

Features

Regulated Converters

Rev.0

- On/Off Pin
- 1kVDC Isolation
- UL94V-0 Package Material
- Optional Continuous Short Circuit Protected
- Internal linear regulator
- Efficiency to 70 %

ECONOLINE

DC/DC-Converter

RY Series

1 Watt

SIP7

Single & Dual Output

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 controlled by an external enable signal.

Selection Guide

Part Number	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency (%)
SIP 7				
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)

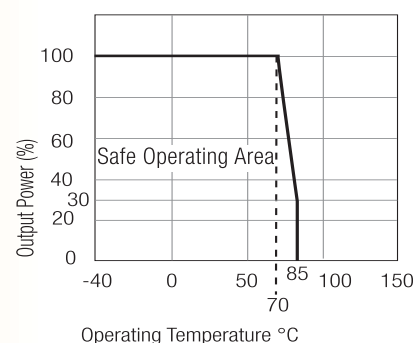
Input Voltage Range		±5%	
Output Voltage Accuracy		±5%	
Line Voltage Regulation		±1% max.	
Load Voltage Regulation (10% to 100% full load)		±1% max.	
Output Ripple and Noise (20MHz limited)		100mVp-p max.	
Operating Frequency		30kHz min. / 50kHz typ. / 88kHz max.	
Efficiency at Full Load		54% min. / 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	
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



EN-60950-1 Certified

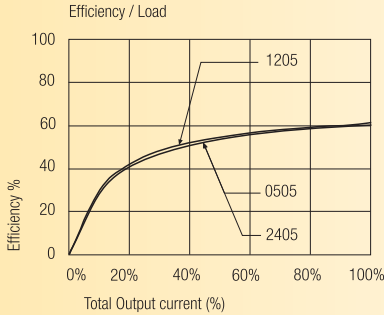
RECOM

Derating-Graph (Ambient Temperature)

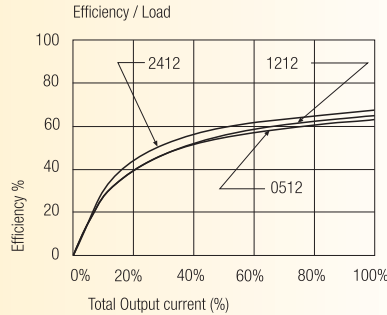


Typical Characteristics

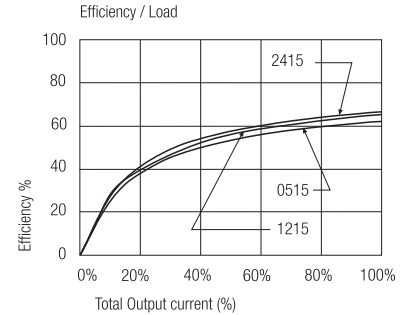
RY-xx05S



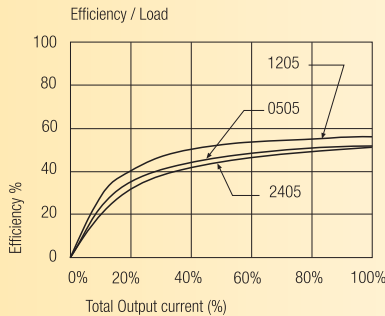
RY-xx12S



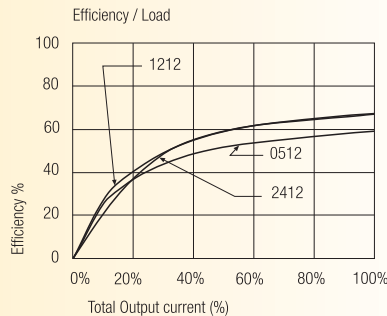
RY-xx15S



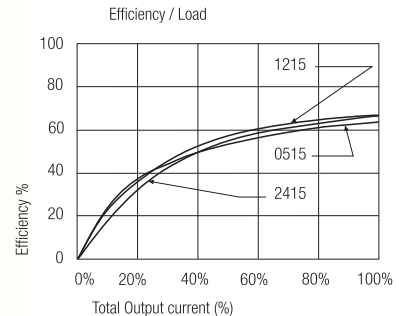
RY-xx05D



RY-xx12D

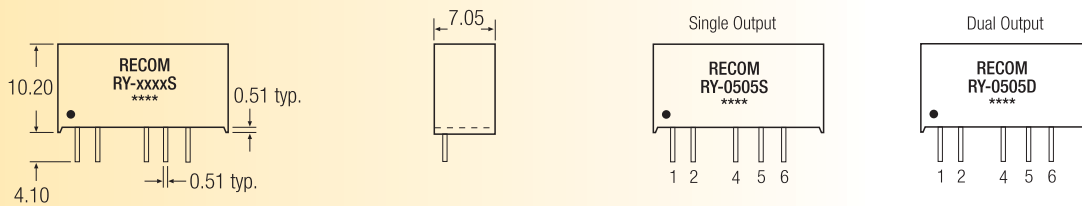


RY-xx15D

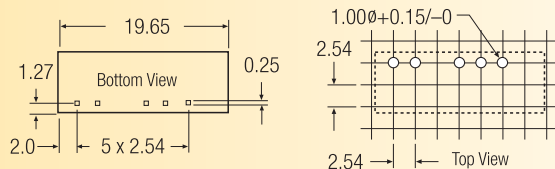


Package Style and Pinning (mm)

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 Application

