XinaBox Datasheet OC06 - Stepper Driver

Contents

Overview

The OC06 xCHIP uses DRV8825 Stepper Motor Controller to precisely drive and control a connected stepper motor. The DRV8825 is interfaced with I2C through a PCA9554A I/O Expander which provides all the required control signals.

Product Highlights

- Stepper Motor Controller/Driver
- Connects a Single Stepper via Screw Terminals
- External Motor Supply Input via Screw Terminal (Max 47 V)
- 2.5 A Continuous Motor Output Current
- Built-In Microstepping Indexer
- Up to 1/32 Microstepping

Applications

- Robotics
- Precision Control
- Accurate Positional Control Systems
- CNC Machines

Specifications

DRV8825

- PWM Microstepping Stepper Motor Driver:
    1. Built-In Microstepping Indexer
    2. Up to 1/32 Microstepping
- Multiple Decay Modes:
    1. Mixed Decay
    2. Slow Decay
    3. Fast Decay
- 8.2-V to 45-V Operating Supply Voltage Range
- 2.5-A Maximum Drive Current at 24 V and
- Low Current Sleep Mode
- Protection Features:
    1. Overcurrent Protection (OCP)
    2. Thermal Shutdown (TSD)
    3. VM Undervoltage Lockout (UVLO)
    4. Fault Condition Indication Pin (nFAULT)

PCA9554A

- 400-kHz Fast I^2C Bus
- Three Hardware Address Pins Allow up to Eight I^2C Addresses
- Internal Power-On Reset
- No Glitch on Power Up
- Latched Outputs With High-Current Drive

External Links

Datasheets

- DRV8825 From Texas Instruments (http://www.ti.com/lit/ds/symlink/drv8825.pdf)
- PCA9554A From Texas Instruments (http://www.ti.com/lit/ds/symlink/pca9554a.pdf)

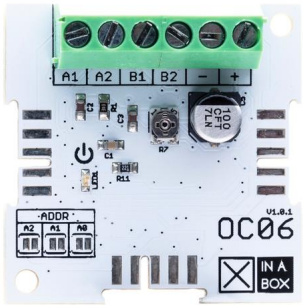
Shop

- Buy OC06 (https://xinabox.cc/products/OC06)

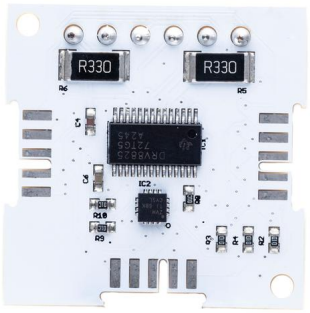
GitHub

- OC06 on GitHub (https://github.com/xinabox/xOC06)

OC06 - Stepper Driver (DRV8825, PCA9554A)



Front



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☒CHIP	
Main Category	Output
Sub Category	Control
Introduced	1 January 2017
Current version	1.0.0
Current version date	1 January 2017
Dimensions	
Size	2x2U (32x32mm)
Weight	6 g
Height	12.1/8.4/2.1 mm
Non-☒BUS Connections	
North	Terminal Block
Main Chip Set	
Main Chip	PCA9554A/DRV8825
I²C Configuration	
Default Address	0x38
Alternative Addresses	0x39; 0x3A; 0x3B; 0x3D; 0x3E; 0x3F
Change Setting	Solder Pads