# EV4832A-RD-00A

**180V, 32-Channel**
**Analog Switch Evaluation Board**

## DESCRIPTION

The EV4832A-RD-00A is an evaluation board for the MP4832A, a high voltage 32-channel analog switch. The MP4832A is designed for medical ultrasound application. It can also be used for non-destructive test (NDT) as the application is very similar to medical ultrasound.

The high voltage analog switches are used to multiplex the transmitter and receiver circuitries to different piezoelectric transducer (PZT) elements. The MP4832A has a resistor to ground on the output pins, SWout. This is to help ensure there is no significant DC voltage built up across the PZT element. The switches can be turned on/off via a serial 32-bit shift register. The serial control interface will help minimize the number of I/O connection.

## FEATURES

- 32 Channels
- No High Voltage Bias Required
- Up to ±90V Analog Signal
- 14Ω Typical Switch Resistance
- ±2.0A Typical Switch Peak Current
- 80MHz Clock Frequency at VLL=5.0V
- 40MHz Clock Frequency at VLL=3.3V
- Integrated Bleed Resistors – MP4832A

## APPLICATIONS

- Medical Ultrasound
- Industrial NDT

All MPS parts are lead-free, halogen free, and adhere to the RoHS directive. For MPS green status, please visit MPS website under Quality Assurance.
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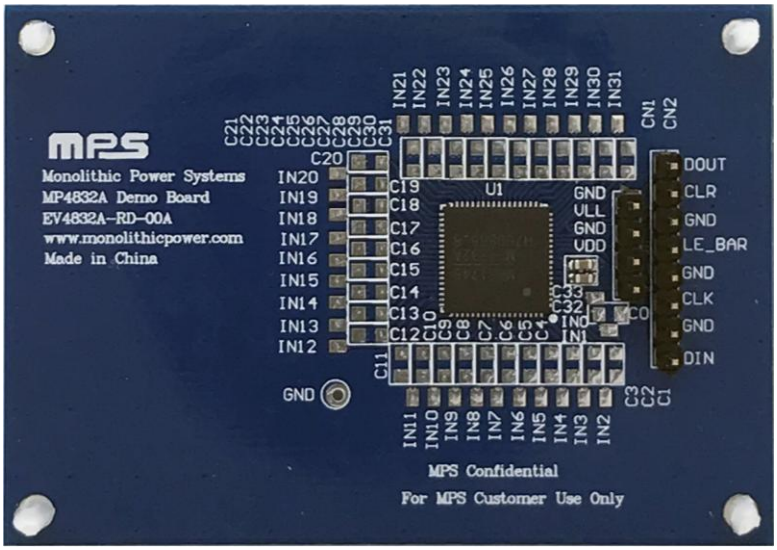
## EV4832A-RD-00A EVALUATION BOARD




"CLR was changed to MODE"

**(L x W x H)**
**(2.875'' x 2.0'' x 0.0625'')**

| Board Number | MPS IC Number |
|---|---|
| EV4832A-RD-00A | MP4832AGRD |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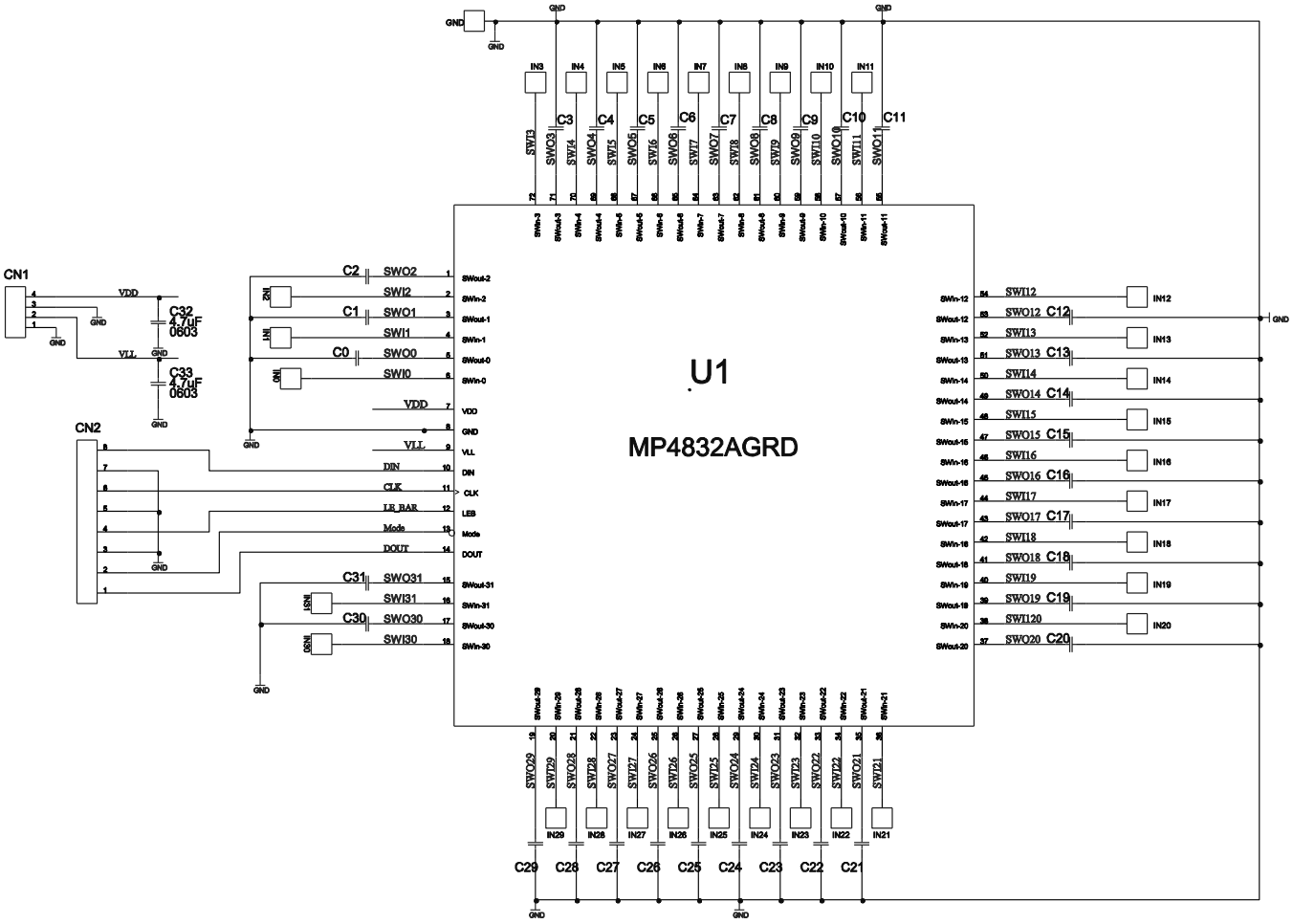
## EVALUATION BOARD SCHEMATIC




## EV4832A-RD-00A BILL OF MATERIALS

| Qty | Ref | Value | Description | Package | Manufacturer | Part Number |
|---|---|---|---|---|---|---|
| 2 | C32, C33 | 4.7µF | Ceramic, 16V, X7R | 0603 | muRata | GRM188R61C475KAAJD |
| 32 | C0-C31 | NS | | 0805 | | |
| 1 | U1 | | 180V, 32-ch analog switch | QFN-72 | MPS | MP4832AGRD |
| 1 | CN1 | 4Pin | 4 pin header, 0.100” pitch | | Molex | |
| 1 | CN2 | 8Pin | 8 pin header, 0.100” pitch | | Molex | |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## PRINTED CIRCUIT BOARD LAYOUT

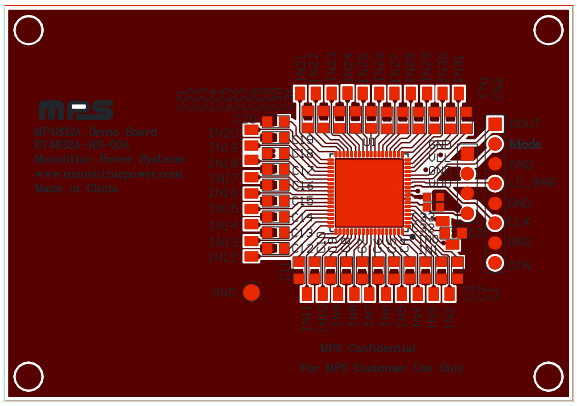

**Figure 1—Top Layer**

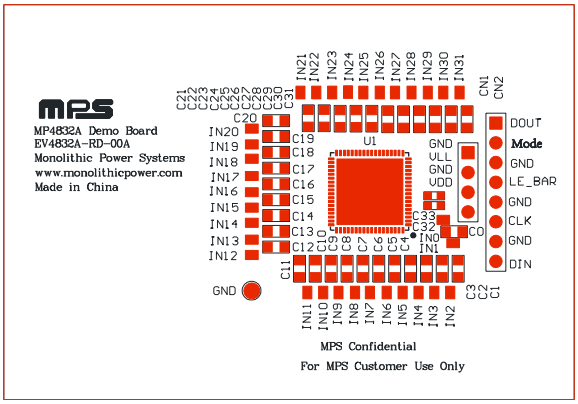


**Figure 2—Top Silk Layer**

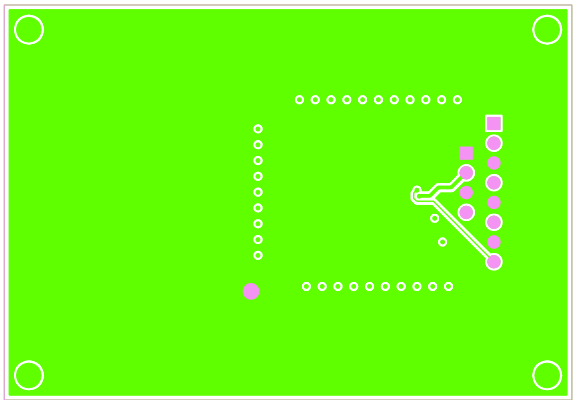

**Figure 3—Bottom Layer**


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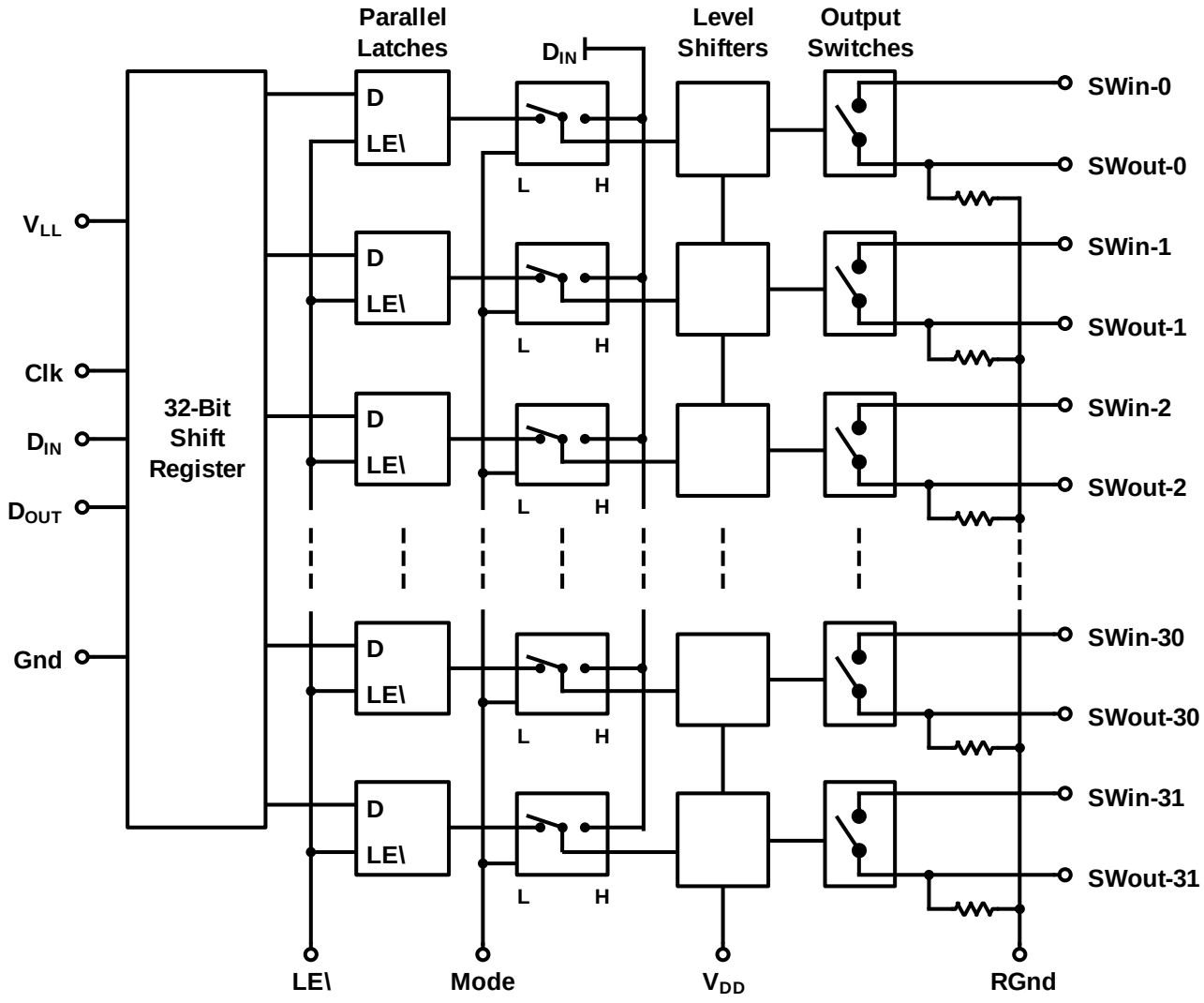
## FUNCTIONAL BLOCK DIAGRAM





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## QUICK START GUIDE

1) Only two low voltage DC supplies are required; $V_{LL}$ and $V_{DD}$
   Logic interface, $V_{LL}$: 2.7V to 5.5V
   Internal translator, $V_{DD}$: 10V to 14V
   Connections to $V_{LL}$ and $V_{DD}$ can be made through the 4-pin header on the board.

2) The analog switches are controlled by a 32-bit serial shift register. A logic high will close the switch and a logic low will open the switch. There are five logic control pins; Clk, Din, Dout, LE_bar, and Mode. Connections to these pins can be made through the 8-pin header on the board.

3) Pads are available for the 32 analog switches.
   Connect the pulser (transmitter) to the IN0 to IN31 pads.
   Connect the piezoelectric transducers to C0 to C31 pads.
   C0 to C31 are pads for an 0805 pattern. This allows for a 330pF chip capacitor to be used as a reference load.

Additional information is available in the MP4832A data sheet.

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