

MAX20323 Evaluation Kit

Evaluates: MAX20323/MAX20323A/
MAX20323B/MAX20323C/MAX20323D/
MAX20323E/MAX20323F

General Description

The MAX20323 evaluation kit (EV kit) is a fully assembled and tested circuit board that demonstrates the MAX20323 USB type-C CC-pin overvoltage protection device. The EV kit comes with the MAX20323ENC+ installed. The EV kit board can also be used to evaluate MAX20323A/MAX20323B/MAX20323C/MAX20323D/MAX20323E/MAX20323F.

Features

- 2.5V to 5.5V Operating Voltage Range
- Power LED Reading
- Proven PCB Layout
- Fully Assembled and Tested

EV Kit Contents

- EV Kit Board Containing a MAX20323

Ordering Information appears at end of data sheet.

Quick Start

Required Equipment

- MAX20323 EV kit
- 5V power supply or USB cable to power
- Power supply
- Multimeter

Procedure

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

- 1) Connect a 5V power supply to TP14 or connect a USB cable to J3, verify LED1 is on.
- 2) Check the voltage on JU1 pin2 is ~4.3V.
- 3) Remove shunt on JU2, check the voltage on JU1 pin2 is ~2.5V.
- 4) Remove shunt on JU3, check the voltage on JU1 pin2 is ~1.257V.
- 5) Install shunt on JU2, check the voltage on JU1 pin2 is ~3.06V.
- 6) Install shunt on JU3 and JU1, check the voltage on TP11 is ~4.3V.
- 7) Connect another power supply 2V to TP3 CC1_I, check TP9 CC1_O is 2V.
- 8) Increase CC1_I voltage, when CC1_I reaches ~5.75V, CC1_O voltage drops down to ~5.1V.
- 9) Turn off the power supply on CC1_I, and connect the power supply to CC2_I TP4.
- 10) Set the power supply to CC2_I to 2V and check TP10 CC2_O is 2V.
- 11) Increase CC2_I voltage, when CC2_I reaches ~5.75V, CC2_O voltage drops down to ~5.1V.

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Detailed Description

The MAX20323 EV kit is a fully assembled and tested circuit board demonstrating the MAX20323 USB type-C CC-pin overvoltage protection device in a 12-bump wafer-level package (WLP).

LED Indicator

The EV kit features LED1 to indicate power on VB_IN.

V_{ENCC} Power

V_{ENCC} can be powered from J3 USB, TP14, or test point TP11. Use jumper JU1 to connect V_{ENCC} to LDO from VB_IN (Table 1). The output voltage of the LDO can be set by JU2 and JU3 (Table 2).

Table 1. JU1 Jumper Setting

JUMPER	SHUNT POSITION	DESCRIPTION
JU1	Installed	V _{ENCC} power from J3/TP14
	Not installed*	V _{ENCC} not power from J3/TP14

*Default position.

Table 2. LDO Output Setting

JUMPER		LDO Output
JU2	JU3	
Open	Open	1.257V
Close	Open	3.06V
Open	Close	2.5V
Close*	Close*	4.3V

*Default position.

MAX20323 Evaluation Kit

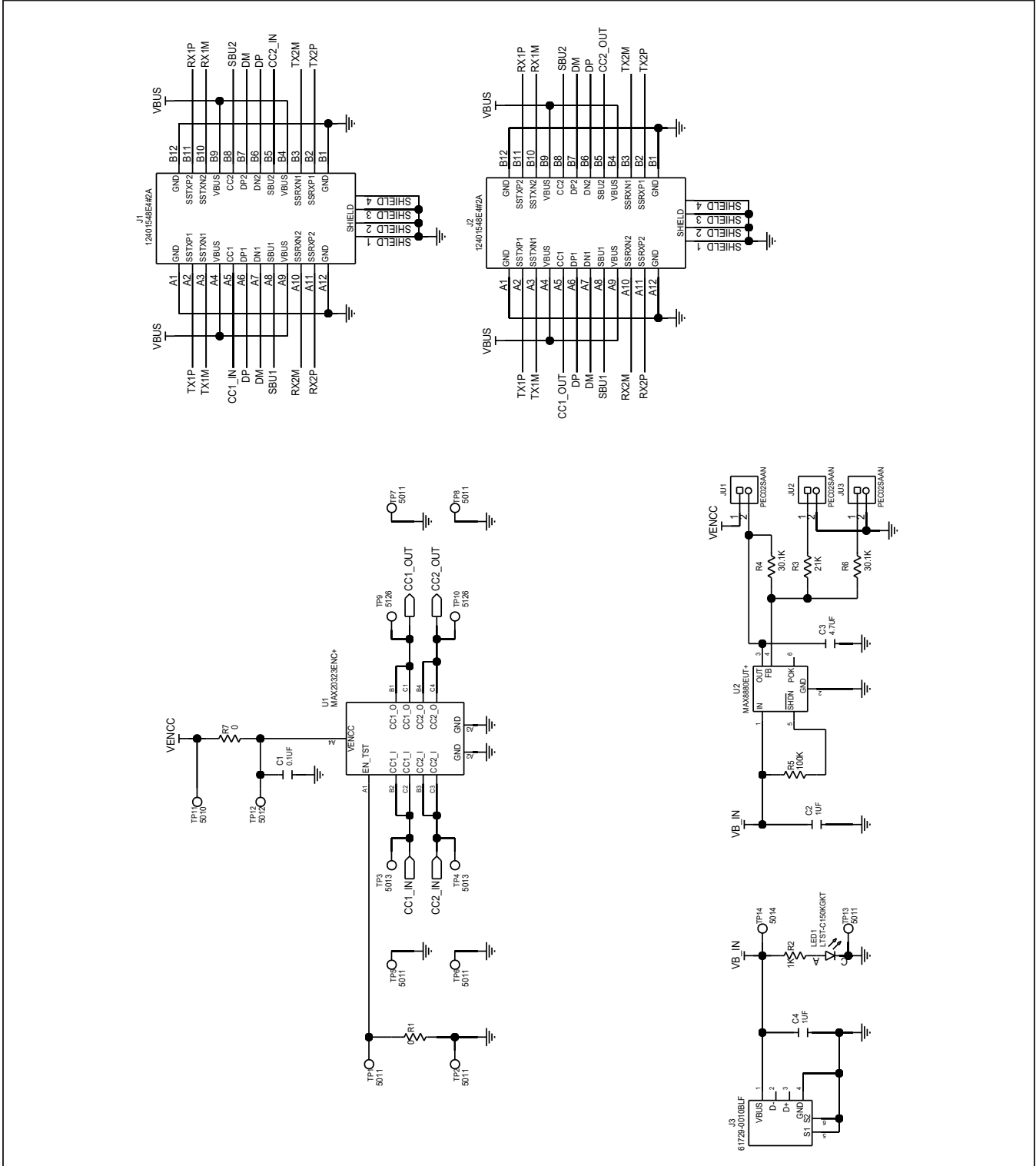
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MAX20323 EV Kit Bill of Materials

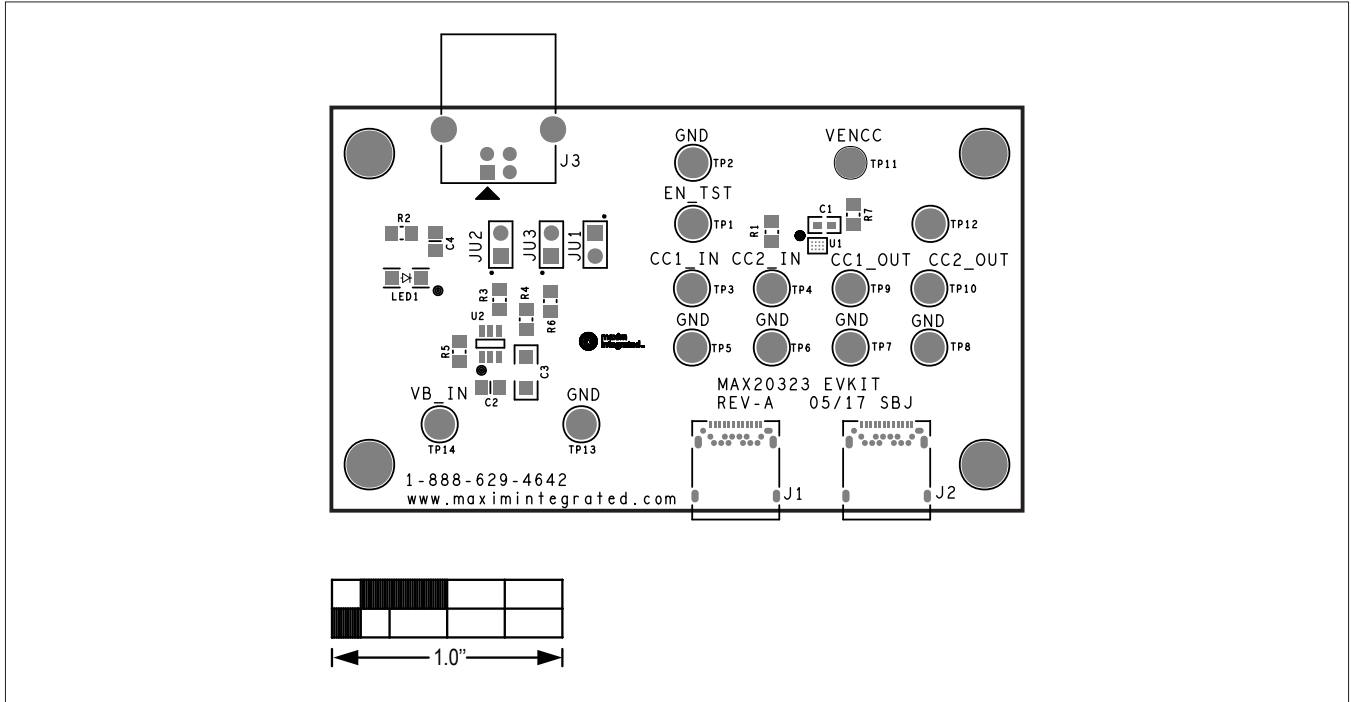
ITEM	REF_DES	DNI/DNP	QTY	MFG PART #	MANUFACTURER	VALUE	DESCRIPTION
1	C1	—	1	GCJ188R71H104KA12; GCM188R71H104K; CGA3E2X7R1H104K080AA	MURATA; TDK	0.1µF	CAPACITOR; SMT (0603); CERAMIC CHIP; 0.1µF; 50V; TOL = 10%; TG = -55°C TO +125°C; TC = X7R; AUTO
2	C2, C4	—	2	EMK212BJ105KG	TAIYO YUDEN	1µF	CAPACITOR; SMT (0805); CERAMIC CHIP; 1µF; 16V; TOL = 10%; MODEL = M SERIES; TG = -55°C TO +85°C; TC = X5R
3	C3	—	1	C3216X7R1E475K160AC	TDK	4.7µF	CAPACITOR; SMT (1206); CERAMIC CHIP; 4.7µF; 25V; TOL = 10%; MODEL = C SERIES; TG = -55°C TO +125°C; TC = X7R
4	J1, J2	—	2	12401548E4#2A	AMPHENOL	12401548E4#2A	CONNECTOR; FEMALE; THROUGH HOLE; USB TYPE C CONNECTOR; RIGHT ANGLE HYBRID; 24PINS
5	J3	—	1	61729-0010BLF	FCI CONNECT	61729-0010BLF	CONNECTOR; FEMALE; THROUGH-HOLE; UNIVERSAL SERIES BUS B-TYPE CONNECTOR; RIGHT ANGLE; 4PINS
6	JU1-JU3	—	3	PEC02SAAN	SULLINS	PEC02SAAN	CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 2PINS
7	LED1	—	1	LTST-C150KGKT	LITE-ON ELECTRONICS; INC.	LTST-C150KGKT	DIODE; LED; STANDARD; GREEN; SMT (1206); PIV = 2V; IF = 0.02A; -55°C TO +85°C
8	R1, R7	—	2	CRCW0805000020EAHP	VISHAY DRALORIC	0	RESISTOR; 0805; 0Ω; 0%; JUMPER; 0.5W; THICK FILM
9	R2	—	1	CRCW08051K00FK; ERJ-6ENF1001V; MCR10EZH1001; RC0805FR-071KL	VISHAY DALE; PANASONIC; ROHM; YAGEO	1K	RESISTOR; 0805; 1K; 1%; 100PPM; 0.125W; THICK FILM
10	R3	—	1	CRCW080521K0FK	VISHAY DALE	21K	RESISTOR; 0805; 21KΩ; 1%; 100PPM; 0.125W; THICK FILM
11	R4, R6	—	2	CRCW080530K1FK	VISHAY DALE	30.1K	RESISTOR; 0805; 30.1K; 1%; 100PPM; 0.125W; THICK FILM
12	R5	—	1	CRCW0805100KFK; RK73H2ATTD1003; ERJ-6ENF1003V	VISHAY DALE/ KOA SPEER/PANASONIC	100K	RESISTOR; 0805; 100K; 1%; 100PPM; 0.125W; THICK FILM
13	TP1, TP2, TP5-TP8, TP13	—	7	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;
14	TP3, TP4	—	2	5013	KEystone	N/A	TEST POINT; PIN DIA = 0.125IN; TOTAL LENGTH = 0.445IN; BOARD HOLE = 0.063IN; ORANGE; PHOSPHOR BRONZE WIRE SILVER PLATE FINISH;
15	TP9, TP10	—	2	5126	KEystone	N/A	TEST POINT; PIN DIA = 0.125IN; TOTAL LENGTH = 0.445IN; BOARD HOLE = 0.063IN; GREEN; PHOSPHOR BRONZE WIRE SILVER PLATE FINISH;
16	TP11	—	1	5010	KEystone	N/A	TESTPOINT WITH 1.80MM HOLE DIA, RED, MULTIPURPOSE;
17	TP12	—	1	5012	KEystone	N/A	TEST POINT; PIN DIA = 0.125IN; TOTAL LENGTH = 0.445IN; BOARD HOLE = 0.063IN; WHITE; PHOSPHOR BRONZE WIRE SILVER PLATE FINISH;
18	TP14	—	1	5014	KEystone	N/A	TEST POINT; PIN DIA = 0.125IN; TOTAL LENGTH = 0.445IN; BOARD HOLE = 0.063IN; YELLOW; PHOSPHOR BRONZE WIRE SILVER PLATE FINISH;
19	U1	—	1	MAX20323ENC+	MAXIM	MAX20323ENC+	EVKIT PART - IC; USB TYPE-C CC-PIN OVERVOLTAGE PROTECTOR; PACKAGE OUTLINE DRAWING: 21-100167; PACKAGE CODE: N121M1+1
20	U2	—	1	MAX8880EUT+	MAXIM	MAX8880EUT+	IC; VREG; ULTRA-LOW-IQ LOW-DROPOUT LINEAR REGULATOR WITH POK; SOT23-6
21	PCB	—	1	MAX20323	MAXIM	PCB	PCB:MAX20323
22	JP1-JP3	DNI	3	STC02SYAN	SULLINS ELECTRONICS CORP.	STC02SYAN	TEST POINT; JUMPER; STR; TOTAL LENGTH = 0.256IN; BLACK; INSULATION = PBT CONTACT = PHOSPHOR BRONZE; COPPER PLATED TIN OVERALL
TOTAL			38				

NOTE: DNI--> DO NOT INSTALL(PACKOUT) ; DNP--> DO NOT PROCURE

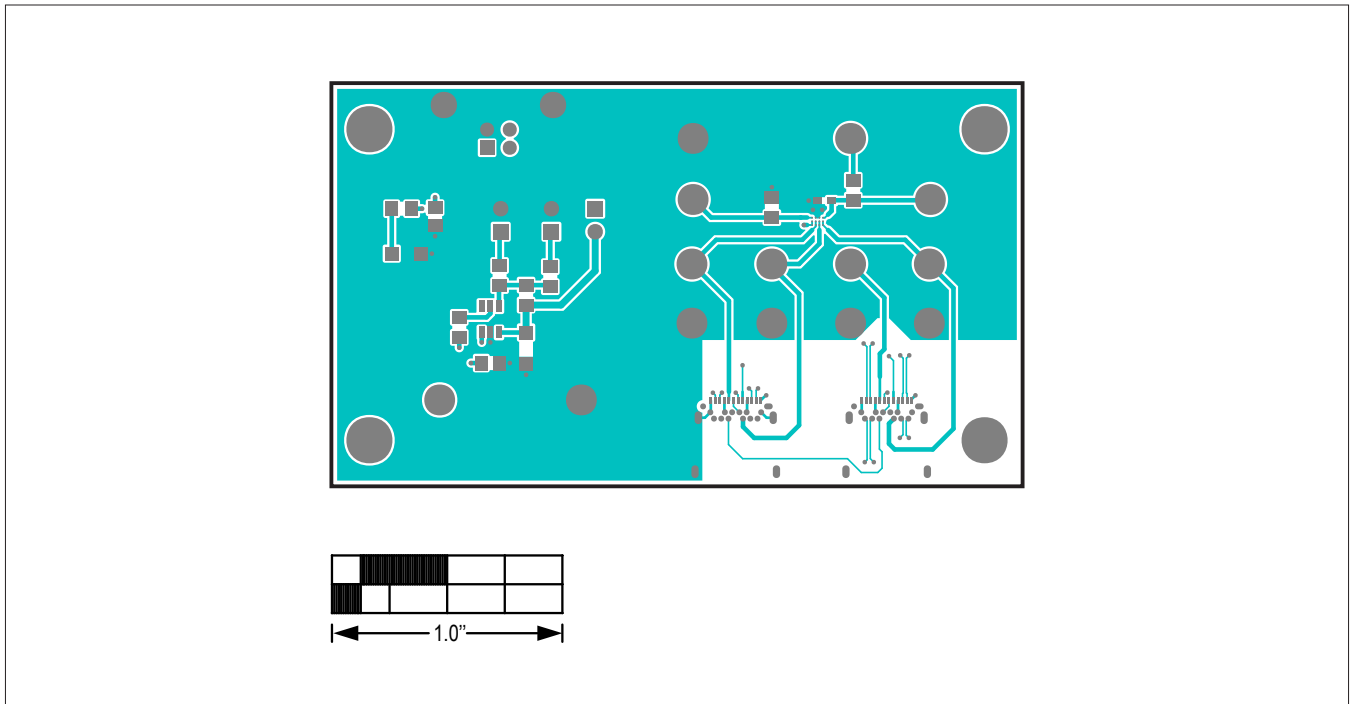
MAX20323 EV Kit Schematic



MAX20323 EV Kit PCB Layout Diagrams

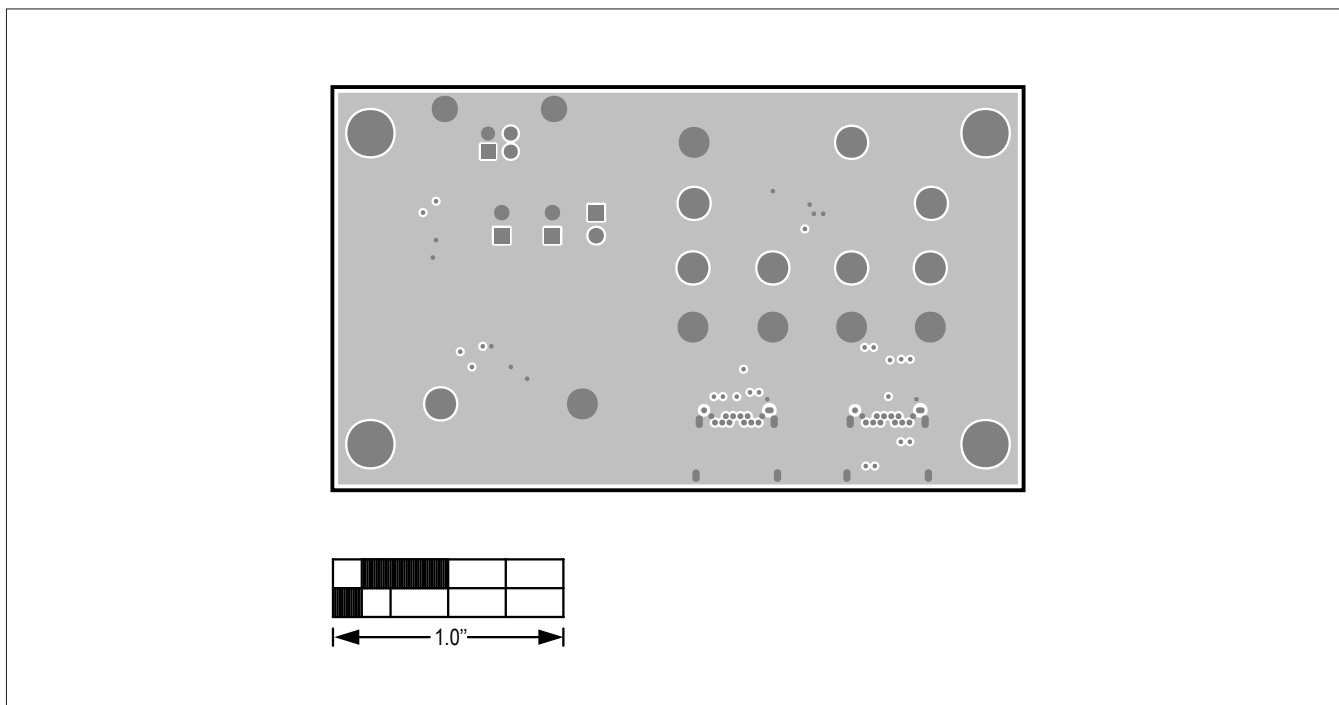


MAX20323 EV—Top Silkscreen

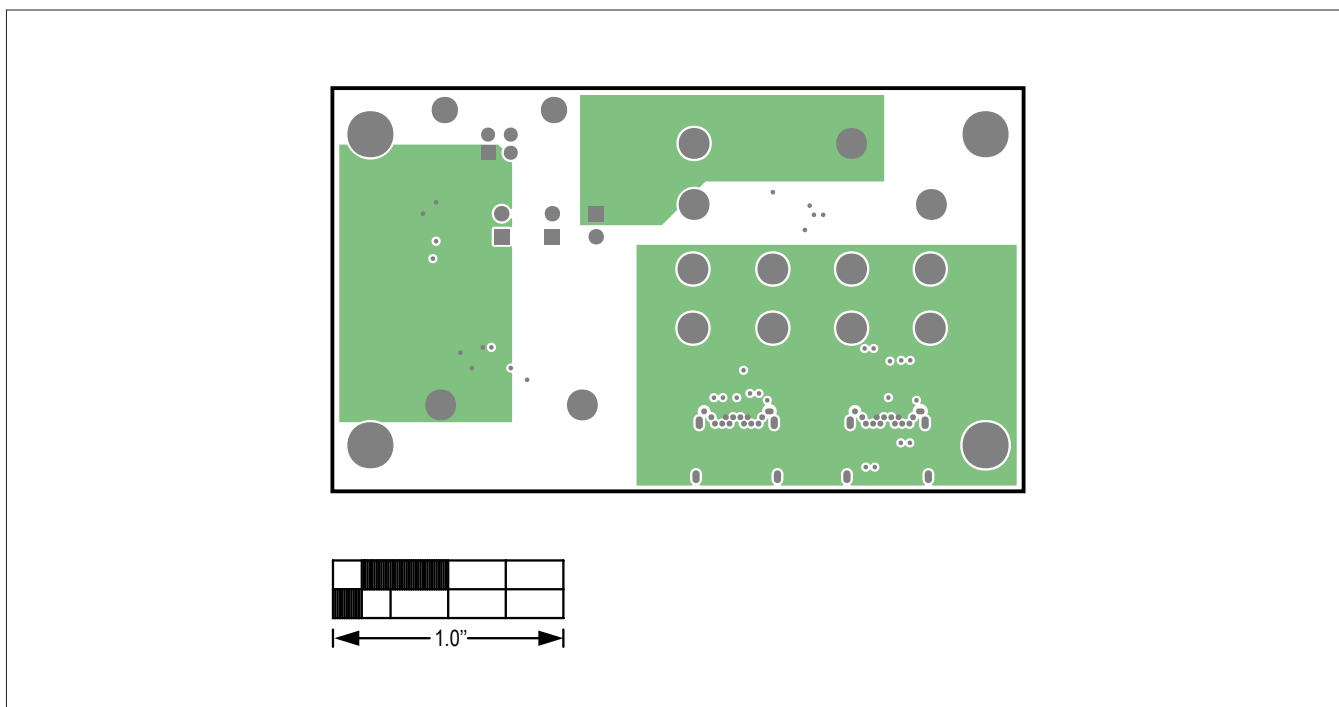


MAX20323 EV—Top

MAX20323 EV Kit PCB Layout Diagrams (continued)

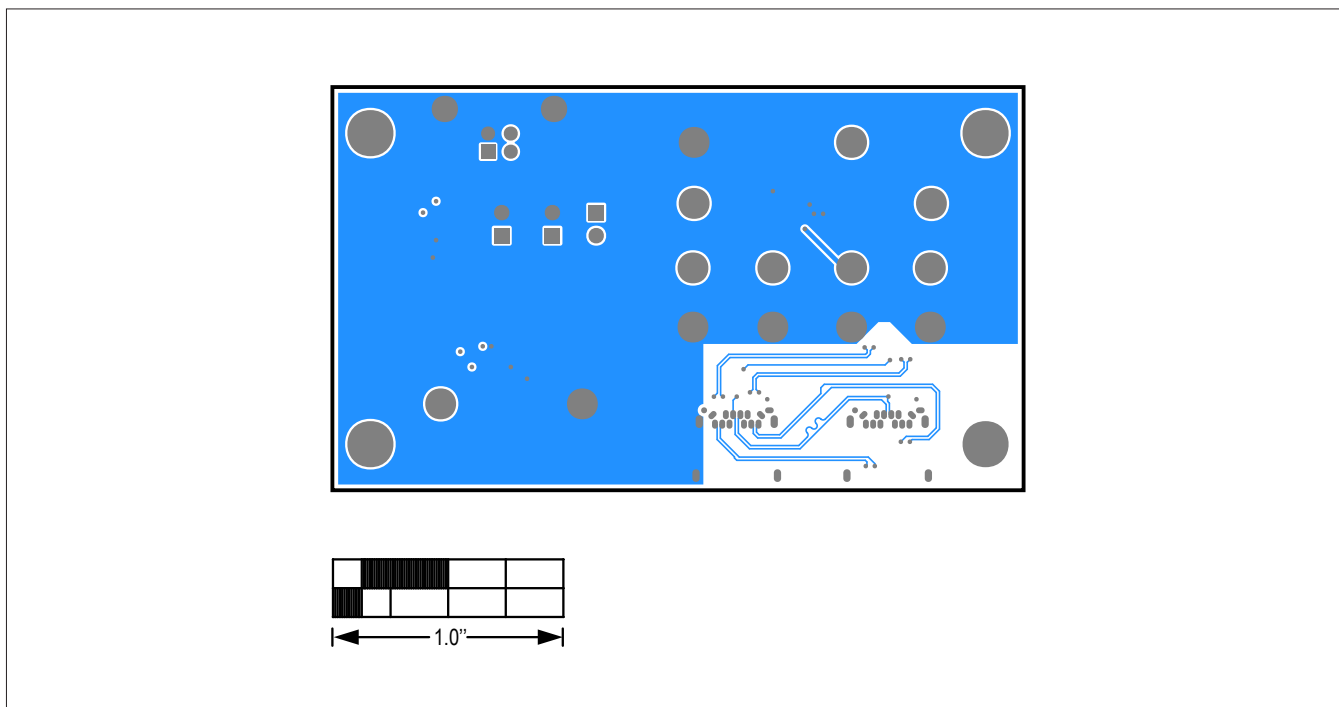


MAX20323 EV—Layer 2



MAX20323 EV—Layer 3

MAX20323 EV Kit PCB Layout Diagrams (continued)



MAX20323 EV—Bottom

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Ordering Information

PART	TYPE
MAX20323EVKIT#	EVKIT

#Denotes RoHS compliant.

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Revision History

REVISION NUMBER	REVISION DATE	DESCRIPTION	PAGES CHANGED
0	7/17	Initial release	—

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

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