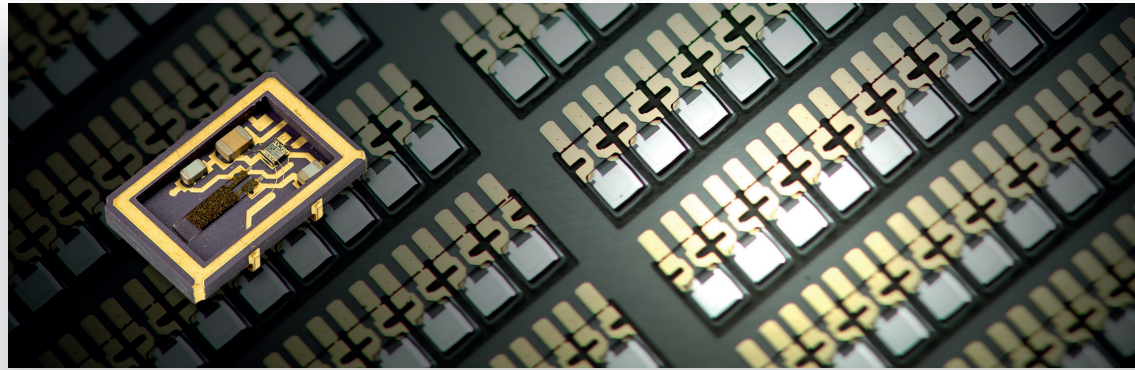
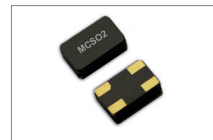


Micro Crystal








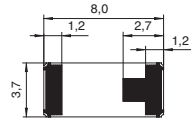
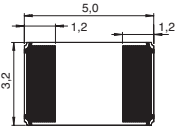
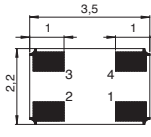
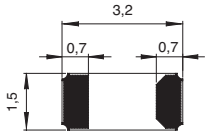
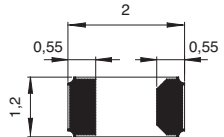
MHz Oscillators

MHz AT-Cut Crystals



Short Form Catalog 2017

SMT Ceramic AT-CUT Crystal 100% Lead Free

Type CC1A / F	Type CC2A	Type CC6A / F	Type CC7A	Type CC8A
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
		 2 or 4 pads available		
 h=1.75 mm	 h=1.2 mm	 h=0.9 mm	 h=0.9 mm	 h=0.63 mm

Standard							
Product Type	Package size (mm)	Frequency (MHz)	Temperature Range	Rs typ Resistance at Fmin and Fmax	C1 typ Capacitance at Fmin and Fmax	C0 typ Capacitance at Fmin and Fmax	Features
CC1A-T1A	8 x 3.7	8-30	-55 to 125°C	60 to 30 Ω	4 to 11 fF	2 to 4 pF	
CC1F-T1A	8 x 3.7	30-250	-55 to 125°C	50 to 15 Ω	4 to 6 fF	2.4 to 6 pF	
CC2A-T1A	5 x 3.2	12-70	-55 to 125°C	60 to 10 Ω	3 to 12 fF	2 to 5 pF	
CC6A-T1A	3.5 x 2.2	16-70	-55 to 125°C	60 to 20 Ω	2 to 5 fF	1.5 to 3 pF	
CC6F-T1A	3.5 x 2.2	70-250	-55 to 125°C	50 to 15 Ω	2.7 to 5.6 fF	2.4 to 2.9 pF	
CC6F-T1AF	3.5 x 2.2	70-200	-55 to 125°C	50 to 35 Ω	2 to 3 fF	2.4 to 2.9 pF	Filter Application Low Spurious Level
CC7A-T1A	3.2 x 1.5	24-50	-55 to 125°C	100 to 50 Ω	1 to 3 fF	0.5 to 2 pF	Medical Implantable
CC8A-T1A	2 x 1.2	24-50	-55 to 125°C	120 to 50 Ω	1 to 3 fF	0.5 to 2 pF	Medical Implantable



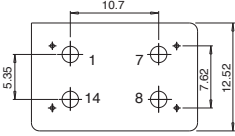
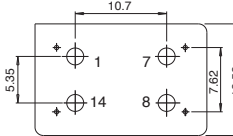
High Temperature							
Product Type	Package size (mm)	Frequency (MHz)	Temperature Range	Rs typ Resistance at Fmin and Fmax	C1 typ Capacitance at Fmin and Fmax	C0 typ Capacitance at Fmin and Fmax	Features
CC1A-T1AH	8 x 3.7	8-24	-55 to 200°C	100 to 50 Ω	4 to 9 fF	2 to 3.2 pF	Very Harsh Environment
CC2A-T1AH	5 x 3.2	12-40	-55 to 200°C	70 to 40 Ω	5 to 10 fF	2,5 to 4 pF	Very Harsh Environment
CC6A-T1AH	3.5 x 2.2	16-40	-55 to 200°C	80 to 50 Ω	2 to 9 fF	1,5 to 3 pF	Very Harsh Environment

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

Applications	Description
<p>Products are screened and specially tested</p> <ul style="list-style-type: none"> Medical Implantable Health Care and Medical Airborne Equipment Optical Network Radio Communications Telemetry Down Hole and Well Drilling 	<ul style="list-style-type: none"> - 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

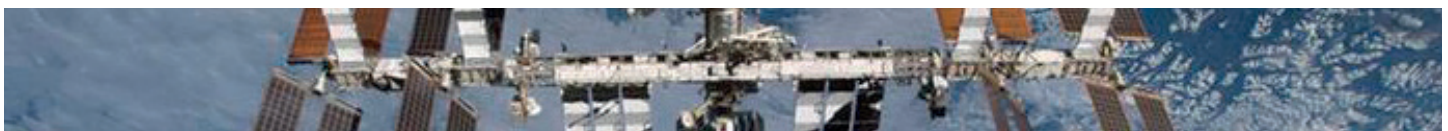
Type SCOCXO	Type OCXO
Package DIL14 20 x 12 mm	Package DIL14 20 x 12 mm
	
 <p style="text-align: center;">h=7.8 mm</p>	 <p style="text-align: center;">h=7.8 mm</p>

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	-55 to 85°C	Sine Wave	From +/- 25 ppb	High Stability
OCXOVT-SAR	DIL14	10 to 40	3.3 / 5 / 12 V	-40 to 85°C	Sine Wave	NS	Cospas Sarsat
OCXOST	DIL14	up to 54	3.3 / 5 / 12 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	





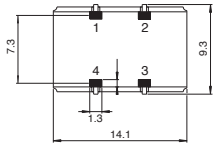
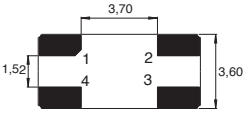
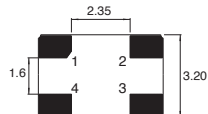
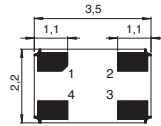
* See data sheet for additional details (www.microcrystal.com)

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 3.7 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 3.7	10 kHz to 225 MHz	1.8 / 2.5 / 3.3 / 5 V	-55 to 125°C		
MCSO1F	8 x 3.7	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	2.5 / 3.3 / 5 V	-55 to 125°C		
MCSO6F	3.2 x 2.5	10 kHz to 155 MHz	2.5 / 3.3 V	-55 to 125°C	Low Jitter	

High Temperature

MCSO1E	8 x 3.7	10 kHz to 100 MHz	2.5 / 3.3 / 5 V	-55 to 210°C	Very Harsh Environment	High Temperature
MCSO1EL	8 x 3.7	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
- Airborne Equipment
- Down Hole 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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