

## JCL Series



- 2:1 Input Range
- High Efficiency up to 90%
- -40 °C to +100 °C Operating Temperature
- Fixed 300 kHz Switching Frequency
- Regulated Single Outputs
- Continuous Short Circuit Protection
- Six-sided Metal Case or Open Frame

## Specification

## Input

- |                      |  |
|----------------------|--|
| Input Voltage Range  | • 24 VDC (18-36 VDC)<br>48 VDC (36-75 VDC)                   |
| Input Current        | • See table  |
| Input Filter         | • Pi network   |
| Undervoltage Lockout | • Turn on >71% nominal input,<br>Turn off <67% nominal input |

## Output

- |                          |  |
|--------------------------|--|
| Output Voltage           | • See table  |
| Output Voltage Adj       | • $\pm 10\%$   |
| Minimum Load             | • No minimum load required   |
| Line Regulation          | • $\pm 0.5\%$ max  |
| Load Regulation          | • $\pm 0.5\%$ max from 10% to full load  |
| Setpoint Accuracy        | • $\pm 1.0\%$ max  |
| Ripple & Noise           | • 1.8 V, 2.5 V, 3.3 V & 5.0 V models<br>75 mV pk-pk max (20 MHz bandwidth)<br>12.0 V & 15.0 V models<br>100 mV pk-pk max (20 MHz bandwidth)                          |
| Transient Response       | • 5% max deviation, recovery to within<br>1% in 300 $\mu$ s for a 25% load change  |
| Temperature Coefficient  | • 0.02%/°C   |
| Overvoltage Protection   | • 1.8 V & 2.5 V models 3.3 V typical,<br>3.3 V models 3.9 V typical,<br>5.0 V models 6.2 V typical,<br>12.0 V models 15.0 V typical,<br>15.0 V models 18.0 V typical |
| Overcurrent Protection   | • 110-150%   |
| Short Circuit Protection | • Trip & restart (hiccup mode)   |
| Remote On/Off            | • ON >3.5 VDC or open circuit<br>OFF <1.8 VDC<br>Optional negative logic, add suffix '-N'<br>to model number   |
| Thermal Protection       | • Shuts down when case measures<br>+110 °C typical   |

## General

- |                     |  |
|---------------------|--|
| Efficiency          | • See table  |
| Isolation Voltage   | • 1500 VDC Input to Output<br>1500 VDC Input to Case<br>-V Output is connected to case |
| Switching Frequency | • 300 kHz typical  |
| MTBF                | • >750 kHrs to MIL-STD-217F  |

## Environmental

- |                       |   |
|-----------------------|---|
| Operating Temperature | • -40 °C to +100 °C (see derating curve)                                |
| Case Temperature      | • +100 °C max   |
| Storage Temperature   | • -55 °C to +125 °C   |
| Cooling               | • Convection-cooled   |
| Operating Humidity    | • Up to 90%, non-condensing   |
| Shock                 | • 30 g, half sine wave 18 ms pulse applied<br>3 times on each of 6 axes |
| Vibration             | • 5-500 Hz, 3 g, for 10 mins on each<br>of 3 axes                       |

## EMC

- |                    |  |
|--------------------|--|
| Emissions          | • EN55022, Level A conducted & radiated<br>with external components - contact<br>technical sales |
| ESD Immunity       | • EN61000-4-2, Level 2 Perf Criteria A   |
| Radiated Immunity  | • EN61000-4-3, 3 V/m Perf Criteria A   |
| Conducted Immunity | • EN61000-4-6, 3 V rms Perf Criteria A   |

Input Voltage	Output Voltage	Output Current	Input Current <sup>(1)</sup>		Efficiency	Model Number <sup>(2, 3)</sup>
			No Load	Full Load		
18-36 VDC	1.8 VDC	8.0 A	60 mA	714 mA	84%	JCL2524S1V8
	2.5 VDC	8.0 A	55 mA	749 mA	88%	JCL2524S2V5
	3.3 VDC	6.0 A	55 mA	729 mA	89%	JCL2524S3V3
	5.0 VDC	5.0 A	60 mA	1157 mA	90%	JCL2524S05
	12.0 VDC	2.0 A	30 mA	1149 mA	89%	JCL2524S12
	15.0 VDC	1.6 A	30 mA	1149 mA	89%	JCL2524S15
36-75 VDC	1.8 VDC	8.0 A	30 mA	397 mA	84%	JCL2548S1V8
	2.5 VDC	8.0 A	30 mA	473 mA	88%	JCL2548S2V5
	3.3 VDC	6.0 A	40 mA	463 mA	89%	JCL2548S3V3
	5.0 VDC	5.0 A	40 mA	579 mA	80%	JCL2548S05
	12.0 VDC	2.0 A	20 mA	568 mA	88%	JCL2548S12
	15.0 VDC	1.6 A	20 mA	568 mA	88%	JCL2548S15

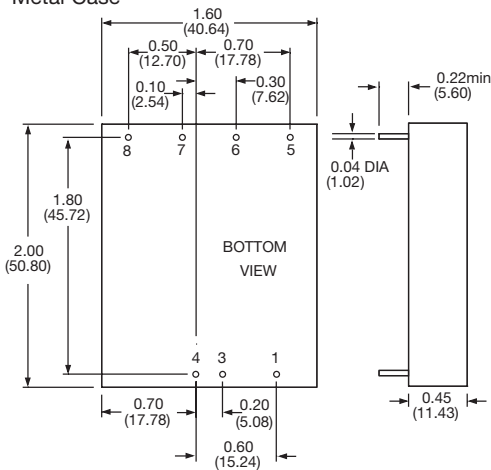
Notes

1. Input currents specified at nominal 24 V or 48 V input.
2. For optional open frame version, add suffix '-U' to model number.
3. For optional negative logic Remote On/Off, add suffix '-N' to model number.

Mechanical Details

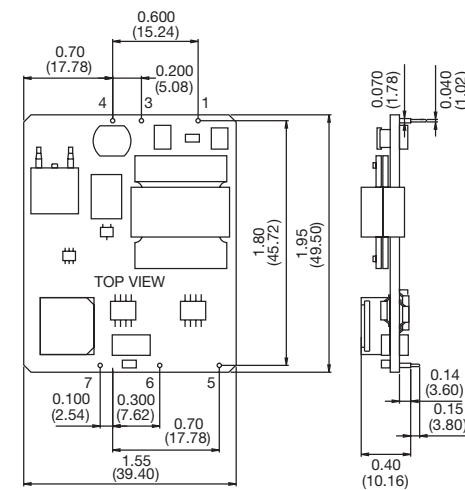
All dimensions are in inches (mm)  
 Weight: 25 g (0.06 lbs)

Metal Case



Pin	Function
1	On/Off Control
3	- V Input
4	+V Input
5	Trim
6	-V Output & Case
7	+V Output
8	No Pin

Open Frame

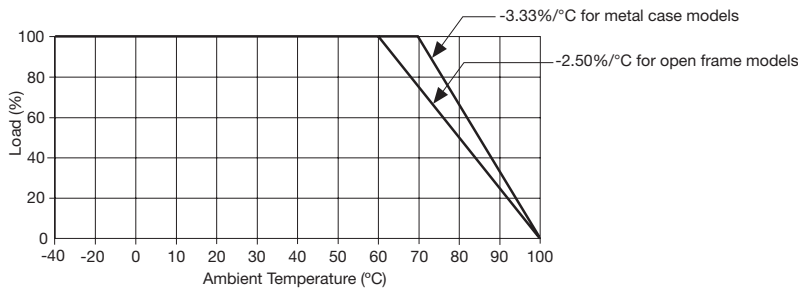


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3	- V Input
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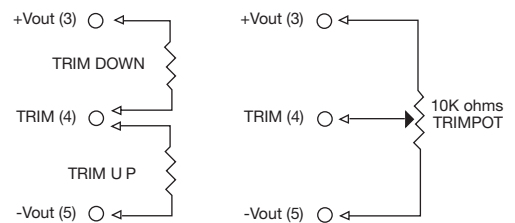
Application Notes

Derating Curve

Derating:  
 Metal case models above +70 °C, linearly to zero power at 100 °C.  
 Open frame models above +60 °C, linearly to zero power at 100 °C.



External Output Trim



Remote On/Off Control

Standard ROF logic is positive.  
 Output On >3.5 VDC or open circuit  
 Output Off <1.8 VDC

Optional ROF logic is negative ('-N' version).  
 Output On <1.8 VDC  
 Output Off >3.5 VDC or open circuit