

# Features

## Unregulated Converters

- UL/CSA and EN Safety certified
- EN-60601 for Medical Applications
- Isolation 6.4kVDC
- Optional Continuous Short Circuit Protected
- Unique Transformer System (Patent Pending)
- Compact SIP7 Package
- /X2 Version with >9mm Input/Output Clearance
- Suitable for IGBT Applications
- Very Low Isolation Capacitance

### Selection Guide

Part Number SIP 7	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency Std (%)	Max Capacitive Load <sup>(1)</sup>
RxxP23.3S	5, 12, 15, 24	3.3	600	70	3300µF
RxxP205S	5, 12, 15, 24	5	400	70-75	1200µF
RxxP209S	5, 12, 15, 24	9	222	70-75	1200µF
RxxP212S	5, 12, 15, 24	12	167	70-75	680µF
RxxP215S	5, 12, 15, 24	15	132	75-80	680µF
RxxP23.3D	5, 12, 15, 24	±3.3	±300	70	±1500µF
RxxP205D	5, 12, 15, 24	±5	±200	70-75	±470µF
RxxP209D	5, 12, 15, 24	±9	±111	70-75	±470µF
RxxP212D	5, 12, 15, 24	±12	±85	70-75	±330µF
RxxP215D	5, 12, 15, 24	±15	±66	75-80	±330µF

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

No suffix is functional isolation e.g. R05P205S

\* add Suffix "P" for Continuous Short Circuit Protection, e.g. R05P205S/P, R05P205D/P

\* add Suffix "/X2" for single output with alternative pinout, e.g. R05P205S/X2, R05P205S/P/X2

### Specifications (measured at T<sub>A</sub> = 25°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 Vin typ.
Load Voltage Regulation (10% to 100% full load)	3.3, 5V output types other output types	15% max. 10% max.
Output Ripple and Noise (20MHz BW)		200mVp-p max.
Operating Frequency		20kHz min. / 50kHz typ. / 85kHz max.
Efficiency at Full Load		65% min. / 80% max.
Minimum Load = 0%		Specifications valid for 10% minimum load only.
Isolation Voltage	(tested for 1 second) (rated for 1 minute)	6400VDC 3200VAC / 60Hz
Isolation Capacitance		1.5pF min / 10pF max.
Isolation Resistance		15 GΩ min.
Short Circuit Protection		1 Second
P-Suffix		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

cont.

# ECONOLINE

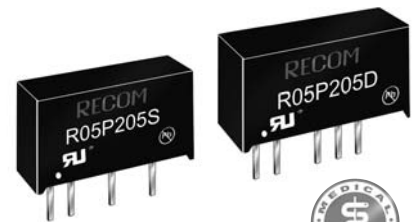
## DC/DC-Converter

with 3 year Warranty

# RECOM

## 2 Watt

# SIP 7 Single & Dual Output



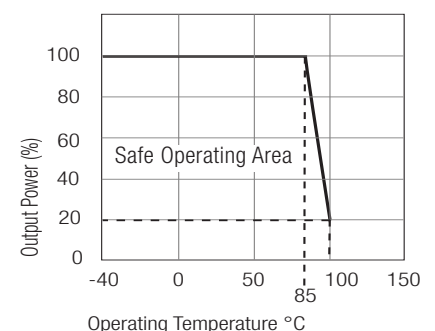
**EN-60950-1 Certified**  
**EN-60601-1 Certified**  
**UL/CSA 60950-1 Certified**  
**IEC 60601-1 CB Report**

# RxxP2xx

### Description

The RxxP2xxS\_D Series of DC/DC Converters are certified to UL/CSA-60950 and UL/CSA 60601. This makes them ideal for medical and safety applications where approved isolation is required. The /X2 version has an input/output clearance of more than 9mm.

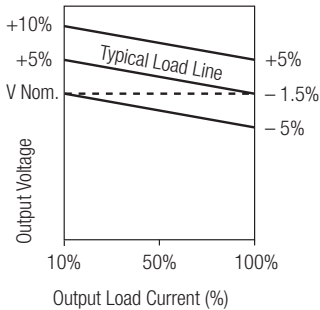
## Derating-Graph (Ambient Temperature)



Refer to Application Notes

www.recom-electronic.com

### Tolerance Envelope



### Specifications (continued)

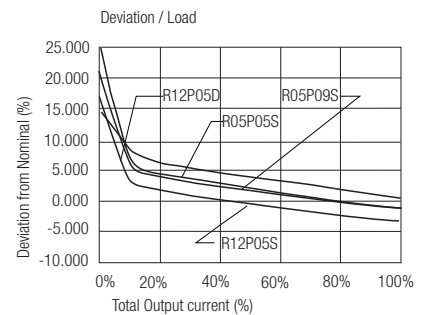
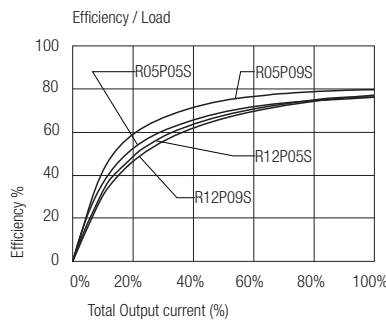
Package Weight	4.3g		
Packing Quantity	25 pcs per Tube		
MTBF (+25°C)	Detailed Information see Application Notes chapter "MTBF"	Single/Dual using MIL-HDBK 217F	2113/2434 x 10 <sup>3</sup> hours
(+85°C)		Single/Dual using MIL-HDBK 217F	299/334 x 10 <sup>3</sup> hours
Certifications	UL/cUL General Safety	Report: E358085	UL 60950-1 1st Ed.
	EN General Safety	Report: PS-R7219C1	EN60950-1:2001 + A11: 2004
	CB/EN Medical Safety	Report: MDD1205098-4 + RM1205098-4 IEC/EN 60601-1 3rd Edition	Medical Report + ISO14971 Risk Assessment

### Notes

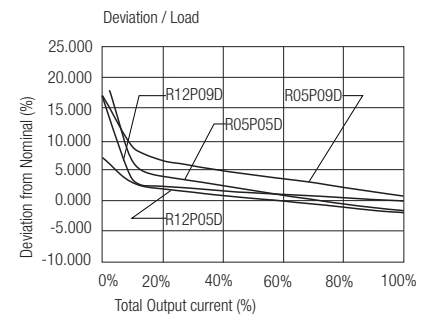
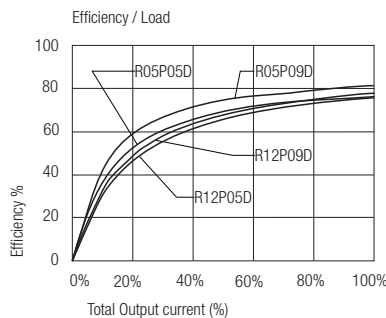
Note 1 Maximum capacitive load is defined as the capacitive load that will allow start up in under 1 second without damage to the converter.

### Typical Characteristics

## RxxP205/09S

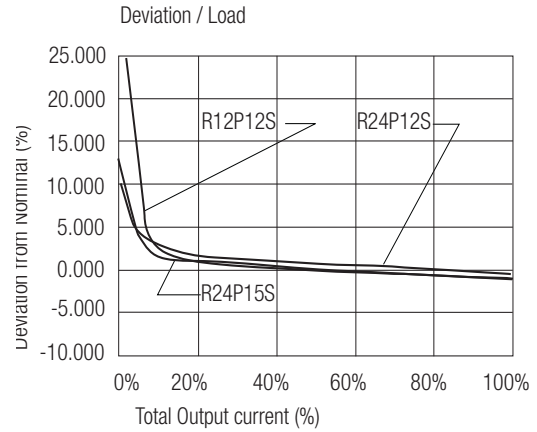
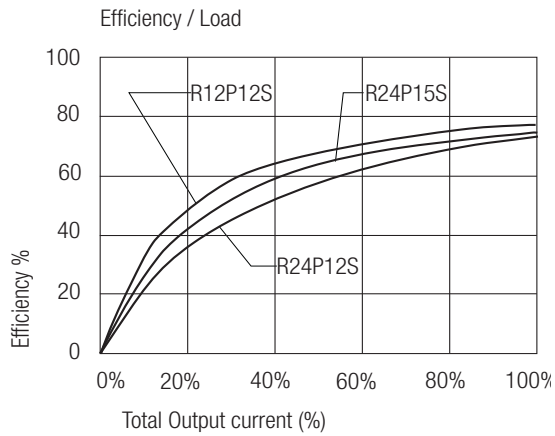


## RxxP205/09D

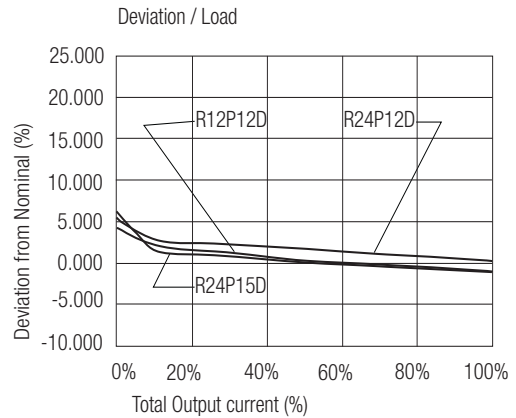
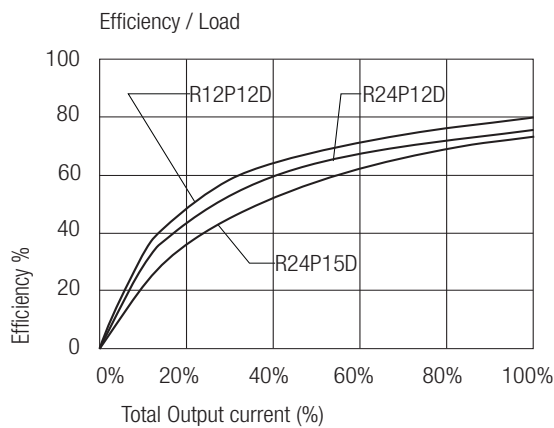


RxxP2xx

**RxxP212/15S**

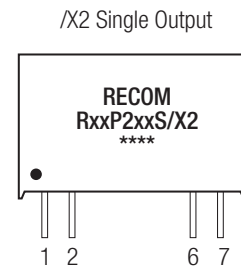
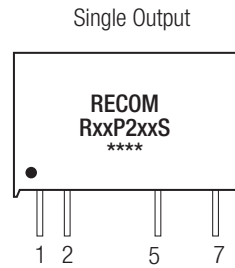
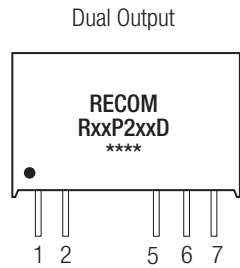
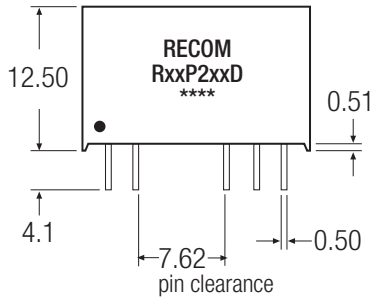


**RxxP212/15D**

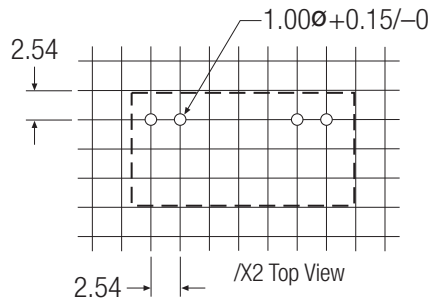
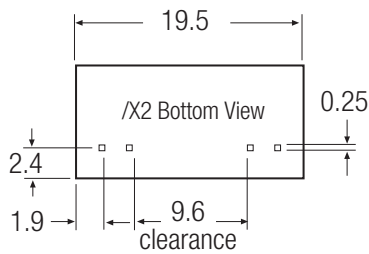
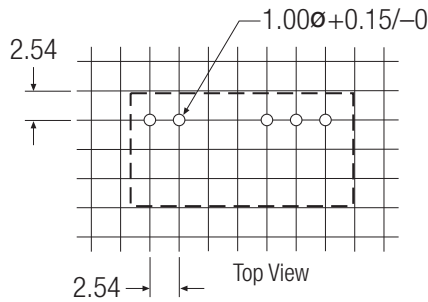
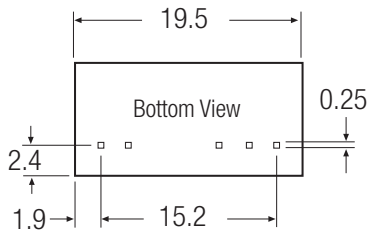


### Package Style and Pinning (mm)

7 PIN SIP Package



### Recommended Footprint Details



### 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