



EV04W0503A-3-Y-00A

0.4W, Regulated, 3kV_{DC}
Isolated DC/DC Converter
Evaluation Board

DESCRIPTION

The EV04W0503A-3-Y-00A is an evaluation board designed to demonstrate the capabilities of the MID04W0503AGY-3R, a regulated, isolated DC/DC converter module.

The MID04W0503AGY-3R integrates a power MOSFET, transformer, and feedback circuit all in one chip, supporting a 3kV_{DC} isolation

voltage. This converter provides a small size and higher reliability operation compared to traditional isolated power modules.

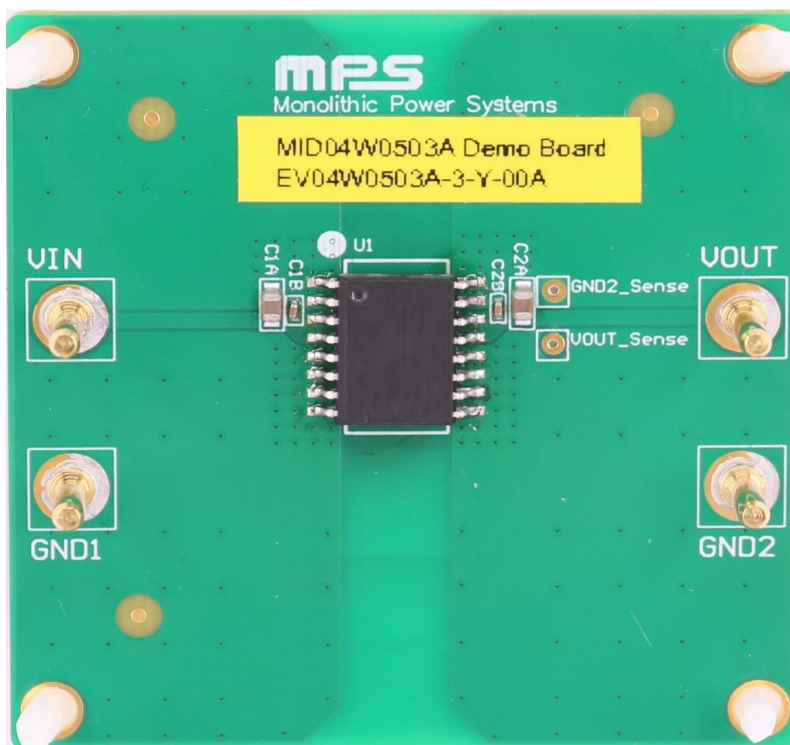
It is recommended to read the datasheet for the MID04W0503A prior to making any changes to the EV04W0503A-3-Y-00A.

PERFORMANCE SUMMARY

Specifications are at T_A = 25°C, unless otherwise noted.

Parameters	Conditions	Value
Input voltage (V _{IN}) range		4.5V to 5.5V
Output voltage (V _{OUT})	V _{IN} = 4.5V to 5.5V, I _{OUT} = 0A to 0.12A	3.3V
Maximum output current (I _{OUT})	V _{IN} = 4.5V to 5.5V	0.12A

EVALUATION BOARD



LxWxH (5.1cmx5.1cmx0.3cm)

2 Layers, 1oz/1oz

Board Number	MPS IC Number
EV04W0503A-3-Y-00A	MID04W0503AGY-3R

QUICK START GUIDE

1. Preset the power supply (V_{IN}) between 4.5V and 5.5V, then turn off the power supply.
2. Connect the power supply terminals to:
 - a. Positive (+): VIN
 - b. Negative (-): GND1
3. Connect the load terminals to:
 - a. Positive (+): VOUT
 - b. Negative (-): GND2
4. After making the connections, turn on the power supply. The board should automatically start up.

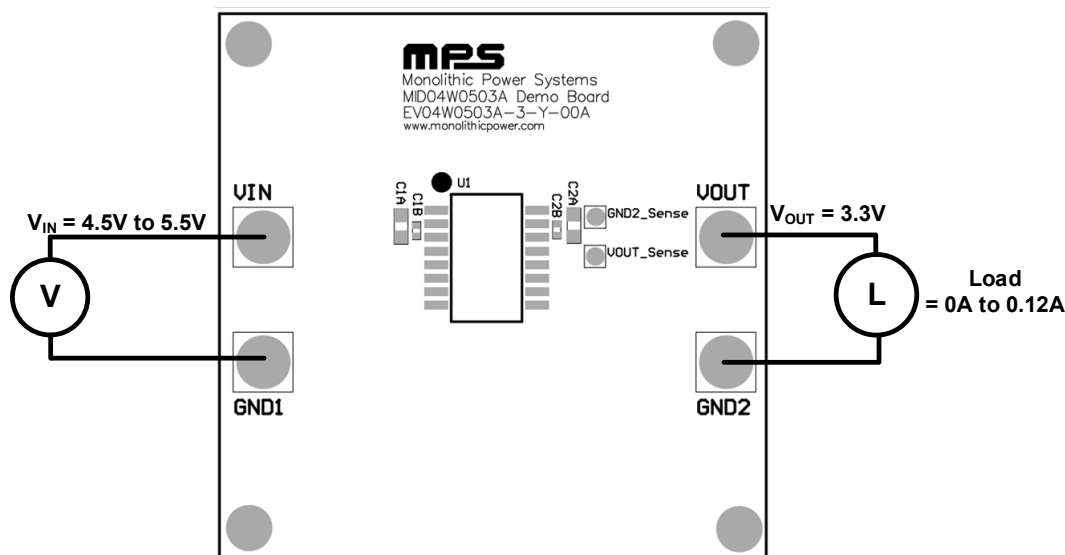


Figure 1: Measurement Equipment Set-Up

EVALUATION BOARD SCHEMATIC

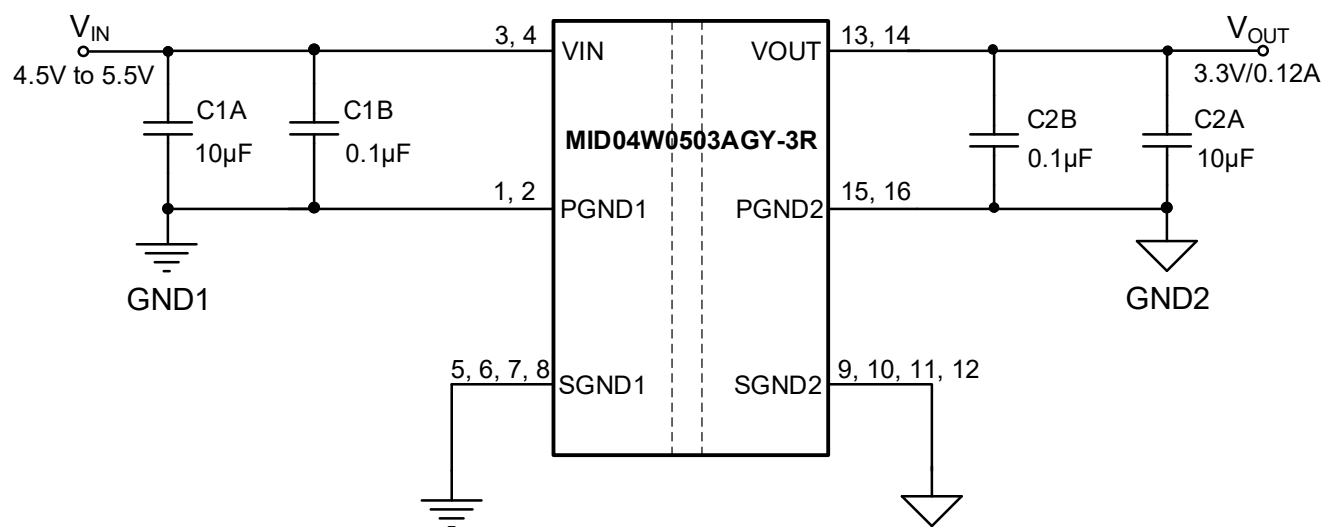


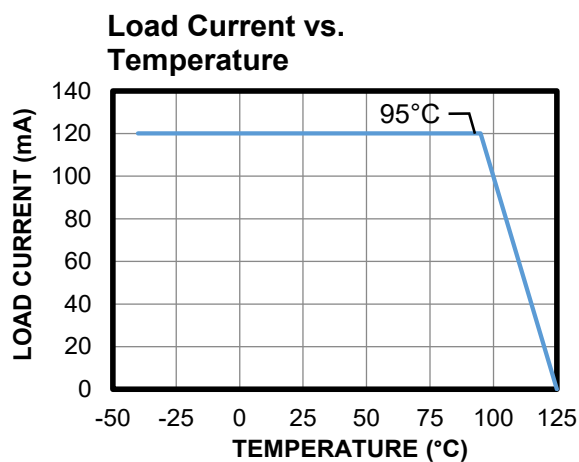
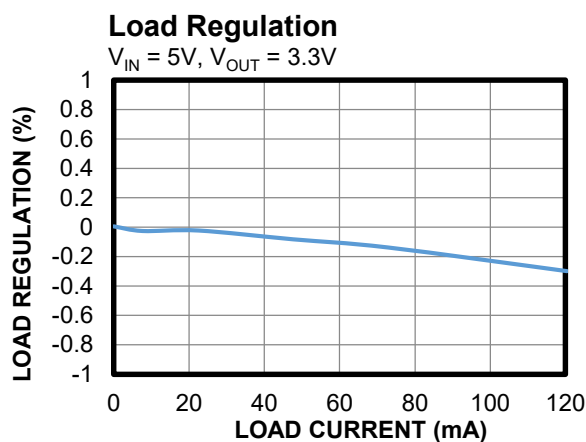
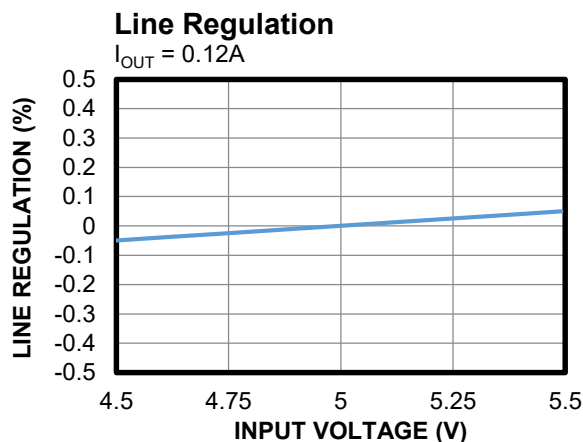
Figure 2: Evaluation Board Schematic

**EV04W0503A-3-Y-00A BILL OF MATERIALS**

Qty	Ref	Value	Description	Package	Manufacturer	Manufacturer PN
2	C1A, C2A	10 μ F	Ceramic capacitor, 10V, X5R	0805	TDK	C2012X5R1A106KT000E
2	C2A, C2B	100nF	Ceramic capacitor, 16V, X7R	0402	Samsung	CL05B104KO5NNNC
1	U1	MID04W0503A	0.4W, 3kV _{DC} isolated DC/DC converter module	SOIC-16 WB	MPS	MID04W0503AGY-3R-Z

EVB TEST RESULTS

Performance curves and waveforms are tested on the evaluation board. $V_{IN} = 5V$, $V_{OUT} = 3.3V$, $T_A = 25^{\circ}C$, $I_{OUT} = 0A$ to $0.12A$, $C_{IN} = C_{OUT} = 0.1\mu F + 10\mu F$, unless otherwise noted.

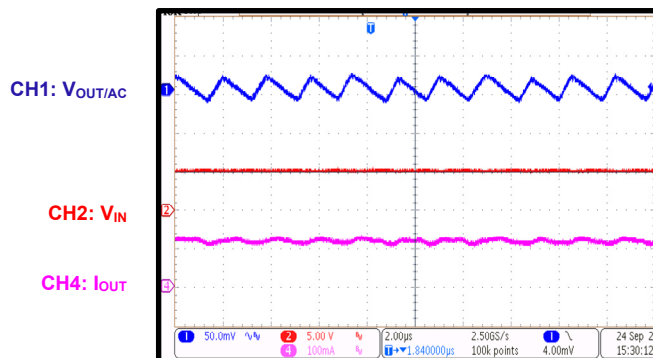


EVB TEST RESULTS *(continued)*

Performance curves and waveforms are tested on the evaluation board. $V_{IN} = 5V$, $V_{OUT} = 3.3V$, $T_A = 25^{\circ}C$, $I_{OUT} = 0A$ to $0.12A$, $C_{IN} = C_{OUT} = 0.1\mu F + 10\mu F$, unless otherwise noted.

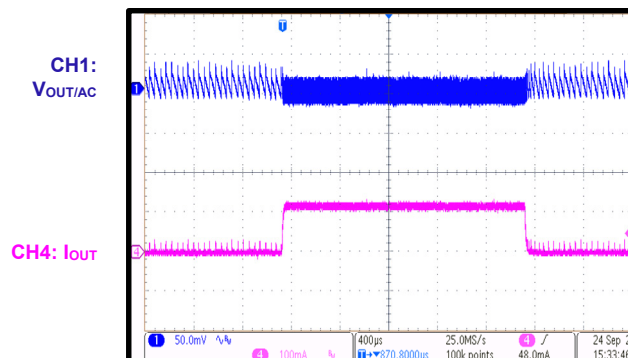
V_{OUT} Ripple

$I_{OUT} = 0.12A$

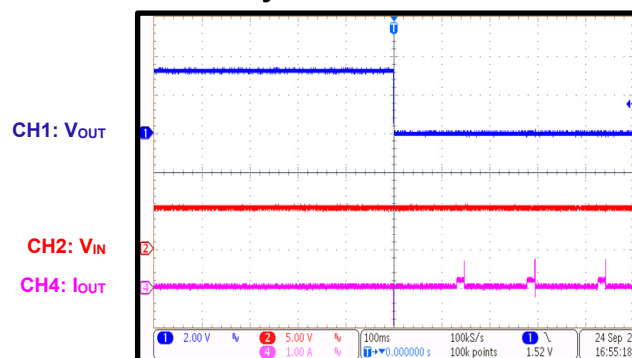


Load Transient

$I_{OUT} = 0A$ to $0.12A$



SCP Entry



PCB LAYOUT

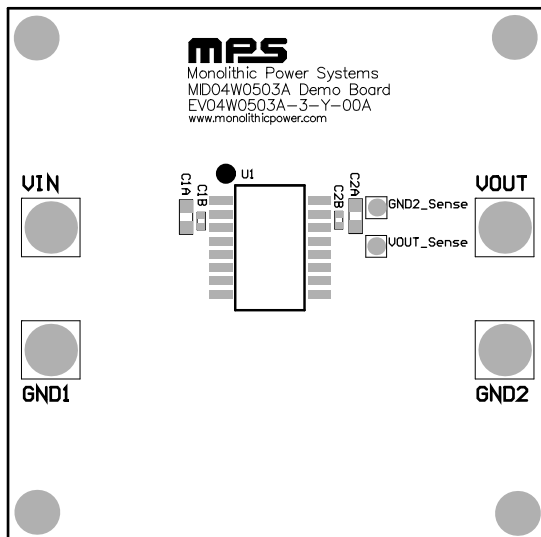


Figure 1: Top Silk

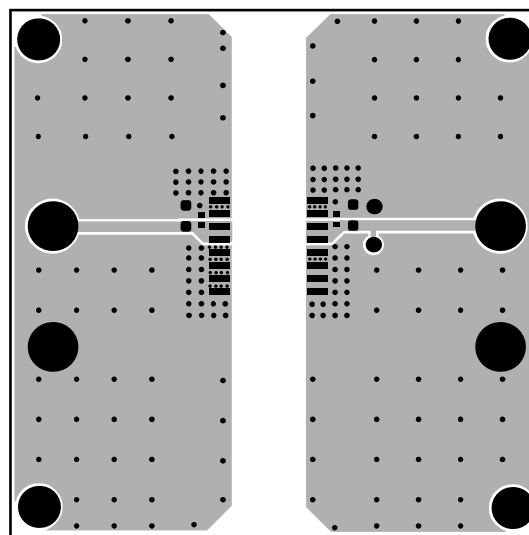


Figure 2: Top Layer

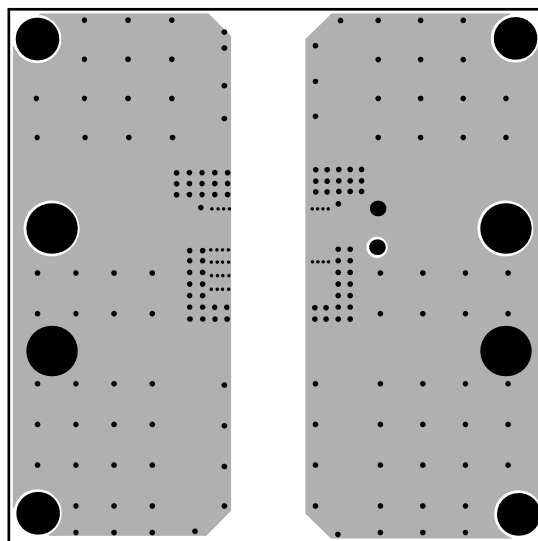


Figure 3: Bottom Layer



REVISION HISTORY

Revision #	Revision Date	Description	Pages Updated
1.0	6/4/2024	Initial Release	-

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