

Precision timing makes the difference

We've been providing world-leading service for over 25 years

Frequency Products For New Designs in 2020



CRYSTALS



OSCILLATORS



TCXOs & VCTCXOs



VCXOs



SAW FILTERS



OCXOs



RTC MODULES



CRYSTAL FILTERS

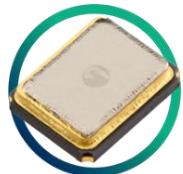


SAW DUPLEXERS



SAW RESONATORS

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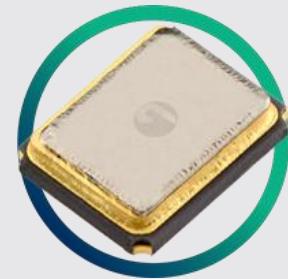
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Surface Mount Quartz Crystals – 32.768kHz

Watch crystals for commercial and industrial applications - Key Product

Available in a range of packages and pad configurations, Golledge watch crystals always offer the most competitive solution



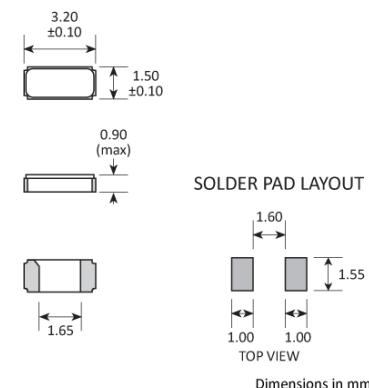
GSX-315

Miniature SM 32.768kHz Watch Crystal

Our most popular 32.768kHz solution, the GSX-315 watch crystal offers highly competitive pricing and low power consumption in a miniature vacuum sealed ceramic package.

Key Points

- Compatible with CM315/FC135
- Industry standard 3.2 x 1.5mm footprint
- Board area = 4.8mm²
- Highly competitive
- Core stock

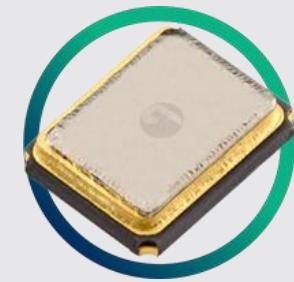


[Configure your GSX-315 here](#)

Surface Mount Quartz Crystals – 32.768kHz

Watch crystals for commercial and industrial applications

Available in a range of packages and pad configurations, Golledge watch crystals always offer the most competitive solution

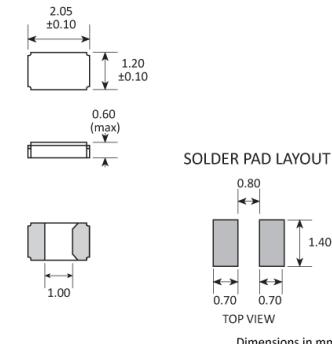
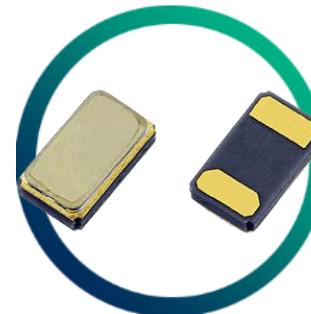


GWX-2012

Ultra- Miniature SM 32.768kHz Crystal

Access the
GWX-2012
datasheet
here

- Suitable for high volume applications
- 2.05 x 1.2mm footprint
- Board area = 2.4mm²
- Ultra-low profile, just 0.6mm high
- Vacuum sealed for high stability

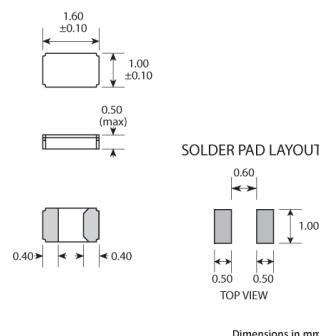
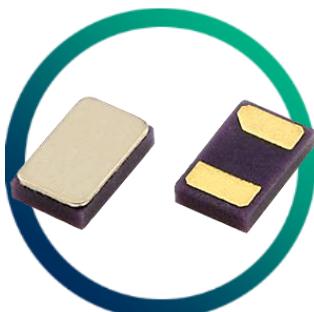


Access the
GWX-1610
datasheet here

GWX-1610

Miniature SM 32.768kHz Crystal

- Competitive pricing for volume applications
- Ultra low profile - 0.6mm high
- Light weight miniature package with tiny 1.6 x 1.0mm footprint
- Vacuum sealed for high stability



GSX-200

Access the GSX-200
datasheet here

- Highly suitable as drop in replacement for existing designs
- Large stocks available
- No longer recommended for new designs



Surface Mount Quartz Crystals – 32.768kHz

Automotive Solutions

Available in a range of packages and pad configurations, Golledge watch crystals always offer the most competitive solution

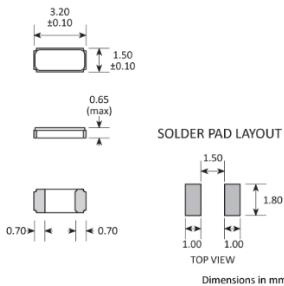
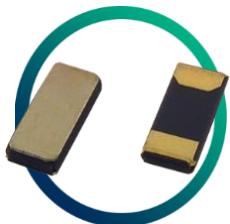
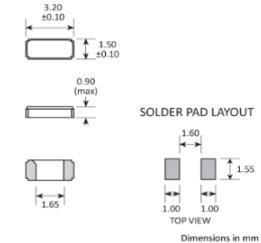


GRX-315

Automotive Watch Crystal (AEC-Q200)

[Access the GRX-315 datasheet here](#)

- AEC-Q200 qualified with PPAP available
- 3.2 x 1.5mm footprint
- Low cost for volume applications
- Low power consumption



CM7V-T1A

Miniature SM 32.768kHz Crystal with AEC-Q200

[Access the CM7V-T1A datasheet here](#)

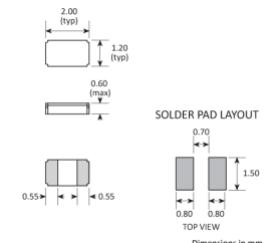
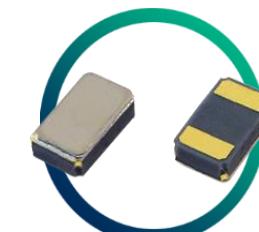
- High shock and vibration resistance
- 3.2 x 1.5mm footprint
- Board area = 4.8mm²
- Extended temperature range option

CM8V-T1A

Ultra-Miniature 2012 SM AEC-Q200 Crystal

[Access the CM8V-T1A datasheet here](#)

- Ultra-low profile of 0.6mm
- 2.0 x 1.2mm footprint
- Board area = 2.4mm²
- Extended temperature range option



Surface Mount Quartz Crystals – 32.768kHz

Solutions for Harsh Environments

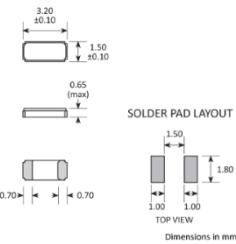
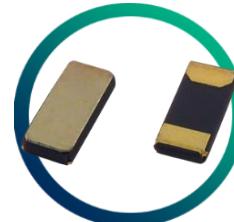
Available in a range of packages and pad configurations, Golledge watch crystals always offer the most competitive solution



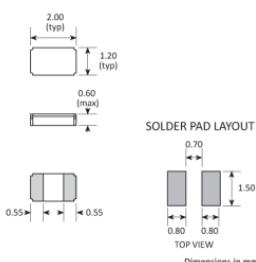
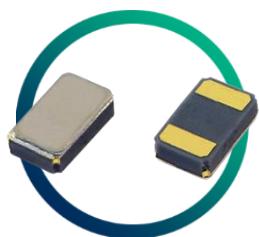
CM7V-T1A/M

Ultra-Miniature SM 32.768kHz Crystal

Configure your
CM7V-T1A/M here



- High shock and vibration resistance
- 3.2 x 1.5mm footprint
- Extended temperature range of -55 to +125°C available
- Low power consumption



CM8V-T1A/M

Ultra-Miniature SM 32.768kHz Crystal

Configure your
CM8V-T1A/M here

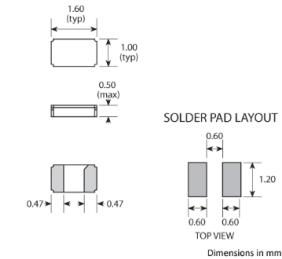
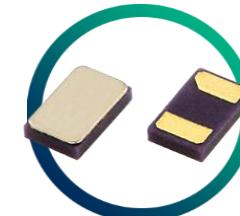
- High shock and vibration resistance
- 2.0 x 1.2mm footprint
- Board area = 2.4mm²
- Extended temperature range of -55 to +125°C available

CM9V-T1A

Ultra-Miniature 1610 Package SM 32.768kHz Crystal

Access the CM9V-T1A
datasheet here

- Ultra-low profile of 0.5mm
- High shock and vibration resistance
- Extended temperature range available
- Board area of just 1.6mm²



Surface Mount Quartz Crystals – Commercial/Industrial

High frequency crystals for commercial/industrial applications – Key Product

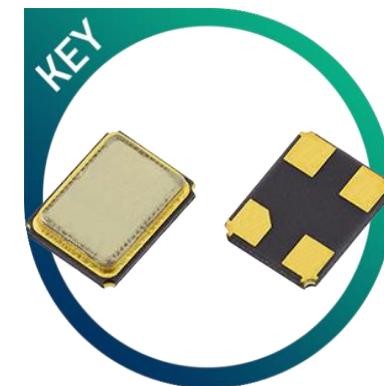
With exceptionally competitive pricing available and an ultra-miniature package



GSX-333

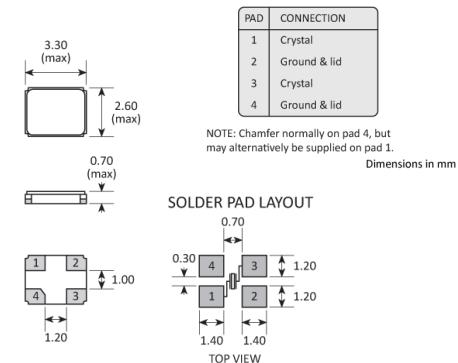
3.2 x 2.5mm High Frequency SM Crystal with Tight Specifications

The GSX-333 miniature surface mount crystal is available from 8.0 ~ 125.0MHz. Fundamental mode available up to 54.0MHz, and 3rd overtone from 54.0MHz upwards.



Key Points

- Metal lid can be grounded to minimise EMI
- Seam sealed for excellent long-term stability
- Ultra-miniature for maximum space saving
- Ideal for Bluetooth / Wireless applications

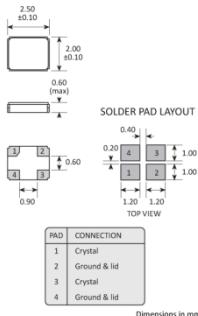
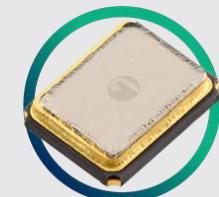


Configure your GSX-333 here

Surface Mount Quartz Crystals – Commercial/Industrial

High frequency crystals for commercial / industrial applications

With exceptionally competitive pricing available and packages as small as 1.2 x 1.0mm



GSX-323

12.0 ~ 54.0MHz Miniature SM Crystal

[Access the GSX-323 datasheet here](#)

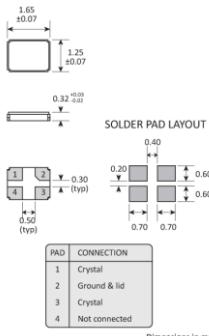
- Ideal for Bluetooth/Wireless applications
- 2.5 x 2.0mm footprint
- Board area = 5.0mm²
- Seam sealed for excellent stability

GSX-223

16.0 ~ 50.0MHz Ultra-Miniature SM Crystal

[Access the GSX-223 datasheet here](#)

- Ultra-miniature for maximum space saving
- 2.0 x 1.2mm footprint
- Board area = 2.4mm²
- Seam sealed for long term stability



GSX-213

Ultra-Miniature SM Crystal for NFC, Smartcard etc.

[Access the GSX-213 datasheet here](#)

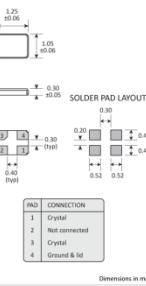
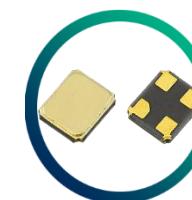
- Available from 24.0 ~ 60.0MHz
- 1.92mm² board area
- 1.6 x 1.2mm footprint
- Ideal for NFC applications
- Excellent ageing characteristics

GSX-113

Super-Miniature SM Crystal with Low ESR

[Access the GSX-113 datasheet here](#)

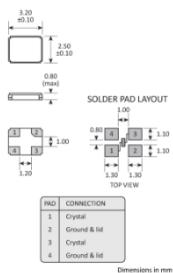
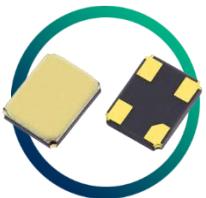
- 1.2 x 1.0mm footprint
- Fundamental mode up to 80MHz
- Available from 32.0 ~ 80.0MHz
- Board area = 1.2mm²



Surface Mount Quartz Crystals – Automotive

High frequency crystals for Automotive applications

Packages as small as 1.6 x 1.2mm and exceptionally competitive pricing available



GRX-330

Ultra-Miniature SM 12.0 ~ 48.0MHz Crystal

[Access the GRX-330 datasheet here](#)

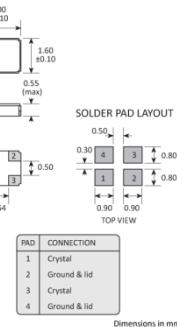
- AEC-Q200 qualified with PPAP available
- 3.2 x 2.5mm footprint
- Board area = 8.0mm²
- Extended temperature range of -40 to +125 °C

GRX-320

Ultra-Miniature SM 12.0 ~ 40.0MHz Crystal

[Access the GRX-320 datasheet here](#)

- AEC-Q200 qualified with PPAP available
- 2.5 x 2.0mm footprint
- Board area = 5.0mm²
- Extended temperature range of -40 to +125 °C



GRX-220

16.0 ~ 40.0MHz Ultra- Miniature SM Crystal

[Access the GRX-220 datasheet here](#)

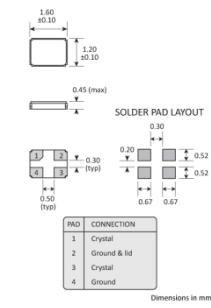
- AEC-Q200 qualified with PPAP available
- 2.0 x 1.6mm footprint
- Board area = 3.2mm²
- Temperature range of -40 to +125 °C available

GRX-210

Ultra- Miniature SM Crystal For Automotive

[Access the GRX-210 datasheet here](#)

- Available from 24.0 ~ 40.0MHz
- 1.6 x 1.2mm footprint
- AEC-Q200 qualified with PPAP available
- Temperature range of -40 to +125 °C available



Surface Mount Quartz Crystals – High Frequency

Crystals for high frequency applications

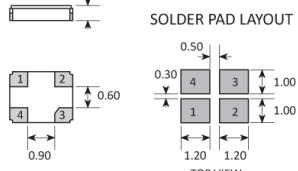
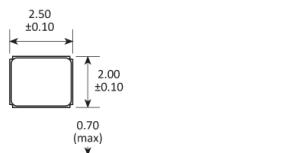
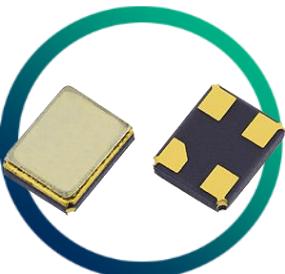
Packages as small as 2.0 x 1.6mm and exceptionally competitive pricing available

GSX-338

Ultra-Miniature High Frequency SM Crystal

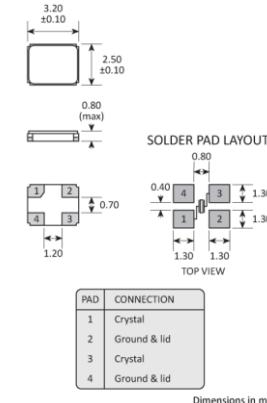
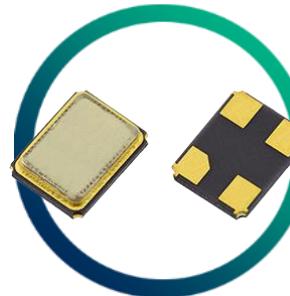
- Fundamental mode up to 315MHz
- Plasma etched inverted mesa process
- Wide pulling range (fundamental mode)

Access the
GSX-338
datasheet
here



PAD	CONNECTION
1	Crystal
2	Ground & lid
3	Crystal
4	Ground & lid

Dimensions in mm



Access the GSX-328
datasheet here

GSX-328

16.0 ~ 315MHz Miniature SM Crystal

- Fundamental mode up to 315MHz
- Plasma etched inverted mesa process
- Wide pulling range (fundamental mode)

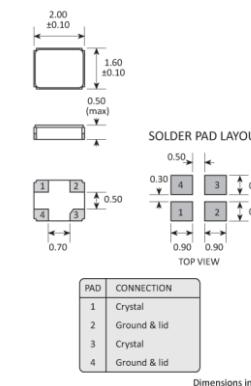
Access the GSX-328
datasheet here

GSX-228

20.0 ~ 315MHz Miniature SM Crystal

- Fundamental mode up to 315MHz
- Plasma etched inverted mesa process
- Wide pulling range (fundamental mode)

Access the GSX-228
datasheet here



Surface Mount Quartz Crystals – Harsh Environments

High frequency crystals for harsh environments

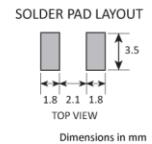
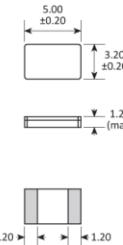
Extreme stability and high shock and vibration resistance



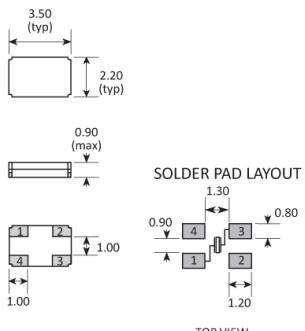
CC2A

SM Crystal Suitable For Harsh Environments

Access the CC2A range here



- Available from 12.0 ~ 70.0MHz
- High shock and vibration resistance
- 5.0 x 3.2mm footprint
- Wide range of frequencies available
- Extreme temperature ranges available, including as wide as -55 to +200 °C



CC6A

Miniature SM Crystal Suitable For Harsh Environments

Access the CC6A range here

PAD	CONNECTION
1	Crystal
2	Not connected
3	Crystal
4	Not connected

Dimensions in mm

- Available from 16.0 ~ 70.0MHz
- High shock and vibration resistance
- 3.5 x 2.2mm footprint
- Wide range of frequencies available
- Extreme temperature ranges available, including as wide as -55 to +200 °C

Surface Mount Oscillators – 32.768kHz

Low frequency oscillators for commercial and industrial applications
Wide supply voltage and operating temperature ranges available

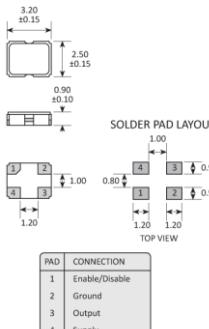
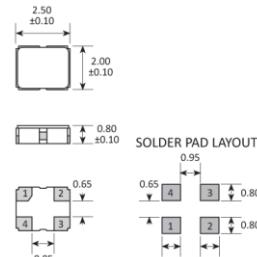
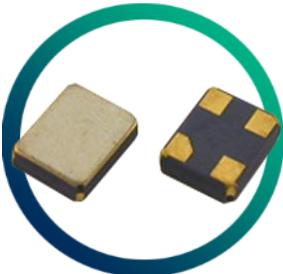


GFO-3301

SM Miniature Oscillator

Access the
GFO-3301
datasheet
here

- Low power consumption
- 3.2 x 2.5mm footprint
- Board area = 8.0mm²
- Extended temperature range of -40 to +80°C available



Access the
GAO-3201
datasheet
here

GAO-3201

Ultra-miniature SM Oscillator

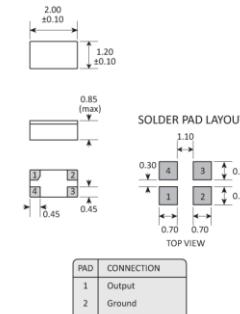
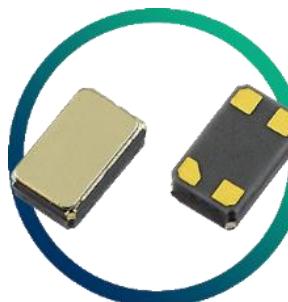
- Suitable for high volume applications
- 2.5 x 2.0mm footprint
- Board area = 5.0mm²
- Ultra-low profile, just 0.8mm high

OM7605C8

Ultra-miniature SM Oscillator

Access the
OM7605C8
datasheet
here

- High shock and vibration resistance
- 2.0 x 1.2mm footprint
- Board area = 2.4mm²
- Extended temperature range of -40 to +85°C available

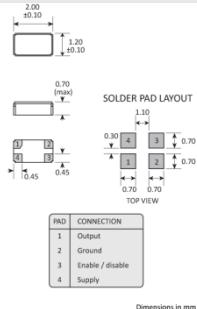


Dimensions in mm

Surface Mount Quartz Crystals – Automotive

High frequency crystals for Automotive applications

Packages as small as 1.6 x 1.2mm and exceptionally competitive pricing available



OM7604C7

Ultra-miniature 32.768kHz Oscillator for Automotive

- Ultra-low power consumption
- Tight frequency tolerance

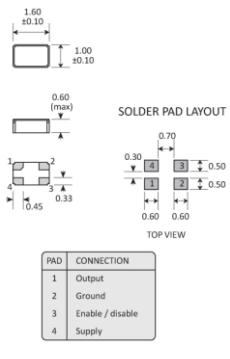
OM7604C7

Ultra-miniature 32.768kHz Oscillator for Automotive

- Ultra-low power consumption
- Tight frequency tolerance
- 3.2 x 1.5mm footprint

- High shock and vibration resistance
- Industrial and extended temperature ranges

[Access the OM7604C7 datasheet here](#)



OM7605C8

Ultra-miniature 32.768kHz Oscillator for Automotive

- Ultra-low power consumption
- Operable from 1.6~5.5V

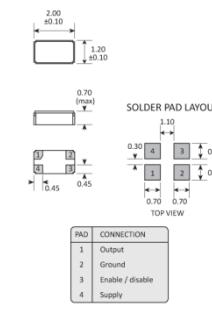
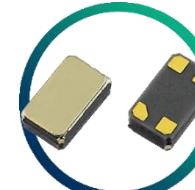
OM7605C8

Ultra-miniature 32.768kHz Oscillator for Automotive

- Ultra-low power consumption
- Tight frequency tolerance
- 1.6 x 1.0mm footprint

- High shock and vibration resistance
- Industrial and extended temperature ranges

[Access the OM7605C8 datasheet here](#)



OM0100C8

Ultra-miniature 100kHz Oscillator for Automotive

- Ultra-low power consumption
- Operable from 1.6~5.5V

- High shock and vibration resistance
- 2.0 x 1.2mm footprint

[Access the OM0100C8 datasheet here](#)

Surface Mount Oscillators – 32.768kHz & 100kHz

Low Frequency Oscillators for Material Sensitive Applications

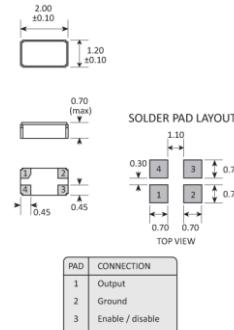
Wide supply voltage and operating temperature ranges available

OV7604C7

Miniature Fully Ceramic SM Oscillator

Access the
OV7604C7
datasheet
here

- Ultra low power consumption
- Fully ceramic package
- Ultra-miniature 32.768kHz oscillator
- Tight frequency tolerance
- Industrial and extended temperature ranges
- High shock and vibration resistance

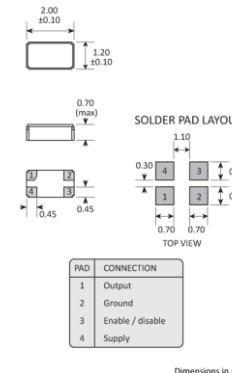


OV7605C8

Miniature Fully Ceramic SM Oscillator

Access the
OV7605C8
datasheet
here

- Ultra low power consumption
- Ultra-miniature 32.768kHz oscillator
- Tight frequency tolerance
- Optional AEC-Q200 qualification
- High shock and vibration resistance
- Fully ceramic package



OV0100C8

Miniature Fully Ceramic SM Oscillator

Access the
OV0100C8
datasheet
here

- Ultra low power consumption
- Ultra-miniature 100kHz oscillator
- Optional AEC-Q200 qualification
- High shock and vibration resistance
- Ultra-miniature fully ceramic package

Surface Mount Oscillators– Low Frequency

Low frequency oscillators for harsh environments

Wide supply voltage and operating temperature ranges available

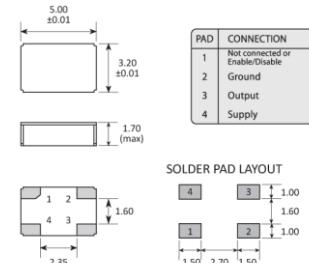


MCSO2xxx

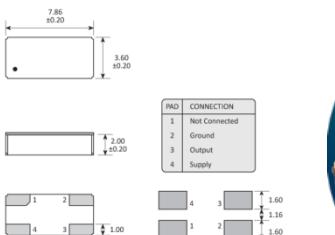
Miniature Fully Ceramic SM Oscillator

Access the MCSO2xxx range here

- Available from 10.0kHz
- Suitable for Avionics, Down-hole, Geothermal etc.
- Extreme temperature ranges up to 210°C
- High stability & low ageing under extremes
- High shock & vibration resistance
- Optional tinned pads (Ag/Cu/Zn)



A 47nF ceramic capacitor must be connected between GND and Vdd
Dimensions in mm



A 47nF ceramic capacitor must be connected between GND and Vdd
Dimensions in mm

MCSO1xxx

Miniature Low Frequency SM Oscillator

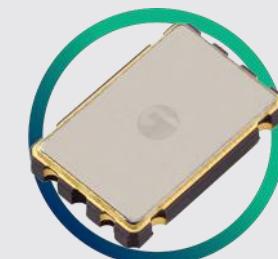
Access the MCSO1xxx range here

- Available from 10.0kHz
- Suitable for Avionics, Down-hole, Geothermal etc.
- Extreme temperature ranges up to 200°C
- High stability & low ageing under extremes
- High shock & vibration resistance
- Optional tinned pads (Ag/Cu/Zn)

Surface Mount Oscillators – Commercial/Industrial

Competitively priced oscillators suitable for commercial applications - Key Product

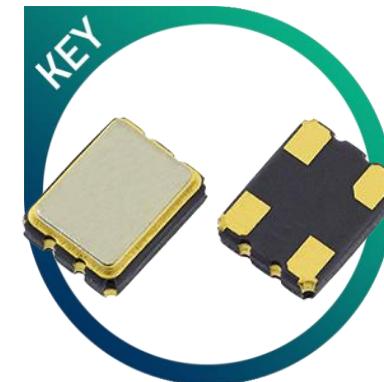
Highly competitive pricing with tight frequency stability and low current consumption



GXO-3301

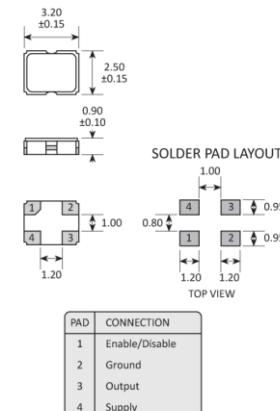
High Stability SM Oscillator

The GXO-3301 oscillator features tight frequency stability and low current consumption as standard and is available with a range of supply voltage options.



Key Points

- High stability for WiMAX, LAN etc.
- Low current consumption
- 3225 Miniature ceramic package with metal lid
- Enable / disable tristate function
- Competitive pricing
- Available from 625kHz ~ 78.0MHz



[Configure your GXO-3301 here](#)

Surface Mount Oscillators – Commercial/Industrial

Competitively priced oscillators suitable for commercial applications

Frequencies up to 200MHz with highly competitive pricing

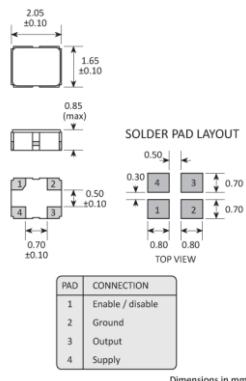


GXO-3201

Miniature CMOS Oscillator with Low Jitter

Access the
GXO-3201
family here

- Low current consumption
- Enable / disable tristate function
- Miniature 2.5 x 2.0mm ceramic package with metal lid
- Competitive pricing
- Available from 750kHz ~ 50.0MHz



GXO-2201

Miniature CMOS Oscillator with Low Jitter

Access the
GXO-2201
family here

- Competitive pricing for high volumes
- Miniature 2.0 x 1.6mm ceramic package with metal lid
- 1.8V, 2.5V and 3.3V voltage supply options
- Enable / disable tristate function
- Available from 1.5 ~ 54.0MHz

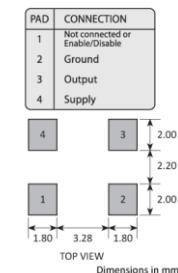
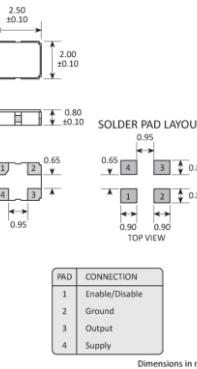
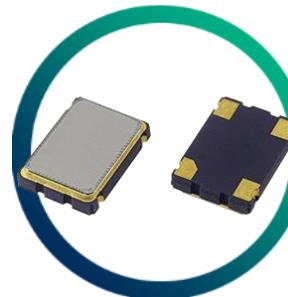
GXO-7531/U108

Versatile Oscillators with Many Available Frequencies

- Very wide range of available frequencies from 12.0kHz ~ 200MHz
- 7.5 x 5.0mm footprint
- High drive capabilities up to 50pF
- Power saving variants available

Access the
GXO-7531

Access the
GXO-U108



Surface Mount Oscillators – Harsh Environments

High frequency components and those suitable for harsh environment

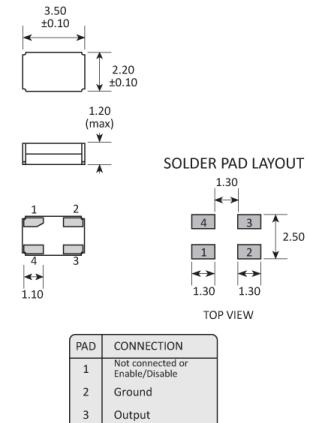
Extended temperature ranges and high shock and vibration resistance



MCS06xxx

Miniature Low Jitter Oscillators For Harsh Environments

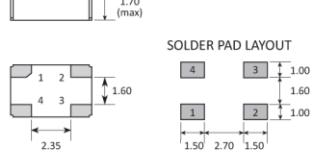
Access the MCS06xxx range here



Dimensions in mm



PAD	CONNECTION
1	Not connected or Enable/Disable
2	Ground
3	Output
4	Supply



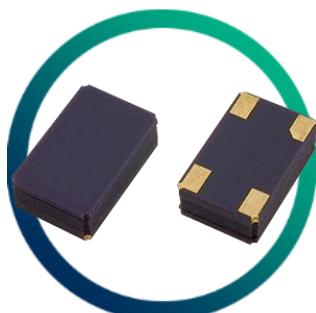
A 47nF ceramic capacitor must be connected between GND and Vdd

Dimensions in mm

MCS02xxx

Low Jitter Oscillators For Harsh Environments

Access the MCS02xxx range here



- Available from 10.0kHz ~ 225MHz
- Suitable for Avionics, Down-hole, Geothermal and more
- Extreme temperature ranges available up to 210°C
- High stability & low ageing under extremes
- High shock & vibration resistance
- Optional tinned pads (Ag/Cu/Zn)

Surface Mount Oscillators – Special Applications

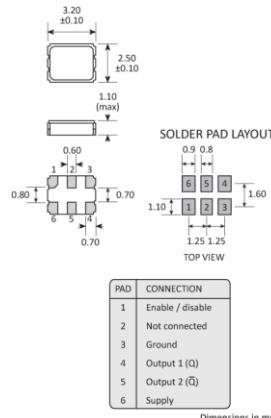
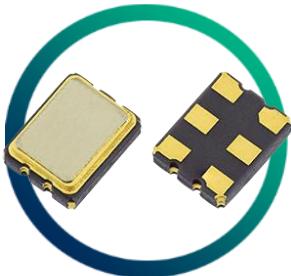
High frequency and tight stability oscillators

Packages as small as 1.6 x 1.0mm with exceptionally low jitter characteristics

GXO-3300

High Frequency, Tight Stability Oscillator

- Available from 10.0 ~ 160MHz
- High precision with tight stability options
- Wide operating temperature ranges
- High frequency fundamental - no multiplier
- Low & medium volumes also available
- Enable / disable tristate function



Access the
GXO-3300
family here

GXO-L31

LVDS Oscillator for High Speed Data Transfer

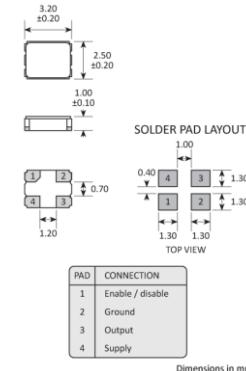
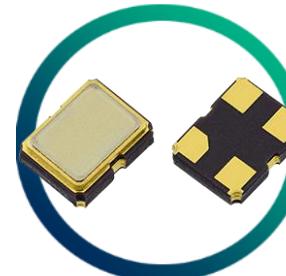
- Available from 40.0 ~ 250MHz
- Differential outputs
- RMS phase jitter 0.3ps
- Low current consumption (20mA max.)
- Multiplier-free design
- Enable / disable tristate function

GXO-3306

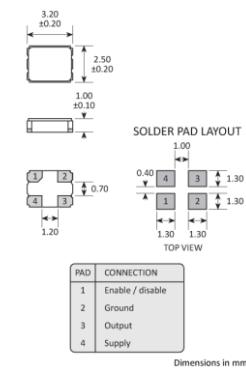
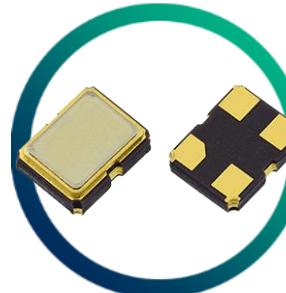
3225 Package Ultra-Low Jitter Oscillator

- Available from 16.0 ~ 50.0MHz
- Excellent phase noise & jitter characteristics of 0.04ps typical
- Enable / disable tristate function
- Small and medium quantities also available

Access the
GXO-3306
family here



Access the
GXO-3306
family here



Temperature Compensated Oscillators – TCXOs

Tight stability in miniature surface mount packages – Key Product

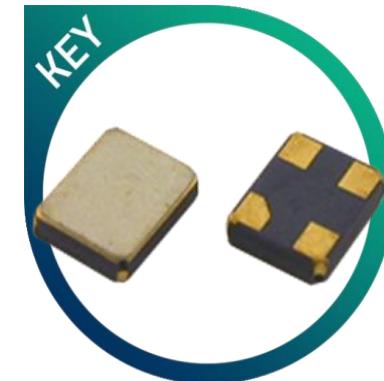
Ultra-miniature package and stability options as tight as $\pm 0.5\text{ppm}$



GTXO-253

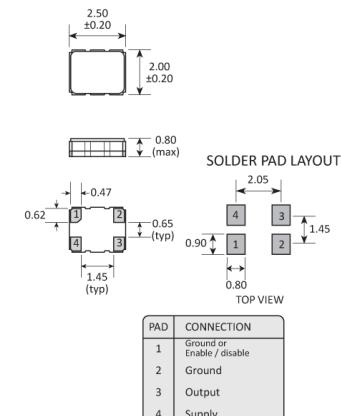
1.8V ~ 3.6V Ultra-tight Stability TCXO

The GTXO-253T temperature compensated oscillator is ideally suited for many applications, featuring frequency stability as tight as $\pm 0.5\text{ppm}$, fast start up time of 3ms maximum, and a miniature 2.5 x 2.0mm package.



Key Points

- $\pm 0.5\text{ppm}$ frequency stability option
- Supply voltage from 1.8V ~ 3.6V
- Low power consumption
- Miniature SM package
- Clipped sine output
- Available from 10.0 ~ 52.0MHz

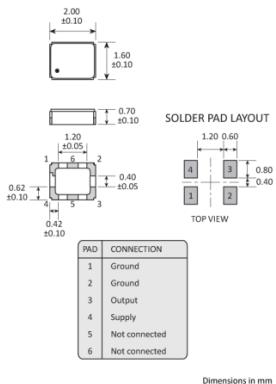
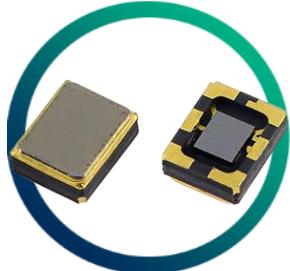


[Explore the GTXO-253 options here](#)

Temperature Compensated Oscillators – TCXOs

Tight stability in miniature surface mount packages

Frequencies available up to 70MHz with stabilities as tight as $\pm 0.5\text{ppm}$



GTXO-203

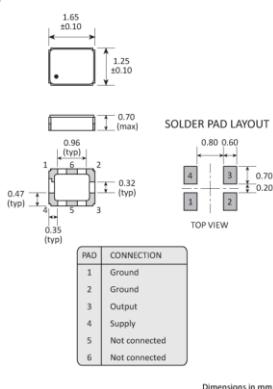
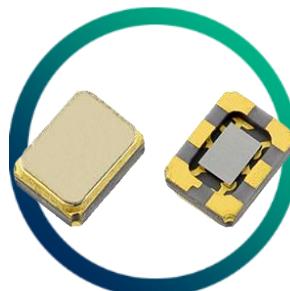
Ultra-miniature 2.0 x 1.6mm Footprint TCXO

Access the
GTXO-203
family here

GTXO-C25

SM TCXO with excellent phase noise characteristics

- Low power consumption
- Enable / disable tristate function
- CMOS output
- Excellent frequency stability
- 4.0 ~ 54.0MHz



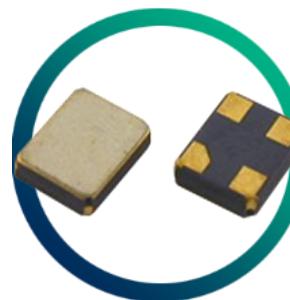
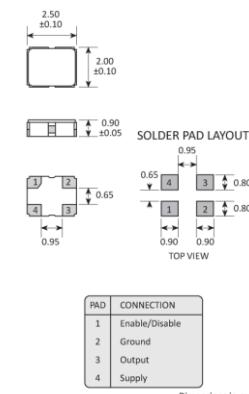
Access the
GTXO-C25
family here

GTXO-163

Ultra-miniature 1.6 x 1.2mm Footprint TCXO

Access the
GTXO-163
family here

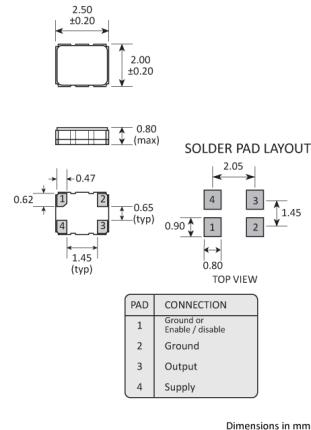
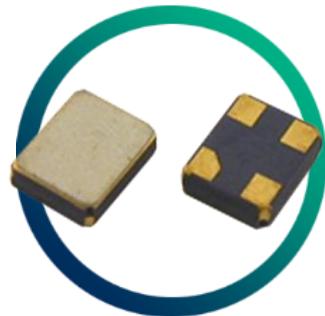
- Available at frequencies from 16.0 ~ 52.0MHz
- Clipped sine output
- Excellent frequency stability options of $\pm 0.5\text{ppm}$ available
- Operable from 1.8 ~ 3.6V



TCXOs - Automotive

Tight stability in miniature surface mount packages

With stabilities as good as $\pm 0.5\text{ppm}$ and optional AEC-Q200 qualification



GTXO-253

1.8V ~ 3.6V Ultra-tight Stability TCXO

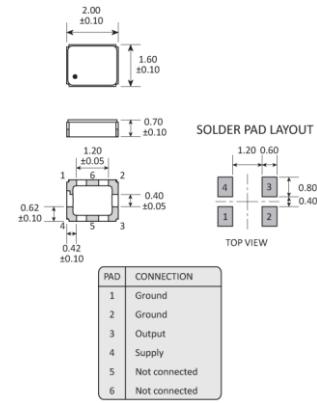
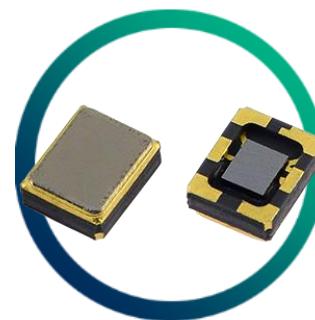
Access the
GTXO-253
family here

- $\pm 0.5\text{ppm}$ frequency stability option
- Supply voltage from 1.8V ~ 3.6V
- Low power consumption
- Miniature SM package
- Available from 10.0 ~ 52.0MHz
- Clipped sine output

GTXO-203

Ultra-miniature 2.0 x 1.6mm Footprint TCXO

Access the
GTXO-203
family here

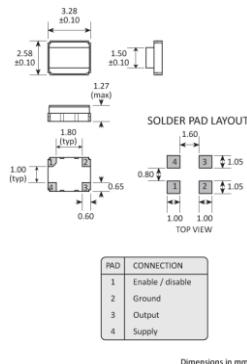


- Ideally suited for wearable applications
- Supply voltages from 1.8V ~ 3.6V
- Low power consumption
- Miniature SM package
- Excellent frequency stability
- Available from 10.0 ~ 70.0MHz
- Clipped sine output

TCXOs – Special Applications

High frequency and tight stability oscillators

Miniature SM packages with exceptional stability and pullability options



GTxO-94

32.768kHz CMOS TCXO

Access the
GTxO-94
range here

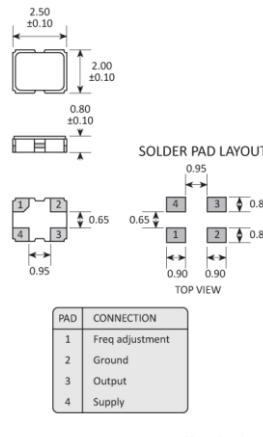
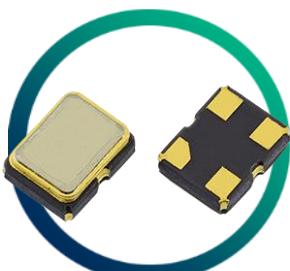
- 32.768kHz
- Extremely low current consumption
- $\pm 5\text{ppm}$ frequency stability
- 1.8V, 2.5V, 3.0V and 3.3V supply options

Access the
GTxO-73
range here

GTxO-73

Stratum 3 TCXO with Clipped Sine Output

- Stratum 3 compliant and available at frequencies from 5.0 ~ 52.0MHz
- $\pm 4.6\text{ppm}$ stability over 20 years
- Miniature 7050 SM package
- 3.3V & 5V supply voltage options

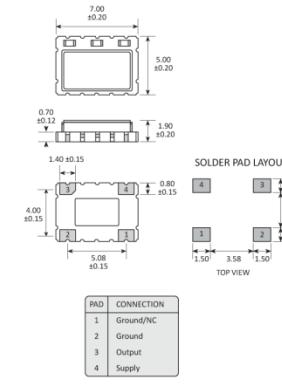


GTxO-251V

VCTCXO with Tight Stability and Wide Pullability

Access the
GTxO-251V
datasheet
here

- Specifically designed for AIS projects
- Wide voltage control range of $\pm 15 \sim \pm 25\text{ppm}$, 1.5V $\pm 1.0\text{V}$
- Great frequency stability of $\pm 0.5\text{ppm}$ available
- Miniature 2520 SM package
- Available from 16.0 ~ 52.0MHz



Voltage Controlled Oscillators – VCXOs

Gain control with our wide range of VCXOs – Key Product

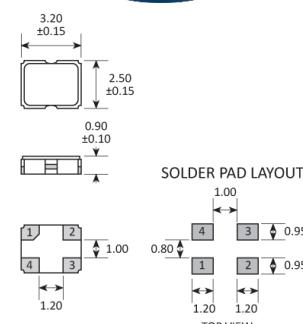
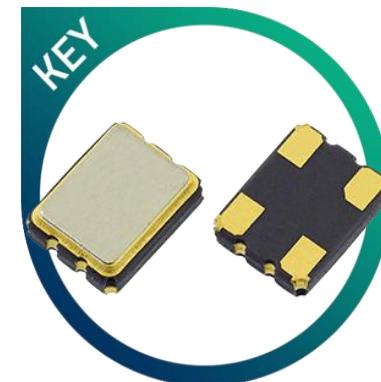
Wide frequency pullability and a range of operating supply voltages



GVXO-331

Surface Mount VCXO

GVXO-331 voltage controlled oscillators are available over a frequency range of 1.50 to 64.440MHz and offer the engineer wide frequency pullability and operating supply voltage options of 1.8V, 2.8V and 3.3V.



PAD	CONNECTION
1	Control voltage
2	Ground
3	Output
4	Supply

Dimensions in mm

[Explore the GVXO-331 range here](#)

Voltage Controlled Oscillators – VCXOs

Gain control with our wide range of VCXOs

Wide frequency pullability and a range of operating supply voltages

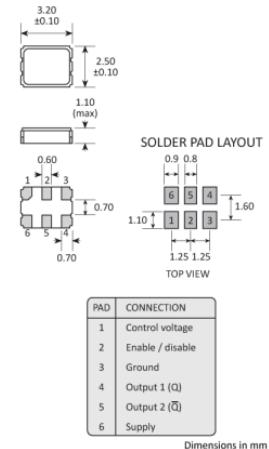
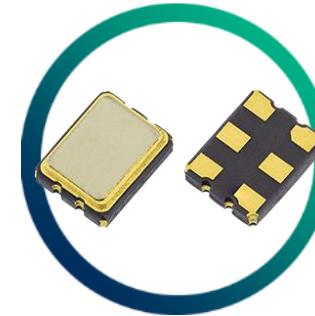
GVXO-L33L (E33L)

VCXO with Low Phase Jitter up to 250MHz

- Complementary LVDS or LV-PECL outputs
- Multiplier-free design
- Enable / disable tristate function
- Designed for high speed data transfer
- Great phase jitter performance of 1ps typ. (12kHz ~ 20MHz)

Access the
GVXO-L33L

Access the
GVXO-E33L

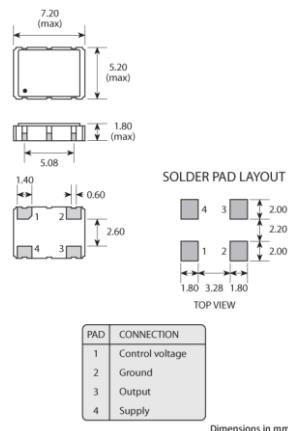
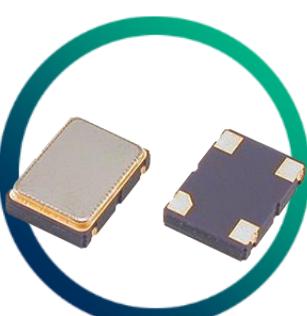


Access the
GVXO-753
family here

GVXO-753

Cost Effective Voltage Controlled Oscillator

- 7.0 x 5.3mm footprint
- Cost effective for volume applications
- Operating temperature ranges as wide as -40 to +85 °C
- Available from 1.5 ~ 54.0MHz
- 6 pad version also available with enable/disable tristate functionality



VCXOs – Harsh Environments

Gain control with our wide range of VCXOs

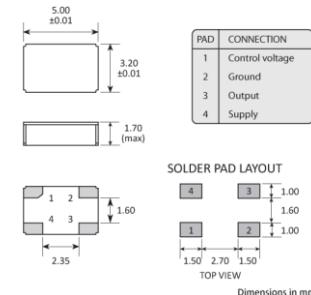
High shock and vibration resistance and extreme operating temperature ranges



VCXO2EV

CMOS VCXO for Harsh Environments

Access the
VCXO2EV
here



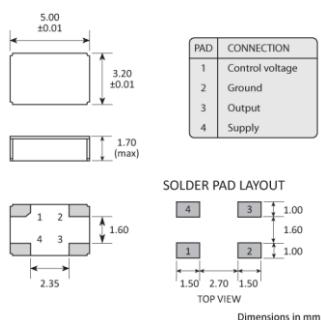
- Suitable for Avionics, Down-hole, Geothermal etc
- Extreme temperature ranges up to 210°C
- High stability & low ageing under extremes
- High shock & vibration resistance
- Low current consumption
- Available from 5.0 ~ 40.0MHz



VCXO2HV

High Frequency VCXO with Military Temperature Range

Access the
VCXO2HV
here

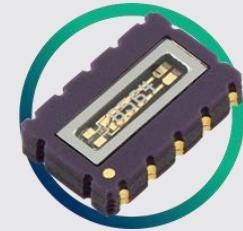


- Military temperature range -55 to +125°C
- Fundamental crystal for low phase noise
- High shock & vibration resistance
- Optional tinned pads (Ag/Cu/Zn)
- Available from 5.0 ~ 170MHz

Real Time Clock Modules - RTCs

Offering Engineers an All-in-one Solution

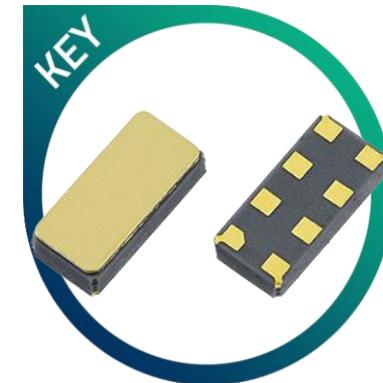
Miniature package with exceptionally low current consumption



RV-3028-C7

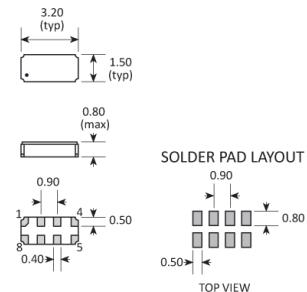
Ultra-low Power I²C RTC Module

The RV-3028-C7 boasts ultra-low current consumption of only 40nA, ideal for many applications requiring low power components, including IoT, wearables, portable devices, healthcare, metering, industrial and automotive.



Key Points

- Ultra-Low power consumption of 40nA
- Built-in crystal
- Wide operating voltage of 1.1 ~ 5.5V
- Battery switch over
- AEC-Q200 compliant option



PAD	CONNECTION	PAD	CONNECTION
1	Serial data (SDA)	5	Ground (VSS)
2	Frequency output (CLKOUT)	6	Interrupt output (INT)
3	Supply voltage (VDD)	7	Event input (EV1)
4	Clock output enable (CLKOE)	8	Serial clock input (SCL)

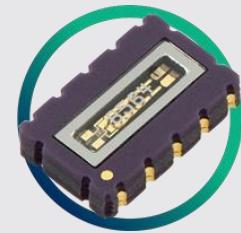
Dimensions in mm

[Configure your RV3028C7 here](#)

Real Time Clock Modules - RTCs

Offering Engineers an All-in-one Solution

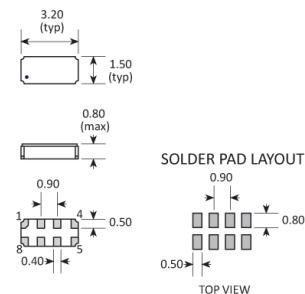
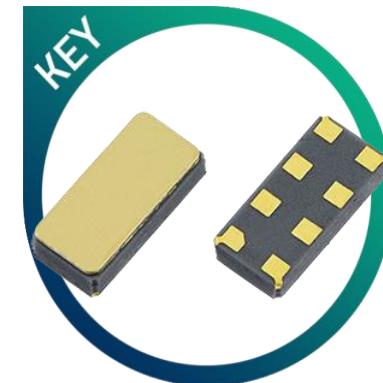
Temperature compensated for maximum stability



RV-8803-C7

RTC I²C bus High Accuracy

The RV-8803-C7 is a high accuracy, ultra-low power real-time-clock module with embedded 32.768kHz Crystal. High accuracy and high stability is achieved by a factory calibrated, temperature compensated DTCXO giving time-accuracy of $\pm 3.0\text{ppm}$ across the temperature range from -40°C to $+85^{\circ}\text{C}$.



PAD	CONNECTION	PAD	CONNECTION
1	Serial data (SDA)	5	Ground (VSS)
2	Frequency output (CLKOUT)	6	Interrupt output (INT)
3	Supply voltage (VDD)	7	Event input (EV1)
4	Clock output enable (CLKOE)	8	Serial clock input (SCL)

Dimensions in mm

[Configure your RV8803C7 here](#)

Monolithic Crystal Filters

Highly accurate filtering at low frequencies

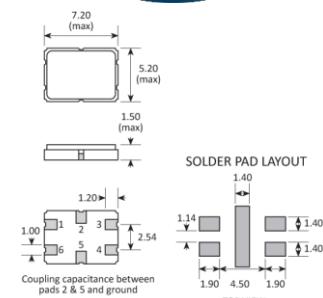
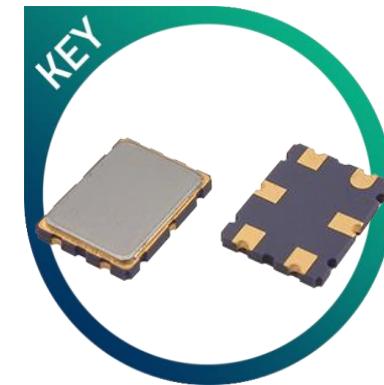
Tiny surface mount space-saving packages available



GSF-75

4-Pole SM Crystal in One Miniature SM Package

The GSF-75 range of crystal filters combines 4-pole functionality within one miniature surface mount package. A range of bandwidths and centre frequencies are available with low insertion loss.



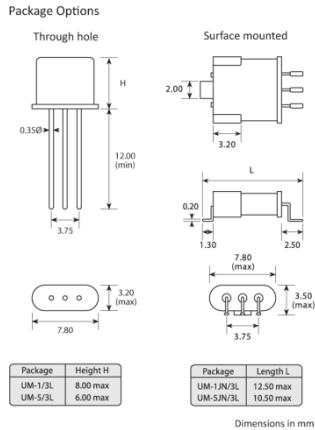
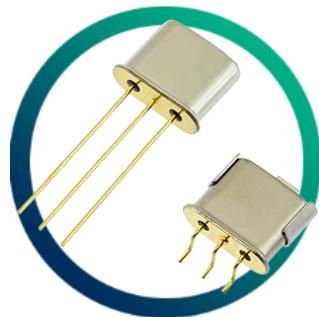
PAD	CONNECTION
1	Ground
2	Connect with pad 5 & Cc
3	In / Out
4	Ground
5	Connect with pad 2 & Cc
6	Out / In

Dimensions in mm

[Access the GSF-75 range of crystal filters here](#)

Monolithic Crystal Filters

Highly accurate filtering at low frequencies
Tiny surface mount space-saving packages available



GMCF-45

Crystal Filters with Centre Frequency 45MHz

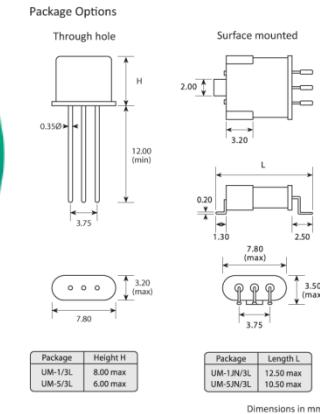
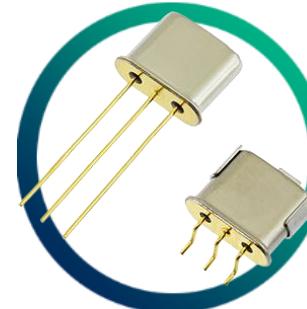
Access the
GMCF-45
range here

GMCF-21

Crystal Filters with Centre Frequency 21.4MHz

Access the
GMCF-21
range here

- Multiple package options including through-hole and leaded packages
- 2, 4, 6 and 8-pole options available
- Wide range of bandwidths
- Low insertion loss



Oven Controlled Oscillators - OCXOs

Highly accurate signal fidelity and fantastic aging and stability characteristics

Check out our range of OCXOs when you need the very best



HCD380 and HCD381

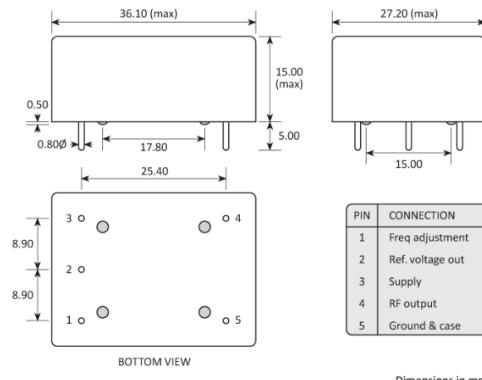
High Frequency OCXO with Ultra-low Phase Noise

The HCD380 oven controlled oscillator with sine wave output and HCD381 with CMOS are available up to very high frequency of 100MHz with low phase noise.



Key Points

- 160dBC/Hz noise floor @ 10kHz
- Frequencies up to 100MHz
- No multiplier
- Standard European IEC CO-08 pin-out
- Custom options available



[Configure your HCD380 here](#)

[Configure your HCD381 here](#)

Oven Controlled Oscillators - OCXOs

Highly accurate signal fidelity and fantastic aging and stability characteristics

Check out our range of OCXOs when you need the very best

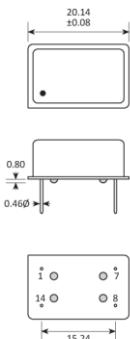


GOXO-149

3.3V Surface Mount OCXO from 10.0 ~ 80.0MHz

Access the
GOXO-149
datasheet
here

- Miniature SM package - 50% smaller footprint than DIL-14
- Ideally suited for base stations, VSAT etc
- Outstanding phase noise characteristics
- 3.3V supply
- LVCMOS output



PIN	CONNECTION
1	Freq adjustment
7	Ground
8	Output
14	Supply

Dimensions in mm

PIN	CONNECTION
1	Freq adjustment
7	Ground
8	Output
14	Supply

PIN	CONNECTION
1	Freq adjustment
7	Ground
8	Output
14	Supply

PIN	CONNECTION
1	Freq adjustment
7	Ground
8	Output
14	Supply

Dimensions in mm

SCOCXOHS

Sine Output OCXO with Excellent Stability

Access the
SCOCXOHS
family here

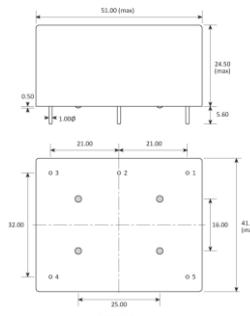
- Excellent phase noise performance @ 100MHz
- -160dBC noise floor @ 10.0MHz
- Fundamental mode frequencies up to 120MHz
- Compact 14-pin DIL package (SMD optional)
- High shock and vibration resistance
- Available from 10.0 ~ 120MHz

HCD660

High Performance OCXO with Sine Output

- Temperature stability down to $\pm 1\text{ppb}$
- Single 12V supply (12V ~ 30V optional)
- Standard European pin-out
- Available at frequencies from 5.0 ~ 20.0MHz

Access the
HCD660
datasheet
here



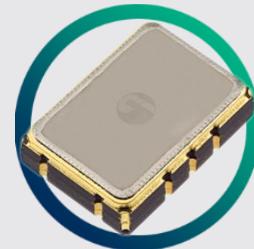
PIN	CONNECTION
1	Ground
2	Freq adjustment
3	Ref voltage out
4	Supply
5	RF output

Dimensions in mm

Surface Acoustic Wave Devices – SAWs

We have one of the widest available ranges of SAW products

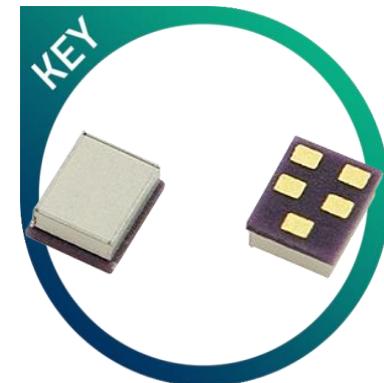
Powerful filtering up to 3.7GHz



SAW Filters – GSRF & GSIF

Filters available for each major application covering most LTE bands

Our SAW filter range includes over 1300 different components, with frequencies available from 35MHz to 3.7GHz. A wide range of passband widths are available with low insertion losses.



Key Points

- Surface mount packages as small as 1.1 x 0.9mm available
- Low insertion loss
- Range of available bandwidths
- Frequencies covering most LTE bands

[Search our SAW Filter range here](#)

Surface Acoustic Wave Devices – SAWs

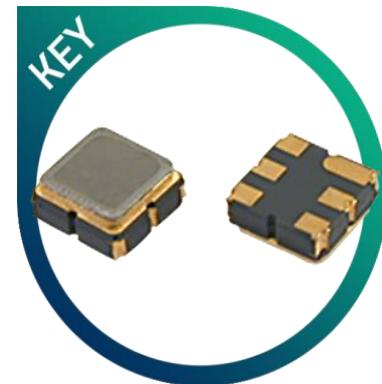
We have one of the widest available ranges of SAW products



SAW Resonators

High Value SAW Resonators

With ultra-miniature surface mount packages available in a range of industry-standard footprints, our range of SAW resonators present a high value option for engineers.



Key Points

- Industry standard footprints
- Large range of frequencies
- Commonly used frequencies available from stock
- Suitable for airborne communications and ISM band applications among others
- Present a high level of value
- Frequencies available from 245MHz ~ 1.28GHz

[Search our SAW Resonator range here](#)

Surface Acoustic Wave Devices – SAWs

We have one of the widest available ranges of SAW products

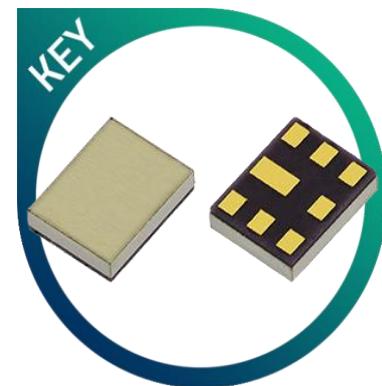
Powerful filtering up to 2.7GHz



SAW Duplexers

Cutting Edge SAW Duplexers in Ultra-Miniature Packages

The Golledge range of SAW duplexers offer engineers space-saving through component reduction and ultra-miniature packages, as small as 1.8 x 1.4mm.



Key Points

- Space saving through component reduction
- Industry standard footprints
- Packages from 1.8 x 1.4mm available
- Low insertion attenuation
- Typical insertion loss of <3dB
- Ultra-miniature for maximum space saving
- Suitable for use within the Cellular, CDMA, WCDMA, and LTE bands

[Search our SAW Duplexer range here](#)

If you'd like further information about any of our products or commercial offerings visit www.golledge.com for more details. If you have any enquiries please get in touch with our team at sales@golledge.com or speak to us on +44 1460 256 100.

Thank You



Precision timing makes the difference

We've been providing world-leading
service for over 25 years