

Features

Unregulated Converters

- Custom Solutions Available
- 1kVDC Isolation
- No External Components Required
- Optional Continuous Short Circuit Protected
- UL94V-0 Package Material
- No Heatsink Required
- Efficiency to 85%

Description

The RI series has been specifically designed for applications where board space is at a premium since these 2 Watt converters have only a slightly larger foot print than the RO series 1 Watt converters. With efficiencies up to 87%, the full output power is available over the operating temperature range -40°C to +85°C and the converters can be used in ambient temperatures of up to 100°C with derating. The wide selection of input voltage and output voltage options plus an I/O-Isolation of 1kVDC as standard makes these converters suitable for many industrial applications.

Selection Guide

| Part Number SIP4 | Input Voltage (VDC) | Output Voltage (VDC) | Output Current (mA) | Efficiency (%) | Max Capacitive Load ^m |
|---------------------|------------------------|-------------------------|------------------------|-------------------|----------------------------------|
| RI-xx05S | 5, 12, 15, 24 | 5 | 400 | 78-83 | 1200µF |
| RI-xx12S | 5, 12, 15, 24 | 12 | 167 | 80-85 | 680µF |
| RI-xx15S | 5, 12, 15, 24 | 15 | 133 | 80-85 | 680µF |

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

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

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 (10% to 100% full load) | 5V Output types All others | 15% max. 10% max. |
| Output Ripple and Noise (20MHz limited) | | 200mVp-p max. |
| Operating Frequency | | 20kHz min. / 50kHz typ. / 85kHz max. |
| Efficiency at Full Load | | 70% min. / 80% typ. |
| Minimum Load = 0% | Specifications valid for 10% minimum load only. | |
| Isolation Voltage | (tested for 1 second) (rated for 1 minute) | 1000VDC 500VAC / 60Hz |
| Isolation Capacitance | | 30pF min. / 85pF max. |
| Isolation Resistance | | 10 GΩ min. |
| Short Circuit Protection | | 1 Second |
| P-Suffix | | Continuous |
| 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 | | 1.4g |
| Packing Quantity | | 42 pcs per Tube |
| MTBF (+25°C) (+85°C) | Detailed Information see Application Notes chapter "MTBF" | using MIL-HDBK 217F 845 x 10 ³ hours using MIL-HDBK 217F 160 x 10 ³ hours |

Certifications

EN General Safety Report: SPCLVD1109103 EN60950-1:2006 + A12:2011

**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

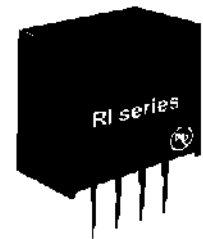
with 3 year Warranty

RECOM

2 Watt

SIP4

Single Output

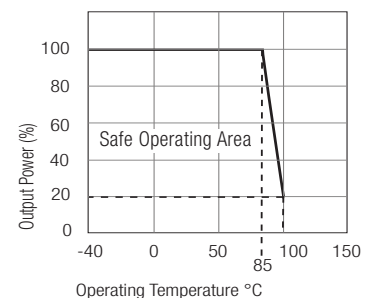


EN-60950-1 Certified

RI

Derating-Graph

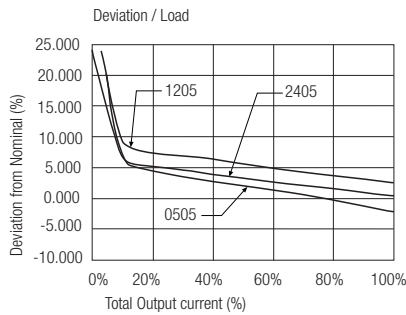
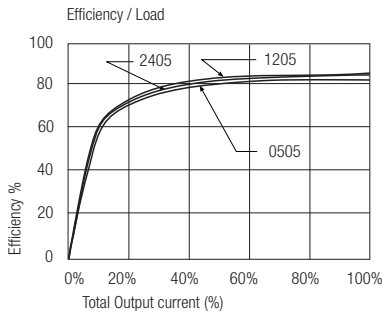
(Ambient Temperature)



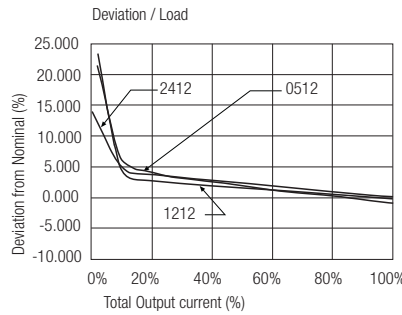
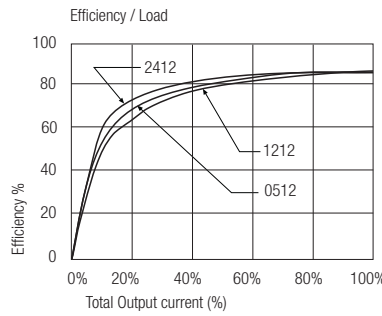
Refer to Application Notes

Typical Characteristics

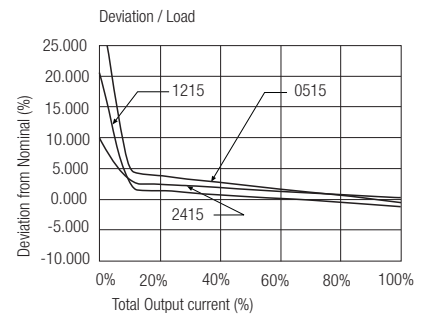
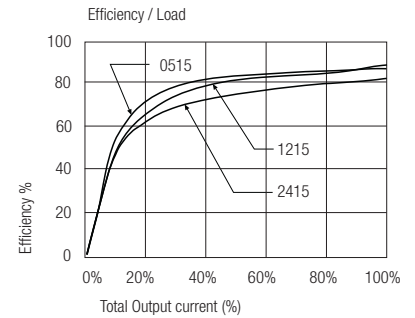
RI-xx05S



RI-xx12S



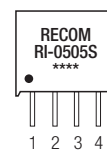
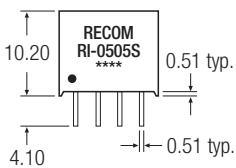
RI-xx15S



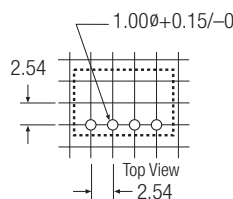
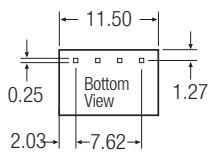
Notes
Note 1 Maximum capacitive load is defined as the capacitive load that will allow start up in under 1 second without damage to the converter.

Package Style and Pinning (mm)

4 PIN SIP Package



Recommended Footprint Details



Pin Connections

| Pin # | Dual |
|-----------------|-------|
| 1 | -Vin |
| 2 | +Vin |
| 3 | -Vout |
| 4 | +Vout |
| XX.X ± 0.5 mm | |
| XX.XX ± 0.25 mm | |