion Efficiency



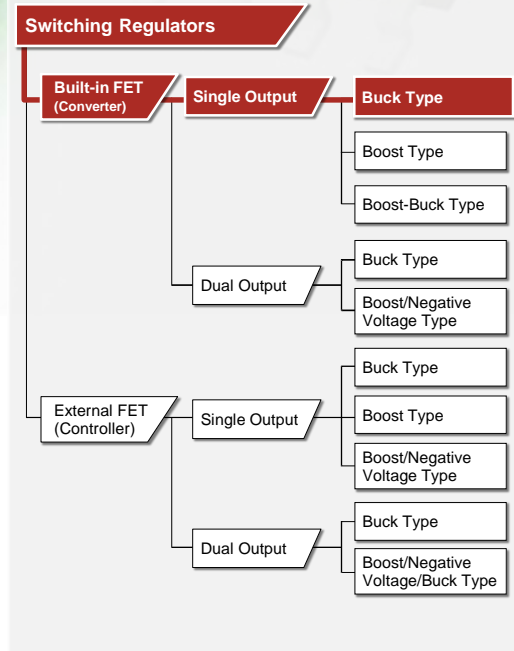
Application Circuit Diagram



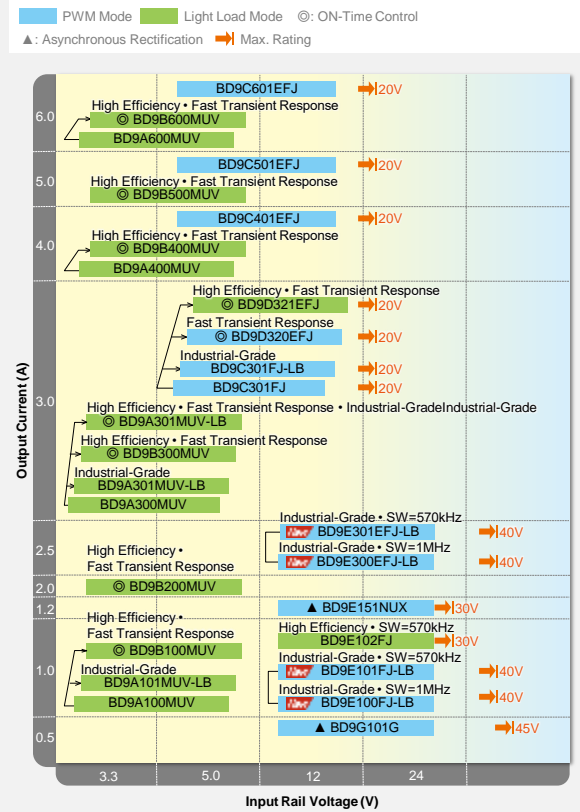


ROHM's Step-Down DC/DC Converter Family

DC/DC Converter Lineup



Buck Type Selection Chart



Space-Saving 1MHz Synchronous Rectification Design

