Standard Product



Size: 0.55in x 0.30in x 0.40in

Heatsink ("H" Suffix)



Size: 1.26in x 0.32in x 0.43in

FEATURES

- 3.0~5.5VDC & 4.6~36VDC Wide Input Ranges
- RoHS & REACH Compliant
- Small Size and Low Profile
- No Minimum Load Required
- Low Standby Power
- CE Marked
- Optional Heatsink for Cooling
- Pin Out Compatible with LM78XX Linear Regulators
- Over Load, Short Circuit, and Over Temperature Protection
- UL60950-1, EN60950-1, and IEC60950-1 Safety Approvals

DESCRIPTION

The DCPSR2 series of non-isolated DC/DC converters offers up to 30 watts of output power in an ultra-compact package with an optional heatsink. This series consists of single output models with wide input voltage ranges and low standby power. Each model in this series has over load, short circuit, and over temperature protection, is RoHS & REACH compliant, and has UL60950-1, EN60950-1, and IEC60950-1 safety approvals.

MODEL SELECTION TABLE

Model Number(1)	Input Voltage Range	Output Voltage	Output Current @Full Load	Ripple & Noise	Efficiency		Maximum Capacitor Load	Output Power
					Min. Vin.	Max. Vin.		
DCPSR2-5S1P2	3.0~5.5VDC	1.2VDC	2A	50mVp-p	90%	86%	2500µF	Up to 30W
DCPSR2-5S1P5		1.5VDC	2A	50mVp-p	91%	88%	2000µF	
DCPSR2-5S1P8		1.8VDC	2A	50mVp-p	92%	90%	1600µF	
DCPSR2-5S2P5	3.8~5.5VDC	2.5VDC	2A	50mVp-p	95%	92%	1200µF	
DCPSR2-12S1P2	4.6~36VDC	1.2VDC	2A	50mVp-p	84%	75%	2500µF	
DCPSR2-12S1P5		1.5VDC	2A	50mVp-p	86%	77%	2000µF	
DCPSR2-12S1P8		1.8VDC	2A	50mVp-p	87%	79%	1600µF	
DCPSR2-12S2P5		2.5VDC	2A	50mVp-p	89%	83%	1200µF	
DCPSR2-12S3P3	4.75~36VDC	3.3VDC	2A	50mVp-p	91%	86%	900µF	
DCPSR2-12S5	6.5~36VDC	5.0VDC	2A	50mVp-p	94%	89%	600µF	
DCPSR2-12S6P5	9.0~36VDC	6.5VDC	2A	50mVp-p	94%	91%	470µF	
DCPSR2-24S9	12~36VDC	9.0VDC	2A	75mVp-p	95%	92%	330µF	
DCPSR2-24S12	15~36VDC	12VDC	2A	75mVp-p	95%	93%	270µF	
DCPSR2-24S15	18~36VDC	15VDC	2A	75mVp-p	96%	94%	200µF	

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	DCPSR2-5S1P2, DCPSR2-5S1P5, and DCPSR2-5S1P8 Models			3.0	5.0	5.5	VDC
	DCPSR2-5S2P5 Model			3.8	5.0	5.5	
	DCPSR2-12S1P2, DCPSR2-12S1P5, DCPSR2-12S1P8, DCPSR2-12S2P5 Models			4.6	12	36	
	DCPSR2-12S3P3 Model			4.75	12	36	
	DCPSR2-12S5 Model			6.5	12	36	
	DCPSR2-12S6P5 Model			9.0	12	36	
	DCPSR2-24S9 Model			12	24	36	
	DCPSR2-24S12 Model			15	24	36	
	DCPSR2-24S15 Model			18	24	36	
Input Filter				Capacitor Type			
OUTPUT SPECIFICATIONS							
Output Voltage				See Table			
Voltage Accuracy				-2.0		+2.0	%
Line Regulation	Low Line to High Line at Full Load			-0.5		+0.5	%
Load Regulation	No Load to Full Load			-1.0		+1.0	%
Output Power				See Table			
Output Current				See Table			
Dynamic Load Response	50% Load Step Change	Peak Deviation	DCPSR2-24XX Models		300		mV
			Others		150		
		Recovery Time	All		150		µS
Ripple & Noise	Measured by 20MHz Bandwidth	Vout ≤6.5V			50		mVp-p
		Vout≥9.0V			75		
Start-Up Time	Constant Resistive Load	Power Up			5		mS
Temperature Coefficient				-0.02		+0.02	%/ºC

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
PROTECTION						
Short Circuit Protection				Continuous, Automatic Recovery		
Over Load Protection	% of Iout rated, Hiccup Mode	DCPSR2-5SXX		8		A
		Others		3.6		
Over Temperature Protection	Internal IC Junction			+150		ºC
ENVIRONMENTAL SPECIFICATIONS						
Operating Ambient Temperature	With Derating		-40		+100	ºC
Storage Temperature			-55		+125	ºC
Maximum Case Temperature					+105	ºC
Relative Humidity			5		95	%RH
Thermal Shock				MIL-STD-810F		
Vibration				MIL-STD-810F		
MTBF	MIL-HDBK-217F, Full Load			13,520,000		Hours
GENERAL SPECIFICATIONS						
Efficiency				See Table		
Switching Frequency	DCPSR2-5SXX			1200		kHz
	Others			410		
PHYSICAL SPECIFICATIONS						
Weight				0.092oz (2.6g)		
Dimensions (L x W x H)	Standard Model			0.55in x 0.30in x 0.40in (14mm x 7.5mm x 10.1mm)		
	Model with Heatsink (“H” Suffix)			1.26in x 0.35in x 0.43in (32mm x 9mm x 10.9mm)		
Case Material				Non-Conductive Black Plastic		
Potting Material				Silicone (UL94 V-0)		
SAFETY CHARACTERISTICS						
Safety Approvals	UL60950-1 EN60950-1 IEC60905-1					

NOTES

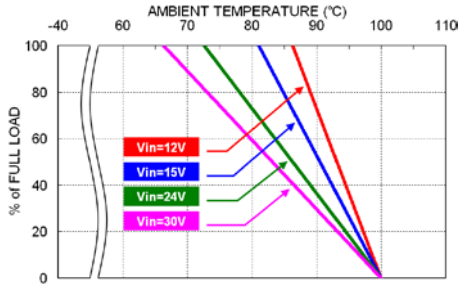
1. Heatsink is available for all models. To indicate heatsink option add “H” to the end of model number. Ex DCPSR2-5S1P2H
   -Due to high output power of DCPSR2-24SXX heatsink is able to be operated at least 50ºC ambient temperature without derating when applied input voltage does not exceed 30V. Other models can meet this condition without heatsink. Heatsink can be installed for higher operating ambient temperature as well. For more information, please contact factory.
2. For DCPSR2-12SXX and DCPSR3-24SXX the input should install an external 22µF/50V E/C only if the input will be switched electromechanically.

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

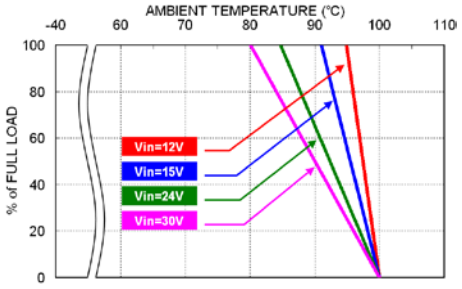
**Due to advances in technology, specifications subject to change without notice.*

DERATING CURVES

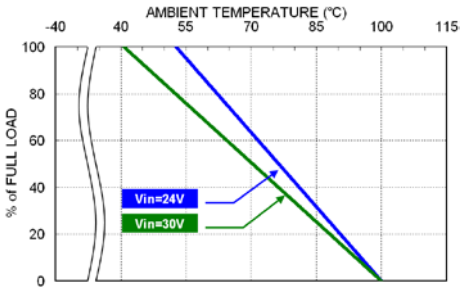
DCPSR2-12S05 Derating Curve



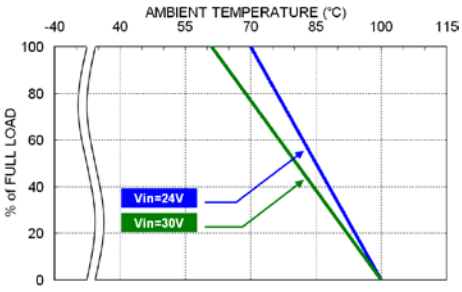
DCPSR2-12S05H Derating Curve



DCPSR2-24S15 Derating Curve

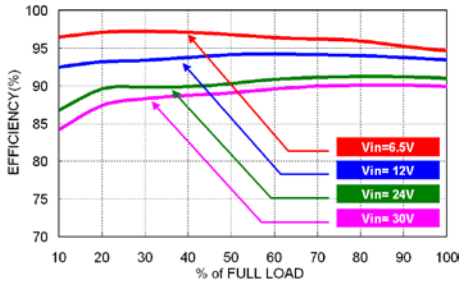


DCPSR2-24S15H Derating Curve

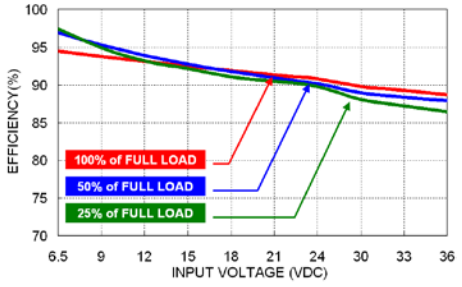


EFFICIENCY GRAPHS

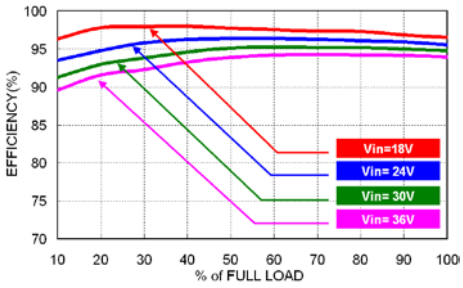
DCPSR2-12S05 Efficiency vs. Output Load



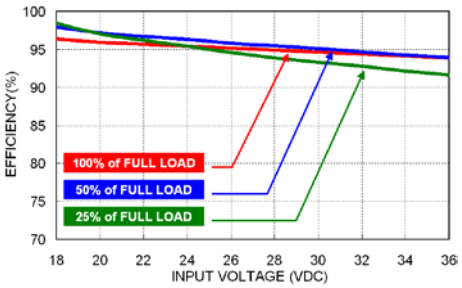
DCPSR2-12S05 Efficiency vs. Output Load



DCPSR2-24S15 Efficiency vs. Output Load

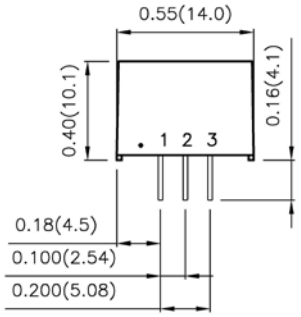


DCPSR2-24S15 Efficiency vs. Input Voltage



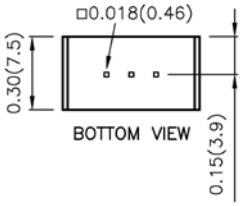
MECHANICAL DRAWINGS

Standard Models

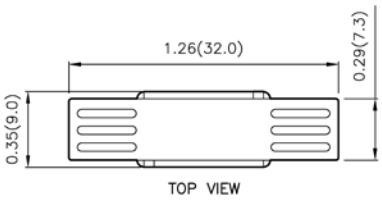


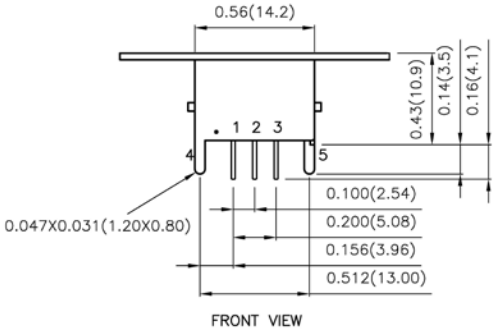
PIN CONNECTION

PIN	DEFINE
1	+Vin
2	GND
3	+Vout



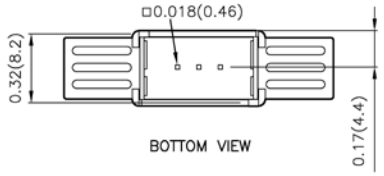
Heatsink Option (“H” Suffix)





PIN CONNECTION

PIN	DEFINE
1	+Vin
2	GND
3	+Vout
4	Case
5	Case



Notes:
All dimensions in inch (mm)
Tolerance: x.xx±0.02 (x.x±0.5)
x.xxx±0.01 (x.xx±0.25)
Pin pitch tolerance ±0.01 (0.25)
Pin dimension tolerance ±0.004 (0.1)

MODEL NUMBER SETUP

DCPSR2	-	5	S	1P5	H
Series Name		Input Voltage	Output Quantity	Ouptut Voltage	Remote On/Off & Pin Length
		5: 3.0~5.5VDC 3.8~5.5VDC **12:** 4.6~36VDC 4.75~36VDC 6.5~36VDC 9.0~36VDC **24:** 12~36VDC 15~36VDC 18~36VDC	**S:** Single	**1P2:** 1.2VDC **1P5:** 1.5VDC **1P8:** 1.8VDC **2P5:** 2.5VDC **3P3:** 3.3VDC **05:** 5VDC **6P5:** 6.5VDC **09:** 9VDC **12:** 12VDC **15:** 15VDC	**Blank:** No Heatsink **H:** Heatsink

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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