

CIRCUIT FOR ICSP PROGRAMMING

Attached is a PDF of a working ICSP arrangement.

Notice that the schottky diode allows the DIY Programmer to feed its VCC without its VCC being shorted to the PIC's normal power supply. A tiny DIP switch will also work in place of the diode. NOTE: the diode is very convenient when developing the code, but it drops about 100mV of the VCC provided (but was never an issue in my designs. Simply do NOT power the PIC while programming it.

The 27K is recommended to prevent VPP current from raising VCC. It can even be larger than this. You can use as low as 10K if a diode is placed in series at the MCLR pin, so that when VPP is applied nothing can conduct. But its a needless waste to have that second diode.

The PIC programmer itself is designed to provide only enough VPP and VDD to program the device, nothing else. With the schottky diode, the VDD load of the product itself is ignored by the programmer while programming. The cap across the chip is very important, and can be as low as 0.01uF and as high as 0.1uF - but it can't be higher, otherwise the risetime needed to enter programming mode cannot be achieved.

The other reason is the way PICs must enter programming mode. Some need to have VCC applied first, while others need to have VPP applied first. That two-step process, together with PGD and PGC at gnd, causes the PIC to enter programming mode.

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