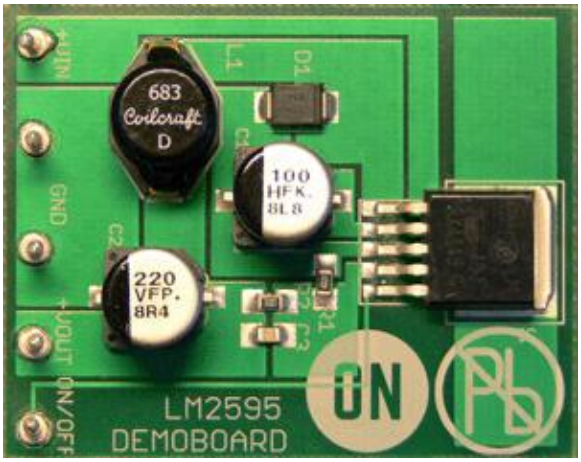
Step-Down Switching Regulator Evaluation Board

Part Number: LM2595ADPBCKGEVB

ON Semiconductor



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: 55mm x 35mm

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 _A
- Thermal Shutdown and Current Limit Protection
- Internal Loop Compensation
- Moisture Sensitivity Level (MSL) Equals
- Pb-Free Packages are Available

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

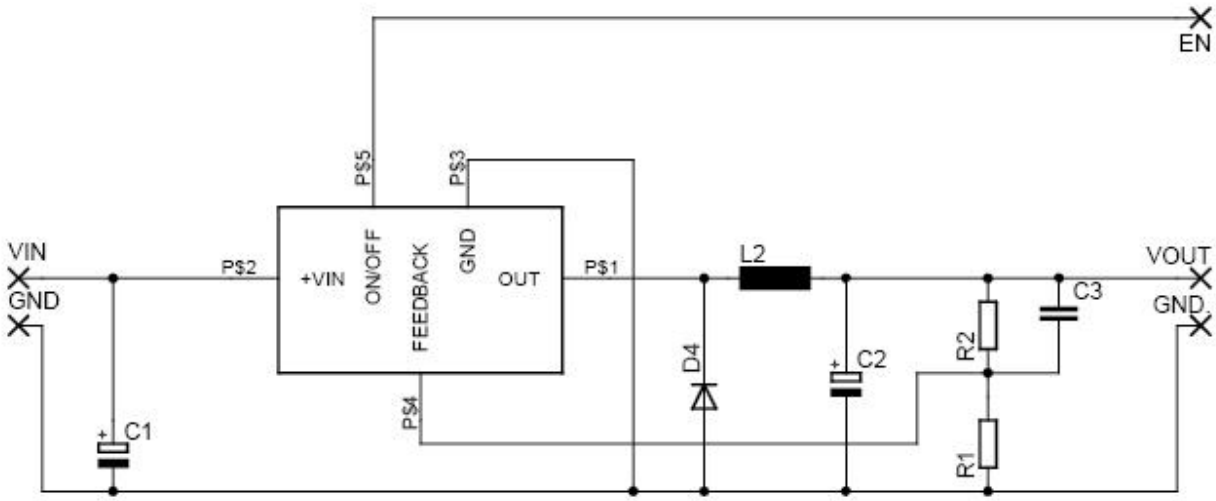
ON Semiconductor

Bill of Materials for the LM2595ADPBCKGEVB

LM2595 SMD

Designator	Quantity	Description	Value	Tolerance	Footprint	Manufacturer	Manufacturer Part Number	Substitution Allowed	Lead Free	Comments
R1	20	Resistor	1.0 k	1%	805	Rohm	MCR10EZHF1001	Yes	Yes	
R2	20	Resistor	3.0 k	1%	805	Rohm	MCR10EZHF3001	Yes	Yes	
C1	20	Electrolytic Capacitor	100 uF / 50 V	10%	E	AVX	TPSE477K010R0200	No	Yes	
C2	20	Electrolytic Capacitor	220 uF / 16 V	10%	7343-31 (EIA)	AVX	TPSE476K035R0250	No	Yes	
C3	20	Capacitor	1.5 nF	10%	805	Kemet	C0805C152K5RACTU	Yes	Yes	
L1	20	Inductors	68 uH	20%	DO3340P	Coilcraft	DO3340P-683ML	No	Yes	
D1	20	Schottky Rectifier , 1.0 A, 40 V	MBRS140	-	SMB	ON semiconductors	MBRS140T3G	No	Yes	
IC1	20	Controller	LM2595	-	D2PAK	ON semiconductors	LM2595DSADJG	No	Yes	

Schematic for LM2595ADPBCKGEVB
- LM2595ADJ 1.0 A D2PAK BUCK DEMO BD



Test Procedure for the LM2595ADPBCKGEVB

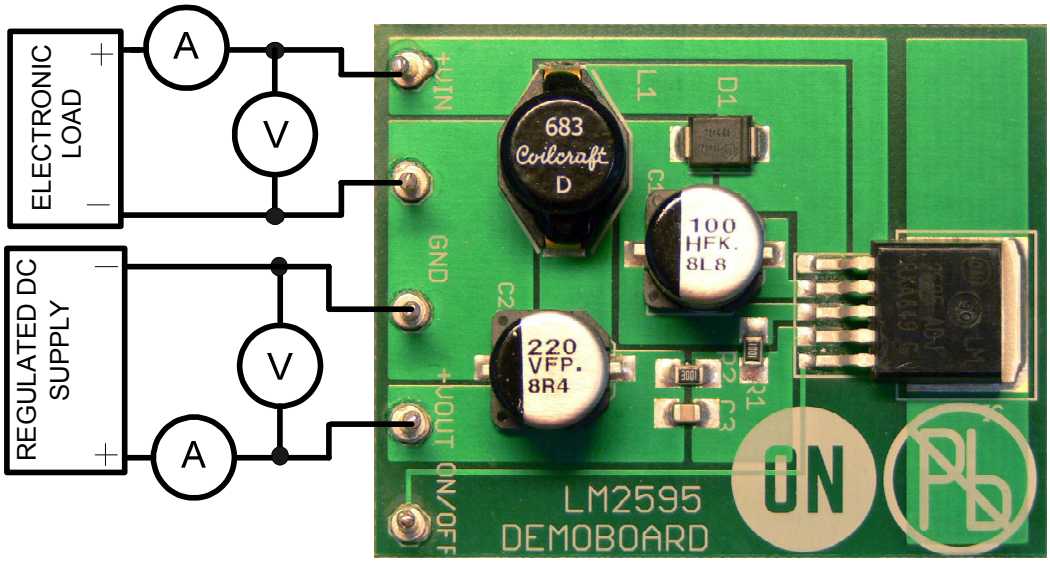


Figure 1: Test Setup

Test Procedure:

1. **Connect the test setup as shown in Figure 1.**
2. **Apply an input voltage, Vcc = 24 V**
3. **Apply Iout = 0 mA load.**
4. **Check that Vout is 5.0 V**
5. **Increate Iout load to 1 A**
6. **Check that Vout is 5.0 V**
7. **Power down the load**
8. **Power down Vcc**
9. **End of test**