

# RS1/RD1-S10

1.0 Watt unregulated  
single output



- 4 Pin SIL / 8 Pin DIL package
- 1000 VDC isolation up to 3000 VDC isolation
- Low ripple and noise
- Efficiency up to 78%
- -40°C~85°C operation temperature range
- Non-conductive black plastic case
- EMI complies with EN55022 class B

## OUTPUT SPECIFICATIONS

Voltage accuracy	± 3%
Line regulation (Per 1% Vin Change)	± 1.2%
Load regulation (From 20% to 100% Load)	± 10%
(Output 3.3 V Model)	± 20%
Ripple & Noise (20 MHz bandwidth) (1)	100 mV pk-pk
Temperature coefficient	± 0.02%/°C
Capacitor load (2)	See table

## INPUT SPECIFICATIONS

Voltage range	± 10%
Max. input current	See table
No-load input current	See table
Input filter	Capacitors
Input reflected ripple current (3)	20 mA pk-pk

## GENERAL SPECIFICATIONS

Efficiency	See table
I/O isolation voltage (3 sec.)	
Input / output	1000 ~ 3000 VDC
I/O isolation capacitance	60 pF typ.
I/O isolation resistance	1000 M Ohm
Switching frequency	variable 80 kHz
Humidity	95% rel. H
Reliability calculated MTBF (MIL-HDBK-217F)	> 1.121 Mhrs.
Safety standard (designed to meet)	IEC 60950-1

## EMC SPECIFICATIONS

Radiated emissions	EN55022	Class B
	FCC 47 CFR	
	Part 15 Subpart B	Class B
ESD	IEC 61000-4-2	Perf. criteria B
RS	IEC 61000-4-3	Perf. criteria A

## PHYSICAL SPECIFICATIONS

Case material	Non-conductive black plastic (UL94V-0 rated)
Pin material	SIP case > 0.5 mm Alloy42 solder-coated DIP case > Ø 0.5 mm brass solder-coated
Potting material	Epoxy (UL94V-0 rated)
Weight	SIP > 1.5 g, DIP > 1.8 g
Dimensions	SIP > 0.46" x 0.24" x 0.4" DIP > 0.50" x 0.40" x 0.27"

## PHYSICAL SPECIFICATIONS

Operating temperature	-40°C~ 85°C (See derating curve)
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)	
5 modes	0 ~ 7 VDC
12 modes	0 ~ 15 VDC
24 modes	0 ~ 28 VDC
48 modes (SIP)	0 ~ 54 VDC
Lead soldering temperature	260°C (1.5 mm from case 10 sec.)

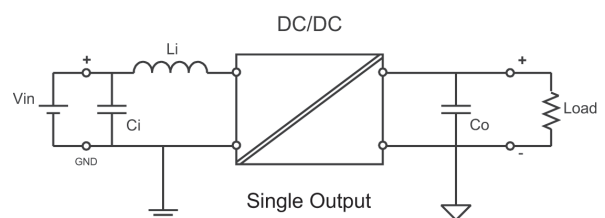
All specifications typical at  $T_a = 25^\circ\text{C}$ , nominal input voltage and full load unless otherwise specified.

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) Ripple / Noise measured with 20 MHz bandwidth.
- 2) Tested by minimal  $V_{in}$  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) To reduce converter's Ripple & Noise it is recommended to add a 4.7µF ~ 100µF capacitor in output end. For EMI performance improvement it is recommended to add a 12µH inductor and a 10µF ~ 220µF capacitor in input end.

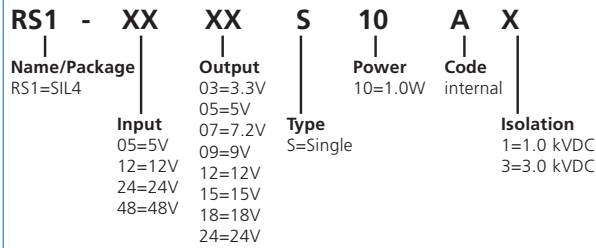
The models listed are just for standard type. If you need a special specification product, please contact our service. Phone: +49 69 984047-0, mail to: info@rsg-electronic.de or use the forms on www.rsg-electronic.de („Kontakt“).



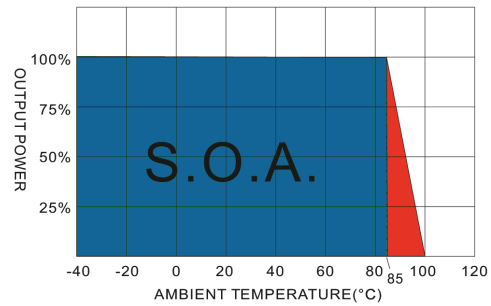
# RS1/RD1-S10

1.0 Watt unregulated  
single output

## NUMBER STRUCTURE



## DERATING CURVE



## MODEL SELECTION GUIDE

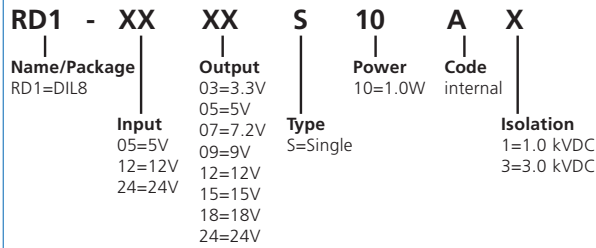
Model Number	Input Range VDC	Input current (mA) No Load / Full Load	Output VDC	Output current Full Load (mA)	Efficiency @FL (%)	Capacitor Load (μF)
RS1-0503S10AX	5	25 / 278	3.3	303	72	220
RS1-0505S10AX	5	25 / 267	5	200	75	220
RS1-0507S10AX	5	25 / 264	7.2	138.8	76	220
RS1-0509S10AX	5	25 / 260	9	111.1	77	220
RS1-0512S10AX	5	25 / 257	12	83.3	78	220
RS1-0515S10AX	5	25 / 257	15	66.67	78	220
RS1-0518S10AX	5	25 / 257	18	55.5	78	220
RS1-0524S10AX	5	25 / 257	24	41.67	78	220
RS1-1203S10AX	12	16 / 116	3.3	303	72	220
RS1-1205S10AX	12	16 / 112	5	200	75	220
RS1-1207S10AX	12	16 / 110	7.2	138.8	76	220
RS1-1209S10AX	12	16 / 109	9	111.1	77	220
RS1-1212S10AX	12	16 / 107	12	83.3	78	220
RS1-1215S10AX	12	16 / 107	15	66.67	78	220
RS1-1218S10AX	12	16 / 107	18	55.5	78	220
RS1-1224S10AX	12	16 / 107	24	41.67	78	220
RS1-2403S10AX	24	10 / 58	3.3	303	72	220
RS1-2405S10AX	24	10 / 56	5	200	75	220
RS1-2407S10AX	24	10 / 55	7.2	138.8	76	220
RS1-2409S10AX	24	10 / 55	9	111.1	77	220
RS1-2412S10AX	24	10 / 54	12	83.3	78	220
RS1-2415S10AX	24	10 / 54	15	66.67	78	220
RS1-2418S10AX	24	10 / 54	18	55.5	78	220
RS1-2424S10AX	24	10 / 54	24	41.67	78	220
RS1-4803S10AX	48	7 / 29	3.3	303	72	220
RS1-4805S10AX	48	7 / 28	5	200	75	220
RS1-4807S10AX	48	7 / 27	7.2	138.8	76	220
RS1-4809S10AX	48	7 / 27	9	111.1	76	220
RS1-4812S10AX	48	7 / 27	12	83.3	76	220
RS1-4815S10AX	48	7 / 27	15	66.67	76	220
RS1-4818S10AX	48	7 / 27	18	55.5	76	220
RS1-4824S10AX	48	7 / 27	24	41.67	76	220



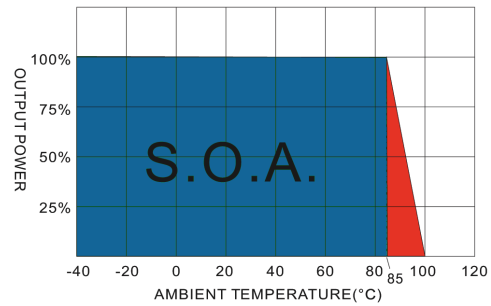
# RS1/RD1-S10

1.0 Watt unregulated  
single output

## NUMBER STRUCTURE



## DERATING CURVE



## MODEL SELECTION GUIDE

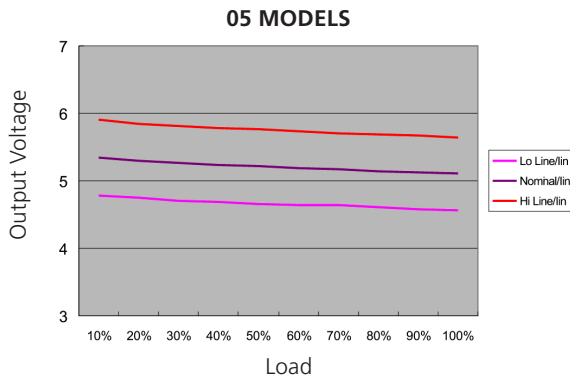
Model Number	Input Range VDC	Input current (mA) No Load / Full Load	Output VDC	Output current Full Load (mA)	Efficiency @FL (%)	Capacitor Load (μF)
RD1-0503S10AX	5	25 / 278	3.3	303	72	220
RD1-0505S10AX	5	25 / 267	5	200	75	220
RD1-0507S10AX	5	25 / 264	7.2	138.8	76	220
RD1-0509S10AX	5	25 / 260	9	111.1	77	220
RD1-0512S10AX	5	25 / 257	12	83.3	78	220
RD1-0515S10AX	5	25 / 257	15	66.67	78	220
RD1-0518S10AX	5	25 / 257	18	55.5	78	220
RD1-0524S10AX	5	25 / 257	24	41.67	78	220
RD1-1203S10AX	12	16 / 116	3.3	303	72	220
RD1-1205S10AX	12	16 / 112	5	200	75	220
RD1-1207S10AX	12	16 / 110	7.2	138.8	76	220
RD1-1209S10AX	12	16 / 109	9	111.1	77	220
RD1-1212S10AX	12	16 / 107	12	83.3	78	220
RD1-1215S10AX	12	16 / 107	15	66.67	78	220
RD1-1218S10AX	12	16 / 107	18	55.5	78	220
RD1-1224S10AX	12	16 / 107	24	41.67	78	220
RD1-2403S10AX	24	10 / 58	3.3	303	72	220
RD1-2405S10AX	24	10 / 56	5	200	75	220
RD1-2407S10AX	24	10 / 55	7.2	138.8	76	220
RD1-2409S10AX	24	10 / 55	9	111.1	77	220
RD1-2412S10AX	24	10 / 54	12	83.3	78	220
RD1-2415S10AX	24	10 / 54	15	66.67	78	220
RD1-2418S10AX	24	10 / 54	18	55.5	78	220
RD1-2424S10AX	24	10 / 54	24	41.67	78	220



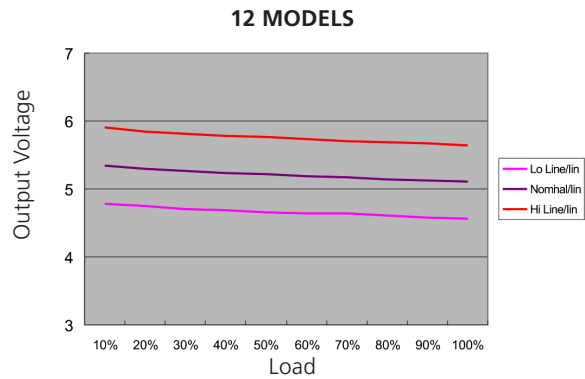
# RS1/RD1-S10

1.0 Watt unregulated  
single output

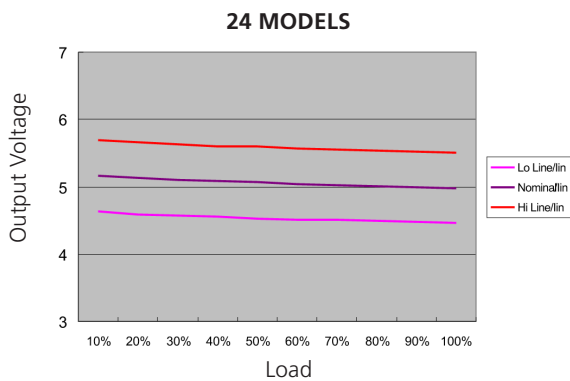
## LOADING VS OUTPUT VOLTAGE 05



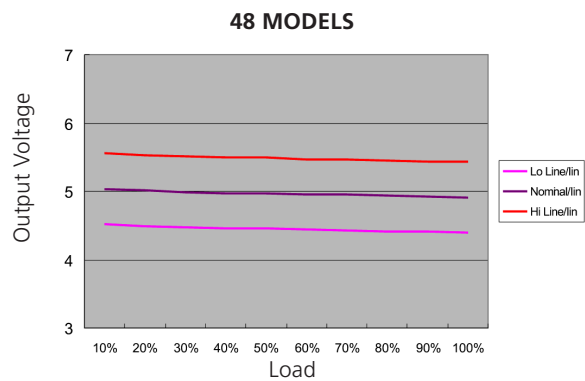
## LOADING VS OUTPUT VOLTAGE 12



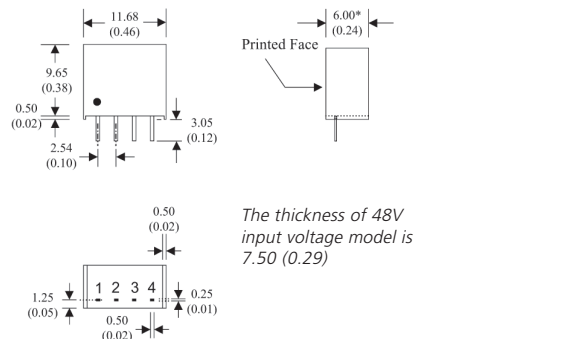
## LOADING VS OUTPUT VOLTAGE 24



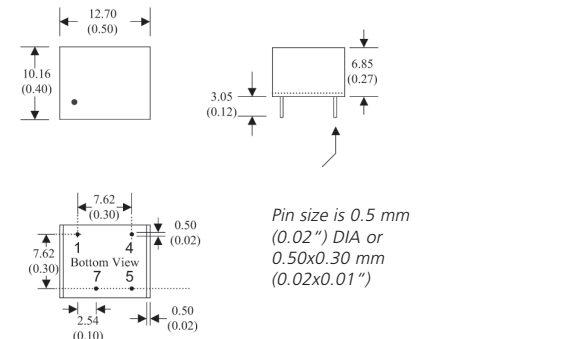
## LOADING VS OUTPUT VOLTAGE 48



## MECHANICAL SPECIFICATIONS 4 Pin SIL



## MECHANICAL SPECIFICATIONS 8 Pin DIL



## PIN CONNECTIONS

Pin Number	Single 4 Pin SIL	Single 8 Pin DIL
1	-V Input	-V Input
2	+V Input	
3	-V Output	
4	+V Output	+V Input
5		+V Output
7		-V Output

Notes:

All dimensions are typical in millimeters (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:  $\pm 0.5$  ( $\pm 0.02$ )