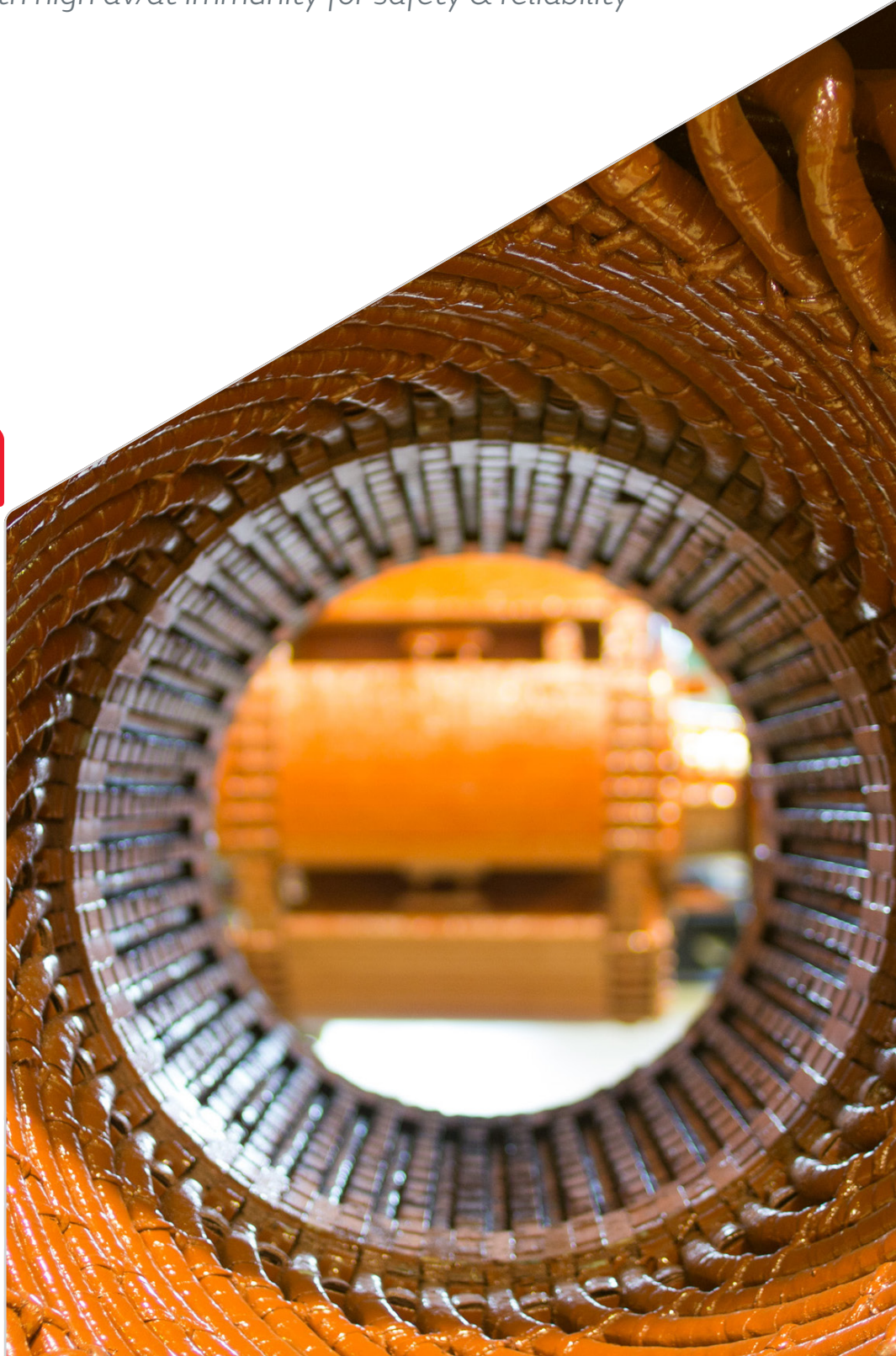


DC-DC converters for

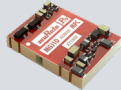

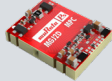
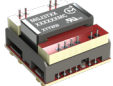
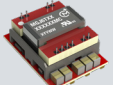


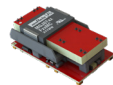
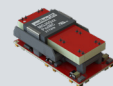

Gate drive applications

Designed with high dv/dt immunity for safety & reliability



DC-DC converters for gate drive applications

MGJ Product overview

Power	Description	Isolation capacitance	Package type	Murata series
1 Watt	1 Channel, Embedded transformer	3 pF	SMD low profile	MGJ1 
2 Watt	1 Channel, Fixed outputs	4 pF	THT, SIP7	MGJ2 
2 Watt	1 Channel, Fixed outputs	3 pF	SMD	MGJ2 SM 
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, 690Vac reinforced isolation	13 pF	SMD	MGJ6W 

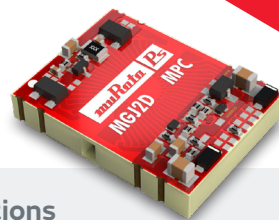
MGJ2 series 2W surface mount

Features

- Optimized bipolar output voltages for IGBT/SiC & MOSFET gate drives
- Reinforced insulation to UL62368 recognition pending
- ANSI/AAMI ES60601-1 recognition pending
- Continuous barrier withstand voltage 2kV
- Characterized CMTI >100kV/uS
- Ultra-low isolation capacitance 3pF
- 5.7kVDC isolation test voltage “Hi Pot Test”
- 5V, 12V & 15V inputs
- +15V/-9V, +15V/-5V & +20V/-5V outputs
- Characterized partial discharge performance

Applications

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



NEW

MGJ2 series

DC-DC converters for gate drive applications

Designed for reliability

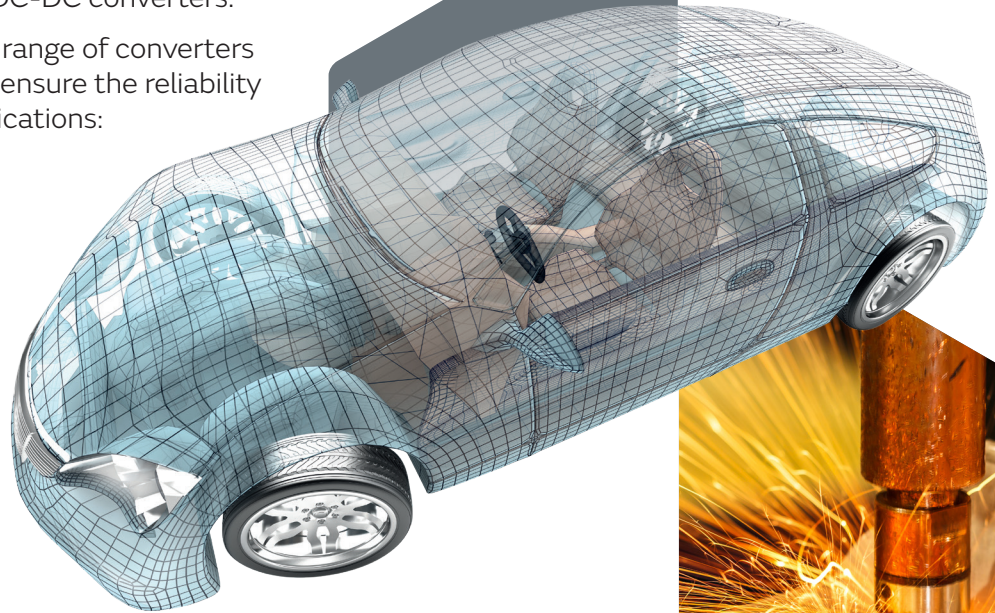
Murata MGJ series DC-DC converters have been designed and tested to withstand high dv/dt and DC link conditions without measurable breakdown within the isolation barrier.

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

For this reason, Murata has created a range of converters specifically engineered and tested to ensure the reliability and safety required in gate drive applications:

Applications

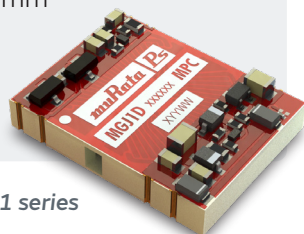
- Motor drives / motion control
- Solar inverters
- Welding
- Medical pump controllers
- Medical X-ray systems
- HVAC inversion systems
- High power AC-DC conversion
- Electrical powered transportation
- Water pump and valve control



1W Dual output SMD

Features

- Optimized bipolar output voltages for IGBT/SiC & MOSFET gate drives
- Reinforced insulation to UL60950 to a working voltage of 250Vrms
- ANSI/AAMI ES60601-1, 2 MOPP recognized
- Characterized CMTI >200kV/uS
- Continuous barrier withstand voltage 3kVDC
- 5.7kVDC isolation test voltage "Hi Pot Test"
- Ultra-low isolation capacitance 3pF
- 5V, 12V, 15V & 24V inputs
- Creepage and clearance 9 mm

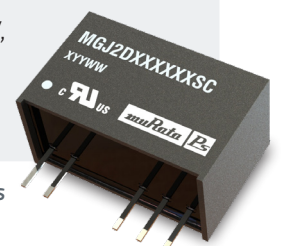


MGJ1 series

2W Through-hole

Features

- Optimized bipolar output voltages for IGBT/SiC & MOSFET gate drives
- Reinforced insulation to UL60950 recognized
- ANSI/AAMI ES60601-1, 1 MOPP/2 MOOPs recognized
- Continuous barrier withstand voltage 2.4kVDC
- Characterized CMTI >200kV/uS
- 5.2kVDC isolation test voltage "Hi Pot Test"
- Ultra-low isolation capacitance 3pF
- 5V, 12V, 15V & 24V inputs
- +15V/-3V, +15V/-5V, +15V/-8.7V, +15V/-15V, +17V/-9V, +18V/-2.5V, +20V/-3.5 & +20V/-5V outputs
- Operation to 100°C



MGJ2 series

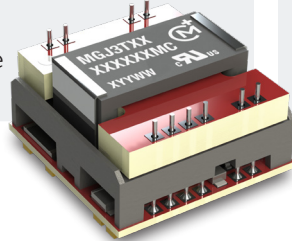
DC-DC converters for gate drive applications

3W Dual output SMD

Features

- No opto feedback
- Optimized bipolar output voltages for IGBT/SiC & MOSFET gate drives
- UL60950 reinforced isolation to a working voltage of 250Vrms
- ANSI/AAMI ES60601-1, 1 MOPP/2 MOOPs recognized
- Continuous barrier withstand voltage 3kVDC
- Characterized CMTI >100kV/uS
- Isolation capacitance 15pF
- Configurable dual outputs for all gate drive applications: +15V/-5V, +15V/-10V & +20V/-5V
- 5.2kVDC isolation test voltage “Hi Pot Test”
- Characterized partial discharge performance
- 5V, 12V & 24V input voltages
- 105°C operating temperature

MGJ3 series

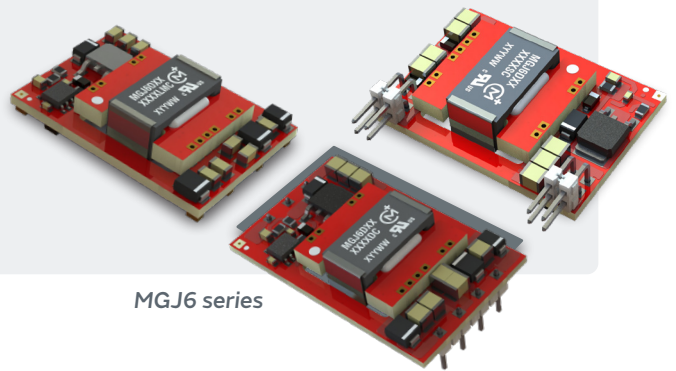


6W SIP, DIP & low profile

Features

- Optimized bipolar output voltages for IGBT, silicon, and silicon carbide gate drives
- Continuous barrier withstand voltage 3kVDC
- Characterized CMTI >100kV/uS
- Isolation capacitance 15pF
- Wide 2:1 input voltage ranges of 5V, 12V & 24V
- +15V/-5V, +15V/-10V & +20V/-5V outputs
- Creepage and clearance 8 mm

MGJ6 series

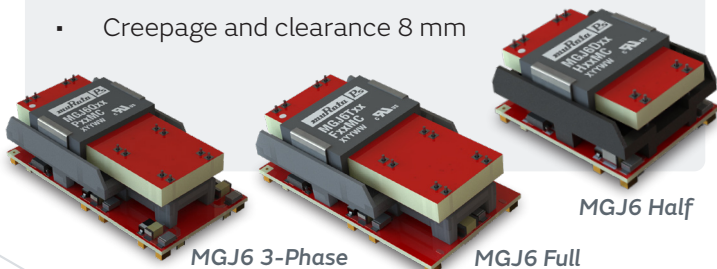


6W Half, full and 3-phase

Features

- Two, three, or four isolated output voltages for IGBT/SiC & MOSFET gate drives in half-bridge, full bridge, three phase configuration
- UL60950 reinforced isolation to a working voltage of 250Vrms
- ANSI/AAMI ES60601-1, 2 MOOPs recognized
- Continuous barrier withstand voltage 3kVDC
- Characterized CMTI >100kV/uS
- Isolation capacitance 15pF
- Wide 2:1 input voltage range of 5V, 12V & 24V
- Creepage and clearance 8 mm

MGJ6 Half



MGJ6 3-Phase

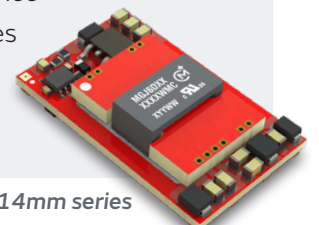
MGJ6 Full

6W Dual output SMD

Features

- No opto feedback
- Optimized bipolar output voltages for IGBT/SiC & MOSFET gate drives
- UL60950 reinforced isolation to a working voltage of 690Vrms
- IEC 61800-5-1 to a working voltage of 690Vrms
- Continuous barrier withstand voltage 3kVDC
- Characterized CMTI >100kV/uS
- Isolation capacitance 13pF
- Configurable dual outputs for all gate drive applications: +15V/-5V, +15V/-10V & +20V/-5V
- 14mm creepage and clearance
- 5V, 12V & 24V input voltages
- 105°C operating temperature

MGJ6 14mm series



Global locations

For details please visit www.murata.com



Note

1 Export Control

For customers outside Japan:

No Murata products should be used or sold, through any channels, for use in the design, development, production, utilization, maintenance or operation of, or otherwise contribution to (1) any weapons (Weapons of Mass Destruction [nuclear, chemical or biological weapons or missiles] or conventional weapons) or (2) goods or systems specially designed or intended for military end-use or utilization by military end-users.

For customers in Japan:

For products which are controlled items subject to the "Foreign Exchange and Foreign Trade Law" of Japan, the export license specified by the law is required for export.

2 Please contact our sales representatives or product engineers before using the products in this brochure for the applications listed below, which require especially high reliability for the prevention of defects which might directly damage a third party's life, body or property, or when one of our products is intended for use in applications other than those specified in this catalog.

- ① Aircraft equipment
- ② Undersea equipment
- ③ Medical equipment
- ④ Traffic signal equipment
- ⑤ Data-processing equipment
- ⑥ Aerospace equipment
- ⑦ Power plant equipment
- ⑧ Transportation equipment (vehicles, trains, ships, etc.)
- ⑨ Disaster prevention / crime prevention equipment
- ⑩ Application of similar complexity and/or reliability requirements to the applications listed above

3 Product specifications in this catalog are as of June 2021. They are subject to change or our products in it may be discontinued without advance notice. Please check with our sales representatives or product engineers before ordering. If there are any questions, please contact our sales representatives or product engineers.

4 Please read rating and & CAUTION (for storage, operating, rating, soldering, mounting and handling) in this catalog to prevent smoking and/or burning, etc.

5 This catalog has only typical specifications. Therefore, please approve our product specifications or transact the approval sheet for product specifications before ordering.

6 Please note that unless otherwise specified, we shall assume no responsibility whatsoever for any conflict or dispute that may occur in connection with the effect of our and/or a third party's intellectual property rights and other related rights in consideration of your use of our products and/or information described or contained in our catalogs. In this connection, no representation shall be made to the effect that any third parties are authorized to use the rights mentioned above under licenses without our consent.

7 No ozone depleting substances (ODS) under the Montreal Protocol are used in our manufacturing process.