

### DESCRIPTION

The EV20142DGT-00A evaluation board demonstrates the performance of MP20142, a dual-channel, low noise, low dropout and high PSRR linear regulator. It operates from 2.5V to 5.5V and features programmable output by setting the voltage of P1 and P2 to VIN, GND or floating. There are 9 different voltage settings in one chip.

Each output channel can supply up to 200mA of load current. The EN1 and EN2 pins control each output respectively. The EV20142DGT-00A features current limiting and over temperature protection, stability with ultra low ESR ceramic capacitors, and very fast transient response.

EV20142DGT-00A can also be used to evaluate the other version MP20142 with different programmable output voltage.

### ELECTRICAL SPECIFICATIONS

Parameter	Symbol	Value	Units
Input Voltage	V <sub>IN</sub>	3.7 – 5.5	V
Output Voltage	V <sub>OUT1</sub>	1.5	V
	V <sub>OUT2</sub>	1.8	V
Operating Temperature		-40 to +85	°C

### FEATURES

- Programmable Output Voltage
- 200mA Output Current (Per Channel)
- Dual Enable Pins Control Each Output
- 75dB PSRR at 1kHz
- 7µV<sub>RMS</sub> Low Noise Output with No Noise Bypass Capacitor Required
- 60mV Dropout at 100mA Load for Each Channel
- Fast Transient Responses
- Current Limit and Thermal Protection

### APPLICATIONS

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

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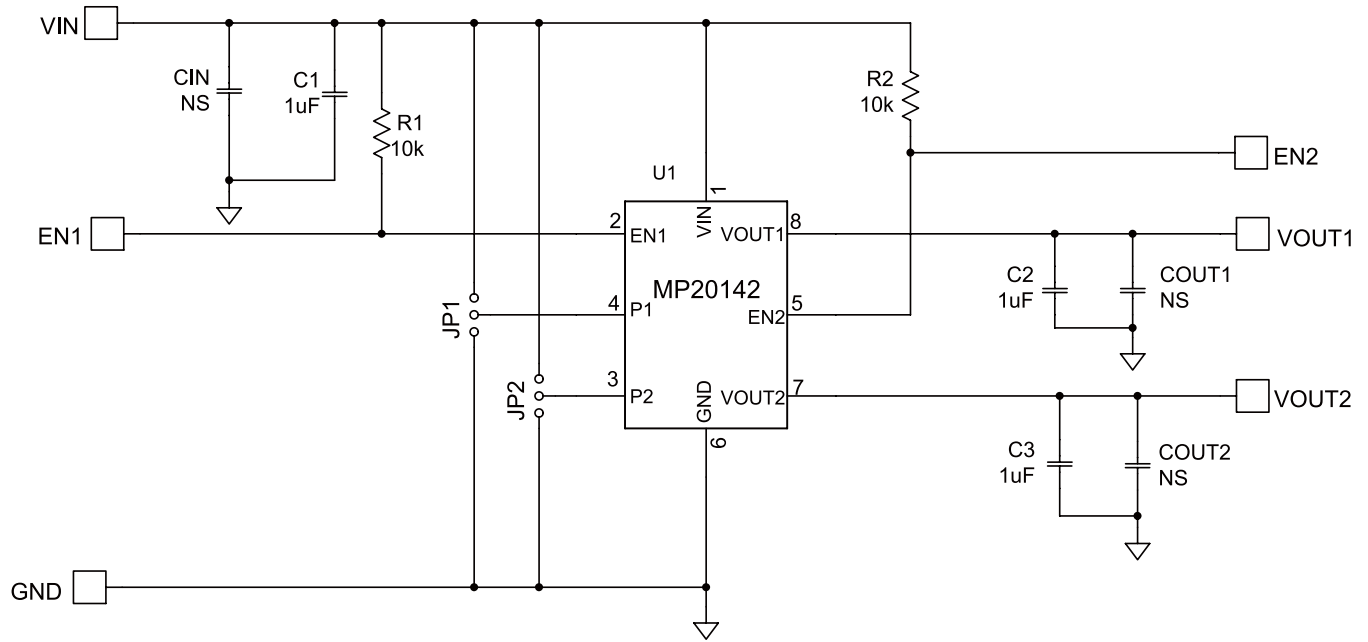
## EV20142DGT-00A EVALUATION BOARD



(L x W x H) 2.5" x 2.5" x 0.4"  
(6.35cm x 6.35cm x 1.1cm)

Board Number	MPS IC Number
EV20142DGT-00A	MP20142DGT-A

## EVALUATION BOARD SCHEMATIC



## EV20142DGT-00A BILL OF MATERIALS

Qty	Ref	Value	Description	Package	Manufacturer	Part Number
3	C1, C2, C3	1uF	Ceramic Capacitor, X7R, 10V	0805	TDK	C2012X7R1A105K
3	CIN, COUT1, COUT2	NS				
2	R1, R2	10k	Film Res, 1%	0603	Yageo	RC0603FR-0710KL
2	JP1, JP2		3-Pin Connector Header, 0.100"		Any	
1	U1		LDO Regulator	TQFN8 (2mm*2mm)	MPS	MP20142DGT

## PRINTED CIRCUIT BOARD LAYOUT

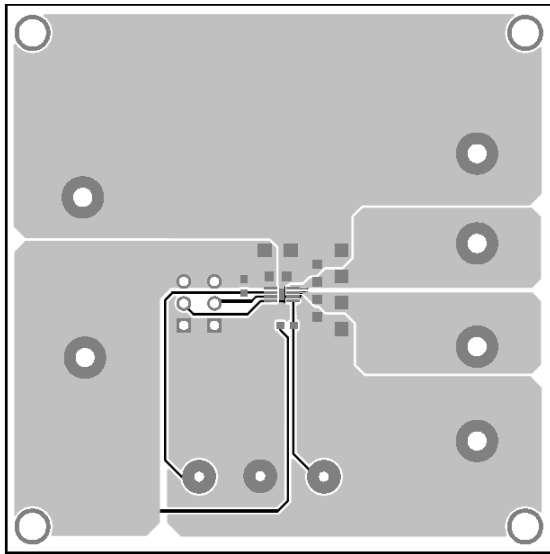


Figure 1—Top Layer

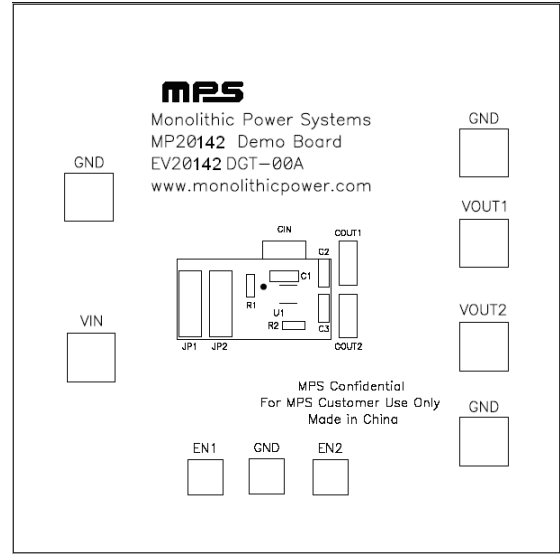


Figure 2—Top Silk Layer

## QUICK START GUIDE

The output voltage of this board can be programmed by setting the voltage of P1 and P2 to VIN, GND or floating. There are 9 different voltage settings in one chip, which is as following table, and P1 and P2 are preset at “Low” states.

**Table 1 Programmable Output Voltage Setting**

P1 State	P2 State	V <sub>OUT1</sub>	V <sub>OUT2</sub>
L	L	1.5V	1.8V
L	H	1.5V	2.8V
L	Open	1.8V	3.0V
H	L	2.6V	3.0V
H	H	2.8V	3.0V
H	Open	2.8V	3.3V
Open	L	3.0V	3.0V
Open	H	3.0V	3.3V
Open	Open	3.3V	3.3V

1. The EN1 and EN2 pin are connected to VIN with a 10kΩ resistor for automatic startup. You can connect EN1 or EN2 to GND to disable each output of MP20142 respectively.
2. Attach the positive and negative ends of the load to the VOUT and GND pins, respectively.
3. Attach the input voltage ( $2.5V \leq V_{IN} \leq 5.5V$ ) and input ground to the VIN and GND pins, respectively.

To evaluate the other version MP20142 with different programmed 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 programmable output voltage of MP20142.

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