

## GENERAL DESCRIPTION

The EV3209DJ-00A is the evaluation board for the MP3209. The MP3209 is a current mode step up converter intended for small, low power applications. The MP3209 switches at 1.3MHz and allows the use of tiny, low cost capacitors and inductors to achieve a solution less than 1mm in height. Internal soft start results in small inrush current and extends battery life.

The MP3209 includes under-voltage lockout, current limiting, and thermal overload protection to prevent damage in the event of an output overload. The MP3209 is available in small 5-pin TSOT23 and 2mm x 2mm ultra-thin QFN 8-pin packages.

## ELECTRICAL SPECIFICATION

Parameter	Symbol	Value	Units
Input Voltage	$V_{IN}$	2.5 to 6	V
Output Voltage	$V_{OUT}$	15	V

## FEATURES

- 2.5V to 6V Input Voltage Range
- On Board Power MOSFET
- Uses Tiny Capacitors and Inductors
- 1.3MHz Fixed Switching Frequency
- Internally Compensated
- Internal Soft-Start
- Operates with Input Voltage as Low as 2.5V and Output Voltage as High as 22V
- UVLO, Thermal Shutdown
- Internal Current Limit
- Available in TSOT23-5 and Ultra-Thin 2x2 QFN Packages

## APPLICATIONS

- Cell Phones
- External Modems
- Small LCD Displays
- OLED Drivers

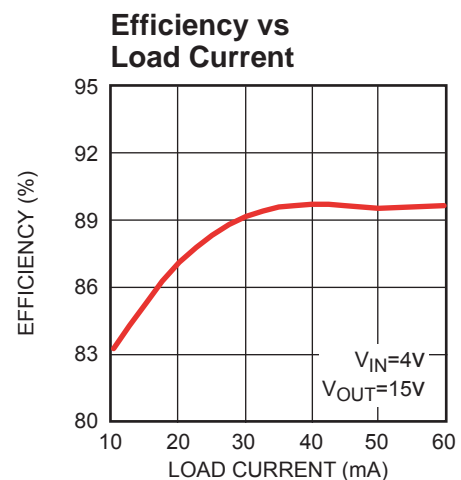
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## EV3209DJ-00A EVALUATION BOARD

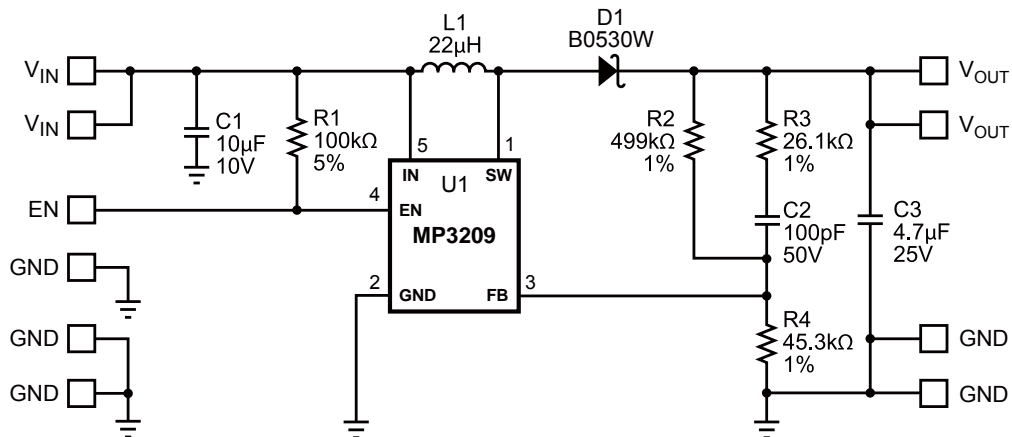


Dimensions (1.6" by 1.8" X x 1.8" Y x 0.4" Z)

Board Number	MPS IC Number
EV3209DJ-00A	MP3209DJ



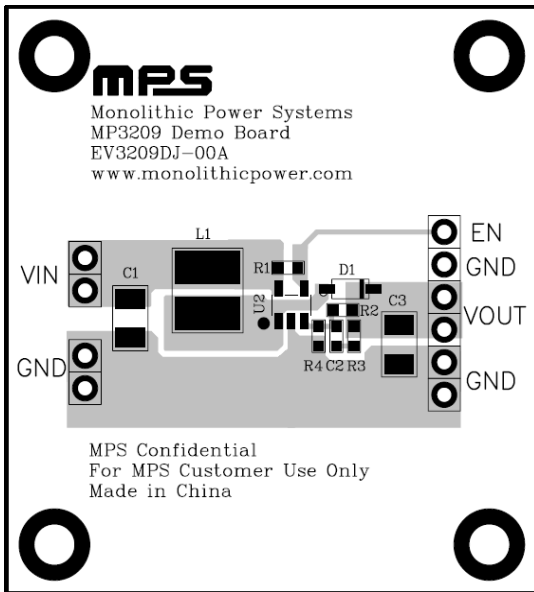
## EVALUATION BOARD SCHEMATIC



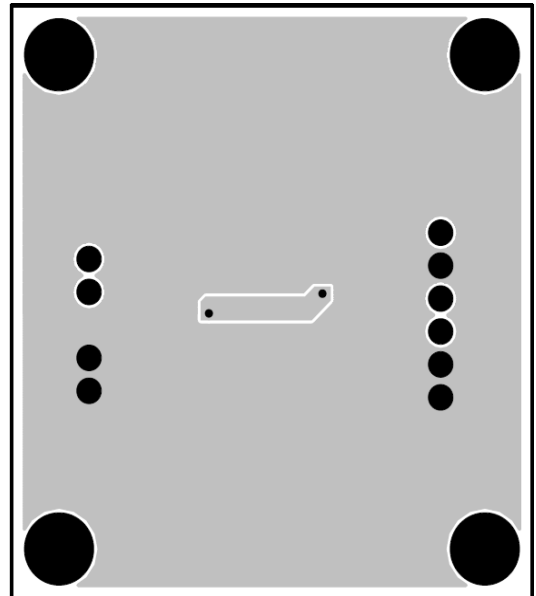
## EV3209DJ-00A BILL OF MATERIALS

Qty	Ref	Value	Description	Package	Manufacturer	Manufacturer P/N
1	C1	10µF	Ceramic Cap., 10V, X5R	1210	TDK	C3225X5R1A106K
1	C3	4.7µF	Ceramic Cap., 25V, X7R	1210	TDK	C3225X7R1E475M
1	C2	100pF	Ceramic Cap., 50V, COG	0603	TDK	C16-8COG1H101J
1	L1	22µH	22µH, 0.49A, SMD	SMD	TDK	VLCF4018-220MR49-2
1	D1	B0530W	Schottky Diode 30V,0.5A	SOD-123	Diodes Inc	B0530W
1	R1	100k	Film Res., 5%	0603	Royalohm	0603J0104T5E
1	R2	499k	Film Res., 1%	0603	Yageo	RC0603FR-07499KL
1	R3	26.1k	Film Res., 1%	0603	Yageo	RC0603FR-0726K1L
1	R4	45.3k	Film Res., 1%	0603	Yageo	RC0603FR-0745K3L
1	U1	MP3209DJ	Step-Up Converter	SOT23-5	MPS	MP3209DJ-R16

**PRINTED CIRCUIT BOARD LAYOUT**



**Figure 1—Top Layer**



**Figure 2—Bottom Layer**

## QUICK START GUIDE

The output voltage of this board is set to 15V. The board layout accommodates most commonly used inductors and output capacitors.

1. Preset Power Supply to  $2.5V \leq V_{IN} \leq 6V$ .
2. Turn Power Supply off.
3. Connect Power Supply terminals to:
  - Positive (+): IN
  - Negative (-): GND
4. Connect Load to:
  - Positive (+): OUT
  - Negative (-): GND
5. Turn Power Supply on after making connections.
6. The MP3209 is enabled on the evaluation board once  $V_{IN}$  is applied. To disable the MP3209, short EN to GND.
7. The output voltage  $V_{OUT}$  can be changed by varying R4. Calculate the new value using the fomula:

$$R4 = \left( \frac{V_{FB}}{V_O - V_{FB}} \right) \times R2$$

Where  $V_{FB} = 1.25V$  and  $R2 = 499k\Omega$

For example, for  $V_{OUT} = 15V$

$$R4 = \left( \frac{1.25}{15 - 1.25} \right) \times 499k\Omega = 45.3k\Omega$$

Therefore use a 45.3 k $\Omega$  standard 1% value.

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