12 Watts

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	• 12 V (9-18 VDC) 24 V (18-36 VDC) 48 V (36-75 VDC)
Input Current	• See table
Input Filter	• Pi network
Input Reflected Ripple	• 20 mA pk-pk through 12 µH inductor, 5 Hz to 20 MHz
Input Surge	• 12 V models 36 VDC for 1000 ms 24 V models 50 VDC for 1000 ms 48 V models 100 VDC for 1000 ms

Output

Output Voltage	• See table
Output Voltage Balance	• ±1% max, dual output models
Minimum Load	• No minimum load required
Intial Set Accuracy	• ±1% max
Start Up Delay	• <20 ms
Start Up Rise Time	• <10 ms
Line Regulation	• ±0.5% max
Load Regulation	• ±0.5% max single, ±1.0% max dual
Cross Regulation	• ±5% on dual output models, see note 2
Transient Response	• <3% deviation, recovery to within 1% in 250 µs for a 25% load change
Ripple & Noise	• 85 mV pk-pk, 20 MHz BW, with 1 µF ceramic capacitor, see note 3
Overload Protection	• >150%
Overvoltage Protection	• 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	• Trip & restart (hiccup) with auto recovery
Maximum Capacitive Load	• See tables
Temperature Coefficient	• ±0.02/°C max
Remote On/Off	• ON = 3-12 V or open circuit OFF <1.2 VDC or short circuit pin 1, 2 & 3

General

Efficiency	• See tables
Isolation	• 1600 VDC Input to Output 1600 VDC Input to Case 1600 VDC Output to Case
Isolation Capacitance	• 1200 pF max
Switching Frequency	• 266 kHz typical
MTBF	• >1 MHrs to MIL-STD-217F

Environmental

Operating Temperature	• -40 °C to +100 °C, derate from 100% load at +60 °C to no load at +100 °C
Case Temperature	• +100 °C max
Storage Temperature	• -40 °C to +125 °C
Humidity	• Up to 90%, non-condensing
Cooling	• Natural convection

EMC

Emissions	• EN55022 Class A conducted with external components - see application note
ESD Immunity	• EN61000-4-2, 4 kV contact discharge Perf Criteria B
Radiated Immunity	• EN61000-4-3, 3 V/m Perf Criteria A
EFT/Burst	• EN61000-4-4, level 3, Perf Criteria B*
Surge	• EN61000-4-5, level 3, Perf Criteria B*
Conducted Immunity	• EN61000-4-6, 3 Vrms, Perf Criteria A
Magnetic Field	• EN61000-4-8, 1 A/m, Perf Criteria A

*See note 4.

Models and Ratings

JCG Series

Input Voltage	Output Voltage	Output Current	Input Current[1] No Load	Input Current[1] Full Load	Maximum Capacitive Load	Efficiency	Model Number
9-18 V	2.5 V	3.5 A	15 mA	0.889 A	2000 µF	85%	JCG1212S2V5
	3.3 V	3.5 A	15 mA	1.146 A	2000 µF	87%	JCG1212S3V3
	5.0 V	2.4 A	15 mA	1.163 A	2000 µF	89%	JCG1212S05
	12.0 V	1.0 A	15 mA	1.149 A	430 µF	90%	JCG1212S12
	15.0 V	0.8 A	15 mA	1.149 A	300 µF	90%	JCG1212S15
	±12.0 V	±0.5 A	15 mA	1.149 A	±200 µF	90%	JCG1212D12
	±15.0 V	±0.4 A	15 mA	1.136 A	±120 µF	91%	JCG1212D15
18-36 V	2.5 V	3.5 A	15 mA	0.445 A	2000 µF	85%	JCG1224S2V5
	3.3 V	3.5 A	15 mA	0.573 A	2000 µF	87%	JCG1224S3V3
	5.0 V	2.4 A	15 mA	0.581 A	2000 µF	89%	JCG1224S05
	12.0 V	1.0 A	15 mA	0.575 A	430 µF	90%	JCG1224S12
	15.0 V	0.8 A	15 mA	0.575 A	300 µF	90%	JCG1224S15
	±12.0 V	±0.5 A	15 mA	0.575 A	±200 µF	90%	JCG1224D12
	±15.0 V	±0.4 A	15 mA	0.562 A	±120 µF	91%	JCG1224D15
36-75 V	2.5 V	3.5 A	15 mA	0.225 A	2000 µF	84%	JCG1248S2V5
	3.3 V	3.5 A	15 mA	0.283 A	2000 µF	88%	JCG1248S3V3
	5.0 V	2.4 A	15 mA	0.291 A	2000 µF	89%	JCG1248S05
	12.0 V	1.0 A	15 mA	0.294 A	430 µF	88%	JCG1248S12
	15.0 V	0.8 A	15 mA	0.291 A	300 µF	89%	JCG1248S15
	±12.0 V	±0.5 A	12 mA	0.294 A	±200 µF	88%	JCG1248D12
	±15.0 V	±0.4 A	15 mA	0.291 A	±120 µF	89%	JCG1248D15

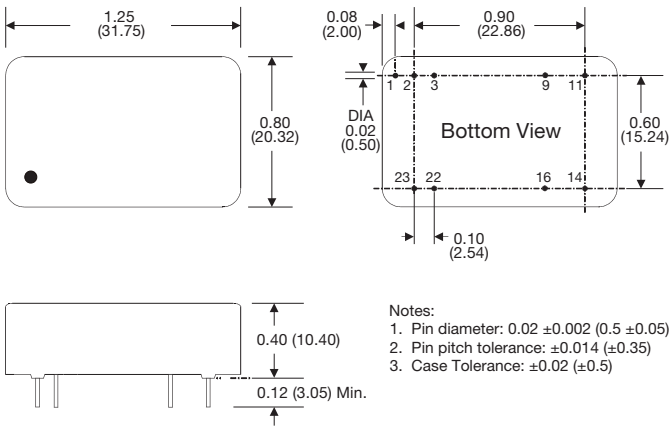
Notes

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 µF ceramic capacitor across output rails.*
4. *A 300 µF, 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

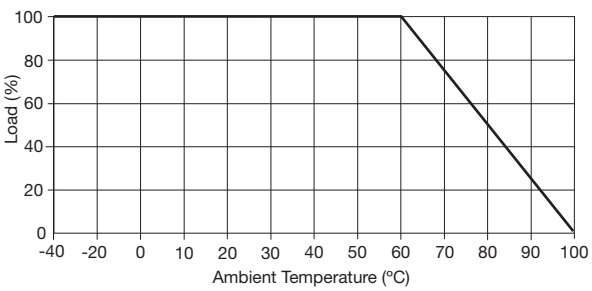


Notes:
1. Pin diameter: 0.02 ±0.002 (0.5 ±0.05)
2. Pin pitch tolerance: ±0.014 (±0.35)
3. Case Tolerance: ±0.02 (±0.5)

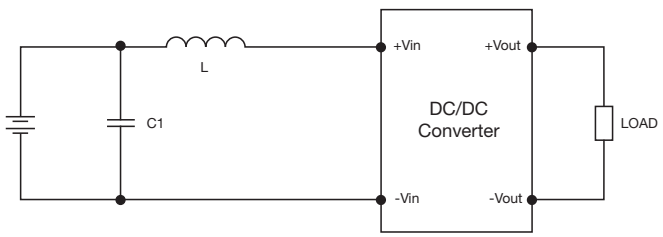
Pin Connections		
Pin	Single	Dual
1	Remote On/Off	Remote On/Off
2	-Vin	-Vin
3	-Vin	-Vin
9	No Pin	Common
11	Not Connected	-Vout
14	+Vout	+Vout
16	-Vout	Common
22	+Vin	+Vin
23	+Vin	+Vin

Application Notes

Derating Curve



Input Filter



Model	L	C1
12 V	12 µH	100 µF, 100 V
24 V	12 µH	100 µF, 100 V
48 V	12 µH	100 µF, 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