

## DESCRIPTION

The EV20042DG-JG-00A evaluation board demonstrates the performance of MP20042, a dual channel, low noise, low dropout and high PSRR linear regulator. It operates from a 2.9V to 6V input voltage and regulates the output voltage to 2.5V for output channel 1 and 1.8V for output channel 2.

Each output channel can supply up to 200mA of load current. The EN1 and EN2 pins control each output respectively. The EV20042DG-JG-00A features current limiting and over temperature protection, stability with ultra low ESR ceramic capacitors, and fast transient response.

EV20042DG-JG-00A can also be used to evaluate the other version MP20042 with different output voltage by replacing the chip on the evaluation board.

## ELECTRICAL SPECIFICATIONS

| Parameter             | Symbol     | Value     | Units |
|-----------------------|------------|-----------|-------|
| Input Voltage         | $V_{IN}$   | 2.9 – 6.0 | V     |
| Output Voltage        | $V_{OUT1}$ | 2.5       | V     |
|                       | $V_{OUT2}$ | 1.8       | V     |
| Operating Temperature |            | -40 – +85 | °C    |

## FEATURES

- Wide Operating Voltage Ranges: 2.9V to 6V
- Up to 200mA Output Current (Per Channel)
- Dual Enable Pins Control Each Output
- 72dB PSRR at 1kHz
- $11\mu V_{RMS}$  Low Noise Output
- 110mV Dropout at 100mA Load
- Very Fast Transient Responses with Small Output Capacitor
- Current Limiting and Thermal Protection

## APPLICATIONS

- Cellular Phones
- Battery-powered Equipment
- Laptop, Notebook, and Palmtop Computers
- Hand-held Equipment
- Wireless LAN

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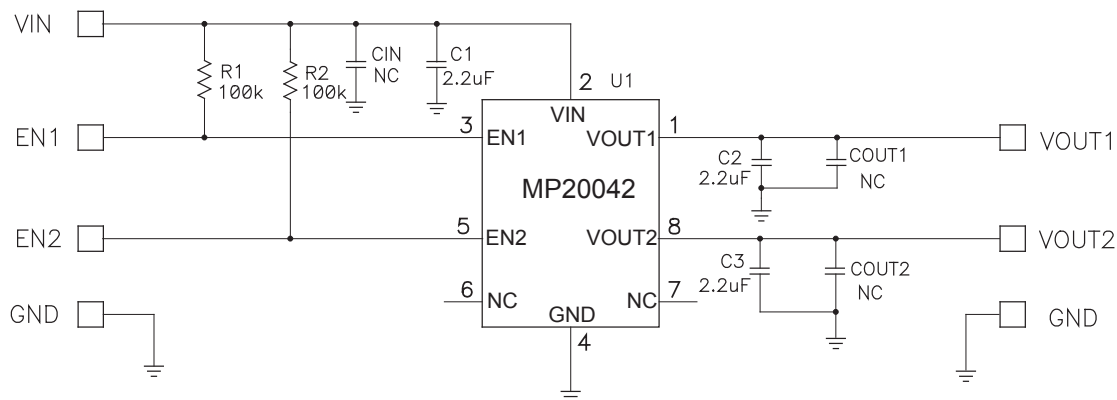
## EV20042DG-JG-00A EVALUATION BOARD



(L x W x H) 2.0" x 2.0" x 0.4"  
(5.0cm x 5.0cm x 1.1cm)

| Board Number     | MPS IC Number |
|------------------|---------------|
| EV20042DG-JG-00A | MP20042DG-JG  |

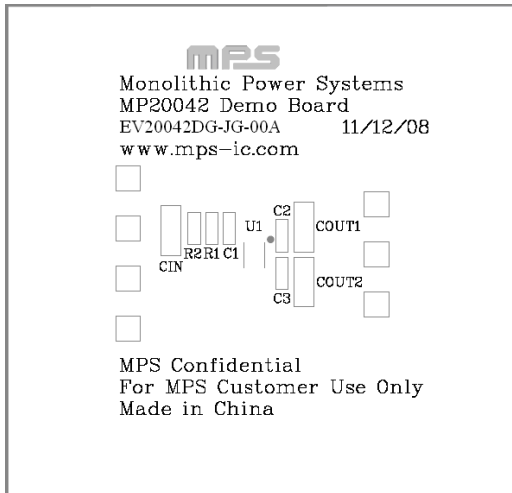
## EVALUATION BOARD SCHEMATIC



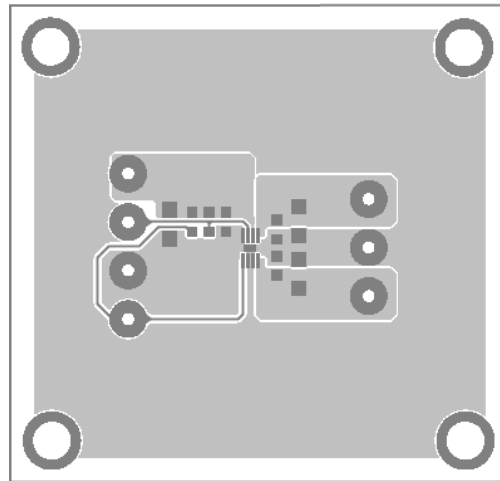
## EV20042DG-JG-00A BILL OF MATERIALS

| Qty | Ref          | Value | Description                      | Package   | Manufacturer | Part Number      |
|-----|--------------|-------|----------------------------------|-----------|--------------|------------------|
| 3   | C1, C2, C3   | 2.2uF | Ceramic Capacitor, X7R/ X5R, 10V | 0805      | TDK          | C2012X5R1A225K   |
| 2   | R1, R2       | 100K  | Film Res, 5%                     | 0805      | Yageo        | RC0805JR-07100KL |
| 1   | CIN          | NS    |                                  |           |              |                  |
| 2   | COUT1, COUT2 | NS    |                                  |           |              |                  |
| 1   | U1           |       | LDO Regulator                    | QFN8(2x2) | MPS          | MP20042DG-JG     |

## PRINTED CIRCUIT BOARD LAYOUT



**Figure 1—Top Silk Layer**



**Figure 2—Top Layer**

## QUICK START GUIDE

The output voltage of this board is set to 2.5V for channel 1 and 1.8V for channel 2. 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 MP20042.

1. Attach the positive and negative ends of the load to the VOUT and GND pins, respectively.
2. Attach the input voltage ( $2.9V \leq V_{IN} \leq 6V$ ) and input ground to the  $V_{IN}$  and GND pins, respectively.

To evaluate the other version MP20042 with different output voltage, carefully remove the IC (U1) and replace it with the corresponding chip. Please refer to the datasheet for the detailed information of the different output voltage option of MP20042.

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