

## Features

## Unregulated Converters

- Dual Output from a Single Input Rail
- Input/Output Isolation 1kVDC
- Output/Output Isolation 1kVDC
- Power Sharing on Outputs
- UL94V-0 Package Material
- Optional Continuous Short Circuit Protected
- No External Components Required
- Efficiency to 85%

## ECONOLINE

DC/DC-Converter

# RUZ Series

## 2 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)                | (%)            |
| RUZ-xx3.33.3 | 5, 9, 12, 24        | 3.3                    | 3.3                    | 303/303             | 70             |
| RUZ-xx0505   | 5, 9, 12, 24        | 5                      | 5                      | 200/200             | 70-82          |
| RUZ-xx0509   | 5, 9, 12, 24        | 5                      | 9                      | 200/111             | 70-82          |
| RUZ-xx0512   | 5, 9, 12, 24        | 5                      | 12                     | 200/84              | 70-82          |
| RUZ-xx0515   | 5, 9, 12, 24        | 5                      | 15                     | 200/66              | 70-82          |
| RUZ-xx0909   | 5, 9, 12, 24        | 9                      | 9                      | 111/111             | 82-84          |
| RUZ-xx1212   | 5, 9, 12, 24        | 12                     | 12                     | 84/84               | 82-84          |
| RUZ-xx1515   | 5, 9, 12, 24        | 15                     | 15                     | 66/66               | 82-84          |
| RUZ-xx2424   | 5, 9, 12, 24        | 24                     | 24                     | 42/42               | 80-85          |

xx = Input Voltage

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

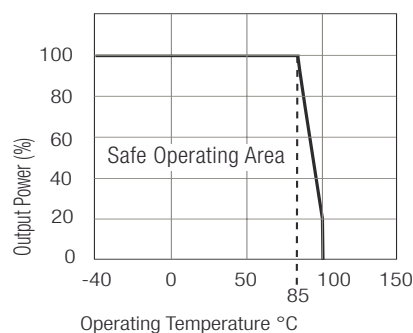
### Specifications (Core Operating Area)

|   |   |                       |                             |
|---|---|-----------------------|-----------------------------|
| 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)   | .3V output types  | 20% max.              |                             |
|   | 5V output type  | 15% max.              |                             |
|   | 9V, 12V, 15V, 24V output types                              | 10% max.              |                             |
| Output Ripple and Noise (20MHz limited)           | 150mVp-p max.   |                       |                             |
| Operating Frequency                               | 35kHz min. / 50kHz typ. / 85kHz max.                        |                       |                             |
| Efficiency at Full Load                           | 70% min. / 80% typ.   |                       |                             |
| No Load Power Consumption                         | 163mW min. / 223mW typ. / 350mW 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                             | 40pF min. / 120pF 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                                    | 2.8g  |                       |                             |
| MTBF (+25°C)                                      | } Detailed Information see Application Notes chapter "MTBF" | using MIL-HDBK 217F   | 988 x 10 <sup>3</sup> hours |
| (+85°C)   |   | using MIL-HDBK 217F   | 135 x 10 <sup>3</sup> hours |

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

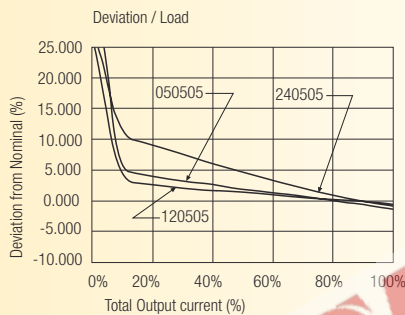
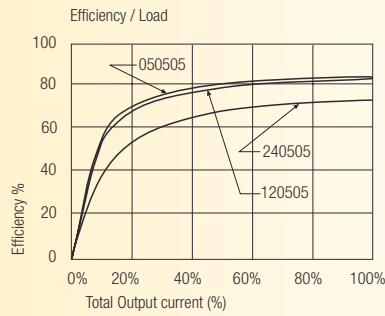


## Derating-Graph (Ambient Temperature)

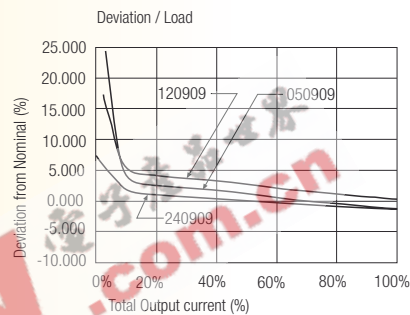
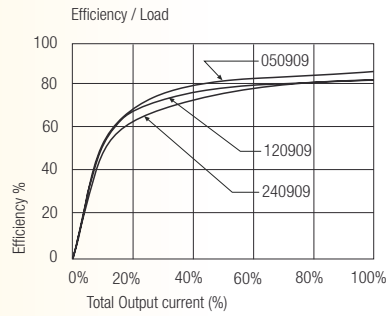


**Typical Characteristics**

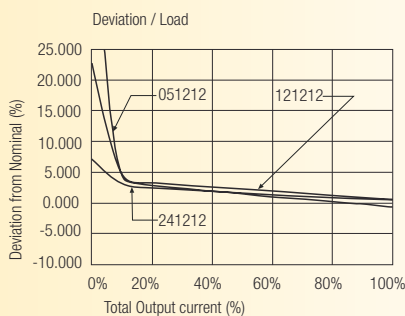
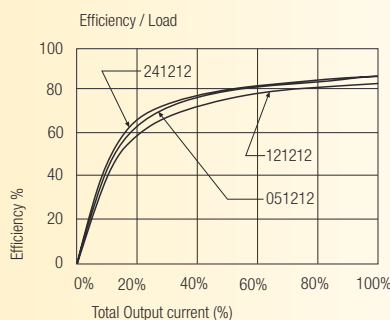
**RUZ-xx0505**



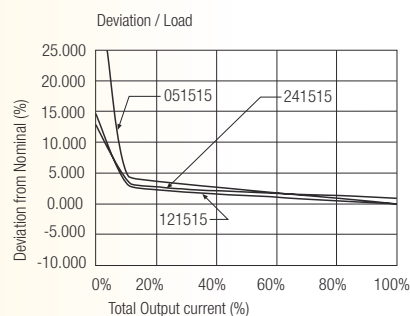
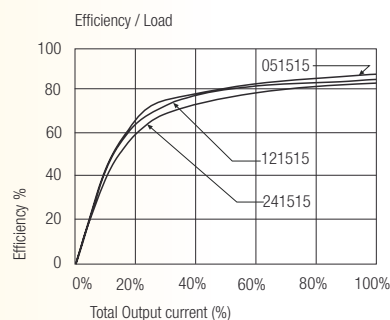
**RUZ-xx0909**



**RUZ-xx1212**

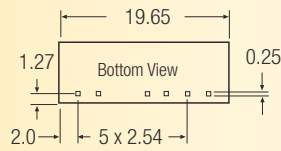
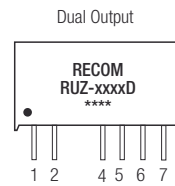
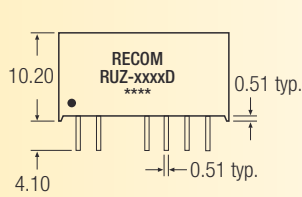


**RUZ-xx1515**

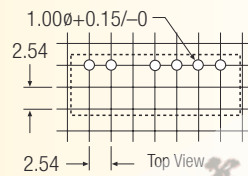


**Package Style and Pinning (mm)**

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

