

Plastic Case (Standard)



Size: 0.86 x 0.36 x 0.44 inches

Metal Case (Suffix "M")



Size: 0.86 x 0.38 x 0.44 inches

FEATURES

- 0.86" x 0.44" x 0.36" SIP Package
- High Efficiency up to 87%
- Remote ON/OFF Control
- 4:1 Ultra Wide Input Voltage Ranges
- 6 Watts Maximum Output Power
- Low Standby Power
- No Minimum Load Required
- 1600VDC I/O Isolation (Optional 3000VDC Isolation)
- Short Circuit and Over Current Protection
- Plastic (Standard) & Metal (Suffix "M") Case Types Available
- IEC/ENUL62368-1 Safety Approvals
- RoHS and REACH Compliant

APPLICATIONS

- Automation
- Datacom
- IPC
- Industrial
- Measurement
- Telecom

DESCRIPTION

The DCPDLW06 series of DC/DC power converters provides 6 watts of output power in a 0.86" x 0.44" x 0.36" SIP package. This series has single and dual output models with 4:1 ultra-wide input voltage ranges of 9-36VDC and 18-75VDC. Some features include high efficiency up to 87%, 1600VDC (standard) or 3000VDC (suffix "H") I/O isolation, remote ON/OFF control, and continuous short circuit protection. Both plastic (standard) and metal (suffix "M") case types are available for this series. All models are RoHS and REACH compliant and have IEC/ENUL62368-1 safety approvals. This series is best suited for use in automation, datacom, IPC, industrial, measurement, telecom applications.

MODEL SELECTION TABLE

SINGLE OUTPUT MODELS								
Model Number ⁽¹⁾	Input Voltage Range	Output Voltage	Output Current	Output Ripple & Noise	No Load Input Current	Output Power	Efficiency	Maximum Capacitive Load
DCPDLW06-24S3.3		3.3 VDC	1500mA	50mVp-p	4mA	5W	81%	2200µF
DCPDLW06-24S05		5 VDC	1200mA	50mVp-p	4mA	6W	84%	1100µF
DCPDLW06-24S09	24 VDC	9 VDC	666mA	50mVp-p	4mA	6W	86%	680µF
DCPDLW06-24S12	(9 - 36 VDC)	12 VDC	500mA	75mVp-p	4mA	6W	87%	470µF
DCPDLW06-24S15		15 VDC	400mA	75mVp-p	4mA	6W	88%	470µF
DCPDLW06-24S24		24 VDC	250mA	75mVp-p	4mA	6W	87%	180µF
DCPDLW06-48S3.3		3.3 VDC	1500mA	50mVp-p	4mA	5W	81%	2200µF
DCPDLW06-48S05		5 VDC	1200mA	50mVp-p	4mA	6W	84%	1100µF
DCPDLW06-48S09	48 VDC	9 VDC	666mA	50mVp-p	4mA	6W	85%	680µF
DCPDLW06-48S12	(18 - 75 VDC)	12 VDC	500mA	75mVp-p	4mA	6W	87%	470µF
DCPDLW06-48S15		15 VDC	400mA	75mVp-p	4mA	6W	87%	470µF
DCPDLW06-48S24		24 VDC	250mA	75mVp-p	4mA	6W	87%	180µF

MODEL SELECTION TABLE

DUAL OUTPUT MODELS								
Model Number	Input Voltage Range	Output Voltage	Output Current	Output Ripple & Noise	No Load Input Current	Output Power	Efficiency	Maximum Capacitive Load
DCPDLW06-24D05		±5 VDC	±600mA	50mVp-p	6mA	6W	84%	±680µF
DCPDLW06-24D12		±12 VDC	±250mA	75mVp-p	6mA	6W	87%	±330µF
DCPDLW06-24D15	(9-30 VDC)	±15 VDC	±200mA	75mVp-p	8mA	6W	87%	±180µF
DCPDLW06-48D05		±5 VDC	±600mA	50mVp-p	6mA	6W	84%	±680µF
DCPDLW06-48D12		±12 VDC	±250mA	75mVp-p	6mA	6W	87%	±330µF
DCPDLW06-48D15	(18 - 75 VDC)	±15 VDC	±200mA	75mVp-p	8mA	6W	87%	±180µF



SPECIFICATIONS: DCPDLW06 SERIES										
All specifications are typical at 25°C, Nominal Input, and Full Load unless otherwise noted. We reserve the right to change specifications based on technological advances.										
SPECIFICATIO	ON		TEST COND	DITIONS	Min	Тур	Max	Unit		
INPUT SPECIFI	CATIONS									
Input Voltage Par	200	24VDC nominal input models				24	36	VDC		
Input voltage Rai	iye	48VDC nominal input models				48	75	VDC		
Input Surge Volta	ge (1 sec. max.)	24VDC nominal inp			50	VDC				
	5 ()	48VDC nominal inp		See 7	100 Fable					
Input Filter		NO LOAU				See Table				
OUTPUT SPECI	FICATIONS					Capaci	or type			
Output Voltage						See 7	Fable			
Voltage Accuracy	1		-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 Output Models	-0.5		+0.5	0/2		
				Dual Output Models	-1.0		+1.0	/0		
Cross Regulation	(Dual Output	Asymmetrical load 2	25% / 100% FL		-5.0		+5.0	%		
Output Power						See 7	Fable			
Output Current						See]	Table			
Maximum Capaci	tive Load					See 7	Table			
			3	3.3V, 5V, 9V output model		50		N		
Ripple & Noise		201VIHZ Bandwidth	1	12V, 15V, 24V output models		75		mvp-p		
Transient Respor	nse Recovery Time	25% load step chan	ige			250		μs		
Start-I In Time	Power Up	Constant Resistive	load			30		ms		
	Remote On/Off			30		04.00				
Temperature Coe					-0.02		+0.02	%/°C		
REMOTE UN/U						0.000.000				
DC/DC ON			2	Open or u	~0.5VDC					
Input Current of C	trl Pin		0.5		35	mA				
Remote Off Input	Current				0.0	2.5	0.0	mA		
PROTECTION	Curront					2.0		110 (
Short Circuit Protection					Contir	nuous, aut	omatic reco	overy		
Over Load Protec	tion	% of rated lout; Hice	cup Mode			180		%		
GENERAL SPEC	CIFICATIONS		· ·							
Efficiency		Nominal input voltage and full load				See 7	Fable	ole		
Switching Freque	ncy				522	580	638	KHz		
		Standard models			1600					
Isolation	Input to Output	Suffix "M" models			1600			VDC		
Voltage (1 min)		Suffix "H" models			3000					
0 ()	Input to Case	Suffix "M" models						VDC		
Icolation Posiston										
ISUIALIUN RESISLAI		Standard models					50	612		
Isolation Canacita	ance	Stanuard models					50	nF		
		Suffix "H" models (only available with plastic case)					50	Pi		
			Standard m	odels	-40		+100			
			"M" Suffix models		-40		+100	°C		
Operating Ambient Temperature		With derating	"H" Suffix models		-40		+100			
			M2 Varaian	"M" Suffix models	-55		+100	•		
			-55		+100	C				
Maximum Case Temperature							100	°C		
Storage Temperature							+125	°C		
Relative Humidity	,				5		95	% RH		
Thermal Shock					MIL-STD-810F					
vibration										
MTBF		MIL-HDBK-217F	Standard mod	Hels and Suttix "H" Models	2.928 x 10° Hours					
				000	3.161 x 10° Hours					



SPECIFICATIONS [•] DCPDI W0	6 SERIES							
All specifications are typical at 25°C. Nominal Input and Full Load unless otherwise noted								
We reserve the right to change specifications based on technological advances.								
SPECIFICATION	TEST CONDITIONS Min Typ Max Un							
PHYSICAL SPECIFICATIONS								
	Standard models		0.17oz (4.8g)					
Weight	Suffix "M" models	;		0.21oz	(5.9g)			
	Suffix "H" models			0.17oz	(4.8g)			
	Standard models. Suffix "H" models			0.86in x 0.36in x 0.44in				
Dimensions $(I \times W \times H)$			(21.8	mm x 9.1n	nm x 11.2 n	nm)		
	Suffix "M" models		0.86in x 0.38in x 0.44in					
				(21.8mm x 9.6mm x 11.2mm)				
	Standard models		Non-conductive black plastic					
Case Material	Suffix "M" models	3	Copper					
	Suffix "H" models		Non-conductive black plastic					
Base Material	none							
Potting Material				Silicon (L	L94-V0)			
SAFETY & EMC CHARACTERISTICS	5							
Safety Approvals	IEC/EN/UL62368-1 ⁽³⁾				CB: UL	(Demko)		
EMI	EN55032 With external components				Class A,	Class B		
EMS	EN55035							
ESD	EN61000-4-2 Air ±8KV and Contact ±6KV			Perf. (Criteria A			
Radiated Immunity	EN61000-4-3 20 V/m		Perf. Criter		Criteria A			
Fast Transient ⁽⁴⁾	EN61000-4-4 ±2KV Pe			Perf. C	Criteria A			
Surge ⁽⁴⁾	EN61000-4-5 ±2KV Perf. C			Criteria A				
Conducted Immunity	EN61000-4-6	10 Vrms			Perf. C	Criteria A		
Power Frequency Magnetic Field	EN61000-4-8	100A/m continuous; 1000A/m 1 second			Perf. C	Criteria A		

NOTES

1. Two case types are available for this series. Plastic case is standard; for the metal case add the suffix "M" to the model number. See the model number setup on page 6 for more details.

2. Referred to -Vin pin

3. This product is Listed to applicable standards and requirements by UL.

4. 24Vin: With an aluminum electrolytic capacitor (Nippon chemi-con KY series, 220µF/100V) and a TVS (SMDJ70A, 70V, 3000Watt peak pulse power) in parallel.

48Vin: With an aluminum electrolytic capacitor (Nippon chemi-com KY series, 220µF/100V) and a TVS (SMDJ120A, 120V, 3000Wat peak pulse power) in parallel.

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







EFFICIENCY CURVES



MECHANICAL DRAWINGS



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FUSE CONSIDERATION -

The power module is not internally fused. An input line fuse must always be used. This encapsulated power module can be used in a wide variety of applications, ranging from simple stand-along operation to an integrated part of sophisticated power architecture. To maximize flexibility, internal fusing is not included however to achieve maximum safety and system protection, always use an input line fuse. Suggested input line fuse below: Model Fuse Rating (A) Fuse Type DCPDLW06-24xxx 1.6 Slow-Blow DCPDLW06-48xxx Slow-Blow 1 Table based on the information provided in this data sheet on inrush energy and maximum DC input current at low Vin.

THERMAL CONSIDERATION -

The power module operates in a variety of thermal environments. However, sufficient cooling should be provided to help ensure reliable operation of the unit. Heat is removed by conduction, convection, and radiation to the surrounding environment. Proper cooling can be verified by measuring the point as shows in the figure below. The temperature at this location should not exceed "Maximum case temperature" When operating, adequate cooling must be provided to maintain the test point temperature at or below "Maximum case temperature" You can limit this temperature to a lower level value for extremely high reliability. • Thermal test condition with vertical direction by natural convection (20LFM) Temp: measurement point TOP VIEW

RECOMMENDED PAD LAYOUT -





EMI CONSIDERATION



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MODEL NUMBER SET-

DCPDLW	06 -	- 48	S	12	М	M3
Series Name	Output Power	Input Voltage	Output Quantity	Output Voltage	Assembly Options	Operating Temp. Options
	6: 6 Watts	24: 9-36 VDC	S: Single Output	33: 3.3 VDC	None: Plastic Case w/ 1600VDC isolation	None: Standard -40~100°C with derating
		48: 18-75 VDC		05: 5 VDC	H: Plastic Case w/ 3000VDC Isolation	M3: -55~100°C with derating
				09: 9 VDC	M: Metal Case w/ 1600VDC isolation	Metal Case: -55~100°C with derating
				12: 12 VDC		
				15: 15 VDC		
				24: 24 VDC		
			D: Dual Output	05: ±5 VDC		
				12: ±12 VDC		
				15: ±15 VDC		

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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