

Features

Regulated Converters

- Controllable Output
- 1kVDC Isolation
- No Heatsink Required
- UL94V-0 Package Material
- Optional Continuous Short Circuit Protected
- No External Components
- Fully Encapsulated
- Efficiency to 70%

ECONOLINE

DC/DC-Converter

RY & RX Series

Selection Guide

Part Number		Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency (%)
SIP 7	DIP 14				
RY-xx05S	RX-xx05S	5, 9, 12, 15, 24	5	180	58-60
RY-xx09S	RX-xx09S	5, 9, 12, 15, 24	9	111	56-62
RY-xx12S	RX-xx12S	5, 9, 12, 15, 24	12	84	60-66
RY-xx15S	RX-xx15S	5, 9, 12, 15, 24	15	66	60-66
RY-xx24S	RX-xx24S	5, 9, 12, 15, 24	24	42	60-68
RY-xx05D	RX-xx05D	5, 9, 12, 15, 24	±5	±100	50-58
RY-xx09D	RX-xx09D	5, 9, 12, 15, 24	±9	±55	52-60
RY-xx12D	RX-xx12D	5, 9, 12, 15, 24	±12	±42	58-68
RY-xx15D	RX-xx15D	5, 9, 12, 15, 24	±15	±33	62-68
RY-xx24D	RX-xx24D	5, 9, 12, 15, 24	±24	±21	64-70

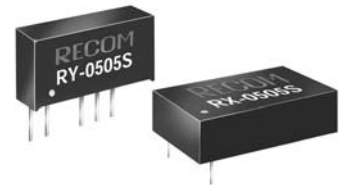
xx = Input Voltage

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

Specifications (Core Operating Area)

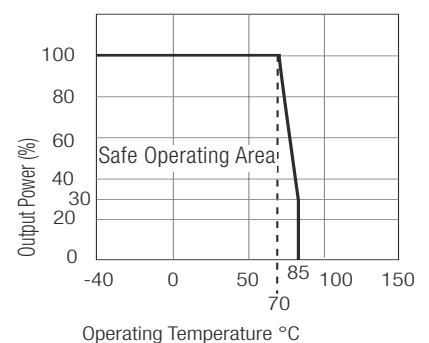
Input Voltage Range	±5%	
Output Voltage Accuracy	±5%	
Line Voltage Regulation	±1% max.	
Load Voltage Regulation (10% to 100% full load)	±1% max.	
Output Ripple and Noise (20MHz limited)	100mVp-p max.	
Operating Frequency	30kHz min. / 50kHz typ. / 88kHz max.	
Efficiency at Full Load	54% min. / 60% typ.	
No Load Power Consumption	Single	171mW min. / 232mW typ. / 390mW max.
	Dual	188mW min. / 264mW typ. / 350mW max.
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
	RX Single output types	2.9g
	RX Dual output types	2.7g
MTBF (+25°C)	using MIL-HDBK 217F	RY types 924 x 10 ³ hours
		RX types 944 x 10 ³ hours
(+70°C)	Application Notes chapter "MTBF"	using MIL-HDBK 217F
		RY types 135 x 10 ³ hours
		RX types 130 x 10 ³ hours

1 Watt SIP7 & DIP14 Single & Dual Output



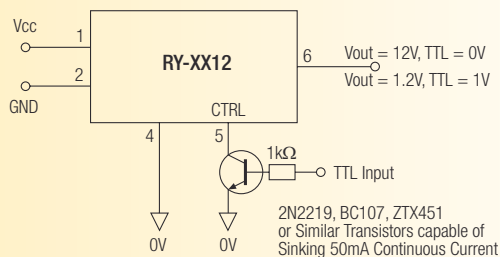
RECOM

Derating-Graph (Ambient Temperature)

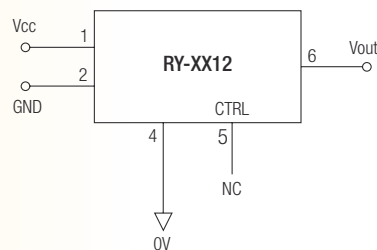


Typical Applications

Flash PROM Programming Voltage Control

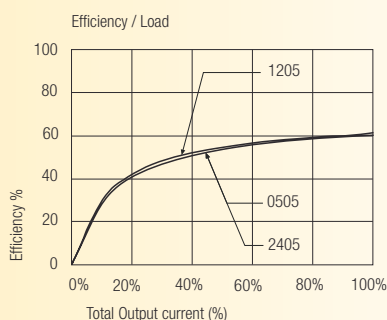


Normal Isolated Regulated Output

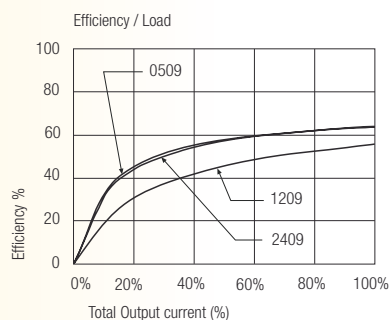


Typical Characteristics

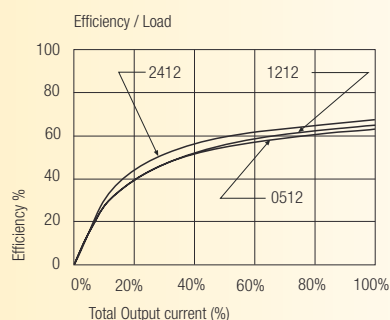
RY/RX-xx05S



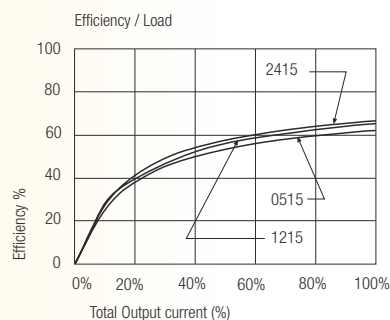
RY/RX-xx09S



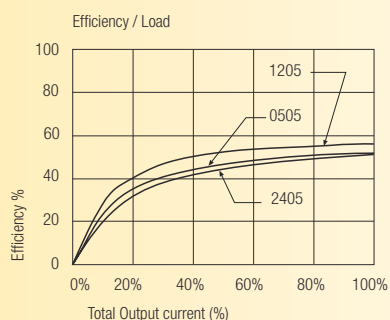
RY/RX-xx12S



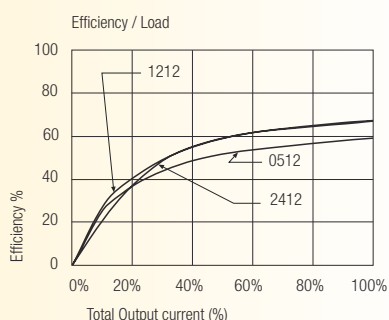
RY/RX-xx15S



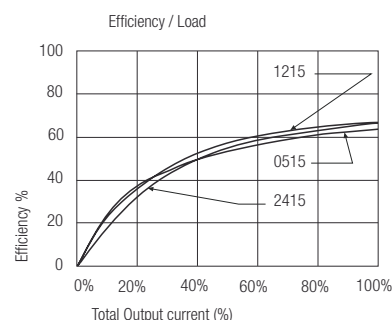
RY/RX-xx05D



RY/RX-xx12D

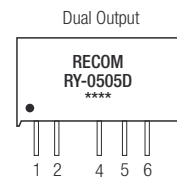
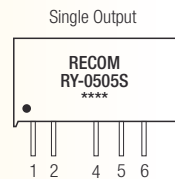
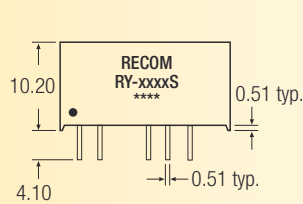


RY/RX-xx15D

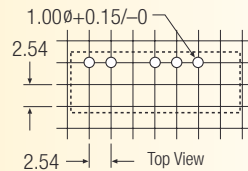
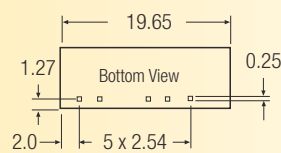


Package Style and Pinning (mm)

7 PIN SIP Package



Recommended Footprint Details

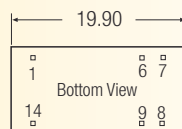
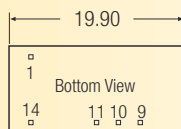
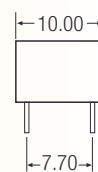
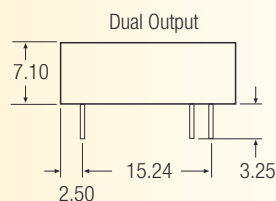
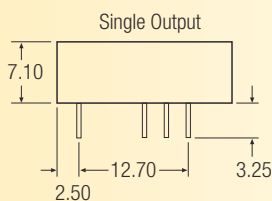


RX Pin Connections

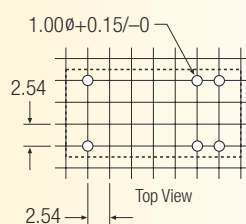
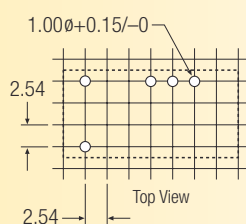
Pin #	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
4	-Vout	-Vout
5	CTRL	Com
6	+Vout	+Vout

XX.X ± 0.5 mm
XX.XX ± 0.25 mm

14 PIN DIP Package



Recommended Footprint Details



RX Pin Connections

Pin #	Single	Dual
1	-Vin	-Vin
6	No Pin	+Vout
7	No Pin	Com
8	No Pin	-Vout
9	+Vout	Com
10	CTRL	No Pin
11	-Vout	No Pin
14	+Vin	+Vin

XX.X ± 0.5 mm
XX.XX ± 0.25 mm