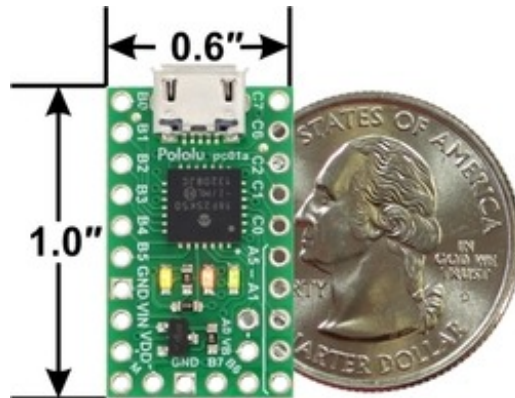![Pololu Robotics & Electronics]

P-Star 25K50 Micro


P-Star 25K50 with U.S. quarter for size reference.

Overview

The Pololu P-Star 25K50 Micro is a general-purpose programmable module based on Microchip's PIC18F25K50 microcontroller, which has 32 KB of flash program memory, 2 KB of RAM, and built-in USB functionality. Onboard features of the P-Star (areviated P*) include a 16 MHz crystal, a USB Micro-B connector, and three user-controllable indicator LEDs. A voltage regulator and power selection circuit allow the board to be powered from either USB or an external 5.5 V to 15 V source, while a resettable PTC fuse on the USB VBUS supply and reverse protection on VIN help protect it from accidental damage. The board ships with a USB bootloader that makes it easy to program the PIC microcontroller without using an external programmer.
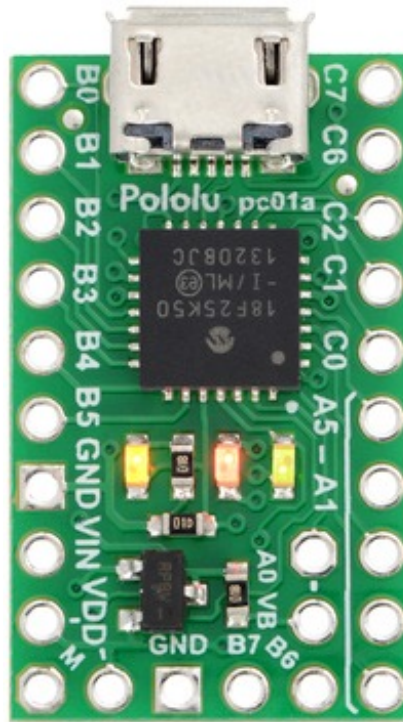
Our comprehensive user's guide provides the basics you need to get started with the P-Star 25K50 Micro as well as detailed technical information.

> This product requires a USB A to Micro-B cable (not included) to connect to a computer.
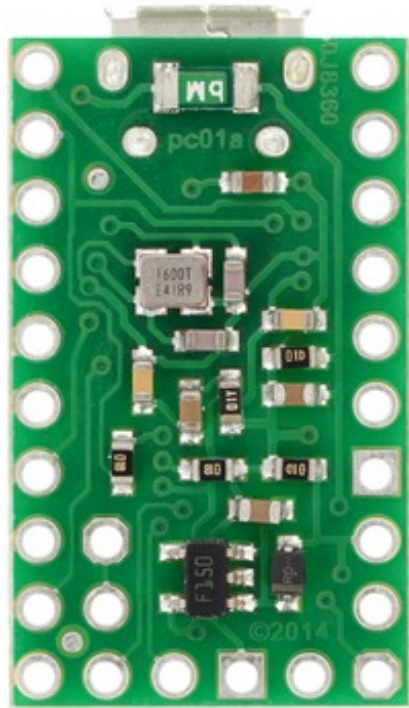
P-Star 25K50 Micro, bottom view.

P-Star 25K50 Micro, top view.

Features

- **Dimensions: 1″ × 0.6″ (1.05″ × 0.6″ including USB Micro-B connector)**
- **Programmable Microchip PIC18F25K50 microcontroller**
  - **32 KB flash (8 KB used by bootloader, leaving 24 KB available for user program by default)**
  - **2 KB SRAM**
  - **256 bytes of EEPROM**
  - **Native full-speed USB (12 Mbps)**
- **5 V logic voltage**
- **Internally clocked at 48 MHz, resulting in execution speeds up to 12 million instructions per second (MIPS)**
- **Precision 16 MHz crystal**
- **Many I/O lines in a small package**
  - **16 user I/O lines along the sides of the board**

- - **3 additional I/O pins available in other locations**
  - **13 pins can be configured as analog inputs**
  - **2 PWM output signals (one of which can be sent to four different pins)**
  - **5-bit digital-to-analog converter (DAC) output**

- **Three user-controllable LEDs**
- **USB Micro-B connector**
- **Can be powered from USB or external source regulated to 5 V by onboard regulator**
- **Operating voltage: 5.5 V to 15 V**
  - **Can operate down to 3.8 V with decreased logic voltage**
- **Reverse-voltage protection on external power input**
- **PTC fuse on VBUS supply**
- **Ships with a proprietary USB bootloader developed by Pololu for the P-Star**
- **Bootloader is usable from Windows, Linux, and Mac OS X with open source software**
- **No external programmer required**
- **Compatible with standard Microchip compilers, development tools, and programmers**
- **Comprehensive user's guide**

Pinout
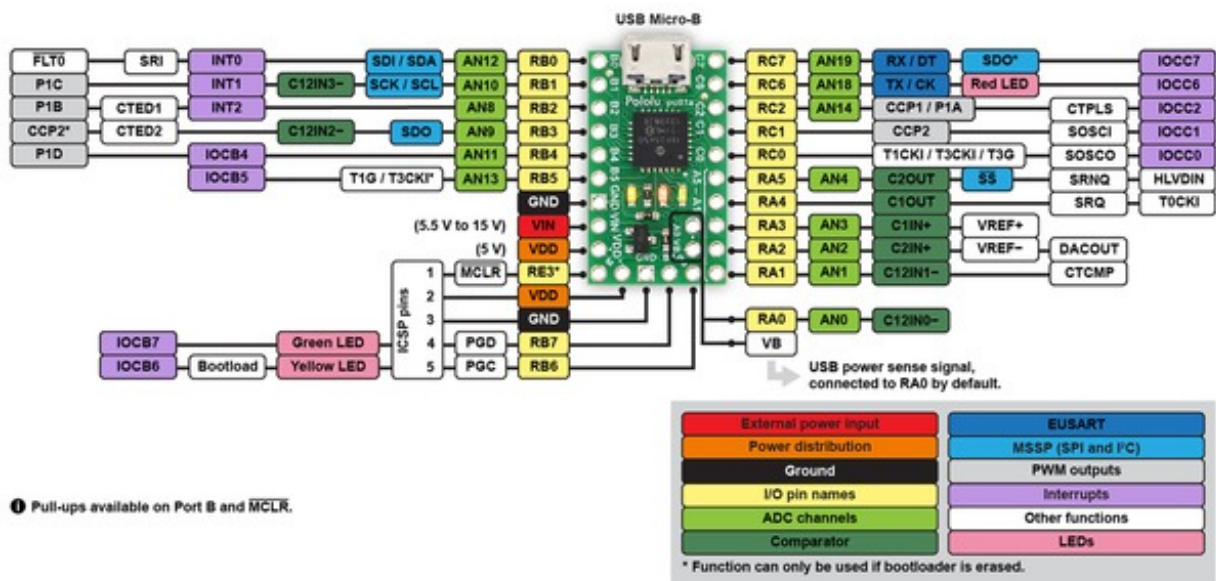
P-Star 25K50 Micro pinout diagram.

This diagram identifies the I/O and power pins on the P-Star 25K50 Micro. The diagram is also available as a printable PDF (161k pdf). For more information about the PIC18F25K50 microcontroller and its peripherals, see Microchip's PIC18F25K50 documentation.

Included hardware
Two 1×10-pin breakaway 0.1″ male headers and one 1×6-pin breakaway 0.1″ male header are included with the P-Star 25K50 Micro. These header pins can be soldered in to use the board with perfboards, breadboards, or 0.1″ female connectors.
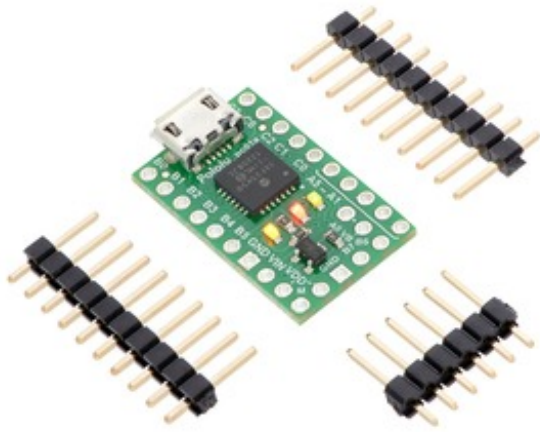
P-Star 25K50 Micro with included optional headers.

The P-Star 25K50 Micro with soldered headers and connected USB cable.

Documentation on producer website.