DS-RVP001-RMR-028-RVS002-0505-1

1W ◊ Unregulated Isolated Output ◊ 1:1 Input

RECOM
DC/DC Converter

FEATURES

- Isolation voltage 5kVAC/min
- Operating temperature: -40°C to +85°C
- Short circuit protection
- Castellated connections



Dimensions (LxWxH): 33.02 x 15.24 x 8.6mm (1.3 x 0.6 x 0.34 inch)
2.60g (0.006lbs)

DESCRIPTION

This solution is composed of RVP001 and isolation transformer RMR-028, combined with necessary resistive and capacitive components as well as RVS002 to achieve an isolated non-regulated power supply with an input of 5V ± 10% and an output of 5V/200mA. The primary and secondary side isolation withstand voltage is not less than 5000VAC, providing long-term short-circuit protection and self-recovery. It is mainly applied in distributed power supply systems on circuit boards where a set of isolated power supply is needed to achieve safety and/or anti-interference.

SELECTION GUIDE

Part Number	Input Voltage [VDC]	Output Voltage [VDC]	Output Current max. [mA]	Efficiency typ. [%]	max. Capacitive[1] [µF]
DS-RVP001-RMR-028-RVS002-0505-1	5	5	200	80	6800

Note 1: Max. capacitive load is tested at nominal input voltage and full load

BASIC CHARACTERISTIC (measured @ T_{AMB}= 25°C, nominal Input and full load after warm-up time unless otherwise noted)

Parameter	Condition	Min.	Typ.	Max.
Input Voltage Range	nom.V_{IN}=5V±10%	4.5VDC	5VDC	5.5VDC
Minimum Load		0%		
Internal Operating Frequency			340kHz	
Output Ripple and Noise	20MHz BW			100mVp-p

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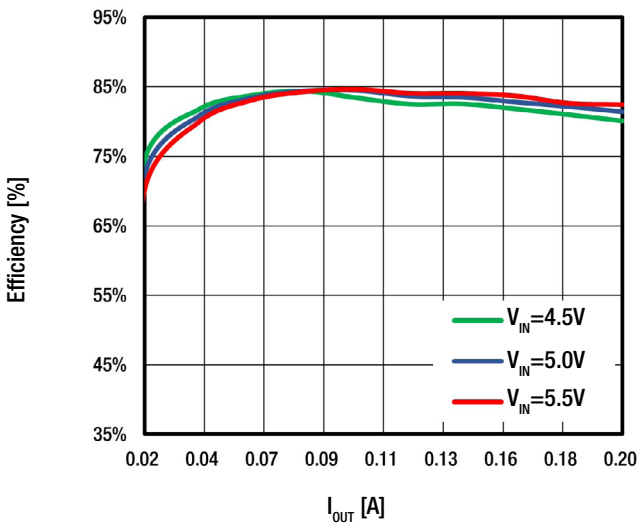
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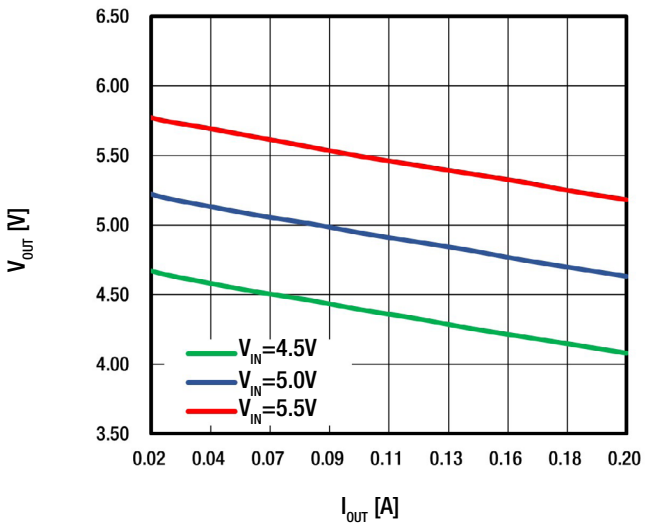
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SPECIFICATIONS (measured @ T_{AMB}= 25°C, nominal Input and full load after warm-up time unless otherwise noted)

Typical Effiency vs. Output Current Curve

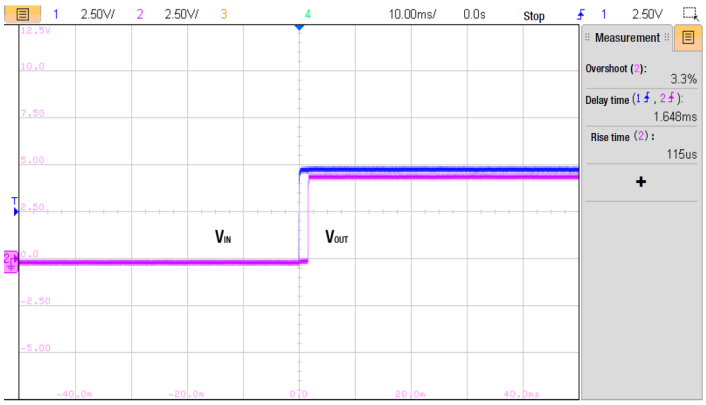


Output Voltage vs. Output Current

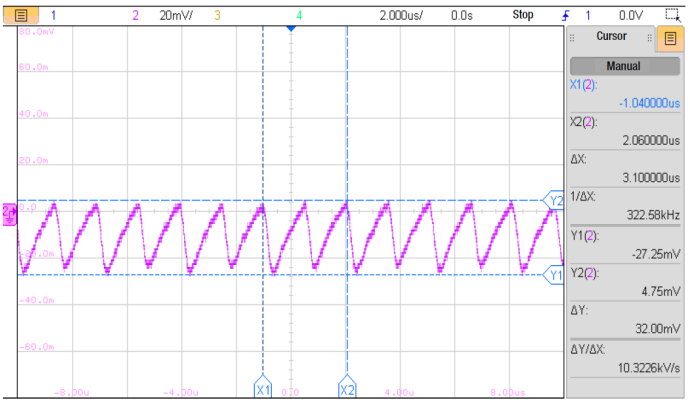


Typical Waveform

V_{IN} =5V, Full load startup waveform



V_{IN} =5V, Full-load output voltage ripple waveform



REGULATIONS

Parameter	Condition	Values
Output Accuracy		±8.0% Typ.
Line Regulation	low line to high line, full load	1.1% of 1.2%V_{IN} typ.
Load Regulation	10% to 100% load, V_{OUT}	±13.0% Typ.

PROTECTION AND ISOLATION CAPABILITIES

Short Circuit Protection		continuous, automatic recovery
Isolation Voltage	tested for 1 minute	5kVAC min.
Insulation Grade		basic

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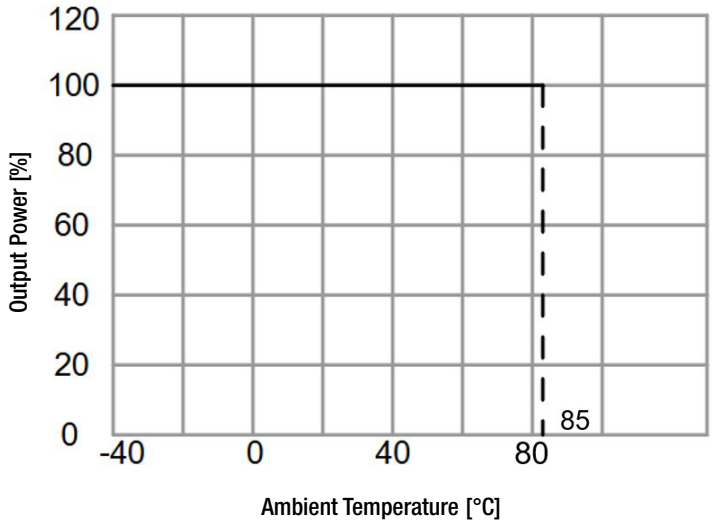
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ENVIRONMENT

Parameter	Condition	Values
Operating Temperature Range	full load	-40°C to +85°C

Derating Graph

(@ Chamber and natural convection 0.1m/s)

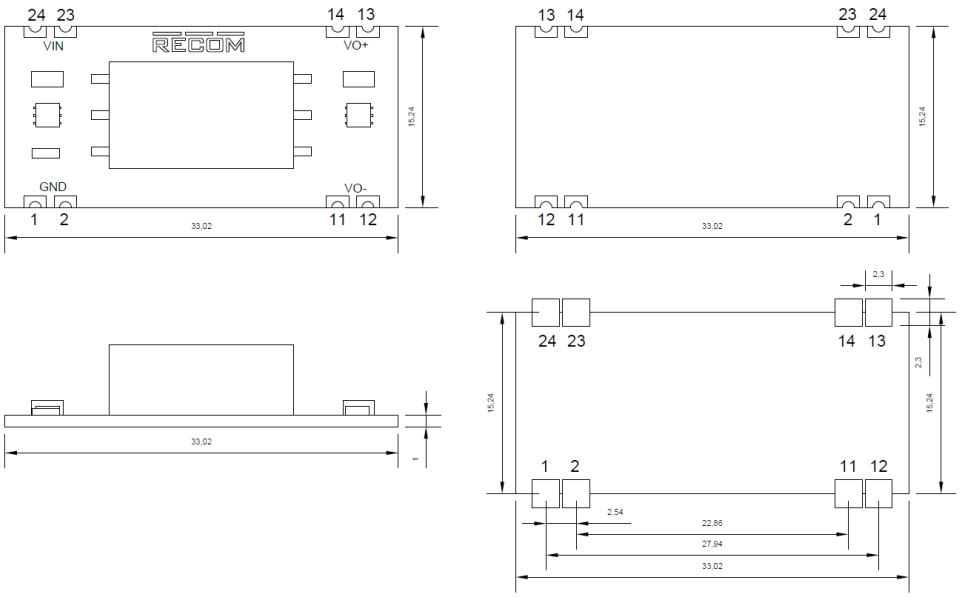


DIMENSION & PHYSICAL CHARACTERISTICS

Parameter	Type	Values
Material	PCB	FR4, (UL94 V-0)
Dimension (LxWxH)		33.02 x 15.24 x 8.6 mm
Weight		2.60g typ. (0.003 lbs)

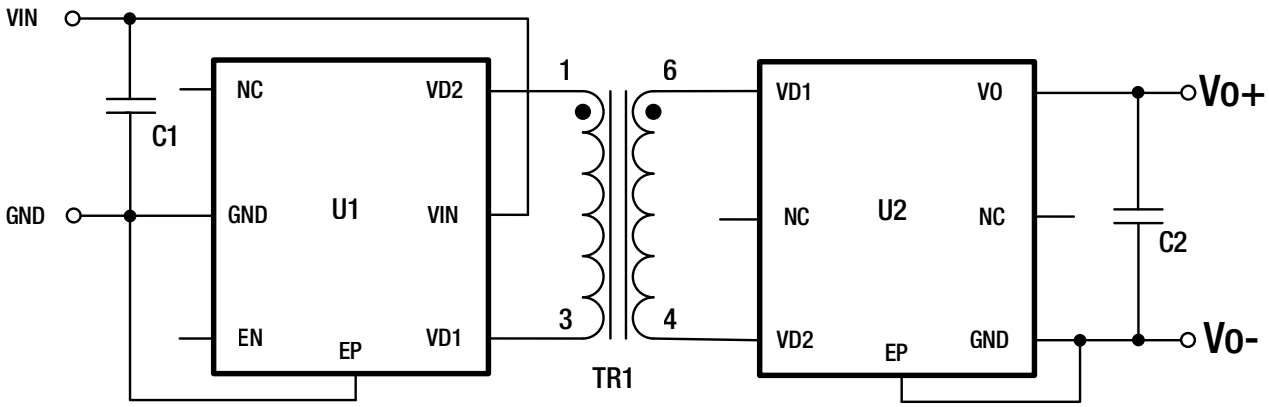
Dimension Drawing (mm)

Pinning Information	
Pin #	Single
1,2	GND
11,12	V_{OUT-}
13,14	V_{OUT+}
23,24	V_{IN}



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SCHEMATIC



BOM

Component Designator	Description	Package	Manufacturer Part Number	Manufacturer
C1	1uF/50V-X7R	0805	CC0805KKX7R9BB105	YAGEO
C2	4.7uF/50V-X5R	0805	CC0805KKX7R9BB105	YAGEO
U1	-	DFN2x2	RVP001	RECOM
U2	-	DFN2x2	RVS002	RECOM
TR1	-	SMD	RMR-028	RECOM

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