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

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Input Voltage (VDC)</th>
<th>Output Voltage (VDC)</th>
<th>Output Current (mA)</th>
<th>Efficiency (%)</th>
<th>Max Capacitive Load (µF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RK-xx05S* (H)</td>
<td>5, 12, 15, 24</td>
<td>5</td>
<td>200</td>
<td>70-78</td>
<td>1000µF</td>
</tr>
<tr>
<td>RK-xx09S* (H)</td>
<td>5, 12, 15, 24</td>
<td>9</td>
<td>111</td>
<td>70-80</td>
<td>1000µF</td>
</tr>
<tr>
<td>RK-xx12S* (H)</td>
<td>5, 12, 15, 24</td>
<td>12</td>
<td>84</td>
<td>78-82</td>
<td>470µF</td>
</tr>
<tr>
<td>RK-xx15S* (H)</td>
<td>5, 12, 15, 24</td>
<td>15</td>
<td>66</td>
<td>80-82</td>
<td>470µF</td>
</tr>
<tr>
<td>RH-xx05D* (H)</td>
<td>5, 12, 15, 24</td>
<td>±5</td>
<td>±100</td>
<td>74-78</td>
<td>±470µF</td>
</tr>
<tr>
<td>RH-xx09D* (H)</td>
<td>5, 12, 15, 24</td>
<td>±9</td>
<td>±56</td>
<td>76-79</td>
<td>±470µF</td>
</tr>
<tr>
<td>RH-xx12D* (H)</td>
<td>5, 12, 15, 24</td>
<td>±12</td>
<td>±42</td>
<td>78-84</td>
<td>±220µF</td>
</tr>
<tr>
<td>RH-xx15D* (H)</td>
<td>5, 12, 15, 24</td>
<td>±15</td>
<td>±33</td>
<td>80-84</td>
<td>±220µF</td>
</tr>
<tr>
<td>RH-xx1509D* (H)</td>
<td>5, 12, 24</td>
<td>+15/-9</td>
<td>+33/-56</td>
<td>70-81</td>
<td>±220/-470µF</td>
</tr>
</tbody>
</table>

* add Suffix "P" for Continuous Short Circuit Protection, e.g. RK-0505S/P, RK-0505S/HP

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

### Features
- 3kVDC or 4kVDC Isolation
- Optional Continuous Short Circuit Protected
- Custom Solutions Available
- UL94V-0 Package Material
- Efficiency to 84 %
- Suitable for IGBT Applications

### Description
The RK and RH Series DC/DC-Converter complements Recom’s industrial range of converters with very high isolations of 3kV and 4kVDC. The extended operating temperature range covering –40°C to +90°C is a standard feature. The converters are EN-60601-1 certified, making them suitable for medical as well as IGBT driver applications.

**Selection Guide**

**Part Number**

**Input Voltage (VDC)** | **Output Voltage (VDC)** | **Output Current (mA)** | **Efficiency (%)** | **Max Capacitive Load (µF)**
---|---|---|---|---
RK-xx05S* (H) | 5, 12, 15, 24 | 5 | 200 | 70-78 | 1000µF
RK-xx09S* (H) | 5, 12, 15, 24 | 9 | 111 | 70-80 | 1000µF
RK-xx12S* (H) | 5, 12, 15, 24 | 12 | 84 | 78-82 | 470µF
RK-xx15S* (H) | 5, 12, 15, 24 | 15 | 66 | 80-82 | 470µF
RH-xx05D* (H) | 5, 12, 15, 24 | ±5 | ±100 | 74-78 | ±470µF
RH-xx09D* (H) | 5, 12, 15, 24 | ±9 | ±56 | 76-79 | ±470µF
RH-xx12D* (H) | 5, 12, 15, 24 | ±12 | ±42 | 78-84 | ±220µF
RH-xx15D* (H) | 5, 12, 15, 24 | ±15 | ±33 | 80-84 | ±220µF
RH-xx1509D* (H) | 5, 12, 24 | +15/-9 | +33/-56 | 70-81 | ±220/-470µF

### ECONOLINE DC/DC-Converter

1 Watt

**SIP7 Single & Dual Output**

**Derating-Graph**

(Ambient Temperature)

**EN-60950-1 Certified**

**IEC/EN-60601-1 Certified**

**UL-60950-1 Certified**

**+15/-9 Version excluded**

**RoHS 2011/65/EU**

**6/6 E-358085**

**Refer to Application Notes**
ECONOLINE
DC/DC-Converter

RK_RH Series

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

- **Package Weight**: 2.6g
- **H-Suffix**: 2.8g
- **Packing Quantity**: 25 pcs per Tube

**MTBF (+25°C)**
- RK types: $992 \times 10^3$ hours
- RH types: $1012 \times 10^3$ hours
- RK types: $145 \times 10^3$ hours
- RH types: $151 \times 10^3$ hours

**Certifications**
- EN General Safety: Report: SPCVDD1109103
- EN Medical Safety: Report: SPCMDD1205098-4
- UL General Safety: Report: E3S8085

**EN60950-1: 2006 + A12:2011**
- UL60950-1, 2nd Edition

**Typical Characteristics**
A safety-critical application is defined as an application where a failure of a RECOM product may reasonably be expected to endanger or cause loss of life, inflict bodily harm or damage property. The buyer shall indemnify and hold harmless RECOM, its affiliated companies and its representatives against any damage claims in connection with the unauthorized use of RECOM products in such safety-critical applications.

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.

Package Style and Pinning (mm)

7 PIN SIP Package

Recommended Footprint Details

Pin Connections

Pin # Single
1 +Vin
2 -Vin
5 -Vout
7 +Vout

Pin # Dual
1 +Vin
2 -Vin
5 -Vout
6 Com
7 +Vout

Recommended Footprint Details

The product information and specifications are subject to change without prior notice. RECOM products are not authorized for use in safety-critical applications (such as life support) without RECOM's explicit written consent. A safety-critical application is defined as an application where a failure of a RECOM product may reasonably be expected to endanger or cause loss of life, inflict bodily harm or damage property. The buyer shall indemnify and hold harmless RECOM, its affiliated companies and its representatives against any damage claims in connection with the unauthorized use of RECOM products in such safety-critical applications.