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
- 12 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 DCHUB12H series of isolated DC/DC power converters provides 12 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 DCHUB12H 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	Full Load	No Load	Full Load			
DCHUB12-12S33H	12 VDC (9 – 18 VDC)	3.3 VDC	0mA	3500mA	10mA	1318mA	11.55W	77%	4700µF
DCHUB12-12S05H		5 VDC	0mA	2400mA	20mA	1282mA	12W	82%	3300µF
DCHUB12-12S12H		12 VDC	0mA	1000mA	22mA	1220mA	12W	86%	680µF
DCHUB12-12S15H		15 VDC	0mA	800mA	21mA	1235mA	12W	85%	330µF
DCHUB12-24S33H	24 VDC (18 – 36 VDC)	3.3 VDC	0mA	3500mA	11mA	659mA	11.55W	77%	4700µF
DCHUB12-24S05H		5 VDC	0mA	2400mA	10mA	641mA	12W	82%	3300µF
DCHUB12-24S12H		12 VDC	0mA	1000mA	13mA	602mA	12W	87%	680µF
DCHUB12-24S15H		15 VDC	0mA	800mA	12mA	610mA	12W	86%	330µF
DCHUB12-48S33H	48 VDC (36 – 75 VDC)	3.3 VDC	0mA	3500mA	3mA	325mA	11.55W	78%	3300µF
DCHUB12-48S05H		5 VDC	0mA	2400mA	6mA	321mA	12W	82%	1680µF
DCHUB12-48S12H		12 VDC	0mA	1000mA	7mA	301mA	12W	87%	220µF
DCHUB12-48S15H		15 VDC	0mA	800mA	6mA	305mA	12W	86%	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			
DCHUB12-12D05H	12 VDC (9 – 18 VDC)	±5 VDC	0mA	±1200mA	19mA	1282mA	12W	82%	±1000µF
DCHUB12-12D12H		±12 VDC	0mA	±500mA	27mA	1220mA	12W	86%	±220µF
DCHUB12-12D15H		±15 VDC	0mA	±400mA	31mA	1235mA	12W	85%	±200µF
DCHUB12-24D05H	24 VDC (18 – 36 VDC)	±5 VDC	0mA	±1200mA	10mA	633mA	12W	83%	±1000µF
DCHUB12-24D12H		±12 VDC	0mA	±500mA	15mA	602mA	12W	87%	±147µF
DCHUB12-24D15H		±15 VDC	0mA	±400mA	17mA	610mA	12W	86%	±133µF
DCHUB12-48D05H	48 VDC (36 – 75 VDC)	±5 VDC	0mA	±1200mA	6mA	316mA	12W	83%	±680µF
DCHUB12-48D12H		±12 VDC	0mA	±500mA	8mA	301mA	12W	87%	±68µF
DCHUB12-48D15H		±15 VDC	0mA	±400mA	9mA	305mA	12W	86%	±100µF

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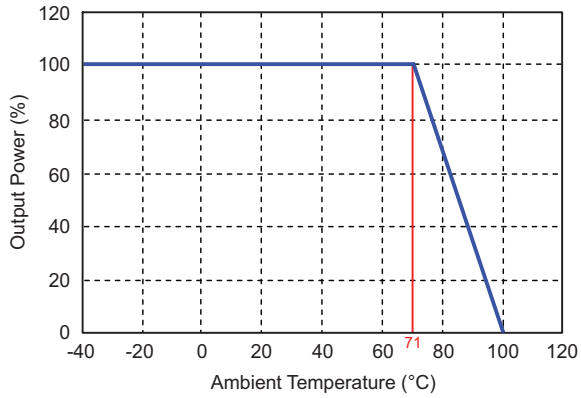
TECHNICAL SPECIFICATIONS: DCHUB12H SERIES

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		9	12	18	VDC
	24VDC nominal input models		18	24	36	
	48VDC nominal input models		36	48	75	
Input Surge Voltage (100ms max)	12 VDC nominal input models				25	VDC
	24VDC nominal input models				50	
	48VDC nominal input models				100	
Input Reflected Ripple Current	Nominal Vin and full load				130	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) 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			0			%
Maximum Capacitive Load			See Table			
Start-up Time	Nominal Vin and constant resistive load			550		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					12	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	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 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)			

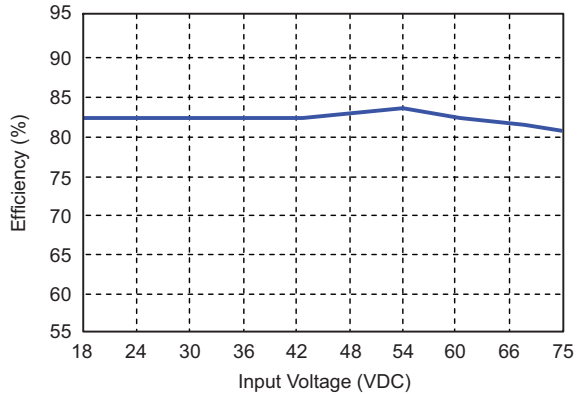
DERATING

DCHUB12-48S05 Derating Curve

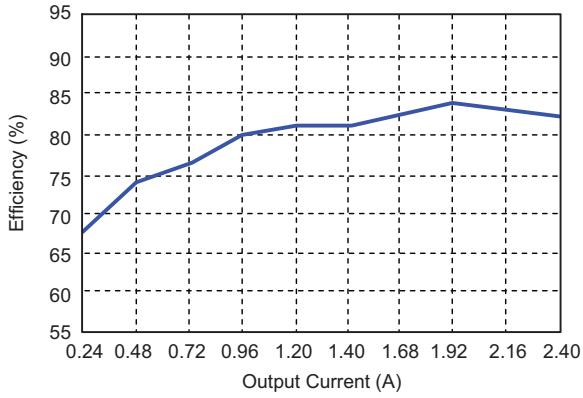


EFFICIENCY

DCHUB12-48S05 Efficiency vs Input Voltage

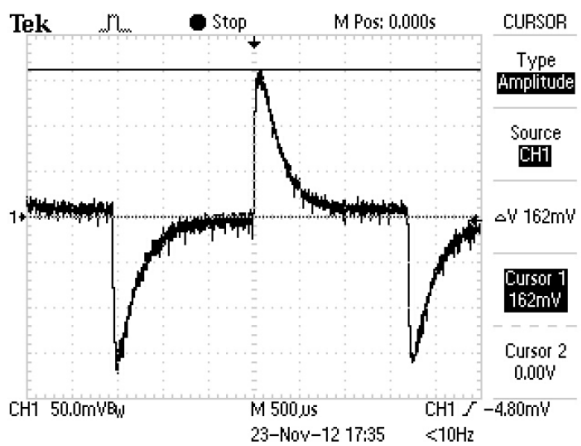


DCHUB12-48S05 Efficiency vs Output Current

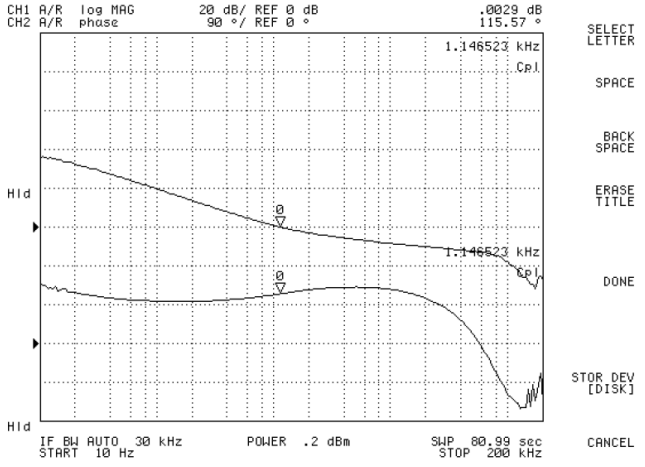


CHARACTERISTICS

Transient Response at 50%~100% Max Load

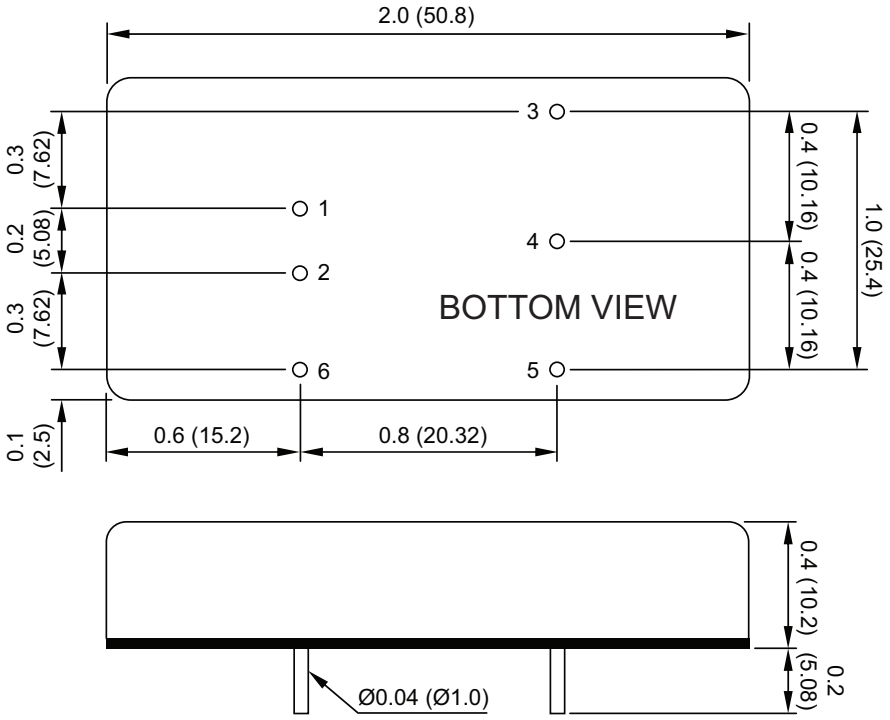


Loop Gain & Phase at Vin=48VDC, Full Load



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 ISO9001-2008 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.

Contact **Wall Industries** for further information:

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