

### DESCRIPTION

The MP2016 is a low power linear regulator that supplies power to systems with high voltage batteries. It includes a wide 4V to 42V input range, low dropout voltage and low quiescent supply current.

The MP2016 provides excellent line transient response time and 50dB power supply rejection ratio (PSRR). The MP2016 can be set externally from 1.2V to 24V through 2 resistors divider.

The MP2016 also includes thermal shutdown and current limiting fault protection, and is available in a QFN-8 package.

### ELECTRICAL SPECIFICATION

Parameter	Symbol	Value	Unites
Input Voltage	$V_{IN}$	7 to 42	V
Output Voltage	$V_{OUT}$	5	V
Operation Temp		-40 to +85	°C

### FEATURES

- 4V to 45V Input Range
- 12 $\mu$ A Quiescent Supply Current
- <1.5 $\mu$ A Shutdown Current
- 1.2V to 24V Adjustable Output new bullet 30mA Output Current with 50mA Peak Current Limit
- $\pm$ 2% Accuracy
- Thermal Shutdown
- Available in a Tiny QFN8 Package

### APPLICATIONS

- Notebook Computers
- Smart-Battery Packs
- PDAs
- Handheld Devices
- Battery-Powered Systems

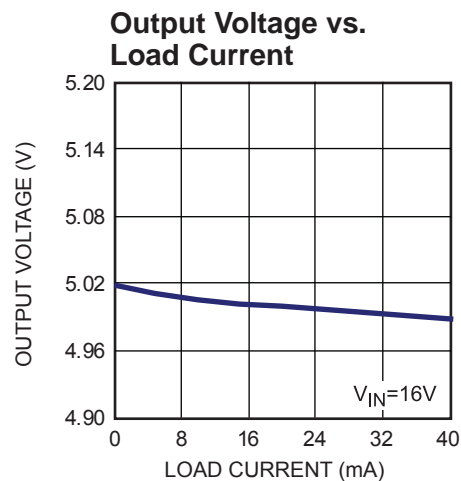
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### EV2016DD-00A EVALUATION BOARD

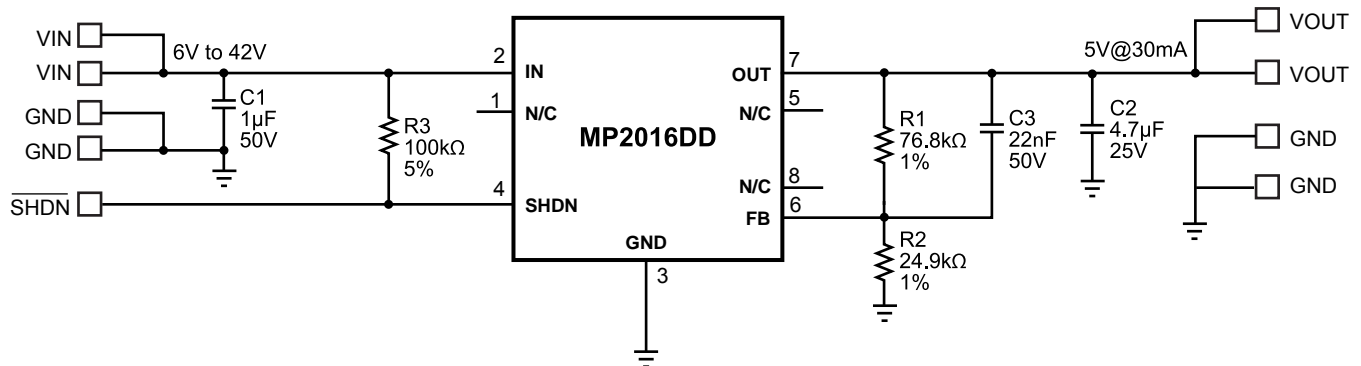


(L x W x H) 2.02" x 2.02" x 0.4"  
( 5.1cm x 5.1cm x 1cm )

Board Number	MPS IC Number
EV2016DD-00A	MP2016DD



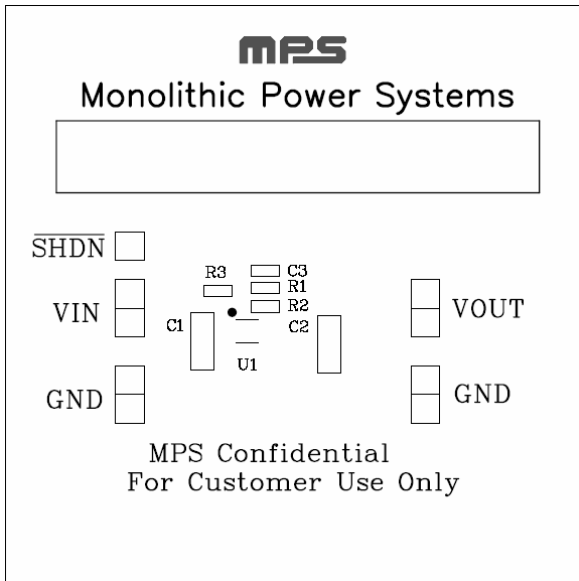
## EVALUATION BOARD SCHEMATIC



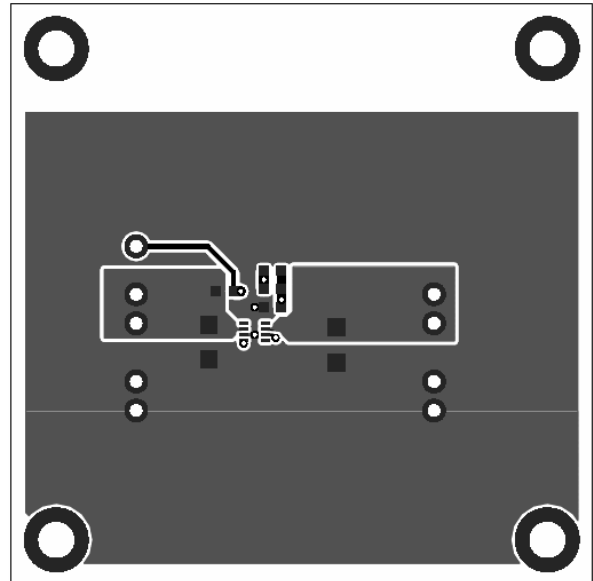
## EV2016DD-00A BILL OF MATERIAL

Qty	Ref.	Value	Description	Package	Manufacturer	Manufacturer P/N
1	C1	1µF	Ceramic Cap, X7R, 50V	1206	TDK	C3216X7R1H105K
1	C2	4.7µF	Ceramic Cap, X7R, 25V	1206	TDK	C3216X7R1C475K
1	C3	22nF	Ceramic Cap, X7R, 50V	603	TDK	C1608X7R1H223K
1	R1	76.8kΩ	Film Res., 1%	603	Panasonic	ERJ-3EKF7682V
1	R2	24.9kΩ	Film Res., 1%	603	Panasonic	ERJ-3EKF2492V
1	R3	100kΩ	Film Res., 5%	603	Panasonic	ERJ-6GEYJ104V
1	U1		MP2016DD		MPS	MP2016DD

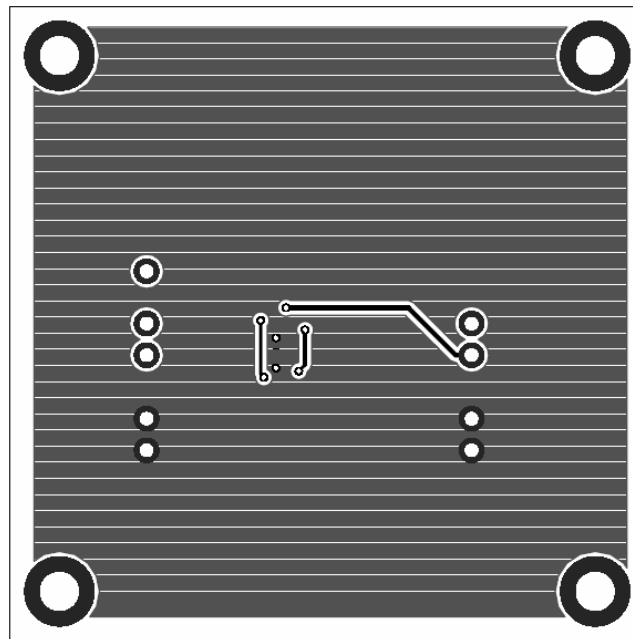
**PRINTED CIRCUIT BOARD LAYOUT**



**Figure 1—Top Silk Layer**



**Figure 2—Top Layer**



**Figure 3—Bottom Layer**

## QUICK START GUIDE

The output voltage of this board is set to 5V. The EN pin is connected to  $V_{IN}$  with a 100k $\Omega$  resistor for automatic startup. You can connect EN to GND to disable the MP2016.

1. Attach the positive and the negative ends of the load to the  $V_{OUT}$  and GND pins respectively.
2. Attach an input voltage ( $7V \leq V_{IN} \leq 42V$ ) and input ground to the  $V_{IN}$  and GND pins respectively.
3. The output voltage ( $V_{OUT}$ ) can be changed by setting a resistor divider (R1 and R2). A 24.9k $\Omega$  ( $\pm 1\%$ ) resistor should be used for the low-side resistor R2 of the voltage divider. The high side resistor R1 can be determined by the equation:

$$R1 = R2 \times \left( \frac{V_{OUT}}{1.23V} - 1 \right)$$

Where the 1.23V is the feedback threshold voltage ( $V_{FB}$ ).

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