THE DATASHEET OF

RD-2412D/HP

Features

Unregulated Converters

- 2W dual output converter
- Industry standard SIP7 packages
- Power sharing on outputs
- Optional continuous short circuit protection
- 1kVDC and 2kVDC basic isolation
- UL94 V-0 package material
- Efficiency up to 87%

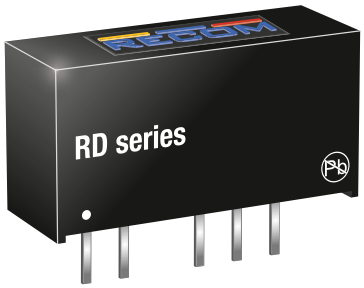
RECOM
DC/DC Converter

RD

2 Watt SIP7 Dual Output

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 87%, 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 input to output isolation of 1kVDC or 2kVDC makes these converters suitable for many industrial applications.



EN60950-1 certified
IEC60950-1 certified

Selection Guide

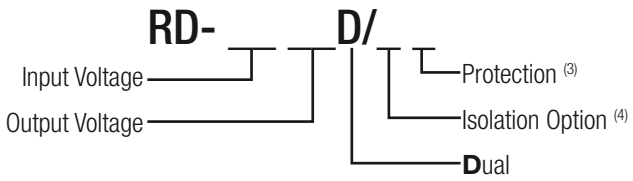
Part Number	nom. Input Voltage [VDC]	Output Voltage [VDC]	Output Current [mA]	Efficiency typ. (1) [%]	max. Capacitive Load (2) [µF]
RD-xx05D (3,4)	5, 12, 24	±5	±200	75-86	±470
RD-xx12D (3,4)	5, 12, 24	±12	±84	81-85	±330
RD-xx15D (3,4)	5, 12, 24	±15	±66	82-86	±330
RD-xx24D (3,4)	5, 12, 24	±24	±42	82-86	±100

Notes:

Note1: Efficiency is tested at nominal input and full load at +25°C ambient

Note2: Max Cap Load is tested at nominal input and full resistive load and is defined as the capacitive load that will allow start up in under 1s without damage to the converter

Model Numbering



Notes:

Note3: standard part is without Continuous Short Circuit Protection
add suffix „/P“ for Continuous Short Circuit Protection

Note4: add suffix „/H“ for 2kVDC Isolation
or add suffix „/HP“ for Continuous Short Circuit Protection and 2kVDC Isolation

Ordering Examples:

RD-123.3D/P: 12V Input Voltage, ±3.3V Output Voltage, Dual Output with continuous short circuit protection

RD-0509D/HP: 5V Input Voltage, ±9V Output Voltage, Dual Output with 2kVDC Isolation and continuous short circuit protection

Specifications (measured @ Ta= 25°C, nom. Vin and full load unless otherwise stated)

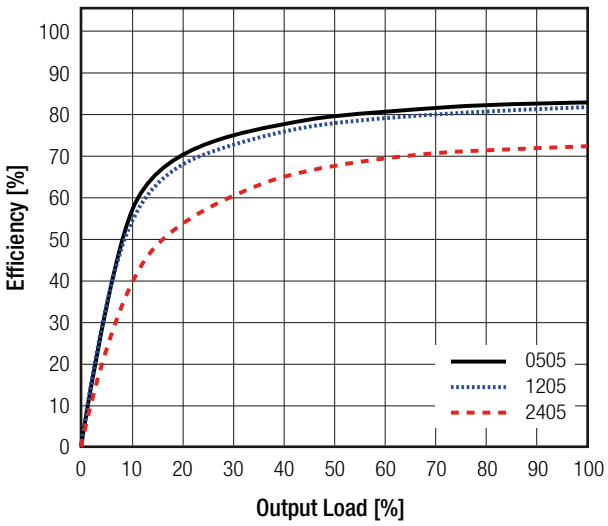
BASIC CHARACTERISTICS				
Parameter	**Condition**	**Min.**	**Typ.**	**Max.**
Input Voltage Range			±10%	
Minimum Load [5]		0%		
Internal Operating Frequency		20kHz	50kHz	85kHz
Output Ripple and Noise	20MHz BW			150mVp-p

Notes:

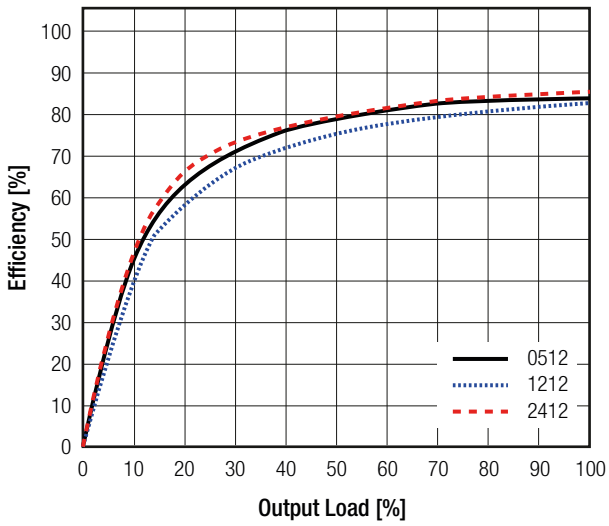
Note5: Operation below 10% load will not harm the converter, but specifications may not be met

Efficiency vs. Load

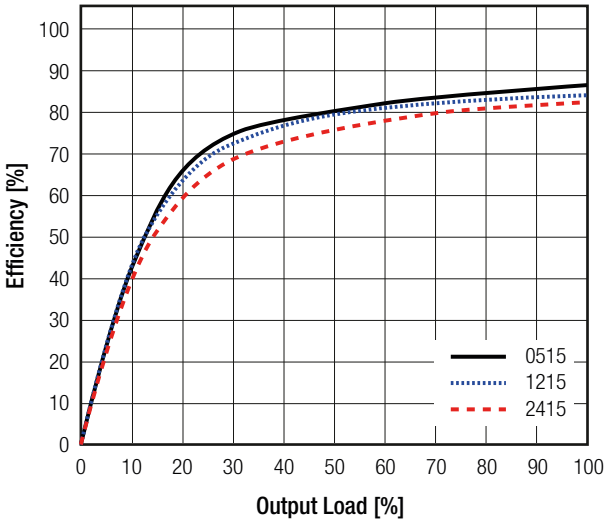
RD-xx05D



RD-xx12D



RD-xx15D



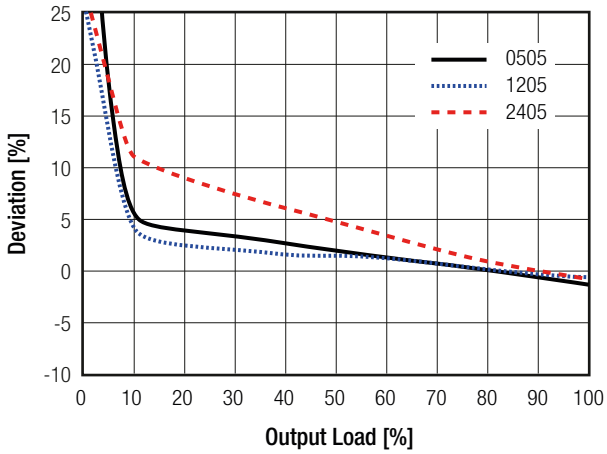
Specifications (measured @ Ta= 25°C, nom. Vin and full load unless otherwise stated)

REGULATIONS

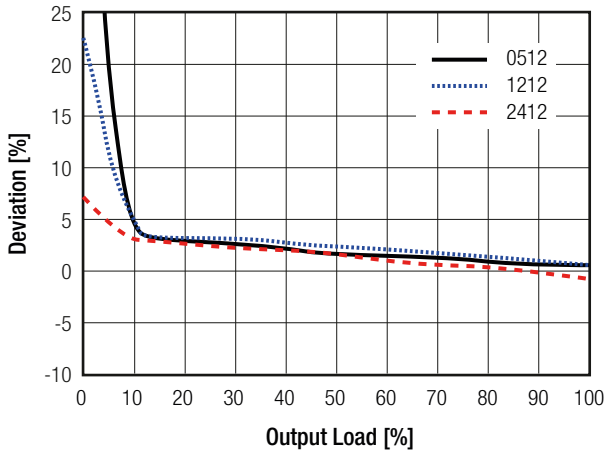
Parameter	Condition		Value
Output Accuracy			±5.0% max.
Line Regulation	low line to high line, full load		±1.2% of 1.0% Vin typ.
Load Regulation	10% to 100% load	5Vout	15.0% max.
		12, 15 and 24Vout	10.0% max.

Deviation vs. Load

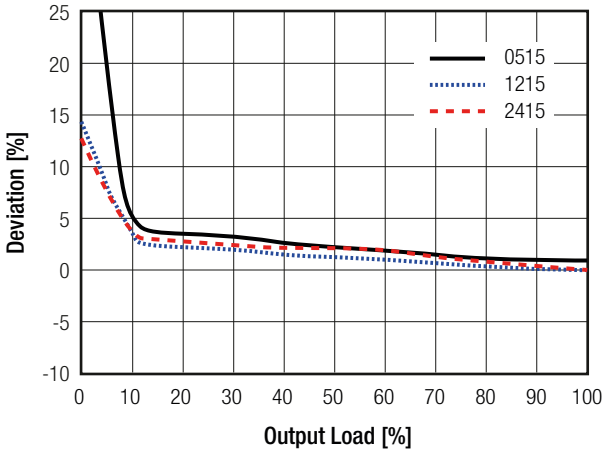
RD-xx05D



RD-xx12D



RD-xx15D



PROTECTIONS

Parameter	Type			Value
Short Circuit Protection (SCP)	without suffix with suffix "/P"			1 second continuous
Isolation Voltage [6]	I/P to O/P	without suffix	tested for 1 second rated for 1 minute	1kVDC 500VAC/60Hz
		with suffix "/H"	tested for 1 second rated for 1 minute	2kVDC 1kVAC/60Hz
Isolation Resistance				10GΩ min.
Isolation Capacitance				40pF min. /115pF max.
Insulation Grade				basic

Notes:

Note6: For repeat Hi-Pot testing, reduce the time and/or the test voltage

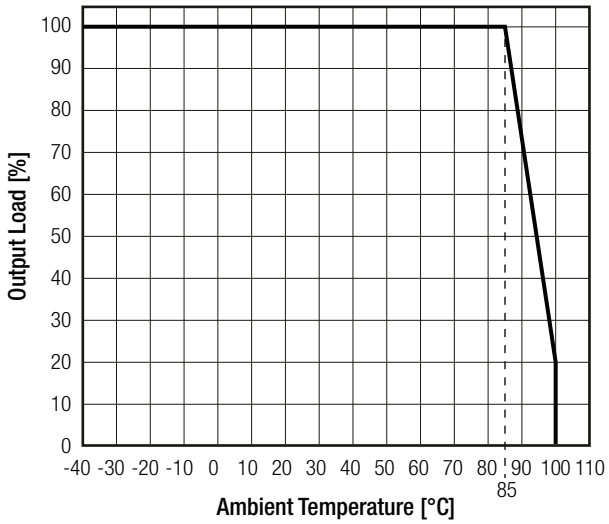
Note7: Refer to local wiring regulations if input over-current protection is also required. Recommended fuse: T2A slow blow type

Specifications (measured @ Ta= 25°C, nom. Vin and full load unless otherwise stated)

ENVIRONMENTAL

Parameter	Condition		Value
Operating Temperature Range	full load @ free air convection (see graph)		-40°C to +85°C
Operating Altitude			2000m
Operating Humidity	non-condensing		95% RH max.
Pollution Degree			PD2
MTBF	according to MIL-HDBK-217F, G.B.	+25°C +85°C	18300 x 10^3 hours 8070 x 10^3 hours

Derating Graph
(@ free air convection)



SAFETY AND CERTIFICATIONS

Certificate Type (Safety)	Report / File Number	Standard
Information Technology Equipment, General Requirements for Safety	1602031	IEC60950-1:2005, 2nd Edition + A2:2013 EN60950-1:2006 + A2:2013
EAC	RU-AT.49.09571	TP TC 004/2011
RoHs 2+		RoHS-2011/65/EU + AM-2015/863

DIMENSION AND PHYSICAL CHARACTERISTICS

Parameter	Type	Value
Material	case potting PCB	non-conductive black plastic (UL94 V-1) epoxy, (UL94 V-0) FR4, (UL94 V-0)
Dimension (LxWxH)		19.65x 7.05 x 10.2mm
Weight		2.8g typ.

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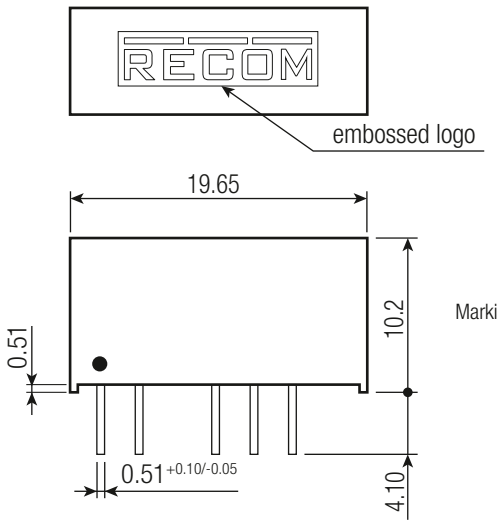
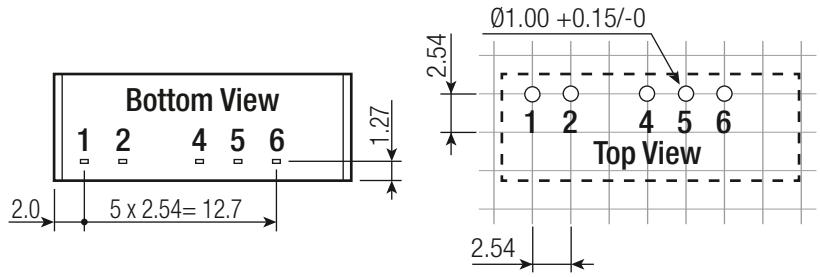
Specifications (measured @ Ta= 25°C, nom. Vin and full load unless otherwise stated)

Dimension Drawing (mm)



Recommended Footprint Details



Pinning information

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

Tolerance: xx.x= ±0.5mm
xx.xx= ±0.25mm

PACKAGING INFORMATION

Parameter	Type	Value
Packaging Dimension (LxWxH)	tube	520.0 x 16.0 x 9.0mm
Packaging Quantity	tube	25pcs
Storage Temperature Range		-55°C to +125°C
Storage Humidity		95% RH max.

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