DIP Type (Standard)

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

SMD Package ("S" Suffix)

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

OPTIONS

- SMD or SIP Package Type
- Input Voltage
- Single or Dual Output
- Isolation

FEATURES

- 4:1 Ultra Wide Input Range
- Single and Dual Outputs
- Ultra Small Package
- SMD and DIP Packages Available
- SMD Package Qualified for Lead Free Reflow Solder Process According to IPC J-STD-020D
- Short Circuit Protection
- Remote Control
- High Efficiency up to 84%
- No Minimum Load Required
- 1600VDC Input to Output Isolation and 3000VDC for Option
- CE Marked
- Compliant to RoHS II & REACH
- UL60950-1, EN60950-1, and IEC60950-1 Safety Approvals

APPLICATIONS

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

DESCRIPTION

The DCSDW02 series of DC/DC converters offers up to 2.01 watts of output power in a compact DIP or SMD package. This series consists of single and dual outputs with ultra wide 4:1 input voltage range. Each model in this series has high efficiency, no minimum required load, short circuit protection, and is CE marked and compliant to RoHS II & REACH. This series has 1600VDC input to output isolation and UL60950-1, EN60950-1, and IEC60950-1 safety approvals. Please call factory for order details.

MODEL SELECTION TABLE

Single Output Models

Model Number	Input Voltage Range	Output Voltage	Output Current @Full Load	Ripple & Noise	No Load Input Current	Output Power	Maximum Capacitive Load	Efficiency
DCSDW02-12S33	12VDC (4.5~18)	3.3VDC	500mA	50mVp-p	25mA	Up to 2.01	2200µF	77%
DCSDW02-12S05		5VDC	400mA		30mA		1000µF	80%
DCSDW02-12S12		12VDC	167mA		30mA		550µF	83%
DCSDW02-12S15		15VDC	134mA		30mA		440µF	84%
DCSDW02-12S24		24VDC	83mA		30mA		200µF	84%
DCSDW02-24S33	24VDC (9~36)	3.3VDC	500mA	50mVp-p	15mA	Up to 2.01	2200µF	76%
DCSDW02-24S05		5VDC	400mA		18mA		1000µF	79%
DCSDW02-24S12		12VDC	167mA		18mA		550µF	82%
DCSDW02-24S15		15VDC	134mA		18mA		440µF	83%
DCSDW02-24S24		24VDC	83mA		18mA		200µF	82%
DCSDW02-48S33	48VDC (18~75)	3.3VDC	500mA	50mVp-p	8mA	Up to 2.01	2200µF	75%
DCSDW02-48S05		5VDC	400mA		8mA		1000µF	81%
DCSDW02-48S12		12VDC	167mA		11mA		550µF	83%
DCSDW02-48S15		15VDC	134mA		11mA		440µF	82%
DCSDW02-48S24		24VDC	83mA		11mA		200µF	82%

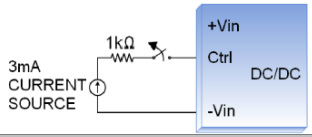
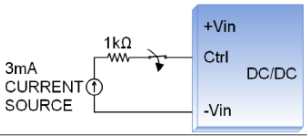
MODEL SELECTION TABLE

Dual Output Models

Model Number	Input Voltage Range	Output Voltage	Output Current @Full Load	Ripple & Noise	No Load Input Current	Output Power	Maximum Capacitive Load	Efficiency
DCSDW02-12D05	12VDC (4.5~18)	±5VDC	±200mA	50mVp-p	30mA	Up to 2.01	±660µF	80%
DCSDW02-12D12		±12VDC	±83mA		30mA		±330µF	84%
DCSDW02-12D15		±15VDC	±67mA		30mA		±220µF	84%
DCSDW02-24D05	24VDC (9~36)	±5VDC	±200mA	50mVp-p	18mA	Up to 2.01	±660µF	80%
DCSDW02-24D12		±12VDC	±83mA		18mA		±330µF	82%
DCSDW02-24D15		±15VDC	±67mA		18mA		±220µF	81%
DCSDW02-48D05	48VDC (18~75)	±5VDC	±200mA	50mVp-p	11mA	Up to 2.01	±660µF	79%
DCSDW02-48D12		±12VDC	±83mA		11mA		±330µF	82%
DCSDW02-48D15		±15VDC	±67mA		11mA		±220µF	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[1]				20		mAp-p
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		-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 Outputs		-5.0		+5.0	%
Output Power			See Table			
Output Current			See Table			
Maximum Capacitive Load			See Table			
Ripple & Noise	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	%/°C
REMOTE ON/OFF CONTROL						
Positive Logic		DC-DC ON	Open or High Impedance			
	Ctrl Pin Applied Current via 1kΩ	DC-DC OFF	2.0	3.0	4.0	mA
Remote Off Input Current					2.5	mA
Application Circuit	DC-DC ON  DC-DC OFF 						
PROTECTION						
Short Circuit Protection	Continuous		Automatic Recovery			

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
ENVIRONMENTAL SPECIFICATIONS						
Operating Ambient Temperature	Without Derating		-40		80	ºC
	With Derating		80		+105	
Storage Temperature Range			-55		+125	ºC
Relative Humidity			5		95	%RH
Thermal Shock			MIL-STD-810F			
Vibration			MIL-STD-810F			
MTBF	MIL-HDBK-217F, Full Load			6,204,000		Hours
GENERAL SPECIFICATIONS						
Efficiency			See Table			
Switching Frequency			100			kHz
Isolation Voltage (1 minute)	Standard		1600			VDC
	"H" Suffix		3000			
Isolation Resistance	500VDC		1			GΩ
Isolation Capacitance	Standard				50	pF
	"H" Suffix				50	
Lead-Free Reflow Solder Process			IPC J-STD-020D			
Moisture Sensitivity Level (MSL)			IPC J-STD-033B Level 2			
PHYSICAL SPECIFICATIONS						
Weight			0.10oz (2.7g)			
Dimensions (L x W x H)	DIP Type		0.52in x 0.36in x 0.40in (13.2mm x 9.1mm x 10.2mm)			
	SMD Type		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[3] EN60905-1 IEC60950-1				
EMI[1]		EN55022				Class A, Class B
ESD	EN61000-4-2	Air ±8kV				Perf. Criteria A
		Contact ±6kV				
Radiated Immunity	EN61000-4-3	10 V/m				Perf. Criteria A
Fast Transient[2]	EN61000-4-4	±2kV				Perf. Criteria A
Surge[2]	EN61000-4-5	±1kV				Perf. Criteria A
Power Frequency Magnetic Field	EN61000-4-8	100A/m continuous; 1000A/m 1 second				Perf. Criteria A

NOTES

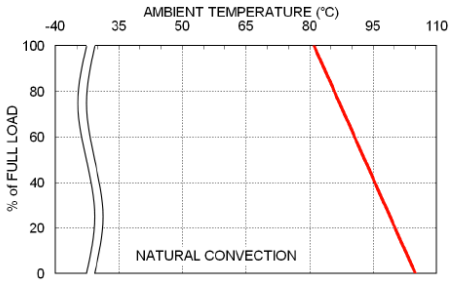
1. The standard module meets EMI Class A or Class B and input reflected ripple current with external components. For further information, please contact factory.
2. An external input filter capacitor is required if the module is to meet EN61000-4-4, EN61000-4-5. Suggested filter: Nippon chemi-con KY series, 220µF/100V.
3. 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.

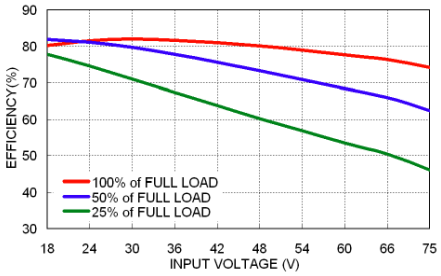
**Due to advances in technology, specifications subject to change without notice.*

CHARACTERISTIC CURVES

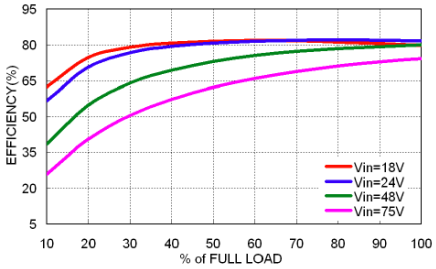
DCSDW02-48S05 Derating Curve



DCSDW02-48S05
Efficiency vs. Input Voltage

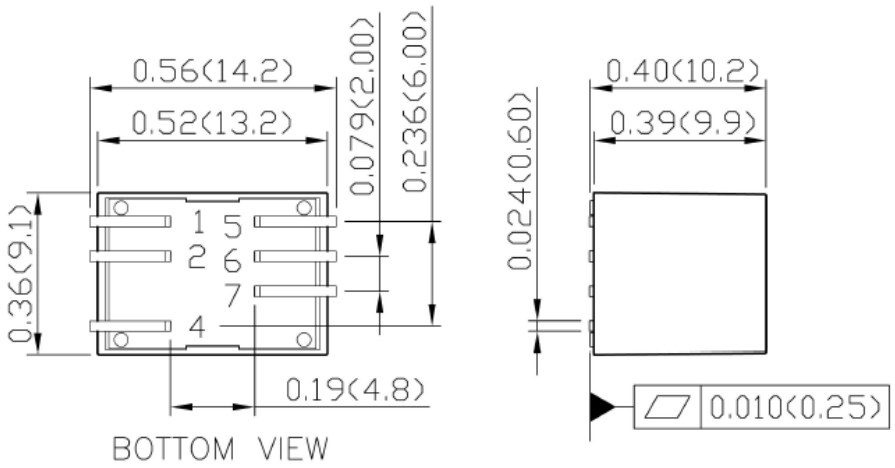


DCSDW02-48S05
Efficiency vs. Output Current

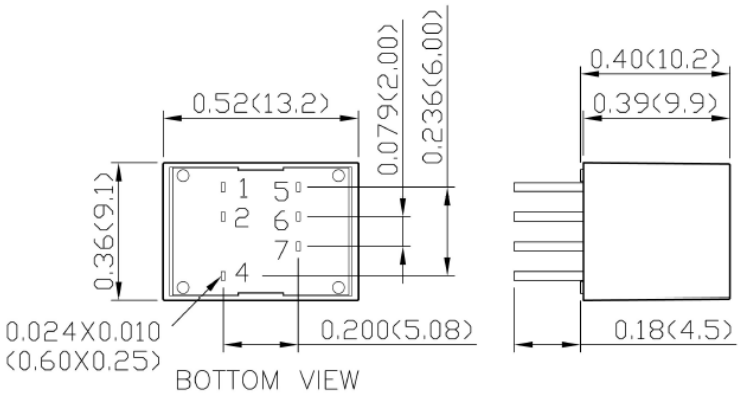


MECHANICAL DRAWINGS

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

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	02	-	12	S	33	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 **S:** SMD	**None:** 1600VDC **H:** 3000VDC

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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