



EV06W0503A-3-Y-00A

0.6W, Semi-Regulated, 3kV_{DC},
Isolated DC/DC Converter
Evaluation Board

DESCRIPTION

The EV06W0503A-3-Y-00A is an evaluation board designed to demonstrate the capabilities of the MID06W0503AGY-3S, a semi-regulated, isolated DC/DC converter module.

The MID06W0503AGY-3S integrates a power MOSFET, transformer, and feedback circuit all in one chip, supporting an isolation voltage up

to 3kV_{DC}. The converter is a small solution that provides highly reliable operation when compared to traditional isolated power modules.

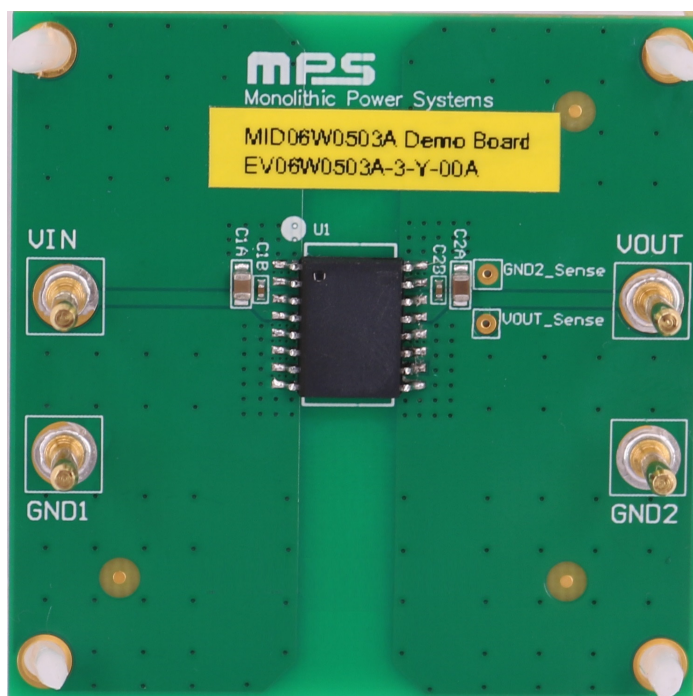
It is recommended to read the datasheet for the MID06W0503A prior to making any changes to the EV06W0503A-3-Y-00A.

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 0.18A	3.3V
Maximum output current (I _{OUT})	V _{IN} = 4.5V to 5.5V	0.18A

EVALUATION BOARD



LxWxH (5.1cmx5.1cmx0.3cm)

2 Layers, 1oz/1oz

Board Number	MPS IC Number
EV06W0503A-3-Y-00A	MID06W0503AGY-3S-Z

QUICK START GUIDE

1. Preset the power supply (V_{IN}) to be 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 shows the measurement equipment set-up.

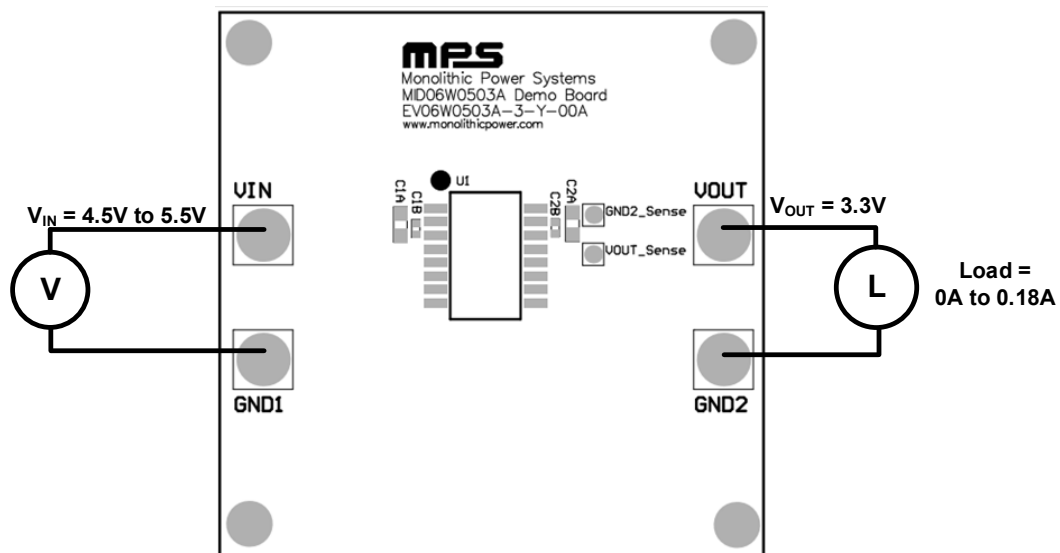


Figure 1: Measurement Equipment Set-Up

EVALUATION BOARD SCHEMATIC

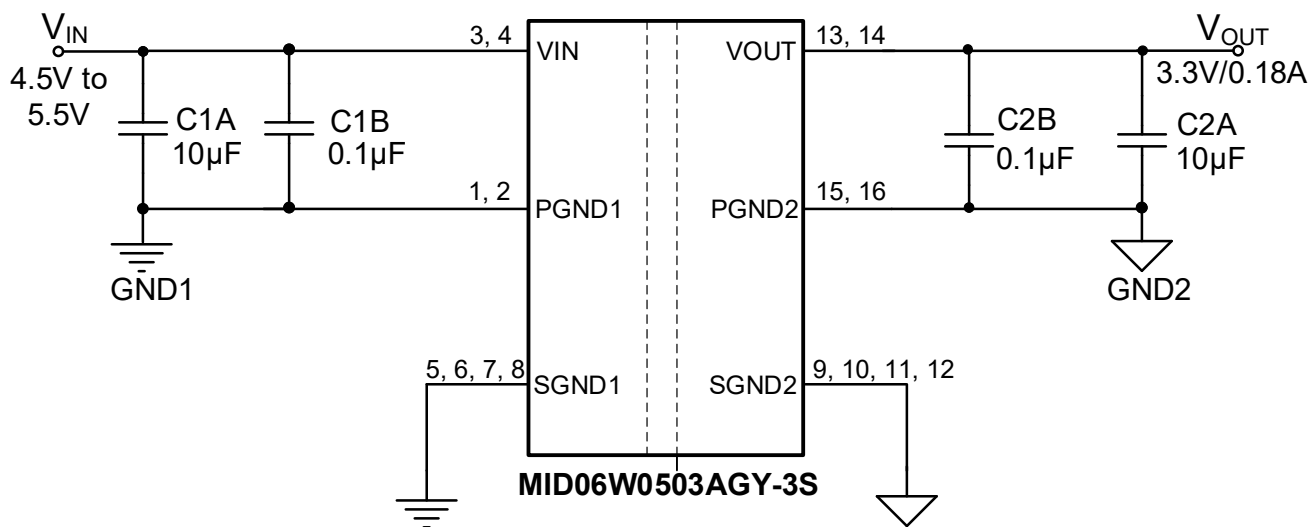


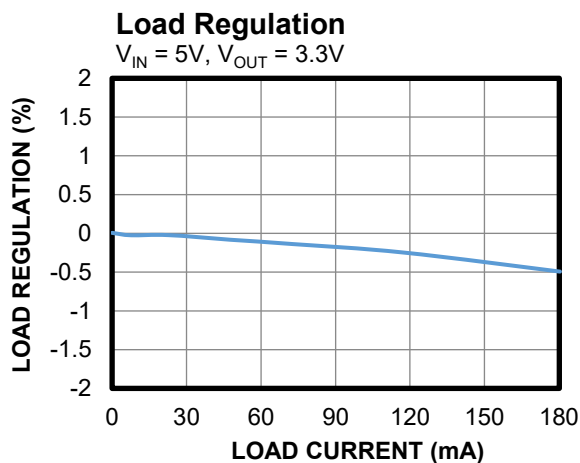
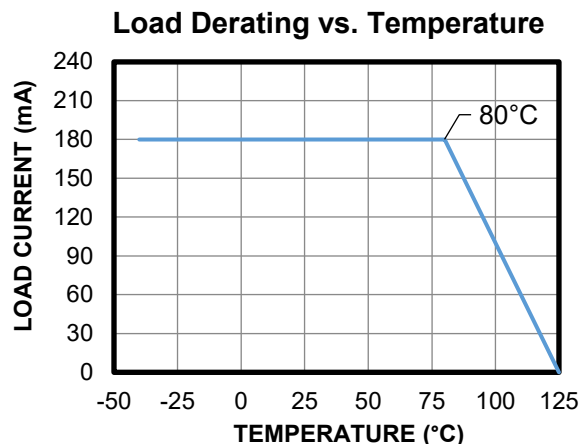
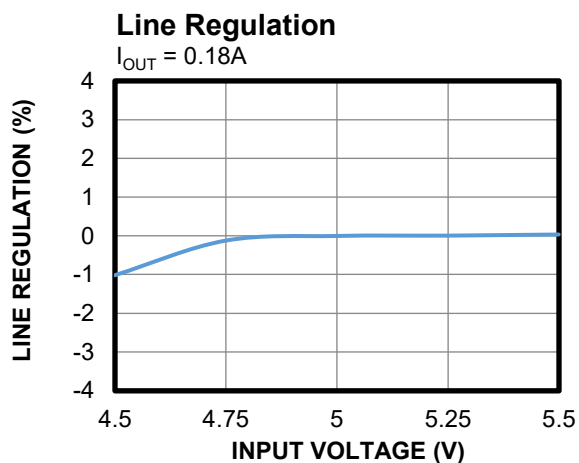
Figure 2: Evaluation Board Schematic

EV06W0503A-3-Y-00A BILL OF MATERIALS

Qty	Ref	Value	Description	Package	Manufacturer	Manufacturer PN
2	C1A, C2A	10μF	Ceramic capacitor, 10V, X5R	0805	TDK	C2012X5R1A106KT000E
2	C2A, C2B	100nF	Ceramic capacitor, 16V, X7R	0402	Samsung	CL05B104KO5NNNC
1	U1	MID06W0503A	0.6W, 3kV _{DC} isolated DC/DC converter module	SOIC-16 WB	MPS	MID06W0503AGY-3S-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 $0.18A$, $C_{IN} = C_{OUT} = 10\mu F$, unless otherwise noted.

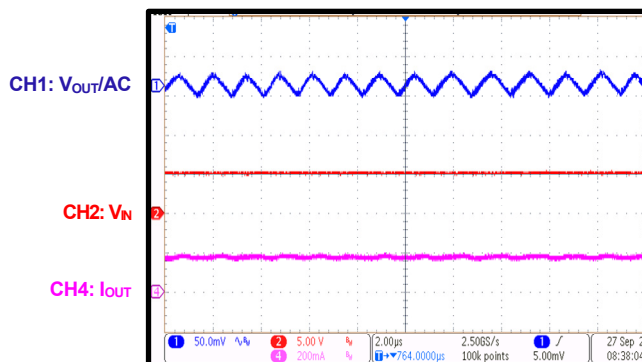


EVB TEST RESULTS *(continued)*

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 $0.18A$, $C_{IN} = C_{OUT} = 10\mu F$, unless otherwise noted.

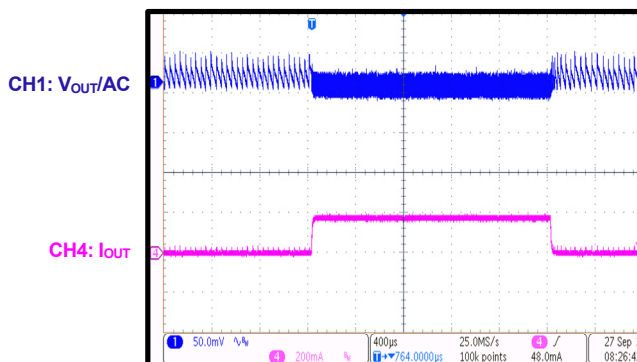
Output Voltage Ripple

$I_{OUT} = 0.18A$

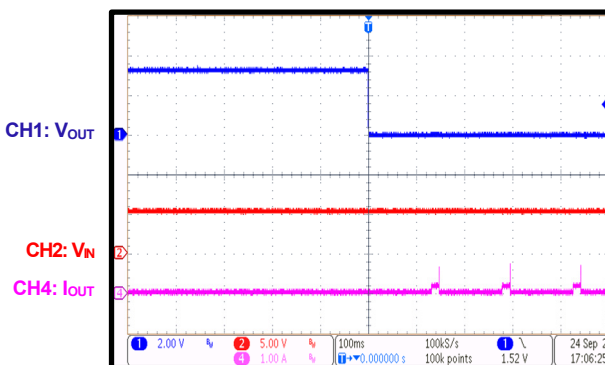


Load Transient Response

$I_{OUT} = 0A$ to $0.18A$



SCP Entry



PCB LAYOUT

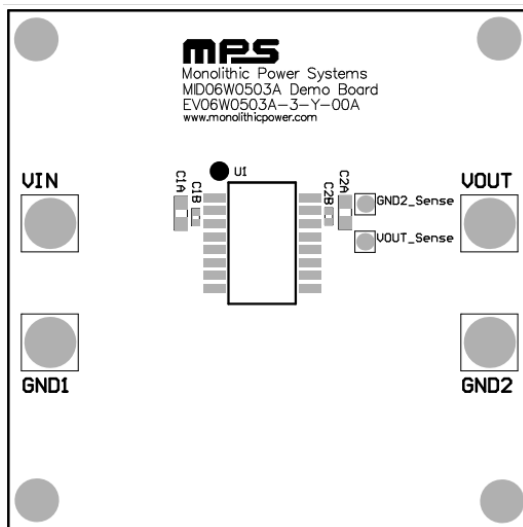


Figure 3: Top Silk

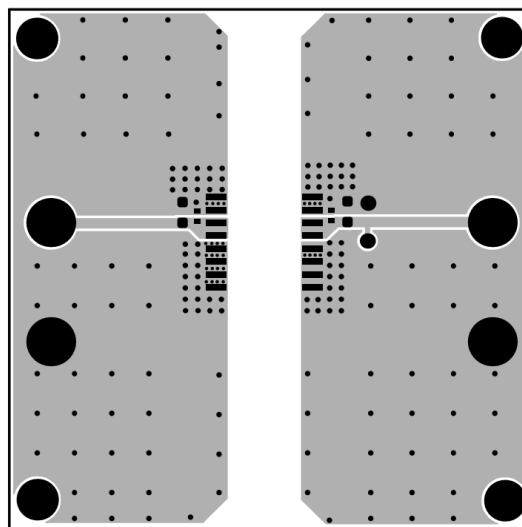


Figure 4: Top Layer

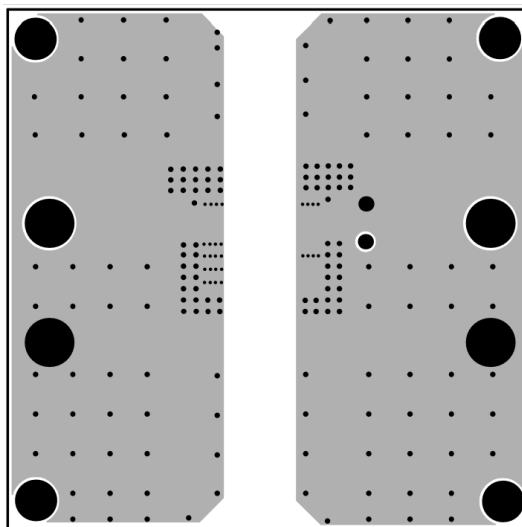


Figure 5: Bottom Layer



REVISION HISTORY

Revision #	Revision Date	Description	Pages Updated
1.0	5/17/2024	Initial Release	-

Notice: The information in this document is subject to change without notice. Please contact MPS for current specifications. Users should warrant and guarantee that third-party Intellectual Property rights are not infringed upon when integrating MPS products into any application. MPS will not assume any legal responsibility for any said applications.