

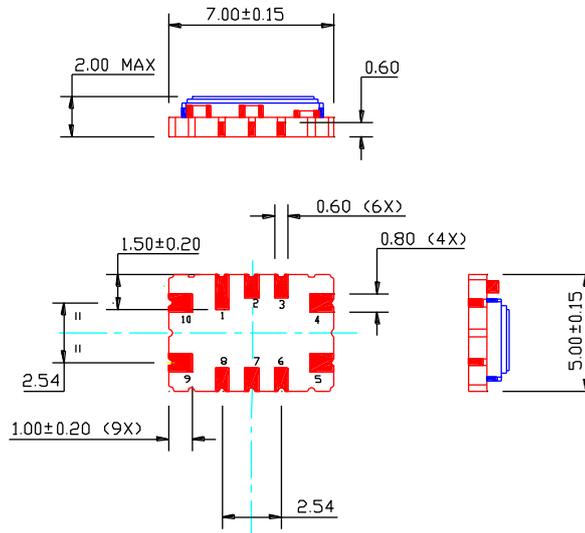
Oscillator Specification: E3199 / E3199LF

Issue 3, 3rd June 2008

Outline:

Pin	Function
1	Do not connect
2	NC
3	Do not connect
4	GND
5	Output
6	NC
7	NC
8	Tri-State Control*
9	Supply, +Vs
10	Do not connect, or connect to GND

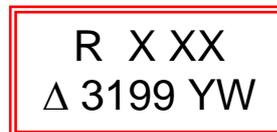
* leave unconnected if not required



Marking:

To include:

- 1) Manufacturers ID (R)
- 2) Manufacturing identifier (xx)
- 3) Pad 1 / Static Sensitivity Identifier (Δ)
- 4) Abbreviated Part Number (3199)
- 5) Oscillator's Date of Manufacture (YW)



Notes: 1) Sample marking may vary.

2) Parts may be marked 'CMAC' (a trademark used under licence) instead of 'R' for a limited time.

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 max.
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%	$\leq 8 \text{ ns}$

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

Temperature, -40 to 85°C	≤ ± 0.28 ppm
ditto, inclusive of Supply Voltage, 3.3V ± 5% and Ageing, 24 hours	≤ ± 0.32 ppm

FREE-RUN ACCURACY, incl.

Calibration @ 25°C, Temperature, -40°C to 85°C, Supply Voltage, 3.3V ± 5%, Load, 15pF±5% Reflow soldering and Ageing, 20 years	≤ ± 4.6 ppm ref. to F ₀
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Phase Noise:

10 Hz	≤ -85 dBc/Hz
100 Hz	≤ -110 dBc/Hz
1 kHz	≤ -125 dBc/Hz
≥10 kHz	≤ -130 dBc/Hz

Tri-State

Pad 8 open circuit or ≥ 0.6Vs	Output Enabled
Pad 8 ≤ 0.2Vs	Output Tri-stated

When in tri-state mode, the output stage is disabled but the oscillator and compensation circuit are still active (Current consumption ≈ 1mA).

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⁻², 30 minutes in each of three mutually perpendicular axes at 1 octave per minute

Shock: IEC 60068-2-27 Test Ea, 980ms⁻² 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

RoHS: Parts with the “LF” suffix 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.

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