JWK10 Series

DC-DC Converter

XP Power

10 Watts

- Regulated Single & Dual Output
- Wide 4:1 Input Range
- 1″ x 1″ Package
- 1500 VDC Isolation
- Operating Temperature -40 °C to +100 °C
- ITE Safety Approvals
- Remote On/Off
- Optional Heatsink
- Six Sided Metal Case
- 3 Year Warranty



Dimensions:

JWK10:
1.00 x 1.00 x 0.40″ (25.4 x 25.4 x 10.16 mm)

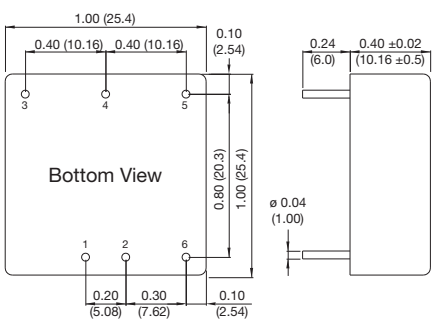
Models & Ratings

Input voltage	Output voltage	Output current		Input current[3]		Maximum capacitive load[2]	Efficiency	Model number
		Min	Max	No load	Full load			
9-36 V	3.3 V	330 mA	2.20 A	30 mA	350 mA	560 µF	86%	JWK1024S3V3
	5 V	300 mA	2.00 A		495 mA	560 µF	84%	JWK1024S05
	5.1 V	300 mA	2.00 A		505 mA	560 µF	84%	JWK1024S5V1
	12 V	125 mA	0.83 A		485 mA	150 µF	86%	JWK1024S12
	15 V	100 mA	0.66 A		475 mA	150 µF	87%	JWK1024S15
	24 V	62 mA	0.41 A		475 mA	68 µF	86%	JWK1024S24
	±5 V	±150 mA	±1.00 A		495 mA	±220 µF	84%	JWK1024D05
	±12V	±62 mA	±0.41 A		475 mA	±100 µF	86%	JWK1024D12
	±15V	±50 mA	±0.33 A		475 mA	±100 µF	87%	JWK1024D15
18-75 V	3.3 V	330 mA	2.20 A	20 mA	180 mA	560 µF	85%	JWK1048S3V3
	5 V	300 mA	2.00 A		250 mA	560 µF	84%	JWK1048S05
	5.1 V	300 mA	2.00 A		255 mA	560 µF	84%	JWK1048S5V1
	12 V	125 mA	0.83 A		240 mA	150 µF	86%	JWK1048S12
	15 V	100 mA	0.66 A		235 mA	150 µF	87%	JWK1048S15
	24 V	62 mA	0.41 A		240 mA	68 µF	86%	JWK1048S24
	±5 V	±150 mA	±1.00 A		250 mA	±220 µF	84%	JWK1048D05
	±12 V	±62 mA	±0.41 A		240 mA	±100 µF	86%	JWK1048D12
	±15 V	±50 mA	±0.33 A		235 mA	±100 µF	87%	JWK1048D15

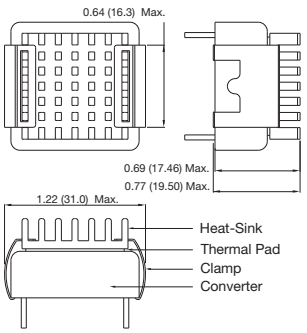
Notes

1. Input currents measured at nominal input voltage.
2. Input current is typically 10 mA at nominal input voltage when output is turned off using remote on/off.
3. Maximum capacitive load is per output.
4. Add suffix "-HK" for optional heatsink.

Mechanical Details



Optional Heatsink (–HK)



Pin Connections		
Pin	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	+Vout	+Vout
4	No Pin	Common
5	-Vout	-Vout
6	Remote On/Off	Remote On/Off

Notes

1. All dimensions are in inches (mm)
2. Weight: 0.03 lbs (15.0g) approx.
3. Tolerance: X.XX±0.01 (X.X±0.25) X.XXX±0.005 (X.XX±0.13)
4. Pin Tolerance: ±0.002 (±0.05)

Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Voltage Range	9.0		36	VDC	24 V nominal
	18.0		75	VDC	48 V nominal
Input Filter	Internal Pi type				
Input Surge			50	VDC for 1 s	24 V models
			100		48 V models
Undervoltage Lockout	ON at >8.5 V, OFF at <9 V				24 V models
	ON at >18 V, OFF at <17 V				48 V models
Remote On/Off	ON: Logic high (2.5-50 V) or open circuit OFF: Logic low (<1.0 V) or short pin 2 to pin 6				

Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Output Voltage	3.3		30	VDC	See Models and Ratings table
Initial Set Accuracy			±2.0	%	At full load
Output Voltage Balance		±1.0	±2.0	%	For dual output with balanced laods
Minimum Load				A	No minimum load required
Line Regulation			±1.0	%	From minimum to maximum input at full load
Load Regulation			±0.5/±1.0	%	Single / Dual output, from 0 to full load
Cross Regulation			±5.0	%	On dual output models when one load is varied between 25% and 100% and other is fixed at 100%
Transient Response		3	6	% deviation	Recovery within 1% in less than 600 µs for a 25% load change.
Ripple & Noise		100		mV pk-pk	20 MHz bandwidth. Measured using 0.47 µF ceramic capacitor.
Overload Protection		150		%	
Short Circuit Protection					Continuous Trip & Restart (Hiccup mode), with auto recovery
Maximum Capacitive Load					See Models and Ratings table
Temperature Coefficient			0.02	%/°C	

General

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency		86		%	See Models and Ratings table
Isolation: Input to Output	1500/1800			VDC	60 s/1 s
Isolation Resistance	10^9			Ω	At 500 VDC
Isolation Capacitance			1500	pF	
Switching Frequency		450		kHz	
Power Density			50.8	W/in³	
Mean Time Between Failure		350		kHrs	MIL-HDBK-217F, +25 °C GB
Weight		0.03 (15.0)		lb (g)	

Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating Temperature	-40		+100	°C	See Derating Curve.
Storage Temperature	-50		+125	°C	
Case Temperature			+100	°C	
Humidity			95	%RH	Non-condensing
Cooling					Natural convection

Safety Approvals

Safety Agency	Safety Standard	Notes & Conditions
UL	UL60950-1, UL62368-1	ITE
CE	Meets all applicable directives	
UKCA	Meets all applicable legislation	

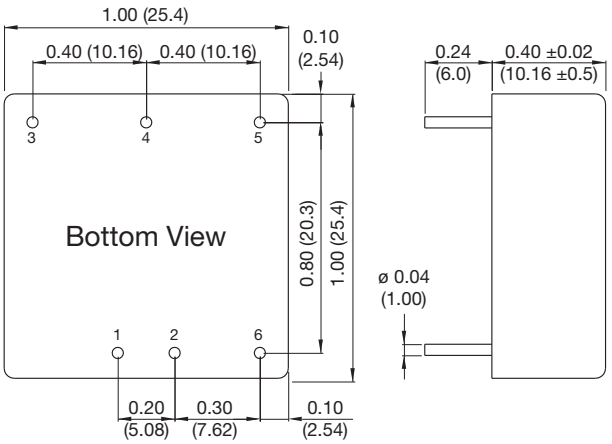
EMC: Emissions

Phenomenon	Standard	Test Level	Notes & Conditions
Conducted & radiated	EN55032	Class A	See application notes

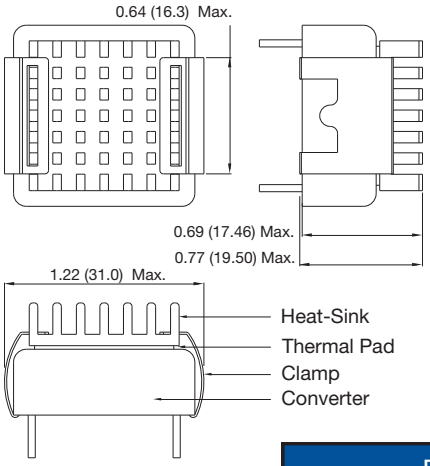
EMC: Immunity

Phenomenon	Standard	Test Level	Criteria	Notes & Conditions
ESD	EN61000-4-2	±8 kV air discharge, ±6 kV contact	A	
Radiated	EN61000-4-3	10 V/m	A	
EFT/Burst	EN61000-4-4	±2 kV	A	With external capacitor, suggested part is CHEMI-CON KY 330µF/100V
Surge	EN61000-4-5	±1 kV	A	With external capacitor, suggested part is CHEMI-CON KY 330µF/100V
Conducted	EN61000-4-6	10 V rms	A	

Mechanical Details



Optional Heatsink (-HK)



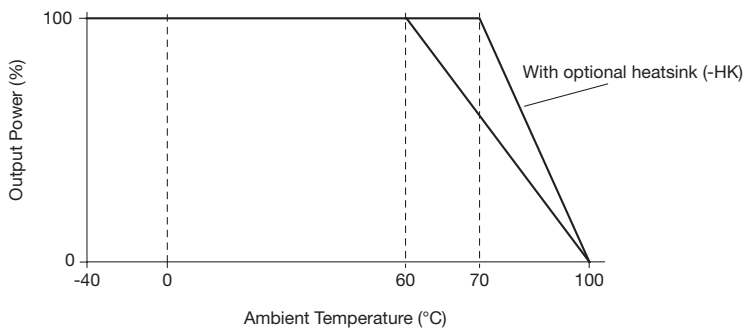
Notes

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   X.XXX±0.005 (X.XX±0.13)
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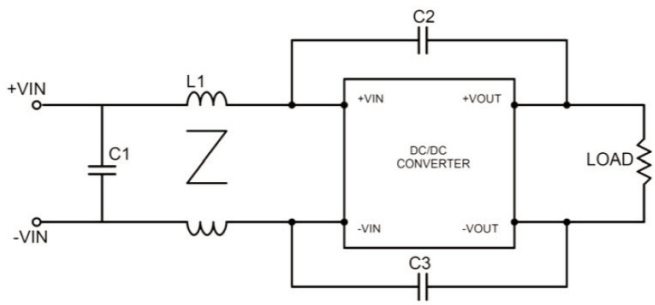
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6	Remote On/Off	Remote On/Off

Application Notes

Derating Curve



EMI Filter for Conducted & Radiated Emissions



L1	C1	C2	C3
0.4mH/0.4mH 74448014501	3.3µF/100V 1210 X7S MLCC	1000pF/2KV 1206 X7R MLCC	1000pF/2KV 1206 X7R MLCC