Evaluates: MAX17291C

MAX17291C Evaluation Kit

General Description

The MAX17291C evaluation kit (EV kit) evaluates the MAX17291C IC in a wafer-level package (WLP). The MAX17291C is a low quiescent current boost (step-up) DC-DC converter with an 80mA peak inductor current limit, TrueShutdown™, 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 MAX17291CANT+ installed.

Features and Benefits

- Evaluates the MAX17291C IC
- (3 x 2 Bump, 0.4mm Pitch)
- 1.8V to 4.5V Input Range
- 5.5V to 20V Configurable Output Voltage
- Up to 80mA Input Peak Current
- Proven 2-Layer, 1.5oz Copper PCB Layout
- Demonstrates Compact Solution Size

MAX17291C EV Kit Files

FILE	DESCRIPTION
MAX17291C WLP EVKIT A	EV Kit Bill of Materials
MAX17291C WLP EVKIT A PCB Layout	EV Kit Layout
MAX17291C WLP EVKIT A Schematic	EV Kit Schematic

Ordering Information **appears at end of data sheet.**

Quick Start

Required Equipment

- MAX17291C WLP EV kit
- 1.8V to 4.5V, 5A DC power supply
- 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 DVM between the OUT and nearest GND terminal posts.
4. Set the power supply to 4.5V and turn it on.
5. Verify that the voltage at the OUT-terminal post is approximately 12V.

EV Kit Photo

TrueShutdown is a trademark of Maxim Integrated Products, Inc.

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Detailed Description of Hardware

The MAX17291C EV kit evaluates the MAX17291C IC in a wafer-level package (WLP). The MAX17291C is a high-efficiency, low-quiescent current, step-up DC-DC converter with TrueShutdown and short-circuit protection. True Shutdown disconnects the output from the input with no forward or reverse current. The MAX17291C 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 has the MAX17291CANT+ (WLP) installed and is configured for a 12V output.

EN

The MAX17291C WLP EV kit provides a jumper JU1 to enable or disable the MAX17291C. See *Table 1* for JU1 jumper settings.

Table 1. Jumper Connection Guide

JUMPER	FEATURE
1-2	Enabled. EN = IN
2-3	Disabled. EN = GND

Default options are in bold.

Ordering Information

PART	TYPE
MAX17291CEVKIT#	EV Kit

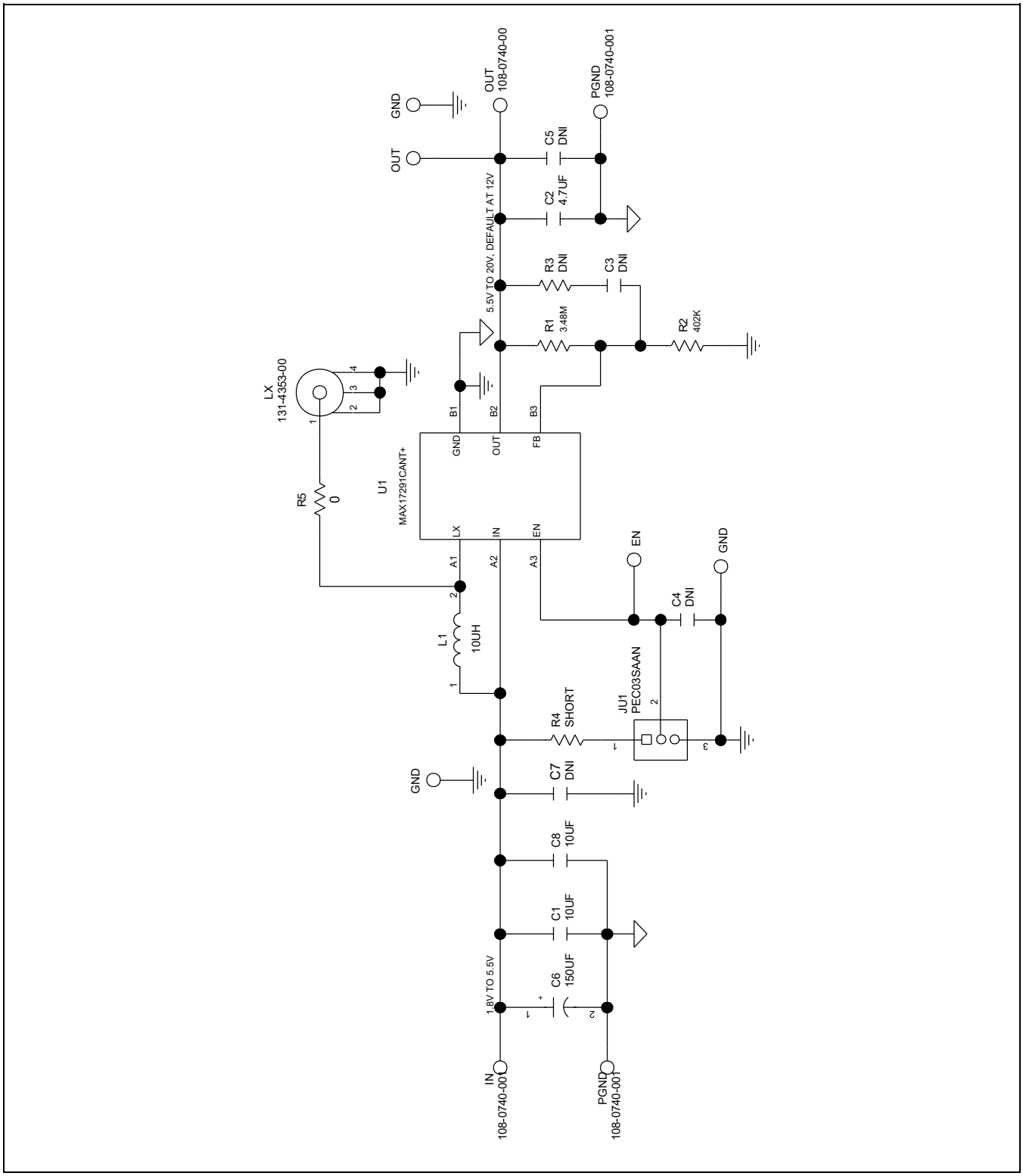
#Denotes RoHS compliant.

MAX17291C EV Kit Bill of Materials

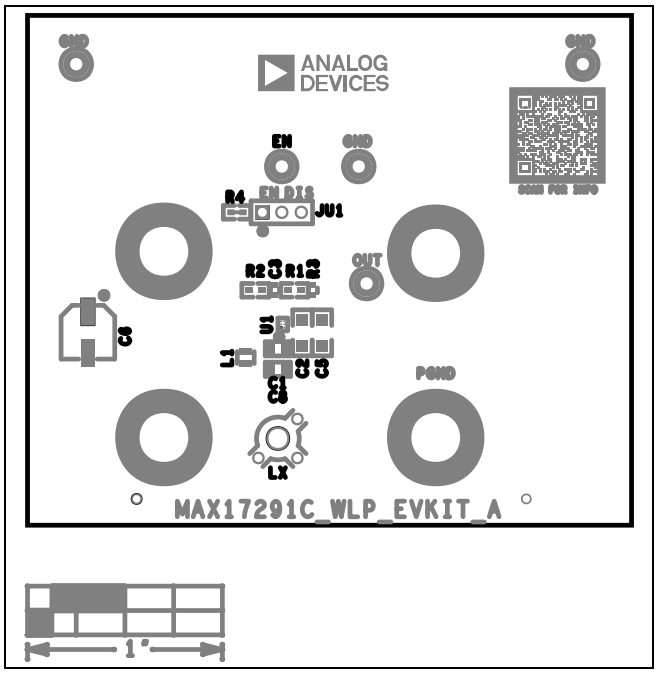
ITEM	REF_DES	QTY	MFG PART #	MANUFACTURER	VALUE	DESCRIPTION
1	C1, C8	2	CL21B106KPQNNN;LMK212AB7106KG;C0805X106K8RACAUTO;GRM21BR71A106KA73;C2012X7R1A106K125AC;GMC21X7R106K10NT	SAMSUNG;TAIYO YUDEN;KEMET;MURATA;TDK;CAL-CHIP ELECTRONIC INC.	10UF	CAP; SMT (0805); 10UF; 10%; 10V; X7R; CERAMIC
2	C2	1	GRM31CR71H475KA12;GRJ31CR71H475KE11;GXM31CR71H475KA10;UMK316AB7475KL;GRM31CR71H475KA12L;CC1206KKX7R9BB475;CC1206KKX7R9BB475	MURATA;MURATA;MURATA;TAIYO YUDEN;MURATA;YAGEO	4.7UF	CAP; SMT (1206); 4.7UF; 10%; 50V; X7R; CERAMIC
3	C6	1	UWJ0J151MCL	NICHICON	150UF	CAP; SMT; 150UF; 20%; 6.3V; ALUMINUM-ELECTROLYTIC
4	EN, TP3	2	5012	KEYSTONE	N/A	TEST POINT; PIN DIA=0.125IN; TOTAL LENGTH=0.445IN; BOARD HOLE=0.063IN; WHITE; PHOSPHOR BRONZE WIRE SILVER PLATE FINISH;

ITEM	REF_DES	QTY	MFG PART #	MANUFACTURER	VALUE	DESCRIPTION
5	GND1, TP2, TP4	3	5011	KEYSTONE	N/A	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	108-0740-001	CONNECTOR; MALE; PANELMOUNT; BANANA JACK; STRAIGHT; 1PIN
7	JU1	1	PEC03SAAN	SULLINS	PEC03 SAAN	CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 3PINS
8	L1	1	DFE201610E-100M	MURATA	10UH	INDUCTOR; SMT (0806); FERRITE; 10UH; 20%; 0.65A
9	LX	1	131-4353-00	TEKTRONICS	131-4353-00	CONNECTOR; WIREMOUNT; CIRCUIT BOARD TEST POINT MINIATURE PROBE; STRAIGHT; 4PINS
10	R1	1	CRCW06033M48FK	VISHAY	3.48M	RES; SMT (0603); 3.48M; 1%; +/-100PPM/DEGK; 0.1000W
11	R2	1	CRCW06034023FK;ERJ-3EKF4023	VISHAY; PANASONIC	402K	RES; SMT (0603); 402K; 1%; +/-100PPM/DEGC; 0.1000W
12	R5	1	ERJ-2GE0R00	PANASONIC	0	RES; SMT (0402); 0; JUMPER; JUMPER; 0.1000W
13	SU1	1	2SN-BK-G	SAMTEC	2SN-BK-G	TEST POINT; JUMPER; STR; TOTAL LENGTH=0.175IN; BLACK; INSULATION=PBT;PHOSPHOR BRONZE CONTACT=GOLD PLATED
14	U1	1	MAX17291CANT+	ANALOG DEVICES	MAX17291CANT+	EVKIT PART - IC; HIGH-VOLTAGE MICROPOWER BOOST CONVERTER; PACKAGE OUTLINE: 21-100577; PACKAGE CODE: N60N1+1S WLP6
15	PCB	1	MAX17291CEVKIT#	ANALOG DEVICES	PCB	PCB:MAX17291CEVKIT#
16	C3, C4	0	N/A	N/A	OPEN	CAPACITOR; SMT (0603); OPEN; FORMFACTOR
17	C5	0	GRM31CR71H475KA12;GRJ31CR71H475KE11;GXM31CR71H475KA10;UMK316AB7475KL;GRM31CR71H475KA12L;CC1206KKX7R9BB475;CC1206KKX7R9BB475	MURATA;MURATA;MURATA;TAIYO YUDEN;MURATA;YAGEO	4.7UF	CAP; SMT (1206); 4.7UF; 10%; 50V; X7R; CERAMIC
18	C7	0	N/A	N/A	N/A	CAPACITOR; 0402 PACKAGE; GENERIC
19	R3	0	N/A	N/A	OPEN	RESISTOR; 0603; OPEN; FORMFACTOR
20	R4	0	N/A	N/A	SHORT	PACKAGE OUTLINE 0603 RESISTOR

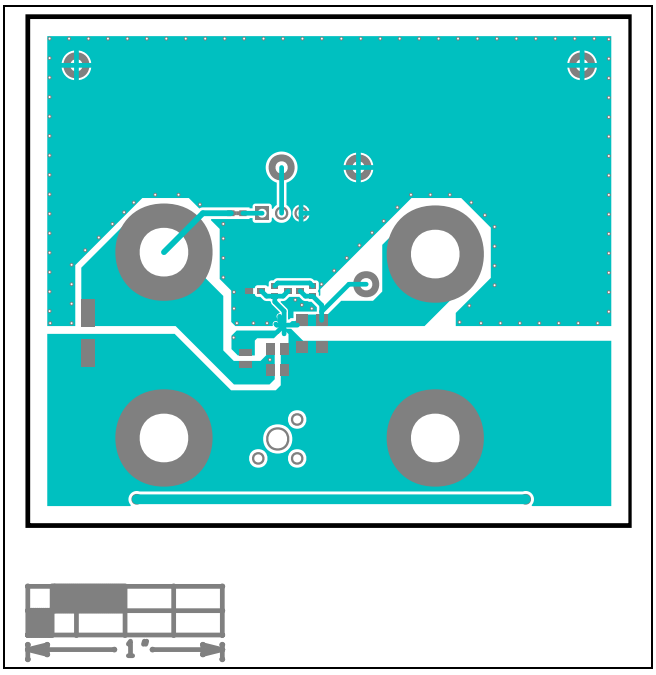
MAX17291C EV Kit Schematic



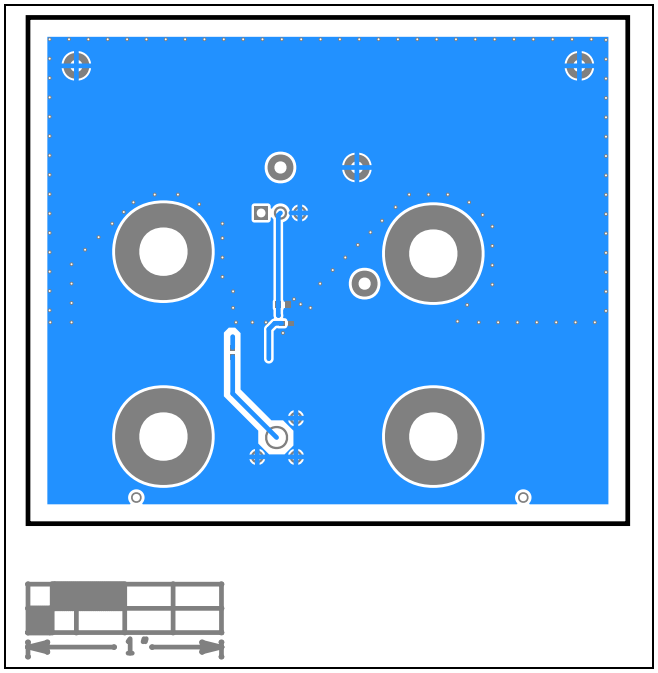
MAX17291C EV Kit PCB Layout



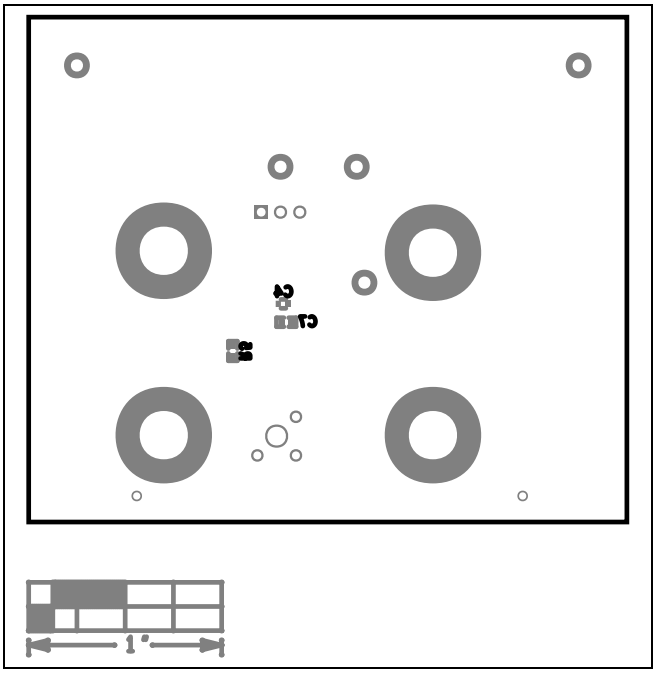
MAX17291C EV Kit Component Placement Guide—Top Silkscreen



MAX17291C EV Kit PCB Layout—Top Layer



MAX17291C EV Kit PCB Layout—Bottom Layer



MAX17291C EV Kit Component Placement Guide—Bottom Silkscreen

Revision History

REVISION NUMBER	REVISION DATE	DESCRIPTION	PAGES CHANGED
0	10/23	Initial release	—