DIP Through Hole Model

Size: 0.52in x 0.36in x 0.40in (13.2mm x 9.1mm x 10.2mm)

SMD Surface Mount Model

Size: 0.56in x 0.36in x 0.40in (14.2mm x 9.1mm x 10.2mm)

OPTIONS

- Through Hole or Surface Mount Models
- Single or Dual Outputs
- 1600VDC or 3000VDC Isolation

FEATURES

- 4:1 Ultra Wide Input Range
- Ultra Small SMD or DIP Package
- SMD Package Qualified for Lead-free Reflow Solder Process According to IPC J-STD-020D
- 1600VDC Input to Output Isolation or 3000VDC Optional Isolation
- CE Marked
- RoHS II & REACH Compliant
- No Minimum Load Required
- Short Circuit Protection
- UL60950-1, EN60950-1, and IEC6090-1 Safety Approvals

APPLICATIONS

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

DESCRIPTION

The DCSDW03 series of DC/DC converters offers up to 3 watts of output power in a compact SMD or DIP package. This series consists of single and dual outputs with an ultra-wide 4:1 input range. Each model in this series is CE marked, RoHS II & REACH compliant, and protected against short circuit conditions. This series also has UL60950-1, EN60950-1, and IEC6090-1 safety approvals. 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 Capacitive Load	Efficiency	Output Power	Ripple & Noise
DCSDW03-12S33	12VDC (4.5~18VDC)	3.3VDC	700mA	35mA	4700µF	76%	Up to 3 Watts	50mVp-p
DCSDW03-12S05		5VDC	600mA	40mA	2530µF	80%		
DCSDW03-12S12		12VDC	250mA	40mA	1220µF	83%		
DCSDW03-12S15		15VDC	200mA	40mA	1000µF	84%		
DCSDW03-12S24		24VDC	125mA	40mA	470µF	82%		
DCSDW03-24S33	24VDC (9~36VDC)	3.3VDC	700mA	20mA	4700µF	77%	Up to 3 Watts	50mVp-p
DCSDW03-24S05		5VDC	600mA	20mA	2530µF	80%		
DCSDW03-24S12		12VDC	250mA	25mA	1220µF	83%		
DCSDW03-24S15		15VDC	200mA	25mA	1000µF	83%		
DCSDW03-24S24		24VDC	125mA	25mA	470µF	82%		
DCSDW03-48S33	48VDC (18~75VDC)	3.3VDC	700mA	12mA	4700µF	77%	Up to 3 Watts	50mVp-p
DCSDW03-48S05		5VDC	600mA	12mA	2530µF	80%		
DCSDW03-48S12		12VDC	250mA	13mA	1220µF	83%		
DCSDW03-48S15		15VDC	200mA	14mA	1000µF	83%		
DCSDW03-48S24		24VDC	125mA	14mA	470µF	82%		

MODEL SELECTION TABLE
Dual Output Models

Model Number	Input Voltage Range	Output Voltage	Output Current @Full Load	No Load Input Current	Maximum Capacitive Load	Efficiency	Output Power	Ripple & Noise
DCSDW03-12D05	12VDC (4.5~18VDC)	±5VDC	±300mA	40mA	±1470µF	80%	Up to 3 Watts	50mVp-p
DCSDW03-12D12		±12VDC	±125mA	40mA	±680µF	82%		
DCSDW03-12D15		±15VDC	±100mA	40mA	±470µF	82%		
DCSDW03-24D05	24VDC (9~36VDC)	±5VDC	±300mA	25mA	±1470µF	80%	Up to 3 Watts	50mVp-p
DCSDW03-24D12		±12VDC	±125mA	25mA	±680µF	82%		
DCSDW03-24D15		±15VDC	±100mA	25mA	±470µF	82%		
DCSDW03-48D05	48VDC (18~75VDC)	±5VDC	±300mA	14mA	±1470µF	80%	Up to 3 Watts	50mVp-p
DCSDW03-48D12		±12VDC	±125mA	14mA	±680µF	82%		
DCSDW03-48D15		±15VDC	±100mA	14mA	±470µF	82%		

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(nom)		4.5	12	18	VDC
	24Vin(nom)		9	24	36	
	48Vin(nom)		18	48	75	
Input Surge Voltage	1 Second, max.	12Vin(nom)			25	VDC
		24Vin(nom)			50	
		48Vin(nom)			100	
Input Reflected Ripple Current[2]	12Vin(nom)			20		mAp-p
	24Vin(nom)			20		
	48Vin(nom)			20		
Input Filter			Capacitor Type			
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	
Cross Regulation	Asymmetrical Load 25%/100% FL, Dual		-5.0		+5.0	%
Output Power			See Table			
Output Current			See Table			
Maximum Capacitive Load			See Table			
Ripple & Noise (20MHz bandwidth)	Measured by 20MHz bandwidth			50		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	%/ºC
Transient Response Recovery Time	25% Load Step Change			500		µS
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						
PROTECTION						
Short Circuit Protection			Continuous, Automatic Recovery			
ENVIRONMENTAL SPECIFICATIONS						
Operating Ambient Temperature	Without Derating		-40		71	ºC
	With Derating		71		+105	
Storage Temperature			-55		+125	ºC
Relative Humidity			5		95	%RH
Thermal Shock			MIL-STD-810F			
Vibration			MIL-STD-810F			
Lead-Free Reflow Solder Process			IPC J-STD-020D			
Moisture Sensitivity Level (MSL)			IPC J-STD-020D			
MTBF	MIL-HDBK-217F, Full Load			5,627,000		Hours
GENERAL SPECIFICATIONS						
Efficiency			See Table			
Switching Frequency			100			kHz
Isolation Voltage	1 minute	Standard	1600			VDC
		Suffix “S”	3000			
Isolation Resistance	500VDC		1			GΩ
Isolation Capacitance				50		pF

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
PHYSICAL SPECIFICATIONS						
Weight				0.10oz (2.7g)		
Dimensions (L x W x H)	Standard			0.52in x 0.36in x 0.40in (13.2mm x 9.1mm x 10.2mm)		
	Suffix “S”			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[4], 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

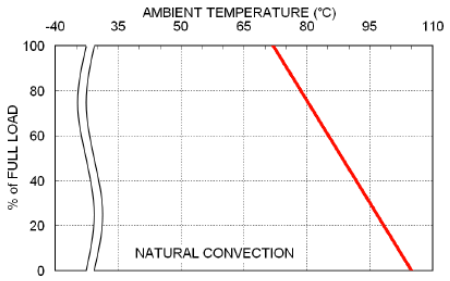
NOTES

1. Add “S” to model number for SMD package type.
2. The standard module meets EMI Class A or Class B and input reflected ripple current with external component. For more information, please contact factory.
3. An external input filter capacitor is required if the module is to meet EN61000-4-4, EN61000-4-5. Suggested filter capacitor: Nippon chemi-con KY series, 220 µF/100V.
4. This product is Listed to applicable standards and requirements by UL.

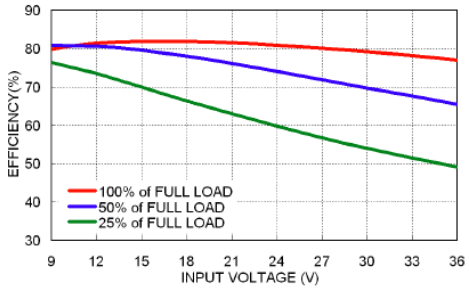
CAUTION: This power module is not internally fused. An input line fuse must always be used.
**Due to advances in technology, specifications subject to change without notice.*

DERATING CURVES

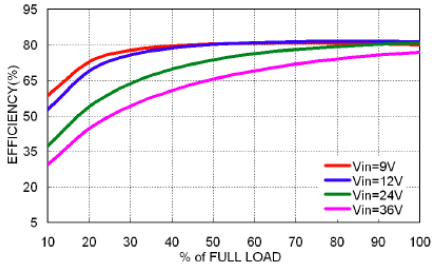
DCSDW03-24S05 Derating Curve



DCSDW03-24S05
Efficiency vs. Input Voltage

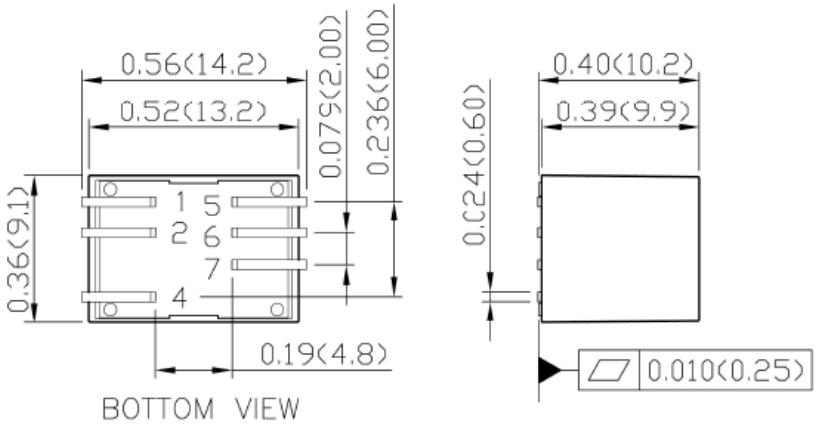


DCSDW03-24S05
Efficiency vs. Output Current

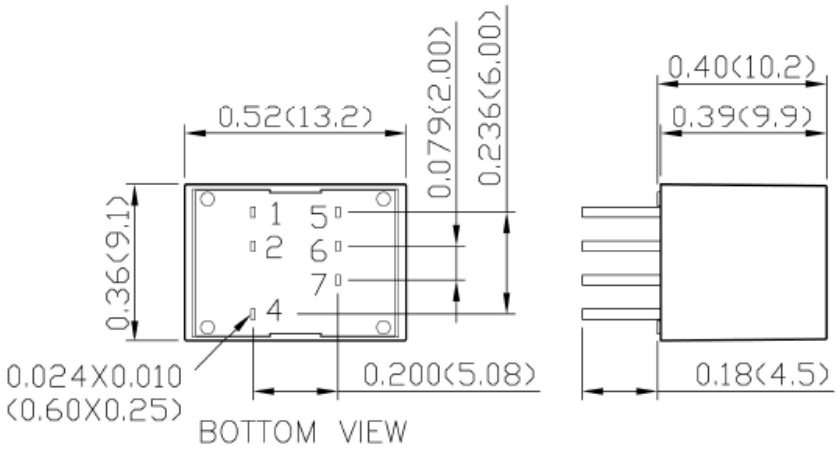


MECHANICAL DRAWINGS

SMD Type



DIP Type



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 Dimension Tolerance ±0.004(0.1)

MODEL NUMBER SETUP

DCSDW	03	-	24	S	05	S	H
Series Name	Output Power		Input Voltage	Output Quantity	Ouptut Voltage	Package Type	Isolation Option
			12: 4.5~18VDC **24:** 9~36VDC **48:** 18~75VDC	**S:** Single **D:** Dual	**33:** 3.3VDC **05:** 5VDC **12:** 12VDC **15:** 15VDC **24:** 24VDC **05:** ±5VDC **12:** ±12VDC **15:** ±15VDC	**None:** DIP Type **S:** SMD Type	**None:** 1600VDC Isolation **H:** 3000VDC Isolation

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 ISO9001:2015 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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