EV6400DJ-00A

Programmable-Delay Supervisory Circuit Evaluation Board

The Future of Analog IC Technology

DESCRIPTION

The EV6400DJ-00A is an evaluation board of MP6400. It is designed for voltage supervisory application with low quiescent current and programmable RESET delay time. The circuit monitors the sense voltage (Vsen) with Vcc from 1.8V to 6V. The MR (Manual Reset) function could introduce an external digital signal to control the RESET output. The RESET delay time could be programmed by the external capacitor.

The monitored voltage Vsen could be set from 0.4V through R1 and R2, and the delay time could be programmable from 2.1ms to 10s through C2. On the EV6400DJ-00A, the monitored voltage is set at 3.3V and RESET delay time at 100ms.

ELECTRICAL SPECIFICATIONS

Parameter	Symbol	Value	Units
Input Voltage Range	Vcc	1.8 – 6	V
Sense Voltage Range	Vsen	3.3	V

FEATURES

- Adjustable Monitored Voltage from 0.4V
- Programmable Reset Delay Time from 2.1ms to 10s
- Optional Manual Reset
- Immune to Short Negative Sense Voltage

APPLICATIONS

- DSP or Micro controller Applications
- Laptop/Desktop Computers
- PDAs/Hand-Held Products
- Portable/Battery-Powered Products
- FPGA/ASIC Applications

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EV6400DJ-00A EVALUATION BOARD

Dimensions (2.0"X x 2.0"Y x 0.5"Z)
(5.0cm X 5.0cm X 1.2cm)

Board Number	MPS IC Number
EV6400DJ-00A	MP6400DJ

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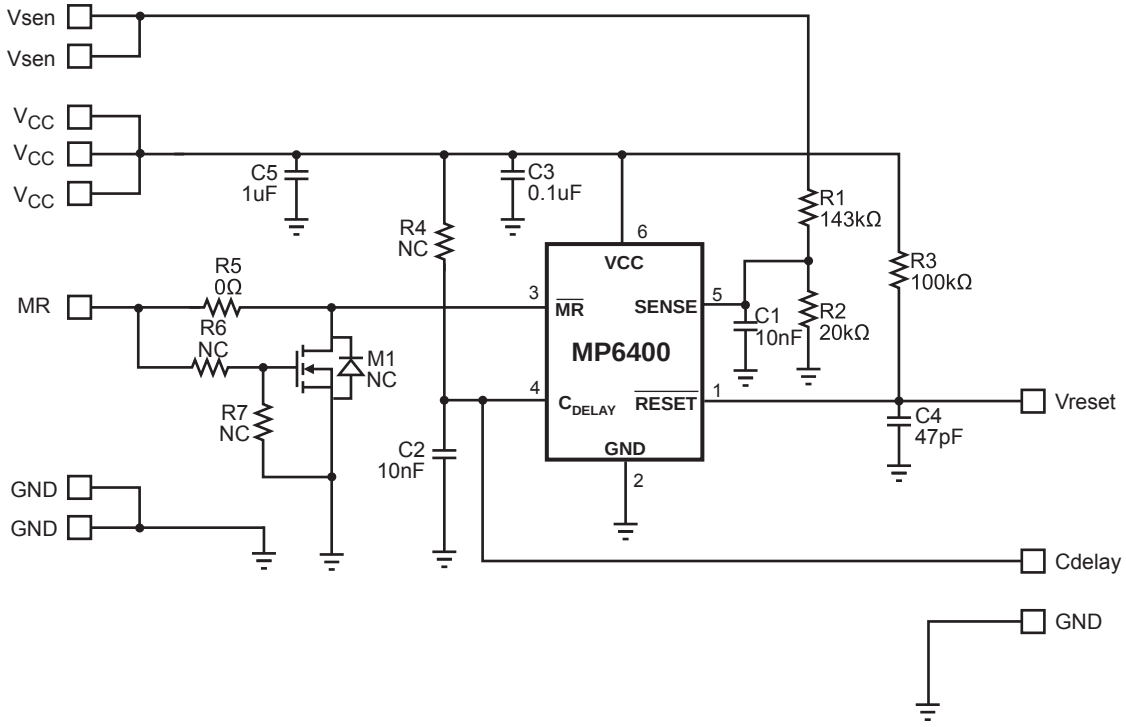
EVALUATION BOARD SCHEMATIC



EV6400DJ-00A BILL OF MATERIALS

Qty	Ref	Value	Description	Package	Manufacturer	Manufacturer P/N
2	C1, C2	10nF	Ceramic Cap., 16V, X7R	SM0603	Murata	GRM188R71C103KA01D
1	C3	0.1uF	Ceramic Cap., 16V, X7R	SM0603	Murata	GRM188R71C104KA01D
1	C4	47pF	Ceramic Cap., 50V, C0G	SM0603	Murata	GRM1885C1H470JA01D
1	C5	1uF	Ceramic Cap., 10V, X7R	SM0603	Murata	GRM188R71A105KA61D
1	R1	143kΩ	Film Res., 1%	SM0603	Yageo	RC0603FR-07143KL
1	R2	20kΩ	Film Res., 1%	SM0603	Yageo	RC0603FR-0720KL
1	R3	100kΩ	Film Res., 1%	SM0603	Yageo	RC0603FR-07100KL
3	R4, R6, R7		Do Not Stuff			
1	R5	0Ω	Film Res., 1%	SM0603	Yageo	RC0603FR-070RL
1	M1		Do Not Stuff			
	U1		Supervisory Circuit	TSOT-6	MPS	MP6400DJ

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PRINTED CIRCUIT BOARD LAYOUT

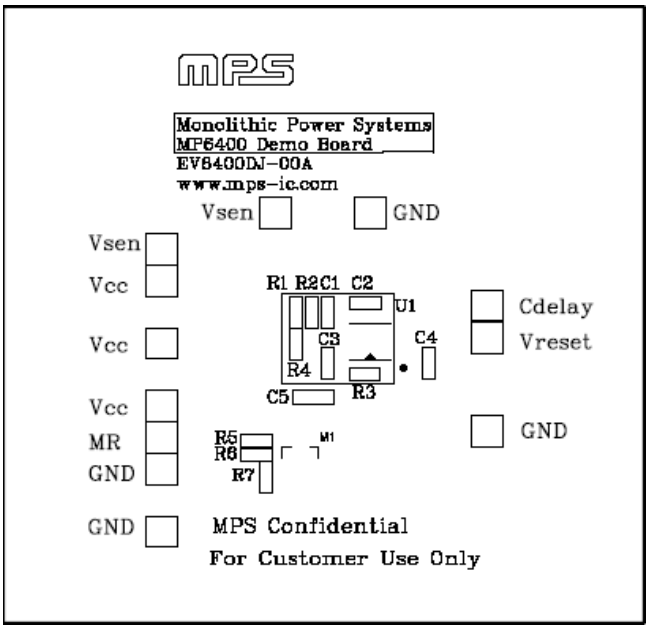

Figure 1—Top Silk Layer

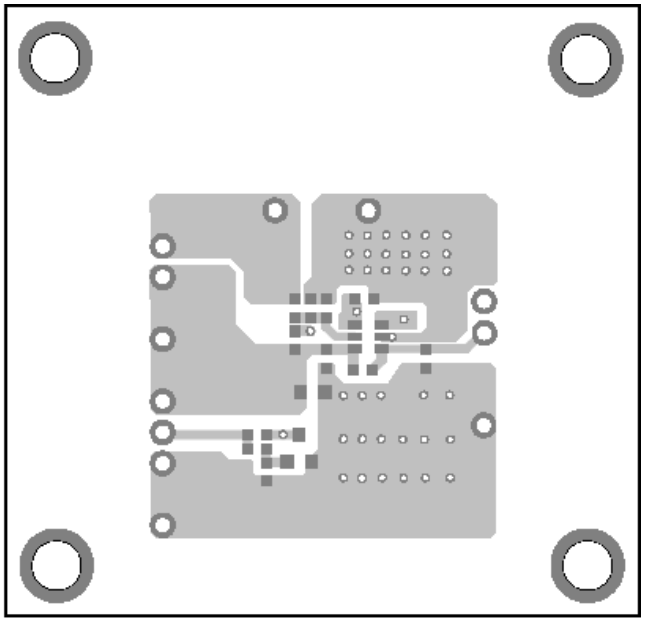

Figure 2—Top Layer

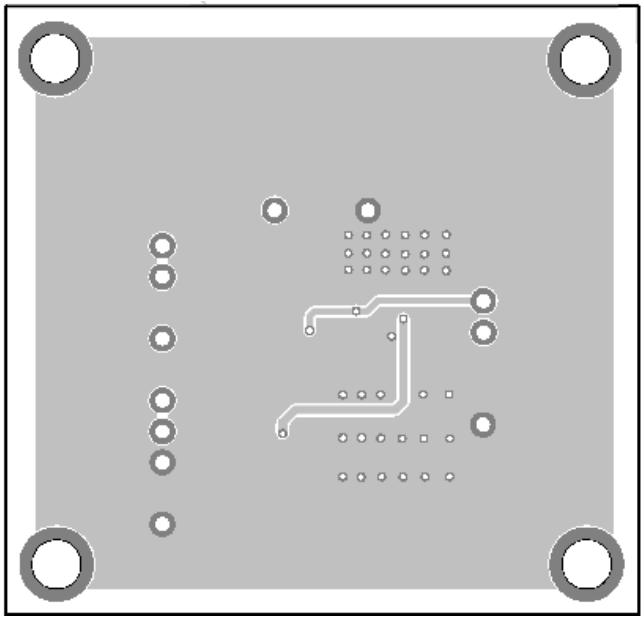

Figure 3—Bottom Layer

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QUICK START GUIDE (ADJUSTABLE VERSION)

1. Attach the positive and negative ends of the monitored voltage to the Vsen and GND pins, respectively.
2. Attach the input voltage ($1.8V \leq V_{CC} \leq 6V$) and input ground to the Vcc and GND pins, respectively.
3. To use the MR function, apply a digital input to the MR pin. Drive MR higher than 0.7Vcc to turn on the supervisory circuit or less than 0.25Vcc to turn it off. The MR is connected to Vcc through a 90kΩ resistor inside of the chip. Floating the MR pin means high.
4. To adjust the monitored voltage Vsen, change the values of R1 and R2.

   For R2 = 20kΩ, R1 can be determined by:

$$R1 = \frac{20k\Omega}{0.4V}\left(Vsen - 0.4V\right)$$

QUICK START GUIDE (FIXED VERSION)

For modifying the EV6400DJ-00A to accommodate a fixed version of the MP6400:

1. Carefully remove the IC(U1) and replace it with the corresponding fixed version of the MP6400 chip.
2. Remove both R1 and R2.
3. Short R1 while leaving R2 open.
4. Attach the positive and negative ends of the monitored voltage to the Vsen and GND pins, respectively.
5. Attach the input voltage ($1.8V \leq V_{CC} \leq 6V$) and input ground to the Vcc and GND pins, respectively.
6. To use the MR function, apply a digital input to the MR pin. Drive MR higher than 0.7Vcc to turn on the supervisory circuit or less than 0.25Vcc to turn it off. The MR is connected to Vcc through a 90kΩ resistor inside of the chip. Floating the MR pin means high.

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