Size:
2.0 x 1.0 x 0.4 inches
50.8 x 25.4 x 10.2 mm

APPLICATIONS

- Battery Operated Equipment
- Telecom
- Industry Control Systems
- Wireless Networks
- Measurement Equipment

FEATURES

- Single and Dual Outputs
- 10 Watts Output Power
- Remote On/Off Control
- 3000VDC I/O Isolation
- High Efficiency up to 87%
- Lead Free Design, RoHS Compliant
- Free Air Convection
- 6 Pin DIP Package with Industry-Standard Footprint
- 2:1 Wide Input Voltage Ranges
- Shielded Metal Case with Insulated Base-plate
- -40°C to +85°C Operating Temperature Range
- Industry Standard 2.0” x 1.0” x 0.4” DIP Package
- Short Circuit, Over Voltage, & Over Load Protection
- Custom Designs Available

DESCRIPTION

The DCHUB10H series of isolated DC/DC power converters provides 10 Watts of continuous output power in a 2.0” x 1.0” x 0.4” shielded metal case. This series consists of single and dual output models with 2:1 input voltage ranges of 9-18VDC, 18-36VDC, and 36~75VDC. Some features include high efficiency up to 87%, 3000VDC I/O isolation, remote on/off control, and -40°C to +85°C operating temperature range. The DCHUB10H series is RoHS compliant and has short circuit, over load, and over voltage protection. These converters are best suited for use in battery operated equipment, measurement equipment, telecom, wireless networks, industry control 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 (1)	Full Load	No Load	Full Load			
DCHUB10-12S33H	12 VDC (9 – 18 VDC)	3.3 VDC	20mA	3000mA	10mA	1130mA	10W	77%	3300µF
DCHUB10-12S05H		5 VDC	0mA	2000mA	21mA	1069mA	10W	82%	1330µF
DCHUB10-12S12H		12 VDC	0mA	830mA	22mA	1013mA	10W	86%	680µF
DCHUB10-12S15H		15 VDC	0mA	670mA	21mA	1034mA	10W	85%	470µF
DCHUB10-12S24H		24 VDC	0mA	415mA	24mA	1000mA	10W	87%	133µF
DCHUB10-24S33H	24 VDC (18 – 36 VDC)	3.3 VDC	20mA	3000mA	6mA	558mA	10W	78%	3300µF
DCHUB10-24S05H		5 VDC	0mA	2000mA	10mA	528mA	10W	83%	1330µF
DCHUB10-24S12H		12 VDC	0mA	830mA	12mA	506mA	10W	86%	680µF
DCHUB10-24S15H		15 VDC	0mA	670mA	12mA	517mA	10W	85%	470µF
DCHUB10-24S24H		24 VDC	0mA	415mA	13mA	500mA	10W	87%	147µF
DCHUB10-48S33H	48 VDC (36 – 75 VDC)	3.3 VDC	20mA	3000mA	3mA	279mA	10W	78%	3300µF
DCHUB10-48S05H		5 VDC	0mA	2000mA	6mA	264mA	10W	83%	1330µF
DCHUB10-48S12H		12 VDC	0mA	830mA	7mA	253mA	10W	86%	470µF
DCHUB10-48S15H		15 VDC	0mA	670mA	6mA	262mA	10W	84%	220µF
DCHUB10-48S24H		24 VDC	0mA	415mA	8mA	257mA	10W	85%	100µF

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			
DCHUB10-12D05H	12 VDC (9 – 18 VDC)	±5 VDC	0mA	±1000mA	20mA	1069mA	10W	82%	±1000µF
DCHUB10-12D12H		±12 VDC	0mA	±415mA	28mA	1013mA	10W	86%	±220µF
DCHUB10-12D15H		±15 VDC	0mA	±330mA	30mA	1019mA	10W	85%	±147µF
DCHUB10-24D05H	24 VDC (18 – 36 VDC)	±5 VDC	0mA	±1000mA	10mA	528mA	10W	83%	±1000µF
DCHUB10-24D12H		±12 VDC	0mA	±415mA	15mA	506mA	10W	86%	±220µF
DCHUB10-24D15H		±15 VDC	0mA	±330mA	17mA	510mA	10W	85%	±147µF
DCHUB10-48D05H	48 VDC (36 – 75 VDC)	±5 VDC	0mA	±1000mA	6mA	261mA	10W	84%	±680µF
DCHUB10-48D12H		±12 VDC	0mA	±415mA	8mA	253mA	10W	86%	±122µF
DCHUB10-48D15H		±15 VDC	0mA	±330mA	9mA	258mA	10W	84%	±100µF

NOTES

1. Some models require a minimum loading on the output. 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.*

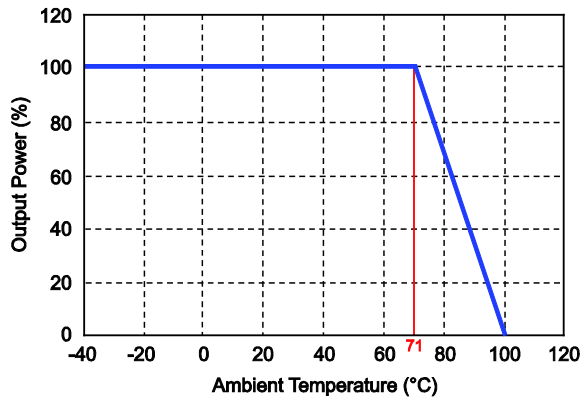
TECHNICAL SPECIFICATIONS: DCHUB10H SERIES

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
INPUT SPECIFICATIONS						
Input Voltage Range	12 VDC nominal input models 24VDC nominal input models 48VDC nominal input models		9 18 36	12 24 48	18 36 75	VDC
Input Surge Voltage (100ms max)	12 VDC nominal input models 24VDC nominal input models 48VDC nominal input models				25 50 100	VDC
Input Reflected Ripple Current	Nominal Vin and full load				170	mAp-p
Input Current			See Table			
Input Filter			Pi Type			
Remote On/Off	Converter ON Converter OFF		Open or 3.5V < Vr < 12V Short to -Vin (Pin 2) 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				3	mA
OUTPUT SPECIFICATIONS						
Output Voltage			See Table			
Voltage Accuracy	Full load and nominal Vin		-1		+1	%
Output Current			See Table			
Minimum Load			See Table			
Maximum Capacitive Load			See Table			
Start-up Time	Nominal Vin and constant resistive load			770		ms
Line Regulation	LL to HL at full load		-0.5		+0.5	%
Load Regulation	Single output models	25% load to full load	-0.5		+0.5	%
	Dual output models	Balanced load	-0.5		+0.5	
		Unbalanced load 25% to full load	-5		+5	
Output Power					10	W
Ripple & Noise	20MHz bandwidth				100	mVp-p
Temperature Coefficient					±0.02	%/°C
Transient Response Overshoot	di/dt=0.8A/µs		-5		+5	% of Vo
Transient Response Settling Time	50% load step change			2000		µs
PROTECTION						
Over Voltage Protection	3.3VDC output models 5VDC output models 12VDC output models 15VDC output models 24 VDC output models	Zener Diode Clamp			3.9 6.2 15 18 27	VDC
Short Circuit Protection			continuous, automatic recovery			
Over Load Protection	% of full load at nominal input			150		%
GENERAL SPECIFICATIONS						
Efficiency	Nominal input		See Table			
Isolation Voltage (Input to Output)	Input to Output		3000			VDC
Isolation Resistance (Input to Output)	500VDC		1			GΩ
Isolation Capacitance				500		pF
Switching Frequency				300		KHz
ENVIRONMENTAL SPECIFICATIONS						
Operating Temperature	With derating (see derating curve)		-40		+85	°C
Maximum Case Surface Temperature					+100	°C
Storage Temperature			-55		+105	°C
Relative Humidity			5		95	% RH
Cooling			Free air convection			
MTBF			1,960,000 hours			
PHYSICAL SPECIFICATIONS						
Case Material			Nickel-coated copper			
Base Material			Non-conductive black plastic			
Potting Material			Silicon rubber (UL94V-0)			
Weight			1.06oz (30g)			
Dimensions (L x W x H)			2.0 x 1.0 x 0.4 inches (50.8 x 25.4 x 10.2 mm)			

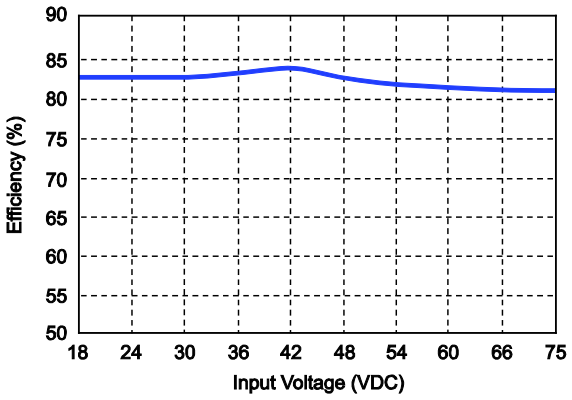
DERATING

DCHUB10-48S05 Derating Curve

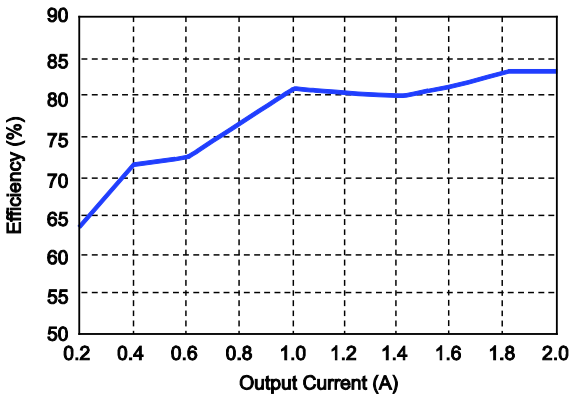


EFFICIENCY

DCHUB10-48S05 Efficiency vs Input Voltage

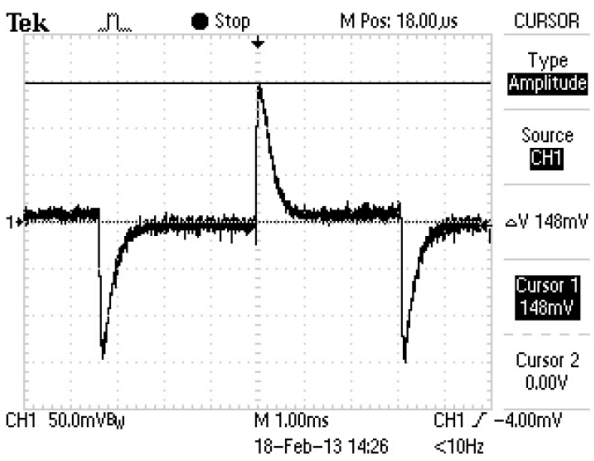


DCHUB10-48S05 Efficiency vs Output Current

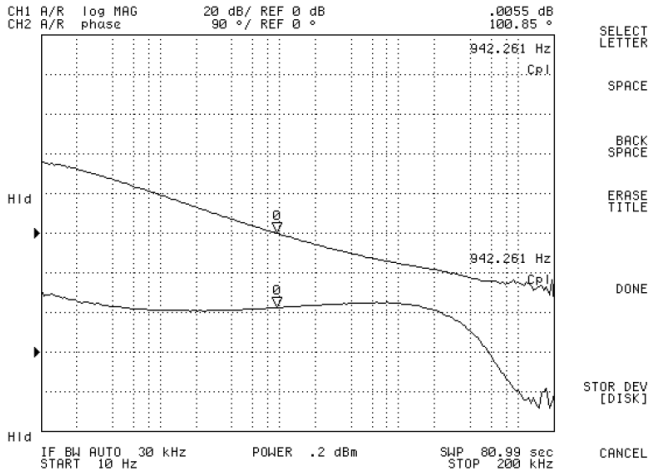


CHARACTERISTICS

Transient Response at 50%~100% Max Load

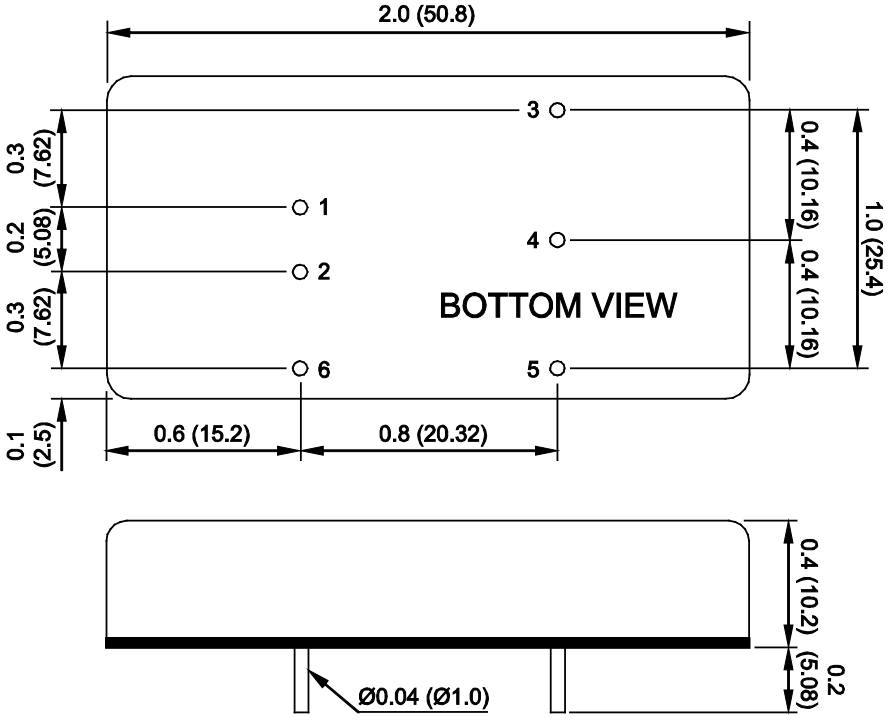


Loop Gain & Phase at Vin=48VDC, Full Load



MECHANICAL DRAWING

Unit: inches (mm)



PIN CONNECTIONS		
Pin	**Single**	**Dual**
1	+Vin	+Vin
2	-Vin	-Vin
3	+Vout	+Vout
4	No Pin	Common
5	-Vout	-Vout
6	Remote On/Off (Optional)	Remote On/Off (Optional)

NOTES
1. Tolerance: ±0.02 (±0.5)
2. Case Material: nickel-coated copper
3. Base Material: non-conductive black plastic
4. Potting Material: silicon rubber (UL94V-0)
5. Weight: 1.06oz (30g)
6. All dimensions are for reference only

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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