Features

Unregulated Converters

- UL/CSA and EN Safety certified
- EN-61010 for Test, Measurement and Lab Use
- EN-60601 for Medical Applications
- Reinforced Isolation 6.4kVDC or 8kVDC
- Optional Continuous Short Circuit Protected
- Compact SIP7 Package
- Efficiency to 88%
- Very Low Isolation Capacitance
- /X2 Version with >9mm Input/Output Clearance

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 or reinforced isolation is required. The reinforced versions are also EN61010-1 certified for Lab Equipment. The /X2 version has an input/output clearance of more than 9mm.

Selection Guide								
Part Number SIP 7	Reinforced Isolation (kVDC)	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency Std (%)	Max Capacitive Load ⁽¹⁾		
RxxP23.3S	/R6.4 & /R8	5, 12, 15, 24	3.3	600	72-78	3300µF		
RxxP205S	/R6.4 & /R8	5, 12, 15, 24	5	400	79-84	1200µF		
RxxP209S	/R6.4 & /R8	5, 12, 15, 24	9	222	80-87	1200µF		
RxxP212S	/R6.4 & /R8	5, 12, 15, 24	12	167	80-87	680µF		
RxxP215S	/R6.4 & /R8	5, 12, 15, 24	15	132	80-88	680µF		
RxxP23.3D	/R6.4 & /R8	5, 12, 15, 24	±3.3	±300	73-80	±1500µF		
RxxP205D	/R6.4 & /R8	5, 12, 15, 24	±5	±200	79-85	±470μF		
RxxP209D	/R6.4 & /R8	5, 12, 15, 24	±9	±111	80-87	±470μF		
RxxP212D	/R6.4 & /R8	5, 12, 15, 24	±12	±85	80-87	±330µF		
RxxP215D	/R6.4 & /R8	5, 12, 15, 24	±15	±66	80-88	±330µF		

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

Specifications (measured at $T_A = 25$ °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 3.3, 5V output types 15% max. (10% to 100% full load) 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 /R6.4 (tested for 1 second) 6400VDC (rated for 1 minute**) 3200VAC / 60Hz (tested for 1 second) 8000VDC (rated for 1 minute**) 4000VAC / 60Hz Isolation Capacitance 1.5pF min. / 10pF max. 15 G Ω min. Isolation Resistance Short Circuit Protection 1 Second P-Suffix Continuous continued on next page

**Any data referred to in this datasheet are of indicative nature and based on our practical experience only. For further details, please refer to our Application Notes.

ECONOLINE

DC/DC-Converter with 3 year Warranty



2 Watt SIP 7 Single & Dual Output









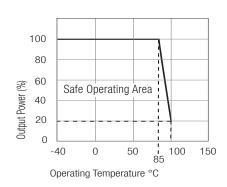


EN-60950-1 Certified EN-60601-1 Certified UL/CSA 60950-1 Certified UL-60601 Certified EN-61010-1 Certified IEC-60601-1 CB Report

RxxP2xx/R

Derating-Graph

(Ambient Temperature)



Refer to Application Notes

^{*} 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

^{*} add Suffix "/R6.4" or "/R8" for Reinforced Isolation, e.g. R05P205D/R6.4, R05P205S/P/X2/R8

E-101

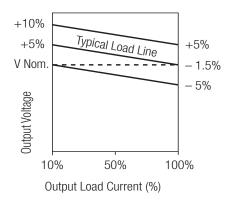
ECONOLINE

DC/DC-Converter

RxxP2xx5_D /Rx Series

Specifications (measured at $T_A = 25$ °C, nor	minal input voltage, full load and after	warm-up)	
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			4.3g
Packing Quantity			25 pcs per Tube
Potting Material		S	ilicone Rubber Compound (UL94V-0)
MTBF (+25°C) Detailed Information see (+85°C) Application Notes chapter "MTE	BE" Reinforced		1154 x 10 ³ hours 168 x 10 ³ hours
, ,	ransformer Creepage	/R6.4 Types	5.5 mm min.
	ransformer Clearance	/R6.4 Types	5.5 mm min.
Р	CB Creepage & Clearance	/R6.4 Types	4.6 mm min.
Certifications Measurement, Control and Laboratory Use Safet	CSA General Safety UL/cUL Medical Safety CSA Medical Safety EN General Safety CB/EN Medical Safety ANSI/AAMI Medical Safety	Report: T1301251-313 Report: 2207629 Report: 314885-A5 Report: 2207629 Report: SPCLVD1310079-1 Report: CA-10169-A1-UL Report: E314885-A5	EN 61010-1 : 2010 UL 60950-1 1st Edition C22.2 No. 60950-1-03 UL60601-1 1st Edition CAN/CSA-22.2 No 601.1-M90 EN60950-1 : 2006 IEC/EN 60601-1 3rd Edition ES60601-1 3rd Edition
Notes			
Note 1 Maximum capacitive	oad is defined as the capacitive load t	hat will allow start up in under 1 seco	nd without damage to the converter.

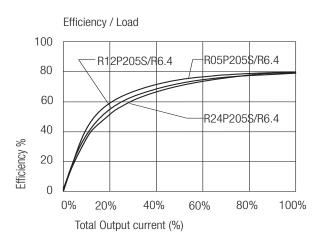
Tolerance Envelope

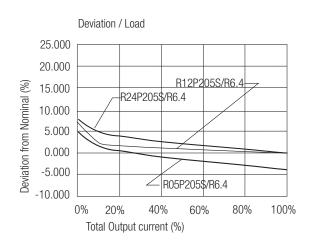


RxxP2xxS_D /Rx Series

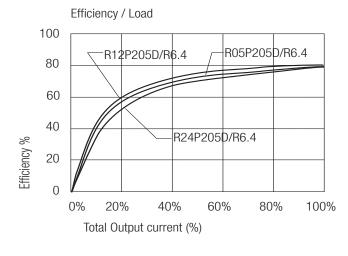
Typical Characteristics

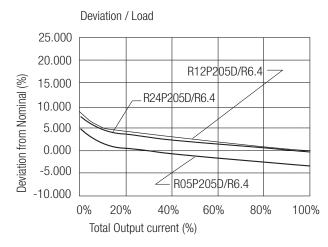
RxxP205S/R6.4 RxxP205S/R8





RxxP205D/R6.4 RxxP205D/R8





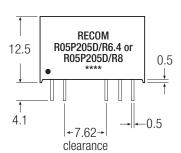
ECONOLINE

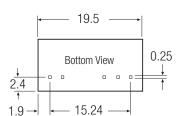
DC/DC-Converter

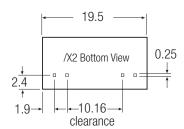
RxxP2xx5_D /Rx Series

Package Style and Pinning (mm)

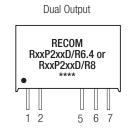
7 PIN SIP Package

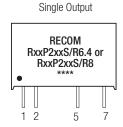




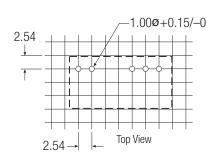


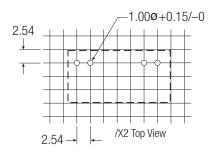






Recommended Footprint Details





RECOM RxxP2xxS/X2/R6.4 or RxxP2xxS/X2/R8 ***** 1 2 6 7

/X2 Single Output

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