

DIP Package (Standard)



Size: 0.52in x 0.36in x 0.40in

SMT Package (Suffix "S")



Size: 0.56in x 0.36in x 0.40in



OPTIONS

- Package Type
 - Surface Mount
 - Through Hole
- Output Quantity
- Isolation
 - 1600VDC
 - 3000VDC

FEATURES

- Ultra Small SMT and DIP Package
- SMT Package Qualifies for Lead-Free Reflow Solder Process According to IPC J-STD-020D
- No Minimum Load Required
- 1600VDC Input to Output Isolation or Optional 3000VDC
- Remote Control
- 4:1 Ultra Wide Input Range
- Up to 1.08 Watts of Output Power
- RoHS II & REACH Compliant
- CE Marked
- Continuous Short Circuit Protection
- UL60950-1, EN60950-1, & IEC60950-1 Safety Approvals

APPLICATIONS

- Wireless Network
- Telecom/Datacom
- Industry Control System
- Measurement Equipment
- Semiconductor Equipment

DESCRIPTION

The DCSDW01 series of DC DC converters offers up to 1.08 watts of output power in a compact package. This series consists of single and dual output models with 4:1 ultra wide input range. Each model in this series has a no minimum load requirement and offers continuous short circuit protection. The DCSDW01 series has UL60950-1, EN60950-1, & IEC60950-1 safety approvals. Either surface mount or through hole package types are available as well as a 1600VDC input to output isolation or a 3000VDC optional isolation. Please call factory for order details.

MODEL SELECTION TABLE

Single Output Models

Model Number ⁽¹⁾	Input Voltage Range	Output Voltage	Output Current @Full Load	No Load Input Current	Maximum Capacitor Load	Efficiency	Output Power	Ripple and Noise
DCSDW01-12S33	12VDC (4.5~18)	3.3VDC	300mA	15mA	1680µF	77%	Up to 1.08W	30mVp-p
DCSDW01-12S05		5VDC	200mA	20mA	820µF	79%		
DCSDW01-12S12		12VDC	90mA	20mA	470µF	81%		
DCSDW01-12S15		15VDC	70mA	20mA	330µF	81%		
DCSDW01-12S24		24VDC	45mA	25mA	160µF	80%		
DCSDW01-24S33	24VDC (9~36)	3.3VDC	300mA	10mA	1680µF	76%	Up to 1.08W	30mVp-p
DCSDW01-24S05		5VDC	200mA	10mA	820µF	78%		
DCSDW01-24S12		12VDC	90mA	10mA	470µF	81%		
DCSDW01-24S15		15VDC	70mA	10mA	330µF	81%		
DCSDW01-24S24		24VDC	45mA	10mA	160µF	80%		
DCSDW01-48S33	48VDC (18~75)	3.3VDC	300mA	5mA	1680µF	75%	Up to 1.08W	30mVp-p
DCSDW01-48S05		5VDC	200mA	5mA	820µF	78%		
DCSDW01-48S12		12VDC	90mA	5mA	470µF	81%		
DCSDW01-48S15		15VDC	70mA	6mA	330µF	81%		
DCSDW01-48S24		24VDC	45mA	6mA	160µF	80%		

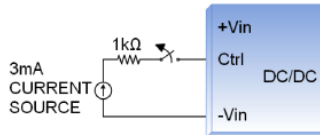
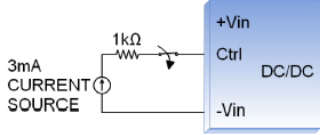
MODEL SELECTION TABLE

Dual Output Models

Model Number ⁽¹⁾	Input Voltage Range	Output Voltage	Output Current @Full Load	No Load Input Current	Maximum Capacitive Load	Efficiency	Output Power	Ripple and Noise
DCSDW01-12D05	12VDC (4.5~18)	±5VDC	±100mA	25mA	±470µF	77%	Up to 1.08W	30mVp-p
DCSDW01-12D12		±12VDC	±45mA	25mA	±330µF	80%		
DCSDW01-12D15		±15VDC	±35mA	25mA	±220µF	81%		
DCSDW01-24D05	24VDC (9~36)	±5VDC	±100mA	10mA	±470µF	77%	Up to 1.08W	30mVp-p
DCSDW01-24D12		±12VDC	±45mA	10mA	±330µF	80%		
DCSDW01-24D15		±15VDC	±35mA	10mA	±220µF	81%		
DCSDW01-48D05	48VDC (18~75)	±5VDC	±100mA	6mA	±470µF	77%	Up to 1.08W	30mVp-p
DCSDW01-48D12		±12VDC	±45mA	6mA	±330µF	80%		
DCSDW01-48D15		±15VDC	±35mA	6mA	±220µF	81%		

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	12Vin(nominal)		4.5	12	18	VDC	
	24Vin(nominal)		9	24	36		
	48Vin(nominal)		18	48	75		
Input Surge Voltage	1 second, max.	12Vin(nominal)			25	VDC	
		24Vin(nominal)			50		
		48Vin(nominal)			100		
Input Reflected Ripple Current ⁽²⁾	12Vin(nominal)			15		mA p-p	
	24Vin(nominal)			10			
	48Vin(nominal)			5			
Input Filter			Capacitor				
OUTPUT SPECIFICATIONS							
Output Voltage			See Table				
Voltage Accuracy			-1.0		+1.0	%	
Line Regulation	Low Line to High Line at Full Load		-0.2		+0.2	%	
Load Regulation	No Load to Full Load	Single	-1.0		+1.0	%	
		Dual	-1.0		+1.0		
	10% Load to 90% Load	Single	-0.5		+0.5		
		Dual	-0.8		+0.8		
Output Power					1.08	W	
Output Current			See Table				
Maximum Capacitive Load			See Table				
Cross Regulation	Asymmetrical Load 25%/100% FL; Dual		-5.0		+5.0	%	
Ripple & Noise (20MHz bandwidth)				30		mVp-p	
Transient Response Recovery Time	25% load step change			500		µs	
Start-Up Time	Constant Resistive Load	Power Up		5	10	ms	
		Remote ON/OFF		5	10		
Temperature Coefficient			-0.02		+0.02	%/°C	
REMOTE ON/OFF CONTROL							
CTRL pin applied current via 1kΩ	DC-DC ON		Open or High Impedance			mA	
	DC-DC OFF		2.0	3.0	4.0		
Remote Off Input Current					2.5	mA	
Application Circuit	DC-DC ON						
	DC-DC OFF						
PROTECTION							
Short Circuit Protection			Continuous, Automatic Recovery				
ENVIRONMENTAL SPECIFICATIONS							
Operating Case Temperature	Without Derating		-40		+90	°C	
	Derating		+90		+105		
Storage Temperature			-55		+125	°C	
Thermal Shock			MIL-STD-810F				
Vibration			MIL-STD-810F				
Relative Humidity			5		95	% RH	
Lead-Free Reflow Solder Process			IPC J-STD-020D				
Moisture Sensitivity (MSL)			IPC J-STD-033B Level 2				
MTBF	MIL-HDBK-217F, Full Load			8,401,000		Hours	

SPECIFICATIONS

All specifications are based on 25°C, Nominal Input Voltage, and Maximum Output Current unless otherwise noted.
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SPECIFICATION	TEST CONDITIONS		Min	Typ	Max	Unit
GENERAL SPECIFICATIONS						
Efficiency			See Table			
Switching Frequency			100			kHz
Isolation Voltage	1 minute	Standard	1600			VDC
		Suffix "H"	3000			
Isolation Resistance	500VDC		1			GΩ
Isolation Capacitance	Standard				50	pF
	Suffix "H"				50	
PHYSICAL SPECIFICATIONS						
Weight			0.10oz (2.7g)			
Dimensions (L x W x H)	Through Hole Models (Standard)		0.52in x 0.36in x 0.40in (14.2mm x 9.1mm x 10.2mm)			
	Surface Mount Models ("S" Suffix)		0.56in x 0.36in x 0.40in (14.2mm x 9.1mm x 10.2mm)			
Case Material			Non-Conductive Black Plastic			
Base Material			Non-Conductive Black Plastic			
Potting Material			Silicone (UL94 V-0)			
SAFETY CHARACTERISTICS						
Safety Approvals			UL60950-1 EN60950-1 IEC60950-1			
EMI ⁽²⁾	EN55022					Class A Class B
ESD	EN61000-4-2	Air ±8kV Contact ±6kV				Perf. Criteria A
Radiated Immunity	EN61000-4-3	10 V/m				Perf. Criteria A
Fast Transient ⁽³⁾	EN61000-4-4	±2kV				Perf. Criteria A
Surge ⁽³⁾	EN61000-4-5	±1kV				Perf. Criteria A
Conducted Immunity	EN61000-4-6	10 Vr.m.s.				Perf. Criteria A
Power Frequency Magnetic Field	EN61000-4-8	100A/m continuous; 1000A/m 1 second				Perf. Criteria A

NOTES

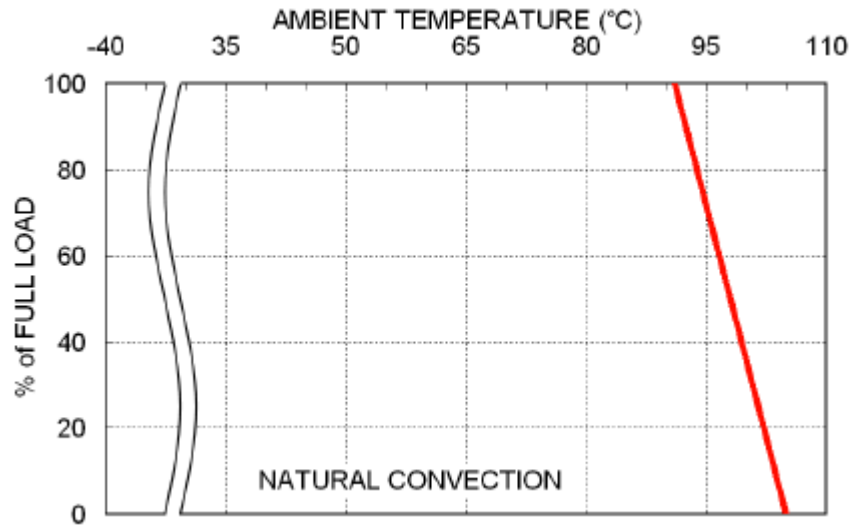
- "S" added at the end of the model number represents SMT (surface mount) package type.
- The standard module meets EMI Class A or Class B and input reflected current with external components. Please contact factory for more information.
- An external input filter capacitor is required if the module will meet EN61000-4-4, EN61000-4-5.
Suggested filter capacitor: Nippon chemi-con KY series, 220µF/100V.

CAUTION: This power module is not internally fused. An input line fuse must always be used.

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

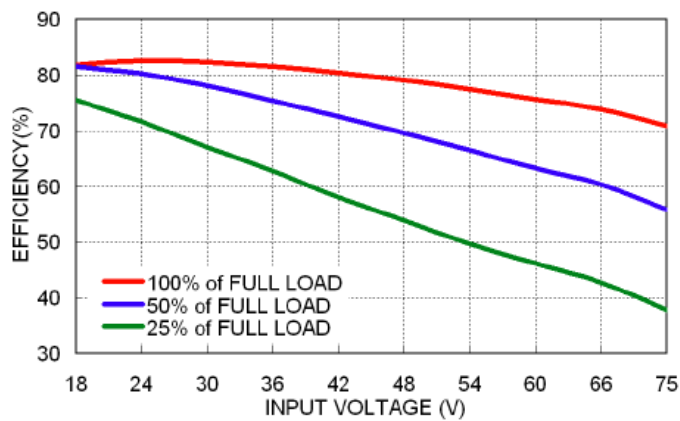
DERATING CURVES

DCSDW01-48S05 Derating Curve

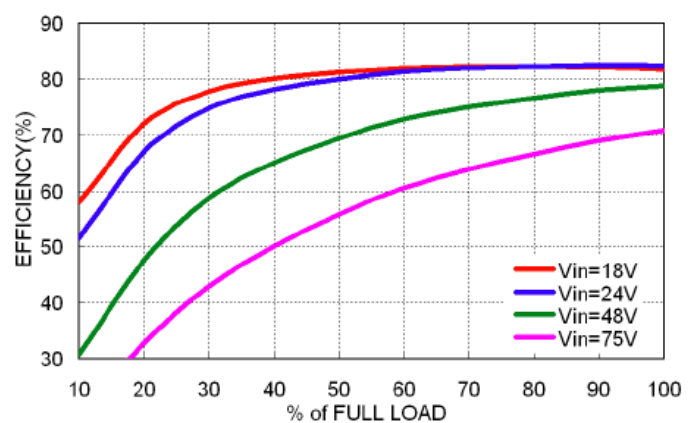


EFFICIENCY GRAPHS

DCSDW01-48S05 Efficiency vs. Input Voltage

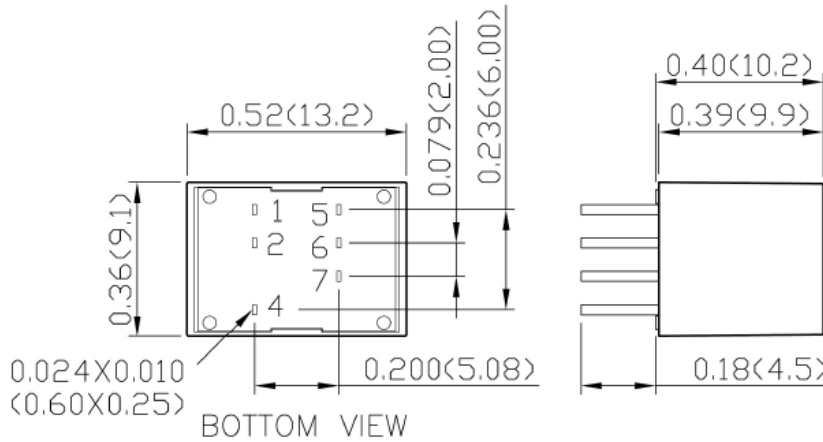


DCSDW01-48S05 Efficiency vs. Output Current



MECHANICAL DRAWINGS

DCSDW01 DIP Through Hole Models



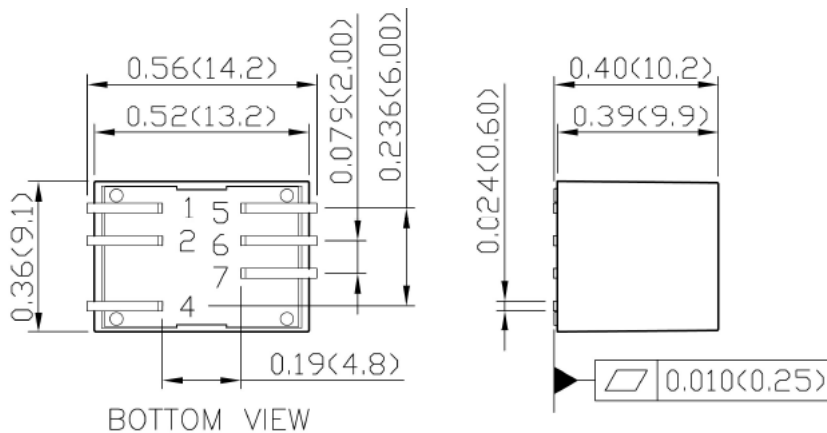
PIN CONNECTION

PIN	SINGLE	DUAL
1	+Vin	+Vin
2	-Vin	-Vin
4	Ctrl	Ctrl
5	NC	-Vout
6	-Vout	Common
7	+Vout	+Vout

Notes

1. All dimensions in inch (mm)
2. Tolerance: x.xx±0.02 (x.x±0.5)
x.xxx±0.01 (x.xx±0.25)
3. Pin pitch tolerance ±0.01 (0.25)
4. Pin Pitch dimensions tolerance ±0.004(0.1)

DCSDW01(S) SMT Surface Mount Models



MODEL NUMBER SETUP

DCSDW	01	-	48	S	05	S	H
Series Name	Output Power		Input Voltage	Output Quantity	Ouptut Voltage	Assembly Option	Isolation Option
			05: 4.5~9VDC 12: 9~18VDC 24: 18~36VDC 48: 36~75VDC	S: Single	33: 3.3VDC 05: 5VDC 12: 12VDC 15: 15VDC 24: 24VDC	None: DIP Type S: SMT Type	None: Standard: 1600VDC Isolation H: 3000VDC Isolation
				D: Dual	05: ±5VDC 12: ±12VDC 15: ±15VDC		

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:

Phone: ☎(603)778-2300
Toll Free: ☎(888)597-9255
Fax: ☎(603)778-9797
E-mail: sales@wallindustries.com
Web: www.wallindustries.com
Address: 37 Industrial Drive
Exeter, NH 03833