Circuitry and Connector Pinouts

Correct

Target V_DD (tV_DD)

V_DD
XTAL
V_PP/MCLR
50 kΩ Typical
PGC
PGD
AV_DD
AV_SS
V_SS
Target Application Device

Target Application PC Board
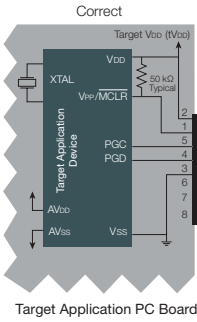
Connect Pin 1 to Pin 1

Typical 6-Pin ICSP Pinout

Pin	Target	MPLAB® PICkit™ 4
1	$\overline{MCLR}$/V_PP	MCLR
2	V_DD Target	VDD
3	V_SS (ground)	Ground
4	PGD	PGD
5	PGC	PGC
6	Not Connected	Not Connect
7		Reserved for Future use
8		Reserved for Future use

Target Circuit Design Precautions

Incorrect

Target V_DD (tV_DD)

V_DD
XTAL*
V_PP/MCLR
0V
PGC
PGD
AV_DD**
AV_SS**
V_SS
Target Application Device

Target Application PC Board
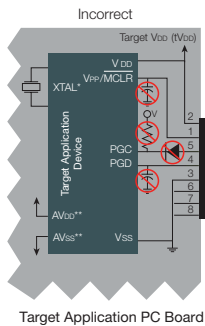
- **Do not use pull-ups on PGC/PGD:** they will disrupt the voltage levels since these lines have programmable pull-down resistors in the debugger.
- **Do not use capacitors on PGC/PGD:** they will prevent fast transitions on data and clock lines during programming and debug communications.
- **Do not use capacitors on $\overline{MCLR}$:** they will prevent fast transitions of VPP. A simple pull-up resistor is generally sufficient.
- **Do not use diodes on PGC/PGD:** they will prevent bidirectional communication between the debugger and the target device.
- **Do not exceed recommended cable lengths:** Refer to the Hardware Specification of the MPLAB PICkit 4 online help or user's guide for lengths.

Pinouts for Debug Interfaces

Connector	Pin #	Pin Name	ICSP (MCHP)	MIPS EJTAG	CORTEX® SWD	AVR® JTAG	AVR ISP (PDW)	UPDI	PDI	AW	DW(IRE)	TPI
	1	MCLR	$\overline{MCLR}$	MCLR	$\overline{MCLR}$							
	2	TVDD	VDD			TTC	VTG	VTG	VTG	VTG	VTG	VTG
	3	GND	GND		GND	GND	GND	GND	GND	GND	GND	GND
	4	PGD	PGDO	SWO	TDO	MISO	DAT	DAT	DATA		DAT
	5	PGC		TCK	SWCLK	TCK	SCK					CLK
		AUX	AUX			RESET	RESET	CLK		dW	RST
				TDI			MOSI					
	8				SWDIO	TMS						

Pinouts for Data Stream Interfaces

MPLAB® PICkit™ 4	DATA STREAM	
Pin #	DMCI/DGI U(S)ART/CDC	DGI SPI
1		
2	VTG	
3	GND	
4		MISO
5		SCK
6	(SCK)	
7	TX	MOSI
8	RX	SS

www.microchip.com/pickit4

MICROCHIP