

# 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 <sup>(1)</sup>
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<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 V <sub>in</sub> typ.
Load Voltage Regulation	5V Output types	15% max.
(10% to 100% full load)	All others	10% max.
Output Ripple and Noise (20MHz limited)		200mVp-p max.
Operating Frequency		35kHz 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)	1000VDC
	(rated for 1 minute)	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)	Detailed Information see Application Notes chapter "MTBF"	using MIL-HDBK 217F
(+85°C)		using MIL-HDBK 217F
		845 x 10 <sup>3</sup> hours
		160 x 10 <sup>3</sup> 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

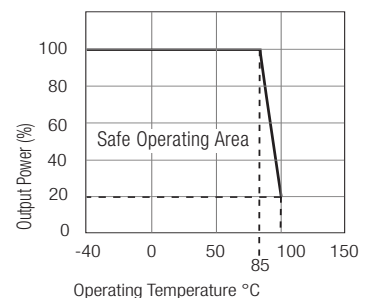


EN-60950-1 Certified

# RI

## Derating-Graph

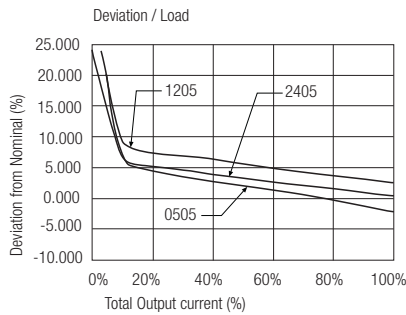
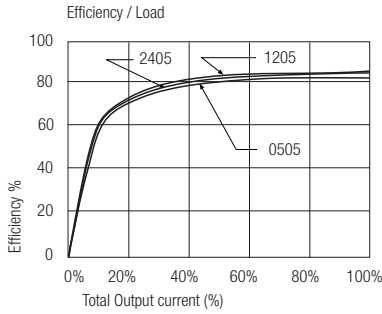
(Ambient Temperature)



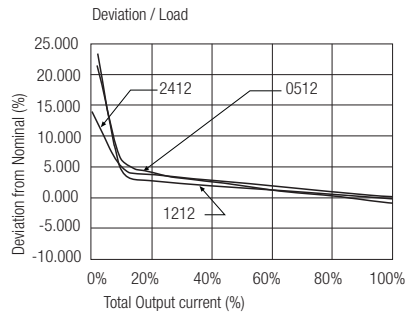
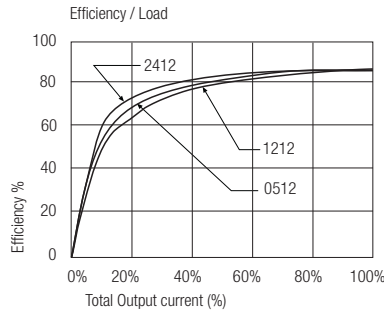
Refer to Application Notes

**Typical Characteristics**

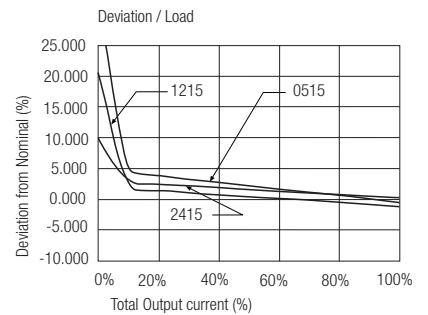
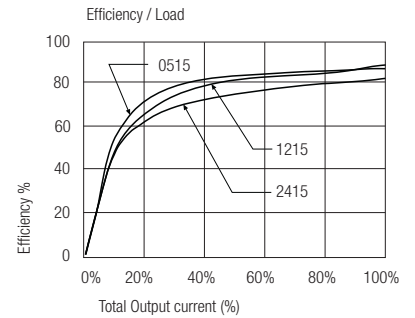
**RI-xx05S**



**RI-xx12S**



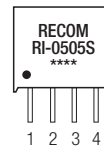
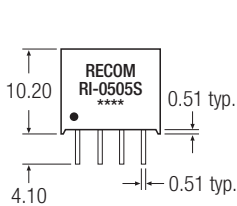
**RI-xx15S**



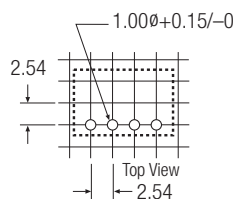
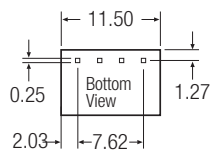
**Notes**  
Note 1 Maximum capacitive load is defined as the capacitive load that will allow start up in under 1 second without damage to the converter.

**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	

The product information and specifications are subject to change without prior notice. All products are designed for non-safety critical commercial and industrial applications. The Buyer agrees to implement safeguards that anticipate the consequences of any failures that might cause harm, loss of life and/or damage property.