

20 Watts

JTM Series



- 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	<ul style="list-style-type: none"> • 24 V (9-36 VDC) • 48 V (18-75 VDC)
Input Current	<ul style="list-style-type: none"> • See table
Undervoltage Lockout	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 24 V models 50 VDC for 100 ms • 48 V models 100 VDC for 100 ms

Output

Output Voltage	<ul style="list-style-type: none"> • See table
Output Voltage Trim	<ul style="list-style-type: none"> • ±10%, single outputs
Minimum Load	<ul style="list-style-type: none"> • No minimum load required
Line Regulation	<ul style="list-style-type: none"> • ±0.5% max
Load Regulation	<ul style="list-style-type: none"> • Single output models: ±0.5% max • Dual output models: ±1% max balanced outputs
Cross Regulation	<ul style="list-style-type: none"> • ±5% for dual outputs (see note 2)
Setpoint Accuracy	<ul style="list-style-type: none"> • ±1%
Start Up Time	<ul style="list-style-type: none"> • 20 ms typical
Ripple & Noise	<ul style="list-style-type: none"> • 75 mV pk-pk at 20 MHz bandwidth, (see note 3)
Transient Response	<ul style="list-style-type: none"> • 3% max deviation, recovery to within 1% in <250 μs for a 25% load change
Temperature Coefficient	<ul style="list-style-type: none"> • 0.02%/°C
Overvoltage Protection	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • >120% of full load typical
Short Circuit Protection	<ul style="list-style-type: none"> • Trip & restart (hiccup mode), auto recovery
Remote On/Off	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • See table
Isolation	<ul style="list-style-type: none"> • 1600 VDC Input to Output • 1600 VDC Input to Case • 1600 VDC Output to Case
Switching Frequency	<ul style="list-style-type: none"> • 330 kHz typical
Power Density	<ul style="list-style-type: none"> • 25 W/in³
MTBF	<ul style="list-style-type: none"> • 560 kHrs min to MIL-HDBK-217F at 25 °C, GB

Environmental

Operating Temperature	<ul style="list-style-type: none"> • -40 °C to +105 °C, see derating curve
Case Temperature	<ul style="list-style-type: none"> • +105 °C max
Cooling	<ul style="list-style-type: none"> • Convection-cooled
Operating Humidity	<ul style="list-style-type: none"> • 5-95% RH, non-condensing
Storage Temperature	<ul style="list-style-type: none"> • -40 °C to +125 °C

EMC & Safety

Emissions	<ul style="list-style-type: none"> • EN55022, class A conducted & radiated with external components - see application notes
ESD Immunity	<ul style="list-style-type: none"> • EN61000-4-2, level 3 Perf Criteria A
Radiated Immunity	<ul style="list-style-type: none"> • EN61000-4-3 10 V/m, Perf Criteria A
EFT/Burst	<ul style="list-style-type: none"> • EN61000-4-4 level 3, Perf Criteria B*
Surge	<ul style="list-style-type: none"> • EN61000-4-5 level 2, Perf Criteria B*
Conducted Immunity	<ul style="list-style-type: none"> • EN61000-4-6 10 V/rms, Perf Criteria A
Magnetic Field	<ul style="list-style-type: none"> • EN61000-4-8 1 A/m, Perf Criteria A
Safety Approvals	<ul style="list-style-type: none"> • EN60950-1, IEC60950-1

*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 VDC	3.3 VDC	5.500 A	50 mA	879 mA	10,000 μ F	89%	JTM2024S3V3 [†] [^]
	5.0 VDC	4.000 A	50 mA	957 mA	6,800 μ F	91%	JTM2024S05 [†] [^]
	12.0 VDC	1.670 A	22 mA	980 mA	1,000 μ F	89%	JTM2024S12 [†] [^]
	15.0 VDC	1.330 A	22 mA	968 mA	680 μ F	89%	JTM2024S15 [†] [^]
	\pm 5.0 VDC	\pm 2.000 A	65 mA	969 mA	\pm 2,200 μ F	89%	JTM2024D05 [†] [^]
	\pm 12.0 VDC	\pm 0.835 A	25 mA	980 mA	\pm 470 μ F	88%	JTM2024D12 [†] [^]
	\pm 15.0 VDC	\pm 0.665 A	25 mA	980 mA	\pm 330 μ F	89%	JTM2024D15 [†] [^]
18-75 VDC	3.3 VDC	5.500 A	30 mA	440 mA	10,000 μ F	89%	JTM2048S3V3 [†] [^]
	5.0 VDC	4.000 A	30 mA	473 mA	6,800 μ F	91%	JTM2048S05 [†] [^]
	12.0 VDC	1.670 A	15 mA	484 mA	1,000 μ F	89%	JTM2048S12 [†] [^]
	15.0 VDC	1.330 A	15 mA	484 mA	680 μ F	89%	JTM2048S15 [†] [^]
	\pm 5.0 VDC	\pm 2.000 A	40 mA	484 mA	\pm 2,200 μ F	89%	JTM2048D05 [†] [^]
	\pm 12.0 VDC	\pm 0.835 A	15 mA	490 mA	\pm 470 μ F	88%	JTM2048D12 [†] [^]
	\pm 15.0 VDC	\pm 0.665 A	15 mA	490 mA	\pm 330 μ F	89%	JTM2048D15 [†] [^]

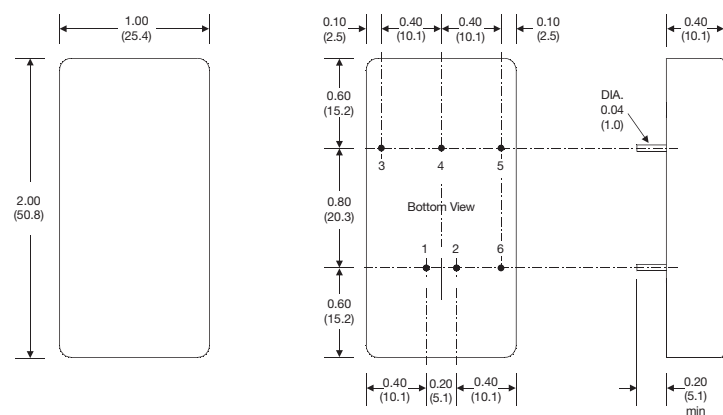
Notes

1. Input current specified at nominal 24 V or 48 V input.
2. Cross regulation is \pm 5% when one output is at 100% and the other is varied between 25% and 100%.
3. Measured with 1 μ F ceramic capacitor across output rails.
4. Non-standard versions can have Remote On/Off function and pin removed. Contact sales for details.

[†] Available from Farnell & element14. See pages 284-290.

[^] Available from Newark. See pages 291-296.

Mechanical Details



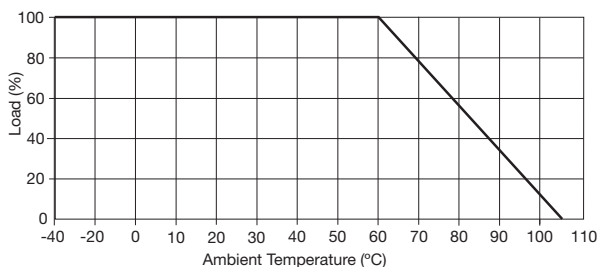
Pin	Pin Connections	
	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	+Vout	+Vout
4	Trim	Com
5	-Vout	-Vout
6	Remote On/Off	Remote On/Off

Notes

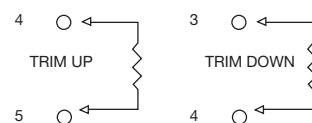
1. All dimensions are in inches (mm).
2. Weight: 0.07 lbs (30 g)
3. Pin diameter: 0.04 \pm 0.002 (1.0 \pm 0.05)
4. Pin pitch tolerance: \pm 0.014 (\pm 0.35)
5. Case tolerance: \pm 0.02 (\pm 0.5)

Application Notes

Derating Curve



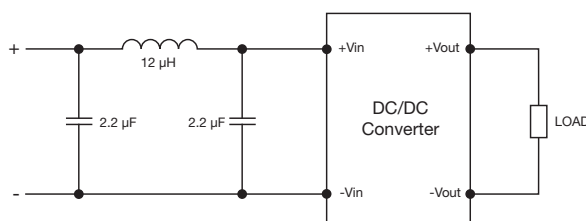
External Output Trim



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