

Size: 1.10in x 0.94in x 0.34in (27.9mm x 23.9m 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 <sup>(1)</sup>	Input Current		Output Power	Maximum Capacitive Load <sup>(1)</sup>	Efficiency <sup>(4)</sup>
			Min Load	Max Load		No Load <sup>(2)</sup>	Full Load <sup>(3)</sup>			
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
<b>INPUT SPECIFICATIONS</b>					
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	
<b>OUTPUT SPECIFICATIONS</b>					
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 <sup>(5)</sup>		-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
<b>REMOTE ON/OFF CONTROL<sup>(6)</sup></b>					
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
<b>PROTECTION</b>					
Short Circuit Protection		Continuous, automatic recovery			
Over Load Protection	% of I <sub>out</sub> 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	
<b>ENVIRONMENTAL SPECIFICATIONS</b>					
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			
<b>GENERAL SPECIFICATIONS</b>					
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
<b>PHYSICAL SPECIFICATIONS</b>					
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**

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
<b>SAFETY &amp; EMC CHARACTERISTICS</b>						
Safety Approvals						UL60950-1 EN60950-1 IEC60950-1
EMI <sup>(7)</sup>	EN55022					Class A Class B
Radiated Immunity	EN61000-4-3	10 V/m				Perf. Criteria A
Fast Transient <sup>(8)</sup>	EN61000-4-4	±2kV				Perf. Criteria A
Surge <sup>(8)</sup>	EN61000-4-5	±1kV				Perf. Criteria A
Conducted Immunity	EN61000-4-6	3 Vr.m.s				Perf. Criteria A

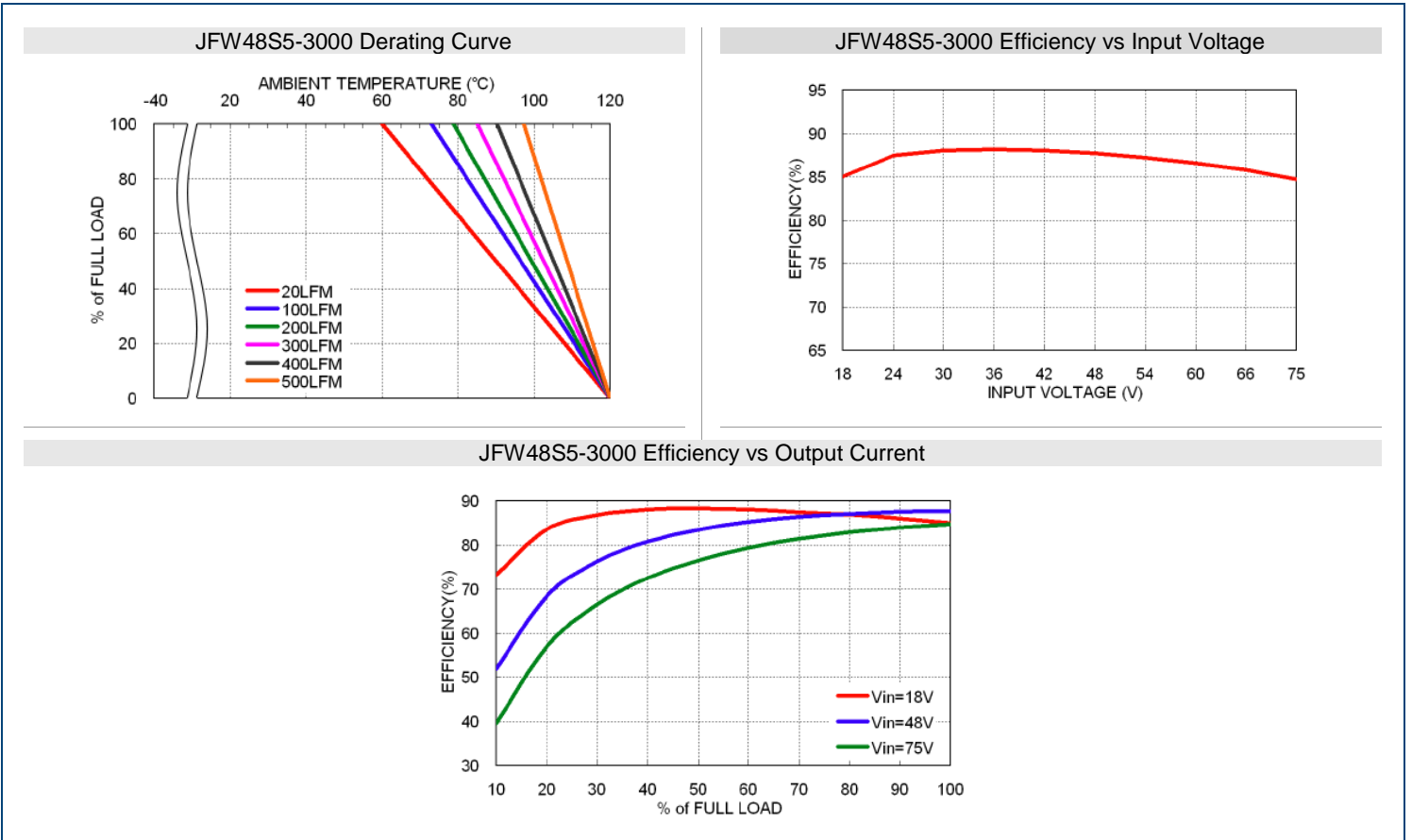
**NOTES**

- (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.

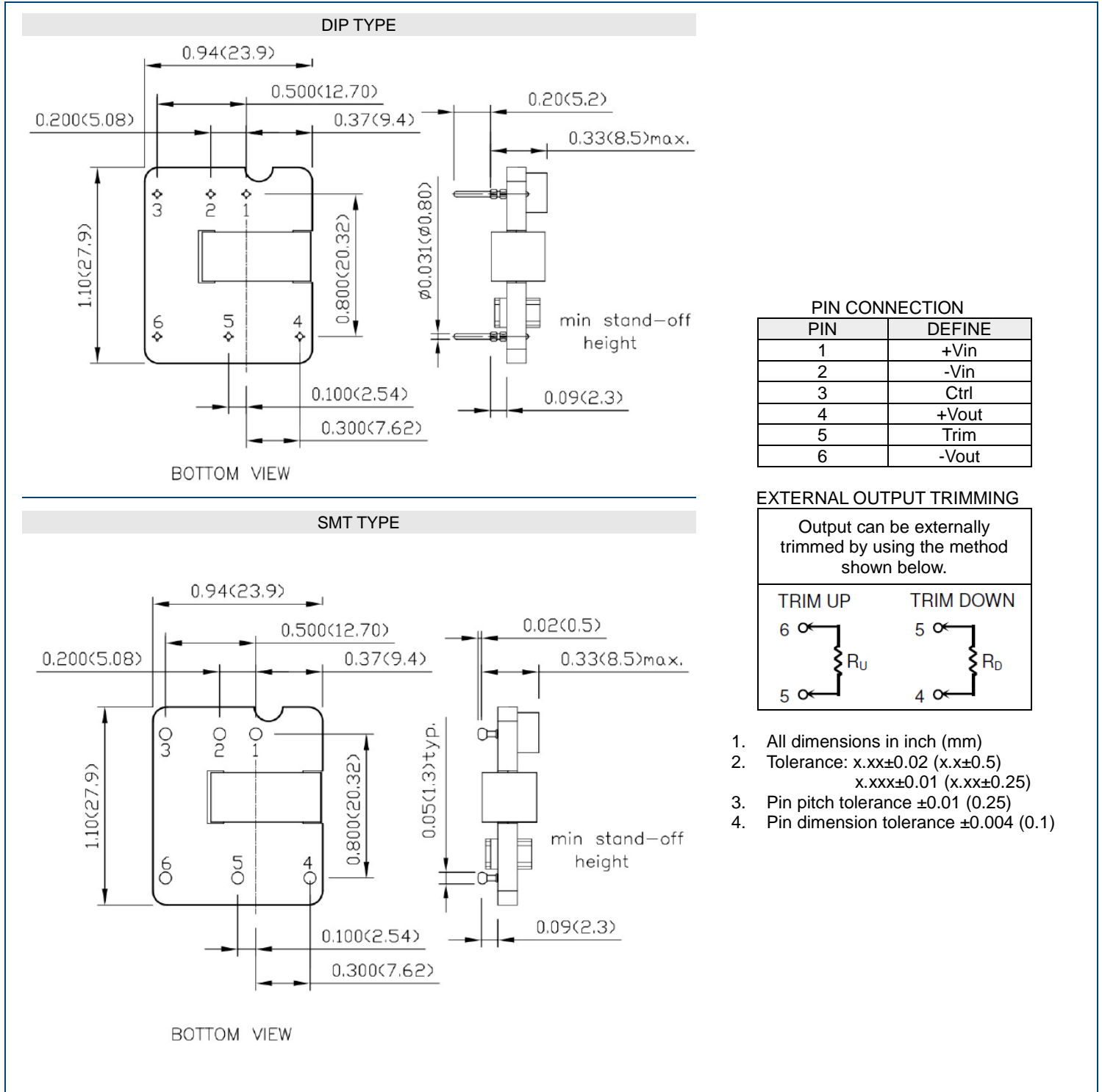
**CAUTION:** This power module is not internally fused. An input line fuse must always be used.

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

**CHARACTERISTIC CURVES**



MECHANICAL DRAWINGS



---

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.

Contact **Wall Industries** for further information:

Phone: ☎ (603)778-2300  
Toll Free: ☎ (888)597-9255  
Fax: ☎ (603)778-9797  
E-mail: [sales@wallindustries.com](mailto:sales@wallindustries.com)  
Web: [www.wallindustries.com](http://www.wallindustries.com)  
Address: 37 Industrial Drive  
Exeter, NH 03833