10 Watts
JCH Series



- 2:1 Input Range
- Industry Standard Package
- 1500 VDC Isolation
- Continuous Short Circuit Protection
- –40 °C to +100 °C Operating Temperature
- Single & Dual Outputs
- 3 Year Warranty

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 Current	• 35 mA rms through 12 µH inductor
Input Filter	• Pi network
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	• ±1% (±2% for dual output 3.3 V models)
Minimum Load	• No minimum load required
Line Regulation	• ±0.5%
Load Regulation	• ±0.5% single outputs, ±1.0 dual outputs
Setpoint Accuracy	• ±1.0%
Ripple & Noise	• 100 mV pk-pk for 3.3 V to 15 V models, 150 mV pk-pk for 24 V models, 20 MHz bandwidth
Transient Response	• 3% max deviation, recovery to within 1% in 250 µs for a 25% load change
Temperature Coefficient	• 0.02%/°C
Overload Protection	• 140% of full load
Short Circuit Protection	• Trip & restart (hiccup mode) with auto recovery
Maximum Capacitive Load	• See table
Start Up Delay	• <20 ms

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
Isolation Resistance	• $10^9\Omega$
Switching Frequency	• 200 kHz typical
Power Density	• 12.5 W/in^3
MTBF	• >1.1 MHrs to MIL-STD-217F at 25 °C, GB

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
Radiated Immunity	• EN61000-4-3, 3 V/m, Perf Criteria A

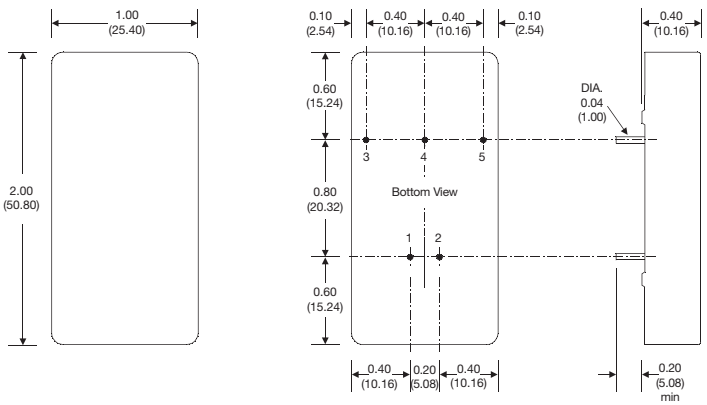
Models and Ratings

Input Voltage	Output Voltage	Output Current	Input Current[1]		Efficiency	Maximum Capacitive Load	Model Number
			No Load	Full Load			
9-18 VDC	3.3 V	2000 mA	30 mA	705 mA	78%	2200 µF	JCH1012S3V3
	5.0 V	2000 mA	30 mA	1016 mA	82%	2200 µF	JCH1012S05
	12.0 V	833 mA	30 mA	992 mA	84%	680 µF	JCH1012S12
	15.0 V	666 mA	30 mA	992 mA	84%	470 µF	JCH1012S15
	24.0 V	416 mA	30 mA	980 mA	85%	330 µF	JCH1012S24
	±3.3 V	±1000 mA	30 mA	1068 mA	78%	±1000 µF	JCH1012D03
	±5.0 V	±1000 mA	30 mA	1016 mA	82%	±1000 µF	JCH1012D05
	±12.0 V	±416 mA	30 mA	992 mA	84%	±470 µF	JCH1012D12
	±15.0 V	±333 mA	30 mA	980 mA	85%	±330 µF	JCH1012D15
	±24.0 V	±208 mA	30 mA	980 mA	85%	±220 µF	JCH1012D24
18-36 VDC	3.3 V	2000 mA	25 mA	352 mA	78%	2200 µF	JCH1024S3V3
	5.0 V	2000 mA	25 mA	508 mA	82%	2200 µF	JCH1024S05
	12.0 V	833 mA	25 mA	496 mA	84%	680 µF	JCH1024S12
	15.0 V	666 mA	25 mA	490 mA	85%	470 µF	JCH1024S15
	24.0 V	416 mA	25 mA	484 mA	86%	330 µF	JCH1024S24
	±3.3 V	±1000 mA	25 mA	352 mA	78%	±1000 µF	JCH1024D03
	±5.0 V	±1000 mA	25 mA	508 mA	82%	±1000 µF	JCH1024D05
	±12.0 V	±416 mA	25 mA	496 mA	84%	±470 µF	JCH1024D12
	±15.0 V	±333 mA	25 mA	496 mA	84%	±330 µF	JCH1024D15
	±24.0 V	±208 mA	25 mA	490 mA	85%	±220 µF	JCH1024D24
36-72 VDC	3.3 V	2000 mA	20 mA	176 mA	78%	2200 µF	JCH1048S3V3
	5.0 V	2000 mA	20 mA	251 mA	83%	2200 µF	JCH1048S05
	12.0 V	833 mA	20 mA	248 mA	84%	680 µF	JCH1048S12
	15.0 V	666 mA	20 mA	248 mA	84%	470 µF	JCH1048S15
	24.0 V	416 mA	20 mA	245 mA	86%	330 µF	JCH1048S24
	±3.3 V	±1000 mA	20 mA	176 mA	78%	±1000 µF	JCH1048D03
	±5.0 V	±1000 mA	20 mA	254 mA	82%	±1000 µF	JCH1048D05
	±12.0 V	±416 mA	20 mA	245 mA	85%	±470 µF	JCH1048D12
	±15.0 V	±333 mA	20 mA	245 mA	85%	±330 µF	JCH1048D15
	±24.0 V	±208 mA	20 mA	242 mA	86%	±220 µF	JCH1048D24

Notes

1. Measured at nominal input voltage.

Mechanical Details



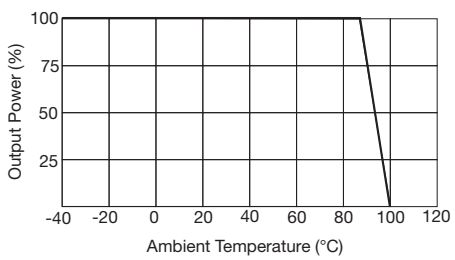
PIN CONNECTIONS		
Pin	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	+Vout	+Vout
4	No Pin	Com
5	-Vout	-Vout

Notes

1. All dimensions are in inches (mm)
2. Weight: 0.07 lbs (30 g)
3. Pin diameter tolerance: ±0.002 (±0.05)
4. Pin pitch tolerance: ±0.014 (±0.35)
5. Case tolerance: ±0.02 (±0.50)

Application Notes

Derating Curve



Input Filter

