

MAXIM

MAX1572 Evaluation Kit

Evaluates: MAX1572

General Description

The MAX1572 evaluation kit (EV kit) is a fully assembled and tested circuit board that evaluates the MAX1572 PWM step-down DC-DC converter. The circuit operates from 2.6V to 5.5V and has a fixed 1.5V output capable of delivering 800mA. It also provides a $\overline{\text{RESET}}$ output. The EV kit can be used to evaluate other output voltage versions of the MAX1572 by replacing the IC.

Component List

DESIGNATION	QTY	DESCRIPTION
C1, C2	2	10 μ F \pm 20%, 6.3V X5R ceramic capacitors (0805) Panasonic ECJ2FB0J106M or TDK C2012X5R0J106M or Taiyo Yuden JMK212BJ106MG
C3	1	1000pF \pm 10%, 50V X7R ceramic capacitor (0603) Murata GRM188R71H102K or equivalent
C4	1	0.1 μ F \pm 10%, 16V X7R ceramic capacitor (0603) Taiyo Yuden EMK107BJ104KA or equivalent
R1	1	10 Ω \pm 5% resistor (0603)
JU1, JU2	2	3-pin headers
L1	1	2.2 μ H inductor, 0.17 Ω , 1.2A 3.6mm \times 3.6mm \times 1.2mm TOKO 976AS-2R2M (D312F family)
U1	1	MAX1572ETC150 (12-pin thin QFN 4mm \times 4mm)
None	2	Shunts, position 2
None	1	MAX1572 EV kit PC board

Component Suppliers

SUPPLIER	PHONE	WEBSITE
Kamaya	260-489-1533	www.kamaya.com
Murata	770-436-1300	www.murata.com
Panasonic	714-373-7939	www.panasonic.com
Taiyo-Yuden	408-573-4150	www.t-yuden.com
TDK	847-803-6100	www.component.tdk.com
TOKO	847-297-0070	www.toko.com

Note: When contacting these component suppliers, please specify you are using the MAX1572.

Features

- ◆ 2MHz PWM Switching
- ◆ 800mA Guaranteed Output Current
- ◆ Power-Saving Modes: Pulse Group/Pulse Skip/Forced PWM
- ◆ Voltage-Positioning Load Transients
- ◆ 5mV_{p-p} Output Ripple
- ◆ Tiny 2.2 μ H Inductor
- ◆ 10 μ F Ceramic Output Capacitor
- ◆ Low 0.1 μ A Shutdown Current
- ◆ Soft-Start with Zero Inrush Current
- ◆ 170ms (min) $\overline{\text{RESET}}$ Output
- ◆ Thin QFN IC Package: 4mm \times 4mm \times 0.8mm
- ◆ Fully Assembled and Tested

Ordering Information

PART	TEMP RANGE	IC PACKAGE
MAX1572EVKIT	0°C to +70°C	12 Thin QFN-EP*

*EP = Exposed paddle.

Recommended Equipment

- Power supply capable of supplying 500mA from 2.6V to 5.5V
- Voltmeter

Quick Start

Follow the steps below to verify operation of the MAX1572 EV kit. **Do not turn on the power supply until all connections are completed:**

- 1) Select the desired operating mode with JU1 and JU2 (see Table 1).
- 2) Connect the positive terminal of the voltmeter to the pad labeled OUT. Connect the ground terminal of the voltmeter to the pad labeled GND nearest the OUT pad. Connect a load from OUT to the GND pad closest to OUT.
- 3) Preset the power supply to between 2.6V and 5.5V, and turn the power supply off.
- 4) Connect the positive power-supply terminal to the pad labeled IN. Connect the power-supply ground to the pad labeled GND nearest the IN pad.
- 5) Turn on the power supply and verify the output voltage is 1.5V.

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For pricing, delivery, and ordering information, please contact Maxim/Dallas Direct! at 1-888-629-4642, or visit Maxim's website at www.maxim-ic.com.

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Detailed Description

Operating Modes

The operating mode is selected with JU1 and JU2, as shown in Table 1. For details on each operating mode, refer to the MAX1572 data sheet.

RESET Output

A connection is provided on the MAX1572 EV kit for evaluating the RESET output of the MAX1572. RESET is an open-drain output with an internal 14kΩ pullup resistor to OUT. Refer to the MAX1572 data sheet for details on the operation of RESET.

ABATT Filter

An RC filter is included on the EV kit to reduce the power-supply noise entering the IC through ABATT. To evaluate the circuit without the filter, short R1 on the PC board and remove C4.

Evaluating Other Output Voltages

The MAX1572 EV kit comes with the 1.5V output version of the MAX1572 installed. To evaluate other voltage versions, replace the IC with the voltage version part to evaluate. MAX1572 output voltages range from 0.75V to 2.5V. Samples of the standard versions are available from Maxim. Refer to the MAX1572 data sheet for ordering information. When evaluating output voltages less than 1.5V, replace C2 with a 22μF ceramic capacitor.

Table 1. JU1 and JU2 Functions

JU1	JU2	EN1 PIN	EN2 PIN	MODE
1-2	1-2	GND	GND	Shutdown
1-2	2-3	GND	IN	Pulse group
2-3	1-2	IN	GND	Pulse skip
2-3	2-3	IN	IN	Forced PWM

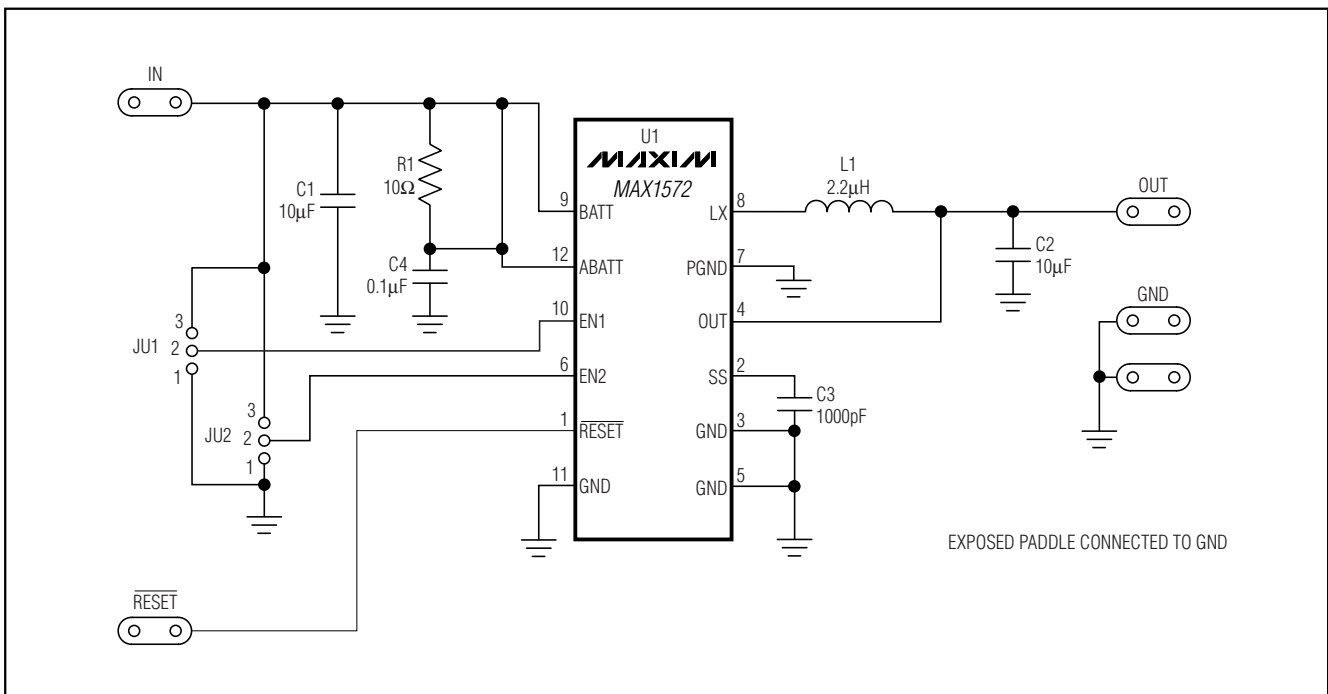


Figure 1. MAX1572 EV Kit Schematic

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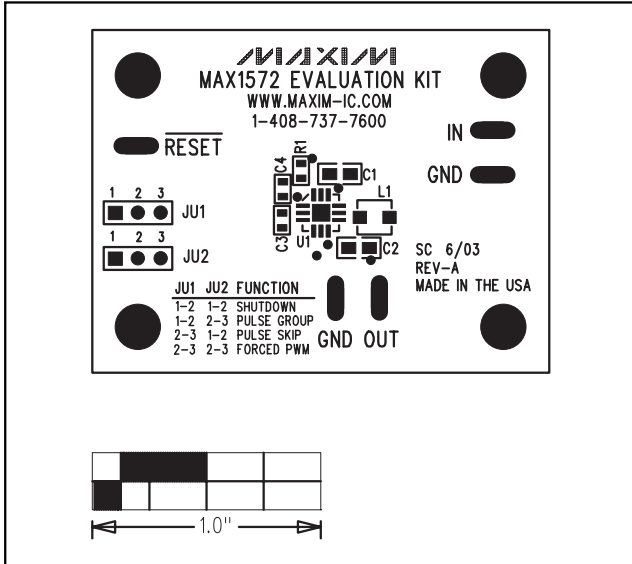


Figure 2. MAX1572 EV Kit Component Placement Guide—Top Silkscreen

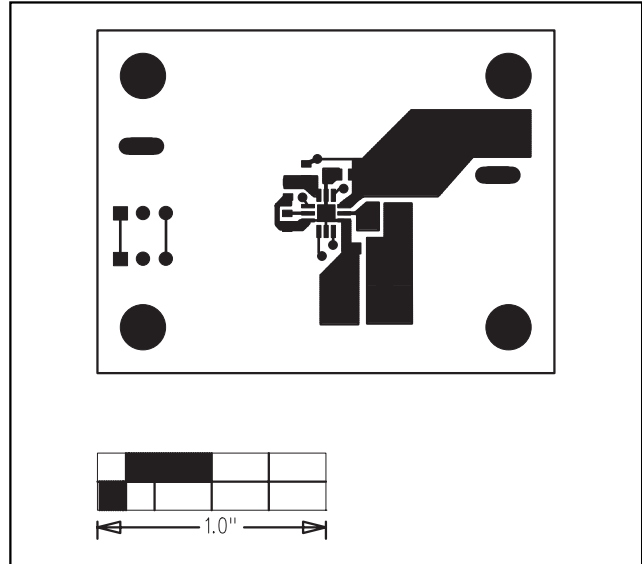


Figure 3. MAX1572 EV Kit PC Board Layout—Component Side

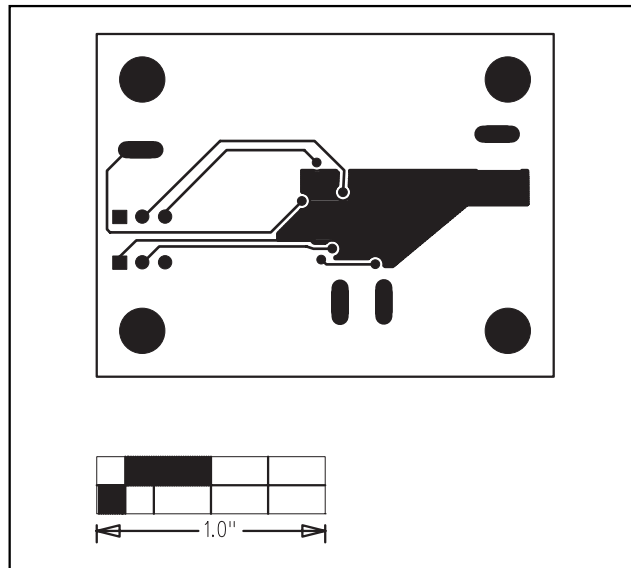


Figure 4. MAX1572 EV Kit PC Board Layout—Solder Side

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