LM2596 DC-DC Adjustable Step-Down Power Supply Module

LM2596 DC to DC step down regulator, adjustable +1.23 to 35vdc output, 2A. Ideal for battery operated projects requiring a regulated power supply.

The LM2596 series of regulators are monolithic integrated circuits that provide all the active functions for a step-down (buck) switching regulator, capable of driving a 3-A load with excellent line and load regulation. These devices are available in fixed output voltages of 3.3 V, 5 V, 12 V, and an adjustable output version.

Requiring a minimum number of external components, these regulators are simple to use and include internal frequency compensation, and a fixed-frequency oscillator.

The LM2596 series operates at a switching frequency of 150 kHz, thus allowing smaller sized filter components than what would be required with lower frequency switching regulators.

Specification

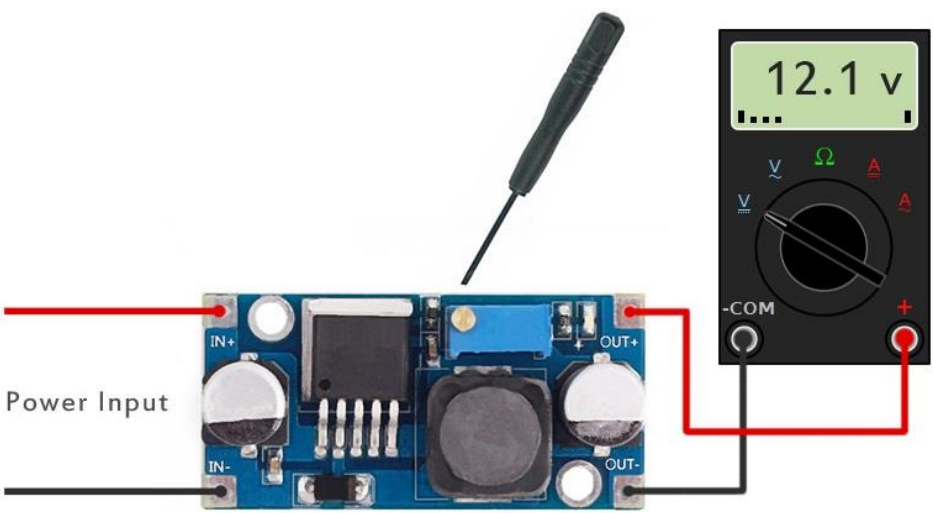
Regulator Type:	Step Down (Non Isolated input to Output)
Input Voltage:	+4 to 40vdc
Output Voltage:	+1.25 to 35vdc
Output Current:	2A Rated, (3A maximum with heat sink)
Switching Frequency:	150kHz
Efficiency:	Up to 92% (when output voltage is set high)
Dropout Voltage:	2vdc minimum
Load Regulation:	+/- 0.5%
Voltage Regulation:	+/- 2.5%
Temperature:	-40 to +85 deg C (output power less than 10Watts)

PC Board Size:	43.6mm L x 21mm W x 14mm H

Features

- 3.3-V, 5-V, 12-V, and Adjustable Output Versions
- Adjustable Version Output Voltage Range: 1.2-V to 37-V ± 4% Maximum Over Line and Load Conditions
- Available in TO-220 and TO-263 Packages
- 3-A Output Load Current Input Voltage Range Up to 40 V
- Requires Only 4 External Components
- Excellent Line and Load Regulation Specifications
- 150-kHz Fixed-Frequency Internal Oscillator
- TTL Shutdown Capability
- Low Power Standby Mode, IQ, Typically 80 µA
- High Efficiency
- Uses Readily Available Standard Inductors
- Thermal Shutdown and Current-Limit Protection

How to set-up before use



- Make sure that the power input is not greater than input voltage written in specification.
- Set the Multimeter to DC Voltage.
- Gently turn the adjustment potentiometer to your expecting voltage.

Note:

Buck converters will change the output voltage to make the feedback pin, connected to the output via a voltage divider, become 1.25V or so. If feedback is higher, output gets lower and vice versa. If one changes the ratio of resistors in voltage divider, output voltage will change. This is usually done by turning a trimmer resistor with a screwdriver. That is good enough for many applications where voltage will be set only once, but sometimes there is a need to adjust the output voltage more frequently.

775 Motor speed controller using LM 2596 DC-DC Buck converter | Adjustable step-down module

Component used:

1) LM2596 dc-dc buck converter step down module (DC 1.5v to 32v)
2) 775 Motor DC 12V-36V 3500-9000RPM Motor

- Set the Multimeter to DC Voltage.
- Gently turn the adjustment potentiometer to your expecting voltage.
- Connect the Motor as shown in diagram above
- Now ,Power on
- Adjust the Clockwise direction for the Knob (Potentiometer) and increase the motor speed.
- Then, Adjust the Anti-Clockwise direction for the Knob (Potentiometer) and decrease the motor speed.