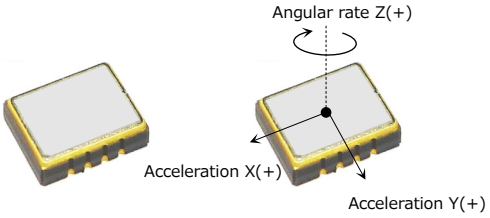
COMBINED SENSOR FOR AUTOMOTIVE

XC1011SD

Product number
XC1011SD: X2E0000210002xx

- Combined sensor integrating gyro sensor and dual-axis G sensor in one package
- Ultra-small and low power consumption using the original Double-T structure quartz crystal element
- High reliability by installing the diagnosis function
- Excellent performance of shock-resistance and vibration-resistance
- Digital output: angular rate (Yaw) / acceleration (X, Y-axis) 16bit, Temperature 11bit with SPI
- Conforms to AEC-Q100, Support evaluation of hardware elements in ISO26262 (ASIL D)



Recommended Application
- Electric Stability Control System

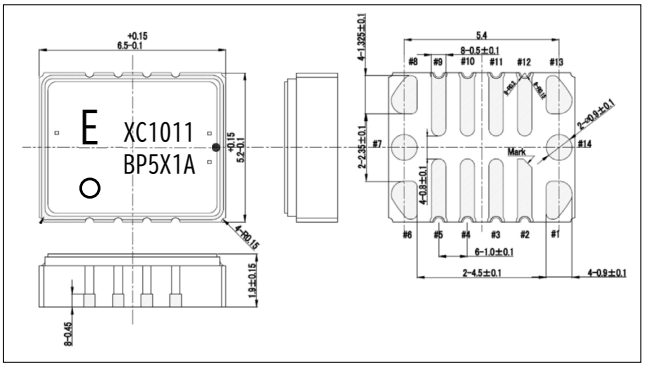
Specifications (characteristics)

Item		Symbol	Specifications	Conditions / Remarks
Supply Voltage		VDD	3.3 V ±0.165 V	
Storage Temperature		TSTG	-40 °C ~ +105 °C	
Operating Temperature		TOPR	-40 °C ~ +105 °C	
Angular rate sensor	Sensitivity	Sy	175 ±5 LSB/(°/s)	Ta=+25°C
	Bias	V0	±525 LSB (±3 °/s)	Ta=+25°C, So=175 LSB/(°/s)
	Rate range	DRy	±160 °/s	
	Non-linearity	NLy	±1 % FS	FS= ±160 °/s
	Frequency characteristic	Fcy	52.6 ±2.6 Hz	-3dB bandwidth
	Cross axis sensitivity	CSy	±5 %	
Acceleration sensor	Sensitivity	Sa	1092±22 LSB/G	
	Zero G offset	0G	±57 mG	Ta=+25°C, Sa=1092LSB/G, without PCB mount
	Acceleration range	DRa	±30 G	Lo-range, Mid-range
	Non-linearity	NLa	±43 LSB	±1G
	Frequency characteristic	Fc1	52.6±2.6 Hz	Lo-range, -3dB bandwidth
		Fc2	200±10 Hz	Mid-range, -3dB bandwidth
	Cross axis sensitivity	CSa	±3 %	
Current consumption		Iop	20 mA Max.	Stationary and No-communication
Start-up time		TACT	300 ms Max.	from V_{DD} rise-up 90%

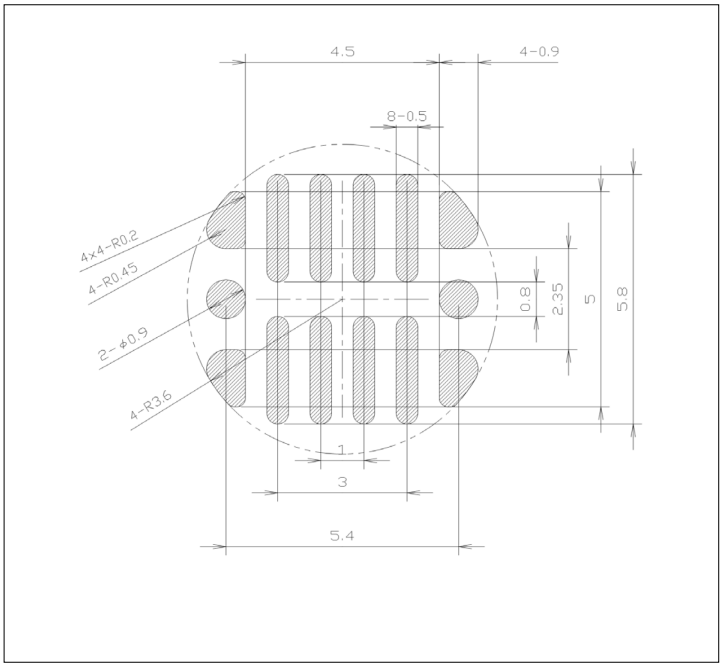
Product Name (Standard form): XC1011SD ① 50.300 kHz ②③

① Model ② Package type ③ Frequency (not necessary to specify)

External Dimensions (Unit: mm)



Footprint (Recommended) (Unit: mm)



Pin Function

Pin	Connection	Pin	Connection
1	N.C.	8	N.C.
2	SS	9	V_{DDL}
3	MISO	10	V_{DD}
4	SCLK	11	VREFAD
5	MOSI	12	GND
6	N.C.	13	N.C.
7	N.C.	14	N.C.

Do not connect “N.C.” pins externally devices.

►Explanation of the mark that are using it for the catalog

	►Pb free.
	►Complies with EU RoHS directive. *About the products without the Pb-free mark. Contains Pb in products exempted by EU RoHS directive. (Contains Pb in sealing glass, high melting temperature type solder or other.)
	►Designed for automotive general equipment.
	►Designed for automotive applications related to driving and safety.

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