



VRB_D-10W Series

WIDE INPUT ISOLATED & REGULATED
10W OUTPUT SINGLE OUTPUT
DIP PACKAGE

RoHS
multi-country patent protection

FEATURES

- Wide (2:1) Input Range
- Efficiency to 85%
- Operating Temperature: -40°C~+85°C
- I/O-Isolation 1.5KVDC
- Single Output
- Metal Case Package
- No Heat Sink Required
- Industry Standard Pin out
- MTBF>1,000,000 hours
- Custom Service Available
- Case size: 50.8(L) *25.4(W)*10.2(H) mm
- RoHS Compliance

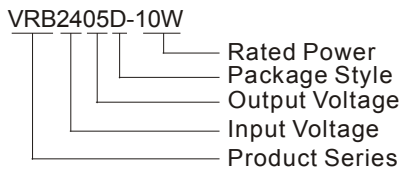
Application

The VRB_D-10W Series are specially designed for applications where a wide range input voltage power supplies are isolated from the input power supply in a distributed power supply system on a circuit board.

These products apply to:

- 1) Where the voltage of the input power supply is wide range (voltage range: 2:1);
- 2) Where isolation is necessary between input and output (Isolation voltage =1500VDC);
- 3) Where the regulation of the output voltage and the output ripple noise are demanded.

MODEL SELECTION



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PRODUCT PROGRAM

Part Number	Input			Output			Efficiency (% Typ)	Package Style
	Voltage (VDC)			Voltage (VDC)	Current (mA)			
	Nominal	Range	Max*		Max	Min**		
VRB1205D-10W	12	9~18VDC	20	5	2000	200	75	DIP
VRB1212D-10W	12	9~18VDC	20	12	830	83	77	DIP
VRB1215D-10W	12	9~18VDC	20	15	660	66	79	DIP
VRB1224D-10W	12	9~18VDC	20	24	420	42	81	DIP
VRB2405D-10W	24	18~36VDC	40	5	2000	200	75	DIP
VRB2412D-10W	24	18~36VDC	40	12	830	83	78	DIP
VRB2415D-10W	24	18~36VDC	40	15	660	66	82	DIP
VRB2424D-10W	24	18~36VDC	40	24	420	42	85	DIP
VRB4805D-10W	48	36~72VDC	80	5	2000	200	78	DIP
VRB4812D-10W	48	36~72VDC	80	12	830	83	81	DIP
VRB4815D-10W	48	36~72VDC	80	15	660	66	84	DIP
VRB4824D-10W	48	36~72VDC	80	24	420	42	85	DIP

* Input voltage above it may cause permanent damage to the device.

** The load shouldn't be less than 10%, otherwise ripple will increase dramatically.

ISOLATION SPECIFICATIONS

Item	Test conditions	Min	Typ	Max	Units
Isolation voltage	Flash tested for 60 seconds	1500			VDC
Isolation resistance	Test at 500VDC	1000			MΩ

OUTPUT SPECIFICATIONS

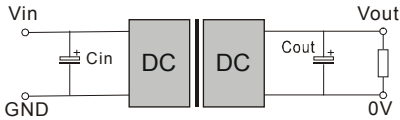
Item	Test conditions	Min	Typ	Max	Units
10W output power	See below products program	1		10	W
Output voltage accuracy	Refer to recommended circuit		±1	±3	
Load regulation	From 25% to 100% load		±0.5	±1	%
Line regulation	Input voltage from low to high		±0.2	±0.5	
Temperature drift (Vout)	Refer to recommended circuit			0.02	%/°C
Ripple	20Hz-300KHz bandwidth		30	50	mVp-p
Noise	DC-20MHz bandwidth		100	300	
Switching frequency	100% load, nominal input voltage		300		KHz

Note:

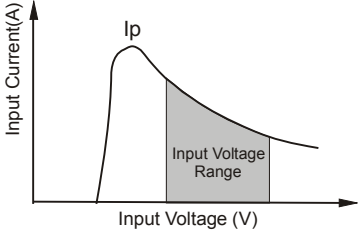
1. All specifications measured at T_a=25°C, humidity<75%, nominal input voltage and rated output load unless otherwise specified.

2. See below recommended circuits for more details.

COMMON SPECIFICATION	
Output Short Circuit Protection	Continuous
Temperature Rise at Full Load	30°C (TYP)
Cooling	Free Air Convection
No-load Power Consumption	500mW (typical)
Operating Temperature Range	-40°C~+85°C
Storage Temperature Range	-55°C ~+125°C
Lead Temperature***	300°C (1.5mm from case for 10 seconds)
Storage Humidity Range	≤ 95%
Case Material	Metal
MTBF	>1,000,000 hours
***Lead Temperature 1.5mm from case for 10 seconds.	



(Figure 1)



(Figure 2)

External Capacitor

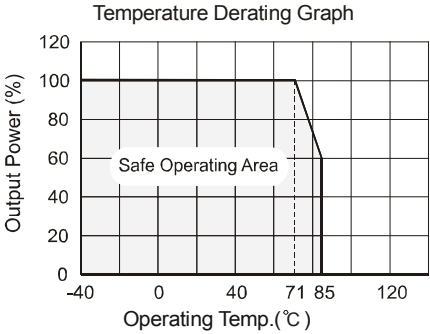
Although this series of DC/DC converter can work without external capacitor, in order to keep an optimum performance, however, it needs external capacitor. (See Table 1)

The products cannot be used in parallel and in plug and play.

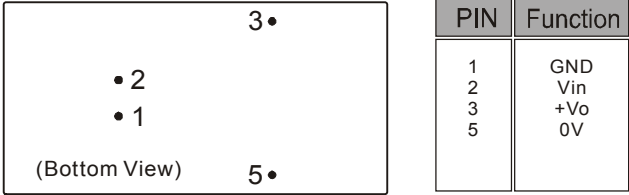
External Capacitor Table(See Table 1)

Vin	Cin	Vout	Cout
12V	100uF	5V	100uF each 1A Current
24V	100uF	12V	
48V	100uF	15V	
		24V	

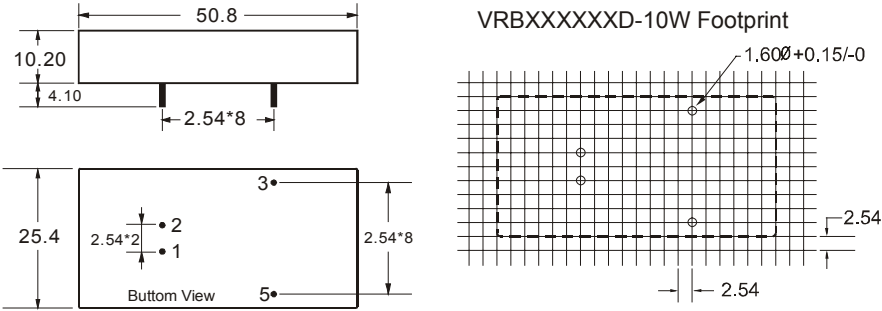
TYPICAL CHARECTERISTICS



FOOTPRINT DETAILS



OUTLINE DIMENSIONS & RECOMMENDED FOOTPRINT



Note: All Pins on a 2.54mm pitch; All Pin diameters are 0.80 mm(Tolerance: ±0.25); All dimensions in mm.

APPLICATION NOTE

Recommended Circuit

All the VRB_D-10W Series have been tested according to the following recommended testing circuit before leaving factory. This series should be tested under load. Never be tested under no load. (See Figure 1).
When it is used in unregulated power supply, be sure that the fluctuating range of the power supply and the rippled voltage do not exceed the module standard. Input current of power supply should afford the startup current of this kind of DC/DC module. (See figure 2)

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