

RR6-S04/D04

- 24 Pin DIL Package
- Wide 4:1 Input Range
- 1500VDC Isolation
- Up to 3500VDC Isolation
- Continuous Short Circuit Protection
- Efficiency up to 82%
- 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	Dimmension 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	24V Models: 40VDC max.
GENERAL SPECIFICATIONS	48V Models: 80VDC max.
Efficiency: See table typ.	Soldering Temperature: 260°C max. (2)
I/O Isolation Voltage Metal Case (3 sec.): 1000VDC	EMC SPECIFICATIONS
I/O Isolation Voltage (3 sec.): 1500 ~ 3500VDC	Radiated-/Conducted Emissions: EN55022 Class A (see EMI Filter note)
I/O Isolation Capacitance: 470pF typ.	ESD: IEC 61000-4-2 Perf.Criteria A
I/O Isolation Resistance: 1000M Ohm	RS: IEC 61000-4-3 Perf.Criteria A
Switching Frequency: 266kHz, typ.	EFT: IEC 61000-4-4 Perf.Criteria A
Humidity: 95% rel H	SURGE: IEC 61000-4-5 Perf.Criteria A
Reliability Calculated MTBF : > 1.21Mhrs (MIL-HDBK-217 f)	CS: IEC 61000-4-6 Perf.Criteria A
Safety Standard: (designed to meet): IEC 60950-1	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.)

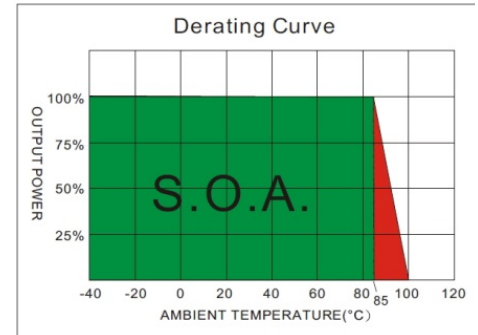
3) All specifications typical at TA= 25°C, nominal input voltage and full load unless otherwise specified.

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.

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NUMBER STRUCTURE

RR6	-	XX	XX	S/D	XX	A	X	X
Name/Package RR6=DIL24		Input 24= 9-36V 48=18-72 V	Output 03=3.3V 05=5.0V 09=9.0V 12=12V 15=15V 24=24V	Type S= Single-Outp. D= Dual-Outp.	Power (W) 04=4.00 05=5.00 06=6.00	Code internal	Isolation (kVDC) 1= 1.5 3= 3.5	
								P = Plastic Case Standard =Metal



MODEL SELECTION GUIDE

MODEL NUMBER	INPUT Voltage Range (Vdc)	INPUT Current		OUTPUT Voltage (Vdc)	OUTPUT Current		EFFICIENCY @FL(%)	Capacitor Load (uF)
		No-Load (mA)	Full Load (mA)		Min. load (mA)	Full load (mA)		
RR6-2403S04AX	9-36	18	222.0	3.3	0	1200	75	1000
RR6-2405S04AX	9-36	18	210.9	5	0	800	79	680
RR6-2407S04AX	9-36	18	208.3	7.2	0	555	80	100
RR6-2409S04AX	9-36	18	208.3	9	0	444	80	100
RR6-2412S04AX	9-36	18	203.3	12	0	333	82	100
RR6-2415S04AX	9-36	18	203.3	15	0	266	82	100
RR6-2424S04AX	9-36	18	205.8	24	0	166	81	100
RR6-2403D04AX	9-36	18	222.0	±3.3	0	±606	75	±470
RR6-2405D04AX	9-36	18	210.9	±5	0	±400	79	±330
RR6-2407D04AX	9-36	18	210.9	±7.2	0	±277	79	±47
RR6-2409D04AX	9-36	18	205.8	±9	0	±222	81	±47
RR6-2412D04AX	9-36	20	203.3	±12	0	±166	82	±47
RR6-2415D04AX	9-36	20	205.8	±15	0	±133	81	±22
RR6-2424D04AX	9-36	25	210.9	±24	0	±83	79	±10
RR6-4803S04AX	18-72	15	110.0	3.3	0	1200	75	1000
RR6-4805S04AX	18-72	15	105.5	5	0	800	79	680
RR6-4807S04AX	18-72	15	102.8	7.2	0	555	81	680
RR6-4809S04AX	18-72	15	104.2	9	0	444	80	220
RR6-4812S04AX	18-72	15	101.6	12	0	333	82	220
RR6-4815S04AX	18-72	15	101.6	15	0	266	82	68
RR6-4824S04AX	18-72	15	104.2	24	0	166	80	47
RR6-4803D04AX	18-72	15	108.2	±3.3	0	±606	77	±680
RR6-4805D04AX	18-72	15	105.5	±5	0	±400	79	±330
RR6-4807D04AX	18-72	15	107.0	±7.2	0	±277	78	±47
RR6-4809D04AX	18-72	15	104.2	±9	0	±222	80	±47
RR6-4812D04AX	18-72	15	102.8	±12	0	±166	81	±47
RR6-4815D04AX	18-72	15	101.6	±15	0	±133	82	±33
RR6-4824D04AX	18-72	15	104.2	±24	0	±83	80	±22

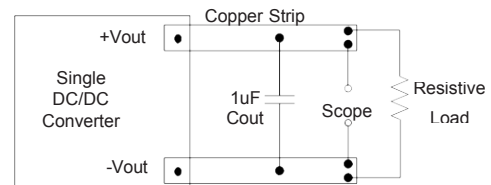
Suffix "3" means 3.5KVdc isolation

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. It's recommended to add C1(220 uF), C3(1000PF,2KV), L(12uH) in input end to achieve EN55022 conducted Class A.
6. An external filter capacitor is required if the module has to meet IEC 61000-4-5. The filter capacitor RSG suggest: Nippon - chemi - con KY series, 220uF/100V.

TEST CONFIGURATION

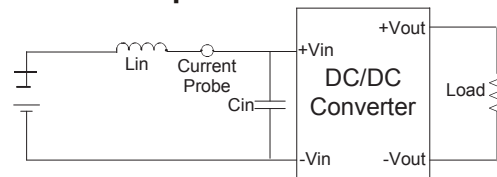
Output Ripple & Noise Measurement Test

Use a capacitor Cout(1.0uF) measurement.
The Scope measurement bandwidth is 0-20MHz.



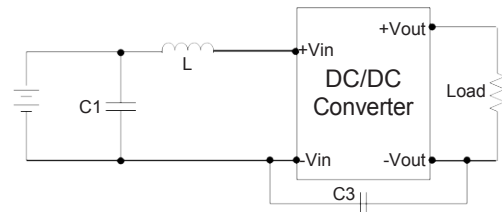
Input Reflected Ripple Current Test Step

Input reflected ripple current is measured through a source inductor Lin(12uH) and a source capacitor Cin(47uF, ESR<1.0Ω at 100KHz) at nominal input and full load.



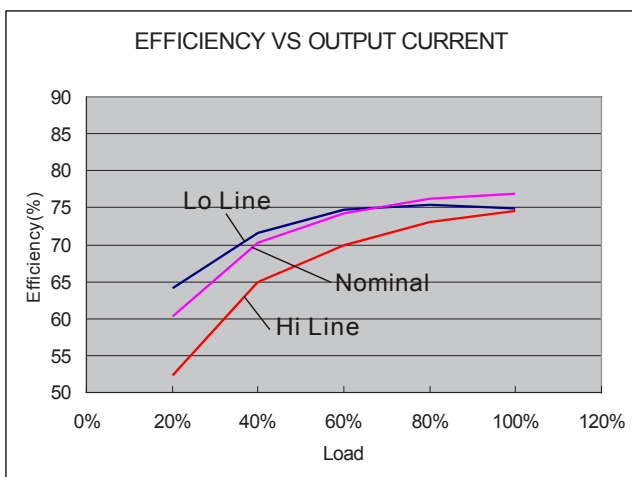
EMI Filter

Input filter components (C1,C3, 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.

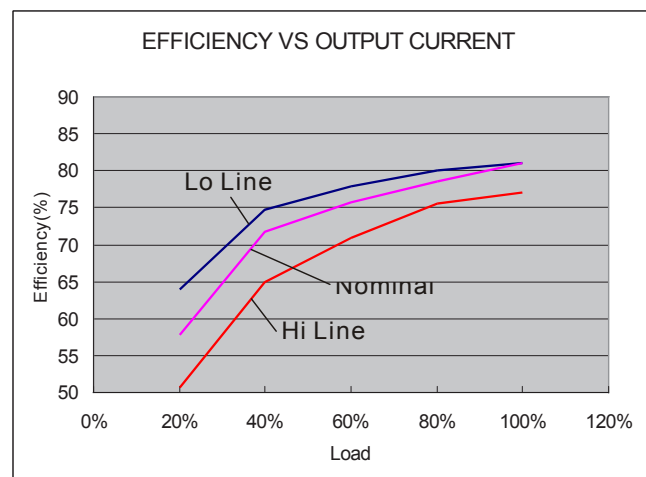


C1	L	C3
220uF, 100V	12uH	1000PF, 2KV

ELECTRICAL CHARACTERISTICS CURVES



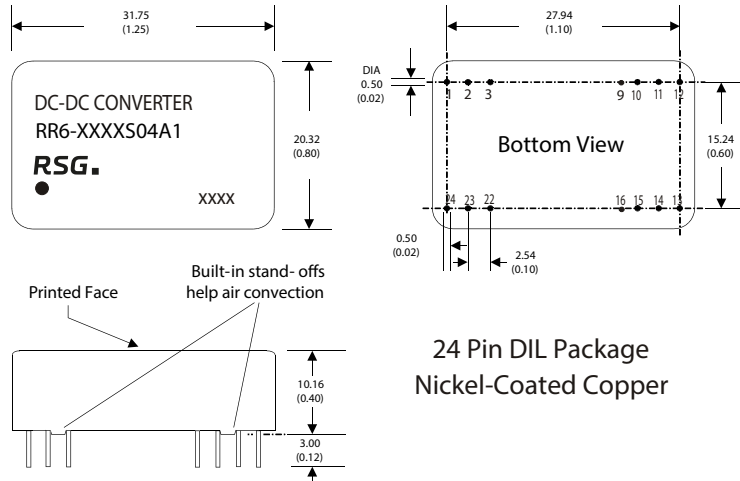
24 Models



48 Models

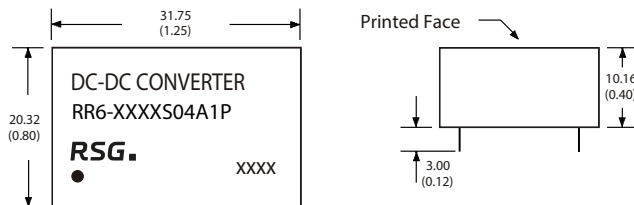
RR6-S04/D04

MECHANICAL SPECIFICATIONS



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	SINGLE-H	DUAL-H
1	+V Input	+V Input	N.P.	N.P.
2	N.C.	-V Output	-V Input	-V Input
3	N.C.	Common	-V Input	-V Input
9	N.P.	N.P.	N.P.	Common
10	-V Output	Common	N.P.	N.P.
11	+V Output	+V Output	N.C.	-V Output
12	-V Input	-V Input	N.P.	N.P.
13	-V Input	-V Input	N.P.	N.P.
14	+V Output	+V Output	+V Output	+V Output
15	-V Output	Common	N.P.	N.P.
16	N.P.	N.P.	-V Output	Common
22	N.C.	Common	+V Input	+V Input
23	N.C.	-V Output	+V Input	+V Input
24	+V Input	+V Input	N.P.	N.P.



Notes: All dimensions are typical in millimeters (inches).
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3. Case Tolerance: ± 0.5 (± 0.02)

PIN CONNECTIONS				
PIN NUMBER	SINGLE	DUAL	SINGLE-H	DUAL-H
1	+V Input	+V Input	N.P.	N.P.
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3	N.C.	Common	-V Input	-V Input
9	N.P.	N.P.	N.P.	Common
10	-V Output	Common	N.P.	N.P.
11	+V Output	+V Output	N.C.	-V Output
12	-V Input	-V Input	N.P.	N.P.
13	-V Input	-V Input	N.P.	N.P.
14	+V Output	+V Output	+V Output	+V Output
15	-V Output	Common	N.P.	N.P.
16	N.P.	N.P.	-V Output	Common
22	N.C.	Common	+V Input	+V Input
23	N.C.	-V Output	+V Input	+V Input
24	+V Input	+V Input	N.P.	N.P.

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