*Click here for production status of specific part numbers.*

# MAX38641A µDFN Evaluation Kit

# Evaluates: MAX38641 A in µDFN

## General Description

The MAX38641A evaluation kit (EV kit) evaluates the MAX38641A, an ultra-low quiescent current step-down DC-DC converter in the µDFN package. The EV kit operates over an input range of 1.8V to 5.5V, and provides resistor-configurable output voltages from 1.0V to 3.3V. The EV kit delivers up to 350mA of current depending on the input voltage to the output voltage ratio.

The EV kit comes with the MAX38641AELT+ installed.

## Features

- Evaluates the MAX38641A in a 6-pin µDFN
- 1.8V to 5.5V Input Range
- 1.0V to 3.3V Configurable Output Voltage
- Up to 350mA Output Current
- Proven 2-Layer 1oz Copper PCB Layout
- Demonstrates Compact Solution Size
- Fully Assemble and Tested

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

## Quick Start

### Required Equipment

- MAX38641A µDFN EV kit
- 5.5V, 3A DC power supply
- Electronic load capable of 350mA
- 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 jumpers JU1 and JU2 are in their default positions, as shown in Table 1 and Table 2.
2) Connect the 5.5V power supply between the IN and nearest GND terminal posts.
3) Connect the 350mA electronic load between the OUT and nearest GND terminal posts.
4) Connect the DVM between the OUT and nearest GND terminal posts.
5) Turn on the power supply.
6) Enable the electronic load.
7) Verify that the voltage at the OUT terminal post is 1.8V, within the device and the Output Voltage Selecting Resistor (RSEL)'s accuracy specifications.

## MAX38641A EV Kit Files

| FILE | DECRIPTION |
|---|---|
| MAX38641A µDFN EV BOM | EV Kit Bill of Material |
| MAX38641A µDFN EV PCB Layout | EV Kit Layout |
| MAX38641A µDFN EV Schematic | EV Kit Schematic |



maxim integrated™

## Detailed Description of Hardware

The MAX38641A EV kit evaluates the MAX38641A, an ultra-low quiescent current, step-down DC-DC converter in a µDFN package. The EV kit operates over an input range of 1.8V to 5.5V, and provides resistor-configurable output voltages from 1.0V to 3.3V. The EV kit delivers up to 350mA of current depending on the input voltage to the output voltage ratio.

The EV kit comes with the MAX38641AELT+ installed.

### EN

The MAX38641A µDFN EV kit provides a jumper JU1 to enable or disable the MAX38641A. Refer to Table 1 for jumper JU1 settings.

### Table 1. EN (JU1)

| SHUNT POSITION | DESCRIPTION |
|---|---|
| 1-2* | EV Kit Enabled |
| 1-3 | EV Kit Controlled by External (TTL) Source Connected to EXT_EN |
| 1-4 | EV Kit Disabled |

**Default position.*

### Output Voltage Selection

The MAX38641A µDFN EV kit provides a jumper JU2 to select the MAX38641A output voltage. Refer to Table 2 for jumper JU2 settings.

### Spare Inductor

The MAX38641A µDFN EV kit provides a spare inductor on the PCB's bottom side. This spare inductor can be used to reconfigure the EV kit for a smaller solution size.

### Table 2. OUT (JU2)

| SHUNT POSITION | DESCRIPTION |
|---|---|
| 1-2 | OUT = 1.0V |
| 1-3 | OUT = 1.5V |
| 1-4* | OUT = 1.8V |
| 1-5 | OUT = 3.3V |
| Not Installed | Output Voltage can be configured to between 0.7V and 3.3V by resistor R1. Refer to the IC data sheet. |

**Default position.*

## Component Suppliers

| SUPPLIER | WEBSITE |
|---|---|
| Murata | www.murata.com |
| Samsung Electronics | www.samsung.com |
| Wurth Electronics | www.we-online.com |

***Note:*** *Indicate that you are using the MAX38641A when contacting these component suppliers.*

## Ordering Information

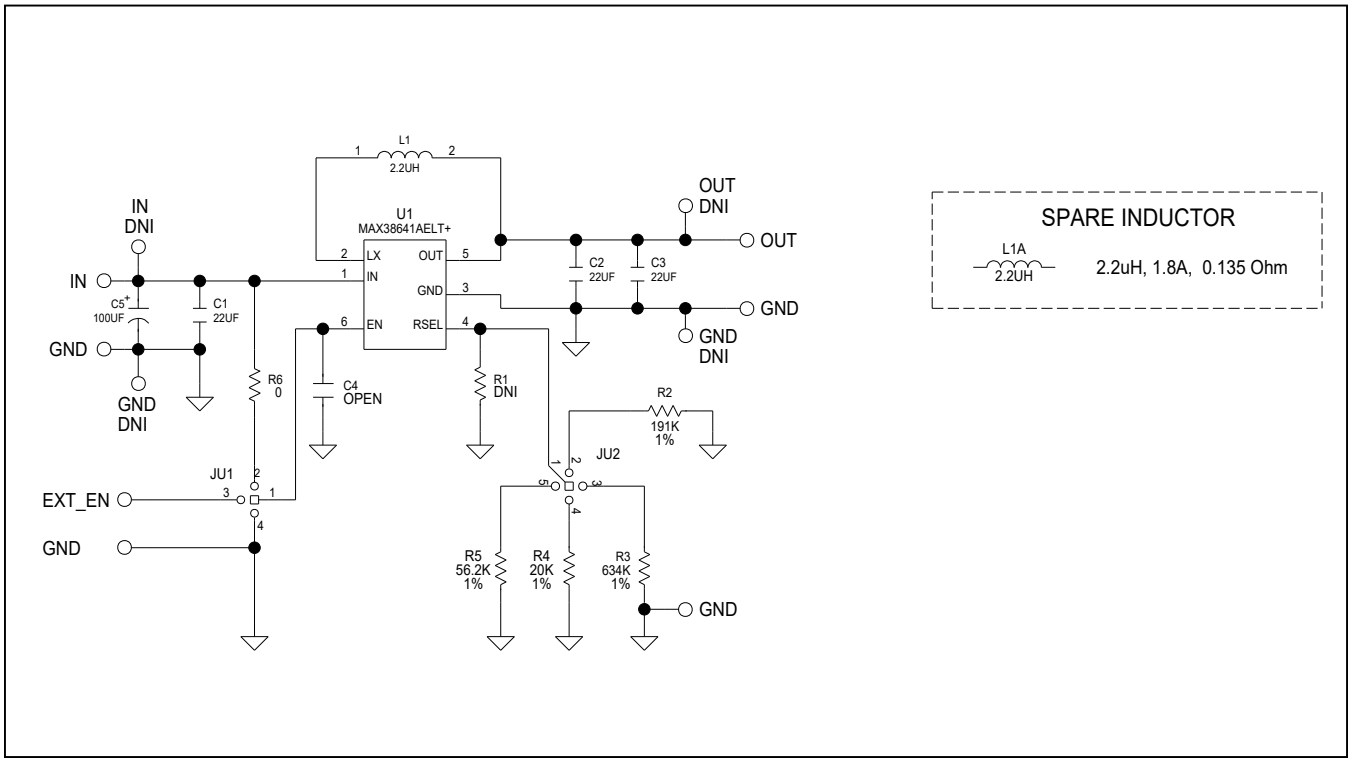
| PART | TYPE |
|---|---|
| MAX38641AEVK#uDFN | EV Kit |

*#Denotes RoHS*

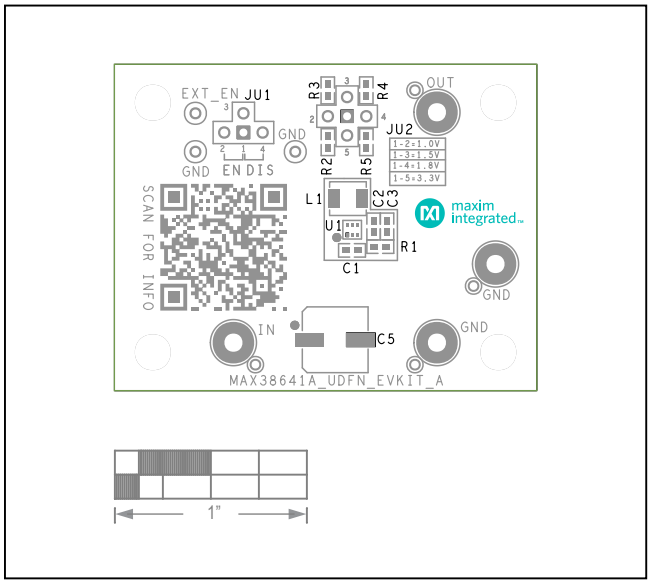
## MAX38641A µDFN EV Kit Bill of Materials

| ITEM | REF_DES | DNI/DNP | QTY | MFG PART # | MANUFACTURER | VALUE | DESCRIPTION | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| 1 | C1-C3 | - | 3 | CL10A226KQ8NRN | SAMSUNG | 22UF | CAP; SMT (0603); 22UF; 10%; 6.3V; X5R; CERAMIC CHIP | |
| 2 | C5 | - | 1 | 25SVPF100M | PANASONIC | 100UF | CAP; SMT (CASE_E7); 100UF; 20%; 25V; ALUMINUM-ORGANIC | |
| 3 | J1-J4 | - | 4 | 1514-2 | KEYSTONE | 1514-2 | TERMINAL; TURRET; PIN DIA=0.090IN; TOTAL LENGTH=0.105IN; BOARD HOLE=0.098IN; BRASS; TIN PLATING; | |
| 4 | JU1 | - | 1 | PEC04SAAN | SULLINS ELECTRONICS CORP. | PEC04SAAN | CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 4PINS | |
| 5 | JU2 | - | 1 | PBC05SAAN | SULLINS ELECTRONICS CORP. | PBC05SAAN | CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 5PINS; -65 DEGC TO +125 DEGC | |
| 6 | L1 | - | 1 | 74437324022□ | WURTH ELECTRONICS INC | 2.2UH | INDUCTOR; SMT; SHIELDED; 2.2UH; 20%; 3.25A | |
| 7 | L1A | - | 1 | 74479276222□ | WURTH ELECTRONICS INC. | 2.2UH | INDUCTOR; SMT (0806); MOLDED CHIP; 2.2UH; 30%; 1.40A | |
| 8 | R2 | - | 1 | CRCW0603191KFK | VISHAY DALE | 191K | RESISTOR; 0603; 191K OHM; 1%; 100PPM; 0.10W; METAL FILM | |
| 9 | R3 | - | 1 | ERJ-3EKF6343 | PANASONIC | 634K | RES; SMT (0603); 634K; 1%; +/-100PPM/DEGC; 0.1W | |
| 10 | R4 | - | 1 | CRCW060320K0FK | VISHAY DALE | 20K | RESISTOR; 0603; 20K OHM; 1%; 100PPM; 0.1W; THICK FILM | |
| 11 | R5 | - | 1 | ERJ-3EKF5622 | PANASONIC | 56.2K | RESISTOR; 0603; 56.2K OHM; 1%; 100PPM; 0.1W; THICK FILM | |
| 12 | R6 | - | 1 | RC1608J000CS; CR0603-J/-000ELF; RC0603JR-070RL | SAMSUNG ELECTRONICS; BOURNS;YAGEO PH | 0 | RESISTOR; 0603; 0 OHM; 5%; JUMPER; 0.10W; THICK FILM | |
| 13 | 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 | |
| 14 | TP5 | - | 1 | 5002 | KEYSTONE | N/A | TEST POINT; PIN DIA=0.1IN; TOTAL LENGTH=0.3IN; BOARD HOLE=0.04IN; WHITE; PHOSPHOR BRONZE WIRE SILVER; | |
| 15 | TP6, TP7 | - | 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; | |
| 16 | U1 | - | 1 | MAX38641AELT+ | MAXIM | MAX38641AELT+ | EVKIT PART - IC; TINY 300NANO-AMP NANOPOWER BUCK CONVERTER; PACKAGE OUTLINE: 21-0164; PACKAGE CODE: L622+1C; PACKAGE LAND PATTERN: 90-0004; DFN6 | |
| 17 | PCB | - | 1 | MAX38641AUDFN | MAXIM | PCB | PCB:MAX38641AUDFN | - |
| 18 | MH1-MH4 | DNP | 0 | 9032 | KEYSTONE | 9032 | MACHINE FABRICATED; ROUND-THRU HOLE SPACER; NO THREAD; M3.5; 5/8IN; NYLON | |
| 19 | R1 | DNP | 0 | CRCW06030000Z0 | VISHAY DALE | 0 | RESISTOR; 0603; 0 OHM; 0%; JUMPER; 0.1W; THICK FILM | |
| 20 | C4 | DNP | 0 | N/A | N/A | OPEN | PACKAGE OUTLINE 0603 NON-POLAR CAPACITOR | |
| TOTAL | | | 24 | | | | | |

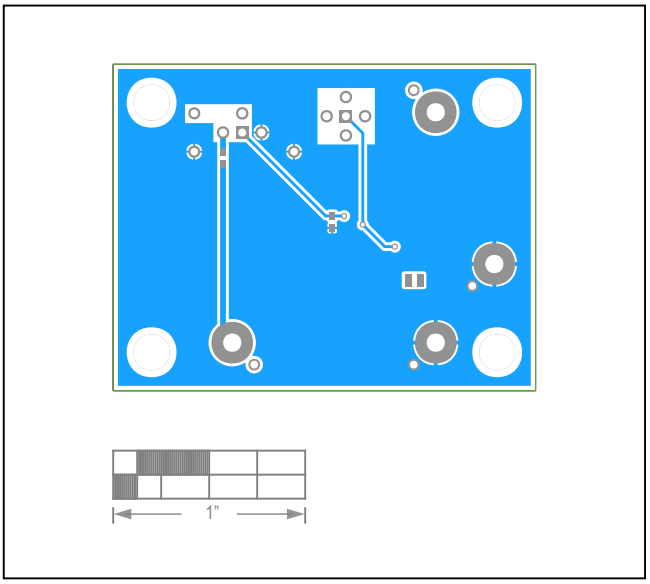
## MAX38641A µDFN EV Kit Schematic



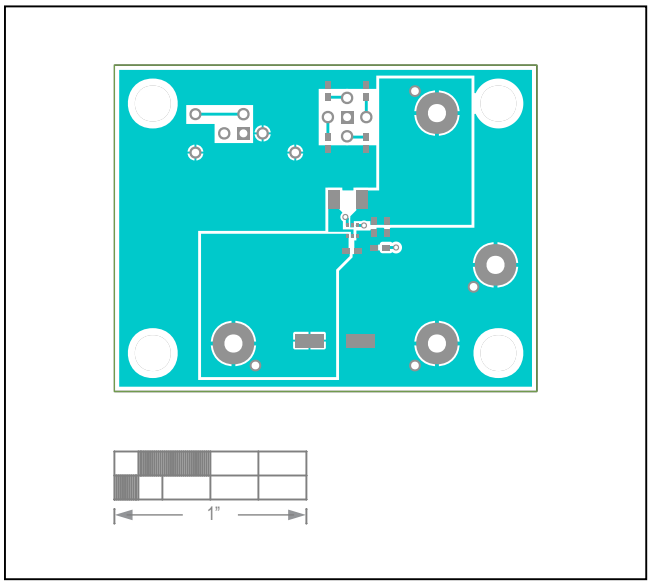
## MAX38641A µDFN EV Kit PCB Layout Diagrams



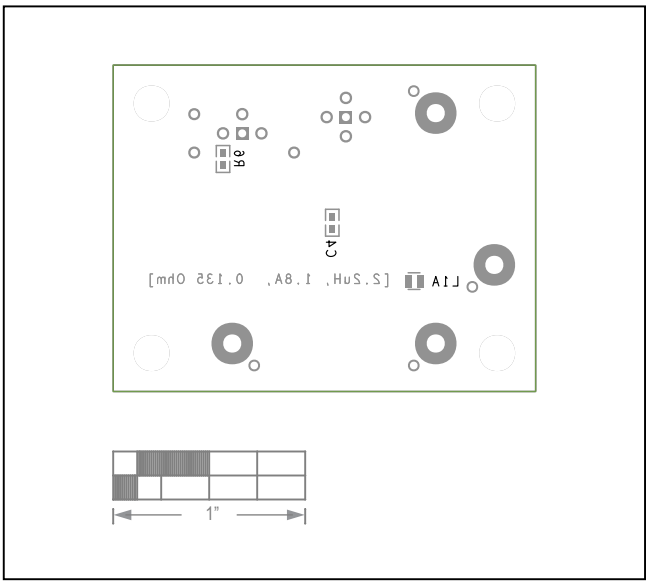

*MAX38641A µDFN EV Kit—Top Silkscreen*




*MAX38641A µDFN EV Kit—Bottom*




*MAX38641A µDFN EV Kit—Top*




*MAX38641A µDFN EV Kit—Bottom Silkscreen*

## Revision History

| REVISION NUMBER | REVISION DATE | DESCRIPTION | PAGES CHANGED |
|---|---|---|---|
| 0 | 4/19 | Initial release | — |
| 1 | 8/19 | Updated title of data sheet | 1–6 |

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

*Maxim Integrated cannot assume responsibility for use of any circuitry other than circuitry entirely embodied in a Maxim Integrated product. No circuit patent licenses are implied. Maxim Integrated reserves the right to change the circuitry and specifications without notice at any time.*

# X-ON Electronics

Largest Supplier of Electrical and Electronic Components

***Click to view similar products for*** Power Management IC Development Tools ***category:***

***Click to view products by*** Maxim ***manufacturer:***

Other Similar products are found below :

EVB-EP5348UI MIC23451-AAAYFL EV MIC5281YMME EV 124352-HMC860LP3E DA9063-EVAL ADP122-3.3-EVALZ ADP130-0.8-EVALZ ADP130-1.8-EVALZ ADP1740-1.5-EVALZ ADP1870-0.3-EVALZ ADP1874-0.3-EVALZ ADP199CB-EVALZ ADP2102-1.25-EVALZ ADP2102-1.875EVALZ ADP2102-1.8-EVALZ ADP2102-2-EVALZ ADP2102-3-EVALZ ADP2102-4-EVALZ AS3606-DB BQ25010EVM BQ3055EVM ISLUSBI2CKIT1Z LP38512TS-1.8EV EVAL-ADM1186-1MBZ EVAL-ADM1186-2MBZ ADP122UJZ-REDYKIT ADP166Z-REDYKIT ADP170-1.8-EVALZ ADP171-EVALZ ADP1853-EVALZ ADP1873-0.3-EVALZ ADP198CP-EVALZ ADP2102-1.0-EVALZ ADP2102-1-EVALZ ADP2107-1.8-EVALZ ADP5020CP-EVALZ CC-ACC-DBMX-51 ATPL230A-EK MIC23250-S4YMT EV MIC26603YJL EV MIC33050-SYHL EV TPS60100EVM-131 TPS65010EVM-230 TPS71933-28EVM-213 TPS72728YFFEVM-407 TPS79318YEQEVM UCC28810EVM-002 XILINXPWR-083 LMR22007YMINI-EVM LP38501ATJ-EV