

JCJ08-10 SERIES

DC/DC Single & Dual Output: 8-106 Watts



Specification

Input

Input Voltage Range	<ul style="list-style-type: none"> 12 V (9-18 VDC) 24 V (18-36 VDC) 48 V (36-75 VDC)
Input Current	<ul style="list-style-type: none"> See table
Input Filter	<ul style="list-style-type: none"> Pi network
Input Reflected Ripple Current	<ul style="list-style-type: none"> JCJ08: 35 mA, JCJ10: 20 mA pk-pk through 12 μH inductor
Input Surge	<ul style="list-style-type: none"> 12 V models 24/25 VDC for 100 ms 24 V models 40/50 VDC for 100 ms 48 V models 100 VDC for 100 ms
Undervoltage Lockout	<ul style="list-style-type: none"> None
Reverse Voltage Protection	<ul style="list-style-type: none"> None

Output

Output Voltage	<ul style="list-style-type: none"> See table
Output Voltage Balance	<ul style="list-style-type: none"> $\pm 1\%$ max, dual output models
Minimum Load	<ul style="list-style-type: none"> No minimum load required
Initial Set Accuracy	<ul style="list-style-type: none"> $\pm 1\%$ max
Line Regulation	<ul style="list-style-type: none"> $\pm 0.5\%$ max
Load Regulation	<ul style="list-style-type: none"> $\pm 0.7\%$ for 2.5-3.3 V models, $\pm 0.5\%$ for all other models (see note 2)
Cross Regulation	<ul style="list-style-type: none"> $\pm 5\%$ on dual output models (see note 3)
Transient Response	<ul style="list-style-type: none"> <3% max deviation, recovery to within 1% in 200 μs for a 25% load change
Ripple & Noise	<ul style="list-style-type: none"> 75 mV pk-pk, 20 MHz bandwidth, (see note 4)
Overvoltage Protection	<ul style="list-style-type: none"> JCJ10: 3.3 V models: 3.9 V typ., 5 V models: 6.2 V typ., 12 V models: 15.0 V typ., 15 V models: 18.0 V typ., ± 12 V models: ± 15.0 V typ., ± 15 V models: ± 18.0 V typ. JCJ08: No OVP
Overload Protection	<ul style="list-style-type: none"> >150% off ull load
Short Circuit Protection	<ul style="list-style-type: none"> Trip & restart (hiccup) with auto recovery
Maximum Capacitive Load	<ul style="list-style-type: none"> See tables
Temperature Coefficient	<ul style="list-style-type: none"> $\pm 0.02/^\circ\text{C}$ max

Features

- 2:1 Input Range
- DIP-24 Metal Package
- Operating Temperature -40°C to $+100^\circ\text{C}$
- Single & Dual Outputs
- Continuous Short Circuit Protection
- 1500 VDC Isolation
- 3 Year Warranty

General

Efficiency	<ul style="list-style-type: none"> See tables
Isolation	<ul style="list-style-type: none"> 1500 VDC Input to Output 1000 VDC Input to Case 1000 VDC Output to Case
Isolation Capacitance	<ul style="list-style-type: none"> 1200 pF max
Switching Frequency	<ul style="list-style-type: none"> 330 kHz typical
Power Density	<ul style="list-style-type: none"> JCJ10: 25 W/in³ JCJ08: 20 W/in³
MTBF	<ul style="list-style-type: none"> >900 KHrs to MIL-HDBK-217F at 25 $^\circ\text{C}$, GB

Environmental

Operating Temperature	<ul style="list-style-type: none"> -40°C to $+100^\circ\text{C}$, derate from 100% load at $+60^\circ\text{C}$ to no load at $+100^\circ\text{C}$
Case Temperature	<ul style="list-style-type: none"> $+100^\circ\text{C}$ max
Storage Temperature	<ul style="list-style-type: none"> -40°C to $+125^\circ\text{C}$
Humidity	<ul style="list-style-type: none"> Up to 95% RH, non-condensing
Cooling	<ul style="list-style-type: none"> Natural convection

EMC

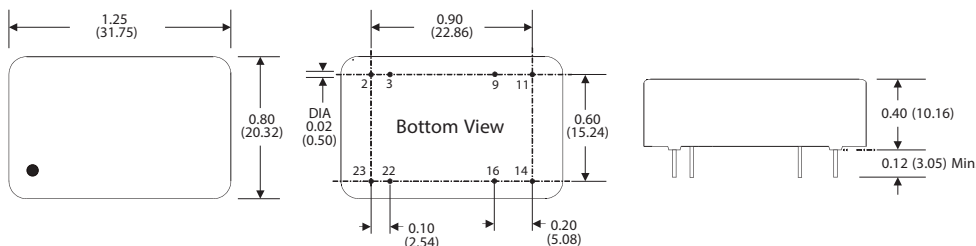
Emissions	<ul style="list-style-type: none"> EN55022 Class A conducted & radiated with external components, see application note
ESD Immunity	<ul style="list-style-type: none"> EN61000-4-2, 8 kV air discharge, 4 kV contact discharge JCJ10: 6 kV contact discharge, Perf Criteria A
EFT/Burst	<ul style="list-style-type: none"> EN61000-4-4, level 1 JCJ10: level 3, Perf Criteria A, (see note 5)
Surge	<ul style="list-style-type: none"> JCJ08: EN61000-4-5, installation class 2, JCJ10: installation class 3, Perf Criteria A, (see note 5)
Conducted Immunity	<ul style="list-style-type: none"> EN61000-4-6, 3 Vrms JCJ10: 10 Vrms, Perf Criteria A
Magnetic Field	<ul style="list-style-type: none"> EN61000-4-8, 1 A/m Perf Criteria A

Input Voltage	Output Voltage	Output Current	Input Current ⁽¹⁾		Maximum Capacitive Load	Efficiency	Model Number
			No Load	Full Load			
9-18 V	3.3 V	2.000 A	20 mA	0.69 A	3300 µF	80%	JCJ0812S3V3 †^
	5.0 V	1.500 A	20 mA	0.76 A	2200 µF	82%	JCJ0812S05 †^
	12.0 V	0.665 A	20 mA	0.78 A	470 µF	85%	JCJ0812S12 †^
	15.0 V	0.535 A	20 mA	0.80 A	220 µF	83%	JCJ0812S15 †^
	±5.0 V	±0.800 A	20 mA	0.81 A	±1000 µF	82%	JCJ0812D05 †^
	±12.0 V	±0.335 A	20 mA	0.79 A	±220 µF	84%	JCJ0812D12 †^
18-36 V	3.3 V	2.000 A	15 mA	0.34 A	3300 µF	80%	JCJ0824S3V3 †^
	5.0 V	1.500 A	15 mA	0.38 A	2200 µF	82%	JCJ0824S05 †^
	12.0 V	0.665 A	15 mA	0.39 A	470 µF	85%	JCJ0824S12 †^
	15.0 V	0.535 A	15 mA	0.40 A	220 µF	84%	JCJ0824S15 †^
	±5.0 V	±0.800 A	15 mA	0.41 A	±1000 µF	82%	JCJ0824D05 †^
	±12.0 V	±0.335 A	15 mA	0.40 A	±220 µF	83%	JCJ0824D12 †^
36-75 V	3.3 V	2.000 A	15 mA	0.17 A	3300 µF	80%	JCJ0848S3V3 †^
	5.0 V	1.500 A	15 mA	0.19 A	2200 µF	82%	JCJ0848S05 †^
	12.0 V	0.665 A	15 mA	0.20 A	470 µF	84%	JCJ0848S12 †^
	15.0 V	0.535 A	15 mA	0.20 A	220 µF	84%	JCJ0848S15 †^
	±5.0 V	±0.800 A	15 mA	0.20 A	±1000 µF	82%	JCJ0848D05 †^
	±12.0 V	±0.335 A	15 mA	0.20 A	±220 µF	85%	JCJ0848D12 †^
9-18 V	2.5 V	3.000 A	10 mA	0.79 A	2200 µF	81%	JCJ1012S2V5 †^
	3.3 V	3.000 A	10 mA	1.01 A	2200 µF	84%	JCJ1012S3V3 †^
	5.0 V	2.000 A	10 mA	0.99 A	2200 µF	86%	JCJ1012S05 †^
	12.0 V	0.833 A	10 mA	0.98 A	820 µF	87%	JCJ1012S12 †^
	15.0 V	0.667 A	10 mA	0.96 A	470 µF	89%	JCJ1012S15 †^
	±12.0 V	±0.416 A	10 mA	0.98 A	±220 µF	87%	JCJ1012D12 †^
18-36 V	2.5 V	3.000 A	10 mA	0.38 A	2200 µF	84%	JCJ1024S2V5 †^
	3.3 V	3.000 A	10 mA	0.50 A	2200 µF	85%	JCJ1024S3V3 †^
	5.0 V	2.000 A	10 mA	0.48 A	2200 µF	89%	JCJ1024S05 †^
	12.0 V	0.833 A	10 mA	0.49 A	820 µF	88%	JCJ1024S12 †^
	15.0 V	0.667 A	10 mA	0.49 A	470 µF	88%	JCJ1024S15 †^
	±12.0 V	±0.416 A	10 mA	0.49 A	±220 µF	88%	JCJ1024D12 †^
36-75 V	2.5 V	3.000 A	10 mA	0.19 A	2200 µF	84%	JCJ1048S2V5 †^
	3.3 V	3.000 A	10 mA	0.25 A	2200 µF	85%	JCJ1048S3V3 †^
	5.0 V	2.000 A	10 mA	0.24 A	2200 µF	88%	JCJ1048S05 †^
	12.0 V	0.833 A	10 mA	0.25 A	820 µF	87%	JCJ1048S12 †^
	15.0 V	0.667 A	10 mA	0.24 A	470 µF	88%	JCJ1048S15 †^
	±12.0 V	±0.416 A	10 mA	0.25 A	±220 µF	87%	JCJ1048D12 †^
36-75 V	2.5 V	3.000 A	10 mA	0.19 A	2200 µF	84%	JCJ1048S2V5 †^
	3.3 V	3.000 A	10 mA	0.25 A	2200 µF	85%	JCJ1048S3V3 †^
	5.0 V	2.000 A	10 mA	0.24 A	2200 µF	88%	JCJ1048S05 †^
	12.0 V	0.833 A	10 mA	0.25 A	820 µF	87%	JCJ1048S12 †^
	15.0 V	0.667 A	10 mA	0.24 A	470 µF	88%	JCJ1048S15 †^
	±12.0 V	±0.416 A	10 mA	0.25 A	±220 µF	87%	JCJ1048D12 †^
36-75 V	2.5 V	3.000 A	10 mA	0.19 A	2200 µF	84%	JCJ1048S2V5 †^
	3.3 V	3.000 A	10 mA	0.25 A	2200 µF	85%	JCJ1048S3V3 †^
	5.0 V	2.000 A	10 mA	0.24 A	2200 µF	88%	JCJ1048S05 †^
	12.0 V	0.833 A	10 mA	0.25 A	820 µF	87%	JCJ1048S12 †^
	15.0 V	0.667 A	10 mA	0.24 A	470 µF	88%	JCJ1048S15 †^
	±12.0 V	±0.416 A	10 mA	0.25 A	±220 µF	87%	JCJ1048D12 †^

Notes

1. Input current measured at nominal input voltage.
2. From 10% to 100% load.
3. When one output is set at 100% load and the other varied between 25% and 100% load
4. Measured with 20 MHz bandwidth and 1 µF ceramic capacitor across output rails.
5. A 220 µF/100 V capacitor across the input is required to meet EN61000-4-4 and EN61000-4-5

Mechanical Details and Application Note



Pin Connections					
Pin	Single	Dual	Pin	Single	Dual
2	-Vin	-Vin	14	+Vout	+Vout
3	-Vin	-Vin	16	-Vout	Common
9	No Pin	Common	22	+Vin	+Vin
11	N.C.	-Vout	23	+Vin	+Vin

Notes

1. All dimensions are in inches (mm)
2. Weight: 0.04 lbs (17 g) approx.
3. Pin pitch tolerance: 0.02 ±0.002 (0.5 ±0.05)
4. Case tolerance: ±0.02 (±0.5)
5. Package: 24 in DIL nickel-coated copper.

