

Stratum 3 Oscillator Specification: E4441LF

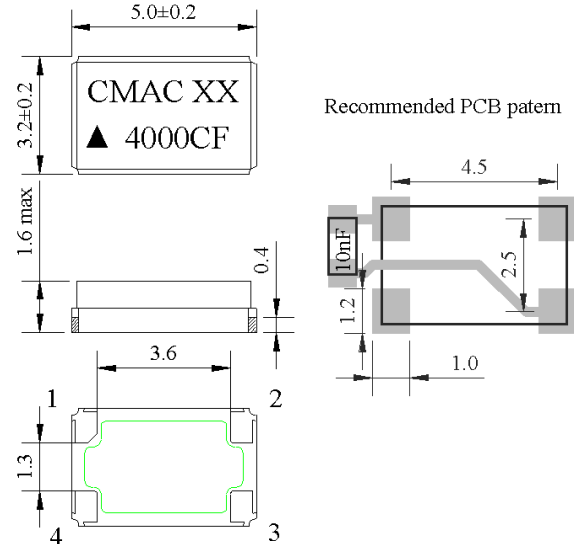
Outline:

Pin	Function
1	Do not connect
2	Ground
3	Output
4	Supply Voltage V_s

Note: for correct operation a 10nF supply de-coupling capacitor should be placed next to the device, see recommended PCB pattern.

Marking, includes:

IQD
 Manufacturing identifier (xx)
 Pad 1 / Static sensitivity identifier (Triangle)
 Part Number (Four digits)
 Device date code (YW)



Electrical:

Nominal Frequency, F_0	20.0 MHz
Supply Voltage, V_s	$3.3 \text{ V} \pm 5\%$
Input Current	$\leq 6 \text{ mA}$
Output:	
Type	HCMOS
Load	15 pF
V_{ol}	$\leq 0.1 * V_s$
V_{oh}	$\geq 0.9 * V_s$
Duty cycle @ 50%	45% to 55%
Rise time, 10% to 90%	$\leq 8 \text{ ns}$
Fall time, 90% to 10%	$\leq 8 \text{ ns}$

HOLDOVER STABILITY [$\pm(F_{\max} - F_{\min}) / 2.F_0$]

Temperature, -40 to 85°C	$\leq \pm 0.28 \text{ ppm}$
ditto, inclusive of	
Supply Voltage, $3.3\text{V} \pm 5\%$ and	
Ageing, 24 hours	$\leq \pm 0.32 \text{ ppm}$

FREE-RUN ACCURACY, incl.

Calibration @ 25°C,	
Temperature, -40 to 85°C,	
Supply Voltage, $3.3\text{V} \pm 5\%$,	
Load, $15\text{pF} \pm 5\text{pF}$	
Reflow soldering and Ageing, 20 years	$\leq \pm 4.6 \text{ ppm ref. to } F_0$



Stratum 3 Oscillator Specification: E4441LF

24 hours drift (GR-1244-CORE) $\leq \pm 0.04$ ppm

Phase Noise:

10 Hz ≤ -85 dBc/Hz

100 Hz ≤ -110 dBc/Hz

1 kHz ≤ -125 dBc/Hz

≥ 10 kHz ≤ -135 dBc/Hz

Environmental Specification:

Storage Temperature: -55 to $+125^{\circ}\text{C}$

Vibration: IEC 60068-2-6, test Fc, procedure B4: 10-60Hz 1.5 mm displacement, 60-2000Hz at 20gn, 4 hours in each of three mutually perpendicular axes at 1 octave per minute.

Shock: IEC 60068-2-27, test Ea: 1500gn acceleration for 0.5ms duration, Half-sine pulse, 3 shocks in each direction along three mutually perpendicular axes.

Soldering: SMD Product suitable for Reflow soldering. Peak temperature 260°C . Maximum time above 220°C , 60 sec.

Marking: Laser Marked

RoHS Parts are fully compliant with the European Union directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment. Note: These RoHS compliant parts are suitable for assembly using both Lead-free solders and Tin/Lead solders.