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DC–DC

20 Watts
JTM Series

xppower.com



- Wide 4:1 Input Range
- Single & Dual Outputs
- –40 °C to +105 °C Operating Temperature
- Overvoltage & Overcurrent Protection
- Remote On/Off
- 1600 VDC Isolation
- 3 Year Warranty

Specification

Input

Input Voltage Range	• 24 V (9-36 VDC) 48 V (18-75 VDC)
Input Current	• See table
Undervoltage Lockout	• 24 V models: ON 8.6 V, OFF 7.9 V typical 48 V models: ON 17.8 V, OFF 16 V typical
Input Surge	• 24 V models 50 VDC for 100 ms 48 V models 100 VDC for 100 ms

Output

Output Voltage	• See table
Output Voltage Trim	• ±10%, single outputs
Minimum Load	• No minimum load required
Line Regulation	• ±0.5% max
Load Regulation	• Single output models: ±0.5% max Dual output models: ±1% max balanced outputs
Cross Regulation	• ±5% for dual outputs (see note 2)
Setpoint Accuracy	• ±1%
Start Up Time	• 20 ms typical
Ripple & Noise	• 75 mV pk-pk at 20 MHz bandwidth, (see note 3)
Transient Response	• 3% max deviation, recovery to within 1% in <250 µs for a 25% load change
Temperature Coefficient	• 0.02%/°C
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
Overload Protection	• >120% of full load typical
Short Circuit Protection	• Trip & restart (hiccup mode), auto recovery
Remote On/Off	• On = Logic High (3.0-12.0 V) or Open Off = Logic Low (<1.2 V) or short pin 2 to 6 (see note 4)

General

Efficiency	• See table
Isolation	• 1600 VDC Input to Output 1600 VDC Input to Case 1600 VDC Output to Case
Switching Frequency	• 330 kHz typical
Power Density	• 25 W/in^3
MTBF	• 560 kHrs min to MIL-HDBK-217F at 25 °C, GB

Environmental

Operating Temperature	• -40 °C to +105 °C, see derating curve
Case Temperature	• +105 °C max
Cooling	• Convection-cooled
Operating Humidity	• 5-95% RH, non-condensing
Storage Temperature	• -40 °C to +125 °C

EMC & Safety

Emissions	• EN55022, class A conducted & radiated with external components - see application notes
ESD Immunity	• EN61000-4-2, level 3 Perf Criteria A
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 V/rms,Perf Criteria A
Magnetic Field	• EN61000-4-8 1 A/m, Perf Criteria A

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

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Models and Ratings

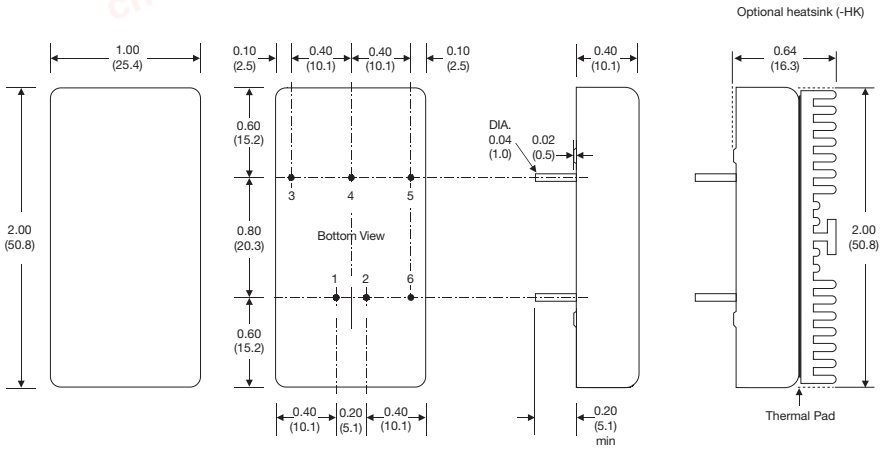
JTM20 XP

Input Voltage	Output Voltage	Output Current	Input Current[1]		Maximum Capacitive Load	Efficiency	Model Number
			No Load	Full Load			
9-36 VDC	3.3 VDC	5.500 A	50 mA	879 mA	10,000 µF	89%	JTM2024S3V3
	5.0 VDC	4.000 A	50 mA	957 mA	6,800 µF	91%	JTM2024S05
	12.0 VDC	1.670 A	22 mA	980 mA	1,000 µF	89%	JTM2024S12
	15.0 VDC	1.330 A	22 mA	968 mA	680 µF	89%	JTM2024S15
	±5.0 VDC	±2.000 A	65 mA	969 mA	±2,200 µF	89%	JTM2024D05
	±12.0 VDC	±0.835 A	25 mA	980 mA	±470 µF	88%	JTM2024D12
	±15.0 VDC	±0.665 A	25 mA	980 mA	±330 µF	89%	JTM2024D15
18-75 VDC	3.3 VDC	5.500 A	30 mA	440 mA	10,000 µF	89%	JTM2048S3V3
	5.0 VDC	4.000 A	30 mA	473 mA	6,800 µF	91%	JTM2048S05
	12.0 VDC	1.670 A	15 mA	484 mA	1,000 µF	89%	JTM2048S12
	15.0 VDC	1.330 A	15 mA	484 mA	680 µF	89%	JTM2048S15
	±5.0 VDC	±2.000 A	40 mA	484 mA	±2,200 µF	89%	JTM2048D05
	±12.0 VDC	±0.835 A	15 mA	490 mA	±470 µF	88%	JTM2048D12
	±15.0 VDC	±0.665 A	15 mA	490 mA	±330 µF	89%	JTM2048D15

Notes

1. Input current specified at nominal 24 V or 48 V input.
2. Cross regulation is ±5% when one output is at 100% and the other is varied between 25% and 100%.
3. Measured with 1 µF ceramic capacitor across output rails.
4. Non-standard versions can have Remote On/Off function and pin removed. Contact sales for details.
5. For heatsink option add '-HK' to the end of the part number.

Mechanical Details



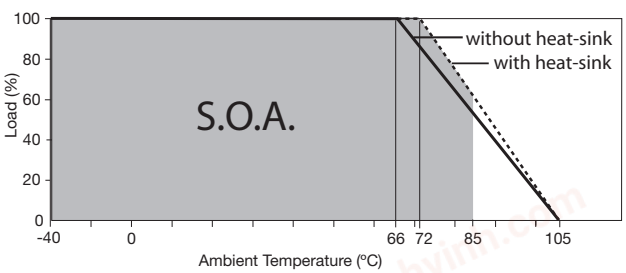
Pin Connections		
Pin	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	+Vout	+Vout
4	Trim	Com
5	-Vout	-Vout
6	Remote On/Off	Remote On/Off

Notes

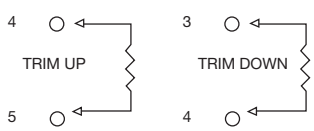
1. All dimensions are in inches (mm).
2. Weight: 0.07 lbs (30 g)
3. Pin diameter: 0.04 ±0.002 (1.0 ±0.05)
4. Pin pitch tolerance: ±0.014 (±0.35)
5. Case tolerance: ±0.02 (±0.5)
6. Stand-off tolerance: ±0.004 (±0.1)

Application Notes

Derating Curve



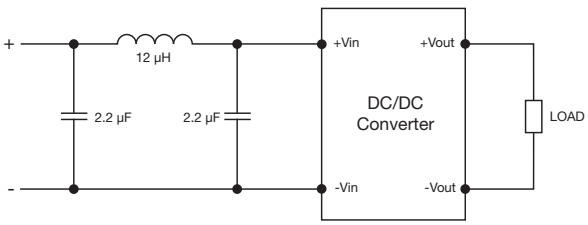
External Output Trim



Output can be externally trimmed using this method.

Contact sales for details.

Input Filter



Remote On/Off Control

Standard ROF logic is positive.
Output On 3.0-12.0 VDC or open circuit
Output Off <1.2 VDC or short circuit pins 2 & 6