



Size:  
1.25 x 0.80 x 0.40 inches  
31.75 x 20.32 x 10.16 mm



## APPLICATIONS

- Battery Powered Equipment
- Telecommunication Applications
- Industrial Applications
- Distributed Power Systems
- Process Control Equipment
- Transportation Equipment

## FEATURES

- Single and Dual Outputs
- 5 Watts Output Power
- Remote On/Off Control
- 3000VDC I/O Isolation
- High Efficiency up to 83%
- Lead Free Design, RoHS Compliant
- Meets EN55022, Class A (Radiation)
- 4:1 Input Voltage Ranges: 9-36VDC and 18-75VDC
- Shielded Metal Case with Insulated Base-plate
- -40°C to +85°C Operating Temperature Range
- 24-Pin DIP Package with Industry-Standard Footprint
- Short Circuit, Over Voltage, and Over Load Protection
- Free Air Convection
- Custom Designs Available

## DESCRIPTION

The DCBOB5 series of isolated DC/DC power converters provides up to 6 Watts of continuous output power in an industry standard 1.25" x 0.80" x 0.40" shielded metal case. This series consists of single and dual output models with 4:1 input voltage ranges of 9-36VDC and 18-75VDC. Some features include high efficiency up to 83%, 3000VDC I/O isolation, remote on/off control, and -40°C to +85°C operating temperature range. The DCBOB5 series is RoHS compliant and has short circuit, over load, and over voltage protection. These converters are best suited for use in battery powered equipment, industrial applications, process control equipment, distributed power systems, and anywhere where isolated, tightly regulated voltages and compact size are required.

## MODEL SELECTION TABLE

### SINGLE OUTPUT MODELS

Model Number	Input Voltage	Output Voltage	Output Current		Input Current		Output Power	Efficiency	Maximum Capacitive Load
			Min Load <sup>(1)</sup>	Full Load	No Load	Full Load			
DCBOB24S33-5H	24 VDC (9 – 36 VDC)	3.3 VDC	38mA	1200mA	7mA	226mA	4W	77%	820µF
DCBOB24S05-5H		5 VDC	0mA	1000mA	12mA	274mA	5W	80%	680µF
DCBOB24S12-5H		12 VDC	0mA	500mA	8mA	316mA	6W	83%	220µF
DCBOB24S15-5H		15 VDC	0mA	400mA	9mA	320mA	6W	82%	147µF
DCBOB48S33-5H	48 VDC (18 – 75 VDC)	3.3 VDC	49mA	1200mA	4mA	113mA	4W	77%	820µF
DCBOB48S05-5H		5 VDC	0mA	1000mA	7mA	137mA	5W	80%	680µF
DCBOB48S12-5H		12 VDC	0mA	500mA	5mA	160mA	6W	82%	220µF
DCBOB48S15-5H		15 VDC	0mA	400mA	5mA	158mA	6W	83%	147µF

### DUAL OUTPUT MODELS

Model Number	Input Voltage	Output Voltage	Output Current		Input Current		Output Power	Efficiency	Maximum Capacitive Load
			Min Load	Full Load	No Load	Full Load			
DCBOB24D05-5H	24 VDC (9 – 36 VDC)	±5 VDC	0mA	±500mA	12mA	274mA	5W	80%	±330µF
DCBOB24D12-5H		±12 VDC	0mA	±250mA	12mA	320mA	6W	82%	±100µF
DCBOB24D15-5H		±15 VDC	0mA	±200mA	14mA	320mA	6W	82%	±68µF
DCBOB48D05-5H	48 VDC (18 – 75 VDC)	±5 VDC	0mA	±500mA	6mA	137mA	5W	80%	±330µF
DCBOB48D12-5H		±12 VDC	0mA	±250mA	7mA	160mA	6W	82%	±100µF
DCBOB48D15-5H		±15 VDC	0mA	±200mA	8mA	158mA	6W	83%	±68µF

### NOTES

1. Output current under this value will not damage these devices; however, they may not meet all listed specifications.

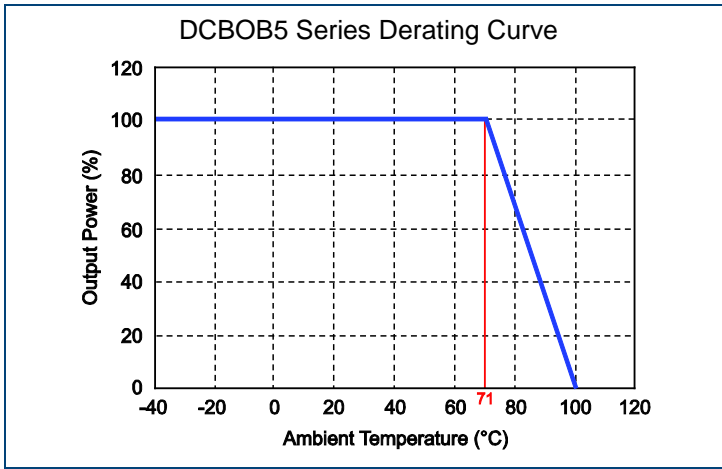
*\*Due to advances in technology, specifications subject to change without notice.*

**TECHNICAL SPECIFICATIONS: DCBOB5 SERIES**

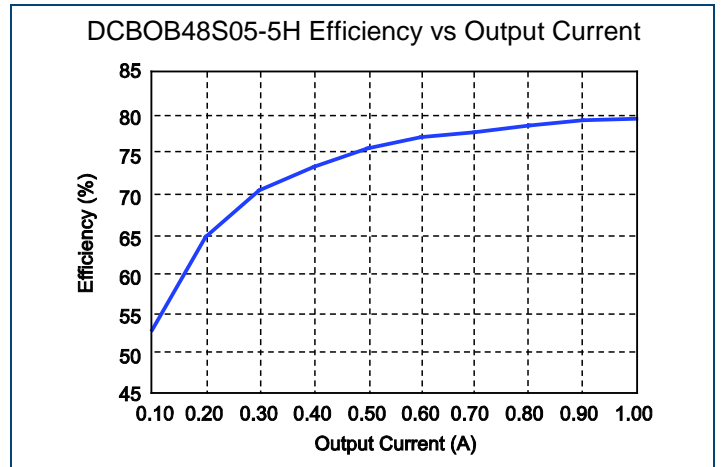
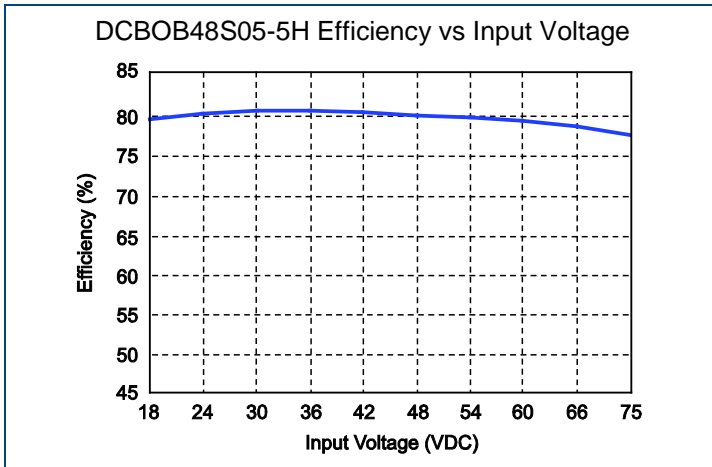
All specifications are based on 25°C, nominal input voltage, and maximum output current unless otherwise noted.  
We reserve the right to change specifications based on technological advances.

SPECIFICATION	TEST CONDITIONS		Min	Nom	Max	Unit
<b>INPUT SPECIFICATIONS</b>						
Input Voltage Range	24VDC nominal input models		9	24	36	VDC
	48VDC nominal input models		18	48	75	
Input Surge Voltage (100ms max)	24VDC nominal input models				50	VDC
	48VDC nominal input models				100	
Input Reflected Ripple Current	Nominal Vin and full load			76		mAp-p
Input Current			See Table			
Input Filter			Pi Type			
Remote On/Off	Converter ON		Open or 3.5V < Vr < 12V			
	Converter OFF		Short to -Vin (Pin 2,3) or 0V < Vr < 1.2V			
Sourcing Current of Remote Control Pin	Nominal Vin				0.2	mA
Idle Input Current (at Remote OFF State)	Nominal Vin				2.5	mA
<b>OUTPUT SPECIFICATIONS</b>						
Output Voltage			See Table			
Voltage Accuracy	Full load and nominal Vin		-2		+2	%
Output Current			See Table			
Minimum Load			See Table			
Capacitive Load			See Table			
Start-up Time	Nominal Vin and constant resistive load				500	ms
Line Regulation	LL to HL at full load		-0.5		+0.5	%
	Load Regulation	Single output models	25% load to full load	-1		+1
Dual output models		Balanced output	-1		+1	
		Unbalanced load 25% to full load	-5		+5	
Output Power					6	W
Ripple & Noise	20MHz bandwidth				80	mVp-p
Temperature Coefficient					±0.02	%/°C
Transient Response Overshoot	di/dt=0.8A/µs				±5	% of Vo
Transient Response Settling Time	50% load step change				860	µs
<b>PROTECTION</b>						
Over Voltage Protection	3.3VDC output models	Zener Diode Clamp			3.9	VDC
	5VDC output models				6.2	
	12VDC output models				15	
	15VDC output models				18	
Short Circuit Protection			continuous, automatic recovery			
Over Load Protection	% of full load			120		%
<b>GENERAL SPECIFICATIONS</b>						
Efficiency	Nominal input		See Table			
Isolation Voltage (Input to Output)			3000			VDC
Isolation Resistance (Input to Output)	500VDC		1			GΩ
Isolation Capacitance				270		pF
Switching Frequency				300		KHz
<b>ENVIRONMENTAL SPECIFICATIONS</b>						
Operating Temperature	With derating (see derating curve)		-40		+85	°C
Maximum Case Temperature					+100	°C
Storage Temperature			-55		+105	°C
Relative Humidity			5		95	% RH
Cooling			Free air convection			
MTBF			2,400,000 hours			
<b>PHYSICAL SPECIFICATIONS</b>						
Case Material			Nickel-coated copper			
Base Material			Non-conductive black plastic			
Potting Material			Silicon rubber (UL94V-0)			
Weight			0.61oz (17.2g)			
Dimensions (L x W x H)			1.25 x 0.80 x 0.40 inches (31.75 x 20.32 x 10.16 mm)			

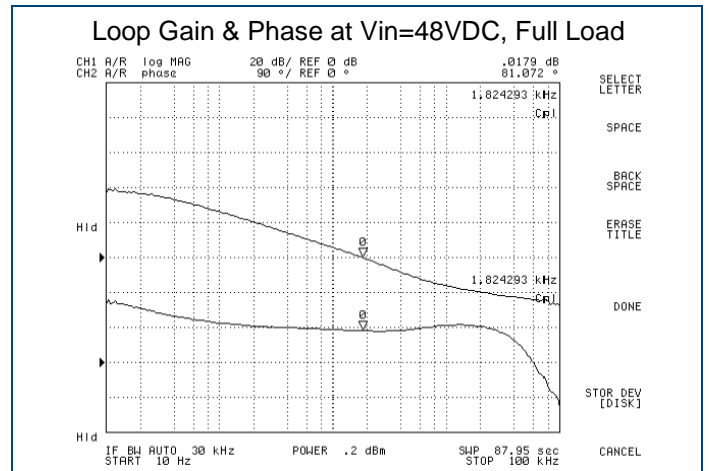
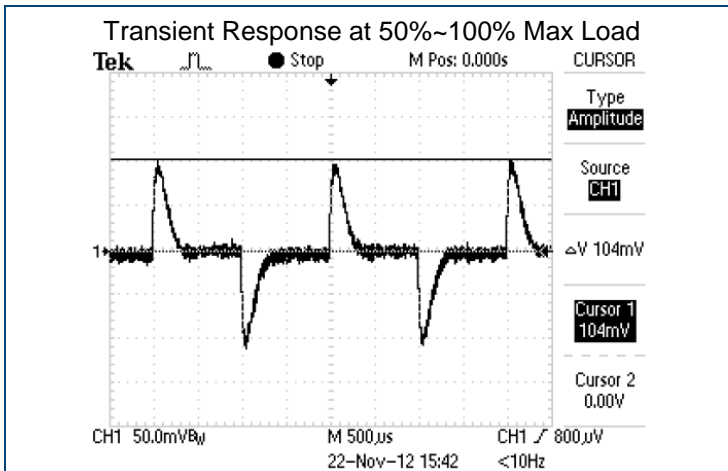
**DERATING**



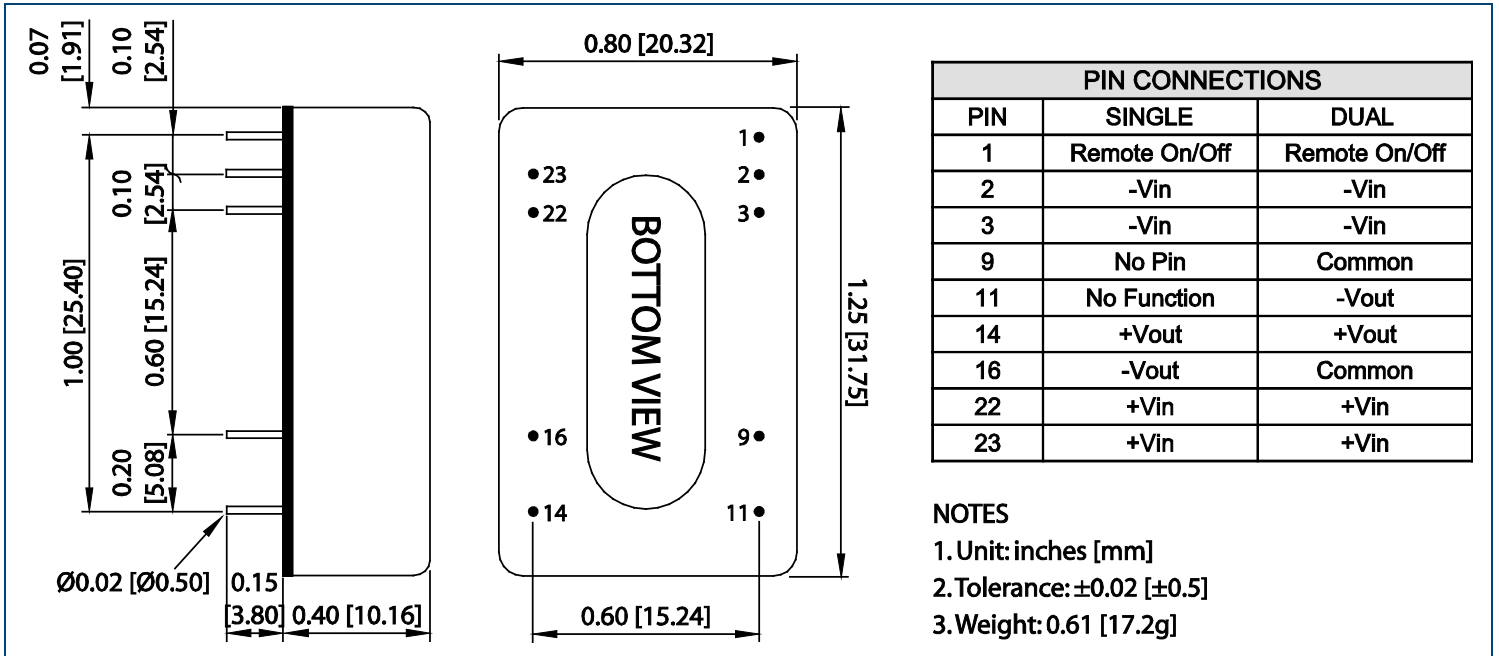
**EFFICIENCY**



**CHARACTERISTICS**



MECHANICAL DRAWING



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 ISO9001-2008 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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