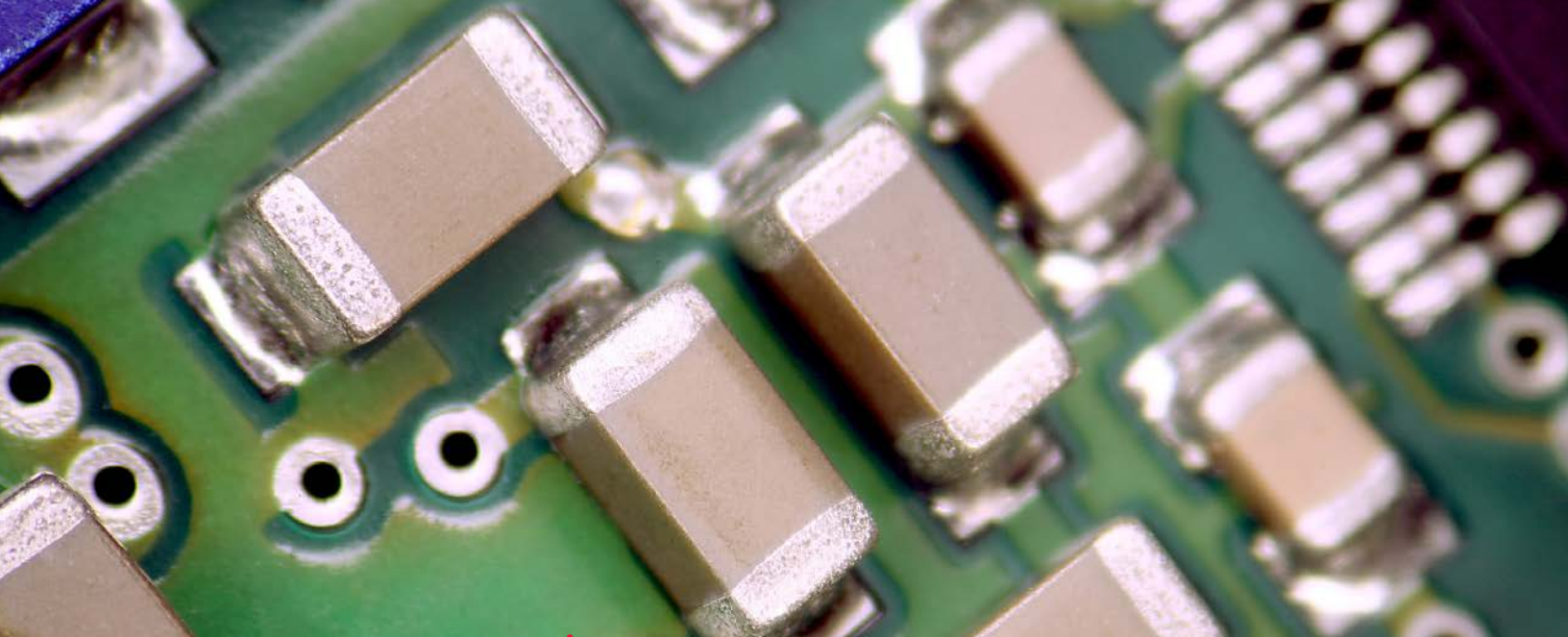


Latest products:

Healthcare Applications





About Murata

Murata has been a global innovator in electronics for decades, producing components which have enabled the advance of modern electronics for more than 60 years.

We offer an extensive range of electronic components, and are the reliable one-stop supplier for the building blocks of most electronic designs.

Our broad product line-up includes:

- **Ceramic capacitors**
- **Noise suppression products**
Filters, ferrite cores & ESD protection devices
- **Inductors**
General purpose, high-frequency, etc.
- **Resonators**
Ceramic & crystal
- **Sensors**
Thermistor, infrared, ultrasonic, rotary position, MEMS accelerometer, gyro, pressure, Magneto-resistance, etc.
- **Sound components**
Piezo-electric buzzers
- **Micro-mechatronics**
Piezo-electric microblowers
- **RF modules**
Bluetooth®, Bluetooth® Low Energy, WiFi®, etc.
- **Power supplies**
DC-DC converters, AC-DC converters, switching power supplies, etc.

Please note that Murata does not support the usage of Murata's standard products for safety-critical applications that require especially high reliability.

Please don't hesitate to contact us if you have any questions or concerns.

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Electronics in healthcare

Electronics are permeating more and more into the health-care sector, and electronics technology advances continue to enhance the functionality of healthcare equipment.

Murata is at the cutting edge of these electronics advancements and is a key provider of technologies which will help to shape the future of healthcare around the world.

Apart from our standard products, which are present in almost any electronic equipment you use, Murata has developed new, innovative products specifically for healthcare applications.

In this brochure we outline just a few of these innovations.

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RF Modules



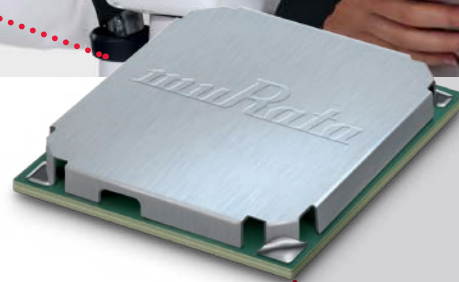
Low-power, reliable connectivity for healthcare devices

Healthcare devices are increasingly connected to each other and the Web. Use a Murata module for proven RF excellence.

Murata RF modules make it easy for you to build connectivity into most devices ...even those where space is limited and power consumption needs to stay low.

With BLE (Bluetooth® Low Energy) devices as small as 4.8 x 5.8 x 1.0mm, wireless communication has never been easier to design in.

Contact Murata today to find out how our RF modules could enhance the functionality of your products.



Small Size

Murata RF modules are small enough to suit even the most space-constrained applications with sizes from 4.8 x 5.8 x 1.0mm.

Footprint:  Height: 

Features

- Support BLE (Bluetooth® Low Energy), Bluetooth®, WiFi®, and other wireless standards
- Combo-modules available (Bluetooth®/WiFi®, etc.)
- Easy to design in
- Antenna matching supported



Applications

- E-health / home monitoring
- Connectivity of healthcare appliances like blood pressure meter, glucose meter, etc.

Blood Pressure Meter



Heart Rate Monitor



Weight Scales



Interface



Exercise Equipment

AC-DC Power

Medical Approved AC-DC Front-End Power Supplies

MVAC, MVAD, MVAB series
40/65/120/250/400W Power Supplies

Model No.	Convection Cooling	Forced Air 250LFM	Input Voltage	Output Voltage	Efficiency	Dimensions
MVAC250	170W	250W	90-264Vac	12/24/50V	93%	3" x 5" x 1.4"
MVAC400	250W	400W	90-264Vac	12/24/50V	93%	3" x 5" x 1.4"
MVAD040	40W	-	90-264Vac	12/24/48V	89%	2" x 4" x 1.3"
MVAD065	65W*	-	90-264Vac	12/24/48V	90%	2" x 4" x 1.3"
MVAB120**	75W	120W	90-264Vac	12/24/28/48V	91%	2" x 4" x 1.35"

Features

- Universal input 90-264Vac
- Active power-factor correction
- Up to 250W natural convection cooling
- -20°C to +70°C full power operating temp.
- Class B conducted EMC
- Aux isolated 12V@1A fan output
- MVAC 250/400: 10W 5V standby power
- MVAD040/065: less than 0.3W at no load
- 2 x MOPP (Primary-Secondary)
- 1 x MOPP (Secondary-Chassis/Earth Enclosure)


Quality/Safety

- 60601 (3rd edition) MOPP, 60950 safety approval
- 2 year warranty


Applications

- Mains-powered medical equipment


40W
MVAD Series




65W
MVAD Series




250W
MVAC Series



400W
MVAC Series



120W
MVAB Series



80 PLUS GOLD
Advanced component and circuit technology delivers medical-approved 80 PLUS Gold® efficiency up to 94%

*Output 12V: up to 60W
** Medical approved part no. ends with -01
www.murata-ps.com/ac-dc

DC-DC Power

Features

- High efficiency across the full load range
- Op. temp. range: -40 to 85
- Encapsulated: superior thermal performance
- 72-79% typ. efficiency
- 3.5 - 5% typ. load regulation

Quality/Safety

- IEC 60601-1 (3rd edition) MOOP
- UL60950

Applications

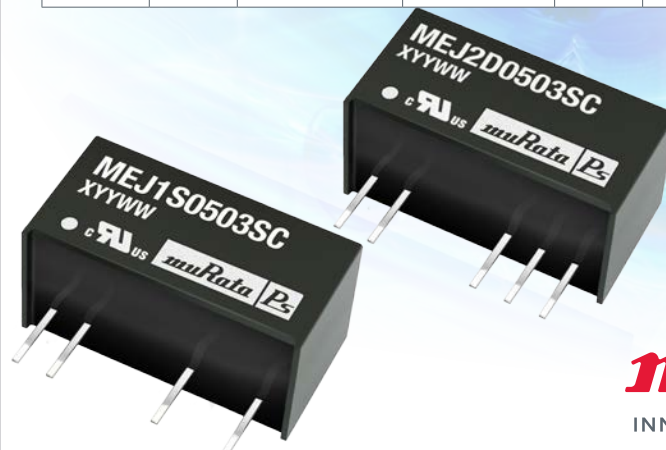
- Battery powered systems
- Process control systems
- High reliability systems

MEJ DC-DC converter

Medical approved 1W/2W

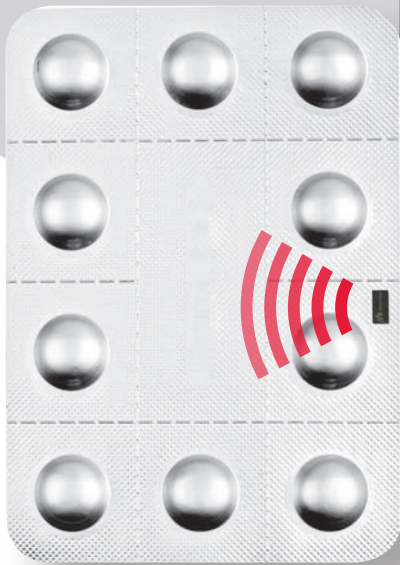
Industry standard, pin compatible 1W and 2W converters maintaining high levels of efficiency at light loads

Series name	Isolation	Input Voltage	Output Voltage	Efficiency	Dimensions (mm)	Power Rating
MEJ1	5200Vdc	3.3/5//12/15/24V	3.3/5/9/12/15V	69-78%	9.95 x 19.65 x 12.65	1W
MEJ2	5200Vdc	3.3/5//12/15V	3.3/5/9/12/15V	70-82%	9.95 x 19.65 x 12.65	2W



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RFID Technologies



Track, trace, and verify – with ultra-miniature UHF RFID tags

Whether your focus is on anti-counterfeiting, inventory management, or process control, MAGICSTRAP® offers you an integrated solution with a tag size which can meet the challenges of almost any application.

At only 2.0 x 1.2 (LXMS21) and 3.2 x 1.6 (LXMS31), the MAGICSTRAP® UHF IC module is one of the smallest in the world. It can be mounted onto, or embedded into, a wide variety of materials even in non-electronic products, and can be surface-mounted directly onto your PCB for use in medical electronics.

In association with partner companies offering hardware & software solutions, we are able to provide a fully integrated system that gives you massive read/write functionality all built around an unbelievably small module.

Applications

- Anti-counterfeit
- Process control/traceability of medical electronics
- Tracking/tracing PCBs
- Inventory management in healthcare institutions
- Probe tracking

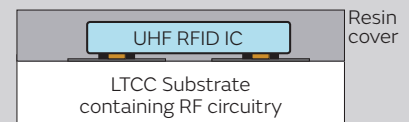
Small Size

2.0 x 1.2 (LXMS21) or
3.2 x 1.6 (LXMS31),
surface-mounted device

Features

- RF circuitry incorporated in LTCC substrate
 - Read range:
 - Up to 2cm using the component alone*
 - Up to 7m with external antenna
 - Can be mounted on many surfaces
 - Can be embedded into many materials
 - Small SMD: 2.0 x 1.2 (LXMS21) and 3.2 x 1.6 (LXMS31)
 - Complies with EPCglobal C1G2, ISO 18000-6C
- *Loop type antenna for reader/writer is required

Construction



Piezo Ceramics

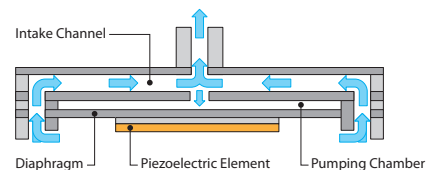


Microblower MZB Series

Piezo ceramics enable high-pressure air discharge

Features

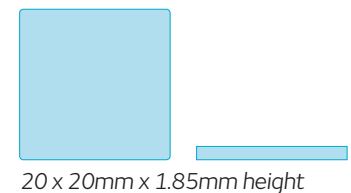
- Utilizes ultrasonic vibration of piezo ceramic material
- Can “blow” or “suck” for air/gas circulation or pumping
- Extremely small and thin
- Low power consumption
- Drive Frequency: 26 kHz
- Flow Rate: 1L/min (@15Vp-p)
- Static Pressure: 1900Pa (@15Vp-p)



Applications

- Discharge, suction or circulation of air/gas
- Transfer of liquids using air-pump mechanism
- Localized cooling
- Aroma dispensing

Small Size



MEMS Sensors

Inclinometers

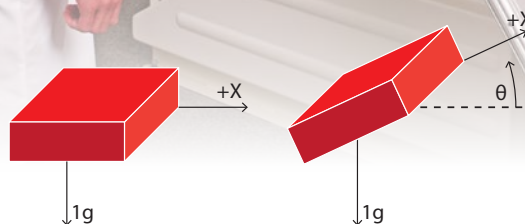
High accuracy leveling and inclination measurement with high reliability

Features

- High reliability, low noise
- Excellent stability over time
- Long lifetime
- Automotive grade quality

Applications

- Diagnostic equipment (X-ray, MRI, etc.)
- Surgery tables
- Hospital beds
- Treatment equipment



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Global locations

For details please visit www.murataamericas.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 catalog 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 August 2016. 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.

Murata Manufacturing Co., Ltd.

www.murata.com

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