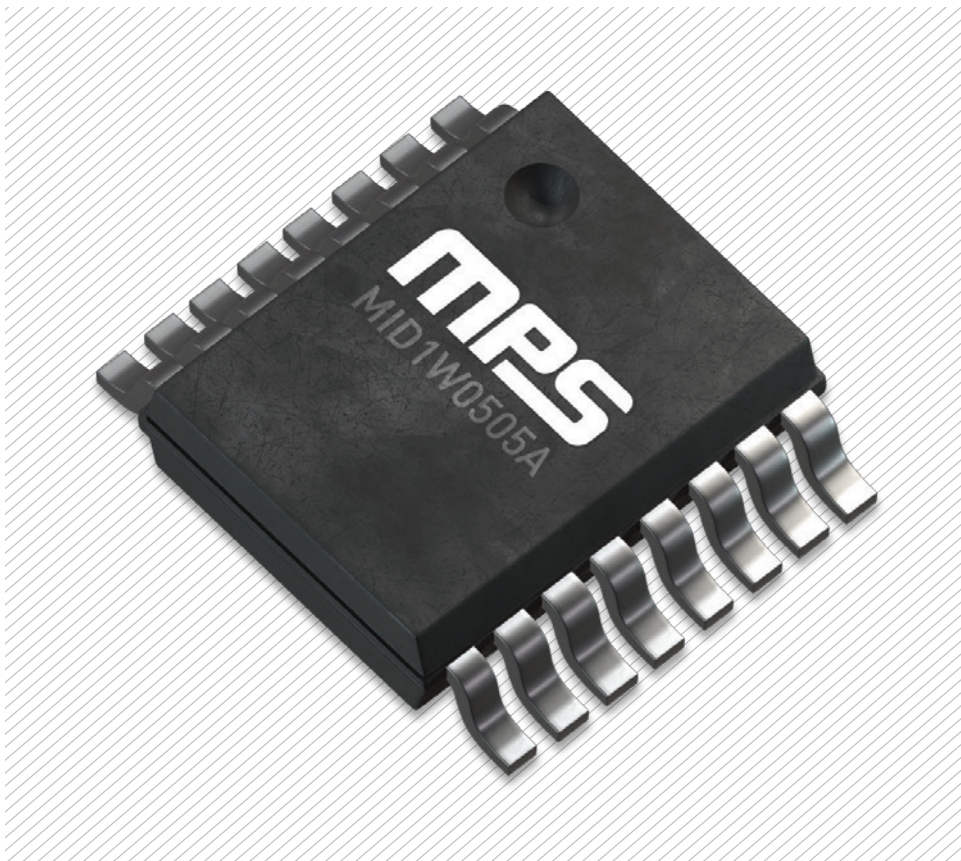


# endrich news

www.endrich.com

**OUR PRODUCT OF THE MONTH:** MIDxxW0505A MPS  
ISOLATED DC/DC POWER MODULES: 0.25 W TO 1 W



## FEATURES

- Input Voltage Range: 3V to 3.6V, or 4.5V to 5.5V
- 3.3V/5V Output Voltage
- 0.4 % Load Regulation, 1.5 % Line Regulation
- 1.5 kVDC/3 kVDC Isolation
- Integrated Transformer
- Passes CISPR32 Class B EMI
- Available in an SOICW-16 Package (10.3 x 10.3 x 2.5 mm)



## ENCAPSULATED HIGH POWER DENSITY 5 W AC/DC CONVERTER FOR FLEXIBLE DESIGNS

HAVE A  
LOOK

In product design, an open-frame power converter is requested to keep a specific contact distance with the periphery.

But for more and more compact layout requirements, encapsulated power modules can greatly reduce the distance from the peripheral devices to meet the pollution level III (meet IEC62368-1). MORNSUN's latest LS05-23BxxDR3 series offers an encapsulated package, satisfying space-limited applications.



MORNSUN's latest  
LS05-23BxxDR3 series

The LS05-23BxxDR3 products have the advantages of an ultra-compact size of 27.60 x 18.50 x 7.80 mm, high reliability, high insulation, and much more. They are suitable for industrial control, power instrumentation, smart home, and many more applications with have space-limitations or for harsh conditions.

### ADVANTAGES

- **Ultra-wide input voltage range**  
85 – 305 VAC and 70 – 430 VDC
- **Ultra-thin thickness and compact size**  
High power density with 27.60 x 18.50 x 7.80 mm
- **High-reliable encapsulated package**
  - a) Pollution degree III (meet IEC62368-1), resistant to corrosion and aging
  - b) Decrease the contact distance with the periphery but more safe
  - c) High I/O isolation test voltage up to 4000 VAC
  - d) High insulation
  - e) Encapsulated package enhance the actual life of the power supply
- **Wide operating temperature**  
Operating temperature range: -40 °C to +85 °C

### APPLICATIONS

- Industrial control
- Power instrumentation
- Smart home
- LED street light control
- Electrical grid
- IoT device
- Security system
- Communication equipment

### FEATURES

- Accepts AC or DC input (dual-use of same terminal)
- Flexible design for versatile applications
- Compact size, high power density, environment friendly
- Controllable lifespan and cost
- No-load power consumption as low as 0.1 W
- High I/O isolation test voltage up to 4000 VAC
- Plastic case meets UL94V-0 flammability
- Output short circuit and over-current protections
- Comply with IEC/EN61558, IEC/EN60335 standards
- Comply with EN62368 standards

## THE WORLD'S SMALLEST 5G NR, WIFI-6E AND GNSS COMBINATION 9-IN-1 ANTENNAS

With the Stellar series, 2J launches the world's smallest 5G NR, WiFi-6E and GNSS combined 9-in-1 antenna for critical communications. This series is designed for a large number of devices, focusing on sub-6 GHz, 5G NR, 4G LTE, 3G, 2G, WiFi-6E and GNSS technologies.



*2J6B86BCFd*  
199 × 167 × 54  
Screw Mount



*2J4H86PCFd*  
198 × 127 × 15.7  
Adhesive Mount



*2J4H86MCFd*  
198 × 127 × 51  
Magnetic Mount

The series includes single or up to 9-in-1 configuration options in the frequency range from 617 MHz to 7125 MHz.

Cutting-edge-patent-pending technology reduces the antenna footprint by 55 %, while implementing a new dual-three-wire design and longitudinal resonance for MIMO/ARRAY configurations, which traditionally have more complex size constraints (i.e. B71 band/600 MHz). Each antenna configuration uses a symmetrical or asymmetrical resonator for the negative part of the antenna to achieve maximum performance at low and intermediate frequencies.

### FEATURES

- 9-in-1 combination antenna
- 617-5925 MHz sub 6 GHz bands
- Full 4GLTE backward compatibility
- 28 dB GNSS active gain
- Pre-filter GNSS
- GNSS Voltage range 1.5 – 3.6 V
- Customizable cable and connector

### BENEFITS:

- Ultra-Wide band antenna
- High performance
- Ground plane independent
- Active GNSS antenna

### APPLICATIONS

- Law enforcement
- Medical transportation
- Fire rescue
- Heavy duty vehicles
- Smart City – energy management
- Smart Home and Smart Building – high performance components
- Horticulture
- Mechanical engineering
- And any other applications where mission critical communication is a requirement

## 5G MODULES – FOR A RELIABLE FUTURE

HAVE A  
LOOK

Fibocom's FG150 and FM150 5G modules are the first 5G modules based on the Qualcomm SDX55 platform. These modules provide high data rate and low latency data transmission services as part of the 5G network.

Fibocom FG150 and FM150 5G modules support both 5G SA (stand-alone) and NSA (non-stand-alone) network architectures and provide an integrated multi-network solution compatible with global 5G sub 6 and millimeter wave bands. The modules are compatible with both LTE and WCDMA standards. This reduces customer investment in the early stages of 5G

deployment and helps customers quick transition of legacy product lines to 5G product lines.

The FG150 comes in small size LGA form factor and is perfect for a variety of integrated eMMB (enhanced Mobile Broadband) solutions. The module supports uplink 2\*2 MIMO and downlink 4\*4 MIMO multi-antenna configuration in SA mode. It also supports GNSS wireless positioning technology.

### FEATURES FG150-AE

- **Radio Standard**
  - WCDMA
  - 4G LTE
  - 5G NR
- **Form Factor**
  - LGA
- **Interface**
  - UART x1
  - USB3.1/3.0 x1
  - GPIO
  - USB2.0 x1
  - I2C x1
  - PCIe3.0 x1
  - SDIO x1
  - SPI x1
  - I2S x2
  - RGMII x1
  - UIM x2
  - MIPI x2
- **Approval**
  - CE/RED (Europe) (FG150-AE)
  - RCM (Australia) (FG150-AE)
  - GCF (Global) (FG150-AE)
  - KC (Korea) (FG150-AE)
- **Band**
  - 5G Sub-6: n1, n3, n5, n7, n8, n20, n28, n40\*, n38, n41, n77, n78, n79
  - LTE FDD: B1, B2, B3, B5, B7, B8, B20, B25, B28, B32
  - LTE TDD: B34, B38, B39, B40, B41, B42, B43\*
  - WCDMA: B1, B2, B5, B8
- \*= in planning
- **General**
  - Size (l x w x h): 41 x 44 x 2.75 mm
  - Operating temperature range: -30~+75°C
  - Power supply: 3.3V ~ 4.4V

### APPLICATIONS:

- Energy Management
- Measurement Systems
- Smart Factory
- Smart Building
- Horticulture
- Autonomous Vehicles (Robots, Drones & Heavy Machines)



## 5G MODULES – FOR A RELIABLE FUTURE

HAVE A LOOK

Regionally certified products provide worldwide availability and accelerate the deployment of 5G IoT applications at scale, as well as 4K / 8K real-time video transmission, cloud office, drones, robots, AR / VR, 5G digital signatures, 5G WLAN gateways and embedded systems, telemedicine, connected cars, intelligent transportation systems, autonomous driving and telematik units, factory automation & robotics, smart buildings, smart cities, smart grids, energy management etc.

The FM150 comes in M.2 form factor (30 × 52 mm) and is suitable for a variety of embedded eMBB (enhanced Mobile Broadband) solutions. The module supports uplink 2\*2 MIMO and downlink 4\*4 MIMO multi-antenna configuration in SA mode. It also supports GNSS wireless positioning technology. The antennas can be connected via coaxial connector (IPEX or U.FL).



### FEATURES FM150-NA /FM150-AE

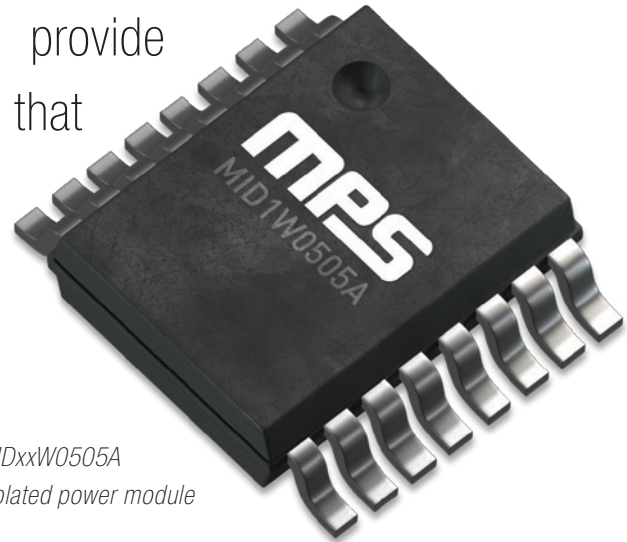
- **Radio Standard**
  - WCDMA
  - 4G LTE
  - 5G NR
- **Interface** USB3.1/3.0 x1
  - GPIO
  - UIM x1
  - USB2.0 x1
  - PCIe3.0 x1
  - I2S x2
  - MIPI x2
- **Form Factor**
  - M.2 in two different versions:
    - a) PCIe version (FM150-AE-20-00) b) USB version (FM150-AE-21-00)
- **Approval**
  - CE/RED (Europe) (FM150-AE)
  - RCM (Australia) (FM150-AE)
  - GCF (Global) (FM150-AE)
  - KC (Korea) (FM150-AE)
  - FCC (USA) (FM150-NA)
  - PTC RB (ASA) (FM150-NA)
- **Band**
  - 5G Sub-6: n1, n3, n5, n7, n8, n20, n28, n38, n41, n77, n78, n79
  - LTE FDD: B1, B2, B3, B5, B7, B8, B20, B25, B28
  - LTE TDD: B34, B38, B39, B40, B41, B42, B43\*
  - WCDMA: B1, B2, B5, B8
  - \*= in planning
- **General**
  - Size (LxWxH): 30 x 52 x 2.3 mm
  - Working temperature range: -10 ~ +55 °C
  - Power supply: 3.135 V ~ 4.4 V

### APPLICATIONS:

- Energy Management
- Embedded Systems
- Routers/Modems
- Smart Factory
- Smart Building
- Medical Systems

## MIDxxW0505A MPS ISOLATED DC/DC POWER MODULES: 0.25 W TO 1 W

MPS's isolated DC/DC power modules provide engineers with a superior isolation barrier that more easily meets design specifications, ...

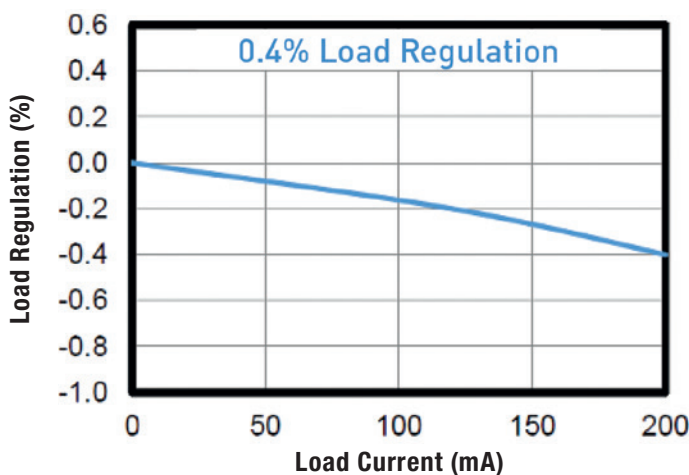


MIDxxW0505A  
isolated power module

... reduces magnetic interference, and comes in a smaller, low-profile size with standard packaging that makes application simple and reliable. They are ideal for a variety of products, including medical and industrial automation, inverters, smart meters, and more.

### Load Regulation

$$V_{IN} = V_{OUT} = 5V$$



PART NUMBER	INPUT RANGE	OUTPUT RANGE	ISOLATION RATING	POWER
MID02W0303A-2/-3	3 V to 3.6 V	3.3 V	1.5 KV/3 KV	0.25 W
MID04W0503A-2/-3	4.5 V TO 5.5 V	3.3 V	1.5 KV/3 KV	0.4 W
MID06W0503A-2/-3	4.5 V TO 5.5 V	3.3 V	1.5 KV/3 KV	0.6 W
MID06W0505A-2/-3	4.5 V TO 5.5 V	5 V	1.5 KV/3 KV	0.6 W
MID1W0505A-2/-3	4.5 V TO 5.5 V	5 V	1.5 KV/3 KV	1 W

### APPLICATIONS

- Isolated Digital
- Isolator Bias
- RS-485/232/CAN
- Interfaces
- Isolated Sensor
- Power Supplies
- Telecom/Networking

### FEATURES

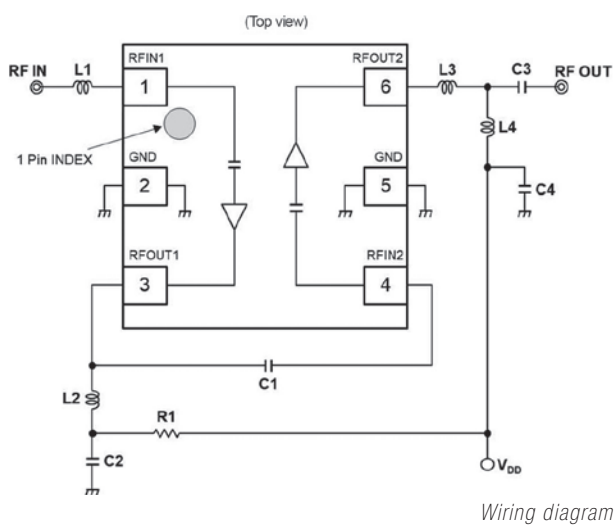
- Input Voltage Range: 3 V to 3.6 V, or 4.5 V to 5.5 V
- 3.3 V/5 V Output Voltage
- 0.4 % Load Regulation, 1.5 % Line Regulation
- 1.5 kVDC/3 kVDC Isolation
- Integrated Transformer
- Passes CISPR32 Class B EMI
- Available in an SOICW-16 Package (10.3 x 10.3 x 2.5 mm)

## GNSS HIGH GAIN LOW NOISE AMPLIFIER NJG1187

HAVE A LOOK

The NJG1187KG1 is a high gain low noise amplifier (LNA) designed for GNSS applications. The NJG1187KG1 is available to be tuning for L1 (1.5 GHz) or L2/5/6 (1.1 to 1.2 GHz) band by changing only value of external parts.

This LNA is also available to place a filter between the two amplifier stages in order to realize high attenuation without degradation of noise figure. This LNA operates in wide temperature range from -40 to +105 °C. Integrated ESD protection device on each port achieves excellent ESD robustness. The small and thin ESON6-G1 package is adopted.



NJG1187KG1  
Low noise GNSS amplifier with high gain

### APPLICATIONS

- GNSS receive application
- Active antenna, dashboard camera, and navigation
- GNSS module

### FEATURES

- Supply voltage (1.5 to 3.7V)
- Low current consumption (8 mA typ. @ VDD = 3.3V)
- High gain  
(34 dB typ. @ L1 band, VDD = 3.3V  
37 dB typ. @ L2/5 band, VDD = 3.3V  
36 dB typ. @ L6 band, VDD = 3.3V)
- Low noise figure  
(0.60 dB typ. @ L1 band, VDD = 3.3V  
0.65 dB typ. @ L2/5/6 band, VDD = 3.3V)
- Small package size (1.6 x 1.6 x 0.397 mm typ.)
- RoHS compliant and halogen free, MSL1

**MERGE BETWEEN NEW JAPAN RADIO CO., LTD.  
AND RICOH ELECTRONIC DEVICES CO., LTD.**



**RICOH**  
imagine. change.



**NISSHINBO**

As of January 1, 2022, New Japan Radio Co. Ltd. and Ricoh Electronic Devices Co., Ltd. will merge in Japan, and commence the business under the name of Nisshinbo Micro Devices Inc., which is a subsidiary wholly owned by Nisshinbo Holdings Inc.

The merge will not affect any order and support of former NJR parts. We are happy to announce that with this merge Endrich GmbH is now able to support you also with the device of the former Ricoh Electronic Device Co.

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