

Murata Power Solutions

DC-DC converters for healthcare applications

Designed for safety and reliability

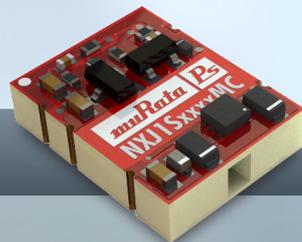


Designed for reliability

Murata's range of DC-DC converters for healthcare applications offer various levels of medical safety agency recognition - in consideration of both the safety of the patient and the operator. They also feature low barrier capacitance to serve the medical application requirement of low leakage current.

Applications

- MRI
- X-Ray
- Ultrasound
- Blood pressure monitors
- Telehealth and remote health monitoring systems
- Infusion pumps
- CPAP machines
- Equipment cable isolation
- Robotics



NXJ1

Features

- 3.3V, 5V & 12V inputs
- 3.3V, 5V, 12V & 15V outputs
- Patent protected
- UL60950 recognised
 - Reinforced insulation to a working voltage of 200Vrms
 - Basic insulation to a working voltage of 250Vrms
- ANSI/AAMI ES60601-1 recognised
 - 1 MOPP to a working voltage of 250Vrms
- Isolation test voltage 4.2kVDC
- Up to 110°C operating temperature
- Short circuit protection
- Substrate embedded transformer
- Low profile
- Industry standard footprint
- Halogen free

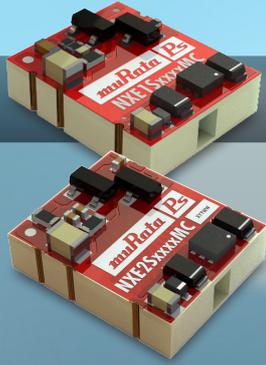


NXJ2

Features

- 5V, 12V & 24V inputs
- 5V, 12V & 15V outputs
- Patent protected
- UL60950 recognised
 - Reinforced insulation to a working voltage of 250Vrms
- ANSI/AAMI ES60601-1 recognised
 - 1 MOPP & 2 MOOP to a working voltage of 250Vrms
- Isolation test voltage 5.2kVDC
- Up to 95°C operating temperature
- Short circuit protection
- Substrate embedded transformer
- Low profile
- Industry standard footprint
- Halogen free

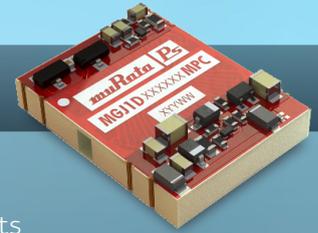
NXE1 & NXE2



Features

- 3.3V, 5V & 12V inputs
- 3.3V, 5V, 12V & 15V outputs
- Patent protected
- UL60950 recognised
 - Reinforced insulation to a working voltage of 125Vrms
 - Basic insulation to a working voltage of 250Vrms
- ANSI/AAMI ES60601-1 recognised
 - 1 MOPP to a working voltage of 250Vrms
- Isolation test voltage 3kVDC
- Up to 100°C operating temperature
- Short circuit protection
- Substrate embedded transformer
- Automated manufacture
- Low profile
- Industry standard footprint
- Halogen free

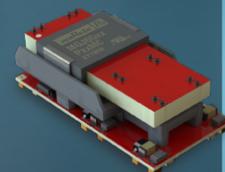
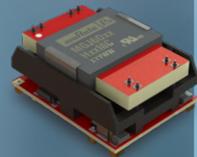
MGJ1



Features

- 5V, 12V, 15V & 24V inputs
- +15V/-3V, +15V/-5V, +15V/-9V & +19V/-5V outputs
- Patent protected
- UL60950 recognised
 - Reinforced insulation to a working voltage of 250Vrms
- ANSI/AAMI ES60601-1 recognised
 - 2 MOPP to a working voltage of 250Vrms
- Continuous barrier withstand voltage 3kVDC
- Isolation test voltage 5.7kVDC
- Up to 105°C operating temperature
- Optimised bipolar output voltages for IGBT/SiC & MOSFET gate drives
- Isolation capacitance 3pF
- Creepage and clearance 9mm

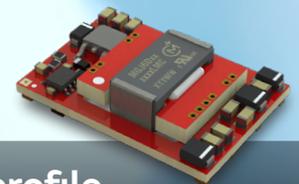
MGJ6 half, full and 3-phase



Features

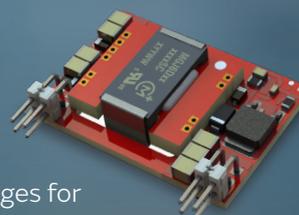
- 5V, 12V & 24V inputs
- 24V output
- Patent protected
- UL60950 recognised
 - Reinforced insulation to a working voltage of 250Vrms
- ANSI/AAMI ES60601-1 recognised
 - 2 MOPP to a working voltage of 250Vrms
- Continuous barrier withstand voltage 3kVDC
- Isolation test voltage 5.7kVDC
- 105°C operating temperature
- Optimised bipolar output voltages for IGBT/SiC & MOSFET gate drives
- Isolation capacitance 15pF
- Creepage and clearance 8mm

MGJ6 SIP/DIP & Low profile

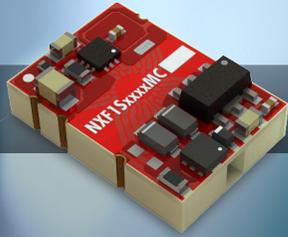


Features

- 5V, 12V & 24V inputs
- +15V/-5V, +15/-10V & +20V/-5V outputs
- Patent protected
- UL60950 recognised
 - Reinforced insulation to a working voltage of 250Vrms
- ANSI/AAMI ES60601-1 recognised
 - 2 MOPP to a working voltage of 250Vrms
- Continuous barrier withstand voltage 3kVDC
- Isolation test voltage 5.7kVDC
- 105°C operating temperature
- Optimised bipolar output voltages for IGBT/SiC & MOSFET gate drives
- Isolation capacitance 15pF
- Creepage and clearance 8mm



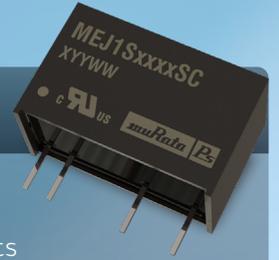
NXF1



Features

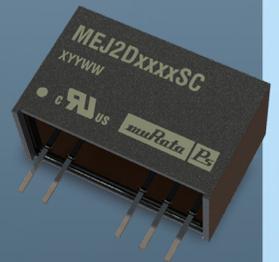
- 3.3V & 5V inputs
- 3.3V & 5V outputs
- Patent protected
- UL60950 recognised
 - Reinforced insulation to a working voltage of 125Vrms
 - Basic insulation to a working voltage of 250Vrms
- ANSI/AAMI ES60601-1 recognised
 - 1 MOPP/2 MOOP to a working voltage of 125Vrms
 - 1 MOOP to a working voltage of 250Vrms
- Isolation test voltage 3kVDC
- Up to 105°C operating temperature
- Short circuit protection
- Substrate embedded transformer
- Low profile

MEJ1 & MEJ2

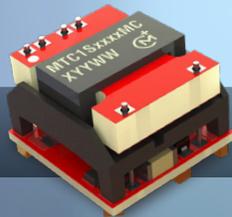


Features

- 3.3V, 5V, 12V, 15V & 24V inputs
- 3.3V, 5V, 9V, 12V & 15V outputs
- $\pm 3.3V$, $\pm 5V$, $\pm 9V$, $\pm 12V$ & $\pm 15V$ dual outputs
- Patent protected
- UL60950 recognised - basic/supplementary insulation to a working voltage of 200Vrms
- ANSI/AAMI ES60601-1 recognised
 - 1 MOOP to a working voltage of 200Vrms
- Isolation test voltage 5.2kVDC
- 85°C operating temperature
- Internal SMD construction
- Industry standard SIP package style
- Fully encapsulated with toroidal magnetics
- Pin compatible with the MEV, NMV, NMK, MEJ2 & NMJ

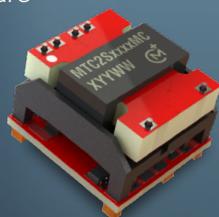


MTC1 & MTC2

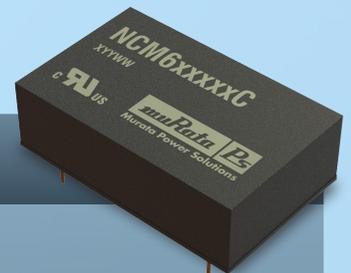


Features

- 2:1 input range with nominals of 5V, 12V & 24V
- 3.3V, 5V & 12V outputs
- Patent protected
- UL60950 recognised
 - Reinforced insulation to a working voltage of 250Vrms
- ANSI/AAMI ES60601-1 recognised
 - 1 MOPP & 2 MOOP to a working voltage of 250Vrms
- Isolation test voltage 3kVAC
- Up to 105°C operating temperature
- Short circuit protection
- Remote on/off pin
- No electrolytic capacitors
- Creepage and clearance 5mm
- Output voltage trim



NCM6



Features

- Wide 4:1 input range with nominals of 5V & 12V
- 5V, 12V & 15V outputs
- $\pm 5V$, $\pm 12V$ & $\pm 15V$ dual outputs
- Patent protected
- UL60950 recognised
 - Reinforced insulation to a working voltage of 250Vrms
- ANSI/AAMI ES60601-1 recognised
 - 1 MOPP & 2 MOOP to a working voltage of 250Vrms
- Isolation test voltage 5.2kVDC
- 85°C operating temperature
- Typical efficiency to 88%
- Encapsulated for superior thermal performance
- Power density 0.94W/cm³
- Under voltage lockout
- Control pin option

Designed for safety

Power	UL60950 insulation	UL60950 working voltage	MOPP	MOOP	ES60601-1 working voltage	Murata series
1 Watt	Reinforced	200Vrms	1		250Vrms	NXJ1
	Basic	250Vrms				
1 Watt	Reinforced	250Vrms	2		250Vrms	MGJ1
1 Watt	Reinforced	125Vrms	1	2	125Vrms	NXF1
	Basic	250Vrms		1	250Vrms	
1 & 2 Watt	Reinforced	125Vrms		1	250Vrms	NXE1 NXE2
	Basic	250Vrms				
1 & 2 Watt	Basic/ Supplementary	200Vrms		1	200Vrms	MEJ1 MEJ2
1 & 2 Watt	Reinforced	250Vrms	1	2	250Vrms	MTC1 MTC2
2 Watt	Reinforced	250Vrms	1	2	250Vrms	NXJ2
6 Watt	Reinforced	250Vrms	2		250Vrms	MGJ6 Half bridge MGJ6 Full bridge MGJ6 3 Phase
6 Watt	Reinforced	250Vrms	2		250Vrms	MGJ6 SIP/DIP MGJ6 Low profile
6 Watt	Reinforced	250Vrms	1	2	250Vrms	NCM6
6 Watt	Reinforced	250Vrms	1	2	250Vrms	MGJ6 MGJ6D

Global locations

For details please visit www.murata.com



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- ③ Medical equipment
- ④ Traffic signal equipment
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