

# RR6-S03/D03

3.0 Watt 4:1 regulated  
single & dual output



- DIP24 package, wide 4:1 input range
- Full SMD technology
- 1500 VDC isolation, up to 3500 VDC
- Continuous short circuit protection
- Efficiency up to 80%
- -40°C~85°C operation temperature range
- Optional Plastic case

## OUTPUT SPECIFICATIONS

Voltage accuracy	± 1%
Line regulation	± 0.5%
Load regulation	± 0.5%
(Output 3.3V / ±3.3V 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 (typ.)	See table
I/O isolation voltage (3 sec.) Input/Output	1500 ~ 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

## 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	Metal 17.0 g, Plastic 13.5 g
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)	
24 modes	-0.7 ~ 40 VDC
48 modes	-0.7 ~ 80 VDC
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](mailto:info@rsg-electronic.de) or use the forms on [www.rsg-electronic.de](http://www.rsg-electronic.de) („Kontakt“).

# RR6-S03/D03

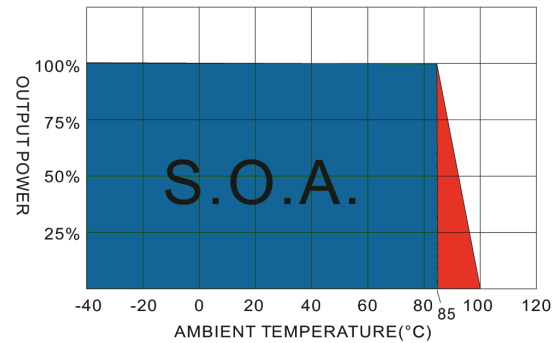
3.0 Watt 4:1 regulated  
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## NUMBER STRUCTURE

<b>RR6 - XX</b>	<b>XX</b>	<b>S</b>	<b>03</b>	<b>A</b>	<b>1 (P)*</b>
<b>Name / Package</b> RR6=DIL24	<b>Output</b> 03=3.3V 05=5V 09=9V 12=12V 15=15V 24=24V	<b>Type</b> S=Single D=Dual	<b>Power</b> 03=3W	<b>Code</b> internal	<b>Isolation</b> 1=1.5 kVDC 3=3.5 kVDC**
<b>Input</b> 24=9~36V 48=18~72V					

\* Standard version in Metal case. Add suffix „P“ for Plastic case!  
\*\* Please add suffix „H“ for High Isolation models and see different Pinout-versions on page 3!

## DERATING CURVE



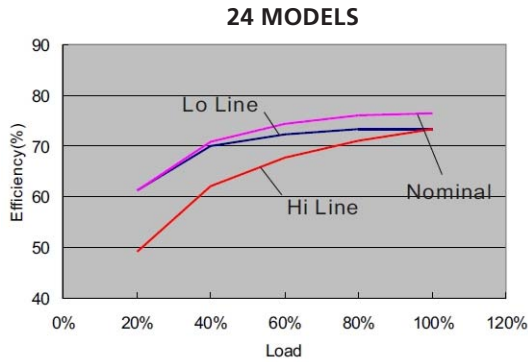
## MODEL SELECTION GUIDE

Model Number	Input Range VDC	Input current (mA) No Load / Full Load	Output VDC	Output current Full Load (mA)	Efficiency @FL (%)	Capacitor Load (μF)
RR6-2403S03AX	9-36	16 / 165	3.3	900	75	680
RR6-2405S03AX	9-36	16 / 160.3	5	600	78	470
RR6-2409S03AX	9-36	16 / 156.3	9	333	80	100
RR6-2412S03AX	9-36	16 / 156.3	12	250	80	68
RR6-2415S03AX	9-36	16 / 156.3	15	200	80	47
RR6-2424S03AX	9-36	16 / 156.3	24	125	80	22
RR6-2403D03AX	9-36	16 / 165	±3.3	±454	75	±330
RR6-2405D03AX	9-36	16 / 160.3	±5	±300	78	±220
RR6-2409D03AX	9-36	16 / 156.3	±9	±166	80	±47
RR6-2412D03AX	9-36	16 / 156.3	±12	±125	80	±33
RR6-2415D03AX	9-36	16 / 156.3	±15	±100	80	±22
RR6-2424D03AX	9-36	16 / 156.3	±24	±63	80	±10
RR6-4803S03AX	18-72	14 / 82.5	3.3	900	75	680
RR6-4805S03AX	18-72	14 / 80.1	5	600	78	470
RR6-4809S03AX	18-72	14 / 78.1	9	333	80	100
RR6-4812S03AX	18-72	14 / 78.1	12	250	80	68
RR6-4815S03AX	18-72	14 / 78.1	15	200	80	47
RR6-4824S03AX	18-72	14 / 78.1	24	125	80	22
RR6-4803D03AX	18-72	14 / 83.3	±3.3	±454	75	±330
RR6-4805D03AX	18-72	14 / 80.1	±5	±300	78	±220
RR6-4809D03AX	18-72	14 / 78.1	±9	±166	80	±47
RR6-4812D03AX	18-72	14 / 78.1	±12	±125	80	±33
RR6-4815D03AX	18-72	14 / 78.1	±15	±100	80	±22
RR6-4824D03AX	18-72	14 / 78.1	±24	±63	80	±10

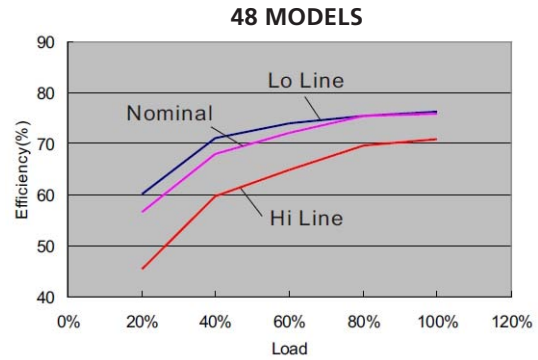
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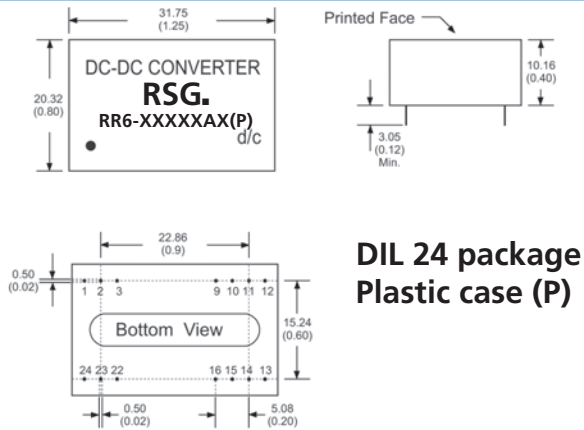
## EFFICIENCY VS OUTPUT CURRENT 24



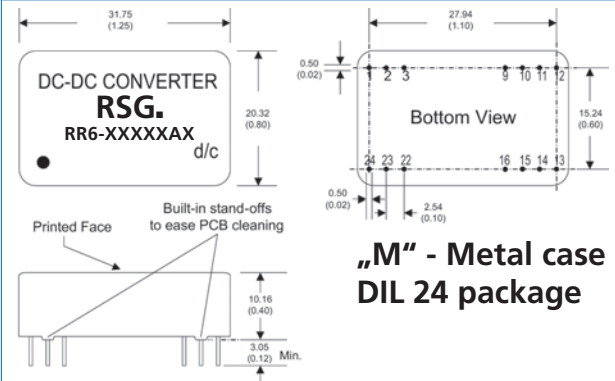
## EFFICIENCY VS OUTPUT CURRENT 48



## MECHANICAL SPECIFICATIONS (P-case) opt.



## MECHANICAL SPECIFICATIONS (Standard)



## PIN CONNECTIONS (Standard)

Pin Number	Single	Dual
1	+V Input	+V Input
2	N.C.	-V Output
3	N.C.	Common
9	N.P.	N.P.
10	-V Output	Common
11	+V Output	+V Output
12	-V Input	-V Input
13	-V Input	-V Input
14	+V Output	+V Output
15	-V Output	Common
16	N.P.	N.P.
22	N.C.	Common
23	N.C.	-V Output
24	+V Input	+V Input

## PIN CONNECTIONS (High Isolation Models)

Pin Number	Single	Dual
1	N.P.	N.P.
2	-V Input	-V Input
3	-V Input	-V Input
9	N.P.	Common
10	N.P.	N.P.
11	N.C.	-V Output
12	N.P.	N.P.
13	N.P.	N.P.
14	+V Output	+V Output
15	N.P.	N.P.
16	-V Output	Common
22	+V Input	+V Input
23	+V Input	+V Input
24	N.P.	N.P.

### Notes:

- All dimensions are typical in mm (inches).  
 1) Pin diameter:  $0.5 \pm 0.05$  ( $0.02 \pm 0.002$ )  
 2) Pin pitch tolerance:  $\pm 0.35$  ( $\pm 0.014$ )  
 3) Case tolerance:  $\pm 0.5$  ( $\pm 0.02$ )