

AEC-Q100 Qualified

Automotive-Grade System Power Supply ICs



BD39001EKV-C

General-Purpose System Power Supply ICs for High Performance Automotive MCUs

Compatible with Idling Stop Systems

40V Power Supply

Built-in Monitoring and Protection Functions

Automatic Boost-Buck Control

HTQFP48V

Sequence-Setting Function

40V breakdown power supply

- Max. rated voltage: 40V (Low voltage operation from 4V)
- Primary DC/DC
 - Boost-Buck switching controller (variable output)
 - Boost-Buck automatic switching control method
- Secondary DC/DC
 - Synchronous rectification buck SW regulator w/built-in FET (3.3V output)
- Secondary LDO (5V output)

Monitoring functions

- Output constant voltage/overvoltage detection (all outputs)
- Reset function
- Window watchdog timer

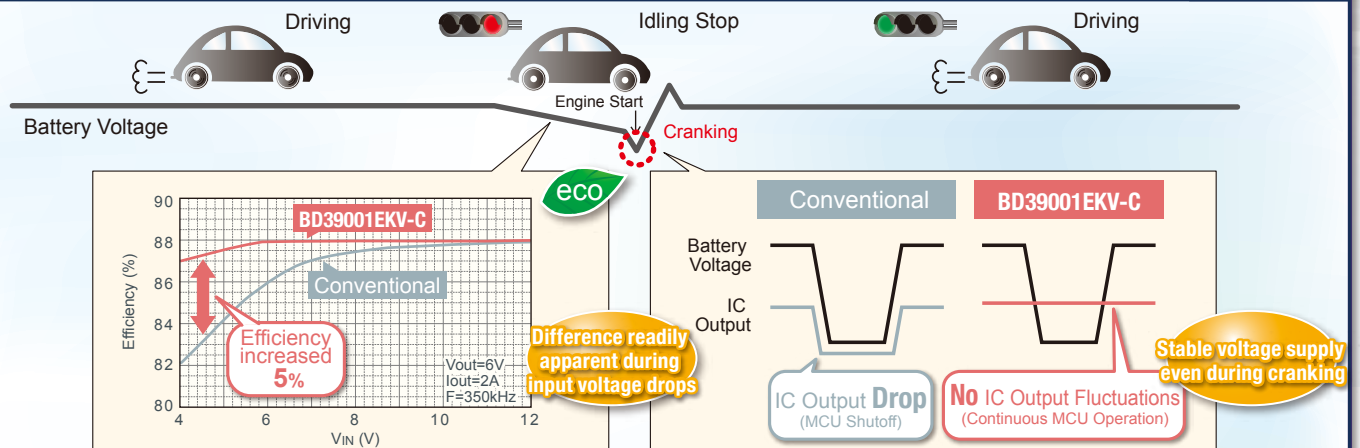
Multiple protection circuits

- Overcurrent
- Thermal shutdown

Sequence setting function

Variable oscillation frequency: 200kHz to 550kHz

Proprietary automatic boost-buck control method ideal for idling stop systems

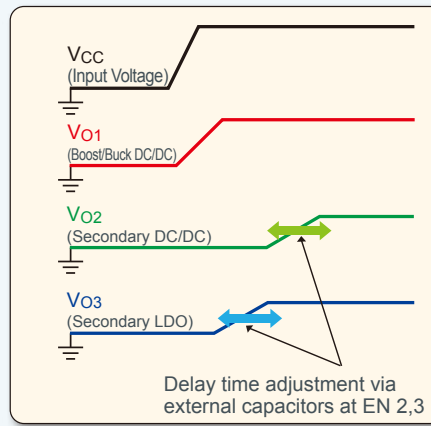
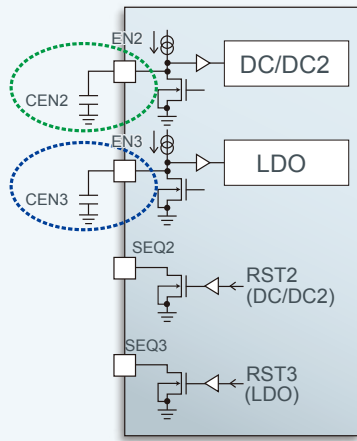


The industry's first* 3-mode automatic switching method ensures high efficiency

Buck Mode + Boost-Buck Mode + Boost Mode

*ROHM October 2014 study

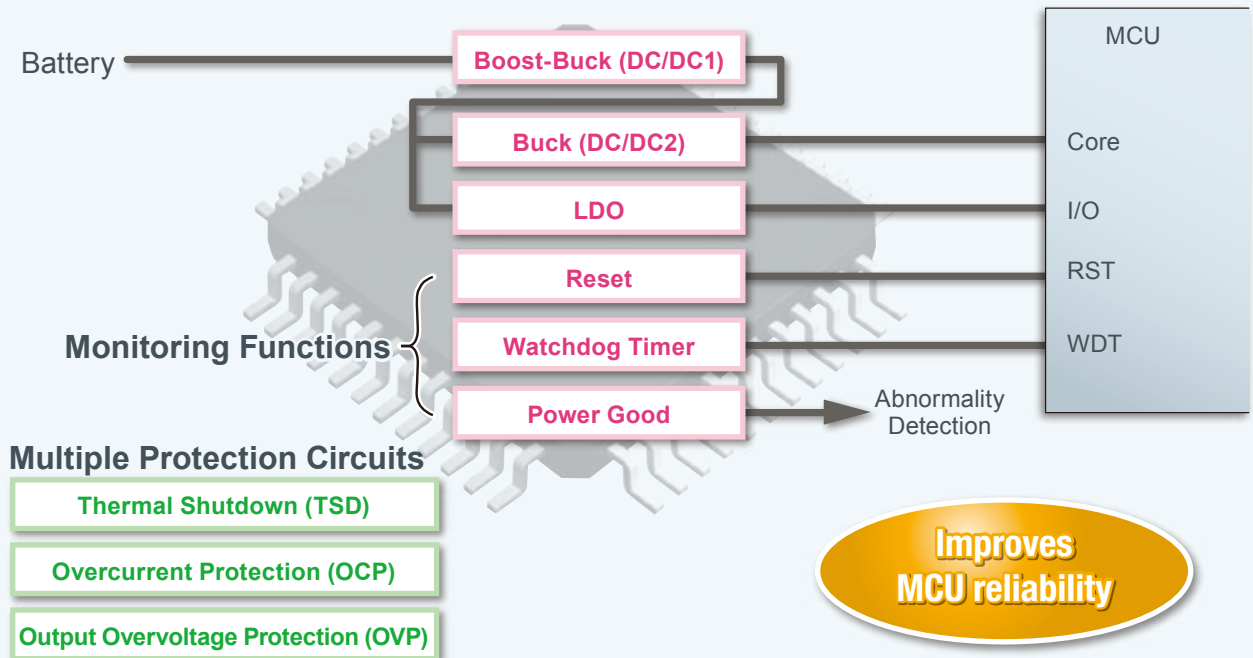
Startup sequence setting function supports a variety of MCUs



[Reference: BD39001EKV-C]

Startup settings adjustable based on MCU

Monitoring and protection functions ensure worry-free operation



Improves MCU reliability

Lineup

| Part No. | Input Voltage | Output | | | Oscillator Frequency | Sequence Setting | Reset Function | Package |
|-------------------------|--------------------------|--|-------------------------|----------------|----------------------|------------------|----------------|---------------------------------|
| | | CH1 | CH2 | CH3 | | | | |
| New BD39001EKV-C | 4 to 30V (40V Breakdown) | Variable Boost-Buck DC/DC (External FET) | Buck DC/DC 3.3V (0.9A) | LDO 5V(0.6A) | 200kHz to 550kHz | ○ | CH2 CH3 | HTQFP48V (9.0 × 9.0 × 1.0mm) |
| ☆ BD39000EKV-C | | | Buck DC/DC 1.23V (0.9A) | LDO 5V(0.6A) | | | | |
| ☆ BD39002EFV-C | | | — | LDO 5V(0.6A) | | | CH3 | HTSSOP-B30 (10.0 × 7.6 × 1.0mm) |
| ☆ BD39004EFV-C | | | — | LDO 3.3V(0.6A) | | | | |

☆ Under development

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