

### DESCRIPTION

The EV6411-S-00A is an evaluation board for MPMPQ6411, a windowed watchdog timer. It used to reset and monitor the microcontroller. In normal operation, MCU sends trigger signal to MPQ6411 in a defined time window cyclically. A missing or fault trigger signal causes the watchdog to reset the MCU.

MPQ6411 provides a reset signal (low level voltage) to MCU during power-up or under voltage.

By setting the MODE pin to high or low, the watchdog can work as long window mode or short window mode. And the window is programmable.

The EV6411-S-00A is assembled and tested with SOIC8 package.

### ELECTRICAL SPECIFICATION

Parameter	Symbol	Value	Units
Input Voltage	V <sub>CC</sub>	5.0	V

### FEATURES

- Windowed watchdog
- Power-on reset during power-up and under voltage
- Programmable short window mode or long window mode
- Watchdog disable function
- Low shutdown mode current
- SOIC8 package

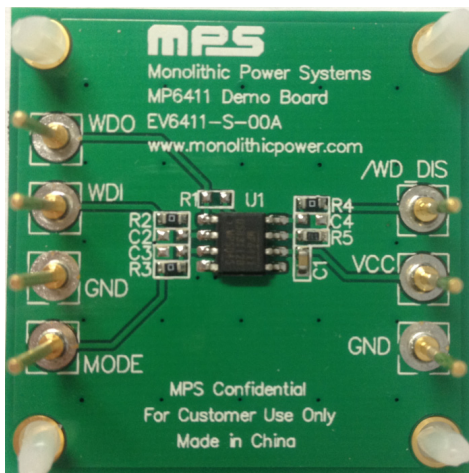
### APPLICATIONS

- Automotive Systems
- Industrial Systems

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.

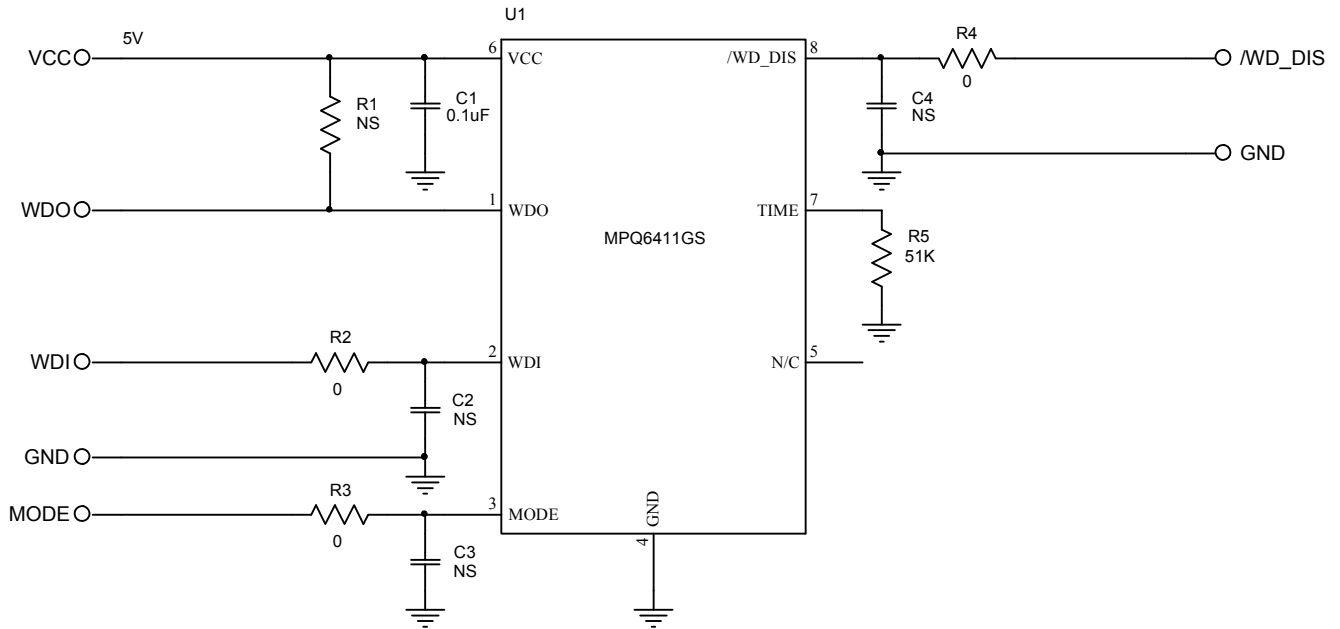
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### EV6411-S-00A EVALUATION BOARD



(L × W × H) 3.81cm × 3.81cm × 0.5cm

Board Number	MPS IC Number
EV6411-S-00A	MPQ6411GS

**EVALUATION BOARD SCHEMATIC**

**EV6411-S-00A BILL OF MATERIALS**

Qty	Ref	Value	Description	Package	Manufacturer	Part Number
1	C1	0.1µF	Ceramic Cap., 16V, X7R	0603	muRata	GRM188R71C104KA01D
3	C2, C3, C4	NS				
1	R1	NS				
3	R2, R3, R4	0	Film Resistor;5%	0603	Yageo	RC0603JR-070RL
1	R5	51K	Film Resistor;1%	0603	Yageo	RC0603FR-0751KL
1	U1			SOIC8	MPS	MPQ6411GS

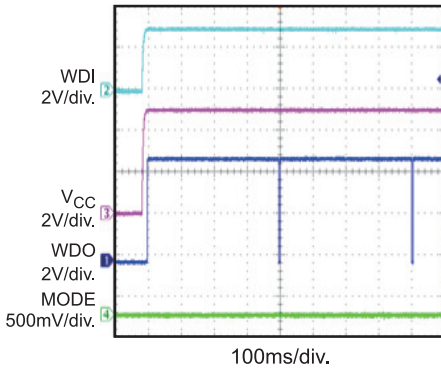
## EVB TEST RESULTS

Performance waveforms are tested on the evaluation board.

$V_{CC} = 5V$ ,  $T_A = 25^{\circ}C$ , unless otherwise noted.

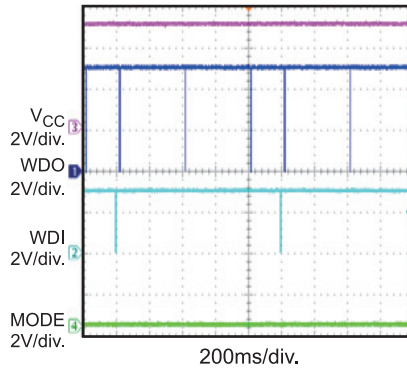
### Power on Reset and No Signal

Mode=0V, WDI=3V



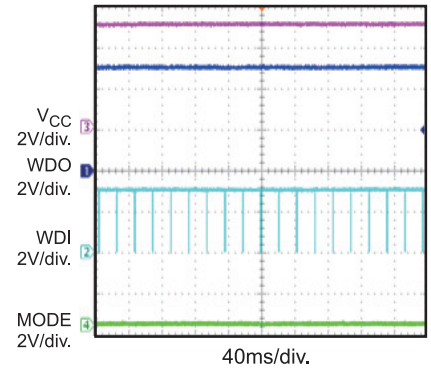
### Sync&No Triggered Signal

Mode=0V, WDI\_OK=500 $\mu$ s, WDI Period=1s



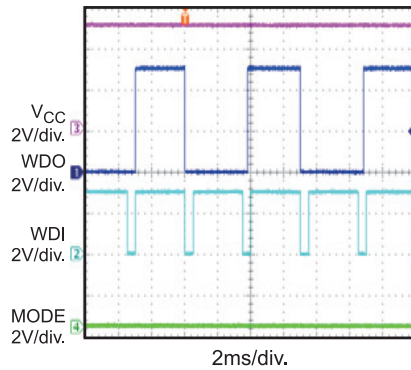
### Sync&Triggered in Open Window

Mode=0V, WDI\_OK=500 $\mu$ s, WDI Period=21ms



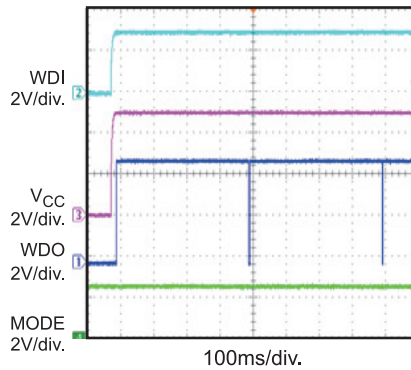
### Sync&Triggered in Close Window

Mode=0V, WDI\_OK=500 $\mu$ s, WDI Period=3.5ms



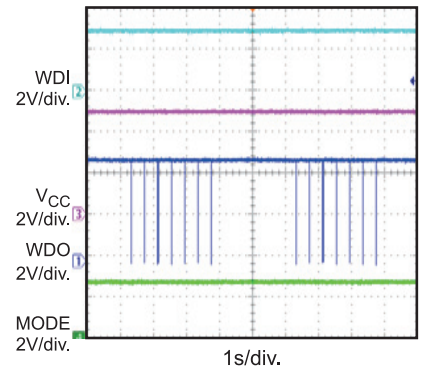
### Power on Reset and No Signal

Mode=3V, WDI=3V, WDI Period=5s



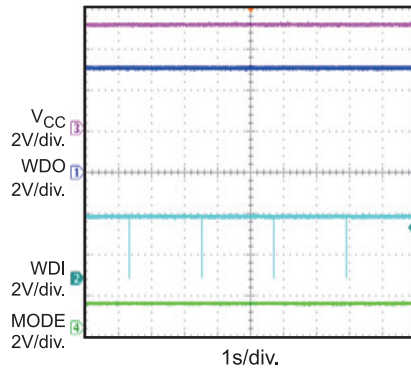
### Sync&No Triggered Signal

Mode=3V, WDI\_OK=500 $\mu$ s, WDI Period=5s



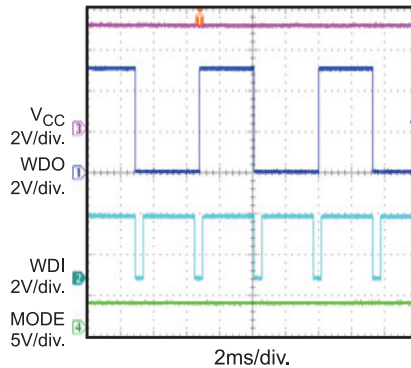
### Sync&Triggered in Open Window

Mode=3V, WDI\_OK=500 $\mu$ s, WDI Period=2.2s



### Sync&Triggered in Close Window

Mode=3V, WDI\_OK=500 $\mu$ s, WDI Period=3.6ms



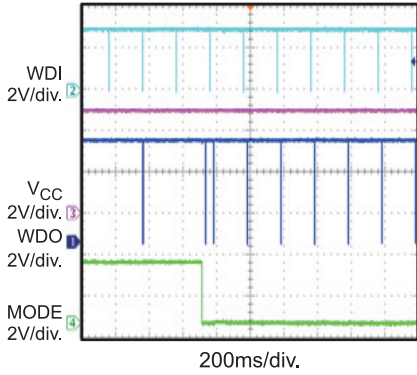
### EVB TEST RESULTS (continued)

Performance waveforms are tested on the evaluation board.

$V_{CC} = 5V$ ,  $T_A = 25^{\circ}C$ , unless otherwise noted.

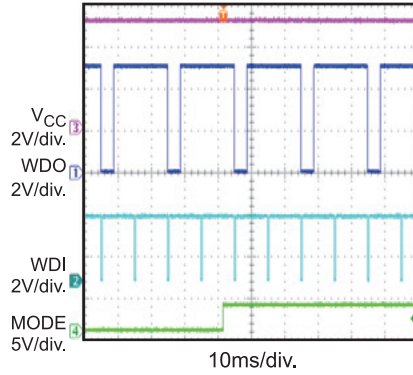
#### Long Close Mode to Short Close Mode

WDI\_OK=500 $\mu$ s, WDI Period=200ms



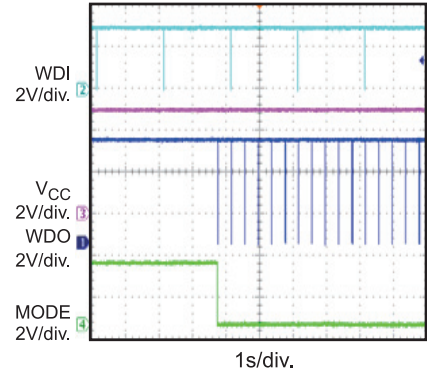
#### Short Close Mode to Long Close Mode

WDI\_OK=500 $\mu$ s, WDI Period=10ms



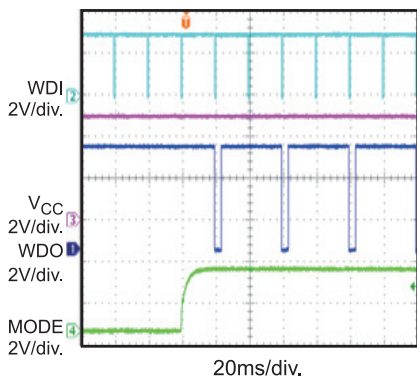
#### Long Open Mode to Short Close Mode

WDI\_OK=500 $\mu$ s, WDI Period=2s



#### Long Open Mode to Short Close Mode

WDI\_OK=500 $\mu$ s, WDI Period=20ms



### PRINTED CIRCUIT BOARD LAYOUT

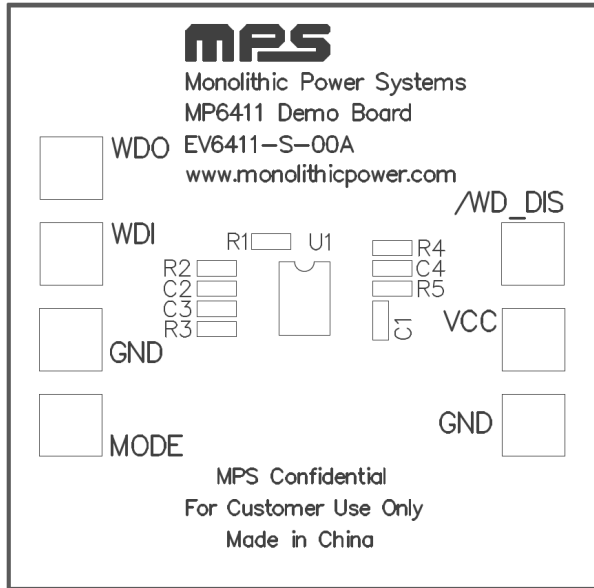


Figure 1: Top Silkscreen Layer

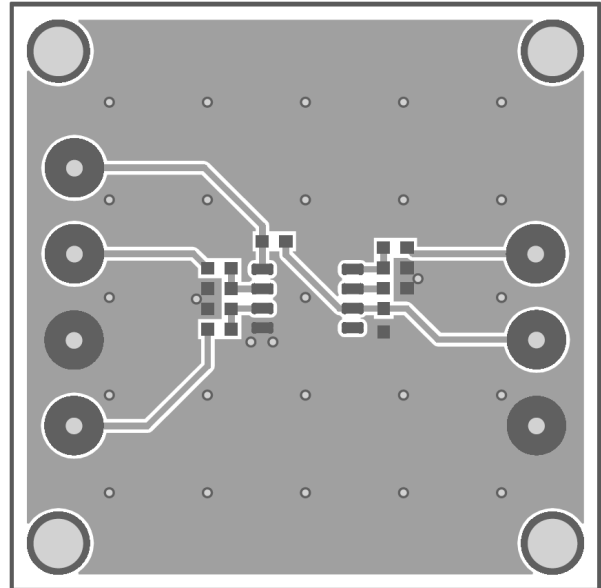


Figure 2: Top Layer

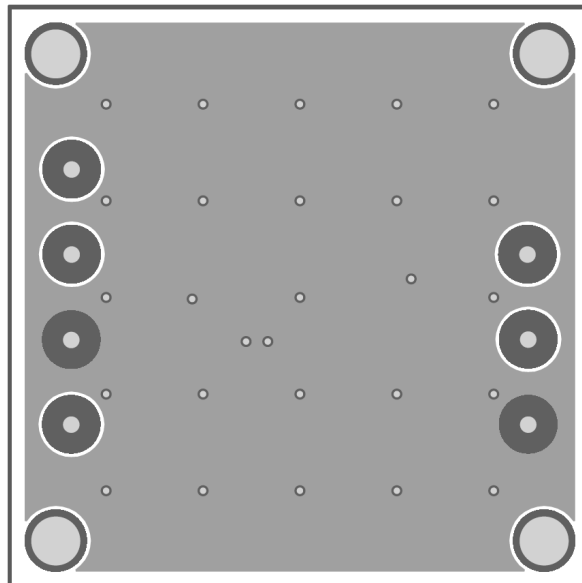


Figure 3: Bottom Layer