

## 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
- Toroidal Magnetics
- No Extern. Components Required
- Custom Solutions Available
- Efficiency to 84%

**ECONOLINE**

DC/DC-Converter

# RU Series

### 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

### Specifications (Core Operating Area)

Input Voltage Range			±10%
Output Voltage Accuracy			±5%
Line Voltage Regulation			1.2%/1% of Vin max.
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. / 190mW max.
Isolation Voltage <sup>1)</sup>	(tested for 1 second)		1.000VDC 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			1 Second
Operating Temperature Range (free air convection)			-40°C to +85°C (see Graph)
Storage Temperature Range			-55°C to +125°C
Relative Humidity	MSL Level 1		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

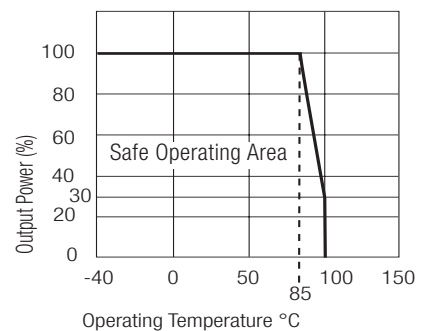
<sup>1)</sup> Input/Output and Output V1/Output V2

## 1 Watt SIP7 Isolated Dual Output



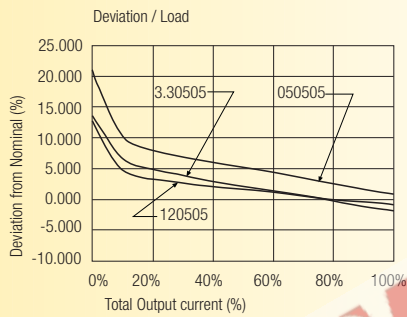
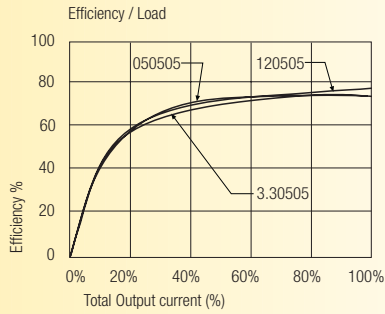
**RECOM**

## Derating-Graph (Ambient Temperature)

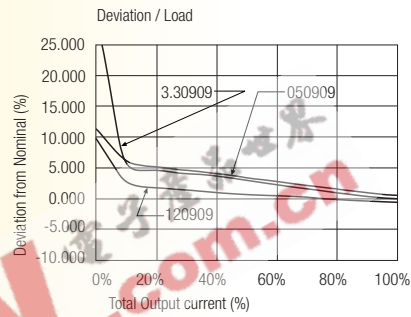
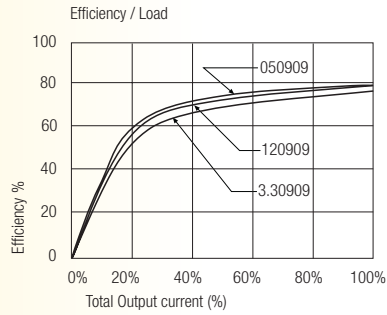


Typical Characteristics

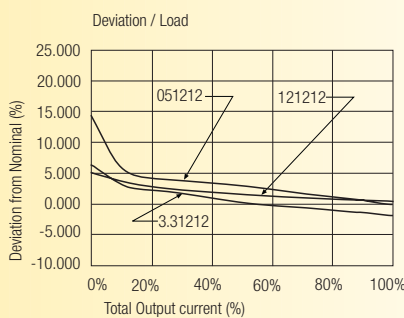
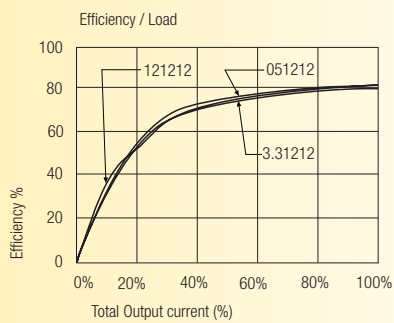
**RU-xx0505**



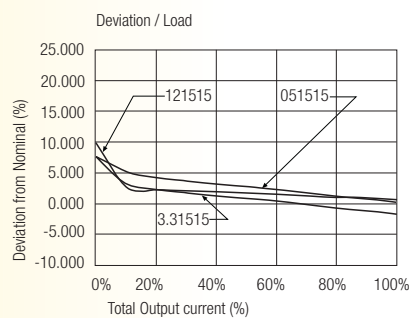
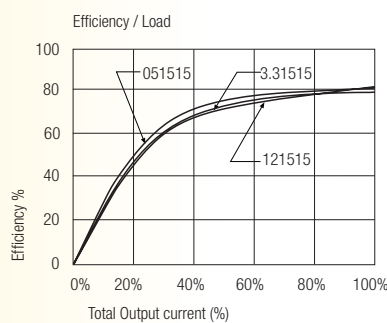
**RU-xx0909**



**RU-xx1212**

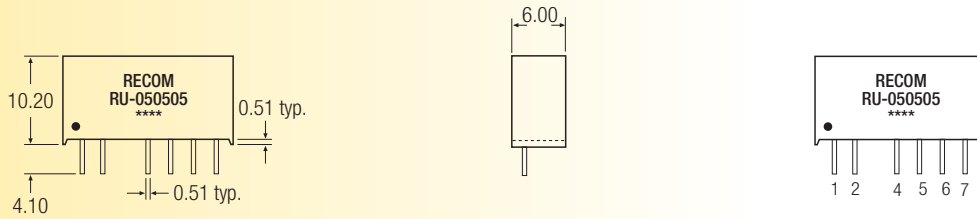


**RU-xx1515**

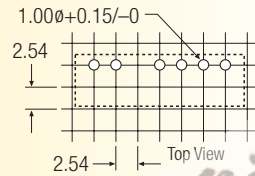
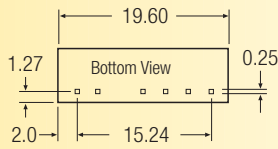


Package Style and Pinning (mm)

7 PIN SIP Package



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

