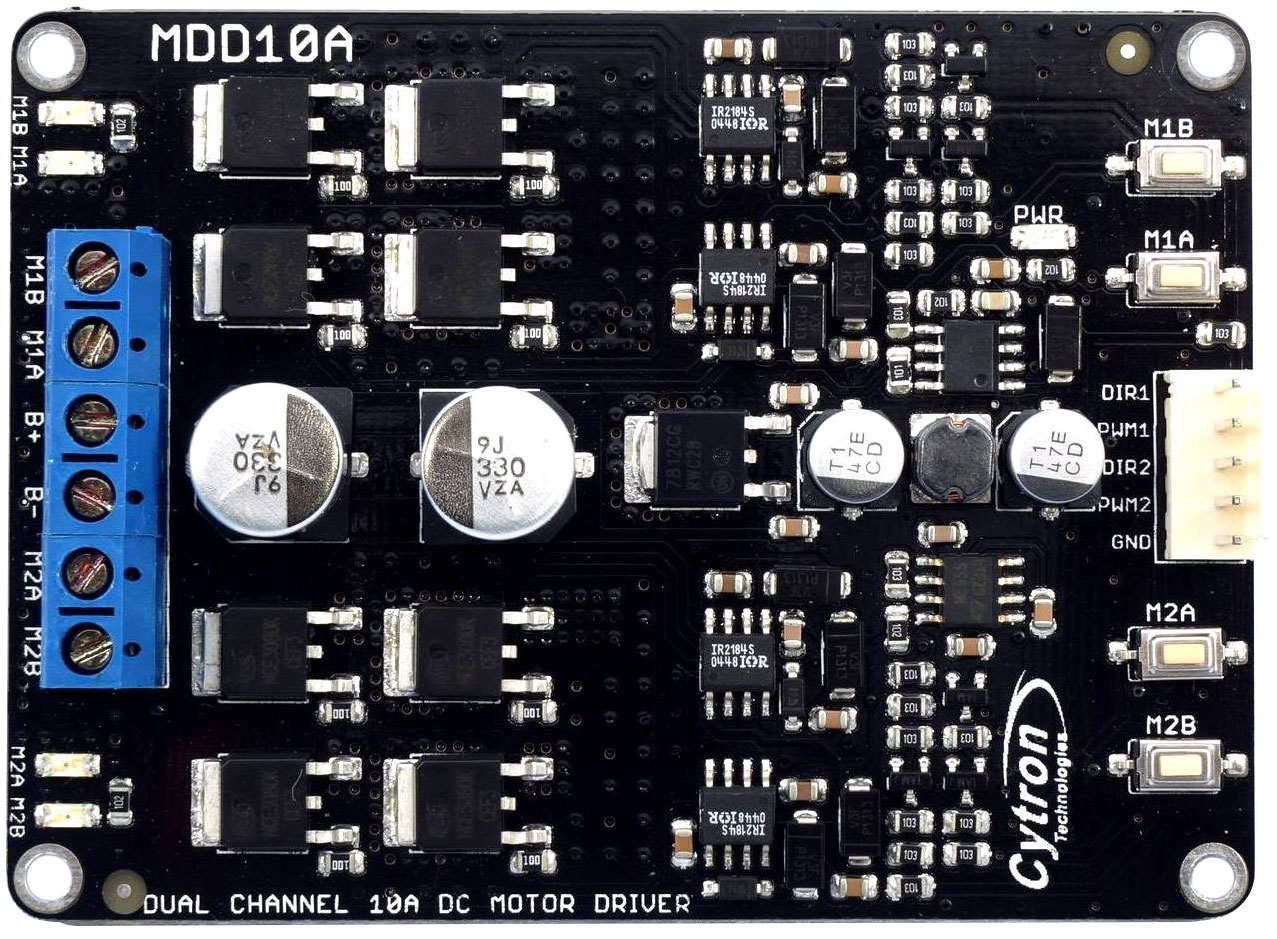
Electronics:

Cytron **10A 5-25V Dual Channel DC Motor Driver $27**

**Motors:**

# **Trossen robotics DC gearhead motor** 6v 180rpm w/ Encoder $29.95 x2

|  |  |
| --- | --- |
| **Characteristic** | **Value** |
| Operating Voltage | 6-8.4v |
| Gear Ratio | 40:1 |
| Rated Load Speed | 163 RPM +/- 10% |
| No Load Speed | 212 RPM +/- 10% |
| No Load Current | <400mA |
| Rated Current | 3A |
| Stall Current | 6A |
| Encoder type | Hall Effect Quadrature |
| Encoder PPR | 13 PPR |
| Encoder Output Resolution | 520 ticks/revolution |
| Encoder Voltage | 5v |
| Shaft Diameter | 6mm |

# http://www.trossenrobotics.com/resize/shared/images/PImages/KIT-MTR-36-06-180-a.jpg?bw=1000&bh=1000

Charmed Labs Pixy Camera-$70

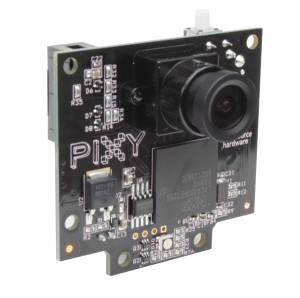
Fast vision sensor for robotics

Connects directly to Arduino

Track Objects 50fps

Finds objects by color

Dedicated processor



 Lens field-of-view: 75 degrees horizontal, 47 degrees vertical

Resolution: 1280×800

# 7.4v Kingmax 1000mAh Lipo for Arduino-$10

# http://i.ebayimg.com/00/s/NTAwWDUwMA==/z/WC4AAOxynwlTczyL/$_12.JPG

# Duratrax LiPo Onyx 2S 7.4V 5000mAh 25C-$44

# For motors

# http://ecx.images-amazon.com/images/I/61Qnm2ynJzL._SL1000_.jpg

# DPDT toggle switch-$1

# http://ecx.images-amazon.com/images/I/41z4Ir3DwaL.jpg

# Breadboard Jumper Wire 75pcs pack-$5

# http://ecx.images-amazon.com/images/I/71BMjzyTYRL._SL1500_.jpg

# Stepper Motor 28BYJ-48 5V DC 4-Phase 5-Wire + ULN2003 Driver Board-$3 x2

# http://ecx.images-amazon.com/images/I/71G62L-fThL._SL1001_.jpg

# American Precision Rapidsyn Division Stepper Motor Model 23A-6102T-$29.95

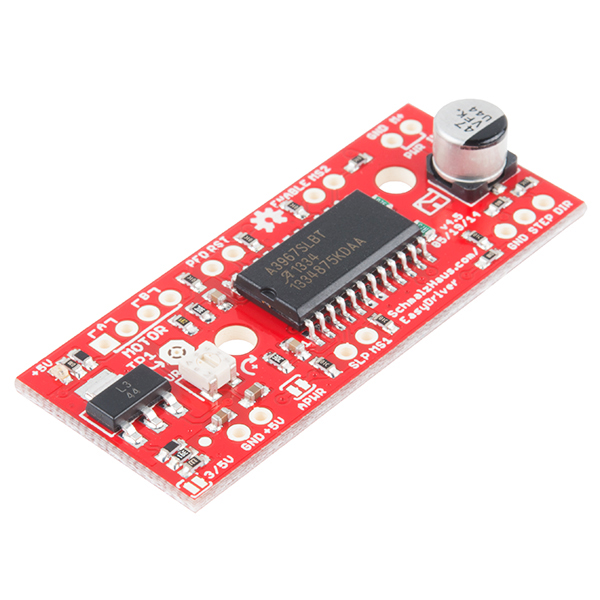


5V 1A

# Spark Fun EasyDriver - Stepper Motor Driver-$14.95

 Adjustable current control from 150mA/phase to 700mA/phase

 Power supply range from 6V to 30V. The higher the voltage, the higher the torque at high speeds



Arduino MEGA-$45

|  |  |
| --- | --- |
| Microcontroller | ATmega1280 |
| Operating Voltage | 5V |
| Input Voltage (recommended) | 7-12V |
| Input Voltage (limits) | 6-20V |
| Digital I/O Pins | 54 (of which 15 provide PWM output) |
| Analog Input Pins | 16 |
| DC Current per I/O Pin | 40 mA |
| DC Current for 3.3V Pin | 50 mA |
| Flash Memory | 128 KB of which 4 KB used by bootloader |
| SRAM | 8 KB |
| EEPROM | 4 KB |
| Clock Speed | 16 MHz |

