

General Description

The MAX20330 evaluation kit (EV kit) is a fully assembled and tested circuit board that demonstrates the MAX20330 programmable OVLO with VBUS short detection device. The EV kit comes with the MAX20330EWA+ installed.

Features

- OVP or ID Detection
- Proven PCB Layout
- Fully Assembled and Tested

EV Kit Contents

- EV Kit Board Containing a MAX20330

Quick Start

Required Equipment

- MAX20330 EV kit
- Power supply
- Multimeter

Procedure

The EV kit is fully assembled and tested. Follow the steps below to verify board operation:

- 1) Connect a 3V power supply to VBUS TP1. Check the voltage on OUT. Verify OUT is also 3V.
- 2) Slowly increase VBUS voltage. Verify OUT voltage follows VBUS. When VBUS reaches ~6.8V, OUT voltage goes down.
- 3) Decrease VBUS voltage and OUT voltage comes back to be same as VBUS voltage.

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

Detailed Description

The MAX20330 EV kit is a fully assembled and tested circuit board demonstrating the MAX20330 OVP/ID detector in an 8-bump wafer-level package (WLP).

VCC Power Supply

The V_{CC} can be connected from different power supply sources or externally supplied from TP7.

I²C Communication

Use JU2, JU3, JU4, JU5, and JU6 to have I²C pins pulled up to selected supply. User needs to provide I²C master to communicate with the device. The slave address is 0010 111.

Table 1. V_{CC} Jumper Setting

| JUMPER | SHUNT POSITION | DESCRIPTION |
|--------|----------------|--------------------------|
| JU1 | 1-2* | VCC is connected to VMC |
| | 2-3 | VCC is connected to 5VMC |

*Default Position

Table 2. I²C Jumper Setting

| JUMPER | SHUNT POSITION | DESCRIPTION |
|--------|----------------|------------------------------|
| JU2 | Installed | VIO is connected to VCC |
| | Not installed* | VIO is not connected to VCC |
| JU3 | Installed | SCL is pulled up to VIO |
| | Not installed* | SCL is not pulled up to VIO |
| JU4 | Installed | SDA is pulled up to VIO |
| | Not installed* | SDA is not pulled up to VIO |
| JU5 | Installed | INTB is pulled up to VIO |
| | Not installed* | INTB is not pulled up to VIO |
| JU6 | Installed | VIO is connected to VMC |
| | Not installed* | VIO is not connected to VMC |

*Default Position

Ordering Information

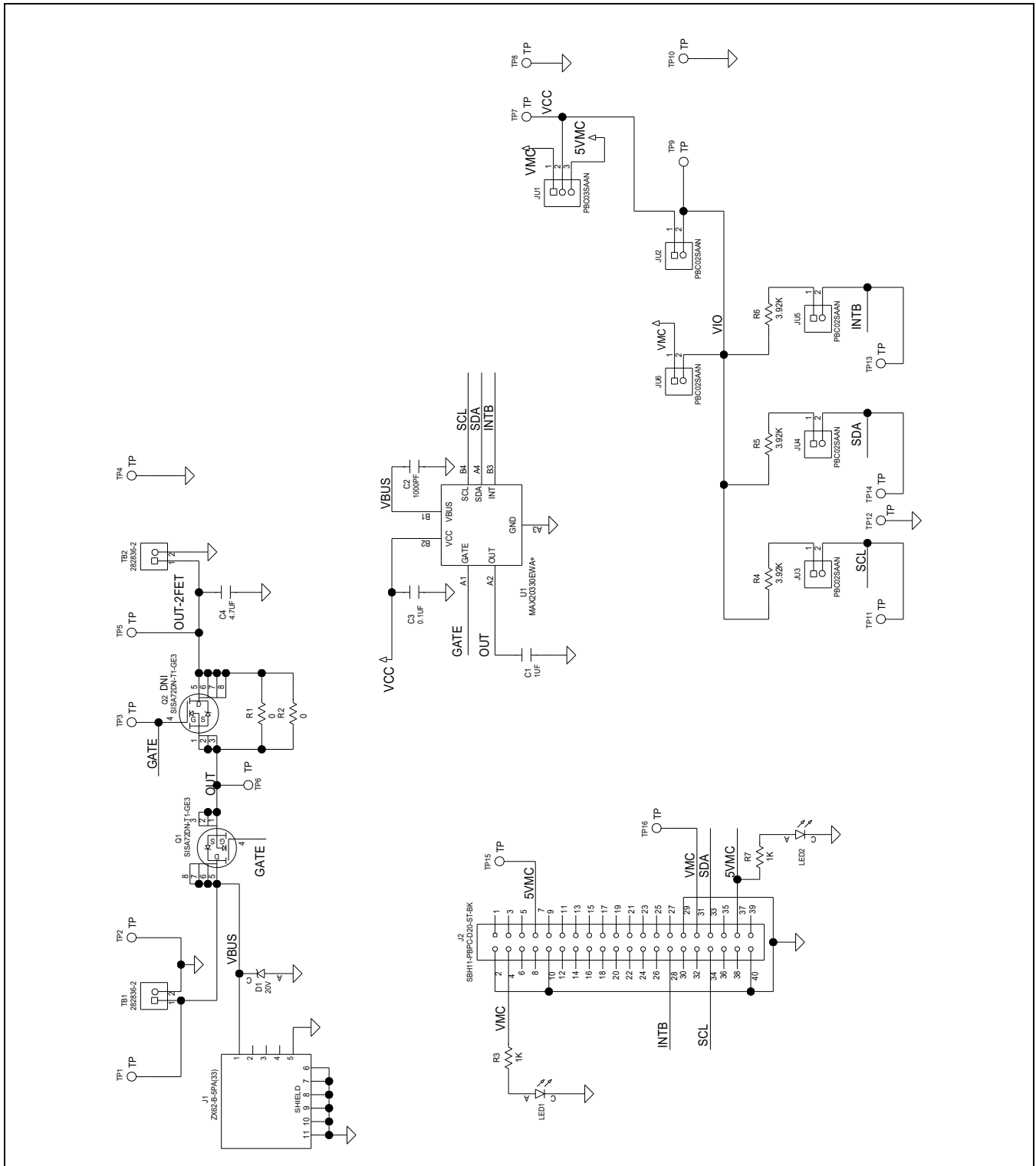
| PART | TYPE |
|----------------|--------|
| MAX20330EVKIT# | EV Kit |

#Denotes RoHS compliant.

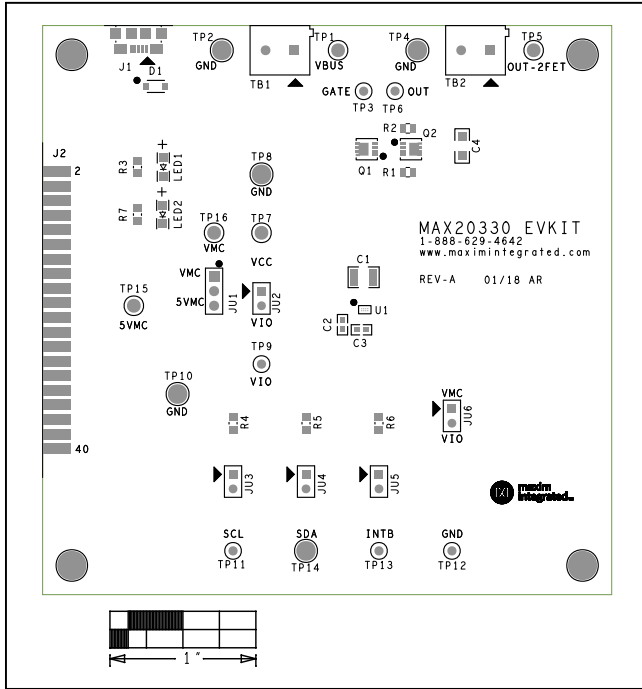
MAX20330 EV Kit Bill of Materials

| ITEM | REF_DES | DNI/DNP | QTY | MFG PART # | MANUFACTURER | VALUE | DESCRIPTION | COMMENTS |
|-------|---------------------------|---------|-----|---|--------------------------------------|----------------------|--|----------|
| 1 | C1 | - | 1 | C1210C105K5RAC | KEMET | 1UF | CAPACITOR; SMT; 1210; CERAMIC; 1uF; 50V; 10%; X7R; -55degC to + 125degC; | |
| 2 | C2 | - | 1 | C0603Y102K5RACAUTO | KEMET | 1000PF | CAP; SMT (0603); 1000PF; 10%; 50V; X7R; CERAMIC CHIP | |
| 3 | C3 | - | 1 | GCM188R71H104KA12; GCM188R71H104K; CGA3E2X7R1H104K080AA | MURATA;MURATA;TDK | 0.1UF | CAPACITOR; SMT (0603); CERAMIC CHIP; 0.1UF; 50V; TOL=10%; TG=-55 DEGC TO +125 DEGC; TC=X7R; AUTO | |
| 4 | C4 | - | 1 | C3216X7R1E475K160AC | TDK | 4.7UF | CAPACITOR; SMT (1206); CERAMIC CHIP; 4.7UF; 25V; TOL=10%; MODEL=C SERIES; TG=-55 DEGC TO +125 DEGC; TC=X7R | |
| 5 | D1 | - | 1 | PTVS20VS1UR | NEXPERIA | 20V | DIODE; TVS; SMT (SOD-123W); VRM=20V; IPP=12.3A | |
| 6 | J1 | - | 1 | ZX62-B-5PA(33) | HIROSE ELECTRIC CO LTD. | ZX62-B-5PA(33) | CONNECTOR; MALE; SMT; USB MICRO B-TYPE; BOTTOM MOUNT; RIGHT ANGLE; 5PINS; WITH OPTION TO CONNECT SHIELD PINS | |
| 7 | J2 | - | 1 | SBH11-PBPC-D20-ST-BK | SULLINS ELECTRONICS CORP. | SBH11-PBPC-D20-ST-BK | CONNECTOR; MALE; THROUGH HOLE; HEADER CONNECTOR; STRAIGHT; 40PINS; EDGE FOOTPRINT | |
| 8 | JU1 | - | 1 | PBC03SAAN | SULLINS | PBC03SAAN | CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 3PINS; -65 DEGC TO +125 DEGC | |
| 9 | JU2-JU6 | - | 5 | PBC02SAAN | SULLINS ELECTRONICS CORP. | PBC02SAAN | EVKIT PART-CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 2PINS; -65 DEGC TO +125 DEGC; | |
| 10 | LED1, LED2 | - | 2 | SML-LX1206GW-TR | LUMEX OPTOCOMPONENTS INC | SML-LX1206GW-TR | DIODE; LED; STANDARD; GREEN; SMT (1206); PIV=2.2V; IF=0.02A; -40 DEGC TO +85 DEGC | |
| 11 | Q1 | - | 1 | SISA72DN-T1-GE3 | VISHAY SILICONIX | SISA72DN-T1-GE3 | TRAN; NCH; POWERPAK1212-8; PD-(3.7W); I-(60A); V-(40V) | |
| 12 | R1, R2 | - | 2 | ANY | ANY | | RESISTOR; 0805; 0 OHM; JUMPER; 0.125W; THICK FILM; FORMFACTOR | |
| 13 | R3, R7 | - | 2 | CRCW08051K00FK;ERJ-6ENF1001V; MCR10EZHF1001;RC0805FR-071KL | VISHAY DALE;PANASONIC; ROHM;YAGEO | 1K | RESISTOR; 0805; 1K; 1%; 100PPM; 0.125W; THICK FILM | |
| 14 | R4-R6 | - | 3 | CRCW08053K92FK; MCR10EZHF3921 | VISHAY DALE;ROHM | 3.92K | RESISTOR; 0805; 3.92K OHM; 1%; 100PPM; 0.125W; THICK FILM | |
| 15 | SU1-SU6 | - | 6 | STC02SYAN | SULLINS ELECTRONICS CORP. | STC02SYAN | TEST POINT; JUMPER; STR; TOTAL LENGTH=0.256IN; BLACK; INSULATION=PBT CONTACT=PHOSPHOR BRONZE; COPPER PLATED TIN OVERALL | |
| 16 | TB1, TB2 | - | 2 | 282836-2 | TE CONNECTIVITY | 282836-2 | CONNECTOR; FEMALE; THROUGH HOLE; TERMINAL BLOCK; SIDE WIRE ENTRY; STACKING WITH INTERLOCK STRAIGHT; 2PINS ; | |
| 17 | TP1, TP5, TP7, TP15, TP16 | - | 5 | 5010 | KEYSTONE | N/A | TESTPOINT WITH 1.80MM HOLE DIA, RED, MULTIPURPOSE; | |
| 18 | TP2, TP4, TP8, TP10, TP14 | - | 5 | 5011 | KEYSTONE | N/A | TEST POINT; PIN DIA=0.125IN; TOTAL LENGTH=0.445IN; BOARD HOLE=0.063IN; BLACK; PHOSPHOR BRONZE WIRE SILVER PLATE FINISH; | |
| 19 | TP3 | - | 1 | 5119 | KEYSTONE | N/A | TEST POINT; PIN DIA=0.1IN; TOTAL LENGTH=0.3IN; BOARD HOLE=0.04IN; PURPLE; PHOSPHOR BRONZE WIRE SILVER PLATE FINISH; | |
| 20 | TP6 | - | 1 | 5004 | KEYSTONE | N/A | TEST POINT; PIN DIA=0.1IN; TOTAL LENGTH=0.3IN; BOARD HOLE=0.04IN; YELLOW; PHOSPHOR BRONZE WIRE SILVER PLATE FINISH; | |
| 21 | TP9 | - | 1 | 5000 | KEYSTONE | N/A | TEST POINT; PIN DIA=0.1IN; TOTAL LENGTH=0.3IN; BOARD HOLE=0.04IN; RED; PHOSPHOR BRONZE WIRE SILVER PLATE FINISH; | |
| 22 | TP11 | - | 1 | 5116 | KEYSTONE | N/A | TEST POINT; PIN DIA=0.1IN; TOTAL LENGTH=0.3IN; BOARD HOLE=0.04IN; GREEN; PHOSPHOR BRONZE WIRE SILVER PLATE FINISH; | |
| 23 | TP12 | - | 1 | 5117 | KEYSTONE | N/A | TEST POINT; PIN DIA=0.1IN; TOTAL LENGTH=0.3IN; BOARD HOLE=0.04IN; BLUE; PHOSPHOR BRONZE WIRE SILVER PLATE FINISH; | |
| 24 | TP13 | - | 1 | 5003 | KEYSTONE | N/A | TEST POINT; PIN DIA=0.1IN; TOTAL LENGTH=0.3IN; BOARD HOLE=0.04IN; ORANGE; PHOSPHOR BRONZE WIRE SILVER PLATE FINISH; | |
| 25 | U1 | - | 1 | MAX20330EWA+ | MAXIM | MAX20330EWA+ | EVKIT PART - IC; DET; PROGRAMMABLE OVP CONTROLLER WITH VBUS SHORT DETECTION; MAX20330; PACKAGE OUTLINE: 21-100229; PACKAGE CODE: W81B1+1; WLP8 | |
| 26 | PCB | - | 1 | MAX20330 | MAXIM | PCB | PCB:MAX20330 | |
| 27 | Q2 | DNP | 0 | SISA72DN-T1-GE3 | VISHAY SILICONIX | SISA72DN-T1-GE3 | TRAN; NCH; POWERPAK1212-8; PD-(3.7W); I-(60A); V-(40V) | DNI |
| TOTAL | | | 49 | | | | | |

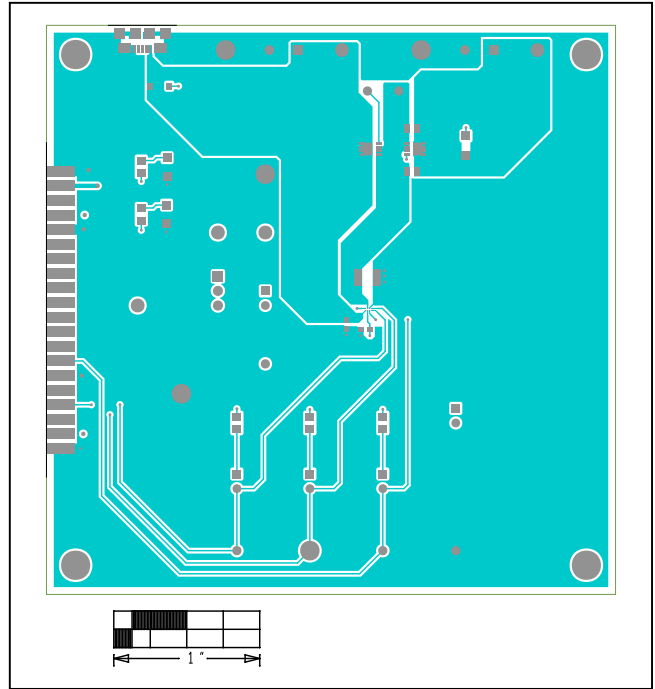
MAX20330 EV Kit Schematic



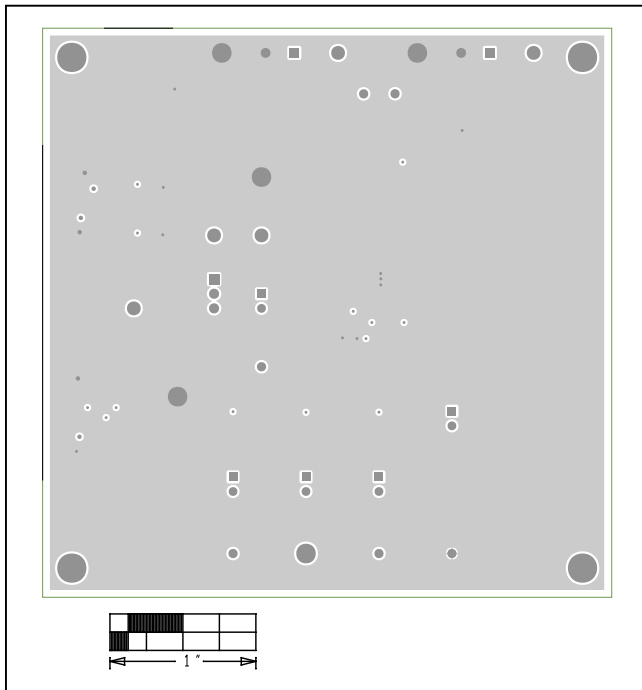
MAX20330 EV PCB Layout Diagrams



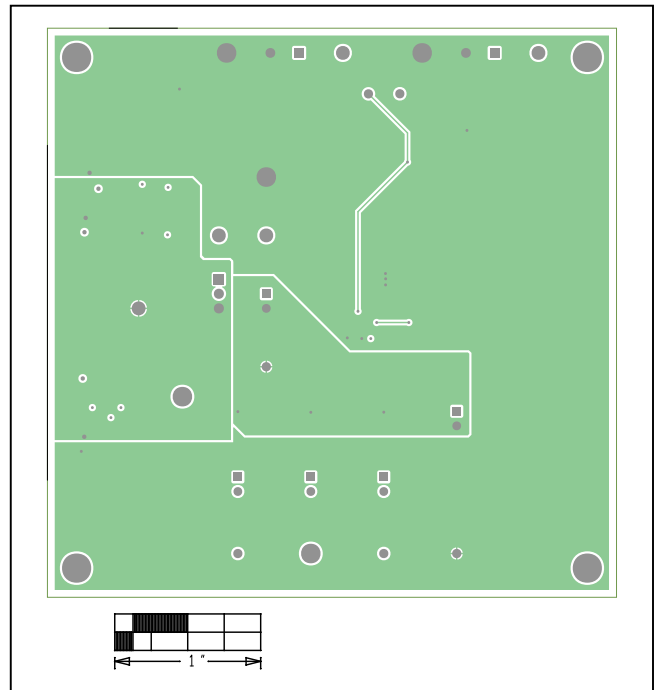
MAX20330 EV Kit—Top Silkscreen



MAX20330 EV Kit—Top

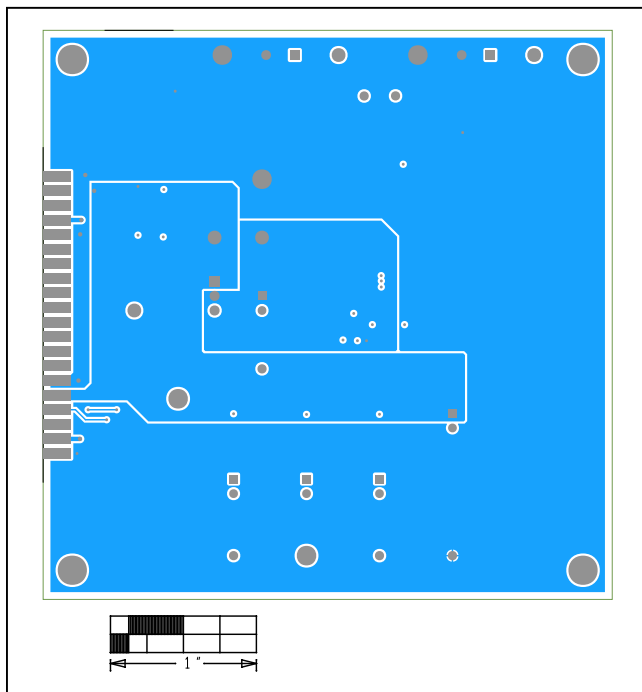


MAX20330 EV Kit—Internal 2

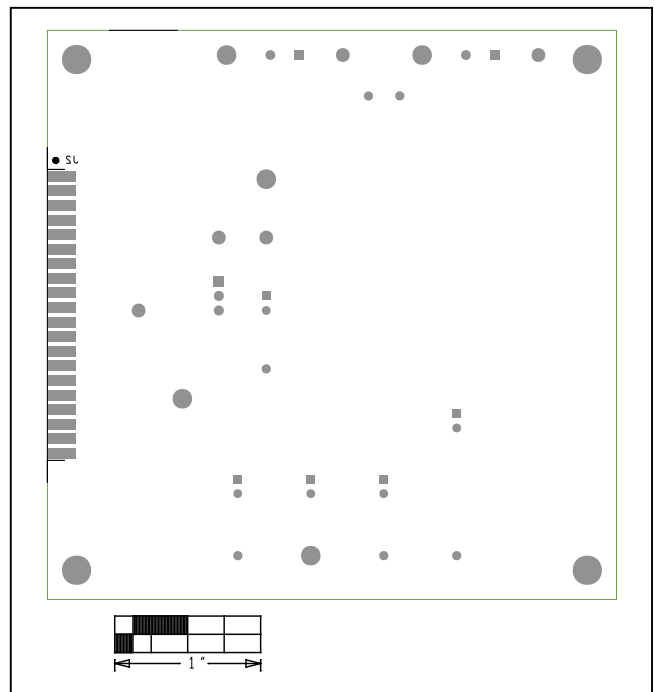


MAX20330 EV Kit—Internal 3

MAX20330 EV PCB Layout Diagrams (continued)



MAX20330 EV Kit—Bottom



MAX20330 EV Kit—Bottom Silkscreen

Revision History

| REVISION NUMBER | REVISION DATE | DESCRIPTION | PAGES CHANGED |
|-----------------|---------------|-----------------|---------------|
| 0 | 1/18 | Initial release | — |

For pricing, delivery, and ordering information, please contact Maxim Direct at 1-888-629-4642, or visit Maxim's website at www.maximintegrated.com.

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