



A. HE83123 Introduction

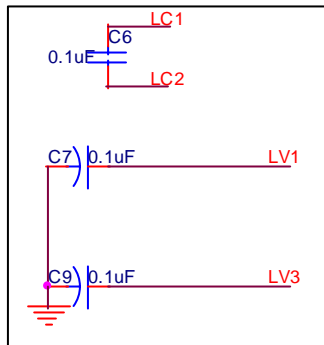
HE83123 is a member of 8-bit Micro-controller series that is developed by King Billion. This IC has built-in 320-dot LCD driver. PWM device provide the complete speech output mechanism. The 64K ROM Size can storage around 20 second's speech.(3K bps) This IC is applicable to the small/medium systems such as LCD Games and Perpetual Calendar etc. This IC is very easy to learn and use. Most of instructions take only 3 oscillator clocks (machine cycles). As a result this IC is suitable for the applications that require higher performance system.

B. HE83123 Features

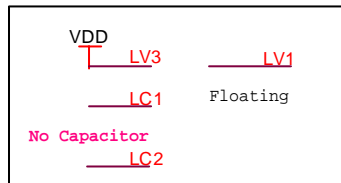
- Operation Voltage : 2.2V – 5.5V
- System Clock : DC ~ 8MHz @ 5.0V
DC ~ 4MHz @ 2.2V
- Internal ROM : 64K Bytes(64K Program ROM)
- Internal RAM : 256 Bytes
- Dual Clock System : Normal (Fast) clock : 32.768K ~ 8MHz
Slow clock : 32.768KHz
- Operation Mode : DUAL、FAST、SLOW、IDLE、SLEEP Mode.
- With WDT (WATCH DOG TIMER) to prevent deadlock condition.
- 8-bit Bi-directional I/O port. Mask Option can select PUSH-PULL or OPEN DRAIN output mode for each I/O pin.
- 320 dots LCD driver (A、B TYPE selectable).
- PWM device.
- Two external interrupts and two internal timers interrupts.
- Two 16-bit timers.
- Instruction set : 32 instructions, 4 addressing mode. 8-bit DATA POINTER for RAM and 16-bit TABLE POINTER for ROM.

C.Application Circuit

Twice Charge Pump is selected
LCD Max. Voltage=LV3=3/2*VDD

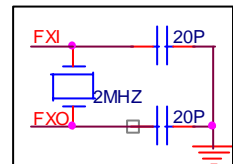


Twice Charge Pump is selected
LCD Max. Voltage=LV3=VDD

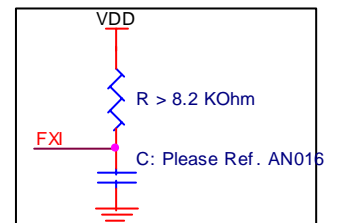


No External Parts is necessary if user adopt Internal Fast RC Clock

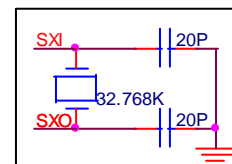
External Fast Clock:
Crystal osc.



External Fast Clock:
RC osc.



External Slow Clock:
Crystal osc.



External Slow Clock:
RC osc.

