



Maker Power™

USB Brick Power

Features

USB Power Input
 Rugged USB Mini connector
 2 Fixed Voltages Out

- 9 VDC
- 3.3 VDC

 and VUSB
 Internal Current/Thermal Limit
 Output Current up to 500mA each¹
 Flexible Connection Scheme
 Switch for Reversing/ON-OFF

Applications

Power Lego 9V Motors
 Power Lego 5V Motors
 Power MyMakerTools Brick Controller
 Remote Power Applications
 Run up to 4 motors from USB power

Description

The USB Brick Power is a small power module that accepts USB power and provides three voltages. Two of these voltages are fixed and regulated outputs, 9.0VDC and 3.3VDC, also provided is VUSB. The module provides a small and convenient package that is the same form factor as other **Maker Power™** USB power modules. The module provides flexible connections and will power the MyMakerTools Brick controller with a standard 10 pin ribbon cable.

The switch has two functions. When the motor is connected to the 9VDC +/- pins the switch will reverse the motor. When the motor is connected to the 9VDC + or – and GND, the switch performs an ON-OFF function (direction determined by the +/- connection).

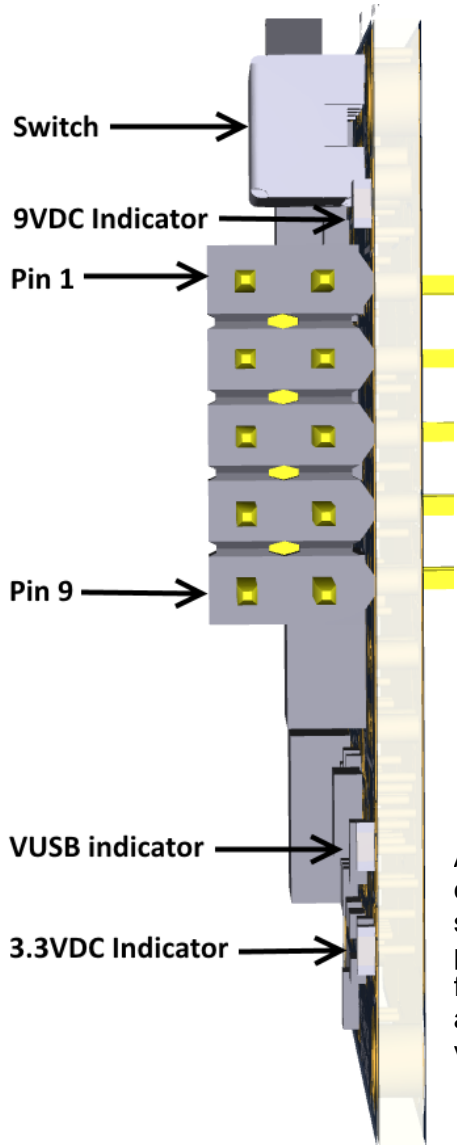
Electrical Characteristics

Parameter	Min	Max	Unit
Input Voltage	4.4	5.2	VDC
9 VDC Output @ 500mA	8.7	9.3	VDC
VUSB	Note 3	Note 3	VDC
3.3 VDC Output @ 500mA	3.15	3.45	VDC
Quiescent Current		30	mA
Line Regulation		50	mV
Load Regulation		50	mV
Stability (Temperature/Long term) ²		0.75	%

Note 1. Total current out is dependent on the USB Power supply. Total current out cannot exceed current/power capability of the USB power supply. Typically the maximum total current is 2.1A or 10W.

Note 2. Stability only applies to 3.3VDC output.

Note 3. VUSB voltage output is entirely dependent on the USB power supply and the load placed on it.



Pin	Function
1	9VDC (+)
2	9VDC (+)
3	9VDC (-)
4	9VDC (-)
5	VUSB
6	VUSB
7	3.3VDC
8	3.3VDC
9	GND
10	GND

Note

All specifications listed here were tested under ideal conditions, i.e. short load connections, well behaved circuits, stable USB power inputs, etc. This is *not* a laboratory grade product and is intended as a small and portable power supply for individuals testing and running small portable systems away from conventional power supplies. Your results will vary.

Motor Connection and Switch Operation

The motor is connected to either:

1. the two 9VDC +/- pins (pins 1/2 and pins 3/4)
2. to either 9VDC +/- (pins 1/2 or pins 3/4) and to GND (pins 9/10).

When the first connection is used, the switch will reverse the motor. When the second connection is used, the switch will turn the motor on and off. The direction of the motor is determined by which 9VDC connection was used, + or _ (pins 1/2 or pins 3/4).