

RR2-S04/D04

4 Watt regulated
single & dual output



- DIP24, wide 2:1 input range
- Full SMD technology
- 1500 VDC isolation up to 3500 VDC isolation
- Continuous short circuit protection
- Efficiency up to 82%
- -25°C~85°C operation temperature range
- Optional metal case

OUTPUT SPECIFICATIONS

Voltage accuracy	± 1%
Line regulation	± 0.5%
Load regulation	± 0.5%
Ripple & Noise (20 MHz bandwidth) (1)	60 mV pk-pk
Short circuit protection	Continuous
Temperature coefficient	± 0.02%/°C
Capacitor load (2)	See table

INPUT SPECIFICATIONS

Voltage range	See table
Max. input current	See table
No-load input current	See table
Input filter	PI Type
Input reflected ripple current (3)	35 mA pk-pk

GENERAL SPECIFICATIONS

Efficiency	See table
I/O isolation voltage (3 sec.)	
Input / Output	1500 ~ 3500 VDC
Metal case / input & output	1000 VDC
I/O isolation capacitance	60 pF typ.
I/O isolation resistance	1000 M Ohm
Switching frequency	100~400 kHz
Humidity	95% rel. H
Reliability calculated MTBF (MIL-HDBK-217F)	> 2.199 Mhrs.
Safety standard (designed to meet)	IEC 60950-1:2001

PHYSICAL SPECIFICATIONS

Case material	Non-conductive black plastic (UL94V-0 rated) Nickel-coated copper
Base material	Non-conductive black plastic (UL94V-0 rated)
Pin material	Ø 0.5 mm brass solder-coated
Potting material	Epoxy (UL94V-0 rated)
Weight	Plastic 12.5 g, Metal 15 g
Dimensions	1.25" x 0.8" x 0.4"

ENVIRONMENT SPECIFICATIONS

Operating temperature (See derating curve)	-25°C~ 85°C
Maximum case temperature	100°C
Storage temperature	-40°C~125°C
Cooling	Nature convection

ABSOLUTE MAXIMUM RATINGS (4)

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

Input voltage (100 mS)	
12 modes	-0.7 ~ 24 VDC
24 modes	-0.7 ~ 40 VDC
48 modes	-0.7 ~ 80 VDC
Lead soldering temperature	260°C
	(1.5 mm from case 10 sec.)

All specifications typical at $T_a = 25^\circ\text{C}$, nominal input voltage and full load unless otherwise specified.
The information and specifications contained in this data sheet are believed to be correct at time of publication. However, we accept no responsibility for consequences arising from printing errors or inaccuracies.
Subject to change without notice.

NOTE

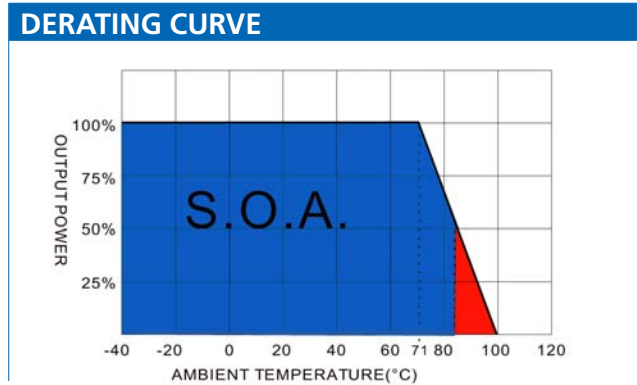
- 1) Typical value at nominal input voltage and full load.
- 2) Tested by nominal V_{in} and constant resistive load.
- 3) Measured input reflected ripple current with a simulated source inductance of 12uH.
- 4) Exceeding the absolute ratings of the unit could cause damage. It is not allowed for continuous operating.
- 5) Operation under no-load conditions will not damage these devices. However they may not meet all listed specifications.
- 6) It's necessary to add a minimum capacitor in output for some models. Please check single model datasheet for detail value.

The models listed are just for standard type. If you need a special specification product, please contact our service.
Phone: +49 69 984047-0, mail to: info@rsg-electronic.de or use the forms on www.rsg-electronic.de („Kontakt“).

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NUMBER STRUCTURE								
RR2	-	XX	XX	S	04	A	1	(M)
Name/Package RR2=DIL24		Input 12=9~18V 24=18~36V 48=36~72V	Output 05=5V 09=9V 12=12V 15=15V 24=24V	Type S=Single D=Dual	Power 04=4W	Code internal	Isolation 1=1.5 kVDC 3=3.5 kVDC	
Add suffix „M“ for Metal case! If no suffix mean Plastic case.								



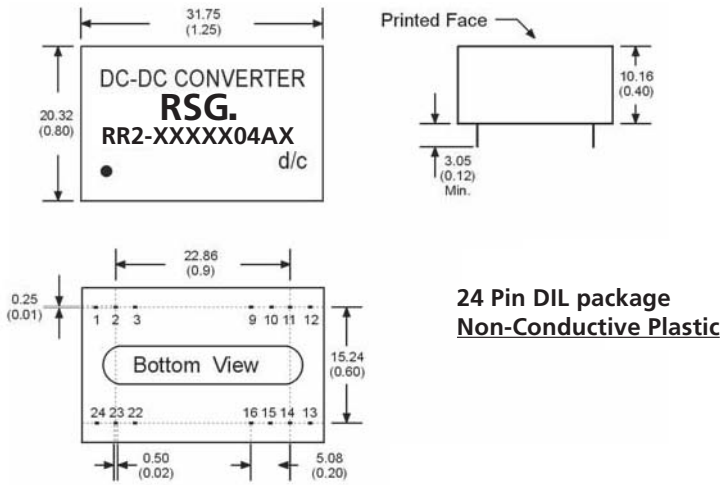
MODEL SELECTION GUIDE

Model Number	Input Range VDC	Input current (mA) No Load/Full Load	Output VDC	Output current Min. Load (mA)	Output current Full Load (mA)	Efficiency @FL (%)	Capacitor Load (μF)
RR2-1205S04AX	9-18	20 / 432	5	200	800	77	2200
RR2-1209S04AX	9-18	20 / 416	9	111	444	80	470
RR2-1212S04AX	9-18	20 / 416	12	83.3	333	80	470
RR2-1215S04AX	9-18	20 / 416	15	66.8	267	80	470
RR2-1224S04AX	9-18	20 / 416	24	41.8	167	80	220
RR2-1205D04AX	9-18	20 / 432	±5	±100	±400	77	±1000
RR2-1209D04AX	9-18	20 / 416	±9	±55.5	±222	80	±220
RR2-1212D04AX	9-18	20 / 416	±12	±41.8	±167	80	±220
RR2-1215D04AX	9-18	20 / 416	±15	±33.3	±133	80	±220
RR2-1224D04AX	9-18	20 / 416	±24	±20.8	±83	80	±100
RR2-2405S04AX	18-36	12 / 210	5	200	800	79	2200
RR2-2409S04AX	18-36	12 / 203	9	111	444	82	470
RR2-2412S04AX	18-36	12 / 203	12	83.3	333	82	470
RR2-2415S04AX	18-36	12 / 203	15	66.8	267	82	470
RR2-2424S04AX	18-36	12 / 203	24	41.8	167	82	220
RR2-2405D04AX	18-36	12 / 210	±5	±100	±400	79	±1000
RR2-2409D04AX	18-36	12 / 203	±9	±55.5	±222	82	±220
RR2-2412D04AX	18-36	12 / 203	±12	±41.8	±167	82	±220
RR2-2415D04AX	18-36	12 / 203	±15	±33.3	±133	82	±220
RR2-2424D04AX	18-36	12 / 203	±24	±20.8	±83	82	±100
RR2-4805S04AX	36-72	8 / 106	5	200	800	78	2200
RR2-4809S04AX	36-72	8 / 101	9	111	444	82	470
RR2-4812S04AX	36-72	8 / 101	12	83.3	333	82	470
RR2-4815S04AX	36-72	8 / 101	15	66.8	267	82	470
RR2-4824S04AX	36-72	8 / 101	24	41.8	167	82	220
RR2-4805D04AX	36-72	8 / 109	±5	±100	±400	76	±1000
RR2-4809D04AX	36-72	8 / 101	±9	±55.5	±222	82	±220
RR2-4812D04AX	36-72	8 / 101	±12	±41.8	±167	82	±220
RR2-4815D04AX	36-72	8 / 101	±15	±33.3	±133	82	±220
RR2-4824D04AX	36-72	8 / 101	±24	±20.8	±83	82	±100

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MECHANICAL SPECIFICATIONS FOR HIGH ISOLATION MODELS

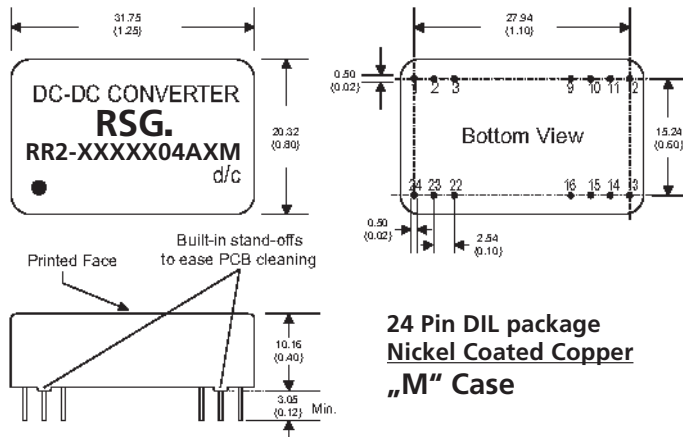


All dimensions are typical in millimeters (inches).

- 1) Pin diameter: 0.5 ± 0.05 (0.02 ± 0.002)
- 2) Pin pitch 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.C.	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.

MECHANICAL SPECIFICATIONS METAL CASE



All dimensions are typical in millimeters (inches).

- 1) Pin diameter: 0.5 ± 0.05 (0.02 ± 0.002)
- 2) Pin pitch 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.C.	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.