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Volume Production Begins for Epson Toyocom's Latest Gyro-sensor
The XV-3700CB offers a high scale factor and wide sensing range

Epson Toyocom Corporation, the leader in crystal devices, today announced it has completed commercial development and launched volume production of the XV-3700CB, a high-sensitivity gyro-sensor with a wide detection range that has been optimized as an input device for motion user interfaces.

Sensing the motion of persons or objects more accurately requires that angular velocity be sensed over a wide range, from slow speeds to fast. Ordinary sensors, however, have not been able to simultaneously provide both a wide sensing range and good stability and noise characteristics.

The XV-3700CB retains the low noise level and outstanding bias stability of Epson Toyocom's current XV-3500CB and, on top of this, can accurately sense motion over a wide range by simultaneously outputting two modes, a high-speed mode (sensing range: ± 1500 deg/s) with a nominal scale factor of $0.8 \text{ mV}/(^{\circ} \cdot \text{s}^{-1})$, and a low-speed mode (sensing range: ± 300 deg/s) with a nominal scale factor of $3.624 \text{ mV}/(^{\circ} \cdot \text{s}^{-1})$. Used for analyzing human motion or as an input device for a motion user interface that accurately senses, for example, the attitude of a radio-controlled helicopter, the new gyro-sensor will help improve the performance of devices designed for motion sensing applications, such as controllers and 3D mice.

Main Features

- 1) Capable of sensing both slow and fast motion, with low-speed and high-speed modes in a single package
- 2) Supports simultaneous dual signal output thanks to Epson Toyocom's analog circuit technology
- 3) Achieves a low noise level yet retains the performance of the XV-3500CB
- 4) High-precision QMEMS^{*1} gyro element provides outstanding bias stability

Main Specifications

Item	Unit	Specifications	Condition
		Typ.	
Supply voltage	V	2.7 ~ 3.3	
Operating temperature	°C	-20 ~ +80	
Scale factor	Output 1	mV/(° · s ⁻¹)	
	Output 2		
Rate range	Output 1	deg/s	
	Output 2		
Scale factor tolerance	%	+/-8	Ta=25°C
Scale factor variation with temp.	%	+/-5	VDD=3.0V Ta=25°C Based
Bias output	mV	1500	Ta=25°C
Bias variation with temp.	Output 1	mV	VDD=3.0V Ta=25°C Based
	Output 2		
Reference voltage	mV	1500	Ta=25°C
Size	mm	5.0 x 3.2 x t1.3	

Glossary

*1 QMEMS

QMEMS is a combination of “Quartz,” a crystalline material with excellent characteristics such as excellent frequency stability and high precision, and “MEMS” (micro electro mechanical system). QMEMS devices, produced via a microfabrication process on a quartz material instead of on a semiconductor material like MEMS, offer high performance in a compact package.

QMEMS is a registered trademark of Epson Toyocom.