

MAXIM

MAX3634 Evaluation Kit

General Description

The MAX3634 evaluation kit (EV kit) provides electrical evaluation of the MAX3634 burst-mode phase aligner IC. The EV kit has SMA connectors for all high-speed inputs and outputs to simplify connection to test equipment.

Features

- ◆ Easy +3.3V Power-Supply Operation
- ◆ Fully Assembled and Tested
- ◆ PECL Terminations Included

Component List

DESIGNATION	QTY	DESCRIPTION
C1, C2, C35	3	2.2 μ F \pm 10% ceramic capacitors (0805)
C3–C29, C31, C32, C36	30	1000pF \pm 10% ceramic capacitors (0402)
C30, C34, C38, C42	4	0.1 μ F \pm 10% ceramic capacitors (0402)
C33, C37, C41	3	33 μ F \pm 10% tantalum capacitors (B Case)
J1, J2, J4, J25, TP2, TP13–TP15,	8	Test points
J6–J9, J13–J20	12	SMA connectors (edge-mount)
J21–J24	0	Not installed
JU1	1	2-pin header, 0.1in centers
JU3	1	3-pin header, 0.1in centers
JU3	1	Shunt
L1, L11, L12	3	56nH \pm 5% inductors
R1, R2, R4, R5, R9–R11, R14, R17, R18, R21, R22	12	0 Ω \pm 5% resistors (0402)
R3, R6, R23–R25	5	Not installed, resistors
R7, R8, R12, R13, R15, R16	6	51 Ω \pm 1% resistors (0201)
R19, R20, R26–R29	0	Not installed, resistors
U1	1	MAX3634ETM (48-pin QFN)
—	1	MAX3634 EV kit PC board
—	1	MAX3634 data sheet
—	1	MAX3634 EV kit data sheet

Ordering Information

PART	TEMP RANGE	IC PACKAGE
MAX3634EVKIT	-40°C to +85°C	48-Pin QFN

Component Suppliers

SUPPLIER	PHONE	FAX
AVX	843-444-2863	843-626-3123
Coilcraft	847-639-6400	847-639-1469
Digi-Key	218-681-6674	218-681-3380
EF Johnson	402-474-4800	402-474-4858
Murata	415-964-6321	415-964-8165

Note: Indicate that you are using the MAX3634 when ordering from these suppliers.

MAX3634 Evaluation Kit

Evaluates: MAX3634

Quick Start

Electrical Evaluation (Data from Lab Equipment)

- 1) Set VCC = 2.0V, VEE = -1.3V, and V_{PECL} = 0V.
- 2) Connect RATESEL to VCC for 622Mbps operation or to VEE for 1.244Gbps operation.
- 3) Set source levels (for SDI, RST, and REFCLK) to V_{High} = +1V and V_{Low} = +0.7V.
- 4) Apply a reference clock to the REFCLK inputs (J19 and J20) at 1/8th the data rate.
- 5) Apply SDI data to J6 and J7 SMA connectors.
- 6) Apply RST signal to J8 and J9.
- 7) Connect the SDO and SCLKO outputs to 50Ω test equipment. Note that the output high level may be as high as 1.12V, so attenuators may be required before connecting to an oscilloscope.

- 8) Due to resistive drops in the supply-filtering network, the voltage applied to the MAX3634 will be lower than what is applied to the board. Therefore, verify that there is 2V at TP13 and -1.3V at TP14.

Interfacing to the MAX3634 PECL

Inputs and Outputs

The MAX3634 EV kit has a VPECL connection that allows easy connection to PECL sources as well as lab sources. Figure 1 shows several different possible configurations that can be selected depending upon the requirements of the test setup.

The MAX3634 PECL inputs (SDI±, RST±, REFCLK±) can accept a wide range of input amplitudes and common-mode levels.

Jumpers and Test Points

COMPONENT	NAME	FUNCTION
J2	VEE	Connection for the VEE voltage supply
J1	GND	Connection for the GND voltage supply
J4	VCC	Connection for the VCC voltage supply
J25	VPECL	Connection for the VPECL voltage supply
JU3	RATESEL	Used to configure rate of operation for the MAX3634. Connect to VCC for 622Mbps operation and to VEE for 1.244Gbps operation
TP2	VPECL	Test point for monitoring VPECL
TP14	VEE	Test point for monitoring VEE at the MAX3634
TP13	VCC	Test point for monitoring VCC at the MAX3634
TP15	GND	Test point for monitoring GND

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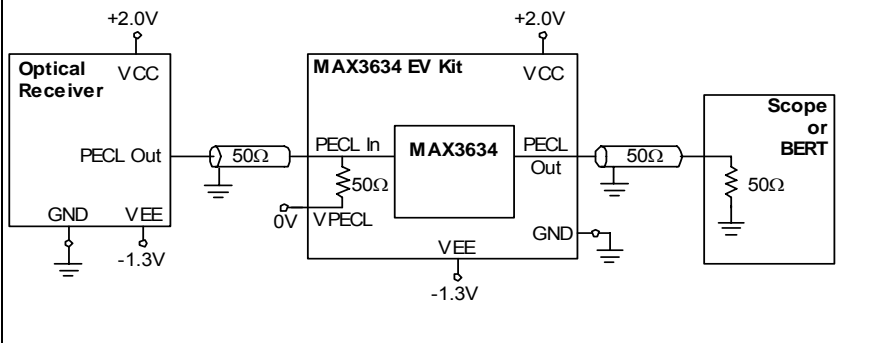
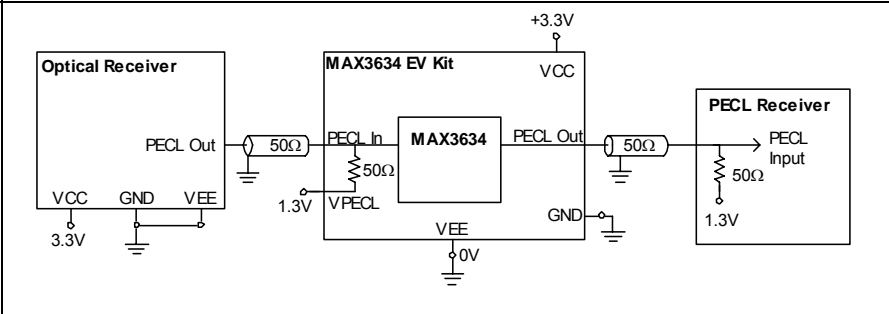
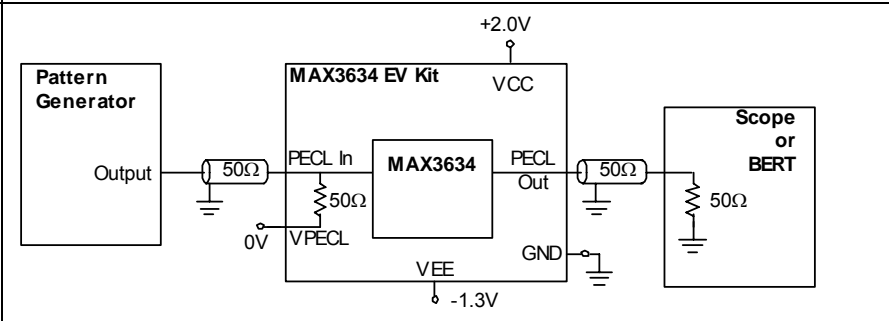
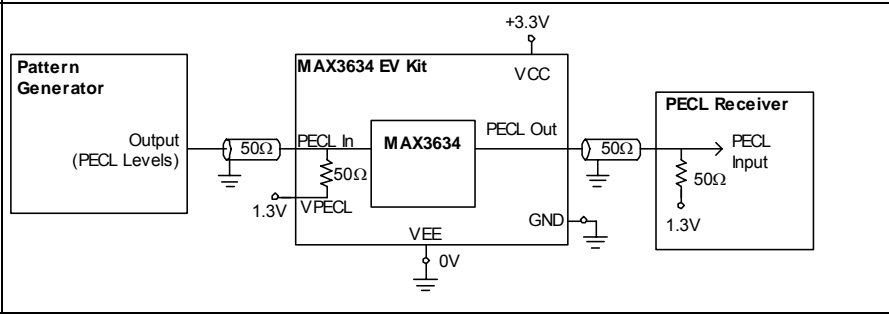
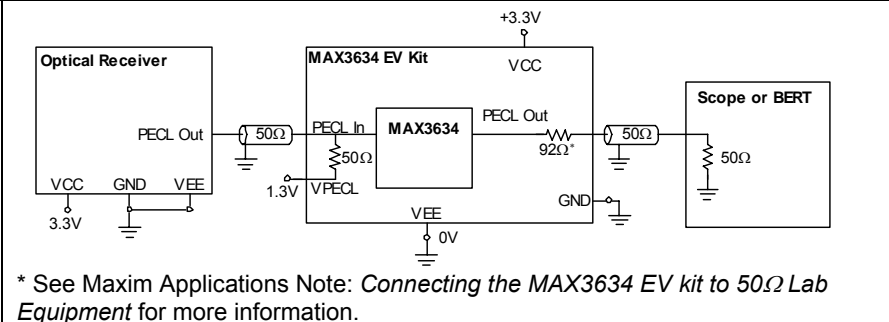
USE IF:	DIAGRAM	CONDITIONS
<p>Input is interfaced to optical receiver with VEE isolated from GND. Output interfaced to oscilloscope or BERT.</p>		<p>VCC = 2V, VEE = -1.3V, VPECL = 0V.</p> <p>Optical Receiver: VCC = 2V, VEE = -1.3V.</p>
<p>Input is interfaced to optical receiver with VEE shorted to GND. Output interfaced to PECL receiver.</p>		<p>VCC = 3.3V, VEE = 0V (JU1 shorted), VPECL = 1.3V.</p> <p>Optical Receiver: VCC = 3.3V, VEE = 0V.</p>
<p>Input is interfaced to lab source. Output interfaced to oscilloscope or BERT.</p>		<p>VCC = 2V, VEE = -1.3V, VPECL = 0V.</p>
<p>Input is interfaced to lab source. Output interfaced to PECL receiver.</p>		<p>VCC = 3.3V, VEE = 0V (JU1 shorted), VPECL = 1.3V.</p>
<p>Input is interfaced to optical receiver with VEE shorted to GND. Output interfaced to oscilloscope or BERT.</p>	 <p>* See Maxim Applications Note: <i>Connecting the MAX3634 EV kit to 50Ω Lab Equipment</i> for more information.</p>	<p>VCC = 3.3V, VEE = 0V (JU1 shorted), VPECL = 1.3V.</p>

Figure 1. MAX3634 EV Kit Configurations

MAX3634 Evaluation Kit

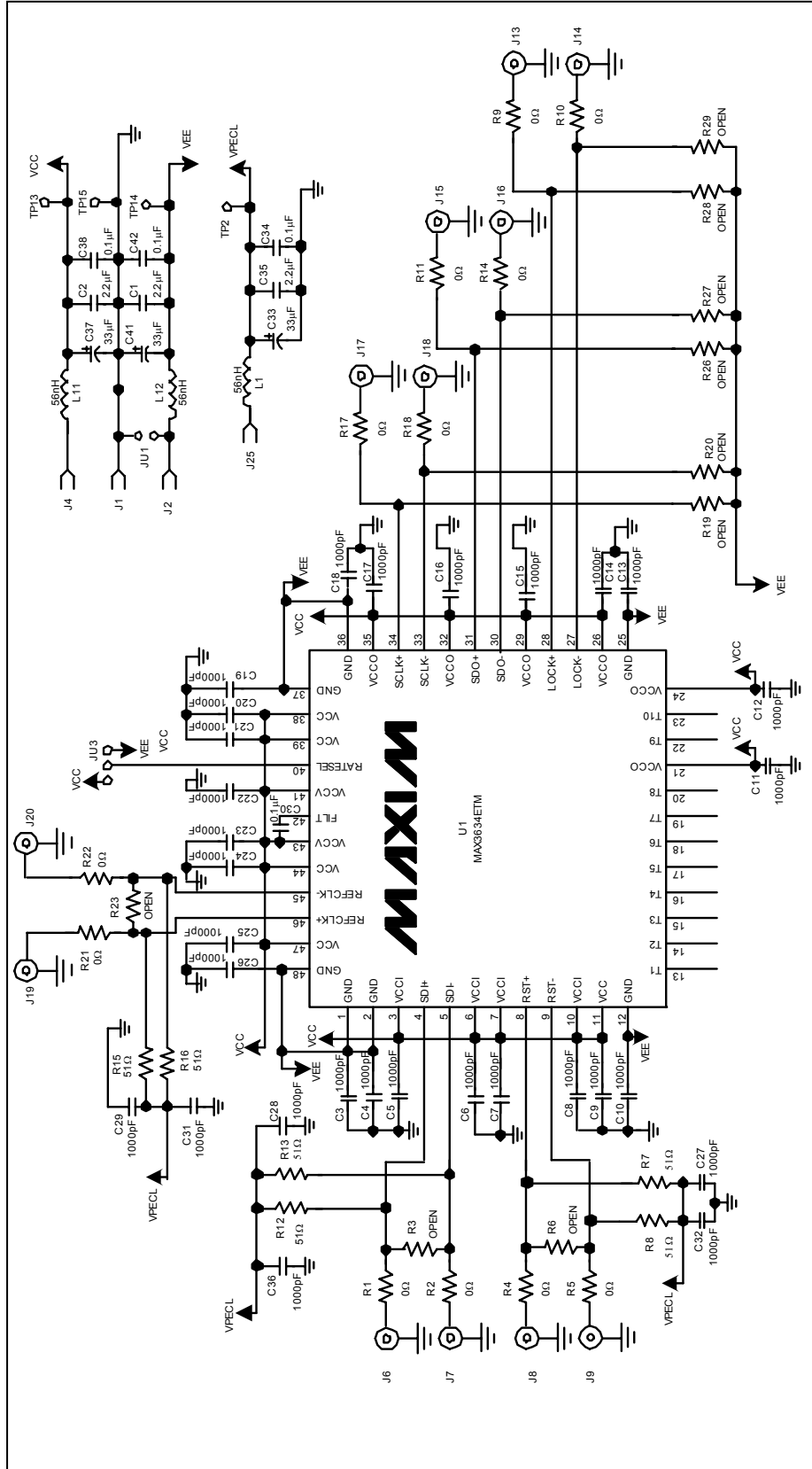


Figure 2. MAX3634 EV Kit Schematic

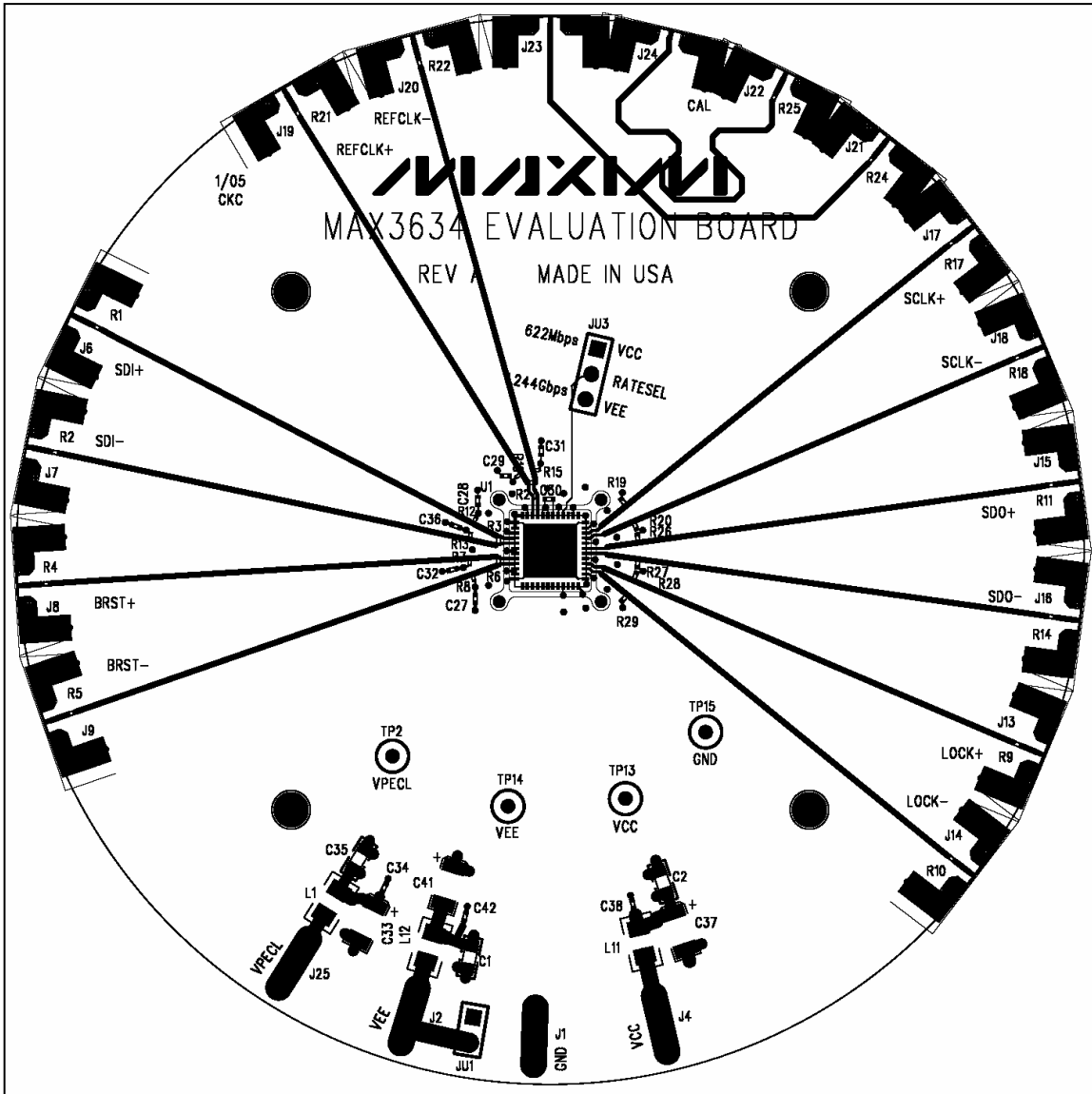


Figure 3. MAX3634 EV Kit Component Placement Guide—Component Side

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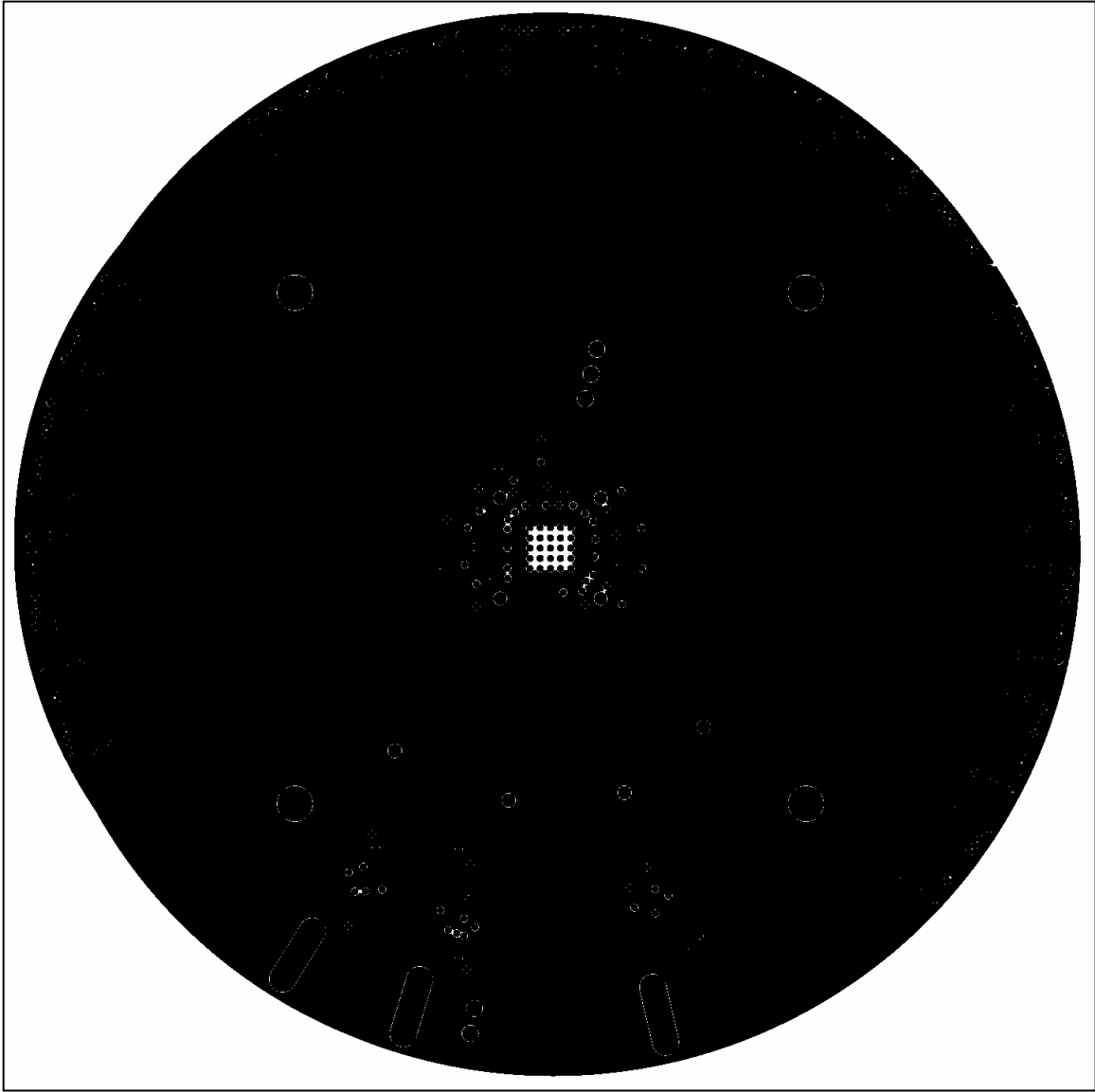


Figure 4. MAX3634 EV Kit PC Board Layout—Ground Plane

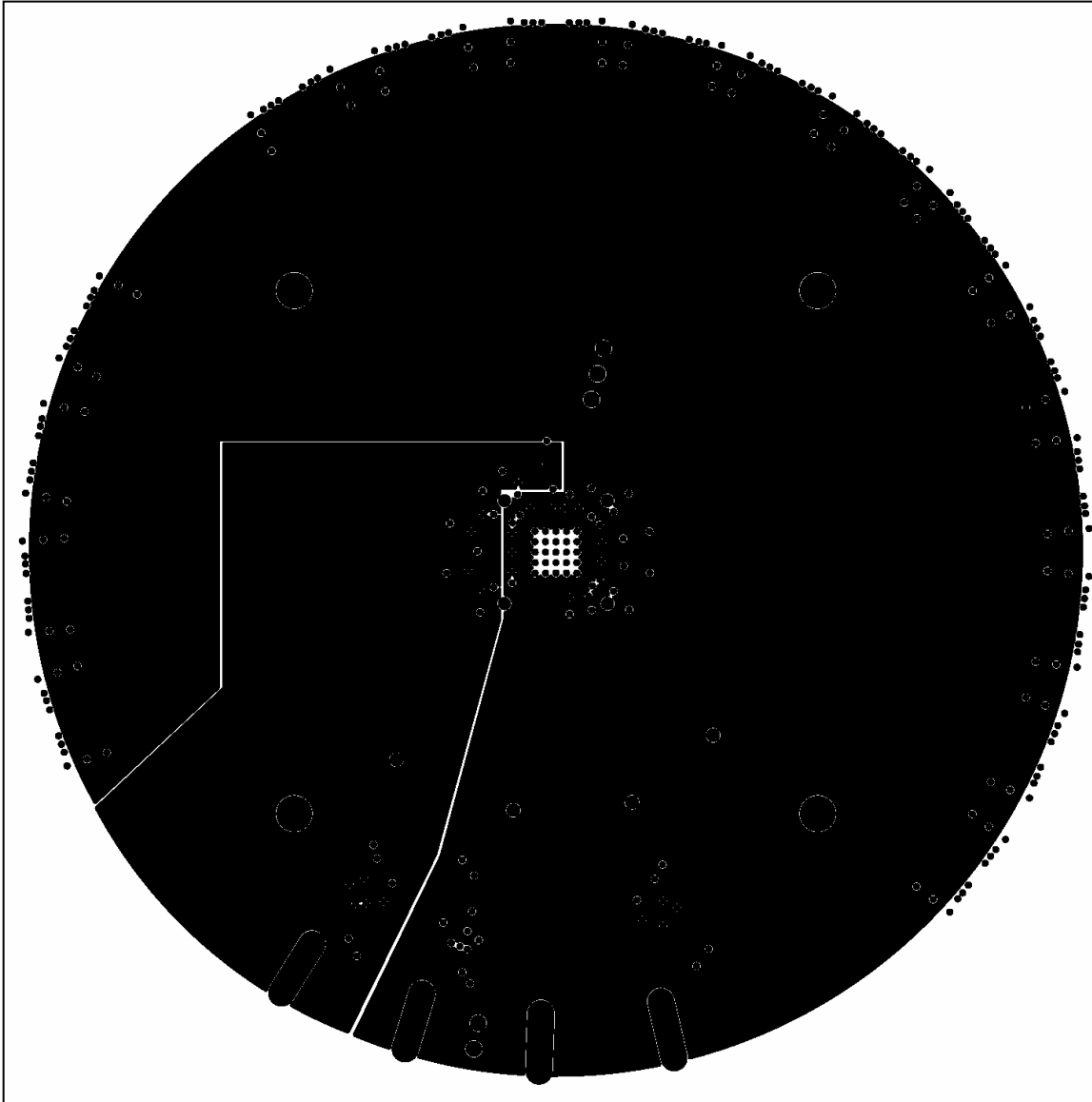


Figure 5. MAX3634 EV Kit PCB Board Layout—Power Plane

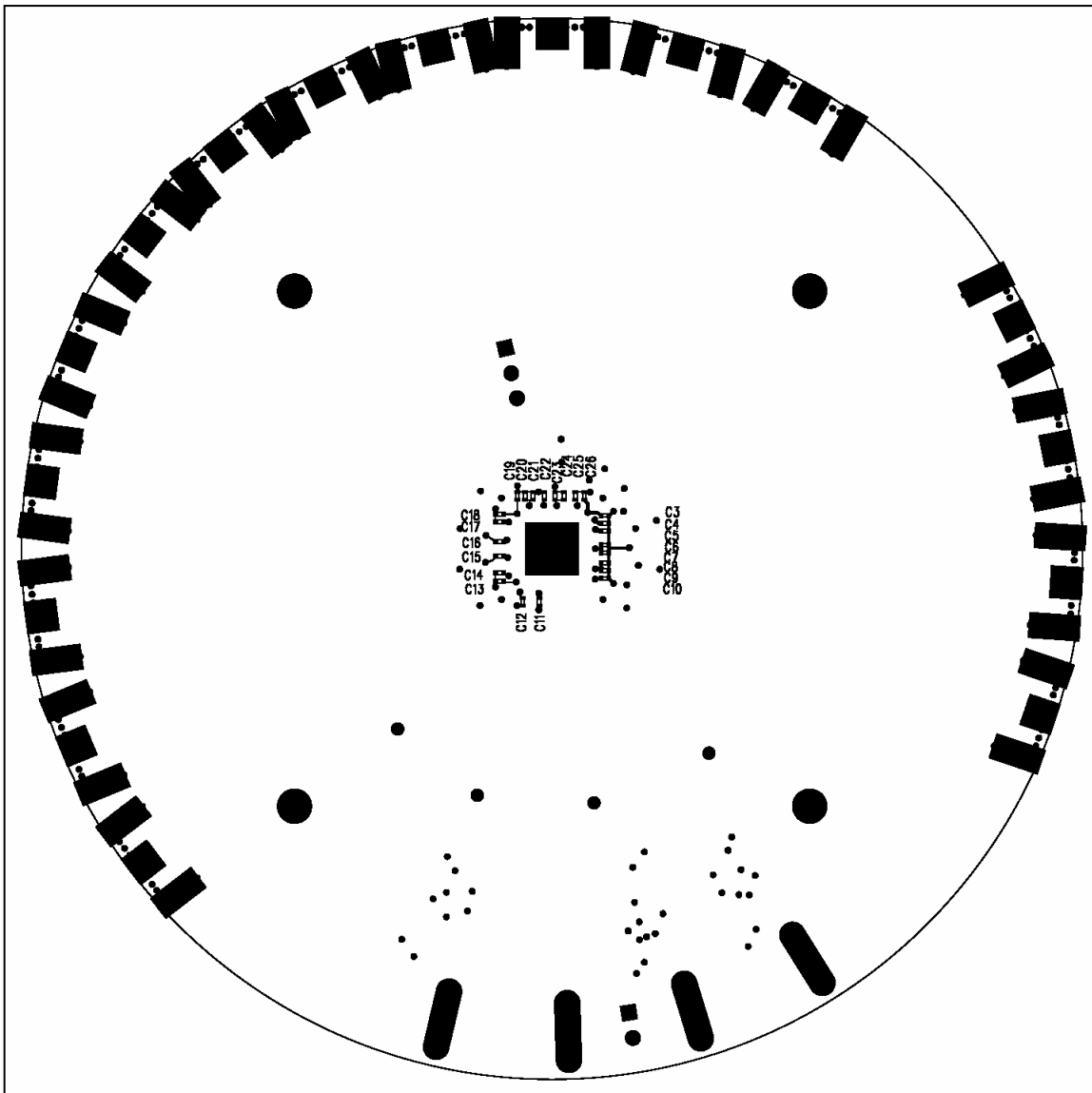


Figure 6. MAX3634 EV Kit Component Placement Guide—Solder Side

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