

JCG Series



- High Power Density
- 2:1 Input Range
- Operating Temperature -40 °C to +100 °C
- Single & Dual Outputs
- Continuous Short Circuit Protection
- 1600 VDC Isolation
- High Efficiency - up to 91%

Specification

Input

Input Voltage Range	<ul style="list-style-type: none"> • 12 V (9-18 VDC) • 24 V (18-36 VDC) • 48 V (18-75 VDC)
Input Current	<ul style="list-style-type: none"> • See table
Input Filter	<ul style="list-style-type: none"> • Pi network
Input Reflected Ripple	<ul style="list-style-type: none"> • 20 mA pk-pk through 12 μH inductor, 5 Hz to 20 MHz

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
Start Up Delay	<ul style="list-style-type: none"> • <20 ms
Start Up Rise Time	<ul style="list-style-type: none"> • <10 ms
Line Regulation	<ul style="list-style-type: none"> • $\pm 0.5\%$ max
Load Regulation	<ul style="list-style-type: none"> • $\pm 0.5\%$ max single, $\pm 1.0\%$ max dual
Cross Regulation	<ul style="list-style-type: none"> • $\pm 5\%$ on dual output models, see note 2
Transient Response	<ul style="list-style-type: none"> • <3% deviation, recovery to within 1% in 250 μs for a 25% load change
Ripple & Noise	<ul style="list-style-type: none"> • 85 mV pk-pk, 20 MHz BW, with 1 μF ceramic capacitor, see note 3
Overload Protection	<ul style="list-style-type: none"> • >150%
Overvoltage Protection	<ul style="list-style-type: none"> • 2.5/3.3 V models: 3.9 V typical • 5 V models: 6.2 V typical • 12 V models: 15.0 V typical • 15 V models: 18.0 V typical • ± 12 V models: ± 15.0 V typical • ± 15 V models: ± 18.0 V typical
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
Remote On/Off	<ul style="list-style-type: none"> • ON = 3-12 V or open circuit • OFF <1.2 VDC or short circuit pin 1, 2 & 3

General

Efficiency	<ul style="list-style-type: none"> • See tables
Isolation	<ul style="list-style-type: none"> • 1600 VDC Input to Output • 1600 VDC Input to Case • 1600 VDC Output to Case
Isolation Capacitance	<ul style="list-style-type: none"> • 1200 pF max
Switching Frequency	<ul style="list-style-type: none"> • 266 kHz typical
MTBF	<ul style="list-style-type: none"> • >1 Mhrs to MIL-STD-217F

Environmental

Operating Temperature	<ul style="list-style-type: none"> • -40 °C to +100 °C, derate from 100% load at +60 °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

EMC

Emissions	<ul style="list-style-type: none"> • EN55022 Class A conducted with external components - see application note
ESD Immunity	<ul style="list-style-type: none"> • EN61000-4-2, 4 kV contact discharge Perf Criteria B
Radiated Immunity	<ul style="list-style-type: none"> • EN61000-4-3, 3 V/m Perf Criteria A
EFT/Burst	<ul style="list-style-type: none"> • EN61000-4-4, level 3, Perf Criteria B*
Surge	<ul style="list-style-type: none"> • EN61000-4-5, level 3, Perf Criteria B*
Conducted Immunity	<ul style="list-style-type: none"> • EN61000-4-6, 3 Vrms, Perf Criteria A
Magnetic Field	<ul style="list-style-type: none"> • EN61000-4-8, 1 A/m, Perf Criteria A

*See note 4.

Input Voltage	Output Voltage	Output Current	Input Current ⁽¹⁾		Maximum Capacitive Load	Efficiency	Model Number
			No Load	Full Load			
9-18 V	2.5 V	3.5 A	15 mA	0.889 A	2000 μ F	85%	JCG1212S2V5
	3.3 V	3.5 A	15 mA	1.146 A	2000 μ F	87%	JCG1212S3V3
	5.0 V	2.4 A	15 mA	1.163 A	2000 μ F	89%	JCG1212S05
	12.0 V	1.0 A	15 mA	1.149 A	430 μ F	90%	JCG1212S12
	15.0 V	0.8 A	15 mA	1.149 A	300 μ F	90%	JCG1212S15
	± 12.0 V	± 0.5 A	15 mA	1.149 A	± 200 μ F	90%	JCG1212D12
18-36 V	2.5 V	3.5 A	15 mA	0.445 A	2000 μ F	85%	JCG1224S2V5
	3.3 V	3.5 A	15 mA	0.573 A	2000 μ F	87%	JCG1224S3V3
	5.0 V	2.4 A	15 mA	0.581 A	2000 μ F	89%	JCG1224S05
	12.0 V	1.0 A	15 mA	0.575 A	430 μ F	90%	JCG1224S12
	15.0 V	0.8 A	15 mA	0.575 A	300 μ F	90%	JCG1224S15
	± 12.0 V	± 0.5 A	15 mA	0.575 A	± 200 μ F	90%	JCG1224D12
18-75 V	2.5 V	3.5 A	15 mA	0.225 A	2000 μ F	84%	JCG1248S2V5
	3.3 V	3.5 A	15 mA	0.283 A	2000 μ F	88%	JCG1248S3V3
	5.0 V	2.4 A	15 mA	0.291 A	2000 μ F	89%	JCG1248S05
	12.0 V	1.0 A	15 mA	0.294 A	430 μ F	88%	JCG1248S12
	15.0 V	0.8 A	15 mA	0.291 A	300 μ F	89%	JCG1248S15
	± 12.0 V	± 0.5 A	12 mA	0.294 A	± 200 μ F	88%	JCG1248D12
	± 15.0 V	± 0.4 A	15 mA	0.291 A	± 120 μ F	89%	JCG1248D15

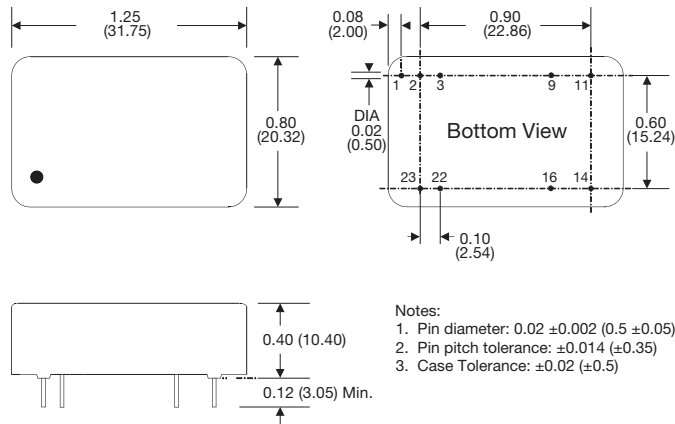
Notes

1. Input current measured at nominal input voltage.
2. When one output is set to 100% load and the other varies between 25% & 100% load.
3. Measured with 1 μ F ceramic capacitor across output rails.
4. A 300 μ F, 100 V capacitor is required across input terminals to meet performance criteria A.

Mechanical Details

All dimensions are in inches (mm) Weight: 0.04 lbs (20 g) approx.

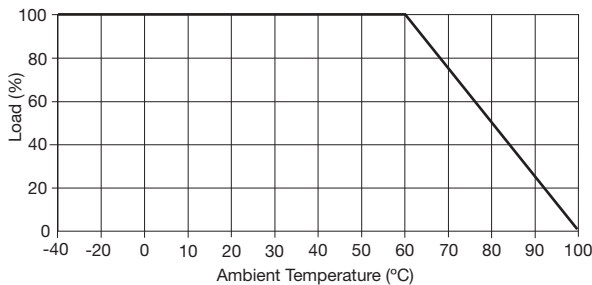
24 Pin DIL Package - Nickel Coated Copper



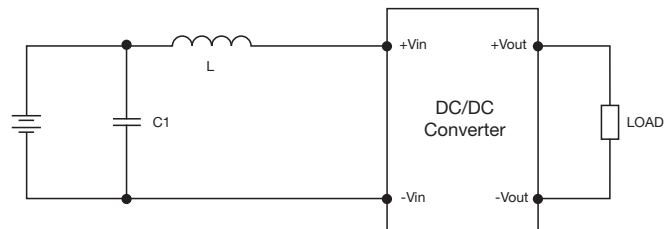
Pin	Pin Connections	
	Single	Dual
1	Remote On/Off	Remote On/Off
2	-Vin	-Vin
3	-Vin	-Vin
9	No Pin	Common
11	Not Connected	-Vout
14	+Vout	+Vout
16	-Vout	Common
22	+Vin	+Vin
23	+Vin	+Vin

Application Notes

Derating Curve



Input Filter



Model	L	C1
12 V	12 μ H	100 μ F, 100 V
24 V	12 μ H	100 μ F, 100 V
48 V	12 μ H	100 μ F, 100 V

Remote On/Off

Standard ROF logic is positive
 Output On >3.0 VDC or open circuit
 Output Off <1.2 VDC or short circuit pins 1, 2 & 3