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Epson Toyocom Expands Its Lineup of Smallest-Class VCXO for Mobile Handsets with Support for Digital Terrestrial Broadcasts

Epson Toyocom Corporation has released the VG-4231CE *QEM Series VCXO^(*). Measuring just 3.2×2.5 mm, the device is in the smallest class and is suitable for use with low voltages (1.8 V). While the device operates with a low consumption current and at low voltage with its size, it features wide frequency coverage. Epson Toyocom will start shipping samples from October 2006.

Demand is increasing for VCXO devices used for the clock function in image signal processors built into handheld devices such as digital terrestrial broadcast receiver units. In addition to a compact product with superior characteristics, power saving is a particular requirement for this application. In order to meet the demand, Epson Toyocom has added the 1.8 V-type VG-4231CE *QEM Series to its highly-regarded 3.2×2.5 mm size VG-4231CE Series, expanding the company's lineup of devices in response to the need for power saving in handheld devices.

In this series, consumption current is 45% lower than in earlier models. Measuring just 3.2×2.5 mm, the device operates with a low consumption current and at low voltage but offers wide frequency coverage of APR^(*) $\pm 80 \times 10^{-6}$ min thanks to Epson Toyocom's unique crystal oscillator fabrication technology and ultra high precision mounting technology.

These products will be on display at CEATEC JAPAN 2006 being held at Makuhari Messe from October 3 (Tuesday). Visit the Epson Toyocom booth (No. 5E03) to see the VG-4231CE *QEM Series and a wide range of other applied crystal devices up close.

Main specifications

Item	VG-4231CE *QEM specification		Remarks
	CQEM	PQEM	
Operating temperature range	-20°C~+70°C	-40°C~+85°C	
Permissible frequency deviation	$\pm 30 \times 10^{-6}$	$\pm 37 \times 10^{-6}$	
APR	$\pm 80 \times 10^{-6}$ min	$\pm 75 \times 10^{-6}$ min	
Frequency pull range	$\pm 120 \times 10^{-6}$ min		$\pm 150 \times 10^{-6}$ Typ.
Output frequency	27 MHz		
Power supply voltage	1.8 V \pm 0.2 V		
Input voltage	0.9 V \pm 0.9 V		VC pin
Input resistance	1 M Ω Min.		DC level
Consumption current	1.2 mA Max.		0.7 mA Typ. no load
External dimensions (mm)	$3.2 \times 2.5 \times 1.2$ t		

Explanation of terms

*1 VCXO: Voltage Controlled X'tal Oscillator

A crystal oscillator circuit with a function for controlling the oscillating frequency by changing the voltage applied. The voltage controlled crystal oscillators that Epson Toyocom offers are the VG Series and TCO Series.

*2 APR: Absolute Pull Range

APR = Frequency pull - (permissible frequency deviation + temporal change + shock + vibration and other frequency changes)

Permissible frequency deviation includes initial frequency deviation, frequency temperature behavior, source voltage fluctuation, load fluctuation, and reflow change. Aging of this series is assumed to be 5 years.

Photographs

