Technical Data Sheet

DS-RVP003-RMR-005-1205-1

1W ◊ Unregulated Isolated Output ◊ 1:1 Input

RECOM
DC/DC Converter

FEATURES

- Isolation voltage 1.5kVDC/min
- Operating temperature: -40°C to +85°C
- Short circuit protection
- Castellated connections



Dimensions (LxWxH): 25.4 x 15.24 x 4.8 mm(1.0 x 0.60 x 0.16 inch)
1.12g (0.002lbs)

DESCRIPTION

This solution is composed of RVP003 and isolation transformer RMR-005, combined with necessary rectifier diodes and resistive-capacitive components to achieve an isolated non-regulated power supply with an input of 12V ± 10% and an output of 5V/200mA. The primary and secondary isolation withstand voltage is not less than 1500VDC, and it can provide 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 anti-interference.

SELECTION GUIDE

Part Number	Input Voltage [VDC]	Output Voltage [VDC]	Output Current max. [mA]	Efficiency typ. [%]	max. Capacitive[1] [µF]
DS-RVP003-RMR-005-1205-1	12	5	200	87	6800

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

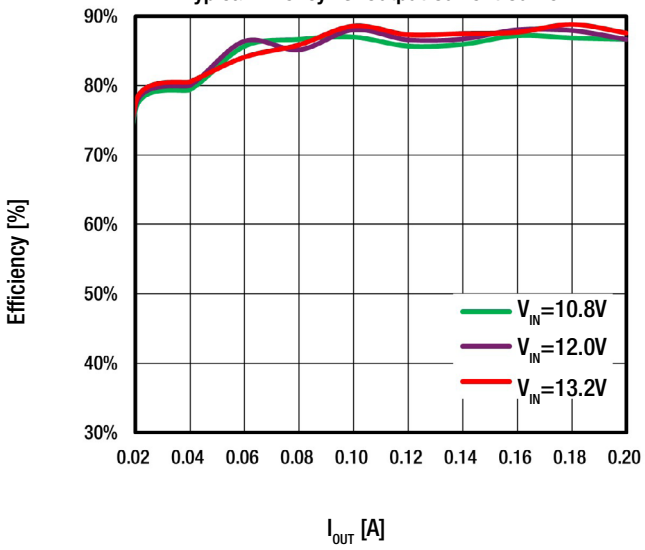
BASIC CHARACTERISTIC (measured @ T_{AMB}= 25°C, nominal Input and full load after warm-up time unless otherwise noted)

Parameter	Condition	Min.	Typ.	Max.
Input Voltage Range	nom.V_{IN}=12V±10%	10.8VDC	12VDC	13.2VDC
Minimum Load		0%		
Internal Operating Frequency			350kHz	
Output Ripple and Noise	20MHz BW			100mVp-p

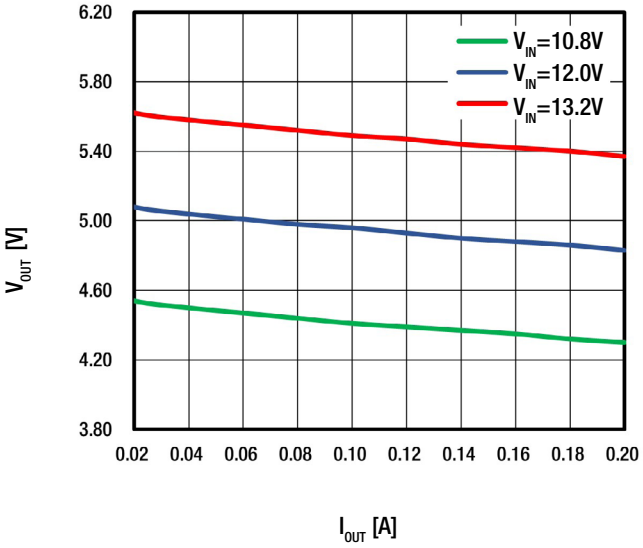
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SPECIFICATIONS (measured @ T_{AMB}= 25°C, nominal Input and full load after warm-up time unless otherwise noted)

Typical Effiency vs. Output Current Curve

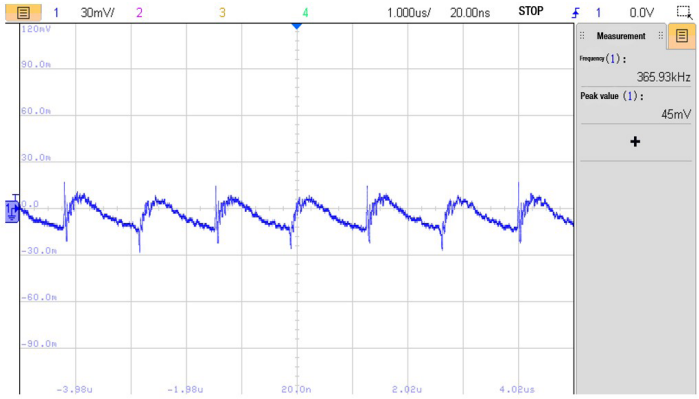


Typical Output Voltage vs. Output Current Curve

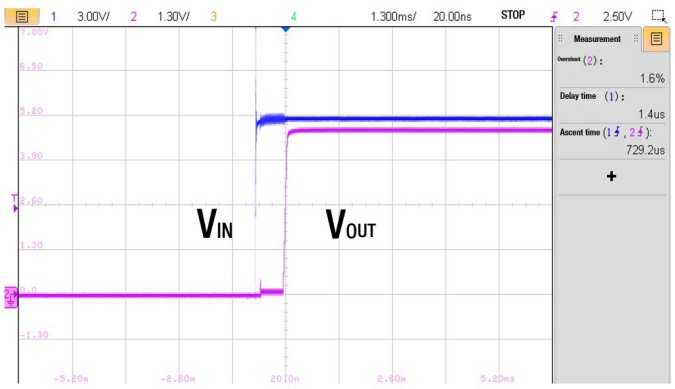


Typical Waveform

V_{IN}=12V, Full-load output voltage ripple waveform



V_{IN} =12V, Full-load startup waveform



REGULATIONS

Parameter	Condition	Values
Output Accuracy		±4.0% 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}	±6.0% Typ.

PROTECTION AND ISOLATION CAPABILITIES

Short Circuit Protection		continuous, automatic recovery
Isolation Voltage	tested for 1 minute	1.5kVDC min.
Insulation Grade		functional

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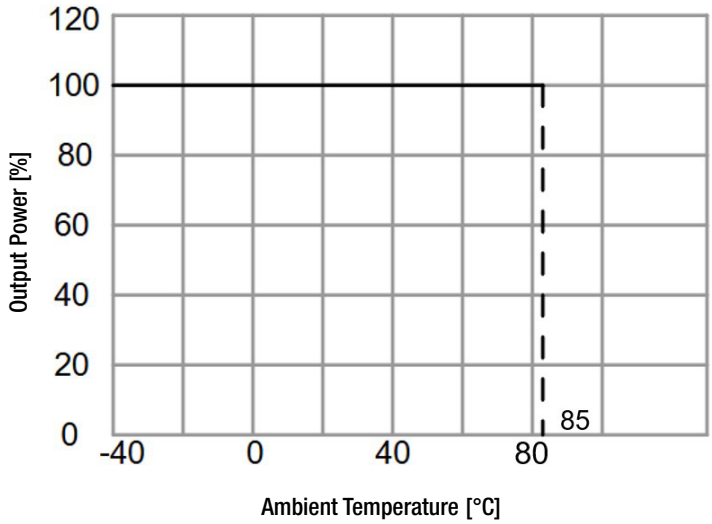
RECOM DC/DC Converter

ENVIRONMENT

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

Derating Graph

(@ Chamber and natural convection 0.1m/s)

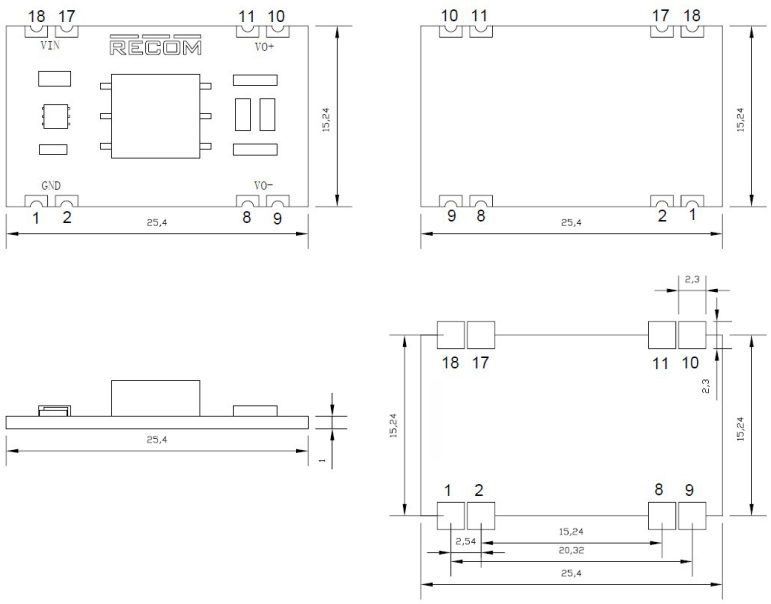


DIMENSION & PHYSICAL CHARACTERISTICS

Parameter	Type	Values
Material	PCB	FR4, (UL94 V-0)
Dimension (LxWxH)		25.4x15.24 x4.8 mm
Weight		1.12g (0.002 lbs)

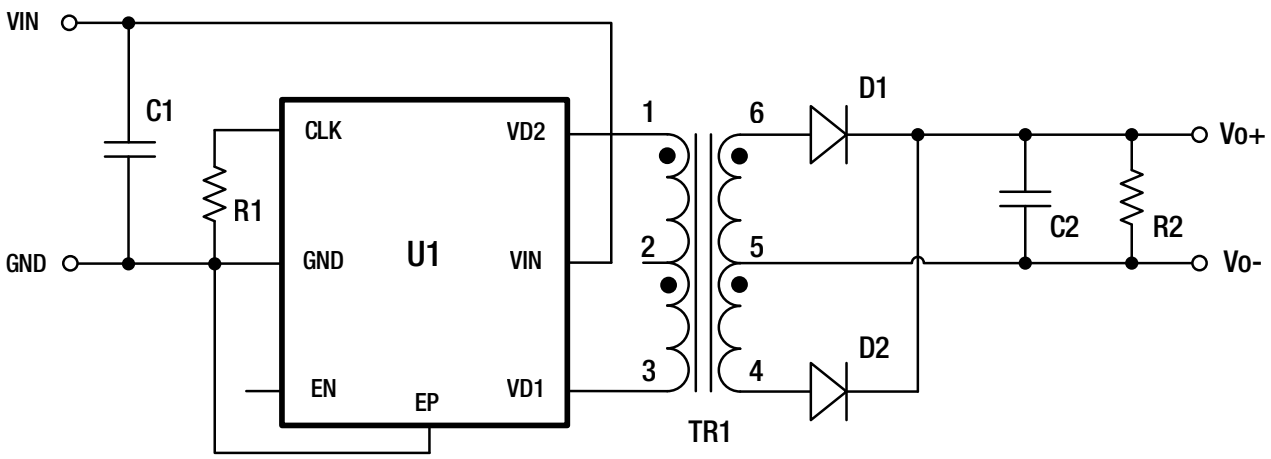
Dimension Drawing (mm)

Pinning Information	
Pin #	Single
1,2	GND
8,9	V_{OUT-}
10,11	V_{OUT+}
17,18	V_{IN}



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SCHEMATIC



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Component Designator	Description	Package	Manufacturer Part Number	Manufacturer
C1	1uF/50V-X7R	0805	CC0805KKX7R9BB105	YAGEO
C2	4.7uF/50V-X5R	0805	CC0805KKX5R9BB475	YAGEO
R1	0Ω±1%	0603	RC0603FR-070RL	YAGEO
R2	4.7KΩ±1%	0805	0805W8F4701T5E	UNI-ROYAL
D1,D2	40V/0.5A	SOD-323	B0540WS	YANGJIE
U1	-	DFN2x2	RVP003	RECOM
TR1	-	SMD	RMR-005	RECOM

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