25 Watts

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

Output

Output Voltage	• See table
Output Voltage Adj	• ±10%
Minimum Load	• No minimum load required
Line Regulation	• ±0.5% max
Load Regulation	• ±0.5% max from 10% to full load
Setpoint Accuracy	• ±1.0% max
Ripple & Noise	• 1.8 V, 2.5 V, 3.3 V & 5.0 V models 75 mV pk-pk max (20 MHz bandwidth) 12.0 V & 15.0 V models 100 mV pk-pk max (20 MHz bandwidth)
Transient Response	• 5% max deviation, recovery to within 1% in 300 µs for a 25% load change
Temperature Coefficient	• 0.02%/°C
Overvoltage Protection	• 1.8 V & 2.5 V models 3.3 V typical, 3.3 V models 3.9 V typical, 5.0 V models 6.2 V typical, 12.0 V models 15.0 V typical, 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 OFF <1.8 VDC Optional negative logic, add suffix '-N' to model number
Thermal Protection	• Shuts down when case measures +110 °C typical

General

Efficiency	• See table
Isolation Voltage	• 1500 VDC Input to Output 1500 VDC Input to Case -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 3 times on each of 6 axes
Vibration	• 5-500 Hz, 3 g, for 10 mins on each of 3 axes

EMC

Emissions	• EN55022, Level A conducted & radiated with external components - contact 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

Models and Ratings

JCL XP

Input Voltage	Output Voltage	Output Current	Input Current[1]		Efficiency	Model Number[2, 3]
			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

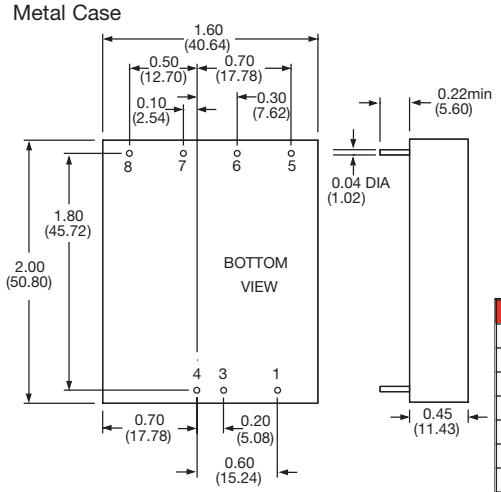
Notes

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

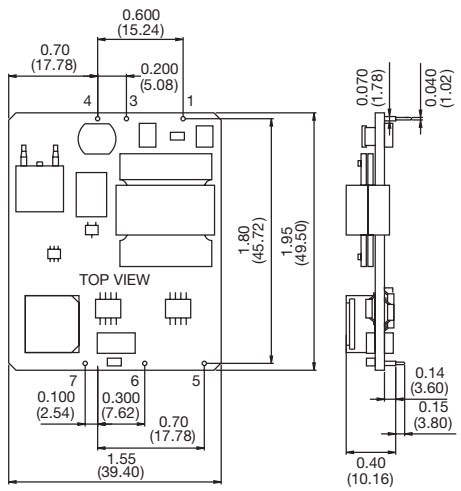
All dimensions are in inches (mm)
Weight: 25 g (0.06 lbs)

Metal Case



PIN CONNECTIONS	
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

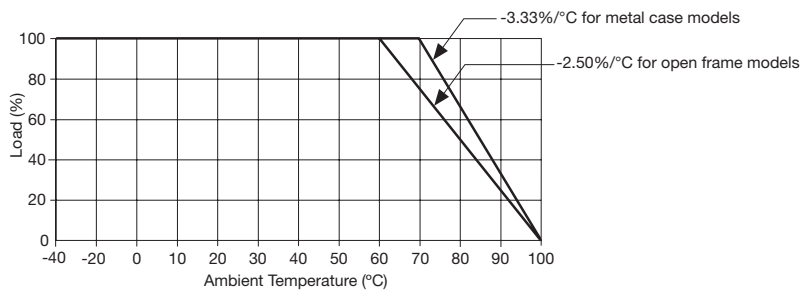


PIN CONNECTIONS	
Pin	Function
1	On/Off Control
3	- V Input
4	+V Input
5	Trim
6	-V Output
7	+V Output
8	No Pin

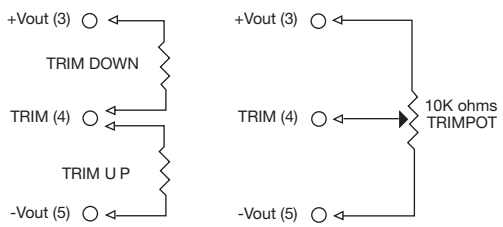
Application Notes

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