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MAX17227J WLP Evaluation Kit

Evaluates: MAX17227J

General Description

The MAX17227J WLP evaluation kit (EV kit) evaluates the MAX17227J IC in a WLP package. The MAX17227J is a nanoPower Boost converter with a 500mA peak inductor current limit and offers automatic pass-through operation when the input voltage is higher than the set output voltage. The EV kit operates over an input range of 400mV to 5.5V depending on load with a 0.88V typical startup with 3kΩ load. The EV kit provides resistor configurable output voltages from 2.3V to 5.4V. Refer to the MAX17227J IC data sheet for output voltage settings. The EV kit comes with the MAX17227JANT+ installed.

Benefits and Features

- Evaluates the MAX17227J in a 6-pin WLP
- 400mV to 5.5V Input Range
- 880mV Minimum Startup Voltage
- 2.3V to 5.4V Configurable Output Voltage
- Up to 300mA Output Current at 5.0V (V_{IN} > 3.6V)
- Proven 2-Layer 1oz Copper PCB Layout
- Demonstrates Compact Solution Size
- Fully Assembled and Tested

MAX17227J WLP EV Kit Files

FILE	DECRIPTION
MAX17227J WLP EV BOM	EV Kit Bill of Material
MAX17227J WLP EV PCB Layout	EV Kit Layout
MAX17227J WLP EV Schematic	EV Kit Schematic

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

MAX17227J EV Kit Photo

maxim integrated™

Quick Start

Required Equipment

- MAX17227J WLP EV kit
- 2.3V to 5.5V, 3A DC power supply
- Electronic load capable of 300mA
- 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 jumpers JU1 (EV kit enabled)
2) Verify that a shunt is installed on pins 1 and 5 of jumpers JU2 (OUT = 5V).
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 4V and turn on the power supply.
7) Set the electronic load to 300mA and turn on the electronic load.
8) Verify that the voltage at the OUT terminal post is approximately 5V.

Detailed Description of Hardware

The MAX17227J WLP EV kit evaluates the MAX17227J in a WLP package. The MAX17227J is a nanoPower boost converter with a 500mA peak inductor current limit and has an Automatic Pass-Through mode when the input voltage is higher than the set output voltage. The EV kit operates over an input range of 400mV to 5.5V, depending on load, with 0.88V typical startup with a 3kΩ load. The EV kit provides resistor-configurable output voltages from 2.3V to 5.4V. The EV kit comes with the MAX17227JANT+ installed.

EN

The MAX17227J WLP EV kit provides a jumper JU1 to enable or disable the MAX17227J. See Table 1 for jumper JU1 settings. Note that for the MAX17227J IC version, the input will automatically pass through to the output when the input voltage is higher than the set output voltage.

Output Voltage Selection

The MAX17227J WLP EV kit provides a jumper JU2 to select the output voltage of the MAX17227J. See Table 2 for jumper JU2 settings.

Table 1. EN (JU1)

JU1 SHUNT POSITION	DESCRIPTION
1-2*	EN = IN. (EV kit enabled)
2-3	EN = GND. (Pass through, OUT = IN)
Not Installed	EN is driven by an external TTL voltage source connected between the EN and GND test point • EN = High. (EV kit enabled) • EN = Low. (Pass through, OUT = IN)

**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 MAX17227J 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 MAX17227J when contacting this component supplier.*

Ordering Information

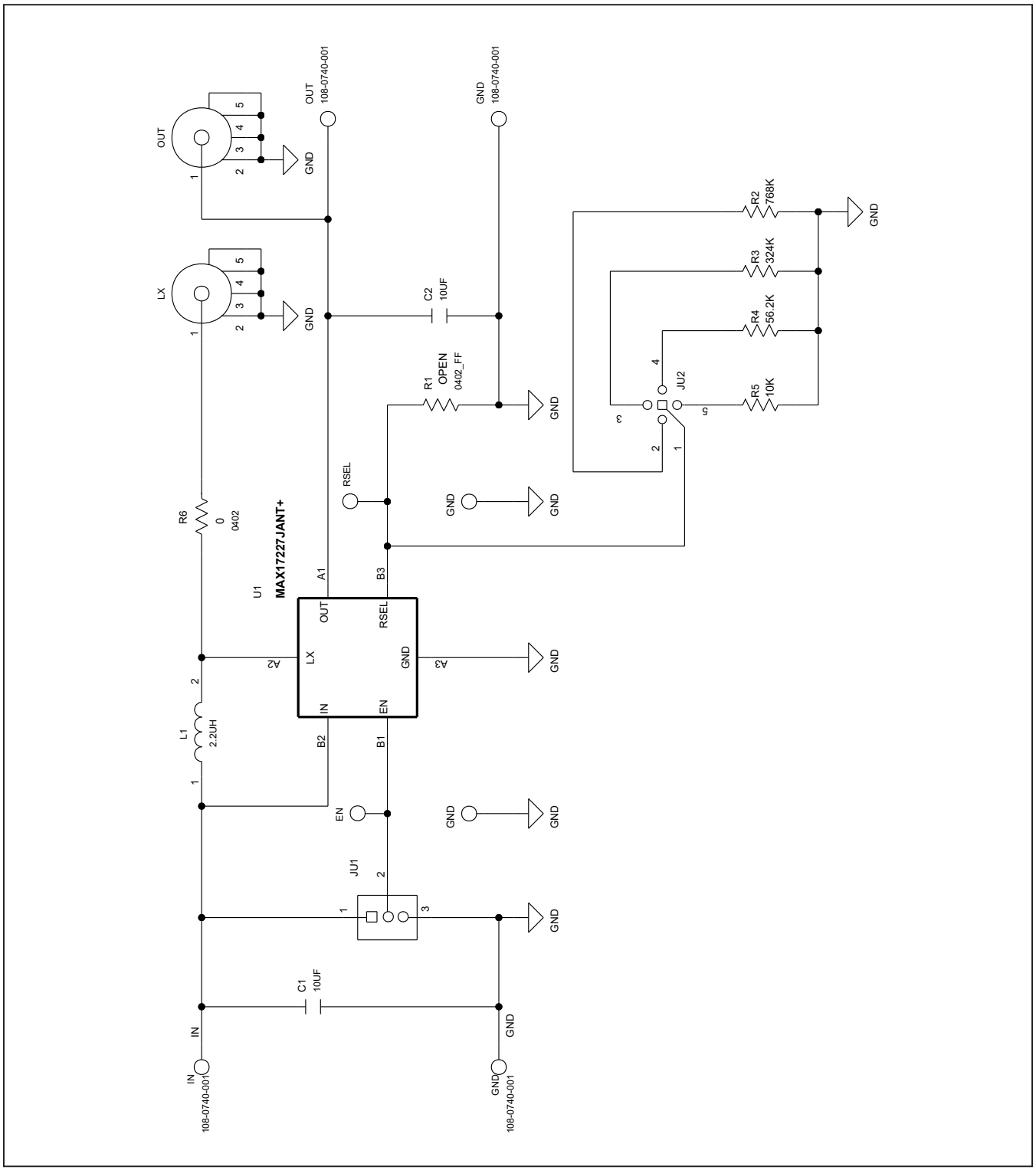
PART	TYPE
MAX17227JEVK#WLP	EV Kit

#Denotes RoHS compliant

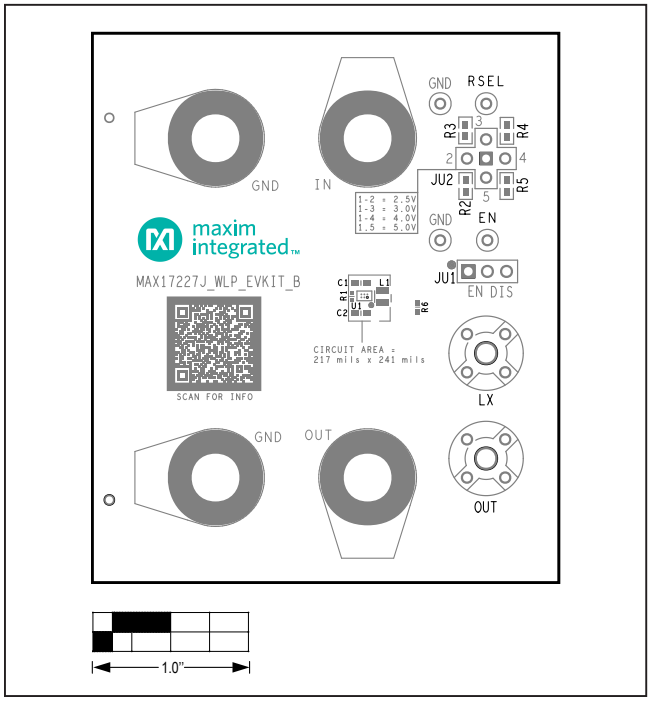
MAX17227J WLP EV Kit Bill of Materials

ITEM	REF_DES	DNI/DNP	QTY	MFG PART #	MANUFACTURER	VALUE	DESCRIPTION
1	C1, C2	—	2	GRM188Z71A106KA73	MURATA	10UF	CAP; SMT (0603); 10UF; 10%; 10V; X7R; CERAMIC ;
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	74479276222	WURTH ELECTRONICS INC.	2.2UH	INDUCTOR; SMT (0806); MOLDED CHIP; 2.2UH; 30%; 1.40A
8	LX, OUT	—	2	131-4353-00	TEKTRONICS	131-4353-00	CONNECTOR; WIREMOUNT; CIRCUIT BOARD TEST POINT MINIATURE PROBE; STRAIGHT; 4PINS;
9	R2	—	1	CRCW0603768KFK	VISHAY DALE	768K	RES; SMT (0603); 768K; 1%; +/-100PPM/DEGC; 0.1000W
10	R3	—	1	CRCW0603324KFK	VISHAY DALE	324K	RES; SMT (0603); 324K; 1%; +/-100PPM/DEGC; 0.1000W
11	R4	—	1	CRCW060356K2FK; ERJ-3EKF5622	VISHAY; PANASONIC	56.2K	RES; SMT (0603); 56.2K; 1%; +/-100PPM/DEGC; 0.1000W
12	R5	—	1	CRCW060310K0FK; ERJ-3EKF1002; AC0603FR-0710KL; RMCF0603FT10K0	VISHAY DALE; PANASONIC; YAGEO	10K	RES; SMT (0603); 10K; 1%; +/-100PPM/DEGC; 0.1000W
13	R6	—	1	ERJ-2GE0R00	PANASONIC	0	RES; SMT (0402); 0; JUMPER; JUMPER; 0.1000W
14	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
15	U1	—	1	MAX17227JANT+	MAXIM	MAX17227JANT+	EVKIT PART - IC; MAX17227JANT+; 0.4V TO 5.5V INPUT; 0.5A NANOPOWER BOOST CONVERTER WITH SHORT-CIRCUIT PROTECTION AND AUTOMATIC PASS THROUGH MODE; PACKAGE OUTLINE DRAWING: 21-100390; PACKAGE CODE: N60O1+1
16	PCB	—	1	MAX17227JWLP	MAXIM	PCB	PCB:MAX17227JWLP
17	R1	DNP	0	N/A	N/A	OPEN	RESISTOR; 0402; OPEN; FORMFACTOR
TOTAL			24				

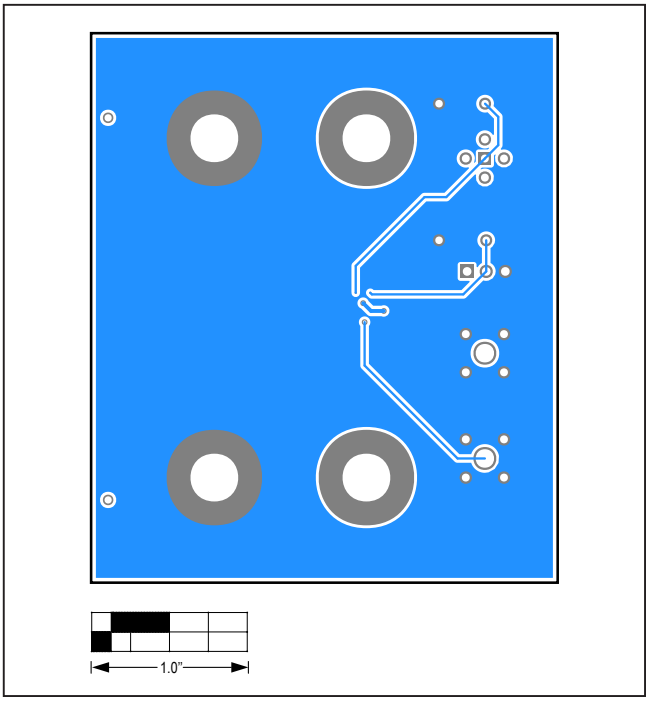
MAX17227J WLP EV Kit Schematic Diagram



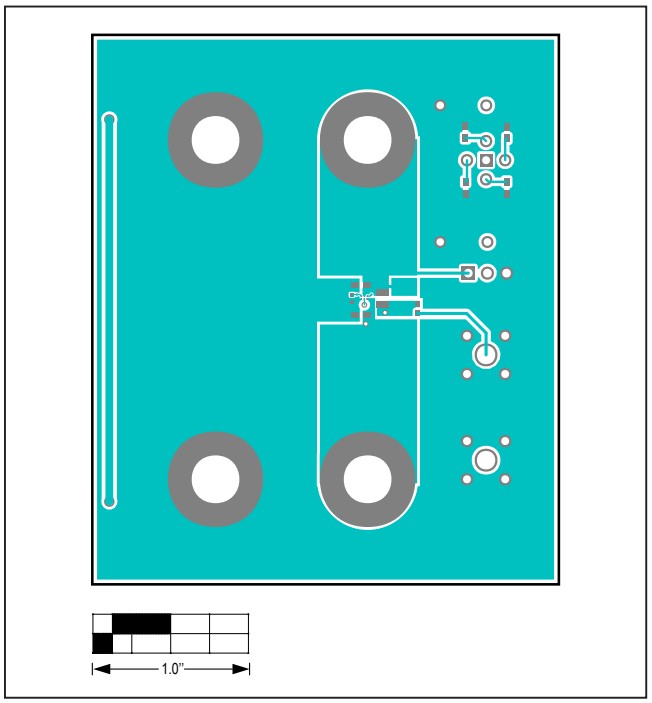
MAX17227J WLP EV Kit PCB Layout Diagrams



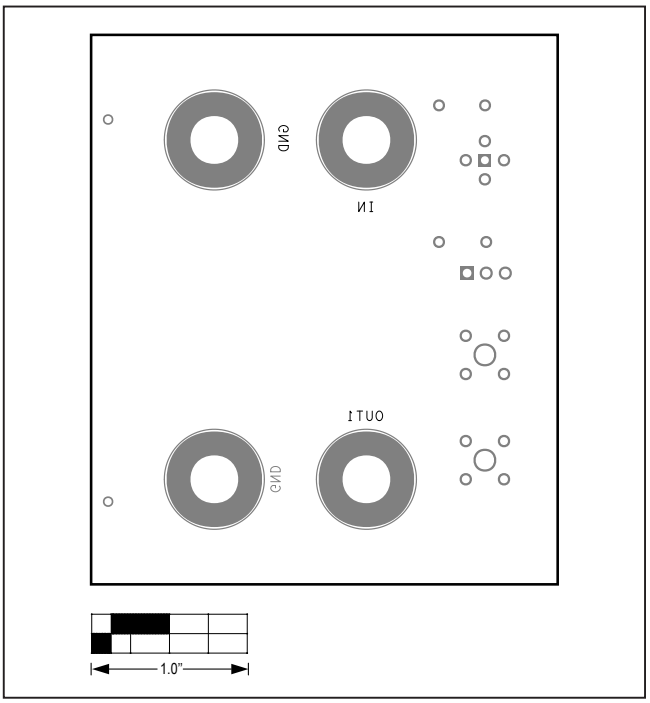
MAX17227J WLP EV Component Placement Guide—Top Silkscreen



MAX17227J WLP EV PCB Layout Diagram—Bottom View



MAX17227J WLP EV PCB Layout Diagram—Top View



MAX17227J WLP EV PCB Layout Diagram—Bottom Silkscreen

Revision History

REVISION NUMBER	REVISION DATE	DESCRIPTION	PAGES CHANGED
0	6/21	Release for Market Intro	—

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

