



### VDB30 Series

### 30 Watts

#### 30W SINGLE OUTPUT

#### 2:1 INPUT

12VDC: 9~18VDC

24VDC: 18~36VDC

48VDC: 36~72VDC

#### ISOLATED & REGULATED

#### METAL CASE SHIELDING

- Efficiency up to 87%
- Operating Temperature: -40°C~+85°C
- 1,500VDC Isolation
- Over Current, Over Voltage, Short Circuit Protection
- Industry Standard Pin out
- RoHS

### Product Program

Part Number	Input Voltage (VDC)		Output Voltage (VDC)	Output Current (mA)	Efficiency (% Typ)	Package Style
	Nominal	Range				
VDB30-12S03	12	9~18	3.3	6000	86	DIP
VDB30-12S05	12	9~18	5	6000	86	DIP
VDB30-12S12	12	9~18	12	2500	83	DIP
VDB30-12S15	12	9~18	15	2000	84	DIP
VDB30-12S24	12	9~18	24	1250	84	DIP
VDB30-24S03	24	18~36	3.3	6000	86	DIP
VDB30-24S05	24	18~36	5	6000	86	DIP
VDB30-24S12	24	18~36	12	2500	84	DIP
VDB30-24S15	24	18~36	15	2000	85	DIP
VDB30-24S24	24	18~36	24	1250	86	DIP
VDB30-48S03	48	36~72	3.3	6000	86	DIP
VDB30-48S05	48	36~72	5	6000	86	DIP
VDB30-48S12	48	36~72	12	2500	84	DIP
VDB30-48S15	48	36~72	15	2000	85	DIP
VDB30-48S24	48	36~72	24	1250	87	DIP
VDB30-12D05	12	9~18	±5	±3000	81	DIP
VDB30-12D12	12	9~18	±12	±1250	84	DIP
VDB30-12D15	12	9~18	±15	±1000	85	DIP
VDB30-24D05	24	18~36	±5	±3000	84	DIP
VDB30-24D12	24	18~36	±12	±1250	86	DIP
VDB30-24D15	24	18~36	±15	±1000	87	DIP
VDB30-48D05	48	36~72	±5	±3000	85	DIP
VDB30-48D12	48	36~72	±12	±1250	87	DIP
VDB30-48D15	48	36~72	±15	±1000	87	DIP

### ISOLATION SPECIFICATIONS

Item	Min	Units
Isolation voltage	1500	VDC
Isolation resistance	100M	Ω

## COMMON SPECIFICATION

Efficiency		See table
Switching frequency		300KHz, typ
Approvals and standard		IEC60950-1, UL60950-1, EN60950-1
Case material		Metal Case
Base material		Plastic Case
Potting material		Epoxy (UL94-V0)
Dimensions		50.8 X 25.4 X 11.20 mm (2.00 X 1.6 X 0.4 4Inch)
Weight		< 40g (1.41 oz)
MTBF		5 x 10 <sup>5</sup>

## OUTPUT SPECIFICATION

Output power			30 Watts
Voltage accuracy	Full load and nominal Vin		± 1%
Transient recovery time			400uS
Line regulation	LL to HL at Full Load		± 0.2%
Load regulation	10% to 100% FL		± 0.5%
Over current protection	Vin min < Vi < Vi max		120%
Over current protection mode	Hiccup, automatic recovery		
Ripple and noise	20MHz bandwidth	3.3V & 5V	50mVp-p
		12V & 15V	100mVp-p
		24V	150mVp-P
Temperature coefficient			±0.02% / °C, max
Transient response recovery time	25% load step change		400uS
Over voltage protection	3.3V output		4.2V
	5V output		6.2V
	12V output		14V
	15V output		17V
Over load protection	% of FL at nominal input		120%,max
Short circuit protection			Hiccup, automatics recovery

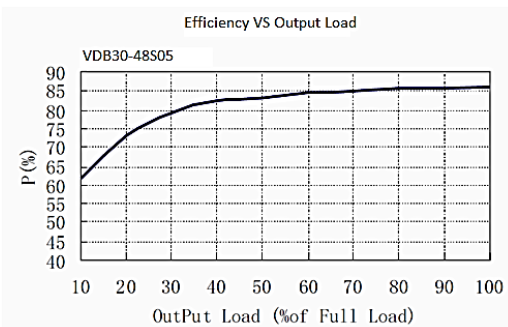
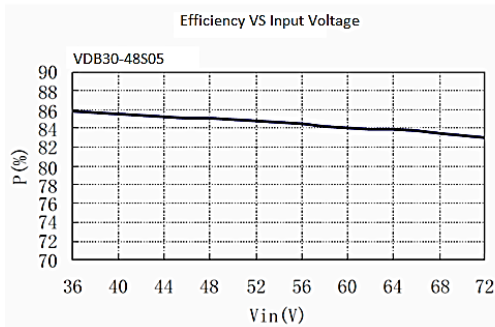
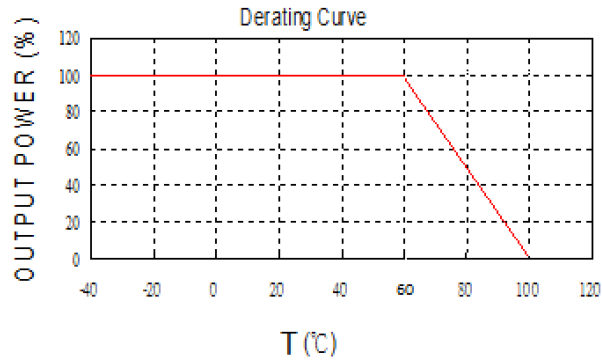
## INPUT SPECIFICATION

Input voltage range	2:1	12V	9~18 VDC
		24V	18~36 VDC
		48V	36~72 VDC
Input reflected ripple	Nominal Vin and full load		30mAp-p
Start up time	No Load	Power up	100mS
Remote Control (CTL)	DC-DC ON	CTL Open (Control Mode 12V-40V)	
	DC-DC OFF	CTL Connect -Vin	
Remote off input current	Nominal Vin		2.0mA

## ENVIRONMENTAL SPECIFICATIONS

Operating temperature range	Standard	-45°C ~ +85°C (with derating)
Maximum case temperature	Standard	+105°C
Storage temperature range	Standard	-45°C ~ +105°C
Cooling	Nature cooling	
Thermal shock		MIL-STD-810D
Vibration		10~55Hz, 5G, 30minutes along X,Y and Z
Relative humidity		5% to 90% RH

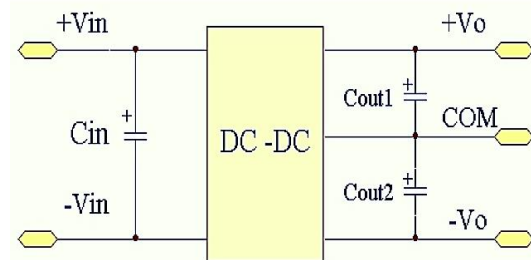
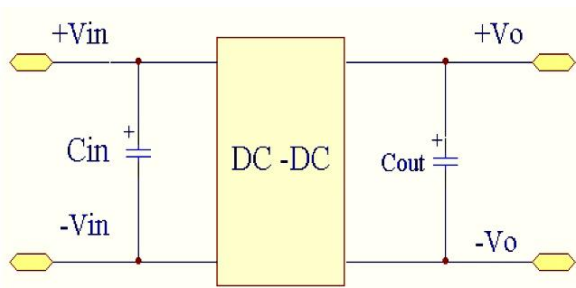
## TYPICAL CHARECTERISTICS



## FOOTPRINT DETAILS

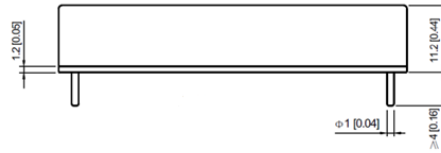
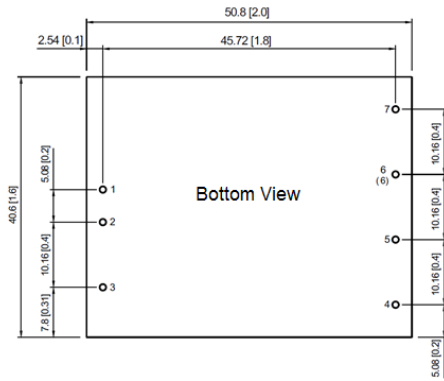
PIN	1	2	3	4	5	6	7
SINGLE	+Vin	-Vin	CTL	TRIM	-Vout	+Vout	No Pin
DUAL	+Vin	-Vin	CTL	TRIM	-Vout	COMMON	+Vout

## Recommended Circuit



1. An extra capacitor  $C_{in}$  (Electrolytic capacitor,  $47\mu F \sim 100\mu F$ ) will improve EMC compatibility.
2. Install  $C_{out}$ ,  $C_{out1}$ ,  $C_{out2}$  at output will improve ripple noise.
3. Need to add  $C_{out1}$ ,  $C_{out2}$ ,  $C_{out3}$  at output.
4. The value of  $C_{out1}$ ,  $C_{out2}$ ,  $C_{out3}$  improper will cause output instability or decrease over current protection.
5. The value of  $C_{out1}$ ,  $C_{out2}$ ,  $C_{out3}$  is  $100\mu F/A$  (A is the output current).

# OUTLINE DIMENSIONS & RECOMMENDED FOOTPRINT



Dimensions: mm (Inch)  
Pin tolerance:  $\pm 0.2$  ( $\pm 0.008$ )  
Pin pitch tolerance:  $\pm 0.25$  ( $\pm 0.01$ )