## General Description

The MAX22707 evaluation kit (EV kit) provides a proven design to evaluate MAX22707 low power, precision zero-crossing detector.

The MAX22707 EV kit features an isolated power and signal interface to configure and evaluate different modes. The EV kit features two independent MAX22707 sections that can be evaluated in lowpass filter (LPF) configuration mode and bandpass filter (BPF) configuration mode.

The EV kit comes with two MAX22707AUB+ (10 µMAX, 3.05mm x 5.05mm footprint) devices installed.

## Features

- Robust Operation with Connector Interface to 110VAC and 220VAC Inputs
- Easy Evaluation of the MAX22707 in Different Configuration Modes
- EV Kit is USB Powered with Optional Power from Terminal Block
- Fully Assembled and Tested
- Proven PCB Layout
- RoHS Compliant

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

## Quick Start

### Required Equipment

- MAX22707 EV kit
- Micro-USB cable (to PC or 5V Adaptor) or +5V bench supply
- Oscilloscope
- AC adaptor wire to AC Interface (110VAC or 220VAC) or AC supply

**Warning:** High voltage interface input. The user should be aware of the hazards associated with higher voltages, which could cause any of the associated test points or circuit traces to have a hazardous potential.

For safety before handling, make sure to discharge high impedance nodes to earth ground after evaluation with high voltage interface.

## Procedure

The EV kit is fully assembled and tested.

The default jumper settings in lowpass configuration section configure the MAX22707 (U7) to operate in Type 3 mode (full wave rectified input).

The default jumper settings in bandpass configuration section configure the MAX22707 (U8) to operate in Type 1 single-ended mode.

Follow the steps to verify board operation:

See *Table 1* Jumper Positions and Configurations

See *Table 2* Header Description

Refer to the *MAX22707 DS* on different input types (Type 1-4)

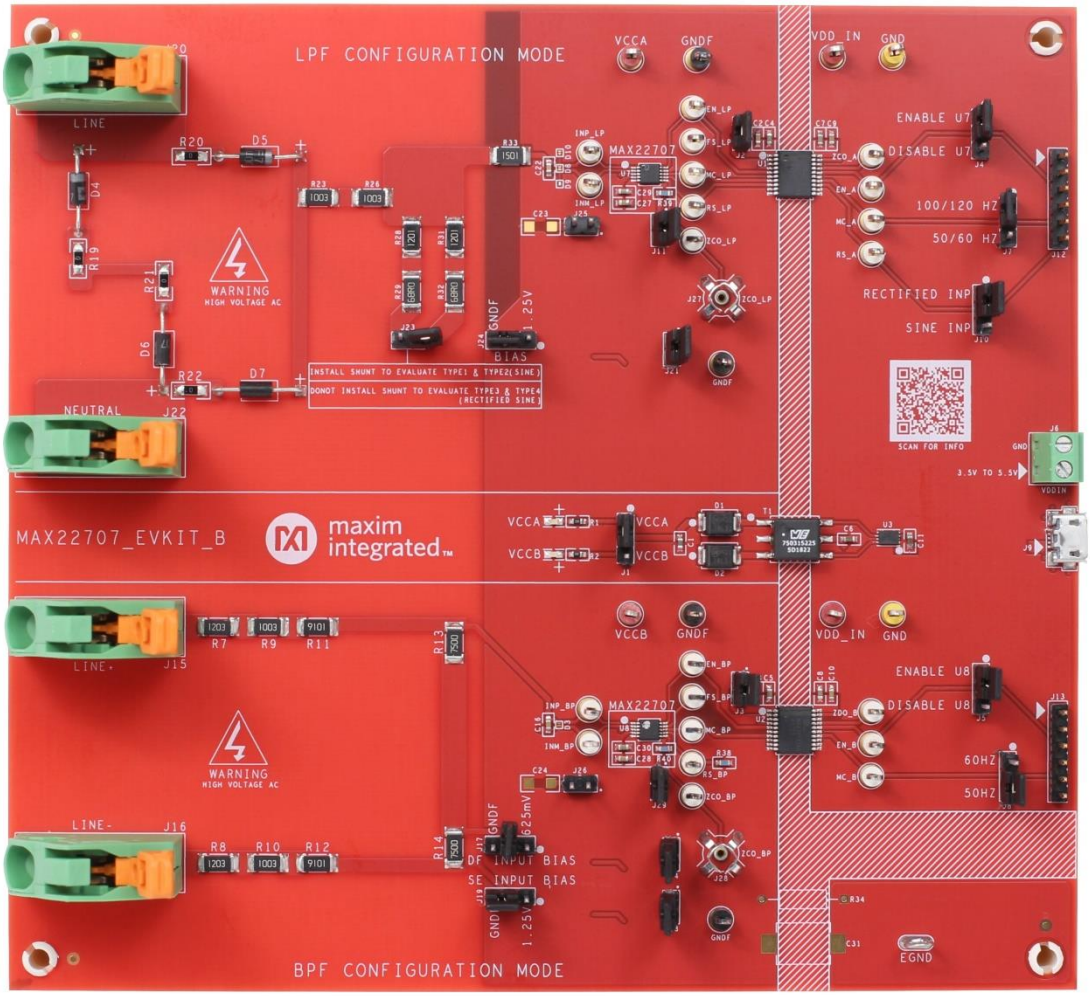
1. Verify that all jumpers are in default positions (*Table 1*).
2. Power the EV kit with a micro-USB cable to a PC or 5V adaptor at the J9 micro-USB connector. Alternatively, the terminal block J6 can be used to power the EV kit from a benchtop power supply when J9 is not used.
3. Connect an oscilloscope probe at ZCO_A_OUTPUT J12(2) and ZCO_B_OUTPUT J13(2).
4. For evaluating the LPF mode, a shunt is installed across J1 (1-2). Verify the VCCA LED is green, indicating there is power available to the LPF section. To evaluate the BPF mode, skip step 10 of the procedure.
5. With the AC supply turned off, connect the line terminal to LINE connector J20. Connect the neutral terminal to NEUTRAL connector J22.



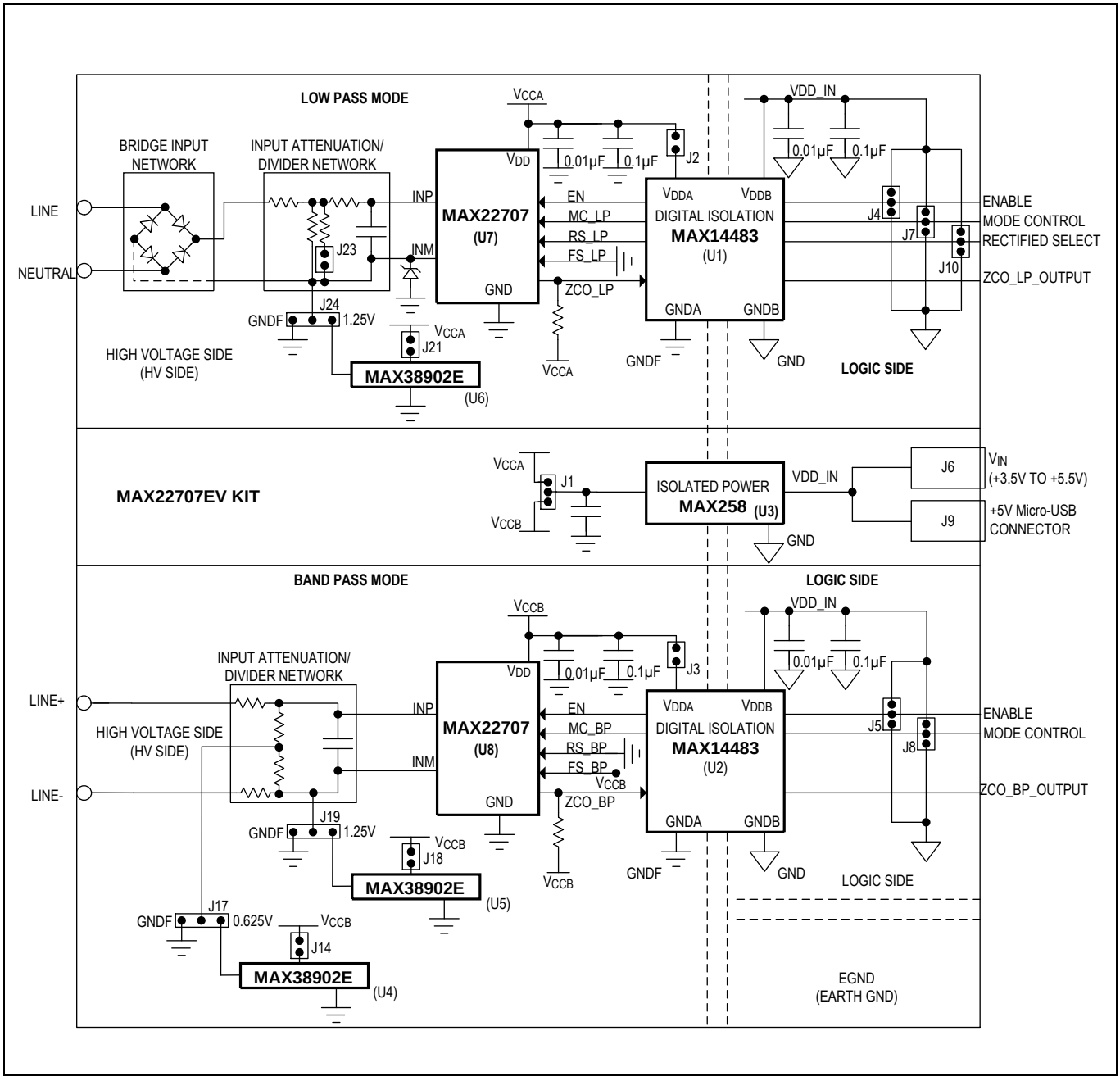
ANALOG DEVICES

6. Turn on the AC supply and observe for digital output transitions at ZCO_A_OUTPUT on the oscilloscope.
7. Disable the AC supply and power supply in that order after evaluation.
8. To evaluate other input types for LPF mode, see *Table 3* for all modifications and configuration settings and follow steps 2-7.
9. Alternatively, to observe for AC input (attenuated low-voltage level) and ZCO output at the high voltage side, the oscilloscope power supply must be floating, and the oscilloscope probes must be connected from the test points provided at INP_LP, INM_LP, and J27 with respect to the high voltage side ground GNDF.
10. For evaluating the BPF mode, install a shunt across J1(2-3). Verify VCCB LED is green, indicating power is available to the BPF section.
11. With the AC supply turned off, connect the line terminal to LINE+ connector J15. Connect the neutral terminal to LINE- connector J16.
12. Turn on the AC supply and observe for digital output transitions at ZCO_B_OUTPUT on the oscilloscope.
13. Disable the AC supply and power supply in that order after evaluation.
14. To evaluate other input types for BPF mode, see *Table 4* for all modifications and configuration settings and follow steps 11-13.
15. Alternatively, to observe for AC input (attenuated low-voltage level) and ZCO output at the high voltage side, the oscilloscope power supply must be floating, and the scope probes must be connected from the test points provided at INP_BP, INM_BP, and J28 with respect to high voltage side ground GNDF.

## MAX22707 EV Kit Photo



## MAX22707 EV Kit Block Diagram



## Table 1. MAX22707 EV Kit Shunt Positions and Settings

| JUMPER | SHUNT POSITION | FEATURES |
|---|---|---|
| **ISOLATED POWER SECTION** | | |
| J1 | **1-2*** | Connects the isolated power to $V_{CCA}$ (LPF section) |
| | 2-3 | Connects the isolated power to $V_{CCB}$ (BPF section) |
| **LPF CONFIGURATION SECTION** | | |
| J2 (HV SIDE) | **1-2*** | Connects $V_{CCA}$ to supply input of the MAX14483 (U1) |
| | Not Installed | The $V_{CCA}$ supply input of the MAX14483 (U1) is not connected |
| J11 (HV SIDE) | **1-2*** | Connects $V_{CCA}$ to pullup resistor at the zero-crossing output (ZCO) |
| | Not Installed | Disconnects the $V_{CCA}$ to pullup resistor at ZCO |
| J21(HV SIDE) | **1-2*** | Connects $V_{CCA}$ to supply input of the MAX38902 (U6) |
| | Not Installed | The $V_{CCA}$ supply input of the MAX38902 (U6) is not connected |
| J23 (HV SIDE) | 1-2 | Evaluates Type 1 and Type 2 (sine) inputs |
| | **Not Installed*** | Evaluates Type 3 and Type 4 (rectified sine) inputs |
| J24 (HV SIDE) | 1-2 | 1.25V bias at INM for Type 2 (sine) input |
| | **2-3*** | GNDF bias at INM for Type 1, 3, and 4 inputs |
| J25 (HV SIDE) | 1-2 | Connects C23 to DCAP pin. Use when other than 220nF (C25) $C_{DCAP}$ is required |
| | **Not Installed*** | 220nF (C25) $C_{DCAP}$ is connected to the DCAP pin of the MAX22707 |
| J4 (LOGIC SIDE) | **1-2*** | Enables the MAX22707 (U7) in active mode |
| | 2-3 | Disables the MAX22707 |
| J7 (LOGIC SIDE) | **1-2*** | Mode control input select 100/120Hz operation |
| | 2-3 | Mode control input select 50/60Hz operation |
| J10 (LOGIC SIDE) | **1-2*** | Rectified input-select option (half wave or full wave input) |
| | 2-3 | Sine input-select option |
| **BPF CONFIGURATION SECTION** | | |
| J3 (HV SIDE) | **1-2*** | Connects $V_{CCB}$ to supply input of the MAX14483 (U2) |
| | Not Installed | The $V_{CCB}$ supply input of the MAX14483 (U2) is not connected |
| J29 (HV SIDE) | **1-2*** | Connects $V_{CCB}$ to pullup resistor at the zero-crossing output (ZCO) |
| | Not Installed | Disconnects the $V_{CCB}$ to pullup resistor at ZCO |
| J14 (HV SIDE) | **1-2*** | Connects $V_{CCB}$ to supply input of the MAX38902 (U4) |
| | Not Installed | The $V_{CCB}$ supply input of the MAX38902 (U4) is not connected |
| J18 (HV SIDE) | **1-2*** | Connects $V_{CCA}$ to supply input of the MAX38902 (U5) |
| | Not Installed | The $V_{CCB}$ supply input of the MAX38902 (U5) is not connected |
| J17 (HV SIDE) | 1-2 | 0.625V bias for Type 2 (sine) differential (DF) input |
| | 2-3 | GNDF bias Type 1 (sine) differential (DF) input |
| J19 (HV SIDE) | 1-2 | 1.25V bias for Type 2 (sine) single-ended (SE) input |
| | **2-3*** | GNDF bias Type 1 (sine) single-ended (SE) input |
| J5 (LOGIC SIDE) | **1-2*** | Enables the MAX22707 (U8) in active mode |
| | 2-3 | Disables the MAX22707 |
| J8 (LOGIC SIDE) | **1-2*** | Mode control input select 60Hz operation |
| | 2-3 | Mode control input select 50Hz operation |

** Default position*

## Table 2. MAX22707 EV Kit Header Description

| HEADER | POSITION | NAME | FEATURES |
|---|---|---|---|
| J12 | 1 | PWR_OK_A | Output from Digital Isolator. Logic-level high, indicating power good signal from the high voltage side. When the power is not present at $V_{CCA}$, the signal is low. |
| | 2 | ZCO_A_OUT | Isolated zero-crossing output from the MAX22707 (U7) |
| | 3 | EN_A | Enable input. Connected to J4. Remove J4 shunt when driving enable from an external source. |
| | 4 | — | Unused |
| | 5 | MC_A | Enable input. Connected to J7. Remove J7 shunt when driving mode control signal from an external source. |
| | 6 | RS_A | Enable input. Connected to J10. Remove J10 shunt when driving rectified select signal from an external source. |
| J13 | 1 | PWR_OK_B | Output from digital isolator. Logic-level high, indicating power good signal from the high voltage side. When the power is not present at $V_{CCB}$, the signal is low. |
| | 2 | ZCO_B_OUT | Isolated zero-crossing output from the MAX22707 (U8) |
| | 3 | EN_B | Enable input. Connected to J5. Remove J5 shunt when driving enable from an external source. |
| | 4 | — | Unused |
| | 5 | MC_B | Enable input. Connected to J8. Remove J8 shunt when driving mode control signal from an external source. |
| | 6 | — | Unused |

## Detailed Description of Hardware

The MAX22707 EV kit provides an easy to use and flexible solution for evaluating the MAX22707, a low power precision zero-crossing detector. The EV kit comes with two MAX22707 configured independently in lowpass mode and bandpass mode, high voltage AC input interface, and input attenuation network to evaluate the device and the system.

The EV kit comes with both the LPF and BPF sections on the high voltage isolated side (HV side) are configured in default modes (see *Table 1*). The jumper shunts provided on the logic side are used to select different configurations within each section. Alternatively, the headers (J12) and (J13) on the logic side can be used when externally driving the logic signals to configure the MAX22707 devices (U7) and (U8).

The default configuration for the LPF section is to accept Type 3 full wave rectified input (U7).

The default configuration for the BPF section is to accept Type 1 single-ended sine wave input (U8).

### Device Powering Options

The MAX22707 EV kit is entirely powered from either the micro-USB connector (J9) or the terminal block (J6). Alternatively, the EV kit can be powered using +3.5V to +5.5V supply applied to terminal block J6. The power supplied generates isolated power on the isolated high voltage side (HV side) section. The MAX258 transformer driver and transformer T1 convert logic side power to supply either $V_{CCA}$ (LPF section) or $V_{CCB}$ (BPF section).

At a given time, only one of the sections (LPF or BPF) can be evaluated. To evaluate the LPF section, a shunt is installed at jumper J1 across 1-2, and to evaluate the BPF section, a shunt is installed at jumper J1 across 2-3.

### Evaluating Different Input Types

The high voltage input resistor network has series resistance >100kΩ to the AC interface connectors. The resistor divider converts the line voltage applied across connectors LINE (J20) and NEUTRAL (J22) to low voltage that MAX227070 (U7) can handle. For the Type 1 and Type 2 single ended inputs (SE), a shunt across jumper J23 is installed for converting a typical 220VAC signal to $2V_{pk-pk}$. When evaluating the Type1 and Type 2 inputs, the input diode bridge must be modified as per *Table 3* . To evaluate in Type 2 input mode, install a shunt across jumper J24 (1-2) to bias the INM input at 1.25V. To evaluate in Type 1 input mode, install a shunt across jumper J24 (2-3) to bias the INM input at ground GNDF.

To evaluate the Type 3 and Type 4 rectified inputs, jumper J23 is removed to convert a typical 220VAC signal to $2V_{pk-pk}$. When evaluating the Type 4 input, the input diode bridge must be modified as per *Table 3*.

*Table 3* shows jumper configurations required to configure the MAX22707 (U7) in different LPF modes. For more information about the input types, refer to the *MAX22707 data sheet*.

## Table 3. LPF Configuration Modes

| MODE | SIGNAL TYPE | JUMPER POSITION | | | | | HV INPUT DIODE BRIDGE COMBINATION |
|---|---|---|---|---|---|---|---|
| | | DIGITAL INPUT | | | HV INPUT NETWORK | INM: INPUT BIAS SELECTION | |
| | | MC | RS | FS | | | |
| Type 1 | Bipolar Sine, Single Ended (SE) | J7 (2-3) LOW | J10 (2-3) LOW | N/A LOW | J23 (1-2) | J24 (2-3) | Remove: R19, R22, D4, D7 D5, D6: Replace with wire short |
| Type 2 | Unipolar Sine, Single Ended (SE) | J7 (2-3) LOW | J10 (2-3) LOW | N/A LOW | J23 (1-2) | J24 (1-2) | Remove: R19, R22, D4, D7 D5, D6: Replace with wire short |
| Type 3 | Full wave Rectified (SE) | J7 (1-2) HIGH | J10 (1-2) HIGH | N/A LOW | J23- Not Installed | J24 (2-3) | Default combination |
| Type 4 | Half wave Rectified (SE) | J7 (2-3) LOW | J10 (1-2) HIGH | N/A LOW | J23- Not Installed | J24 (2-3) | Remove: R19, R22 |

The high voltage input resistor network has series resistance >200kΩ to the AC interface connectors. The resistor divider converts the line voltage applied across connectors LINE+ (J15) and LINE- (J16) to low voltage that MAX227070 (U8) can handle. The input network converts a typical 220VAC signal to $2V_{pk-pk}$.

To evaluate Type 1 or Type 2 SE Inputs, a shunt is applied at jumper J19. To evaluate Type 1 single-ended input, a shunt is applied across the jumper J19 (2-3) that provides a 0V (GNDF) bias to the input network. To evaluate Type 2 SE input, a shunt is applied across jumper J19 (1-2) that provides 1.25V bias to the input network. To evaluate SE inputs across LINE+ and LINE- in BPF mode, a shunt across jumper J17 is not installed.

A shunt across Jumper J17 is used to evaluate Type 1 or Type 2 differential inputs (DF). A shunt across jumper J17 (2-3) provides a 0V bias when Type 1 input is used. A 0.625V bias is provided when a shunt is applied across J17(1-2) to evaluate Type 2 DF input. To evaluate DF input across LINE+ and LINE- in BPF mode, a shunt across jumper J19 is not installed.

*Table 4* shows jumper configurations required to configure the MAX22707 (U8) in different BPF modes.

## Table 4. BPF Configuration Modes

| MODE | SIGNAL TYPE | JUMPER POSITION | | | | |
|---|---|---|---|---|---|---|
| | | DIGITAL INPUT | | | SINGLE ENDED INPUT BIAS SELECTION | DIFFERENTIAL INPUT BIAS SELECTION |
| | | MC | RS | FS | | |
| Type1 | Bipolar Sine, Single Ended (SE) | J8 (1-2) / (2-3) HIGH / LOW | N/A LOW | N/A HIGH | J19 (2-3) | J17 Not Installed |
| Type1 | Bipolar Sine, Differential Input (DF) | J8 (1-2) / (2-3) HIGH / LOW | N/A LOW | N/A HIGH | J19 Not Installed | J17 (2-3) |
| Type 2 | Unipolar Sine, Single Ended (SE) | J8 (1-2) / (2-3) HIGH / LOW | N/A LOW | N/A HIGH | J19 (1-2) | J17 Not Installed |
| Type 2 | Unipolar Sine, Differential Input (DF) | J8 (1-2) / (2-3) HIGH / LOW | N/A LOW | N/A HIGH | J19 Not Installed | J17 (1-2) |

### Input Attenuation Network

The input series resistance seen across the high voltage AC connectors must be >100kΩ. The external high voltage input needs to be divided down to acceptable signal levels of the MAX22707. High wattage resistors must be chosen to handle the power dissipation during attenuation of the input signal. The input series resistance value at each high voltage AC connector must be ≤ 1MΩ.

The user should be aware of the hazards associated with higher voltages, which could cause any of the associated test points or circuit traces to have a hazardous potential.

### Input Network Bias

The MAX38902 low noise LDO generates the bias for the input network. In LPF mode, U6 is configured to provide 1.25V of bias to the INM input of the MAX22707 (U7) when a jumper shunt J24 is installed across (1-2).

The device U4 (MAX38902) provides 0.625V bias to the BPF input circuitry for differential inputs when a shunt is installed across J17(1-2), and U5 provides 1.25V for single ended inputs when a shunt is applied across J19 (1-2).

### IEC 61000-4 Transient Immunity Compliance

The typical application for MAX22707 requires to pass basic transient immunity standards as defined by IEC 61000-4-x, covering -2 for Electrostatic (ESD), -4 for Electrical Fast Transient/Burst (EFT), and -5 for Surge immunity. The MAX22707 EV kit includes circuitry to support testing to these standards to support ±6kV line-to-EGND (Earth GND) and line-to-line surge, ±8kV contact ESD, and ±15kV air gap ESD. TVS diode (D9) provides protection from ESD voltage applied at INM input. The EV kit includes circuitry to support up to ±3kV EFT with default components included.

See *Figure 1* for connections and configuration used in high voltage immunity testing. It shows the disconnected jumper sections and connections in red, indicating the supporting devices are disconnected from the active circuitry and are not part of the high voltage immunity testing. Only the input resistive network and MAX22707 are considered for the immunity compliance.

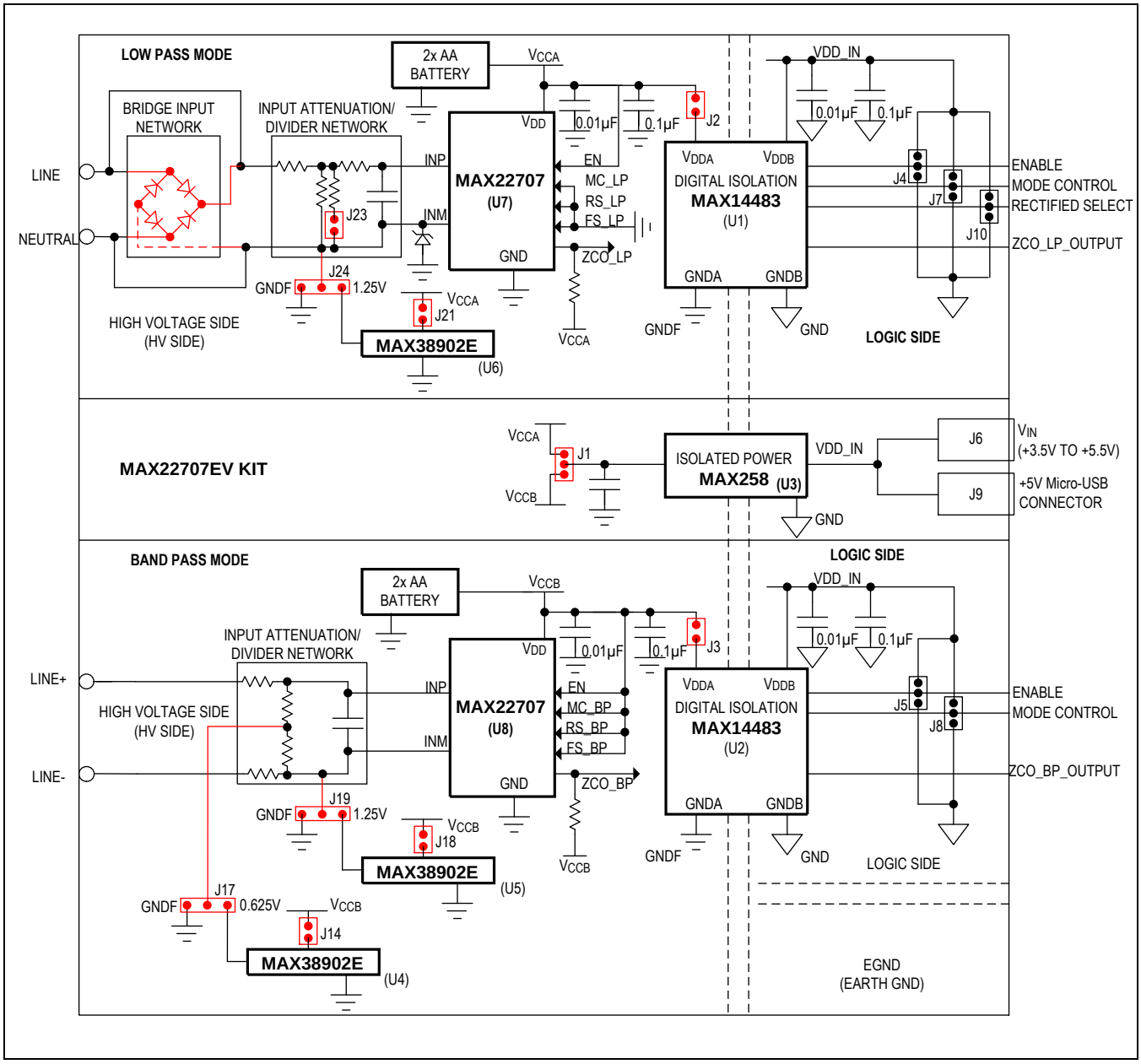



*Figure 1. MAX22707EV Kit High Voltage Test Configuration*

## Ordering Information

| PART | TYPE |
|---|---|
| MAX22707EVKIT# | EV Kit |

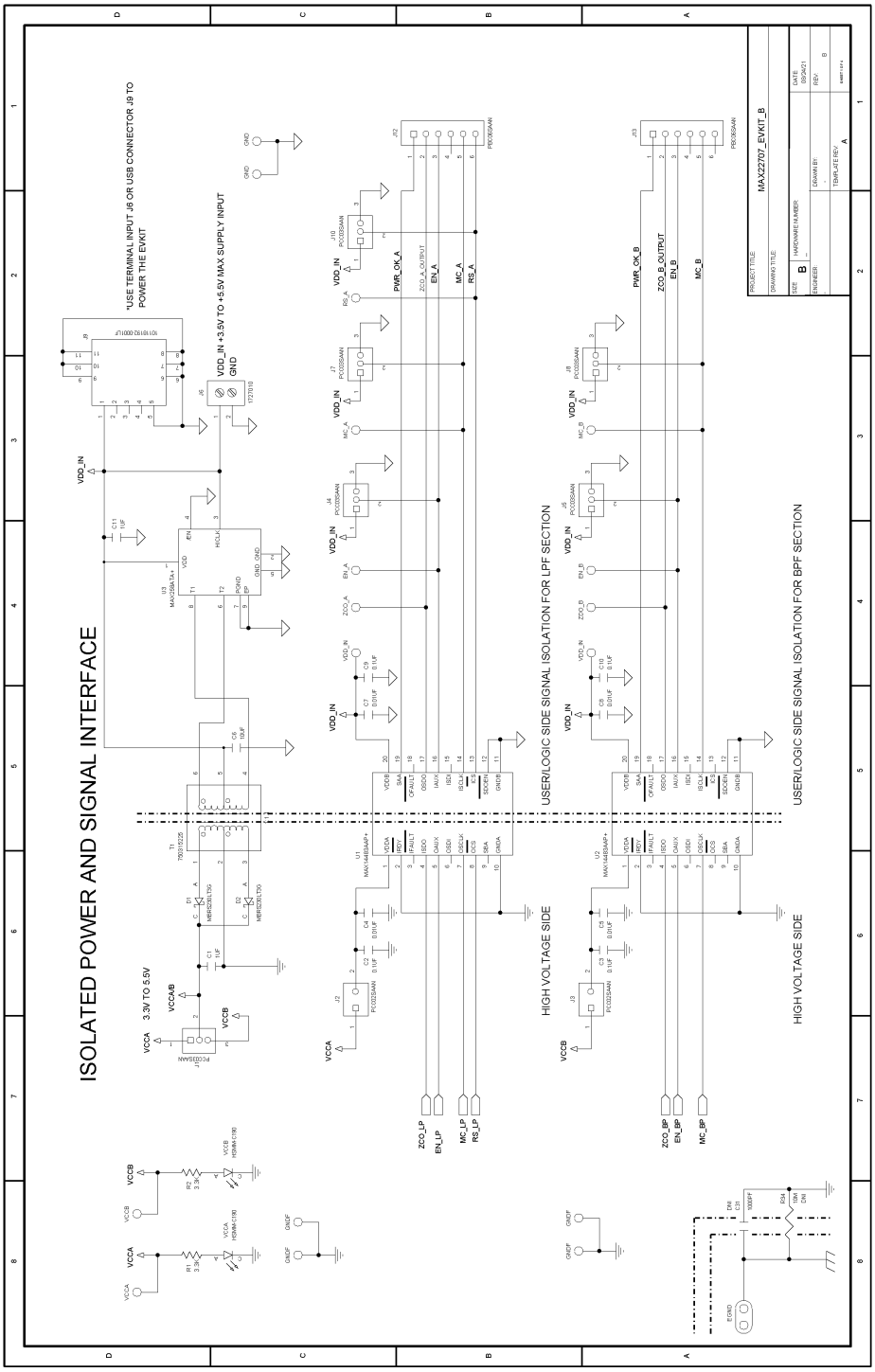
*#Denotes RoHS-compliance.*

## MAX22707 EV Kit Bill of Materials

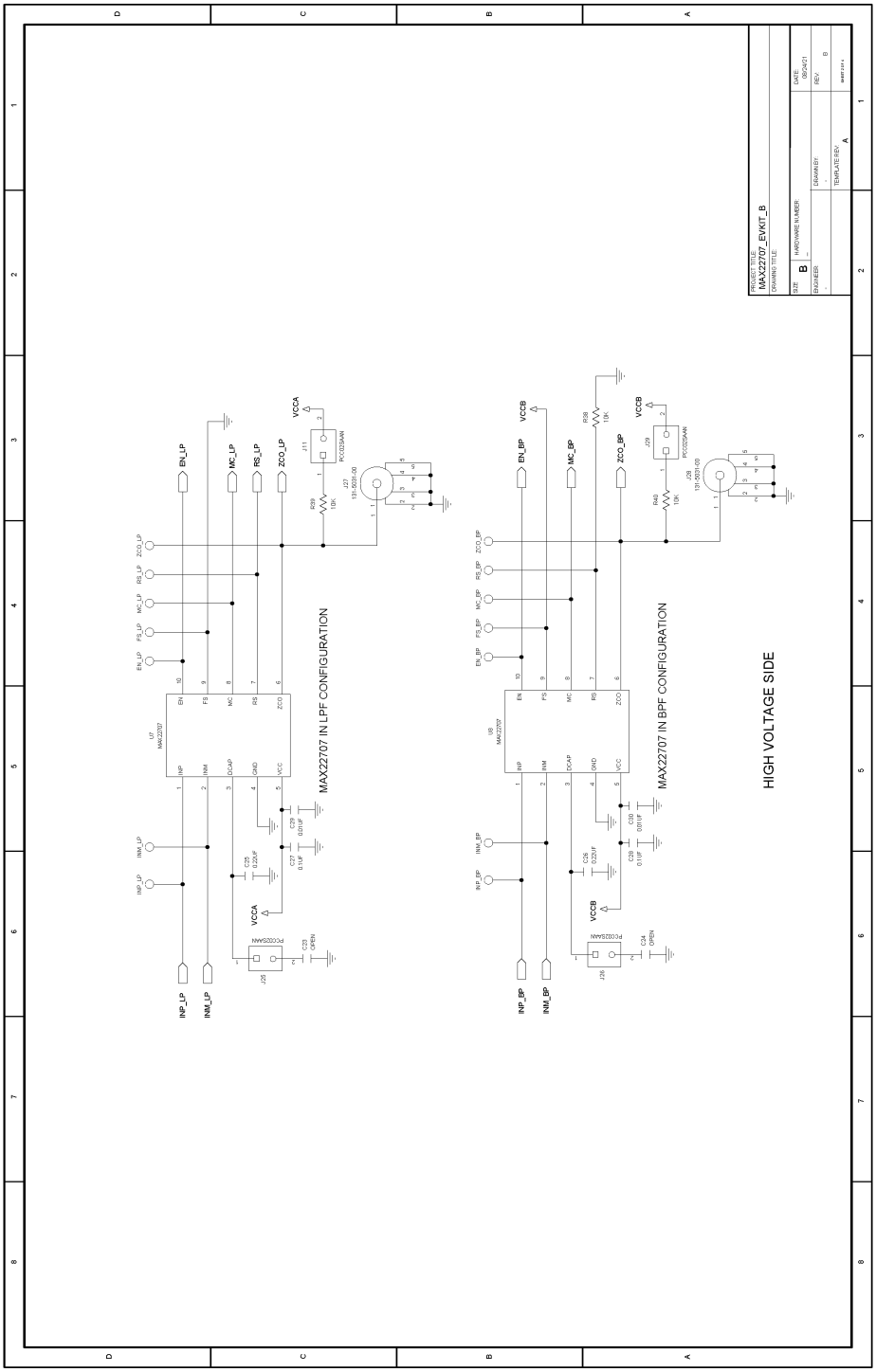
| PART | QTY | DESCRIPTION |
|---|---|---|
| C1, C11 | 2 | CAP; SMT (0603); 1UF; 10%; 25V; X7R; CERAMIC |
| C2, C3, C9, C10, C27, C28 | 6 | CAP; SMT (0603); 0.1UF; 10%; 16V; X7R; CERAMIC |
| C4, C5, C7, C8, C13, C17, C20, C29, C30 | 9 | CAP; SMT (0603); 0.01UF; 5%; 25V; C0G; CERAMIC |
| C6, C12, C14, C15, C18, C19, C21 | 7 | CAP; SMT (0603); 10UF; 20%; 16V; X5R; CERAMIC |
| C16, C22 | 2 | CAP; SMT (0603); 0.022UF; 10%; 50V; X7R; CERAMIC |
| C25, C26 | 2 | CAP; SMT (0603); 0.22UF; 10%; 25V; X7R; CERAMIC |
| D1, D2 | 2 | DIODE; SCH; SMB (DO-214AA); PIV=30V; IF=2A |
| D4-D7 | 4 | DIODE, RECTIFIER, DO-41, PIV=1000V, If(ave)=1A, Vf=1.1V@If=1A |
| EGND | 1 | EVK KIT PARTS; MAXIM PAD; WIRE; NATURAL; SOLID; WEICO WIRE; SOFT DRAWN BUS TYPE-S; 20AWG |
| EN_A_OUT, EN_BP, EN_B_OUT, EN_LP, FS_BP, FS_LP, INM_BP, INM_LP, INP_BP, INP_LP, MC_A_OUT, MC_BP, MC_B_OUT, MC_LP, RS_A_OUT, RS_BP, RS_LP, ZCO_A_OUT, ZCO_BP, ZCO_LP, ZDO_B_OUT | 21 | TEST POINT; PIN DIA=0.125IN; TOTAL LENGTH=0.445IN; BOARD HOLE=0.063IN; WHITE; PHOSPHOR BRONZE WIRE SILVER PLATE FINISH; |
| J1, J4, J5, J7, J8, J10, J17, J19, J24 | 9 | CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT THROUGH; 3PINS; -65 DEGC TO +125 DEGC |
| J2, J3, J11, J14, J18, J21, J23, J25, J26, J29 | 10 | CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT THROUGH; 2PINS; -65 DEGC TO +125 DEGC |
| J6 | 1 | CONNECTOR; FEMALE; THROUGH HOLE; GREEN TERMINAL BLOCK; RIGHT ANGLE; 2PINS |
| J9 | 1 | CONNECTOR; FEMALE; SMT; MICRO USB B TYPE RECEPTACLE; RIGHT ANGLE; 5PINS |
| J12, J13 | 2 | CONNECTOR; MALE; THROUGH HOLE; BREAKAWAY; STRAIGHT; 6PINS; -65 DEGC TO +125 DEGC |
| J15, J16, J20, J22 | 4 | CONNECTOR; FEMALE; THROUGH HOLE; TERMINAL BLOCK; RIGHT ANGLE; 1PIN |
| J27, J28 | 2 | CONNECTOR; WIREMOUNT; 3 GHZ 20X LOW CAPACITANCE PROBE; STRAIGHT; 5PINS |
| MH1-MH4 | 4 | MACHINE FABRICATED; ROUND-THRU HOLE SPACER; NO THREAD; M3.5; 5/8IN; NYLON |
| R1, R2 | 2 | RES; SMT (0603); 3.3K; 1%; +/-100PPM/DEGC; 0.1000W |
| R3, R24, R36 | 3 | RES; SMT (0603); 1K; 0.05%; +/-5PPM/DEGC; 0.1000W |
| R4, R16, R25 | 3 | RES; SMT (0603); 300K; 0.10%; +/-25PPM/DEGC; 0.1000W |
| R5, R17, R27 | 3 | RES; SMT (0603); 100K; 0.10%; +/-25PPM/DEGC; 0.0630W |
| R6, R18, R30 | 3 | RES; SMT (0805); 0; JUMPER; JUMPER; 0.5000W |
| R7, R8 | 2 | RES; SMT (2010); 120K; 1%; +/-100PPM/DEGC; 2W |
| R9, R10, R23, R26 | 4 | RES; SMT (2010); 100K; 1%; +/-100PPM/DEGC; 2W |
| R11, R12 | 2 | RES; SMT (2010); 9.1K; 1%; +/-100PPM/DEGC; 2W |
| R13, R14 | 2 | RES; SMT (2010); 750; 1%; +/-100PPM/DEGC; 2W |
| R15 | 1 | RES; SMT (0603); 11.5K; 1%; +/-100PPM/DEGC; 0.1000W |
| R19-R22 | 4 | RES; SMT (1206); 0; JUMPER; JUMPER; 0.2500W |
| R28, R31 | 2 | RES; SMT (2010); 1.2K; 1%; +/-100PPM/DEGC; 2W |
| R29, R32 | 2 | RES; SMT (2010); 68; 1%; +/-100PPM/DEGC; 2W |
| R33 | 1 | RES; SMT (2010); 1.5K; 1%; +/-100PPM/DEGC; 2W |
| R35, R37 | 2 | RES; SMT (0603); 324K; 0.10%; +/-10PPM/DEGC; 0.0630W |
| R38-R40 | 3 | RES; SMT (0603); 10K; 0.10%; +/-25PPM/DEGC; 0.1000W |
| SU1-SU17 | 17 | CONNECTOR; FEMALE; MINI SHUNT; 0.100IN CC; OPEN TOP; JUMPER; STRAIGHT; 2PINS |

| PART | QTY | DESCRIPTION |
|---|---|---|
| T1 | 1 | TRANSFORMER; SMT; 1:1.1; PUSH-PULL TRANSFORMER |
| TP1, TP4, VDD_IN, VDD_IN1 | 4 | TEST POINT; PIN DIA=0.125IN; TOTAL LENGTH=0.445IN; BOARD HOLE=0.063IN; RED; PHOSPHOR BRONZE WIRE SIL; |
| TP2, TP3, TP7, TP8 | 4 | TEST POINT; PIN DIA=0.125IN; TOTAL LENGTH=0.445IN; BOARD HOLE=0.063IN; BLACK; PHOSPHOR BRONZE WIRE SILVER PLATE FINISH; |
| TP5, TP6 | 2 | TEST POINT; PIN DIA=0.125IN; TOTAL LENGTH=0.445IN; BOARD HOLE=0.063IN; YELLOW; PHOSPHOR BRONZE WIRE SILVER PLATE FINISH; |
| U1, U2 | 2 | IC; DISO; 6-CHANNEL; LOW-POWER; 3.75KVRMS SPI DIGITAL ISOLATOR; SSOP20 |
| U3 | 1 | IC; DRV; 0.5A; PUSH-PULL TRANSFORMER DRIVER FOR ISOLATED POWER SUPPLY; TDFN8-EP 2X3 |
| U4-U6 | 3 | IC; REG; 14MICRO VRMS LOW NOISE 500 MILLIAMPERE LDO LINEAR REGULATOR; TDFN8-EP |
| U7, U8 | 2 | EVKIT PART -IC; RX35; DET; LOW POWER PRECISION ZERO CROSSING DETECTOR; PACKAGE OUTLINE DRAWING: 21-0061; LAND PATTERN DRAWING: 90-0330; PACKAGE CODE: U10+6C; UMAX10 |
| VCCA, VCCB | 2 | DIODE; LED; SMT CHIPLED; GREEN; SMT (0603); VF=3.3V; IF=0.02A |
| PCB | 1 | PCB:MAX22707 |
| C31 | 0 | CAP; SMT; 1000PF; 20%; 250V; E; CERAMIC |
| D3, D8-D10 | 0 | DIODE; TVS; SMT (01005); VRM=3.3V; IPP=4.5A |
| R34 | 0 | RES; THROUGH HOLE-AXIAL LEAD; 10M; 1%; +/-100PPM/DEGC; 0.25W |
| C23, C24 | 0 | PACKAGE OUTLINE 1206 NON-POLAR CAPACITOR |

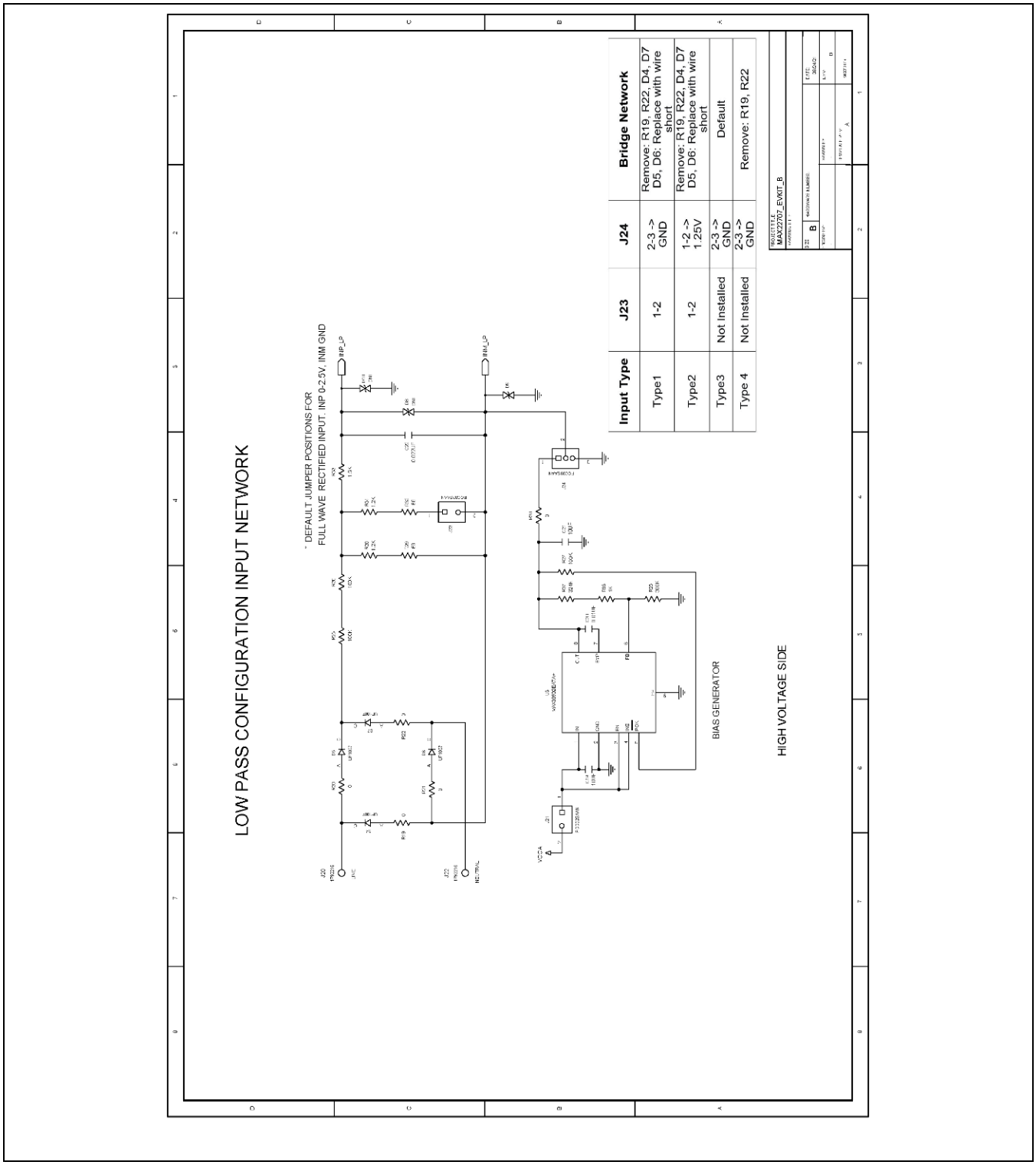
## MAX22707 EV Kit Schematic



## MAX22707 EV Kit Schematic (continued)

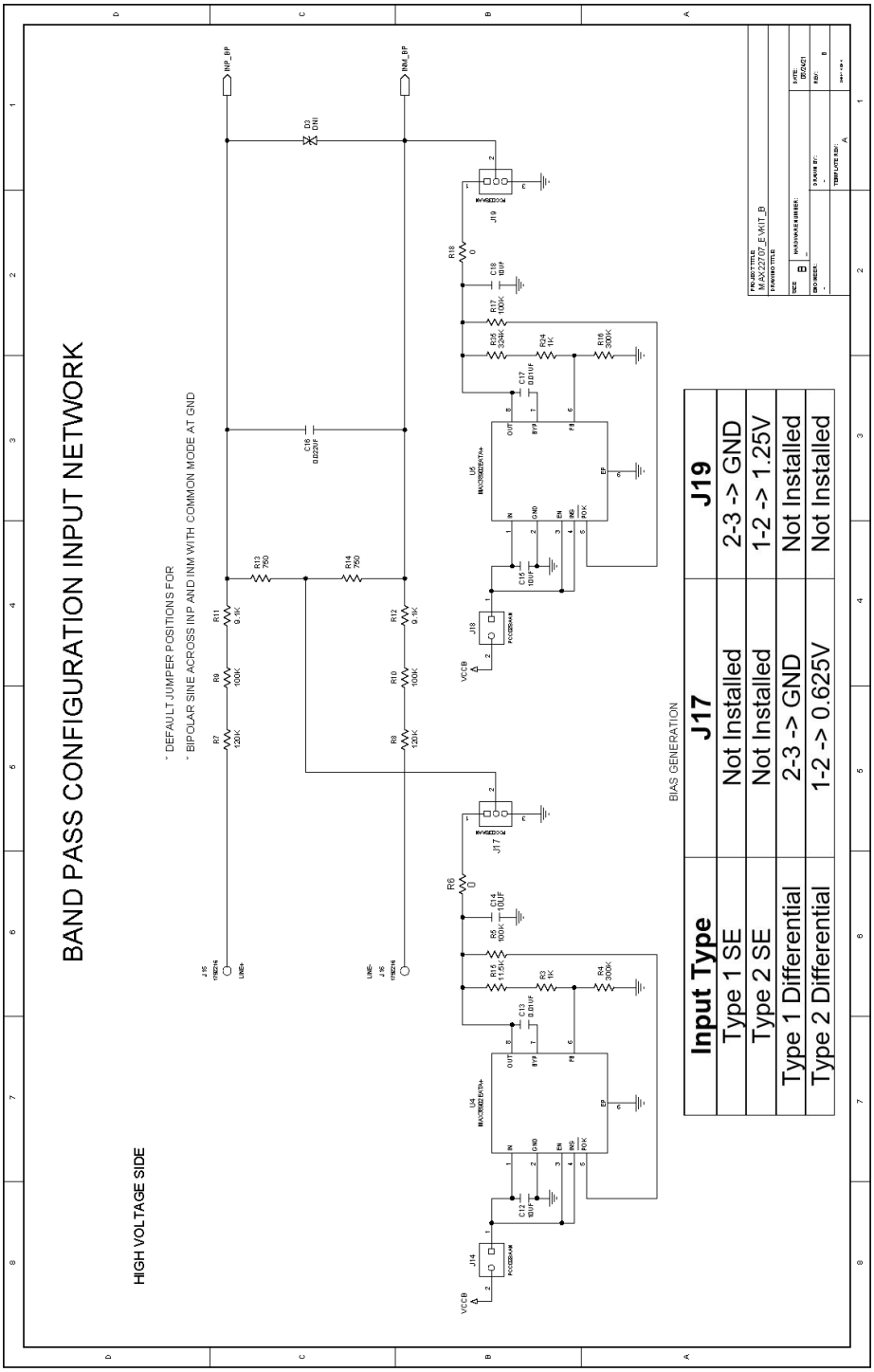


## MAX22707 EV Kit Schematic (Continued)

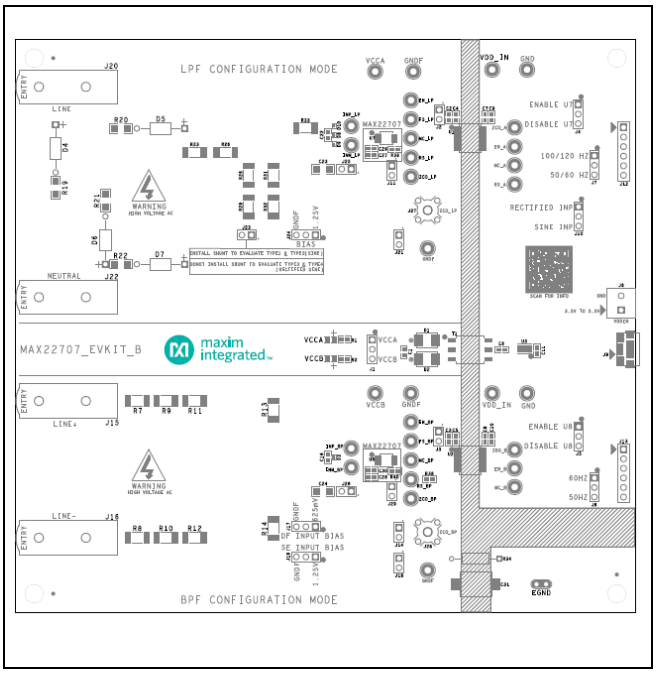



| Input Type | J23 | J24 | Bridge Network |
|---|---|---|---|
| Type1 | 1-2 | 2-3 -> GND | Remove: R19, R22, D4, D7 D5, D6: Replace with wire short |
| Type2 | 1-2 | 1-2 -> 1.25V | Remove: R19, R22, D4, D7 D5, D6: Replace with wire short |
| Type3 | Not Installed | 2-3 -> GND | Default |
| Type 4 | Not Installed | 2-3 -> GND | Remove: R19, R22 |

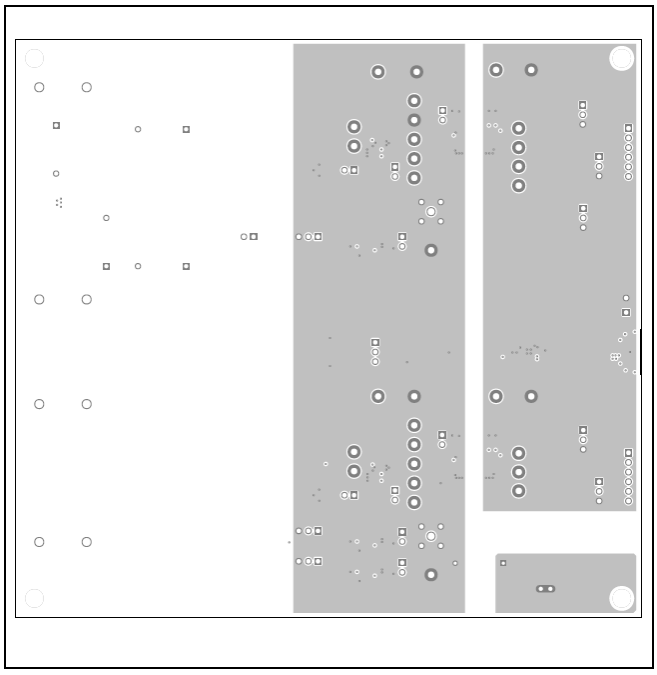
## MAX22707 EV Kit Schematic (continued)



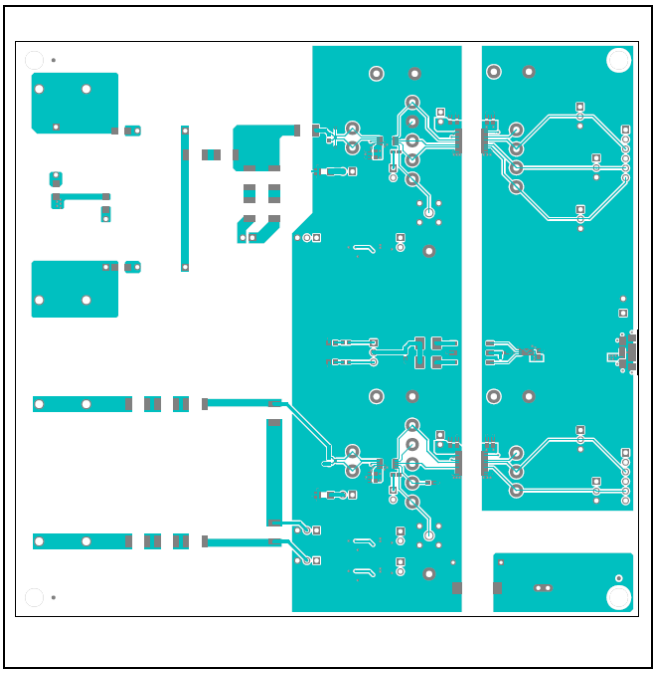
## MAX22707 EV Kit PCB Layout



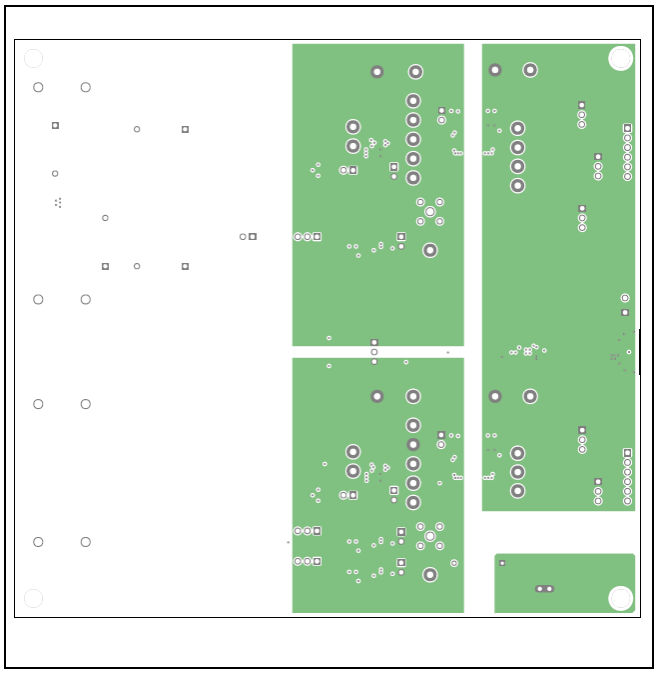

*MAX22707 EV Kit Component Placement Guide—Top Silkscreen*



*MAX22707 EV Kit PCB Layout—Layer 2*

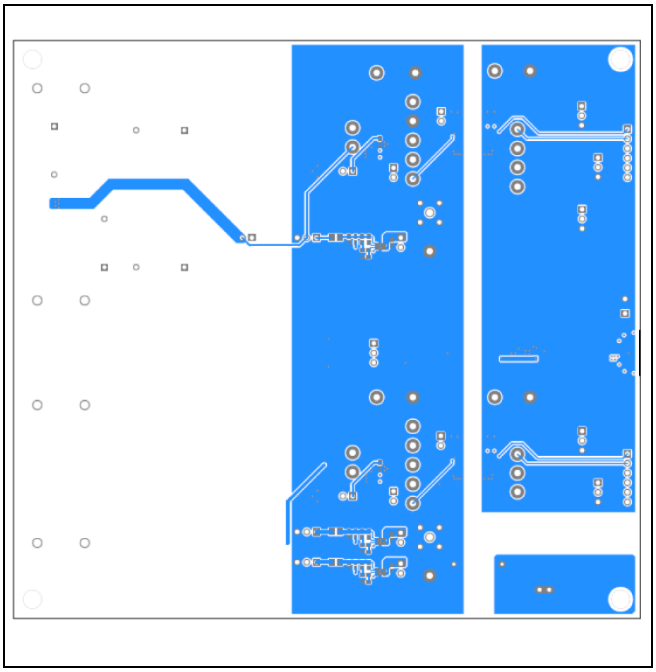


*MAX22707 EV Kit PCB Layout—Top*

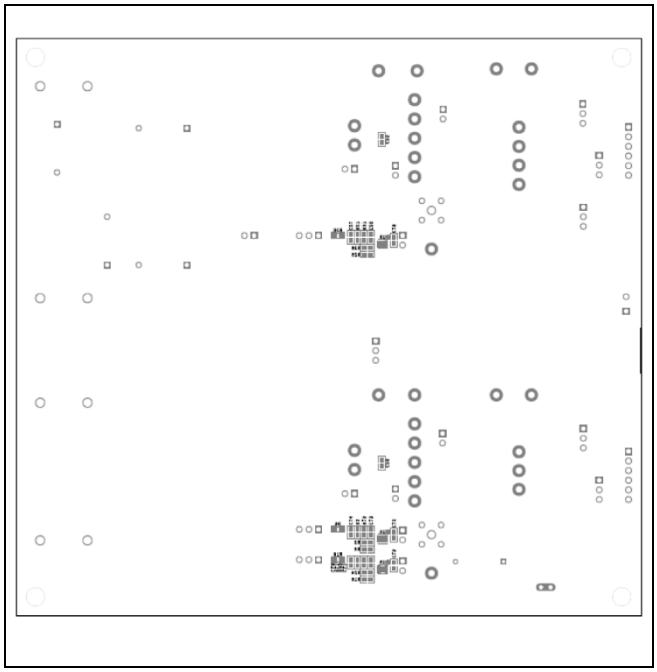


*MAX22707 EV Kit PCB Layout—Layer 3*

## MAX22707 EV Kit PCB Layout (continued)



*MAX22707 EV Kit PCB Layout—Bottom*



*MAX22707 EV Kit Component Placement Guide—Bottom Silkscreen*

## Revision History

| REVISION NUMBER | REVISION DATE | DESCRIPTION | PAGES CHANGED |
|---|---|---|---|
| 0 | 12/21 | Initial release | — |