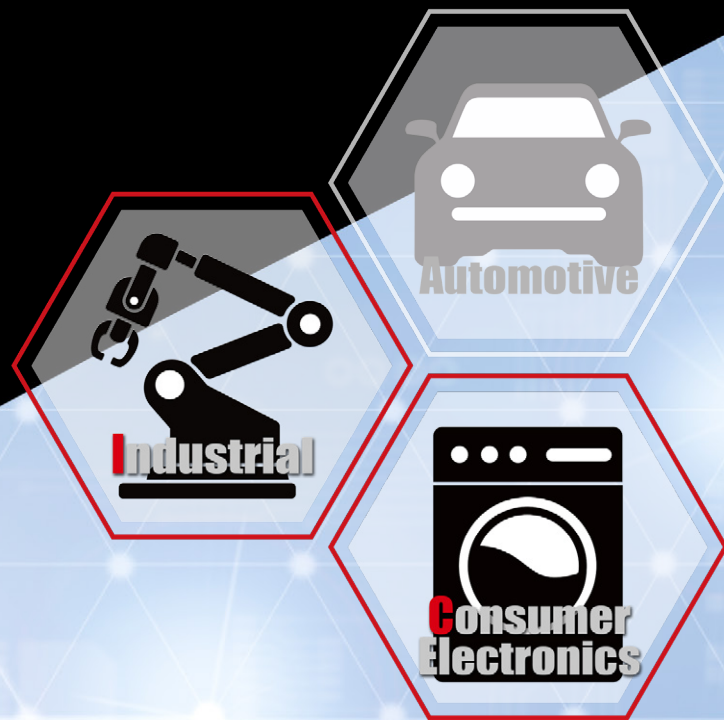


New products for miniaturizing power supply blocks
easy Design with Comprehensive Design Support

Compact SOT23 Package Energy-Saving Buck DC-DC Converter ICs

BD9ExxxFP4-Z, BD9E304FP4-LBZ,
BD9A201FP4-LBZ



The BD9ExxxFP4-Z, BD9E304FP4-LBZ, and BD9A201FP4-LBZ are buck DC-DC converter ICs which adopt the compact SOT23 package that significantly contributes to reduction of the power supply blocks size in consumer and industrial equipment. Products can be selected by power supply system and function. Comprehensive design support contents are offered for immediate consideration and adoption.

Features

- **Compact TSOT23 package enables greater miniaturization of application power supply blocks**

Decreases package area by approximately 72% compared to conventional SOP-J8 packages (4.9mm×6.0mm)

- **Achieve higher efficiency at light load**

Optimize the ON-time control system to minimize losses at light loads

- **Comprehensive design support content provided**

Evaluation board (EVK), calculation tools for external constant selection, and a free web simulator are available



TSOT23-6L
(2.8mm×2.9mm×0.95mm)

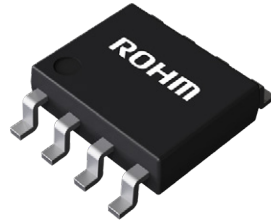


TSOT23-6CJ
(2.8mm×2.9mm×1.1mm)



TSOT23-8L
(2.8mm×2.92mm×0.95mm)

Conventional
Product
SOP-J8



(4.9mm×6.0mm)

Package area
reduced approx.
72%

New Product
TSOT23

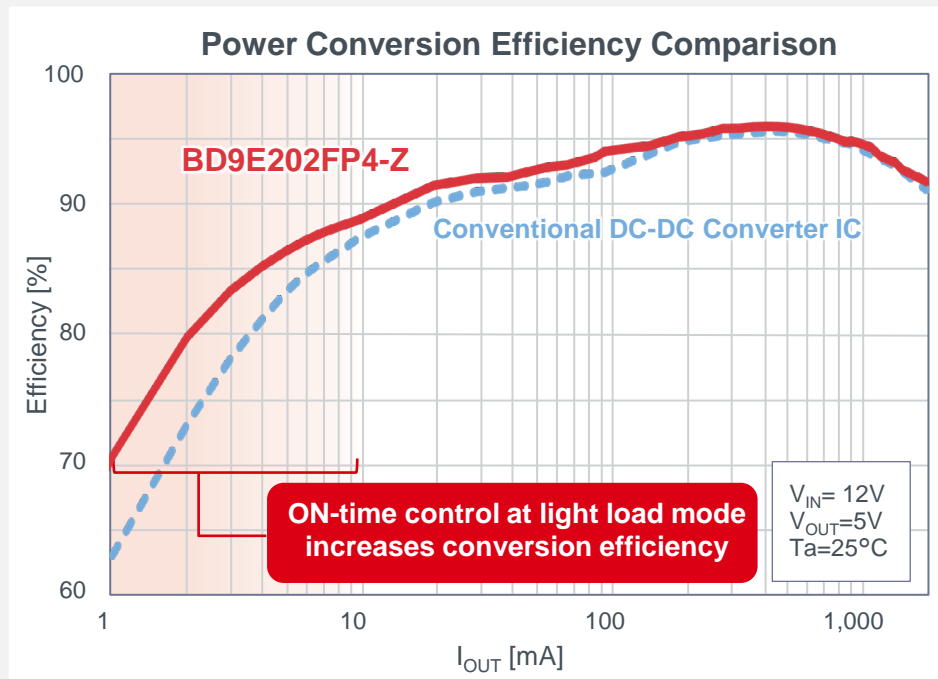


(2.8mm×2.9mm)

Significantly smaller mounting area







Contributes to miniaturizing application power supply blocks
Thermal design support* also available

*Paid support service. For details, please contact a ROHM sales representative.



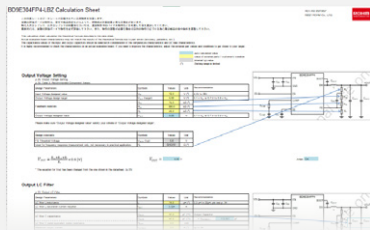
High power conversion efficiency over the entire operating range from light loads reduces application power consumption

• Evaluation Boards

Part No.	BD9E105FP4-Z	BD9E202FP4-Z	BD9E304FP4-LBZ	BD9E304FP4-LBZ	BD9E304FP4-LBZ	BD9A201FP4-LBZ
Evaluation Board						
	BD9E105FP4-EVK-001	BD9E202FP4-EVK-001	BD9E304FP4-EVK-001	BD9E304FP4-EVK-002	BD9E304FP4-EVK-003	BD9A201FP4-EVK-001
Input Voltage	12V to 24V	4.5V to 28V	12V	24V	12V	5V
Output Voltage	5V	0.7 to $V_{IN} \times 0.8V$	1.2V	12V	5V	1.8V
Output Current	1A	2A	3A	3A	3A	2A

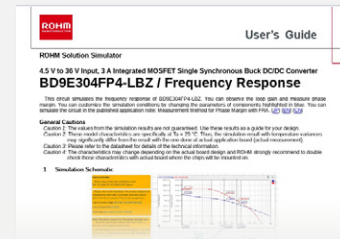
• Design Value Calculation Tool (Calculation Sheet)

- Automatically executes constant setting calculation formulas listed in the datasheet
- Facilitates initial design of peripheral constants











• Free Web Simulator (ROHM Solution Simulator)

- A free web-based circuit simulator
- Easily change devices and external constants



Entering the constants calculated using the design verification tool into ROHM Solution Simulator makes it possible to verify the operating waveforms

TSOT23 Package Buck DC-DC Converter IC Lineup

Part No.	Input Rating (Max) [V]	Input Voltage [V]	Output Voltage [V]	Output Current (Max) [A]	Switching Frequency [kHz]	Circuit Current [μA]	Control Method	Functions				Package	Supporting Content		
								Light Load Efficiency	EMI Reduced	Fsw Fixed	Overshoot Control		Evaluation Boards	Design Value Calculation Tools	ROHM Solution Simulator
New BD9E105FP4-Z  	30	4.5 to 28	$V_{IN} \times 0.1$ or 0.7 to $V_{IN} \times 0.8$	1	500	55	Current	✓	–	–	–	TSOT23-6L	BD9E105FP4-EVK-001	✓	✓
New BD9E202FP4-Z  	30	4.5 to 28	$V_{IN} \times 0.1$ or 0.7 to $V_{IN} \times 0.8$	2	500	95	Current	✓	✓	–	–	TSOT23-6CJ	BD9E202FP4-EVK-001	In preparation	✓
☆ BD9E203FP4-Z	30	4.5 to 28	$V_{IN} \times 0.1$ or 0.7 to $V_{IN} \times 0.8$	2	350	510	Current	–	–	✓	✓	TSOT23-6CJ	In preparation	In preparation	In preparation
New BD9E304FP4-LBZ  	39	4.5 to 36	$V_{IN} \times 0.1$ or 0.7 to $V_{IN} \times 0.8$	3	300	45	Current	✓	–	–	–	TSOT23-8L	BD9E304FP4-EVK-001/002/003	✓	✓
New BD9A201FP4-LBZ  	7	2.7 to 5.5	0.8 to $V_{IN} \times 0.7$	2	1,000	350	Current	–	–	✓	–	TSOT23-8L	BD9A201FP4-EVK-001	✓	✓

☆ Under Development

Click on the  icon to access the product page and the  icon to view the datasheet on ROHM's website.

■ Application Examples

24V/12V/5V/3.3V Power Supply

Consumer appliances:

Refrigerators, washing machines, Air Conditioners, etc.



Industrial equipment:

PLCs, inverters, AC servos, etc.



BD9Axxx/BD9Exxx Product Table

		Input Power Rail Voltage					
		3.3V/5V		12V/24V			
		BD9Axxx		BD9Exxx			
		 VQFN016V3030 3.0mm×3.0mm	 TSOT23-8L 2.8mm×2.92mm	 SOP-J8 4.9mm×6.0mm	 HTSOP-J8 4.9mm×6.0mm	 TSOT23-6L/ TSOT23-6CJ 2.8mm×2.9mm	 TSOT23-8L 2.8mm×2.92mm
Output Current	1A	BD9A100MUV BD9A101MUV-LB		BD9E100FJ-LB BD9E101FJ-LB BD9E104FJ		New BD9E105FP4-Z	
	2A		New BD9A201FP4-LBZ			BD9E200FP4-Z BD9E201FP4-Z New BD9E202FP4-Z ☆BD9E203FP4-Z	
	2.5A				BD9E300UEFJ-LB BD9E301UEFJ-LB		
	3A	BD9A300MUV BD9A301MUV-LB			BD9E302EFJ BD9E303UEFJ-LB		New BD9E304FP4-LBZ
	4A	BD9A400MUV					
	6A	BD9A600MUV					

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