## பSING ־ $\square$ IN-CIRCUIT ロEBUGGER

## Install the Latest Software

Install the MPLAB ${ }^{\circledR}$ IDE software onto your PC using the MPLAB IDE CD-ROM or download the software from the MPLAB IDE page of the Microchip web site (www.microchip.com/MPLAB). Check the latest Release Notes for additional
information. information.
(2) Configure PC USB Communications Connect the PICKit™ 3 development programmer/debugger to a PC USB port via a USB cable. PICkit 3 uses the standard HID USB Windows ${ }^{\circledR}$ driver. Note: If a USB hub is used, the hub must be powered with its own power supply.

(3) Build Your Project

1. Launch MPLAB IDE.
2. Load your project or use the Project Wizard to create a new one.
3. Build your project based on your configurations and options.
4. Select the PICkit 3 as either a debugger (Debugger>Select Tool>PICkit 3) or as a programmer (Programmer>Select Programmer>PICkit 3).
(4) Connect to Target and Power
5. Attach the PICkit 3 to the PC using the USB cable, if not already. 2. Attach the communications cable between the debugger and target board 3. Connect power to the target board.

Typical Debugger System - Device With On-Board ICE Circuitry:


Alternate Debugger System - ICE Device:


## (5) Program and Debug

1. Program your device
2. As a programmer, PICkit 3 will automatically run your code. As a debugger, you
3. As a programmer, halt, single step and set breakpoints in your code.

Note: For information on Reserved Resouces used by the debugger, see the PICkit 3 on-line help.

## ADDITIONAL INFORMATION

## Circuitry and Connector Pinouts


*Target device must be running with an oscillator for the debugger to function as a debugger. **If the device has AVoo and AVss lines, they must be connected for the debugger to operate.

Target Circuit Design Precautions


> - Do not use mulitplexing on PGC/PGD - they are $\begin{aligned} & \text { dedicated for communications to PCCCit } 3 \text {. } \\ & \text { Do not use pull -ups on PGCIPGD - they will divide the }\end{aligned}$ voltage levels since these lines have 4.7 K K2 pull-cown resistors in PICkit 3 . fast transitions onpitotars on PGCCIPCD - they $\begin{aligned} & \text { progranming and deuto communications. } \\ & \text { Do not use capacitors on MCLR -they will }\end{aligned}$ $\begin{aligned} & \text { Do on use capacitors } \\ & \text { fast transitions of Ype. }\end{aligned}$
> $\begin{aligned} & \text { Do not use diodes on PGC/PGD - they will prevent } \\ & \text { bidirectional }\end{aligned}$
> $\begin{aligned} & \text { Do not Use diodes on PGCIPGD - they wil prevent } \\ & \text { bidirectional communication between PICkit } 3 \text { and the } \\ & \text { target PICO MCU. }\end{aligned}$

Recommended Settings

| COMPONENT | SETTING |
| :---: | :---: |
| Oscillator | - OSC bits set properly <br> - Running |
| Power | Supplied by target |
| WDT | Disabled (device dependent) |
| Code Protect | Disabled |
| Table Read Protect | Disabled |
| LVP | Disabled |
| BOD | VDD > BOD VdD min |
| JTAG | Disabled |
| AVDD and AVss | Must be connected |
| PGCx/PGDx | Proper channel selected, if applicable |
| Programming | VDD voltage levels meet programming specs |
| e: See the PICkit 3 and setting info | User's Guide for more component mation. | The Microchip name and logo, the Microchip logo, MPLAB and PIC are registered trademarks of

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