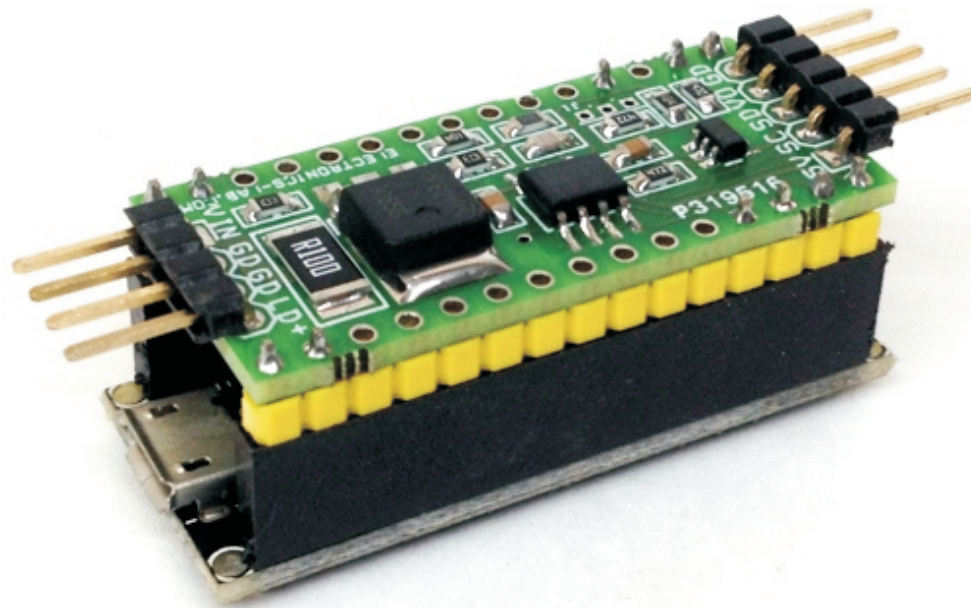


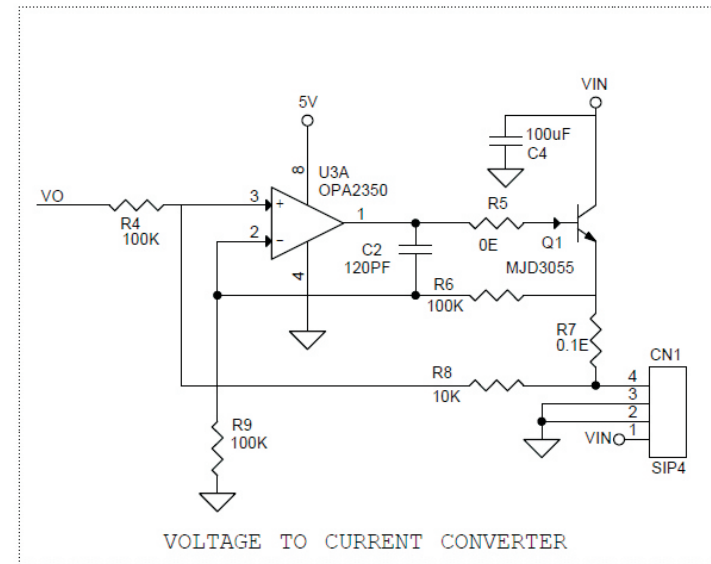
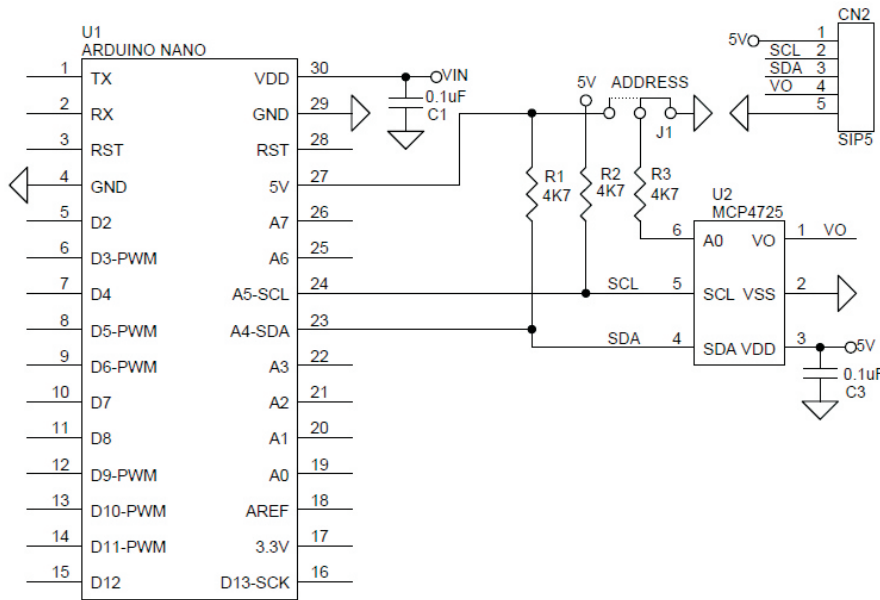
## DAC Shield For Arduino Nano

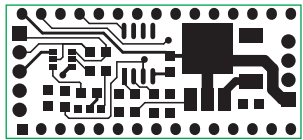
The project features the easy to use Digital to Analog converter (DAC) shield for Arduino Nano. The project built using MCP4725 12Bit DAC IC over I2C communication. The shield directly seats on Arduino Nano and also can be used as stand-alone DAC converter can be connect to other micro-controller board with help of 5 pin header connector. Output is 0-5V. PCB jumper J1 provided to select the address in case using multiple module on same I2C .

Shield also provided with high current driver circuit, which converters voltage to current can be used to drive Laser diode or LED. Maximum possible load 500mA.

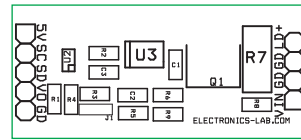
The MCP4725 is a low-power, high accuracy, single channel, 12-bit buffered voltage output Digital-to- Analog Converter (DAC) with non-volatile memory (EEPROM). Its on-board precision output amplifier allows it to achieve rail-to-rail analog output swing. The DAC input and configuration data can be programmed to the non-volatile memory (EEPROM) by the user using I2C interface command. The non-volatile memory feature enables the DAC device to hold the DAC input code during power-off time, and the DAC output is available immediately after power-up. This feature is very useful when the DAC device is used as a supporting device for other devices in the network. The device includes a Power-On-Reset (POR) circuit to ensure reliable power-up and an on-board charge pump for the EEPROM programming voltage. The DAC reference is driven from V DD directly. In power- down mode, the output amplifier can be configured to present a known low, medium, or high resistance output load. The MCP4725 has an external A0 address bit selection pin. This A0 pin can be tied to V DD or V SS of the user's application board. The MCP4725 has a two-wire I<sup>2</sup>C™ compatible serial interfaces for standard (100 kHz), fast (400 kHz), or high speed (3.4 MHz) mode. The MCP4725 is an ideal DAC device where design simplicity and small footprint is desired, and for applications requiring the DAC device settings to be saved during power-off time.



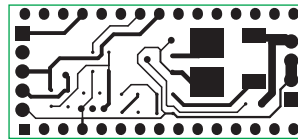




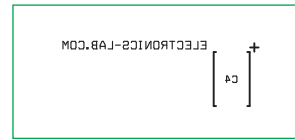
TOP LAYER



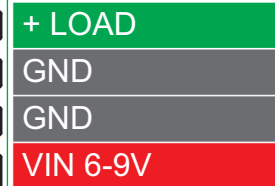
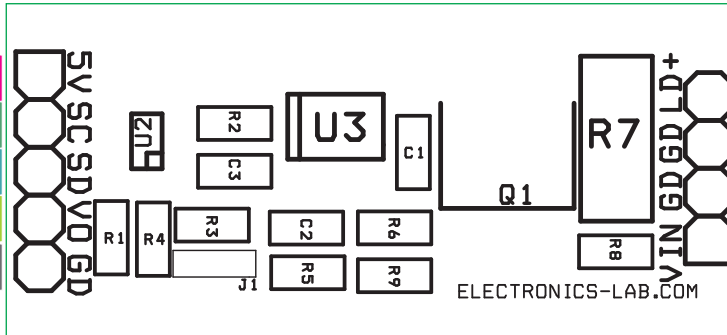
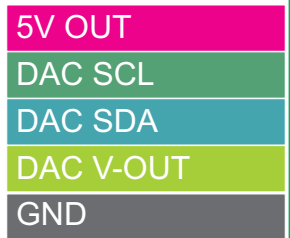
SILKSCREEN TOP



BOTTOM LAYER



SILKSCREEN BOTTOM



| BOM |       |          |                        |
|-----|-------|----------|------------------------|
| SR. | QNTY. | REF.     | DESC.                  |
| 1   | 1     | CN1      | 4 PIN HEADER CONNECTOR |
| 2   | 1     | CN2      | 5 PIN HEADER CONNECTOR |
| 3   | 2     | C1,C3    | 0.1uF SMD 0805         |
| 4   | 1     | C2       | 120PF SMD 0805         |
| 5   | 1     | C4       | 100uF SMD 2512         |
| 6   | 1     | J1       | 3 PIN PCB JUMPER       |
| 7   | 1     | Q1       | MJD3055 DPAK           |
| 8   | 3     | R1,R2,R3 | 4K7 SMD 0805           |
| 9   | 3     | R4,R6,R9 | 100K SMD 0805          |
| 10  | 1     | R5       | 0E SMD 0805            |
| 11  | 1     | R7       | 0.1E SMD 2512          |
| 12  | 1     | R8       | 10K SMD 0805           |
| 13  | 1     | U1       | ARDUINO NANO           |
| 14  | 1     | U2       | MCP4725 SOT223         |
| 15  | 1     | U3       | OPA2350 SO8            |

