

# SMD Temperature Compensated Crystal Oscillators 3.2 x 2.5 x 1.0 mm 7Q Series

Oscillators  
 Series

## Features

- Temperature Stability:  $\pm 0.5 \text{ ppm} \sim \pm 2.0 \text{ ppm}$
- Operating Temperature Range:  $-30^\circ\text{C} \sim 85^\circ\text{C}$
- Supply Voltage:  $1.8 \text{ V} \sim 3.3 \text{ V}$
- Voltage Control Function Available
- Frequencies: 16.367667 MHz, 16.368 MHz, 16.369 MHz, 16.8 MHz, 19.2 MHz, 20 MHz, 26 MHz, 33.6 MHz, 38.4 MHz, 40 MHz
- Applications: GPS, WiMAX, Cellular and Wireless Communications
- RoHS Compliant / Pb Free



## Electrical Specifications

Item / Type		7Q
Output Type		Clipped Sinewave
Output Load		10K $\Omega$ // 10 pF
Oscillation Mode		Fundamental
Supply Voltage		1.8 ~ 3.3 V
Frequency Range		13 ~ 52 MHz
Clipped Sinewave Output Voltage		0.8 V <sub>p-p</sub> typical
Frequency Stability	Vs. Temperature ( $-30 \sim +85^\circ\text{C}$ )	$\pm 0.5 / \pm 2.0 \text{ ppm}$
	Vs. Load ( Load varies $\pm 10\%$ )	$\pm 0.2 \text{ ppm Max.}$
	Vs. Supply Voltage ( $V_{cc} = \text{Typical} \pm 0.1 \text{ V}$ )	$\pm 0.2 \text{ ppm Max.}$
Frequency Tolerance	at $25^\circ\text{C}$ after 2 Reflows with Typical Applied to Auto Frequency Control Pin	$\pm 2.5 \text{ ppm Max.}$
Slope of Frequency Drift		$\pm 0.1 \text{ ppm} / ^\circ\text{C}$ Typical ; $\pm 0.5 \text{ ppm} / ^\circ\text{C}$ Max.
Storage Temperature Range		$-40 \sim +85^\circ\text{C}$
Auto Frequency Control ( AFC ) Range ( Center @ 1.4 V )		$\pm 7 \sim \pm 16 \text{ ppm} / \text{V}$
Supply Current		2.0 mA Max.
Start-up Time		5 ms Max.
Harmonics		- 5 dBc Max.
Phase Noise at 1 KHz offset		- 130 dBc / Hz
Aging ( at $25^\circ\text{C}$ )		$\pm 1 \text{ ppm} / \text{year Max.}$

## Dimensions



Units: mm

Remark : Specification subject to change without prior notice. Please confirm with our sales.