MORNSUN
Industrial DC&AC converter professional

VRB_D-30W Series

30W, WIDE INPUT, ISOLATED & REGULATED DIP PACKAGE,SINGLE OUTPUT DC-DC CONVERTER



multi-country patent protection **RoHS**

FEATURES

- Efficiency up to 90%
- Wide (2:1) Input Range
- 1.5KVDC Input/Output Isolation
- Over Voltage protection
- Output Short Circuit Protection
- Operating Temperature: -40°C to +85°C
- Internal SMD construction
- Metal Shielding Package
- Industry Standard Pin out
- MTBF>1,000,000 hours
- RoHS Compliance

Application

The VRB_D-30W series offer 30W of output, the VRB_D-30W series with 2:1 wide input voltage of 9-18, 18-36 and 36-75VDC and features 1500VDC isolation, short-circuit and over current protection, as well as six sided shielding. All models are particularly suited to tele-communications, industrial, test equipments power.

MODEL SELECTION

VRB2424D-30W

- Rated Power
- Package Style
- Output Voltage
- Input Voltage
- Product Series

PRODUCT PROGRAM

Part Number	Input		Output		Efficiency (%, Typ)	capacitance (max,UF)
	Voltage (VDC)		Voltage (VDC)	Current (mA)		
	Nominal	Range				
VRB1203D-30W *	12	9-18	3.3	6000	85	19500
VRB1205D-30W			5	6000	87	10200
VRB1212D-30W			12	2500	88	3240
VRB1215D-30W *			15	2000	88	1100
VRB1224D-30W *			24	1250	88	900
VRB2403D-30W *	24	18-36	3.3	6000	86	19500
VRB2405D-30W			5	6000	89	10200
VRB2412D-30W			12	2500	89	3300
VRB2415D-30W *			15	2000	89	1100
VRB2424D-30W			24	1250	89	900
VRB4803D-30W *	48	36-75	3.3	6000	87	19500
VRB4805D-30W			5	6000	89	10200
VRB4812D-30W			12	2500	87	3300
VRB4815D-30W			15	2000	90	1100
VRB4824D-30W			24	1250	90	900

*Designing.

COMMON SPECIFICATIONS

Item	Test conditions	Min	Typ	Max	Units
Operating Temperature		-40		85	°C
Storage Temperature		-55		105	
Storage Humidity		5		95	%
Isolation voltage	Test for 1 minute and 1 mA max		1500		VDC
Isolation resistance			1000		MΩ
Isolation Capacitance	100KHz / 1V		1000		pF
Switching frequency	Nominal, full load		300		KHz
MTBF			1000		K hours
Weight			45		g
Case Material		Copper, Nickel plated			

INPUT SPECIFICATIONS

Item	Test conditions	Min	Typ	Max	Units
Start voltage/Under Voltage shutdown	12V input models	8.6/8.1	8.8/8.3	9/8.5	VDC
	24V input models	17.5/16	17.8/16.5	18/17	
	48V input models	34/32	35/33	36/34	
Start up time			20		MS
Input filter		Pi			
Method of Remote (Reference point: GND)	on	3.5-40VDC or open circuit			
	off	0-1.2VDC			

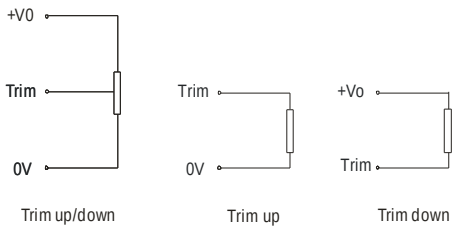
MORNSUN Science& Technology co.,Ltd.
Address: 2th floor 6th building, Huangzhou Industrial District, Guangzhou, China
Tel: 86-20-38601850
Fax:86-20-38601272
Http://www.mornsun-power.com

OUTPUT SPECIFICATIONS

Item	Test conditions	Min	Typ	Max	Units
Output voltage accuracy	Refer to recommended circuit		±1	±3	%
Load regulation	From 10% to 100% load		±0.5	±1	
Line regulation	Input voltage from low to high		±0.2	±0.5	
Ripple and noise	Tested under 20MHz brand	50	75	150	mV
Transient recovery time	25%load change		200	300	us
Transient peak deviation		±2	±3	±5	%
Over load protection	Input voltage range	120	130	150	%
Output Short Circuit	Input voltage range	Hiccup, automatics recovery			
Over voltage protection	3.3V	3.63		4.29	VDC
	5V	5.5		6.5	
	12V	13.2		15.6	
	15V	16.5		19.5	
	24	26.4		31.2	
Temperature drift (Vout)		0.02			%/°C
Trim		±10%Vo			VDC

Note:
1. All specifications are measured at TA=25°C, humidity<75%, nominal input voltage and rated output load unless otherwise specified.
2. The CTRL control pin voltage is referenced to GND.
3. Typical efficiency value at nominal input voltage and full load.
4. Capacitor MAX load tested at nominal input voltage and constant resistive load.
5. Refer to the diagram of Output Voltage trim up/down for trim applications.
6. The products cannot be used in parallel and in plug and play.

OUTPUT VOLTAGE TRIM



RECOMMENDED CIRCUIT

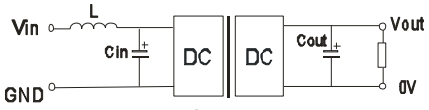


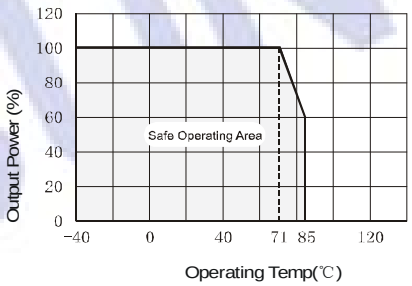
Figure.1

In order to abtain better performance for the DC/DC models. it's recommended that use input and output filters as Fig.1 shown.

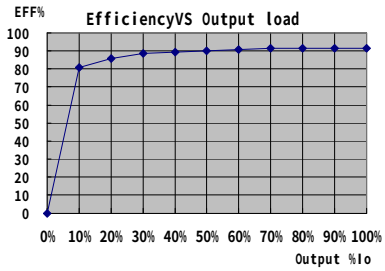
L:12uH C:100uF/100V

DERATING&EFFICIENCY CURVE

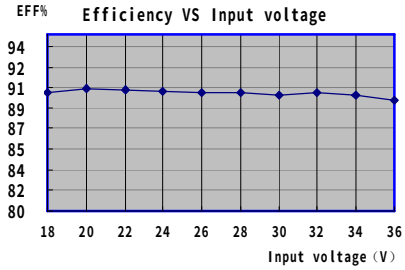
Temperature derating curve



Curve of Efficiency VS output load
VRB2424D-30W

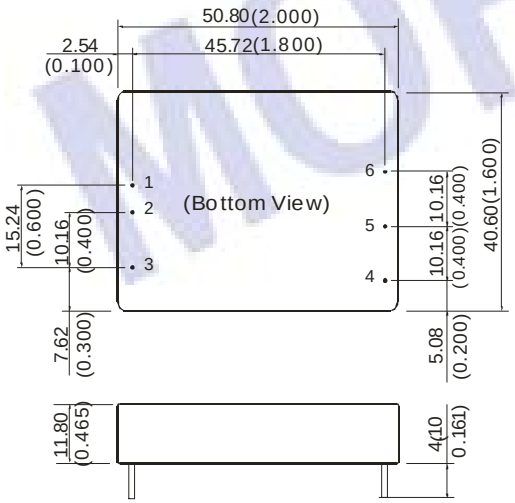


Curve of Efficiency VS input Voltage
VRB2424D-30W

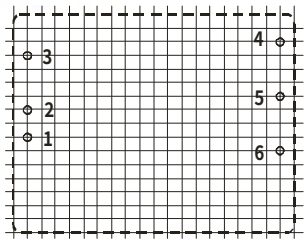


OUTLINE DIMENSIONS & FOOTPRINT DETAILS

First Angle Projection



RECOMMENDED FOOTPRINT
Top view, grid:2.54mm(0.1inch)
diameter:1.50mm(0.059inch)



FOOTPRINT DETAILS

Pin	Function
1	Vin
2	GND
3	Ctrl
4	Trim
5	0V
6	+Vo

Note:
Unit:mm(inch)
Pin diameter:1.00mm(0.039inch)
Pin diameter tolerances:±0.05mm(±0.002inch)
General tolerances:±0.25mm(±0.010inch)