Size: 4.60in x 2.4in x 0.5in (116.8mm x 61mm x 12.7mm)

FEATURES

- Input Voltage Range of 18~36VDC
- High Efficiency & Power Density
- Metal Baseplate
- Remote On/Off Control
- Low Output Noise
- Industry-Standard Size
- Over Voltage, Under Voltage, Over Temperature, Current Limit, and Short Circuit Protection
- I.O.G. (DC Good): Open Collector Output

DESCRIPTION

The DCFHB600-24S28 model of DC/DC converters offers 600 watts of output power in a compact 4.60” x 2.4” x 0.5” full brick package. This is an adjustable single output model with an input voltage range of 18~36VDC. This model also features high efficiency and power density, a metal base plate, remote on/off control, and I.O.G (DC Good). The DCFBH600-24S28 model is protected against over voltage, under voltage, over temperature, current limit, and short circuit conditions and it is useful in centralized modular and distributed power applications.

SPECIFICATIONS

All specifications are based on 25°C, Nominal Input Voltage, and Maximum Output Current unless otherwise noted.
We reserve the right to change specifications based on technological advances.

SPECIFICATION	TEST CONDITIONS		Min	Typ	Max	Unit
INPUT SPECIFICATIONS						
Input Voltage Range			18	24	36	V
Absolute Maximum Input Voltage	+In to -In	<100ms	-0.3		50	V
		Continuous	-0.3		36	
Input Current	Vin=24V, Io Max				28.9	A
Inrush Transient					2	A^2s
Input Ripple Rejection	@120Hz			60		dB
OUTPUT SPECIFICATIONS						
Output Voltage Set Point	Initial Adjusted, @Tb=25ºC, Vin=24V, Io Max		27.95	28	28.05	V
Output Voltage Accuracy	Vin=24V, Io Max		27.72	28	28.28	V
Line Regulation	Vin=18V-36V			0.01	0.2	%
Load Regulation	Io= To, min to To max			0.05	0.2	%
Trim Range			-40		+10	%
Output Voltage Trim Range	With cap. 440uF/35V, Tb=25ºC		6		110	%Vo, Set
Remote Sense				Yes		
Output Power					600	W
Output Current	At Vo≤28V, if Yo>28Y, Output Power (Po) should be ≤602W				21.5	A
Output Current Limit	Current limit inception point Vo=90% of Vo, set		105		140	%Io, max
Ripple & Noise[1]					250	mVp-p
Dynamic Response	25%-50%-75% load, 0.1A/us; with cap. 440uF/35V, Tb=25ºC, Vin=24V	Peak Deviation		3		%Vo, Set
		Settling Time			300	us
Turn-On Time	Io=80% of To, max. Vo with ±1% Vo, set				200	mS
Remote On/Off Control	Short			On		
	Open			Off		
Auxiliary Voltage	Io≤20mA		7	8	9	V
Power Density					109.29	W/in.A3
PROTECTION						
Current Limit/ Short Circuit Protection				Yes		
Over Voltage Protection	Io=0.5A		115		135	%Vo, set
Under Voltage Protection				12		V
Over Temperature Protection			105	110	115	ºC
Recovery	Automatic Recovery		100			ºC
ENVIRONMENTAL SPECIFICATIONS						
Operating Temperature[2]			-40		+100	ºC
Storage Temperature			-55		+125	ºC
Storage Humidity			10		95	%
Operating Humidity			30		95	%
Temperature Drift	Tb=-40 to 100ºC			0.002	0.02	%/ºC
Shock				20g, 166in/sec, Square Wave		
Vibration	Sine Wave, 10-55Hz (sweep for 1 min.), Amplitude 0.825mm constant (max 0.5g) X,Y,Z Hour, @no operation					
MTBF	Tb=40ºC, Io=80% To, max, Vi=24V			1.2		mHrs

SPECIFICATIONS

All specifications are based on 25°C, Nominal Input Voltage, and Maximum Output Current unless otherwise noted.
We reserve the right to change specifications based on technological advances.

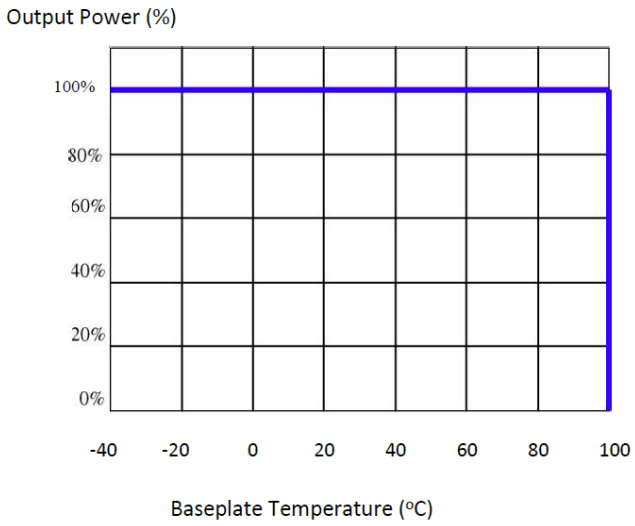
SPECIFICATION	TEST CONDITIONS		Min	Typ	Max	Unit
GENERAL SPECIFICATIONS						
Efficiency	Vin=24V, Vo=28V, Io=80%Io, max, Th=25ºC			91		%
Isolation	60 Seconds	Input to Output		1500		VDC
		Input to Case		1500		
		Output to Case		500		
Input to Output Capacitance				2000		pF
Isolation Resistance	Tb=25ºC, 70%RH, Output to Baseplate=500VDC		100			MΩ
PHYSICAL SPECIFICATIONS						
Weight			7.94oz (225g)			
Dimensions (L x W x H)			4.59in x 2.4in x 0.5in (116.8mm x 61mm x 12.7mm)			
Baseplate Material			Metal			

NOTES

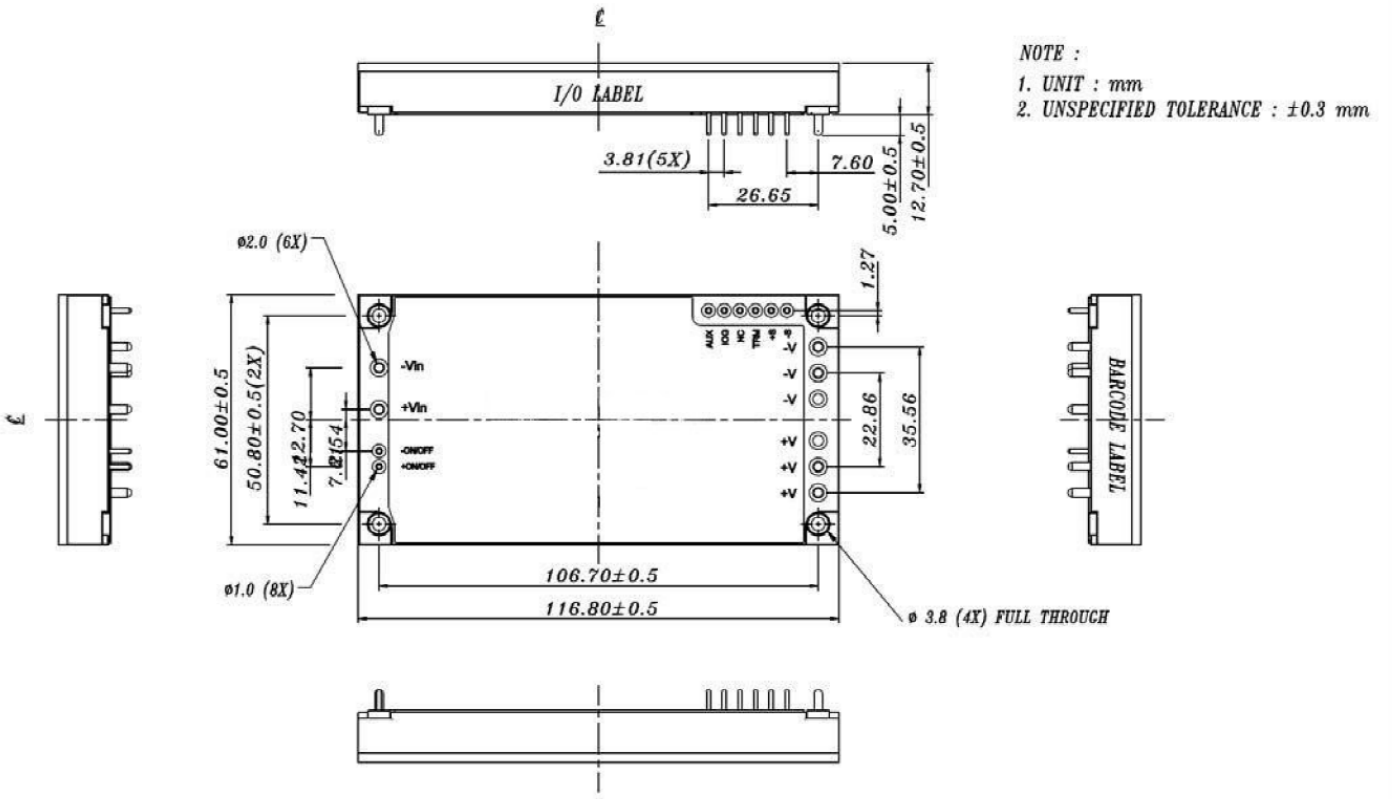
1. Bandwidth 5Hz-20MHz with filter 0.1uF MLCC series 100 ohm Min. Output capacitor: 220uF*2, Tc ≥ -20ºC, 220uF*4, Tc ≤ -20ºC
2. Temperature measure should be taken from baseplate (Tb). Refer to Baseplate Measure Point drawing for location.

**Due to advances in technology, specifications subject to change without notice.*

DERATING CURVES

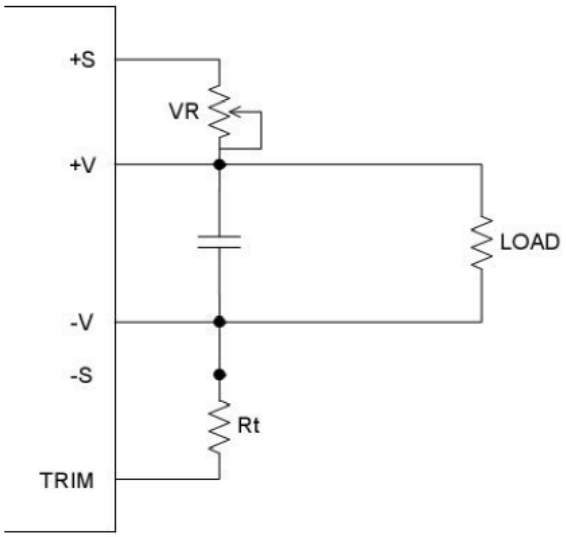


MECHANICAL DRAWINGS



TRIM CIRCUIT

1. Output Voltage Adjusted by Using External Resistor and/or Variable Resistor



Output voltage can be determined by below equations:

$$V_f = \frac{1.225*(R_t//32.4)}{7.32\ (R_t//32.4)}\ (V)$$

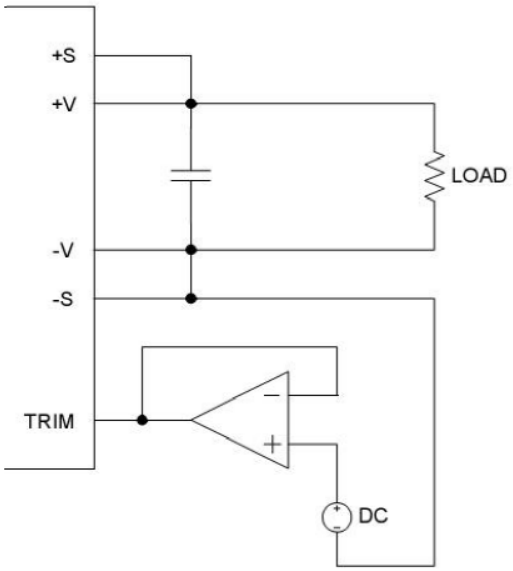
$$V_{out} = (28+VR)*V_f\ (V)$$

Rt: ±5% Tolerance
VR: ±20% Tolerance
Unit: KΩ
Rt: 43K ohm and VR: 10k ohm for output ±10% variable

Fig. 1 The schematic of output voltage adjusted by using external resistor and/or variable resistor.

2. Output Voltage Adjustment by Applying External DC Voltage

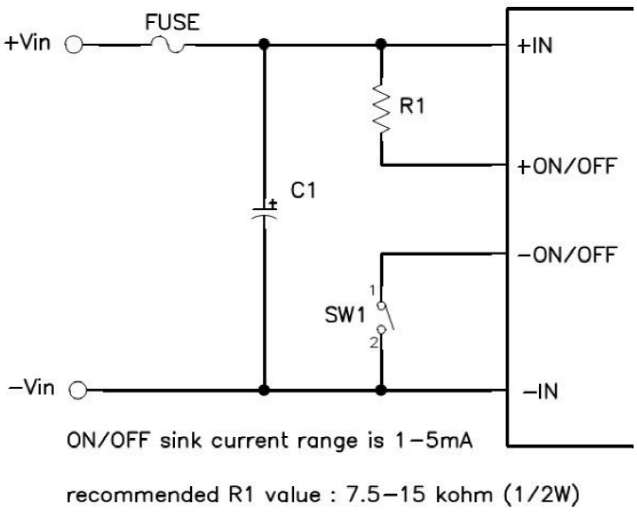
Output voltage can be adjusted either by applying an external voltage or external resistor at the trim terminal. The relationship between the trim voltage and output voltage is shown in Fig. 2.



*Output Voltage=TRIM Terminal Voltage * Nominal Output Voltage*

Fig. 2 The schematic of output voltage adjusted by using external DC voltage.

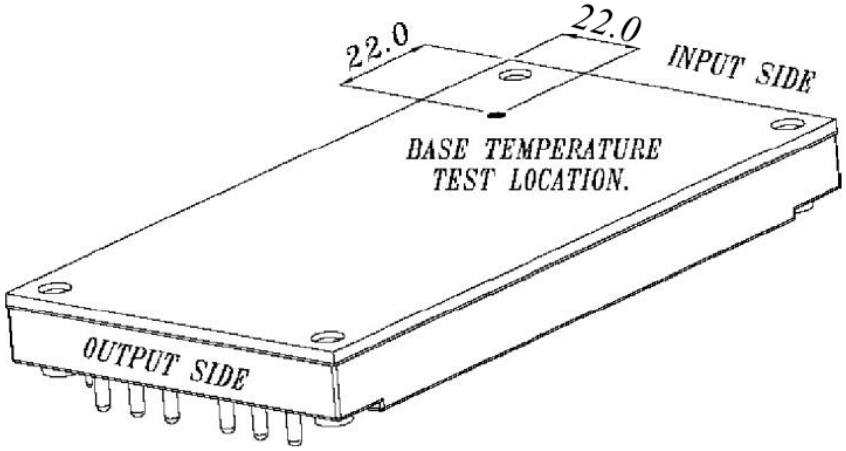
3. Recommended ON/OFF Control Circuit



SW1 Status	Output Status
Open	Off
Short	On

Fig. 3 ON/Off Control Circuit

BASEPLATE MEASURE POINT



Unit: mm

Fig. 4 Baseplate Temperature Measure Point

COMPANY INFORMATION

Wall Industries, Inc. has created custom and modified units for over 50 years. Our in-house research and development engineers will provide a solution that exceeds your performance requirements on-time and on budget. Our ISO9001 certification is just one example of our commitment to producing a high quality, well-documented product for our customers.

Our past projects demonstrate our commitment to you, our customer. Wall Industries, Inc. has a reputation for working closely with its customers to ensure each solution meets or exceeds form, fit and function requirements. We will continue to provide ongoing support for your project above and beyond the design and production phases. Give us a call today to discuss your future projects.

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