

# Features

## Unregulated Converters

- Low Cost 2W Dual Output Converter
- Industry Standard SIP7 and DIP14 Packages
- Power Sharing on Outputs
- Optional Continuous Short Circuit Protected
- 1kVDC and 2kVDC Isolation Options
- UL94V-0 Package Material
- Efficiency to 86 %

### Description

The RD series have been specifically designed for applications where dual power rails need to be created from a single rail supply and a low cost solution is required.

With efficiencies up to 85%, 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 industry standard input voltage and output voltage options plus an I/O-Isolation of 1kVDC or 2kVDC makes these converters suitable for many industrial applications.

### Selection Guide

Part Number	2kV	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency (%)
RD-xx05D	(H)	5, 12, 24	±5	±200	75-82
RD-xx12D	(H)	5, 12, 24	±12	±84	80-84
RD-xx15D	(H)	5, 12, 24	±15	±66	82-86
RD-xx24D	(H)	5, 12, 24	±24	±42	82-86

xx = Input Voltage. Other input and output voltage combinations available on request.

\* add Suffix "P" for Continuous Short Circuit Protection, e.g. RD-0505D/P, RD-0505D/HP

### Specifications (measured at $T_A = 25^\circ\text{C}$ , nominal input voltage, full load and after warm-up)

Input Voltage Range		±10%
Output Voltage Accuracy		±5%
Line Voltage Regulation		1.2%/1% of $V_{in}$ typ.
Load Voltage Regulation (10% to 100% full load)	3.3V output types 5V output type 9V, 12V, 15V, 24V output types	20% max. 15% max. 10% max.
Output Ripple and Noise (20MHz limited)		150mVp-p max.
Operating Frequency		34kHz min. / 50kHz typ. / 85kHz max.
Efficiency at Full Load		70% min. / 80% typ.
No Load Power Consumption		163mW min. / 223mW typ. / 350mW max.
Maximum Capacitive Load		±33µF
Isolation Voltage	(tested for 1 second)	1000VDC min.
Rated Working Voltage	(long term isolation)	see Application Notes.
Isolation Voltage	H-Suffix (tested for 1 second)	2000VDC min.
Rated Working Voltage	H-Suffix (long term isolation)	see Application Notes
Isolation Capacitance		40pF min. / 115pF 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
Packing Quantity		25 pcs per Tube
MTBF (+25°C)	} Detailed Information see Application Notes chapter "MTBF"	using MIL-HDBK 217F
(+85°C)		using MIL-HDBK 217F
		988 x 10 <sup>3</sup> hours
		135 x 10 <sup>3</sup> hours

**ECONOLINE**  
DC/DC-Converter

**RECOM**

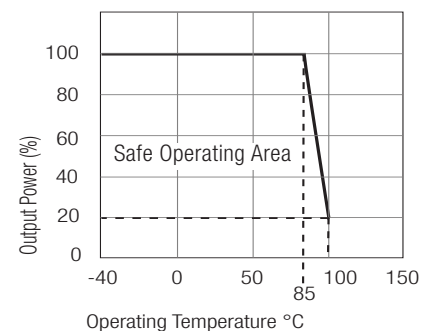
**2 Watt**  
**SIP7**  
**Dual Output**



**EN-60950-1 Certified**

**RD**

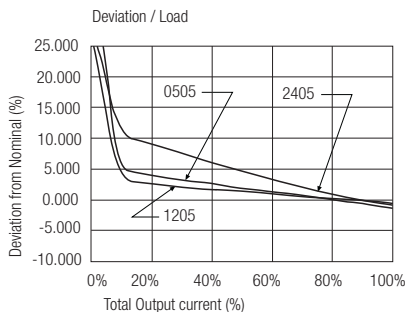
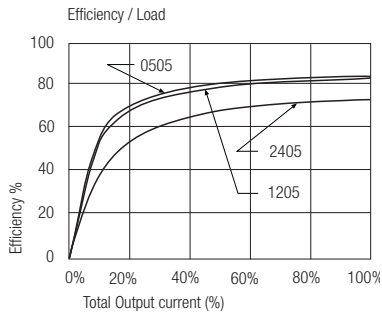
## Derating-Graph (Ambient Temperature)



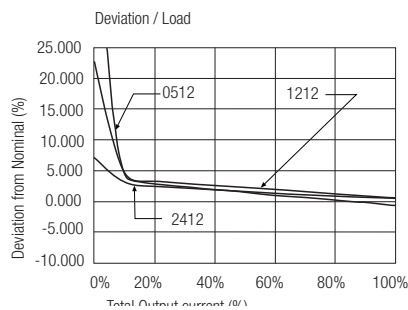
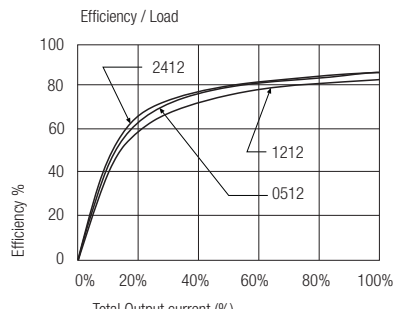
**Refer to Application Notes**

Typical Characteristics

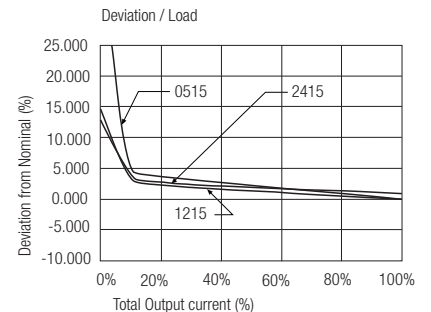
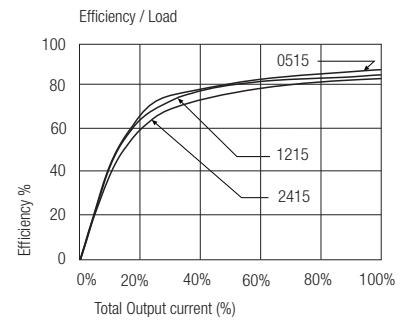
**RD-xx05D**



**RD-xx12D**

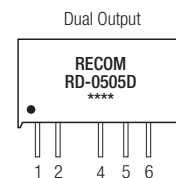
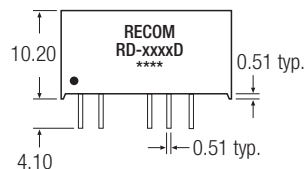


**RD-xx15D**

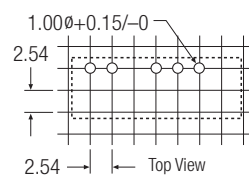
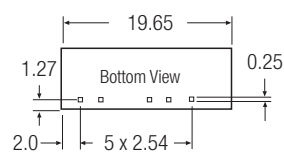


Package Style and Pinning (mm)

7 PIN SIP Package



Recommended Footprint Details



Pin Connections

Pin #	RD
1	+Vin
2	-Vin
4	-Vout
5	Com
6	+Vout

XX.X ± 0.5 mm  
XX.XX ± 0.25 mm