

General Description

The MAX618 evaluation kit (EV kit) is a constant-frequency, PWM, step-up switching regulator with an internal 2A, 28V n-channel MOSFET. The EV kit accepts a +3V to Vout input and converts it to a 12V output for currents up to 500mA. Conversion efficiency is greater than 90%. The EV kit operates at 250kHz, allowing the use of small external components.

The MAX618 EV kit is a fully assembled and tested surface-mount circuit board.

Features

- ♦ +3V to VouT Input Voltage Range
- ♦ 12V or Adjustable Output Voltage
- ♦ Up to 500mA Output Current
- ♦ Internal 2A, 28V MOSFET Switch
- ♦ 3µA Shutdown Current
- ◆ 250kHz Switching Frequency
- **♦ Surface-Mount Components**
- ◆ Fully Assembled and Tested

Component List

DESIGNATION	QTY	DESCRIPTION	
C1, C2	2	68μF, 20V low-ESR tantalum caps AVX TPSE686M020R0150 or Sprague 593D686X0020E2W	
C3	1	0.1µF ceramic capacitor	
C4	1	4.7μF, 10V X5R ceramic capacitor Taiyo Yuden LMK316BJ475ML	
C5	1	0.047µF ceramic capacitor	
C6, C7	2	1μF, 25V X5R ceramic capacitors Taiyo Yuden TMK316BJ105KL	
C8	1	68pF ceramic capacitor	
D1	1	2A Schottky diode SGS-Thomson STPS2L25U, Nihon EC21QS03L, or Central Semiconductor CMSH2-40M	
L1	1	15µH power inductor Sumida CDRH6D38-150 (shielded), Sumida CR75-150 (unshielded), or Sumida CDH74-150 (unshielded)	
R1	1	715kΩ ±1% resistor	
R2	1	100kΩ ±1% resistor	
U1	1	MAX618EEE	
JU1	1	3-pin header	
None	1	Shunt	
None	1	MAX618 PC board	
None	1	MAX618 data sheet	

Ordering Information

PART	TEMP. RANGE	IC PACKAGE
MAX618EVKIT	0°C to +70°C	16 QSOP

Quick Start

The MAX618 EV kit is fully assembled and tested. Follow these steps to verify board operation. Do not turn on the power supply until all connections are completed.

- 1) Connect a +5V supply to the VIN pad. Connect ground to the GND pad.
- 2) Connect a voltmeter and load, if any, to the VOUT
- 3) Place the shunt across JU1 pins 2 and 3.
- 4) Turn on the power supply to the board and verify that the output voltage is 12V.
- 5) For other output voltages, refer to the Output Voltage Selection section in the MAX618 data sheet for instructions on selecting feedback resistors R1 and R2, inductor L1, output capacitor C2, and compensation capacitors C5 and C8. Note: Input (C1) and output (C2) capacitors are rated at 20V.

Jumper Selection

The 3-pin header JU1 selects shutdown mode. Table 1 lists the selectable jumper options in shutdown mode.

Table 1. Jumper JU1 Shutdown Function

SHUN		SHDN PIN	MAX618 OUTPUT
1 & 3	2	Connected to GND	Shutdown mode, VOUT = VIN - VDIODE
2 & 3	3	Connected to VL	MAX618 enabled, Vout = 12V

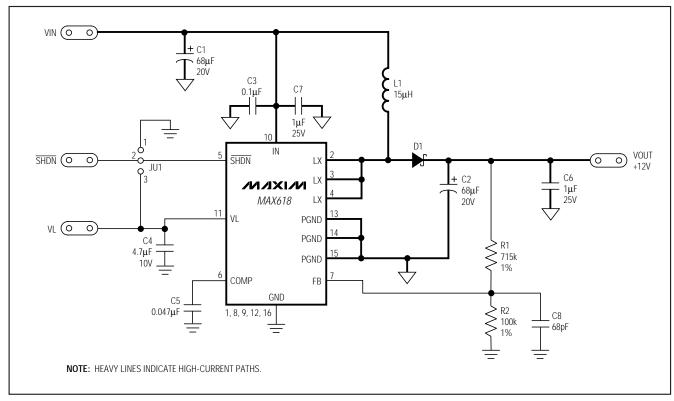


Figure 1. MAX618 EV Kit Schematic

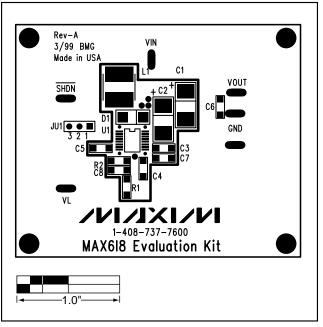


Figure 2. MAX618 EV Kit—Component Placement Guide

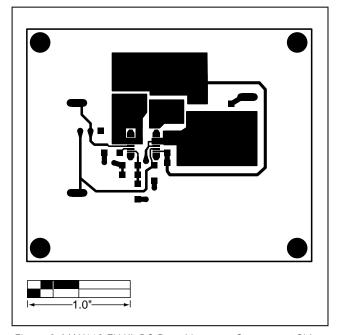


Figure 3. MAX618 EV Kit PC Board Layout—Component Side

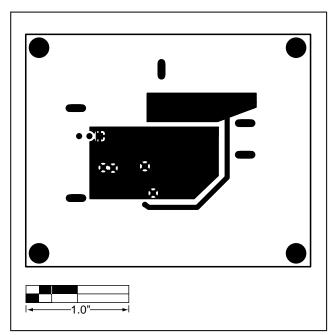


Figure 4. MAX618 EV Kit PC Board Layout—Solder Side

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MAX618 Evaluation Kit

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