DC/DC converters are often required to provide an isolated asymmetric supply for high-side gate drivers. The simplest (functional) isolation can withstand 1kVDC for one second. This sounds impressive; however this is often not sufficient.

High side inverters are often floated a few hundred volts with an opto-isolated PWM control, so the gate drivers need an isolated power supply. This isolated supply is typically +15/-9V for IGBT, +20/-5V for SiC (+15/-3V for 2nd Gen. devices) or +6V and +9V for GaN. A typical DC/DC isolation voltage would be at least twice the working voltage, but the high ambient temperature and fast switching edges generated by these high-power transistors additionally stress the insulation barrier. RECOM combines the required asymmetric output voltages, high insulation voltage and low isolation capacitance into one simple DC/DC converter module. Whether IGBT, SiC MOSFET or GaN HEMT, RECOM has the matching drop-in product.

**Main features:**
- High isolation up to 6.4kVDC/1sec.
- Reinforced or functional isolation
- High efficiency up to 87%
- Ultra-compact design
- UL/IEC/EN60950-1 certified
- 3-year warranty

**Applications:**
- IGBT, SiC and GaN driver circuits
- Motor control units
- General purpose inverter
- Uninterruptible power supplies
- Welding machines
High isolation DC/DC converters for IGBT gate drivers
RECOM’s 1W (RxxPx, RP, RH, RV series) and 2W (RKZ & RxxP2xx series) IGBT gate driver DC/DC converters provide isolation up to 6.4kVDC. The outputs of +15V/-9V replace two converters with one converter, thus saving board space and halving the isolation capacitance.

Main features:
- RxxPx, RP, RH, RxxP2xx & RKZ series in a compact SIP7 case
- Low profile DIP14 and mini DIP24 case (RV & RGZ series)
- Efficiency up to 86%
- Operating temperature range up to +90°C
- EN 60950-1 certified

Applications:
- IGBT gate driver circuits
- Motor control units
- General purpose inverter
- Uninterruptible power supplies
- Welding machines

High isolation 2W DC/DC converters for SiC gate drivers
RECOM’s 2W (RKZ & RxxP2xx series) SiC gate driver DC/DC converters provide isolation up to 4kVDC/1 minute. To meet the tough requirements of the next generation of MOSFETs, they were specially designed to power either 1st gen. or 2nd gen. SiC MOSFETs, with +20/-05VDC or +15/-03VDC outputs respectively.

Main features:
- RxxP21503D, RxxP22005D, RKZ-xx2005D series in SIP7 case
- Efficiency up to 87%
- Wide operating temperature range from -40°C to +85°C
- UL/IEC/EN60950-1 certified

Applications:
- DC/AC inverters
- Renewable energy
- Smart grids
- Motor drives

DC/DC supplies for next-gen GaN technology
GaN devices are set to supersede existing SiC MOSFETs for many applications and reach their optimal performance with a gate switching voltage of +6V from RP-xx06S and RxxP06S DC/DC converter series. In GaN applications where higher noise and interferences have to be considered, RECOM also offers converters with +9V output which can be split up via a Zener diode to +6V and -3V to provide a negative gate voltage on turn-off ensuring that the gate voltage stays below the turn-on threshold.

Main features:
- RJZ, RK, RP, RV, RxxPx, RxxP2xx in compact DIP14, DIP24 or SIP7 cases
- Efficiency up to 83%
- EN certified

Applications:
- DC/AC inverters
- Renewable energy
- Smart grids
- Motor drives