

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 and IGBT Applications
- UL and EN Certified
- Efficiency to 82 %

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.

Selection Guide

Part Number SIP 7	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency (%)	Max Capacitive Load ⁽¹⁾
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
RP-xx1509D	5, 12, 24	+15/-9	±42	70-85	±220µF

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	3.3V output types	20% max.
(10% to 100% full load)	5V output type	15% max.
	9V, 12V, 15V, 24V output types, RP-xx1509D	10% max.
Output Ripple and Noise (20MHz limited)	100mVp-p max.	
Operating Frequency	50kHz min. / 100kHz typ. / 120kHz max.	
	RP-xx1509D	50kHz min / 94kHz typ.
Efficiency at Full Load	70% min. / 80% typ.	
Minimum Load = 0%	Specifications valid for 10% minimum load only.	
Isolation Voltage	(tested for 1 second)	5200VDC
	(rated for 1 minute**)	2600VAC / 60Hz
Isolation Capacitance	4pF min. / 10pF max.	
Isolation Resistance	20 GΩ min.	
Short Circuit Protection	1 Second	
P-Suffix	Continuous	
Operating Temperature Range (free air convection, without derating)	-40°C to +85°C (see Graph)	

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ECONOLINE

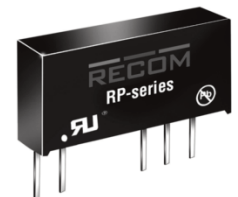
DC/DC-Converter

with 3 year Warranty

RECOM

1 Watt

SIP 7 Single & Dual Output



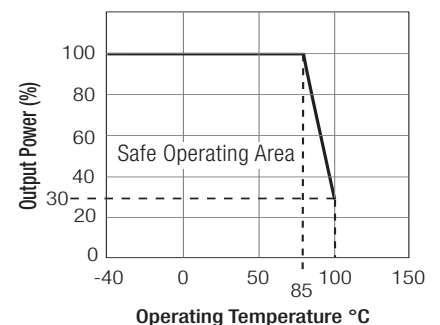
E-358085

EN-60950-1 Certified
IEC/EN-60601-1 Certified*
CSA/UL-60950-1 Certified*
*** +15/-9 Version excluded**

RP

Derating-Graph

(Ambient Temperature)



**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.



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

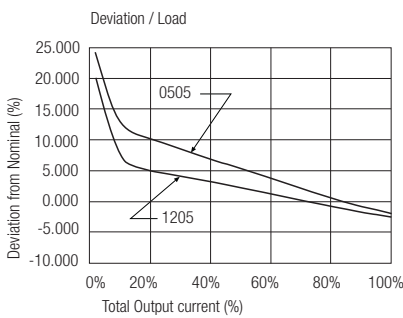
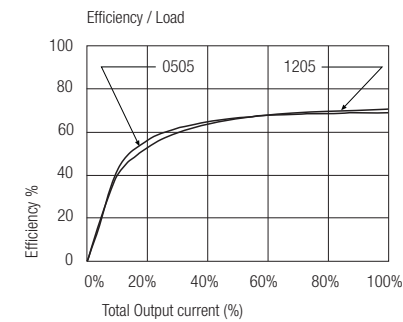
Storage Temperature Range	-55°C to +125°C		
Relative Humidity	95% RH		
Package Weight	2.4g		
Packing Quantity	25 pcs per Tube		
MTBF (+25°C)	Detailed Information see Application Notes chapter "MTBF"	using MIL-HDBK 217F	928 x 10 ³ hours
(+85°C)		using MIL-HDBK 217F	150 x 10 ³ hours
Certifications			
CSA General Safety	Report: E358085	CSA C22.2 No. 60950-1-03	
UL General Safety	Report: E358085	UL 60950-1 2nd Ed.	
EN General Safety	Report: SPCLVD1109103	EN60950-1:2006 + A12:2011	
EN Medical safety	Report: SPCMDD1205098-4	IEC/EN60601-1:2006, 3rd Edition	

Notes

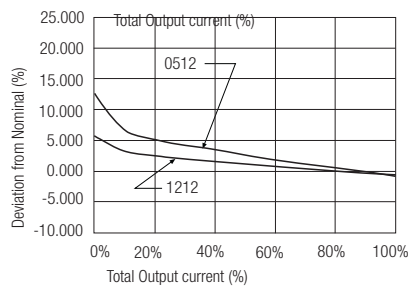
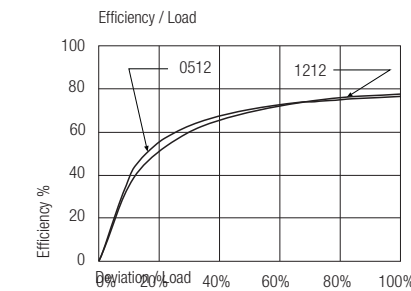
Note 1 Maximum capacitive load is defined as the capacitive load that will allow start up in under 1 second without damage to the converter.

Typical Characteristics

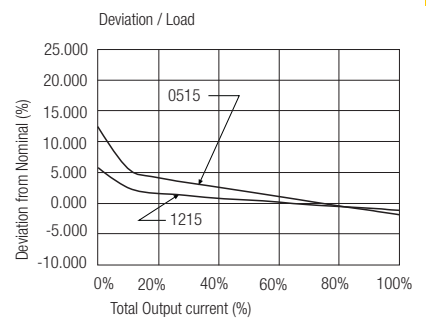
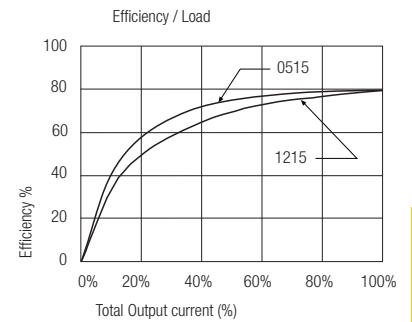
RP-xx05S



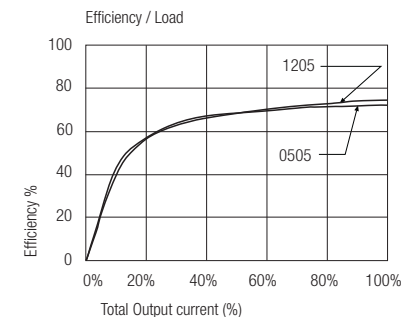
RP-xx12S



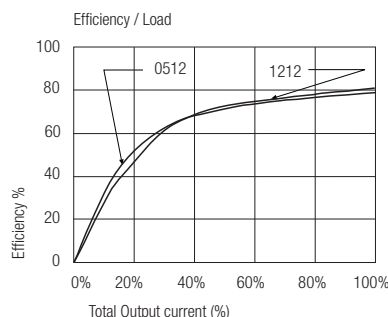
RP-xx15S



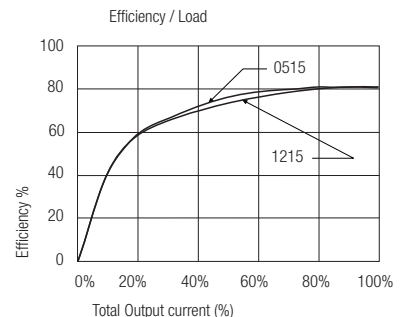
RP-xx05D



RP-xx12D



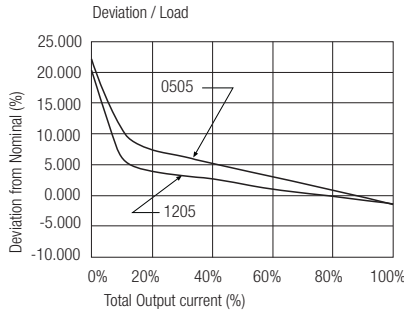
RP-xx15D



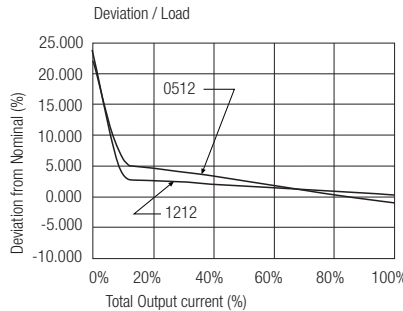
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Typical Characteristics

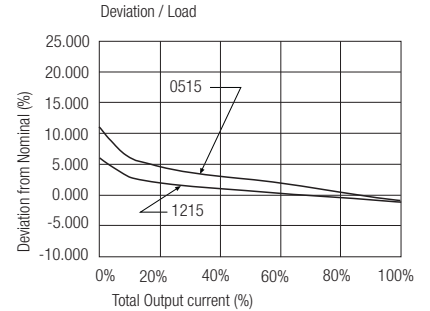
RP-xx05D



RP-xx12D

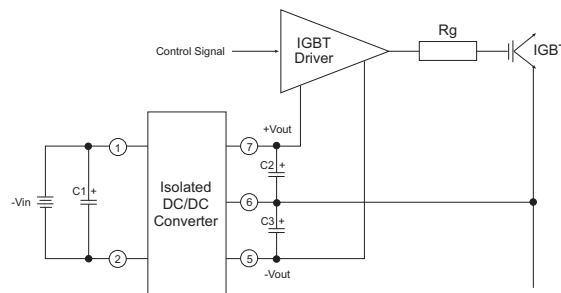


RP-xx15D



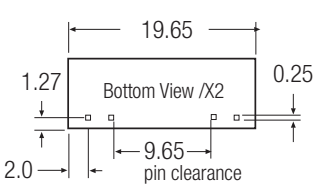
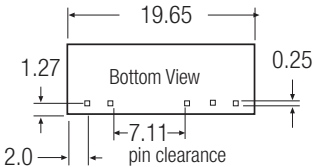
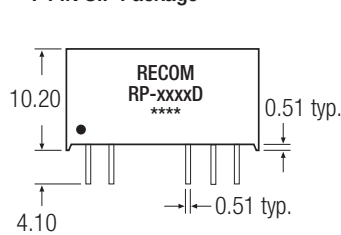
Application

IGBT Application Circuit

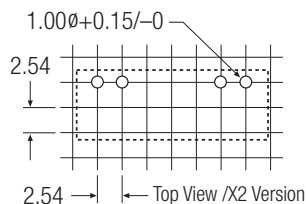
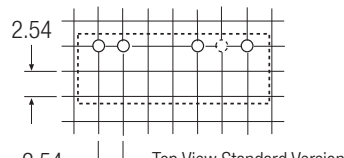


Package Style and Pinning (mm)

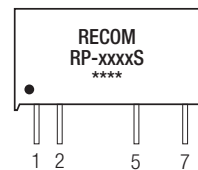
7 PIN SIP Package



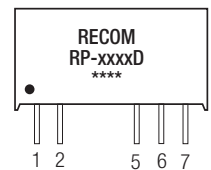
Recommended Footprint Details



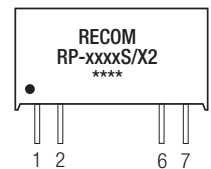
Single Output



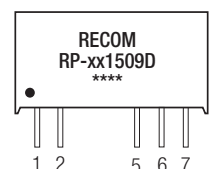
Dual Output



Single Output/X2



Dual 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

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