THE DATASHEET OF

JTK2024S05

15/20 Watts

JTK Series

- Very High Power Density
- Wide 4:1 Input Range
- Operating Temperature –40 °C to +100 °C
- Single & Dual Outputs
- 1600 VDC Isolation
- UL Approved
- High Efficiency – up to 89%
- 3 Year Warranty

Specification

Input

Input Voltage Range	• 24 V (9-36 VDC) 48 V (18-75 VDC)
Input Current	• See table
Input Filter	• Pi network
Input Reflected Ripple Current	• JTK15: 20 mA pk-pk JTK20: 30 mA pk-pk through 12 µH inductor and 47 µF capacitor, 5 Hz to 20 MHz
Input Surge	• 24 V models: 50 VDC for 100 ms • 48 V models: 100 VDC for 100 ms

Output

Output Voltage	• See table
Output Trim	• ±10% max on single output
Minimum Load	• No minimum load required
Initial Set Accuracy	• ±1% max
Start Up Delay	• 20 ms typical
Line Regulation	• JTK15: ±0.2% max single, ±0.5% max dual JTK20: ±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% max deviation, recovery to within 1% in 250 µs for a 25% load change
Ripple & Noise	• 100 mV pk-pk, 20 MHz bandwidth, (see note 3)
Overload Protection	• JTK15: 170% of full load typical, JTK20: 150% of full load typical
Overvoltage Protection	• 3.3 V models: 3.9 V typical 5 V models: 6.2 V typical 12 V models: 15 V typical 15 V models: 18 V typical ±5 V models: ±6.2 V typical ±12 V models: ±15 V typical ±15 V models: ±18 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 pins 2 & 3

General

Efficiency	• See table
Isolation	• 1600 VDC Input to Output 1600 VDC Input to Case 1600 VDC Output to Case
Isolation Capacitance	• JTK15: 1200 pF max JTK20: 1000 pF max
Switching Frequency	• JTK15: 375 kHz typical JTK20: 330 kHz typical
Power Density	• JTK15: 38.4 W/in^3, JTK20: 51.3 W/in^3
MTBF	• >560 KHrs to MIL-STD-217F at 25 °C, GB

Environmental

Operating Temperature	• -40 °C to +100 °C, JTK15: derate from 100% load at +65 °C to no load at +100 °C, JTK20: derate from 100% load at +55 °C to no load at +100 °C
Case Temperature	• +105 °C max
Storage Temperature	• -40 °C to +125 °C
Humidity	• Up to 90%, non-condensing
Cooling	• Natural convection

EMC

Emissions	• EN55022, Level A conducted & radiated with external components - see applications note
ESD Immunity	• EN61000-4-2, Level 2 Perf Criteria A
Radiated Immunity	• EN61000-4-3, 3 V/m Perf Criteria A
EFT/Burst	• EN61000-4-4, Level 3 Perf Criteria A*
Conducted Immunity	• EN61000-4-6, 3 V rms Perf Criteria A
Magnetic Fields	• EN61000-4-8, 1 A/m Perf Criteria A

Safety

Safety Approvals	• UL60950-1, CAN/CSA C22.2 No.60950-1, UL62368-1

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

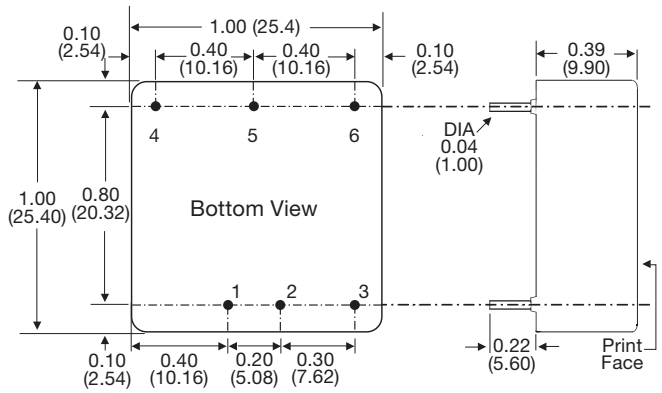
Models and Ratings

Input Voltage	Output Voltage	Output Current	Input Current[1]		Maximum Capacitive Load	Efficiency	Model Number
			No Load	Full Load			
9-36 V	3.3 V	4.000 A	15 mA	647 mA	1000 µF	86%	JTK1524S3V3
	5.0 V	3.000 A	15 mA	727 mA	1000 µF	87%	JTK1524S05
	12.0 V	1.300 A	15 mA	747 mA	330 µF	88%	JTK1524S12
	15.0 V	1.000 A	15 mA	710 mA	220 µF	89%	JTK1524S15
	±5.0 V	±1.500 A	15 mA	744 mA	±470 µF	85%	JTK1524D05
	±12.0 V	±0.625 A	15 mA	720 mA	±220 µF	88%	JTK1524D12
	±15.0 V	±0.500 A	15 mA	710 mA	±100 µF	89%	JTK1524D15
18-75 V	3.3 V	4.000 A	10 mA	331 mA	1000 µF	84%	JTK1548S3V3
	5.0 V	3.000 A	10 mA	368 mA	1000 µF	86%	JTK1548S05
	12.0 V	1.300 A	10 mA	378 mA	330 µF	87%	JTK1548S12
	15.0 V	1.000 A	10 mA	360 mA	220 µF	88%	JTK1548S15
	±5.0 V	±1.500 A	10 mA	377 mA	±470 µF	84%	JTK1548D05
	±12.0 V	±0.625 A	10 mA	363 mA	±220 µF	87%	JTK1548D12
	±15.0 V	±0.500 A	10 mA	360 mA	±100 µF	88%	JTK1548D15
9-36 V	3.3 V	4.500 A	50 mA	720 mA	10000 µF	86%	JTK2024S3V3
	5.0 V	4.000 A	50 mA	936 mA	5000 µF	89%	JTK2024S05
	12.0 V	1.670 A	22 mA	936 mA	850 µF	89%	JTK2024S12
	15.0 V	1.330 A	22 mA	936 mA	700 µF	89%	JTK2024S15
	±12.0 V	±0.833 A	25 mA	936 mA	±470 µF	89%	JTK2024D12
	±15.0 V	±0.667 A	25 mA	936 mA	±330 µF	89%	JTK2024D15
18-75 V	3.3 V	4.500 A	30 mA	309 mA	10000 µF	86%	JTK2048S3V3
	5.0 V	4.000 A	30 mA	468 mA	5000 µF	89%	JTK2048S05
	12.0 V	1.670 A	15 mA	468 mA	850 µF	89%	JTK2048S12
	15.0 V	1.330 A	15 mA	468 mA	700 µF	90%	JTK2048S15
	±12.0 V	±0.833 A	15 mA	468 mA	±470 µF	89%	JTK2048D12
	±15.0 V	±0.667 A	15 mA	468 mA	±330 µF	89%	JTK2048D15

Notes

1. Input current measured at nominal 24 V and 48 V input.
2. When one output is set to 100% load, and the other varies between 25% and 100% load.
3. Measured with 1 µF ceramic capacitor and 10 µF tantalum capacitor across output rails.

Mechanical Details



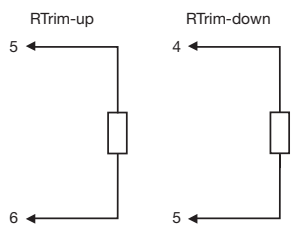
Pin Connections		
Pin	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	Remote On/Off	Remote On/Off
4	+Vout	+Vout
5	Trim	Com
6	-Vout	-Vout

Notes

1. All dimensions are in inches (mm)
2. Weight: 0.04 lbs (20 g) approx.
3. Pin diameter: 0.04 ±0.002 (1.0 ±0.05)
4. Pin pitch tolerance: ±0.014 (±0.35)
5. Case tolerance: ±0.02 (±0.5)

Application Notes

Output Trim

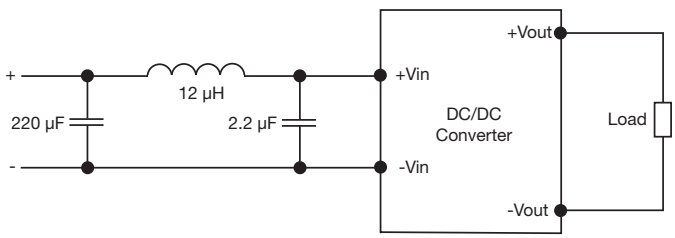


Trim Resistor Values		
Model Number	Trim up 10%	Trim down 10%
JTK - S3V3	8 k	12 k
JTK - S05	10 k	5 k
JTK - S12	20 k	7 k
JTK - S15	20 k	6 k

Approximate values.

Output can be externally trimmed by using this method.
(Single output models only). For variable trimming, use 100 kΩ potentiometer.
Contact sales for details.

Input Filter



Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

- View JTK2024S05 on WIN SOURCE
- XP Power Information

Optimize Your Supply Chain with WIN SOURCE Solutions

- Global Sourcing Solution
- Obsolete Management
- Cost Control Management
- Shortage Management
- Alternative Solution
- Excess Inventory Management