

# Oscillators for High Temperature Applications



Product Type								
			SC-Cut	SC-Cut			< 20uA	VCXOE
			NEW	NEW			NEW	NEW
MCS01E	MCS02E	MCS06E	MCS01ES	MCS01ELS	MCS01EL	MCS02EL	MCS02EU	VCXOE
8.1 x 3.7	5.0 x 3.2	3.5 x 2.2	8.1 x 3.7	8.1 x 3.7	8.1 x 3.7	5.0 x 3.2	5.0 x 3.2	5.0 x 3.2
2.0	1.6	1.2	2.0	2.0	2.0	1.6	1.6	1.6
32 KHz to 20 MHz				32.768 KHz				5 - 40MHz
H : >20 MHz to 100 MHz								
Input Current <sup>1)</sup>			I <sub>dd</sub>					
0.3 to 30mA			< 110µA @ 3.3V		< 20µA		2 to 20mA	
Supply Voltage ± 5%			V <sub>dd</sub>					
: 5.0 V			NA		NA			
V : 3.3 V							V : 3.3 V	
W : 2.5 V								
Z : 1.8 V Ask factory								
Operating Temperature Range			OTR					
C: -55°C to +125°C					C: -55°C to +125°C		C	
E: -55°C to +150°C			R: -10°C to +150°C		E: -55°C to +150°C		R	
D: -55°C to +175°C			S: -10°C to +175°C		D: -55°C to +175°C		S	
G: -55°C to +210°C			T: -10°C to +200°C		G: -55°C to +200°C		NA	
Overall Frequency Stability Including			Over Temperature Range, Adjustment @25°C, Aging, Supply Voltage & Load Change 1000 Hours @ Tmax.				APR <sup>3)</sup>	
Freq. vs. OTR C <sup>2)</sup>			ΔF/F		C: ≤ ± 100ppm		≤ ± 110ppm	
Freq. vs. OTR E (R) <sup>2)</sup>			ΔF/F		E: ≤ ± 150ppm		≤ ± 90ppm	
Freq. vs. OTR D (S) <sup>2)</sup>			ΔF/F		D: ≤ ± 300ppm		≤ ± 50ppm	
Freq. vs. OTR G (T) <sup>2)</sup>			ΔF/F		G: ≤ ± 400ppm		≤ ± 30ppm	
Output Signal								
Symmetry					40 / 60% @V <sub>dd</sub> /2			
Rise & Fall Time					< 7 ns		< 5 ns	
Rise & Fall Time [ H ]					H : < 3 ns			
Start up time					< 5 ms			
Storage Temperature					-65°C to +125°C			
Vibration resistance					10 to 2000Hz / 40g			
Shock resistance					10000g, 0.3ms 1/2 sine			

1) Input Current vary versus V<sub>dd</sub> and Frequency, see detail specification

2) Tighter frequency tolerances on request

For detail specification : <http://www.microcrystal.com/index.php/products/oscillators/atcut>

Contact: [ves.schwab@microcrystal.ch](mailto:ves.schwab@microcrystal.ch)

<sup>3)</sup> APR (Absolute frequency Pulling Range)

Inclusive of frequency deviation due to stability :

Adjustment @ 25°C

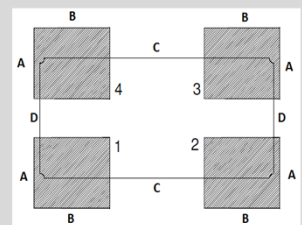
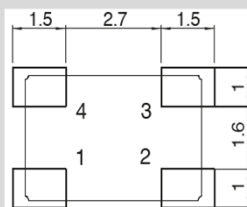
Frequency Stability over Trange

Aging 1 year

Over Supply Voltage ± 5%

Over load min to max

## Recommended Solder Pad Layout



VCX02E

Pin 1 V<sub>c</sub>  
Pin 2 GND  
Pin 3 Fout  
Pin 4 V<sub>dd</sub>

MCS01E

A: 2.12  
B: 2.54  
C: 3.18  
D: 1.16

MCS02E

A: 1.0  
B: 1.5  
C: 2.7  
D: 1.6

MCS06E

A: 0.8  
B: 1.3  
C: 1.3  
D: 0.9

Pin 1 E/D  
Pin 2 GND  
Pin 3 Fout  
Pin 4 V<sub>dd</sub>



## Ordering Information

Consult datasheet

<http://www.microcrystal.com/index.php/products/oscillators/atcut>