



Size: 0.94in x 0.54in x 0.31in (23.8mm x 13.7mm x 8mm)

FEATURES

- Ultra-Wide 4:1 Input Voltage Range
- Industrial DIP-16 Package
- Fully Regulated Output Voltage
- No Minimum Load Requirement
- Over Load and Short Circuit Protection
- RoHS & REACH Compliant
- UL/cUL/IEC/EN 62368-1 (60950-1) Safety Approvals and CE Marking

DESCRIPTION

The DCIDW08 series of DC/DC converters offers up to 8 watts of output power in a compact 0.94" x 0.54" x 0.31" industrial DIP-16 package. This series consists of fully regulated single and dual output models with an ultra-wide 4:1 input voltage range. Each model in this series has over load and short circuit protection, is RoHS & REACH compliant, and features no minimum load requirement. This series has UL/cUL/IEC/EN 62368-1 (60950-1) safety approvals and is CE marked.

MODEL SELECTION TABLE

Single Output Models

Model Number	Input Voltage Range	Output Voltage	Output Current	Input Current		Maximum Capacitive Load	Efficiency	Output Power
				No Load	Max Load			
DCIDW08-24S33	24VDC (9~36VDC)	3.3VDC	2000mA	10mA	353mA	680µF	78%	8 Watts
DCIDW08-24S05		5VDC	1600mA		407mA	680µF	82%	
DCIDW08-24S12		12VDC	665mA		391mA	330µF	85%	
DCIDW08-24S15		15VDC	535mA		393mA	330µF	85%	
DCIDW08-24S24		24VDC	335mA		390mA	150µF	86%	
DCIDW08-48S33	48VDC (18~75VDC)	3.3VDC	2000mA	8mA	176mA	680µF	78%	8 Watts
DCIDW08-48S05		5VDC	1600mA		206mA	680µF	81%	
DCIDW08-48S12		12VDC	665mA		196mA	330µF	85%	
DCIDW08-48S15		15VDC	535mA		197mA	330µF	85%	
DCIDW08-48S24		24VDC	335mA		195mA	150µF	86%	

MODEL SELECTION TABLE

Dual Output Models

Model Number	Input Voltage Range	Output Voltage	Output Current	Input Current		Maximum Capacitive Load ⁽¹⁾	Efficiency	Output Power
				No Load	Max Load			
DCIDW08-24D12	24VDC (9~36VDC)	±12VDC	±335mA	10mA	394mA	150µF	85%	8 Watts
DCIDW08-24D15		±15VDC	±265mA		385mA	150µF	86%	
DCIDW08-48D12	48VDC (18~75VDC)	±12VDC	±335mA	8mA	195mA	150µF	86%	8 Watts
DCIDW08-48D15		±15VDC	±265mA		193mA	150µF	86%	

SPECIFICATIONS

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

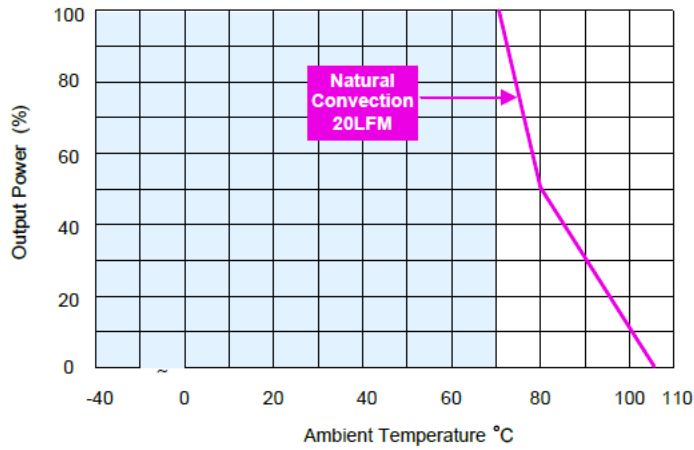
SPECIFICATION	TEST CONDITIONS	Min	Typ	Max	Unit
INPUT SPECIFICATIONS					
Input Voltage Range	24V Input Models	9	24	36	VDC
	48V Input Models	18	48	75	
Start-Up Threshold Voltage	24V Input Models			9	VDC
	48V Input Models			18	
Under Voltage Shutdown	24V Input Models		8		VDC
	48V Input Models		16		
Input Surge Voltage (1 sec. max)	24V Input Models	-0.7		50	VDC
	48V Input Models	-0.7		100	
Input Filter	All Models	Internal Pi Type			
OUTPUT SPECIFICATIONS					
Output Voltage		See Table			
Voltage Accuracy				±2.0	%Vnom.
Line Regulation	Vin=Min. to Max. @Full Load		±0.2	±0.8	%
Load Regulation	Io=0% to 100%		±0.5	±1.0	%
Voltage Balance	Dual Output, Balanced Loads		±1.0	±2.0	%
Output Power		See Table			
Output Current		See Table			
Minimum Load		No Minimum Load Requirement			
Maximum Capacitive Load		See Table			
Ripple & Noise	0-20Mhz Bandwidth			55	mVp-p
Transient Response Recovery Time ⁽²⁾	25% Load Step Change			500	µsec
Transient Response Deviation	25% Load Step Change		±3	±5	%
Temperature Coefficient			±0.01	±0.02	%/°C
PROTECTION					
Short Circuit Protection	Automatic Recovery	Hiccup Mode, 0.3Hz Typ.			
Over Load Protection	Hiccup		150		%
ENVIRONMENTAL SPECIFICATIONS					
Operating Ambient Temperature	Natural Convection	-40		+80	°C
Storage Temperature		-50		+125	°C
Case Temperature				+105	°C
Humidity	Non-Condensing			95	%RH
Lead Temperature	1.5mm from case for 10sec.			260	°C
Cooling ⁽³⁾		Natural Convection			
MTBF (calculated)	MIL-HDBK-217F @25°C, Ground Benign	2,358,263			Hours
GENERAL SPECIFICATIONS					
Typical Efficiency	@Max. Load	See Table			
Switching Frequency			370		kHz
Isolation Voltage	60 Seconds	1500			VDC
	1 Second	1800			
Isolation Resistance	500VDC	1000			MΩ
Isolation Capacitance	100KHz, 1V		500		pF
PHYSICAL SPECIFICATIONS					
Weight		0.035oz (6.1g)			
Dimensions (L x W x H)		0.94in x 0.54in x 0.31in (23.8mm x 13.7mm x 8mm)			
Case Material		Aluminum Alloy, Black Anodized Coating			
Pin Material		Tinned Copper			
Shielding		Shielded Metal Case with Insulated Baseplate			
SAFETY CHARACTERISTICS					
Safety Approvals		UL/cUL 60950-1 recognition (UL Certificate) IEC/EN 60950-1 (CB Report) UL/cUL 62368-1 Recognition (UL Certificate) IEC/EN 62368-1 (CB Report)			
EMI	Conduction	EN55032, EN55022, FCC Part 15			Class A
EMS	EN55024				
	ESD	EN61000-4-2 Air ±8kV, Contact ±6kV			A
	Radiated Immunity	EN61000-4-3 20V/m			A
	Fast Transient ⁽⁴⁾	EN61000-4-4 ±2kV			A
	Surge ⁽⁴⁾	EN61000-4-5 ±1kV			A
	Conducted Immunity	EN61000-4-6 10Vrms			A
	PFMF	EN61000-4-8 100A/m, 1000A/m (1sec.)			A

NOTES

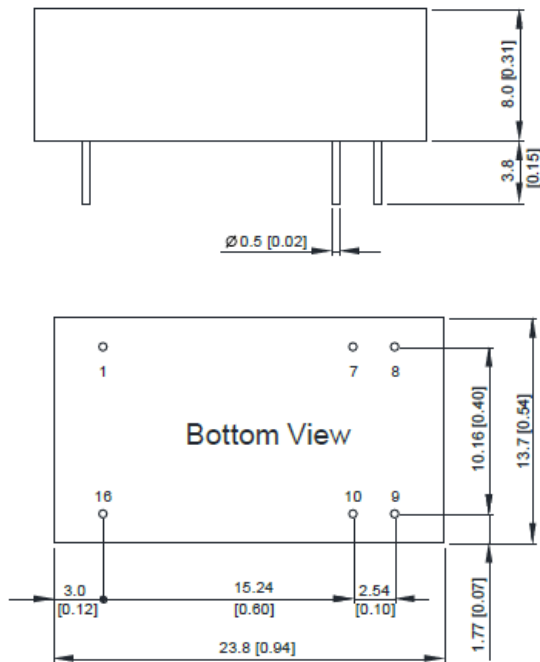
1. # for Each Output
2. Transient recovery time is measured to within 1% error band for a step change in output load of 75% to 100%.
3. "Natural Convection" is about 20LFM but is not equal to still air (0 LFM).
4. To meet EN61000-4-4 & EN61000-4-5 an external capacitor across the input pins is required. Suggested capacitor: 220µF/100V.
5. Other input and output voltages may be available, please contact factory.
6. It is recommended to protect the converter by a slow blow fuse in the input supply line.

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

DERATING CURVES



MECHANICAL DRAWINGS



Pin Connections

Pin	Single Output	Dual Output
1	-Vin	-Vin
7	NC	NC
8	NC	Common
9	+Vout	+Vout
10	-Vout	-Vout
16	+Vin	+Vin

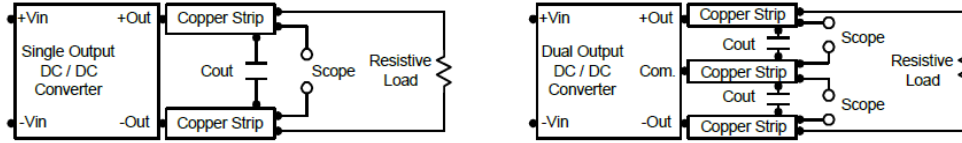
NC: No Connection

All dimensions in mm (inches)
Tolerance: X.X±0.5 (X.XX±0.02)
X.XX±0.25 (X.XXX±0.01)
Pin Diameter Ø0.5±0.05 (0.02±0.002)

TEST SETUP

Peak-to-Peak Output Noise Measurement Test

Use a C_{out} 0.47 μ F ceramic capacitor. Scope measurement should be made by using a BNC socket, measurement bandwidth is 0-20Mhz. Position the load between 50mm and 75mm from the converter.



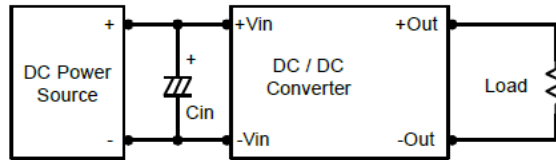
TECHNICAL NOTES

Overload Protection

To provide protection in a fault (output overload) condition, the unit is equipped with internal current limiting circuitry and can endure current limiting for an unlimited duration. At the point of current-limit inception, the unit shifts from voltage control to current control. The unit operates normally once the output current is brought back into its specified range.

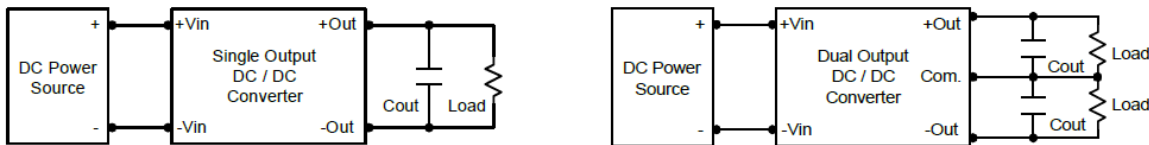
Input Source Impedance

The power module should be connected to a low ac-impedance input source. Highly inductive source impedances can affect the stability of the power module. In applications where power is supplied over long lines and output loading is high, it may be necessary to use a capacitor at the input to ensure startup. Capacitor mounted close to the power module helps ensure stability of the unit, it is recommended to use a good quality low Equivalent Series Resistance (ESR < 1.0 Ω at 100KHz) capacitor of a 2.2 μ F for the 24V and 48V devices.



Output Ripple Reduction

A good quality low ESR capacitor placed as close as practical across the load will give the best ripple and noise performance. To reduce output ripple, it is recommended to use 3.3 μ F capacitors at the output.

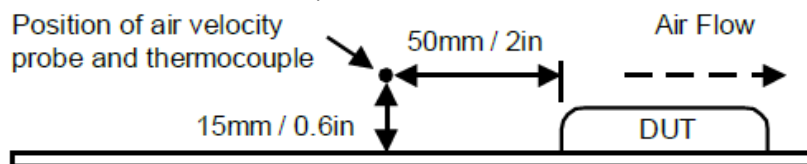


Maximum Capacitive Load

The DCIDW08 series has a limitation of maximum connected capacitance at the output. The power module may be operated in current limiting mode during start-up, affecting the ramp-up and the startup time. The maximum capacitance can be found in the data sheet.

Thermal Considerations

Many conditions affect the thermal performance of the power module, such as orientation, airflow over the module, and board spacing. To avoid exceeding the maximum temperature rating of the components inside the power module, the case temperature must be kept below 105°C. The derating curves are determined from measurements obtained in a test setup.



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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