

EVmEZDPD4506A-00A

Programmable 45V DC/DC Power Supply up to 6A

DESCRIPTION

The EVmEZDPD4506A-00A is a programmable, DC/DC, power supply, buck converter featuring the mEZDPD4506A module, which has a multiple-time programmable memory and a simple GUI for programming. mEZDPD4506A has an input range from 4V to 45V. The output voltage is adjustable from 0.6V to 22V (default 3.3V). The EVmEZDPD4506A-00A can output up to 6A of current continuously.

EVmEZDPD4506A-00A has mEZDPD4506A socket that should be placed to the EVB manually. The mEZDPD4506A is a programmable, DC/DC, power supply up to 6A and 0.6 - 22V output voltage. The Virtual Bench provides Pro GUI flexible 2.2 management functions, including setting the output voltage, switching frequency, output current limit, multiple protection modes, and compensation. For more details, please refer to the mEZDPD4506A datasheet.

FEATURES

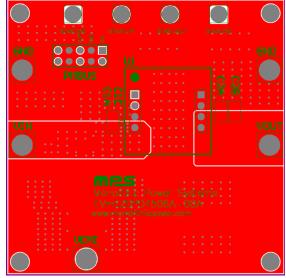
mEZDPD4506A comes 18.8mmx18.8mm solution size. To explore the digital functions of the board completely, the EVmEZDPD4506A-00A board and the Virtual Bench Pro 2.2 GUI are both required. Please contact MPS for more information.

PKT-mEZDPD4506A Kit Contents (Items below can be ordered separately)

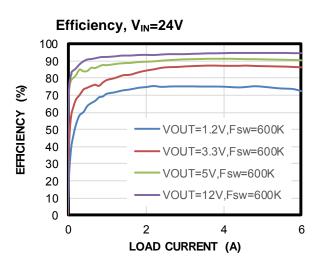
#	Part Number	Item	Qty	
1	EVmEZDPD4506A-00A	mEZDPD4506A	1	
		evaluation board		
2	mEZDPD4506A-0000	mEZDPD4506A modules with default configuration	1	
3	EVKT-USBI2C-02	USB to I2C communication interface device kit, includes one USB to I2C communication interface device, USB cable, and ribbon cable	1	
4	Tdrive-mEZDPD4506A	USB thumb drive that stores the GUI installation file and supplemental documents	1	

Order directly from Monolithicpower.com or our distributors.

EVMEZDPD4506A-00A



DEMO 64mm x 64mm



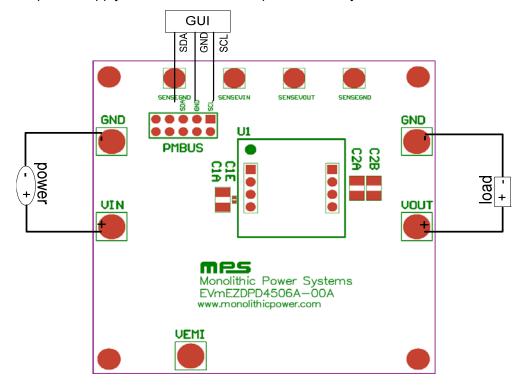


PERFORMANCE SUMMARY

Parameter	Conditions	Value	
Input Voltage		4V to 45V	
Output Voltage	Vin=4V to 45V, single output, lout=0A to 6A	0.6V to 22V	
Output Current	Vin=4V to 45V, single output, Vout=0.6V to 22V	0A to 6A	
Typical Efficiency	Vin=12V, Vout=5V, lout=6A	92.4%	
Peak Efficiency	V _{IN} =24V, V _{OUT} =12V, full load, Fsw=600kHz	94.4%	
Default Switching Frequency	Typical switching frequency	600kHz	

QUICK START

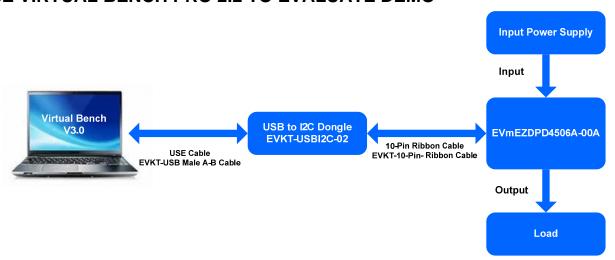
- 1. Connect the mEZDPD4506A module to the socket on the EVmEZDPD4506A-00A board.
- 2. Connect the positive and negative terminals of the load to the VOUT and GND pins.
- 3. Preset the power supply output between 4V and 45V.
- 4. Turn off the power supply.
- 5. Connect the positive and negative terminals of the power supply to the VIN and GND pins.
- 6. Turn on the power supply. The board will start up automatically.



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USE VIRTUAL BENCH PRO 2.2 TO EVALUATE DEMO



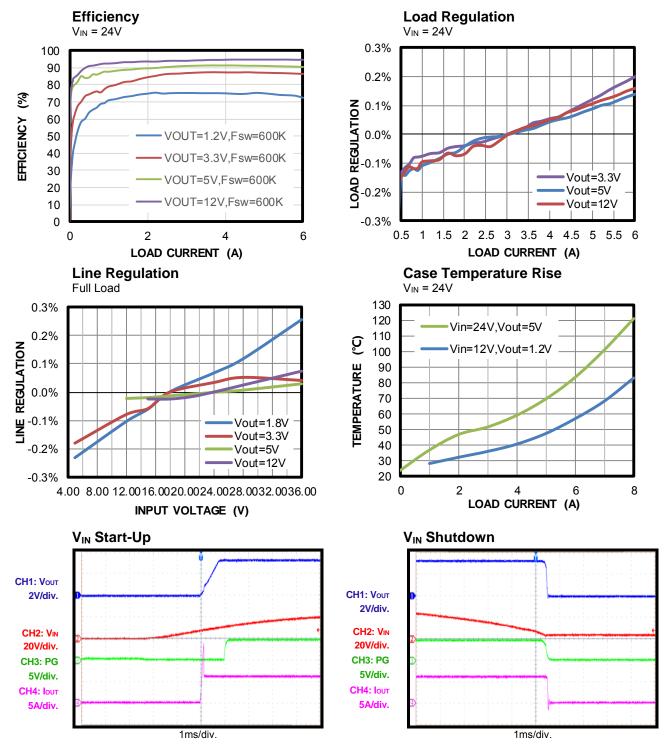
- 1. Connect the I2C wires to the EVB.
- 2. Open 'Virtual Bench Pro.exe'. The GUI will auto-scan the device.

When the part is found, the part number will be shown. The GUI allows user modify the internal parameters. For more detail, refer to the register details in IC datasheet.



TYPICAL PERFORMANCE CHARACTERISTICS

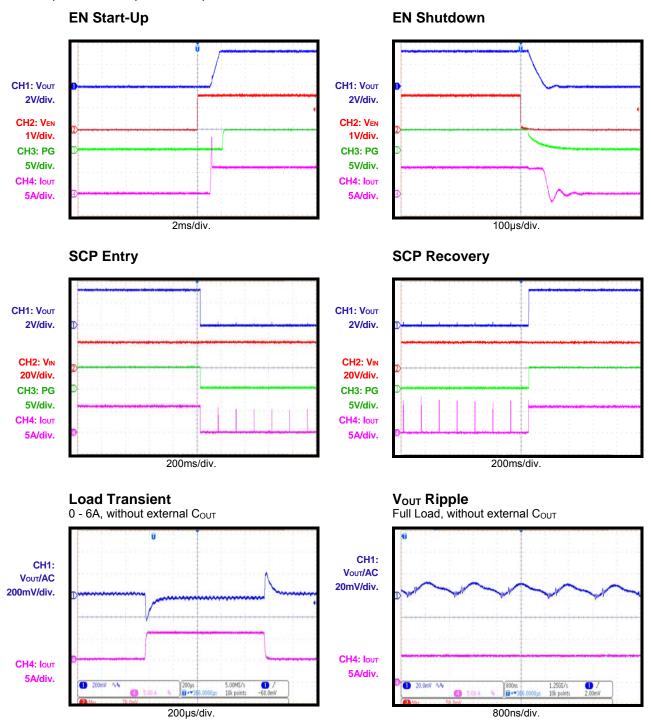
 $V_{IN} = 24V$, $V_{OUT} = 3.3V$, $T_A = 25$ °C, unless otherwise noted.





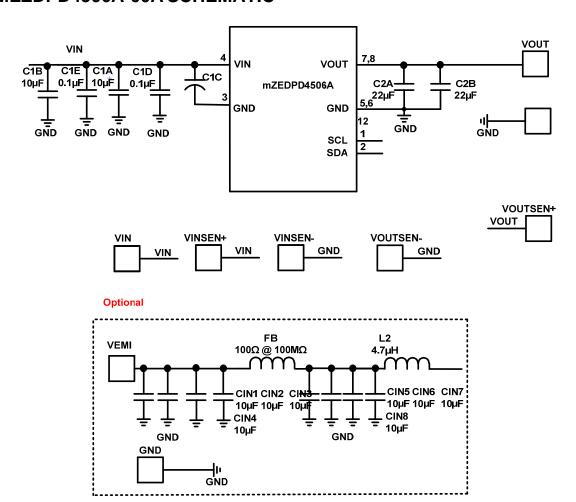
TYPICAL PERFORMANCE CHARACTERISTICS (continued)

 $V_{IN} = 24V$, $V_{OUT} = 3.3V$, $T_A = 25$ °C, unless otherwise noted.





EVMEZDPD4506A-00A SCHEMATIC





EVMEZDPD4506A-00A BOM

Qty	RefDes	Value	Description	Pkg	Manufacturer	Manufactuer_P/N
2	C1A,C1B	10µF	Ceramic Cap.,50V,X5R	1210	Murata	GRM32ER61H106KA12L
2	C2A, C2B	22µF	Ceramic Cap.,16V,X5R	1210	Murata	GRM32ER61C226KE20L
2	C1D, C1E	100nF	Ceramic Cap.,50V,X7R	0402	Murata	GRM155R71H104ME14D
1	C1C	100uF	100uF,50V	SMD	PANASONIC	EEEFP1H101AP

Optional (EMI)

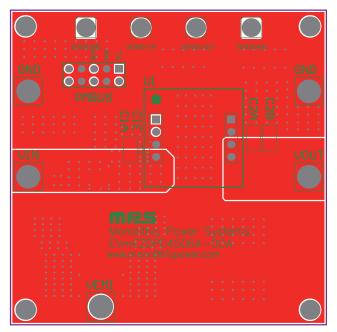
Qty	RefDes	Value	Description	Pkg	Manufacturer	Manufactuer_P/N
8	CIN1, CIN2, CIN3, CIN4 CIN5, CIN6, CIN7, CIN8	10μF	Ceramic Cap, 50V, X5R	1210	Murata	GRM32ER61H106KA12L
1	FB	100Ω @ 100MHz 1210	Film Res, 1%, 1210, 100R	1210	YAGEO	RC1210FR-07100RL
1	L2	4.7µH	Inductor, RDC=0.0195Ω, Isat=7A	7040	WE	744311470

NOTES:

When V_{OUT} < 3.3V, C2A = 22 μ F, C2B = NS, C1C = NS When V_{OUT} = 5V, C2A = 22 μ F, C2B = 22 μ F, C1C = NS When V_{OUT} = 12V, C2A = 22 μ F, C2B = 22 μ F, C1C = 100 μ F E-cap



PRINTED CIRCUIT BOARD LAYOUT



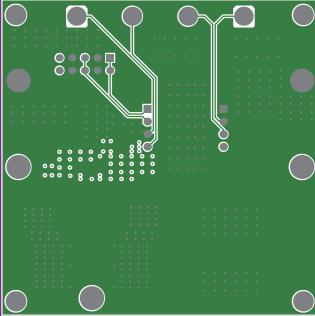


Figure 1: Top Layer

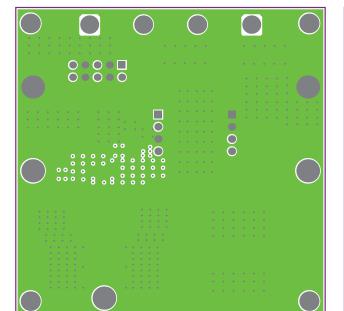


Figure 2: Mid Layer 1

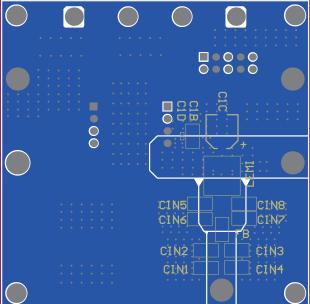


Figure 3: Mid Layer 2

Figure 4: Bottom Layer

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