12/15 Watts

JCG Series

- High Power Density
- 2:1 Input Range
- Operating Temperature –40 °C to +100 °C
- Single & Dual Outputs
- Remote On/Off
- 1600 VDC Isolation
- 3 Year Warranty

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 Current	• 20 mA pk-pk through 12 µH inductor
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
Undervoltage Lockout	• None
Input Reverse Voltage Protection	• None

Output

Output Voltage	• See table
Minimum Load	• No minimum load required
Initial Set Accuracy	• ±1.2% max for JCG12, ±1.0% for JCG15
Start Up Delay	• 20 ms max
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 bandwidth for JCG12, 60 mV pk-pk, 20 MHz bandwidth for JCG15 (see note 3)
Overload Protection	• >150% of full load
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 table
Temperature Coefficient	• ±0.02/°C max
Remote On/Off	• ON >3.0 VDC or open circuit OFF <1.2 VDC or short circuit pin 1, 2 & 3

General

Efficiency	• See tables
Isolation Voltage	• 1600 VDC Input to Output, functional insulation 1600 VDC Input to Case 1600 VDC Output to Case
Isolation Capacitance	• 2000 µF max
Switching Frequency	• 330 kHz typical
Power Density	• 30 W/in^3 for JCG12, 37.5 W/in^3 for JCG15
MTBF	• >1.0 MHrs to MIL-HDBK-217F at 25 °C, GB
Solder Profile	• Max 260°C 10s max, 1.5 from case
Pin Material	• Solder coated brass
Case Material	• Copper, nickel coated
Base Material	• UL94V-0 rated plastic
Potting Material	• UL94V-0 rated epoxy

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 95%, non-condensing
Cooling	• Natural convection

EMC

Emissions	• EN55022 Class A conducted and radiated with external components - see application note
ESD Immunity	• EN61000-4-2, level 3, Perf Criteria A
EFT/Burst	• EN61000-4-4, level 3, Perf Criteria A*
Surge	• EN61000-4-5, installation class 3, Perf Criteria A*
Conducted Immunity	• EN61000-4-6, 10 Vrms, Perf Criteria A
Magnetic Field	• EN61000-4-8, 1 A/m, Perf Criteria A

** A 330 µF, 100 V capacitor is required across input terminals to meet performance criteria A.*

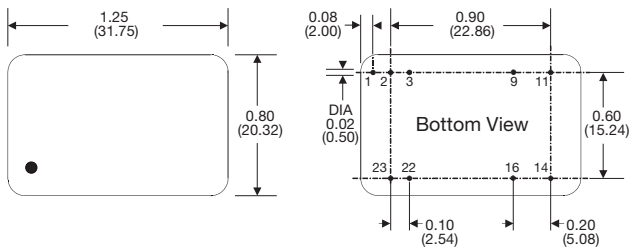
Models and Ratings

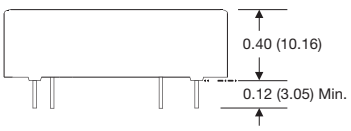
Input Voltage	Output Voltage	Output Current	Input Current[1]		Max. Capacitive Load	Efficiency	Model Number
			No Load	Full Load			
9-18 V	2.5 V	3.5 A	15 mA	0.89 A	2000 µF	85%	JCG1212S2V5
	3.3 V	3.5 A	15 mA	1.15 A	2000 µF	87%	JCG1212S3V3
	5.0 V	2.4 A	15 mA	1.16 A	2000 µF	89%	JCG1212S05
	12.0 V	1.0 A	15 mA	1.15 A	430 µF	90%	JCG1212S12
	15.0 V	0.8 A	15 mA	1.15 A	300 µF	90%	JCG1212S15
	±12.0 V	±0.5 A	15 mA	1.15 A	±200 µF	90%	JCG1212D12
	±15.0 V	±0.4 A	15 mA	1.14 A	±120 µF	91%	JCG1212D15
18-36 V	2.5 V	3.5 A	15 mA	0.45 A	2000 µF	85%	JCG1224S2V5
	3.3 V	3.5 A	15 mA	0.57 A	2000 µF	87%	JCG1224S3V3
	5.0 V	2.4 A	15 mA	0.58 A	2000 µF	89%	JCG1224S05
	12.0 V	1.0 A	15 mA	0.58 A	430 µF	90%	JCG1224S12
	15.0 V	0.8 A	15 mA	0.58 A	300 µF	90%	JCG1224S15
	±12.0 V	±0.5 A	15 mA	0.58 A	±200 µF	90%	JCG1224D12
	±15.0 V	±0.4 A	15 mA	0.56 A	±120 µF	91%	JCG1224D15
36-75 V	2.5 V	3.5 A	15 mA	0.23 A	2000 µF	84%	JCG1248S2V5
	3.3 V	3.5 A	15 mA	0.28 A	2000 µF	88%	JCG1248S3V3
	5.0 V	2.4 A	15 mA	0.29 A	2000 µF	89%	JCG1248S05
	12.0 V	1.0 A	15 mA	0.29 A	430 µF	88%	JCG1248S12
	15.0 V	0.8 A	15 mA	0.29 A	300 µF	89%	JCG1248S15
	±12.0 V	±0.5 A	15 mA	0.29 A	±200 µF	88%	JCG1248D12
	±15.0 V	±0.4 A	15 mA	0.29 A	±120 µF	89%	JCG1248D15
9-18 V	3.3 V	4.0 A	15 mA	1309 mA	4700 µF	86%	JCG1512S3V3
	5.1 V	3.0 A	15 mA	1465 mA	3300 µF	89%	JCG1512S05
	12.0 V	1.25 A	15 mA	1436 mA	600 µF	89%	JCG1512S12
	15.0 V	1.0 A	15 mA	1420 mA	400 µF	90%	JCG1512S15
	±5.0 V	±1.5 A	15 mA	1488 mA	±1500 µF	86%	JCG1512D05
	±12.0 V	±0.625 A	15 mA	1420 mA	±288 µF	90%	JCG1512D12
	±15.0 V	±0.5 A	15 mA	1420 mA	±200 µF	90%	JCG1512D15
18-36 V	3.3 V	4.0 A	10 mA	647 mA	4700 µF	87%	JCG1524S3V3
	5.1 V	3.0 A	10 mA	732 mA	3300 µF	89%	JCG1524S05
	12.0 V	1.25 A	10 mA	710 mA	600 µF	90%	JCG1524S12
	15.0 V	1.0 A	10 mA	702 mA	400 µF	91%	JCG1524S15
	±5.0 V	±1.5 A	10 mA	744 mA	±1500 µF	86%	JCG1524D05
	±12.0 V	±0.625 A	10 mA	710 mA	±288 µF	90%	JCG1524D12
	±15.0 V	±0.5 A	10 mA	710 mA	±200 µF	90%	JCG1524D15
36-75 V	3.3 V	4.0 A	5 mA	327 mA	4700 µF	86%	JCG1548S3V3
	5.1 V	3.0 A	5 mA	370 mA	3300 µF	88%	JCG1548S05
	12.0 V	1.25 A	5 mA	359 mA	600 µF	89%	JCG1548S12
	15.0 V	1.0 A	5 mA	359 mA	400 µF	89%	JCG1548S15
	±5.0 V	±1.5 A	5 mA	372 mA	±1500 µF	86%	JCG1548D05
	±12.0 V	±0.625 A	5 mA	359 mA	±288 µF	89%	JCG1548D12
	±15.0 V	±0.5 A	5 mA	355 mA	±200 µF	90%	JCG1548D15

Notes

1. Input current measured at nominal input voltage.
2. When one output is set to 100% load & the other varies between 25% & 100% load.
3. Measured with 1 µF ceramic capacitor across output rails.

Mechanical Details





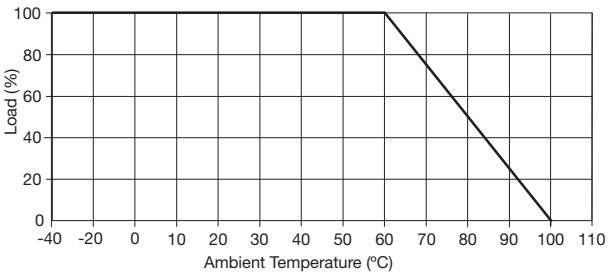
Pin Connections		
Pin	Single	Dual
1	Remote On/Off	Remote On/Off
2	-Vin	-Vin
3	-Vin	-Vin
9	No Pin	Common
11	Not Connected	-Vout
14	+Vout	+Vout
16	-Vout	Common
22	+Vin	+Vin
23	+Vin	+Vin

Notes

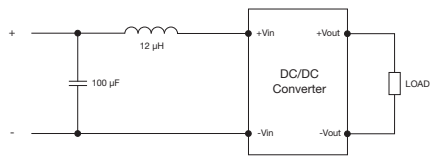
1. All dimensions are in inches (mm)
2. Weight: 0.04 lbs (18 g) approx
3. Pin diameter: 0.02 ±0.002 (0.5 ±0.05)
4. Pin pitch tolerance: ±0.014 (±0.35)

Application Notes

Derating Curve



Input Filter



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