

Power solutions for EV Chargers

100 kWh

50 kWh



Murata EV infrastructure optimization

Are you being challenged on size, price and reliability?

Global EV Market

As the market for Electric Vehicles (EV) is on the rise, more and more new models are being put on the market each year.

Some countries already offer purchase incentives. Germany recently doubled theirs from €3,000 to €6,000 to promote EV sales.

As EV Technology rapidly develops, the chargers require reliable, consistent and faster charging capabilities.

Murata and EVs

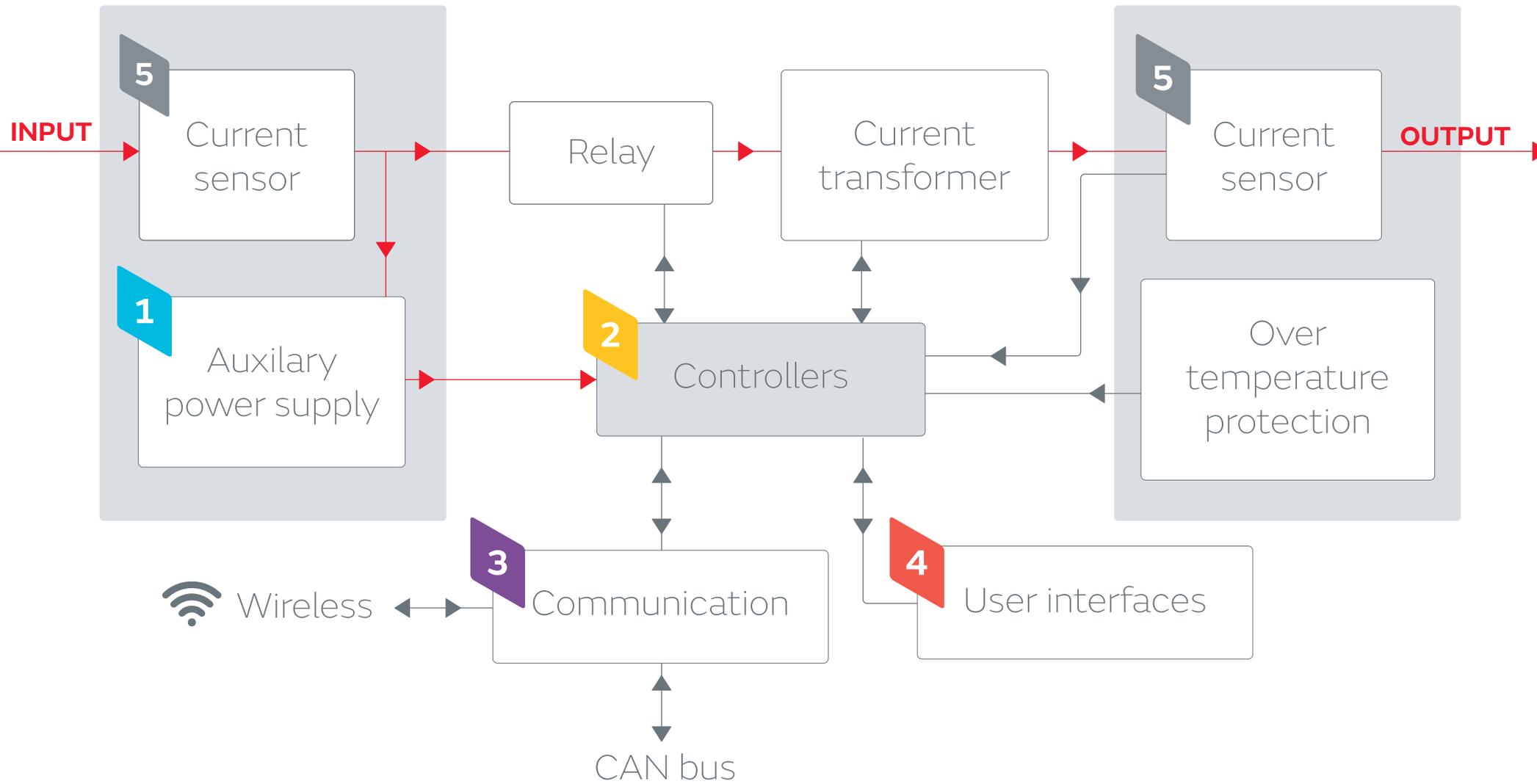
Murata, a global leader in EV infrastructure optimization, offers a wide range of reliable, durable products supporting this growing market.

This includes ultra-compact transformers, highly reliable coin batteries, power products and high-level sensors. These small-sized, reliable products maximize performance at reasonable cost.

Why choose Murata...

As an innovator in electronics, Murata has the technical expertise and support services in place to help you with all your AC-DC, DC-DC, transformer, sensors, connectivity needs and much more.

AC charging system

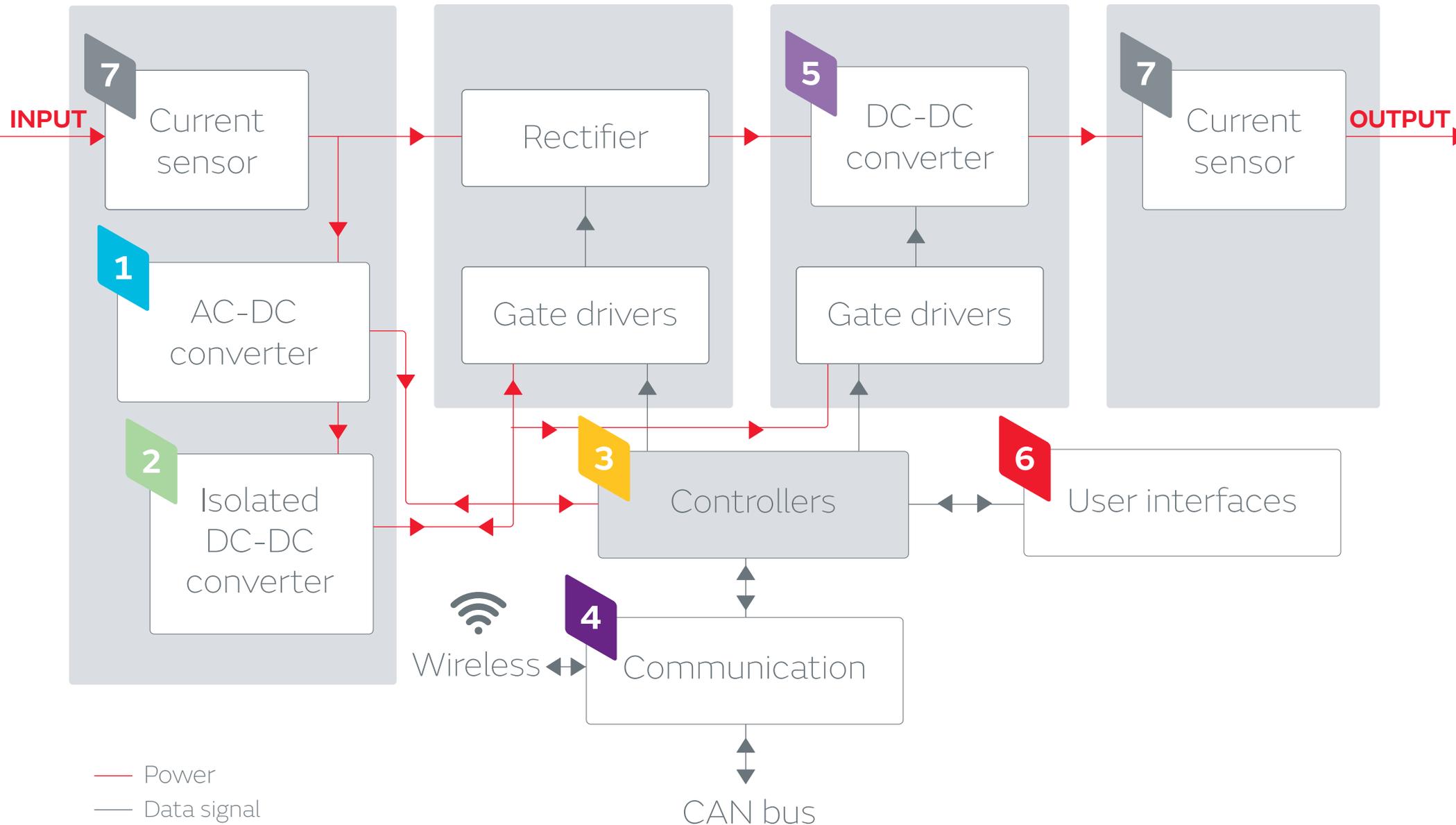


— Power
— Data signal

Product series table

Product category	Murata series
1 AC-DC converter	BAC series
2 Non isolated DC	MYRG series
3 Connectivity	Type1GC, Type1MW, Type ABZ, MBN52832
4 Micro Battery	CR coin lithium batteries
4 Isolated DC for RS485	NXE/NXJ series
5 Current sensor	MRD series CT100 series CT110 series

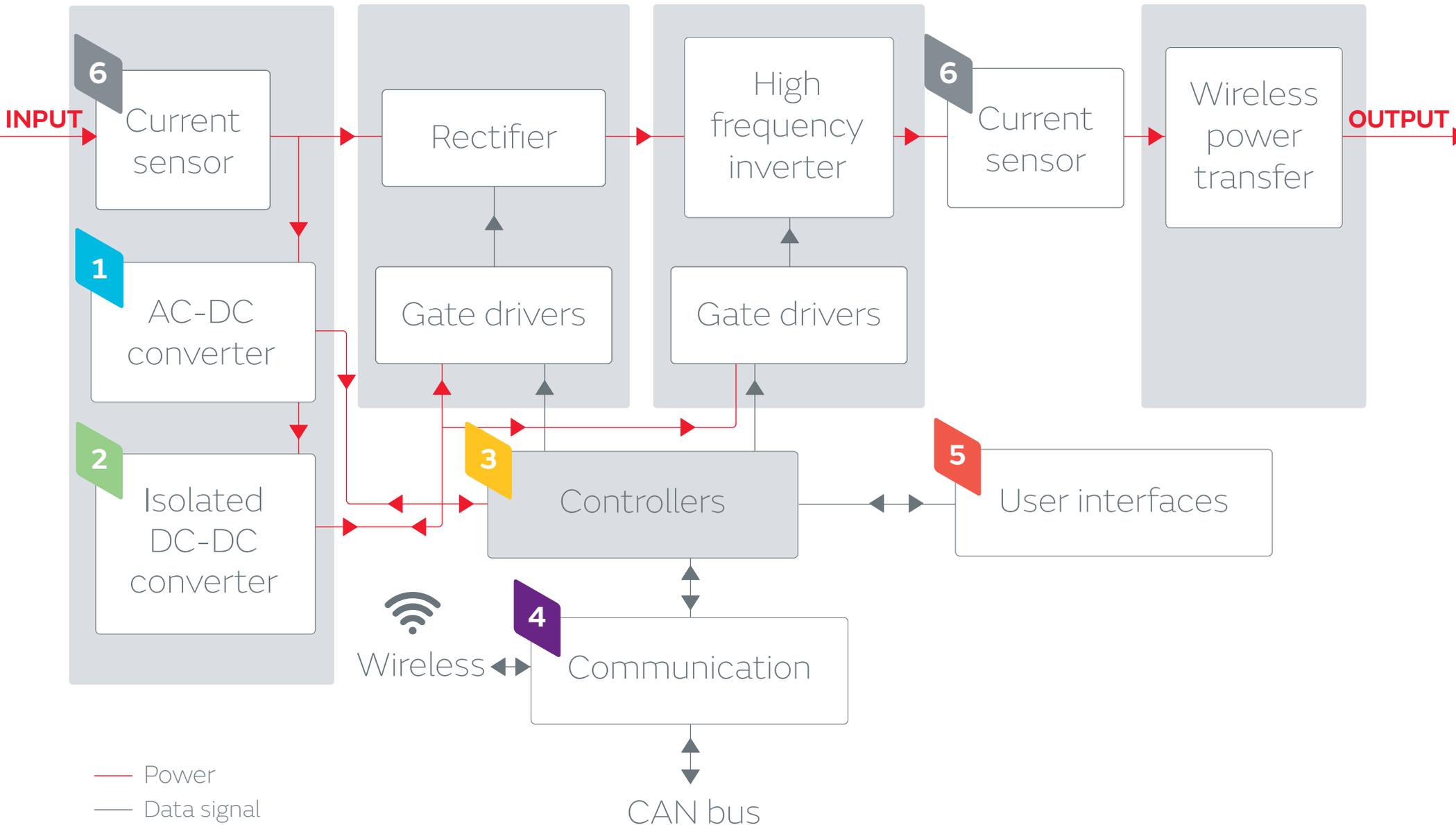
DC charging system



Product series table

Product category	Murata series
1 AC-DC converter	BAC series
2 Isolated DC for gate driver	MGJ series
3 Non isolated DC	MYRG series
4 Connectivity	Type1GC, Type1MW, Type ABZ, MBN52832
5 Transformer	HPHF transformer
6 Micro Battery	CR coin lithium batteries
6 Isolated DC for RS485	NXE/NXJ series
7 Current sensor	MRD series CT100 series CT110 series

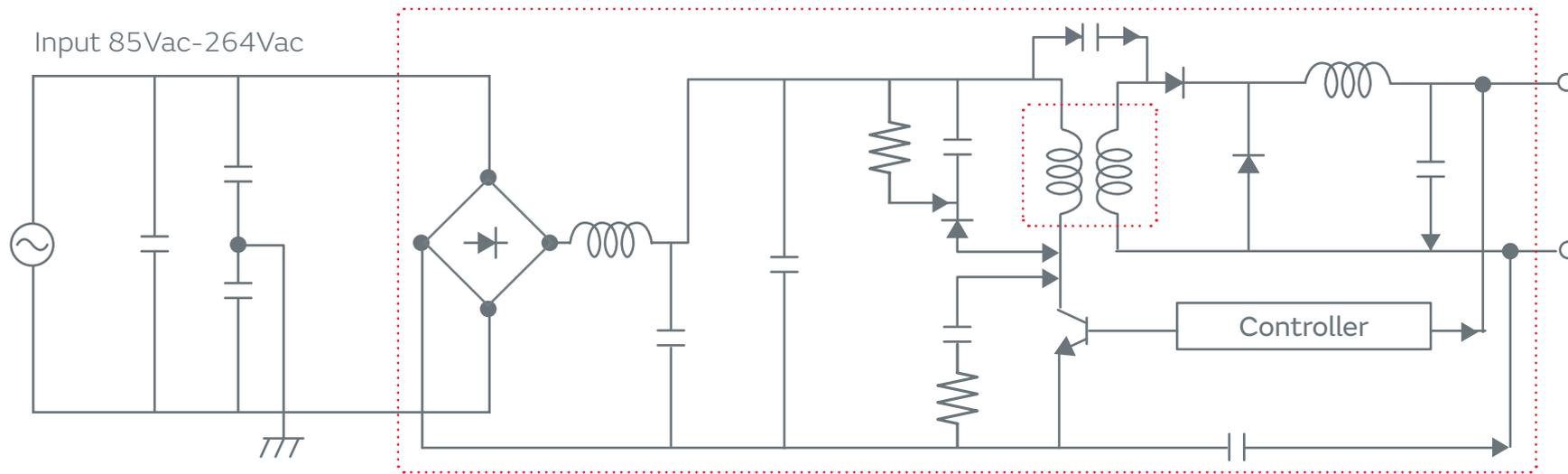
Wireless charging system



Product series table

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3 Non isolated DC	MYRG series
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The BAC series AC-DC converter



Features & benefits

Operating temp.: -40 – 85°C

Vin: 85 – 305Vac / 70 – 400Vdc

Vout: 5V, 12V, 24Vdc

Power rating: (*1) 1W, 3W, 5W, 10W

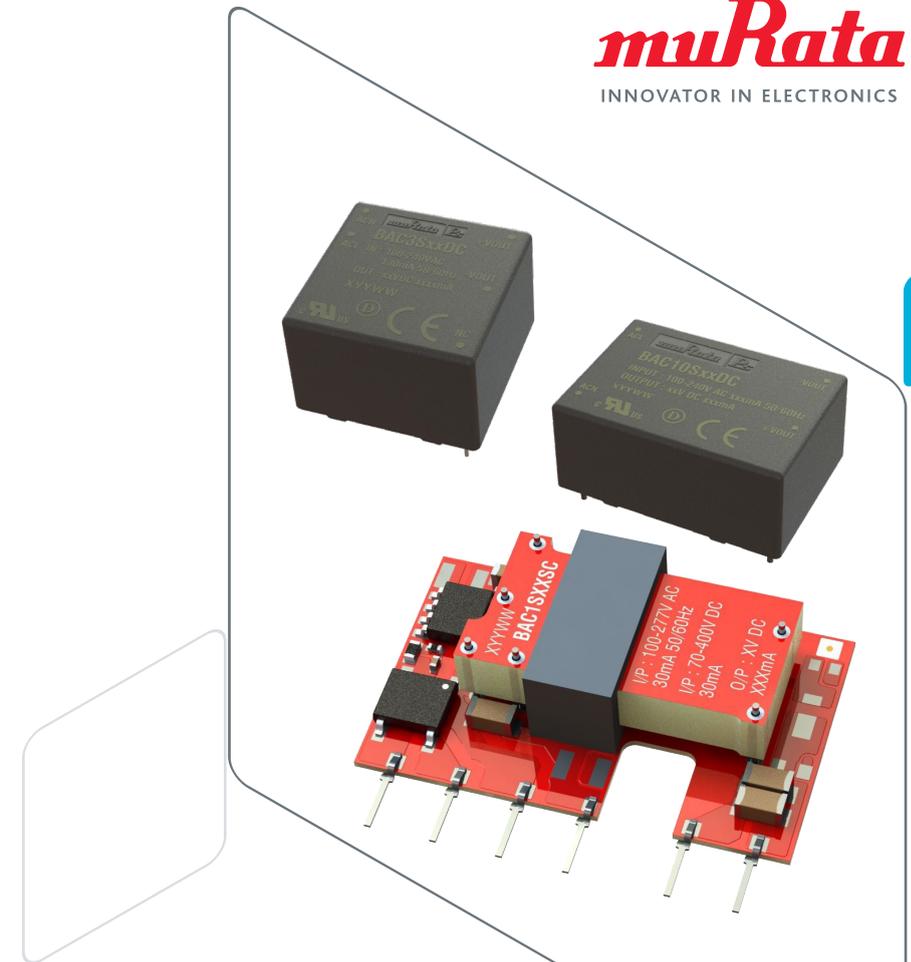
Isolation: 4.0kV “Hi pot test”

Typical line regulation: 0.3% for 5V, 0.1% for 12V & 24V

Standby power: Complies with ErP

Standard: EN60950, UL60950

- Ultra low line regulation
- Ultra low standby power
- High Efficiency at 230VAC (typ.) : 73%
- Operating temp from -40°C



Sample Schedule

- 1W(available)
- 3W(available)
- 5W(available)
- 10W(available)



MGJ series Isolated DC-DC converter for gate drive

Features & benefits

Operating temp.: 105 °C

Vin: 5V, 12V, 15V & 24Vin

Vout: +15V/-9V, +15V/-5V & +19V/-5V +15V/-8.7V
+15V/-15V, +17V/-9V, +15V/-10V, +24V/+24V

Power rating: 1-6W

Isolation: 5.2kV "Hi pot test"

I/O capacitance: Isolated capacitance; 3pF type

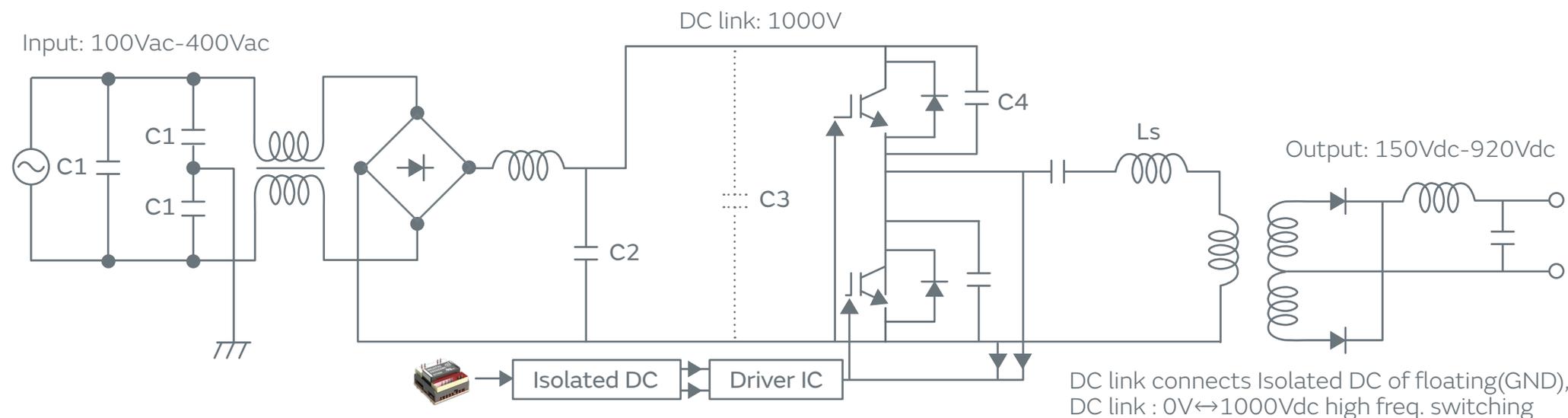
DC link voltage: 3kVDC

Standard: ANSI/AAMI ES60601-1

- High reliability
- High operating temperature
- High non-safety barrier continuous working voltage
- Reference design: Cree, ST micro, Infineon, Littlefuse

Sample
Schedule

MP: Started



The MYRGC series

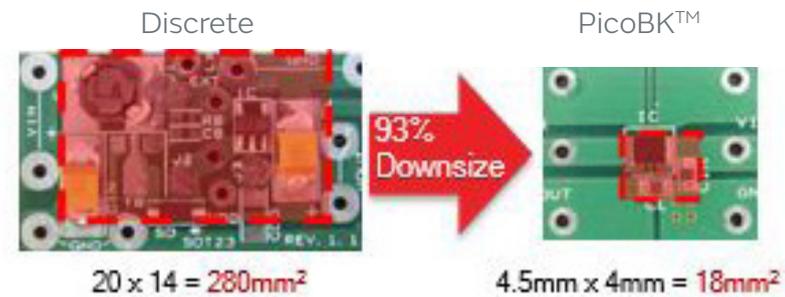
Non-Isolated DC-DC converter 12Vin/24Vin

Features & benefits

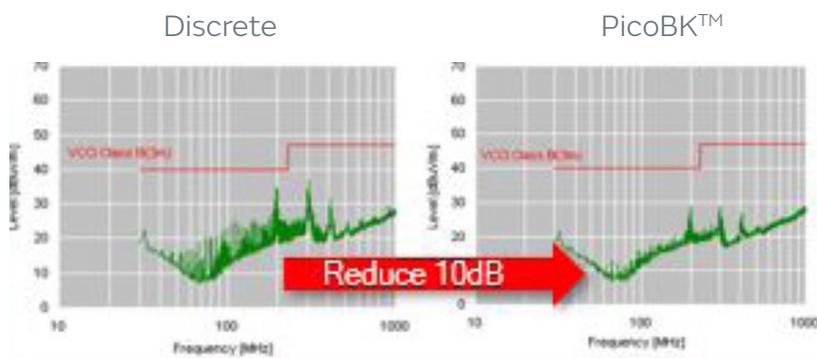
Comparison Discrete vs PicoBK™

- Space saving
- Thermal performance on PCB
- Low noise

Mounting area



Radiated noise



	MYRGC07505	MYRGC07506
Size (mm):	3.0 × 3.0 × 1.7	3.0 × 3.0 × 1.7
Vin:	3.0 – 18V	3.0 – 36V
Vout:	1.0 – 15V	1.0 – 5.0V
Output current:	0.5A	0.6A
Efficiency:	85%	86%
Operating temp.:	-40 – +105°C	
Control methods:	PWM control	



Sample
Schedule

MP: Started



High power high frequency Transformer for DC-DC converter

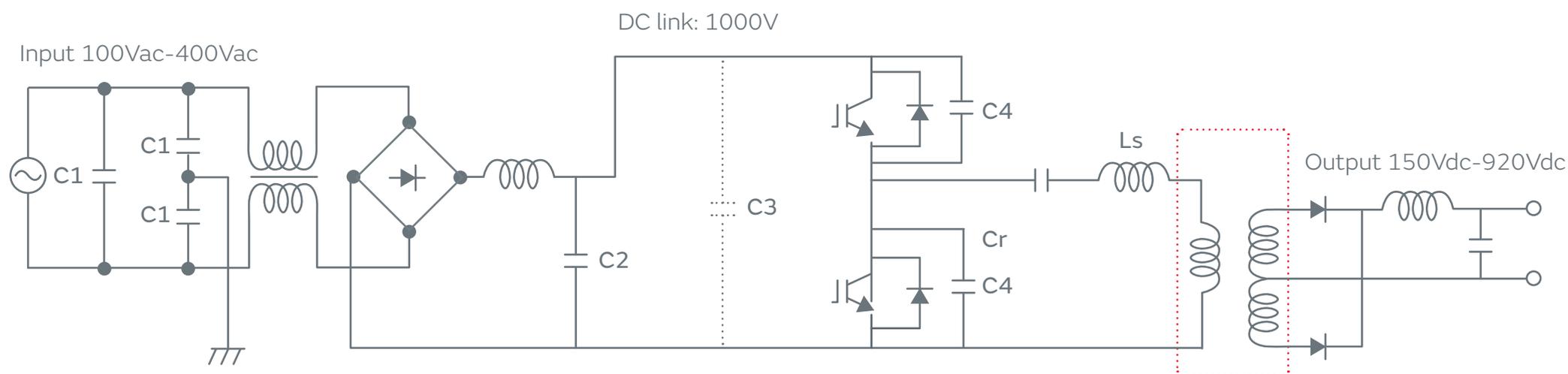
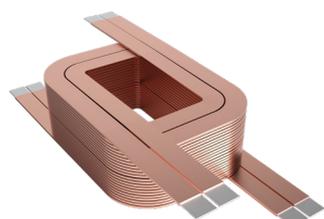
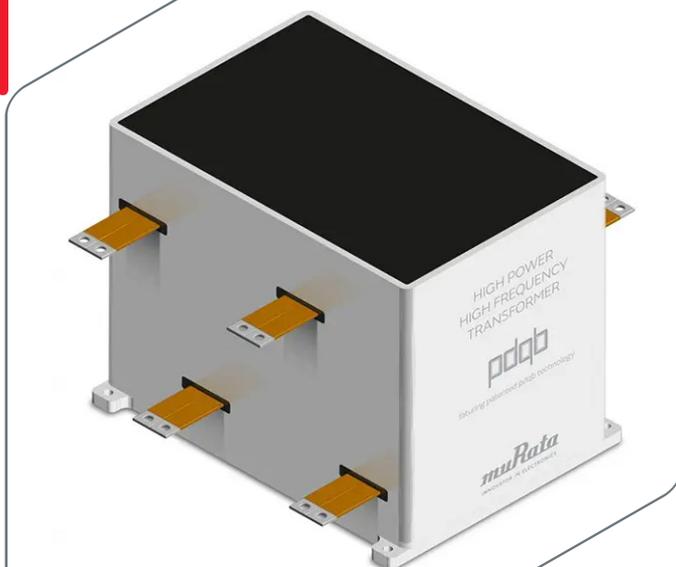
Features & benefits

Power rating: 30kW to 400kW
 Operating frequency: 20kHz to 250kHz
 Size: 12cm*14cm*21cm (100kW, 50kHz)
 Efficiency: >99.5%
 Isolation: $\geq 6\text{kV}$
 Vin: 50V to 1000V
 Vout: 50V to 1000V
 Turns ratio: 1:1 to 10:1

- Fully customised transformers
- High operating frequency
- Compact size
- High efficiency
- Proprietary pdqb winding technology

Sample
Schedule

ES: Available
MP: 2021Q2



Connectivity modules

Features & benefits

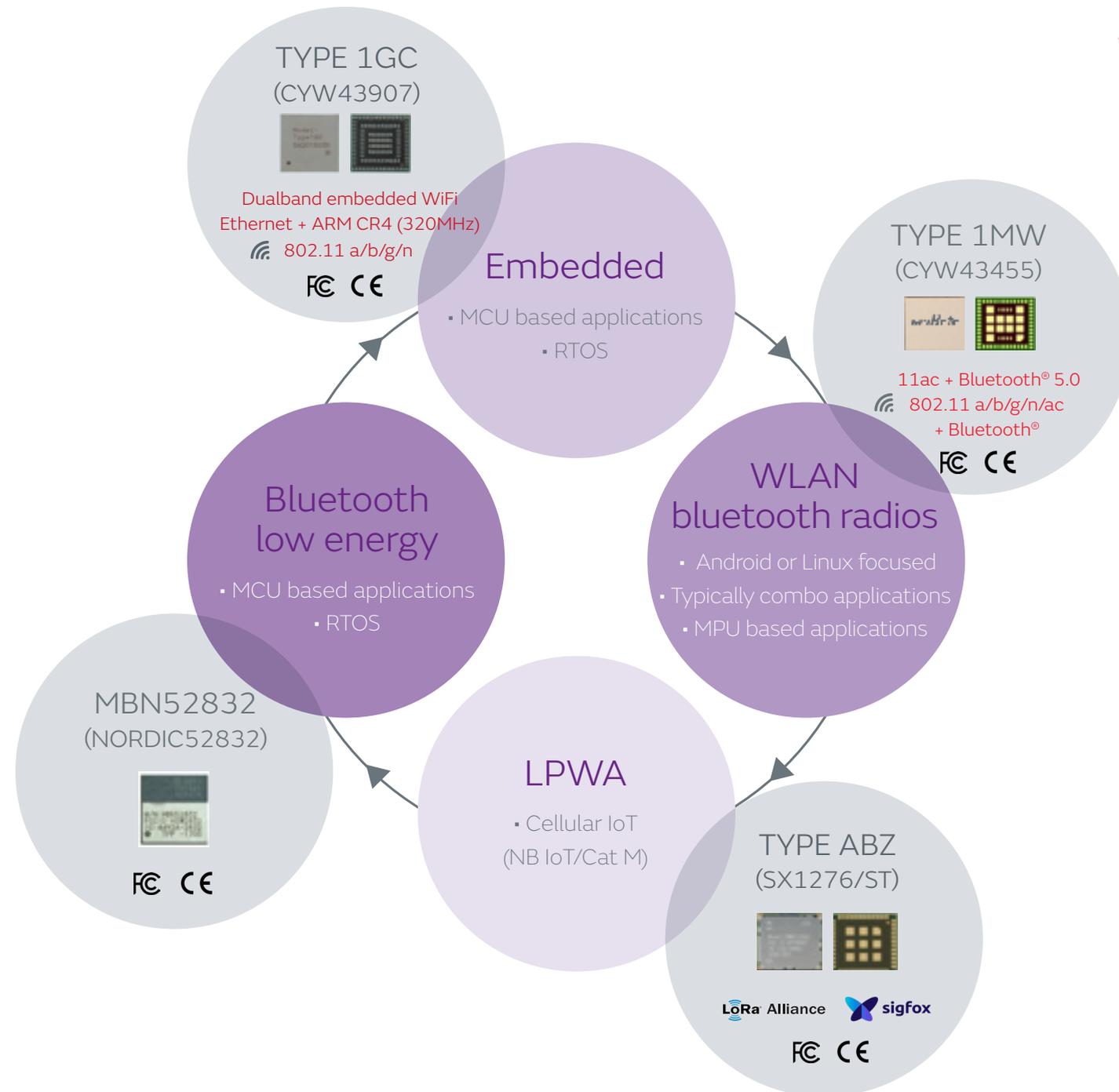
Wifi /Bluetooth (or Combo) & LPWA

Supply capability: >30Mu/Month

Market share: more than 60% in the world

Partnership: Cypress, DSP group, Qualcomm, Marvell, Nordic semi., Dialog semi.

- Support: HW/RF design SW/Cert design
- Covering semiconductor with Partner



Micro Battery

CR coin lithium batteries

Features & benefits

- Space saving : small, thin and light
- High reliability and safety : Outstanding temperature characteristics for exterior devices
- Stable and long discharge characteristics

	Extended Temp.	Heat Resistant
Operating Temp.:	-40°C to +85°C	-40°C to +125°C
Model (Nominal Capacity):	CR2032X (220mAh) CR2450X (600mAh) CR2477X (1000mAh) CR3677X (2000mAh)	CR2032W (210mAh) CR2050W (345mAh) CR2450W (550mAh) CR2477W (1000mAh)

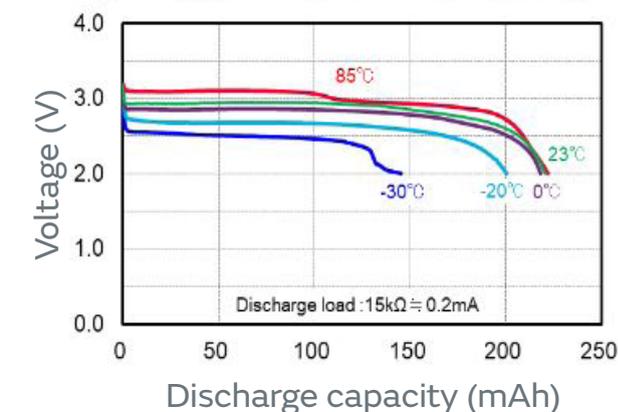
Sample Schedule

ES : Available

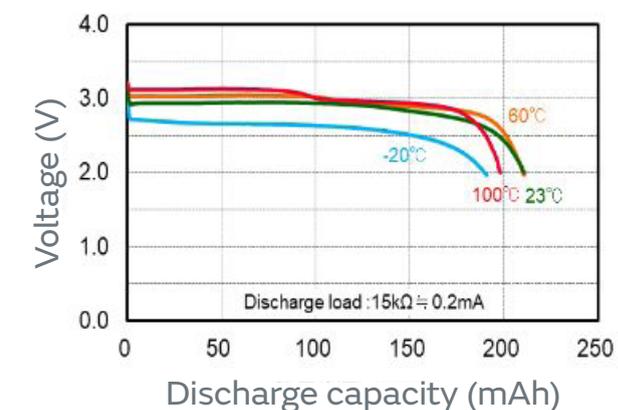
MP : Started



CR2032X performance



CR2032W performance

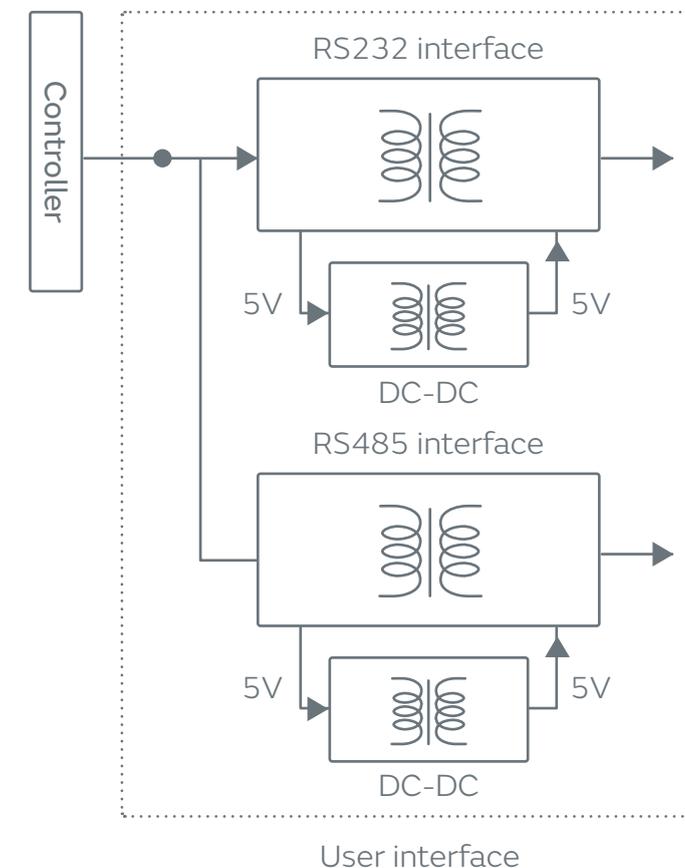


The NXE and NXJ series Isolated DC-DC

Features & benefits

- Lowest profile isolated converters
- Highest isolation for footprint size
- Compatible with a peak reflow solder temperature of 260oC as per J-STD-020.

	NXE1	NXE2	NXJ1	NXJ2
Vin	3.3, 5	5, 12	3.3, 5, 12	5, 12, 24
Vout:	3.3, 5	5, 12, 15	3.3, 5, 12, 15	5, 12, 15
Wattage:	1W	2W	1W	2W
Isolation test voltage:	3kVDC	3kVDC	4.2kVDC	5.2kVDC
Operating Temp.:	-40 to +105°C			
Safety:	ANSI/AAMI ES60601-1, UL60950			
	1 MOOP	1 MOOP	1 MOPP	1MOPP & 2MOOP



Sample Schedule

ES: Available
MP: Started



The MRD series *(under development)*

Coreless current sensors

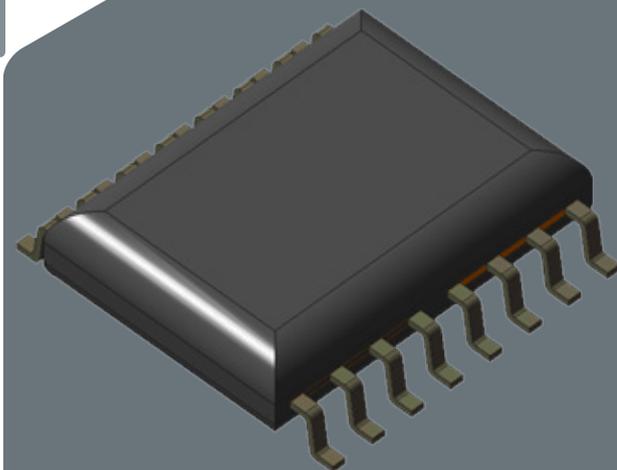
Features & benefits

Power supply voltage: 3.3V or 5.0V
 Operating temp.: -40 – 125°C
 Range of Current: +/- 40A
 Total accuracy: 3% & 4% FS max.
 Size: SOICW16

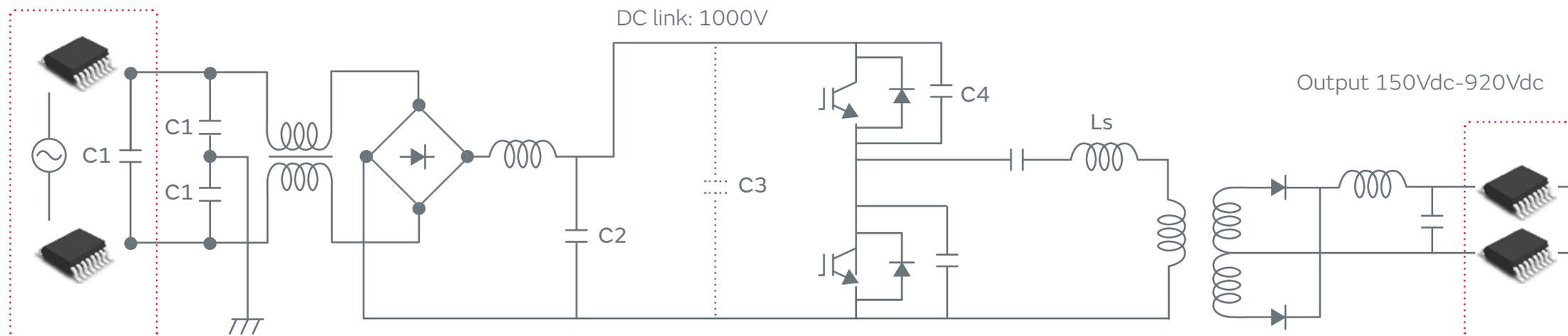
Response: 0.5 uS typ.
 Dielectric strength voltage: 4.8kV
 Current consumption: 14mA typ.
 Selectable frequency bandwidth

Sample Schedule

ES: 2020 Q4
 MP: TBC



Input 100Vac-400Vac



Current sensor

Current sensor

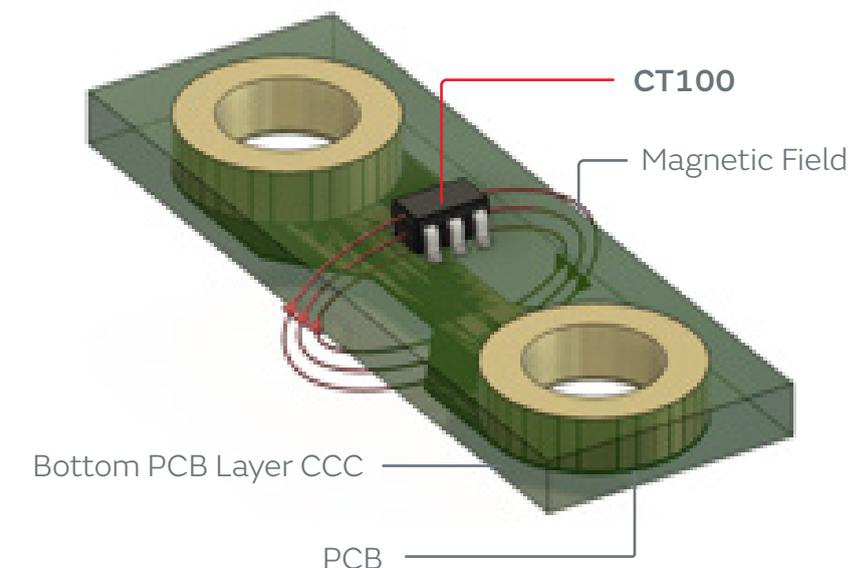
CT100

Contactless current sensor

CT100 captures the magnetic field generated by the current traveling in the current carrying bottom PCB layer.

Features & benefits

- Contactless and isolated current sensor
- Excellent linearity performance with minimal heat loss
- Stable performance over temperature
- Large bandwidth and tolerant to current transients/spikes
- Low power consumption: < 100 μ A
- Wide voltage supply range: 1.0 V to 5.5 V
- PCB limited: 100 mA to 100 A
- Package options:
 - 6-lead SOT23
 - 6-lead DFN, 1.50 * 1.50 * 0.45 mm



**Sample
Schedule**

ES: Available

MP: Started

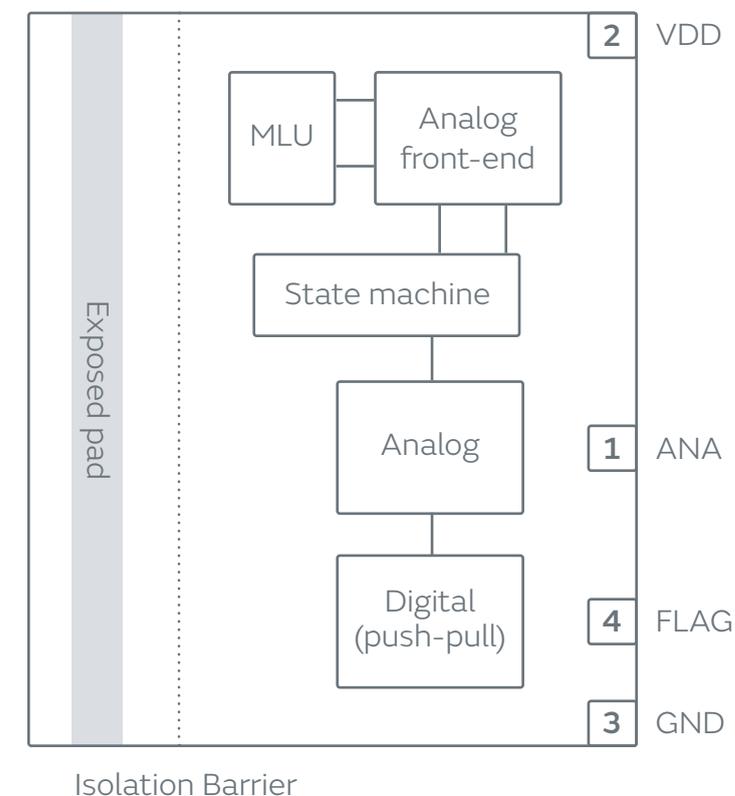


CT110

Isolated analog current sensor

Features & benefits

- Supports AC & DC current: 2.5A to 25.0A
- Stable performance over full temperature range
- 2 kV rated isolation voltage per ISO 60950-1:2005
- Linearity error: $\pm 0.5\%$
- FLAG pin to detect over-current event
- Supply voltage range: 2.7 V to 5.5V
- Analog S&H output @ $f_S = 200$ kHz
Supply Current: ~ 2.4 mA
- Operating temperature ranges:
Industrial: -40°C to $+85^\circ\text{C}$
Extended industrial: -40°C to $+125^\circ\text{C}$
- Package: 6-lead LGA, 3.00 x 3.00 x 0.92 mm



Sample Schedule

ES: Available
MP: 2020Q4

