Features

Unregulated Converters

Rev.2

- Custom Solutions Available
- 1kVDC Isolation
- No External Components Required
- Optional Continuous Short Circuit Protected
- UL94V-0 Package Material
- No Heatsink Required
- Efficiency to 87 %

ECONOLINE

DC/DC-Converter

RI Series

2 Watt SIP4 Single Output

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 (%)
RI-xx05S	5, 12, 15, 24	5	400	78-83
RI-xx12S	5, 12, 15, 24	12	167	80-85
RI-xx15S	5, 12, 15, 24	15	133	80-85

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

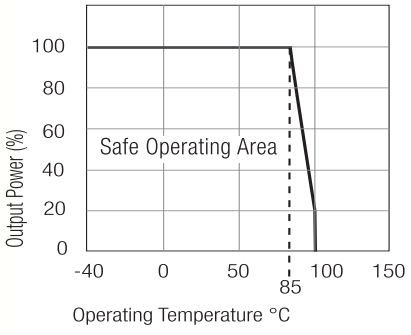
Specifications (measured at T_A = 25°C, nominal input voltage, full load and after warm-up)

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 type	15% max.
	12V, 15V output types	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.
No Load Power Consumption		142mW min. / 185mW typ. / 350mW max.
Maximum Capacitive Load		47µF
Isolation Voltage	(tested for 1 second)	1000VDC min.
Rated Working Voltage	(long term isolation)	see Application Notes
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
MTBF (+25°C) *Detailed Information see Application Notes chapter "MTBF"*	using MIL-HDBK 217F	845 x 10^3 hours
(+85°C)	using MIL-HDBK 217F	160 x 10^3 hours

RECOM

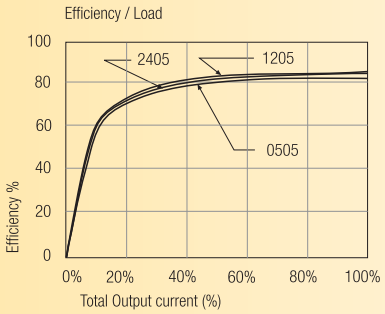
Derating-Graph

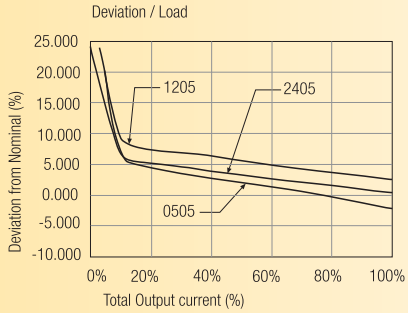
(Ambient Temperature)



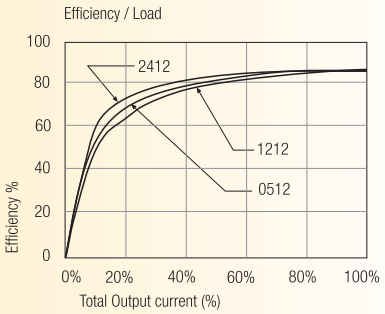
Typical Characteristics

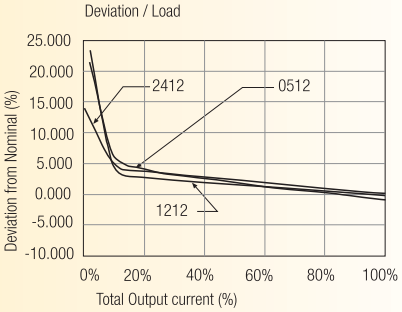
RI-xx05S



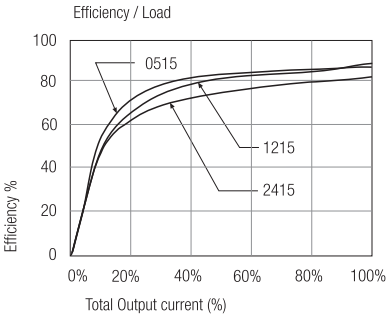


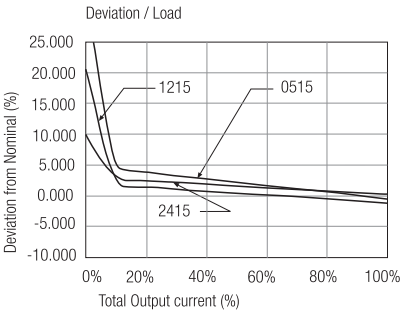
RI-xx12S





RI-xx15S

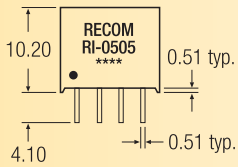


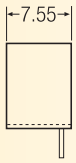


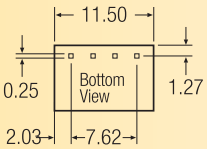
Package Style and Pinning (mm)

3rd angle projection

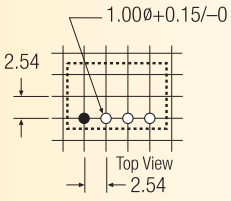
4 PIN SIP Package







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