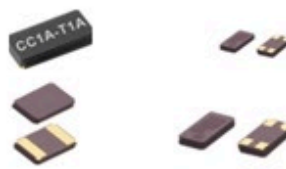


Frequency source for High Temperature Applications



		Product Type					
		Quart Crystal			Clock Oscillator		
		NEW	NEW	NEW		NEW	NEW
		CC1A-T1AH	CC2A-T1AH	CC6A-T1AH	MCSO1E	MCSO2E	MCSO6E
Dimensions L x W Height	Typ [mm]	8.0 x 3.7 1.75	5.0 x 3.2 1.2	3.5 x 2.2 0.9	8.1 x 3.7 2.0	5.0 x 3.2 1.6	3.5 x 2.2 1.2
Frequency Range	F _L	8 - 24MHz	10 - 40MHz	16 - 40MHz	32 KHz to 20 MHz		
Frequency Range [H]	F _L	NA			H : >20 MHz to 100 MHz		

		Operating Temp. Range	
OTR		D: -55°C to +175°C G: -55°C to +200°C	D: -55°C to +175°C G: -55°C to +210°C

Overall Frequency Stability Including		Over Temperature Range, Adjustment @25°C, Aging, Supply Voltage & Load Change	
Freq. vs. TRange D ⁴⁾	ΔF/F	≤ ± 150ppm	≤ ± 300ppm
Freq. vs. TRange G ⁴⁾	ΔF/F	≤ ± 250ppm	≤ ± 400ppm

Frequency Example	F _L	12.0MHz	12.0MHz	20MHz
Std Load Capacitance ¹⁾	C _L	20pF	20	20pF
Freq. Tol. @ 25°C ²⁾	ΔF/F	< ±50 ppm		
Series Res. vs OTR	R _S	< 120Ω	< 150Ω	< 120Ω
Motional Cap. Typ.	C ₁	7.0 fF	4.0 fF	3.0 fF
Static Cap. Typ.	C ₀	2.5 pF	2.0 pF	2.0 pF
Drive Level Typ	P	0.1W		

Supply Voltage [V _{dd}]
5.0 V ± 5%
V : 3.3 V ± 5%
W : 2.5 V ± 5%
³⁾ Input Current from 0.3 to 50mA
Output Signal
40/60 @V _{dd} /1
Rise & Fall Time < 7ns
Rise & Fall Time H : < 3ns
Start up time < 5ms
RMS Jitter < 30ps
Opt 1 <u>E</u> nable / <u>D</u> isable

- 1) Other load capacitances on request
- 2) Tighter and frequency tolerances on request
- 3) Input Current depend of the Supply Voltage and Frequency, see detail specification
- 4) Tighter frequency tolerances on request

Environment	
Storage Temperature	-55°C to +125°C
Vibration resistance	10 to 2000Hz / 40g
Shock resistance	10000g, 0.3ms 1/2 sine

For detail specification : www.microcrystal.com OEM specification: yves.schwab@microcrystal.ch

Quartz Crystal Ordering Information Example

Crystal Type CC6A -T1AH **Frequency F_L** 16 MHz **Load C_L Capacitance** 10pF **Frequency Tolerance** ± 50ppm **Temperature Range** TC
 D = -55 to +175°C
 G = -55 to +200°C

Package size [mm]
 1 = 8.0 x 3.7
 2 = 5.0 x 3.2
 6 = 3.5 x 2.2

Clock Oscillator Ordering Information Example

Oscillator Type MCSO2EHW - G **Output Frequency** 40.96MHz **Option 1** E/D **Customer Spec #** XXXX02

Package size [mm]
 1 = 8.0 x 3.7
 2 = 5.0 x 3.2
 6 = 3.5 x 2.2

Temperature Range
 D = -55 to +175°C
 G = -55 to +210°C
 X = Custom Trange

Supply Voltage
 = 5.0V ± 5%
 V = 3.3V ± 5%
 W = 2.5V ± 5%
 Z = 1.8V ± 5% (Consult factory)

E= High Temp.
 H= Frequency > 20MHz
 L= MCSO1EL Low consumption 32.768KHz