

## JTA Series



- 4:1 Input Range
- -40 °C to +100 °C Operating Temperature
- Single & Dual Outputs
- Overvoltage & Overcurrent Protection
- UL Safety Approvals
- Remote On/Off
- 3 Year Warranty

## Specification

## Input

|                                  |                                                                                                                                                                                                                                                                                             |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Input Voltage Range              | <ul style="list-style-type: none"> <li>• 24 V (9-36 VDC)</li> <li>• 48 V (18-75 VDC)</li> </ul>                                                                                                                                                                                             |
| Input Current                    | <ul style="list-style-type: none"> <li>• JTA10: 1.65 A max at 9 VDC input</li> <li>• JTA15: 2.20 A max at 9 VDC input</li> <li>• JTA20: 2.90 A max at 9 VDC input</li> </ul>                                                                                                                |
| Input Filter                     | <ul style="list-style-type: none"> <li>• Pi Network</li> </ul>                                                                                                                                                                                                                              |
| Input Surge                      | <ul style="list-style-type: none"> <li>• 24 V models: 50 VDC for 100ms</li> <li>• 48 V models: 100 VDC for 100 ms</li> </ul>                                                                                                                                                                |
| Input Reflected Ripple Current   | <ul style="list-style-type: none"> <li>• 24 V models, with a 100 <math>\mu</math>F capacitor: JTA10: 20mA pk-pk, JTA15: 35mA pk-pk, JTA20: 60mA pk-pk,</li> <li>• 48 V models, with a 22 <math>\mu</math>F capacitor: JTA10: 30 mA pk-pk, JTA15: 20 mA pk-pk, JTA20: 30 mA pk-pk</li> </ul> |
| Input Reverse Voltage Protection | <ul style="list-style-type: none"> <li>• None</li> </ul>                                                                                                                                                                                                                                    |

## Output

|                          |                                                                                                                                                                                      |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Output Voltage           | <ul style="list-style-type: none"> <li>• See table</li> </ul>                                                                                                                        |
| Output Voltage Trim      | <ul style="list-style-type: none"> <li>• <math>\pm 10\%</math> (15 &amp; 20 W models only)</li> </ul>                                                                                |
| Voltage Balance          | <ul style="list-style-type: none"> <li>• <math>\pm 1\%</math> max dual models, 100% load</li> </ul>                                                                                  |
| Minimum Load             | <ul style="list-style-type: none"> <li>• No minimum load required for single output models, 10% required for dual output models</li> </ul>                                           |
| Line Regulation          | <ul style="list-style-type: none"> <li>• <math>\pm 1\%</math> max</li> </ul>                                                                                                         |
| Load Regulation          | <ul style="list-style-type: none"> <li>• Single output models: <math>\pm 1\%</math> max</li> <li>• Dual output models: <math>\pm 2\%</math> max for a 10-100% load change</li> </ul> |
| Setpoint Accuracy        | <ul style="list-style-type: none"> <li>• <math>\pm 2\%</math></li> </ul>                                                                                                             |
| Ripple & Noise           | <ul style="list-style-type: none"> <li>• Single output models: 50 mV pk-pk</li> <li>• Dual output models: 75 mV pk-pk typical at 20 MHz bandwidth</li> </ul>                         |
| Transient Response       | <ul style="list-style-type: none"> <li>• 4% max deviation, recovery to within 1% in &lt;500 <math>\mu</math>s for a 25% load change</li> </ul>                                       |
| Temperature Coefficient  | <ul style="list-style-type: none"> <li>• 0.02%/°C</li> </ul>                                                                                                                         |
| Overvoltage Protection   | <ul style="list-style-type: none"> <li>• See table</li> </ul>                                                                                                                        |
| Overcurrent Protection   | <ul style="list-style-type: none"> <li>• 120-190%</li> <li>• JTA10: Constant current, auto recovery</li> <li>• JTA15/20: Trip &amp; restart (hiccup mode)</li> </ul>                 |
| Short Circuit Protection | <ul style="list-style-type: none"> <li>• Continuous with auto recovery</li> </ul>                                                                                                    |
| Remote On/Off            | <ul style="list-style-type: none"> <li>• On = Logic High or Open</li> <li>• Off = Logic Low or &lt;1.8 V (15 &amp; 20 W models only)</li> </ul>                                      |
| Maximum Capacitive Load  | <ul style="list-style-type: none"> <li>• Single outputs: 1000 <math>\mu</math>F, Dual outputs: 650 <math>\mu</math>F</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 Input to Output</li> </ul>                                                                                     |
| Isolation Resistance | <ul style="list-style-type: none"> <li>• <math>10^9 \Omega</math></li> </ul>                                                                                     |
| Switching Frequency  | <ul style="list-style-type: none"> <li>• 300 kHz typical</li> </ul>                                                                                              |
| Power Density        | <ul style="list-style-type: none"> <li>• JTA10: 11.4 W/in<sup>3</sup></li> <li>• JTA15: 10.4 W/in<sup>3</sup></li> <li>• JTA20: 13.9 W/in<sup>3</sup></li> </ul> |
| MTBF                 | <ul style="list-style-type: none"> <li>• 1.0 MHrs to MIL-HDBK-217F at 25°C, GB</li> </ul>                                                                        |

## Environmental

|                       |                                                                                                                                              |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Operating Temperature | <ul style="list-style-type: none"> <li>• -40 °C to +100 °C, derate from 100% load at 70 °C (60 °C for JTA20) to no load at 100 °C</li> </ul> |
| Case Temperature      | <ul style="list-style-type: none"> <li>• +100 °C max</li> </ul>                                                                              |
| Cooling               | <ul style="list-style-type: none"> <li>• Convection-cooled</li> </ul>                                                                        |
| Operating Humidity    | <ul style="list-style-type: none"> <li>• 5-95% RH, non-condensing</li> </ul>                                                                 |
| Storage Temperature   | <ul style="list-style-type: none"> <li>• -55 °C to +105 °C</li> </ul>                                                                        |

## EMC &amp; Safety

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

## Models and Ratings

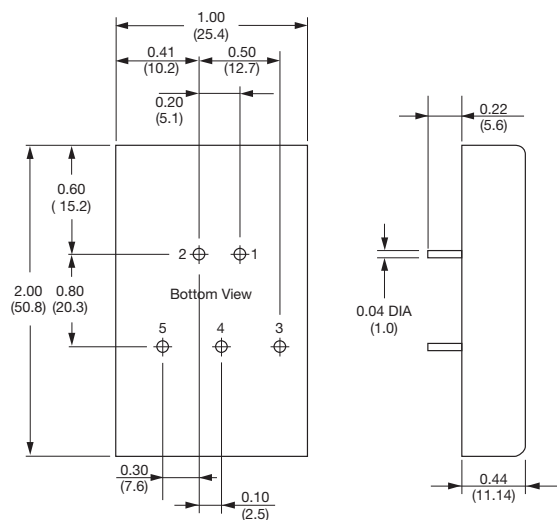
JTA10 **XP**

| Input Voltage | Maximum Power | Overvoltage Protection | Output V1 |         | Output V2 |         | Efficiency <sup>(2)</sup> | Model Number |
|---------------|---------------|------------------------|-----------|---------|-----------|---------|---------------------------|--------------|
|               |               |                        | Voltage   | Current | Voltage   | Current |                           |              |
| 9-36 VDC      | 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   |
| 18-75 VDC     | 10.0 W        | 18.0 V                 | +15.0 V   | 0.33 A  | -15.0 V   | 0.33 A  | 80%                       | JTA1024D03   |
|               | 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  $\mu$ F (24 VDC input), 22  $\mu$ F (48 VDC input) electrolytic capacitor is required across the input of the converter.
2. Efficiency is measured at nominal input, full load and 25 °C

## Mechanical Details



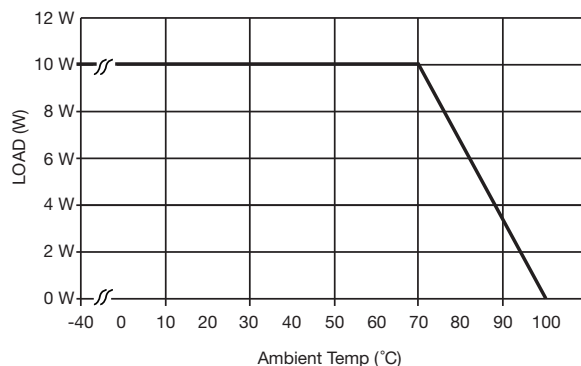
| PIN CONNECTIONS |               |             |
|-----------------|---------------|-------------|
| Pin             | Single Output | Dual Output |
| 1               | +Input        | +Input      |
| 2               | -Input        | -Input      |
| 3               | +Output       | +Output     |
|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

## Notes

1. All dimensions are in inches (mm)
2. Weight: 0.06 lb (28 g) approx.
3. Pin diameter tolerance:  $\pm 0.002$  ( $\pm 0.052$ )
4. Pin pitch tolerance:  $\pm 0.01$  ( $\pm 0.25$ )
5. Case tolerance:  $\pm 0.04$  ( $\pm 1.0$ )
6. Packaging Style: Copper case with non-conducting base

## Application Notes

## Derating Curve



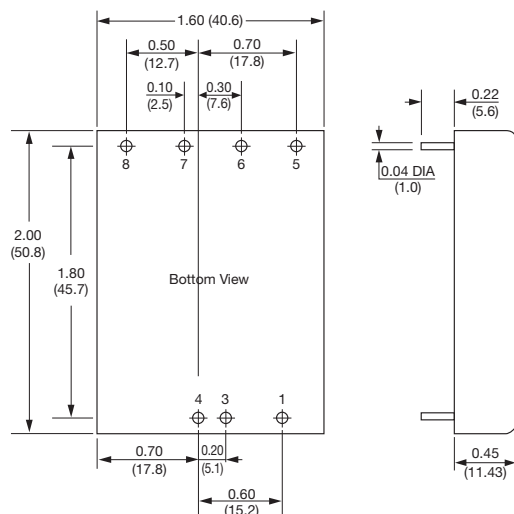
## Models and Ratings

| Input Voltage | Maximum Power | Overvoltage Protection | Output V1 |         | Output V2 |         | Efficiency <sup>(2)</sup> | Model Number |
|---------------|---------------|------------------------|-----------|---------|-----------|---------|---------------------------|--------------|
|               |               |                        | Voltage   | Current | Voltage   | Current |                           |              |
| 9-36 VDC      | 10 W          | 3.9 V                  | 3.3 V     | 3.000 A |           |         | 76%                       | JTA1524S3V3  |
|               | 15 W          | 6.8 V                  | 5.0 V     | 3.000 A |           |         | 80%                       | JTA1524S05   |
|               | 15 W          | 15.0 V                 | 12.0 V    | 1.250 A |           |         | 82%                       | JTA1524S12   |
|               | 15 W          | 18.0 V                 | 15.0 V    | 1.000 A |           |         | 82%                       | JTA1524S15   |
|               | 15 W          | 6.8 V                  | +5.0 V    | 1.500 A | -5.0 V    | 1.500 A | 80%                       | JTA1524D01   |
|               | 15 W          | 15.0 V                 | +12.0 V   | 0.625 A | -12.0 V   | 0.625 A | 82%                       | JTA1524D02   |
| 18-75 VDC     | 15 W          | 18.0 V                 | +15.0 V   | 0.500 A | -15.0 V   | 0.500 A | 82%                       | JTA1524D03   |
|               | 10 W          | 3.9 V                  | 3.3 V     | 3.000 A |           |         | 76%                       | JTA1548S3V3  |
|               | 15 W          | 6.8 V                  | 5.0 V     | 3.000 A |           |         | 80%                       | JTA1548S05   |
|               | 15 W          | 15.0 V                 | 12.0 V    | 1.250 A |           |         | 82%                       | JTA1548S12   |
|               | 15 W          | 18.0 V                 | 15.0 V    | 1.000 A |           |         | 82%                       | JTA1548S15   |
|               | 15 W          | 6.8 V                  | +5.0 V    | 1.500 A | -5.0 V    | 1.500 A | 80%                       | JTA1548D01   |
|               | 15 W          | 15.0 V                 | +12.0 V   | 0.625 A | -12.0 V   | 0.625 A | 82%                       | JTA1548D02   |
|               | 15 W          | 18.0 V                 | +15.0 V   | 0.500 A | -15.0 V   | 0.500 A | 82%                       | JTA1548D03   |

## Notes

- 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.
- Efficiency is measured at nominal input, full load and 25 °C

## Mechanical Details



## PIN CONNECTIONS

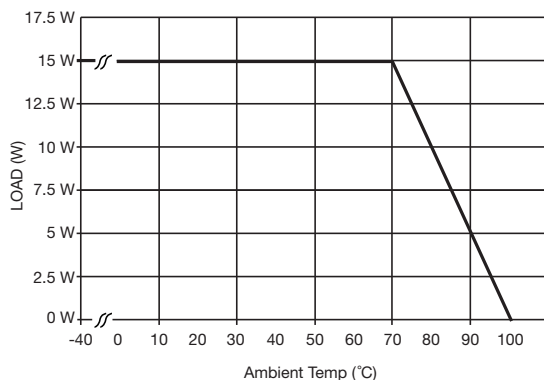
| Pin | Single Output  | Dual Output    |
|-----|----------------|----------------|
| 1   | On/Off control | On/Off control |
| 3   | -Vin           | -Vin           |
| 4   | +Vin           | +Vin           |
| 5   | Trim           | Trim           |
| 6   | -Vout          | -Vout          |
| 7   |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

## Notes

- All dimensions are in inches (mm)
- Weight: 0.11 lb (50 g) approx.
- Pin diameter tolerance: ±0.001 (±0.025)
- Pin pitch tolerance: ±0.01 (±0.25)
- Case tolerance: ±0.04 (±1.0)
- Packaging Style: Copper case with non-conducting base

## Application Notes

## Derating Curve



## Output Trim

| OUTPUT TRIM    |                                                       |                                                      |
|----------------|-------------------------------------------------------|------------------------------------------------------|
| Output Voltage | R Trim Down (kΩ)                                      | R Trim Up (kΩ)                                       |
| 3.3 V          | $(6.180 - (12.10 \times \Delta V_o)) / \Delta V_o$    | $(3.484 - (7.511 \times \Delta V_o)) / \Delta V_o$   |
| 5.0 V          | $(5.788 - (10.57 \times \Delta V_o)) / \Delta V_o$    | $(5.788 - (8.250 \times \Delta V_o)) / \Delta V_o$   |
| 12.0 V         | $(86.496 - (60.10 \times \Delta V_o)) / \Delta V_o$   | $(19.763 - (14.366 \times \Delta V_o)) / \Delta V_o$ |
| 15.0 V         | $(150.000 - (87.00 \times \Delta V_o)) / \Delta V_o$  | $(25.585 - (14.516 \times \Delta V_o)) / \Delta V_o$ |
| ±5.0 V         | $(68.296 - (48.10 \times \Delta V_o)) / \Delta V_o$   | $(20.657 - (19.500 \times \Delta V_o)) / \Delta V_o$ |
| ±12.0 V        | $(430.000 - (120.00 \times \Delta V_o)) / \Delta V_o$ | $(42.141 - (13.793 \times \Delta V_o)) / \Delta V_o$ |
| ±15.0 V        | $(743.000 - (177.00 \times \Delta V_o)) / \Delta V_o$ | $(56.644 - (17.647 \times \Delta V_o)) / \Delta V_o$ |

## Note:

- ΔVo is the change in the trimmed output voltage from the nominal output voltage.

Example: JTA1524S05 trimmed to 5.3 V.

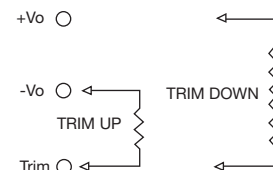
For dual output models, Vo should be multiplied by 2.

$$\Delta V_o = 5.0 - 5.3 = 0.3 \text{ VDC}$$

$$\text{The equation is } (5.788 - (8.25 \times \Delta V_o)) / \Delta V_o$$

$$\text{The value of resistor} = (5.788 - (8.25 \times 0.3)) / 0.3 = 11.04 \text{ K}\Omega$$

Connect the resistor between TRIM pin and -Vo pin.



## Models and Ratings

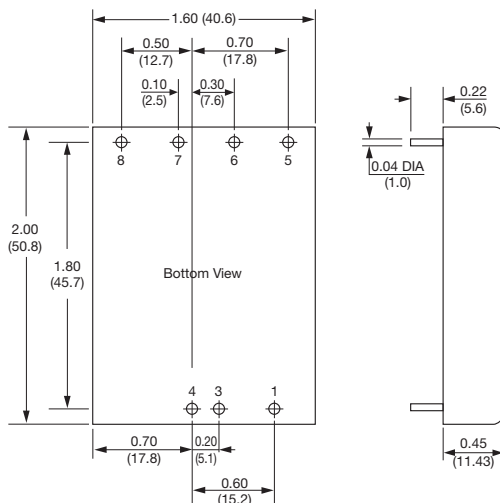
JTA20 XP

| Input Voltage | Maximum Power | Overvoltage Protection | Output V1 |         | Output V2 |         | Efficiency <sup>(2)</sup> | Model Number |
|---------------|---------------|------------------------|-----------|---------|-----------|---------|---------------------------|--------------|
|               |               |                        | Voltage   | Current | Voltage   | Current |                           |              |
| 9-36 VDC      | 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   |
| 18-75 VDC     | 20.0 W        | 18.0 V                 | +15.0 V   | 0.67 A  | -15.0 V   | 0.67 A  | 83%                       | JTA2024D03   |
|               | 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

- 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.
- Efficiency is measured at nominal input, full load and 25 °C

## Mechanical Details



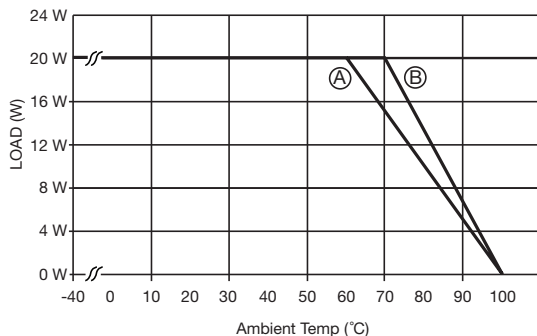
| PIN CONNECTIONS |                |                |
|-----------------|----------------|----------------|
| Pin             | Single Output  | Dual Output    |
| 1               | On/Off control | On/Off control |
| 3               | -Vin           | -Vin           |
| 4               | +Vin      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

## Notes

- All dimensions are in inches (mm)
- Weight: 0.11 lb (50 g) approx.
- Pin diameter tolerance: ±0.001 (±0.025)
- Pin pitch tolerance: ±0.01 (±0.25)
- Case tolerance: ±0.04 (±1.0)
- Packaging Style: Copper case with non-conducting base

## Application Notes

## Derating Curve



## Output Trim

| OUTPUT TRIM    |                                                       |                                                      |
|----------------|-------------------------------------------------------|------------------------------------------------------|
| Output voltage | R Trim Down (k $\Omega$ )                             | R Trim Up (k $\Omega$ )                              |
| 3.3 V          | $(6.180 - (12.10 \times \Delta V_o)) / \Delta V_o$    | $(3.484 - (7.511 \times \Delta V_o)) / \Delta V_o$   |
| 5.0 V          | $(5.788 - (10.57 \times \Delta V_o)) / \Delta V_o$    | $(5.788 - (8.250 \times \Delta V_o)) / \Delta V_o$   |
| 12.0 V         | $(86.496 - (60.10 \times \Delta V_o)) / \Delta V_o$   | $(19.763 - (14.366 \times \Delta V_o)) / \Delta V_o$ |
| 15.0 V         | $(150.000 - (87.00 \times \Delta V_o)) / \Delta V_o$  | $(25.585 - (14.516 \times \Delta V_o)) / \Delta V_o$ |
| ±5.0 V         | $(68.296 - (48.10 \times \Delta V_o)) / \Delta V_o$   | $(20.657 - (19.500 \times \Delta V_o)) / \Delta V_o$ |
| ±12.0 V        | $(430.000 - (120.00 \times \Delta V_o)) / \Delta V_o$ | $(42.141 - (13.793 \times \Delta V_o)) / \Delta V_o$ |
| ±15.0 V        | $(743.000 - (177.00 \times \Delta V_o)) / \Delta V_o$ | $(56.644 - (17.647 \times \Delta V_o)) / \Delta V_o$ |

## Note:

- $\Delta V_o$  is the change in the trimmed output voltage from the nominal output voltage.

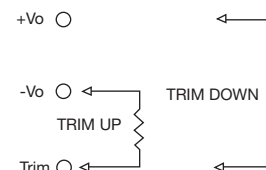
Example: JTA2024S05 trimmed to 5.3 V. For dual output models,  $V_o$  should be multiplied by 2.

$$\Delta V_o = 5.0 - 5.3 = 0.3 \text{ VDC}$$

$$\text{The equation is } (5.788 - (8.25 \times \Delta V_o)) / \Delta V_o$$

$$\text{The value of resistor} = (5.788 - (8.25 \times 0.3)) / 0.3 = 11.04 \text{ K}\Omega$$

Connect the resistor between TRIM pin and -Vo pin.



# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[XP Power:](#)

[JTA2048S05](#) [JTA2024S12](#) [JTA2048S12](#) [JTA2024D03](#) [JTA1024D02](#) [JTA1024S05](#) [JTA2024S05](#) [JTA1524S05](#)  
[JTA2024D02](#) [JTA2048D02](#) [JTA1048S05](#) [JTA1024S15](#) [JTA1048D02](#) [JTA1548D02](#) [JTA1548S05](#)