

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 ⁽¹⁾
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 $T_A = 25^\circ\text{C}$, 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)	3.3, 5V output types 15% max. other output types 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)	6400VDC
(rated for 1 minute)	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

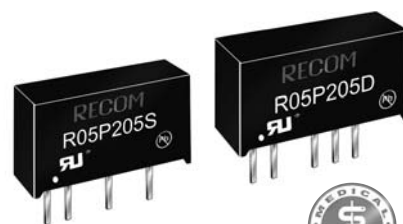
DC/DC-Converter

with 3 year Warranty

RECOM

2 Watt

SIP 7 Single &
Dual Output



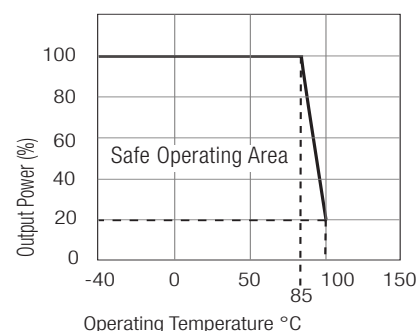
EN-60950-1 Certified
EN-60601-1 Certified
UL/CSA 60950-1 Certified
IEC 60601-1 CB Report

RxxP2xx

Description

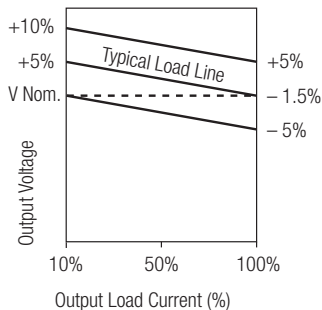
The RxxP2xxS_D Series of DC/DC Converters are certified to UL/CSA-60950 and UL/CSA 60601. This makes them ideal for medical and safety applications where approved isolation is required. The /X2 version has an input/ output clearance of more than 9mm.

Derating-Graph (Ambient Temperature)



Refer to Application Notes

Tolerance Envelope



Specifications (continued)

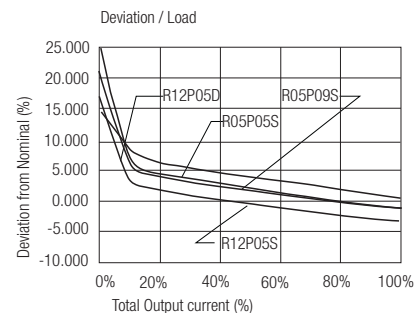
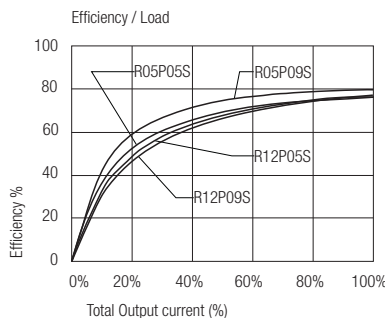
Package Weight	4.3g		
Packing Quantity	25 pcs per Tube		
MTBF (+25°C)	Detailed Information see Application Notes chapter "MTBF"	Single/Dual using MIL-HDBK 217F	2113/2434 x 10 ³ hours
(+85°C)		Single/Dual using MIL-HDBK 217F	299/334 x 10 ³ hours
Certifications	UL/cUL General Safety EN General Safety CB/EN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

Notes

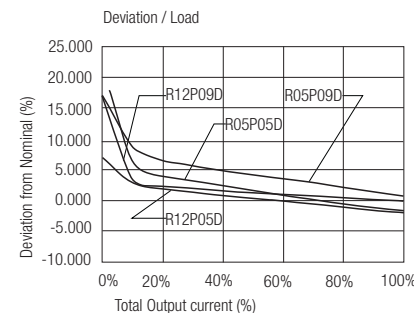
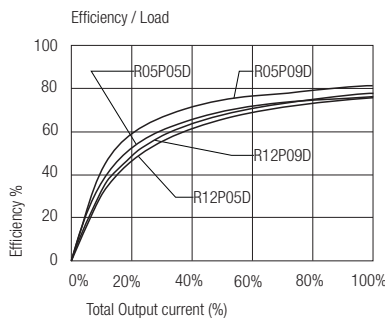
Note 1 Maximum capacitive load is defined as the capacitive load that will allow start up in under 1 second without damage to the converter.

Typical Characteristics

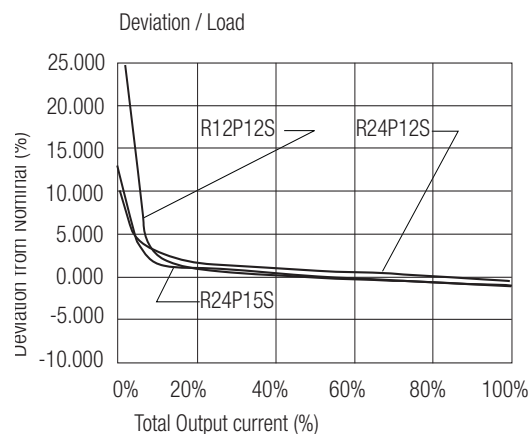
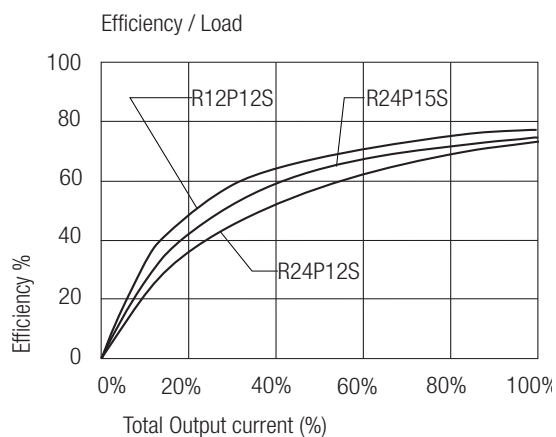
RxxP205/09S



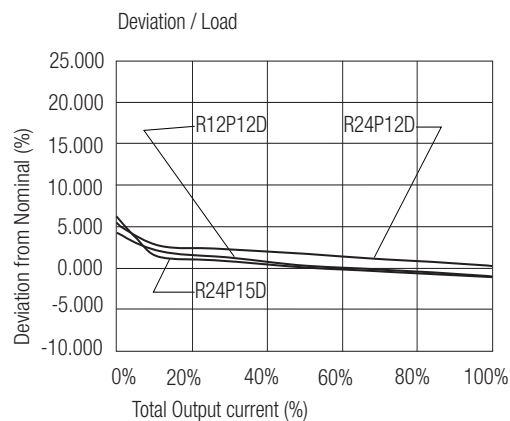
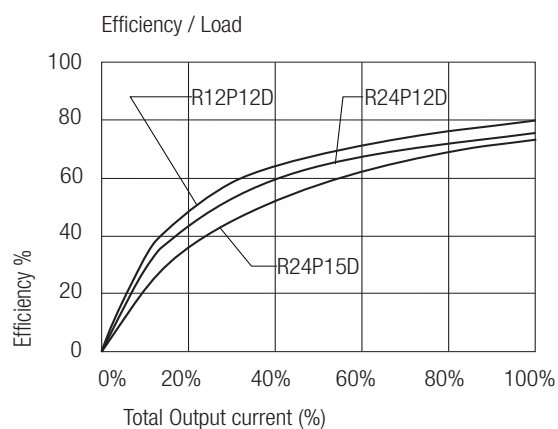
RxxP205/09D



RxxP212/15S



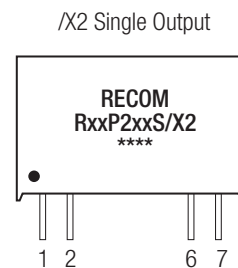
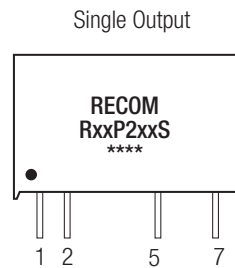
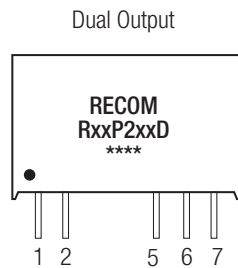
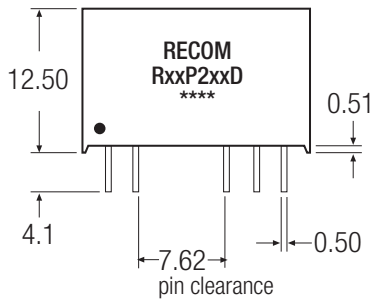
RxxP212/15D



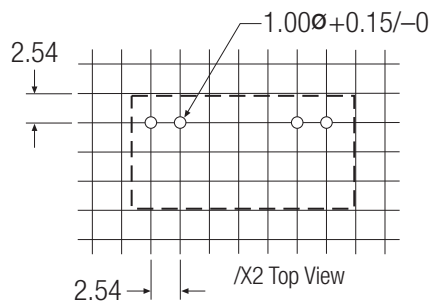
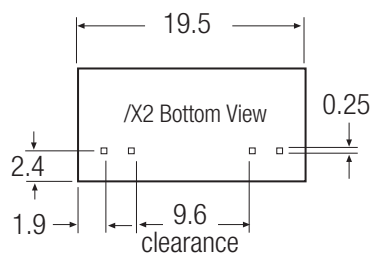
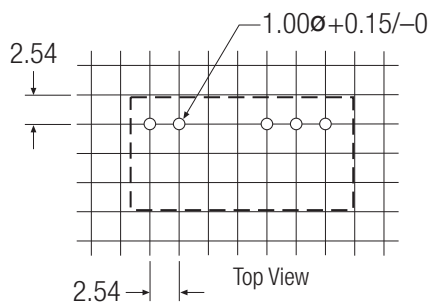
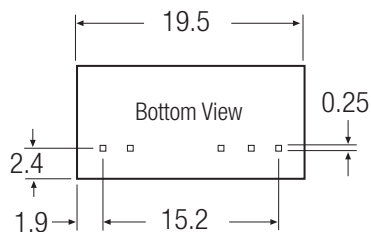
Package Style and Pinning (mm)

7 PIN SIP Package

3rd angle
projection



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