

Features

Regulated Converters

- On/Off Pin
- 1kVDC Isolation
- UL94V-0 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.

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

Specifications (measured at $T_A = 25^\circ\text{C}$, 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	0%	
Output Ripple and Noise (20MHz limited)	100mVp-p max.	
Operating Frequency	30kHz min. / 50kHz typ. / 88kHz max.	
Efficiency at Full Load	54% min. / 60% typ.	
Isolation Voltage	(tested for 1 second) (rated for 1 minute)	1000VDC 1500VAC / 60Hz
Isolation Capacitance	Single output types Dual output types	30pF min. / 150pF max. 40pF min. / 72pF max.
Isolation Resistance	10 GΩ min.	
Short Circuit Protection	1 Second	
P-Suffix	Continuous	
Operating Temperature Range (free air convection)	-40°C to +70°C (see Graph)	
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)	} Detailed Information see Application Notes chapter "MTBF"	using MIL-HDBK 217F 924 x 10³ hours
(+70°C)		using MIL-HDBK 217F 135 x 10³ hours

ECONOLINE

DC/DC-Converter

with 3 year Warranty



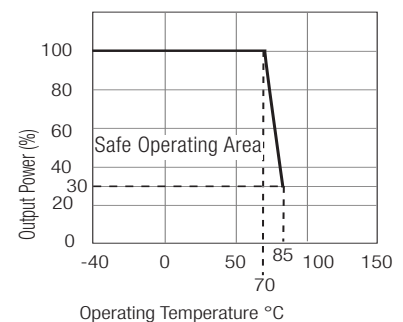
1 Watt SIP7 Single & Dual Output



EN-60950-1 Certified

RY

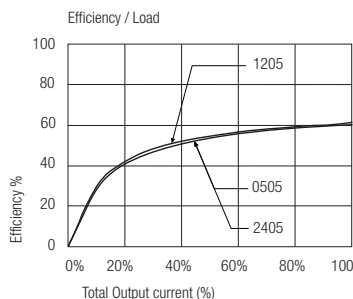
Derating-Graph (Ambient Temperature)



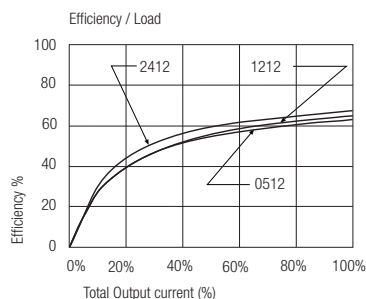
Refer to Application Notes

Typical Characteristics

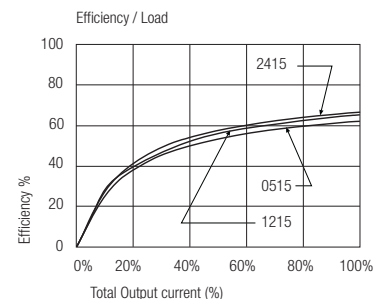
RY-xx05S



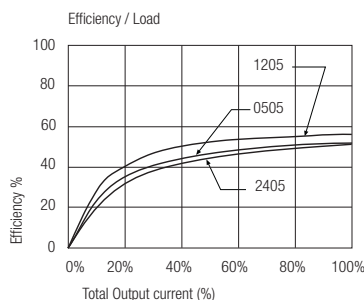
RY-xx12S



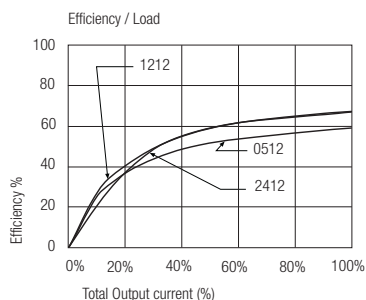
RY-xx15S



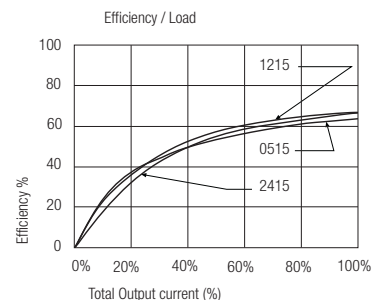
RY-xx05D



RY-xx12D



RY-xx15D



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

Certifications

EN General Safety

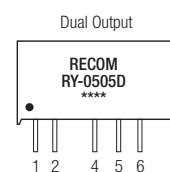
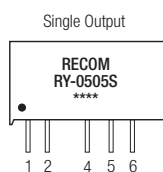
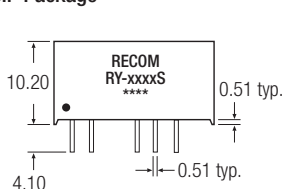
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EN60950-1:2001 + A11:2004

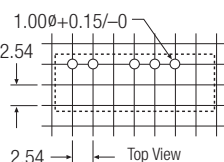
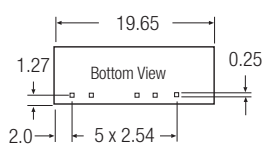
RY

Package Style and Pinning (mm)

7 PIN SIP Package



Recommended Footprint Details



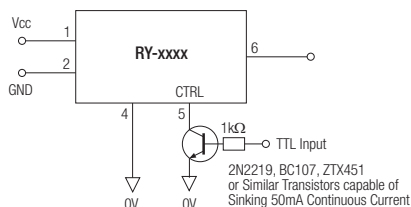
RX Pin Connections

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

XX.X ± 0.5 mm
XX.XX ± 0.25 mm

Typical On/Off Control and Adjustable Output Applications

On/Off Control



Adjustable Output

