

less than 1 μ s 16-bit risc architecture, 62.5-ns instruction cycle time basic clock module configurations internal frequencies up to 16 mhz with four calibrated frequencies to $\pm 1\%$ 32-khz crystal high-frequency crystal up to 16 mhz resonator external digital clock source 16-bit timer_a with three capture/compare registers on-chip comparator for analog signal compare function or slope analog-to-digital (a/d) conversion brownout detector serial onboard programming, no external programming voltage needed, programmable code protection by security fuse bootstrap loader on chip emulation module family members: msp430f2101 1kb + 256b flash memory 128b ram msp430f2111 2kb + 256b flash memory 128b ram msp430f2121 4kb + 256b flash memory 256b ram msp430f2131 8kb + 256b flash memory 256b ram available in a 20-pin plastic small-outline wide body (sowb) package, 20-pin plastic small-outline thin (tssop) package, 20-pin tvsop package, and 24-pin qfn package for complete module descriptions, see the msp430x2xx family user's guide (slau144)