

Product Specification

Encapsulated DC-DC Converter

Key Product Features

- The Smallest Dimension in the Market
- Smaller Dimension with High Efficiency
- 2:1 Input Range
- Regulated Output
- Low Ripple and Noise
- Screw Terminal For Optional
- Remote ON/OFF Control (Optional)
- Operating Temperature: -40°C...+85°C (with derating)
- Small Size :1.0 x 1.0 x 0.433 Inches

DPSW20 Series 20 Watt



Product Specification

Model	DPSW20-12-3.3S	DPSW20-12-5S	DPSW20-12-12S	DPSW20-12-15S
Input Voltage (VDC)	12V (9-18V)	12V (9-18V)	12V (9-18V)	12V (9-18V)
Output Voltage (VDC)	3.3V / 4500mA	5V / 4000mA	12V / 1660mA	15V / 1330mA
Efficiency	85%	89%	88%	87%
Capacitor Load (max)	2000µF	2000µF	470µF	330µF

Model	DPSW20-24-3.3S	DPSW20-24-5S	DPSW20-24-12S	DPSW20-24-15S
Input Voltage (VDC)	24V (18-36V)	24V (18-36V)	24V (18-36V)	24V (18-36V)
Output Voltage (VDC)	3.3V / 4500mA	5V / 4000mA	12V / 1660mA	15V / 1330mA
Efficiency	86%	89%	89%	88%
Capacitor Load (max)	2000µF	2000µF	470µF	330µF

Model	DPSW20-48-3.3S	DPSW20-48-5S	DPSW20-48-12S	DPSW20-48-15S
Input Voltage (VDC)	48V (36-75V)	48V (36-75V)	48V (36-75V)	48V (36-75V)
Output Voltage (VDC)	3.3V / 4500mA	5V / 4000mA	12V / 1660mA	15V / 1330mA
Efficiency	84%	88%	89%	88%
Capacitor Load (max)	2000µF	2000µF	470µF	330µF

NOTES

1. All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated.
2. Ripple & Noise are measured at 20MHz of bandwidth with 0.1µF & 47µF parallel capacitor.

Model	(Single Output)	DPSW20-12-3.3S DPSW20-24-3.3S DPSW20-48-3.3S	DPSW20-12-5S DPSW20-24-5S DPSW20-48-5S	DPSW20-12-12S DPSW20-24-12S DPSW20-48-12S	DPSW20-12-15S DPSW20-24-15S DPSW20-48-15S
Max Output Wattage (W)		14.85W	20W	20W	20W
Input					
Input Filter		L-C type			
Output					
Voltage (VDC)		3.3	5	12	15
Voltage Accuracy		±2%			
Current (mA) max		4500	4000	1660	1330
Line Regulation (LL-HL) (typ.)		±0.5%			
Load Regulation (10-100%) (typ.)		±1%			
Ripple		75 mV max.		100mV max.	
Noise		100mV max.		125mV max.	
Switching Frequency		450KHz		300KHz	

Protection	
Over Power Protection	Works over 120% of rating and recovers automatically
Over Voltage Protection	Zener diode clamp
Short Circuit Protection	Current limit, auto-recovery

Isolation	
Voltage	1600 VDC.
Resistance	10 ⁸ ohms
Capacitance	1000 pF

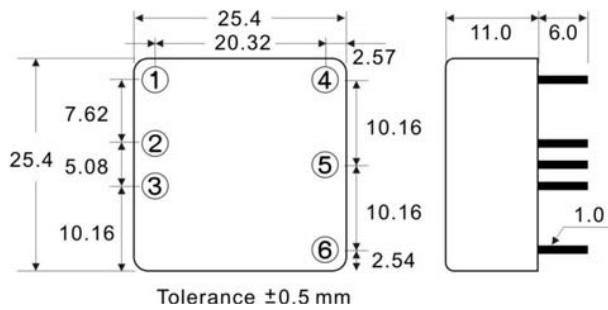
Environment	
Operating Temperature	-40°C...+85°C (with derating)
Storage Temperature	-55°C...+105°C
Case Temperature	+105°C max
Temperature Coefficient	±0.02% Per°C
Humidity	95% RH
MTBF	>800,000h @ 25°C (MIL-HDBK-217F)

Physical	
Dimension (L x W x H)	1.0 x 1.0 x 0.433 Inches (25.4 x 25.4 x 11.0 mm) Tolerance ±0.5%
Case Material	six-side shielded Aluminum with Non-Conductive base, Black Anodize
Weight	15g
Cooling Method	Free-air convection

Model No.	(Single Output)	DPSW20-12-3.3S DPSW20-24-3.3S DPSW20-48-3.3S	DPSW20-12-5S DPSW20-24-5S DPSW20-48-5S	DPSW20-12-12S DPSW20-24-12S DPSW20-48-12S	DPSW20-12-15S DPSW20-24-15S DPSW20-48-15S
Remote ON/OFF	DC-DC ON	Open or +5 VDC ~ +15 VDC			
	DC-DC OFF	When -DC IN and ON/OFF CTL is Short (or 0 VDC ~ +0.5VDC)			
	Input Current of Remote Control Pin	1mA			
	Remote off State Input Current	4mA			

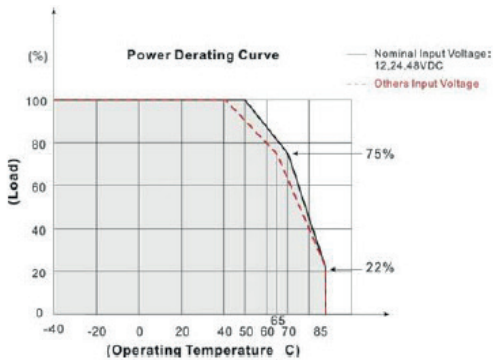
- 1.All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.
- 2.Ripple & Noise are measured at 20MHz of bandwidth with 0.1UF & 47UF parallel capacitor.

Mechanical Specifications

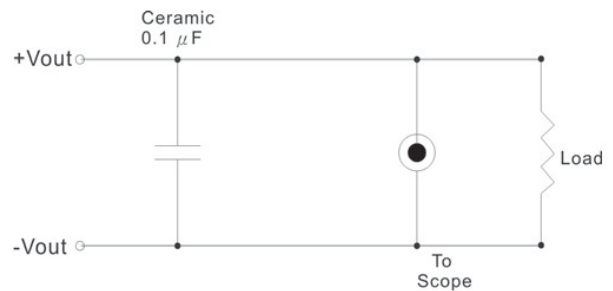


PIN#	Single
1	ON / OFF CTL
2	-DC IN
3	+DC IN
4	-DC OUT
5	NO PIN
6	+DC OUT

Derating



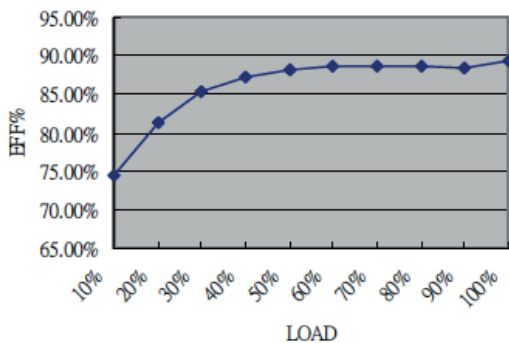
Output noise



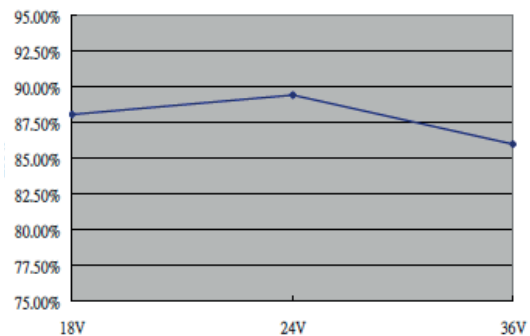
The output noise is measured with 0.1 μF tantalum capacitor.

DPSW20-24-5S Efficiency

Load = 100% (4A)



Vin = 24 VDC

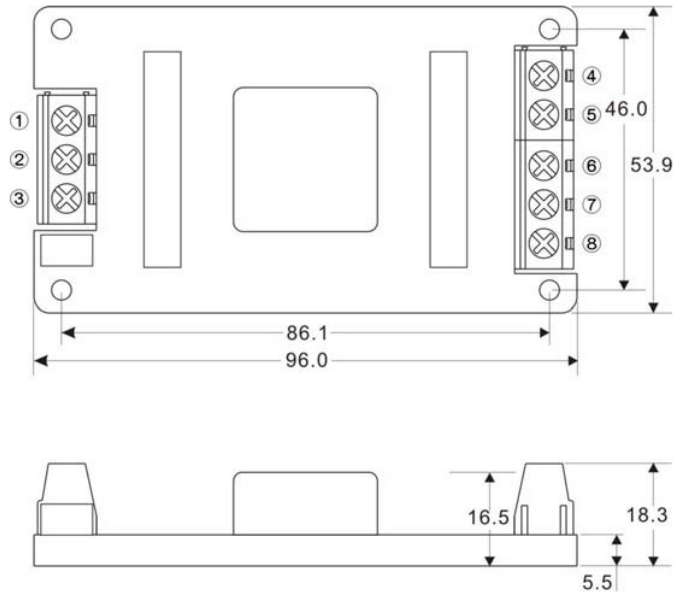


Screw terminal

DPSW20-A2



PIN#	Single
1	CTRL
2	-DC IN
3	+DC IN
4	-DC OUT
5	NO CONNECT
6	NO CONNECT
7	NO CONNECT
8	+DC OUT



DPSW20-A5



PIN#	Single
1	CTRL
2	-DC IN
3	+DC IN
4	-DC OUT
5	NO CONNECT
6	NO CONNECT
7	NO CONNECT
8	+DC OUT

