

02. DC/DC Conversion & Battery Charging

Buck, boost, buck-boost and lithium charging products for smart devices, industrial systems and energy storage.

This category can be selected by input voltage, output current, topology and battery-cell configuration.

Product Positioning

Buck, Boost and Buck-Boost

- Covers 5.5V, 18V, 30V, 40V, 60V, 100V, 120V, 150V and 180V input ranges.

- Includes synchronous/asynchronous buck, boost and bidirectional buck-boost topologies.

Lithium Battery Charging

- Supports 1-cell / 2-cell lithium charging with linear, buck and boost modes.

- Suitable for portable devices, energy storage, smart hardware and appliances.

Representative Models / Product Lines

Category	Representative Models	Key Range	Applications
Synchronous Buck	ICW3102, ICW3106, ICW3115, ICW3127, ICW3128, ICW6204B	1.2A-3A; up to 60V input; built-in MOSFET	Control boards, automotive/industrial low-voltage rails
Asynchronous Buck	ICW3150, ICW3151, ICW6205, ICW6208, ICW6215	Up to 180V input; 0.6A-5A class	High-voltage buck and industrial auxiliary rails
Boost	MD3156, ICW2159, ICW2150, ICW2139, ICW2199	<12V / <20V boost outputs; 0.3A-2A	Backlight, sensors and boost rails
Buck-Boost	ICW5175, ICW5176, ICW5177	2.0-36V output; 10A external MOS	Energy storage, bidirectional power and wide-input systems
Battery Charger	ICW5010, ICW5012, ICW5069, ICW5014, ICW5015	0.5A-1.8A; 1-cell / 2-cell lithium	Portable battery-powered products

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Applications and Promotion Notes

Typical Applications

- Wi-Fi modules, control boards and sensor rails in smart appliances.
- Automotive auxiliary rails for body control and cockpit modules.
- Multi-rail conversion in PV storage, portable power and industrial meters.

Promotion Focus

- Promote by input-voltage class: 18V / 40V / 60V / 100V / 120V / 180V.
- Synchronous buck fits efficiency-driven designs; asynchronous buck fits high-voltage and cost-sensitive rails.
- Buck-boost targets storage, automotive wide-input and bidirectional power needs.

Quick Selection Direction

Customer Need	Recommended Direction	Message
Compact 5V/3.3V buck rail	5.5V / 18V buck series	High integration and fewer external components for consumer and control boards.
40V/60V buck for automotive or industrial rails	40V / 60V buck series	Higher input margin for harsh power environments.
High-voltage buck above 100V	ICW6205 / ICW6215 high-voltage buck series	For high-voltage bus auxiliary power.
Lithium battery charging	ICW501x charger management series	Linear/switching charging for 1-cell and 2-cell lithium packs.

Note: Before design-in, verify temperature grade, package, certification status, PPAP support and availability with the latest datasheet.