



Sensors & MEMS

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Hall ICs

Omnipolar Detection Hall ICs Detects S- or N-pole Magnetic Fields and Turns the Output ON(active Low)									
Part No.	Supply Voltage (V)	Operate Point(mT)		Pulse Drive Period (ms)	Power supply noise resittance	Supply Current (Avg.)(μ A)	Output	Operating Temperature (°C)	Package (mm)
		S-pole	N-pole						
New BU52492NUZ	1.65 to 3.60	+2.4	-2.4	50	Normal	4.2	CMOS	-40 to +85	VSON04Z1114A 1.1 × 1.4, H=Max.0.4
BU52092GWZ	1.65 to 3.60	+2.4	-2.4	50	Normal	4.4	CMOS	-40 to +85	UCSP35L1 0.8 × 0.8, H=Max.0.4
New BU52493NUZ	1.65 to 3.60	+4.1	-4.1	50	Normal	4.2	CMOS	-40 to +85	VSON04Z1114A 1.1 × 1.4, H=Max.0.4
BU52055GWZ	1.65 to 3.60	+4.1	-4.1	50	Normal	5.0	CMOS	-40 to +85	UCSP35L1 0.8 × 0.8, H=Max.0.4
New BU52494NUZ	1.65 to 3.60	+6.3	-6.3	50	Normal	4.2	CMOS	-40 to +85	VSON04Z1114A 1.1 × 1.4, H=Max.0.4
BU52054GWZ	1.65 to 3.60	+6.3	-6.3	50	Normal	5.0	CMOS	-40 to +85	UCSP35L1 0.8 × 0.8, H=Max.0.4
BU52095GWZ	1.65 to 3.60	+9.5	-9.5	50	Normal	4.4	CMOS	-40 to +85	UCSP35L1 0.8 × 0.8, H=Max.0.4
BU52097GWZ	1.65 to 3.60	+15.0	-15.0	50	Normal	4.4	CMOS	-40 to +85	UCSP35L1 0.8 × 0.8, H=Max.0.4
BU52098GWZ	1.65 to 3.60	+24.0	-24.0	50	Normal	4.4	CMOS	-40 to +85	UCSP35L1 0.8 × 0.8, H=Max.0.4
BU52792GWZ	2.7 to 5.5	+2.4	-2.4	50	Normal	3.2	CMOS	-40 to +85	UCSP35L1 0.8 × 0.8, H=Max.0.4
BD7411G	4.5 to 5.5	+3.4	-3.4	—	Normal	2.0(mA)	CMOS	-40 to +85	SSOP5

Omnipolar Detection Hall ICs with Polarity Discrimination(Polarity Detection for Both S and N Features Dual Outputs) Features 2 Outputs to Discriminate Between N- and S-pole Detection									
New BU52472NUZ	1.65 to 3.60	+2.4	-2.4	50	High	4.4	CMOS (2 Outputs : S, N pole)	-40 to +85	VSON04Z1114A 1.1 × 1.4, H=Max.0.4
BU52272NUZ	1.65 to 3.60	+2.4	-2.4	50	Normal	4.4	CMOS (2 Outputs : S, N pole)	-40 to +85	VSON04Z1114A 1.1 × 1.4, H=Max.0.4
BU52072GWZ	1.65 to 3.60	+2.4	-2.4	50	Normal	4.4	CMOS (2 Outputs : S, N pole)	-40 to +85	UCSP35L1 0.8 × 0.8, H=Max.0.4
BU52273NUZ	1.65 to 3.60	+4.1	-4.1	50	Normal	4.4	CMOS (2 Outputs : S, N pole)	-40 to +85	VSON04Z1114A 1.1 × 1.4, H=Max.0.4
BU52073GWZ	1.65 to 3.60	+4.1	-4.1	50	Normal	4.4	CMOS (2 Outputs : S, N pole)	-40 to +85	UCSP35L1 0.8 × 0.8, H=Max.0.4
BU52274NUZ	1.65 to 3.60	+6.3	-6.3	50	Normal	4.4	CMOS (2 Outputs : S, N pole)	-40 to +85	VSON04Z1114A 1.1 × 1.4, H=Max.0.4
BU52074GWZ	1.65 to 3.60	+6.3	-6.3	50	Normal	4.4	CMOS (2 Outputs : S, N pole)	-40 to +85	UCSP35L1 0.8 × 0.8, H=Max.0.4
BU52075GWZ	1.65 to 3.60	+9.5	-9.5	50	Normal	5.0	CMOS (2 Outputs : S, N pole)	-40 to +85	UCSP35L1 0.8 × 0.8, H=Max.0.4
BU52077GWZ	1.65 to 3.60	+15.0	-15.0	50	Normal	5.0	CMOS (2 Outputs : S, N pole)	-40 to +85	UCSP35L1 0.8 × 0.8, H=Max.0.4
BU52177GXZ	1.65 to 3.60	+15.0	-15.0	50	Normal	5.0	CMOS (2 Outputs : S, N pole)	-40 to +85	XCSP30L1 0.65 × 0.65, H=Max.0.33
BU52078GWZ	1.65 to 3.60	+24.0	-24.0	50	Normal	5.0	CMOS (2 Outputs : S, N pole)	-40 to +85	UCSP35L1 0.8 × 0.8, H=Max.0.4

Bipolar Latch Hall IC Detects Turn of Pole(S→N or N→S)(N-pole→S-pole : Out put High→Low S-pole→N-pole : Out put Low→High)									
Part No.	Supply Voltage (V)	Operate Point(mT)		Pulse Drive Period (ms)	Supply Current (Avg.)(μ A)	Output	Operating Temperature (°C)	Package (mm)	
		S-pole	N-pole						
BU52040HFV	1.65 to 3.30	+3.0	-3.0	0.5	200	CMOS	-40 to +85	HVSOF5	

Geomagnetic Sensor IC

3-Axis Digital Magnetometer IC							
Part No.	Supply Voltage (V)	Magnetic Measurement (μ T)	Magnetic Sensitivity (μ T/LSB)	Current Consumption (μ A)	I/F	Operating Temperature (°C)	Package (mm)
New BM1422AGMV	1.7 to 3.6	\pm 1,200	0.042	150	I ² C	-40 to +85	MLGA010V020A 2.0 × 2.0, H=Max.1.0

Current Sensor IC

Contactless Current Sensor IC							
Part No.	Supply Voltage (V)	Magnetic Measurement (μ T)	Magnetic Sensitivity (μ T/LSB)	Current Consumption (μ A)	I/F	Operating Temperature (°C)	Package (mm)
New BM14270MUV-LB	2.7 to 5.5	\pm 280	0.045	70	I ² C	-40 to +125	VQFN20QV3535 3.5 × 3.5, H=Max.1.0

Ambient Light Sensor ICs

Analog Current Output type Ambient Light Sensor ICs								
Part No.	Supply Voltage (V)	Sensitivity Variations (%)	Illuminance Measurement (lx)	High Sensitivity	IR Cut	I/F	Operating Temperature (°C)	Package
BH1603FVC	2.4 to 5.5	\pm 15	0 to 100,000	—	—	Linear Current Output (Source)	-40 to +85	WSOF6
BH1620FVC	2.4 to 5.5	\pm 15	0 to 100,000	—	—	Linear Current Output (Source)	-40 to +85	WSOF5
BH1680FVC	2.4 to 5.5	\pm 15	0 to 50,000	✓	✓	Linear Current Output (Source)	-40 to +85	WSOF5
BH1682FVC	2.3 to 5.5	\pm 3 μ A	1 to 55,000	—	✓	Logarithmic Current Output (Source)	-40 to +80	WSOF5

Digital 16bit Serial Output type Ambient Light Sensor ICs								
Part No.	Supply Voltage (V)	Sensitivity Variations (%)	Illuminance Measurement (lx)	High Sensitivity	IR Cut	I/F	Operating Temperature (°C)	Package
BH1721FVC	2.4 to 3.6	\pm 15	0 to 65,000	—	—	I ² C	-40 to +85	WSOF5
BH1730FVC	2.4 to 3.6	\pm 15	0 to 65,000(1/128 lx step)	✓	—	I ² C	-40 to +85	WSOF6
BH1726NUC	2.3 to 3.6	\pm 15	0 to 30,000(1/512 lx step)	✓	✓	I ² C	-40 to +85	WSON008X2120

Color Sensor IC

Digital 16bit Serial Output type Color Sensor IC

Part No.	Supply Voltage (V)	λ_r (nm)				Illuminance Measurement (lx)	High Sensitivity	IR Cut	I/F	Operating Temperature (°C)	Package
		Red	Green	Blue	IR						
New BH1749NUC	2.3 to 3.6	630	540	460	825	0 to 80,000	✓	✓	I ² C	-40 to +85	WS0N008X2120

Optical Sensor for Heart Rate Monitor ICs

Optical Sensor for Heart Rate Monitor ICs

Part No.	Analog Supply Voltage (V)	IO Supply Voltage (V)	Sampling Frequency (Hz)	Red Light, IR Cut	I/F	Operating Temperature (°C)	Package (mm)
BH1790GLC	2.5 to 3.6	1.7 to 3.6	32/64	✓	I ² C	-20 to +85	WLGA10V28 2.8 × 2.8, H=Max.1.0
BH1792GLC	2.5 to 3.6	1.7 to 3.6	32/64/128/256/1,024	✓	I ² C	-20 to +85	WLGA10V28 2.8 × 2.8, H=Max.1.0

Pressure Sensor ICs

Digital Pressure Sensor ICs with Built-in Temperature Compensation Function

Part No.	Supply Voltage (V)	Pressure Range (hPa)	Relative Pressure Accuracy (hPa)	Absolute Pressure Accuracy (hPa)	Average Current Consumption (μA)	I/F	Operating Temperature (°C)	Package (mm)
BM1383AGLV	1.7 to 3.6	300 to 1,100	±0.12	±1	3.0	I ² C	-40 to +85	CLGA12V025M 2.5 × 2.5, H=Max.1.0
BM1386GLV	1.7 to 3.6	300 to 1,300	±0.12	±1	3.0	I ² C	-40 to +85	CLGA10V020A 2.0 × 2.0, H=Max.1.0

Temperature Sensor ICs

Analog Output Temperature Sensor IC

Part No.	Supply Voltage (V)	Temperature Accuracy(°C)		Temperature Sensitivity (mV/°C)	Output Voltage(V) (Ta=+30°C, V _{DD} =3V)	Supply Current (μA)	Operating Temperature (°C)	Package
		Ta=+30°C	Ta=-30, +100°C					
BD1020HFV	2.4 to 5.5	±1.5	±2.5	-8.2	1.3	4.0	-30 to +100	HVSOF5

Digital Output Temperature Sensor IC

Part No.	Supply Voltage (V)	Temperature Accuracy(°C) Ta=-20 to +85°C	Current Consumption (μA)	I/F	Operating Temperature (°C)	Package
BH1900NUX	2.7 to 3.6	±3	75	I ² C	-30 to +95	VSON008X2030

Low Power Thermostat Output Temperature Sensor ICs

Part No.	Supply Voltage (V)	Detection Temperature (°C)	Detection Temperature Accuracy (°C)	Current Consumption (Operation/Power down) (μA)	Output type		Operating Temperature (°C)	Package
					Type	Active		
New BDJ0600AHFV	2.4 to 5.5	60	±2.5	7.5/0.3	Open Drain	L	-30 to +100	HVSOF5
New BDJ0700AHFV	2.4 to 5.5	70	±2.5	7.5/0.3	Open Drain	L	-30 to +100	HVSOF5
New BDJ0800AHFV	2.4 to 5.5	80	±2.5	7.5/0.3	Open Drain	L	-30 to +100	HVSOF5

Amplifier for Human Body Detector IC

Pyroelectric Infrared Sensor Amplifier

Part No.	Supply Voltage (V)	DRAIN Voltage (V)	Amp.1/Amp.2 Gain (dB)	Output type	Package
BD9251FV	2.97 to 6.00	2.3	Max. 46	Analog/CMOS	SSOP-B14

Capacitive Switch Controller ICs

Capacitive Switch Controller ICs

Part No.	Supply Voltage (V)	Cap. Switch (ch)	LED_Driver (ch)	LED_PWM Control	Matrix Control	I/F	MCU (bit)	Program Memory	Intermittent Motion	Package
BU21170MUV	3.0 to 5.5	5	5	✓	—	I ² C	32	ROM	—	VQFN020V4040
BU21079F	3.0 to 5.5	8	—	—	4×4	I ² C	32	ROM	✓	SOP16
BU21077MUV	2.7 to 5.5	8	—	—	4×4	I ² C	32	RAM	✓	VQFN020V4040
BU21072MUV	3.0 to 5.5	10	6	✓	4×4	I ² C	32	ROM	—	VQFN024V4040
BU21078MUV	3.0 to 5.5	12	8	✓	6×6	I ² C	32	ROM	—	VQFN028V5050
BU21078FV	3.0 to 5.5	12	8	✓	6×6	I ² C	32	ROM	—	SSOP-B28
☆BU21181FS	3.0 to 5.5	18	—	—	—	I ² C	32	ROM	✓	SSOP-A32
BU21180FS	3.0 to 5.5	20	—	—	—	I ² C	32	ROM	—	SSOP-A32

☆ : Under Development

Touch Screen Controller ICs

Resistive type										
Part No.	Supply Voltage (V)	MCU (bit)	Resolution	Touch Detection	Standby Current (μA)	Active Current (mA)	Host I/F	Operating Temperature (°C)	Package (mm)	Automotive Grade AEC-Q100
BU21029MUV	1.65 to 3.6	—	4096 × 4096	2 points/Single	100	0.8	I ² C	−20 to +85	VQFN020V4040	—
BU21029GUL	1.65 to 3.6	—	4096 × 4096	2 points/Single	100	0.8	I ² C	−20 to +85	VCSP50L2 2.0 × 2.0, t=0.55	—
BU21028FV-M	2.7 to 3.6	—	4096 × 4096	2 points/Single	100	0.8	I ² C	−40 to +85	SSOP-B20	YES
BU21023MUV	2.7 to 3.6	8	1024 × 1024	2 points/Single	60	4.0	I ² C/SPI	−20 to +85	VQFN028V5050	—
BU21023GUL	2.7 to 3.6	8	1024 × 1024	2 points/Single	60	4.0	I ² C/SPI	−20 to +85	VCSP50L2 2.0 × 2.0, t=0.55	—
BU21024FV-M	2.7 to 3.6	8	1024 × 1024	2 points/Single	60	4.0	I ² C/SPI	−40 to +85	SSOP-B28	YES
BU21027MUV	2.7 to 3.6	32	4096 × 4096	2 points/Single	70	8.0	I ² C	−20 to +85	VQFN020V4040	—
BU21025GUL	1.65 to 3.6	—	4096 × 4096	Single	0.8	0.12	I ² C	−30 to +85	VCSP50L2 2.0 × 1.5, t=0.55	—
BU21026MUV	1.65 to 3.6	—	4096 × 4096	Single	0.8	0.12	I ² C	−30 to +85	VQFN020V4040	—

Touch Screen I/F LSIs Supporting SPI/I ² C (LAPIS Semiconductor products)											
Part No.	Supply Voltage (V)	MCU	Resolution	Touch Detection	Stand-by Current (μA)	Active Current (mA)	Host I/F	Operating Temperature (°C)	Package	Halogen free Support ^{*1}	Automotive Grade
ML26700CGD	2.7 to 3.6	—	4096 × 4096	Single	30	0.42	I ² C	−40 to +85	WQFN12-0303-0.50	✓	—
ML26700SGD	2.7 to 3.6	—	4096 × 4096	Single	30	0.42	SPI	−40 to +85	WQFN12-0303-0.50	✓	—

*1: A check mark of halogen free support means that we will be able to ship out the halogen free products. For details, please inquire to the sales.

Accelerometers

(Kionix products)

3-Axis Accelerometers							
Part No.	Axis	Full-Scale Range	I/F Output	Current Consumption (μA)	Size, No. of Pins, Package	Features	Automotive Grade AEC-Q100
KX122-1037	3	User-selectable 2g, 4g, 8g	Digital SPI/I ² C	10 to 145	2 × 2 × 0.9mm, 12pin, LGA	2KB FIFO/FILO, Wide range of ODRs from 0.781Hz to 25.6kHz, Directional Tap/Double-Tap™, Free fall, Orientation Detection	—
KX124-1051	3	User-selectable 2g, 4g, 8g	Digital SPI/I ² C	10 to 145	3 × 3 × 0.9mm, 16pin, LGA	2KB FIFO/FILO, Wide range of ODRs from 0.781Hz to 25.6kHz, Directional Tap/Double-Tap™, Free fall, Orientation Detection	—
New KX126-1063	3	User-selectable 2g, 4g, 8g	Digital SPI/I ² C	0.9 to 145	2 × 2 × 0.9mm, 12pin, LGA	Pedometer function, 2KB FIFO/FILO, Wide range of ODRs from 0.781Hz to 25.6kHz, Directional Tap/Double-Tap™, Free fall, Orientation Detection, V _{DD} =7pin	—
New KX127-1068	3	User-selectable 2g, 4g, 8g	Digital SPI/I ² C	0.9 to 145	2 × 2 × 0.9mm, 12pin, LGA	Pedometer function, 2KB FIFO/FILO, Wide range of ODRs from 0.781Hz to 25.6kHz, Directional Tap/Double-Tap™, Free fall, Orientation Detection, V _{DD} =9pin	—
KXCJB-1041	3	User-selectable 2g, 4g, 8g	Digital I ² C	10 to 135	3 × 3 × 0.45mm, 10pin, LGA	Low Current Consumption, User-configurable wakeup function, Ultra thin type	—
KX112-1042	3	User-selectable 2g, 4g, 8g	Digital SPI/I ² C	10 to 135	2 × 2 × 0.6mm, 12pin, LGA	2KB FIFO/FILO, Wide range of ODRs from 0.781Hz to 25.6kHz, Directional Tap/Double-Tap™, Free fall, User-configurable wakeup function, Thin type	—
New KXTJ3-1057	3	User-selectable 2g, 4g, 8g, 16g	Digital I ² C	10 to 135	2 × 2 × 0.9mm, 12pin, LGA	User-configurable wakeup function, V _{DD} =7pin	—
New KX003-1077	3	User-selectable 2g, 4g, 8g, 16g	Digital I ² C	10 to 135	2 × 2 × 0.9mm, 12pin, LGA	User-configurable wakeup function, V _{DD} =9pin	—
New KX224-1053	3	User-selectable 8g, 16g, 32g	Digital SPI/I ² C	10 to 145	3 × 3 × 0.9mm, 16pin, LGA	2KB FIFO/FILO, Wide range of ODRs from 0.781Hz to 25.6kHz, Mechanical resonance frequency(−3dB) 6kHz(xy), 3.6kHz(z)	—
New KX222-1054	3	User-selectable 8g, 16g, 32g	Digital SPI/I ² C	0.9 to 145	2 × 2 × 0.9mm, 12pin, LGA	2KB FIFO/FILO, Wide range of ODRs from 0.781Hz to 25.6kHz, Mechanical resonance frequency(−3dB) 6kHz(xy), 3.6kHz(z)	—
KXTC9 series	3	1.5g to 6.0g	Analog	170 to 310	3 × 3 × 0.9mm, 10pin, LGA	Factory Programmable Internal Low Pass Filter	—
New KX220 series	3	up to 40g	Analog	170 to 310	3 × 3 × 0.9mm, 10pin, LGA	Factory Programmable Internal Low Pass Filter	—
New KX123-6000	3	User-selectable 2g, 4g, 8g	Digital SPI/I ² C	10 to 145	3 × 3 × 0.9mm, 16pin, LGA	AEC-Q100 qualified, Operating Temperature −40 to 85° C, 2KB FIFO/FILO, Wide range of ODRs from 0.781Hz to 25.6kHz, Directional Tap/Double-Tap™, Free fall, Orientation Detection	YES*

*For Automotive Non-Safety Directional Tap/Double-Tap™ is a trademark of Kionix.

6-Axis Combo Sensor

(Kionix products)

3-Axis Accelerometer+3-Axis Gyroscope											
Part No.	Axis	Gyroscope Full-Scale Range	Accelerometer Full-Scale Range	Accelerometer Sensitivity	Resolution	Size, No. of Pins, Package	I/F Output	Wakeup	Operating Temperature (°C)	V _{CC} (V)	
☆KXG07	6	±2048, ±1024, ±512, ±256, ±128, ±64 °/Sec.	2g, 4g, 8g, 16g	16384(±2g), 8192(±4g), 4096(±8g), 2048(±16g), Counts/g	16	3×3×0.9mm, 16pin, LGA	Digital I ² C/SPI	YES	-40 to +85	1.8 to 3.6	
☆KXG08	6	±2048, ±1024, ±512, ±256, ±128, ±64 °/Sec.	2g, 4g, 8g, 16g	16384(±2g), 8192(±4g), 4096(±8g), 2048(±16g), Counts/g	16	2.5×3×0.95mm, 14pin, LGA	Digital I ² C/SPI	YES	-40 to +85	1.8 to 3.6	

3-Axis Accelerometer+3-Axis Magnetometer								
Part No.	Axis	Accelerometer Full-Scale Range	I/F Output	Current (μA)	Magnetometer Range (μT)	Operating Temperature (°C)	Size, No. of Pins, Package	Features
New KMX62-1031	6	User-selectable 2g, 4g, 8g, 16g	Digital I ² C	10 to 395	±1,200	-40 to +85	3×3×0.9mm, 16pin, LGA	E-compass Solution, Magnetic field change, Free fall

☆ : Under Development

Infrared Image Sensor

(LAPIS Semiconductor products)

Infrared (IR) Sensor										
Part No.	Feature	Pixel	Measurement Range (°C)	Temperature Resolution (without lens) (°C)	Output type	Read Speed	Supply Voltage (V)	Operating Temperature Range (°C)	Package	Halogen free Support*
ML8540	2000 pixels thermopile type Thermal image sensor	47row × 48column 2256 pixels	-30 to +300(Variable)	0.5	Analog	6FPS	4.5 to 5.5	-30 to +85	C-QFN24-8585-1.00	✓

*A check mark of halogen free support means that we will be able to ship out the halogen free products. For details, please inquire to the sales.

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