

## Features

### Unregulated Converters

- Safety standards and approvals: EN 60950 certified, rated for 250VAC (LVD test report)
- UL-60950-1 / CSA C22.2 certified
- 6kVDC Isolation
- UL94V-0 Package Material
- Optional Continuous Short Circuit Protected
- Fully Encapsulated
- Efficiency to 82%

### Selection Guide

Part Number	Input Voltage	Rated Output Voltage	Output Current Full Load
	(VDC)	(VDC)	(mA)
DIP24 (SMD) Miniature			
RV-xx3.3S	3.3, 5, 9, 12, 15, 24	3.3	600
RV-xx05S	3.3, 5, 9, 12, 15, 24	5	400
RV-xx09S	3.3, 5, 9, 12, 15, 24	9	222
RV-xx12S	3.3, 5, 9, 12, 15, 24	12	167
RV-xx15S	3.3, 5, 9, 12, 15, 24	15	133
RV-xx24S	3.3, 5, 9, 12, 15, 24	24	83
RV-xx3.3D	3.3, 5, 12, 15, 24	±3.3	±300
RV-xx05D	3.3, 5, 12, 15, 24	±5	±200
RV-xx09D	3.3, 5, 12, 15, 24	±9	±111
RV-xx12D	3.3, 5, 12, 15, 24	±12	±83
RV-xx15D	3.3, 5, 12, 15, 24	±15	±67
RV-xx24D	3.3, 5, 12, 15, 24	±24	±42

xx = Input Voltage

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

### Specifications (Core Operating Area)

Input Voltage Range		±10%	
Output Voltage Accuracy		±5%	
Line Voltage Regulation		1.2%/1% of Vin typ.	
Load Voltage Regulation (10% to 100% full load)	3.3V output types 5V output type 9V, 12V, 15V, 24V output types	20% max. 15% max. 10% max.	
Output Ripple and Noise (20MHz limited)		200mVp-p max.	
Operating Frequency		20kHz min. / 50kHz typ. / 85kHz max.	
Efficiency at Full Load		70% min. / 75% typ.	
No Load Power Consumption		282mW min. / 338mW typ. / 430mW max.	
Isolation Voltage (tested for 1 second)		6000VDC min.	
Rated Working Voltage (long term isolation)		see Application Notes	
Isolation Capacitance		2pF min. / 12pF max.	
Isolation Resistance		15 GΩ min.	
Short Circuit Protection P-Suffix		1 Second Continuous	
Operating Temperature Range (free air convection)		-40°C to +85°C (see Graph)	
Storage Temperature Range		-55°C to +125°C	
Relative Humidity		95% RH	
Package Weight		9g	
MTBF (+25°C)	} Detailed Information see Application Notes chapter "MTBF"	using MIL-HDBK 217F	1154 x 10 <sup>3</sup> hours
(+85°C)		using MIL-HDBK 217F	168 x 10 <sup>3</sup> hours

## ECONOLINE

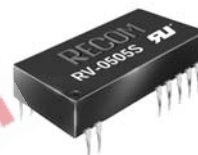
DC/DC-Converter

# RV Series

2 Watt

DIP24

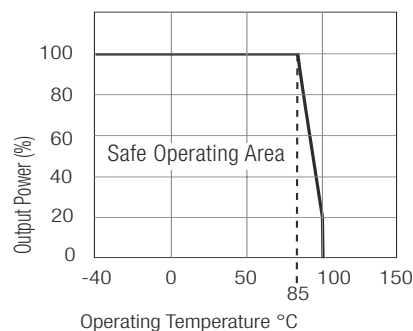
Miniature  
Single & Dual  
Output



**EN-60950-1 Certified**  
**UL-60950-1 Certified**  
**EN-60601-1 Certified**

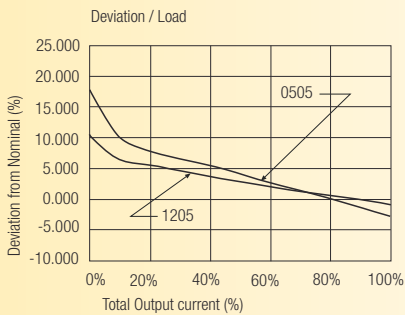
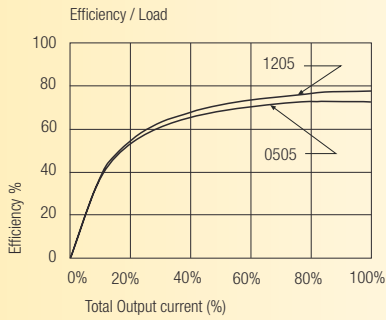


## Derating-Graph (Ambient Temperature)

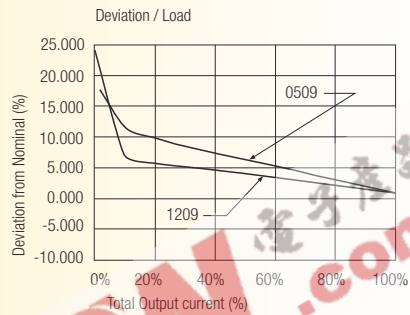
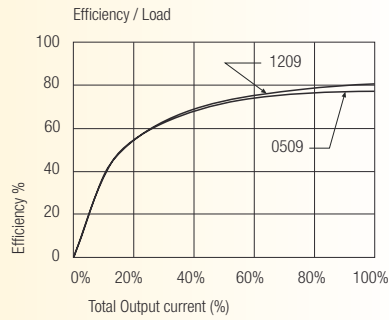


**Typical Characteristics**

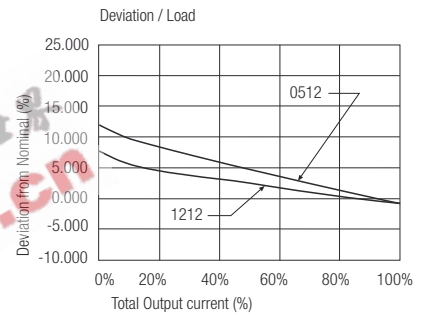
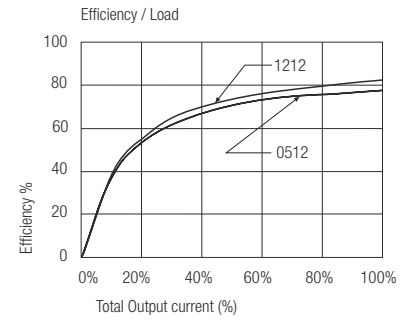
**RV-xx05S**



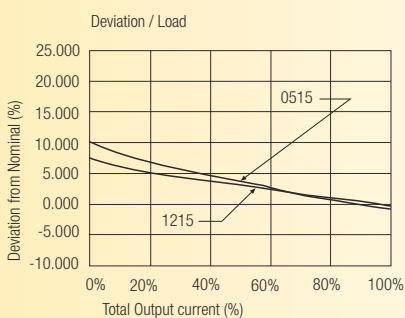
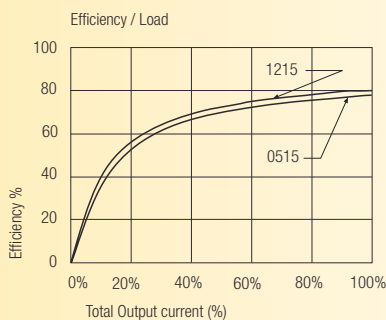
**RV-xx09S**



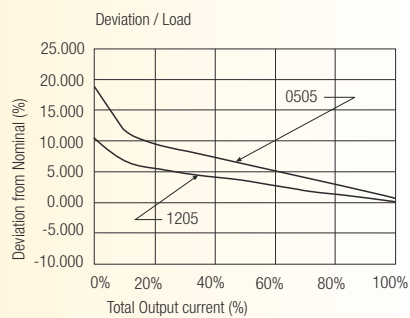
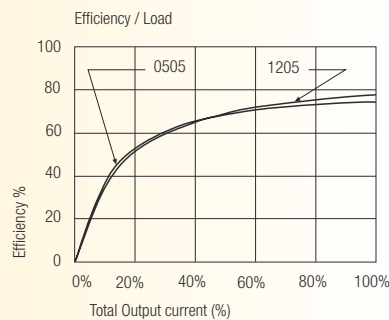
**RV-xx12S**



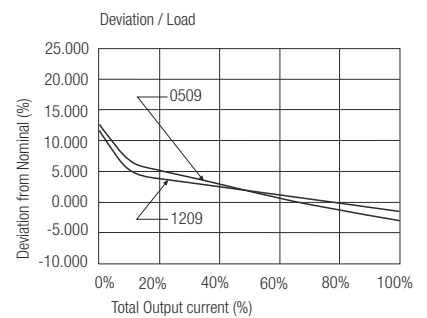
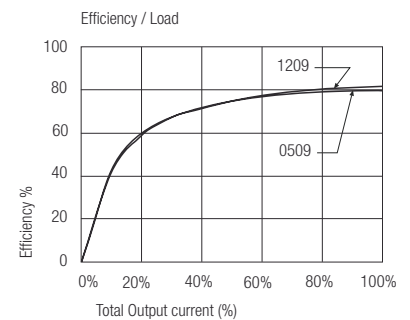
**RV-xx15S**



**RV-xx05D**

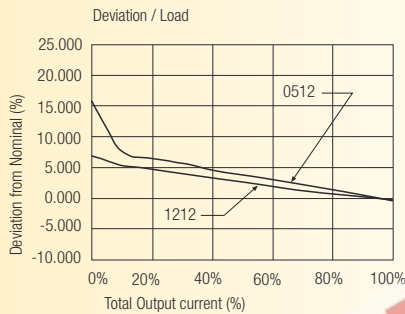
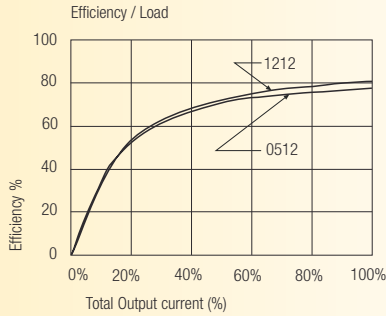


**RV-xx09D**

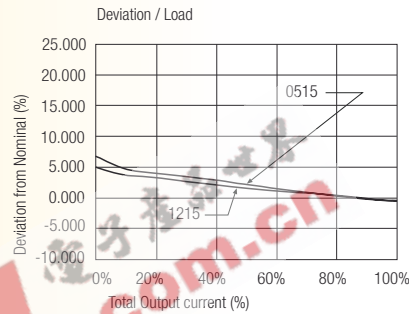
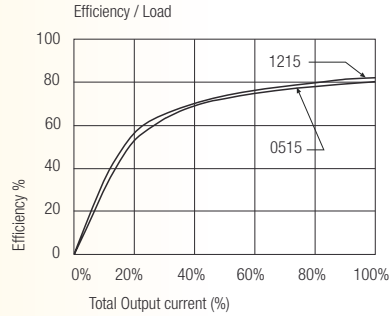


**Typical Characteristics**

**RV-xx12D**



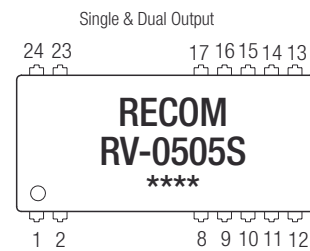
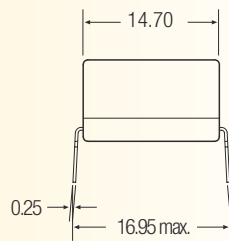
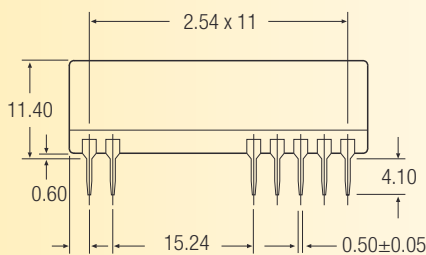
**RV-xx15D**



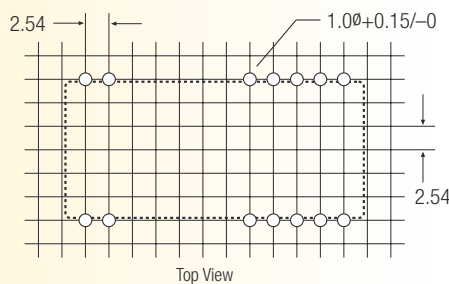
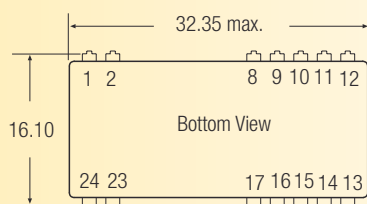
**Package Style and Pinning (mm)**

**24 PIN DIP Miniature Package Style**

3rd angle projection



**Recommended Footprint Details**



**Pin Connections**

Pin #	Single
1	+Vin
2	-Vin
8, 9, 11, 14	NC
10, 15	-Vout
12 & 13	+Vout
16, 17, 23, 24	NC

**Pin Connections**

Pin #	Dual
1	+Vin
2	-Vin
8, 17	-Vout
9, 11, 14, 16, 23, 24	NC
10 & 15	Com
12, 13	+Vout

NC = No Connection

NC = No Connection

XX.X ± 0.5 mm  
XX.XX ± 0.25 mm