

JTA Series



- Compact Size
- Ultra Wide 4:1 Input
- -40 °C to +70 °C Operation - No Derating
- Single & Dual Outputs
- Overvoltage & Overcurrent Protection
- UL Safety Approvals
- Remote On/Off

Specification

Input

Input Voltage Range	<ul style="list-style-type: none"> • 9-36 VDC • 18-75 VDC
Input Current	<ul style="list-style-type: none"> • JTA10: 1.45 A max at 9 VDC input • JTA15: 2.20 A max at 9 VDC input • JTA20: 2.90 A max at 9 VDC input

Output

Output Voltage	<ul style="list-style-type: none"> • See table
Output Voltage Trim	<ul style="list-style-type: none"> • $\pm 10\%$ minimum for 15 and 20 W models only
Voltage Balance	<ul style="list-style-type: none"> • $\pm 1\%$ max. dual models, 100% load
Minimum Load	<ul style="list-style-type: none"> • No minimum load required for single output models, 10% required for dual output models
Line Regulation	<ul style="list-style-type: none"> • $\pm 1\%$ maximum
Load Regulation	<ul style="list-style-type: none"> • Single output models: $\pm 1\%$ maximum • Dual output models: $\pm 2\%$ maximum for a 10-100% load change
Setpoint Accuracy	<ul style="list-style-type: none"> • $\pm 2\%$
Ripple & Noise	<ul style="list-style-type: none"> • Single output models: 50 mV pk-pk • Dual output models: 75 mV pk-pk at 20MHz BW
Transient Response	<ul style="list-style-type: none"> • 4% max. deviation, recovery to within 1% in $< 500 \mu s$ after a 25% load change
Temperature Coefficient	<ul style="list-style-type: none"> • 0.02% /°C
Overvoltage Protection	<ul style="list-style-type: none"> • See table
Overcurrent Protection	<ul style="list-style-type: none"> • Continuous with auto recovery
Remote On/Off	<ul style="list-style-type: none"> • On = Logic High or Open • Off = Logic Low or $< 1.8 V$ (15-20 W models only)

General

Efficiency	<ul style="list-style-type: none"> • See table
Isolation	<ul style="list-style-type: none"> • 1500 VDC Input to Output
MTBF	<ul style="list-style-type: none"> • 1,000 kHrs min per MIL-HDBK-217F

Environmental

Operating Temperature	<ul style="list-style-type: none"> • -40 °C to +100 °C, derate from 100% load at +70 °C to 0% load at +100 °C
Cooling	<ul style="list-style-type: none"> • Convection-cooled
Operating Humidity	<ul style="list-style-type: none"> • 5-95% RH, non-condensing
Storage Temperature	<ul style="list-style-type: none"> • -55 °C to +105 °C

EMC & Safety

Emissions	<ul style="list-style-type: none"> • EN55022, level A conducted (below -25 °C) • level B conducted (-25 °C to +100 °C) • See note 1. • EN55022, level A radiated
ESD Immunity	<ul style="list-style-type: none"> • EN61000-4-2, level 2 • Perf Criteria A
Radiated Immunity	<ul style="list-style-type: none"> • EN61000-4-3 3 V/rms, Perf Criteria A
Conducted Immunity	<ul style="list-style-type: none"> • EN61000-4-6 3 V/m, Perf Criteria A
Safety Approvals	<ul style="list-style-type: none"> • UL60950

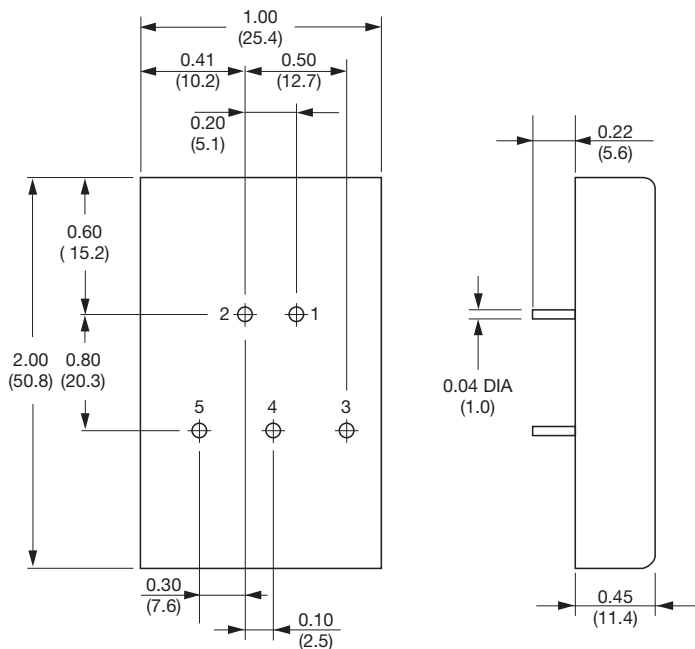
Models and Ratings

Input Voltage	Maximum Power	Overvoltage Protection	Output 1		Output 2		Efficiency	Model Number
			V1nom	I _{max}	V2nom	I _{max}		
24 V (9-36)	6.6 W	3.9 V	3.3 V	2.00 A			77%	JTA1024S3V3
	10.0 W	6.8 V	5.0 V	2.00 A			79%	JTA1024S05
	10.0 W	15.0 V	12.0 V	0.83 A			81%	JTA1024S12
	10.0 W	18.0 V	15.0 V	0.67 A			81%	JTA1024S15
	10.0 W	6.8 V	5.0 V	1.00 A	-5.0 V	1.00 A	80%	JTA1024D01
	10.0 W	15.0 V	12.0 V	0.42 A	-12.0 V	0.42 A	80%	JTA1024D02
	10.0 W	18.0 V	15.0 V	0.33 A	-15.0 V	0.33 A	80%	JTA1024D03
48 V (18-75)	6.6 W	3.9 V	3.3 V	2.00 A			78%	JTA1048S3V3
	10.0 W	6.8 V	5.0 V	2.00 A			80%	JTA1048S05
	10.0 W	15.0 V	12.0 V	0.83 A			82%	JTA1048S12
	10.0 W	18.0 V	15.0 V	0.67 A			82%	JTA1048S15
	10.0 W	6.8 V	5.0 V	1.00 A	-5.0 V	1.00 A	81%	JTA1048D01
	10.0 W	15.0 V	12.0 V	0.42 A	-12.0 V	0.42 A	83%	JTA1048D02
	10.0 W	18.0 V	15.0 V	0.33 A	-15.0 V	0.33 A	83%	JTA1048D03

Notes

1. For EN55022 Level B performance below -25 °C, a 100 µF (24 VDC input), 22 µF (48 VDC input) electrolytic capacitor is required across the input of the converter.

Mechanical Details

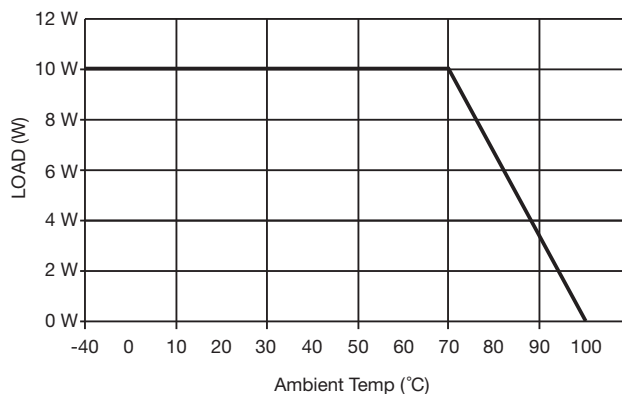


PIN CONNECTIONS		
Pin	Single Output	Dual Output
1	+Input	+Input
2	-Input	-Input
3	+Output	+Output
4	No pin	Common
5	-Output	-Output

All dimensions are in inches (mm)
Weight: 0.06 lb (28 g) approx.
Packaging Style: Copper case with non-conducting base

Application Notes

Derating Curve



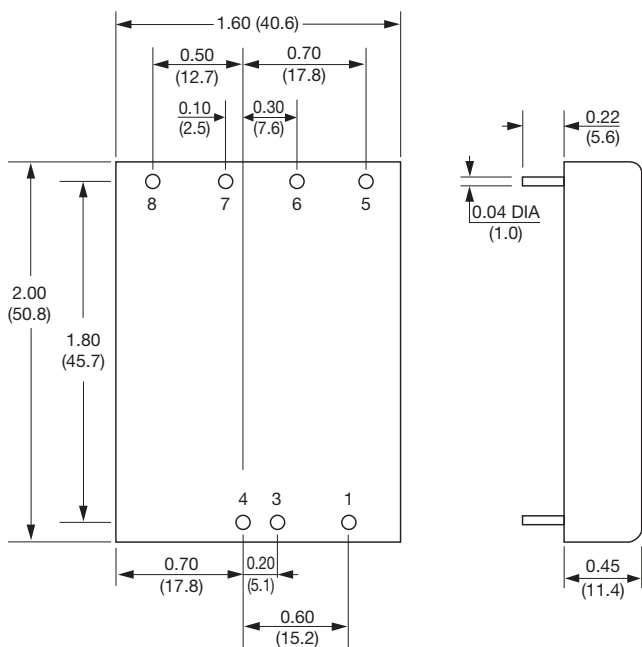
Models and Ratings

Input Voltage	Maximum Power	Overvoltage Protection	Output 1		Output 2		Efficiency	Model Number
			V1nom	I _{max}	V2nom	I _{max}		
24 V (9-36)	10.0 W	3.9 V	3.3 V	3.000 A			76%	JTA1524S3V3
	15.0 W	6.8 V	5.0 V	3.000 A			80%	JTA1524S05
	15.0 W	15.0 V	12.0 V	1.250 A			82%	JTA1524S12
	15.0 W	18.0 V	15.0 V	1.000 A			82%	JTA1524S15
	15.0 W	6.8 V	5.0 V	1.500 A	-5.0 V	1.500 A	80%	JTA1524D01
	15.0 W	15.0 V	12.0 V	0.625 A	-12.0 V	0.625 A	82%	JTA1524D02
	15.0 W	18.0 V	15.0 V	0.500 A	-15.0 V	0.500 A	82%	JTA1524D03
48 V (18-75)	10.0 W	3.9 V	3.3 V	3.000 A			76%	JTA1548S3V3
	15.0 W	6.8 V	5.0 V	3.000 A			80%	JTA1548S05
	15.0 W	15.0 V	12.0 V	1.250 A			82%	JTA1548S12
	15.0 W	18.0 V	15.0 V	1.000 A			82%	JTA1548S15
	15.0 W	6.8 V	5.0 V	1.500 A	-5.0 V	1.500 A	80%	JTA1548D01
	15.0 W	15.0 V	12.0 V	0.625 A	-12.0 V	0.625 A	82%	JTA1548D02
	15.0 W	18.0 V	15.0 V	0.500 A	-15.0 V	0.500 A	82%	JTA1548D03

Notes

1. For EN55022 Level B performance below -25 °C, a 220 µF (24 VDC input), 47 µF (48 VDC input) electrolytic capacitor is required across the input of the converter.

Mechanical Details

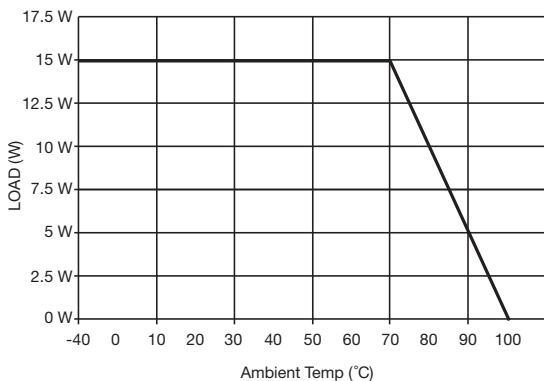


PIN CONNECTIONS		
Pin	Single Output	Dual Output
1	On/Off control	On/Off control
3	-Vin	-Vin
4	+Vin	+Vin
5	Trim	Trim
6	-Vout	-Vout
7	+Vout	Common
8	No pin	+Vout

All dimensions are in inches (mm)
Weight: 0.11 lb (50 g) approx.
Packaging Style: Copper case with non-conducting base

Application Notes

Derating Curve



Output Trim

Model Number	OUTPUT TRIM	
	R Trim Down (kΩ)	R Trim Up (kΩ)
3.3 V	$(6.18 - (12.1 \times \Delta V_o)) / \Delta V_o$	$(3.484 - (7.511 \times \Delta V_o)) / \Delta V_o$
5 V	$(5.788 - (10.57 \times \Delta V_o)) / \Delta V_o$	$(5.788 - (8.25 \times \Delta V_o)) / \Delta V_o$
12 V	$(86.496 - (60.1 \times \Delta V_o)) / \Delta V_o$	$(19.763 - (14.366 \times \Delta V_o)) / \Delta V_o$
15 V	$(150 - (87 \times \Delta V_o)) / \Delta V_o$	$(25.585 - (14.516 \times \Delta V_o)) / \Delta V_o$
±5 V	$(430 - (120 \times \Delta V_o)) / \Delta V_o$	$(42.141 - (13.793 \times \Delta V_o)) / \Delta V_o$
±12 V	$(743 - (177 \times \Delta V_o)) / \Delta V_o$	$(56.644 - (17.647 \times \Delta V_o)) / \Delta V_o$
±15 V	$(68.296 - (48.1 \times \Delta V_o)) / \Delta V_o$	$(20.657 - (19.5 \times \Delta V_o)) / \Delta V_o$

Note:
 1. ΔVo is the change in the trimmed output voltage from the nominal output voltage.
Example: JTA1524S05 trimmed to 5.3 V

$\Delta V_o = 5.0 - 5.3 = 0.3 \text{ VDC}$
 The equation is $(5.788 - (8.25 \times \Delta V_o)) / \Delta V_o$
 The value of resistor = $(5.788 - (8.25 \times 0.3)) / 0.3 = 11.04 \text{ K}\Omega$
 Connect the resistor between TRIM pin and -Vo pin.

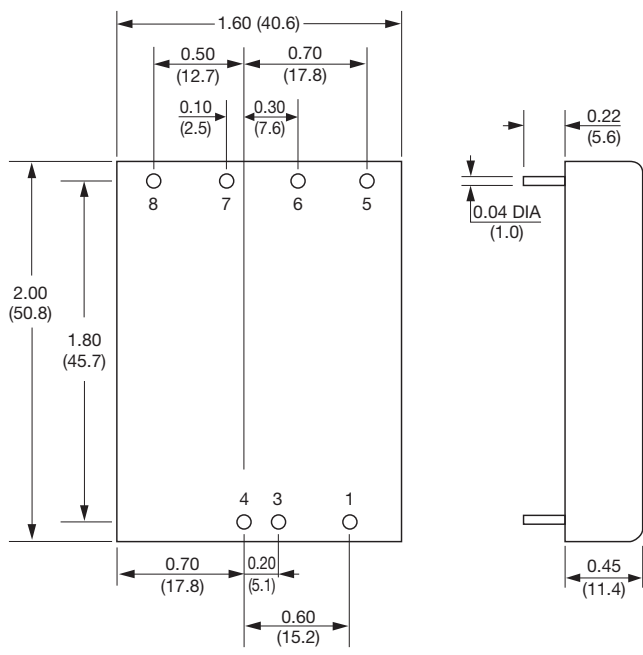
Models and Ratings

Input Voltage	Maximum Power	Overvoltage Protection	Output 1		Output 2		Efficiency	Model Number
			V1nom	I _{max}	V2nom	I _{max}		
24 V (9-36)	13.2 W	3.9 V	3.3 V	4.00 A			78%	JTA2024S3V3
	20.0 W	6.8 V	5.0 V	4.00 A			81%	JTA2024S05
	20.0 W	15.0 V	12.0 V	1.67 A			83%	JTA2024S12
	20.0 W	18.0 V	15.0 V	1.33 A			83%	JTA2024S15
	20.0 W	6.8 V	5.0 V	2.00 A	-5.0 V	2.00 A	83%	JTA2024D01
	20.0 W	15.0 V	12.0 V	0.83 A	-12.0 V	0.83 A	83%	JTA2024D02
	20.0 W	18.0 V	15.0 V	0.67 A	-15.0 V	0.67 A	83%	JTA2024D03
48 V (18-75)	13.2 W	3.9 V	3.3 V	4.00 A			78%	JTA2048S3V3
	20.0 W	6.8 V	5.0 V	4.00 A			82%	JTA2048S05
	20.0 W	15.0 V	12.0 V	1.67 A			84%	JTA2048S12
	20.0 W	18.0 V	15.0 V	1.33 A			84%	JTA2048S15
	20.0 W	6.8 V	5.0 V	2.00 A	-5.0 V	2.00 A	84%	JTA2048D01
	20.0 W	15.0 V	12.0 V	0.83 A	-12.0 V	0.83 A	84%	JTA2048D02
	20.0 W	18.0 V	15.0 V	0.67 A	-15.0 V	0.67 A	84%	JTA2048D03

Notes

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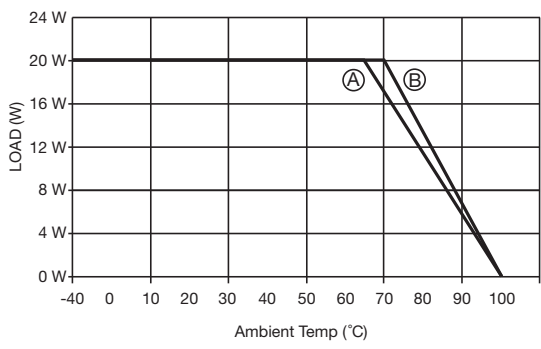


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Pin	Single Output	Dual Output
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4	+Vin	+Vin
5	Trim	Trim
6	-Vout	-Vout
7	+Vout	Common
8	No pin	+Vout

All dimensions are in inches (mm)
Weight: 0.11 lb (50 g) approx.
Packaging Style: Copper case with non-conducting base

Application Notes

Derating Curve



Curve A: Convection cooling
 100% load at +65 °C to 0% load at +100 °C
Curve B: 150 LFM airflow
 100% load at +70 °C to 0% load at +100 °C

Output Trim

Model Number	OUTPUT TRIM	
	R Trim Down (kΩ)	R Trim Up (kΩ)
3.3 V	$(6.18 - (12.1 \times \Delta Vo)) / \Delta Vo$	$(3.484 - (7.511 \times \Delta Vo)) / \Delta Vo$
5 V	$(5.788 - (10.57 \times \Delta Vo)) / \Delta Vo$	$(5.788 - (8.25 \times \Delta Vo)) / \Delta Vo$
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±15 V	$(68.296 - (48.1 \times \Delta Vo)) / \Delta Vo$	$(20.657 - (19.5 \times \Delta Vo)) / \Delta Vo$

Note:
 1. ΔVo is the change in the trimmed output voltage from the nominal output voltage.
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 The value of resistor = $(5.788 - (8.25 \times 0.3)) / 0.3 = 11.04$ KΩ
 Connect the resistor between TRIM pin and -Vo pin.

