

Size: 1.10in x 0.94in x 0.34in (27.9mm x 23.9mm x 8.5mm)

OPTIONS

- SMT Type
- Without Trim Pin
- Without ON/OFF Pin
- Negative Logic Remote ON/OFF

FEATURES

- 15 Watts Maximum Output Power
- Single Output up to 4A
- Cost Efficient Open Frame Design
- Small Size and Low Profile
- High Efficiency up to 87%
- 4:1 Ultra Wide Input Voltage Range
- Fixed Switching Frequency
- Input to Output Isolation: 2250VDC
- CE Marked
- RoHS II & REACH
- No Minimum Load Requirement
- Output Voltage Adjustability
- Industry Standard Pin-Out
- Negative or Positive Remote ON/OFF Control
- Short Circuit, Over Current, Over Voltage, and Input Under Voltage Protection
- Surface Mount and Through Hole Types Available
- SMT Package Qualified for Lead-free Reflow Solder Process According to IPC J-STD-020D
- UL60950-1, EN60950-1, & IEC60950-1 Safety Approvals

APPLICATIONS

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

DESCRIPTION

The JFW series of DC/DC power converters provides up to 15 Watts of output power in a low profile industry standard package and footprint. These converters have single outputs and operate over 4:1 input voltage ranges of 9-36VDC and 18-75VDC. These units are also protected against short circuit, over current, over voltage, and input under voltage conditions. Some features include high efficiency up to 87%, adjustable output voltage, and positive or negative remote ON/OFF control. These converters are RoHS compliant and have UL60950-1, EN60950-1, and IEC60950-1 safety approvals. Both surface mount ("S" suffix) and DIP (standard) packages are available.

MODEL SELECTION TABLE

Model Number	Input Voltage Range	Output Voltage	Output Current		Ripple & Noise ⁽¹⁾	Input Current		Output Power	Maximum Capacitive Load ⁽¹⁾	Efficiency ⁽⁴⁾
			Min Load	Max Load		No Load ⁽²⁾	Full Load ⁽³⁾			
JFW24S3.3-4000	24VDC (9-36VDC)	3.3VDC	0mA	4000mA	100mVp-p	60mA	680mA	13W	12000µF	85%
JFW24S5-3000		5VDC	0mA	3000mA	100mVp-p	70mA	754mA	15W	6000µF	87%
JFW24S12-1300		12VDC	0mA	1300mA	100mVp-p	10mA	793mA	15W	1000µF	86%
JFW24S15-1000		15VDC	0mA	1000mA	100mVp-p	10mA	763mA	15W	660µF	86%
JFW48S3.3-4000	48VDC (18-75VDC)	3.3VDC	0mA	4000mA	100mVp-p	40mA	340mA	13W	12000µF	85%
JFW48S5-3000		5VDC	0mA	3000mA	100mVp-p	40mA	377mA	15W	6000µF	87%
JFW48S12-1300		12VDC	0mA	1300mA	100mVp-p	10mA	392mA	15W	1000µF	86%
JFW48S15-1000		15VDC	0mA	1000mA	100mVp-p	10mA	382mA	15W	660µF	86%

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	24VDC nominal input models		9	24	36	VDC	
	48VDC nominal input models		18	48	75		
Input Reflected Ripple Current	Nominal input and Full Load			30		mAp-p	
Start-Up Voltage	24VDC nominal input models				9	VDC	
	48VDC nominal input models				18		
Shutdown Voltage	24VDC nominal input models			8		VDC	
	48VDC nominal input models			16			
Input Surge Voltage (100ms)	24VDC nominal input models				50	VDC	
	48VDC nominal input models				100		
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		-0.2		+0.2	%	
Voltage Adjustability ⁽⁵⁾			-10		+10	%	
Output Power			See Table				
Output Current			See Table				
Maximum Capacitive Load			See Table				
Ripple & Noise (20MHz bandwidth)	Measured by 20MHz bandwidth, with a 1μF M/C X7R and a 10μF T/C			100		mVp-p	
Transient Response Recovery Time	25% load step change			250		μs	
Start-Up Time	Constant Resistive Load	Power Up			30	ms	
		Remote ON/OFF			30		
Temperature Coefficient			-0.02		+0.02	%/°C	
REMOTE ON/OFF CONTROL ⁽⁶⁾							
Positive Logic (Standard)	DC-DC ON		Open or 3~15VDC				
	DC-DC OFF		Short or 0~1.2VDC				
Negative Logic (Option)	DC-DC ON		Short or 0~1.2VDC				
	DC-DC OFF		Open or 3~15VDC				
Input Current of CTRL Pin			-0.5		1.0	mA	
Remote OFF Input Current				2.5		mA	
PROTECTION							
Short Circuit Protection			Continuous, automatics recovery				
Over Load Protection	% of Iout rated; Hiccup mode			150		%	
Over Voltage Protection	3.3VDC Models		3.7		5.4	VDC	
	5VDC Models		5.6		7.0		
	12VDC Models		13.8		17.5		
	15VDC Models		16.8		20.5		
ENVIRONMENTAL SPECIFICATIONS							
Operating Ambient Temperature	With derating		-40		+120	°C	
Storage Temperature			-55		+125	°C	
Relative Humidity			5		95	% RH	
Thermal Shock			MIL-STD-810F				
Vibration			MIL-STD-810F				
Lead-free reflow solder process			IPC J-STD-020D				
Moisture Sensitivity Level (MSL)			IPC J-STD-033B Level 2a				
MTBF	MIL-HDBK-217F, Full Load		2,444,000 hours				
GENERAL SPECIFICATIONS							
Efficiency			See Table				
Switching Frequency	3.3VDC and 5VDC output models		315	350	385	kHz	
	12VDC and 15VDC output models		360	400	440		
Isolation Voltage (Input to Output)	For 1 minute		2250			VDC	
Isolation Resistance	500VDC		1			GΩ	
Isolation Capacitance					1500	pF	
PHYSICAL SPECIFICATIONS							
Weight			0.36oz (10.5g)				
Dimensions (L x W x H)			1.10in x 0.94in x 0.34in (27.9mm x 23.9mm x 8.5mm)				

SPECIFICATIONS

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SPECIFICATION	TEST CONDITIONS		Min	Typ	Max	Unit
SAFETY & EMC CHARACTERISTICS						
Safety Approvals	UL60950-1 EN60950-1 IEC60950-1					
EMI ⁽⁷⁾	EN55022		Class A Class B			
Radiated Immunity	EN61000-4-3	10 V/m	Perf. Criteria A			
Fast Transient ⁽⁸⁾	EN61000-4-4	±2kV	Perf. Criteria A			
Surge ⁽⁸⁾	EN61000-4-5	±1kV	Perf. Criteria A			
Conducted Immunity	EN61000-4-6	3 Vr.m.s	Perf. Criteria A			

NOTES

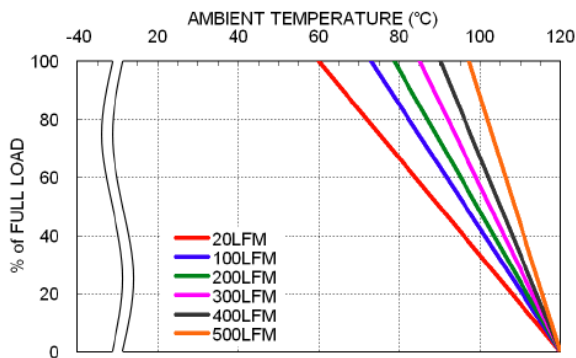
- (1) Typical Value at Nominal Input Voltage and Full Load
- (2) Typical Value at Nominal Input Voltage and No Load
- (3) Maximum Value at Nominal Input Voltage and Full Load
- (4) Test by Minimum Input and Constant Resistive Load
- (5) Trimming allows the user to increase or decrease the output voltage set point of the module. This is accomplished by connecting an external resistor between the TRIM pin and either the +OUTPUT pin or the -OUTPUT pin.
- (6) The CTRL pin voltage is referenced to -INPUT. (See "Product Options" table for suffix options)
- (7) The JFW Series meets EN55022 Class A and Class B only with external components connected to the input pins of the converter.
- (8) An external filter capacitor is required if the module has to meet EN61000-4-4 and EN61000-4-5.
The filter capacitor suggested is Nippon chemi-con KY series, 220µF/100V, ESR 48mΩ.

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

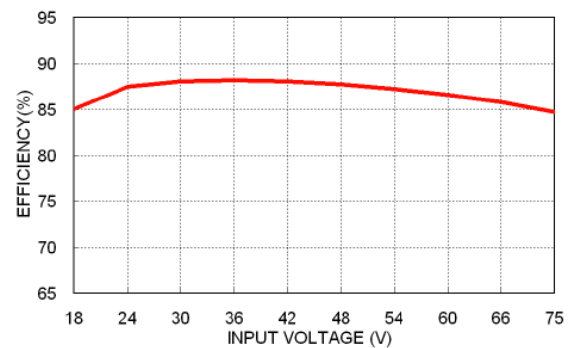
**Due to advances in technology, specifications subject to change without notice.*

CHARACTERISTIC CURVES

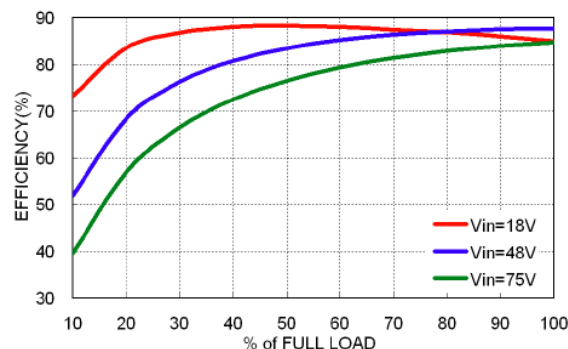
JFW48S5-3000 Derating Curve



JFW48S5-3000 Efficiency vs Input Voltage

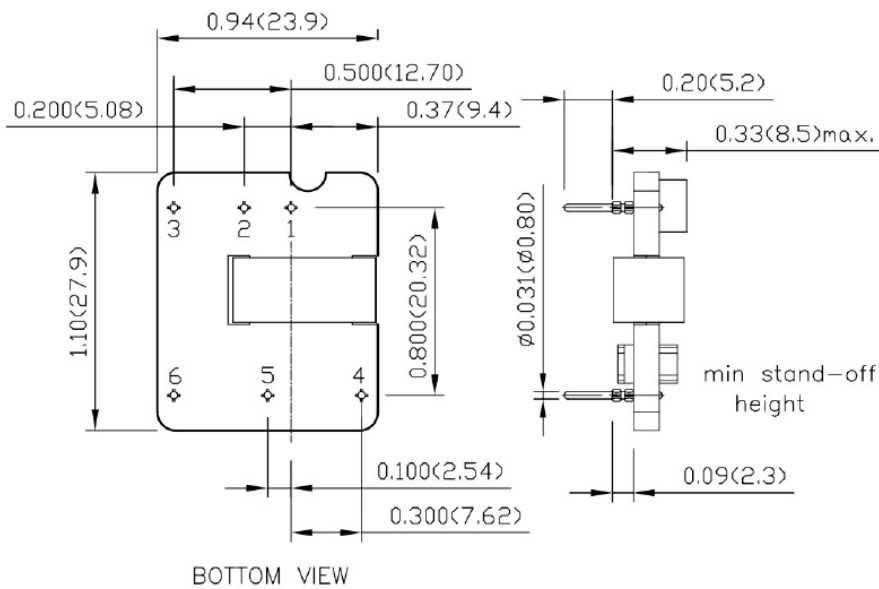


JFW48S5-3000 Efficiency vs Output Current

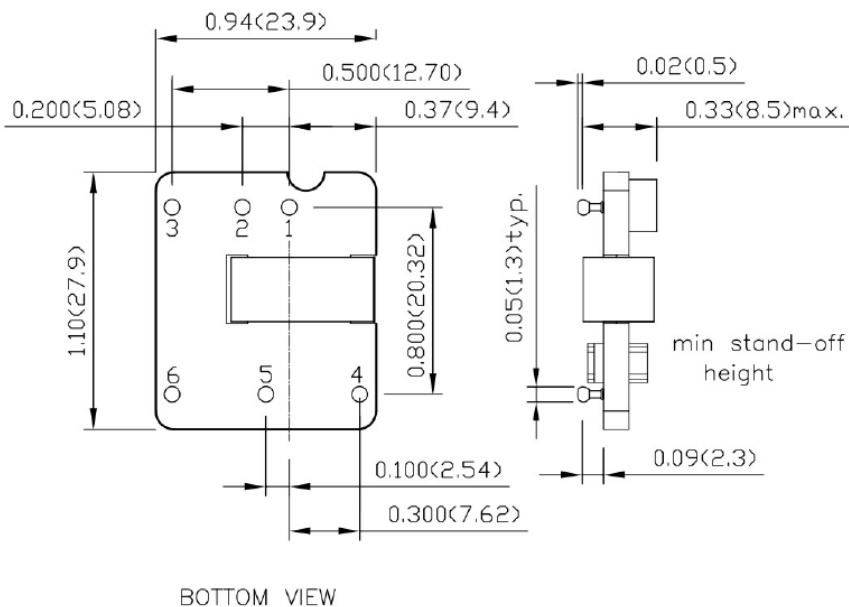


MECHANICAL DRAWINGS

DIP TYPE



SMT TYPE

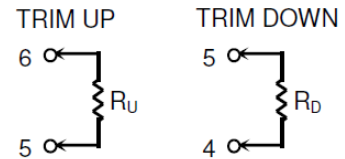


PIN CONNECTION

PIN	DEFINE
1	+Vin
2	-Vin
3	Ctrl
4	+Vout
5	Trim
6	-Vout

EXTERNAL OUTPUT TRIMMING

Output can be externally trimmed by using the method shown below.



1. All dimensions in inch (mm)
2. Tolerance: $x.xx \pm 0.02$ ($x.x \pm 0.5$)
 $x.xxx \pm 0.01$ ($x.xx \pm 0.25$)
3. Pin pitch tolerance ± 0.01 (0.25)
4. Pin dimension tolerance ± 0.004 (0.1)

PRODUCT OPTIONS

Option	Suffix
Positive Remote ON/OFF with DIP (standard)	No Suffix
Positive remote ON/OFF with SMT	S
Negative Remote ON/OFF with DIP	R
Negative Remote ON/OFF with SMT	SR
DIP type without ON/OFF pin	D
SMT type without ON/OFF pin	SD
DIP type without ON/OFF & TRIM pin	G
SMT type without ON/OFF & TRIM pin	SG
DIP type, negative remote ON/OFF, without TRIM pin	F
SMT type, negative remote ON/OFF, without TRIM pin	SF
DIP type, positive remote ON/OFF, without TRIM pin	J
SMT type, positive remote ON/OFF, without TRIM pin	SJ

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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