MPLAB® PM3 Socket Module AC164339 modification for dsPIC33FJ06GS101-SO

Symptom: The MPLAB PM3 socket module AC164339, may have a problem programming the dsPIC33FJ06GS101-SO on some MPLAB PM3 programmers. The dsPIC33FJ06GS101-SO device to be programmed with the AC164339 socket module is not able to enter into the programming mode, and the PM3 will report a "Fail to Read Device ID error" during the programming operation.

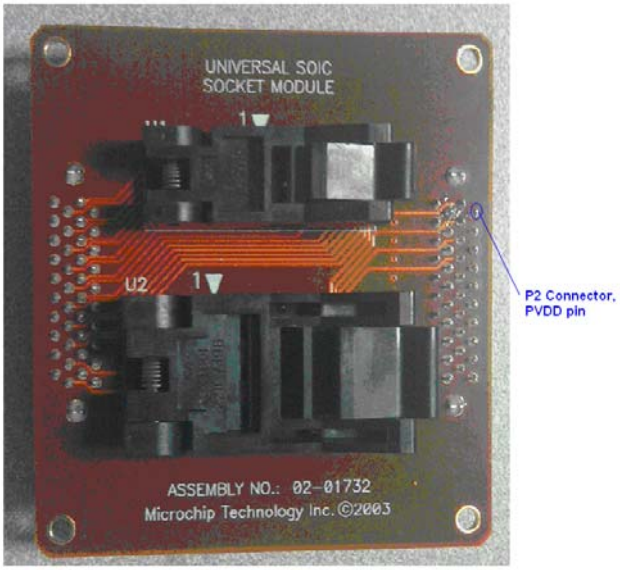
Problem: The problem is the high current surge (Idd) required by this device during the start of the programming operation. The current is limited by the PM3 drivers and therefore, the DUT (device under test) is not able to enter into the programming mode. The problem is being reported on the MPLAB PM3 with assembly # 10-00359, with socket module AC164339, and only with the 18P-SOIC package.

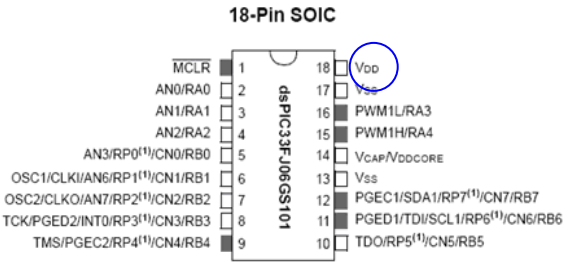
Solution: One quick solution is to simply bypass the MPLAB PM3 drivers and provide a high-current source voltage (PVDD) directly to the Vdd pin of the DUT. The modification is done in the AC164339 socket module.

Materials:

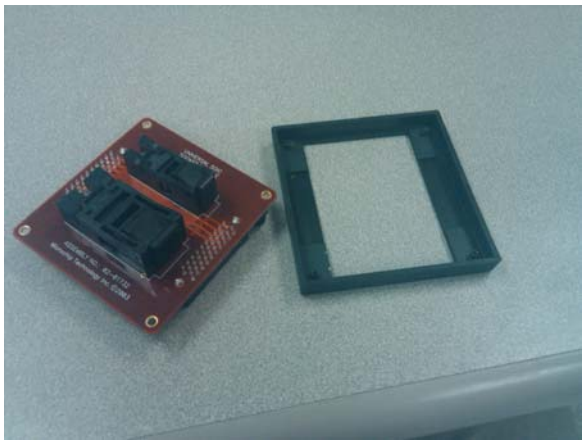
1. PM3 Universal SOIC socket Module **AC164339**
2. Soldering tools
3. Wire and wire-wrap tool.

Steps for modifying the AC164339 SOIC Module:
To start, here is the pinout for the 18P SOIC for the dsPIC33FJ06GS101-SO, and a picture showing where the PVDD signal is in the AC164339 socket module.



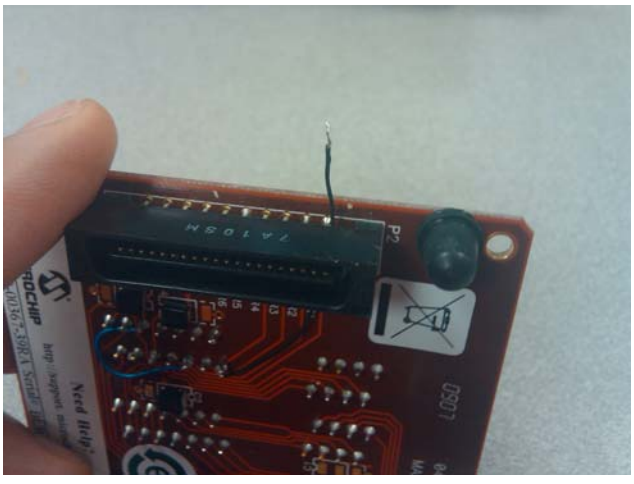


The goal is to provide the PVDD high-current voltage source directly to the VDD (pin 18) of the 18P SOIC device. Keep in mind that the 18-pin SOIC will be top-justified inside the 28P socket of the PM3 socket module.

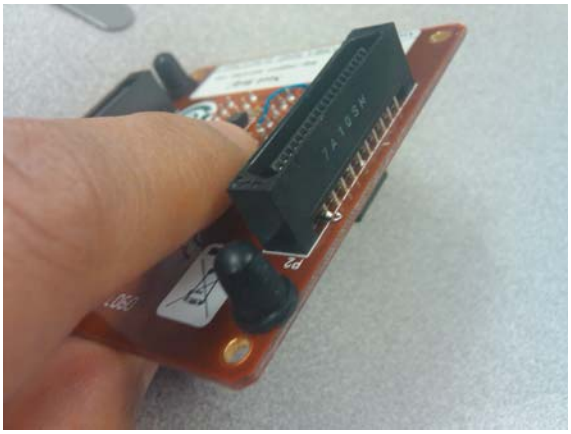


1. Remove the top cover from the socket module.

2. Solder the wire at the bottom of the socket module to the 28-SOIC socket pin 28, DUT pin 18 (VDD).



3. Now, run the wire thru the top of the P2 connector as shown in the picture.



4. Bend the tip of the wire and hook it to the outmost top pin in the P2 connector as shown in the picture.

5. To complete the procedure, solder the pin and place the cover back.