

A dark blue background image showing a car in motion, with light trails suggesting speed. The car is positioned in the center-right of the frame.

A PROFESSIONAL AUTOMOTIVE-GRADE IC SUPPLIER
SENSING THE WORLD · CREATING THE FUTURE

Semiment Product Selection Guide



A Professional Automotive-grade IC Supplier

Founded in 2011, Semiment Technology Co., Ltd. is headquartered in Shanghai, with R&D centers, sales centers and automotive-grade testing/packaging factories in Shanghai, Hangzhou, Xi'an, Shenzhen, Jiashan and other places. As one of the earliest integrated circuit (IC) design companies for automotive electronics in China, Semiment is committed to providing customers with complete automotive-grade IC solutions. Its main products include sensor ICs, power management ICs, motor driver ICs, and other ICs, which are widely used in the fields of automotive electronics, consumer electronics, and industrial control, etc.



VISION

To be the leading automotive IC supplier in China, acknowledged by OEMs from automotive industry

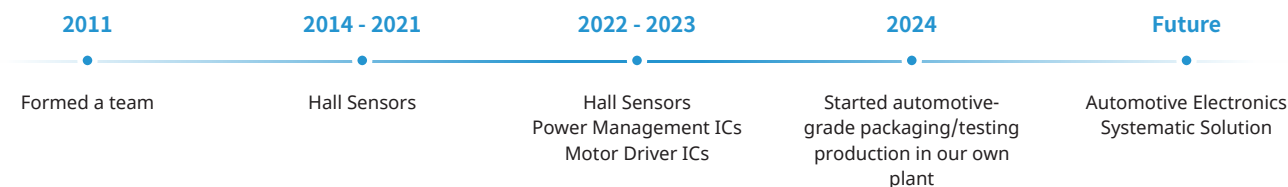
MISSION

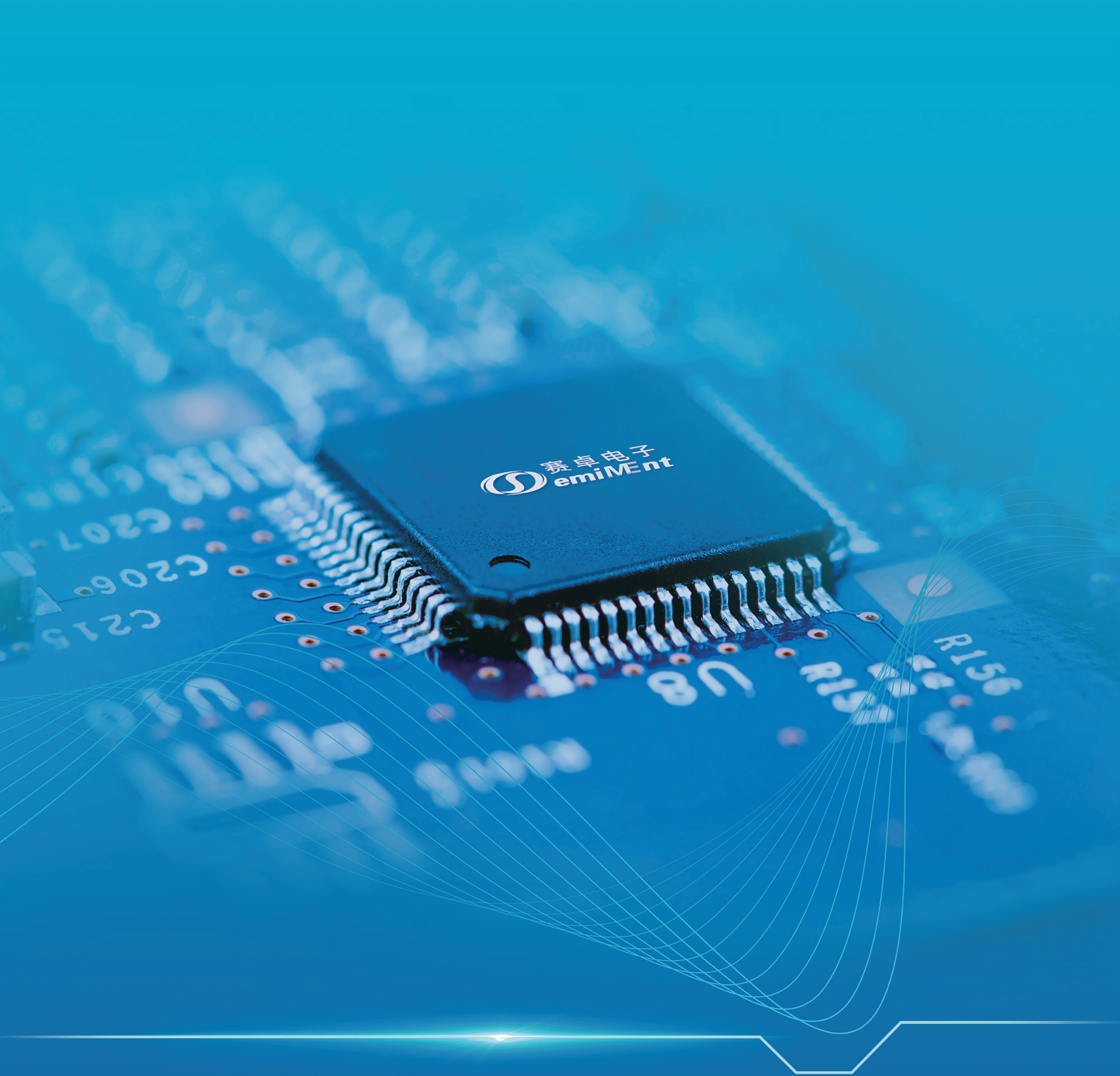
Continuously create maximum value for customers through tech, and cost innovations

VALUES

Openness, Integrity, Collaboration, Innovation

STRATEGIC DEVELOPMENT





Sensing The World • Creating The Future

CONTENTS

PRODUCTS

Speed Sensor ICs 02

- Wheel Speed Sensor ICs
- Camshaft Sensor ICs
- Crankshaft Sensor ICs
- Transmission Sensor ICs
- Geartooth Sensor ICs

Magnetic Position Sensor ICs 06

- Unipolar
- Latch
- Omnipolar
- Dual Channel
- Linear Hall

Current Sensor ICs 10

- Programmable Linear Hall
- Coreless Current Sensing
- Leakage Current Detector

Angle Sensor ICs 12

- Magnetic
- Inductive

High Speed Encoder ICs 14

- Magnetic Motor Encoder
- Inductive Motor Encoder

Motor Driver ICs 16

- Brush DC Motor Driver
- Brushless DC Motor Driver
- Stepper Motor Driver
- Gate Driver
- MCU
- Others

Power Management ICs 20

- LDO Regulator
- DC/DC Converter
- Buck/Boost Controller
- Buck-Boost Controller
- PMIC

ASIC 23

- Operational Amplifier
- Interface

APPLICATIONS

Automotive Electronics 26

- Powertrain
- Body Electronics
- Chassis Electronics
- Thermal Management
- EIC System
- Intelligent Cabin
- Automated Driving
- Passive Safety

Alternative Transportation 32

- Electric Motorcycle
- E-bike
- Bike-sharing
- Motorcycle
- Ship

Industrial & Robotics 33

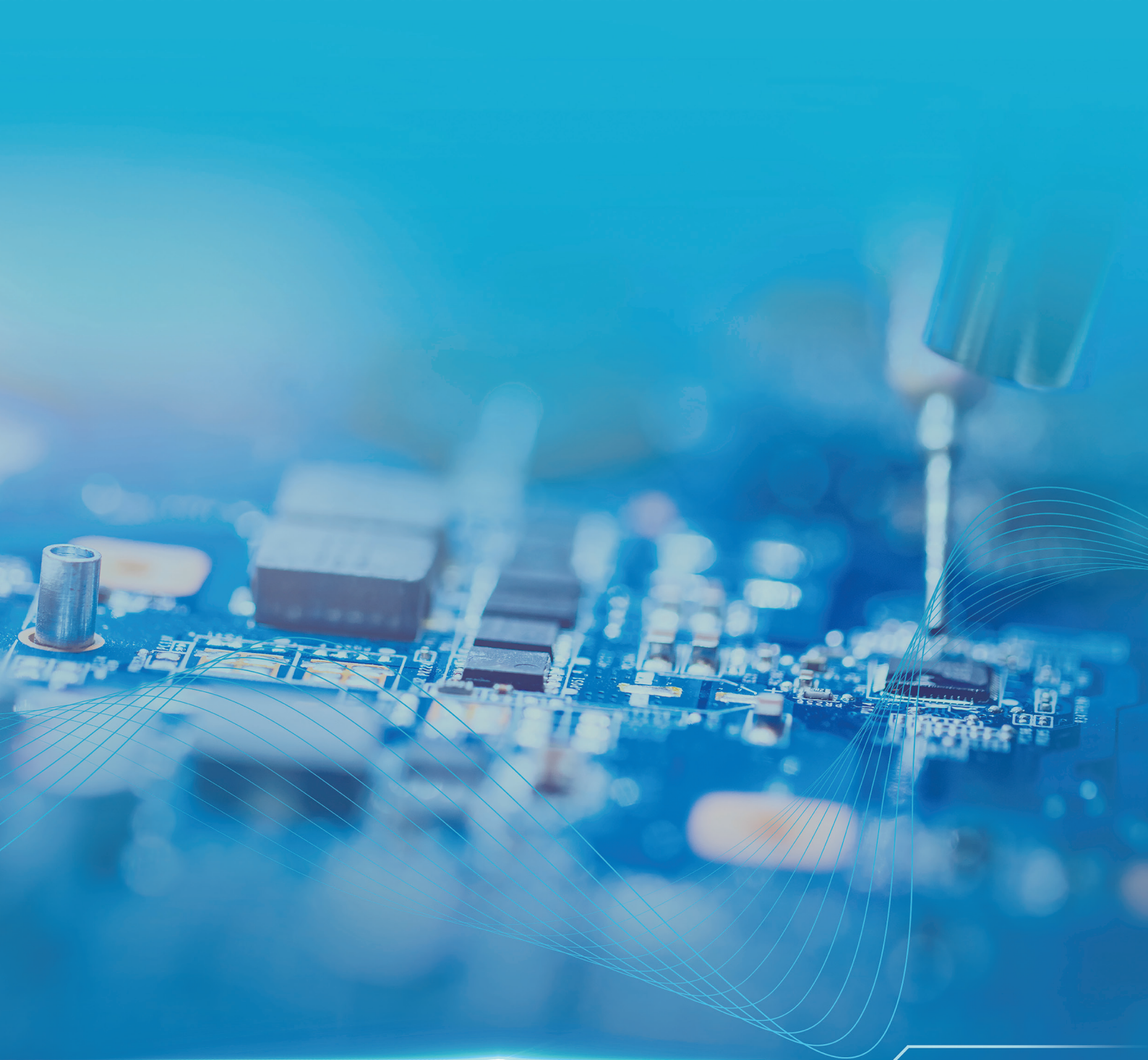
- Electric Tools
- Power Grid
- Blower
- Server
- Construction Machines
- Industry Automation
- Photovoltaic
- Handle-equipped Portable Speaker
- Building Automation
- Street Light Power Supply
- Three-utility Metering
- Emergency Power Supply
- Lighting

Home Automation 35

- Major Appliances
- Small Appliances
- Floor Cleaning
- Bathroom & Sanitary

Consumer Electronics 36

- Office Furnitures
- Healthcare & Wellness
- Portable Electronics & Wearable Device
- Fan Motor
- Entertainment System
- Pan-Tilt Mechanism



SPEED SENSOR ICS

The speed sensor IC, which consists of analog conditioning circuit, analog-to-digital converter, digital signal processor, logic circuit, is designed to sense speed and position of a toothed wheel or of a magnetic encoder wheel. Through decades of algorithm expertise and OEM/Tier1 collaborations, Semi supports your applications in obtaining greater precision of direction and speed detection.

01 Wheel Speed Sensor

Supply ABS&ESP with essential rotational velocity data, applicable primarily for rotating objects.

Feature

- AEC-Q100
- ISO26262 ASIL B
- Wide Operating Voltage/Temperature Range
- Dynamic Self-Calibration
- Vibration Suppression Algorithm
- Speed, Direction and Alarm Signal Output
- PCB-Less Package
- Enhanced EMC Performance

Wheel Speed

P.N.	Output	BW(HZ)	Voltage(V)	Package	Notes
SC9641TS	2-wire	1~10k	4.5~24	TS-2	AEC-Q100, Square
SC9642TS	2-wire	1~5k	4.5~24	TS-2	AEC-Q100, PWM
SC9682TS	2-wire	0~5k	5.3~24	TS-2	AEC-Q100, Square, ASIL-B
SC9683TS	2-wire	0~5k	5.3~24	TS-2	AEC-Q100, PWM, ASIL-B
SC9684TS	2-wire	0~5k	5.3~24	TS-2	AEC-Q100, AK, ASIL-B

02 Camshaft Sensor

Determine which cylinder is firing to synchronize the fuel injector and coil firing sequence.

Feature

- AEC-Q100
- Wide Operating Voltage/Temperature Range
- High Accuracy & High Sensitivity
- TPOS
- No Need to Rotate Alignment
- Back Magnetic Selection
- PCB-Less Package

Camshaft

P.N.	Output	BW(HZ)	Voltage(V)	Package	Notes
SC9314UA	3-Wire	0~20K	3.0~24	TO-92S	AEC-Q100, Self-Adjusting
SC9388T3	3-Wire	0~10K	4.0~24	TS-3	AEC-Q100, TPOS, Programmable
SC9675IM	4-Wire	0~8K	3.3~24	IM-P	AEC-Q100, TPOS, Back-Magnetic
SC9675T3	3-Wire	0~8K	3.3~24	TS-3	AEC-Q100, TPOS, Programmable

03 Crankshaft Sensor

Detects the speed and position of the crankshaft and forwards info to the engine control in the form of an electrical signal.

Feature

- AEC-Q100
- Wide Operating Voltage/Temperature Range
- High Accuracy & High Sensitivity
- Speed and Direction Signal Output
- Excellent Jitter Immunity
- Dynamic Self-Calibration

Crankshaft

P.N.	Output	BW(HZ)	Voltage(V)	Package	Notes
SC9621VB	4-Wire	5~20K	3.8~24	TO-94	AEC-Q100,Center Trigger
SC9669T3	3-Wire	0~12K	4.0~24	TS-3	AEC-Q100,PWM Output

04 Transmission Sensor

Offer info on speed and position for vehicle powertrain.Effective in detecting gear inspection,particularly used in in/output shafts and others.

Feature

- AEC-Q100
- ISO26262 ASIL B
- Wide Operating Voltage/Temperature Range
- Dynamic Self-Calibration
- Vibration Suppression Algorithm
- Speed and Direction Signal Output
- PCB-Less Package
- Enhanced EMC Performance

Transmission

P.N.	Output	BW(HZ)	Voltage(V)	Package	Notes
SC9625VB	3-Wire	5~20K	3.8~24	TO-94	AEC-Q100,Edge Trigger
SC9685TS	2-wire	0~12K	5.3~24	TS-2	AEC-Q100,Two-Wire,Current Output,ASIL-B
SC9686TS	3-Wire	0~12K	4.0~24	TS-3	AEC-Q100,Three-Wire,Voltage Output,ASIL-B

05 Geartooth Sensor

The measurement of position and rotational speed. Applied to evaluate speed and direction of AC asynchronous motors.

Feature

- High Sensitivity & Large Air Gap
- Quadrature Output
- High Duty Ratio & High Phase Accuracy Error
- Low Start-up Voltage
- Reduced Power Consumption

Geartooth

P.N.	Output	BW(HZ)	Voltage(V)	Package	Notes
SC9632VB	4-Wire	1~20K	3.8~24	TO-94	Quadrature A/B
SC9633VB	4-Wire	1~20K	3.8~24	TO-94	Quadrature A/B
SC9634VB	4-Wire	1~20K	3.8~24	TO-94	Quadrature A/B
SC9636VB	4-Wire	0~20K	3.8~24	TO-94	Quadrature A/B, Zero Speed



MAGNETIC POSITION SENSOR ICS

Semi offer products for non-contact position detection in automotive, industrial and new energy with wide operating voltage range, high sensitivity, and a variety of packaging options.

01 Unipolar Switch Hall

Operated by one magnetic field. Sufficient strength will cause the device to switch to its on state.

Feature

- AEC-Q100
- Wide Operating Temperature Range
- Diversification of Sensitivity
- Wide Operating Voltage Range

Unipolar

P.N.	Voltage(V)	B _{OP} (mT)	B _{RP} (mT)	B _H (mT)	Temp(°C)	Package	Notes
SC2033	1.65~5.5	2.2	1.8	0.4	-40~85	SOT23-3L	-
SC2432	2.5~24	2.5	2.0	0.5	-40~150	SOT23-3L, TO92S-S2	AEC-Q100
SC2434	2.5~24	7.0	5.5	1.5	-40~150	SOT23-3L, TO92S-S2	AEC-Q100
SC2438	2.5~24	12.0	9.5	2.5	-40~150	SOT23-3L, TO92S-S2	AEC-Q100
SC2451	3.0~40	10.0	8.5	1.5	-40~150	SOT23-3L	AEC-Q100
SC2452	3.0~40	18.0	13.0	5.0	-40~150	SOT23-3L	AEC-Q100
SC2455	3.0~40	25.5	20.0	5.5	-40~150	SOT23-3L	AEC-Q100, Low-Sensitivity
SC25891	3.3~24	9.0	7.5	1.5	-40~125	SOT23L, TO92S-S1	AEC-Q100, Current Output, ASILA

02 Latch Switch Hall

Activated within a symmetrical magnetic field, disconnected when the opposite magnetic field is applied.

Feature

- AEC-Q100
- Wide Operating Temperature Range
- Diversification of Sensitivity
- Wide Operating Voltage Range

Latch

P.N.	Voltage(V)	B _{OP} (mT)	B _{RP} (mT)	B _H (mT)	Temp(°C)	Package	Notes
SC2202	2.5~24	1.5	-1.5	3	-40~150	SOT23-3L, TO92S-S2	Built-in Pull-up Resistor
SC2242	2.5~24	2.0	-2.0	4.0	-40~150	SOT23-3L, TO92S-S2	AEC-Q100, Built-in Pull-up Resistor
SC2402	2.5~24	2.0	-2.0	4.0	-40~150	SOT23-3L, TO92S-S2, DFN1616	High-Sensitivity
SC2442	2.5~24	2.0	-2.0	4.0	-40~150	SOT23-3L, TO92S-S2	AEC-Q100, High-Sensitivity
SC2443	2.5~24	3.0	-3.0	6.0	-40~150	SOT23-3L, TO92S-S2	AEC-Q100
SC2448	2.5~24	8.0	-8.0	16.0	-40~150	SOT23-3L, TO92S-S2	AEC-Q100
SC2498	2.8~40	9.5	-9.5	19.0	-40~150	SOT23-3L, TO92S-S2	AEC-Q100
SC1919	4.0~120	-7.0	7.0	14.0	-40~150	SOT23-3L, TO92S-S2	AEC-Q100, HV
SC2943	2.8~40	3.0	-3.0	6.0	-40~150	SOT23-3L, TO92S-S2	AEC-Q100, HV
SC2948	2.8~40	8.0	-8.0	16.0	-40~150	SOT23-3L, TO92S-S2	AEC-Q100, HV
SC2743	2.8~40	3.0	-3.0	6.0	-40~150	SOT23-3L, TO92S-S2	AEC-Q100, Current Output
SC2748	2.8~40	9.5	-9.5	19.0	-40~150	SPI2	AEC-Q100, Current Output

03 Ominipolar Switch Hall

Operate with either a strong positive/negative magnetic field. Simplified assembly production process.

Feature

- Wide Operating Temperature Range
- Wide Operating Voltage Range
- Diversification of Sensitivity

Ominipolar

P.N.	Voltage(V)	B _{OP} (mT)	B _{RP} (mT)	B _H (mT)	Temp(°C)	Package	Notes
SC2061	1.8~5.5	±1.8	±1.0	±0.8	-40~85	SOT23-3L, TO92S-S2	-
SC2063	1.65~5.5	±3.0	±2.0	±1.0	-40~85	SOT23-3L, TO92S-S2	AEC-Q100, Micro-Power, Push-Pull
SC2064	1.65~5.5	±3.0	±2.0	±1.0	-40~85	SOT23-3L, TO92S-S2	AEC-Q100, Micro-Power, Open-Drain
SC2462	2.5~24	±2.5	±1.5	±1.0	-40~150	SOT23-3L, TO92S-S2	AEC-Q100, High Voltage
SC2464	2.5~24	±6.0	±5.0	±1.0	-40~150	SOT23-3L, TO92S-S2	AEC-Q100, High Voltage
SC2466	2.5~24	±16.5	±13.5	±2.5	-40~150	SOT23-3L	AEC-Q100, High Voltage
SC2450	3.0~40	±2.0	±1.5	±0.5	-40~150	SOT23-3L	AEC-Q100, High Voltage

04 Dual-Channel Switch Hall

Ideal for use in speed and direction sensing applications incorporating encoder ring-magnet targets.

Feature

- AEC-Q100
- Wide Operating Temperature Range
- Wide Operating Voltage Range
- Sequential Control
- Diversification of Sensitivity

Dual-Channel

P.N.	Voltage(V)	B _{OP} (mT)	B _{RP} (mT)	B _H (mT)	Temp(°C)	Package	Notes
SC2526VB-AB	2.8~40	-3.0	3.0	6.0	-40~150	TO-94	Speed+Speed
SC2526VB-SD	2.8~40	-3.0	3.0	6.0	-40~150	TO-94	Speed+Direction
SC2527S6-SD	2.8~40	3.0	-3.0	6.0	-40~150	SOT23-6L	AEC-Q100, Speed+Direction
SC2527S6-AB	2.8~40	3.0	-3.0	6.0	-40~150	SOT23-6L	AEC-Q100, Speed+Speed

05 Linear Hall

An output voltage which can be obtained by changing the relative position between magnetic pole and Hall element.

Feature

- Diversification of Sensitivity
- Wide Bandwidth Fast Response
- Micropower Mode
- 3D Omnidirectional Induction

Linear Hall

P.N.	Voltage(V)	V _Q	Sensitivity,V _{DD} =3.3V	BW	Temp(°C)	Package
SC4002	3.5~10.5	50% V _{DD}	2.1mV/Gs	1.0M	-40~150	SOT89-3,SOT23-3L,TO92S-S1
SC4005	3.5~10.5	50% V _{DD}	1.65mV/G	1.0M	-40~150	TO92S-S1
SC4011	2.2~5.5	50% V _{DD}	1.6mV/Gs	1.0M	-40~105	SOT23-3L,TO92S,DFN1616
SC4015	2.2~5.5	66% V _{DD}	2mV/Gs	1.0M	-40~105	SOT23-3L
SC4019	2.2~5.5	50% V _{DD}	1.4mV/Gs	1.0M	-40~105	SOT23-3L,TO92S-S7
SC4101	2.5~5.5	50% V _{DD}	1mV/Gs	100K	-40~105	SOT23-3L,SOT23-3,DFN1616
SC4102	2.5~5.5	50% V _{DD}	1.5mV/Gs	100K	-40~105	SOT23-3L,SOT23-3,DFN1616
SC4103	2.5~5.5	50% V _{DD}	2.5mV/Gs	100K	-40~105	SOT23-3L,SOT23-3,DFN1616
SC4104	2.5~5.5	50% V _{DD}	3.2mV/Gs	100K	-40~105	SOT23-3L,SOT23-3,DFN1616
SC4123	2.5~5.5	90% V _{DD}	3.3mV/Gs	100K	-40~105	SOT23-3L,SOT23-5
SC4125	2.5~5.5	90% V _{DD}	5mV/Gs	100K	-40~105	SOT23-3L,SOT23-5
SC4251	3.0~5.5	50% V _{DD}	1.5mV/Gs 2D	30K	-40~125	DFN1616,DFN3*3
SC4901	2.5~5.5	50% V _{DD}	1.65mV/Gs	1.0M	-40~125	SOT23-3L
SC4902	2.5~5.5	50% V _{DD}	2.1mV/Gs	1.0M	-40~125	SOT23-3L
SC4903	2.5~5.5	50% V _{DD}	3.3mV/Gs	1.0M	-40~125	SOT23-3L
SC4923	2.5~5.5	90% V _{DD}	3.3mV/Gs	1.0M	-40~125	SOT23-3L
SC4823	2.5~5.5	90% V _{DD}	3.3mV/Gs	300K	-40~105	SOT23-6
SC4723	2.5~5.5	90% V _{DD}	3mV/Gs	250K	-40~105	SOT23-3L
SC4702	2.5~5.5	50% V _{DD}	3mV/Gs	250K	-40~105	SOT23-3L
SC4703	2.5~5.5	50% V _{DD}	4.5mV/Gs	250K	-40~105	SOT23-3L
SC439X	3.0~5.5	Adjustable	2.4~8.6mV/Gs	/	-40~85	DFN2*2-8L,SOT23-6



CURRENT SENSOR ICS

By detecting the magnetic field changes generated by the current, it outputs a signal that is proportional to the current.

Our programmable sensors can detect currents from 10A to 2000A, satisfying diverse application requirements in industrial control, smart home, and new energy.

01 Programmable Linear Hall

It can be used for open-loop current detection with magnetic rings, which can detect up to 1500A current, and has high accuracy and high bandwidth performance at full temperature. It has multiple protection functions, such as over-current, disconnection, under-voltage, and over-voltage protection, and supports multiple programming of EEPROM at the same time. It can be used for new energy vehicle inverter, photovoltaic inverter, BMS current detection, etc

Feature

- High accuracy: $\pm 2\%$ sens error at full temperature
- High bandwidth and fast response: up to 400kHz, 1.2 μ s
- Low noise
- Withstand voltage up to 24V
- Some products are AEC-Q100 qualified

Programmable Linear Hall

P.N.	Voltage(V)	V _Q	BW(HZ)	Sensitivity(mV/Gs)	Package	Notes
SC4643	4.5~5.5	50%V _{DD}	120K	0.6~14	TO-92, TO-94	AEC-Q100
SC4616	4.5~5.5	2.5	5k	8~24	TO-94, SOT89	Cost-Effective
SC4645	4.5~5.5	2.5	240k	1~21	TO-94	Vref Pin
SC4663	4.5~5.5	50%V _{DD} /2.5/1.65	400K	0.4~4.0	TO-94	AEC-Q100,OCD
SC4665	3.0~5.5	50%V _{DD} /2.5/1.65	400K	1~25	TO-94	AEC-Q100,Vref,OCD
SC4668	3.0~5.5	50%V _{DD} /2.5/1.65	400K	2~30	8 Pin TSSOP	AEC-Q100,Coreless

02 Coreless Current Sensing

A variety of package forms, 3.3/5V power supply, and multiple output modes can meet the needs of different current sensing from 10 to 150A, and provide a current path as low as 0.27m Ω impedance. Through the unique package design, it meets the highest operating isolation withstand voltage capacity of UL standards. It can be used for inverter, OBC, DCDC, photovoltaic inverter and MPPT current detection.

Feature

- High accuracy: $\pm 2\%$ sens error at full temperature
- High bandwidth and fast response: up to 400kHz, 1.2 μ s
- Low noise
- The maximum creepage distance is 8.2mm, the maximum isolation withstand voltage of 5000Vrms and the maximum working isolation withstand voltage of 1618Vpk meet the UL standard.

Coreless Current Sensing

P.N.	Voltage(V)	V _Q	BW(HZ)	Current(A)	Package	Notes
SC4624	4.5~5.5	2.5	120K	20/25/30/50/100	SOP8, SOW16	Vref
SC4671	3.0~5.5	50%V _{DD} /2.5/1.65	400K	10~150	SOP8, SOW16, SOW10	AEC-Q100, OCD, Vref Pin

03 Leakage protection

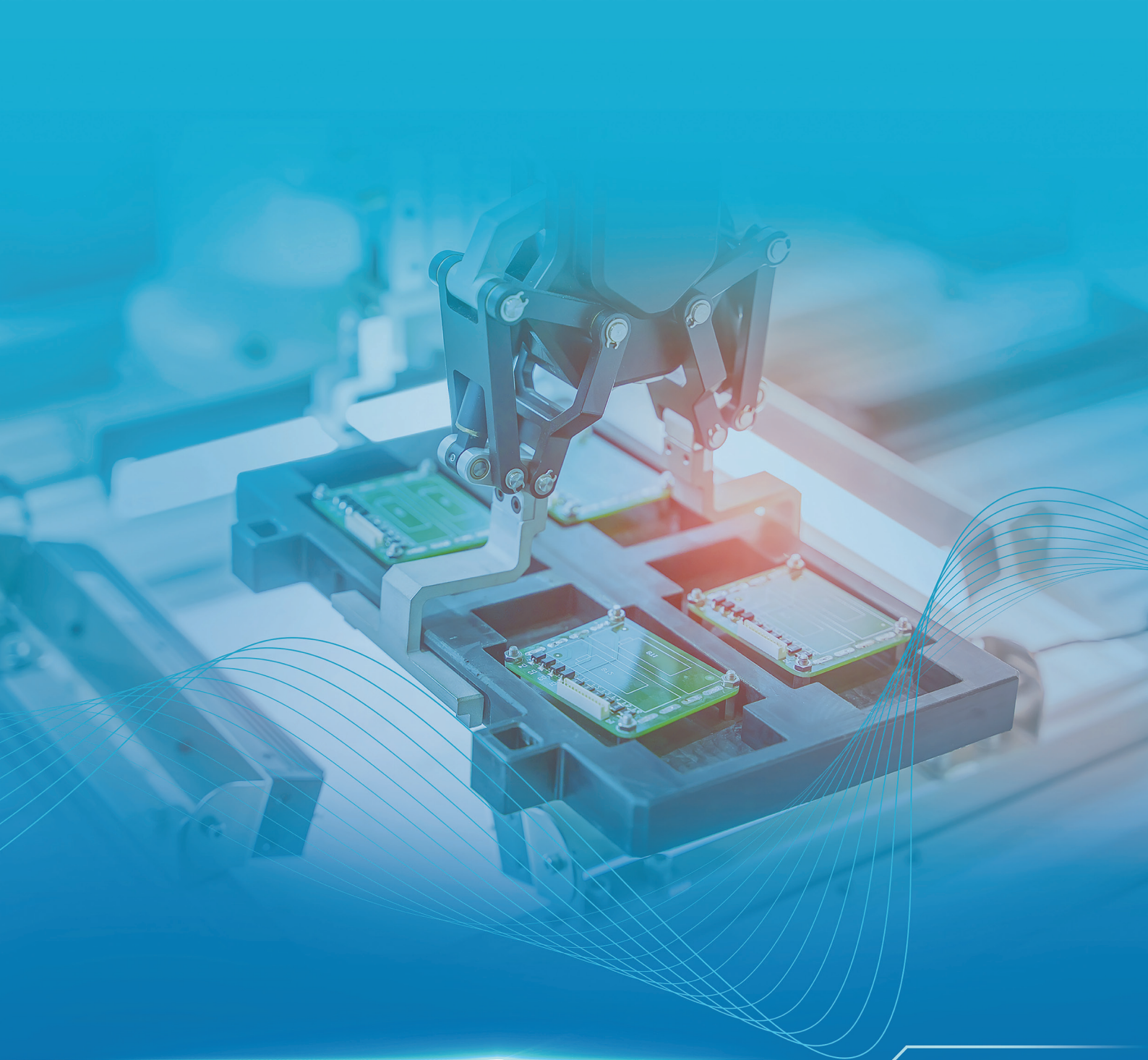
For the need for leakage protection of type A and AC. The high-precision current detection circuit is integrated inside, which can quickly detect leakage and realize the trigger action within 4 microseconds to ensure personal safety.

Feature

- The chip directly uses AC power supply
- The chip directly drives SCR (thyristor), and when there is a leakage signal, the OS outputs a 30mS high-level pulse
- It is suitable for detecting AC type residual current leakage signal
- High precision and good consistency

Leakage Current Detector

P.N.	Voltage(V)	Leakage Current(mA)	Ton(mS)	Temp(°C)	Package	Notes
SL002147	4.5~5.5	30	30	-20~85°	SOP8	A&AC,110V/220V
SL54123	4.5~5.5	30	30	-20~85°	SOP8	AC,110V/220V



ANGLE SENSORS ICS

Angle sensors are used to measure the rotation angle of objects, which converts the rotation angle of an object into a digital or analog signal output.

01 Magnetic Angle Sensor

Slow rotation angle detection of magnets based on Hall technology.

Feature

- AEC-Q100
- High withstand voltage
- Wide operating temperature range
- On-line programming
- Diagnostic protection function
- Multiple output interfaces

Magnetic

P.N.	Voltage (V)	Current (mA)	Magnetic Field Range	Accuracy	Temp(°C)	Output	Package	Notes
SC4688	4.5~5.5	7.5	-100mT~100mT	2.0%	-40~150	Analog	TO-92U,SOP8	AEC-Q100,1D Linear,Programmable
SC4689	4.5~5.5	7.5	-100mT~100mT	2.0%	-40~150	Analog	TO-92U	AEC-Q100,1D Linear,Programmable
SC69401	3.3~5.5	8	10mT~120mT	1 degree	-40~160	Analog,PWM,SPI	SOP8	AEC-Q100,2D,ASIL-B,Programmable
SC69431	3.3~5.5	8	20mT~70mT	1 degree	-40~160	Analog,PWM,SPI,SENT,PSI5	SIP,SOP8,TSSOP16	AEC-Q100,3D Hall, ASIL-B,Programmable

02 Inductive Angle Sensors

Highly accurate slow position detection based on eddy current effect.

Feature

- AEC-Q100
- High withstand voltage
- High precision
- Wide operating temperature range
- Online programming
- Integrated sine-cosine signal self-calibration function
- Diagnostic protection function
- Multiple output interfaces

Inductive

P.N.	Voltage(V)	Current(mA)	Accuracy	Temp(°C)	Output	Package	Notes
SC69510	4.5~5.5	7	0.5%	-40~160	Analog,PWM,SENT,PSI5	TSSOP16	AEC-Q100,Inductive Encoder, ASIL-B,Programmable



HIGH SPEED ENCODER ICS

Rotary encoder installed on the motor convert electrical pulse signals into digital signals through tracking the speed or position of the motor shaft.

01 Magnetic Motor Encoder

This series of magnetic encoder ICs utilizes the Hall effect principle to enable high-precision real-time detection of motor rotor position by analyzing angular variations in rotating magnetic fields.

Feature

- Hall effect non-contact sensing technology enables high-precision rotor position decoding
- Dynamic angle compensation algorithm enhances repeatability consistency
- Low-latency signal processing architecture supports real-time feedback for high-speed rotation
- Configurable digital output interfaces compatible with diverse control systems
- High-voltage-tolerant power supply and interface protection ensure reliability in harsh electromagnetic environments

Magnetic Motor Encoder

P.N.	Voltage Rating(V)	KRPM	Resolution	Output Signal				Digital Interface	Package
				Analog	ABZ-Line	UVW	PWM (HZ)		
SC60220	-0.3 ~ 6	100	12bit	±SIN&COS	-	-	-	-	SSOP16
SC60224	-0.3 ~ 6	10	12bit	-	1~1024	1~16	244/976	SPI	SSOP16
SC60228	-0.3 ~ 6	10	12bit	-	-	-	244/976	SPI	SOP8
SC60210	-0.3 ~ 30	>100	-	±SIN&COS	-	-	-	-	SOP8
SC60214	-0.3 ~ 30	>100	14bit	-	1~1024	-	250~2000	-	SOP8
SC60218	-0.3 ~ 30	>100	14bit	-	-	-	-	SPI	SOP8

02 Inductive Motor Encoder

This series of inductive encoder chips is based on the eddy current principle, achieving non-contact motor rotor position detection through high-frequency magnetic field coupling. It features industrial-grade high-speed response and precise measurement capabilities.

Feature

- Eddy Current Non-Contact Detection Technology: No Need for Magnets or Shielding Structures, Resistant to Stray Magnetic Field Interference
- Dynamic Noise Suppression and Error Compensation: Improving High Repeatability Accuracy
- High-Speed Signal Chain Architecture Design: Enabling Low-Latency Real-Time Control
- Multi-Protocol Digital/Analog Output Interfaces: Compatible with Diverse
- High Voltage-Resistant Power Supply and Interface Protection: Ensuring Reliability in Complex Electromagnetic Environments
- Suitable for Compact Through-Shaft Mounting Structures: Optimizing System Space Layout

Inductive Motor Encoder

P.N.	Voltage Rating(V)	KRPM*	Resolution /CH	Output Signal				Digital Interface	Package
				Analog	ABZ-Line	UVW	PWM (HZ)		
SC60340	-15 ~ 15	100	12bit	±SIN&COS	1~1024	1~32	244/1000	SPI/SSI	SSOP28
SC60370	-15 ~ 15	100	12bit	±SIN&COS	1~1024	1~32	244/1000	SPI/SSI	QFN40
SC60410	-0.3 ~ 30	600	14bit	±SIN&COS	1~1024	-	250~2000	SPI	TSSOP16



MOTOR DRIVER ICS

Semi's motor drivers offer industry-leading robustness and safety, thriving in harsh environments. We are expert in helping motors run more efficiently and reliably in automotive, industrial and consumer applications.

01 Brush DC Motor Driver

Driver IC for DC Brushed Motors. Features wide operating voltage range, integrated extensive protection functions with fault alarm, and built-in current feedback capability inside.

Feature

- Wide Voltage & High Current
- Complete Protection Functions
- Ultra-low Sleep Current
- Stall Protection Alarm & Open-circuit Protection Alarm
- Parameter Configuration And Failure Diagnosis Via UART Communication

Brush DC Motor Driver

P.N.	Feature	Operating Voltage(V)	Peak Current (A)	Package	Notes
ZH6200	H Bridge Driver Integrated Power Stage	2.4~6.4	2.5	SOP8	Cost-Effective
ZH6232	H Bridge Driver Integrated Power Stage	6.0~30	3.0	ESOP8	Cost-Effective
ZH6242	H Bridge Driver Integrated Power Stage	6.0~40	3.0	ESOP8	High Performance
ZH6252	H Bridge Driver Integrated Power Stage	2.8~40	5.5	SOP8	Cost-Effective

02 Brushless DC Motor Driver

A mixed-signal Circuit specifically designed for brushless motor control, integrating digital algorithms and driver circuits to achieve BLDC motor control. The highly integrated design eliminates external components (power supplies, op-amps, MCUs, etc.).

Feature

- Wide Voltage & High Current
- Complete Alarm Protection Functions
- Supports Square Or Sinusoidal Wave Control
- Configurable Parameters
- High Operational Efficiency
- Excellent Start-up Performance

Brushless DC Motor Driver

P.N.	Feature	Operating Voltage(V)	Peak Current (A)	Package	Notes
ZH6332	Three-Phase Trapezoidal Sensored, with Power Stage	6.0~40	3.0	TSSOP2,QFN20	Hall Commutation
ZH6338	Three-Phase Sinusoidal Sensorless, with Power Stage	6.0~40	1.75	ETSSOP16	Field-Oriented Control
ZH6358	Three-Phase Sinusoidal Sensorless, without Power Stage	7.0~32	External MOSFETs	ETSSOP24	Field-Oriented Control
ZH6521	Single-Phase Sinusoidal, with Power Stage	3.2~28	0.8	SOT23-6	Hall Commutation (Integrated)
ZH6551	Single-Phase Sinusoidal, without Power Stage	3.2~28	External MOSFETs	TSSOP16	Hall Commutation

03 Stepper Motor Driver

The ZH6429 is a control-and-driver integrated IC specifically designed for small stepper motors. It incorporates a pulse counter, stepper motor path/speed planning algorithms, sine-cosine wave generator, SPWM generator, as well as short-circuit and over-temperature protection functions.

Feature

- Sine Wave Output (256 Subdivision)
- Low Current Sleep Mode
- Lost Step Alarm And Protection
- Configurable Soft Start And Soft Stop
- Automatic Path Planning
- Supports Burst Mode & Simplifies Host Design

Stepper Motor Driver

P.N.	Feature	Voltage(V)	Peak Current (A)	Package	Notes
ZH6429	Intelligent Stepper Motor Driver	4.5~30	1.0	ESSOP10	Sinusoidal Phase Current, Lock Detection
ZH6412	Classical Stepper Motor Driver	2.7~14	0.8	ETSSOP16	Cost-Effective

04 Gate Driver

The smart gate driver is designed to drive various types of MOSFETs, featuring excellent driving characteristics with outstanding performance in switching frequency and reliability.

Feature

- Integrated Bootstrap Diode
- Integrated DCDC Circuits
- Maximum Operating Frequency: 500kHz
- Automatic Deadband Function
- Miller Clamp Function

Gate Driver

P.N.	Feature	Voltage(V)	Peak Current (A)	Package	Notes
ZH619A0	High Voltage Half-Bridge Driver	600	0.3	SOP8	NN Gate Driver
ZH6350(B)	Three-Phase Gate Driver	40	0.1	QFN16,SOP16	PN Gate Driver, with DC/DC BUCK (B Version)
ZH639D0	Three-Phase Gate Driver	100	2.5	TSSOP20,QFN24	NN Gate Driver

05 MCU

The ZH521X series motor-control dedicated MCUs (Cortex-M0 core) comprise three variants: ZH5210, ZH5212 (with integrated PN driver), and ZH5213 (with integrated NN driver). These devices feature not only extensive communication interfaces but also essential motor control peripherals including EPMW, ADC, and OPA modules.

Feature

- Maximum MCU Operating Frequency: 96Mhz
- 32K FLASH Memory
- 4K RAM Memory
- Integrated CORDIC Co-processor and Divider Inside
- 3-channel OPA, High Speed ADC Module And Multiple Timers

MCU

P.N.	Feature	Voltage(V)	Package	Notes
ZH5210	96Mhz M0 ARM Cortex MCU, Include ADC/OPA/EPWM	2.8~5.5	QFN40, QFN24, SSOP24	Motor Driver Algorithm Provided
ZH5212(B)	Housed ZH5210 and a 3 Phase PN Gate Driver	5.0~40	QFN40, QSOP24, ETSSOP28, QFN32	Motor Driver Algorithm Provided
ZH5213	Housed ZH5210 and a 3 Phase NN Gate Driver	5.0~100	QFN48, QFN40	Motor Driver Algorithm Provided

06 Others

Meets the needs of some specialized motor drive requirements.

Feature

- Small package volume
- High Efficiency
- Reduced Power Consumption
- Wide Voltage Range

Others

P.N.	Feature	Voltage(V)	Load	Package	Notes
ZH6219	Claw-Pole Synchronous Motor Driver	6.0~28	0.5	SOT23-5, SOP8	Extreme Simple in Control and Peripherals
ZH7805	COT Architecture DC/DC BUCK	7.0~32	0.2	SOT23-6	Cost-Effective



POWER MANAGEMENT ICS

As your partner in power management, we are in constant pursuit of pushing the most stable data for your application.

01 LDO

Automotive-grade high-withstand voltage and low quiescent current 300mA linear regulator.

Feature

- Wide input voltage range
- Low quiescent current
- independent enablement
- PG delay can be programmed

LDO

P.N.	Input Voltage(V)	Output Voltage(V)	Load(A)	Package	Notes
VE1430Q	3.0~40	3.3/5/1.25~24	0.3	SOT223/MSOP-8/SOIC-8	AEC-Q100, Enable,PG and PG Delay Option

02 DC/DC Converter

Buck converter with integrated switch tube.

Feature

- Switch frequency adjustable
- Tune frequency function optional
- Soft start is programmable
- Comprehensive protection features

DC/DC Converter

P.N.	Input Voltage(V)	Output Voltage(V)	Frequency(HZ)	Package	Notes
VE2220	3.3~20	20	400K~3M	42-lead BGA	20V/20A Multi-phase Buck Regulator
VE2226	3.3~20	6/6	500K~4M	QFN-34	20V/Dual Channel 6A Buck Regulator(IC Parallel)
VE2266	3.3~20	6/6	500K~4M	QFN-34	20V/Dual Channel 6A Buck Regulator(Channel parallel)
VE2430Q	3.3~40	3.5	350K~2.5M	QFN-34	AEC-Q100,40V/3.5A Buck Converter

03 Buck/Boost Controller

60V boost/buck controller.

Feature

- 60V high withstand voltage
- Support TSSOP-level QFN package
- Frequency jitter function is optional
- Overcurrent protection can be set flexibly

Buck/Boost Controller

P.N.	Input Voltage(V)	Output Voltage(V)	Frequency(HZ)	Package	Notes
VE8600Q	4.0~60	0.8~60	100K~1M	TSSOP-20/QFN-20	AEC-Q100,Buck, SS, PG,Dither
VE8602Q	4.0~60	4~60	100K~1M	TSSOP-20/QFN-20	AEC-Q100,Boost, Quassi-Bypass, SS, PG,Dither

04 Buck-Boost Controller

60V 4-switch buck-boost controller.

Feature

- 4-tube single-inductor architecture
- High efficiency
- Adjustable switching frequency
- bi-directional mode
- CC/CV dual-loop control

Buck-Boost Controller

P.N.	Input Voltage(V)	Voltage Accuracy	Frequency(HZ)	Bidirectional Mode	Package	Notes
VE8620	4.5~60	1.50%	100K~700K	No/ Forward	TSSOP-38	60V Full Function Buck-boost Controller(CC/CV)
VE8622	4.5~60	1.50%	100K~700K	Yes (Forward/Reverse)	TSSOP-38	60V Bidirectional Buck-boost Controller(CC/CV)
VE8624	4.5~60	1.50%	100K~700K	No/ Forward	TSSOP-28	60V Simple Unidirectional Buck-boost Controller(CC/CV)

05 PMIC

Automotive-grade PMICs for CIS power supply.

Feature

- 2.1Mhz switching frequency
- LDO has excellent performance
- The output voltage timing is flexibly adjustable
- Small package

PMIC

P.N.	Input Voltage(V)	Frequency(HZ)	Voltage Accuracy	Package	Notes
VE6200Q	4.0~18.5	2.1M	1.00%	QFN-16(3*3)	AEC-Q100,1HV Buck +2LV Buck +1High PSRR LDO, Flexible Sequence



ASIC

Moreover, we provide a variety of suitable products for clean energy, thermal management systems and other ICs.

01 Operational Amplifier

OP is an analog circuit block that takes a differential voltage input and produces a single-ended voltage output.

Feature

- High PSRR
- Low Bias Voltage & Bias Current
- Good Temperature Stability
- AEC-Q100

Operational Amplifier

P.N.	Voltage(V)	GBW(HZ)	VOS(mV)	SR(V/uS)	Package
SYLMV321	2.5~5.5	1M	±1	0.7	SOT23-5
SYLMV324	2.5~5.5	1M	±1	0.7	SOP14,TSSOP14
SYLMV358	3.0~36	1M	±0.35	1	SOP8,TSSOP8,MSOP8
SYLMV2904	3.0~36	1M	±0.35	1	SOP8,TSSOP8,MSOP8

02 Interface

Enable a system to read out infor from the input signal,providing a suitable output signal for a host system to display or process.

Feature

- Bus ESD Protection Enhancement— HBM 15KV
- Power Supply—3.3V & 5V
- Highest Data Rate—10Mbps
- Over-temperature & Over-current Protection & Fail-safe Function

Transceiver

P.N.	Voltage(V)	Transmit Rate (Mbps)	ESD HBM (KV)	Temp(°C)	Mountable Nodes	Communication Mode	Package
SI485E	3.0~5.5	15	15	-40~85	256	Half Duplex	SOIC8

APPLICATIONS



Powertrain

Engine

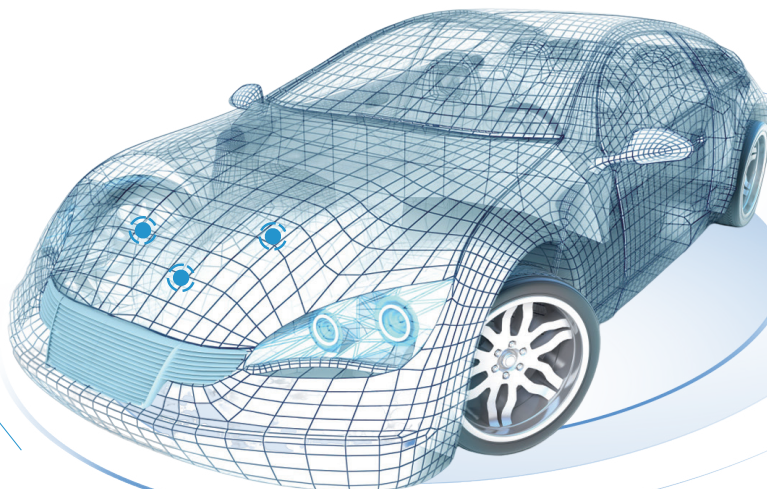
- Camshaft Phase Sensor
- Crankshaft Position Sensor
- EGR Valve
- Electronic Throttle Control
- Turbocharger Actuator
- Electric Fuel Pump

Fuel Tank

- Urea Dosing Pump
- Fuel Level Sensor

Transmission

- Transmission Speed Sensor
- Electronic Gear Selector



Powertrain	Engine	Camshaft Phase Sensor	SC9314 SC9675 SC9388
		Crankshaft Position Sensor	SC9621 SC9625 SC9669
		EGR Valve	SC69401 SC69431 SC69510
		Electronic Throttle Control	SC69401 SC69431 SC69510
		Turbocharger Actuator	SC69401 SC69431 SC69510
		Electric Fuel Pump	SC244X SC2498
	Transmission	Transmission Speed Sensor	SC9685 SC9686
		Electronic Gear Selector	SC69401 VE1430Q SC113X SC69401 SC2455 SC2436 SC244X SC4688 SC69431
	Fuel Tank	Urea Dosing Pump	SC2242
		Fuel Level Sensor	SC4688

Body Electronics

Window Assembly

- Power Window Anti-Pinch System
- Power Window Motor

Door System

- Power Sliding Door Anti-Pinch System
- Door Step
- Hidden Handle

Controller

- BCM

Stop-Start System

- Stop-Start System

Sunroof assembly

- Sunroof Motor Control Unit (SMCU)

Power Liftgate

- Liftgate Strut Motor

Rear Spoiler

- Active Rear Spoiler

Rear View Mirror

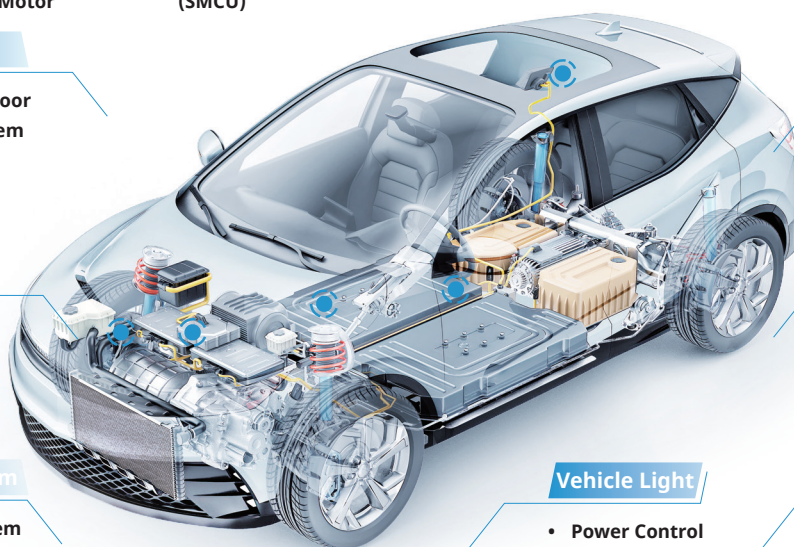
- Power-folding Side Mirror

Charging Port

- Charge Port Cover
- Charge Port Actuator

Wiper assembly

- Intelligent Wiper Controller



Body Electronics	Window Assembly	Power Window Anti-Pinch System	SC2527 SC244X SC2498 SC294X
		Power Window Motor	SC244X SC249X SC294X
	Vehicle Light	Power Control	VE1430Q
		Power Sliding Door Anti-Pinch System	SC2498 SC244X
		Door Step	SC244X
	Door System	Hidden Handle	SC244X SC2498
		Charge Port Cover	SC243X SC2462
	Charging Port	Charge Port Actuator	SC2242
	Power Liftgate	Liftgate Strut Motor	SC244X SC249X VE1430Q
	Rear View Mirror	Power-folding Side Mirror	-
	Controller	BCM	VE1430Q
	Stop-Start System	Stop-Start System	VE8602Q
	Sunroof Assembly	Sunroof Motor Control Unit (SMCU)	SYLM2904 SC244X SC294X VE1430Q SYLM2902A SC2498
	Wiper Assembly	Intelligent Wiper Controller	SC69431
	Rear Spoiler	Active Rear Spoiler	SC2527

Intelligent Cabin

Seat Assembly

- Seat Longitudinal Motor
- Seat Recline Motor
- Seat Backrest Vibration Monitoring
- Seat Ventilation
- Seat Massage
- Power Leg Rest
- Seat Controller

Audio System

- Audio Power Amplifier

Infotainment Display System

- Cockpit Domain Controller
- Foldable Screen

Sun Visor

- Sun Visor Vanity Mirror

HUD

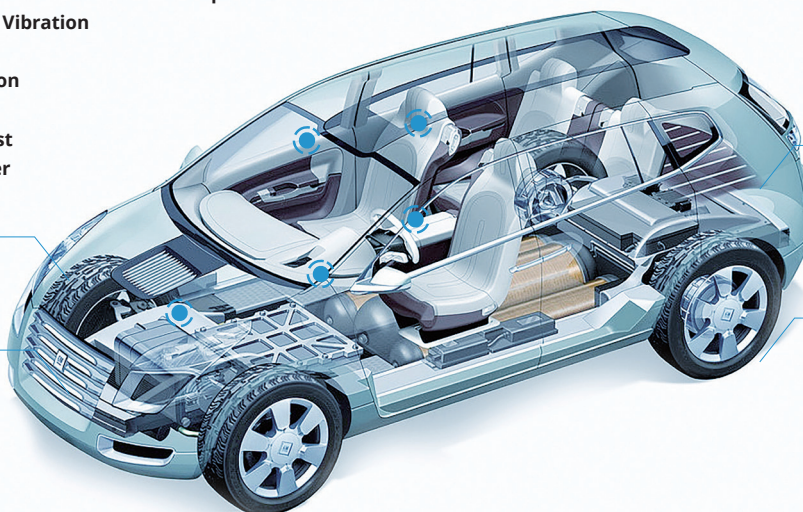
- HUD Motor

Armrest

- Armrest Console Opening/Closing Mechanism
- Armrest Translation Mechanism

Central Control

- Combination Switch
- Electronic Steering Column Lock (ESCL)



Intelligent Cabin	HUD	HUD Motor	SC243X
	Armrest	Armrest Console Opening/Closing Mechanism	SC244X
		Armrest Translation Mechanism	SC246X SC243X
	Audio System	Audio Power Amplifier	VE8602Q
	Infotainment Display System	Cockpit Domain Controller	VE2430Q VE8600Q
		Foldable Screen	SC69401 SC69431
	Sun Visor	Sun Visor Vanity Mirror	SC246X
	Central Control	Combination Switch	SC69401 SC69431 SC243X
		Electronic Steering Column Lock (ESCL)	SC244X SC2498
	Seat Assembly	Seat Longitudinal Motor	SC294X SC296X SC2498 SC244X SC2498T
		Seat Recline Motor	SC294X SC296X SC2498 SC244X SC2498T
		Seat Backrest Vibration Monitoring	SC2432
		Seat Ventilation	SC294X SC296X
		Seat Massage	SC2442
		Power Leg Rest	-
		Seat Controller	SC294X SC296X VE1430

Thermal Management & EIC System

Multi-port Valve

- Multi-port Valve

Air Conditioning System

- Air Vent

Electronic Expansion Valve

- Electronic Expansion Valve (EEV)

OBC

- Current Sensor

Solenoid Valve

- Solenoid Valve

DCDC

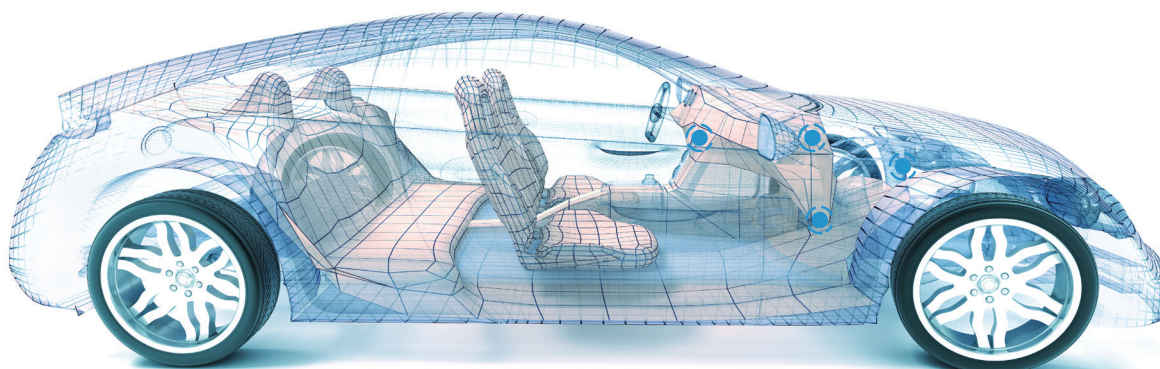
- Current Sensor

High voltage DC relay

- Intelligent High Voltage DC Relay

Electric Oil Pump

- Electric Oil Pump (EOP)



Motor Controller

- Current Sensor

BMS

- Current Sensor

BDU

- Current Sensor

PDU

- Current Sensor

Thermal Management	Multi-port Valve	Multi-port Valve	SC69401 SC69431
	Electronic Expansion Valve (EEV)	Electronic Expansion Valve (EEV)	SC294X SC244X
	Solenoid Valve	Solenoid Valve	SC294X
	Electric Oil Pump (EOP)	Electric Oil Pump (EOP)	SC294X SC244X
	Air Conditioning System	Air Vent	SC69401 SC69431
EIC System	High voltage DC relay	Intelligent High Voltage DC Relay	SC4665
	Motor Controller	Current Sensor	SC4643 SC4663
	BMS	Current Sensor	SC4643 SC4663
	OBC	Current Sensor	SC4671
	DCDC	Current Sensor	SC4671
	BDU	Current Sensor	SC4643
	PDU	Current Sensor	SC4643

Chassis Electronics

ABS System

- ABS Wheel Speed

Accelerator Pedal

- Electrical Accelerator Pedal

Air Suspension System

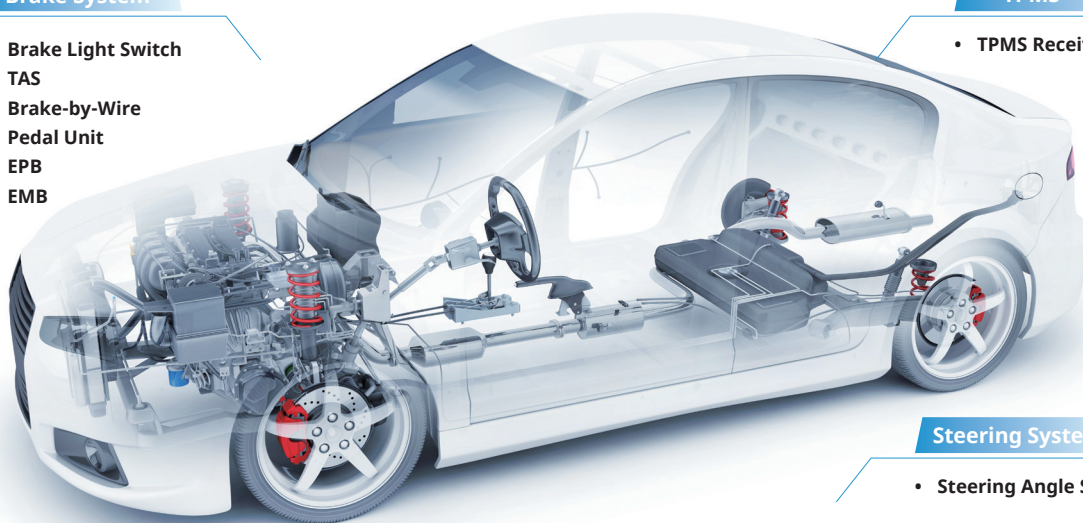
- Ride Height Sensor
- Air Suspension Compressor Control Module

Brake System

- Brake Light Switch
- TAS
- Brake-by-Wire Pedal Unit
- EPB
- EMB

TPMS

- TPMS Receiver



Steering System

- Steering Angle Sensor

Chassis Electronics	ABS System	ABS Wheel Speed	SC9641 SC9642 SC9683 SC9684
	Accelerator Pedal	Electrical Accelerator Pedal	SC4688 SC4689 SC69401 SC69431 SC69510
	Air Suspension System	Ride Height Sensor	SC69401 SC69431
		Air Suspension Compressor Control Module	SC244X SC294X
	TPMS	TPMS Receiver	VE1430Q
	Steering System	Steering Angle Sensor	SC69401 SC69431 SC69510
	Brake System	Brake Light Switch	SC243X
		TAS	SC69431 SC69510
		Brake-by-Wire Pedal Unit	SC69401 SC69431 SC69510
		EPB	-
		EMB	-

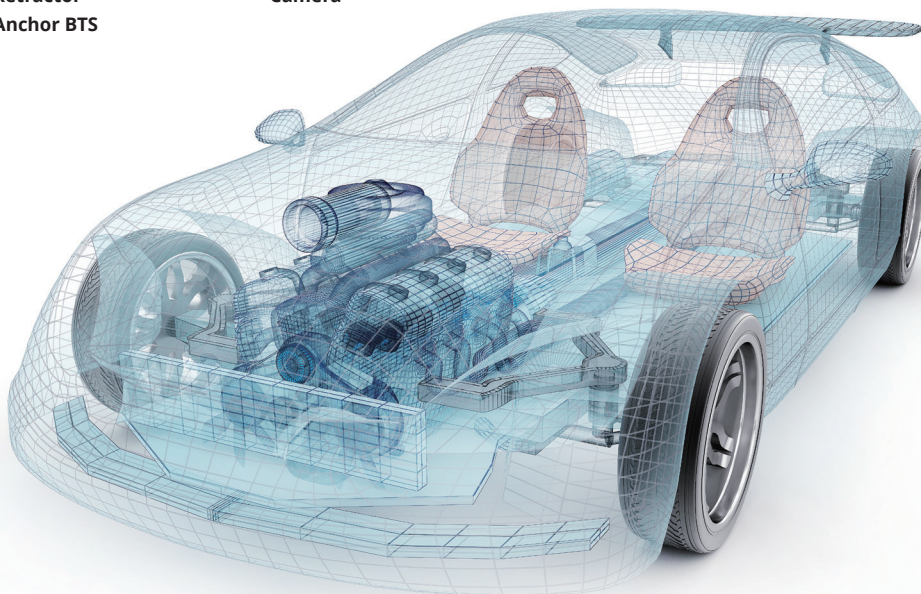
Automated Driving & Passive Safety

Seat Belt

- Seat Belt Buckle
- Seat Belt Retractor
- Seat Belt Anchor BTS

Sensor

- Laser Radar
- Camera



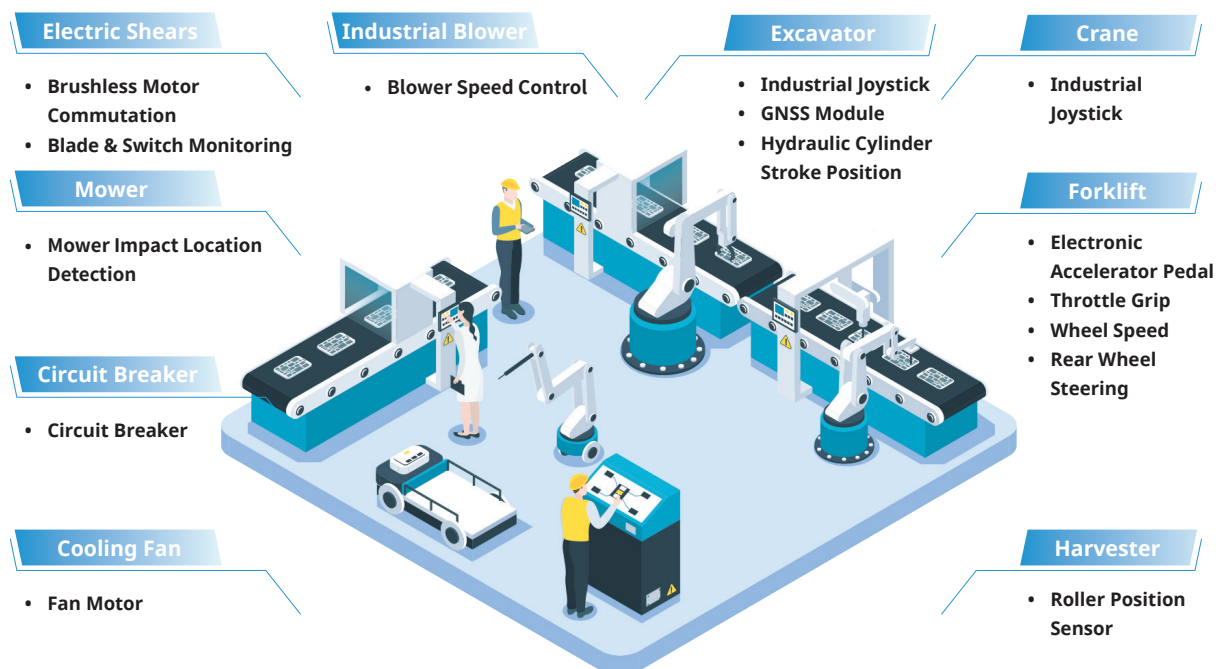
Automated Driving	Sensor	Laser Radar	SC2442 SC2438
		Camera	VE6200Q
Passive Safety	Seat Belt	Seat Belt Buckle	SC25891
		Seat Belt Retractor	SC244X SC25891
		Seat Belt Anchor BTS	SC468X SC25891

Alternative Transportation



E-bike	E-bike Motor	Motor Angle Detection	SC2402
	E-bike Handlebar	E-bike Handlebar	SC4019
	Mid-drive Motor	Mid-drive Speed Sensing	SC963X SC9641 SC2943
Bike-sharing	Bike-sharing Lock	Position Detection	SC206X SC203X
Motorcycle	ABS System	ABS Wheel Speed Sensor	SC9641
	Powertrain	Electronic Throttle Control	SC69401 SC69431
Electric Motorcycle	Three-electric System	Current Sensor	SC4643 SC4645
		Fan Speed Controller	SC1245
Ship	Power Module	Power Module	VE86XX

Industrial & Robotics



Electric tools	Electric Shears	Brushless Motor Commutation	SC2402
		Blade & Switch Monitoring	SC206X SC2466 SC2434
	Mower	Mower Impact Location Detection	SC2466
Power Grid	Circuit Breaker	Circuit Breaker	SL54123A SL2147
Server	Cooling Fan	Fan Motor	SC2442
Blower	Industrial Blower	Blower Speed Control	SC1245
Construction Machines	Excavator	Industrial Joystick	SC4624 SC4688 SC69401
		GNSS Module	VE2430Q
		Hydraulic Cylinder Stroke Position	SC4616
	Crane	Industrial Joystick	SC1245 SC4688 SC69401 SC69431
	Forklift	Electronic Accelerator Pedal	SC4688 SC69401 SC69431
		Throttle Grip	SC4688 SC69401 SC69431
		Wheel Speed	SC9642
		Rear Wheel Steering	SC69401 SC69431
	Harvester	Roller Position Sensor	SC2464

Industrial & Robotics

Encoder

- Encoder Module

Sorting Robot

- Magnetic Guidance Tape

Industrial Sewing Machine

- Brushless Motor Commutation

Amplifier Board

- Boost Circuit

Street Light Power Supply Module

- Buck-boost Converter

Emergency power supply

- Boost Circuit

RCD Socket

- Residual Current Device

Electricity Meter

- Electricity Theft Prevention

Water Meter

- Water Flow Sensor

Inverter

- Current Sensor

Energy Storage

- Current Sensor

Stage Lighting

- Angle Detection

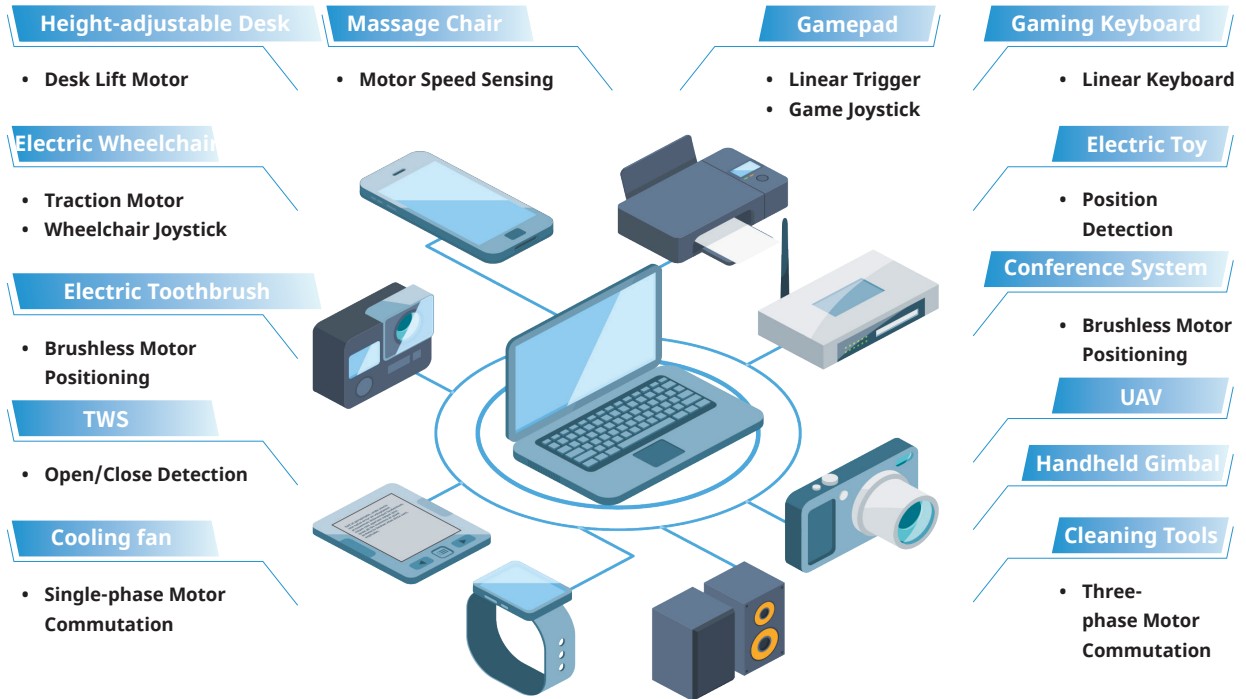
Industry Automation	Encoder	Encoder Module	SC60370
	Sorting Robot	Magnetic Guidance Tape	SC4002
	Industrial Sewing Machine	Brushless Motor Commutation	SC2402
Handle-equipped Portable Speaker	Amplifier Board	Boost Circuit	VE8602
Street Light Power Supply	Street Light Power Supply Module	Buck-boost Converter	VE8622
Emergency power supply	Emergency Power Supply	Boost Circuit	VE8602
Building Automation	RCD Socket	Residual Current Device	SL54123A
Three-utility Metering	Electricity Meter	Electricity Theft Prevention	SC2063
	Water Meter	Water Flow Sensor	SC2402 SC244X SC2242
Photovoltaic	Inverter	Current Sensor	SC4645 SC4671 SC4624 SC4665
	Energy Storage	Current Sensor	SC4671 SC4624 SC4645
Lighting	Stage Lighting	Angle Detection	SC60221 SC1134 SC60214

Home Automation



Major Appliances	Refrigerator	Refrigerator Door Position Detection	SC243X
		Refrigerator Fan Motor	SC2402
	Washing Machine	Washing Machine Drain Pump	SC40XX
	Air Conditioner	Air Conditioner Compressor Motor	SC2442
	Commercial Induction Cooktop	Induction Cooker Switch	SC206X
	Dishwasher	Water Pump	SC2402
	Wall-mounted Boiler	Water Pressure Sensor	SC4688
	RCD Socket	Residual Current Device	SL54123A
Floor Cleaning	Humidifier	Water Tank/ Level Detection	SC206X
	Robotic Sweeper	Liquid Level Detection	SC206X
Bathroom & Sanitary	Floor Scrubber	Location Detection	SC206X
	Toilet	Toilet Seat Position Detection	SC113X SC2063
Small Appliances	Juicer	Brushless Motor Commutation	SC2402
	Soy Milk Maker	Brushless Motor Commutation	SC2402
	Food Processor	Brushless Motor Commutation	SC2402
	Water Purifier	Water Flow Meter	SC224X
	Automatic Curtain	Motor position detection	SC2402 SC244X
	Hair Dryer	Hair Dryer	SC2402

Consumer Electronics



Office Furniture	Height-adjustable Desk	Desk Lift Motor	SC1245 SC2202 SC2402
	Massage Chair	Motor Speed Sensing	SC2402 SC244X
Healthcare & Wellness	Electric Wheelchair	Traction Motor	SC4251
		Wheelchair Joystick	SC4688
	Electric Toothbrush	Brushless Motor Positioning	SC410X SC4251
Portable Electronics & Wearable Devices	TWS	Open/Close Detection	SC206X
Fan Motor	Cooling fan	Single-phase Motor Commutation	SC244X SC2402
	Cleaning Tools	Three-phase Motor Commutation	SC244X SC2402
Entertainment System	Gamepad	Linear Trigger	SC410X SC49XX
		Game Joystick	SC49XX
	Gaming Keyboard	Linear Keyboard	SC4015 SC49XX SC48XX
Pan-Tilt Mechanism	Electric Toy	Position Detection	SC206X SC410X
	Conference System	Brushless Motor Positioning	SC244X SC60370 SC4251 SC60418
	Unmanned Aerial Vehicle (UAV)	-	SC4251 SC410X
	Handheld Gimbal	-	SC4251 SC410X



SEMIMENT TECHNOLOGY CO.,LTD



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Account



Channels



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