

# Features

## Unregulated Converters

- Pot-Core Transformer - separated windings
- High 5.2kVDC Isolation in compact size
- Optional Continuous Short Circuit Protected
- Pin Compatible with RH and RK Series
- Approved for Medical Applications
- UL and EN Safety Certified
- Efficiency to 82 %

### Selection Guide

Part Number SIP 7	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency (%)	Max Capacitive Load <sup>(1)</sup>
RP-xx3.3S	5, 9, 12, 15, 24	3.3	303	70	2200µF
RP-xx05S	5, 9, 12, 15, 24	5	200	70-72	1000µF
RP-xx09S	5, 9, 12, 15, 24	9	111	75	1000µF
RP-xx12S	5, 9, 12, 15, 24	12	84	75-78	470µF
RP-xx15S	5, 9, 12, 15, 24	15	66	80	470µF
RP-xx24S	5, 9, 12, 15, 24	24	42	80	220µF
RP-xx3.3D	5, 9, 12, 15, 24	±3.3	±152	70	±1000µF
RP-xx05D	5, 9, 12, 15, 24	±5	±100	74-76	±470µF
RP-xx09D	5, 9, 12, 15, 24	±9	±56	75	±470µF
RP-xx12D	5, 9, 12, 15, 24	±12	±42	79-82	±220µF
RP-xx15D	5, 9, 12, 15, 24	±15	±33	80-82	±220µF
RP-xx24D	5, 9, 12, 15, 24	±24	±21	80	±100µF

xx = Input Voltage. Other input and output voltage combinations available on request

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

\* add Suffix "/X2" for single output with alternative pinning e.g. RP-0505S/X2, RP-0505S/P/X2

### Specifications (measured at $T_A = 25^\circ\text{C}$ , nominal input voltage, full load and after warm-up)

Input Voltage Range	±10%	
Output Voltage Accuracy	±5%	
Line Voltage Regulation	1.2%/1% of $V_{in}$ 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)	100mVp-p max.	
Operating Frequency	57kHz min. / 100kHz typ. / 125kHz max.	
Efficiency at Full Load	70% min. / 80% typ.	
Minimum Load = 0%	Specifications valid for 10% minimum load only.	
Isolation Voltage	(tested for 1 second) (rated for 1 minute)	5200VDC 2600VAC / 60Hz
Isolation Capacitance	4pF min. / 10pF max.	
Isolation Resistance	20 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	2.4g	
Packing Quantity	25 pcs per Tube	
MTBF (+25°C) (+85°C)	using MIL-HDBK 217F using MIL-HDBK 217F	928 x 10 <sup>3</sup> hours 150 x 10 <sup>3</sup> hours

*Detailed Information see  
Application Notes chapter "MTBF"*

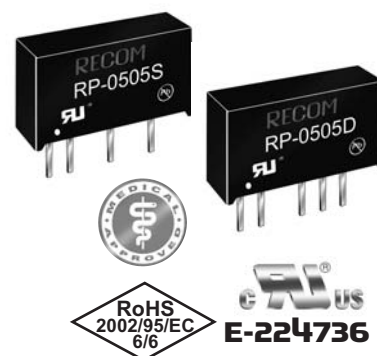
## ECONOLINE

### DC/DC-Converter

with 3 year Warranty

# RECOM

## 1 Watt SIP 7 Single & Dual Output



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

RP

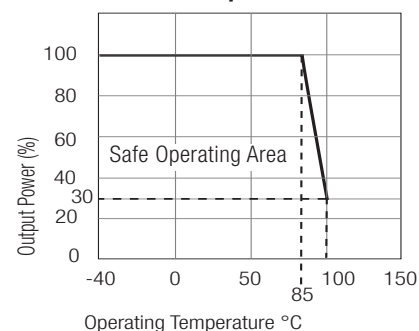
# RP

### Description

The RP series has very high isolation of 5.2 kVDC in a compact size. The converters are EN-60601-1 certified, making them suitable for medical as well as IGBT driver applications.

The /X2 version has rearranged pins to permit an input/output separation of more than 9mm.

## Derating-Graph (Ambient Temperature)

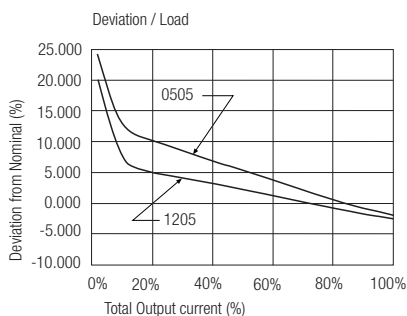
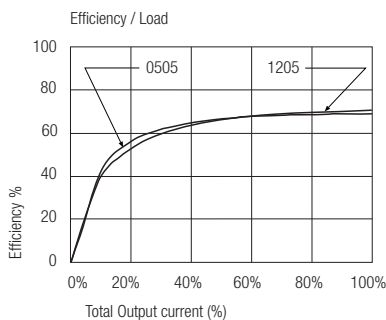


Refer to Application Notes

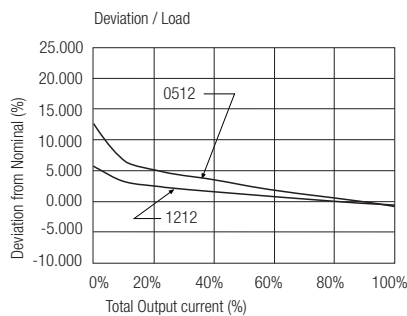
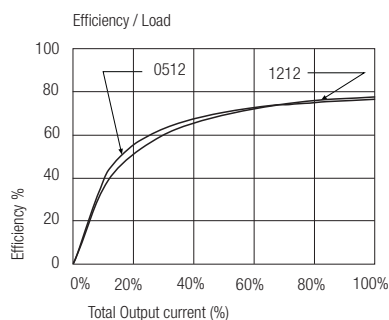
www.recom-electronic.com

### Typical Characteristics

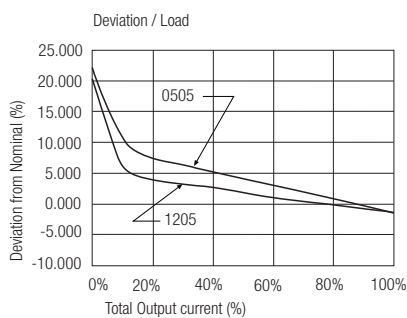
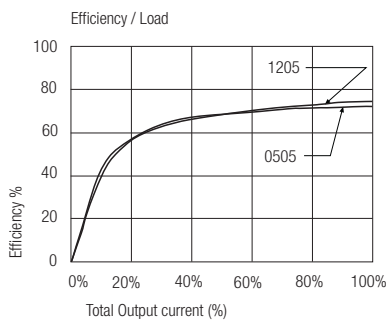
## RP-xx05S



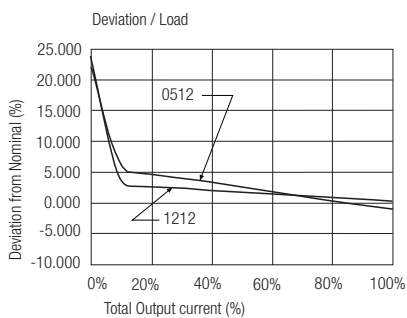
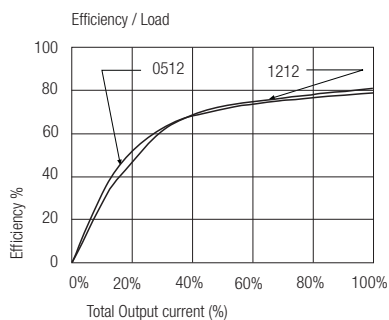
## RP-xx12S



## RP-xx05D

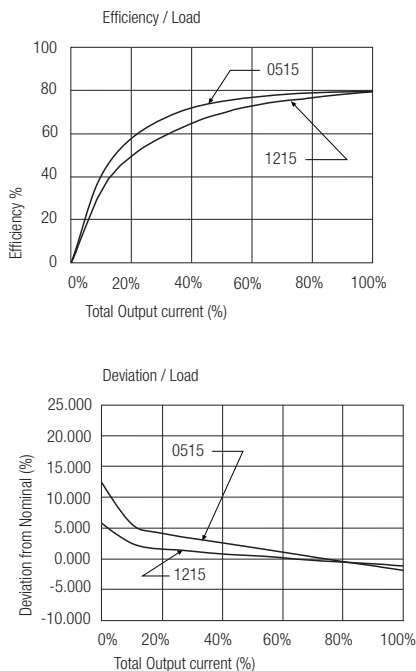


## RP-xx12D

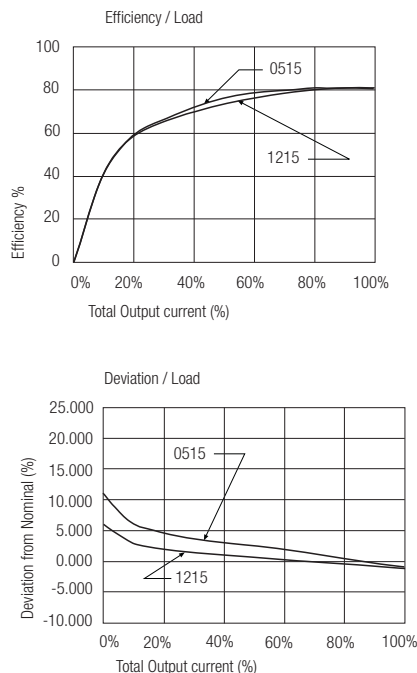


## Typical Characteristics

### RP-xx15S



### RP-xx15D

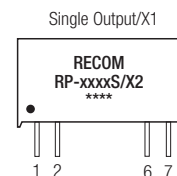
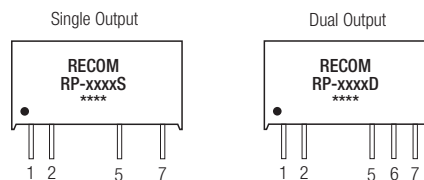
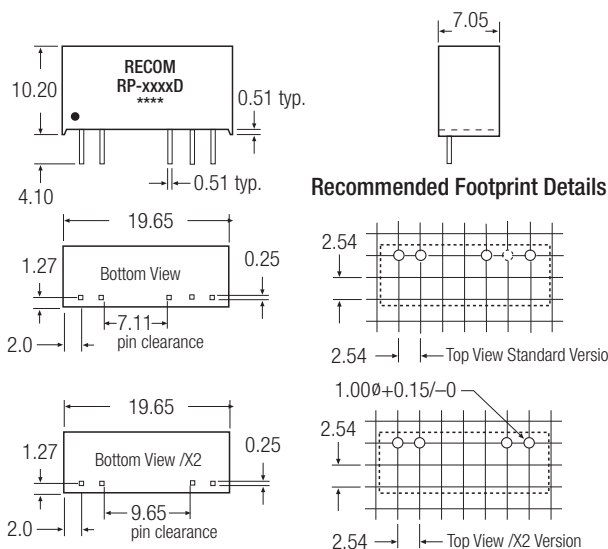


#### Notes

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	CSA General Safety	Report: E248550	CSA C22.2 No. 60950-1-03
	UL General Safety	Report: E248550	UL 60950-1 1st Ed.
	EN General Safety	Report: PS-R7219C1	EN60950-1:2001 + A11:2004
	EN Medical safety	Report: 1007090	EN 60601-1:1990 + A13:1996
	ESD	Report: 70124402-ES	IEC 61000-4-2

## Package Style and Pinning (mm)

### 7 PIN SIP Package



#### Pin Connections

Pin #	Single	Dual	/X2
1	+Vin	+Vin	+Vin
2	-Vin	-Vin	-Vin
5	-Vout	-Vout	No Pin
6	No Pin	Com	-Vout
7	+Vout	+Vout	+Vout

XX.X ± 0.5 mm  
XX.XX ± 0.25 mm