

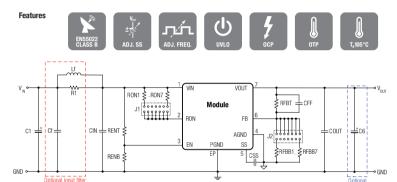
Quick Start Guide



Evaluation Board 178030601

Version 3.1

Schematic



The additional aluminium electrolytic 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. The switching frequency of the module can be additsted by changing the position of jumper J1.

For accurate V_N and V_{OUT} voltage measurements it is recommended to measure directly at the input and output capacitors CIN and COUT. 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: https://www.we-online.de/katalog/de/MAGIC-VDRM



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	Magl ³ C Power Module (171030601)	
C1	Aluminum electrolytic capacitor 100 μF/50V (860010674014)	
CIN	2 x Ceramic chip capacitor 10 µF/50V	
CSS	Ceramic chip capacitor 4.7 nF/50V (885012007067)	
CFF	Ceramic chip capacitor 22 nF/50V (885012207094)	
COUT	2 x Ceramic chip capacitor 47 µF/10V	
C6	Through hole electrolytic capacitor (optional)	
Cf	Ceramic chip capacitor 1 µF/50V (optional) (885012209047)	
Lf	Filter inductor, 10 µH, PD2 (optional) (74477410)	
R1	0 Ω resistor bridge	
RENT	not mounted	
RENB	not mounted	
RFBT	10kΩ	
J1	Jumper for switching frequency selection. Only one resistor should be selected at a time (61301421121)	
J2	Jumper for output voltage selection. Only one resistor should be selected at a time (61301421121)	

Ref.Des.	Des	cription (Order Code)
RFBB	Set by jumper	1.54 kΩ for $V_{OUT} = 6V$
		1.87 kΩ for $V_{OUT} = 5V$ (default setting)
		$3.16 \text{k}\Omega$ for $V_{\text{OUT}} = 3.3 \text{V}$
		$4.64 \mathrm{k}\Omega$ for $V_{OUT} = 2.5 \mathrm{V}$
		$7.87 \mathrm{k}\Omega$ for $V_{OUT} = 1.8 \mathrm{V}$
		$20 \mathrm{k}\Omega$ for $V_{\mathrm{OUT}} = 1.2 \mathrm{V}$
		To be soldered for adjustable output
		voltage R _{FBT}
		$R_{FB8} = \frac{V_{OUT}}{0.8V} -1$
RON	Set by jumper	90.9 kΩ for $V_{OUT} = 6V$
		75 kΩ for V _{OUT} = 5V (default setting)
		49.9 kΩ for $V_{OUT} = 3.3$ V
		$37.4 \text{k}\Omega \text{ for } V_{\text{OUT}} = 2.5 \text{V}$
		$27.4 \text{k}\Omega$ for $V_{\text{OUT}} = 1.8 \text{V}$
		$18.2 \text{k}\Omega$ for $V_{\text{OUT}} = 1.2 \text{V}$
		To be soldered for adjustable frequency
		$R_{ON} = \frac{V_{OUT}}{1.3 \cdot 10^{-10} \cdot f_{\text{SW(ccm)}^*}}$

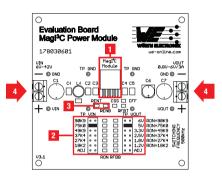
^{*}Switching frequency in continuous conduction mode



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

Overview





Description

VIN 6-42V Vour 0.8-6V

Inux 3A

- 1 VDRM Variable Step Down Regulator Module T0263-7FP
- 2 Jumpers to set predefined output voltage Volt and fsw
- 3 Resistors to set UVLO level
- 4 Terminal block screw connectors for VIN and VOLIT
- Default jumper position

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 CISPR22 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 CISPR22 Class B standards. This evaluation board is not intended for usage in final applications. This evaluation board is not intended for resale

