

# endrich news

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## OUR PRODUCT OF THE MONTH: 5-IN-1 COMBO ANTENNA SERIES "DIAMOND" – FOR ROUGH ENVIRONMENTS



### FEATURES

- Low profile
- Dimensions: 200 x 100 x 31 mm
- 5 in 1 antenna (2x 5G/LTE, 2x WiFi MIMO, 1x GNSS L1 / L2 / L5 / L6)
- Screw-mount installation
- Ultra reliable (salt spray, UV, humidity resistant)
- IP67
- Operating temperature: -40 °C to +105 °C
- Cable and connector customization possible



## ULTRA WIDE INPUT DC-DC CONVERTER FOR SOLAR TRACKING SYSTEMS

## 5-IN-1 COMBO ANTENNA SERIES "DIAMOND" – FOR ROUGH ENVIRONMENTS

HAVE A LOOK

Enclosed DC-DC power supplies are often used in remote and harsh environments, the altitude may exceed 2000 m or even 5000 m or the temperature may exceed 50 °C in operation. The PV 40 W to 350 W - 27/29Bxx family has passed a series of tests to verify reliable operation in high altitude environment, such as high temperature test, low temperature altitude test, aging test etc leading to a robust product performing in extreme conditions for demanding applications.

A 200 W or higher DC/DC converter gets electricity from the solar panel array to supply power to the motor directly. The requirements for PV20029Bxx series: higher power means better cooling materials and design, 300-1500 VDC in/out voltage, input under voltage protection, input reserve

protection, 4000 VAC isolation, 1500 VDC safety certification, operating temperature range of -40 °C bis +70 °C, meets 5.000 m altitude requirements, high humidity resistance, cold and heat shock.

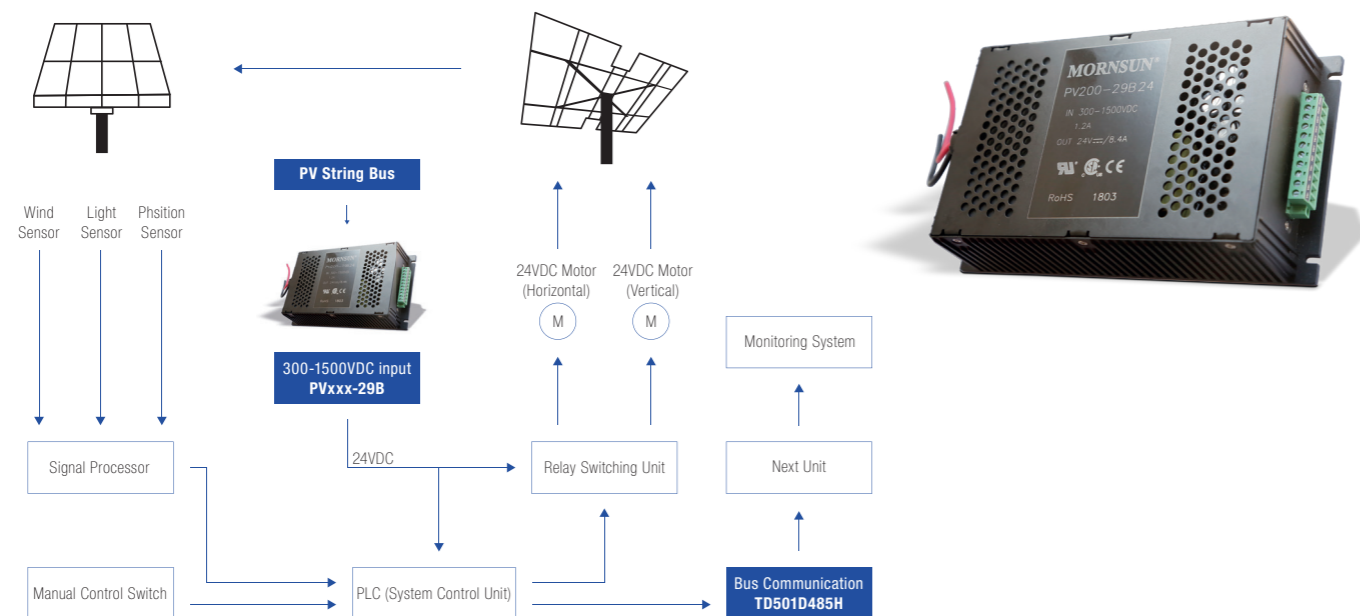
1. Simple design the ultra-wide input for 300-1500 VDC enables the direct connection of the PV350 to the PV string, a particularly effective structure for supplying all tracker components.
2. Low cost: equipped with a PV350, a single tracker can control several PV-panels
3. High reliability
4. Wide range of power: 40 W, 120 W, 150 W, 200 W and 350 W (upcoming).

### APPLICATIONS

- PV tracking systems
- Industrial control
- Valves control
- Street lighting
- Telecommunications
- Energy storage systems

### FEATURES

- Input voltage: 300-1500 VDC
- Output: 12-48 VDC
- Power: 40-350 Watt
- Operating temperature range: -40 °C bis +85 °C
- Wide input voltage ranges 200-1000 V / 1500 V
- Insulation: 4000 VAC
- Protection against polarity reversal prevents incorrect connection
- Wide temperature ranges and high reliability in harsh environments
- Safe and certified design
- Reinforced insulation



HAVE A LOOK

Rough environment and multiple wireless technologies? No problem. The Inpaq Diamond antenna is save to use in outdoor applications as well as rough environment indoor applications. The Diamond antenna is a 5 in 1 solution supporting 4G / 5G in the Sub6 GHz Frequency range as well as WiFi and GNSS in multiple bands (L1 / L2 / L5 / L6).

Made for rough environments, the Diamond is salt spray, UV, humidity resistant and IP67 rated – so also water and dust proof. Mechanical shock and vibrations are not a problem. The antenna is mounted via screw mount (M20 nut) to hold it extra tight. With only 31 mm in height on typical applications it is almost invisible and fits in the surroundings.

For different applications, the cable length and connector can be customized. A low loss cable can be chosen as well as Fakra connectors for high performance usage.



### APPLICATIONS

- Smart building / smart city
- Energy management
- Smart agriculture
- Construction / heavy vehicles and machines
- Fleet management
- Public transportation
- Telematic systems

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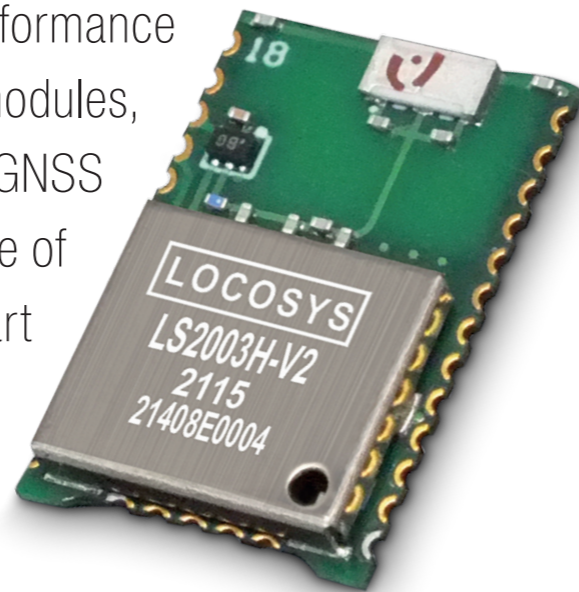


**GNSS L1 + L5 SUB-METER SMART ANTENNA MODULE – LOCOSYS LS2003H-V2**

**LARGE-CURRENT SMD COMMON-MODE FILTERS WITH HIGH IMPEDANCE**

**HAVE A LOOK**

LS2003H-Vx series products are high-performance dual-band GNSS smart antenna modules, including embedded antennas and GNSS receiver circuits, designed for a wide range of OEM system applications. The GNSS smart antenna will acquire L1 and L5 signals at the same time, while providing better independent position accuracy.



The LS2003H-V2 can provide you with fast Time-To-First-Fix and low power consumption. These modules support hybrid ephemeris prediction to achieve a faster cold start. One is self-generated ephemeris prediction (called EASY), which does not require network assistance or host CPU intervention. The validity period is up to 3 days and will be automatically updated from time to time when the GNSS module is powered on and the satellite is available. The other is the ephemeris prediction (called EPO) generated by the server obtained from the internet server. The maximum validity period is 14 days. Both ephemeris predictions are stored in the onboard flash memory, and the cold start time is less than 15 seconds.

Due to the built-in chip antenna, it can be easily installed without the need for the RF connector and coaxial cable required in a separate GNSS active antenna. In other words, reduced cost and size. In addition, by eliminating R&D work on RF matching and stability between separate GNSS antennas and modules, time to market is accelerated. If an external antenna is required, users can add some external components to realize the automatic switching function between the built-in GNSS chip antenna and the external antenna. In addition, it can be directly powered by a lithium battery without any external voltage regulator. Therefore, the compact and high-performance LS2003H-Vx is the best choice for integration into your ultra-thin device.

**FEATURES**

- Tiny size: 14.0x9.6x2.0 mm
- Smart jammer detection and suppression
- ±15 ns high accuracy time pulse (PPS)
- The positioning accuracy is "< 1 m"
- Concurrent reception of L1 and L5 band signals
- Supports GPS, GLONASS, GALILEO and BEIDOU

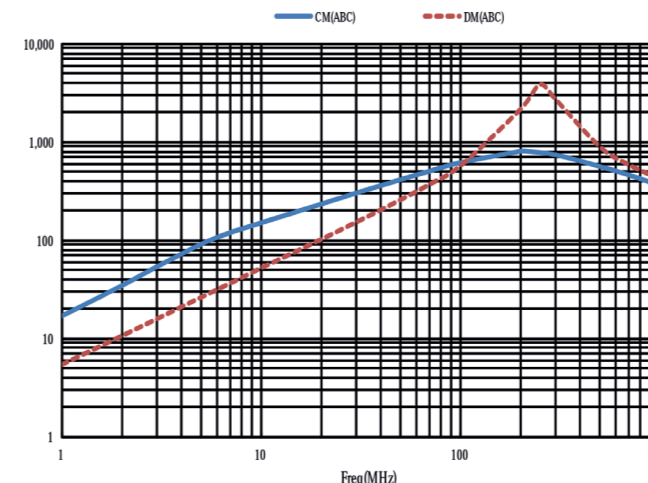
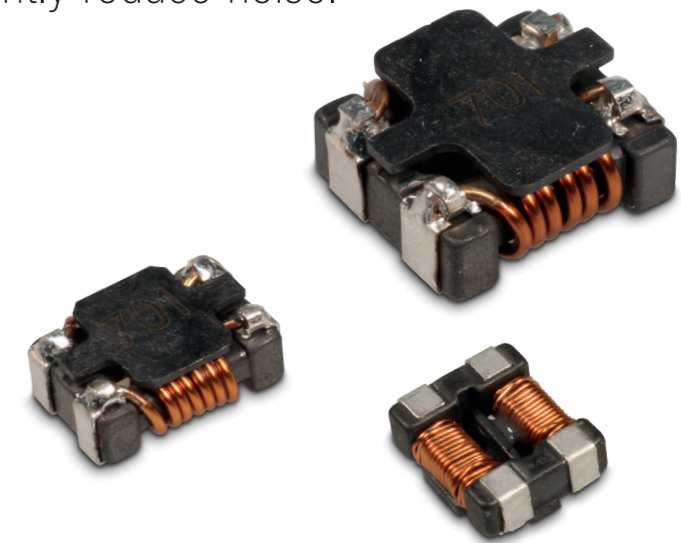
**APPLICATIONS**

- Personal positioning and navigation
- Smart agriculture
- Timing applications
- Fleet management
- Handheld and mobile devices
- Tracker

**HAVE A LOOK**

ABC-ATEC introduces their new series of large-current SMD common-mode filters that have higher common-mode impedance compared with previous types and can significantly reduce noise.

Due to the low height and small size of these products, it is possible to adapt to the trend towards higher density of portable devices that are becoming smaller and lighter and help to reduce noise for adapter lines and battery lines in many applications. Thanks to the completed AECQ200 qualification, these products are suitable for use in automotive applications.



Typical performance curve – impedance vs frequency – on the example of AQF9045701YSB

**FEATURES**

- Large-current SMD common-mode filters
- High common-mode impedance
- Best noise reduction
- AECQ200 qualified

**APPLICATIONS**

- DC common mode reduction circuit
- Head light (automotive)
- Automation equipment (industrial)
- Audio / visual systems (consumer & IT)

SERIES	ITEMS	IMPEDANCE		DCR MAX.	IDC MAX.
		TYP.	MIN.		
AQF9045	701	700 Ω	500 Ω	10.00 mΩ	5.00 A
AQF1260	701	700 Ω	500 Ω	6.00 mΩ	8.00 A
AQF1260	102	1000 Ω	750 Ω	14.00 mΩ	6.00 A
AQF7035	301	300 Ω	225 Ω	10.00 mΩ	5.00 A
AQF7035	701	700 Ω	500 Ω	15.00 mΩ	4.00 A

## SAFETY CERTIFIED MULTILAYER CERAMIC CHIP CAPACITORS

HAVE A LOOK



PROSPERITY DIELECTRIC CO., LTD. also known as "PDC" announced their new SAFETY CERTIFIED CAPACITORS Series FH&FK.

These capacitors are designed for surge or lightning immunity in modem, facsimile and other equipment. The FK series are class X1/Y2 compliant, and the FH series are class X2 compliant respectively.

The green type capacitors in FK/FH series are manufactured by using environmentally friendly materials without lead or cadmium. The terminations are composed of plated nickel and pure tin to feature the superior leaching resistance during soldering. There are versions with anti bending, anti arcing and AEC-Q200 on request.

### FEATURES

- High reliability and stability
- Small size and high capacitance.
- Safety standard approval by: TÜV IEC60384-14 / UL 60384
- RoHs compliant and HALOGEN free
- AEC-Q200 qualified (schedule: Q2/2020)

### APPLICATIONS

- General electronic application that require a lightning immunity
- Communication device (telephone, fax, ISDN, modems)
- Automotive
- Network
- LED driver

MATERIAL	VOLTAGE	SIZE	CLASS	CAPACITANCE	TOLERANCE	TEMPERATURE	TCR
COG	250 Vac	1808, 1812, 2211	X1/Y2	3 pF ~ 720 pF	0.5 pF for Cap. < 10 pF; 1 %, 2 %, 5 %, 10 %, 20 % for >= 10 pF	-55 °C to +125 °C	±30 ppm /°C
			X2	3 pF ~ 1000 pF			
X7R		1808, 1812, 2211, 2220	X1/Y2	100 pF ~ 4700 pF			±15 %
			X2	150 pF ~ 22000 pF			

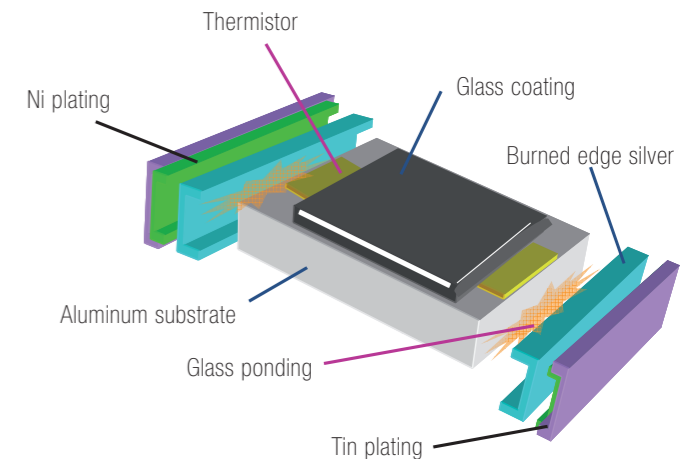
## THICK FILM CHIP THERMISTORS

HAVE A LOOK

Based on Tateyama's patented core material technology, it is possible to offer wide variety and customization R/T-curves with an extreme long-term stability and best price/performance ratio even for medium quantities. All products are characterized by a high mechanical strength, superior thermal responsiveness and high reliability.

### FEATURES

- High mechanical strength by alumina substrate and glass coating
- Superior thermal responsiveness due to small cubic volume & heat capacity
- Thin structure by thick film elements & constant thickness with any resistance value
- Customization of the entire RT curve
- Excellent long term stability
- IATF16949 certified & AEC-Q200



### APPLICATIONS

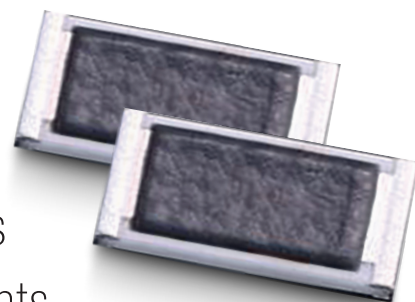
- Air conditioning
- Battery management systems
- Climate control systems
- IGBT's
- Motor temperature monitoring
- LED head lamps
- Fever thermometer
- Metering applications

TYPE	RESISTANCE TOLERANCE	B-VALUE TOLERANCE	DISSIPATION FACTOR IN AIR $\delta \leq 1.5 \text{ mW} / ^\circ\text{C}$	THERMAL TIME CONSTANT IN AIR $\tau \leq 5.0 \text{ sec}$	MAX. PERMISSIBLE POWER	RATED POWER (25 °C)	OPERATING TEMPERATURE RANGE
TCT6G	± 1 %, ± 2 %	± 1 %, ± 2 %, ± 3 %, ± 5 %	≈ 1.3 mW / °C	≈ 2.5 sec	5 m W	130 m W	-40 to +150 °C
TCT3G	± 3 %, ± 5 %		≈ 1.2 mW / °C	≈ 2.0 sec		120 m W	
TCT16G	± 10 %		≈ 1.1 mW / °C	≈ 1.5 sec		110 m W	

## HIGH RESISTANCE THICK FILM RESISTORS

HAVE A  
LOOK

TATEYAMA manufactures highly reliable resistors, resistor arrays and chip thermistors based on their unique technology of thick and thin films utilizing their expertise in manufacturing components since more than 60 years.



### FEATURES

- High mechanical strength using thick film technology
- Wide available R/V range: 27 M–10 G  $\Omega$
- Appropriate for pyroelectric sensors and voltage divider circuits
- Responding to reflow and flow soldering
- AEC-Q200 is available
- Short lead time supply

### APPLICATIONS

- X-Ray equipment
- Measurement equipment (low current detection)
- Pyroelectric sensors
- Voltage divider for detecting high voltage
- High performance amplifiers for medical technology

TYPE	RATED POWER	MAX. WORKING VOLTAGE	MAX. OVERLOAD VOLTAGE	OPERATING TEMPERATURE RANGE	T.C.R	RESISTANCE RANGE		
						$\pm 5\%$ E24	$\pm 10\%$ E24	$\pm 20\%$ E24
TSR3H	0.1 W	50 V	100 V	-55 °C to +155 °C	–	27 M – 1 G $\Omega$		
TSR6H	0.125 W	150 V	300 V		–	27 M – 10 G $\Omega$		
TSR8H	0.25 W	200 V	400 V		–	27 M – 10 G $\Omega$		
TSR1H	1.0 W				–	27 M – 10 G $\Omega$		

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