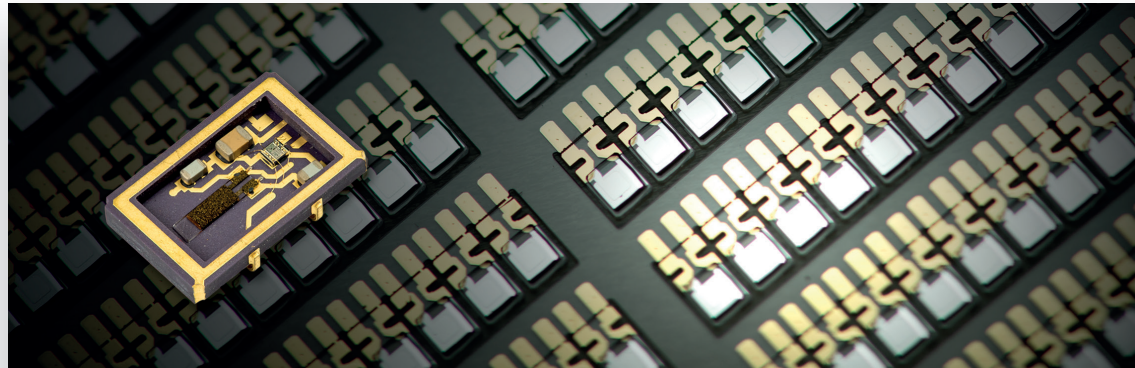


Micro Crystal








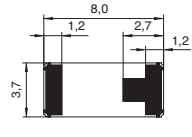
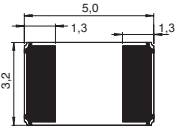
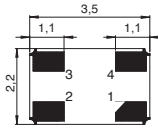
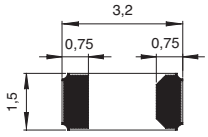
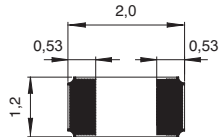
MHz Oscillators

MHz AT-Cut Crystals



Short Form Catalog 2021

SMT Ceramic AT-CUT Crystal 100% Lead Free

Type CC1A / F	Type CC2A	Type CC6A / F	Type CC7A	Type CC8A / CM8A
Package 8 x 3.7 mm	Package 5 x 3.2 mm	Package 3.5 x 2.2 mm	Package 3.2 x 1.5 mm	Package 2 x 1.2 mm
		 4 or 2 pads		 2 or 4 pads
 h = 1.75 mm	 h = 1.2 mm	 h = 1.0 mm	 h = 0.75 mm	 h = 0.60 mm

Standard (Fundamental Mode)

Product Type	Number of pads	Frequency MHz	Temp. Range °C	R _s typ. in Ω @ Fmin - Fmax	C ₁ typ. in fF @ Fmin - Fmax	C ₀ typ. in pF @ Fmin - Fmax	Key Features / Applications
CC1A-T1A	2	8 - 30	-55 to +125	60 - 30	4 - 11	2.0 - 4.0	
CC1F-T1A	2	30 - 250	-55 to +125	35 - 15	4 - 7	2.0 - 4.0	Inverted mesa crystal
CC2A-T1A	2	12 - 70	-55 to +125	60 - 10	3 - 12	2.0 - 5.0	
CC6A-T1D	4	16 - 70	-55 to +125	60 - 20	2 - 5	1.5 - 3.0	
CC6F-T1A	2	70 - 250	-55 to +125	30 - 15	5 - 6	2.4 - 3.2	Inverted mesa crystal
CC6F-T1A F	2	70 - 200	-55 to +125	35 - 15	3 - 3	2.4 - 3.2	Inverted mesa crystal Filter applications - low spurious
CC7A-T1A	2	20 - 50	-55 to +125	40 - 25	2 - 2	0.7 - 0.7	
CC8A-T1A	2	24 - 50	-55 to +125	40 - 20	1 - 1	0.7 - 0.7	Smallest package
CM8A-T1D	4	24 - 50	-55 to +125	40 - 20	1 - 1	0.7 - 0.7	Smallest package
CC7A-T1A Medical	2	14 - 50	0 to +55	60 - 25	2 - 2	0.7 - 0.7	Medical implantable
CC8A-T1A Medical	2	24 - 50	0 to +55	40 - 20	1 - 1	0.7 - 0.7	Medical implantable

High Temperature / Harsh Environment (Fundamental Mode)

CC1A-T1A H	2	8 - 24	-55 to +200	100 - 50	4 - 9	2.0 - 3.2	
CC2A-T1A H	2	14 - 40	-55 to +200	70 - 40	5 - 10	2.5 - 4.0	
CC6A-T1D H	4	16 - 40	-55 to +200	80 - 50	2 - 4	1.5 - 2.5	

* See data sheet for additional details (www.microcrystal.com)

Applications

Customer-specific applications such as:



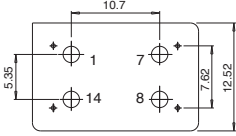
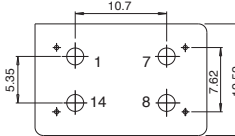
- Filters
- Telemetry
- Animal Tracking
- Optical Network
- Avionics / Aerospace
- Radio Communication
- TCXO, VCTCXO, VCXO
- Downhole and Well Drilling
- Healthcare, Medical and Medical Implantable

Description

- This SMT quartz crystal in ceramic package has been specially designed for surface mount using vapor phase soldering, epoxy assembling technology and standard reflow soldering.
- All quartz crystals are in fundamental mode frequency range up to 250 MHz.
- Specially designed for harsh environmental shock and vibration
- Extremely wide operating temperature ranges up to 200°C, with a ultra low internal moisture level.



OCXO DIL 14 Package RoHS

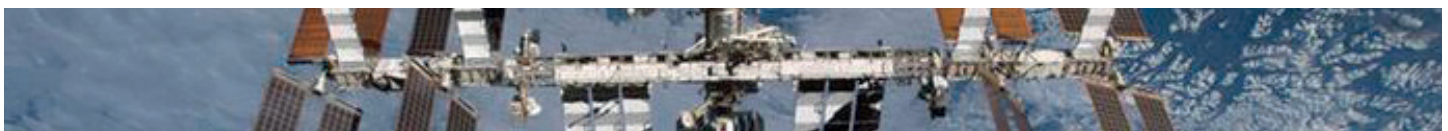
Type SCOCXO	Type OCXO
Package DIL14 20 x 12 mm	Package DIL14 20 x 12 mm
	
 <p style="text-align: center;">h = 7.8 mm</p>	 <p style="text-align: center;">h = 7.8 mm</p>

Standard							
Product Type	Package size	Frequency (MHz)	Supply Voltage	Temperature Range	Output	Thermal	Features / Application
SCOCXOL	DIL14	up to 54	3.3 / 5 / 12 V	-55 to +85°C	HC-MOS	From ±25 ppb	Low Consumption
SCOCXOHS	DIL14	10 to 120	3.3 / 5 V	-40 to +85°C	Sine Wave	From ±25 ppb	Very Low Phase Noise
SCOCXOH	DIL14	10 to 120	3.3 / 5 V	-40 to +85°C	HC-MOS	From ±25 ppb	Very Low Phase Noise
SCOCXO	DIL14	up to 54	3.3 / 5 / 12 V	-55 to +85°C	HC-MOS	From ±25 ppb	High Stability
SCOCXOS	DIL14	10 to 54	3.3 / 5 / 12 V	-40 to +85°C	Sine Wave	From ±25 ppb	High Stability
OCXOVT-SAR	DIL14	up to 54	5 V	-40 to +55°C	Sine Wave	NS	Cospas Sarsat
OCXOST	DIL14	up to 54	3.3 / 5 V	-40 to +85°C	HC-MOS	±4.6 ppm overall	Stratum 3
OCXOS	DIL14	10 to 54	3.3 / 5 / 12 V	-40 to +85°C	Sine Wave	From ±50 ppb	
OCXO	DIL14	up to 54	3.3 / 5 / 12 V	-55 to +85°C	HC-MOS	From ±50 ppb	





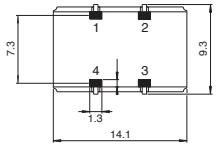
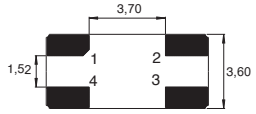
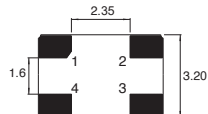
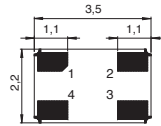
* See data sheet for additional details (www.microcrystal.com)

Applications
<ul style="list-style-type: none"> Airborne Equipment Telecom Transmission Sonet / SDH / DWD / FDM/36 / WINMAX Battery Operated Systems Instrumentation Radio Transceiver Cospas Sarsat Stratum 3

Description
<ul style="list-style-type: none"> - In an OCXO, the crystal and other temperature sensitive components are placed in an ovenized enclosure where a temperature sensor, a heating element, and the oven control circuitry provide a temperature stabilized environment, thus isolating the crystal from external temperature variations. Keeping the crystal at a constant temperature greatly improves the oscillator performance and frequency accuracy. - Frequency range up to 120 MHz - OCXO's are high shock and vibration resistant, ultra low power consumption & low aging. - Operating temperature range from -55°C to +85°C.



SMT Ceramic Clock Oscillators and VCXO 100% Lead Free

Type MCSO	Type MCSO1	Type MCSO2	Type MCSO6
Package 14 x 9 mm	Package 8 x 3.6 mm	Package 5 x 3.2 mm	Package 3.2 x 2.5 mm
			
 h = 2.4 mm	 h = 2 mm	 h = 1.6 mm	 h = 1.2 mm

Standard

Product Type	Package size (mm)	Frequency	Supply Voltage	Temperature Range	Features	Remark
MCSO	14 x 9	10 kHz to 225 MHz	2.5 / 3.3 / 5 V	-55 to +125°C		
MCSOF	14 x 9	10 kHz to 225 MHz	2.5 / 3.3 V	-55 to +125°C	Low Jitter	
MCSO1	8 x 3.6	10 kHz to 225 MHz	1.8 / 2.5 / 3.3 / 5 V	-55 to +125°C		
MCSO1F	8 x 3.6	10 kHz to 225 MHz	1.8 / 2.5 / 3.3 V	-55 to +125°C	Low Jitter	
MCSO2	5 x 3.2	10 kHz to 225 MHz	1.8 / 2.5 / 3.3 / 5 V	-55 to +125°C		
MCSO2F	5 x 3.2	10 kHz to 225 MHz	1.8 / 2.5 / 3.3 V	-55 to +125°C	Low Jitter	
MCSO6	3.2 x 2.5	10 kHz to 155 MHz	1.8 / 2.5 / 3.3 / 5 V	-55 to +125°C		
MCSO6F	3.2 x 2.5	10 kHz to 155 MHz	1.8 / 2.5 / 3.3 V	-55 to +125°C	Low Jitter	

High Temperature

MCSO1E	8 x 3.6	10 kHz to 100 MHz	2.5 / 3.3 / 5 V	-55 to +210°C	Very Harsh Environment	High Temperature
MCSO1EL	8 x 3.6	32,768 kHz	2.5 / 3.3 / 5 V	-55 to +200°C	Consumption = 100 µA	Very Harsh Environment
MCSO2E	5 x 3.2	10 kHz to 100 MHz	2.5 / 3.3 / 5 V	-55 to +210°C	Very Harsh Environment	High Temperature
MCSO2EL	5 x 3.2	32,768 kHz	2.5 / 3.3 / 5 V	-55 to +200°C	Consumption = 100 µA	High Temperature
MCSO2EU	5 x 3.2	32,768 kHz	2.5 / 3.3 V	-55 to +175°C	Consumption = 20 µA	High Temperature
MCSO6E	3.2 x 2.5	10 kHz to 60 MHz	2.5 / 3.3 / 5 V	-55 to +210°C	Very Harsh Environment	High Temperature

VCXO

VCXO2E	5 x 3.2	5 to 40 MHz	3.3 V	-55 to +210°C	APR ±30 to ±130 ppm	High Temperature
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* See data sheet for additional details (www.microcrystal.com)

Applications

Products are screened and specially tested

- Avionics / Aerospace
- Airborne Equipment
- Downhole and Well Drilling
- Geothermal Equipment
- Fire fighter Equipment

Description

- This SMT oscillator in ceramic package has been specially designed for surface mount using vapor phase soldering, epoxy assembling technology and standard reflow soldering.
- All oscillators with quartz crystal in fundamental mode and a frequency range of up to 225 MHz.
- Specially designed for harsh environmental shock and vibration.
- Extremely wide operating temperature ranges up to 210°C, with a ultra low internal moisture level.
- The stability is specified during 10 years.

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