

# MEMS Inertial Devices and Systems

- ◇ Extra Small Size, LCC20 packaging
- ◇ Low Noise
- ◇ Harsh Environment(Shock, Vibration, Temperature)
- ◇ ±5~±200g Range
- ◇ Excellent Long-term Stability



BS-AO1 MEMS Accelerometers

Order code: BS-AO1-xxx-A1C, where xxx indicates dynamic range.

Parameter	Unit	-05	-10	-15	-30	-50	-100	-200
Range	g	±5	±10	±15	±30	±50	±100	±200
Bias	mg	<50	<50	<100	<150	<250	<500	<1000
Bias Stability	mg	<0.5	<0.5	<0.75	<1	<2	<5	<10
Bias Repeatability	mg	<0.75	<0.75	<0.75	<1.5	<2.5	<5.0	<10
Bias Temp. Coefficient	mg/°C	<0.75	<0.75	<0.75	<1.2	<2.5	<5.0	<10
Scale Factor	mV/g	400±5	200±2	133.3±1	66.6±1	40±1	20±1	10±1
Scale Factor Temp. Coefficient	ppm	100	100	100	100	100	100	100
Sensitive Axis Misalignment	ppm/°C	<10	<10	<10	<10	<10	<10	<10
	mrad (max)	<2	<1	<1	<1	<1	<1	<1
Resolution	% (max)	0.3	0.3	0.5	1.0	2.5	5.0	10
Non-linearity	mg	<0.3	<0.3	<0.3	<0.3	<0.5	<0.5	<0.5
Bandwidth	% of FS	0~250	0~500	0~500	0~500	0~500	0~500	0~500
Resonant Frequency	Hz	1.7	2.7	3.8	5.5	5.5	9.8	9.8
Operating Temp.		-40°C~+85°C(default) ; -55°C~+125°C (as request, but the performance have to be updated in this case)						
Shock		Up to 20,000g(half sine, 3 time shocks in each direction)						
Recovery Time		<1ms(1000g, 1ms half-sine shock)						
Vibration		20g rms, 20~2000Hz(random noise, 30 minutes in each direction)						
Packaging		Hermetic						
ESD Sensitivity		Class 2 (requirements MIL-STD-883-G, 1 Method 3015.7) HBM 2kV						
Supply Voltage		3.0~7.0Vdc (Typ. 5.0Vdc)						
Output Range		0.5~4.5Vdc@5.0Vdc Supply Voltage(2.5V±10mV@0g)						
Supply Current		<6mA @5.0Vdc						
Output Impedance/Load Drive		Max 50pF@Vout(pin 16) and Max. 100µF GND(pin 20)						
Weight		<1 grams						
Size		Typ 9.0×9.0×2.6mm (0.35×0.35×0.101inch)						

All values are typical at +25°C, +5Vdc unless otherwise statement.

## ◇ Applications

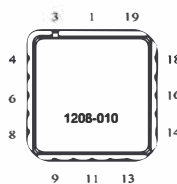
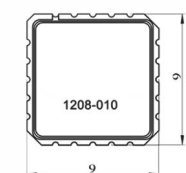
IMU/AHRS for Mil/Aerospace

Land & Sea Inertial Navigation

Directional Drilling

Tilt & Inclination

## ◇ Structure (unit:mm)



2	VCC	+PWR
3	GND	Ground
15	SST	Self Test
16	V <sub>out</sub>	Sensor Output
17	ORG <sub>out</sub>	Filter Output (adjustable bandwidth)
18	ECAP	Voltage Reference(½V <sub>cc</sub> )
20	GND	Ground

← Positive Acceleration

Side view

Top view