



Murata
DC-DC converters for
gate drive applications

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DESIGNED FOR RELIABILITY

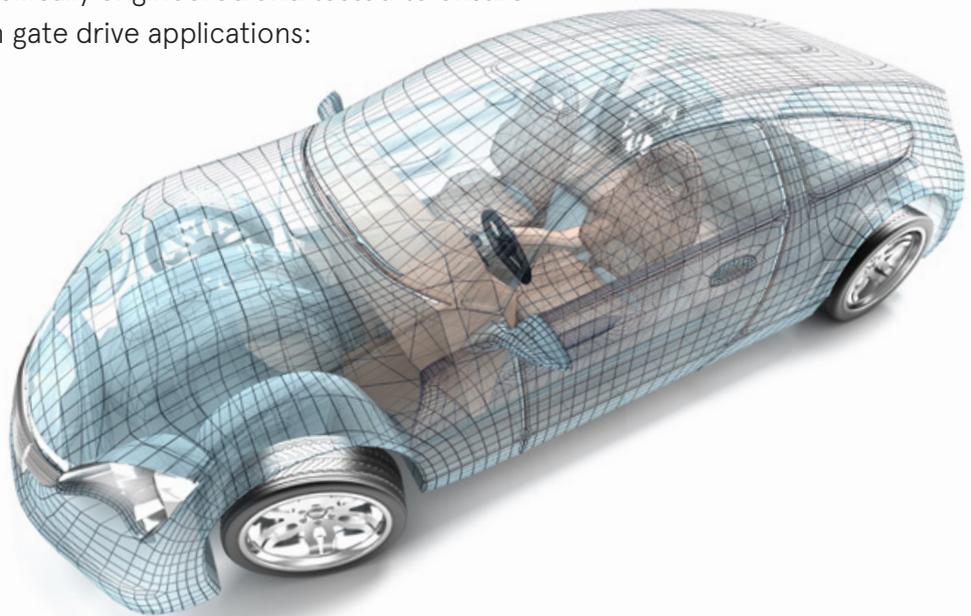
Avnet Abacus offers Murata's MGJ series DC-DC converters, designed and tested to withstand high dv/dt and DC link conditions without measurable breakdown within the isolation barrier.

Gate drive applications create challenging conditions which are not factored into the design of standard DC-DC converters.

Murata's range of converters is specifically engineered and tested to ensure the reliability and safety required in gate drive applications:

APPLICATIONS

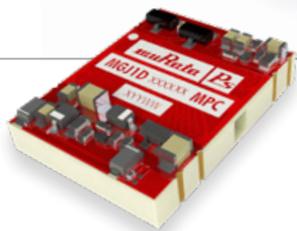
- Motor drives / motion control
- Solar inverters
- Welding
- Medical pump controllers
- Medical X-ray systems
- HVAC inversion systems
- High power AC-DC conversion
- Electrical powered transportation
- (Water) pump and valve control



MGJ1

FEATURES

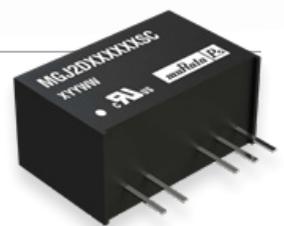
- Optimised bipolar output voltages for IGBT/ SiC & MOSFET gate drives
- Reinforced insulation to UL60950 to a working voltage of 250Vrms
- ANSI/AAMI ES60601-1 recognised, 2 MOPP to a working voltage of 250Vrms
- DC link voltage 3kVDC
- Ultra-low coupling capacitance
- Creepage and clearance 9mm
- Ultra-low coupling capacitor 3pF



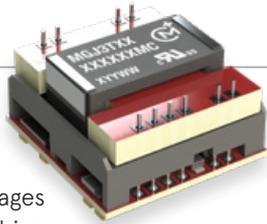
MGJ2 THROUGH HOLE

FEATURES

- Optimised bipolar output voltages for IGBT/ Mosfet gate drives
- Reinforced insulation to UL60950 to a working voltage of 150Vrms or basic/supplementary to a working voltage of 300Vrms
- AANSI/AAMI ES60601-1, 1 MOPP to a working voltage of 300Vrms or 2 MOOP/1 MOPP to a working voltage of 200Vrms
- 5.2kVDC isolation test voltage 'Hi Pot Test'
- Ultra low coupling capacitance 2.8pF - 4PF
- SIP package style
- 5V, 12V, 15V & 24V inputs
- +15V/-15V +15V/-5V, +15V/-8.7V, +17V/-9V, +20V/-3.5 & +20V/-5V outputs
- Operation to 100°C
- Characterised dv/dt immunity 80kV/uS at 1.5kV



MGJ3



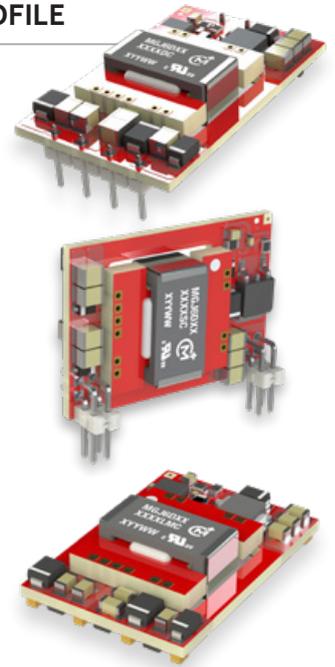
FEATURES

- No opto feedback
- Optimised bipolar output voltages for IGBT/SiC & MOSFET gate drives
- Configurable dual outputs for all gate drive applications: +15V/-5V, +15V/-10V & +20V/-5V outputs
- Reinforced insulation to UL60950 to a working voltage of 250Vrms
- ANSI/AAMI ES60601-1, 1 MOPP/2 MOOP to a working voltage of 250Vrms
- Characterised dv/dt immunity 80kV/μs at 1.6kV
- 5.2kVDC isolation test voltage 'Hi Pot Test'
- Ultra low coupling capacitance 15pF
- Characterised partial discharge performance
- DC link voltage 3kVDC
- 5V, 12V & 24V input voltages
- 105°C operating temperature

MGJ6 SIP, DIP & LOW PROFILE

FEATURES

- Optimised bipolar output voltages for IGBT, silicon and silicon carbide gate drives
- Suitable for DC link voltages up to 3kVDC
- Wide 2:1 input voltage ranges of 5V, 12V & 24V
- +15V/-5V, +15V/-10V & +20V/-5V outputs
- Characterised dv/dt immunity 80kV/μs at 1.6kV and partial discharge performance
- Ultra-low coupling capacitor 15pF
- Creepage and clearance 8mm
- Reinforced insulation to UL60950 to a working voltage of 250Vrms
- ANSI/AAMI ES60601-1 1 MOPP/2 MOOP to a working voltage of 250Vrms



MGJ6 HALF, FULL AND 3-PHASE

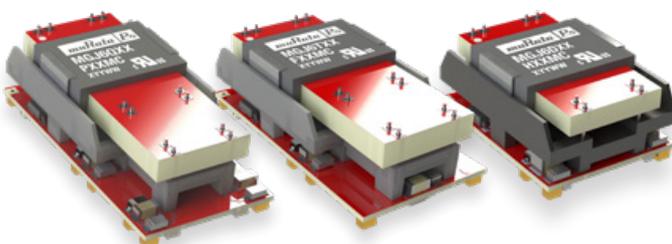
FEATURES

- Two, three or four isolated output voltages for IGBT/SiC & Mosfet gate drives in half-bridge, full bridge, three phase configuration
- Suitable for DC link voltages up to 3kVDC
- UL60950 reinforced insulation to a working voltage of 250Vrms
- Wide 2:1 input voltage range of 5V, 12V and 24V
- ANSI/AAMI ES60601-1, 2 MOPP/2 MOOP recognised to a working voltage of 250Vrms
- Characterised dv/dt immunity 80kV/μs at 1.6kV and partial discharge performance
- Ultra low coupling capacitor 15pF
- Creepage and clearance 8mm

MGJ6 14mm

FEATURES

- No opto feedback
- Optimised bipolar output voltages for IGBT/SiC & MOSFET gate drives
- Configurable dual outputs for all gate drive applications: +15V/-5V, +15V/-10V & +20V/-5V outputs
- UL60950 reinforced insulation to 690Vrms
- IEC 61800-5-1
- Characterised dv/dt immunity 80kV/μs at 1.6kV
- 14mm creepage and clearance
- Ultra low coupling capacitance 13pF
- DC link voltage 3kVDC
- 5V, 12V & 24V input voltages
- 105°C operating temperature



MGJ product overview

Power	Description	Coupling capacitance	Package type	Murata series	
1 Watt	1 Channel; Embedded transformer	2 pF	SMD, low profile	MGJ1	
2 Watt	1 Channel; Fixed outputs	4 pF	THT, SIP7	MGJ2	
3 Watt	1 Channel; Configurable outputs	15 pF	SMD	MGJ3T	
6 Watt	1 Channel; Configurable outputs	15 pF	SMD	MGJ6T	
6 Watt	1 Channel; Fixed outputs	15 pF	SMD low profile, THT SIP + DIP	MGJ6-LP, -SIP, -DIP	
6 Watt	2 channels for Half-Bridge	15 pF	SMD	MGJ6H	
6 Watt	3 channels for Full-Bridge	15 pF	SMD	MGJ6F	
6 Watt	4 channels for 3-Bridge	15 pF	SMD	MGJ6P	
6 Watt	1 channel; 14mm cr/cl for 690Vac reinforced isolation	15 pF	SMD	MGJ6W - 14mm	

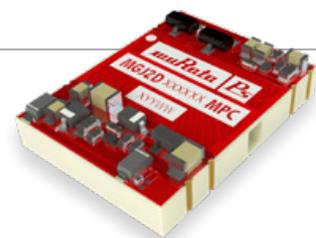
dV/dt rating up to 80kV/μs and partial discharge performance characterised

COMING SOON

MGJ2 SURFACE MOUNT

FEATURES

- Optimised bipolar output voltages for IGBT/SiC & MOSFET gate drives
- Reinforced insulation to UL60950 recognition pending
- ANSI/AAMI ES60601-1 recognition pending
- 5.7kVDC isolation test voltage 'Hi Pot Test'
- Ultra low coupling capacitance
- 5V, 12V, 15V & 24V inputs
- +15V/-9V, +15V/-5V & +20V/-5V outputs
- Characterised partial discharge performance pending
- DC link voltage 3kVDC



APPLICATIONS

- HVAC Inversion systems
- Medical pump controllers
- Water pump and valve control

ASK AN EXPERT

Our Europe-wide team of product specialists works closely with Murata to offer you the highest levels of engineering support for your design.

To arrange a visit or to discuss your design requirements, contact this team in your local language or at avnet-abacus.eu/ask-an-expert