

## Oscillator Specification: E3222

Issue 2, 20<sup>th</sup> October 2004, LN2443

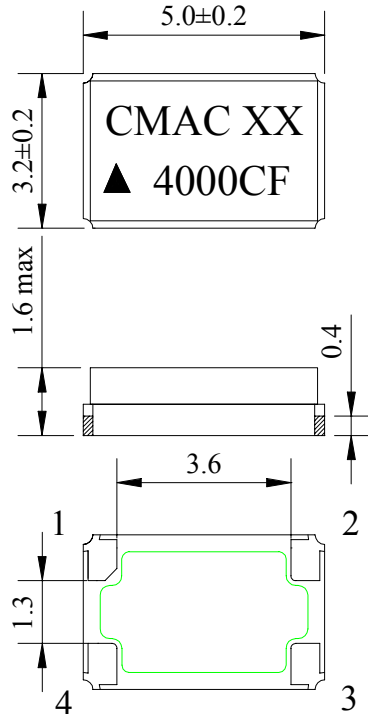
### Outline in mm

### Pad Connections

1. Control Voltage (Vc)
2. GND
3. Output
4. Supply Voltage

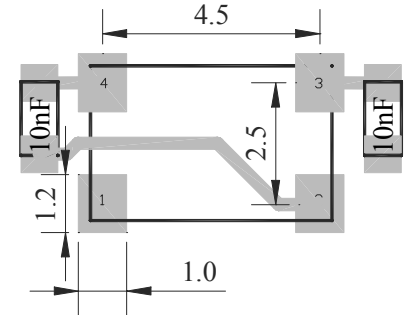
### Marking

- CMAC
- Manufacturing identifier (XX)
- Pad 1 / Static sensitivity identifier (▲)
- Part number (four digits)
- Device date code (YW)



Typical Marking Shown

### Recommended PCB pattern



### Electrical

Nominal Frequency, Fo	14.4 MHz
Supply Voltage, Vs	2.8 V ± 5%
Input Current	≤ 2.5 mA (typ. 2.0 mA)
Output:	
Type	Clipped Sinewave, DC-coupled
Load	2 kΩ // 20 pF
Level	≥ 0.7 Vpk-pk
Duty-Cycle at 50% amplitude level	40 to 60%

### Frequency Stability

Calibration Tolerance at Vc=1.5V, 25°C	
after Reflow soldering	≤ ± 1.5 ppm
Temperature, -20°C to 85°C	≤ ± 1.0 ppm [±(Fmax-Fmin)/2Fo]
Supply Voltage, ± 5%	≤ ± 0.1 ppm reference to frequency at 2.8V
Ageing, first year at 35°C	≤ ± 1.0 ppm
Ageing, 7 years at 35°C	≤ ± 3.0 ppm

Start-up time, > 90% amplitude, within ± 2 ppm of final frequency  
≤ 5 msec. (typ. 3 msec)

Phase Noise ≤ -120 dBc/Hz at 1 kHz  
Spurious outputs ≤ -80dBc



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Frequency Adjustment	
Range	$\geq \pm 5.0$ ppm, $\leq \pm 10.0$ ppm
Control Voltage	$1.5 \pm 1.0$ V
Linearity	$\leq 2$ %
Slope	Positive
Input resistance	$\geq 100k\Omega$
Modulation Response	DC to $\geq 100$ Hz less than $\pm 1$ dB Ripple.

### Environmental:

Storage Temperature Range:	-55 to +125°C
Vibration	IEC 60068-2-6 Test Fc Procedure B4, 10-60Hz 1.5mm displacement, at 98.1 ms <sup>-2</sup> , 30 minutes in each of three mutually perpendicular axes at 1 octave per minute
Shock	IEC 60068-2-27 Test Ea, 980ms <sup>-2</sup> acceleration for 6ms duration, 3 shocks in each direction along three mutually perpendicular axes
Soldering	SMD product suitable for Convection Reflow soldering. Peak temperature 260°C. Maximum time above 220°C, 60 secs.
Solderability	MIL-STD-202, Method 208, Category 3
Marking	Laser Marked