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Wolfgang Endrich

Liebe Leserinnen und Leser, für das kommende Jahr 2024 wünschen wir Ihnen alles Gute, Gesundheit und viele frohe Stunden. Wenn man auf das Jahr 2023 zurückblickt und die

Prognosen für 2024 liest, weiß man nicht mehr, ob man weinen oder lachen soll. Es sind nicht nur die weltweiten Kriege, Unruhen und sonstigen Probleme, es sind auch die neuen hohen Kosten für Importe aus China, durch den Beschuss der Schiffe im Roten Meer, die uns erhebliche Probleme bereiten, Verwunderung über die zahlreichen Demonstrationen gegen die AfD, die Treckerparaden der Bauern, Streiks der Lokführer u.v.a.m.

Über die Regierung zu urteilen wäre zu billig. Wer schon am Boden liegt, den sollte man nicht mehr treten! Denn Vieles wurde ihnen bereits von der Vorgängerregierung in die Wiege gelegt. Aber – in zwei Jahren Regierungstätigkeit hätte man erwarten können, dass mehr Fehlentscheidungen korrigiert werden. Aber das Draufsatteln von Parteiideologien auf die schon bestehenden Probleme war sicherlich keine kluge Entscheidung. Und dies gerade nach der überstandenen Corona-Epidemie, wo jeder froh war, dass er heil aus dieser weltweiten Epidemie davongekommen ist und eigentlich bessere Zeiten erwartet hätte. Es ist kein Wunder, dass die Wählerstimmung sich dramatisch geändert hat. Eine schlechte internationale wirtschaftliche Konjunkturlage, sinkende Exporte, unerwartet hohe

Inflation, immer neue Gesetze, die uns fast erdrücken (z.B. das Lieferkettengesetz), Facharbeitermangel und hohe Energiepreise sind eine schwere Last, unter der wir jetzt zu leben haben.

Aber die allgemeine Unzufriedenheit darf nicht dazu führen, dass wir uns zu politischen Fehlentscheidungen – und sei es nur aus Trotz – verführen lassen. Demokratie ist eine zarte Pflanze. Es gibt zu viele Diktaturen oder Quasi-Diktaturen – siehe Ungarn. Polen kämpft gerade heftig, um ihre wieder niederzuringen. Wir hatten schon einmal eine kritische Situation, und zwar in den 30-er Jahren des letzten Jahrhunderts. Damals war es die extreme Arbeitslosigkeit, die die Wähler eine falsche Partei wählen ließ und wir damit in die Diktatur rutschten. Die Weimarer Republik war zu schwach.

Auch die Bauern haben in den letzten Wochen nicht nur wegen des Agrardiesels protestiert, sondern weil jahrzehntelange Gängelei und immer neue Vorschriften den Bewegungsspielraum des Einzelnen extrem belastet haben und drohen, ganze Existenzen zu vernichten. Die Gängelei durch neue Gesetze und Parteiideologien und die ständige Bevormundung muss aufhören. Lassen Sie uns hoffen, dass jetzt auch die Einsicht der Politiker wächst und sich die Wirtschaft und die Bevölkerung erholen können. Der Klimawandel wird uns noch genug Probleme bereiten, die es zu überwinden gilt.

Lassen Sie mich mit dem Spruch von Martin Luther enden: Wenn ich wüsste, dass morgen die Welt untergeht, würde ich heute noch ein Apfelbäumchen pflanzen.

Blieben Sie optimistisch! Auch in diesem Jahr! Es kann nur besser werden!

Mit freundlichen Grüßen, Wolfgang Endrich

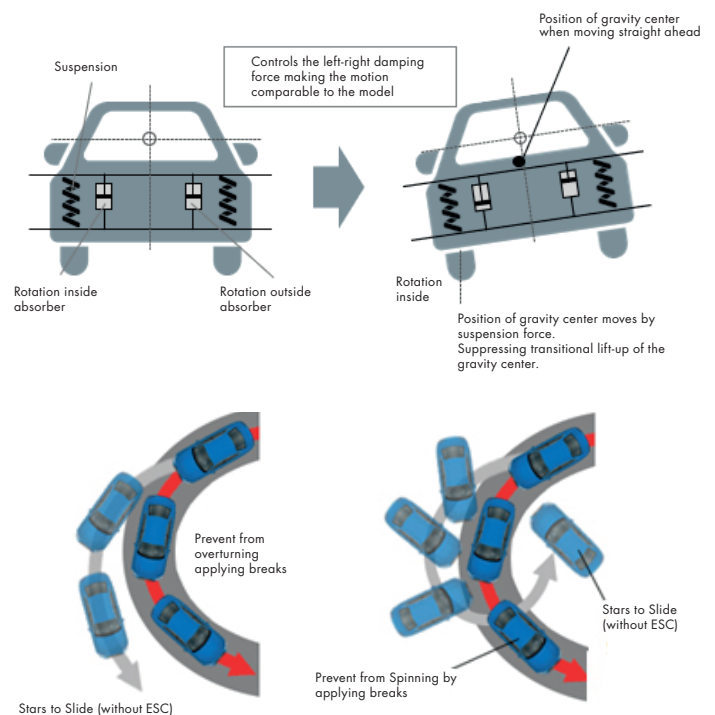
READY FOR AUTONOMOUS DRIVING: PANASONIC INDUSTRY AND AUTOMOTIVE MEMS MOTION SENSORS EWTS5

Mems (Micro-electromechanical systems) usually are microscopic devices of electronic as well as moving parts, they consist of central unit (integrated circuit chip, e.g. microprocessor) and several components that interact with the environment. Their sizes are between 1 and 100 microns (i.e. 0.001 to 0.1 mm).

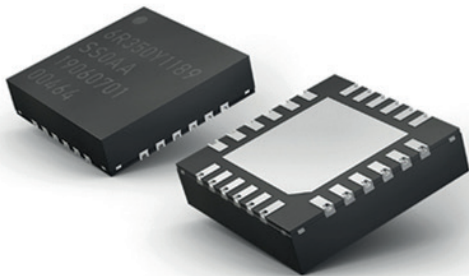
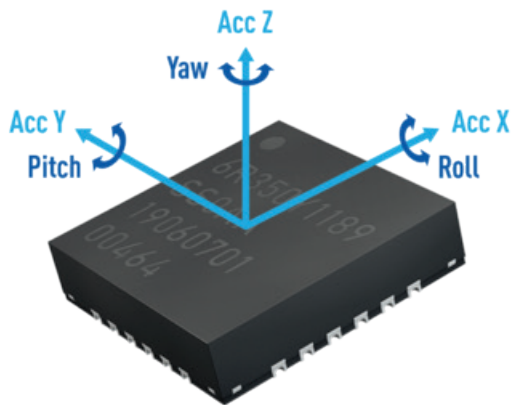
The Panasonic MEMS 6DoF inertial Sensor serie EWTS5 provides accurate and reliable acceleration and Angular rate data, therefore contribute to Advanced System such as ADAS (Advanced Driver Assistance Systems), autonomous driving, and more, in order to detect 6DoF data which are composed by 3 axis (forward and backward, left and right, up and down) of acceleration(Acc) and gyro data. Distance measurement and motion detection (3D infrared camera, LiDAR, Radar, PIR and ultrasonic system) play an important role in safety, and the system is often required to comply with functional safety (ISO26262).at the system level, ASIL-D is often required. Functional safety requirements have begun for devices such as inertial sensors installed in 3D position detection systems. The sensor serie EWTS5 is compatible with ASIL-B(D) and functional safety compliance can be achieved with one chip.

FEATURES

- "6 in1 Sensor "Ver 1.5 "EWTS5GND21" for ADAS and security application
- 6in1 sensor Ver 2.0 for all mobility applications in Q3 2023
- 3-axis accelerometer up to 300 dps
- 3-axis gyroscopes (rotation sensors) up to 16g
- AEC-Q100 Grade 1
- 4.5x4.5x1.1mm
- Bandwidth (low pass filter) of EWTS5G up to 400Hz
- Power consumption <10mA
- Temperature range -40°C to 135°C
- Interface SPI (32bit)
- Supply voltage 3.3V/5.0V



NEWS

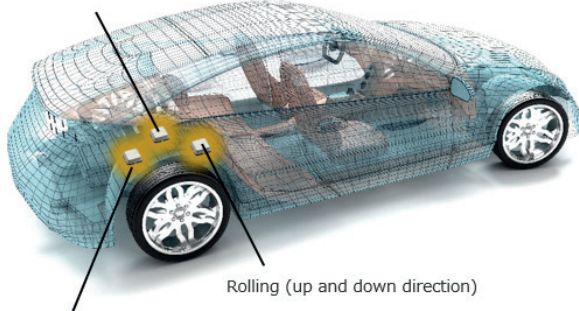


APPLICATIONS

- Airbag deployment
- Hard drive free fall detection
- Hand-held devices (portable devices, measuring devices...)
- Position detection in digital photo cameras
- mechanical image stabilizers for video
- For measuring yaw, pitch and roll movements in autonomous driving.
- Magnetometer – Used to determine direction during navigation.
- Pressure and Inertia Sensor – For brake control.
- Pressure Sensor – Tire Pressure Monitoring System.
- Airflow Sensor – Air Intake Monitoring.
- Fuel sensor – fuel level indicator.
- Active suspension system and vibration control
- Passive safety and Vehicle Dynamics Control
- Impact Sensor – Impact detection and airbag deployment
- Navigation system of agricultural and/or construction machinery
- Auto Lawnmowers, two-wheeled vehicles and Auto-operation Railway System

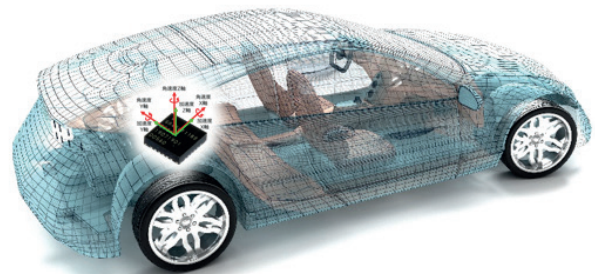
Conventional

Pitting (back and forth direction)



Yawing (left and right direction)

6 in 1 sensor (1 chip)



NEW HIGH CMR INTELLIGENT POWER MODULE (IPM) INTERFACE OPTOCOUPLER

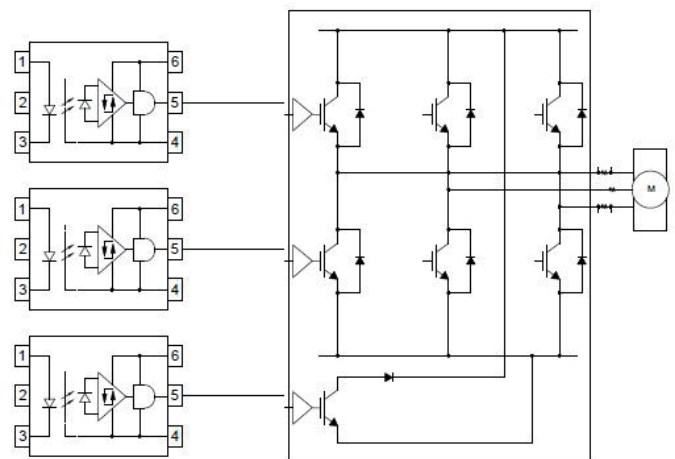
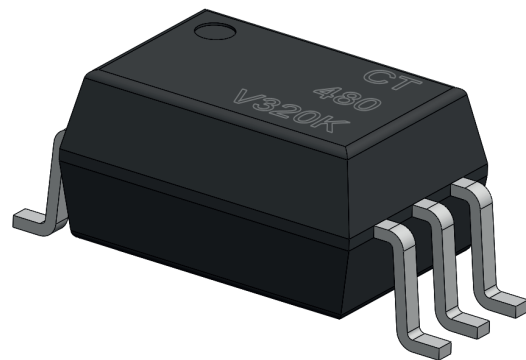
CT Micro offers its first high CMR Intelligent Power Module (IPM) interface optocoupler, the CTS480, which includes an AlGaAs LED and a photodetector with an integrated Schmitt trigger to provide logic-compatible waveforms, eliminating the need for additional waveform shaping. The highly integrated, compact power coupler is designed to drive motors in applications ranging from household appliances, fans, pumps to general purpose drives. The minimised propagation delay difference between devices makes these optocouplers for

high CMR Intelligent Power Modules an excellent solution for improving inverter efficiency by reducing switching dead time. The CTS480 has an increased common-mode transient withstand of at least 10kV/ μ s at $V_{CM} = 1000V$, which is guaranteed over a wide operating temperature range.

The interface coupler is offered to allow for optimal PCB design, size and system cost. This simplifies the design, improves reliability and reduces the number of components, while significantly shortening the time to market.

FEATURES

- Compact SMD-6 package
- 8mm creepage and 7mm clearance
- Positive output type (totem pole output)
- Guaranteed truth table
- Operating Temperature range: 4.5V to 30V
- High isolation voltage of 5000V
- High speed: 4MBd typ
- Threshold input current: 5mA (min)
- High common-mode rejection at $V_{CM} = 1000 V$
- Low propagation delay, T_{PLH} / T_{PHL} : 250ns (max)
- Industrial temperature range: -40°C to 100°C
- Safety approvals: UL 1577, EN 60747-5-5, IEC62368



Intelligent Power Module

PART NUMBER	V _{CC} (V)	I _{OSH} /I _{OSL} (mA)	I _{FT} (mA)	T _{PHL} /T _{PLH} (ns)
CTS480	4.5-30V	+/- 80	Max. 5	250

NEWS

MIE1W0505BGLVH 5V, 1W, REGULATED, 2.5KVRMS ISOLATED DC-DC MODULE

The MIE1W0505BGLVH is an isolated, regulated DC/DC module. It can support applications with a 3V to 5.5V input voltage (VIN). The MIE1W0505BGLVH has excellent load and line regulation, and supports up to 1W of output power (POUT). The MIE1W0505BGLVH integrates a power MOSFET, transformer, and feedback circuit all in one chip, achieving excellent performance and saving size.

The MIE1W0505BGLVH supports a regulated output. When the output voltage (VOUT) falls below the target voltage, the device starts to switch, delivering power from VIN to VOUT until VOUT reaches the target output value again.

The MIE1W0505BGLVH integrates a VOUT feedback block, which regulates VOUT without a traditional optocoupler and TL431. The device provides a small size and highly reliable operation compared to traditional isolation power modules.

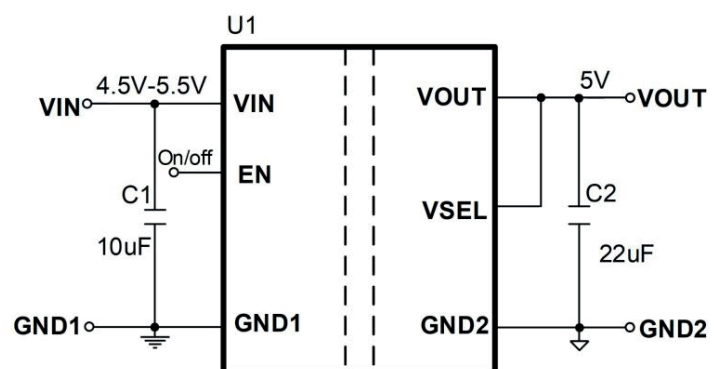
The MIE1W0505BGLVH features continuous short-circuit protection (SCP) and over-temperature protection (OTP). The MIE1W0505BGLVH is available in a small LGA-12 (4mmx5mm) package.

APPLICATION EXAMPLES

- 3V to 5.5V Operating Input Voltage (VIN) Range
- 2.5kVRMS Isolation Voltage
- Max 1W Output Power (POUT)
- Supports Infinite Capacitive Load
- 0.4% Load Regulation
- 0.5% Line Regulation

APPLICATIONS

- Industrial Automation Systems
- Isolated Bias Power for Digital Isolators
- Isolated Power for Isolated RS485/RS422/CAN interface
- Isolated Sensor Power Supply
- Telecom and Network Device (5G RRU, Industrial CPE, Network Gateway, etc.)



S4-3DB01 STRAY-FIELD ROBUST 3D POSITION SENSOR WITH VERSATILE APPLICATION CAPABILITY

S4-3DB01 from manufacturer S4sensors is a high-performance 3D magnetometer featuring a robust stray-field design, a wake-up function, and an I²C interface, all encapsulated within the compact TSSOP-8L package. Designed to cater to a broad spectrum of applications such as position and angular measurements, Human-Machine Interface (HMI) interfaces, and safeguarding against unauthorized manipulation in metering systems. Thanks to the patented Back Side Vertical Hall technology, S4-3DB01 is the first Hall-based sensor in the market capable of delivering the same high performance across all three dimensions in direct magnetic field measurements.

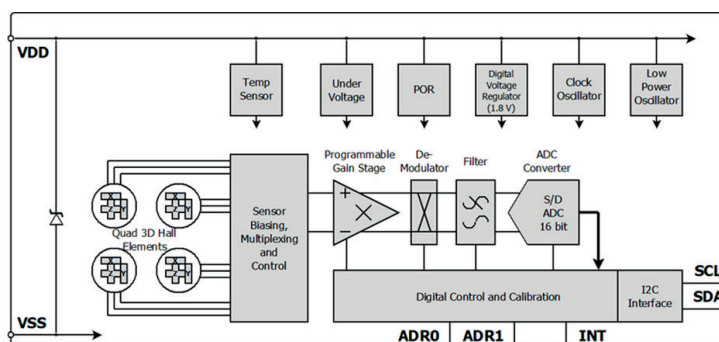
The sensor incorporates four 3D Hall clusters, each positioned with a 1mm displacement from one another. This configuration not only ensures exceptional versatility for a wide range of applications but also guarantees robustness against stray fields due to the differential measurement principle applied in all three dimensions.

S4-3DB01 is equipped with a built-in wake-up function triggered by magnetic and temperature events, coupled with absolute and relative threshold levels. Combined with an exceptionally low current consumption in inactive mode, these features make it ideal for battery-powered applications and HMI applications in vehicles.

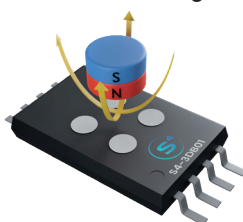
All of the working modes, configurable magnetic and timing parameters are accessible for customer via fast standard I²C interface with a frequency up to 1MHz and over hardware configurable 9 slave addresses. S4-3DB01 is AEC-Q100 qualified and operates in the ambient temperature range from -40 °C to 125 °C.

APPLICATIONS

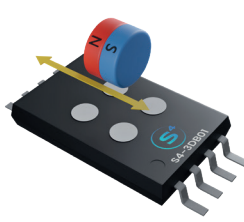
- Industrial Joystick
- Position Detection (3D)
- HMI Applications, Knobs, Levers, Shifter Position
- Door Handle, Door Lock, Window Position
- White Goods



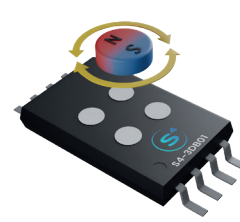
Measurement configurations for 3D magnet motions:



Joystick



Linear

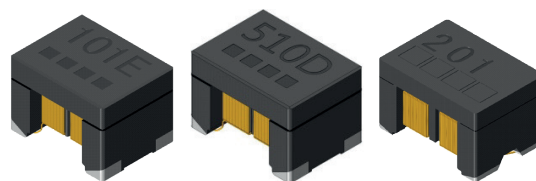


Rotary

NEWS

ABC-ATEC COMPLETED THE LINEUP OF SMD COMMON MODE CHOKES

These new series come in three available sizes as ASF4532/MSF4532, MSF3425 and MSF3225 and are AEC-Q200 compliant. All products are manufactured with automatic production and excellent winding technology, which keeps stability and maintains coil flatness during production. To further ensure best mounting and soldering all items come with tin plated terminals and ABC-ATEC's patented wire partitioning technique, that provides excellent noise suppression characteristics. All items are using a ferrite drum core construction with magnetic shielding. By upgrading the wire insulation class, the temperature resistance is improved which reduces the risk of short circuit. ASF4532/MSF4532 and MSF3225 Series use the wire solder wrapping design. Winding wire breaking is avoided by applying bevel and raised terminal design. MSF3225 Series has bifilar or separated winding on magnetic path through the core, which offers excellent impedance and frequency characteristics improving the noise suppression on common mode circuit further.



FEATURES

- MSL 1
- Halogen free
- Rohs compliant
- AECQ200 qualified

APPLICATIONS

- CAN Bus
- Flex ray
- Ethernet
- PoE

DIMENSIONS (mm)	APPLICATION	SERIES	INDUCTANCE (µH)	DCR (mOhm)	IDC (A)	COMMON MODE IMPEDANCE (kOhm) (@100MHZ)
4.50X3.20X3.00	CAN Bus	ASF4532-C	11.0~100.0	0.50~1.50	0.36~0.20 (IRMS)	0.30~3.00 min. 0.60~7.50 typ.
	Ethernet	ASF4532-E	200.0	4.5	0.11(IRMS)	4.50 min. 10.0 typ.
	Flex ray	ASF4532-R	11.0~100.0	0.50~1.50	0.36~0.20 (IRMS)	0.30~3.00 min. 0.60~7.50 typ.
	CAN-FD	MSF4532-D	51.0~100.0	0.55~1.50	1.00~0.55(IRMS)	1.70~3.80 min. 2.80~6.20 typ.
3.40X2.50X2.40	Ethernet Class 1	MSF3425-E	51.0~100.0	1.10~3.00	0.10~0.40 (IRMS)	1.40~2.00 min. 2.80~5.50 typ.
	CAN-FD Class 1	MSF3425-D	51.0~130.0	1.20~3.50	0.25~0.30 (IRMS)	1.25~3.00 min. 2.50~6.10 typ.
	100 Base-T1	MSF3425-B	200.0	5.50	0.25 (IRMS)	4.00 min. 8.50 typ.
3.20X2.50X2.40	Ethernet	MSF3225-E	100.0	3.50	0.10 (IRMS)	2.00 min. 5.50 typ.
	CAN Bus	MSF3225-B	22.0~100.0	0.40~3.30	0.15-0.40 (IRMS)	0.40~2.60 min. 0.80~5.20 typ.
	PoE	MSF3225-S	2.20~15.0	2.20~15.0	0.50~1.20 (ISAT)	NA

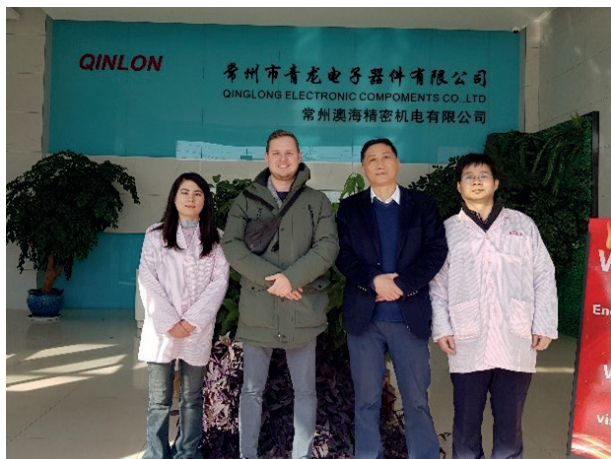
QINLONG AS OFFICIAL PARTNER OF ENDRICH - ACOUSTICS MANUFACTURER

Changzhou Qinglong Electronic Components Co., Ltd was founded in 1994. The company is professionally engaged in developing and researching the electroacoustic parts which are mainly loudspeaker, buzzer and ultrasonic sensors.

Qinlon has many advantages which includes the research institute, owns independent research and development ability and originality in the application of acoustics technology.

Qinlon is certified according to IATF16949, ISO 14001 and ISO 9001.

We from Endrich are really proud to be an official Partner with the Qinlong company.



From left to right: Lily Qian, Werner Töws, Henry Lu (Managing Director), Rambo Dong



Auto-parking Radar



Driver Assistance



Instrument board



Natural gas meter



Intelligent robot



Intelligent home electric

FEATURES

- Automotive: Loudspeaker, Ultrasonic Sensor, Exciter, Parking Radar, Entertainment, Loudspeaker, Microphone
- Smart Products: Sounders (Piezo and Magnetic), Ultrasonic Sensor, Loudspeaker, Microphone



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