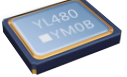


1.Crystal

1.1 Ceramic Packaging

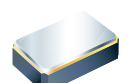
Series		Frequency Range	Description
1210 SMD RoHS Compliant Pb Free		24MHz~96MHz	- SMD hermetic sealed crystal units. - Ultra compact and thin (Thickness 0.3mm Max.). - Excellent environmental and mechanical endurances.
1612 SMD RoHS Compliant Pb Free		24MHz~96MHz	- SMD hermetic sealed crystal units. - Ultra compact and thin (Thickness 0.35mm Max.). - Excellent environmental and mechanical endurances.
2016 SMD RoHS Compliant Pb Free		16MHz~96MHz	- SMD seam sealed crystal units. - Excellent aging & hysteresis characteristics. - Excellent environmental and mechanical endurances.
2520 SMD RoHS Compliant Pb Free		12MHz~60MHz	- SMD seam sealed crystal units. - Wide temperature range is available. - Excellent environmental and mechanical endurances.
3225 SMD RoHS Compliant Pb Free		8.0MHz~60MHz	- SMD seam sealed crystal units. - Wide frequency range. - Excellent environmental and mechanical endurances.
5032 SMD RoHS Compliant Pb Free		8.0MHz~60MHz	- SMD seam sealed crystal units. - Multi-pads are available. - Excellent environmental and mechanical endurances.
6035 SMD RoHS Compliant Pb Free		8.0MHz~60MHz	- SMD seam sealed crystal units. - Excellent environmental and mechanical endurances.
7050 SMD RoHS Compliant Pb Free		6.0MHz~60MHz	- SMD seam sealed crystal units. - Multi-pads are available. - Excellent environmental and mechanical endurances.

1.2 HC-49 Series

Series		Frequency Range	Description
HC-49/S RoHS Compliant Pb Free		3.2MHz~37MHz	- Industrial standard package. - Low profile & cost effective. - Good stability & high reliability. - AT-cut crystal with hermetic resistance welding package.
HC-49/SM RoHS Compliant Pb Free		3.2MHz~37MHz	- Surface mount type crystal unit. - Highly mass production capability. - High frequency stability & low ESR (equivalent series resistance). - AT-cut crystal with hermetic resistance welding package.

HC-49/S-S RoHS Compliant Pb Free		3.2MHz~37MHz	- Industrial standard package. - Low profile & cost effective. - Good stability & high reliability. - AT-cut crystal with hermetic resistance welding package.
HC-49/SM-S RoHS Compliant Pb Free		3.2MHz~37MHz	- Surface mount type crystal unit. - Highly mass production capability. - High frequency stability & low ESR (equivalent series resistance). - AT-cut crystal with hermetic resistance welding package.

1.3 Tuning Fork

Series		Frequency Range	Description
YL206 RoHS Compliant Pb Free		32.768KHz (12.5pF)	- Cylinder type Tuning Fork. - For portable applications.
YL308 RoHS Compliant Pb Free		32.768KHz (12.5pF)	- Cylinder type Tuning Fork. - For portable applications.
1SQ327 RoHS Compliant Pb Free		32.768KHz (7pF/9pF/12.5pF)	- Ceramic surface mount package. - Applications in mobile phone,notebook and DSC.
2SQ327 RoHS Compliant Pb Free		32.768KHz (7pF/9pF/12.5pF)	- Ceramic surface mount package. - Applications in mobile phone,notebook and DSC.
3SQ327 RoHS Compliant Pb Free		32.768KHz (7pF/9pF/12.5pF)	- Ceramic packaged SMD Tuning Fork. - For portable and mobile applications.
7SQ327 RoHS Compliant Pb Free		32.768KHz (7pF/9pF/12.5pF)	- Molding type SMD Tuning Fork. - For portable and mobile applications.

2.Crystal Unit with Built-in Temperature Sensor

2.1 TSX

Series		Frequency Range	Description
1612 TSX RoHS Compliant Pb Free		19.2/26/38.4/52/76.8MHz	4 pads SMD seam sealed crystal unit with thermistor. - Ultra compact and thin (Thickness 0.65mm Max.). - Excellent frequency stability and hysteresis characteristics. - Excellent environmental and mechanical endurences.

2016 TSX RoHS Compliant Pb Free		19.2/26/38.4/52MHz	4 pads SMD seam sealed crystal unit with thermistor. - Available for reference clock of RF and GPS applications. - Excellent frequency stability and hysteresis characteristics. - Excellent environmental and mechanical endurences.
2520 TSX RoHS Compliant Pb Free		19.2/26MHz	4 pads SMD seam sealed crystal unit with thermistor. - Available for reference clock of RF and GPS applications. - Excellent frequency stability and hysteresis characteristics. - Excellent environmental and mechanical endurences.

3.TCXO

3.1 TCXO Type

Series		Frequency Range	Description
1612 TCXO RoHS Compliant Pb Free		13MHz~52MHz	- High stability, low power consumption. - Small footprint. - A temperature compensated crystal oscillator in a hermetically sealed surface mount package.
2016 TCXO RoHS Compliant Pb Free		13MHz~52MHz	- High stability, low power consumption. - Small footprint. - A temperature compensated crystal oscillator in a hermetically sealed surface mount package.
2520 TCXO RoHS Compliant Pb Free		13MHz~40MHz	- High stability, low power consumption. - Small footprint. - A temperature compensated crystal oscillator in a hermetically sealed surface mount package.
3225 TCXO RoHS Compliant Pb Free		12MHz~60MHz	- High precision TCXO for telecommunication and mobile phone applications. - Generic specification for custom design. - High stability with small package.

3.2 VC-TCXO Type

Series		Frequency Range	Description
1612 VC-TCXO RoHS Compliant Pb Free		13MHz~52MHz	- High stability, low power consumption. - Small footprint. - A temperature compensated crystal oscillator with voltage control function in a hermetically sealed surface mount package.
2016 VC-TCXO RoHS Compliant Pb Free		13MHz~40MHz	- High stability, low power consumption. - Small footprint. - A temperature compensated crystal oscillator with voltage control function in a hermetically sealed surface mount package.
2520 VC-TCXO RoHS Compliant Pb Free		13MHz~40MHz	- High stability, low power consumption. - Small footprint. - A temperature compensated crystal oscillator with voltage control function in a hermetically sealed surface mount package.
3225 VC-TCXO RoHS Compliant Pb Free		13MHz~40MHz	- High precision TCXO for telecommunication and mobile phone applications. - Generic specification for custom design. - High stability small package.

4.OSC

4.1 SMD OSC (CMOS Output)

Series		Frequency Range	Description
2016 SMD OSC RoHS Compliant Pb Free		1.0MHz~54MHz	- Fast lead time. - Crystal oscillator in a hermetically sealed ceramic package with a metal lid. - Compact size and light weight.
2520 SMD OSC RoHS Compliant Pb Free		1.0MHz~54MHz	- Fast lead time. - Crystal oscillator in a hermetically sealed ceramic package with a metal lid. - Compact size and light weight.
3225 SMD OSC RoHS Compliant Pb Free		1.0MHz~54MHz	- An increasing number of applications require the use of high temperature oscillators. - Full military testing available.
5032 SMD OSC RoHS Compliant Pb Free		1.0MHz~135MHz	- Generic specification. - Ultra-compact with dimensions of 5.0x3.2x1.1mm. - Spread spectrum surface mount crystal oscillator in a ceramic package.
7050 SMD OSC RoHS Compliant Pb Free		1.0MHz~250MHz	- Supports wide frequency range. - Excellent heat resistance and environmental characteristics and environmental endurance. - SMD seam sealing simple package crystal oscillators.

4.2 SMD OSC (LVPECL & LVDS)

Series		Frequency Range	Description
3225 PECL RoHS Compliant Pb Free		1.0MHz~800MHz	- For WLAN,XDSL,Ethernet,optic repeater equipment. - Full military testing available. - Excellent stability and tight reliability.
Series		Frequency Range	Description
5032 PECL RoHS Compliant Pb Free		1.0MHz~800MHz	- For WLAN,XDSL,Ethernet,optic repeater equipment. - Full military testing available. - Ultra low rms phase jitter in a small 5.0 x 3.2mm SMD package.
7050 PECL RoHS Compliant Pb Free		1.0MHz~800MHz	- Applications in telecommnetworking and communication equipment. - Excellent stability and tight reliability.
Series		Frequency Range	Description

5032 LVPECL RoHS Compliant Pb Free		10MHz~1400MHz	- Programable IC used. - Low jitter and excellent stability. - High frequency and tight reliability.
7050 LVPECL RoHS Compliant Pb Free		10MHz~1400MHz	- Programable IC used. - Low jitter and excellent stability. - High frequency and tight reliability.
Series		Frequency Range	Description
5032 LVDS RoHS Compliant Pb Free		10MHz~1500MHz	- Programable IC used. - Low jitter and excellent stability. - High frequency and tight reliability.
7050 LVDS RoHS Compliant Pb Free		10MHz~1500MHz	- Programable IC used. - Low jitter and excellent stability. - High frequency and tight reliability.

5.VCXO

5.1 SMD VCXO (CMOS Output)

Series		Frequency Range	Description
5032 VCXO RoHS Compliant Pb Free		1.544MHz~80MHz	- For communication equipment. - Ceramic package with a seam sealed metal lidhermetically sealed. - General purpose VCXO with good performance at an affordable price.
7050 VCXO RoHS Compliant Pb Free		1.544MHz~80MHz	- Standard 7.0 x 5.0mm voltage controlled crystal oscillator. - For ADSL, Set-top Box, and repeater applications. - Full military testing available.

5.2 SMD VCXO (Differential Output:LVPECL)

Series		Frequency Range	Description
3225 LVPECL VCXO RoHS Compliant Pb Free		12MHz~800MHz	- For WLAN,xDSL,Ethernet,and repeater applications. - LVPECL output Voltage Controlled Crystal Oscillator. - Providing wide frequency range with PLL technology.
5032 LVPECL VCXO RoHS Compliant Pb Free		12MHz~800MHz	- For WLAN,xDSL,Ethernet,and repeater applications. - LVPECL output Voltage Controlled Crystal Oscillator. - Providing wide frequency range with PLL technology.
7050 LVPECL VCXO RoHS Compliant Pb Free		12MHz~800MHz	- For WLAN,xDSL,Ethernet,and repeater applications. - LVPECL output Voltage Controlled Crystal Oscillator. - Providing wide frequency range with PLL technology.

6. Automotive Products

6.1 Automotive (AEC - Q200)

Series	Photo	Type	Dimension	Frequency Range	Vibration Mode	Grad	Application
9Y RoHS Compliant Pb Free		Seam 4 Pads	2.0*1.6 mm	16~60MHz	Fund.	G1	Info, Conn, Cluster, BCM, PEPS, ADAS, TPMS, BMS
2Y RoHS Compliant Pb Free		Seam 4 Pads	2.5*2.0 mm	16~60MHz	Fund.	G1	Info, Conn, Cluster, BCM, PEPS, ADAS, TPMS, BMS
3Y RoHS Compliant Pb Free		Seam 4 Pads	3.2*2.5mm	8~60MHz	Fund.	G1	Info, Conn, Cluster, BCM, PEPS, ADAS, TPMS, BMS
Series	Photo	Type	Dimension	Frequency Range	Vibration Mode	Grad	Application
9K RoHS Compliant Pb Free		TSX 4 Pads	2.0*1.6 mm	26/38.4MHz	Fund.	G1	Connectivity

6.2 Automotive (AEC - Q100)

Series	Photo	Type	Dimension	Frequency Range	Output Type	Grad	Application
9L RoHS Compliant Pb Free		Seam 4 Pads	2.0*1.6 mm	1~170 32.768KHz	CMOS	G1	Info, Conn, Cluster, BCM, PEPS, ADAS, TPMS, BMS
2L RoHS Compliant Pb Free		Seam 4 Pads	2.5*2.0 mm	1~170 32.768KHz	CMOS	G1	Info, Conn, Cluster, BCM, PEPS, ADAS, TPMS, BMS
3L RoHS Compliant Pb Free		Seam 4 Pads	3.2*2.5mm	1~170 32.768KHz	CMOS	G1	Info, Conn, Cluster, BCM, PEPS, ADAS, TPMS, BMS