

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 (%)
RY-xx05S	5, 9, 12, 15, 24	5	200	58-60
RY-xx09S	5, 9, 12, 15, 24	9	111	56-62
RY-xx12S	5, 9, 12, 15, 24	12	84	60-66
RY-xx15S	5, 9, 12, 15, 24	15	66	60-66
RY-xx24S	5, 9, 12, 15, 24	24	42	60-68
RY-xx05D	5, 9, 12, 15, 24	±5	±100	50-58
RY-xx09D	5, 9, 12, 15, 24	±9	±55	52-60
RY-xx12D	5, 9, 12, 15, 24	±12	±42	58-68
RY-xx15D	5, 9, 12, 15, 24	±15	±33	62-68
RY-xx24D	5, 9, 12, 15, 24	±24	±21	64-70

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.	
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.	
No Load Power Consumption	Single	171mW min. / 232mW typ. / 390mW max.	
	Dual	188mW min. / 264mW typ. / 350mW max.	
Maximum Capacitive Load		47µF / ±33µF	
Isolation Voltage	(tested for 1 second)	1000VDC min.	
Rated Working Voltage	(long term isolation)	see Application Notes	
Isolation Capacitance	Single output types	30pF min. / 150pF max.	
	Dual output types	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 10 ³ hours
(+70°C)		using MIL-HDBK 217F	135 x 10 ³ hours

ECONOLINE

DC/DC-Converter



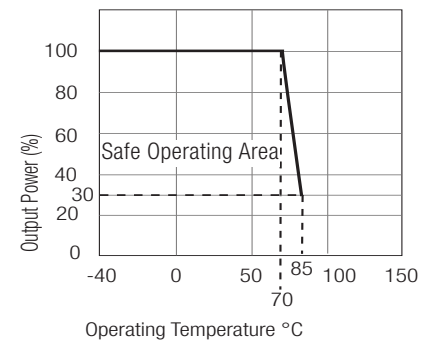
1 Watt SIP7 Single & Dual Output



EN-60950-1 Certified

RY

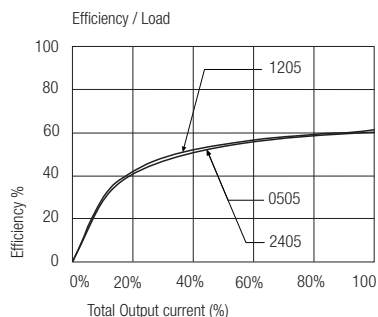
Derating-Graph (Ambient Temperature)



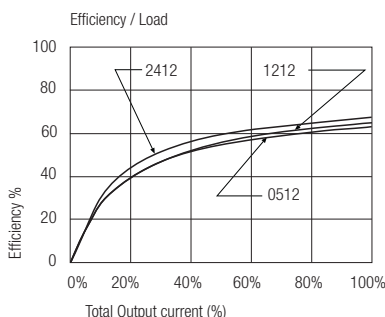
Refer to Application Notes

Typical Characteristics

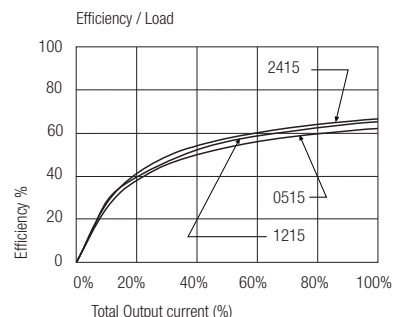
RY-xx05S



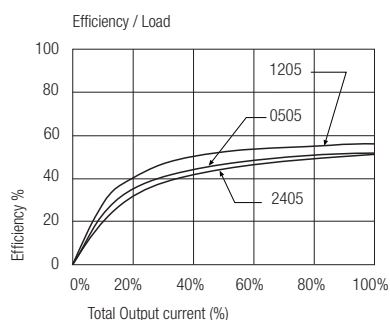
RY-xx12S



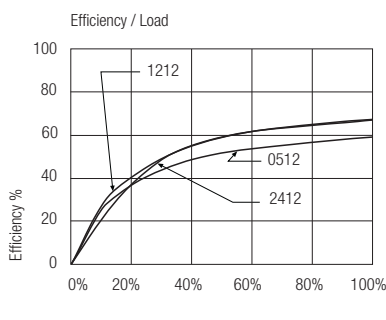
RY-xx15S



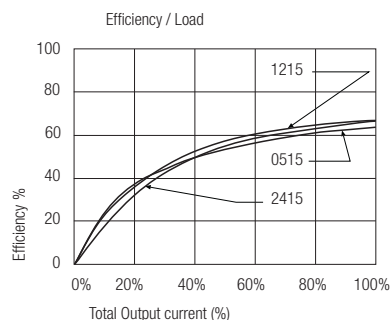
RY-xx05D



RY-xx12D

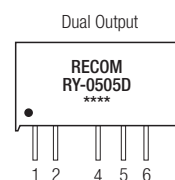
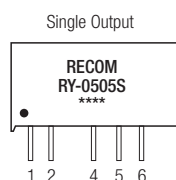
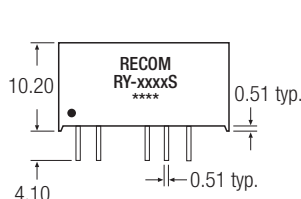


RY-xx15D

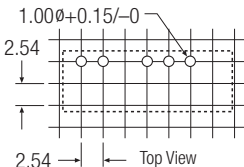
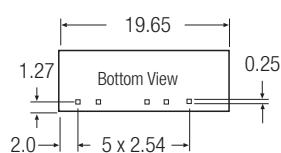


Package Style and Pinning (mm)

7 PIN SIP Package



Recommended Footprint Details



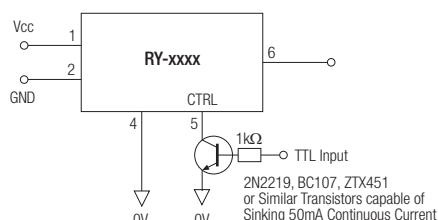
RX Pin Connections

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

