

JAH02 Series



- DIP-24 Package
- Low Cost
- Operating Temperature -40 °C to +100 °C
- Single & Dual Outputs
- Optional Metal Case
- 6000 VDC Isolation Optional
- 3 Year Warranty

Specification

Input

Input Voltage Range	<ul style="list-style-type: none"> • 5 V \pm10% • 12 V \pm10% • 24 V \pm10%
Input Current	<ul style="list-style-type: none"> • See table
Input Filter	<ul style="list-style-type: none"> • LC network
Input Reflected Ripple	<ul style="list-style-type: none"> • 35 mA pk-pk through 12 μH inductor, 5 Hz to 20 MHz
Input Surge	<ul style="list-style-type: none"> • 5 V models 7 VDC for 100 ms • 12 V models 15 VDC for 100 ms • 24 V models 28 VDC for 100 ms

Output

Output Voltage	<ul style="list-style-type: none"> • See table
Minimum Load	<ul style="list-style-type: none"> • No minimum load required
Initial Set Accuracy	<ul style="list-style-type: none"> • \pm2% max
Start Up Delay	<ul style="list-style-type: none"> • 20 ms typical
Start Up Rise Time	<ul style="list-style-type: none"> • 20 ms typical
Line Regulation	<ul style="list-style-type: none"> • \pm0.5% max
Load Regulation	<ul style="list-style-type: none"> • \pm0.5% max (\pm1.5% max for 3V3 versions)
Cross Regulation	<ul style="list-style-type: none"> • \pm5% on dual output models, see note 4
Transient Response	<ul style="list-style-type: none"> • \pm3% max deviation (\pm5% for 3V3 output), recovery to within 1% in 2 ms for a 50% load change
Ripple & Noise	<ul style="list-style-type: none"> • 75 mV pk-pk measured with 20 MHz bandwidth
Short Circuit Protection	<ul style="list-style-type: none"> • Output shuts down with auto recovery
Maximum Capacitive Load	<ul style="list-style-type: none"> • See tables
Temperature Coefficient	<ul style="list-style-type: none"> • \pm0.02/°C max

General

Efficiency	<ul style="list-style-type: none"> • See tables
Isolation	<ul style="list-style-type: none"> • 1000 VDC Input to Output, for optional high isolation version up to 6000 VDC input to output, see note 1 • 1000 VDC Input to Case • 1000 VDC Output to Case
Isolation Resistance	<ul style="list-style-type: none"> • 109Ω
Isolation Capacitance	<ul style="list-style-type: none"> • 60 pF max
Switching Frequency	<ul style="list-style-type: none"> • 40 kHz typical singles, 300 kHz typical duals
MTBF	<ul style="list-style-type: none"> • >3 Mhrs to MIL-HDBK-217F at 25 °C, GB

Environmental

Operating Temperature	<ul style="list-style-type: none"> • -40 °C to +100 °C, derate from 100% load at +85 °C to no load at +100 °C
Case Temperature	<ul style="list-style-type: none"> • +100 °C max
Storage Temperature	<ul style="list-style-type: none"> • -40 °C to +125 °C
Humidity	<ul style="list-style-type: none"> • Up to 90%, non-condensing
Cooling	<ul style="list-style-type: none"> • Natural convection

Models and Ratings

Input Voltage	Output Voltage	Output Current	Input Current ⁽²⁾		Maximum Capacitive Load	Efficiency	Model ^(1,3) Number
			No Load	Full Load			
5 V	3.3 V	500 mA	75 mA	622 mA	330 µF	53%	JAH0205S3V3
	5.0 V	400 mA	75 mA	615 mA	330 µF	65%	JAH0205S05
	9.0 V	222 mA	75 mA	597 mA	330 µF	67%	JAH0205S09
	12.0 V	166 mA	75 mA	571 mA	330 µF	70%	JAH0205S12
	15.0 V	133 mA	75 mA	588 mA	330 µF	68%	JAH0205S15
	24.0 V	83 mA	75 mA	615 mA	330 µF	65%	JAH0205S24
	±3.3 V	±300 mA	30 mA	638 mA	±1000 µF	62%	JAH0205D03
	±5.0 V	±200 mA	30 mA	588 mA	±1000 µF	68%	JAH0205D05
	±9.0 V	±111 mA	40 mA	571 mA	±470 µF	70%	JAH0205D09
	±12.0 V	±83 mA	40 mA	571 mA	±470 µF	70%	JAH0205D12
12 V	3.3 V	500 mA	70 mA	245 mA	330 µF	56%	JAH0212S3V3
	5.0 V	400 mA	70 mA	260 mA	330 µF	64%	JAH0212S05
	9.0 V	222 mA	70 mA	245 mA	330 µF	68%	JAH0212S09
	12.0 V	166 mA	70 mA	238 mA	330 µF	70%	JAH0212S12
	15.0 V	133 mA	70 mA	252 mA	330 µF	66%	JAH0212S15
	24.0 V	83 mA	70 mA	256 mA	330 µF	65%	JAH0212S24
	±3.3 V	±300 mA	20 mA	250 mA	±1000 µF	66%	JAH0212D03
	±5.0 V	±200 mA	20 mA	228 mA	±1000 µF	73%	JAH0212D05
	±9.0 V	±111 mA	20 mA	222 mA	±470 µF	75%	JAH0212D09
	±12.0 V	±83 mA	20 mA	213 mA	±470 µF	78%	JAH0212D12
24 V	3.3 V	500 mA	25 mA	120 mA	330 µF	53%	JAH0224S3V3
	5.0 V	400 mA	25 mA	132 mA	330 µF	53%	JAH0224S05
	9.0 V	222 mA	25 mA	132 mA	330 µF	53%	JAH0224S09
	12.0 V	166 mA	25 mA	122 mA	330 µF	53%	JAH0224S12
	15.0 V	133 mA	25 mA	122 mA	330 µF	53%	JAH0224S15
	24.0 V	83 mA	25 mA	122 mA	330 µF	53%	JAH0224S24
	±3.3 V	±300 mA	15 mA	121 mA	±1000 µF	53%	JAH0224D03
	±5.0 V	±200 mA	15 mA	114 mA	±1000 µF	53%	JAH0224D05
	±9.0 V	±111 mA	15 mA	111 mA	±470 µF	53%	JAH0224D09
	±12.0 V	±83 mA	15 mA	104 mA	±470 µF	53%	JAH0224D12
24 V	±15.0 V	±67 mA	20 mA	108 mA	±470 µF	53%	JAH0224D15
	±24.0 V	±42 mA	20 mA	111 mA	±220 µF	53%	JAH0224D24

Notes

- For optional 3000 VDC isolation add suffix '-H' to model number.
For optional 4000 VDC isolation add suffix '-H4' to model number.
For optional 5000 VDC isolation add suffix '-H5' to model number.
For optional 6000 VDC isolation add suffix '-H6' to model number.
- Input current measured at nominal input voltage.
- For optional metal case add suffix '-M'. Metal case is only an option up to 3000 VDC isolation versions eg. JAH0212S15-HM.
- Cross regulation is ±5% when one output is at 100% and the other is varied between 25% and 100%.

Mechanical Details

All dimensions are in inches (mm)
 Weight: 0.04 lbs (20 g) approx.
 Pin diameter: 0.02±0.002 (0.5±0.05)
 Pin pitch tolerance: ±0.014 (±0.35)
 Case tolerance: ±0.02 (±0.5)

PIN CONNECTIONS				
Pin	Single	Dual	Single - H	Dual - H
1	+Vin	+Vin	+Vin	+Vin
2	N.C.	-Vin	+Vin	+Vin
3	N.C.	Common	N.P	N.P
10	-Vout	Common	N.P	Common
11	+Vout	+Vout	N.P	Common
12	-Vin	-Vin	-Vout	N.P
13	-Vin	-Vin	+Vout	-Vout
14	+Vout	+Vout	N.P	N.P
15	-Vout	Common	N.P	+Vout
22	N.C.	Common	N.P	N.P
23	N.C.	-Vout	-Vin	-Vin
24	+Vin	+Vin	-Vin	-Vin

N.P : No Pin N.C : No Connection

