

RDD05 SERIES



DC - DC CONVERTER
5 ~ 6W SINGLE & DUAL OUTPUT

FEATURES

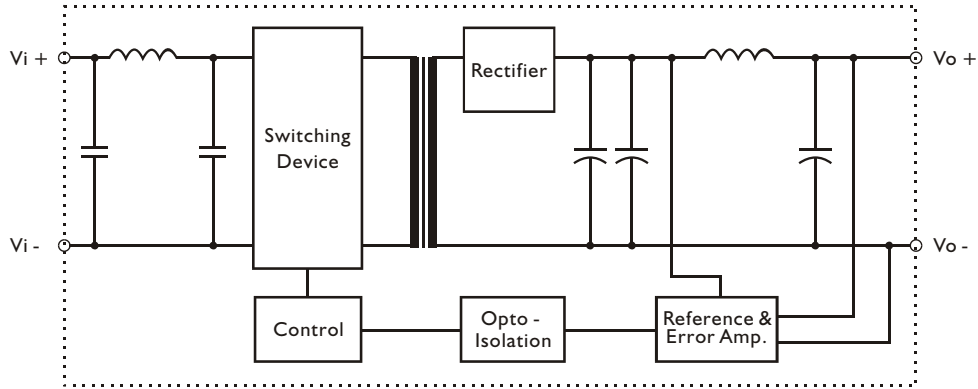
- LOW COST
- 2:1 WIDE INPUT RANGE
- I/O ISOLATION
- INPUT Pi FILTER
- SHORT CIRCUIT PROTECTION
- HIGH PERFORMANCE

MODEL LIST

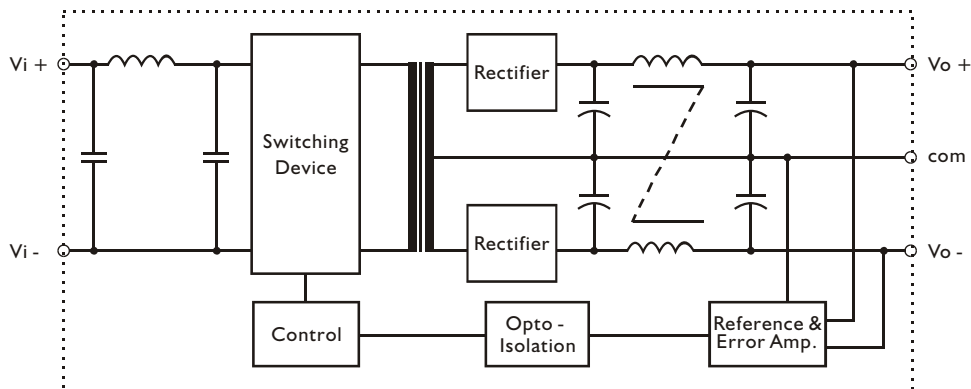
MODEL NO.	INPUT VOLTAGE	OUTPUT WATTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. (min.)
Single Output Models					
RDD05 - 03S1	9~18 VDC	5 WATTS	+3.3 VDC	1500 mA	74%
RDD05 - 05S1	9~18 VDC	5 WATTS	+ 5 VDC	1000 mA	77%
RDD05 - 12S1	9~18 VDC	6 WATTS	+ 12 VDC	500 mA	81%
RDD05 - 15S1	9~18 VDC	6 WATTS	+ 15 VDC	400 mA	82%
RDD05 - 03S2	18~36 VDC	5 WATTS	+3.3 VDC	1500 mA	77%
RDD05 - 05S2	18~36 VDC	5 WATTS	+ 5 VDC	1000 mA	80%
RDD05 - 12S2	18~36 VDC	6 WATTS	+ 12 VDC	500 mA	84%
RDD05 - 15S2	18~36 VDC	6 WATTS	+ 15 VDC	400 mA	85%
RDD05 - 03S3	35~75 VDC	5 WATTS	+3.3 VDC	1500 mA	78%
RDD05 - 05S3	35~75 VDC	5 WATTS	+ 5 VDC	1000 mA	81%
RDD05 - 12S3	35~75 VDC	6 WATTS	+ 12 VDC	500 mA	85%
RDD05 - 15S3	35~75 VDC	6 WATTS	+ 15 VDC	400 mA	86%
Dual Output Models					
RDD05 - 05D1	9~18 VDC	5 WATTS	± 5 VDC	± 500 mA	76%
RDD05 - 12D1	9~18 VDC	6 WATTS	± 12 VDC	± 250 mA	80%
RDD05 - 15D1	9~18 VDC	6 WATTS	± 15 VDC	± 200 mA	81%
RDD05 - 05D2	18~36 VDC	5 WATTS	± 5 VDC	± 500 mA	78%
RDD05 - 12D2	18~36 VDC	6 WATTS	± 12 VDC	± 250 mA	83%
RDD05 - 15D2	18~36 VDC	6 WATTS	± 15 VDC	± 200 mA	84%
RDD05 - 05D3	35~75 VDC	5 WATTS	± 5 VDC	± 500 mA	79%
RDD05 - 12D3	35~75 VDC	6 WATTS	± 12 VDC	± 250 mA	84%
RDD05 - 15D3	35~75 VDC	6 WATTS	± 15 VDC	± 200 mA	85%

CIRCUIT SCHEMATIC

- Block diagram for RDD05 series with single output



- Block diagram for RDD05 series with dual output



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	150			KHz
Isolation voltage	Input / Output	1,500			VDC
Isolation resistance	Input / Output, @ 500VDC	1G			Ω
Ambient temperature	Operating at Vi nom, Io nom	-25		+ 71	°C
Case temperature	Operating at Vi nom, Io nom			+ 90	°C
Derating	Vi nom	See derating curve			% / °C
Storage temperature	Non operational	-40		+ 100	°C
M.T.B.F.	According to MIL-HDBK-217F, GF40		277,000		Hrs
Dimension	L20.3 x W31.8 x H12.7				mm
Cooling	Free air convection				
Case material	Plastic				

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	72	VDC
No load input current	Vi nom, Io = 0	12V models		30	mA
		24V models		22	mA
		48V models		15	mA
Input voltage w/o damage	Io nom	12V models		20	VDC
		24V models		40	VDC
		48V models		75	VDC
Input filter	Pi type				

OUTPUT SPECIFICATIONS

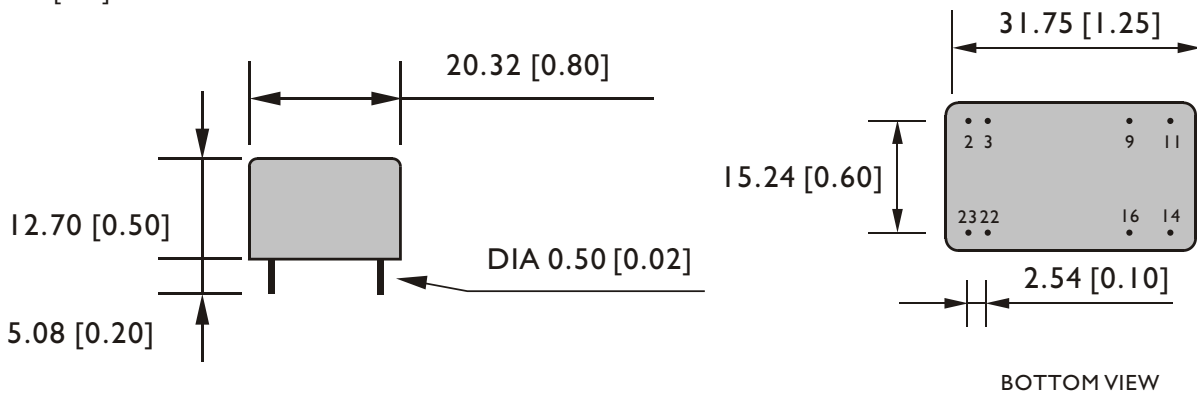
Characteristics	Conditions	min.	typ.	max.	unit
Output voltage accuracy	Vi nom, Io nom			± 2	%
Minimum load	Vi nom single output models	0			%
	Vi nom dual output models (each output)	20			%
Line regulation	Io nom, Vi min ... Vi max			± 1	%
Load regulation	Vi nom, Io 0 ... Io nom, single output models			± 2	%
	Vi nom, Io min ... Io nom, dual output models			± 3	%
Transient recovery time	25% load step changed		500		μs
Temperature coefficient	Vi nom, Io nom			± 0.02	% / °C
Ripple & noise	Vi nom, Io nom, BW = 20MHz			100	mV
Efficiency	Vi nom, Io nom, Po / Pi	Up to 86%, See model list			

CONTROL AND PROTECTION

Input reversed	Shunt diode built in, external fuse recommended
Output short circuit	Continuous

MECHANISM & PIN CONFIGURATION

mm [inch]



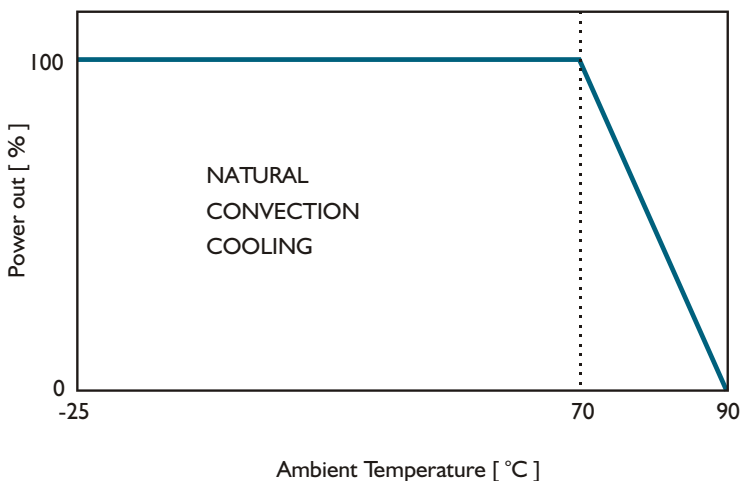
PHYSICAL CHARACTERISTICS

CASE SIZE	20.3 x 31.8 x 12.7 mm 0.8 x 1.25 x 0.5 inches
CASE MATERIAL	Plastic
WEIGHT	16 g

PIN ASSIGNMENT

GENERAL						
PIN NO.	2 & 3	9	11	14	16	22 & 23
SINGLE	Vi -	NO PIN	N. C.	Vo+	Vo -	Vi+
DUAL	Vi -	com	Vo -	Vo+	com	Vi+

DERATING



RDD05 SERIES

DC - DC CONVERTER

4 ~ 6W SINGLE & DUAL OUTPUT



FEATURES

- LOW COST
- 4:1 WIDE INPUT RANGE
- I/O ISOLATION
- INPUT Pi FILTER
- SHORT CIRCUIT PROTECTION
- HIGH PERFORMANCE

MODEL LIST

MODEL NO.	INPUT VOLTAGE	OUTPUT WATTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. (TYP.)	EFF. (min.)
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Single Output Models

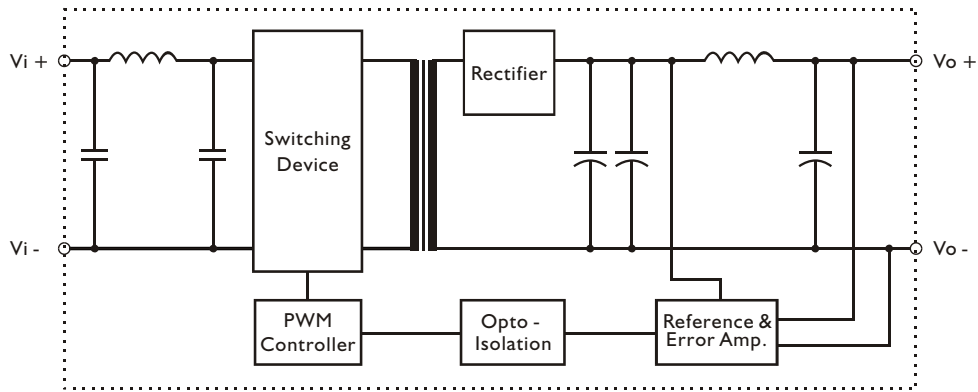
RDD05 - 03S4	9~36 VDC	4 WATTS	+3.3 VDC	1200 mA	77%	75%
RDD05 - 05S4	9~36 VDC	5 WATTS	+ 5 VDC	1000 mA	79%	77%
RDD05 - 12S4	9~36 VDC	6 WATTS	+ 12 VDC	500 mA	81%	79%
RDD05 - 15S4	9~36 VDC	6 WATTS	+ 15 VDC	400 mA	81%	79%
RDD05 - 03S5	18~75 VDC	4 WATTS	+3.3 VDC	1200 mA	77%	75%
RDD05 - 05S5	18~75 VDC	5 WATTS	+ 5 VDC	1000 mA	80%	78%
RDD05 - 12S5	18~75 VDC	6 WATTS	+ 12 VDC	500 mA	82%	80%
RDD05 - 15S5	18~75 VDC	6 WATTS	+ 15 VDC	400 mA	82%	80%

Dual Output Models

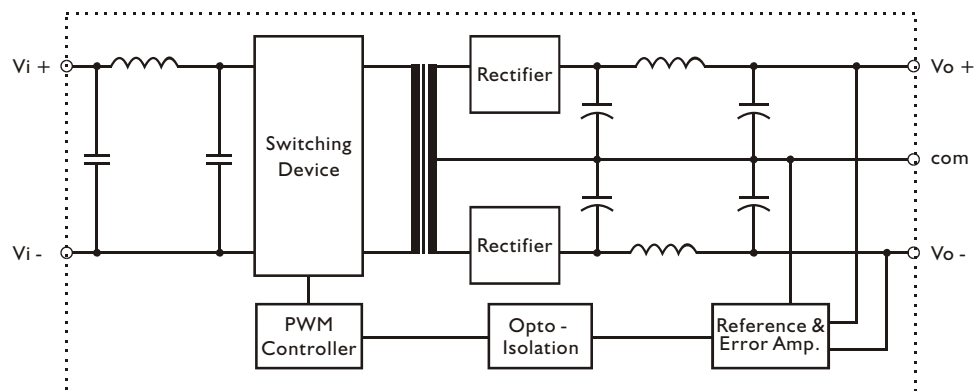
RDD05 - 05D4	9~36 VDC	5 WATTS	± 5 VDC	± 500 mA	80%	78%
RDD05 - 12D4	9~36 VDC	6 WATTS	± 12 VDC	± 250 mA	81%	79%
RDD05 - 15D4	9~36 VDC	6 WATTS	± 15 VDC	± 200 mA	81%	79%
RDD05 - 05D5	18~75 VDC	5 WATTS	± 5 VDC	± 500 mA	80%	78%
RDD05 - 12D5	18~75 VDC	6 WATTS	± 12 VDC	± 250 mA	82%	80%
RDD05 - 15D5	18~75 VDC	6 WATTS	± 15 VDC	± 200 mA	82%	80%

CIRCUIT SCHEMATIC

- Block diagram for RDD05 series with single output



- Block diagram for RDD05 series with dual output



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		300		KHz
Isolation voltage	Input / Output	1,500			VDC
Isolation resistance	Input / Output, @ 500VDC	1G			Ω
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			% / °C
Storage temperature	Non operational	-40		+ 100	°C
Dimension	L20.3 x W31.8 x H10.2				mm
Cooling	Free air convection				
Case material	Tinplate nickel plated				

INPUT SPECIFICATIONS

Characteristics	Conditions	min.	typ.	max.	unit
Input voltage range	Ta min ... Ta max, Io nom	9	24	36	VDC
		18	48	75	VDC
No load input current	Vi nom, Io = 0	24V models		20	mA
		48V models		15	mA
Input voltage w/o damage	Io nom	24V models		40	VDC
		48V models		80	VDC
startup voltage	Io nom	24V models	8.7		VDC
		48V models	17.4		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	%
Transient recovery time	Vi nom, Io nom = I ↔ 1/2 Io nom		1		ms
Temperature coefficient	Vi nom, Io nom			± 0.02	% / °C
Ripple & noise	Vi nom, Io nom, BW = 20MHz			50	mV
Efficiency	Vi nom, Io nom, Po / Pi	Up to 86%, See model list			
Capacitive Load	Io nom	3.3Vout models		2200	μF
		5.0Vout models		1500	
		12.0Vout models		330	
		15.0Vout models		220	
		± 5Vout models		± 680	
		± 12Vout models		± 150	
		± 15Vout models		± 68	

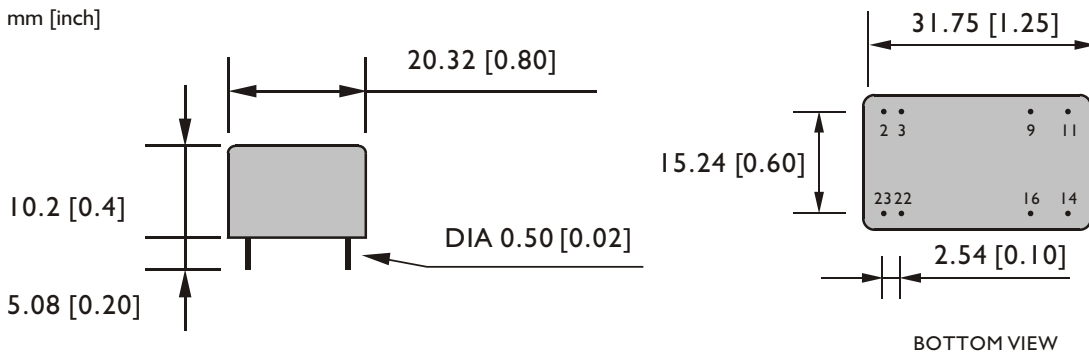
CONTROL AND PROTECTION

Input reversed	Shunt diode built in, external fuse recommended
Output short circuit	Continuous
Rated over load protection	115%min....160%max

APPROVALS AND STANDARD

UL/cUL	UL1950
TUV	EN60950
CE	EN61204(Class A for EMI)

MECHANISM & PIN CONFIGURATION



PHYSICAL CHARACTERISTICS

CASE SIZE	20.3 x 31.8 x 10.2 mm 0.8 x 1.25 x 0.4 inches
CASE MATERIAL	Tinplate nickel plated
WEIGHT	16 g

PIN ASSIGNMENT

GENERAL

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

DERATING

