



Quick Start Guide

Mag1³C Power Module Evaluation Board
for 171930601 LGA8-EP

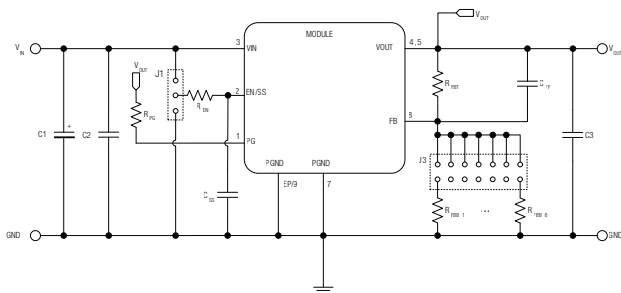


Evaluation Board
178930601

Version 1.0

Schematic

Features



The additional aluminum polymer capacitor C1 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. If the ambient temperature is $> 85^{\circ}\text{C}$ the use of two MLCCs needs to be considered (see part list p. 3 " $^{\circ}\text{C}3$ (up to 105°C)").

For accurate V_{IN} and V_{OUT} voltage measurements it is recommended to measure directly at the input and output capacitors C2 and C3.

It is **not** recommended to use this evaluation board with input and output wire lengths longer than 1 m.

For the data sheet of the power module visit us at: <https://katalog.we-online.com/en/pm/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! – Before operating read the attached IMPORTANT NOTICE document!



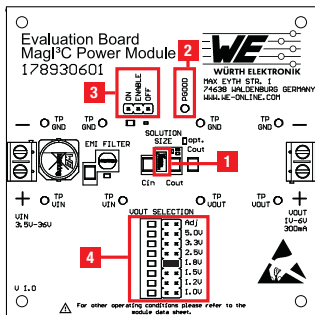
Ref.Des.	Description (Order Code)
U1	Mag ¹ C Power Module (171930601)
C1	Aluminum Polymer Capacitor 220 µF/50 V (865060657012)
C2	Ceramic chip capacitor 4.7 µF/50 V X7R, 1210 (885012209048)
C3 (up to 85 °C)	Ceramic chip capacitor 47 µF/16 V X5R, 1210 (885012109011)
C3 (up to 105 °C)	2x Ceramic chip capacitor 22 µF/10 V X7R, 1210 (885012209006)
CFF	Ceramic chip capacitor 220 pF/10 V NP0, 0402 (885012005015)
CSS	Ceramic chip capacitor 470 nF/50 V X7R, 0805 (885012207102)
REN	422 kΩ
RPG	100 kΩ
RFBT	64.9 kΩ

Ref.Des.	Description (Order Code)
RFBB	Open for $V_{OUT} = 0.75V$
	191 kΩ for $V_{OUT} = 1.0 V$
	107 kΩ for $V_{OUT} = 1.2 V$
	64.9 kΩ for $V_{OUT} = 1.5 V$
	46.4 kΩ for $V_{OUT} = 1.8 V$ (default setting)
	27.4 kΩ for $V_{OUT} = 2.5 V$
	19.1 kΩ for $V_{OUT} = 3.3 V$
	11.3 kΩ for $V_{OUT} = 5 V$
	To be soldered for adjustable output voltage
	$R_{FBB} = \frac{R_{FBT}}{\frac{V_{OUT}}{V_{REF}} - 1}$
J1	Jumper for EN connection to either V_{IN} (device enabled) or GND (device disabled) (61300311121)
J2	Jumper for output voltage selection. Only one resistor should be selected at a time (61301621121)



For Layout, Gerber and STP files visit us on:
www.we-online.com/magic-vdmm

Overview



Description

V_{IN} 3.5 - 36 V

V_{OUT} 1 - 6 V

I_{OUT} 0.3 A

- 1 VDMM Variable Step Down MicroModule LGA8-EP
 - 2 Connection pin for power good signal
 - 3 Jumpers (J2) for ENABLE & shut off the Module
 - 4 Jumpers to set predefined output voltage V_{OUT}
 - 5 Terminal block screw connectors for V_{IN} and V_{OUT}
- Default jumper position

Absolute maximum ratings

Caution: Exceeding the abs. max. values given in the data sheet 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.

