

# auris<sup>®</sup>



*Your satisfaction with auris products is our goal.*



**CRYSTALS &  
OSCILLATORS**

**PRODUCTS &  
COMPONENTS**

auris-GmbH is a supplier of crystals, oscillators, resonators and SAWs. Founded in 2000 in Germany, auris-GmbH began by supplying the European market with through-hole crystals and oscillators. Today we are known worldwide for high quality and offering some of the world's smallest quartz crystals and oscillators. Our company is certified "ISO9001:2015" by 3cert GmbH.

Manufacturing facilities in China, Taiwan and Hong Kong, use state-of-the-art technology to produce large quantities of quartz resonators of different shapes and functions. The production facilities are ISO 9001, ISO 14001 and ISO/TS 16949 certified by SGS systems. All crystals and oscillators are fully compliant with RoHS regulations (version 2011/65/EU).

This brochure shows our wide range of innovative products and technical competence for all industrial and commercial applications.

Our customer service center offers:

- design-in support, with workbench collaboration
- comprehensive technical advice
- fast and cost-effective development of customized solutions
- testing, analysis and optimization of customized circuits
- project monitoring from initial evaluation to production


**- Your satisfaction with auris products is our goal. -**


Your team from




## Tuning Fork Quartz – Pin Through Hole

### Metal Package


<b>TC155</b>		
Frequency range	32.768kHz 30 ~ 200kHz	
Tolerance (25°C)	±20ppm ~ ±50ppm	
Load capacitance	7pF/12.5pF	
Temperature coefficient	-0.034±0.006ppm/°C <sup>2</sup>	
Operating temperature	-10°C ~ +60°C/-40°C ~ +85°C	
Dimensions	1.5x5.0mm	

<b>TC26</b>		
Frequency range	32.768kHz 30 ~ 200kHz	
Tolerance (25°C)	±20ppm ~ ±50ppm	
Load capacitance	6pF/10pF/12.5pF	
Temperature coefficient	-0.034±0.006ppm/°C <sup>2</sup>	
Operating temperature	-10°C ~ +60°C/-40°C ~ +85°C	
Dimensions	2.0x6.0mm	


<b>TC38</b>		
Frequency range	32.768kHz 30 ~ 200kHz	
Tolerance (25°C)	±20ppm ~ ±50ppm	
Load capacitance	6pF/10pF/12.5pF	
Temperature coefficient	-0.034±0.006ppm/°C <sup>2</sup>	
Operating temperature	-10°C ~ +60°C/-40°C ~ +85°C	
Dimensions	3.0x8.0mm	


## Tuning Fork Quartz – SMD Package

### SMD Metal

<b>TC206B</b>		
Frequency range	32.768kHz 30 ~ 200kHz	
Tolerance (25°C)	±20ppm ~ ±50ppm	
Load capacitance	6pF/10pF/12.5pF	
Temperature coefficient	-0.034±0.006ppm/°C <sup>2</sup>	
Operating temperature	-10°C ~ +60°C/-40°C ~ +85°C	
Dimensions	2.0x6.0mm	


### SMD Plastic


<b>MP6914</b>		
Frequency range	32.768kHz	
Tolerance (25°C)	±20ppm	
Load capacitance	7pF/9pF/12.5pF	
Temperature coefficient	-0.034±0.006ppm/°C <sup>2</sup>	
Operating temperature	0°C ~ +70°C/-40°C ~ +85°C	
Dimensions	6.9x1.4x1.3mm	


<b>MP03</b>		
Frequency range	32.768kHz	
Tolerance (25°C)	±20ppm ~ ±50ppm	
Load capacitance	6pF/9pF/12.5pF	
Temperature coefficient	-0.034±0.006ppm/°C <sup>2</sup>	
Operating temperature	0°C ~ +70°C/-40°C ~ +85°C	
Dimensions	8.0x3.8x2.5mm	


## Tuning Fork Quartz – SMD Package


### SMD Ceramic


<b>LC1210</b>		
	(under development)	
Frequency range	32.768kHz	
Tolerance (25°C)	±20ppm ~ ±50ppm	
Load capacitance	7pF/9pF/12.5pF	
Temperature coefficient	-0.045ppm/°C <sup>2</sup> max.	
Operating temperature	0°C ~ +70°C/-40°C ~ +85°C	
Dimensions	1.2x1.0x0.35mm	

<b>LC1610</b>		
Frequency range	32.768kHz	
Tolerance (25°C)	±20ppm ~ ±50ppm	
Load capacitance	9pF/12.5pF	
Temperature coefficient	-0.045ppm/°C <sup>2</sup> max.	
Operating temperature	0°C ~ +70°C/-40°C ~ +85°C	
Dimensions	1.6x1.0x0.5mm	

<b>LC2012</b>		
Frequency range	32.768kHz	
Tolerance (25°C)	±20ppm ~ ±50ppm	
Load capacitance	7pF/9pF/12.5pF	
Temperature coefficient	-0.045ppm/°C <sup>2</sup> max.	
Operating temperature	0°C ~ +70°C/-40°C ~ +85°C	
Dimensions	2.0x1.2x0.6mm	

<b>LM3215</b>		
Frequency range	32.768kHz	
Tolerance (25°C)	±20ppm ~ ±50ppm	
ESR	50k/70kOhm max.	
Load capacitance	7pF/9pF/12.5pF	
Temperature coefficient	-0.045ppm/°C <sup>2</sup> max.	
Operating temperature	0°C ~ +70°C/-40°C ~ +85°C	
Dimensions	3.2x1.5x0.9mm	

<b>LC4115</b>		
Frequency range	32.768kHz	
Tolerance (25°C)	±20ppm ~ ±50ppm	
Load capacitance	12.5pF	
Temperature coefficient	-0.034±0.006ppm/°C <sup>2</sup>	
Operating temperature	0°C ~ +70°C/-40°C ~ +85°C	
Dimensions	4.1x1.5x0.9mm	

<b>LC4918</b>		
Frequency range	32.768kHz	
Tolerance (25°C)	±20ppm ~ ±50ppm	
Load capacitance	7pF/12.5pF	
Temperature coefficient	-0.034±0.006ppm/°C <sup>2</sup>	
Operating temperature	0°C ~ +70°C/-40°C ~ +85°C	
Dimensions	4.9x1.8x1.0mm	

## Quartz – Metal Package

### Pin Through Hole

### SMD

#### HF26 / HF38

Frequency range 6.00 ~ 48.00MHz  
 Tolerance (25°C)  $\pm 10\text{ppm} \sim \pm 50\text{ppm}$   
 Tolerance vs. temperature  $\pm 10\text{ppm} \sim \pm 50\text{ppm}$   
 Operating temperature  $0^\circ\text{C} \sim +70^\circ\text{C}/-40^\circ\text{C} \sim +85^\circ\text{C}$   
 Load capacitance 10pF ~ series  
 Dimensions 2.1x6.2mm / 3.1x8.3mm



#### HC49S7S

Frequency range 8.00 ~ 50.00MHz  
 Tolerance (25°C)  $\pm 10\text{ppm} \sim \pm 50\text{ppm}$   
 Tolerance vs. temperature  $\pm 10\text{ppm} \sim \pm 50\text{ppm}$   
 Operating temperature  $0^\circ\text{C} \sim +70^\circ\text{C}/-40^\circ\text{C} \sim +85^\circ\text{C}$   
 Load capacitance 5pF ~ series  
 Dimensions 7.6x4.0x2.0mm



#### HF39

Frequency range 4.00 ~ 6.00MHz  
 Tolerance (25°C)  $\pm 10\text{ppm} \sim \pm 50\text{ppm}$   
 Tolerance vs. temperature  $\pm 10\text{ppm} \sim \pm 50\text{ppm}$   
 Operating temperature  $0^\circ\text{C} \sim +70^\circ\text{C}/-40^\circ\text{C} \sim +85^\circ\text{C}$   
 Load capacitance 10pF ~ series  
 Dimensions 3.1x9.3mm



#### HC49S8S

Frequency range 8.00 ~ 50.00MHz  
 Tolerance (25°C)  $\pm 10\text{ppm} \sim \pm 50\text{ppm}$   
 Tolerance vs. temperature  $\pm 10\text{ppm} \sim \pm 50\text{ppm}$   
 Operating temperature  $0^\circ\text{C} \sim +70^\circ\text{C}/-40^\circ\text{C} \sim +85^\circ\text{C}$   
 Load capacitance 5pF ~ series  
 Dimensions 8.4x3.0x2.0mm



#### HF310

Frequency range 3.579 ~ 4.00MHz  
 Tolerance (25°C)  $\pm 10\text{ppm} \sim \pm 50\text{ppm}$   
 Tolerance vs. temperature  $\pm 10\text{ppm} \sim \pm 50\text{ppm}$   
 Operating temperature  $0^\circ\text{C} \sim +70^\circ\text{C}/-40^\circ\text{C} \sim +85^\circ\text{C}$   
 Load capacitance 10pF ~ series  
 Dimensions 3.1x10.3mm



#### HC49USSMD

Frequency range 3.2768 ~ 90.00MHz  
 Tolerance (25°C)  $\pm 5\text{ppm} \sim \pm 50\text{ppm}$   
 Tolerance vs. temperature  $\pm 10\text{ppm} \sim \pm 150\text{ppm}$   
 Operating temperature  $0^\circ\text{C} \sim +70^\circ\text{C}/-40^\circ\text{C} \sim +125^\circ\text{C}$   
 Load capacitance 5pF ~ series  
 Dimensions 13.0x4.8x4.5/3.2/3.0mm



#### HC49U

Frequency range 1.8432 ~ 180.00MHz  
 Tolerance (25°C)  $\pm 5\text{ppm} \sim \pm 50\text{ppm}$   
 Tolerance vs. temperature  $\pm 5\text{ppm} \sim \pm 100\text{ppm}$   
 Operating temperature  $0^\circ\text{C} \sim +70^\circ\text{C}/-40^\circ\text{C} \sim +105^\circ\text{C}$   
 Load capacitance 5pF ~ series  
 Dimensions 13.46x11.05x5.0mm



#### HC49J

Frequency range 3.50 ~ 80.00MHz  
 Tolerance (25°C)  $\pm 10\text{ppm} \sim \pm 50\text{ppm}$   
 Tolerance vs. temperature  $\pm 10\text{ppm} \sim \pm 150\text{ppm}$   
 Operating temperature  $0^\circ\text{C} \sim +70^\circ\text{C}/-40^\circ\text{C} \sim +125^\circ\text{C}$   
 Load capacitance 10pF ~ series  
 Dimensions 13.2x4.9x5.1mm



#### HC49US

Frequency range 3.2768 ~ 90.00MHz  
 Tolerance (25°C)  $\pm 5\text{ppm} \sim \pm 50\text{ppm}$   
 Tolerance vs. temperature  $\pm 10\text{ppm} \sim \pm 150\text{ppm}$   
 Operating temperature  $0^\circ\text{C} \sim +70^\circ\text{C}/-40^\circ\text{C} \sim +125^\circ\text{C}$   
 Load capacitance 5pF ~ series  
 Dimensions 11.1x4.7x2.5(low)/3.5mm



#### UM1

Frequency range 6.00 ~ 160.00MHz  
 Tolerance (25°C)  $\pm 5\text{ppm} \sim \pm 50\text{ppm}$   
 Tolerance vs. temperature  $\pm 10\text{ppm} \sim \pm 50\text{ppm}$   
 Operating temperature  $0^\circ\text{C} \sim +70^\circ\text{C}/-40^\circ\text{C} \sim +85^\circ\text{C}$   
 Load capacitance 5pF ~ series  
 Dimensions 7.8x3.2x8.0mm



#### UM5

Frequency range 8.00 ~ 200.00MHz  
 Tolerance (25°C)  $\pm 5\text{ppm} \sim \pm 50\text{ppm}$   
 Tolerance vs. temperature  $\pm 10\text{ppm} \sim \pm 50\text{ppm}$   
 Operating temperature  $0^\circ\text{C} \sim +70^\circ\text{C}/-40^\circ\text{C} \sim +85^\circ\text{C}$   
 Load capacitance 5pF ~ series  
 Dimensions 7.9x3.2x6.0mm




## Quartz SMD – Ceramic Package


### SMD Ceramic Enclosure

### SMD All Ceramic


#### HC1612 (4 Pad)

Frequency range	24.00 ~ 80.00MHz	
Tolerance (25°C)	±10ppm ~ ±50ppm	
Tolerance vs. temperature	±10ppm ~ ±50ppm	
Operating temperature	0°C ~ +70°C/-40°C ~ +85°C	
Load capacitance	6pF ~ series	
Dimensions	1.6x1.2x0.4mm	

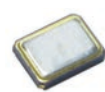
#### HC2016 (4 Pad)

Frequency range	16.00 ~ 72.00MHz	
Tolerance (25°C)	±10ppm ~ ±50ppm	
Tolerance vs. temperature	±10ppm ~ ±50ppm	
Operating temperature	0°C ~ +70°C/-40°C ~ +105°C	
Load capacitance	6pF ~ series	
Dimensions	2.0x1.6x0.5mm	


#### HC2520 (4 Pad)

Frequency range	12.00 ~ 80.00MHz	
Tolerance (25°C)	±10ppm ~ ±50ppm	
Tolerance vs. temperature	±10ppm ~ ±100ppm	
Operating temperature	0°C ~ +70°C/-40°C ~ +125°C	
Load capacitance	6pF ~ series	
Dimensions	2.5x2.0x0.6mm	


#### HC3225 (4 Pad)

Frequency range	8.00 ~ 156.00MHz	
Tolerance (25°C)	±10ppm ~ ±50ppm	
Tolerance vs. temperature	±10ppm ~ ±100ppm	
Operating temperature	0°C ~ +70°C/-40°C ~ +125°C	
Load capacitance	6pF ~ series	
Dimensions	3.2x2.5x0.8mm	


#### HC5032 (2 Pad / 4 Pad)

Frequency range	7.60 ~ 156.00MHz	
Tolerance (25°C)	±10ppm ~ ±50ppm	
Tolerance vs. temperature	±10ppm ~ ±100ppm	
Operating temperature	0°C ~ +70°C/-40°C ~ +125°C	
Load capacitance	8pF ~ series	
Dimensions	5.0x3.2x1.1mm	


#### HC6035 (2 Pad / 4 Pad)

Frequency range	7.00 ~ 200.00MHz	
Tolerance (25°C)	±5ppm ~ ±50ppm	
Tolerance vs. temperature	±10ppm ~ ±50ppm	
Operating temperature	0°C ~ +70°C/-40°C ~ +85°C	
Load capacitance	8pF ~ series	
Dimensions	6.0x3.5x1.1mm	


#### HC7050 (4 Pad)

Frequency range	6.00 ~ 125.00MHz	
Tolerance (25°C)	±10ppm ~ ±50ppm	
Tolerance vs. temperature	±10ppm ~ ±100ppm	
Operating temperature	0°C ~ +70°C/-40°C ~ +105°C	
Load capacitance	8pF ~ series	
Dimensions	7.0x5.0x1.0mm	


#### AC3225H (4 Pad)

Frequency range	12.00 ~ 48.00MHz	
Tolerance (25°C)	±10ppm ~ ±50ppm	
Tolerance vs. temperature	±10ppm ~ ±50ppm	
Operating temperature	-20°C ~ +70°C/-40°C ~ +85°C	
Load capacitance	8pF ~ series	
Dimensions	3.2x2.5x0.8mm	


#### AC3225 (4 Pad)

Frequency range	12.00 ~ 48.00MHz	
Tolerance (25°C)	±20ppm ~ ±50ppm	
Tolerance vs. temperature	±10ppm ~ ±50ppm	
Operating temperature	-20°C ~ +70°C/-40°C ~ +85°C	
Load capacitance	8pF ~ series	
Dimensions	3.2x2.5x1.1mm	

#### AC5032 (2 Pad / 4 Pad)


Frequency range	8.00 ~ 48.00MHz	
Tolerance (25°C)	±20ppm ~ ±50ppm	
Tolerance vs. temperature	±20ppm ~ ±50ppm	
Operating temperature	-20°C ~ +70°C/-40°C ~ +85°C	
Load capacitance	8pF ~ series	
Dimensions	5.0x3.2x1.1mm	

#### AC1045 (2 Pad / 4 Pad)

Frequency range	3.2768 ~ 7.00MHz	
Tolerance (25°C)	±20ppm ~ ±50ppm	
Tolerance vs. temperature	±20ppm ~ ±50ppm	
Operating temperature	-20°C ~ +70°C/-40°C ~ +85°C	
Load capacitance	10pF ~ series	
Dimensions	10.0x4.5x1.4mm	


### SMD Ceramic & Metal

#### CM2016 (4 Pad)


Frequency range	24.00 ~ 48.00MHz	
Tolerance (25°C)	±10ppm ~ ±20ppm	
Tolerance vs. temperature	±10ppm ~ ±20ppm	
Operating temperature	-20°C ~ +70°C/-40°C ~ +85°C	
Load capacitance	6pF ~ series	
Dimensions	2.0x1.6x0.7mm	

## Quartz Oscillator Metal Package – Pin Through Hole

### AQO14

Frequency range	1.00 ~ 180.00MHz	
Frequency stability	±25ppm, ±50ppm or ±100ppm	
Operating temperature	0°C ~ +70°C/-40°C ~ +85°C	
Input voltage	3.3V, 5.0V	
Output	CMOS / 15pF ~ 50pF	
Dimensions	20.4x13.1x5.3mm (>80MHz 7,7mm)	


### AQO08

Frequency range	1.00 ~ 180.00MHz	
Frequency stability	±25ppm, ±50ppm or ±100ppm	
Operating temperature	0°C ~ +70°C/-40°C ~ +85°C	
Input voltage	3.3V, 5.0V	
Output	CMOS / 15pF ~ 50pF	
Dimensions	12.9x12.9x5.3mm (>80MHz 7,7mm)	


## Quartz Oscillator – SMD Package

### Clock Type, 32.768kHz, CMOS


#### AQO1612 Clock

Frequency range	(under development)	
Frequency range	32.768kHz	
Frequency stability	±20ppm ~ ±100ppm	
Operating temperature	-20°C ~ +70°C/-40°C ~ +85°C	
Input voltage	1.8V ~ 3.3V	
Dimensions	1.6x1.2x0.6mm	


#### AQO2016 Clock

Frequency range	32.768kHz	
Frequency stability	±20ppm ~ ±100ppm	
Operating temperature	-20°C ~ +70°C/-40°C ~ +85°C	
Input voltage	1.8V ~ 5.0V	
Dimensions	2.0x1.6x0.8mm	


#### AQO2520 Clock

Frequency range	32.768kHz	
Frequency stability	±20ppm ~ ±100ppm	
Operating temperature	-20°C ~ +70°C/-40°C ~ +85°C	
Input voltage	1.8V ~ 5.0V	
Dimensions	2.5x2.0x1.0mm	


#### AQO3225 Clock

Frequency range	32.768kHz	
Frequency stability	±20ppm ~ ±100ppm	
Operating temperature	-20°C ~ +70°C/-40°C ~ +85°C	
Input voltage	1.8V ~ 5.0V	
Dimensions	3.2x2.5x1.2mm	

#### AQO5032 Clock

Frequency range	32.768kHz	
Frequency stability	±20ppm ~ ±100ppm	
Operating temperature	-20°C ~ +70°C/-40°C ~ +85°C	
Input voltage	1.8V ~ 5.0V	
Dimensions	5.0x3.2x1.3mm	

#### AQO7050 Clock

Frequency range	32.768kHz	
Frequency stability	±20ppm ~ ±100ppm	
Operating temperature	-20°C ~ +70°C/-40°C ~ +85°C	
Input voltage	1.8V ~ 5.0V	
Dimensions	7.0x5.0x1.4mm	



### Programming Service

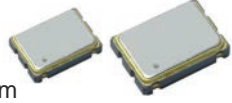
For developers it is often important to have quick access to required oscillators. In most cases, patterns are available relatively quickly, but sometimes it has to go even faster...

Here, the auris-GmbH offers the programming service for oscillators. Blanks in various sizes are available in stock.

- Advantages:**
- extremely short delivery time of a few days
  - minimal quantities (from five pieces)
  - individually programmable oscillators according to customer specification
  - various package sizes


### Programmable Oscillator

#### APQO5032 / 7050

Frequency range	1.00 ~ 133.00MHz	
Frequency stability	±25ppm ~ ±100ppm	
Operating temperature	0°C ~ +70°C/-40°C ~ +85°C	
Input voltage	5.0V (1~133MHz), 3.3V (1~100MHz)	
Output	CMOS / 15pF ~ 50pF	
Dimensions	5.0x3.2x1.2mm / 7.0x5.0x1.7mm	

### Spread Spectrum Clock Oscillator


#### ASSO5032 / 7050


Frequency range	13.00 ~ 160.00MHz	
Frequency stability	±20ppm ~ ±100ppm	
Operating temperature	0°C ~ +70°C/-40°C ~ +85°C	
Input voltage	2.5V ~ 3.3V	
Output	CMOS / 15pF	
Dimensions	5.0x3.2x1.3mm / 7.0x5.0x1.4mm	


## Quartz Oscillator – SMD Package


### Quartz Oscillator – Ceramic Package


#### CMOS

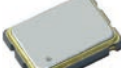
**AQO1612** (under development)   
 Frequency range 1.25 ~ 80.00MHz  
 Frequency stability  $\pm 20\text{ppm} \sim \pm 100\text{ppm}$   
 Operating temperature  $0^\circ\text{C} \sim +70^\circ\text{C}/-40^\circ\text{C} \sim +85^\circ\text{C}$   
 Input voltage 1.8V ~ 3.3V  
 Dimensions 1.6x1.2x0.6mm

**AQO2016**   
 Frequency range 1.25 ~ 100.00MHz  
 Frequency stability  $\pm 20\text{ppm} \sim \pm 100\text{ppm}$   
 Operating temperature  $0^\circ\text{C} \sim +70^\circ\text{C}/-40^\circ\text{C} \sim +85^\circ\text{C}$   
 Input voltage 0.8V ~ 3.3V  
 Dimensions 2.0x1.6x0.8mm


**AQO2520**   
 Frequency range 1.00 ~ 160.00MHz  
 Frequency stability  $\pm 10\text{ppm} \sim \pm 100\text{ppm}$   
 Operating temperature  $0^\circ\text{C} \sim +70^\circ\text{C}/-40^\circ\text{C} \sim +85^\circ\text{C}$   
 Input voltage 0.8V ~ 5.0V  
 Dimensions 2.5x2.0x1.0mm


**AQO3225**   
 Frequency range 1.00 ~ 160.00MHz  
 Frequency stability  $\pm 10\text{ppm} \sim \pm 100\text{ppm}$   
 Operating temperature  $0^\circ\text{C} \sim +70^\circ\text{C}/-40^\circ\text{C} \sim +85^\circ\text{C}$   
 Input voltage 0.8V ~ 5.0V  
 Dimensions 3.2x2.5x1.2mm

**AQO5032**   
 Frequency range 1.00 ~ 160.00MHz  
 Frequency stability  $\pm 10\text{ppm} \sim \pm 100\text{ppm}$   
 Operating temperature  $0^\circ\text{C} \sim +70^\circ\text{C}/-40^\circ\text{C} \sim +85^\circ\text{C}$   
 Input voltage 0.8V ~ 5.0V  
 Dimensions 5.0x3.2x1.3mm

**AQO7050**   
 Frequency range 1.00 ~ 160.00MHz  
 Frequency stability  $\pm 10\text{ppm} \sim \pm 100\text{ppm}$   
 Operating temperature  $0^\circ\text{C} \sim +70^\circ\text{C}/-40^\circ\text{C} \sim +85^\circ\text{C}$   
 Input voltage 0.8V ~ 5.0V  
 Dimensions 7.0x5.0x1.4mm


#### LVPECL/LVDS

**AQO2520 / 3225 LVPECL/LVDS (6 Pad)**   
 Frequency range 13.50 ~ 156.25MHz  
 Frequency stability  $\pm 20\text{ppm} \sim \pm 100\text{ppm}$   
 Operating temperature  $-20^\circ\text{C} \sim +70^\circ\text{C}/-40^\circ\text{C} \sim +85^\circ\text{C}$   
 Input voltage 1.8V ~ 3.3V  
 Dimensions 2.5x2.0x1.1mm / 3.2x2.5x1.2mm


**AQO5032 / 7050 LVPECL/LVDS (6 Pad)**   
 Frequency range 13.50 ~ 212.50MHz  
 Frequency stability  $\pm 20\text{ppm} \sim \pm 50\text{ppm}$   
 Operating temperature  $-20^\circ\text{C} \sim +70^\circ\text{C}/-40^\circ\text{C} \sim +85^\circ\text{C}$   
 Input voltage 1.8V ~ 3.3V  
 Dimensions 5.0x3.2x1.3mm / 7.0x5.0x1.6mm

### Temperature-compensated Quartz Oscillator

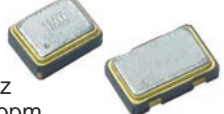
#### ATCQO2016

Frequency range 13.00 ~ 52.00MHz   
 Frequency stability  $\pm 0.5\text{ppm} \sim \pm 2.5\text{ppm}$   
 Operating temperature  $-30^\circ\text{C} \sim +70^\circ\text{C}/-40^\circ\text{C} \sim +85^\circ\text{C}$   
 Input voltage 1.8V, 2.5V, 3.0V  
 Output signal Clipped sine  
 Dimensions 2.0x1.6x0.8mm


#### ATCQO2520

Frequency range 2.50 ~ 54.00MHz   
 Frequency stability  $\pm 0.5\text{ppm} \sim \pm 2.5\text{ppm}$   
 Operating temperature  $-20^\circ\text{C} \sim +70^\circ\text{C}/-40^\circ\text{C} \sim +85^\circ\text{C}$   
 Input voltage 1.8V, 2.0V, 2.5V, 2.8V, 3.0V, 3.3V  
 Output signal Clipped sine / CMOS  
 Dimensions 2.5x2.0x1.0mm

#### ATCQO3225 / 5032

Frequency range 2.50 ~ 54.00MHz   
 Frequency stability  $\pm 0.5\text{ppm} \sim \pm 2.5\text{ppm}$   
 Operating temperature  $-20^\circ\text{C} \sim +70^\circ\text{C}/-40^\circ\text{C} \sim +85^\circ\text{C}$   
 Input voltage 1.8V, 2.0V, 2.5V, 2.8V, 3.0V, 3.3V  
 Output signal Clipped sine / CMOS  
 Dimensions 3.2x2.5x1.0mm / 5.0x3.2x1.5mm


#### ATCQO7050

Frequency range 10.00 ~ 52.00MHz   
 Frequency stability  $\pm 0.5\text{ppm} \sim \pm 2.5\text{ppm}$   
 Operating temperature  $-20^\circ\text{C} \sim +70^\circ\text{C}/-40^\circ\text{C} \sim +85^\circ\text{C}$   
 Input voltage 1.8V, 3.3V  
 Output signal Clipped sine / CMOS  
 Dimensions 7.0x5.0x1.4mm


### Voltage-controlled Quartz Oscillator

#### CMOS


#### AVCQO2520 (4 Pad)

Frequency range 1.25 ~ 62.00MHz   
 Frequency stability  $\pm 20\text{ppm} \sim \pm 50\text{ppm}$   
 Operating temperature  $-20^\circ\text{C} \sim +70^\circ\text{C}/-40^\circ\text{C} \sim +85^\circ\text{C}$   
 Input voltage 3.3V  
 Dimensions 2.5x2.0x1mm

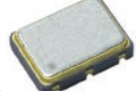
#### AVCQO3225 (4 Pad / 6 Pad)

Frequency range 1.00 ~ 54.00MHz   
 Frequency stability  $\pm 25\text{ppm} \sim \pm 100\text{ppm}$   
 Operating temperature  $-20^\circ\text{C} \sim +70^\circ\text{C}/-40^\circ\text{C} \sim +125^\circ\text{C}$   
 Input voltage 1.8V, 2.8V, 3.3V, 5.0V  
 Dimensions 3.2x2.5x1.2mm

#### AVCQO5032 (4 Pad / 6 Pad)

Frequency range 1.00 ~ 54.00MHz   
 Frequency stability  $\pm 25\text{ppm} \sim \pm 100\text{ppm}$   
 Operating temperature  $-20^\circ\text{C} \sim +70^\circ\text{C}/-40^\circ\text{C} \sim +125^\circ\text{C}$   
 Input voltage 1.8V, 2.8V, 3.3V, 5.0V  
 Dimensions 5.0x3.2x1.3mm

#### AVCQO7050 (4 Pad / 6 Pad)

Frequency range 1.00 ~ 54.00MHz   
 Frequency stability  $\pm 25\text{ppm} \sim \pm 100\text{ppm}$   
 Operating temperature  $-20^\circ\text{C} \sim +70^\circ\text{C}/-40^\circ\text{C} \sim +125^\circ\text{C}$   
 Input voltage 1.8V, 2.8V, 3.3V, 5.0V  
 Dimensions 7.0x5.0x1.8mm

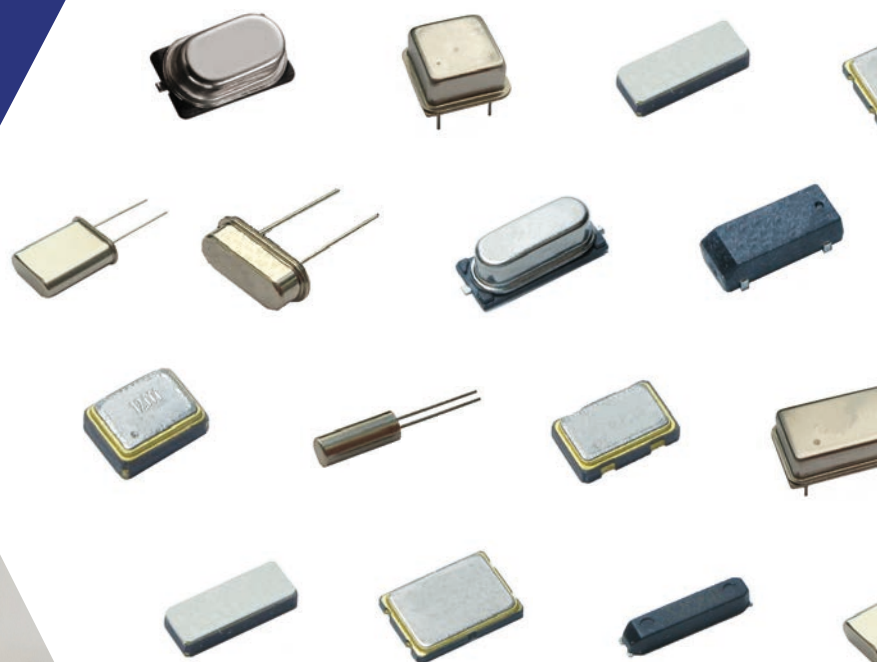
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