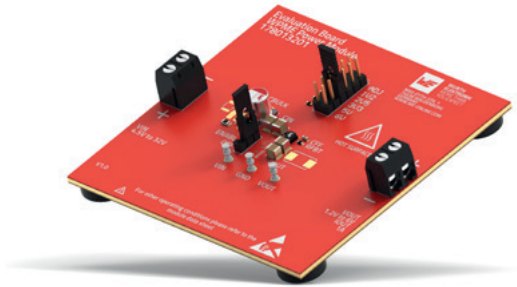
WÜRTH ELEKTRONIK
MORE THAN YOU EXPECT



QUICK START GUIDE

MagI³C Power Module Evaluation Board for 171013201 LGA-10

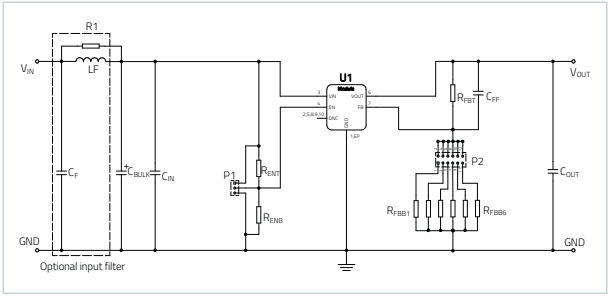
Evaluation Board 178013201

Version 1.0

SCHEMATIC

Features 171013201

- Compliant to EN 55032 class B (CISPR 32) (with optional filter assembled)
- Fixed Soft Start
- Fixed switching Frequency
- Programmable UVLO
- Short-circuit protection
- Ambient temp. range: -40 °C – +85 °C



The additional aluminum electrolytic capacitor C_{BULK} is only for evaluation board protection purposes. It is mounted at the termination of the supply line and provides slight damping of possible oscillations of the series resonance circuit represented by the inductance of the supply line and the input capacitance. It is not essential for operation.

For accurate V_{IN} and V_{OUT} voltage measurements it is recommended to measure directly at the test pins placed beside the input and output capacitors C_{IN} and C_{OUT}. It is **not** recommended to use this evaluation board with input and output wire lengths longer than 1 m.

For the datasheet of the power module visit us at: **we-online.com/magic-vdmm**

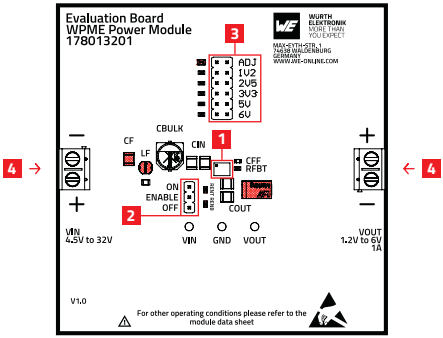
This product is highly sensitive to electrostatic discharge (ESD). As such, always use proper ESD precautions when handling. Failing to follow the aforementioned recommendations can result in severe damage to the part.

WARNING! – Read the included TERMS OF USE FOR EVALUATION BOARDS, KITS OT MODULES before operation!

Ref. Des.	Quantity	Description	Order Code
U1	1	WPME-VDMM MagI³C Power Module LGA-10	**171013201**
C_{BULK}	1	WCAP-ASLI Aluminum Electrolytic Capacitor 50 V 47 µF	**865080645012**
C_{IN}	2	WCAP-CSGP MLCC 50 V, X7R, 1210, 10 µF	**885012209073**
C_{FF}	1	WCAP-CSGP MLCC 25 V, NP0, 0603, 100 pF	**885012006038**
C_{OUT}	2	WCAP-CSGP MLCC 50 V, X7R, 1210, 10 µF	**885012209073**
C_F	1	WCAP-CSGP MLCC 50 V, X7R, 1210, 10 µF (optional filter Capacitor)	**885012209073**
L_F	1	WE-PD2 Power Inductor 3521, 1 µH (optional filter Inductor)	**7447732010**
R_{FBT}		WRIS-RSKS Thick Film Resistor 100 mW, 0603, 100 kΩ	**560112116004**
R_{FBB}		Set by jumper 15 kΩ 0603 for V_{OUT} = 6 V 20 kΩ 0603 for V_{OUT} = 5 V 33 kΩ 0603 for V_{OUT} = 3.3 V 47 kΩ 0603 for V_{OUT} = 2.5 V 200 kΩ 0603 for V_{OUT} = 1.8 V To be soldered for adjustable output voltage $V_{OUT} = V_{REF} \left(\frac{R_{FBT}}{R_{FBB}} + 1 \right)$	**560112120004** **560112116060** **560112116025** **560112116030** **560112116015**
R_{ENT}		To be soldered for setting UVLO with $V_{UVLO(EXT.)}$ = 1.4 V $V_{UVLO(EXT.)} = V_{UVLO} \left(\frac{R_{ENT}}{R_{ENB}} + 1 \right)$	
R_{ENB}			
P1		WR-PHD Jumper for EN connection to either VIN (device enabled) or GND (device disabled)	**61300311121**
P2		WR-PHD Jumper for output voltage selection. Only one resistor should be selected at a time	**61301221121**

For Layout, Gerber and Step files visit us on www.we-online.com/en/components/products/MAGIC-VDMM

OVERVIEW



Description

V_{IN} 4.5 – 32 V
V_{OUT} 1.2 – 6 V
I_{OUT} 1 A

1. VDMM Variable Step Down MicroModule LGA-10
2. Jumpers (P1) for ENABLE & shut off the Module
3. Jumpers (P2) to set predefined output voltage V_{OUT}
4. Terminal block screw connectors for V_{IN} and V_{OUT}

Absolute maximum ratings Caution:
Exceeding the abs. max. values given in the datasheet may affect the device negatively and may cause permanent damage.

This evaluation board is intended to be operated in a research and development environment under the supervision of qualified technicians and engineers who are trained and experienced in the safe use of electronics. This evaluation board was designed and tested according to CISPR32 Class B standards under Würth Elektronik laboratory test conditions, as indicated in the data sheet of the corresponding power module. Operation in other test setups may cause unintended electrical behavior and exceed the stated performance and limits imposed by the CISPR32 Class B standards. This evaluation board is not intended for usage in final applications. This evaluation board is not intended for resale.

Würth Elektronik eiSos GmbH & Co. KG
Max-Eyth-Straße 1 · 74638 Waldenburg

DIE NEUE ART DER PRINZEN | 178013201BR.082611.REV