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MAX8530/MAX8531 Evaluation Kit

_____*General Description*

The MAX8530/MAX8531 evaluation kit (EV kit) is a fully assembled and tested surface-mount circuit board that contains two separate low-dropout (LDO) regulator circuits. The left circuit utilizes a MAX8530 and is configured for outputs of 2.85V at 200mA and 2.60V at 150mA. The right circuit uses a low-noise MAX8531 and is configured for outputs of 2.85V at 200mA and 2.85V at 150mA.

The MAX8530/MAX8531 EV kit features on-board shutdown control and a jumper-selectable $\overline{RESET}$ output voltage (MAX8530 only). Both circuits are separate from each other and do not share a common ground plane.

_____*Component List*

DESIGNATION	QTY	DESCRIPTION
A1	1	MAX8530ETT 6-pin QFN (Note 1)
C1, C4	2	2.2µF ±20%, 10V X5R ceramic capacitors (0805) TDK C2012X5R1A225M (Note 2)
C2, C5	2	2.2µF ±20%, 6.3V X5R ceramic capacitors (0603) TDK 1608X5R0J225M
C3, C6	2	1.0µF ±20%, 10V X5R ceramic capacitors (0603) TDK C1608X5R1A105M
C7	1	0.01µF ±20%, 25V X7R ceramic capacitor (0402) TDK C1005X7R1E103M
JU1, JU2, JU3	3	Jumpers, 3-pin headers
R1	1	100kΩ ±5% resistor (0402)
U1	1	MAX8530EBTJO (2 x 3 UCSP)
U2	1	MAX8531EBTJJ (2 x 3 UCSP)
None	3	Shunts
None	1	MAX8530/MAX8531 EV kit PC board

Note 1: A1 is for display purposes only (not a functional component).
Note 2: If the input voltage is less than 6.3V, capacitors C1 and C4 can be reduced in size.

_____*Features*

♦ **Dual-Output Power Supply**

   MAX8530: 2.85V at 200mA, 2.60V at 150mA

   MAX8531: 2.85V at 200mA, 2.85V at 150mA

♦ **2.5V to 6.5V Input Supply Range**

♦ **Selectable (140ms) $\overline{RESET}$ Output (MAX8530)**

♦ **Low-Noise ($40\mu V_{RMS}$) Outputs (MAX8531)**

♦ **On-Board Shutdown Control**

♦ **Surface-Mount Construction**

♦ **Fully Assembled and Tested**

_____*Ordering Information*

PART	TEMP RANGE	IC PACKAGE
MAX8530/MAX8531EVKIT	0°C to +70°C	2 x 3 UCSP

_____*Quick Start*

Recommended Equipment

• One variable-DC power supply capable of supplying up to 6.5V at 0.5A

• Three voltmeters

Procedure (MAX8530)

The MAX8530/MAX8531 EV kit is fully assembled and tested. Follow the steps below to verify board operation. **Do not turn on the power supply until all connections are completed:**

1) Set the variable-DC power supply to 3.6V.

2) Ensure the variable-DC power supply is turned off.

3) Ensure shunts are placed across pins 1 and 2 of jumpers JU1 and JU2.

4) Connect the power supply to the IN pad and the corresponding GND pad.

5) Connect a voltmeter across the OUT1 pad and the corresponding GND pad.

6) Connect a voltmeter across the OUT2 pad and the corresponding GND pad.

7) Connect a voltmeter across the $\overline{RESET}$ pad and the GND pad (located beside the IN pad).

Evaluate: MAX8530/MAX8531

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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.

MAX8530/MAX8531 Evaluation Kit

Component Suppliers

SUPPLIER	PHONE	FAX	WEBSITE
TDK	847-803-6100	847-390-4405	www.component.tdk.com

Note: Please indicate that you are using the MAX8530 or MAX8531 when contacting this component supplier.

8) Turn on the variable-DC power supply.

9) Verify the voltage at OUT1 is 2.85V.

10) Verify the voltage at OUT2 is 2.60V.

11) Verify the voltage at $\overline{RESET}$ is 2.85V.

Procedure (MAX8531)

The MAX8530/MAX8531 EV kit is fully assembled and tested. Follow the steps below to verify board operation. **Do not turn on the power supply until all connections are completed:**

1) Set the variable-DC power supply to 3.6V.

2) Ensure the variable-DC power supply is turned off.

3) Ensure a shunt is placed across pins 1 and 2 of jumper JU3.

4) Connect the power supply to the IN2 pad and the corresponding GND2 pad.

5) Connect a voltmeter across the OUT21 pad and the corresponding GND2 pad.

6) Connect a voltmeter across the OUT22 pad and the corresponding GND2 pad.

7) Turn on the variable-DC power supply.

8) Verify the voltage at OUT21 is 2.85V.

9) Verify the voltage at OUT22 is 2.85V.

Detailed Description

The MAX8530/MAX8531 EV kit contains two separate low-dropout (LDO) regulator circuits. Either circuit can be powered from a DC power supply with a 2.5V to 6.5V input range.

The left circuit (MAX8530) provides two fixed output voltages (2.85V and 2.60V) at 200mA and 150mA. A MAX8530 in a 6-pin UCSP package is used for this circuit. PC board pads for the $\overline{SHDN}$ signal and the $\overline{RESET}$ signal are provided on the circuit to interface with an external controller.

The right circuit (MAX8531) provides two fixed output voltages (2.85V and 2.85V) at 200mA and 150mA. A low-noise MAX8531 in a 6-pin UCSP™ package is used for this circuit. PC board pads for the $\overline{SHDN}$ signal are provided on the circuit to interface with an external controller.

The MAX8530/MAX8531 EV kit provides on-board shutdown control as well as a jumper-selectable $\overline{RESET}$ output voltage for the MAX8530. The left and right circuits are separate from each other and do not share a common ground plane.

Shutdown Control

The MAX8530/MAX8531 has an active-low shutdown control input that enables/disables both of the power outputs. JU1 (MAX8530) or JU3 (MAX8531) selects the circuit operating modes: shutdown or normal operation. When driving $\overline{SHDN}$ with an external signal, remove the shunt and connect a signal source to the $\overline{SHDN}$ pad (MAX8530) or the $\overline{SHDN2}$ pad (MAX8531). See Table 1 for shunt positions.

Table 1. Shutdown Selection

JUMPER	SHUNT POSITION	$\overline{SHDN}$ PIN	DESCRIPTION
JU1/JU3	1 and 2*	Connected to IN	MAX8530/MAX8531 Outputs Enabled. $\overline{RESET}$ is high impedance when all outputs are in regulation (MAX8530).
JU1/JU3	2 and 3	Connected to GND	MAX8530/MAX8531 Outputs Disabled. $\overline{RESET}$ is low impedance (MAX8530).

Default configuration: JU1/JU3 (1 and 2).

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Selecting the $\overline{RESET}$ Output Voltage (MAX8530)

The $\overline{RESET}$ pin of the MAX8530 indicates the status of the voltage at OUT1 only. Monitor this voltage at the $\overline{RESET}$ pad. The $\overline{RESET}$ pin is pulled up with a 100kΩ resistor through jumper JU2 to one of two outputs (see Table 2 for shunt positions). There is also a version that has an internal 100kΩ pullup to OUT1. Contact factory for availability.

Table 2. $\overline{RESET}$ Output Selection

JUMPER	SHUNT POSITION	DESCRIPTION
JU2	1 and 2*	$\overline{RESET}$ pin pulled up to OUT1 (2.85V)
JU2	2 and 3	$\overline{RESET}$ pin pulled up to OUT2 (2.60V)

*Default configuration: JU2 (1–2).
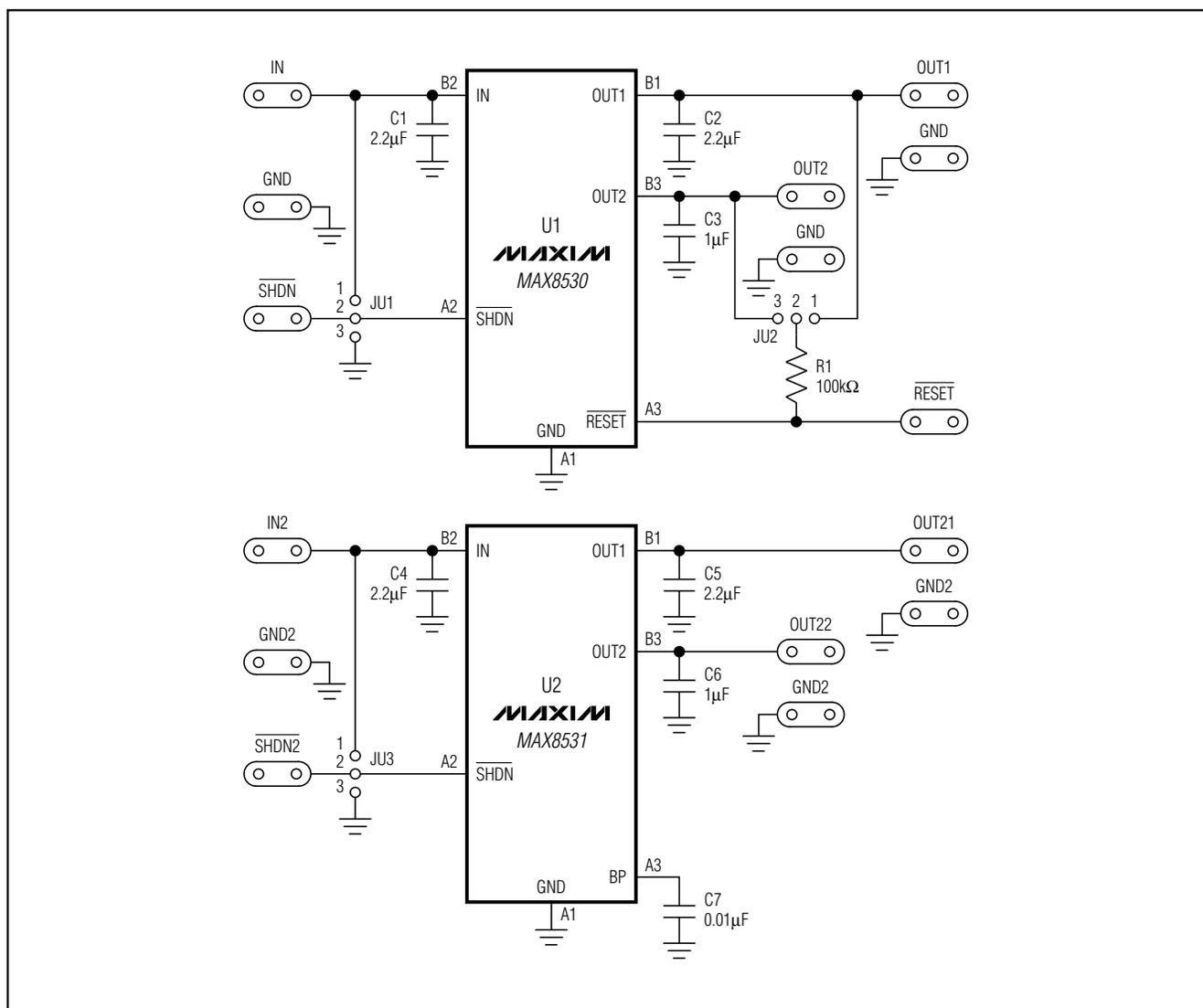
Figure 1. MAX8530/MAX8531 EV Kit Schematic

MAX8530/MAX8531 Evaluation Kit
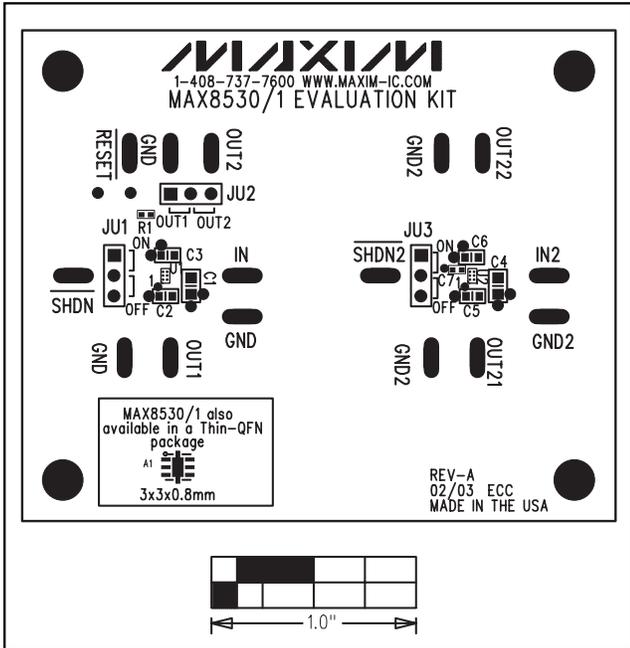
Figure 2. MAX8530/MAX8531 EV Kit Component Placement Guide—Component Side
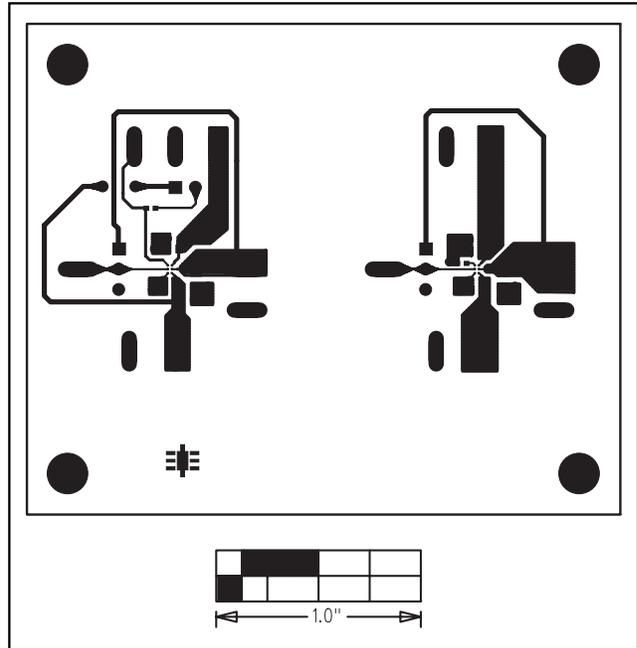
Figure 3. MAX8530/MAX8531 EV Kit PC Board Layout—Component Side
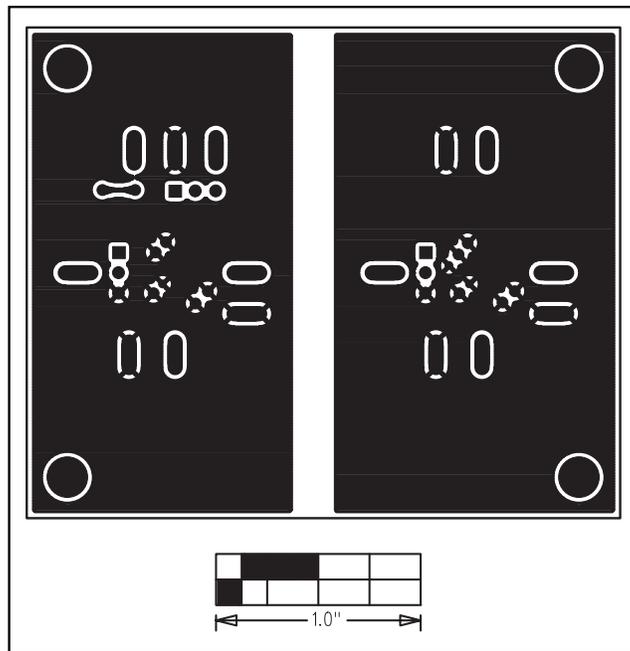
Figure 4. MAX8530/MAX8531 EV Kit PC Board Layout—Solder Side

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