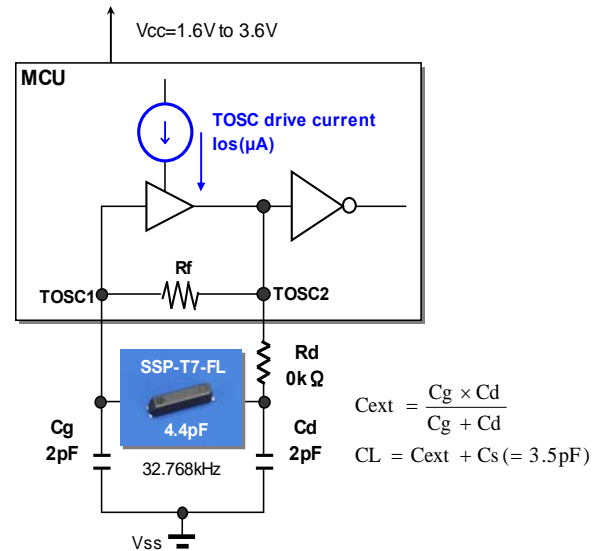
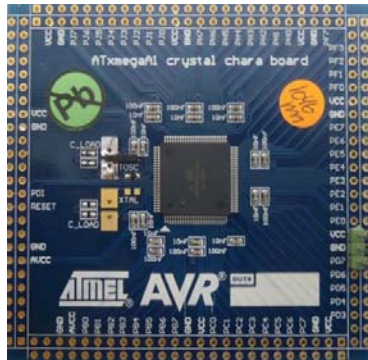


XMEGA oscillation circuit and recommended load capacitance

AVR XMEGA : Ultra Low Power 32 kHz Crystal Oscillator

AVR XMEGA's Real Time Counter consumes only 500 nA while running from a 32.768 kHz Crystal Oscillator.

Minimize power consumption by clocking the RTC at 1kHz with an external crystal in low power mode.



SSP-T7 and VT-200 series

SSP-T7-FL CL=3.7pF,4.4pF,6.0pF and SSP-T7-F CL=7.0pF,9.0pF,12.5pF

VT-200-FL CL=3.7pF,4.4pF,6.0pF and VT-200-F CL=12.5pF

Recommended CL resonator

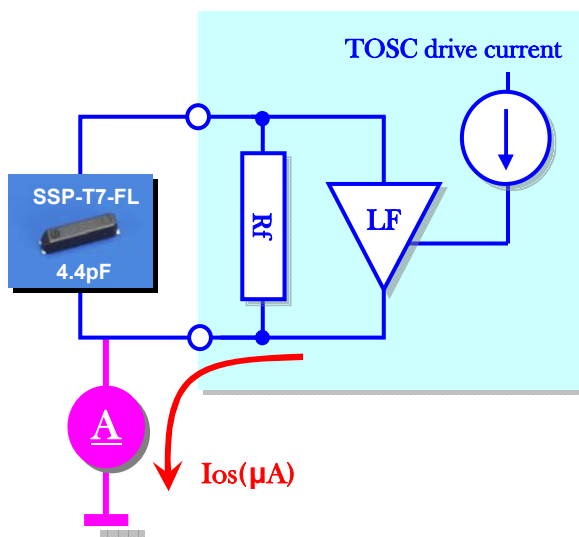
As a result of our evaluation, our recommended resonators are CL=4.4pF as best, and CL=6.0pF as 2nd best, Low CL resonator for ATXMEGA128A1 Low Mode. Table 1 shows that CL=4.4pF surpasses CL=6.0pF in all Osc.charactersitics.

Table 1 Osc.characteristics CL=4.4pF and CL=6.0pF, Low CL resonator.

| Mode | XTL                    | Vcc (V) | Ios (μA) | CL (pF) | Cg (pF)<br>Cd (pF) | dF/Total <sup>*1</sup> (*10 <sup>-6</sup> ) | Ts (sec.) | -RL  (kΩ) | Osc. allowance |
|------|------------------------|---------|----------|---------|--------------------|---|-----------|-----------|----------------|
| Low  | SSP-T7-FL<br>VT-200-FL | 3.0     | 0.189    | 4.4     | 2<br>2             | 2.57  | 0.72      | 775       | 11.9           |
|      |                        |         |          | 6.0     | 5<br>5             | 2.86  | 1.22      | 480       | 7.4            |
|      | 1.8                    | 0.189   | 4.4      | 2<br>2  | 2.72               | 0.76  | 735       | 11.3      |                |
|      |                        |         | 6.0      | 5<br>5  | 2.92               | 1.27  | 460       | 7.1       |                |

\*1 dF/Total=dF/Vcc(±10%)+dF/Cext(±5%)

Ultra Low Power consumption ATXMEGA128A1 and SSP-T7-FL



Voltage characteristics of TOSC drive current

