

12 Watts

JTF Series



- High Power Density
- Wide 4:1 Input Range
- Operating Temperature -40 °C to +105 °C
- Single & Dual Outputs
- Standard Remote On/Off
- 1600 VDC Isolation
- 3 Year Warranty

Specification

Input

Input Voltage Range	• 24 V (9-36 VDC) • 48 V (18-75 VDC)
Input Current	• See table
Input Filter	• Pi network
Input Reflected Ripple Current	• 20 mA pk-pk through 12 μH inductor and 47 μF capacitor, 5 Hz to 20 MHz
Input Surge	• 24 V models: 50 VDC for 1000 ms • 48 V models: 100 VDC for 1000 ms

Output

Output Voltage	• See table
Minimum Load	• No minimum load required
Initial Set Accuracy	• $\pm 1.2\%$ max
Start Up Delay	• 20 ms typical
Line Regulation	• $\pm 0.2\%$ max
Load Regulation	• $\pm 0.5\%$ max single, $\pm 1.0\%$ max dual
Cross Regulation	• $\pm 5\%$ on dual output models, see note 2
Transient Response	• <3% max deviation, recovery to within 1% in 250 μs for a 25% load change
Ripple & Noise	• 85 mV pk-pk, 20 MHz bandwidth, see note 3
Overload Protection	• 170% of full load typical
Overvoltage Protection	• 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
Short Circuit Protection	• Trip & restart (hiccup) with auto recovery
Maximum Capacitive Load	• See table
Temperature Coefficient	• $\pm 0.02/^{\circ}\text{C}$ max
Remote On/Off	• On >3.0 VDC or open circuit • Off <1.2 VDC or short circuit pins 1, 2 & 3

General

Efficiency	• See tables
Isolation	• 1600 VDC Input to Output • 1600 VDC Input to Case • 1600 VDC Output to Case
Isolation Capacitance	• 1500 pF max
Switching Frequency	• 270 kHz typical
MTBF	• >1 Mhrs to MIL-HDBK-217F at 25 °C, GB

Environmental

Operating Temperature	• -40 °C to +105 °C, derate from 100% load at +60 °C to no load at +105 °C
Case Temperature	• +105 °C max
Storage Temperature	• -40 °C to +125 °C
Humidity	• Up to 90%, non-condensing
Cooling	• Natural convection

EMC

Emissions	• EN55022 Class A conducted with external components - see application note
ESD Immunity	• EN61000-4-2, Level 3, Perf Criteria A
Radiated Immunity	• EN61000-4-3, 10 V/m Perf Criteria A
EFT/Burst	• EN61000-4-4, Level 3 Perf Criteria B*
Surge	• EN61000-4-5, Level 2 Perf Criteria B*
Conducted Immunity	• EN61000-4-6, 10 Vrms Perf Criteria A*
Magnetic Field	• EN61000-4-8, 1 A/m Perf Criteria A

*External input capacitor required, 330 μ F/100 V.

Models and Ratings

JTF Series **XP**

Input Voltage	Output Voltage	Output Current	Input Current ⁽¹⁾		Maximum Capacitive Load	Efficiency	Model Number
			No Load	Full Load			
9-36 V	3.3 V	3.5 A	15 mA	573 mA	2000 μ F	87%	JTF1224S3V3†^
	5.1 V	2.4 A	15 mA	581 mA	2000 μ F	89%	JTF1224S05†^
	12.0 V	1.0 A	15 mA	574 mA	430 μ F	90%	JTF1224S12†^
	15.0 V	0.8 A	15 mA	574 mA	300 μ F	90%	JTF1224S15†^
	± 5.0 V	± 1.2 A	15 mA	595 mA	± 1250 μ F	87%	JTF1224D05†^
	± 12.0 V	± 0.5 A	15 mA	574 mA	± 200 μ F	90%	JTF1224D12†^
	± 15.0 V	± 0.4 A	15 mA	574 mA	± 120 μ F	90%	JTF1224D15†^
18-75 V	3.3 V	3.5 A	15 mA	286 mA	2000 μ F	87%	JTF1248S3V3†^
	5.1 V	2.4 A	15 mA	290 mA	2000 μ F	89%	JTF1248S05†^
	12.0 V	1.0 A	15 mA	287 mA	430 μ F	90%	JTF1248S12†^
	15.0 V	0.8 A	15 mA	287 mA	300 μ F	90%	JTF1248S15†^
	± 5.0 V	± 1.2 A	15 mA	297 mA	± 1250 μ F	87%	JTF1248D05†^
	± 12.0 V	± 0.5 A	12 mA	287 mA	± 200 μ F	90%	JTF1248D12†^
	± 15.0 V	± 0.4 A	15 mA	287 mA	± 120 μ F	90%	JTF1248D15†^

Notes

1. Input current measured at nominal 24 V and 48 V input.

2. When one output is set to 100% load, and the other varies between 25% and 100% load.

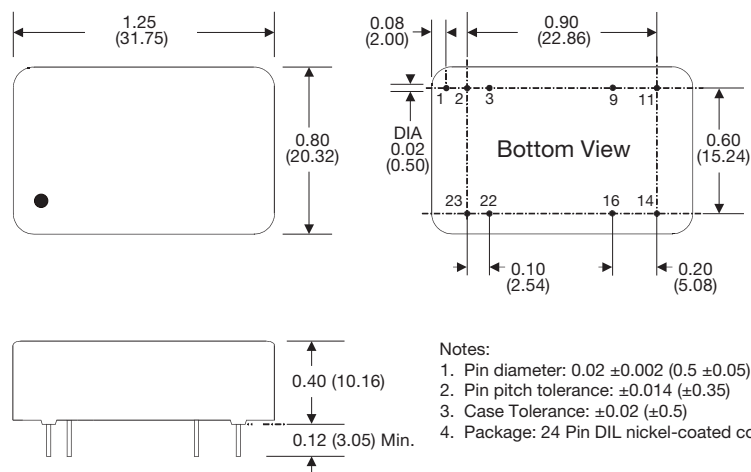
3. Measured with 1 μ F ceramic capacitor across output rails.

† Available from Farnell. See pages 266-269.

^ Available from Newark. See pages 270-272.

Mechanical Details

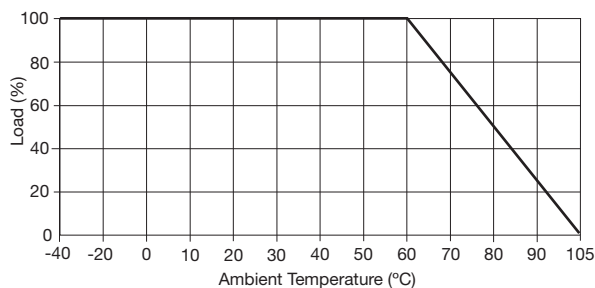
All dimensions are in inches (mm) Weight: 0.04 lbs (18 g).



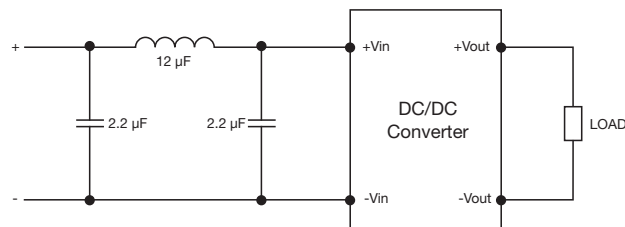
Pin Connections		
Pin	Single	Dual
1	Remote On/Off	Remote On/Off
2	-Vin	-Vin
3	-Vin	-Vin
9	No Pin	Common
11	Not Connected	-Vout
14	+Vout	+Vout
16	-Vout	Common
22	+Vin	+Vin
23	+Vin	+Vin

Application Notes

Derating Curve



Input Filter



Remote On/Off

Standard ROF logic is positive

Output On >3.0 VDC or open circuit

Output Off <1.2 VDC or short circuit pins 1, 2 & 3