

MAX17291B WLP Evaluation Kit

Evaluates: MAX17291B

General Description

The MAX17291B WLP evaluation kit (EV kit) evaluates the MAX17291B IC packaged in a WLP. The MAX17291B is a low quiescent current boost (step-up) DC-DC converter with a 100mA peak inductor current limit, True Shutdown™, and short-circuit protection. The EV kit operates over an input range of 1.8V to 4.5V and provides resistor-configurable output voltages from 5.5V to 20V. The EV kit comes with the MAX17291BANT+ (WLP) installed.

Features and Benefits

- Evaluates the MAX17291B IC in a 6-Bump WLP
- (3 x 2 Bump, 0.4mm Pitch)
- 1.8V to 4.5V Input Range
- 5.5V to 20V Configurable Output Voltage
- Up to 100mA Input Peak Current
- Proven 2-Layer, 1.5oz Copper PCB Layout
- Demonstrates Compact Solution Size
- Fully Assembled and Tested

MAX17291B WLP EV Kit Files

FILE	DESCRIPTION
MAX17291B WLP EV BOM	EV Kit Bill of Materials
MAX17291B WLP EV PCB Layout	EV Kit Layout
MAX17291B WLP EV Schematic	EV Kit Schematic

[Ordering Information](#) appears at end of data sheet.

Quick Start

Required Equipment

- MAX17291B WLP EV Kit
- 1.8V to 4.5V, 5A DC Power Supply
- Electronic Load Capable of 50mA
- Digital Voltmeter (DVM)

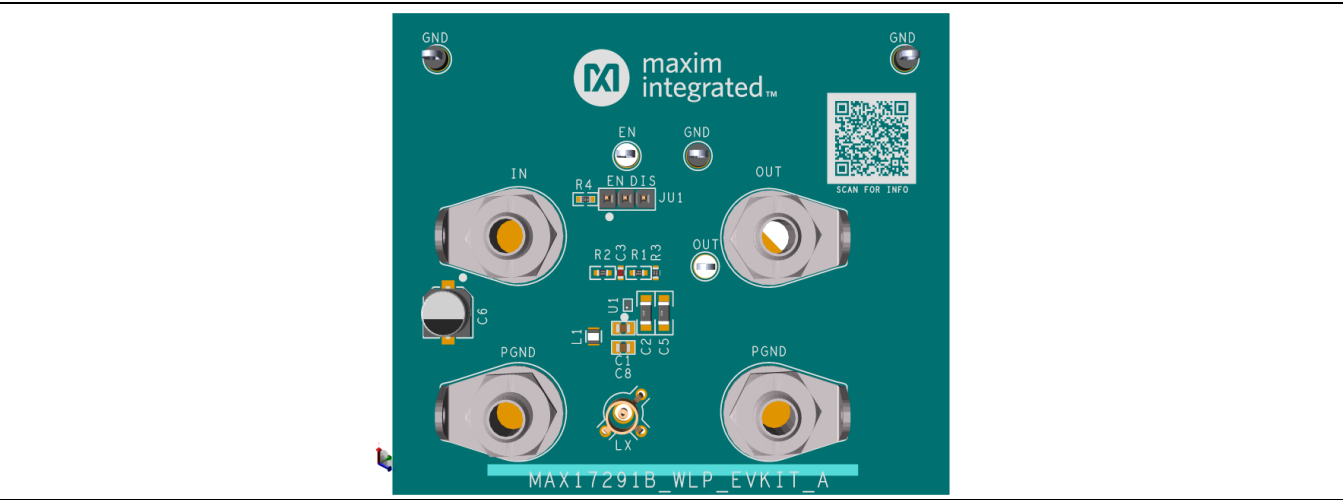
Procedure

The EV kit is fully assembled and tested. Follow the steps below to verify board operation.

Caution: Do not turn on the power supply until all connections are completed.

- 1) Verify that a shunt is installed on pins 1 and 2 of jumpers JU1 (EV kit enabled).
- 2) Connect the power supply between the IN and nearest GND terminal posts.
- 3) Connect the electronic load between the OUT and nearest GND terminal posts.
- 4) Connect the DVM between the OUT and nearest GND terminal posts.
- 5) Set the power supply to 4.5V and turn it on.
- 6) Set the electronic load to 50mA at constant current mode, then enable the electronic load.
- 7) Verify that the voltage at the OUT-terminal post is approximately 12V.

EV Kit Photo



Detailed Description of Hardware

The MAX17291B WLP EV kit evaluates the MAX17291B IC in a WLP package. The MAX17291B is a high efficiency, low quiescent current, step-up DC-DC converter with True Shutdown and short-circuit protection. True Shutdown disconnects the output from the input with no forward or reverse current. The MAX17291B WLP EV kit operates over an input range of 1.8V to 4.5V. The EV kit provides resistor-configurable output voltages from 5.5V to 20V. The EV kit comes with the MAX17291BANT+ (WLP) installed and is configured for a 12V output. The 12V output can deliver 50mA of current at 4.5V input.

EN

The MAX17291B WLP EV kit provides a jumper JU1 to enable or disable the MAX17291B. See [Table 1](#) for JU1 jumper settings.

Table 1. EN (JU1) Jumper Settings

SHUNT POSITION	DESCRIPTION
1-2*	Enabled. EN = IN*
2-3	Disabled. EN = GND

*Default Position

Component Suppliers

SUPPLIER	WEBSITE
Murata/TOKO	www.murata.com
Nichicon	www.nichicon-us.com
Taiyo Yuden	www.ty-top.com

Note: Indicates the use of the MAX17291B when contacting these component suppliers.

Ordering Information

PART	TYPE
MAX17291BEVK#WLP	EV Kit

#Denotes RoHS-compliant.

MAX17291B WLP EV Kit Bill of Materials

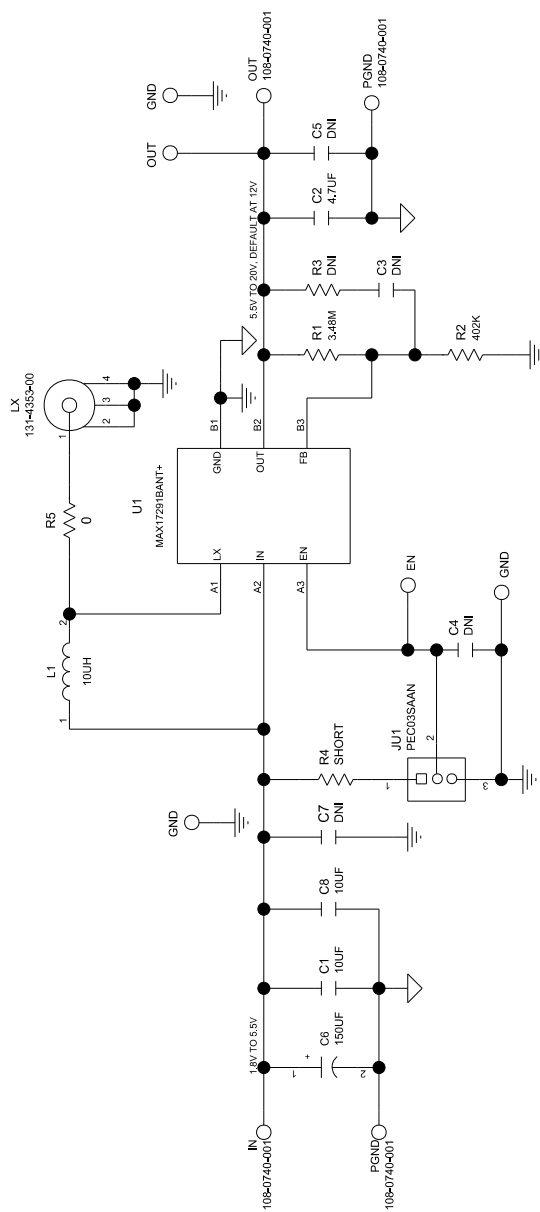
ITEM	REF_DES	QTY	MFG PART #	MANUFACTURER	DESCRIPTION
1	C1, C8	2	CL21B106KPQNNN; LMK212AB7106KG; C0805X106K8RACAUTO; GRM21BR71A106KA73; C2012X7R1A106K125AC; GMC21X7R106K10NT	SAMSUNG; TAIYO YUDEN; KEMET; MURATA; TDK; CAL-CHIP ELECTRONIC INC.	CAP; SMT (0805); 10UF; 10%; 10V; X7R; CERAMIC
2	C2	1	GRM31CR71H475KA12; GRJ31CR71H475KE11; GXM31CR71H475KA10; UMK316AB7475KL; GRM31CR71H475KA12L	MURATA; MURATA; MURATA; TAIYO YUDEN; MURATA	CAP; SMT (1206); 4.7UF; 10%; 50V; X7R; CERAMIC

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3	C6	1	UWJ0J151MCL	NICHICON	CAP; SMT; 150UF; 20%; 6.3V; ALUMINUM-ELECTROLYTIC
4	EN, TP3	2	5012	KEystone	TEST POINT; PIN DIA=0.125IN; TOTAL LENGTH=0.445IN; BOARD HOLE=0.063IN; WHITE; PHOSPHOR BRONZE WIRE SILVER PLATE FINISH;
5	GND1, TP2, TP4	3	5011	KEystone	TEST POINT; PIN DIA=0.125IN; TOTAL LENGTH=0.445IN; BOARD HOLE=0.063IN; BLACK; PHOSPHOR BRONZE WIRE SILVER PLATE FINISH;
6	IN, OUT, PGND, PGND2	4	108-0740-001	EMERSON NETWORK POWER	CONNECTOR; MALE; PANELMOUNT; BANANA JACK; STRAIGHT; 1PIN
7	JU1	1	PEC03SAAN	SULLINS	CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 3PINS
8	L1	1	DFE201610E-100M	MURATA	INDUCTOR; SMT (0806); FERRITE; 10UH; 20%; 0.65A
9	LX	1	131-4353-00	TEKTRONICS	CONNECTOR; WIREMOUNT; CIRCUIT BOARD TEST POINT MINIATURE PROBE; STRAIGHT; 4PINS
10	R1	1	CRCW06033M48FK	VISHAY	RES; SMT (0603); 3.48M; 1%; +/- 100PPM/DEGK; 0.1000W
11	R2	1	CRCW06034023FK; ERJ-3EKF4023	VISHAY; PANASONIC	RES; SMT (0603); 402K; 1%; +/- 100PPM/DEGC; 0.1000W
12	R5	1	ERJ-2GE0R00	PANASONIC	RES; SMT (0402); 0; JUMPER; JUMPER; 0.1000W
13	SU1	1	2SN-BK-G	SAMTEC	TEST POINT; JUMPER; STR; TOTAL LENGTH=0.175IN; BLACK; INSULATION=PBT;PHOSPHOR BRONZE CONTACT=GOLD PLATED
14	U1	1	MAX17291BANT+	MAXIM	EVKIT PART-IC; MAX17291BANT+; HIGH-VOLTAGE MICROPPOWER BOOST CONVERTER; PACKAGE OUTLINE: 21-100577; PACKAGE CODE: N60N1+1S WLP6
15	PCB	1	MAX17291BWLP	MAXIM	PCB:MAX17291BWLP
16	C3, C4	0	N/A	N/A	CAPACITOR; SMT (0603); OPEN; FORMFACTOR
17	C5	0	GRM31CR71H475KA12; GRJ31CR71H475KE11; GXM31CR71H475KA10; UMK316AB7475KL; GRM31CR71H475KA12L	MURATA; MURATA; MURATA; TAIYO YUDEN; MURATA	CAP; SMT (1206); 4.7UF; 10%; 50V; X7R; CERAMIC
18	C7	0	N/A	N/A	CAPACITOR; 0402 PACKAGE; GENERIC
19	R3	0	N/A	N/A	RESISTOR; 0603; OPEN; FORMFACTOR
20	R4	0	N/A	N/A	PACKAGE OUTLINE 0603 RESISTOR
TOTAL		22			

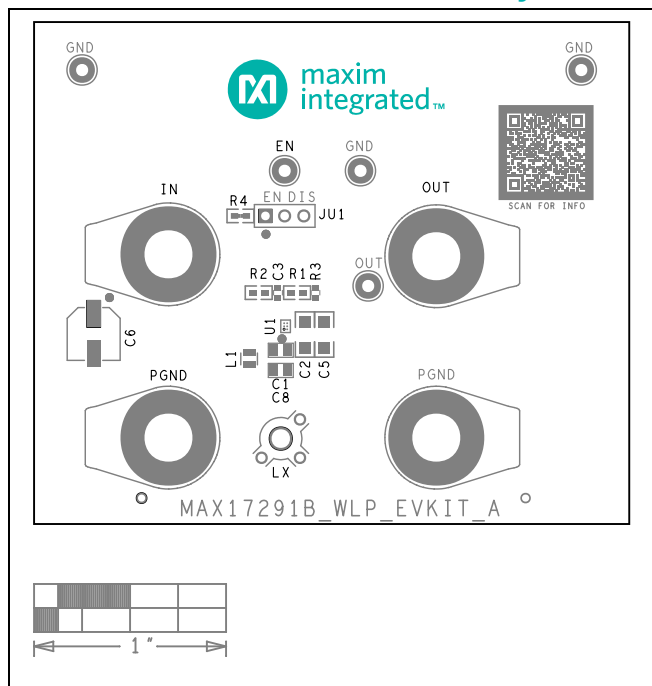
MAX17291B WLP EV Kit Schematic



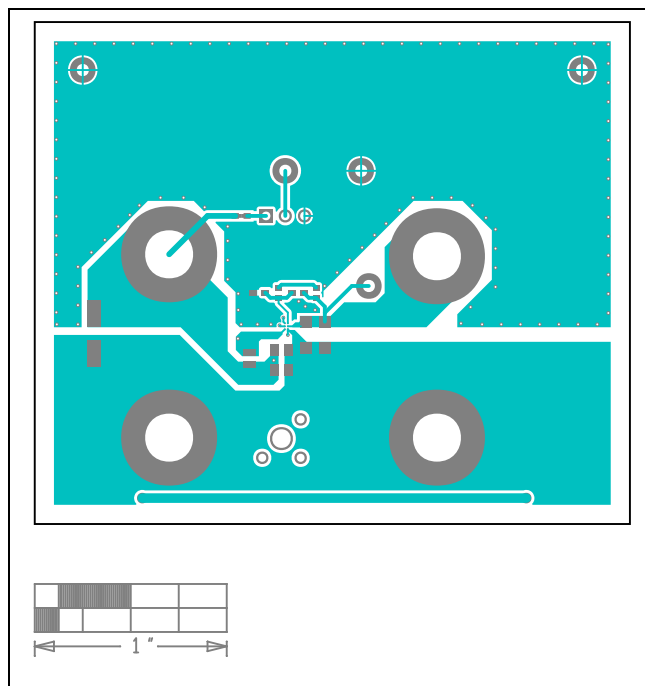
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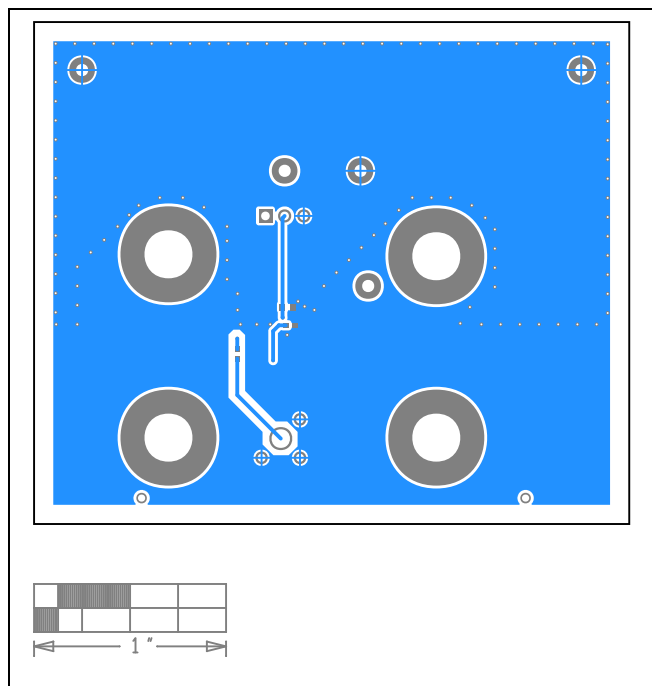
MAX17291B WLP EV Kit PCB Layout



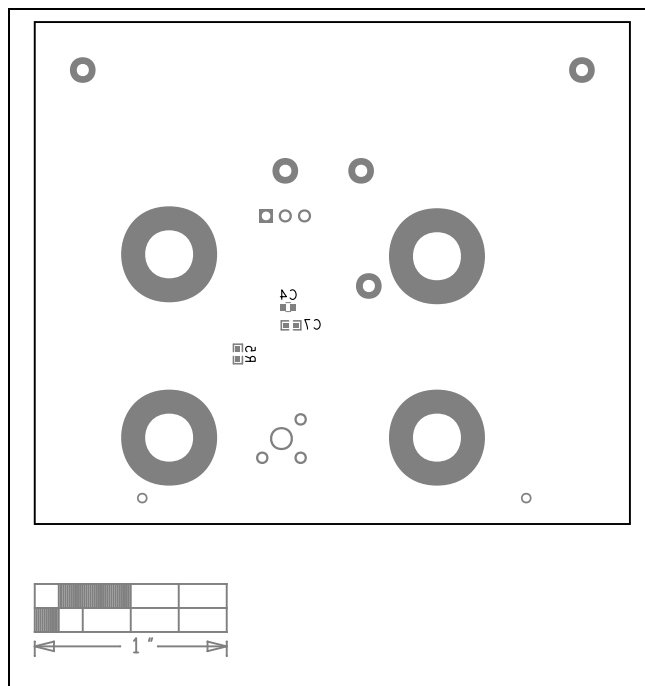
MAX17291B WLP EV Kit Component Placement Guide - Top Silkscreen



MAX17291B WLP EV Kit PCB Layout - Top



MAX17291B WLP EV Kit PCB Layout - Bottom



MAX17291B WLP EV Kit Component Placement Guide - Bottom Silkscreen

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Revision History

REVISION NUMBER	REVISION DATE	DESCRIPTION	PAGES CHANGED
0	10/21	Initial Release	—

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For pricing, delivery, and ordering information, please visit Maxim Integrated's online storefront at <https://www.maximintegrated.com/en/storefront/storefront.html>.

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