

# 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 %

### 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
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<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	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 +90°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)	Detailed Information see Application Notes chapter "MTBF"	using MIL-HDBK 217F	928 x 10 <sup>3</sup> hours
		using MIL-HDBK 217F	150 x 10 <sup>3</sup> hours

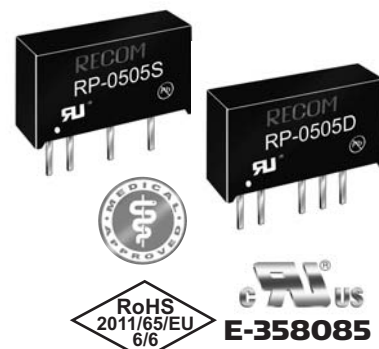
# ECONOLINE

## DC/DC-Converter

with 3 year Warranty

# RECOM

## 1 Watt SIP 7 Single & Dual Output



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

RP

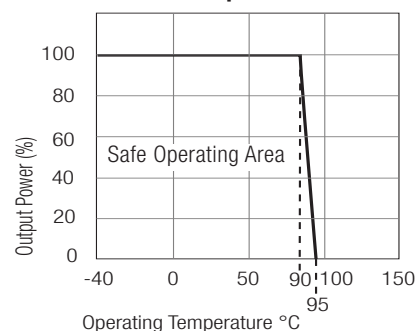
# RP

### 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)

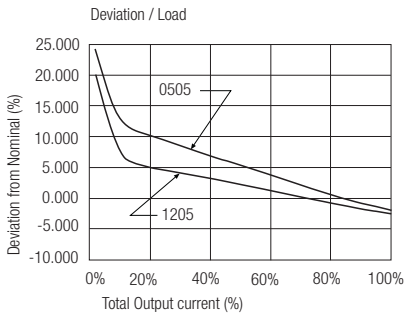
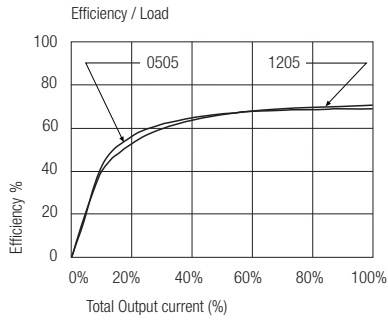


Refer to Application Notes

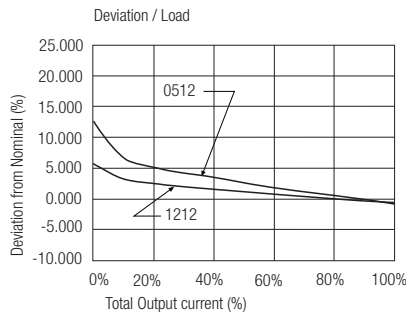
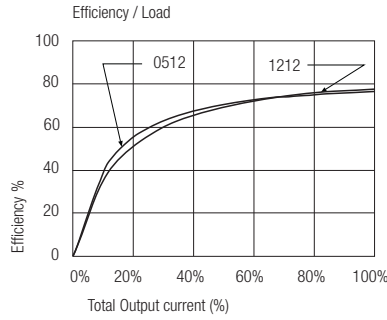
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Typical Characteristics

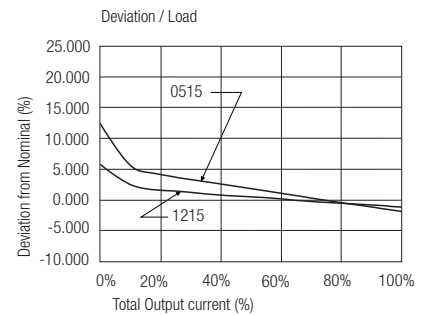
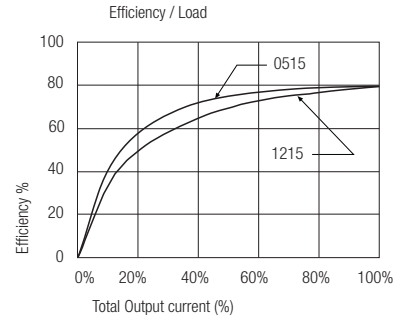
**RP-xx05S**



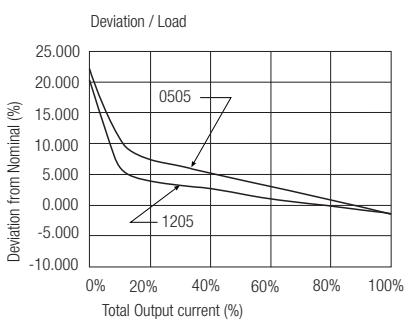
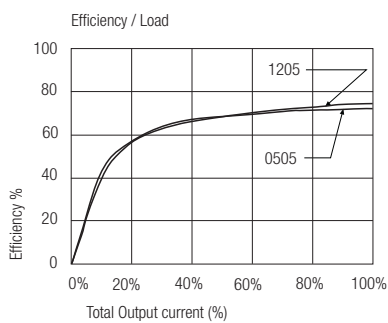
**RP-xx12S**



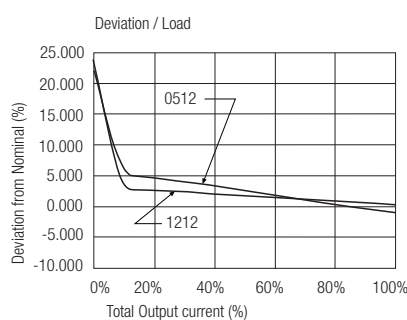
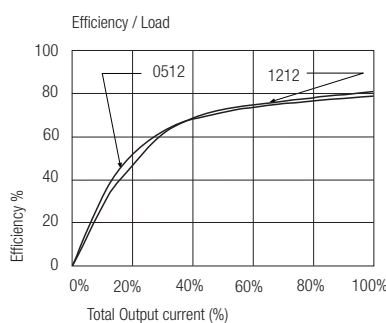
**RP-xx15S**



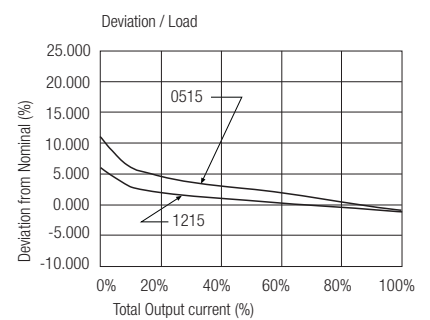
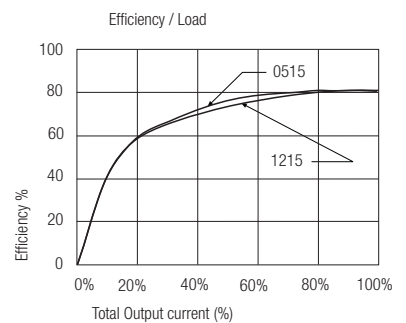
**RP-xx05D**



**RP-xx12D**



**RP-xx15D**

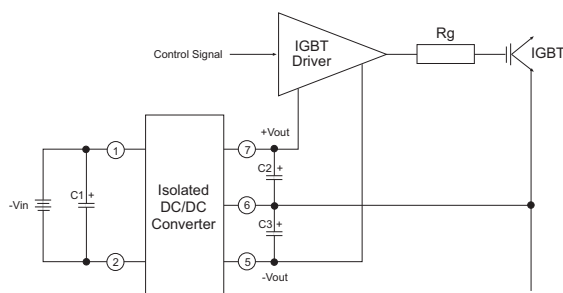


## Specifications

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: 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

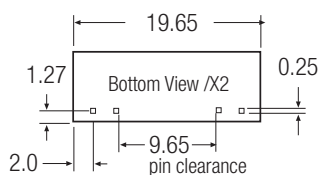
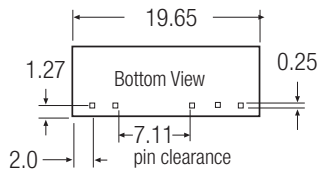
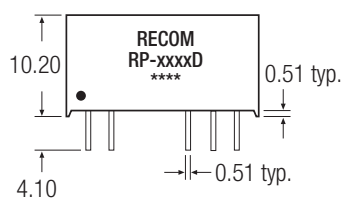
## Application

### IGBT Application Circuit

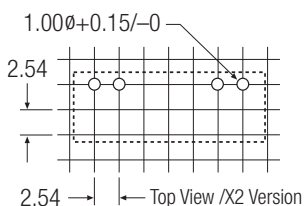
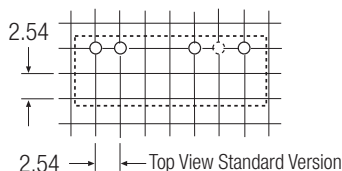


## Package Style and Pinning (mm)

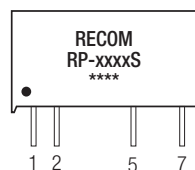
### 7 PIN SIP Package



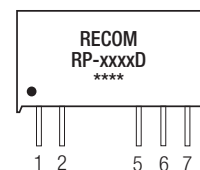
### Recommended Footprint Details



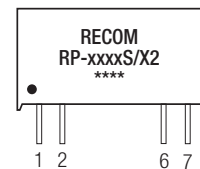
### Single Output



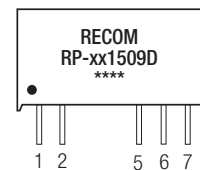
### Dual Output



### Single Output/X1



### 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