

## JCF10 Series



- 2:1 Input Range
- DIP-24 Metal Package
- Operating Temperature  $-40\text{ }^{\circ}\text{C}$  to  $+100\text{ }^{\circ}\text{C}$
- High Efficiency up to 89%
- 1500 VDC Isolation
- Input Pi Filter
- Continuous Short Circuit Protection

## Specification

## Input

Input Voltage Range	<ul style="list-style-type: none"> <li>• 24 V (18-36 VDC)</li> <li>• 48 V (36-75 VDC)</li> </ul>
Input Current	<ul style="list-style-type: none"> <li>• See table</li> </ul>
Input Filter	<ul style="list-style-type: none"> <li>• Pi network</li> </ul>
Undervoltage Lockout	<ul style="list-style-type: none"> <li>• Turn on <math>&gt;71\%</math> nominal input</li> <li>• Turn off <math>&lt;67\%</math> nominal input</li> </ul>

## Output

Output Voltage	<ul style="list-style-type: none"> <li>• See table</li> </ul>
Minimum Load	<ul style="list-style-type: none"> <li>• None</li> </ul>
Line Regulation	<ul style="list-style-type: none"> <li>• <math>\pm 0.2\%</math></li> </ul>
Load Regulation	<ul style="list-style-type: none"> <li>• <math>\pm 0.5\%</math></li> </ul>
Setpoint Accuracy	<ul style="list-style-type: none"> <li>• <math>\pm 1.0\%</math></li> </ul>
Ripple & Noise	<ul style="list-style-type: none"> <li>• 75 mV pk-pk, 20 MHz BW</li> </ul>
Transient Response	<ul style="list-style-type: none"> <li>• <math>\pm 5\%</math> deviation recovery to within 1% in <math>&lt;500\text{ }\mu\text{s}</math> for a 25% step load change</li> </ul>
Temperature Coefficient	<ul style="list-style-type: none"> <li>• <math>\pm 0.05\%/^{\circ}\text{C}</math></li> </ul>
Overvoltage Protection	<ul style="list-style-type: none"> <li>• On single output models only</li> <li>• 2.5 V models: 3.9 V typical,</li> <li>• 3.3 V models: 3.9 V typical,</li> <li>• 5.0 V models: 6.2 V typical,</li> <li>• 12.0 V models: 15.0 V typical</li> </ul>
Overcurrent Protection	<ul style="list-style-type: none"> <li>• 110-140%</li> </ul>
Short Circuit Protection	<ul style="list-style-type: none"> <li>• Trip &amp; restart (Hiccup mode), auto recovery</li> </ul>

## General

Efficiency	<ul style="list-style-type: none"> <li>• See table</li> </ul>
Isolation Voltage	<ul style="list-style-type: none"> <li>• 1500 VDC min</li> </ul>
Switching Frequency	<ul style="list-style-type: none"> <li>• 380 kHz typical</li> </ul>
MTBF	<ul style="list-style-type: none"> <li>• 1,000 kHrs min per MIL-HDBK-217F</li> </ul>

## Environmental

Operating Temperature	<ul style="list-style-type: none"> <li>• <math>-40\text{ }^{\circ}\text{C}</math> to <math>+100\text{ }^{\circ}\text{C}</math> (see derating curve)</li> </ul>
Case Temperature	<ul style="list-style-type: none"> <li>• <math>+100\text{ }^{\circ}\text{C}</math> max</li> </ul>
Storage Temperature	<ul style="list-style-type: none"> <li>• <math>-40\text{ }^{\circ}\text{C}</math> to <math>+125\text{ }^{\circ}\text{C}</math></li> </ul>
Cooling	<ul style="list-style-type: none"> <li>• Convection-cooled</li> </ul>
Operating Humidity	<ul style="list-style-type: none"> <li>• Up to 95% RH, non-condensing</li> </ul>
Shock	<ul style="list-style-type: none"> <li>• 30 g, half sine wave 18 ms pulse applied 3 times on each of 6 axes</li> </ul>
Vibration	<ul style="list-style-type: none"> <li>• 5-500 Hz, 3 g, for 10 mins on each of 3 axes</li> </ul>

## EMC

Emissions	<ul style="list-style-type: none"> <li>• EN55022, Level A conducted &amp; radiated with external components (contact technical sales for details)</li> </ul>
ESD Immunity	<ul style="list-style-type: none"> <li>• EN61000-4-2, Level 2 Perf Criteria A</li> </ul>
Radiated Immunity	<ul style="list-style-type: none"> <li>• EN61000-4-3, 3 V/m Perf Criteria A</li> </ul>
Conducted Immunity	<ul style="list-style-type: none"> <li>• EN61000-4-6, 3 V rms Perf Criteria A</li> </ul>

Input Voltage	Output Voltage	Output Current	Input Current <sup>(1)</sup>		Efficiency	Model Number
			No Load	Full Load		
18-36 VDC	2.5 VDC	3.00 A	30 mA	368 mA	85%	JCF1024S2V5
	3.3 VDC	3.00 A	30 mA	480 mA	86%	JCF1024S3V3
	5.0 VDC	2.00 A	30 mA	475 mA	88%	JCF1024S05
	12.0 VDC	0.84 A	30 mA	470 mA	89%	JCF1024S12
36-75 VDC	2.5 VDC	3.00 A	15 mA	185 mA	85%	JCF1048S2V5
	3.3 VDC	3.00 A	15 mA	240 mA	86%	JCF1048S3V3
	5.0 VDC	2.00 A	15 mA	240 mA	87%	JCF1048S05
	12.0 VDC	0.84 A	15 mA	235 mA	89%	JCF1048S12

Notes

1. Input current measured at nominal input voltage.

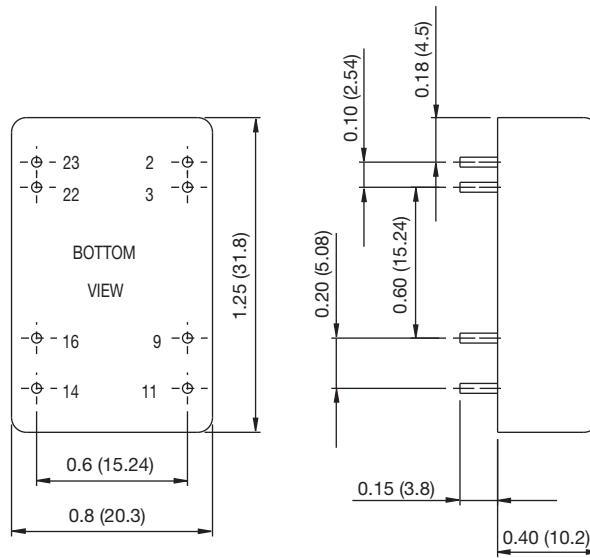
Mechanical Details

All dimensions are in inches (mm)

Pin Size: Diameter 0.02 (0.50)

Tolerance: x.xx = ±0.02 (x.xxx = ±0.010)

Weight: 18.4 g (0.04 lbs)



PIN CONNECTION	
Pin	Function
2	-V Input
3	-V Input
9	No Pin
11	NC
14	+V Output
16	-V Output
22	+V Input
23	+V Input

Application Notes

Derating Curve

