

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		1.2VDC	2A	50mVp-p	84%	75%	2500µF	
DCPSR2-12S1P5	4.6~36VDC	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	
Input Filter	DCPSR2-24S15 Model			18	24	36	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	%/°C

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 I _{out} rated, Hiccup Mode	DCPSR2-5SXX	8		A
		Others	3.6		
Over Temperature Protection	Internal IC Junction		+150		°C
ENVIRONMENTAL SPECIFICATIONS					
Operating Ambient Temperature	With Derating	-40		+100	°C
Storage Temperature		-55		+125	°C
Maximum Case Temperature				+105	°C
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 ⁽³⁾ EN60950-1 IEC60905-1			

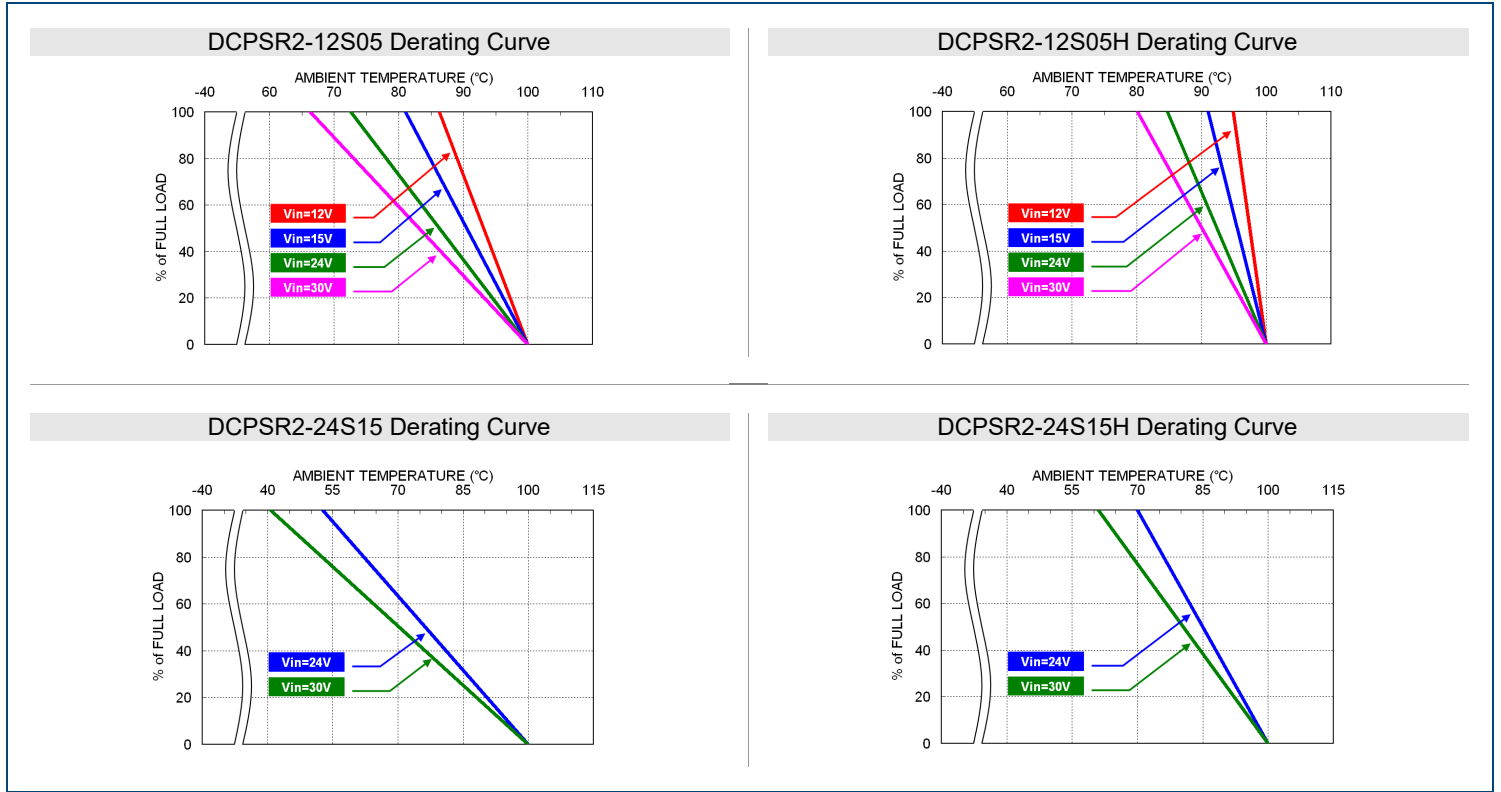
NOTES

- 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 50°C 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.
- For DCPSR2-12SXX and DCPSR3-24SXX the input should install an external 22µF/50V E/C only if the input will be switched electromechanically.
- This product is Listed to applicable standards and requirements by UL.

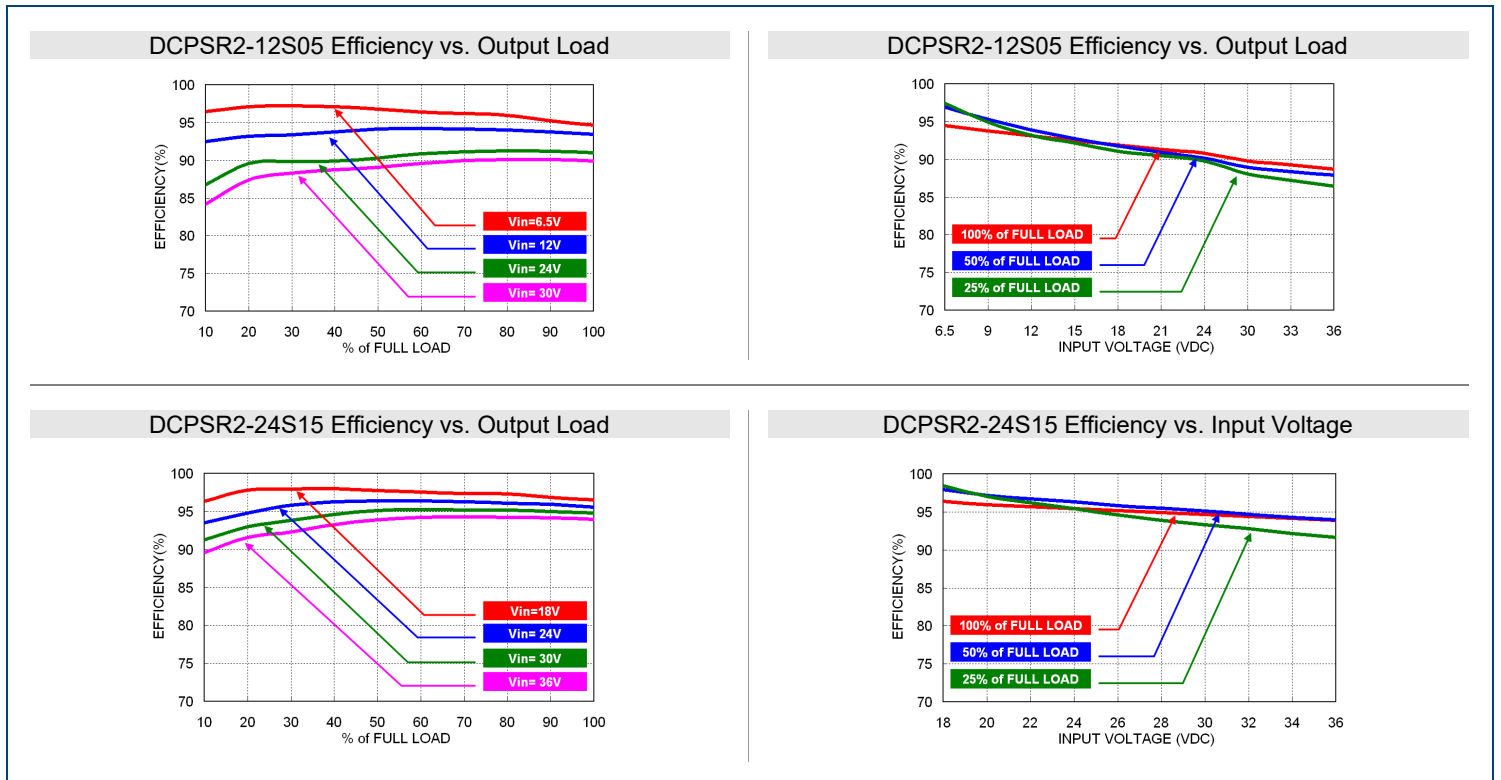
CAUTION: This power module is not internally fused. An input fuse must always be used.

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

DERATING CURVES

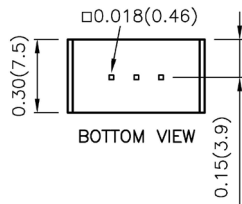
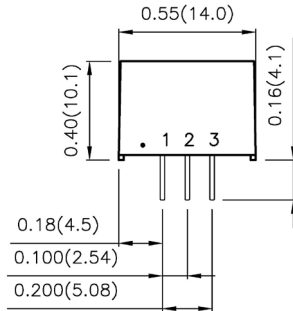


EFFICIENCY GRAPHS



MECHANICAL DRAWINGS

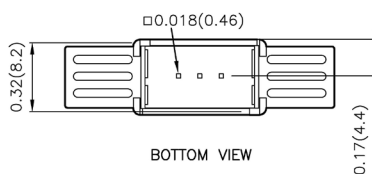
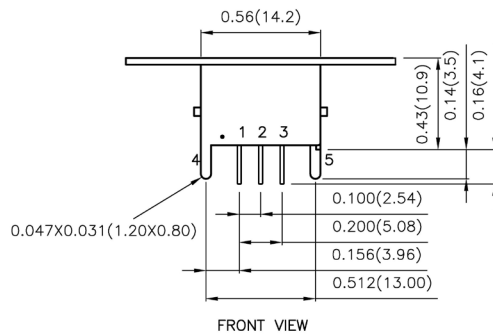
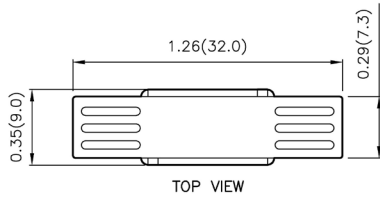
Standard Models



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	Ouput 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 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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