Features

Regulated Converters

- On/Off Pin
- 1kVDC Isolation
- UL94V-O Package Material
- Optional Continuous Short Circuit Protected
- Internal linear regulator
- Efficiency to 70 %
- Adjustable Output Voltage

Description

The RY series DC/DC converter is a low cost general purpose isolated converter with a built-in linear regulator to give a regulated, load-independent output. It is available with single or dual outputs. A useful feature is the CTRL pin on the single output version which allows the converter to be adjusted or controlled by an external enable signal.

Selection Guide							
Part Number SIP 7	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency (%)	Max Capacitive Load ⁽¹⁾		
RY-xx05S	5, 9, 12, 15, 24	5	200	58-60	1200µF		
RY-xx09S	5, 9, 12, 15, 24	9	111	56-62	1200µF		
RY-xx12S	5, 9, 12, 15, 24	12	84	60-66	680µF		
RY-xx15S	5, 9, 12, 15, 24	15	66	60-66	680µF		
RY-xx24S	5, 9, 12, 15, 24	24	42	60-68	220µF		
RY-xx05D	5, 9, 12, 15, 24	±5	±100	50-58	±470µF		
RY-xx09D	5, 9, 12, 15, 24	±9	±55	52-60	±470µF		
RY-xx12D	5, 9, 12, 15, 24	±12	±42	58-68	±330µF		
RY-xx15D	5, 9, 12, 15, 24	±15	±33	62-68	±330µF		
RY-xx24D	5, 9, 12, 15, 24	±24	±21	64-70	±100µF		

xx = Input Voltage. Other input and output voltage combinations available on request.

Specifications (measured at $T_A = 25$ °C, nominal input voltage, full load and after warm-up) Input Voltage Range ±5% Output Voltage Accuracy ±5% Line Voltage Regulation ±1% max. Load Voltage Regulation (10% to 100% full load) ±1% max. Minimum Load 10% (2) _____ 100mVp-p max. Output Ripple and Noise (20MHz limited) Operating Frequency 30kHz min. / 50kHz typ. / 88kHz max. Efficiency at Full Load 54% min. / 60% typ. Isolation Voltage (tested for 1 second) 1000VDC (rated for 1 minute**) 1500VAC / 60Hz 30pF min. / 150pF max. Isolation Capacitance Single output types 40pF min. / 72pF max. Dual output types Isolation Resistance 10 G Ω min. Short Circuit Protection 1 Second P-Suffix Continuous -40°C to +70°C (see Graph) Operating Temperature Range (free air convection) Storage Temperature Range -55°C to +125°C Relative Humidity 95% RH Package Weight RY Single & Dual output types 2.8g Packing Quantity 25 pcs per Tube MTBF (+25°C) using MIL-HDBK 217F 924 x 103 hours Detailed Information see (+70°C) Application Notes chapter "MTBF" using MIL-HDBK 217F 135 x 103 hours Certifications Report: SPCLVD1109103 **EN General Safety** EN60950-1:2006 + A12:2011

continued on next page

ECONOLINE

DC/DC-Converter with 3 year Warranty



1 Watt SIP7 Single & Dual Output

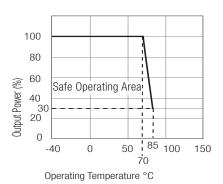


EN-60950-1 Certified



Derating-Graph

(Ambient Temperature)



**Any data referred to in this datasheet are of indicative nature and based on our practical experience only. For further details, please refer to our Application Notes.

Refer to Application Notes

^{*} add Suffix "P" for Continuous Short Circuit Protection, e.g. RY-0505S/P, RY-0505D/P

ECONOLINE

DC/DC-Converter



Specifications (measured at $T_A = 25$ °C, nominal input voltage, full load and after warm-up)

Notes

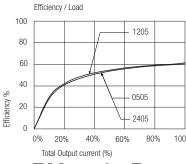
Note 1: Maximum capacitive load is defined as the capacitive load that will allow start up in under 1 second without damage to the converter

Note 2: The RY series requires a minimum of 10% load on the output to maintain specified regulation. Operating under no-load conditions

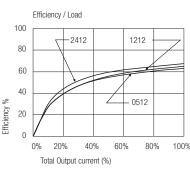
will not damage these devices; however, they may not meet all listed specifications.

Typical Characteristics

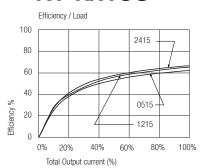
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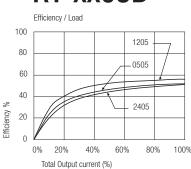
RY-xx12S



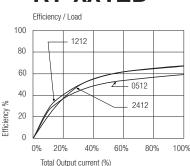
RY-xx15S



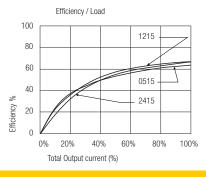
RY-xx05D



RY-xx12D

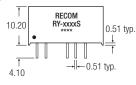


RY-xx15D



Package Style and Pinning (mm)

SIP7 Package





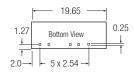


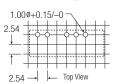


Pin Connections

Pin#	Single	Dual
1	+Vin	+Vin
2	–Vin	–Vin
4	-Vout	-Vout
5	CTRL	Com
6	+Vout	+Vout

Recommended	Footprint	Details
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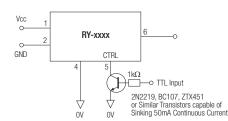




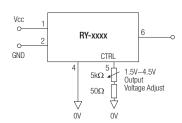
XX.X ± 0.5 mm XX.XX ± 0.25 mm

Typical On/Off Control and Adjustable Output Applica	itione
Typical On/On Control and Adjustable Output Applica	เนบทอ

On/Off Control



Adjustable Output



The product information and specifications are subject to change without prior notice. RECOM products are not authorized for use in safety-critical applications (such as life support) without RECOM's explicit written consent. A safety-critical application is defined as an application where a failure of a RECOM product may reasonably be expected to endanger or cause loss of life, inflict bodily harm or damage property. The buyer shall indemnify and hold harmless RECOM, its affiliated companies and its representatives against any damage claims in connection with the unauthorized use of RECOM products in such safety-critical applications.