

MAX38911 WLP Evaluation Kit

Evaluates: MAX38911

General Description

The MAX38911 WLP evaluation kit (EV kit) evaluates the MAX38911 in a WLP package. The MAX38911 is a low-noise, high-PSRR pMOS linear regulator. The MAX38911 WLP EV kit operates over an input range of 1.7V to 5.5V, provides a factory-preset output-voltage range of 0.8V to 5.0V in 50mV steps, and can deliver up to 500mA of current. The EV kit comes with the MAX38911ANT+ (1.8V output) installed.

Benefits and Features

- Evaluates the MAX38911 in a 6-ball (1.42mm x 0.83mm) WLP
- 1.7V to 5.5V Input Range
- 0.8V to 5.0V Factory-Preset Output Voltage (with IC Replacement)
- Up to 500mA Output Current
- Jumper-Selectable Operating Modes
- Proven 2-Layer 1oz Copper PCB Layout
- Demonstrates Compact Solution Size
- Fully Assembled and Tested

MAX38911 WLP EV Kit Files

FILE	DESCRIPTION
MAX38911 WLP EV BOM	EV Kit Bill of Material
MAX38911 WLP EV PCB Layout	EV Kit Layout
MAX38911 WLP EV Schematic	EV Kit Schematic
MAX38911 WLP EV Minimal Component Schematic	Minimal Component Circuit

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

Quick Start

Required Equipment

- MAX38911 WLP EV kit
- 5.5V, 1A DC power supply
- Electronic load capable of 500mA
- 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 jumper JU1 has a shunt across pins 1 and 2 (EV kit enabled) as shown in [Table 1](#).
- 2) Verify that jumper JU2 has a shunt across pins 1 and 2 (Normal mode) as shown in [Table 2](#).
- 3) Connect the 2.1V power supply between the IN and GND terminal posts.
- 4) Connect the 500mA electronic load between the OUT and GND terminal posts.
- 5) Connect the DVM between the OUT and GND terminal posts.
- 6) Turn on the power supply.
- 7) Enable the electronic load.
- 8) Verify that the voltage at the OUT terminal post is approximately 1.8V.

Detailed Description of Hardware

The MAX38911 WLP evaluation kit (EV kit) evaluates the MAX38911 in a WLP package. The MAX38911 is a low-noise linear regulator that delivers 500mA of output current with only 11 μ V_{RMS} of output noise from 10Hz to 100kHz. The MAX38911 has a high PSRR of 70dB at 10Hz. This regulator requires only 62mV of input-to-output headroom at full load.

The MAX38911 WLP EV kit operates over an input range of 1.7V to 5.5V. The EV kit comes with the MAX38911ANT+ installed and a factory-preset output of 1.8V, and can deliver up to 500mA of current in Normal mode. In Low-Power mode (LPM), the output-current limit is configured up to 20mA, and has a no-load quiescent current of 19.2 μ A.

Table 1. EN (JU1)

JU1 SHUNT POSITION	DESCRIPTION
1-2*	Enabled. EN = IN
2-3	Disabled. EN = GND

*Default position.

Component Suppliers

SUPPLIER	WEBSITE
Murata/TOKO	www.murata.com
TDK	www.tdk.com
Samsung Electro-Mechanics America, Inc.	www.samsungsem.com

Note: Indicate that you are using the MAX38911 when contacting these component suppliers.

EN (Enable)

The MAX38911 WLP EV kit provides a jumper JU1 to enable or disable the MAX38911. Refer to [Table 1](#) for jumper JU1 settings.

MODE (Mode Selection)

The MAX38911 WLP EV kit provides a jumper JU2 to select between Normal and Lower-Power modes for the MAX38911. Refer to [Table 2](#) for JU2 jumper settings.

Evaluating Other Output Voltages

The MAX38911 WLP EV kit can evaluate the MAX38911 in other output voltages after IC (U1) replacement. The MAX38911 can be factory-trimmed to any voltage between 0.8V and 5.0V, in 50mV steps. Contact the factory to order the MAX38911 with the desired factory-preset output voltages.

Table 2. MODE (JU2)

JU101 SHUNT POSITION	DESCRIPTION
1-2*	Normal. MODE = IN. (Output Current up to 500mA)
2-3	LPM. MODE = GND. (Output Current up to 20mA)

*Default position.

Ordering Information

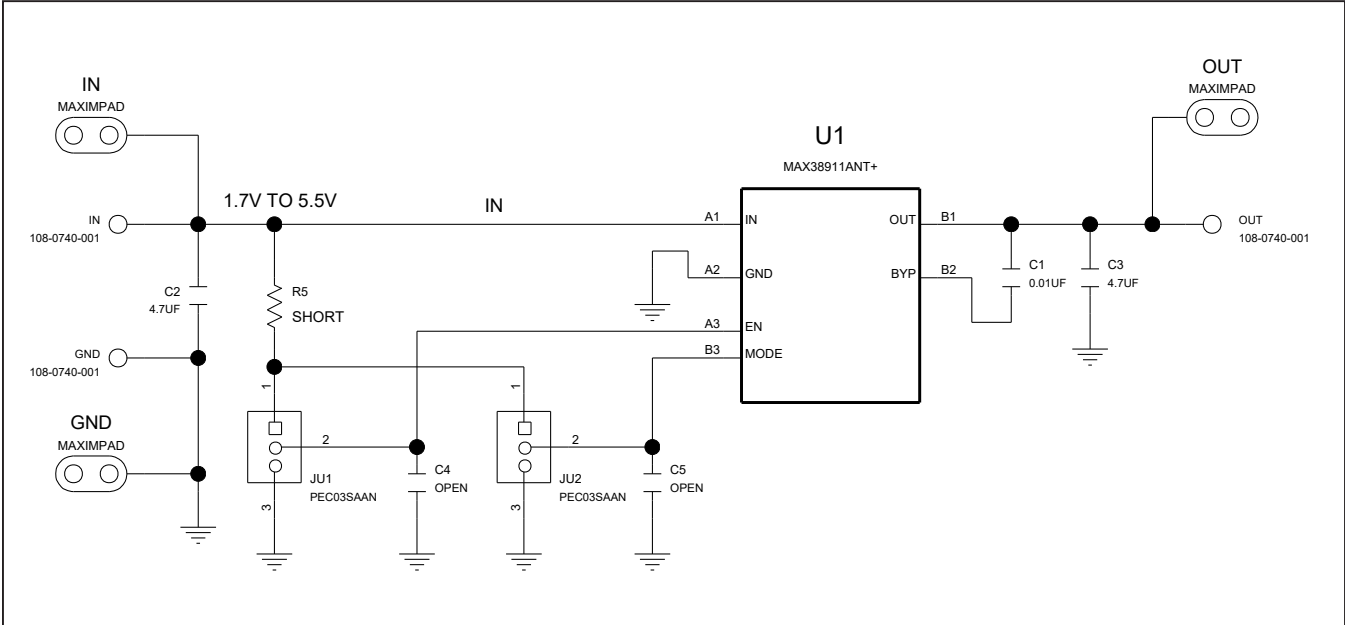
PART	TYPE
MAX38911EVK#WLP	EV Kit

#Denotes RoHS

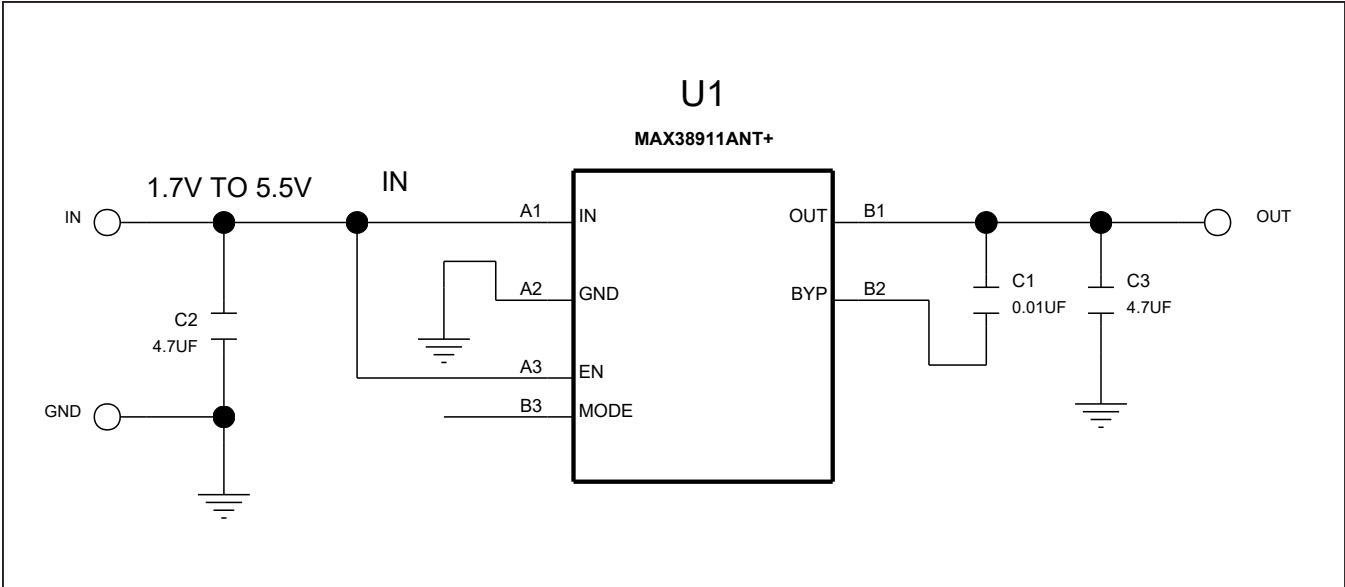
MAX38911 WLP EV Kit Bill of Materials

ITEM	REF_DES		QTY	MFG PART #	MANUFACTURER	VALUE	DESCRIPTION
1	C1		1	C0402C103K5RAC; GRM155R71H103KA88; C1005X7R1H103K050BE; CL05B103KB5NNN; UMK105B7103KV	KEMET; MURATA; TDK; SAMSUNG ELECTRONIC; TAIYO YUDEN	0.01μF	CAPACITOR; SMT (0402); CERAMIC CHIP; 0.01μF; 50V; TOL = 10%; TG = -55°C TO +125°C; TC = X7R
2	C2, C3		2	GMC10X7R475K6R3NT; CL10B475KQ8NQNC; JMK107BB7475KA; CL10B475KQ8NQNC; 06036C475KAT2A	CAL-CHIP ELECTRONIC INC.; SAMSUNG; TAIYO YUDEN; SAMSUNG;AVX	4.7μF	CAPACITOR; SMT (0603); CERAMIC CHIP; 4.7μF; 6.3V; TOL = 10%; MODEL=; TG = -55°C TO +125°C; TC=X7R;
3	GND, IN, OUT		3	108-0740-001	EMERSON NETWORK POWER	108-0740-001	CONNECTOR; MALE; PANELMOUNT; BANANA JACK; STRAIGHT; 1PIN
4	JU1, JU2		2	PEC03SAAN	SULLINS	PEC03SAAN	CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 3PINS
5	SU1, SU2		2	SNT-100-BK-G	SAMTEC	SNT-100-BK-G	TEST POINT; SHUNT AND JUMPER; STR; TOTAL LENGTH = 6.10MM; BLACK; INSULATION=GLASS FILLED POLYESTER; CONTACT = PHOSPHOR BRONZE
6	U1		1	MAX38911ANT+	MAXIM	MAX38911ANT+	EVKIT PART - IC; MAX38911ANT+; 500MA LOW NOISE PMOS LDO WITH LOW POWER MODE; TEMPORARY FOOTPRINT
7	PCB		1	MAX38911WLP	MAXIM	PCB	PCB:MAX38911WLP
8	BUMP1-BUMP4	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
9	R5	DNP	0	N/A	N/A	SHORT	PACKAGE OUTLINE 0603 RESISTOR
10	C4, C5	DNP	0	N/A	N/A	OPEN	PACKAGE OUTLINE 0603 NON-POLAR CAPACITOR
TOTAL			16				

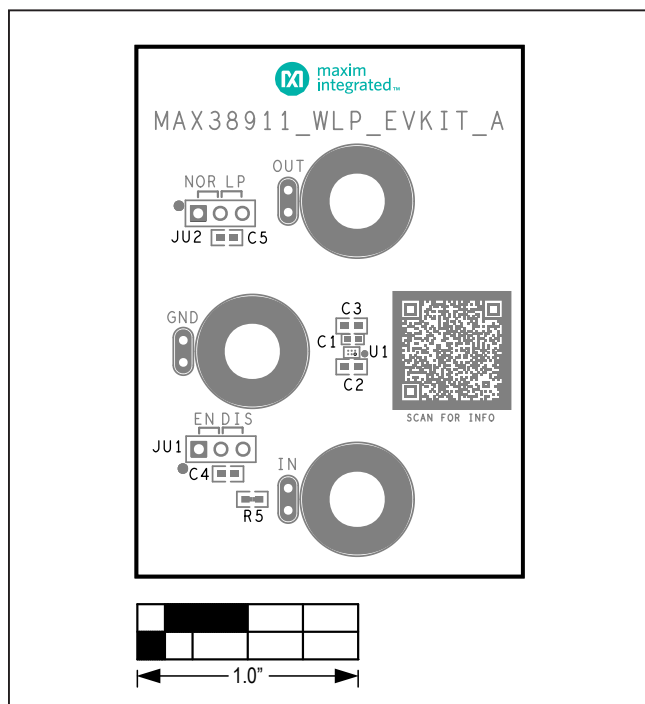
MAX38911 WLP EV Kit Schematic Diagram



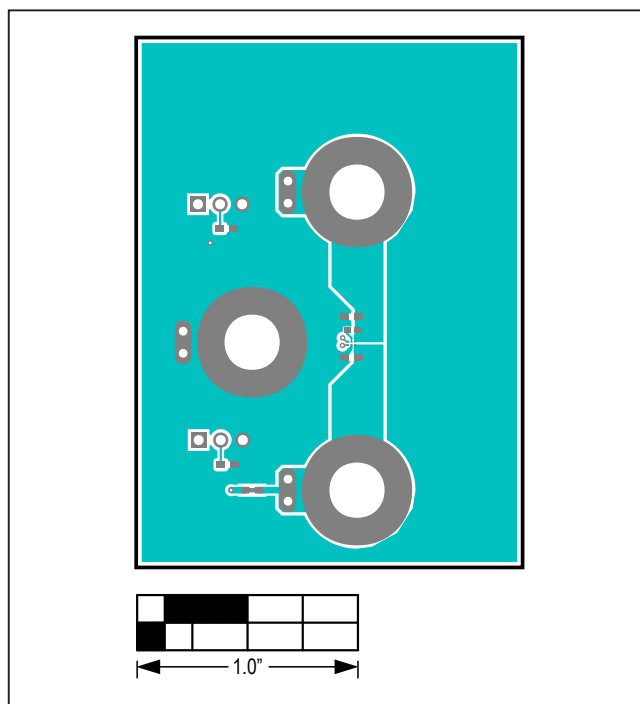
MAX38911 WLP EV Kit Minimal Component Schematic Diagram



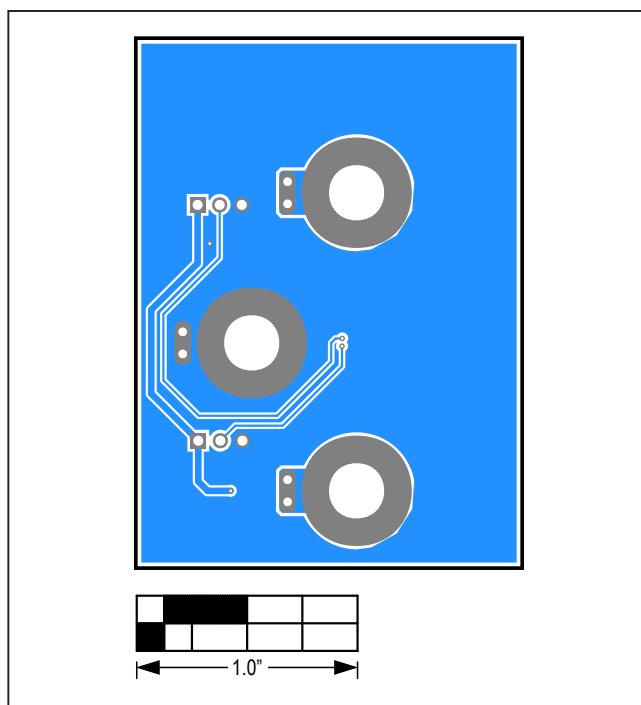
MAX38911 WLP EV Kit PCB Layout Diagrams



MAX38911 WLP EV Kit—Top Silkscreen



MAX38911 WLP EV Kit—Top View



MAX38911 WLP EV Kit—Bottom View

Revision History

REVISION NUMBER	REVISION DATE	DESCRIPTION	PAGES CHANGED
0	8/20	Initial release	—

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