

MAX17291B WLP Evaluation Kit

Evaluates: MAX17291B

General Description

The MAX17291B WLP evaluation kit (EV kit) evaluates the MAX17291B IC packaged in a WLP. The MAX17291B is a low quiescent current boost (step-up) DC-DC converter with a 100mA peak inductor current limit, True Shutdown™, 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 MAX17291BANT+ (WLP) installed.

Features and Benefits

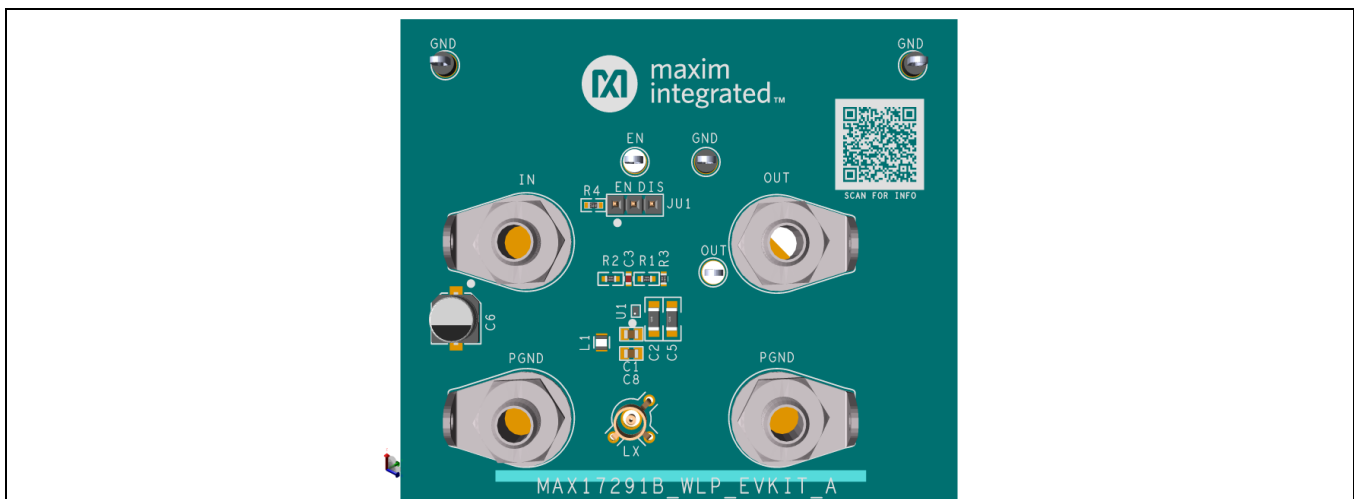
- Evaluates the MAX17291B IC in a 6-Bump WLP (3 x 2 Bump, 0.4mm Pitch)
- 1.8V to 4.5V Input Range
- 5.5V to 20V Configurable Output Voltage
- Up to 100mA Input Peak Current
- Proven 2-Layer, 1.5oz Copper PCB Layout
- Demonstrates Compact Solution Size
- Fully Assembled and Tested

MAX17291B WLP EV Kit Files

| FILE | DESCRIPTION |
|-----------------------------|--------------------------|
| MAX17291B WLP EV BOM | EV Kit Bill of Materials |
| MAX17291B WLP EV PCB Layout | EV Kit Layout |
| MAX17291B WLP EV Schematic | EV Kit Schematic |

Ordering Information appears at end of data sheet.

EV Kit Photo



Quick Start

Required Equipment

- MAX17291B WLP EV Kit
- 1.8V to 4.5V, 5A DC Power Supply
- Electronic Load Capable of 50mA
- 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 electronic load between the OUT and nearest GND terminal posts.
- 4) Connect the DVM between the OUT and nearest GND terminal posts.
- 5) Set the power supply to 4.5V and turn it on.
- 6) Set the electronic load to 50mA at constant current mode, then enable the electronic load.
- 7) Verify that the voltage at the OUT-terminal post is approximately 12V.

Detailed Description of Hardware

The MAX17291B WLP EV kit evaluates the MAX17291B IC in a WLP package. The MAX17291B is a high efficiency, low quiescent current, step-up DC-DC converter with True Shutdown and short-circuit protection. True Shutdown disconnects the output from the input with no forward or reverse current. The MAX17291B 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 comes with the MAX17291BANT+ (WLP) installed and is configured for a 12V output. The 12V output can deliver 50mA of current at 4.5V input.

EN

The MAX17291B WLP EV kit provides a jumper JU1 to enable or disable the MAX17291B. See [Table 1](#) for JU1 jumper settings.

Table 1. EN (JU1) Jumper Settings

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

*Default Position

Component Suppliers

| SUPPLIER | WEBSITE |
|-------------|---------------------|
| Murata/TOKO | www.murata.com |
| Nichicon | www.nichicon-us.com |
| Taiyo Yuden | www.ty-top.com |

Note: Indicates the use of the MAX17291B when contacting these component suppliers.

Ordering Information

| PART | TYPE |
|------------------|--------|
| MAX17291BEVK#WLP | EV Kit |

#Denotes RoHS-compliant.

MAX17291B WLP EV Kit Bill of Materials

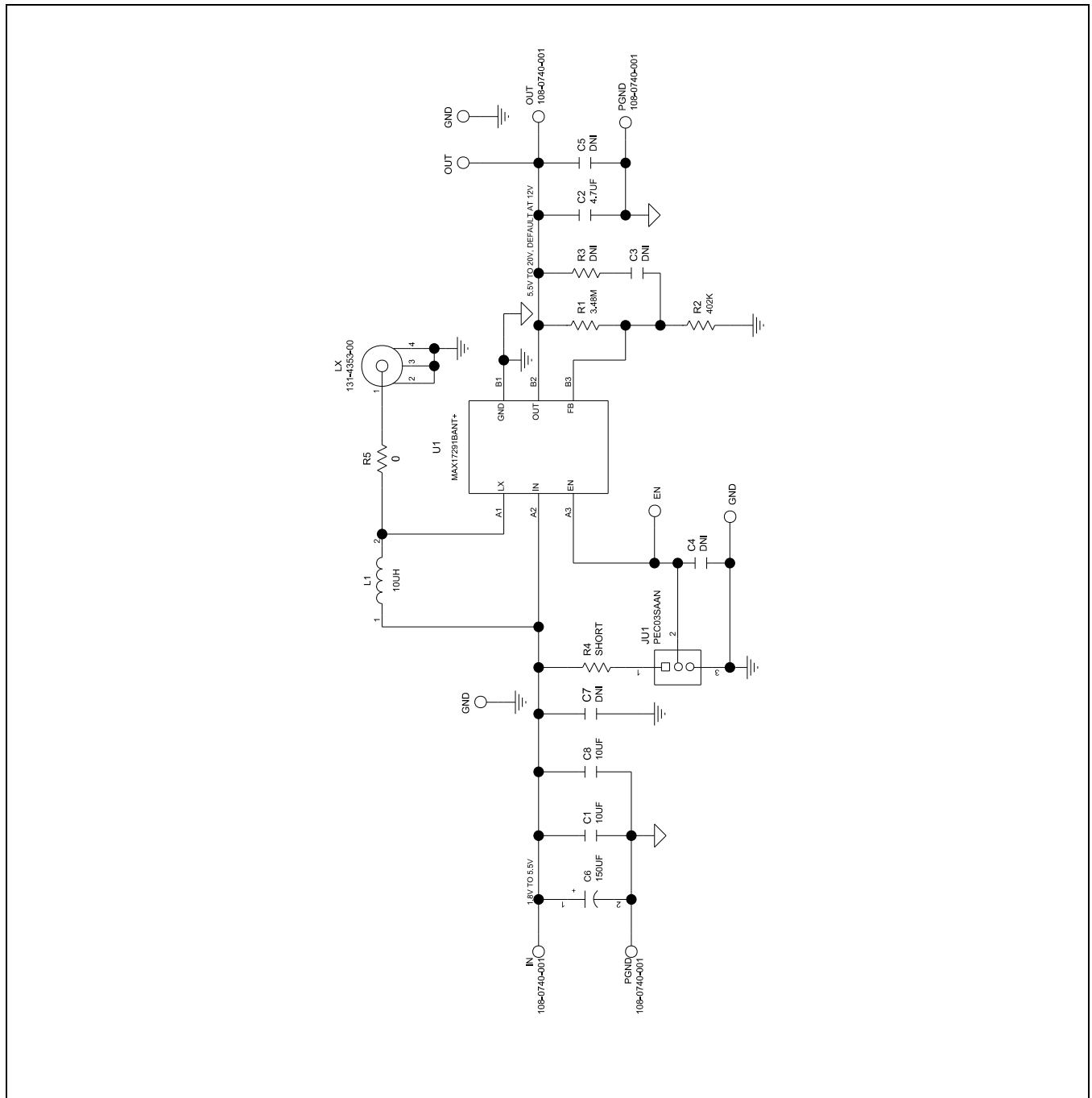
| ITEM | REF_DES | QTY | MFG PART # | MANUFACTURER | DESCRIPTION |
|------|---------|-----|---|---|---|
| 1 | C1, C8 | 2 | CL21B106KPQNNN; LMK212AB7106KG; C0805X106K8RACAUTO; GRM21BR71A106KA73; C2012X7R1A106K125AC; GMC21X7R106K10NT | SAMSUNG; TAIYO YUDEN; KEMET; MURATA; TDK; CAL-CHIP ELECTRONIC INC. | CAP; SMT (0805); 10UF; 10%; 10V; X7R; CERAMIC |
| 2 | C2 | 1 | GRM31CR71H475KA12; GRJ31CR71H475KE11; GXM31CR71H475KA10; UMK316AB7475KL; GRM31CR71H475KA12L | MURATA; MURATA; MURATA; TAIYO YUDEN; MURATA | CAP; SMT (1206); 4.7UF; 10%; 50V; X7R; CERAMIC |

MAX17291B WLP
Evaluation Kit

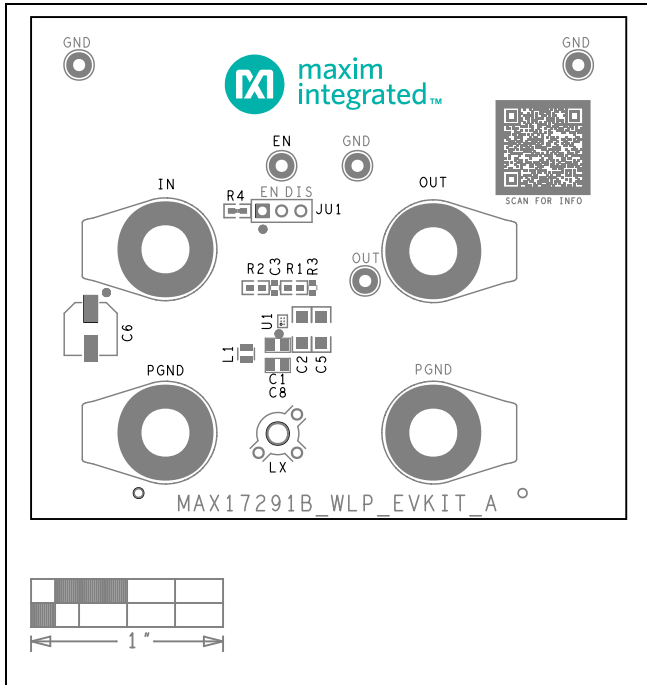
Evaluates: MAX17291B

| | | | | | |
|-------|----------------------------|----|---|---|---|
| 3 | C6 | 1 | UWJ0J151MCL | NICHICON | CAP; SMT; 150UF; 20%; 6.3V; ALUMINUM-ELECTROLYTIC |
| 4 | EN, TP3 | 2 | 5012 | KEystone | TEST POINT; PIN DIA=0.125IN; TOTAL LENGTH=0.445IN; BOARD HOLE=0.063IN; WHITE; PHOSPHOR BRONZE WIRE SILVER PLATE FINISH; |
| 5 | GND1, TP2, TP4 | 3 | 5011 | KEystone | 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 | CONNECTOR; MALE; PANELMOUNT; BANANA JACK; STRAIGHT; 1PIN |
| 7 | JU1 | 1 | PEC03SAAN | SULLINS | CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 3PINS |
| 8 | L1 | 1 | DFE201610E-100M | MURATA | INDUCTOR; SMT (0806); FERRITE; 10UH; 20%; 0.65A |
| 9 | LX | 1 | 131-4353-00 | TEKTRONICS | CONNECTOR; WIREMOUNT; CIRCUIT BOARD TEST POINT MINIATURE PROBE; STRAIGHT; 4PINS |
| 10 | R1 | 1 | CRCW06033M48FK | VISHAY | RES; SMT (0603); 3.48M; 1%; +/- 100PPM/DEGK; 0.1000W |
| 11 | R2 | 1 | CRCW06034023FK; ERJ-3EKF4023 | VISHAY; PANASONIC | RES; SMT (0603); 402K; 1%; +/- 100PPM/DEGC; 0.1000W |
| 12 | R5 | 1 | ERJ-2GE0R00 | PANASONIC | RES; SMT (0402); 0; JUMPER; JUMPER; 0.1000W |
| 13 | SU1 | 1 | 2SN-BK-G | SAMTEC | TEST POINT; JUMPER; STR; TOTAL LENGTH=0.175IN; BLACK; INSULATION=PBT;PHOSPHOR BRONZE CONTACT=GOLD PLATED |
| 14 | U1 | 1 | MAX17291BANT+ | MAXIM | EVKIT PART-IC; MAX17291BANT+; HIGH-VOLTAGE MICROPOWER BOOST CONVERTER; PACKAGE OUTLINE: 21-100577; PACKAGE CODE: N60N1+1S WLP6 |
| 15 | PCB | 1 | MAX17291BWLP | MAXIM | PCB:MAX17291BWLP |
| 16 | C3, C4 | 0 | N/A | N/A | CAPACITOR; SMT (0603); OPEN; FORMFACTOR |
| 17 | C5 | 0 | GRM31CR71H475KA12; GRJ31CR71H475KE11; GXM31CR71H475KA10; UMK316AB7475KL; GRM31CR71H475KA12L | MURATA; MURATA; MURATA; TAIYO YUDEN; MURATA | CAP; SMT (1206); 4.7UF; 10%; 50V; X7R; CERAMIC |
| 18 | C7 | 0 | N/A | N/A | CAPACITOR; 0402 PACKAGE; GENERIC |
| 19 | R3 | 0 | N/A | N/A | RESISTOR; 0603; OPEN; FORMFACTOR |
| 20 | R4 | 0 | N/A | N/A | PACKAGE OUTLINE 0603 RESISTOR |
| TOTAL | | 22 | | | |

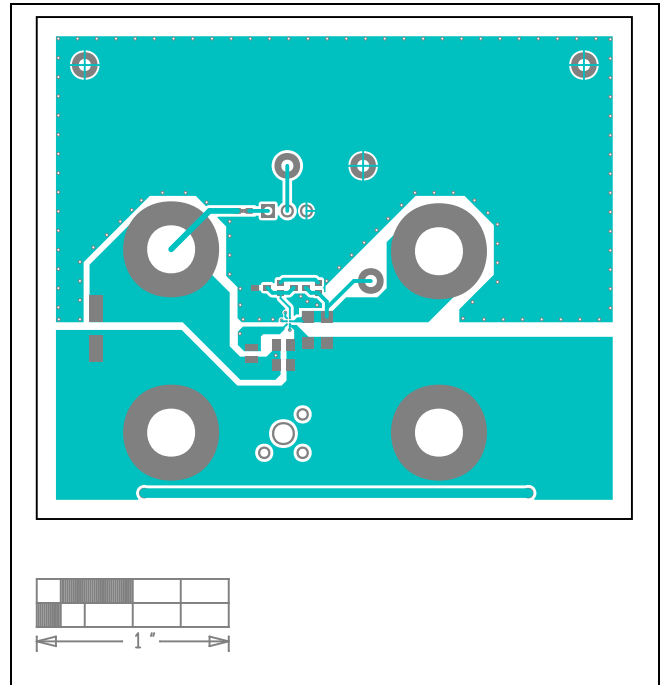
MAX17291B WLP EV Kit Schematic



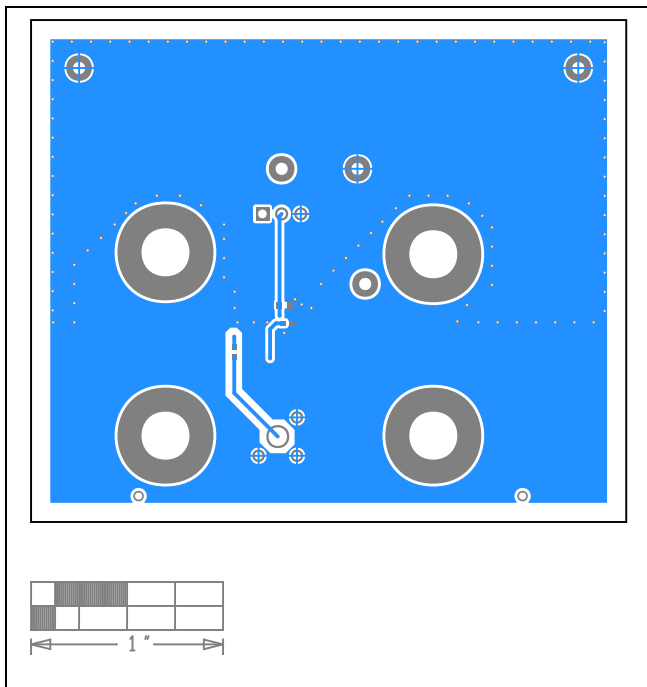
MAX17291B WLP EV Kit PCB Layout



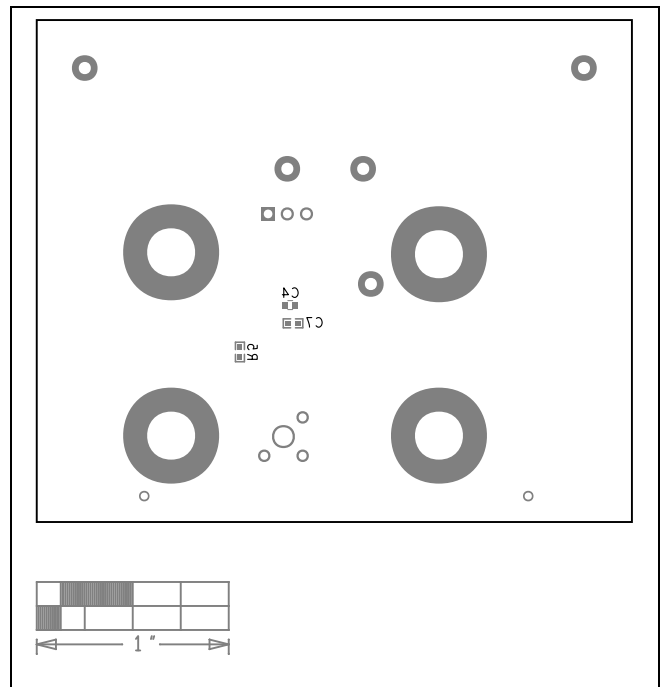
MAX17291B WLP EV Kit Component Placement Guide - Top Silkscreen



MAX17291B WLP EV Kit PCB Layout - Top



MAX17291B WLP EV Kit PCB Layout - Bottom



MAX17291B WLP EV Kit Component Placement Guide - Bottom Silkscreen

MAX17291B WLP
Evaluation Kit

Evaluates: MAX17291B

Revision History

| REVISION NUMBER | REVISION DATE | DESCRIPTION | PAGES CHANGED |
|-----------------|---------------|-----------------|---------------|
| 0 | 10/21 | Initial Release | — |

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

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. The parametric values (min and max limits) shown in the Electrical Characteristics table are guaranteed. Other parametric values quoted in this data sheet are provided for guidance.

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 [Analog Devices](#) manufacturer:

Other Similar products are found below :

[EVAL-ADM1168LQEBZ](#) [EVB-EP5348UI](#) [MIC23451-AAAYFL EV](#) [DA9063-EVAL](#) [ADP130-0.8-EVALZ](#) [ADP130-1.2-EVALZ](#) [ADP130-1.5-EVALZ](#) [ADP130-1.8-EVALZ](#) [ADP1714-3.3-EVALZ](#) [ADP1716-2.5-EVALZ](#) [ADP1752-1.5-EVALZ](#) [ADP1828LC-EVALZ](#) [ADP1870-0.3-EVALZ](#) [ADP1871-0.6-EVALZ](#) [ADP1873-0.6-EVALZ](#) [ADP1874-0.3-EVALZ](#) [ADP1882-1.0-EVALZ](#) [ADP2102-1.25-EVALZ](#) [ADP2102-1.875EVALZ](#) [ADP2102-1.8-EVALZ](#) [ADP2102-2-EVALZ](#) [ADP2102-3-EVALZ](#) [ADP2102-4-EVALZ](#) [ADP2106-1.8-EVALZ](#) [ADP2147CB-110EVALZ](#) [AS3606-DB](#) [BQ24010EVM](#) [BQ24075TEVM](#) [BQ24155EVM](#) [BQ24157EVM-697](#) [BQ24160EVM-742](#) [BQ24296MEVM-655](#) [BQ25010EVM](#) [BQ27411EVM-G1A](#) [BQ3055EVM](#) [NCV891330PD50GEVB](#) [ISLUSBI2CKIT1Z](#) [KIT9Z1J638EVM](#) [LM2744EVAL](#) [LM2854EVAL](#) [LM3658SD-AEV/NOPB](#) [LM3658SDEV/NOPB](#) [LM3691TL-1.8EV/NOPB](#) [LM4510SDEV/NOPB](#) [EVAL-ADM1186-1MBZ](#) [ADM7170CP-EVALZ](#) [ADP163UJ-EVALZ](#) [ADP170-1.8-EVALZ](#) [ADP1711-2.5-EVALZ](#) [ADP171-EVALZ](#)