

RS1/RD1-S05

0.5 Watt unregulated
single output



- 4 Pin SIP4 / 8 Pin DIP8 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"

ENVIRONMENT 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.)

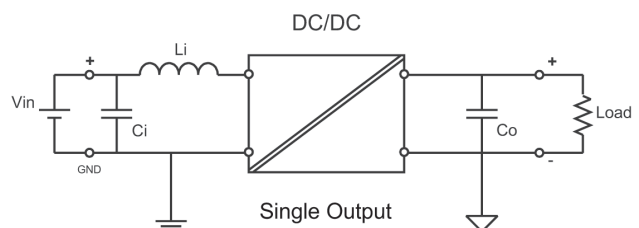
All specifications typical at Ta = 25°C, nominal input voltage and full load unless otherwise specified.

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 Vin 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“).



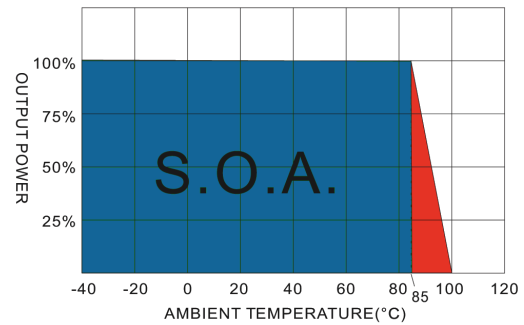
RS1/RD1-S05

0.5 Watt unregulated
single output

NUMBER STRUCTURE

RS1	-	XX	XX	S	05	A	X
Name/Package		Output		Type	Power	Code	Isolation
RS1=SIL4		03=3.3V 05=5V 07=7.2V 09=9V 12=12V 15=15V 18=18V 24=24V		S=Single	05=0.50W	internal	1=1.0 kVDC 3=3.0 kVDC
Input							
05=5V 12=12V 24=24V 48=48V							

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)
RS1-0503S05AX	5	30 / 134	3.3	151.5	75	100
RS1-0505S05AX	5	30 / 129	5	100	78	100
RS1-0507S05AX	5	30 / 136	7.2	69.44	74	100
RS1-0509S05AX	5	30 / 134	9	55.55	75	100
RS1-0512S05AX	5	30 / 132	12	41.67	76	100
RS1-0515S05AX	5	30 / 132	15	33.33	76	100
RS1-0518S05AX	5	30 / 134	18	27.77	75	100
RS1-0524S05AX	5	30 / 139	24	20.83	72	100
RS1-1203S05AX	12	20 / 60	3.3	151.5	70	100
RS1-1205S05AX	12	20 / 56	5	100	74	100
RS1-1207S05AX	12	20 / 56	7.2	69.44	74	100
RS1-1209S05AX	12	20 / 56	9	55.55	75	100
RS1-1212S05AX	12	20 / 60	12	41.67	70	100
RS1-1215S05AX	12	20 / 60	15	33.33	70	100
RS1-1218S05AX	12	20 / 60	18	27.77	70	100
RS1-1224S05AX	12	20 / 60	24	20.83	70	100
RS1-2403S05AX	24	10 / 31	3.3	151.5	67	100
RS1-2405S05AX	24	10 / 29	5	100	72	100
RS1-2407S05AX	24	10 / 31	7.2	69.44	67	100
RS1-2409S05AX	24	10 / 31	9	55.55	67	100
RS1-2412S05AX	24	10 / 31	12	41.67	67	100
RS1-2415S05AX	24	10 / 29	15	33.33	72	100
RS1-2418S05AX	24	10 / 30	18	27.77	70	100
RS1-2424S05AX	24	10 / 30	24	20.83	70	100
RS1-4803S05AX	48	6 / 17	3.3	151.5	62	100
RS1-4805S05AX	48	6 / 16	5	100	65	100
RS1-4807S05AX	48	6 / 17	7.2	69.44	62	100
RS1-4809S05AX	48	6 / 17	9	55.55	62	100
RS1-4812S05AX	48	6 / 17	12	41.67	62	100
RS1-4815S05AX	48	6 / 17	15	33.33	62	100
RS1-4818S05AX	48	6 / 17	18	27.77	62	100
RS1-4824S05AX	48	6 / 17	24	20.83	62	100

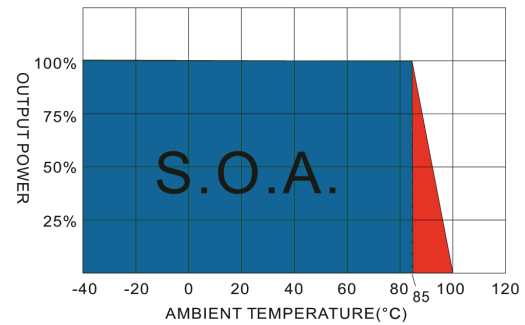
RS1/RD1-S05

0.5 Watt unregulated
single output

NUMBER STRUCTURE

RD1	-	XX	XX	S	05	A	X
Name/Package			Output		Power	Code	Isolation
RD1=DIL8			03=3.3V 05=5V 07=7.2V 09=9V 12=12V 15=15V 18=18V 24=24V	Type S=Single	05=0.50W	internal	1=1.0 kVDC 3=3.0 kVDC
		Input					
		05=5V 12=12V 24=24V					

DERATING CURVE



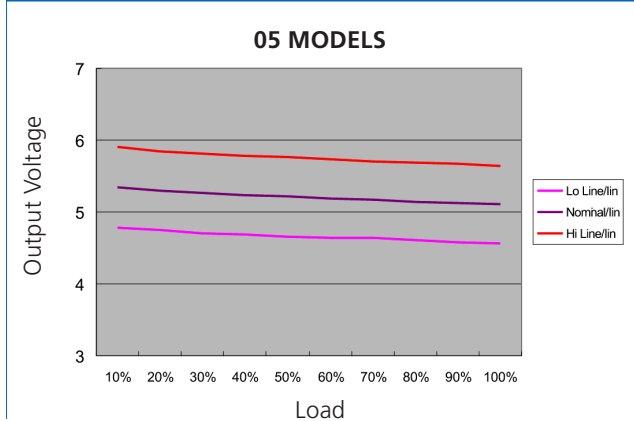
MODEL SELECTION GUIDE

Model Number	Input Range VDC	Input current (mA) No Load / Full Load	Output VDC	Output current Full Load (mA)	Efficiency @FL (%)	Capacitor Load (μF)
RD1-0503S05AX	5	30 / 134	3.3	151.5	75	100
RD1-0505S05AX	5	30 / 129	5	100	78	100
RD1-0507S05AX	5	30 / 134	7.2	69.44	75	100
RD1-0509S05AX	5	30 / 134	9	55.55	75	100
RD1-0512S05AX	5	30 / 132	12	41.67	76	100
RD1-0515S05AX	5	30 / 132	15	33.33	76	100
RD1-0518S05AX	5	30 / 134	18	27.77	75	100
RD1-0524S05AX	5	30 / 139	24	20.83	72	100
RD1-1203S05AX	12	20 / 60	3.3	151.5	70	100
RD1-1205S05AX	12	20 / 56	5	100	75	100
RD1-1207S05AX	12	20 / 58	7.2	69.44	72	100
RD1-1209S05AX	12	20 / 56	9	55.55	75	100
RD1-1212S05AX	12	20 / 60	12	41.67	70	100
RD1-1215S05AX	12	20 / 60	15	33.33	70	100
RD1-1218S05AX	12	20 / 60	18	27.77	70	100
RD1-1224S05AX	12	20 / 60	24	20.83	70	100
RD1-2403S05AX	24	10 / 31	3.3	151.5	67	100
RD1-2405S05AX	24	10 / 29	5	100	72	100
RD1-2407S05AX	24	10 / 31	7.2	69.44	67	100
RD1-2409S05AX	24	10 / 31	9	55.55	67	100
RD1-2412S05AX	24	10 / 31	12	41.67	67	100
RD1-2415S05AX	24	10 / 31	15	33.33	67	100
RD1-2418S05AX	24	10 / 31	18	27.77	67	100
RD1-2424S05AX	24	10 / 31	24	20.83	67	100

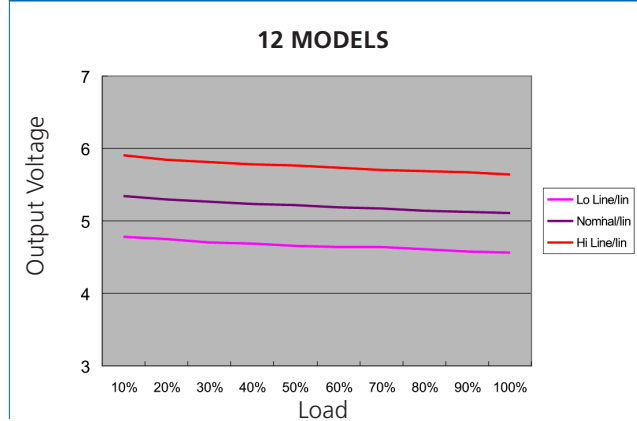
RS1/RD1-S05

0.5 Watt unregulated
single output

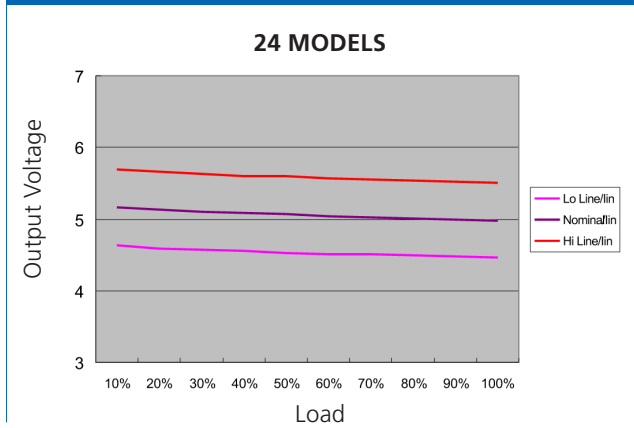
LOADING VS OUTPUT VOLTAGE 05



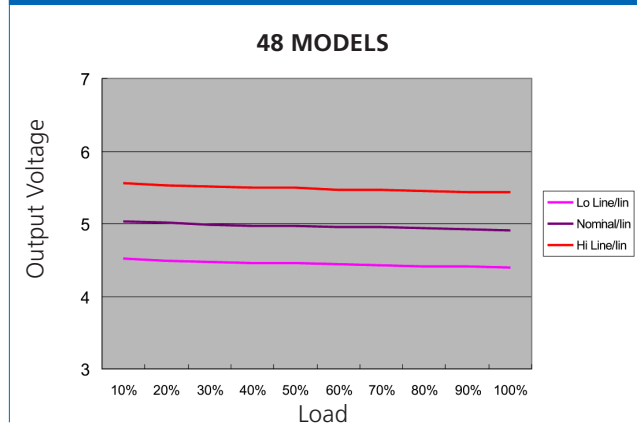
LOADING VS OUTPUT VOLTAGE 12



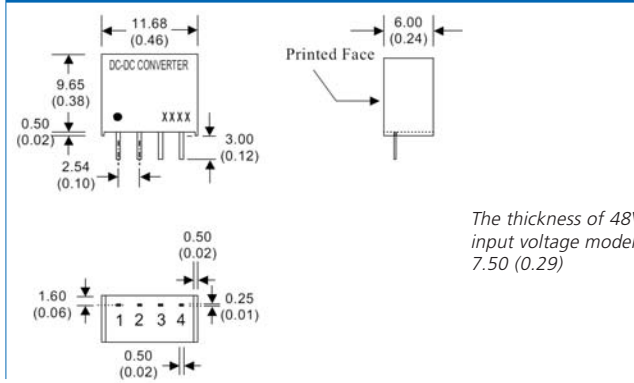
LOADING VS OUTPUT VOLTAGE 24



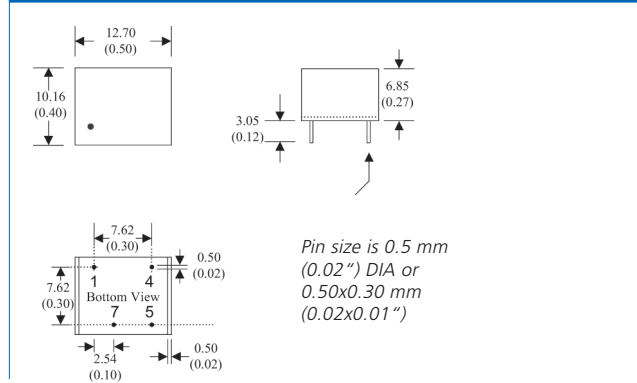
LOADING VS OUTPUT VOLTAGE 48



MECHANICAL SPECIFICATIONS 4 Pin SIL



MECHANICAL SPECIFICATIONS 8 Pin DIL



Notes:
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 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