

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 & VCTXOs



VCXOs



SAW FILTERS



OCXOs



RTC MODULES



CRYSTAL FILTERS



SAW DUPLEXERS



SAW RESONATORS

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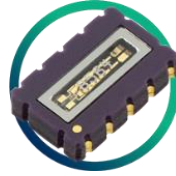
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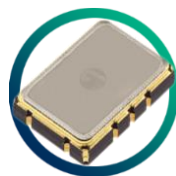
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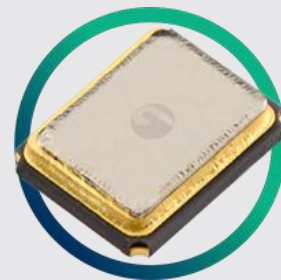
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Surface Mount Quartz Crystals – 32.768kHz

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



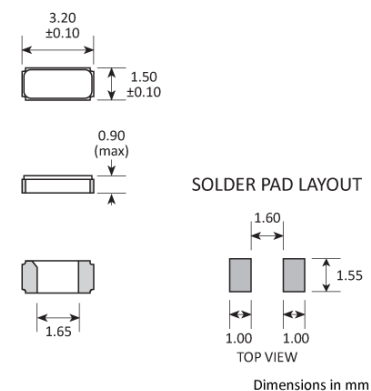
GSX-315

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

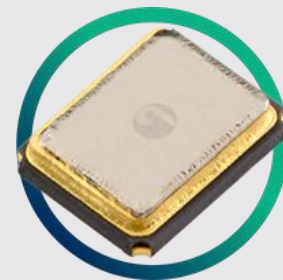


[Configure your GSX-315 here](#)

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

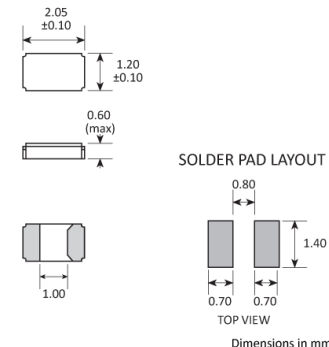


GWX-2012

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

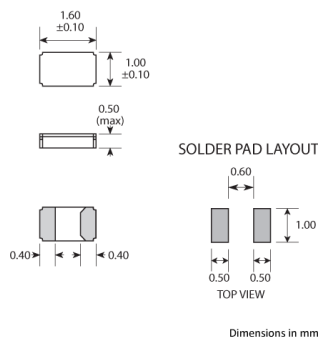


GWX-1610

Miniature SM 32.768kHz Crystal

Access the
GWX-1610
datasheet
here

- 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

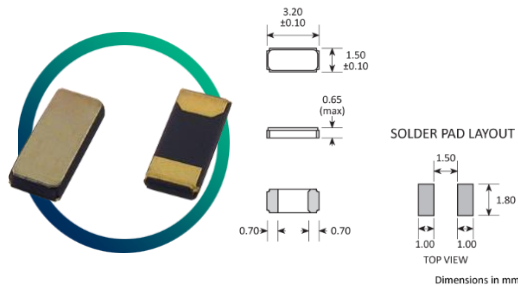
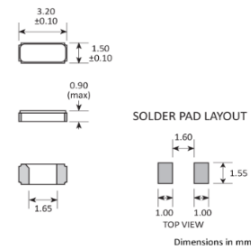
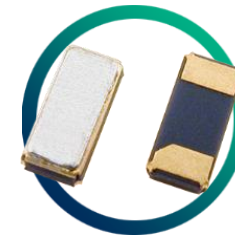


GRX-315

Automotive Watch Crystal (AEC-Q200)

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

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



CM7V-T1A

Miniature SM 32.768kHz Crystal with AEC-Q200

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

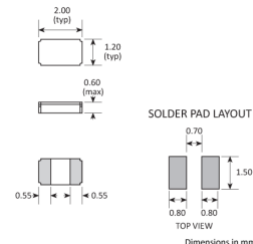
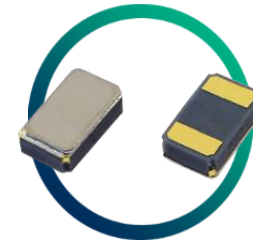
[Access the CM7V-T1A datasheet here](#)

CM8V-T1A

Ultra-Miniature 2012 SM AEC-Q200 Crystal

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

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



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

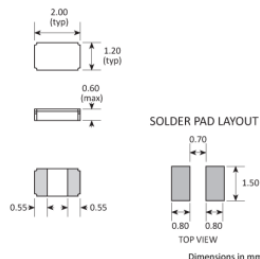
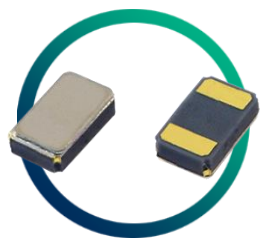
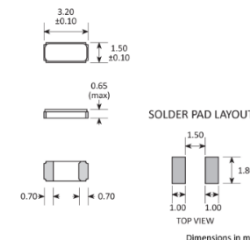
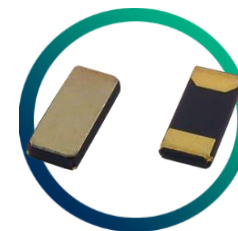


CM7V-T1A/M

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](#)

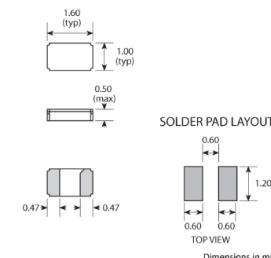
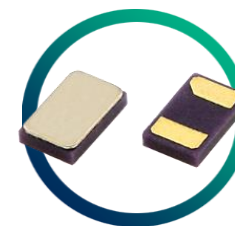
- High shock and vibration resistance
- 2.0 x 1.2mm footprint
- Board area = 2.4mm²
- Extended temperature range of -55 to +125°C available

CM9V-T1A

Ultra-Miniature 1610 Package SM 32.768kHz Crystal

[Access the CM9V-T1A datasheet here](#)

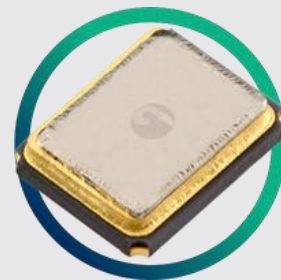
- Ultra-low profile of 0.5mm
- High shock and vibration resistance
- Extended temperature range available
- Board area of just 1.6mm²



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



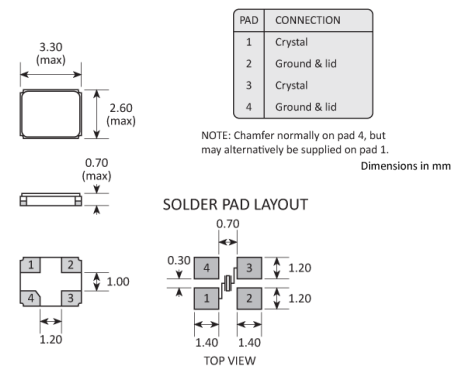
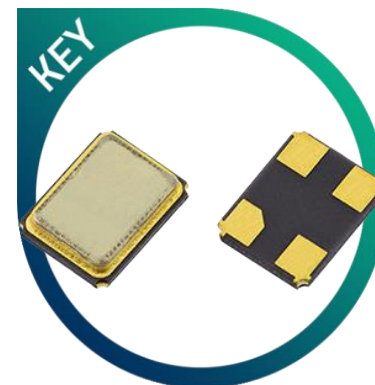
GSX-333

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

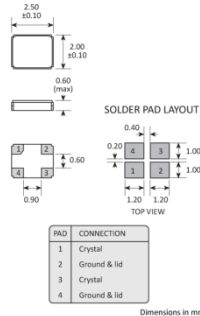
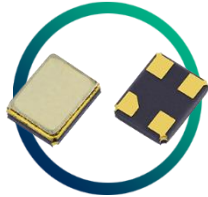


[Configure your GSX-333 here](#)

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

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

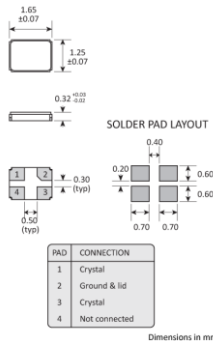
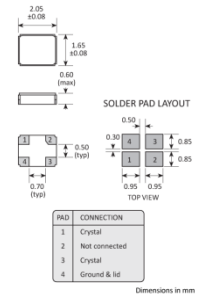
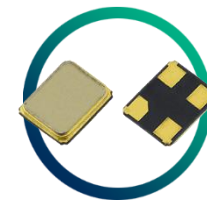
[Access the GSX-323 datasheet here](#)

GSX-223

16.0 ~ 50.0MHz Ultra-Miniature SM Crystal

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

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



GSX-213

Ultra-Miniature SM Crystal for NFC, Smartcard etc.

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

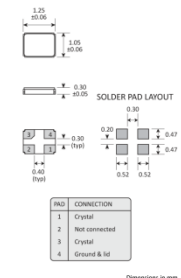
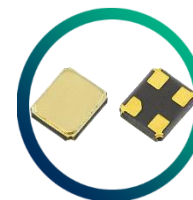
[Access the GSX-213 datasheet here](#)

GSX-113

Super-Miniature SM Crystal with Low ESR

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

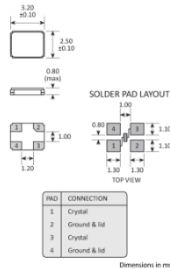
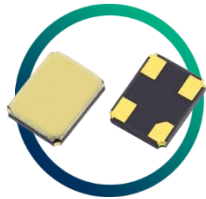
[Assess the GSX-113 datasheet here](#)



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

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

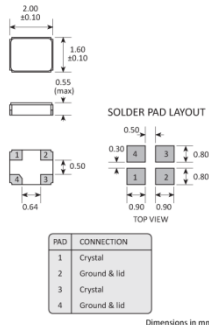
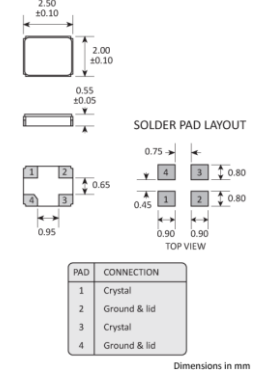
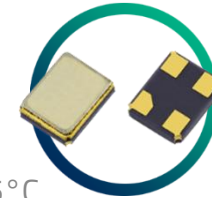
[Access the GRX-330 datasheet here](#)

GRX-320

Ultra-Miniature SM 12.0 ~ 40.0MHz Crystal

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

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



GRX-220

16.0 ~ 40.0MHz Ultra- Miniature SM Crystal

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

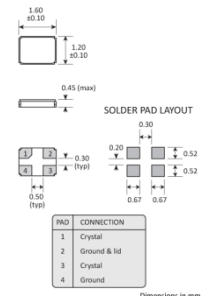
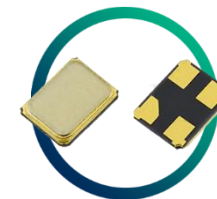
[Access the GRX-220 datasheet here](#)

GRX-210

Ultra- Miniature SM Crystal For Automotive

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

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



Surface Mount Quartz Crystals – High Frequency

Crystals for high frequency applications

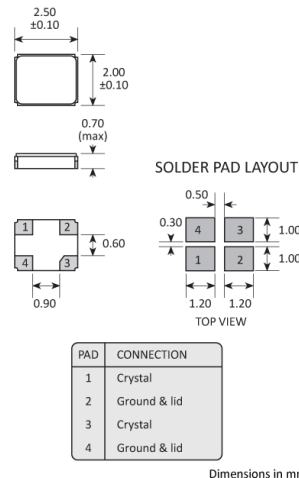
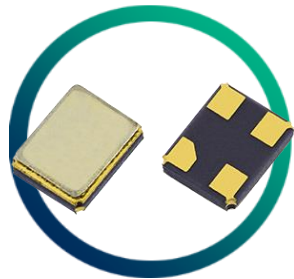
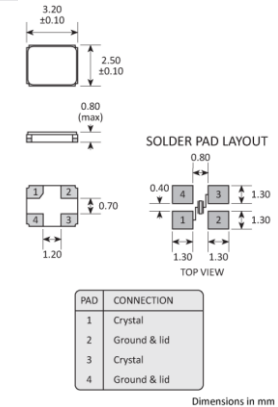
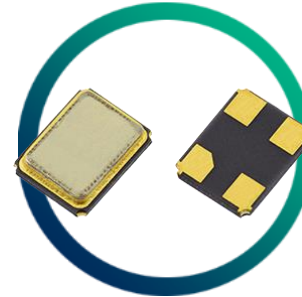
Packages as small as 2.0 x 1.6mm and exceptionally competitive pricing available

GSX-338

Ultra-Miniature High Frequency SM Crystal

Access the
GSX-338
datasheet
here

- Fundamental mode up to 315MHz
- Plasma etched inverted mesa process
- Wide pulling range (fundamental mode)
- 3.2 x 2.5mm footprint
- Small and medium quantities also available

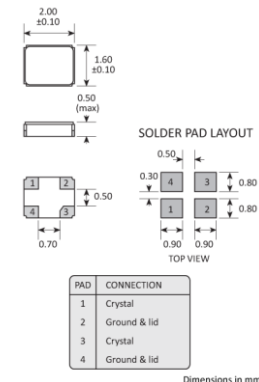


GSX-328

16.0 ~ 315MHz Miniature SM Crystal

Access the GSX-328
datasheet here

- Fundamental mode up to 315MHz
- Plasma etched inverted mesa process
- Wide pulling range (fundamental mode)
- 2.5 x 2.0mm footprint
- Small and medium quantities also available



GSX-228

20.0 ~ 315MHz Miniature SM Crystal

Access the GSX-228
datasheet here

- Fundamental mode up to 315MHz
- Plasma etched inverted mesa process
- Wide pulling range (fundamental mode)
- 2.0 x 1.6mm footprint
- Small and medium quantities also available

Surface Mount Quartz Crystals – Harsh Environments

High frequency crystals for harsh environments
Extreme stability and high shock and vibration resistance

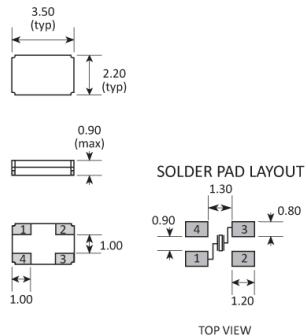
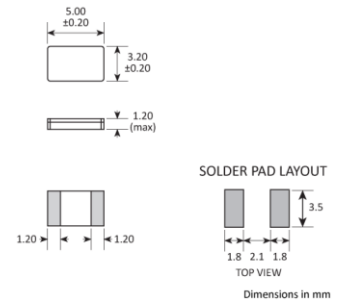


CC2A

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



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

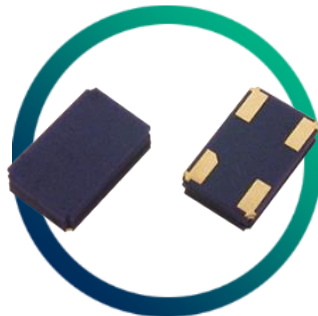
Dimensions in mm

CC6A

Miniature SM Crystal Suitable For Harsh Environments

[Access the CC6A range here](#)

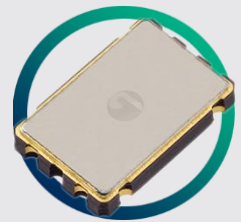
- Available from 16.0 ~ 70.0MHz
- High shock and vibration resistance
- 3.5 x 2.2mm footprint
- Wide range of frequencies available
- Extreme temperature ranges available, including as wide as -55 to +200°C



Surface Mount Oscillators– 32.768kHz

Low frequency oscillators for commercial and industrial applications

Wide supply voltage and operating temperature ranges available

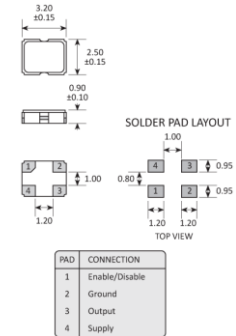
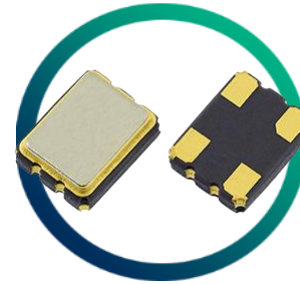


GFO-3301

SM Miniature Oscillator

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

Access the
GFO-3301
datasheet
here



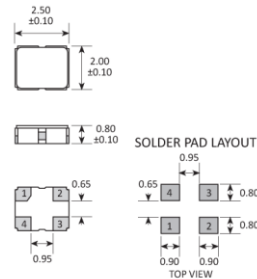
Dimensions in mm

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

Access the
GAO-3201
datasheet
here



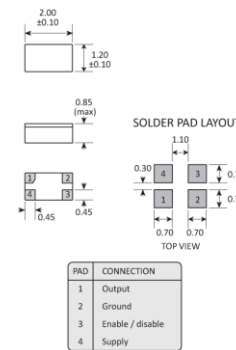
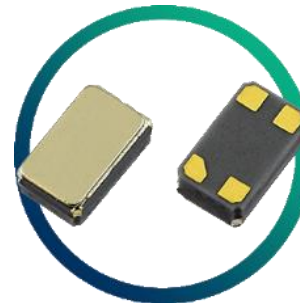
Dimensions in mm

Access the
OM7605C8
datasheet
here

OM7605C8

Ultra-miniature SM Oscillator

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

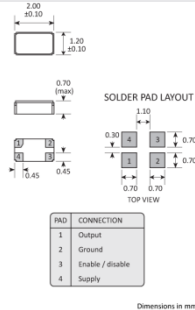


Dimensions in mm

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
- 3.2 x 1.5mm footprint
- High shock and vibration resistance
- Industrial and extended temperature ranges

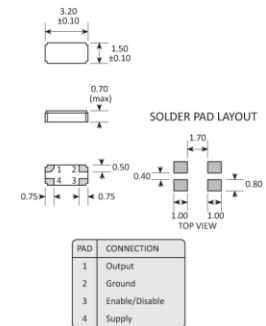
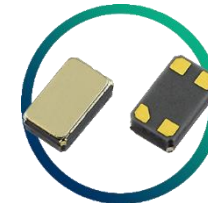
[Access the OM7604C7 datasheet here](#)

OM7605C8

Ultra-miniature 32.768kHz Oscillator for Automotive

- Ultra-low power consumption
- Tight frequency tolerance
- High shock and vibration resistance
- Industrial and extended temperature ranges
- 2.0 x 1.2mm footprint

[Access the OM7605C8 datasheet here](#)

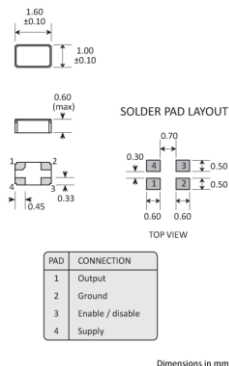
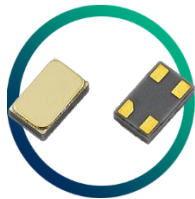


OM7605C9

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 OM7605C9 datasheet here](#)

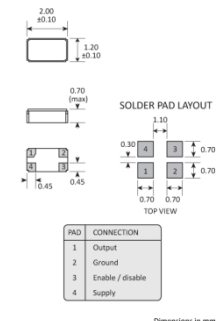
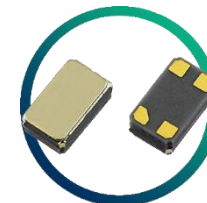


OM0100C8

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

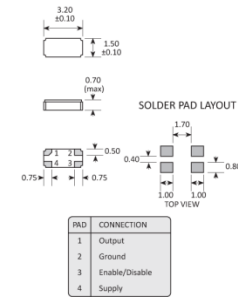
Wide supply voltage and operating temperature ranges available

OV7604C7

Miniature Fully Ceramic SM Oscillator

- 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

Access the
OV7604C7
datasheet
here



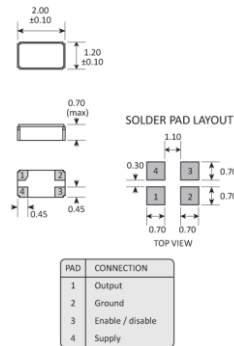
Dimensions in mm

OV7605C8

Miniature Fully Ceramic SM Oscillator

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

Access the
OV7605C8
datasheet
here



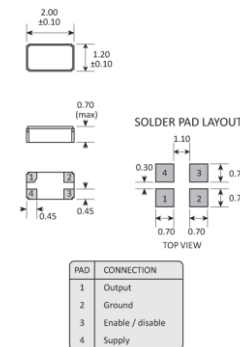
Dimensions in mm

Access the
OV0100C8
datasheet
here

OV0100C8

Miniature Fully Ceramic SM Oscillator

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



Dimensions in mm

Surface Mount Oscillators– Low Frequency

Low frequency oscillators for harsh environments

Wide supply voltage and operating temperature ranges available

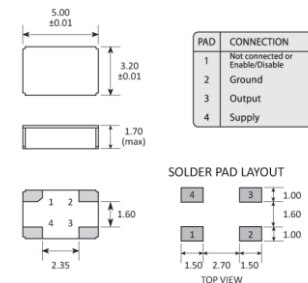
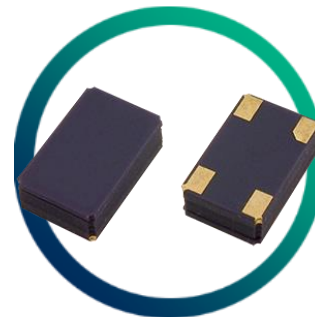


MCS02xxx

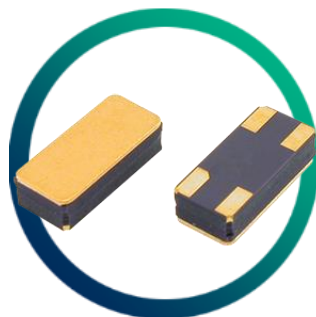
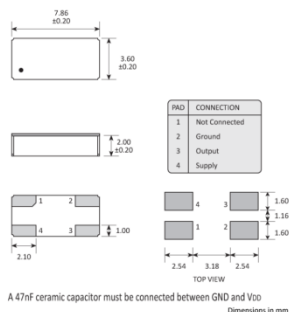
Miniature Fully Ceramic SM Oscillator

Access the MCS02xxx 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



MCS01xxx

Miniature Low Frequency SM Oscillator

Access the MCS01xxx 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



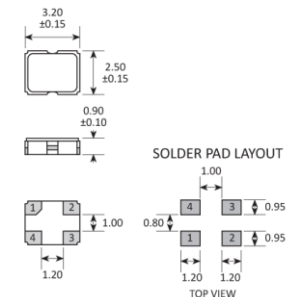
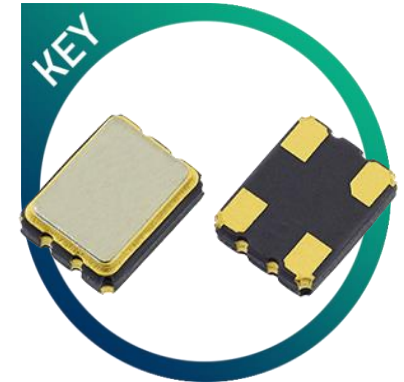
GXO-3301

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



PAD	CONNECTION
1	Enable/Disable
2	Ground
3	Output
4	Supply

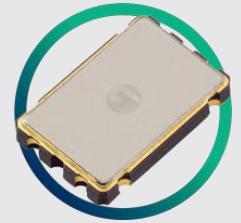
Dimensions in mm

[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

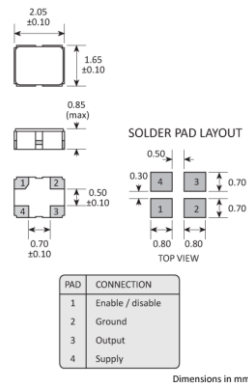
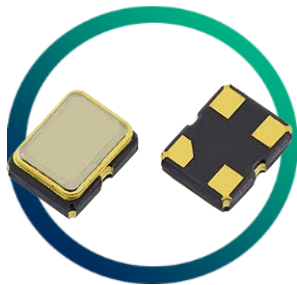
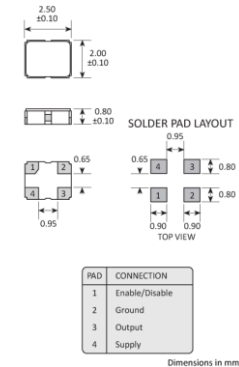
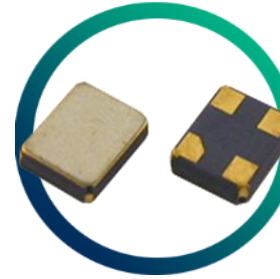


GXO-3201

Miniature CMOS Oscillator with Low Jitter

- 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

Access the
GXO-3201
family here



GXO-2201

Miniature CMOS Oscillator with Low Jitter

- 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

Access the
GXO-2201
family here

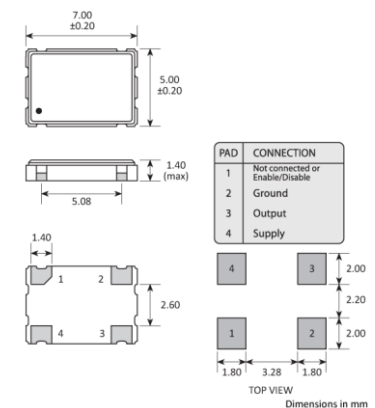
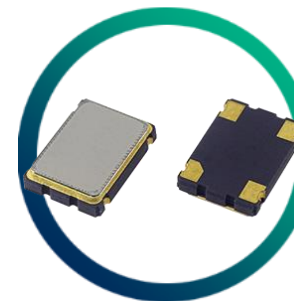
GXO-7531/U108

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

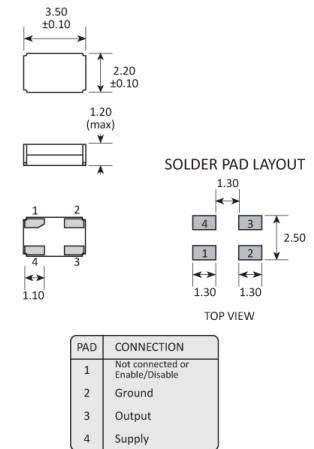


MCS06xxx

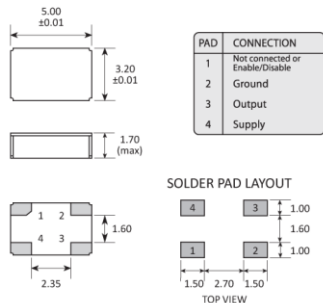
Miniature Low Jitter Oscillators For Harsh Environments

- Miniature 3.5 x 2.2mm package
- Available from 10.0kHz ~ 155MHz
- 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)

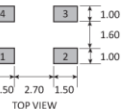
Access
the
MCS06xxx
range
here



Dimensions in mm

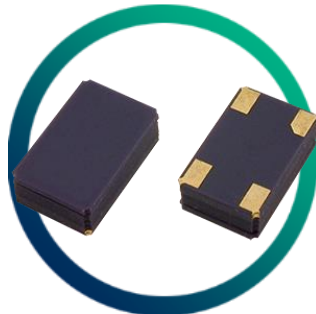


SOLDER PAD LAYOUT



TOP VIEW

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



MCS02xxx

Low Jitter Oscillators For Harsh Environments

- 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)

Access the
MCS02xxx
range here

Surface Mount Oscillators – Special Applications

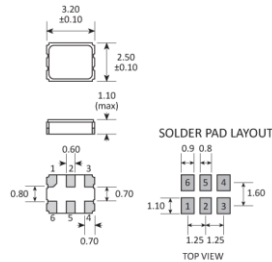
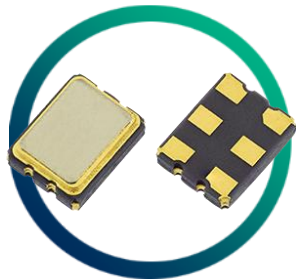
High frequency and tight stability oscillators

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

GXO-3300

High Frequency, Tight Stability Oscillator

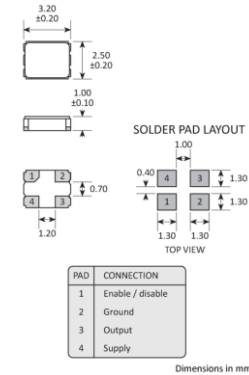
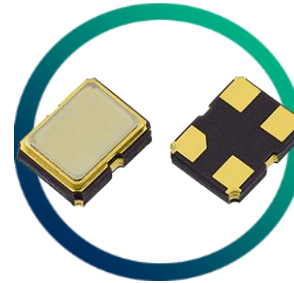
- Available from 10.0 ~ 160MHz
- High precision with tight stability options
- Wide operating temperature ranges
- High frequency fundamental - no multiplier
- Low & medium volumes also available
- Enable / disable tristate function



PAD	CONNECTION
1	Enable / disable
2	Not connected
3	Ground
4	Output 1 (Q)
5	Output 2 (Q̅)
6	Supply

Dimensions in mm

Access the
GXO-3300
family here



PAD	CONNECTION
1	Enable / disable
2	Ground
3	Output
4	Supply

Dimensions in mm

GXO-L31

LVDS Oscillator for High Speed Data Transfer

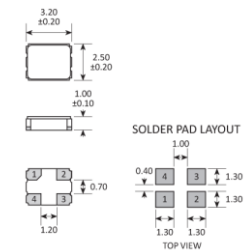
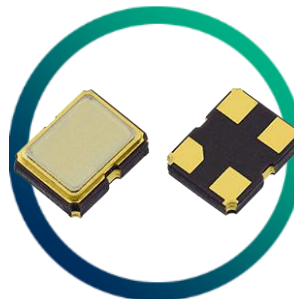
- Available from 40.0 ~ 250MHz
- Differential outputs
- RMS phase jitter 0.3ps
- Low current consumption (20mA max.)
- Multiplier-free design
- Enable / disable tristate function

Access the
GXO-3306
family here

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



PAD	CONNECTION
1	Enable / disable
2	Ground
3	Output
4	Supply

Dimensions in mm

Temperature Compensated Oscillators – TCXOs

Tight stability in miniature surface mount packages – Key Product

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



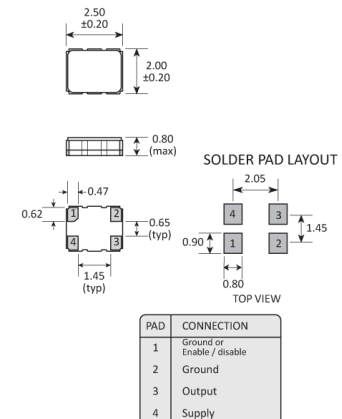
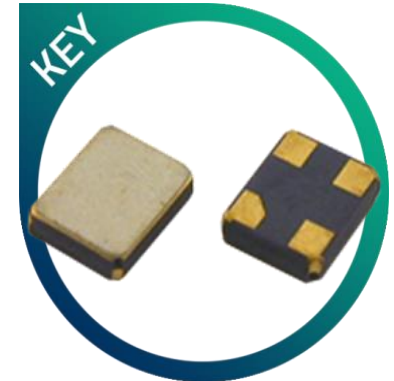
GTXO-253

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



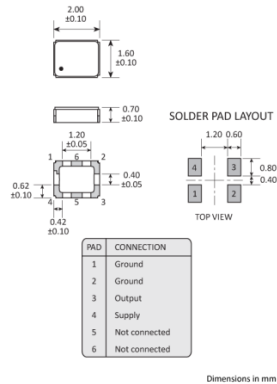
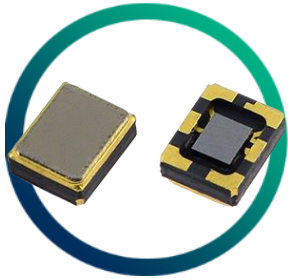
Dimensions in mm

[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

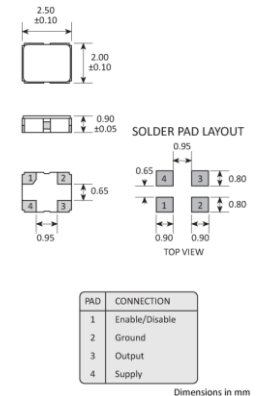
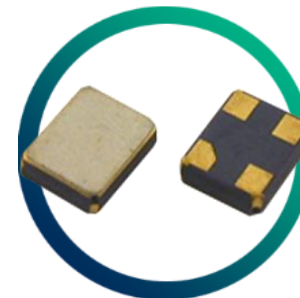
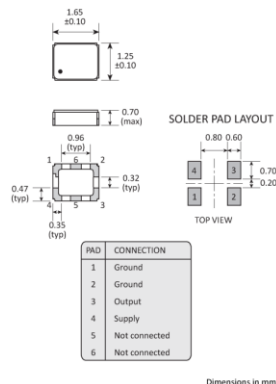
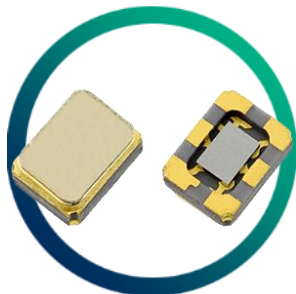
- Ideally suited for wearable applications
- Supply voltages from 1.8V ~ 3.6V
- Low power consumption
- Clipped sine output
- Excellent frequency stability
- Available from 10.0 ~ 70.0MHz

GTXO-C25

SM TCXO with excellent phase noise characteristics

Access the
GTXO-C25
family here

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



GTXO-163

Ultra-miniature 1.6 x 1.2mm Footprint TCXO

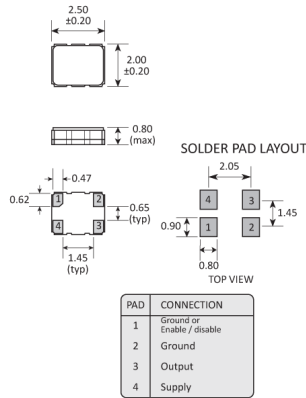
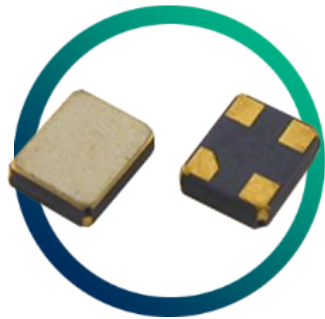
Access the
GTXO-163
family here

- 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



Dimensions in mm

GTXO-253

1.8V ~ 3.6V Ultra-tight Stability TCXO

- $\pm 0.5\text{ppm}$ 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

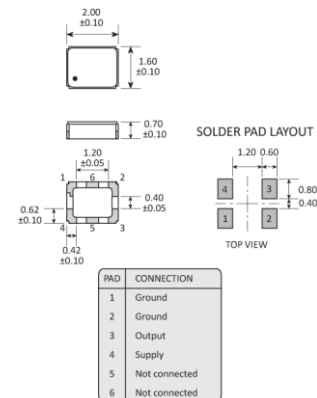
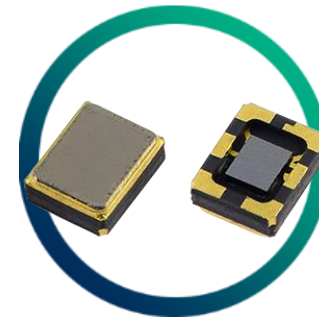
Access the
GTXO-253
family here

GTXO-203

Ultra-miniature 2.0 x 1.6mm Footprint TCXO

- 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

Access the
GTXO-203
family here



Dimensions in mm

Miniature SM packages with exceptional stability and pullability options



Dimensions in mm

Dimensions in mm

**Access the
GTXO-251V
datasheet
here**

Voltage Controlled Oscillators – VCXOs

Gain control with our wide range of VCXOs – Key Product

Wide frequency pullability and a range of operating supply voltages



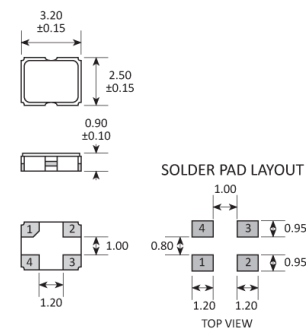
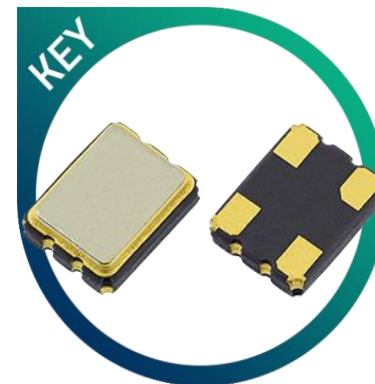
GVXO-331

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.

Key Points

- Low current consumption
- Three supply voltage options
- Miniature SM package
- Competitive pricing



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

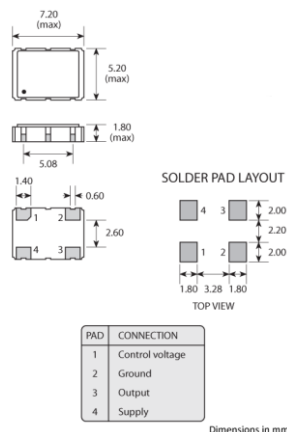
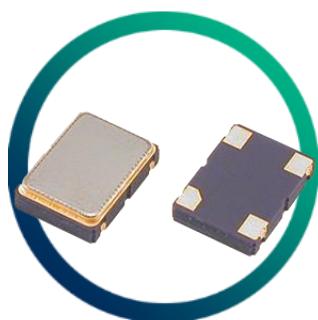
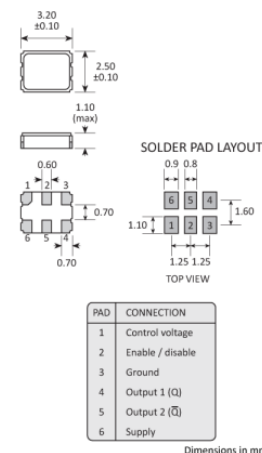
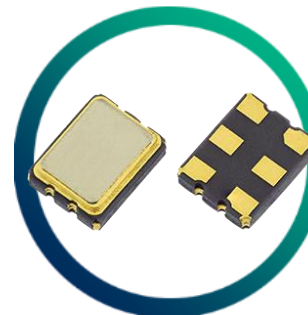
GVXO-L33L (E33L)

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



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

Access the
GVXO-753
family here

VCXOs – Harsh Environments

Gain control with our wide range of VCXOs

High shock and vibration resistance and extreme operating temperature ranges

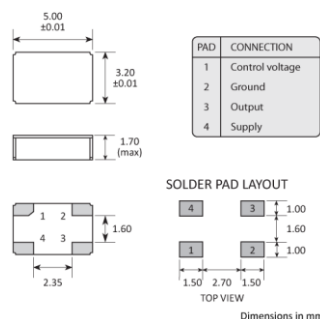
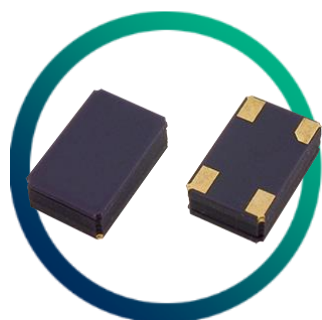
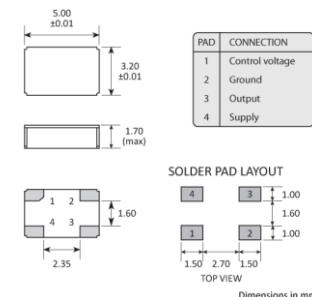
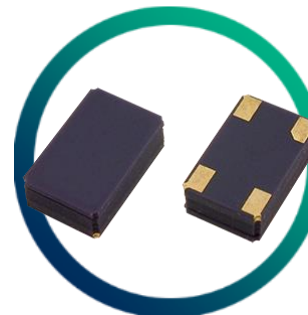


VCX02EV

CMOS VCXO for Harsh Environments

Access the
VCX02EV
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



VCX02HV

High Frequency VCXO with Military Temperature Range

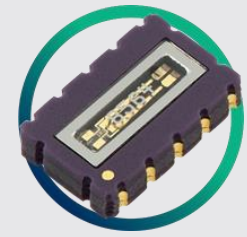
Access the
VCX02HV
here

- 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



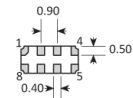
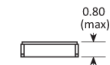
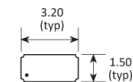
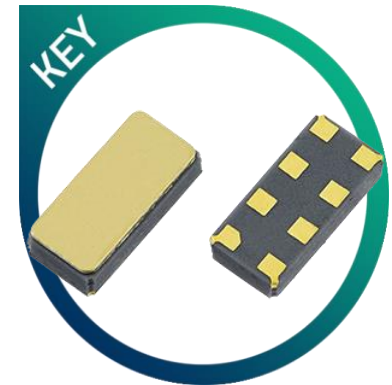
RV-3028-C7

Ultra-low Power I²C RTC Module

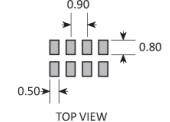
The RV-3028-C7 boasts ultra-low current consumption of only 40nA, ideal for many applications requiring low power components, including IoT, wearables, portable devices, healthcare, metering, industrial and automotive.

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



SOLDER PAD LAYOUT



TOP VIEW

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 (EVI)
4	Clock output enable (CLKOE)	8	Serial clock input (SCL)

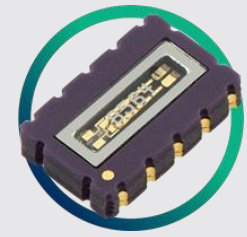
Dimensions in mm

Configure your RV3028C7 here

Real Time Clock Modules - RTCs

Offering Engineers an All-in-one Solution

Temperature compensated for maximum stability



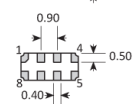
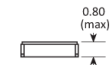
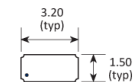
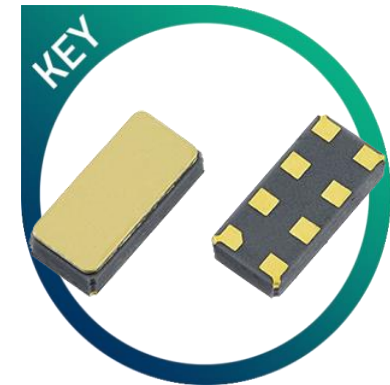
RV-8803-C7

RTC I²C bus High Accuracy

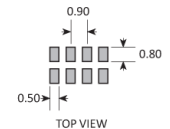
The RV-8803-C7 is a high accuracy, ultra-low power real-time-clock module with embedded 32.768kHz Crystal. High accuracy and high stability is achieved by a factory calibrated, temperature compensated DTCXO giving time-accuracy of $\pm 3.0\text{ppm}$ across the temperature range from -40°C to $+85^{\circ}\text{C}$.

Key Points

- High accuracy via digital temperature compensation
- Built-in crystal for adjustment-free operation
- Time stamp event input function
- I²C-Bus interface (up to 400kHz)
- AEC-Q200 compliant option



SOLDER PAD LAYOUT



TOP VIEW

PAD	CONNECTION	PAD	CONNECTION
1	Serial data (SDA)	5	Ground (VSS)
2	Frequency output (CLKOUT)	6	Interrupt output ($\overline{\text{INT}}$)
3	Supply voltage (VDD)	7	Event input (EVI)
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



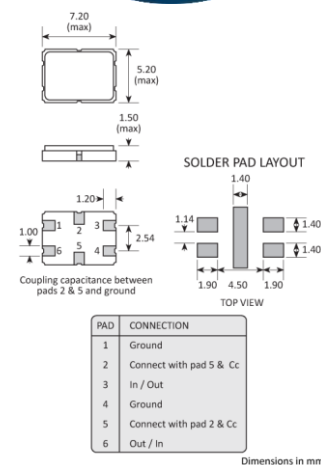
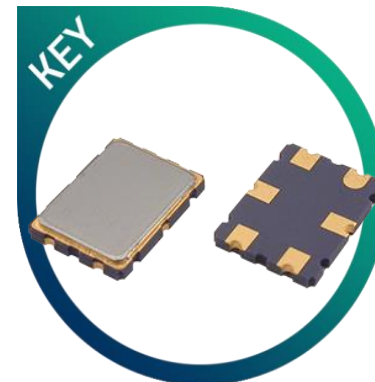
GSF-75

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.

Key Points

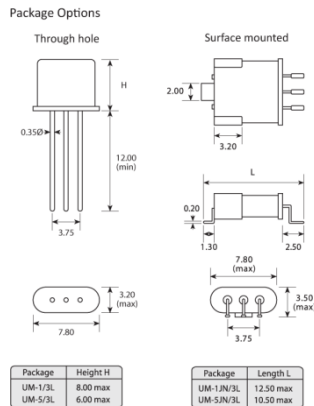
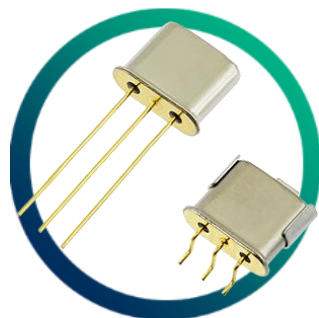
- 4-pole filter in one package
- Frequencies from 19.655 ~ 75.0MHz available
- Custom specifications available
- Miniature SM package



[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

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

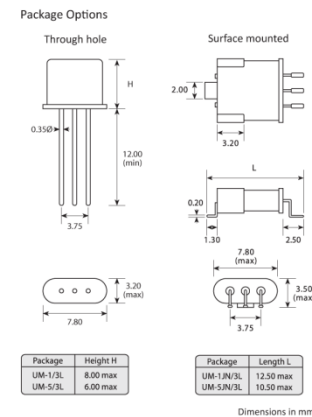
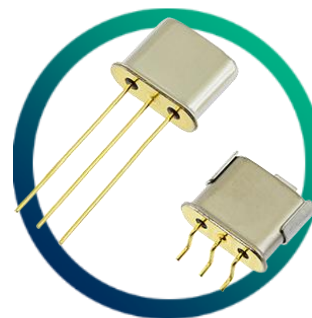
Access the
GMCF-45
range here

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

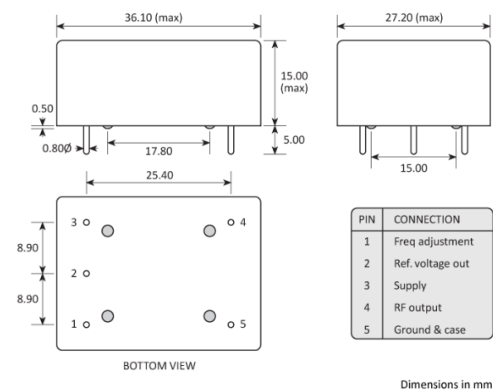
High Frequency OCXO with Ultra-low Phase Noise

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

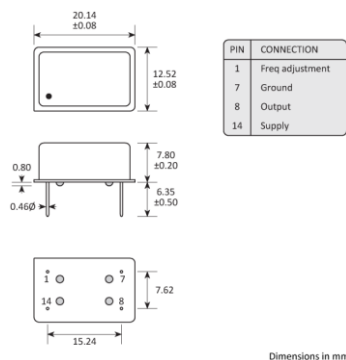
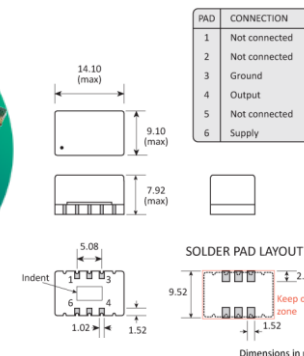
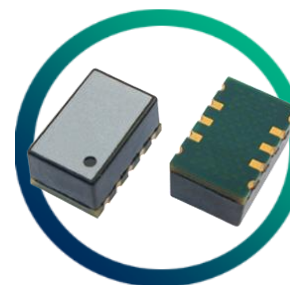


GOXO-149

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

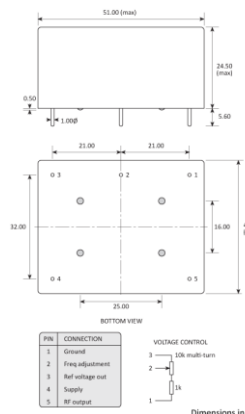


SCOCXOHS

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

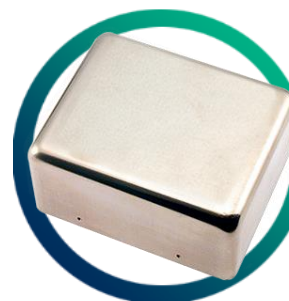


HCD660

High Performance OCXO with Sine Output

Access the
HCD660
datasheet
here

- Temperature stability down to ± 1 ppb
- Single 12V supply (12V ~ 30V optional)
- Standard European pin-out
- Available at frequencies from 5.0 ~ 20.0MHz



Surface Acoustic Wave Devices – SAWs

We have one of the widest available ranges of SAW products

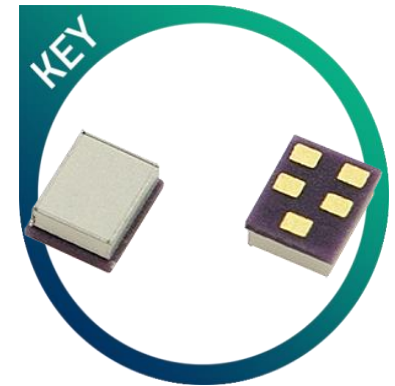
Powerful filtering up to 3.7GHz



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

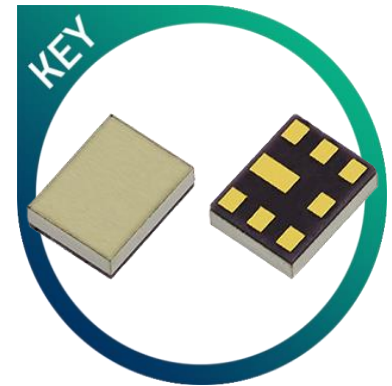
Powerful filtering up to 2.7GHz



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