

## Features

### Unregulated Converters

- Safety standards and approval: EN 60950 certified, rated for 250VAC (LVD test report)
- Power Sharing on Dual Output
- 3kVDC & 4kVDC Isolation
- Custom Solutions Available
- UL94V-O Package Material
- Efficiency to 84%

**ECONOLINE**

DC/DC-Converter

## RK & RH Series

### Selection Guide

| Part Number |       | Input Voltage              | Output Voltage | Output Current | Efficiency |
|-------------|-------|----------------------------|----------------|----------------|------------|
| SIP 7       | (4kV) | (VDC)                      | (VDC)          | (mA)           | (%)        |
| RK-xx1.8S   | (H)   | 1.8, 3.3, 5, 9, 12, 15, 24 | 1.8            | 555            | 70         |
| RK-xx3.3S   | (H)   | 1.8, 3.3, 5, 9, 12, 15, 24 | 3.3            | 303            | 75         |
| RK-xx05S    | (H)   | 1.8, 3.3, 5, 9, 12, 15, 24 | 5              | 200            | 70-78      |
| RK-xx09S    | (H)   | 1.8, 3.3, 5, 9, 12, 15, 24 | 9              | 111            | 76-79      |
| RK-xx12S    | (H)   | 1.8, 3.3, 5, 9, 12, 15, 24 | 12             | 84             | 78-79      |
| RK-xx15S    | (H)   | 1.8, 3.3, 5, 9, 12, 15, 24 | 15             | 66             | 80-82      |
| RK-xx24S    | (H)   | 1.8, 3.3, 5, 9, 12, 15, 24 | 24             | 42             | 74-83      |
| RH-xx1.8D   | (H)   | 1.8, 3.3, 5, 9, 12, 15, 24 | ±1.8           | ±278           | 70         |
| RH-xx3.3D   | (H)   | 1.8, 3.3, 5, 9, 12, 15, 24 | ±3.3           | ±152           | 70         |
| RH-xx05D    | (H)   | 1.8, 3.3, 5, 9, 12, 15, 24 | ±5             | ±100           | 74-78      |
| RH-xx09D    | (H)   | 1.8, 3.3, 5, 9, 12, 15, 24 | ±9             | ±56            | 76-79      |
| RH-xx12D    | (H)   | 1.8, 3.3, 5, 9, 12, 15, 24 | ±12            | ±42            | 80-82      |
| RH-xx15D    | (H)   | 1.8, 3.3, 5, 9, 12, 15, 24 | ±15            | ±33            | 80-84      |
| RH-xx24D    | (H)   | 1.8, 3.3, 5, 9, 12, 15, 24 | ±24            | ±21            | 80-84      |

xx = Input Voltage

### Specifications (Core Operating Area)

|                                                   |                                |                                        |
|---------------------------------------------------|--------------------------------|----------------------------------------|
| Input Voltage Range                               |                                | ±10%                                   |
| Output Voltage Accuracy                           |                                | ±5%                                    |
| Line Voltage Regulation                           |                                | 1.2%/1% of Vin max.                    |
| Load Voltage Regulation (10% to 100% full load)   | 1.8V, 3.3V output types        | 20% max.                               |
|                                                   | 5V output type                 | 15% max.                               |
|                                                   | 9V, 12V, 15V, 24V output types | 10% max.                               |
| Output Ripple and Noise (20MHz limited)           | Single output types            | 100mVp-p max.                          |
|                                                   | Dual output types              | ±75mVp-p max.                          |
| Operating Frequency                               | RK types                       | 50kHz min. / 100kHz typ. / 105kHz max. |
|                                                   | RH types                       | 57kHz min. / 100kHz typ. / 105kHz max. |
| Efficiency at Full Load                           |                                | 70% min. / 80% typ.                    |
| No Load Power Consumption                         | RK types                       | 101mW min. / 126mW typ. / 171mW max.   |
|                                                   | RH types                       | 87mW min. / 130mW typ. / 190mW max.    |
| Isolation Voltage                                 | (tested for 1 second)          | 3.000VDC min.                          |
| Rated Working Voltage                             | (long term isolation)          | see Application Notes                  |
| Isolation Voltage                                 | H-Suffix (tested for 1 second) | 4.000VDC min.                          |
| Rated Working Voltage                             | H-Suffix (long term isolation) | see Application Notes.                 |
| Isolation Capacitance                             | RK types                       | 20pF min. / 75pF max.                  |
|                                                   | RH types                       | 20pF min. / 65pF max.                  |
| Isolation Resistance                              |                                | 15 GΩ min.                             |
| Short Circuit Protection                          |                                | 1 Second                               |
| Operating Temperature Range (free air convection) |                                | -40°C to +85°C (see Graph)             |
| Storage Temperature Range                         |                                | -55°C to +125°C                        |
| Relative Humidity                                 | MSL Level 1                    | 95% RH                                 |

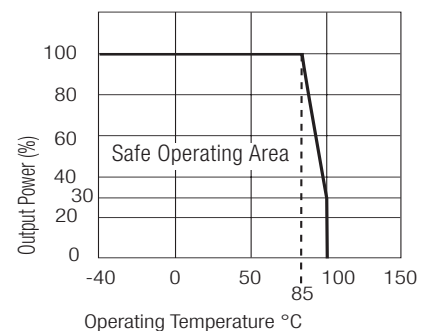
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## 1 Watt SIP7 Single & Dual Output



**RECOM**

## Derating-Graph (Ambient Temperature)

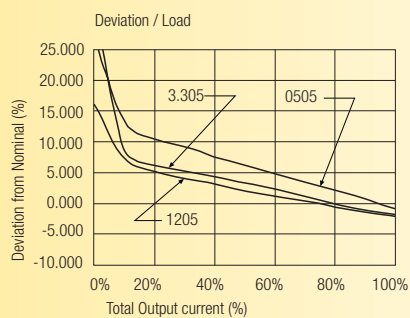
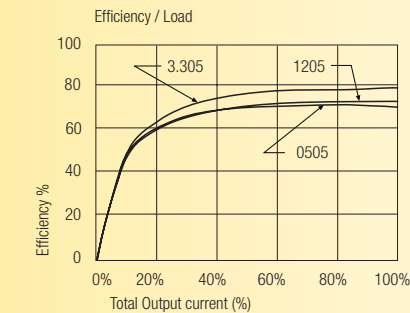


**Specifications (Core Operating Area)**

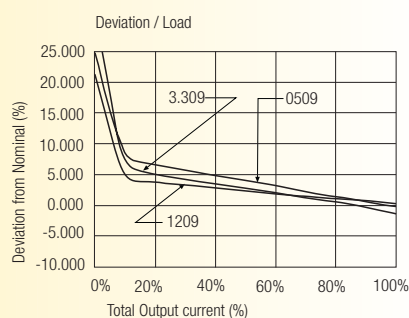
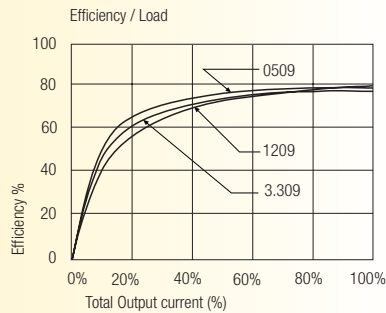
|                                                                           |                                                          |
|---------------------------------------------------------------------------|----------------------------------------------------------|
| Package Weight                                                            | 2.6g                                                     |
| H-Suffix                                                                  | 2.8g                                                     |
| MTBF (+25°C)                                                              | using MIL-HDBK 217F RK types 992 x 10 <sup>3</sup> hours |
| } Detailed Information see<br>Application Notes chapter "MTBF"<br>(+85°C) | RH types 1012 x 10 <sup>3</sup> hours                    |
|                                                                           | using MIL-HDBK 217F RK types 145 x 10 <sup>3</sup> hours |
|                                                                           | RH types 151 x 10 <sup>3</sup> hours                     |

**Typical Characteristics**

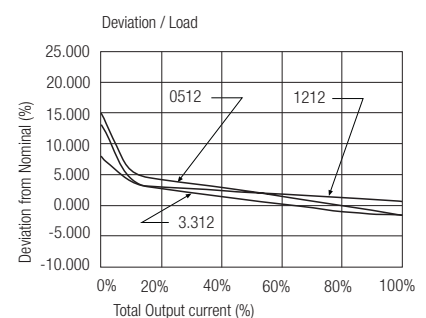
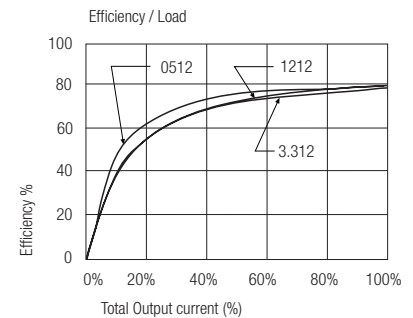
**RK-xx05S**



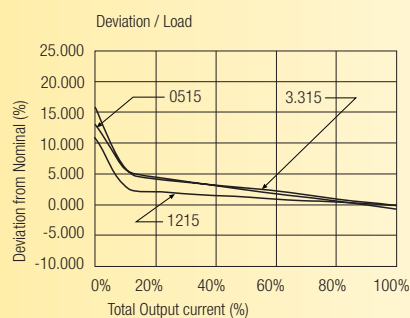
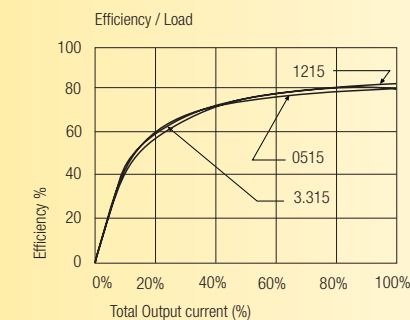
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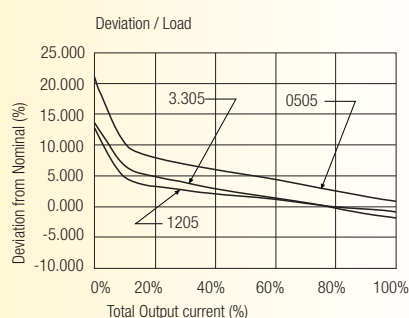
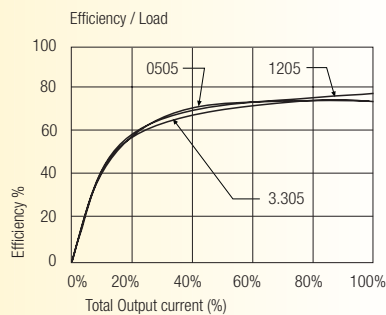
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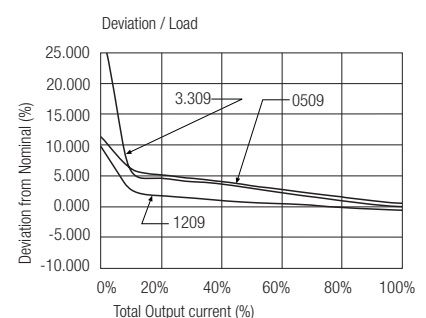
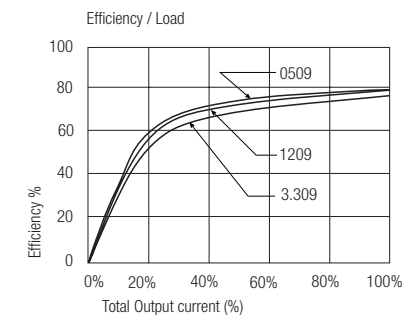
**RK-xx15S**



**RH-xx05D**

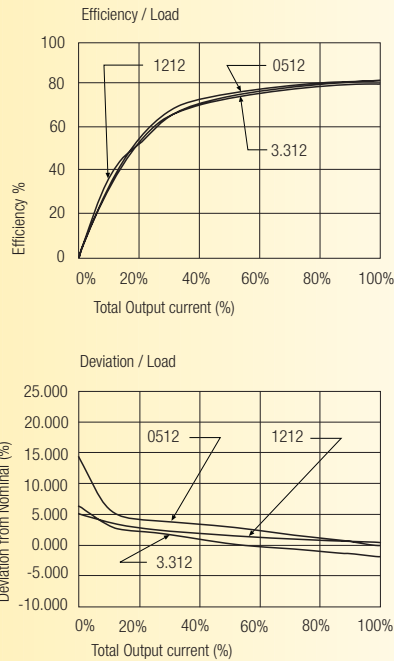


**RH-xx09D**

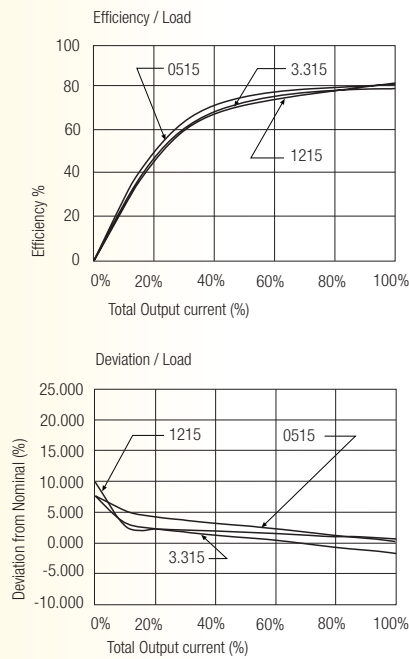


**Typical Characteristics**

**RH-xx12D**



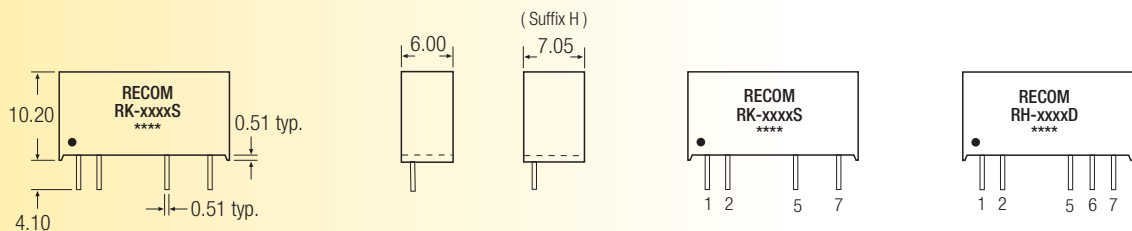
**RH-xx15D**



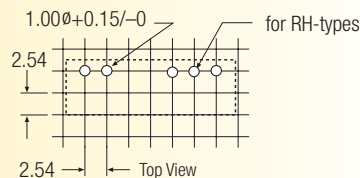
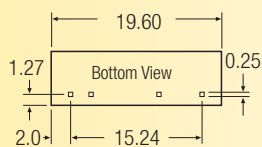
**Package Style and Pinning (mm)**

**7 PIN SIP Package**

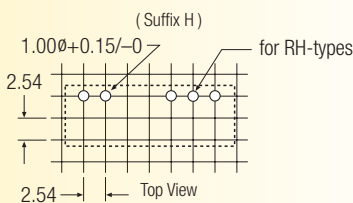
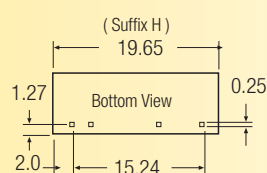
3rd angle projection



**Recommended Footprint Details**



**Recommended Footprint Details**



**Pin Connections  
RK-xxxxS**

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

**Pin Connections  
RH-xxxxD**

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

XX.X ± 0.5 mm  
XX.XX ± 0.25 mm



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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