

## Features

### Unregulated Converters

- Twin Independent Outputs
- Output/Output Isolation 1kVDC
- Power Sharing on Outputs
- Input/Output Isolation 1kVDC
- No Heatsink Required
- UL94V-0 Package Material
- Optional Continuous Short Circuit Protected
- No External Components Required
- Custom Solutions Available
- Efficiency to 84%

## ECONOLINE

DC/DC-Converter

# RU Series

1 Watt

SIP7

Isolated

Dual Output



### Selection Guide

Part Number	Input Voltage (VDC)	Output Voltage (V1VDC)	Output Voltage (V2VDC)	Output Current (mA)	Efficiency (%)
SIP 7	(VDC)	(V1VDC)	(V2VDC)	(mA)	(%)
RU-xx1.81.8	1.8, 3.3, 5, 9, 12, 24	1.8	1.8	278/278	70
RU-xx3.33.3	1.8, 3.3, 5, 9, 12, 24	3.3	3.3	152/152	70
RU-xx053.3	1.8, 3.3, 5, 9, 12, 24	5	3.3	100/152	70
RU-xx0505	1.8, 3.3, 5, 9, 12, 24	5	5	100/100	70-78
RU-xx0509	1.8, 3.3, 5, 9, 12, 24	5	9	100/55	75
RU-xx0512	1.8, 3.3, 5, 9, 12, 24	5	12	100/42	75
RU-xx0515	1.8, 3.3, 5, 9, 12, 24	5	15	100/33	78
RU-xx0909	1.8, 3.3, 5, 9, 12, 24	9	9	55/55	75-80
RU-xx1212	1.8, 3.3, 5, 9, 12, 24	12	12	42/42	78-80
RU-xx1515	1.8, 3.3, 5, 9, 12, 24	15	15	33/33	80-82
RU-xx2424	1.8, 3.3, 5, 9, 12, 24	24	24	21/21	80-84

xx = Input Voltage

\* add Suffix "P" for Continuous Short Circuit Protection, e.g. RU-050505/P

### Specifications (Core Operating Area)

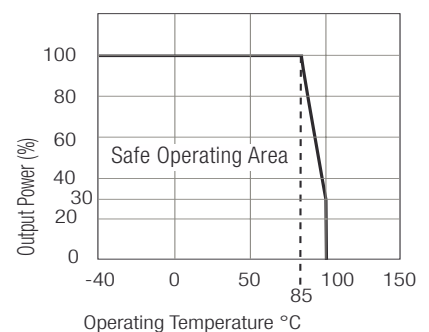
Input Voltage Range				±10%
Output Voltage Accuracy				±5%
Line Voltage Regulation				1.2%/1% of Vin typ.
Load Voltage Regulation (10% to 100% full load)	1.8V, 3.3V output types			20% max.
	5V output type			15% max.
	9V, 12V, 15V, 24V output types			10% max.
Output Ripple and Noise (20MHz limited)				75mVp-p max.
Operating Frequency				50kHz min. / 100kHz typ. / 105kHz max.
Efficiency at Full Load				70% min. / 80% typ.
No Load Power Consumption				87mW min. / 130mW typ. / 220mW max.
Isolation Voltage	<sup>1)</sup>	(tested for 1 second)	1000VDC min.	
Rated Working Voltage	<sup>1)</sup>	(long term isolation)	see Application Notes	
Isolation Capacitance				20pF min. / 94pF max.
Isolation Resistance				10 GΩ min.
Short Circuit Protection P-Suffix				1 Second 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				2.7g
MTBF (+25°C)	} Detailed Information see Application Notes chapter "MTBF"	using MIL-HDBK 217F	1012 x 10 <sup>3</sup> hours	
(+85°C)		using MIL-HDBK 217F	151 x 10 <sup>3</sup> hours	

<sup>1)</sup> Input/Output and Output V1/Output V2

# RECOM

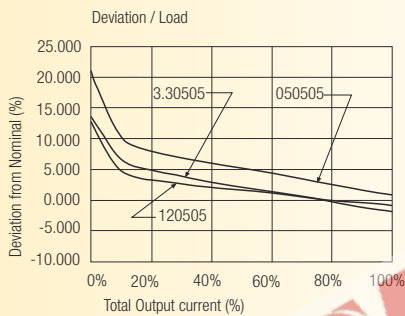
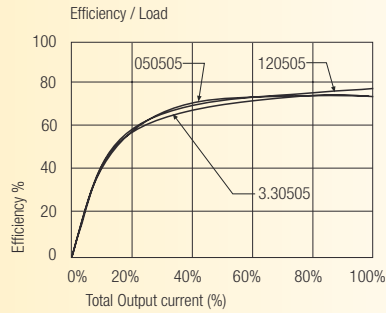
## Derating-Graph

(Ambient Temperature)

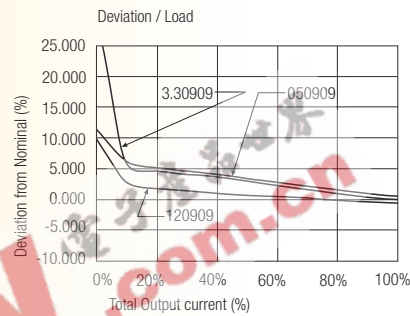
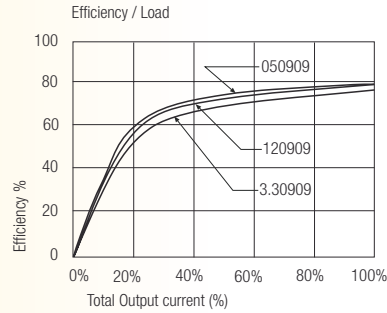


**Typical Characteristics**

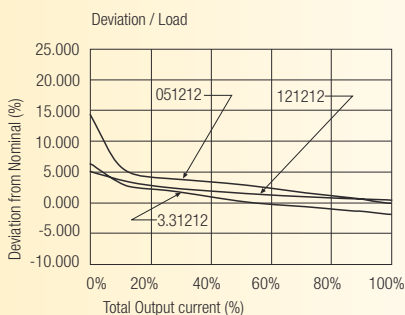
**RU-xx0505**



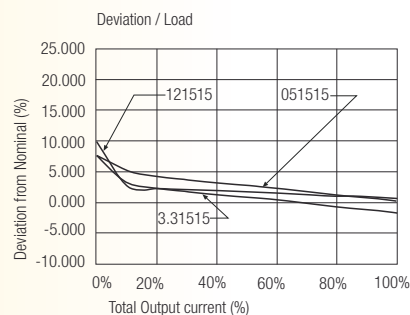
**RU-xx0909**



**RU-xx1212**



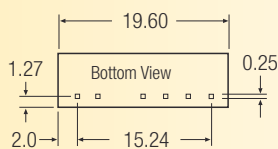
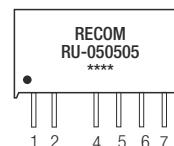
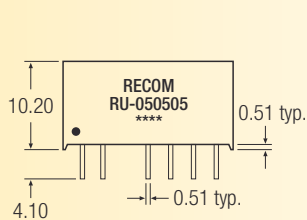
**RU-xx1515**



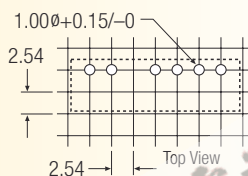
**Package Style and Pinning (mm)**

7 PIN SIP Package

3rd angle projection 



Recommended Footprint Details



Pin Connections

Pin #	Single
1	+Vin
2	-Vin
4	+Vout 1
5	-Vout 1
6	+Vout 2
7	-Vout 2

XX.X ± 0.5 mm  
XX.XX ± 0.25 mm

