6 Watts
JCD Series

- 2:1 Input Range
- Industry Standard Package
- 1600 VDC Isolation
- Continuous Short Circuit Protection
- –40 °C to +100 °C Operating Temperature
- Single & Dual Outputs
- 3 Year Warranty

Specification

Input

Input Voltage Range	• 5 V (4.5-9 VDC) 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	• 5 V models 15 VDC for 100 ms 12 V models 24 VDC for 100 ms 24 V models 40 VDC for 100 ms 48 V models 80 VDC for 100 ms

Output

Output Voltage	• See table
Setpoint Accuracy	• ±1% (±2% for JCD0612/24/48S3V3 & D03 models)
Voltage Balance	• ±1% (±2% D03 models)
Minimum Load	• No minimum load required
Line Regulation	• ±0.5%
Load Regulation	• ±0.5% single outputs, ±1.5% for S3V3 & D03 models
Cross Regulation	• ±5% (see note 1)
Ripple & Noise	• 60 mV pk-pk, 20 MHz bandwidth
Start Up Delay	• 20 ms typical for 5 V input models, 500 ms typical for 12/24/48 V input models
Transient Response	• 3% max deviation, recovery to within 1% in 250 µs (5% & 300 µS for JCD0612/24/48S3V3 & D03 models) for a 25% load change
Temperature Coefficient	• 0.02%/°C
Overload Protection	• 150% of full load on 5 V input models only
Short Circuit Protection	• Indefinite with auto recovery
Maximum Capacitive Load	• See table

General

Efficiency	• See table
Isolation Voltage	• 1600 VDC Input to Output For optional high isolation versions 3500 VDC Input to Output add suffix -H to model number 1600 VDC Input to Case 1600 VDC Output to Case
Isolation Capacitance	• 500 pF typical input to output
Isolation Resistance	• $10^9\Omega$
Switching Frequency	• 266 kHz typical
Power Density	• 15 W/in^3
MTBF	• >1.1 MHrs to MIL-STD-217F at 25 °C, GB

Environmental

Operating Temperature	• -40 °C to +100 °C (see derating curve)
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 with external components, see application note
ESD Immunity	• EN61000-4-2, level 3, Perf Criteria B
Radiated Immunity	• EN61000-4-3, 10 V/m, Perf Criteria A
EFT/Burst	• EN61000-4-4, level 3 Perf Criteria B*
Surge	• EN61000-4-5, level 2, Perf Criteria B*
Conducted Immunity	• EN61000-4-6, 10 Vrms, Perf Criteria A*
Magnetic Field	• EN61000-4-8, 1 A/m, Perf Criteria A*

**External input capacitor required, 220 µF/100 V*

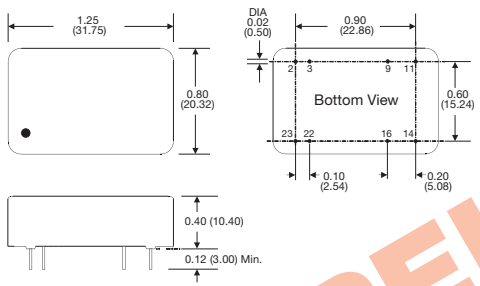
Models and Ratings

Input Voltage	Output Voltage	Output Current	Input Current[1]		Maximum Capacitive Load	Efficiency	Model Number[4]
			No Load	Full Load			
4.5-9 VDC	3.3 V	1400 mA	25 mA	1232 mA	1000 µF	75%	JCD0605S3V3
	5.0 V	1200 mA	25 mA	1558 mA	1000 µF	77%	JCD0605S05
	12.0 V	500 mA	25 mA	1445 mA	330 µF	83%	JCD0605S12
	15.0 V	400 mA	30 mA	1445 mA	220 µF	83%	JCD0605S15
	±3.3 V	±909 mA	25 mA	1578 mA	±680 µF	76%	JCD0605D03
	±5.0 V	±600 mA	25 mA	1500 mA	±330 µF	80%	JCD0605D05
	±12.0 V	±250 mA	35 mA	1428 mA	±100 µF	84%	JCD0605D12
	±15.0 V	±200 mA	40 mA	1428 mA	±47 µF	84%	JCD0605D15
9-18 VDC	3.3 V	1400 mA	30 mA	520 mA	220 µF	74%	JCD0612S3V3
	5.0 V	1200 mA	30 mA	649 mA	1000 µF	77%	JCD0612S05
	9.0 V	666 mA	30 mA	632 mA	680 µF	79%	JCD0612S09
	12.0 V	500 mA	30 mA	617 mA	1000 µF	81%	JCD0612S12
	15.0 V	400 mA	30 mA	604 mA	100 µF	82%	JCD0612S15
	24.0 V	250 mA	30 mA	617 mA	100 µF	81%	JCD0612S24
	±3.3 V	±909 mA	30 mA	675 mA	±1000 µF	74%	JCD0612D03
	±5.0 V	±600 mA	30 mA	657 mA	±680 µF	76%	JCD0612D05
	±9.0 V	±333 mA	30 mA	617 mA	±22 µF	81%	JCD0612D09
	±12.0 V	±250 mA	30 mA	632 mA	±330 µF	79%	JCD0612D12
	±15.0 V	±200 mA	30 mA	625 mA	±100 µF	80%	JCD0612D15
	±24.0 V	±125 mA	30 mA	625 mA	±10 µF	80%	JCD0612D24
18-36 VDC	3.3 V	1400 mA	20 mA	256 mA	1000 µF	75%	JCD0624S3V3
	5.0 V	1200 mA	20 mA	313 mA	1000 µF	80%	JCD0624S05
	9.0 V	666 mA	20 mA	301 mA	680 µF	83%	JCD0624S09
	12.0 V	500 mA	20 mA	301 mA	1000 µF	83%	JCD0624S12
	15.0 V	400 mA	20 mA	301 mA	100 µF	83%	JCD0624S15
	24.0 V	250 mA	20 mA	294 mA	470 µF	85%	JCD0624S24
	±3.3 V	±909 mA	20 mA	328 mA	±1000 µF	76%	JCD0624D03
	±5.0 V	±600 mA	20 mA	308 mA	±680 µF	81%	JCD0624D05
	±9.0 V	±333 mA	20 mA	301 mA	±220 µF	83%	JCD0624D09
	±12.0 V	±250 mA	20 mA	301 mA	±470 µF	83%	JCD0624D12
	±15.0 V	±200 mA	20 mA	301 mA	±100 µF	83%	JCD0624D15
	±24.0 V	±125 mA	20 mA	304 mA	±100 µF	82%	JCD0624D24
36-72 VDC	3.3 V	1400 mA	12 mA	128 mA	2200 µF	75%	JCD0648S3V3
	5.0 V	1200 mA	12 mA	156 mA	1000 µF	80%	JCD0648S05
	9.0 V	666 mA	12 mA	148 mA	1000 µF	84%	JCD0648S09
	12.0 V	500 mA	12 mA	148 mA	470 µF	84%	JCD0648S12
	15.0 V	400 mA	12 mA	154 mA	1000 µF	81%	JCD0648S15
	24.0 V	250 mA	12 mA	147 mA	220 µF	85%	JCD0648S24
	±3.3 V	±909 mA	12 mA	164 mA	±1000 µF	76%	JCD0648D03
	±5.0 V	±600 mA	12 mA	156 mA	±680 µF	80%	JCD0648D05
	±9.0 V	±333 mA	12 mA	150 mA	±680 µF	83%	JCD0648D09
	±12.0 V	±250 mA	12 mA	148 mA	±330 µF	84%	JCD0648D12
	±15.0 V	±200 mA	12 mA	152 mA	±330 µF	82%	JCD0648D15
	±24.0 V	±125 mA	12 mA	150 mA	±150 µF	83%	JCD0648D24

Notes

1. When one output is set at 100% load and the other varies between 25% & 100% load.
2. Measured with 20 MHz bandwidth and 1 µF ceramic capacitor across output rails.
3. Input current specified at nominal 5 V, 12 V, 24 V or 48 V input.
4. For optional 3500 VDC isolation add suffix -H to part number e.g. JCD0624S12-H

Mechanical Details



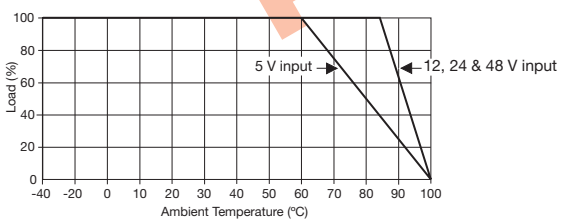
Pin	Single	Dual
2	-Vin	-Vin
3	-Vin	-Vin
9	No Pin	Common
11	N.C.	-Vout
14	+Vout	+Vout
16	-Vout	Common
22	+Vin	+Vin
23	+Vin	+Vin

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 ±0.005)
4. Pin pitch and length tolerance: ±0.014 (±0.35)
5. Case tolerance: ±0.02 (±0.5)
6. Package: 24 pin DIL nickel-coated copper

Application Notes

Derating Curve



Input Filter