

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%

ECONOLINE

DC/DC-Converter

with 3 year Warranty

RECOM

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 ¹⁾
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

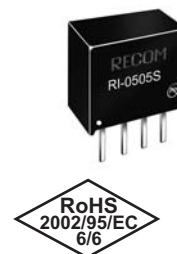
xx = Input Voltage. Other input and output voltage combinations available on request.

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

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

Input Voltage Range	$\pm 10\%$	
Output Voltage Accuracy	$\pm 5\%$	
Line Voltage Regulation	1.2%/1% of V_{in} 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 G Ω 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 ³ hours
		160 x 10 ³ hours

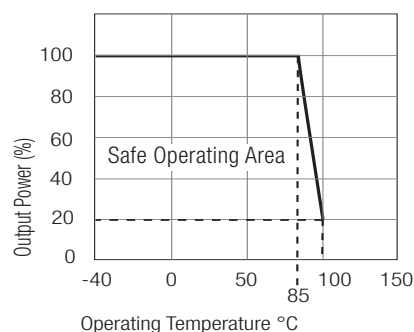
2 Watt SIP4 Single Output



EN-60950-1 Certified

RI

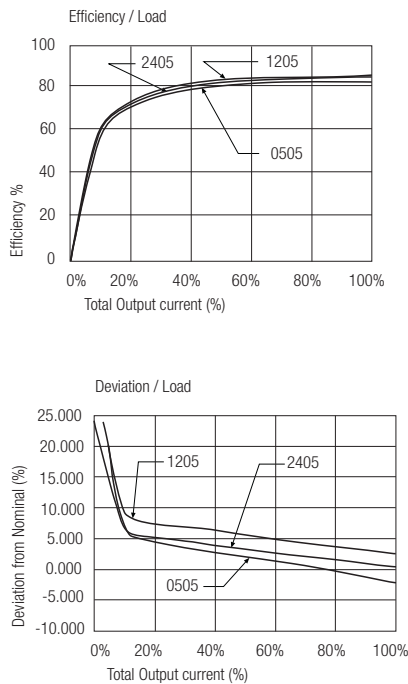
Derating-Graph (Ambient Temperature)



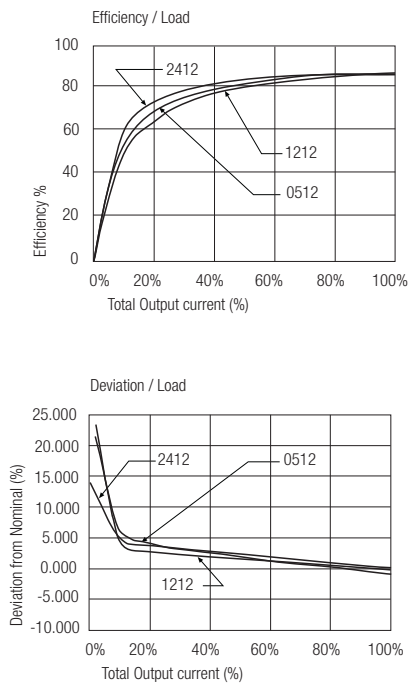
Refer to Application Notes

Typical Characteristics

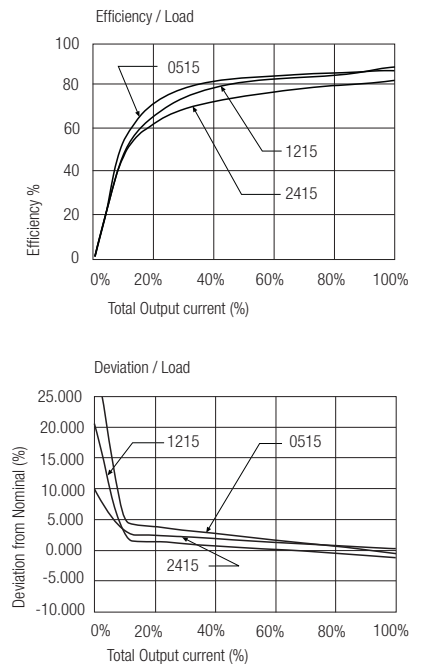
RI-xx05S



RI-xx12S



RI-xx15S



Notes

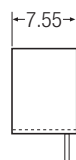
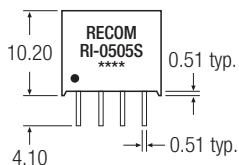
Note 1 Maximum capacitive load is defined as the capacitive load that will allow start up in under 1 second without damage to the converter.

Certifications

EN General Safety Report: PS080804950C2 EN60950-1:2001 + A11:2004

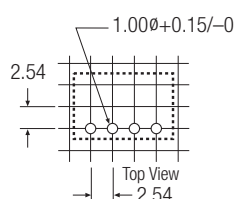
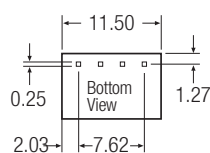
Package Style and Pinning (mm)

4 PIN SIP Package



3rd angle projection

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