

10 Watts

JCH10 Series



- 2:1 Input Range
- Industry Standard Package
- 1500 VDC Isolation
- Continuous Short Circuit Protection
- Efficiency up to 86%
- -40 °C to +100 °C Operating Temperature
- Single & Dual Outputs

Specification

Input

Input Voltage Range	• 12 V (9-18 VDC) • 24 V (18-36 VDC) • 48 V (36-72 VDC)
Input Current	• See table
Input Reflected Ripple	• 35 mA rms through 12 μH inductor, 5 Hz to 20 MHz
Input Surge	• 12 V models 25 VDC for 100 ms • 24 V models 50 VDC for 100 ms • 48 V models 100 VDC for 100 ms

Output

Output Voltage	• See table
Voltage Balance	• $\pm 1\%$ ($\pm 2\%$ for dual output 3.3 V models)
Minimum Load	• No minimum load required
Line Regulation	• $\pm 0.5\%$
Load Regulation	• $\pm 0.5\%$
Setpoint Accuracy	• $\pm 1.0\%$
Start Up Delay	• <10 ms
Start Up Rise Time	• <5 ms
Ripple & Noise	• 100 mV pk-pk for 3.3 V to 15 V models, 150 mV pk-pk for 24 V models, 20 MHz BW
Transient Response	• 5% max deviation, recovery to within 1% in 300 μs for a 25% load change
Temperature Coefficient	• 0.02%/°C
Overcurrent Protection	• >120% of full load at nominal input
Short Circuit Protection	• Trip & restart (Hiccup mode) with auto recovery
Capacitive Load	• See table

General

Efficiency	• See table
Isolation Voltage	• 1500 VDC Input to Output • 1000 VDC Input to Case • 1000 VDC Output to Case
Isolation Capacitance	• 500 pF typical input to output
Switching Frequency	• 200 kHz typical
MTBF	• >1.1 Mhrs to MIL-STD-217F

Environmental

Operating Temperature	• -40 °C to +100 °C, derate from 100% load at +85 °C to 0% load at +100 °C
Case Temperature	• +100 °C max
Storage Temperature	• -40 °C to +125 °C
Cooling	• Convection-cooled
Operating Humidity	• Up to 95% RH, non-condensing

EMC

Emissions	• EN55022 Class A conducted & radiated with external components, see application note
ESD Immunity	• EN61000-4-2, 8 kV air discharge Perf Criteria A, 4 kV contact discharge Perf Criteria A
Radiated Immunity	• EN61000-4-6 Level 2, 3 V/m Perf Criteria A

Models and Ratings

JCH10 XP

Input Voltage	Output Voltage	Output Current	Input Current ⁽¹⁾		Efficiency	Maximum Capacitive Load ⁽²⁾	Model Number
			No Load	Full Load			
9-18 VDC	3.3 V	2000 mA	30 mA	705 mA	78%	6800 μ F	JCH1012S3V3
	5.0 V	2000 mA	30 mA	1004 mA	83%	6800 μ F	JCH1012S05
	12.0 V	833 mA	30 mA	980 mA	85%	1000 μ F	JCH1012S12
	15.0 V	666 mA	30 mA	992 mA	84%	1000 μ F	JCH1012S15
	24.0 V	416 mA	30 mA	980 mA	85%	470 μ F	JCH1012S24
	± 3.3 V	± 1000 mA	30 mA	705 mA	78%	3300 μ F	JCH1012D03
	± 5.0 V	± 1000 mA	30 mA	1004 mA	83%	3300 μ F	JCH1012D05
	± 12.0 V	± 416 mA	30 mA	980 mA	85%	330 μ F	JCH1012D12
	± 15.0 V	± 333 mA	30 mA	980 mA	85%	330 μ F	JCH1012D15
18-36 VDC	3.3 V	2000 mA	25 mA	352 mA	78%	6800 μ F	JCH1024S3V3
	5.0 V	2000 mA	25 mA	502 mA	83%	6800 μ F	JCH1024S05
	12.0 V	833 mA	25 mA	490 mA	85%	1000 μ F	JCH1024S12
	15.0 V	666 mA	25 mA	484 mA	86%	1000 μ F	JCH1024S15
	24.0 V	416 mA	25 mA	484 mA	86%	470 μ F	JCH1024S24
	± 3.3 V	± 1000 mA	25 mA	352 mA	78%	3300 μ F	JCH1024D03
	± 5.0 V	± 1000 mA	25 mA	496 mA	84%	3300 μ F	JCH1024D05
	± 12.0 V	± 416 mA	25 mA	490 mA	85%	680 μ F	JCH1024D12
	± 15.0 V	± 333 mA	25 mA	484 mA	86%	330 μ F	JCH1024D15
36-72 VDC	3.3 V	2000 mA	20 mA	176 mA	78%	6800 μ F	JCH1048S3V3
	5.0 V	2000 mA	20 mA	248 mA	84%	6800 μ F	JCH1048S05
	12.0 V	833 mA	20 mA	242 mA	86%	1000 μ F	JCH1048S12
	15.0 V	666 mA	20 mA	245 mA	85%	1000 μ F	JCH1048S15
	24.0 V	416 mA	20 mA	245 mA	85%	470 μ F	JCH1048S24
	± 3.3 V	± 1000 mA	20 mA	176 mA	78%	3300 μ F	JCH1048D03
	± 5.0 V	± 1000 mA	20 mA	245 mA	85%	3300 μ F	JCH1048D05
	± 12.0 V	± 416 mA	20 mA	242 mA	86%	680 μ F	JCH1048D12
	± 15.0 V	± 333 mA	20 mA	242 mA	86%	330 μ F	JCH1048D15
	± 24.0 V	± 208 mA	25 mA	245 mA	85%	220 μ F	JCH1048D24

Notes

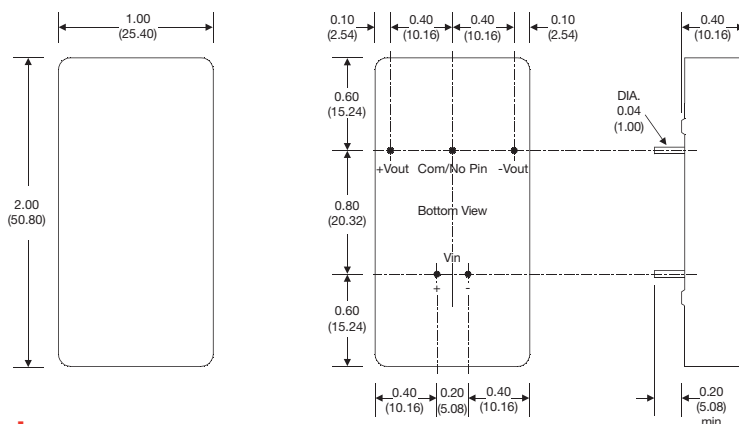
1. Measured at nominal input voltage.

2. Maximum capacitive load is per output.

Mechanical Details

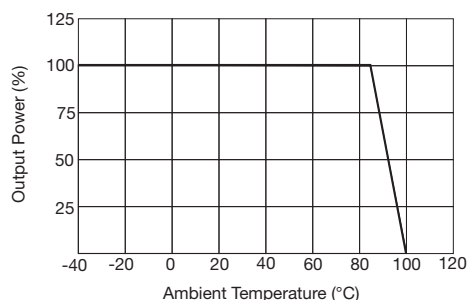
All dimensions are in inches (mm)

Weight: 30 g



Application Notes

Derating Curve



Input Filter

