

# Step-Down Switching Regulator Evaluation Board



ON Semiconductor

Part Number: LM2595ATPBCKGEVB



## Evaluation/Development Tool Description

The LM2595 regulator is circuit ideally suited for easy and convenient design of a step-down switching regulator (buck converter). It is capable of driving a 1 A load with excellent line and load regulation. This device is available in adjustable output version and it is internally compensated to minimize the number of external components to simplify the power supply design. Demoboard size: 51mm x 32mm

## Features

- Adjustable Output Voltage Range 1.23 V 37 V
- Guaranteed 1 A Output Load Current
- Wide Input Voltage Range up to 40 V
- 150 kHz Fixed Frequency Internal Oscillator
- TTL Shutdown Capability
- Low Power Standby Mode, typ 50  $\mu$ A
- Thermal Shutdown and Current Limit Protection
- Internal Loop Compensation
- Moisture Sensitivity Level (MSL) Equals 1

## Applications

- Simple High-Efficiency Step-Down (Buck) Regulator
- Efficient Pre-Regulator for Linear Regulators
- On-Card Switching Regulators
- Positive to Negative Converter (Buck-Boost)
- Negative Step-Up Converters
- Power Supply for Battery Chargers

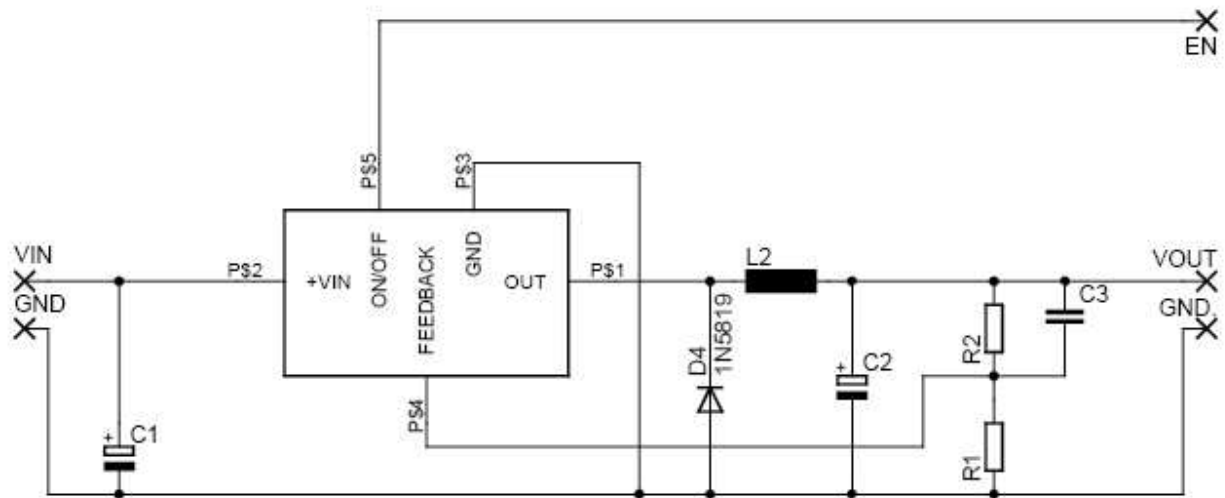


## Bill of Materials for the LM2595ATPBCKGEVB

Designator	Quantity	Description	Value	Tolerance	Footprint	Manufacturer	Manufacturer Part Number	Substitution		Comments
								Allowed	Lead Free	
R1	1	Resistor	1.0 k	1%	Axial	Panasonic - ECG	ERO-S2PHF1001	Yes	Yes	OK
R2	1	Resistor	3.0 k	1%	Axial	Panasonic - ECG	ERO-S2PHF3001	Yes	Yes	OK
C1	1	Electrolytic Capacitor	100 uF / 50 V	10%	Axial	Nichicon	UPM1C471MPD6	Yes	Yes	OK
C2	1	Electrolytic Capacitor	220 uf / 25 V	10%	Axial	Nichicon	UPM1H101MPD6	Yes	Yes	OK
C3	1	Capacitor	4.7 nF	10%	Radial	Vishay	K472K15X7RH5TH5	Yes	Yes	OK
L2	1	Inductors	68 uH	20%	RFB0810	Coilcraft	RFB0810-680L	No	Yes	OK
D4	1	Schottky Rectifier , 1.0 A, 40 V	1N5819	-	Axial	ON semiconductors	1N5819RLG	No	Yes	OK
IC1	1	Controller	LM2595	-	TO220	ON semiconductors	LM2595TADJG	No	Yes	OK



**Schematic for LM2595ATPBACKGEVB  
- LM2595ADJ 1.0 A TO220 BUCK DEMO BD**



## Test Procedure for the LM2595ATPBACKGEVB

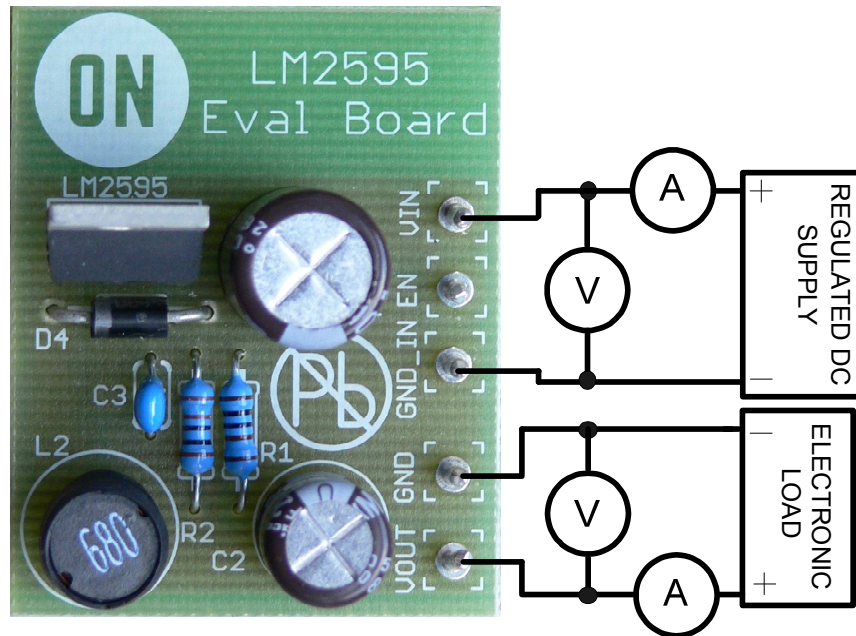


Figure 1: Test Setup

### Test Procedure:

1. Connect the test setup as shown in Figure 1.
2. Apply an input voltage,  $V_{cc} = 24\text{ V}$
3. Apply  $I_{out} = 0\text{ mA}$  load.
4. Check that  $V_{out}$  is  $5.0\text{ V}$
5. Increase  $I_{out}$  load to  $1\text{ A}$
6. Check that  $V_{out}$  is  $5.0\text{ V}$
7. Power down the load
8. Power down  $V_{cc}$
9. End of test