EVM3695-25-RF-SK-00A

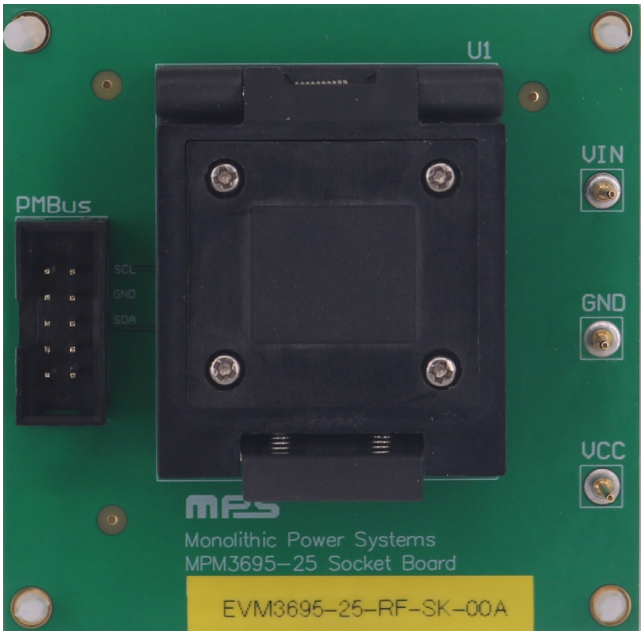
16V, 20A, Scalable DC/DC Power Module with PMBus Configurable Evaluation Board

DESCRIPTION

The EVM3695-25-RF-SK-00A programming evaluation board is designed to configure the MPM3695-25, a scalable, fully integrated power module with a PMBus interface and multiple-time programmable (MTP) memory. The MPM3695-25 offers a complete power solution that achieves up to 25A of peak output current (I_{OUT}), with excellent load and line regulation across a wide input voltage (V_{IN}) range. It also operates with high efficiency across a wide load range.

The MPM3695-25 is available in a QFN-59 (10mmx12mmx4mm) package.

EVM3695-25-RF-SK-00A PROGRAMMING EVALUATION BOARD



LxWxH (64mmx64mmx1.6mm)

Board Number	MPS IC Number
EVM3695-25-RF-SK-00A	MPM3695GRF-25

QUICK START GUIDE

The EVM3695-25-RF-SK-00A programming evaluation board is simple to set up and use to evaluate the MPM3695-25's performance.

1. Carefully place the MPM3695-25 in the evaluation board, paying attention to the pin 1 indicator on the chip and socket.
2. Connect the ribbon cable to the evaluation board and the EVKT-USBI2C-02 communication interface.
3. Connect the communication interface to the PC using the USB cable.
4. Preset the power supply (V_{IN}) between 8V and 16V, then turn off the power supply.
5. Connect the power supply terminals to:
   a. Positive (+): VIN
   b. Negative (-): GND
6. After making the connections, turn on the power supply.
7. Download the GUI installation file (Virtual Bench Pro 4.0), which is available on the MPS website.
8. Install the Virtual Bench Pro 4.0.
9. Open Virtual Bench Pro 4.0 to scan the connected power modules.
10. The Register Control menu should appear in the middle panel, and the values stored in the module registers should be read automatically.
11. Change the register values to their required value. A valid input must be entered; otherwise, an alert appears and the entered value is not accepted.
12. Click the "Write RAM" button to write values to the register.
13. Click the "Write ROM" button to save values permanently.
14. Turn off the power supply and remove the chip.

Figure 1 shows the proper hardware set-up.

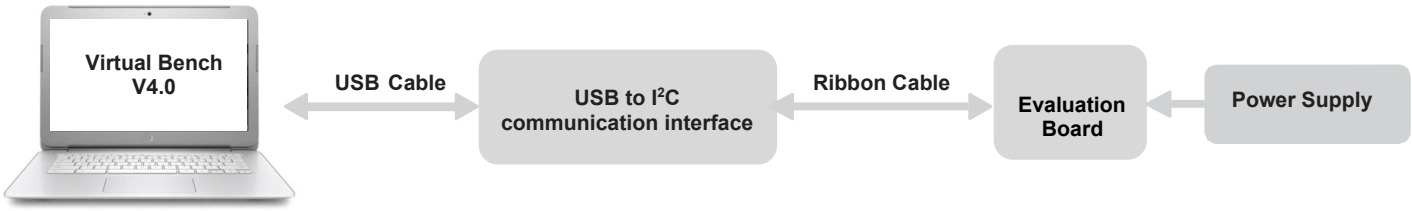


Figure 1: Hardware Set-Up

EVALUATION BOARD SCHEMATIC

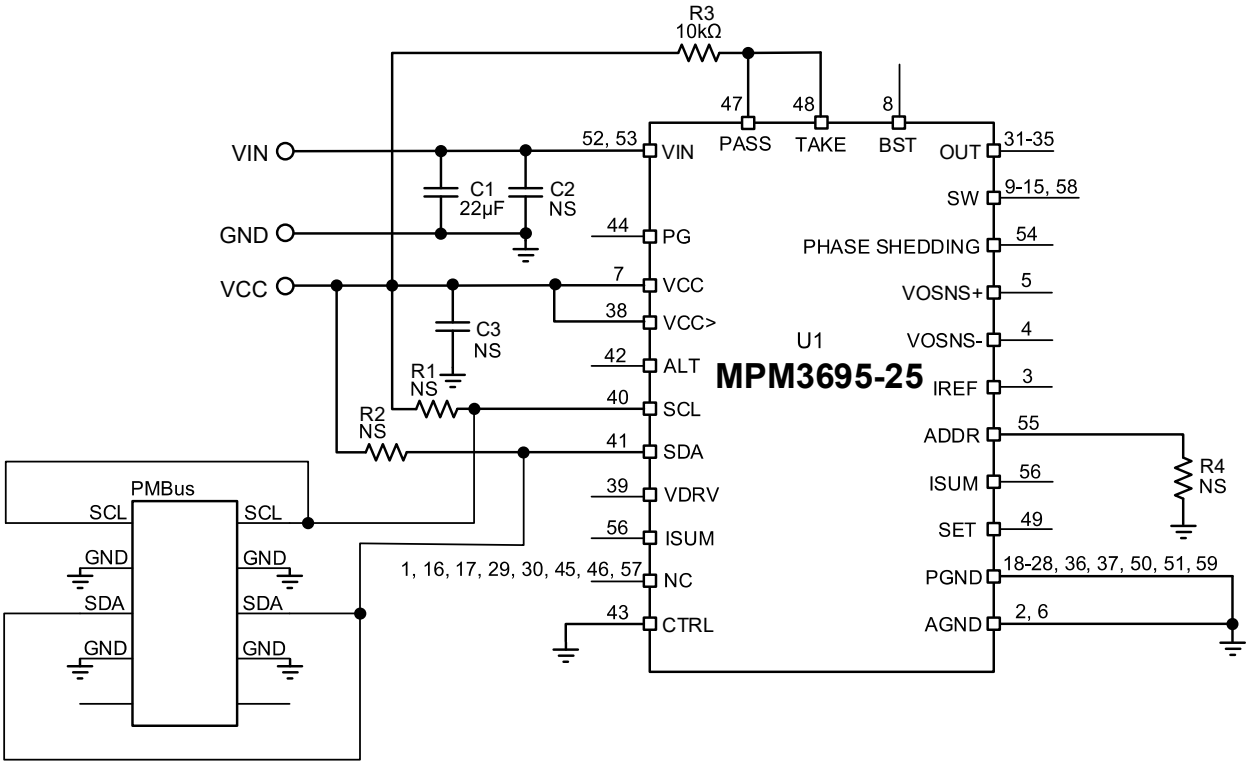


Figure 2: Evaluation Board Schematic

EVM3695-25-RF-SK-00A BILL OF MATERIALS

Qty	Ref	Value	Description	Package	Manufacturer	Manufacturer PN
1	C1	22μF	Ceramic capacitor, 25V, X5R	0805	Murata	GRM21BR61E226ME44L
1	R3	10kΩ	Resistor, 1%	0603	Yageo	RC0603FR-0710KL
1	PMBUS	2.54mm	Connector header through-hole, 2-row, 10-pin	DIP	Wurth	612010235121
3	VIN, GND, VCC	1mm	Copper pin, φ = 1mm	SIP	Custom	
1	U1	Socket	MPM3695-25 socket	42mmx 44mm	Suzhou Shangshi Semiconductor	SST-59-1012
1	U1	MPM3695-25	16V, 20A, scalable DC/DC power module with PMBus	QFN-59 (10mmx 12mmx 4mm)	MPS	MPM3695GRF-25

PCB LAYOUT

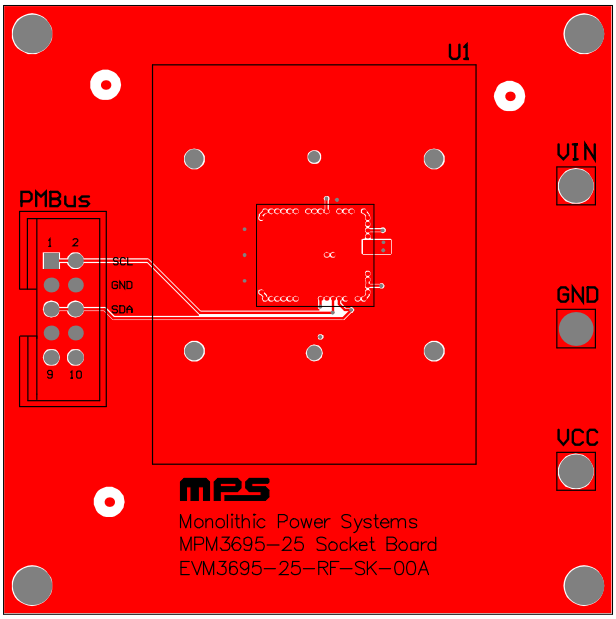


Figure 3: Top Layer

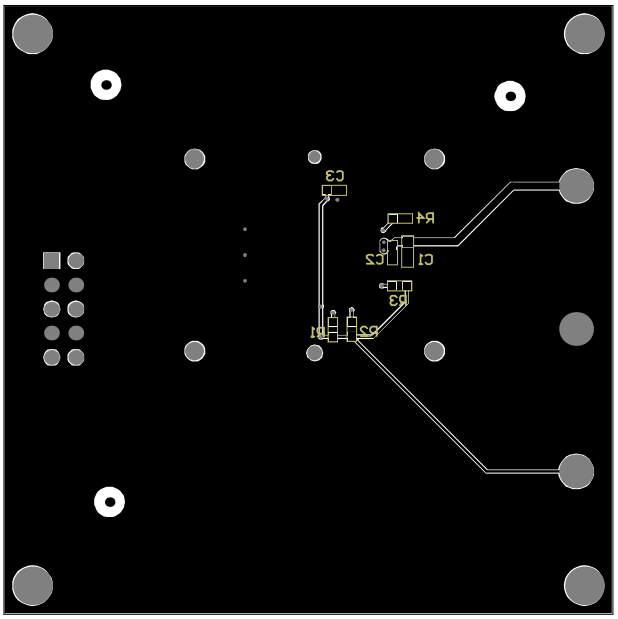


Figure 4: Bottom Layer

REVISION HISTORY

Revision #	Revision Date	Description	Pages Updated
1.0	4/6/2022	Initial Release	-