

RR4-S02/D02

2 Watt 2:1 regulated
single & dual output



- DIP24, wide 2:1 input range
- Full SMD technology
- 1500 VDC isolation, up to 3500 VDC
- Continuous short circuit protection
- Efficiency up to 78%
- -40°C~85°C operation temperature range
- Optional plastic case

OUTPUT SPECIFICATIONS

Voltage accuracy	± 1%
Line regulation	± 0.5%
Load regulation	± 0.5%
(Output 3.3 V / ±3.3 V Model)	± 1.5%
Ripple & Noise (20 MHz bandwidth) (1)	60 mV pk-pk
Short circuit protection	Indefinite (automatic recovery)
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, typ.
I/O isolation voltage (3 sec.)	
Input / Output	1500 VDC ~ 3500 VDC
Metal case / Input & Output	1000 VDC
I/O isolation capacitance	470 pF typ.
I/O isolation resistance	1000 M Ohm
Switching frequency	typ. 266 kHz
Humidity	95% rel. H
Reliability calculated MTBF (MIL-HDBK-217F)	> 1.121 Mhrs.
Safety standard (designed to meet)	IEC 60950-1:2001

PHYSICAL SPECIFICATIONS

Case material	Nickel-coated copper
	Non-conductive black plastic (UL94V-0 rated)
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	17.0 g Metal, 13.5 g Plastic
Dimensions	1.25" x 0.8" x 0.4"

ENVIRONMENT SPECIFICATIONS

Operating temperature (See derating curve)	-40°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 resistor load.
- 3) Measured input reflected ripple current with a simulated source inductance of 12µH.
- 4) Exceeding the absolute ratings of the unit could cause damage. It is not allowed for continuous operating.

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“).

RR4-S02/D02

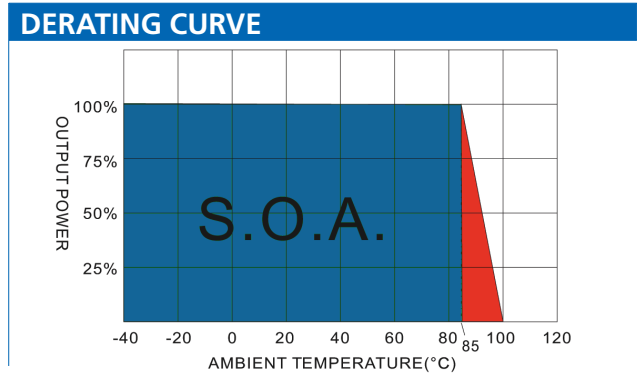
2 Watt 2:1 regulated
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NUMBER STRUCTURE

RR4 - XX XX S/D 02 A 1 (P)*

Name/Package RR4=DIL24	Input 12=9~18V 24=18~36V 48=36~72V	Output 03=3.3V 05=5V 12=12V 15=15V	Type S=Single D=Dual	Power 02=2W	Code internal	Isolation 1=1.5 kVDC 3=3.5 kVDC
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* Add suffix **P** at the end for Plastic Case!



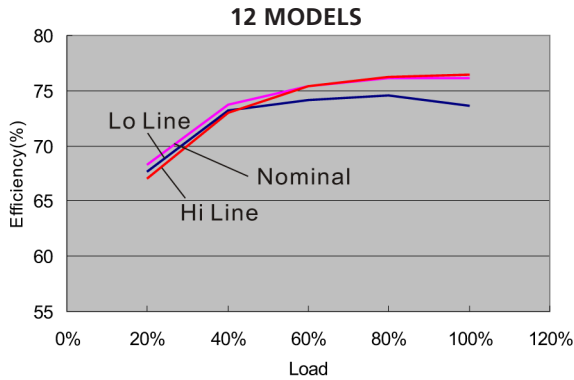
MODEL SELECTION GUIDE

Model Number	Input Range VDC	Input current (mA) No Load / Full Load	Output VDC	Output current Full Load (mA)	Efficiency @FL (%)	Capacitor Load (μF)
RR4-1203S02AX	9-18	30 / 223	3.3	600	74	680
RR4-1205S02AX	9-18	30 / 222	5	400	75	680
RR4-1209S02AX	9-18	30 / 219	9	222	76	330
RR4-1212S02AX	9-18	30 / 219	12	167	76	220
RR4-1215S02AX	9-18	30 / 219	15	133	76	100
RR4-1224S02AX	9-18	30 / 219	24	83	76	33
RR4-1203D02AX	9-18	30 / 229	±3.3	±300	72	±330
RR4-1205D02AX	9-18	30 / 219	±5	±200	75	±330
RR4-1209D02AX	9-18	30 / 219	±9	±111	76	±100
RR4-1212D02AX	9-18	30 / 219	±12	±83	76	±47
RR4-1215D02AX	9-18	30 / 219	±15	±67	76	±33
RR4-1224D02AX	9-18	30 / 219	±24	±42	76	±22
RR4-2403S02AX	18-36	20 / 109	3.3	600	76	680
RR4-2405S02AX	18-36	20 / 107	5	400	78	680
RR4-2409S02AX	18-36	20 / 107	9	222	78	330
RR4-2412S02AX	18-36	20 / 107	12	167	78	220
RR4-2415S02AX	18-36	20 / 107	15	133	78	100
RR4-2424S02AX	18-36	20 / 107	24	83	78	33
RR4-2403D02AX	18-36	20 / 112	±3.3	±300	74	±330
RR4-2405D02AX	18-36	20 / 109	±5	±200	76	±330
RR4-2409D02AX	18-36	20 / 107	±9	±111	78	±100
RR4-2412D02AX	18-36	20 / 107	±12	±83	78	±47
RR4-2415D02AX	18-36	20 / 107	±15	±67	78	±33
RR4-2424D02AX	18-36	20 / 107	±24	±42	78	±22
RR4-4803S02AX	36-72	12 / 56	3.3	600	74	680
RR4-4805S02AX	36-72	12 / 56	5	400	75	680
RR4-4809S02AX	36-72	12 / 56	9	222	75	330
RR4-4812S02AX	36-72	12 / 56	12	167	75	220
RR4-4815S02AX	36-72	12 / 56	15	133	75	100
RR4-4824S02AX	36-72	12 / 56	24	83	75	33
RR4-4803D02AX	36-72	12 / 56	±3.3	±300	74	±330
RR4-4805D02AX	36-72	12 / 56	±5	±200	75	±330
RR4-4809D02AX	36-72	12 / 56	±9	±111	75	±100
RR4-4812D02AX	36-72	12 / 56	±12	±83	75	±47
RR4-4815D02AX	36-72	12 / 56	±15	±67	75	±33
RR4-4824D02AX	36-72	12 / 56	±24	±42	75	±22

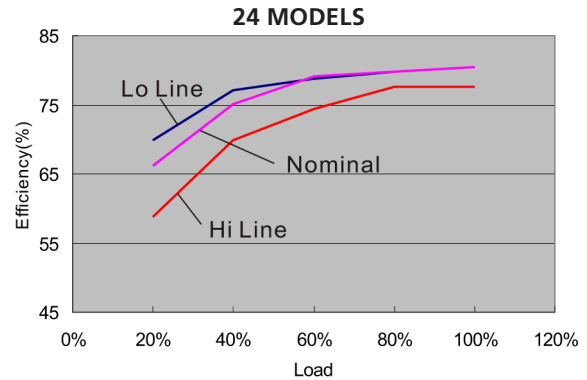
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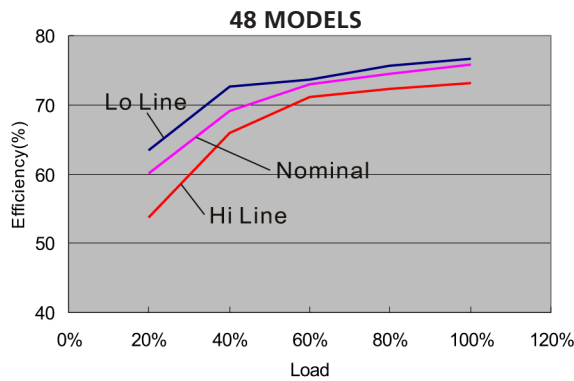
EFFICIENCY VS OUTPUT CURRENT 12



EFFICIENCY VS OUTPUT CURRENT 24



EFFICIENCY VS OUTPUT CURRENT 48

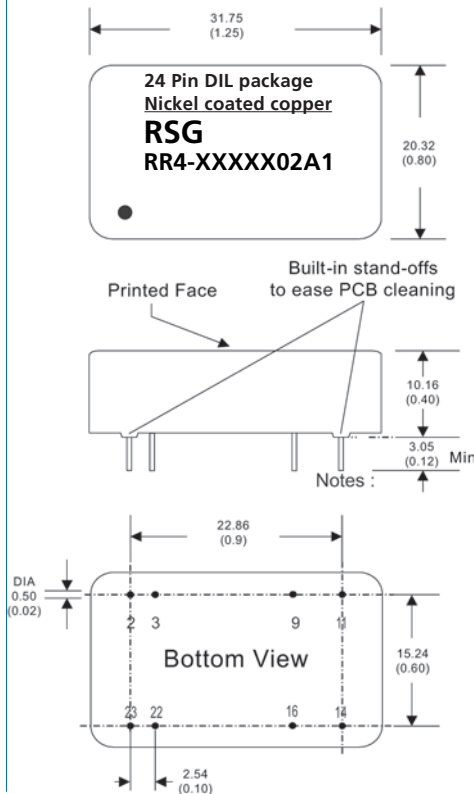


PIN CONNECTIONS

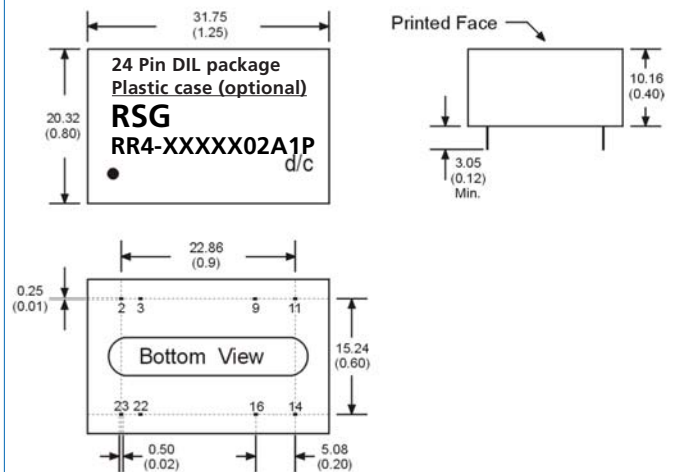
Pin Number	Single	Dual
2	-V Input	-V Input
3	-V Input	-V Input
9	N.P.	Common
11	N.C.	-V Output
14	+V Output	+V Output
16	-V Output	Common
22	+V Input	+V Input
23	+V Input	+V Input

The pin connection of high isolation models is the same as for normal ones.

MECHANICAL SPECIFICATIONS METAL CASE



MECHANICAL SPECIFICATIONS PLASTIC 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)