

MAX17227A WLP Evaluation Kit

Evaluates: MAX17227A

General Description

The MAX17227A WLP evaluation kit (EV kit) evaluates the MAX17227A IC in a WLP package. The MAX17227A is a nanoPower Boost converter with 2A peak inductor current limit and has True Shutdown™ mode. The EV kit operates over an input range of 400mV to 5.5V, depending on load, with 0.88V typical startup with 3kΩ load. The EV kit provides resistor-configurable output voltages from 2.3V to 5.5V. Refer to the MAX17227A IC data sheet for output voltage setting. The EV kit comes with the MAX17227AANT+ installed.

Features

- Evaluates the MAX17227A in a 6-pin WLP
- 400mV to 5.5V Input Range
- 2.3V to 5.5V Configurable Output Voltage
- Up to 1A Output Current
- Proven Two-Layer, 1oz Copper PCB Layout
- Demonstrates Compact Solution Size
- Fully Assembled and Tested

MAX17227A WLP EV Kit Files

FILE	DESCRIPTION
MAX17227A WLP EV BOM	EV Kit Bill of Materials
MAX17227A WLP EV PCB Layout	EV Kit Layout
MAX17227A WLP EV Schematic	EV Kit Schematic

Ordering Information appears at end of data sheet.

Quick Start

Required Equipment

- MAX17227A WLP EV kit
- 3A DC power supply
- Electronic load capable of 1A
- 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 power supply until all connections are completed.

- 1) Verify that a shunt is installed on pins 1 and 2 of jumper JU1 (EV kit enabled).
- 2) Verify that a shunt is installed on pins 1 and 3 of jumper JU2 (OUT = 3V).
- 3) Connect the power supply between the IN and nearest GND terminal posts.
- 4) Connect the electronic load between the OUT and nearest GND terminal posts.
- 5) Connect the DVM between the OUT and nearest GND terminal posts.
- 6) Set the input power supply to 2.3V and turn on the power supply.
- 7) Set the electronic load to 1A and turn on the electronic load.
- 8) Verify that the voltage at the OUT terminal post is approximately 3V.

True Shutdown is a trademark of Maxim Integrated Products, Inc.

Detailed Description of Hardware

The MAX17227A WLP EV kit evaluates the MAX17227A in a WLP package. The MAX17227A is a nanoPower boost converter with 2A peak inductor current limit and has True Shutdown mode. The EV kit operates over an input range of 400mV to 5.5V, depending on load, with 0.88V typical startup with 3kΩ load. The EV kit provides resistor-configurable output voltages from 2.3V to 5.5V. The EV kit comes with the MAX17227AANT+ installed.

EN

The MAX17227A WLP EV kit provides a jumper JU1 to enable or disable the MAX17227A. See [Table 1](#) for jumper JU1 settings.

Output Voltage Selection

The MAX17227A WLP EV kit provides a jumper JU2 to select the output voltage of the MAX17227A. See [Table 2](#) for jumper JU2 settings.

Spare Inductors

The MAX17227A WLP EV kit provides spare inductors on the PCB's bottom side. The spare inductors can be used to reconfigure the EV kit output current ratings.

Table 1. EN (JU1)

JU1 SHUNT POSITION	DESCRIPTION
1-2*	EN = IN. (EV kit enabled)
2-3	EN = GND. (EV kit shutdown)
Not Installed	EN is driven by an external TTL voltage source connected between the EN and GND test point <ul style="list-style-type: none"> • EN = High. (EV kit enabled) • EN = Low. (EV kit shutdown)

*Default position.

Table 2. Output Voltage Selection (JU2)

JU2 SHUNT POSITION	DESCRIPTION
1-2	OUT = 2.5V
1-3*	OUT = 3.0V
1-4	OUT = 4.0V
1-5	OUT = 5.0V
Not Installed	Output voltage is configured by resistor R1. Refer to the MAX17227 IC data sheet RSEL selection table to select the resistor value for the desired output voltage.

*Default position.

Component Supplier

SUPPLIER	WEBSITE
Murata/TOKO	www.murata.com

Note: Indicate that you are using the MAX17227A when contacting this component supplier.

Ordering Information

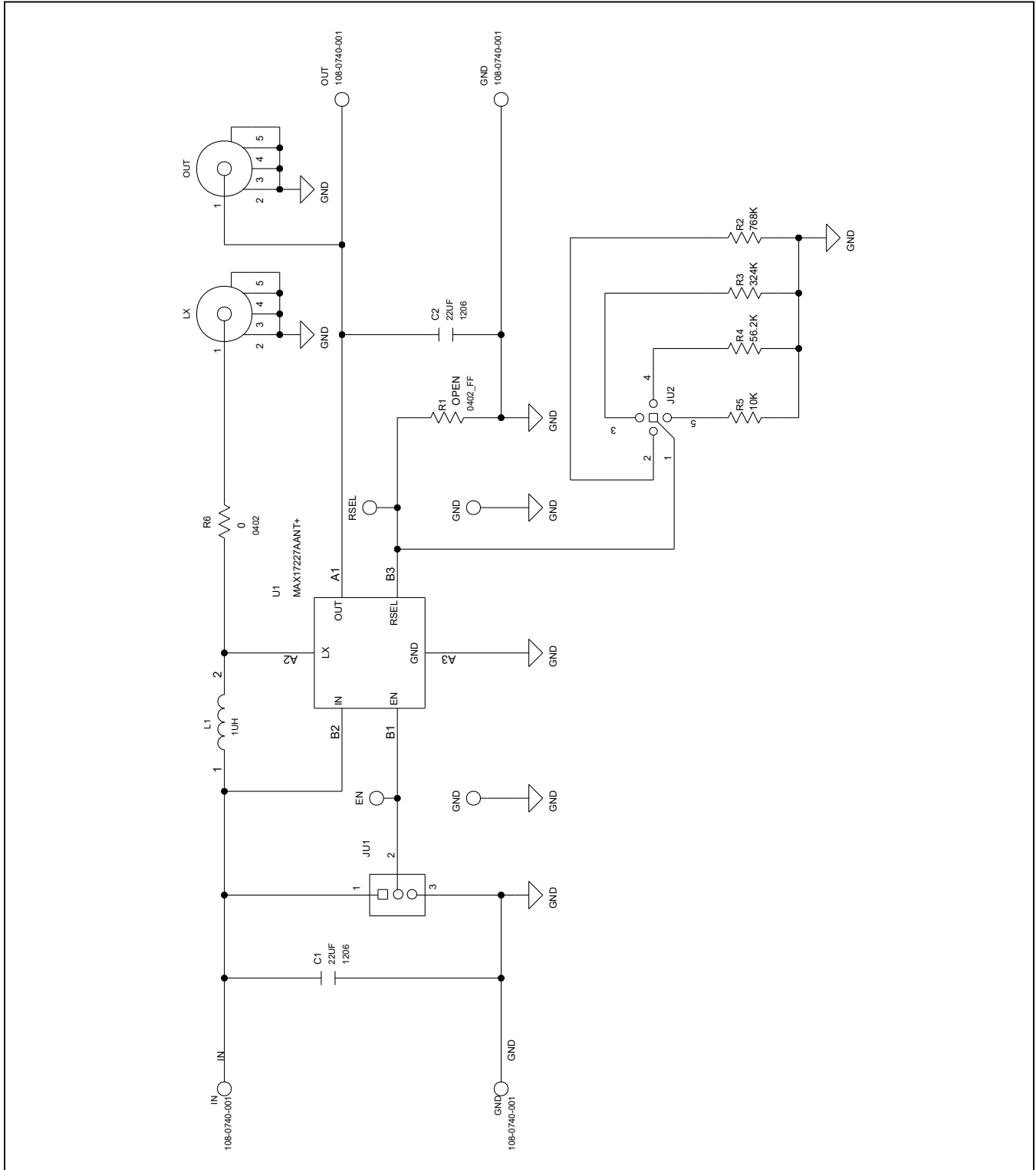
PART	TYPE
MAX17227AEVK#WLP	EV Kit

#Denotes RoHS

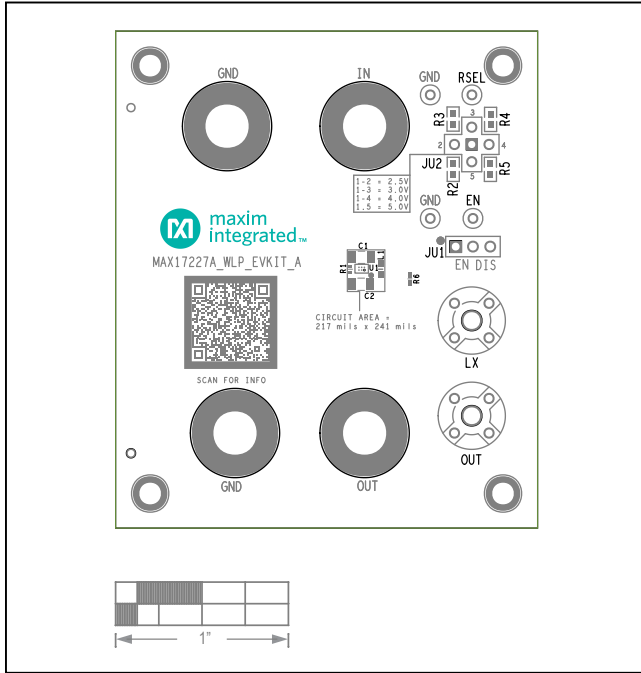
MAX17227A WLP EV Kit Bill of Materials

ITEM	REF_DES	DNI/DNP	QTY	MFG PART #	MANUFACTURER	VALUE	DESCRIPTION	COMMENTS
1	C1, C2	-	2	GRM31CR71A226KE15; GCM31CR71A226KE01	MURATA;MURATA	22UF	CAPACITOR; SMT (1206); CERAMIC CHIP; 22UF; 10V; TOL=10%; MODEL=CHIP MONOLITHIC CERAMIC CAPACITOR FOR GENERAL; TG=-55 DEGC TO +125 DEGC; TC=X7R	
2	EN, RSEL	-	2	5002	KEYSTONE	N/A	TEST POINT; PIN DIA=0.1IN; TOTAL LENGTH=0.3IN; BOARD HOLE=0.04IN; WHITE; PHOSPHOR BRONZE WIRE SILVER;	
3	GND, GND2, IN, OUT1	-	4	108-0740-001	EMERSON NETWORK POWER	108-0740-001	CONNECTOR; MALE; PANELMOUNT; BANANA JACK; STRAIGHT; 1PIN	
4	GND3, GND4	-	2	5001	KEYSTONE	N/A	TEST POINT; PIN DIA=0.1IN; TOTAL LENGTH=0.3IN; BOARD HOLE=0.04IN; BLACK; PHOSPHOR BRONZE WIRE SILVER PLATE FINISH;	
5	JU1	-	1	PEC03SAAN	SULLINS	PEC03SAAN	CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 3PINS	
6	JU2	-	1	PBC05SAAN	SULLINS ELECTRONICS CORP.	PBC05SAAN	CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 5PINS; -65 DEGC TO +125 DEGC	
7	L1	-	1	DFE18SAN1R0ME0	MURATA	1UH	INDUCTOR; SMT (0603); METAL; 1UH; 20%; 1.6A	
8	L1A	-	1	DFE252012F-1R0M=P2; DFE252012F-1R0M	MURATA;MURATA	1UH	INDUCTOR; SMT (1008); METAL; 1UH; 20%; 3.3A	
9	L1B	-	1	DFE201612E-1R0M	MURATA	1UH	INDUCTOR; SMT (0806); WIREWOUND CHIP; 1UH; TOL=+/-20%; 2.9A	
10	LX, OUT	-	2	131-4353-00	TEKTRONICS	131-4353-00	CONNECTOR; WIREMOUNT; CIRCUIT BOARD TEST POINT MINIATURE PROBE; STRAIGHT; 4PINS;	
11	R2	-	1	CRCW0603768KFK	VISHAY DALE	768K	RESISTOR; 0603; 768K OHM; 1%; 100PPM; 0.1W; THICK FILM	
12	R3	-	1	CRCW0603324KFK	VISHAY DALE	324K	RESISTOR; 0603; 324K OHM; 1%; 100PPM; 0.10W; THICK FILM	
13	R4	-	1	CRCW060356K2FK; ERJ-3EKF5622	VISHAY;PANASONIC	56.2K	RESISTOR; 0603; 56.2K OHM; 1%; 100PPM; 0.10W; METAL FILM	
14	R5	-	1	CRCW060310K0FK; ERJ-3EKF1002	VISHAY DALE;PANASONIC	10K	RESISTOR; 0603; 10K; 1%; 100PPM; 0.10W; THICK FILM	
15	R6	-	1	ERJ-2GE0R00	PANASONIC	0	RESISTOR; 0402; 0 OHM; 0%; JUMPER; 0.10W; THICK FILM	
16	SU1, SU2	-	2	S1100-B;SX1100-B; STC02SYAN	KYCON;KYCON;SULLINS ELECTRONICS CORP.	SX1100-B	TEST POINT; JUMPER; STR; TOTAL LENGTH=0.24IN; BLACK; INSULATION=PBT;PHOSPHOR BRONZE CONTACT=GOLD PLATED	
17	U1	-	1	MAX17227AANT+	MAXIM	MAX17227AANT+	EVKIT PART - IC; MAX17227AANT+; NANOPOWER FAMILY BOOST CONVERTERS WITH 2A PEAK INDUCTOR CURRENT; SHORT CIRCUIT PROTECTION; TRUE/PASS THROUGH SHUTDOWN MODE; PACKAGE OUTLINE DRAWING: 21-100390; PACKAGE CODE: N60L1+2	
18	PCB	-	1	MAX17227AWLP	MAXIM	PCB	PCB;MAX17227AWLP	-
19	MTH1-MTH4	DNI	4	SJ-5003(BLACK)	3M ELECTRONIC SOLUTIONS DIVISION	SJ-5003(BLACK)	BUMPER; BLACK-HEMISPHERICAL SHAPE EVKIT EH0231; 0.44D/0.2BH; RESILIENT ELASTOMER POLYURETHANE	
20	R1	DNP	0	N/A	N/A	OPEN	RESISTOR; 0402; OPEN; FORMFACTOR	
TOTAL			30					

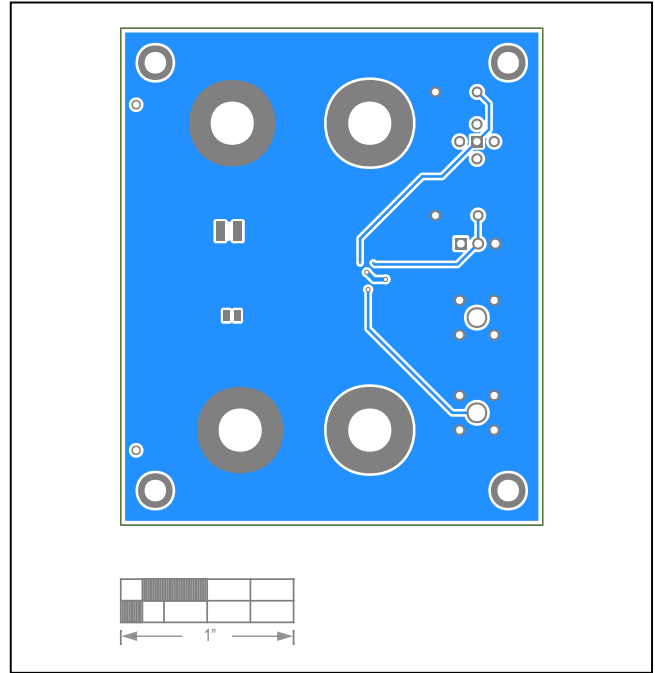
MAX17227A WLP EV Kit Schematic



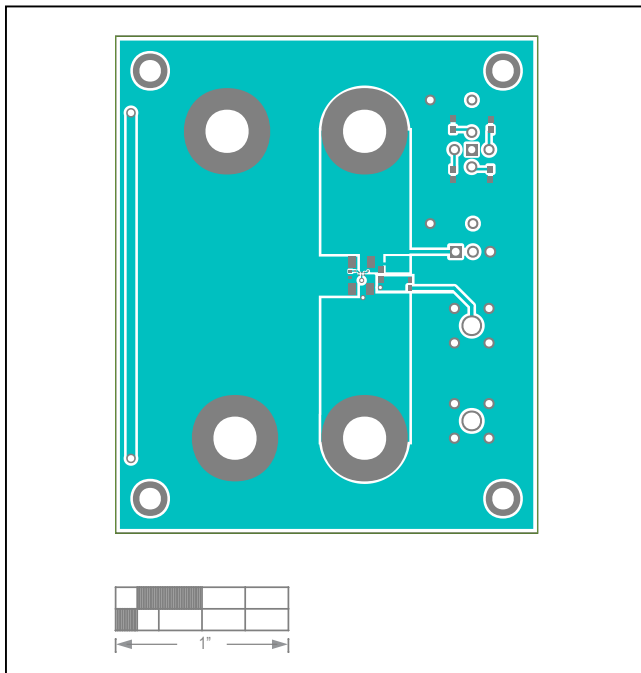
MAX17227A WLP EV Kit PCB Layout Diagrams



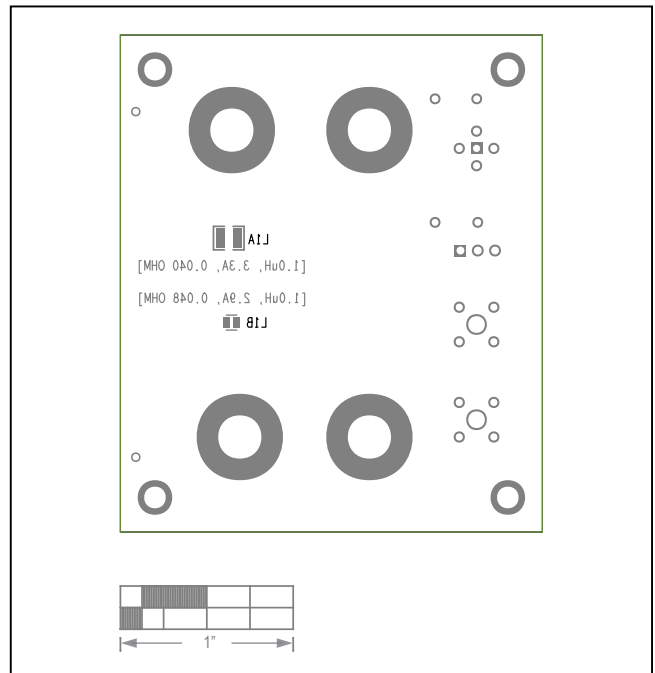
MAX17227A WLP EV Kit—Top Silkscreen



MAX17227A WLP EV Kit—Bottom



MAX17227A WLP EV Kit—Top



MAX17227A WLP EV Kit—Bottom Silkscreen

Revision History

REVISION NUMBER	REVISION DATE	DESCRIPTION	PAGES CHANGED
0	1/20	Initial release	—

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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