

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

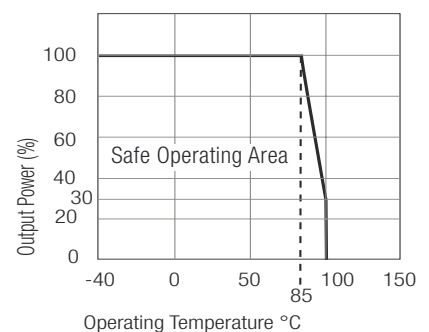
Specifications (Core Operating Area)

| | | | |
|---|---|-----------------------|------------------------------|
| 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 | ¹⁾ (tested for 1 second) | 1000VDC min. | |
| Rated Working Voltage | ¹⁾ (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 ³ hours |
| (+85°C) | | using MIL-HDBK 217F | 151 x 10 ³ hours |

¹⁾ Input/Output and Output V1/Output V2

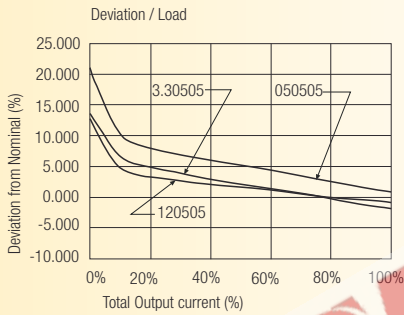
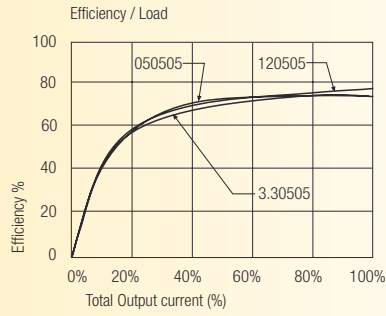
Derating-Graph

(Ambient Temperature)

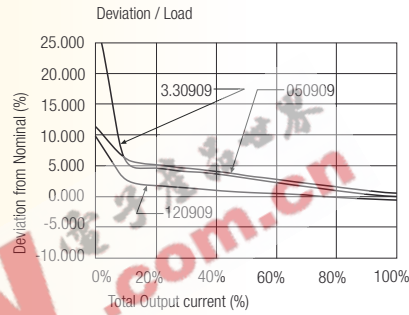
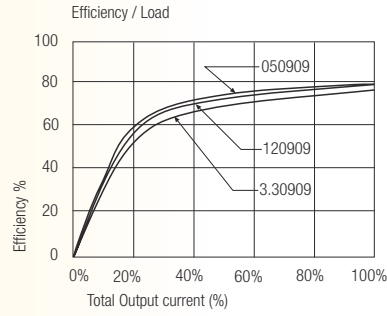


Typical Characteristics

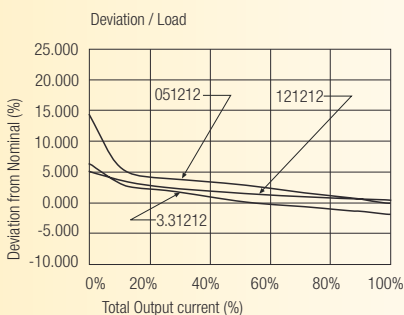
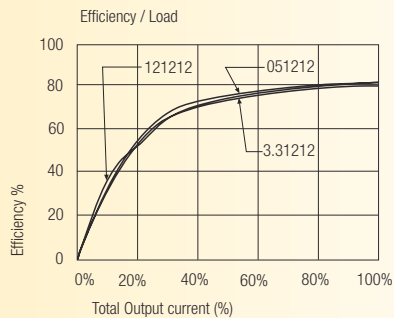
RU-xx0505



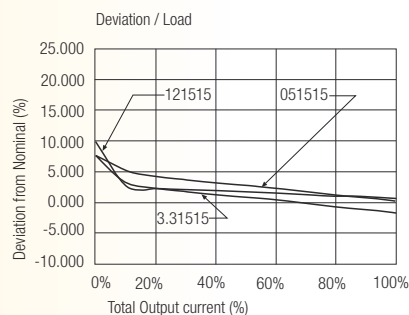
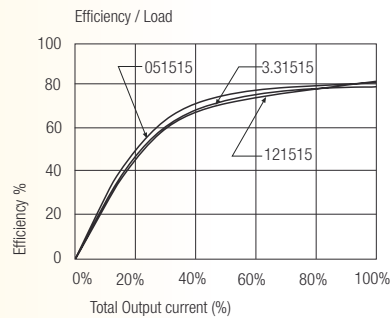
RU-xx0909



RU-xx1212



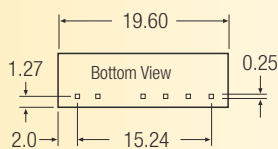
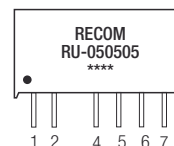
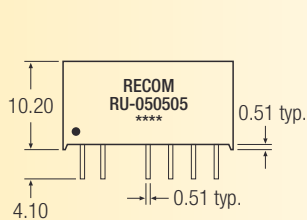
RU-xx1515



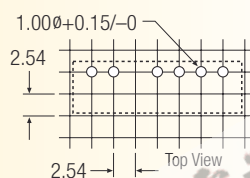
Package Style and Pinning (mm)

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

