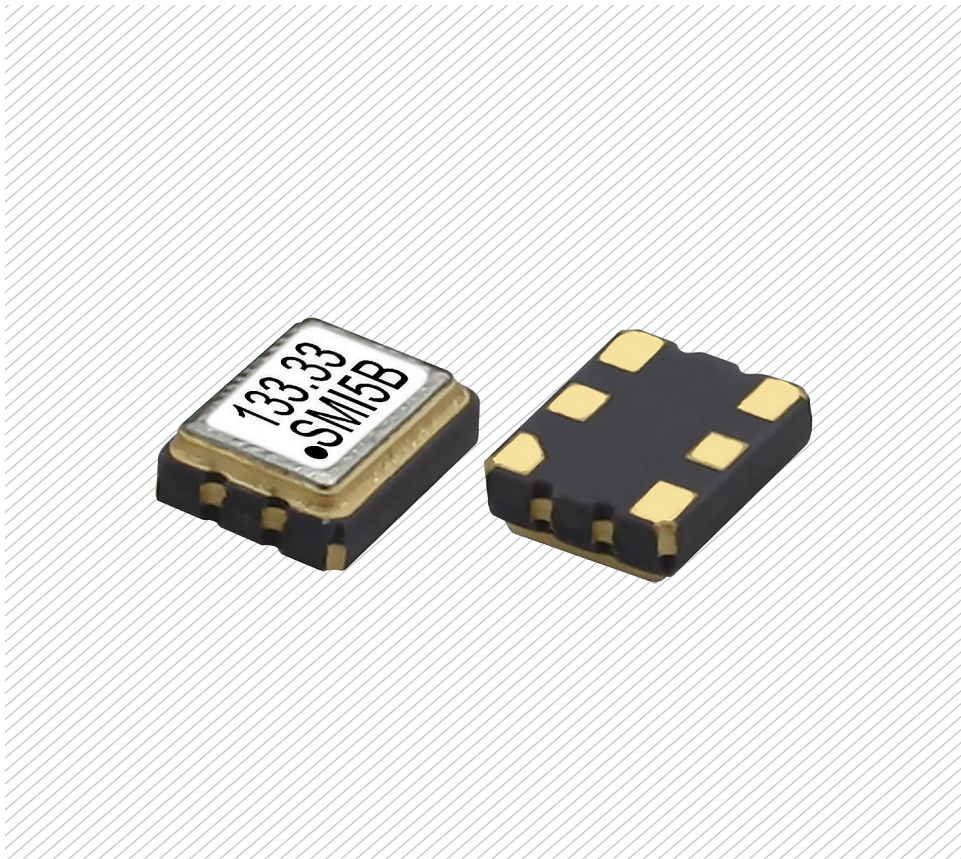


endrich news

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OUR PRODUCT OF THE MONTH: HIGH PERFORMANCE DIFFERENTIAL CRYSTAL OSCILLATOR



FEATURES

- Ultra Low Jitter Performance
- Wide Operating Temp. Range up to -55 °C ~ +125 °C
- Excellent High Frequency Stabilities over all Conditions
- Differential Output: LCDS and LVPECL
- Different Package Options 2520 ~ 7050
- Enable / Disable
- Stability Option: ± 15 ppm ~ ± 50 ppm
- Popular Frequencies (100 MHz / 125 MHz / 156.2 MHz / 200 MHz / 212.5 MHz / 250 MHz / 312.5 MHz)



Contact for information: Mr. Gensler · phone: +49 7452 6007-31 · e-mail: a.gensler@endrich.com

VERY HIGH PERFORMANCE SMD POWER INDUCTORS

HAVE A LOOK

Inpaq Technology, Co. Ltd introduces their new AIPGX series of SMD power inductors with very high performance. AIPGX0630 is available in the size of 7.3 x 6.8 x 3.0 mm and the inductance values from 1 μ H to 3.3 μ H.

Based on the well established, conventional molding process on round wire but special proprietary "S7" core material, it can reach the performance of inductors with inverted t-core and flat wire such as Coilcrafts XAL series. The "S7" material improves the saturation current at high frequency and allows for thicker wire gauge to reduce DCR drastically. The material is highly

stable and reliable and shows almost no fatigue even after applied 3.000 hrs 85 °C/85 % rH test (AECQ-200 pending).

Contact us also for any other metal alloy power inductor product – we can offer solutions from a very wide portfolio from 2.0 x 1.6 mm to 17.0 x 18.0 mm.

APPLICATIONS

DC/DC converter for industrial and commercial applications such as:

- 5G
- Computer & Peripheral
- Automotive
- Actuators

And wherever low power consumption is needed

FEATURES

- Low DCR
- High Isat
- Proprietary material
- AEC-Q200 pending
- Highly competitive due to making on conventional process manufacturing line



SERIES	SIZE	INDUCTANCE	RDC	ISAT	IRMS
AIPGX0630	7.3 x 6.8 x 3.0 mm	1.0 μ H +/-20 %	5.5 m Ω	23.0 A	18.0 A
		2.2 μ H +/-20 %	12.7 m Ω	16.0 A	10.0 A
		3.3 μ H +/-20 %	17.0 m Ω	12.5 A	8.5 A
AIPGX0530	~ 5.0 x 5.0 x 3.0 mm	Coming soon			

BM32S2021-1 PROXIMITY SENSING MODULE

HAVE A LOOK

The BM32S2021-1 is an infrared proximity sensing module, which is designed for object detection applications. When an object enters the detection range, the reflected energy of the infrared will change. Proximity is determined by detecting changes in reflection. Compared with the general infrared sensing modules on the market, this module has a small size, supports detection of objects at a distance of up to 100cm and has a low standby current consumption of 10 μ A at 3.3V, allowing the module to meet the requirements of a large number of product applications with varying power designs.

Having a modular design ensures much reduced product development time. This proximity sensing module is suitable used for all types of smart home electronic products, such as smart door locks, smart makeup mirrors, smart sanitary ware and automatic dryers. The module provides two user selectable

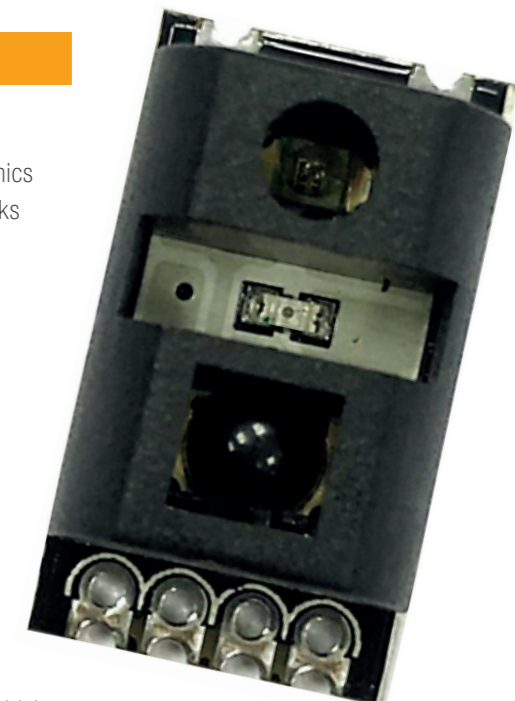
output modes, namely I/O and UART types. When used together with a dedicated development platform, the required module characteristics can be rapidly setup and adjusted to implement fast and convenient product development

FEATURES

- Wide distance detection application
- Operating voltage: 3.3V/5.0V
- Low current consumption operating current: Typ. 1.5 mA (3.3V/object detected at 80 cm / scanning time = 0.5 s)
- Standby current: Typ. 10 μ A (3.3V / default at 80 cm / scanning time = 0.5 s)
- Wide operating range: Distance: 1~100 cm
- Factory-calibrated
- Detection distance learning function
- Optional communication interfaces: UART mode or I/O mode

APPLICATIONS

- White goods
- Consumer electronics
- Electrical door locks
- Bath equipments

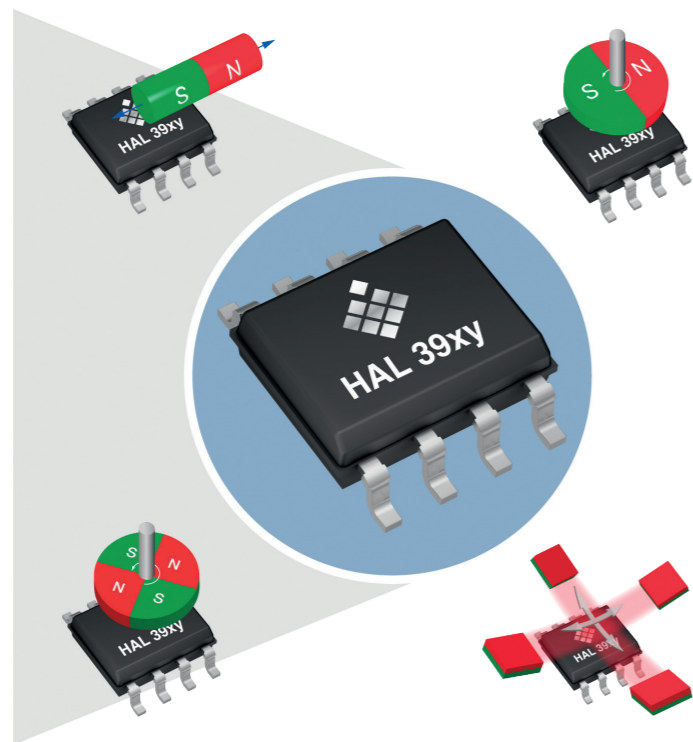


3D POSITION HALL SENSOR PRODUCT LINE WITH UNIQUE STRAY FIELD COMPENSATION FROM TDK-MICRONAS

The new 3D sensor meets today's and tomorrow's automotive and industrial market needs and offers four different measurement modes in a single device: Linear position detection, rotary 360° angle detection and rotary 180° angle detection with stray field compensation including gradient fields as well as the capability for real 3D magnetic field measurement (B_x , B_y , B_z).

The heart of the HAL 39xy sensors is the patented 3D HALpixel cell technology. It helps not only to measure magnetic fields very accurately, but it is also insensitive to stray fields. The unique concept is based on an array of Hall plates. Each measurement mode uses a different combination of them to enable best performance in each mode. The highly flexible sensor array of the MasterHAL sensor line helps design engineers to select the best operation mode for any given measurement task. The HAL 39xy is the only solution available on the market that integrates all four modes in a single device. This offers a clear benefit to customers: They only have to qualify one device instead of various different hardware versions.

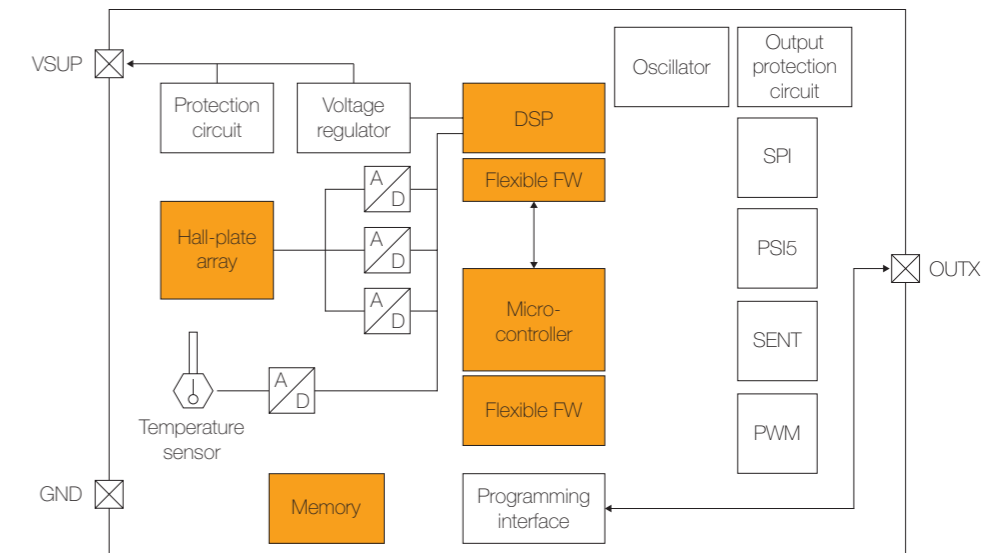
Thanks to its flexible architecture, the HAL 39xy sensor family offers a wide range of configuration possibilities. It features a powerful DSP and an embedded microcontroller. The DSP is responsible for fast signal processing, while the microcontroller performs the interface configuration and supervision of the functional safety related tasks. TDK-Micronas offers the development of customized firmware for the DSP and the microcontroller. Together with the flexible



3D Sensor HAL 39xy

3D POSITION HALL SENSOR PRODUCT LINE WITH UNIQUE STRAY FIELD COMPENSATION FROM TDK-MICRONAS

Hall sensor front-end, this enables customers to realize new kinds of applications. The innovative architecture of the HAL 39xy sensors makes it easy for customers to develop new solutions using fast prototyping techniques. It also enables quick and easy adaptation to changes in interface standards such as SENT, SPI, and PSI5.



Flexible Architecture of HAL 39xy Family

APPLICATIONS

- All kind of valves and actuators (e.g. cooling valves, EGR, turbocharger actuators)
- Selectors and gear shifters
- Pedal-position detection
- Position detection in transmission systems
- Steering-angle detection
- Chassis position detection

KEY DATA

Type	HAL 3900, HAL 3930, HAL 3980
Package	SOIC-8
Digital output formats	SPI, PWM & SENT SAE J2716 rev. 2016, PSI5 2.x
Angular error	± 0.6° @ 10 mT for rotary setups
Magnetic field amplitude range	10 mT ... 130 mT. Down to 5 mT with reduced accuracy
Safety	ASIL-B ready development according ISO 26262
Sample availability	Samples available

FEATURES

- Stray field robust position detection (linear and rotary up to 360°) covering ISO 11452-8 requirements
- Compensation of stray fields with gradients for applications with 180° rotation
- Real 3D magnetic field measurement of B_x , B_y and B_z
- Transmission of temperature compensated magnetic raw values (B_x , B_y , B_z), up to two calculated angles, angle velocity, magnetic field amplitude and / or chip temperature
- SEooC according to ISO 26262 to support functional safety applications
- Additional switch output
- Wide supply voltage range: 3.0 V ... 16 V
- Suitable for automotive applications, thanks to a wide ambient temperature range from -40 °C up to max. +160 °C

HIGH PERFORMANCE DIFFERENTIAL CRYSTAL OSCILLATOR FOR HIGH DATA COMMUNICATIONS

HAVE A LOOK

SMI – Quartz Crystal Oscillator Meeting Tough Requirements of High Data Communications

Internet traffic grows, driven by 5G, AI and cloud computing. Data centers are increasing throughput. In consequence, data communications equipment needs to deliver faster data rates. With the increased data rates, timing margins shrink and require lower jitter oscillators to ensure the same quality of service. The timing device needs the reliable, with tight tolerance and excellent phase noise feature.

Our Partner SMI INC. (Japan) introduces a new product family of crystal based clock oscillators. These generation of differential oscillators, with excellent frequency stability over temperature and ultra low phase noise performance are designed for high data rate applications such as 5G (high speed and wide broadband communication), Ethernet, GbE, Synchronous Ethernet, FBGA's. The small design down to 2.5 x 2.0 mm fulfils the market requirements of differential clock generators in a tiny

package. This allows additional functions to be integrated and development time to be greatly reduced. The components have very low power consumption. In addition the oscillator can be set in "standby-mode" to reduce the current consumption down to 30 µA max. SMI supports 7 standard network frequencies such as 100/125/ 156.2/200/212.5/250 and 312.5 MHz. with best in class RMS jitter performance and extended temperature range up to -55 °C to +125 °C with output for LVPECL and LVDS.



HIGH PERFORMANCE DIFFERENTIAL CRYSTAL OSCILLATOR FOR HIGH DATA COMMUNICATIONS

SPECIFICATION	LVPECL	LVDS
SUPPLY VOLTAGE (VDD)	+2.5V or +3.3V	+2.5V or +3.3V
CURRENT CONSUMPTION (I)	65 mA max. (156.25 MHz +3.3V)	30 mA max. (200 MHz +3.3V)
SYMMETRY (DUTY)	45 / 55%	45 / 55%
RISE/FALL TIMES (TR/TF)	400 pS max.	300 pS max.
OUTPUT LOGIC HIGH (VOH)	VDD-0.95 V (Typ.)	1.43 V (Typ.)
OUTPUT LOGIC LOW (VOL)	VDD-1.7 V (Typ.)	1.1 V (Typ.)
STAND-BY CURRENT (ISTB)	30 µA max.	30 µA max.
LOAD	50 Ω into VDD-2V	100 Ω (Out-C Out)
ENABLE HIGH (VIH)	70 % VDD min.	70 % VDD min.
DISABLE LOW (VIL)	30 % VDD max.	30 % VDD max.
FREQUENCY	14 stand. frequencies	1 to 725 MHz
SSB PHASE NOISE	-162 dBc / Hz (Typ.) at 1 MHz offset (156.25 MHz +3.3V)	-157 dBc / Hz (Typ.) at 100 kHz offset (200 MHz +3.3V)
RMS JITTER (12 KHZ TO 20 MHZ BAND)	43 fs (Typ.) (156.25MHz +3.3V)	32 fs (Typ.) (200MHz +3.3V)

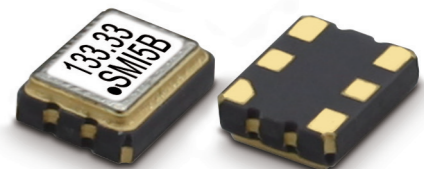
Note: The oscillators are not applicable to automotive applications (engine control/underhood, ABS/brake, airbag, TPMS, power steering and transmission).

FEATURES

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- Popular Frequencies (100 MHz / 125 MHz / 156.2 MHz / 200 MHz / 212.5 MHz / 250 MHz / 312.5 MHz)

APPLICATIONS

- 5G (high speed and wide broadband communication)
- Ethernet, GbE, Synchronous Ethernet
- Fiber Channel
- Telecom
- Clock Source for A/D's, DAC's
- Driving FPGA's
- Test and Measurement
- PON
- Medical
- COTS



NEW TYPES OF SMD SPEAKER



CSMS13S4-8S0.3-P950F

APPLICATIONS

- Portable handheld devices
- White goods
- Medical healthcare
- Industry devices
- Measuring devices
- Communication devices
- Every application, which will be improved through SMD

FEATURES

- Dimensions from 13 mm to 29 mm
- Widest frequency range and best sound, compared with other sound solutions
- Different impedance values available upon request
- Different dimensions and frequencies available
- SMD capable
- Automotive specification and sound solution available on request

	PART NO.	APPEARANCE	DIMENSIONS	IMPEDANCE $\pm 15\%$	NORMAL POWER	SPL	OPERATING TEMP.	LOWEST RESONANT FREQ.	FREQUENCY RANGE
SMD SPEAKER									
HAVE A LOOK	PCXS1313040-R08W0 7-A-SM-266	Square	13.0x13.0x4.0 mm	8 Ω	700 mW	90 dB	-40 to +105 °C	1.000 Hz	F0 to 20.000 Hz
HAVE A LOOK	PCXS1515040-R08W0 5-A-SM-187	Square	15.0x15.0x4.0 mm	8 Ω	500 mW	87 dB	-30 to +85 °C	850 Hz	F0 to 20.000 Hz
HAVE A LOOK	CSMS13S4-8S0.3-P950F	Square	13.0x13.0x4.0 mm	8 Ω	300 mW	87 dB	-40 to +85 °C	950 Hz	F0 to 20.000 Hz
HAVE A LOOK	CSMS15S4.3-4S0.3-P950F	Square	15.0x15.0x4.3 mm	4 Ω	300 mW	89 dB	-40 to +85 °C	950 Hz	F0 to 20.000 Hz
HAVE A LOOK	CSMS18S4.8-8S0.3-P580F	Square	18.0x18.0x4.8 mm	8 Ω	300 mW	89 dB	-40 to +85 °C	580 Hz	F0 to 20.000 Hz
HAVE A LOOK	CSMS29R8-8S0.6-P700F	Round	28.8x8.0 mm	8 Ω	600 mW	97 dB	-40 to +85 °C	700 Hz	F0 to 20.000 Hz

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