

15W



The 15W JCM15 series is housed in a 25.4 x 25.4 x 10.4 mm (1" x 1" x 0.41") PCB mount metal case. Featuring a 2:1 input voltage range of 9 to 18VDC 18 to 36VDC or 36 to 75VDC with regulated single outputs of 3.3, 5, 12 & 15VDC adjustable +/-10% with a trim resistor, dual outputs ± 5 , ± 12 & ± 15 VDC.

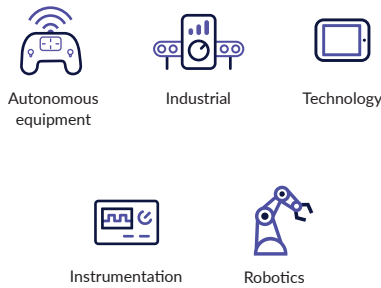
The JCM15 has 1.6kVDC isolation between input and output. Remote on/off is standard as are overload & over voltage protection. Operating temperature range is from -40°C to +105°C, with derating above +65°C.



Features

- ▶ Regulated single outputs from 3.3 to 15VDC
- ▶ Regulated dual outputs ± 5 , ± 12 & ± 15 VDC
- ▶ Input ranges 9 to 18, 18 to 36, 36 to 75VDC
- ▶ 25.4 x 25.4mm (1" x 1") package, 10.4mm profile
- ▶ 1.6kVDC isolation
- ▶ Remote On/Off
- ▶ -40°C to +105°C operating temperature
- ▶ Full power to +65°C
- ▶ 3 year warranty

Applications



Dimensions

25.4 x 25.4 x 10.4mm (1.00" x 1.00" x 0.41")

Models & ratings

Model number	Input voltage	Output voltage	Output current	Efficiency	Input current ⁽¹⁾		Maximum capacitive load
					No load	Full load	
JCM1512S3V3	9-18VDC	3.3VDC	4.000A	85%	20mA	1310mA	1000 μ F
JCM1512S05		5.0VDC	3.000A	86%	20mA	1471mA	1000 μ F
JCM1512S12		12.0VDC	1.300A	88%	20mA	1494mA	330 μ F
JCM1512S15		15.0VDC	1.000A	89%	20mA	1420mA	220 μ F
JCM1512D05 ⁽²⁾		± 5.0 VDC	± 1.500 A	85%	20mA	1488mA	± 470 μ F
JCM1512D12 ⁽²⁾		± 12.0 VDC	± 0.625 A	89%	20mA	1420mA	± 220 μ F
JCM1512D15 ⁽²⁾		± 15.0 VDC	± 0.500 A	89%	20mA	1437mA	± 100 μ F

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Notes:

1. Input current specified at nominal input.
2. Cross regulation for duals 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 in parallel with a 10 μ F electrolytic across output rails on single output models or 1 μ F ceramic capacitor only on dual output models.

Models & ratings

Model number	Input voltage	Output voltage	Output current	Efficiency	Input current ⁽⁴⁾		Maximum capacitive load
					No load	Full load	
JCM1524S3V3	18-36VDC	3.3VDC	4.000A	86%	15mA	647mA	1000μF
JCM1524S05		5.0VDC	3.000A	87%	15mA	727mA	1000μF
JCM1524S12		12.0VDC	1.300A	88%	15mA	747mA	330μF
JCM1524S15		15.0VDC	1.000A	89%	15mA	710mA	220μF
JCM1524D05 ⁽²⁾		±5.0VDC	±1.500A	85%	15mA	744mA	±470μF
JCM1524D12 ⁽²⁾		±12.0VDC	±0.625A	88%	15mA	718mA	±220μF
JCM1524D15 ⁽²⁾		±15.0VDC	±0.500A	89%	10mA	710mA	±100μF
JCM1548S3V3	36-75VDC	3.3VDC	4.000A	85%	10mA	327mA	1000μF
JCM1548S05		5.0VDC	3.000A	86%	10mA	368mA	1000μF
JCM1548S12		12.0VDC	1.300A	88%	10mA	374mA	330μF
JCM1548S15		15.0VDC	1.000A	88%	10mA	359mA	220μF
JCM1548D05 ⁽²⁾		±5.0VDC	±1.500A	84%	10mA	377mA	±470μF
JCM1548D12 ⁽²⁾		±12.0VDC	±0.625A	87%	10mA	363mA	±220μF
JCM1548D15 ⁽²⁾		±15.0VDC	±0.500A	88%	10mA	359mA	±100μF

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 1μF ceramic capacitor in parallel with a 10μF electrolytic across output rails on single output models or 1μF ceramic capacitor only on dual output models.

Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Input voltage range	9		18	VDC	12VDC nominal
	18		36		24VDC nominal
	36		75		48VDC nominal
Input current	See models & ratings table				
Input Filter	Pi network				
Input reflected ripple current		20		mA/pk-pk	12μH inductor and 47μF capacitor, 5Hz to 20MHz
Input surge		36		VDC	12VDC models (for 100ms)
		50			24VDC models (for 100ms)
		100			48VDC models (for 100ms)

Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Output voltage	See models & ratings table				
Output voltage trim		±10		%	Single output models only
Minimum load	0			%	No minimum load required
Line regulation			±0.2	%	Single output
			±0.5		Dual outputs
Load regulation			±0.5	%	Single output
			±1.0		Dual outputs
Cross regulation		±5		%	Dual outputs when one output is at 100% and the other is varied between 25% and 100%.
Transient response			<3	%	Deviation, recovery to within 1% in <250µs for a 25% load change
Start up delay		20		ms	
Ripple & noise		100		mV pk-pk	Measured with 1µF ceramic capacitor in parallel with a 10µF electrolytic across output rails on single output models or 1µF ceramic capacitor only on dual output models
Short circuit protection	Trip & restart (hiccup mode), auto recovery				
Temperature coefficient		±0.02		%/°C	
Overload protection		150		%	Full load
Remote on/off	On >3.0VDC or open circuit				
	Off <1.2VDC or short circuit pins 2 & 3				
Overvoltage protection		3.9		VDC	3.3VDC models
		6.2			5VDC models
		15			12VDC models
		18			15VDC models
		±6.2			±5VDC models
		±15			±12VDC models
		±18			±15VDC models
Maximum capacitive load	See models and ratings table				

General

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Efficiency	See models & ratings table				
Isolation: input to output		1600		VDC	
Isolation: input to case		1600		VDC	
Isolation: output to case		1600		VDC	
Isolation capacitance			1200	pF	
Switching frequency		375		kHz	
Power density		2.34 (38.4)		W/cm ³ (W/in ³)	
Mean time between failure		>560		khrs	MIL-HDBK-217F, +25°C GB
Water Washing	Use de-ionised water, do not soak, dry thoroughly				
Solder Profile	Wave solder profile 260°C 1.5mm from case 10s max. With iron 450°C, 5s max.				

Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Operating temperature	-40		+105	°C	Derate from 100% load at +65°C to no load at +105°C
Storage temperature	-40		+125	°C	
Case temperature			+105	°C	
Cooling	Natural convection				
Humidity			90	%	Non condensing

Safety approvals

Safety agency	Standard	Notes & conditions
UL	UL60950-1, CAN/CSA C22.2 No.60950-1, UL62368-1	
CE	Meets all applicable directives	
UKCA	Meets all applicable legislation	

Emissions - EMC

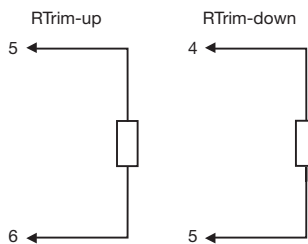
Phenomenon	Standard	Test level	Notes & conditions
Conducted	EN55032	Class A	With external components, see application note
Radiated	EN55032	Class A	

Immunity - EMC

Phenomenon	Standard	Test level	Criteria	Notes & conditions
ESD immunity	EN61000-4-2		A	6kV contact discharge, 8kV air discharge
Radiated immunity	EN61000-4-3	10V/m	A	
EFT/Burst	EN61000-4-4	2	A	External input capacitor required, 220μF/100V.
Surge	EN61000-4-5	2	A	
Conducted immunity	EN61000-4-6	10Vrms	A	
Magnetic fields	EN61000-4-8	1A/m	A	

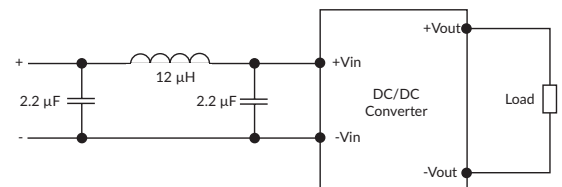
Application notes

Output trim



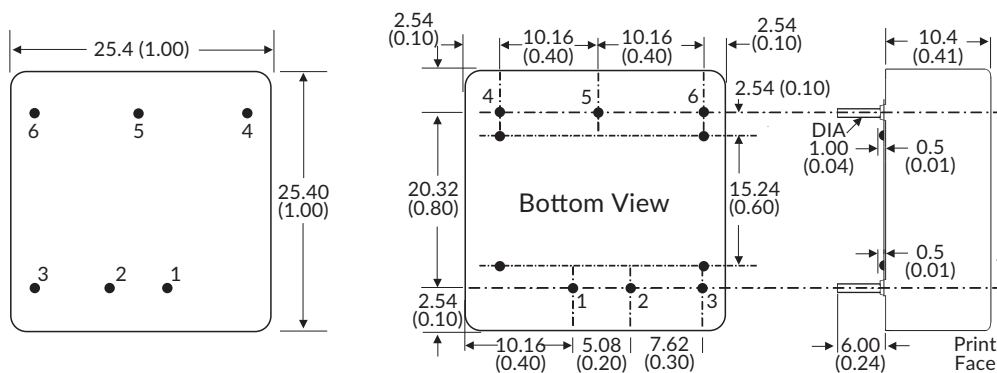
Trim resistor values		
Model Number	Trim up 10%	Trim down 10%
JCM-S3V3	8kΩ	12kΩ
JCM-S05	10kΩ	5kΩ
JCM-S12	20kΩ	7kΩ
JCM-S15	20kΩ	6kΩ

Input filter



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

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:

- All dimensions are in mm (inches)
- Weight: 20g (0.04lbs) approx.
- Pin diameter: 1.0 ±0.05 (0.04 ±0.002)

- Pin pitch tolerance: ±0.35 (±0.014)
- Case tolerance: ±0.5 (±0.02)

Specifications subject to change without notice.