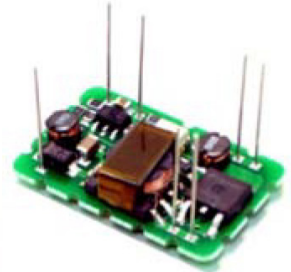


# RR4-S05/D05

- 24 Pin DIL Package
- Wide 2:1 Input Range
- 1500VDC Isolation
- Up to 3500VDC Isolation
- Continuous Short Circuit Protection
- Efficiency up to 83%
- Operating Temperature Range  
-40° ~ +85°C
- Metal Case Standard , Optional Plastic Case



RoHS



OUTPUT SPECIFICATION	ENVIRONMENTAL SPECIFICATION
Voltage accuracy: ±1%	Operating Temperature range: -40°C ~+85°C (see Derating Curve)
Line regulation: Single &Dual ±0.5% max.	Maximum Case Temperature: 100°C
LOAD REGULATION: ±0.5%	Storage Temperature : -40°C ~+125°C
Output 3.3V Model: ±1.5%	Cooling : Nature Convection
Short Circuit Protection : Indefinite (Automatic Recovery)	PHYSICAL SPECIFICATIONS:
Ripple noise (20Mhz bandwidth): 60mV pk-pk	Case Material: Nickel-coated Copper
Temperature coefficient: ±0.02% °C	Base Material: Non-conductive Black Plastic (UL94V-0 rated)
Capacitor load: See table	PIN Material: Ø 0.5mm Brass Solder coated
INPUT SPECIFICATIONS	Potting Material: Epoxy (UL94V-0 rated)
Voltage Range: See table	Weight Case-DIP: 17.0g ( Metal), 13.5g (plastic)
Max. Input Current: See table	Dimension DIP: 1.25" x 0.8" x 0.4"
No-Load/Full-Load Input Current: See table	ABSOLUTE MAXIMUM RATINGS (1)
Input Filter: PI Type	Input Surge Voltage (100ms)/
Input Reflected Ripple Current : 35mA pk-pk	12V Models: 24VDC max.
GENERAL SPECIFICATIONS	24V Models: 40VDC max.
Efficiency: See table typ.	48V Models: 80VDC max.
I/O Isolation Voltage Metal Case (3 sec.): 1000VDC	Soldering Temperature: 260°C max. (2)
I/O Isolation Voltage (3 sec.): 1500 ~ 3500VDC	EMC SPECIFICATIONS
I/O Isolation Capacitance: 500pF typ.	Radiated-/Conducted Emissions: EN55022 Class A
I/O Isolation Resistance: 1000M Ohm	ESD: IEC 61000-4-2 Perf.Criteria A
Switching Frequency: 266kHz, typ.	RS: IEC 61000-4-3 Perf.Criteria A
Humidity: 95% rel H	EFT: IEC 61000-4-4 Perf.Criteria A
Reliability Calculated MTBF : > 1.21Mhrs (MIL-HDBK-217 f)	SURGE: IEC 61000-4-5 Perf.Criteria A
Safety Standard: (designed to meet):IEC 60950-1	CS: IEC 61000-4-6 Perf.Criteria A
	PFMF IEC 61000-4-8 Perf.Criteria A

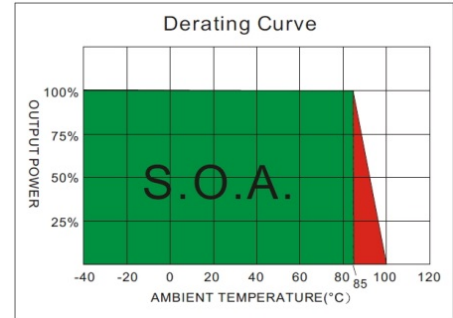
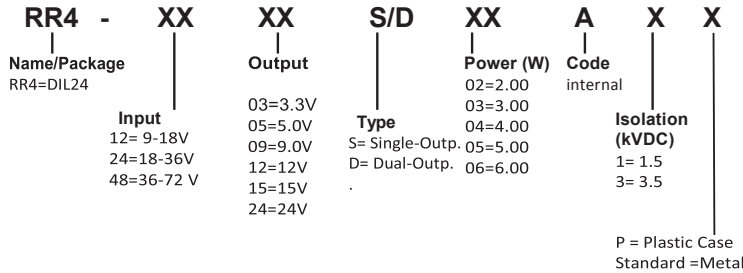
1) These are stress ratings. Exposure of devices to any of these conditions may adversely affect long-term reliability.

2) (1.5mm from case 10sec Max.)

3) All specifications typical at TA= 25°C, nominal input voltage and full load unless otherwise specified.

4) The information and specification contained in this data sheet are believed to be correct at time of publication. However RSG accepts no responsibility for consequences arising from printing errors or inaccuracies. Specifications are subject to change without notice.

**NUMBER STRUCTURE**



**MODEL SELECTION GUIDE**

MODEL NUMBER	INPUT Voltage Range (Vdc)	INPUT Current		OUTPUT Voltage (Vdc)	OUTPUT Current		EFFICIENCY @FL(%)	Capacitor Load(µF)
		No-Load (mA)	Full Load (mA)		Min. load (mA)	Full load (mA)		
RR4-1203S05AX	9-18	30	490	3.3	0	1300	73	1000
RR4-1205S05AX	9-18	30	542	5	0	1000	77	1000
RR4-1209S05AX	9-18	30	534	9	0	555	78	680
RR4-1212S05AX	9-18	30	514	12	0	417	81	330
RR4-1215S05AX	9-18	30	520	15	0	333	80	220
RR4-1224S05AX	9-18	30	520	24	0	208	80	68
RR4-1203D05AX	9-18	30	565	±3.3	0	±750	73	±680
RR4-1205D05AX	9-18	30	542	±5	0	±500	77	±330
RR4-1209D05AX	9-18	30	520	±9	0	±278	80	±220
RR4-1212D05AX	9-18	30	520	±12	0	±208	80	±100
RR4-1215D05AX	9-18	30	528	±15	0	±167	79	±47
RR4-1224D05AX	9-18	30	520	±24	0	±104	80	±33
RR4-2403S05AX	18-36	20	239	3.3	0	1300	75	1000
RR4-2405S05AX	18-36	20	261	5	0	1000	80	1000
RR4-2409S05AX	18-36	20	254	9	0	555	82	680
RR4-2412S05AX	18-36	20	261	12	0	417	80	330
RR4-2415S05AX	18-36	20	255	15	0	333	82	220
RR4-2424S05AX	18-36	20	255	24	0	208	82	68
RR4-2403D05AX	18-36	20	275	±3.3	0	±750	75	±680
RR4-2405D05AX	18-36	20	267	±5	0	±500	78	±330
RR4-2409D05AX	18-36	20	251	±9	0	±278	83	±220
RR4-2412D05AX	18-36	20	261	±12	0	±208	80	±100
RR4-2415D05AX	18-36	20	261	±15	0	±167	80	±47
RR4-2424D05AX	18-36	20	261	±24	0	±104	80	±33
RR4-4803S05AX	36-72	12	120	3.3	0	1300	75	1000
RR4-4805S05AX	36-72	12	131	5	0	1000	80	1000
RR4-4809S05AX	36-72	12	127	9	0	555	82	680
RR4-4812S05AX	36-72	12	131	12	0	417	80	330
RR4-4815S05AX	36-72	12	126	15	0	333	83	220
RR4-4824S05AX	36-72	12	126	24	0	208	83	68
RR4-4803D05AX	36-72	12	142	±3.3	0	±750	73	±680
RR4-4805D05AX	36-72	12	132	±5	0	±500	79	±330
RR4-4809D05AX	36-72	12	132	±9	0	±278	79	±220
RR4-4812D05AX	36-72	12	131	±12	0	±208	80	±100
RR4-4815D05AX	36-72	12	131	±15	0	±167	80	±47
RR4-4824D05AX	36-72	12	131	±24	0	±104	80	±33

Suffix "3" means 3.5KVdc isolation  
Suffix "P" means Plastic case instead of standard Metal Case

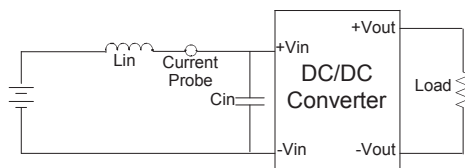
**NOTE**

1. Ripple/Noise measured with a 1uF ceramic capacitor.
2. Test by nominal input voltage and constant resistor load.
3. Measured Input reflected ripple current with a simulated source inductance of 12uH.
4. Exceeding the absolute ratings of the unit could cause damage. It is not allowed for continuous operating.
5. Input filter components are be required to help meet conducted emission class A, which application refer to the EMI Filter of design & feature configuration.
6. An external filter capacitor is required if the module has to meet IEC 61000-4-4 and IEC 61000-4-5. The filter capacitor RSG suggest: Nippon - chemi - con KY series, 220uF/100V.

**MECHANICAL SPECIFICATIONS**

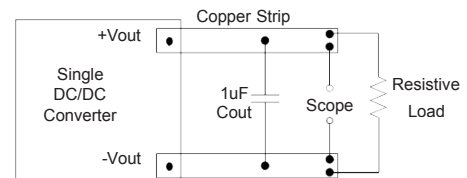
**Input Reflected Ripple Current Test Step**

Input reflected ripple current is measured through a source inductor  $L_{in}$ (12uH) and a source capacitor  $C_{in}$ (47uF, ESR<1.0Ω at 100KHz) at nominal input and full load.



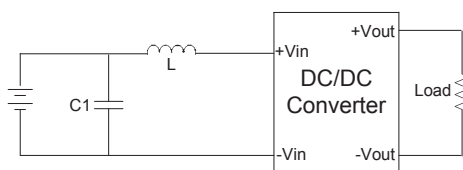
**Output Ripple & Noise Measurement Test**

Use a capacitor  $C_{out}$ (1.0uF) measurement. The Scope measurement bandwidth is 0-20MHz.

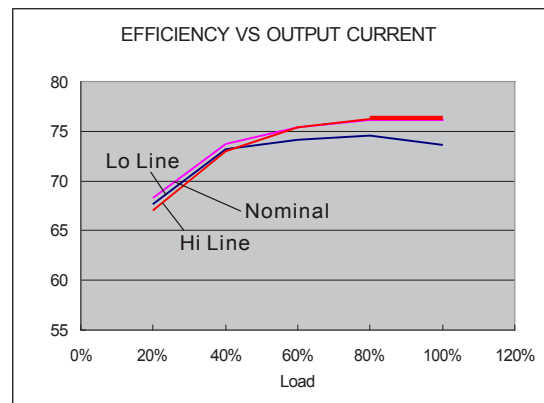


**EMI Filter**

Input filter components ( $C_1$ ,  $L$ ) are used to help meet conducted emissions requirement for the module. These components should be mounted as close as possible to the module; and all leads should be minimized to decrease radiated noise.



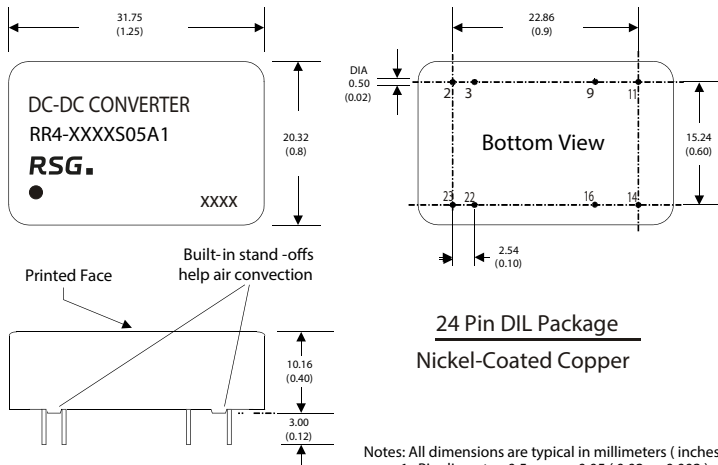
C1	L
100uF, 100V	12uH



12 Models

RR4-S05/D05

MECHANICAL SPECIFICATIONS

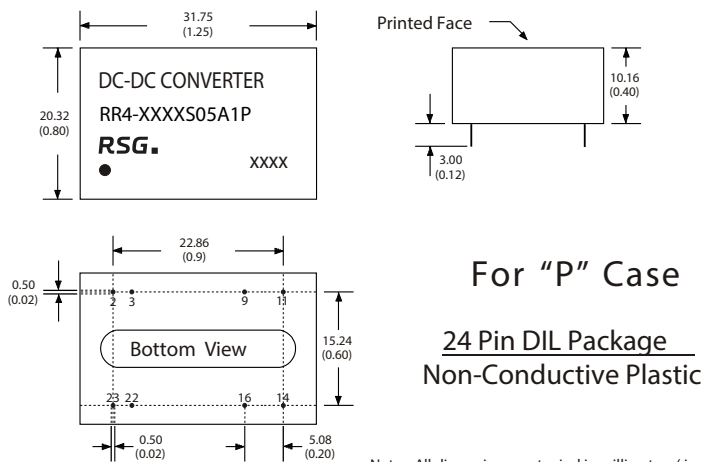


24 Pin DIL Package  
Nickel-Coated Copper

- Notes: All dimensions are typical in millimeters ( inches ).
1. Pin diameter: 0.5 ±0.05 ( 0.02 ±0.002 )
  2. Pin pitch and length tolerance: ±0.35 ( ±0.014 )
  3. Case Tolerance: ±0.5 ( ±0.02 )

PIN CONNECTIONS		
PIN NUMBER	SINGLE	DUAL
2	-V Input	-V Input
3	-V Input	-V Input
9	N.P.	Common
11	N.C.	-V Output
14	+V Output	+V Output
16	-V Output	Common
22	+V Input	+V Input
23	+V Input	+V Input

(The Pin Connection of high isolation one is the same with normal one. )



For "P" Case  
24 Pin DIL Package  
Non-Conductive Plastic

- Notes: All dimensions are typical in millimeters ( inches ).
1. Pin diameter: 0.5 ±0.05 ( 0.02 ±0.002 )
  2. Pin pitch and length tolerance: ±0.35 ( ±0.014 )
  3. Case Tolerance: ±0.5 ( ±0.02 )

PIN CONNECTIONS		
PIN NUMBER	SINGLE	DUAL
2	-V Input	-V Input
3	-V Input	-V Input
9	N.P.	Common
11	N.C.	-V Output
14	+V Output	+V Output
16	-V Output	Common
22	+V Input	+V Input
23	+V Input	+V Input

(The Pin Connection of high isolation one is the same with normal one. )

The models listed here are just standard type. If you need a product with special specification or you have questions regarding packing standards (Tube oder Tape/Reel) as well as application support, please contact our specialists: sales@rsg-electronic.de or +49 69-984047-41/-28