

RDD08U SERIES

DC - DC CONVERTER

6.6 ~ 8.1W SINGLE & DUAL OUTPUT



FEATURES

- EFFICIENCY UP TO 85%
- 2:1 WIDE INPUT RANGE
- I/O ISOLATION
- INPUT π FILTER
- SHORT CIRCUIT PROTECTION
- HIGH PERFORMANCE
- UL/cUL/TUV/CE
- 3 YEARS WARRANTY



EN 60950-1



MODEL LIST

MODEL NO.	INPUT VOLTAGE	INPUT CURRENT (typ.) (max.)		OUTPUT WATTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. (min.)	EFF. (typ.)	CAPACITOR LOAD (max.)
Single Output Models									
RDD08 - 03S1U	9~18 VDC	0.69A	0.97A	6.6 WATTS	+3.3 VDC	2000 mA	78%	80%	3300 μ F
RDD08 - 05S1U	9~18 VDC	0.77A	1.07A	7.5 WATTS	+ 5 VDC	1500 mA	80%	82%	2200 μ F
RDD08 - 12S1U	9~18 VDC	0.79A	1.11A	8 WATTS	+ 12 VDC	670 mA	83%	85%	470 μ F
RDD08 - 15S1U	9~18 VDC	0.80A	1.11A	8.1 WATTS	+ 15 VDC	540 mA	83%	85%	330 μ F
RDD08 - 03S2U	18~36 VDC	0.35A	0.48A	6.6 WATTS	+3.3 VDC	2000 mA	78%	80%	3300 μ F
RDD08 - 05S2U	18~36 VDC	0.38A	0.53A	7.5 WATTS	+ 5 VDC	1500 mA	81%	83%	2200 μ F
RDD08 - 12S2U	18~36 VDC	0.40A	0.55A	8 WATTS	+ 12 VDC	670 mA	83%	85%	470 μ F
RDD08 - 15S2U	18~36 VDC	0.40A	0.55A	8.1 WATTS	+ 15 VDC	540 mA	83%	85%	330 μ F
RDD08 - 03S3U	35~75 VDC	0.17A	0.25A	6.6 WATTS	+3.3 VDC	2000 mA	78%	80%	3300 μ F
RDD08 - 05S3U	35~75 VDC	0.19A	0.27A	7.5 WATTS	+ 5 VDC	1500 mA	81%	83%	2200 μ F
RDD08 - 12S3U	35~75 VDC	0.20A	0.28A	8 WATTS	+ 12 VDC	670 mA	83%	85%	470 μ F
RDD08 - 15S3U	35~75 VDC	0.20A	0.28A	8.1 WATTS	+ 15 VDC	540 mA	83%	85%	330 μ F

Dual Output Models

RDD08 - 05D1U	9~18 VDC	0.82A	1.14A	8 WATTS	$\pm$ 5 VDC	$\pm$ 800 mA	80%	82%	$\pm$ 1000 μ F
RDD08 - 12D1U	9~18 VDC	0.81A	1.12A	8.1 WATTS	$\pm$ 12 VDC	$\pm$ 340 mA	83%	85%	$\pm$ 180 μ F
RDD08 - 15D1U	9~18 VDC	0.81A	1.12A	8.1 WATTS	$\pm$ 15 VDC	$\pm$ 270 mA	83%	85%	$\pm$ 100 μ F
RDD08 - 05D2U	18~36 VDC	0.41A	0.56A	8 WATTS	$\pm$ 5 VDC	$\pm$ 800 mA	81%	83%	$\pm$ 1000 μ F
RDD08 - 12D2U	18~36 VDC	0.40A	0.56A	8.1 WATTS	$\pm$ 12 VDC	$\pm$ 340 mA	83%	85%	$\pm$ 180 μ F
RDD08 - 15D2U	18~36 VDC	0.40A	0.56A	8.1 WATTS	$\pm$ 15 VDC	$\pm$ 270 mA	83%	85%	$\pm$ 100 μ F
RDD08 - 05D3U	35~75 VDC	0.20A	0.29A	8 WATTS	$\pm$ 5 VDC	$\pm$ 800 mA	81%	83%	$\pm$ 1000 μ F
RDD08 - 12D3U	35~75 VDC	0.20A	0.29A	8.1 WATTS	$\pm$ 12 VDC	$\pm$ 340 mA	83%	85%	$\pm$ 180 μ F
RDD08 - 15D3U	35~75 VDC	0.20A	0.29A	8.1 WATTS	$\pm$ 15 VDC	$\pm$ 270 mA	83%	85%	$\pm$ 100 μ F

SPECIFICATION

All Specifications Typical At Nominal Line, Full Load, 25°C Unless Otherwise Noticed

GENERAL

Characteristics	Conditions	min.	typ.	max.	unit
Switching frequency	Vi nom, Io nom		280		KHz
Isolation voltage	Input / Output	1500			VDC
Isolation resistance	Input / Output, @ 500VDC	100			MΩ
Isolation capacitance	100KHz / IV		1000		PF
Ambient temperature	Operating at Vi nom, Io nom	-40		+ 71	°C
Case temperature	Operating at Vi nom, Io nom			+ 100	°C
Derating	Vi nom	See derating curve			
Storage temperature	Non operational	-40		+ 100	°C
Relative humidity	Vi nom, Io nom	20		95	% RH
Temperature coefficient	Vi nom, Io min			± 0.02	% / °C
Dimension		L31.8 x W20.3 x H10.2			mm
MTBF	Bellcore issue 6@40°C, GB		1309000		Hours
Cooling	Free air convection				

INPUT SPECIFICATIONS

Characteristics	Conditions	min.	typ.	max.	unit
Input voltage range	Ta min ... Ta max, Io nom	9	12	18	VDC
		18	24	36	VDC
		36	48	75	VDC
No load input current	Vi nom, Io = 0	12V models		30	mA
		24V models		25	mA
		48V models		20	mA
Input voltage w/o damage	Io nom	12V models		20	VDC
		24V models		40	VDC
		48V models		80	VDC
Startup voltage	Io nom	12V models		8.7	VDC
		24V models		17.4	VDC
		48V models		31.5	VDC
Input filter	Pi type				

OUTPUT SPECIFICATIONS

Characteristics	Conditions	min.	typ.	max.	unit
Output voltage accuracy	Vi nom, Io nom			± 2	%
Minimum load	Vi nom single output models	0			%
	Vi nom dual output models (each output)	10			%
Line regulation	Io nom, Vi min ... Vi max			± 0.5	%
Load regulation	Vi nom, Io 0 ... Io nom, single output models			± 0.5	%
	Vi nom, Io min ... Io nom, dual output models			± 1	%
Cross regulation (Dual modle)	Aymmetrical load 10% - 100% FL			± 5	%
Startup time	Vi nom, Io nom			700	ms
Transient recovery time	Vi nom, I ~0.5 Io nom			1	ms
Ripple & noise	Vi nom, Io nom, BW = 20MHz			50	mV
Efficiency	Vi nom, Io nom, Po / Pi	Up to 85%, See model list and efficiency curve			

SPECIFICATION

All Specifications Typical At Nominal Line, Full Load, 25°C Unless Otherwise Noticed

CONTROL AND PROTECTION

Input reversed	Shunt diode built in, external fuse recommended 1A	
Output short circuit	Current limited (Auto-recovery)	
Rated over load protection	110%min....140%max	
Remote on/off control	ON : 3....10Vdc or open circuit	OFF: 0....1.5Vdc or short circuit pin1 and pin2,3

APPROVALS AND STANDARD

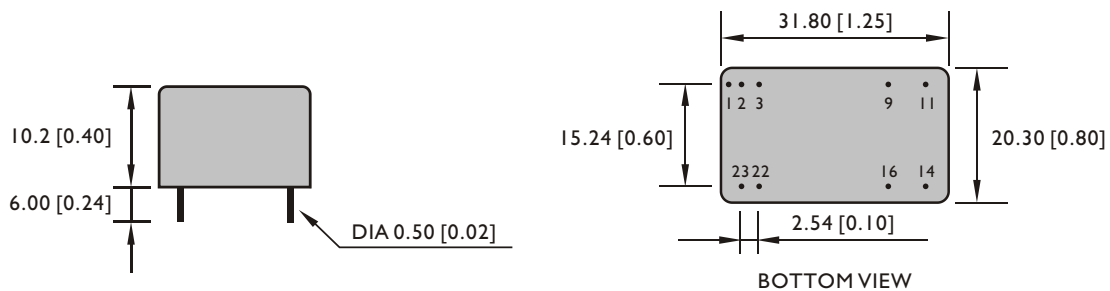
UL/cUL	UL 60950-1 Recognized
TUV	EN 60950-1, CB scheme
CE	EN 61204-3, EN 55022 Class A, EN 61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-6
Vibration	meet IEC 60068-2-6 (10-500 Hz, 2G, along X, Y, Z each Axis, 60 min for each Axis)

PHYSICAL CHARACTERISTICS

Case size	31.8 x 20.3 x 10.2 mm (1.25 x 0.8 x 0.4 inches)
Case material	Plastic base / Metal case
Weight	18 g
Potting material	Silicone

MECHANISM & PIN CONFIGURATION

mm [inch]



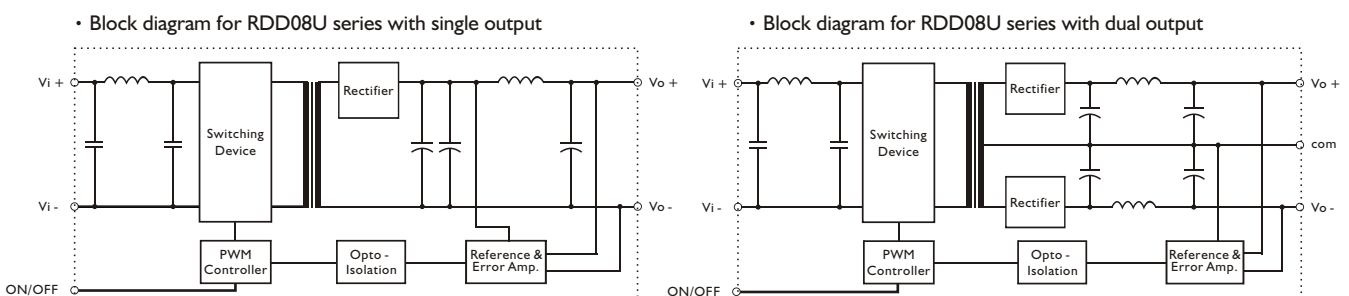
GENERAL TOLERANCE	
0.00[0.00] - 30.00[1.18]	±0.30[0.01]
30.00[1.18] - 120.00[4.72]	±0.50[0.02]

PIN ASSIGNMENT

GENERAL

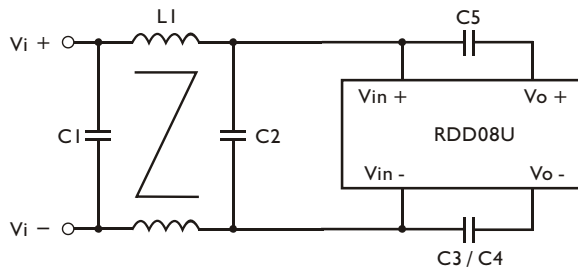
PIN NO.	1	2 & 3	9	11	14	16	22 & 23
SINGLE	Remote On/Off	Vi -	N. C.	N. C.	Vo +	Vo -	Vi +
DUAL	Remote On/Off	Vi -	com	Vo -	Vo +	com	Vi +

CIRCUIT SCHEMATIC



RECOMMENDED CIRCUIT

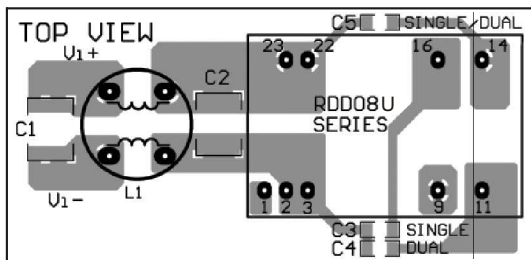
- Recommended filter for EN55022 Class B compliance.



- The components used in the above figure, together with the manufacturer part numbers for these components, are as follows.

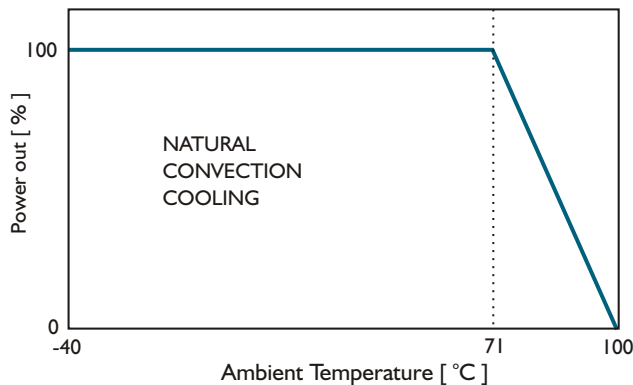
	C1	C2	C3 / C4	C5	L1
RDD08-XXX1U	2.2 μ F / 50V MLCC	4.7 μ F / 50V MLCC	1nF/2KV MLCC	1nF/2KV MLCC	1.5mH Common Choke
RDD08-XXX2U	2.2 μ F / 50V MLCC	4.7 μ F / 50V MLCC	1nF/2KV MLCC	1nF/2KV MLCC	1.5mH Common Choke
RDD08-XXX3U	2.2 μ F / 100V MLCC	2.2 μ F / 100V MLCC	1nF/2KV MLCC	1nF/2KV MLCC	1.5mH Common Choke

- Recommended EN 55022 Class B filter circuit layout.

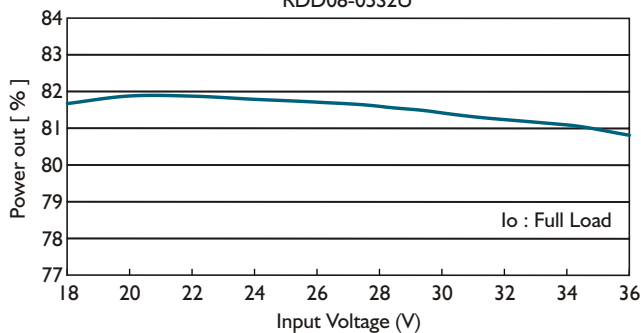


DERATING AND EFFICIENCY CURVE

Temperature derating curve



Efficiency Vs Input Voltage
RDD08-05S2U



Efficiency Vs Output Load
RDD08-05S2U

