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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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- Very High Power Density
- 2:1 Input Range
- Operating Temperature $-40\text{ }^{\circ}\text{C}$ to $+105\text{ }^{\circ}\text{C}$
- Single & Dual Outputs
- 1600 VDC Isolation
- High Efficiency – up to 89%
- 3 Year Warranty

Specification

Input

Input Voltage Range	<ul style="list-style-type: none"> • 12 V (9-18 VDC) • 24 V (18-36 VDC) • 48 V (36-75 VDC)
Input Current	<ul style="list-style-type: none"> • See table
Input Filter	<ul style="list-style-type: none"> • Pi network
Input Reflected Ripple Current	<ul style="list-style-type: none"> • JCM15: 20 mA pk-pk, JCM20: 30 mA pk-pk through 12 μH inductor and 47 μF capacitor, 5 Hz to 20 MHz
Input Surge	<ul style="list-style-type: none"> • 12 V models: 36 VDC for 100 ms • 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 Trim	<ul style="list-style-type: none"> • $\pm 10\%$ max on single output
Minimum Load	<ul style="list-style-type: none"> • No minimum load required
Initial Set Accuracy	<ul style="list-style-type: none"> • $\pm 1\%$ max
Start Up Delay	<ul style="list-style-type: none"> • 20 ms typical
Line Regulation	<ul style="list-style-type: none"> • JCM15: $\pm 0.2\%$ max, JCM20: $\pm 0.5\%$
Load Regulation	<ul style="list-style-type: none"> • $\pm 0.5\%$ max single, $\pm 1.0\%$ max dual
Cross Regulation	<ul style="list-style-type: none"> • $\pm 5\%$ on dual output models (see note 2)
Transient Response	<ul style="list-style-type: none"> • $< 3\%$ max deviation, recovery to within 1% in 250 μs for a 25% load change
Ripple & Noise	<ul style="list-style-type: none"> • 100 mV pk-pk, 20 MHz bandwidth, (see note 3)
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"> • 150% of full load typical
Short Circuit Protection	<ul style="list-style-type: none"> • Trip & restart (hiccup) with auto recovery
Maximum Capacitive Load	<ul style="list-style-type: none"> • See table
Temperature Coefficient	<ul style="list-style-type: none"> • $\pm 0.02/^{\circ}\text{C}$ max
Remote On/Off	<ul style="list-style-type: none"> • On > 3.0 VDC or open circuit • Off < 1.2 VDC or short circuit pins 2 & 3

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
Isolation Capacitance	<ul style="list-style-type: none"> • JCM15: 1200 pF max, JCM20: 1000 pF max
Switching Frequency	<ul style="list-style-type: none"> • JCM15: 375 kHz typical, JCM20: 330 kHz typical
Power Density	<ul style="list-style-type: none"> • JCM15: 38.4 W/in³, JCM20: 51.3 W/in³
MTBF	<ul style="list-style-type: none"> • > 560 kHrs to MIL-STD-217F at 25 $^{\circ}\text{C}$, GB

Environmental

Operating Temperature	<ul style="list-style-type: none"> • $-40\text{ }^{\circ}\text{C}$ to $+105\text{ }^{\circ}\text{C}$, derate from 100% load at $+65\text{ }^{\circ}\text{C}$ to no load at $+105\text{ }^{\circ}\text{C}$ for JCM15 and 100% load at $+55\text{ }^{\circ}\text{C}$ to no load at $105\text{ }^{\circ}\text{C}$ for JCM20
Case Temperature	<ul style="list-style-type: none"> • $+105\text{ }^{\circ}\text{C}$ max
Storage Temperature	<ul style="list-style-type: none"> • $-40\text{ }^{\circ}\text{C}$ to $+125\text{ }^{\circ}\text{C}$
Humidity	<ul style="list-style-type: none"> • Up to 90%, non-condensing
Cooling	<ul style="list-style-type: none"> • Natural convection

EMC

Emissions	<ul style="list-style-type: none"> • EN55022 class A conducted & radiated with external components, see application note
ESD Immunity	<ul style="list-style-type: none"> • EN61000-4-2, 6 kV contact discharge, 8 kV air discharge, 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 2, Perf Criteria A*
Surge	<ul style="list-style-type: none"> • EN61000-4-5, level 2, Perf Criteria A
Conducted Immunity	<ul style="list-style-type: none"> • EN61000-4-6, 10 Vrms, Perf Criteria A
Magnetic Field	<ul style="list-style-type: none"> • EN61000-4-8, 1 A/m, Perf Criteria A

*External input capacitor required, 220 $\mu\text{F}/100\text{ V}$.

Input Voltage	Output Voltage	Output Current	Input Current ⁽¹⁾		Maximum Capacitive Load	Efficiency	Model Number
			No Load	Full Load			
9-18 V	3.3 V	4.000 A	20 mA	1310 mA	1000 µF	85%	JCM1512S3V3
	5.0 V	3.000 A	20 mA	1471 mA	1000 µF	86%	JCM1512S05
	12.0 V	1.300 A	20 mA	1494 mA	330 µF	88%	JCM1512S12
	15.0 V	1.000 A	20 mA	1420 mA	220 µF	89%	JCM1512S15
	±5.0 V	±1.500 A	20 mA	1488 mA	±470 µF	85%	JCM1512D05
	±12.0 V	±0.625 A	20 mA	1420 mA	±220 µF	89%	JCM1512D12
18-36 V	3.3 V	4.000 A	15 mA	647 mA	1000 µF	86%	JCM1524S3V3
	5.0 V	3.000 A	15 mA	727 mA	1000 µF	87%	JCM1524S05
	12.0 V	1.300 A	15 mA	747 mA	330 µF	88%	JCM1524S12
	15.0 V	1.000 A	15 mA	710 mA	220 µF	89%	JCM1524S15
	±5.0 V	±1.500 A	15 mA	744 mA	±470 µF	85%	JCM1524D05
	±12.0 V	±0.625 A	15 mA	718 mA	±220 µF	88%	JCM1524D12
36-75 V	3.3 V	4.000 A	10 mA	327 mA	1000 µF	85%	JCM1548S3V3
	5.0 V	3.000 A	10 mA	368 mA	1000 µF	86%	JCM1548S05
	12.0 V	1.300 A	10 mA	374 mA	330 µF	88%	JCM1548S12
	15.0 V	1.000 A	10 mA	359 mA	220 µF	88%	JCM1548S15
	±5.0 V	±1.500 A	10 mA	377 mA	±470 µF	84%	JCM1548D05
	±12.0 V	±0.625 A	10 mA	363 mA	±220 µF	87%	JCM1548D12
9-18 V	3.3 V	4.500 A	60 mA	1439 mA	7000 µF	86%	JCM2012S3V3
	5.0 V	4.000 A	60 mA	1852 mA	5000 µF	90%	JCM2012S05
	12.0 V	1.670 A	30 mA	1873 mA	850 µF	89%	JCM2012S12
	15.0 V	1.330 A	30 mA	1873 mA	700 µF	89%	JCM2012S15
	±12.0 V	±0.833 A	30 mA	1873 mA	±470 µF	89%	JCM2012D12
	±15.0 V	±0.667 A	30 mA	1873 mA	±330 µF	89%	JCM2012D15
18-36 V	3.3 V	4.500 A	35 mA	720 mA	7000 µF	86%	JCM2024S3V3
	5.0 V	4.000 A	35 mA	936 mA	5000 µF	89%	JCM2024S05
	12.0 V	1.670 A	25 mA	936 mA	850 µF	89%	JCM2024S12
	15.0 V	1.330 A	25 mA	936 mA	700 µF	89%	JCM2024S15
	±12.0 V	±0.833 A	30 mA	936 mA	±470 µF	89%	JCM2024D12
	±15.0 V	±0.667 A	30 mA	936 mA	±330 µF	89%	JCM2024D15
36-75 V	3.3 V	4.500 A	25 mA	360 mA	7000 µF	86%	JCM2048S3V3
	5.0 V	4.000 A	25 mA	468 mA	5000 µF	89%	JCM2048S05
	12.0 V	1.670 A	15 mA	468 mA	850 µF	89%	JCM2048S12
	15.0 V	1.330 A	15 mA	468 mA	700 µF	90%	JCM2048S15
	±12.0 V	±0.833 A	20 mA	468 mA	±470 µF	89%	JCM2048D12
	±15.0 V	±0.667 A	20 mA	468 mA	±330 µF	89%	JCM2048D15

Notes

1. Input current specified at nominal input.
2. Cross regulation for duals is ±5% when one output is at 100% and the other is varied between 25% and 100%.
3. Measured with 1 µF ceramic capacitor in parallel with a 10 µF electrolytic across output rails on single output models or 1 µF ceramic capacitor only on dual output models.

Mechanical Details

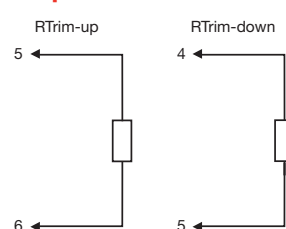
Pin Connections					
Pin	Single	Dual	Pin	Single	Dual
1	+Vin	+Vin	4	+Vout	+Vout
2	-Vin	-Vin	5	Trim	Com
3	Remote On/Off	Remote On/Off	6	-Vout	-Vout

Notes

1. All dimensions are in inches (mm).
2. Weight: 0.04 lbs (20 g) approx.
3. Pin diameter: 0.004 ±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%
JCM-S3V3	8 kΩ	12 kΩ
JCM-S05	10 kΩ	5 kΩ
JCM-S12	20 kΩ	7 kΩ
JCM-S15	20 kΩ	6 kΩ

Approximate values.

Output can be externally trimmed by using the method above. (Single output models only). For variable trimming, use 100 kΩ potentiometer

Input Filter

