

FEATURES

- 10 Watts Output Power
- High Efficiency up to 86%
- Fixed Switching Frequency
- Six-Sided Continuous Shield
- 4:1 Wide Input Voltage Range
- Standard 2 x 1 x 0.4 inch Package
- International Safety Standard Approval
- Options: Add suffix “-I” for Extended Operating Temperature Range



SPECIFICATIONS: JRW Ultra Wide Series

All specifications apply @ 25°C ambient unless otherwise noted

INPUT SPECIFICATIONS

Input Voltage Range	24V nominal input	9 - 36VDC
	48V nominal input	18 - 75VDC
Input Filter		Pi Type
Input Surge Voltage (100ms max)	24V input	50VDC
	48V input	100VDC
Input Reflected Ripple Current (See Note 2)		30mA _{p-p} (nominal Vin and full load)
Start Up Time (nominal Vin and constant resistive load)		20ms typ.
Remote ON/OFF (Option) (See Note 3)		
(Positive Logic)	DC-DC ON	Open or 3.5V < Vr < 12V
	DC-DC OFF	Short or 0V < Vr < 1.2V
(Negative Logic)	DC-DC ON	Short or 0V < Vr < 1.2V
	DC-DC OFF	Open or 3.5V < Vr < 12V
Remote Off Input Current (nominal Vin)		20mA

OUTPUT SPECIFICATIONS

Output Voltage		see table
Voltage Accuracy (nominal Vin and full load)		±1%
Output Current		see table
Output Power		10 watts max.
Line Regulation (LL to HL at FL)		±0.2%
Load Regulation (10% - 100 % FL)	Single Output	±0.5%
	Dual Output	±1%
Cross Regulation (Dual) (Asymmetrical load 25% / 100% FL)		±5%
Minimum Load (See Note 1)		10% of full load
Ripple/Noise (20 MHz BW)	Single Output	50mV _{p-p}
	Dual Output	75mV _{p-p}
Temperature Coefficient		±0.02% / °C max.
Transient Response Recovery Time (25% load step)		250us

PROTECTION SPECIFICATIONS

Over Voltage Protection (zener diode clamp)	3.3V output	3.9V
	5V output	6.2V
	12V output	15V
	15V output	18V
Over Load Protection (% of full load at nominal input)		150% max.
Short Circuit Protection		Hiccup, automatic recovery

GENERAL SPECIFICATIONS

Efficiency	see table
Switching Frequency	300KHz typ.
Isolation Voltage (Input to Output)	1600VDC min.
Isolation Resistance	10 ⁹ ohms min.
Isolation Capacitance	300pF max.

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature (See derating curves)	
Standard	-25°C ~ +85°C (with derating)
“I” (See Note 5)	-40°C ~ +85°C (with derating)
Storage Temperature	-55°C ~ +105°C
Maximum Case Temperature	100°C
Relative Humidity	5% to 95% RH
Thermal Impedance (See Note 6)	
Natural Convection	12°C / Watt
Natural Convection with Heat-Sink	10°C / Watt
Thermal Shock	MIL-STD-810D
Vibration	10~55Hz, 10G, 30 minutes along X, Y, and Z
MTBF (See Note 4)	1.976 x 10 ⁶ hours

PHYSICAL SPECIFICATIONS

Weight	27g (0.95 oz)
Dimensions	2.0 x 1.0 x 0.40 inches (50.8 x 25.4 x 10.2 mm)
Case Material	Nickel-coated copper
Base Material	Non-conductive black plastic
Potting material	Epoxy (UL94-V0)
Shielding	six-sided

SAFETY & EMC

Approvals and Standards	IEC60950-1, UL60950-1, EN60950-1
Conducted Emissions	EN55022 Class A
Radiated Emissions	EN55022 Class A
	EN55022 (See Note 7) Class B
ESD	EN61000-4-2 Perf. Criteria B
Radiated Immunity	EN61000-4-3 Perf. Criteria A
Fast Transient	EN61000-4-4 Perf. Criteria B
Surge	EN61000-4-5 Perf. Criteria B
Conducted Immunity	EN61000-4-6 Perf. Criteria A

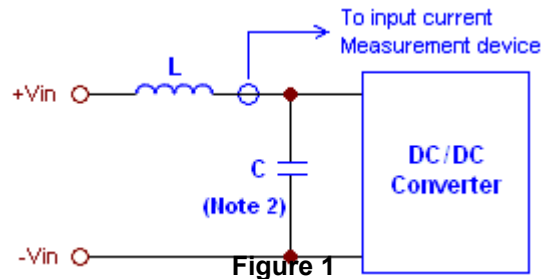
Due to advances in technology, specifications subject to change without notice

OUTPUT VOLTAGE / CURRENT RATING CHART

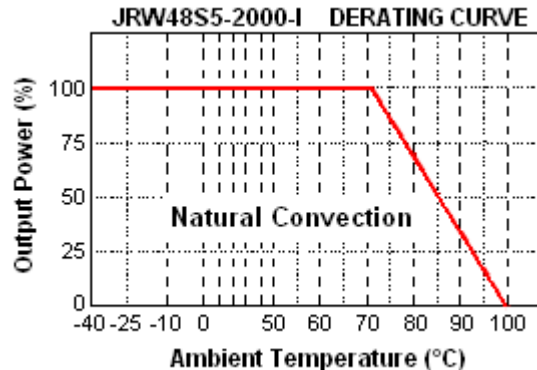
Model Number	Input Range	Output Voltage	Output Current	Output Ripple & Noise	Input Current ⁽⁸⁾	Efficiency ⁽⁹⁾	Capacitor ⁽¹⁰⁾ Load max
JRW24S33-2500	24 VDC (9 – 36 VDC)	3.3 VDC	2500mA	50mVp-p	465mA	78%	6800µF
JRW24S5-2000		5 VDC	2000mA	50mVp-p	548mA	80%	4700µF
JRW24S12-830		12 VDC	830mA	50mVp-p	519mA	84%	690µF
JRW24S15-660		15 VDC	670mA	50mVp-p	544mA	81%	470µF
JRW24D5-1000		± 5 VDC	±1000mA	75mVp-p	534mA	82%	±680µF
JRW24D12-420		± 12 VDC	±416mA	75mVp-p	547mA	80%	±330µF
JRW24D15-330		± 15 VDC	±333mA	75mVp-p	548mA	80%	±110µF
JRW48S33-2500	48 VDC (18 – 75 VDC)	3.3 VDC	2500mA	50mVp-p	239mA	76%	6800µF
JRW48S5-2000		5 VDC	2000mA	50mVp-p	270mA	81%	4700µF
JRW48S12-830		12 VDC	830mA	50mVp-p	259mA	84%	690µF
JRW48S15-660		15 VDC	670mA	50mVp-p	262mA	84%	470µF
JRW48D5-1000		± 5 VDC	±1000mA	75mVp-p	267mA	82%	±680µF
JRW48D12-420		± 12 VDC	±416mA	75mVp-p	281mA	78%	±330µF
JRW48D15-330		± 15 VDC	±333mA	75mVp-p	270mA	81%	±110µF

NOTES

- The JRW Series requires a minimum 10% loading on the output to maintain specified regulation. Operation under no load condition will not damage these devices, however, they may not meet all listed specifications.
- Please add an external filter at converter input terminals when measuring input reflected ripple current (See Figure 1).
L: Simulated source impedance of 12uH C: Nippon chemi-con KMF Series 47uF/100V.
- The ON/OFF control pin voltage is referenced to -Vin.
To order negative logic On/Off control add the suffix "R" (Ex: JRW24S5-2000R).
- BELLCORE TR-NWT-000332. Case 1: 50% Stress, Temperature at 40°C. (Ground fixed and controlled environment).
- "I" Version is more efficient; therefore, it can be operated over a more extensive temperature range than the standard version. Please add the suffix "-I" for industrial grade temperature range models.
- Heat sink is optional, please consult factory for ordering details.
- The JRW Series meets 55022 class B with external components connected before the input pin to the converter.
- Maximum value at nominal input voltage and full load of standard type.
- Typical value at nominal input voltage and no load.
- Tested at minimum Vin and constant resistive load.

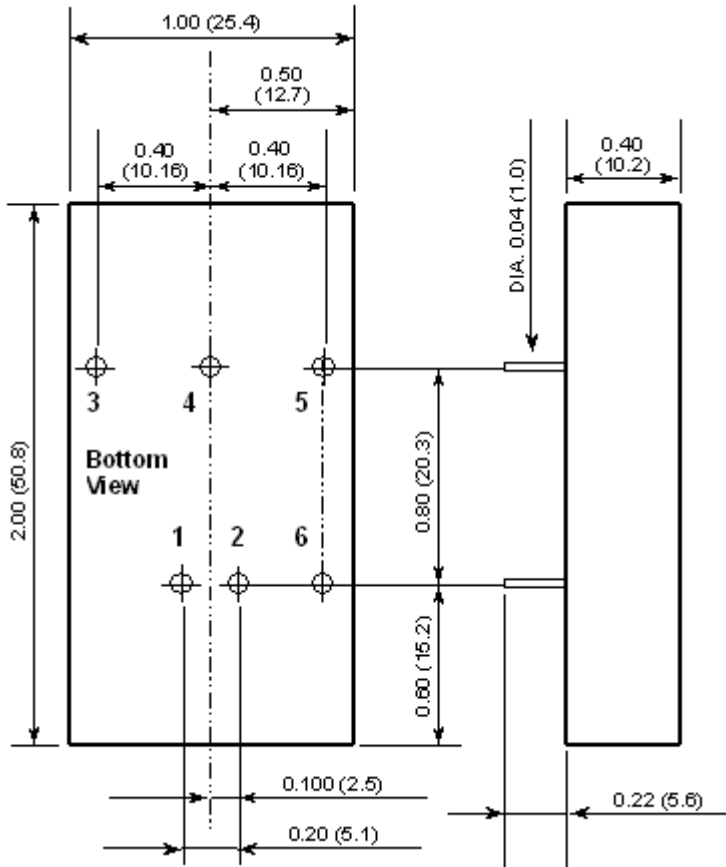


DERATING CURVE



MECHANICAL DRAWING

UNIT: inches (mm)



PIN CONNECTION		
PIN	SINGLE	DUAL
1	+INPUT	+INPUT
2	-INPUT	-INPUT
3	+OUTPUT	+OUTPUT
4	NO PIN	COMMON
5	-OUTPUT	-OUTPUT
6	CTRL (Option)	CTRL (Option)

- All dimensions in Inches (mm)
 Tolerance: X.XX±0.02 (X.X±0.5)
- Pin pitch tolerance ±0.014 (0.35)