

### 30 Watts

- Single and Dual Outputs
- 1" x 1" Footprint
- -40 °C to +100 °C Operation
- Full Load at 55 °C Ambient
- 1600 VDC Isolation
- Output Trim  $\pm 10\%$
- Remote On/Off
- MTBF 370 kHrs
- 3 Year Warranty



#### Dimensions:

##### JTK30:

1.0 x 1.0 x 0.43" (25.4 x 25.0 x 10.9 mm)

### Models & Ratings

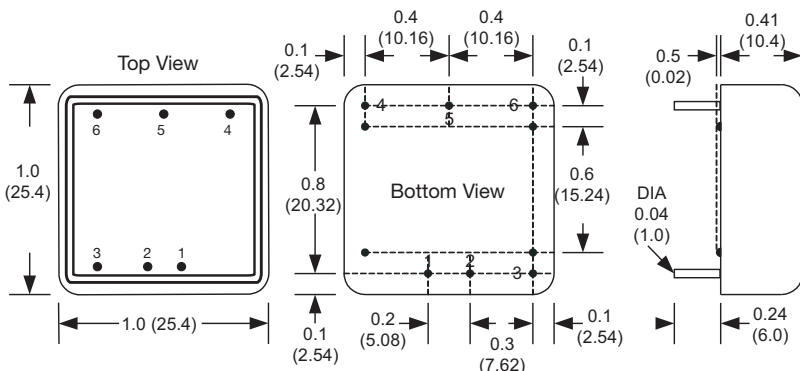
| Input Voltage | Output Voltage | Output Current | Input Current <sup>(1)</sup> |           | OVP setting  | Efficiency | Max. capacitive load <sup>(2)</sup> | Model Number <sup>(3)</sup> |
|---------------|----------------|----------------|------------------------------|-----------|--------------|------------|-------------------------------------|-----------------------------|
|               |                |                | No Load                      | Full Load |              |            |                                     |                             |
| 9-36 V        | 3.3 V          | 7.0 A          | 10 mA                        | 1095 mA   | 3.9 V        | 88%        | 10000 $\mu$ F                       | JTK3024S3V3                 |
|               | 5.0 V          | 6.0 A          | 10 mA                        | 1405 mA   | 6.2 V        | 89%        | 7200 $\mu$ F                        | JTK3024S05                  |
|               | 12.0 V         | 2.5 A          | 10 mA                        | 1405 mA   | 15.0 V       | 89%        | 1200 $\mu$ F                        | JTK3024S12                  |
|               | 15.0 V         | 2.0 A          | 10 mA                        | 1375 mA   | 18.0 V       | 91%        | 1000 $\mu$ F                        | JTK3024S15                  |
|               | $\pm 12.0$ V   | $\pm 1.25$ A   | 10 mA                        | 1405 mA   | $\pm 15.0$ V | 89%        | $\pm 750$ $\mu$ F                   | JTK3024D12                  |
|               | $\pm 15$ V     | $\pm 1.0$ A    | 10 mA                        | 1375 mA   | $\pm 18.0$ V | 91%        | $\pm 500$ $\mu$ F                   | JTK3024D15                  |
| 18-75 V       | 3.3 V          | 7.0 A          | 8 mA                         | 540 mA    | 3.9 V        | 89%        | 10000 $\mu$ F                       | JTK3048S3V3                 |
|               | 5 V            | 6.0 A          | 8 mA                         | 695 mA    | 6.2 V        | 90%        | 7200 $\mu$ F                        | JTK3048S05                  |
|               | 12 V           | 2.5 A          | 8 mA                         | 695 mA    | 15.0 V       | 90%        | 1200 $\mu$ F                        | JTK3048S12                  |
|               | 15 V           | 2.0 A          | 8 mA                         | 680 mA    | 18.0 V       | 92%        | 1000 $\mu$ F                        | JTK3048S15                  |
|               | $\pm 12$ V     | $\pm 1.25$ A   | 8 mA                         | 695 mA    | $\pm 15.0$ V | 90%        | $\pm 750$ $\mu$ F                   | JTK3048D12                  |
|               | $\pm 15$ V     | $\pm 1.0$ A    | 8 mA                         | 685 mA    | $\pm 18.0$ V | 91%        | $\pm 500$ $\mu$ F                   | JTK3048D15                  |

#### Notes

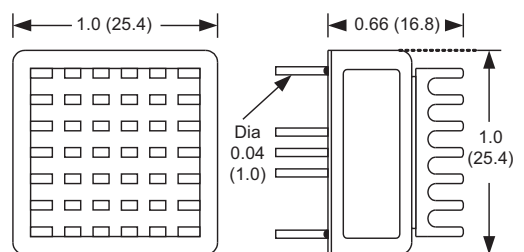
1. Input currents measured at nominal input voltage.
2. Maximum capacitive load is per output.

3. Add suffix '-HK' for optional heatsink.

### Mechanical Details



#### Optional Heatsink (-HK)



#### Notes

1. All dimensions are in inches (mm)
2. Weight: 0.042 lbs (19 g) approx.
3. Pin diameter: 0.04 $\pm$ 0.002 (1.0 $\pm$ 0.05)
4. Pin pitch tolerance:  $\pm 0.014$  ( $\pm 0.35$ )
5. Case tolerance:  $\pm 0.02$  ( $\pm 0.5$ )

| Pin Connections |               |               |
|-----------------|---------------|---------------|
| Pin             | Single        | Dual          |
| 1               | +Vin          | +Vin          |
| 2               | -Vin          | -Vin          |
| 3               | Remote On/Off | Remote On/Off |
| 4               | +Vout         | +Vout         |
| 5               | Trim          | Common        |
| 6               | -Vout         | -Vout         |

### Input

| Characteristic                 | Minimum | Typical | Maximum | Units          | Notes & Conditions                                   |
|--------------------------------|---------|---------|---------|----------------|------------------------------------------------------|
| Input Voltage Range            | 9       |         | 36      | VDC            | 24 V nominal                                         |
|                                | 18      |         | 75      | VDC            | 48 V nominal                                         |
| Input Reflected Ripple Current |         | 30      |         | mA pk-pk       | Through 12 $\mu$ H inductor and 47 $\mu$ F capacitor |
| Input Surge                    |         |         | 50      | VDC for 100 ms | 24 V models                                          |
|                                |         |         | 100     | VDC for 100 ms | 48 V models                                          |

### Output

| Characteristic           | Minimum                                                                                                      | Typical | Maximum   | Units           | Notes & Conditions                                                                                                                                   |
|--------------------------|--------------------------------------------------------------------------------------------------------------|---------|-----------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Output Voltage           | 3.3                                                                                                          |         | 30        | VDC             | See Models and Ratings table                                                                                                                         |
| Output Trim              | $\pm 10$                                                                                                     |         |           | %               | Single Output Versions                                                                                                                               |
| Initial Set Accuracy     |                                                                                                              |         | $\pm 1$   | %               | At full load                                                                                                                                         |
| Minimum Load             | 0                                                                                                            |         |           | %               | No minimum load required                                                                                                                             |
| Line Regulation          |                                                                                                              |         | $\pm 0.5$ | %               | From minimum to maximum input at full load                                                                                                           |
| Load Regulation          |                                                                                                              |         | 0.5/1.0   | %               | From 0% to full load for single/dual output                                                                                                          |
| Cross Regulation         |                                                                                                              |         | $\pm 5$   | %               | On dual output models, when one output is at 100% load and other is varied from 25% load to full load                                                |
| Ripple & Noise           |                                                                                                              |         | 75/60     | mV pk-pk        | Single output with 10 $\mu$ F/25 V X7R MLCC on output<br>Dual output with 10 $\mu$ F/25 V X7R MLCC on each output<br>measured using 20 MHz bandwidth |
| Overload Protection      |                                                                                                              | 170     |           | %               |                                                                                                                                                      |
| Short Circuit Protection |                                                                                                              |         |           |                 | Trip and Restart (hiccup), with auto recovery                                                                                                        |
| Maximum Capacitive Load  |                                                                                                              |         |           |                 | See Models and Ratings table                                                                                                                         |
| Temperature Coefficient  |                                                                                                              |         | 0.02      | %/ $^{\circ}$ C |                                                                                                                                                      |
| Overvoltage Protection   |                                                                                                              |         |           |                 | See Models and Ratings table                                                                                                                         |
| Remote On/Off            | Output is on if remote on/off (pin 3) is open<br>Output turns off if remote on/off (pin 3) is low (<1.2 VDC) |         |           |                 |                                                                                                                                                      |

### General

| Characteristic             | Minimum                                               | Typical      | Maximum | Units             | Notes & Conditions                 |
|----------------------------|-------------------------------------------------------|--------------|---------|-------------------|------------------------------------|
| Efficiency                 |                                                       | 90           |         | %                 | See Models and Ratings table       |
| Isolation: Input to Output | 1600                                                  |              |         | VDC               |                                    |
| Isolation: Input to Case   | 1600                                                  |              |         | VDC               |                                    |
| Switching Frequency        |                                                       | 330          |         | kHz               |                                    |
| Isolation Resistance       | 10 <sup>9</sup>                                       |              |         | $\Omega$          |                                    |
| Isolation Capacitance      |                                                       |              | 2000    | pF                |                                    |
| Power Density              |                                                       |              | 73      | W/in <sup>3</sup> |                                    |
| Case Material              | Copper with plastic non conductive base UL95V-0 rated |              |         |                   |                                    |
| Potting Material           | Epoxy UL94V-0 rated                                   |              |         |                   |                                    |
| Pin Material               | Brass solder coated                                   |              |         |                   |                                    |
| Solder Profile             | 260 $^{\circ}$ C max 1.5mm from case 10s max          |              |         |                   |                                    |
| Mean Time Between Failure  | 370                                                   |              |         | kHrs              | MIL-HDBK-217F, +25 $^{\circ}$ C GB |
| Weight                     |                                                       | 0.042 (19.0) |         | lb (g)            |                                    |

### Environmental

| Characteristic        | Minimum | Typical | Maximum | Units        | Notes & Conditions                                                                                                                                                         |
|-----------------------|---------|---------|---------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating Temperature | -40     |         | +100    | $^{\circ}$ C | Derate from 100% load at +55 $^{\circ}$ C to 50% load at +80 $^{\circ}$ C<br>or from 100% load at 60 $^{\circ}$ C to 50% load at 85 $^{\circ}$ C with<br>optional heatsink |
| Storage Temperature   | -55     |         | +125    | $^{\circ}$ C |                                                                                                                                                                            |
| Case Temperature      |         |         | +105    | $^{\circ}$ C |                                                                                                                                                                            |
| Humidity              |         |         | 95      | %RH          | Non-condensing                                                                                                                                                             |
| Cooling               |         |         |         |              | Natural convection                                                                                                                                                         |

### EMC: Emissions

| Phenomenon | Standard | Test Level | Notes & Conditions   |
|------------|----------|------------|----------------------|
| Conducted  | EN55032  | Class A    | See Application Note |
| Radiated   | EN55032  | Class A    |                      |

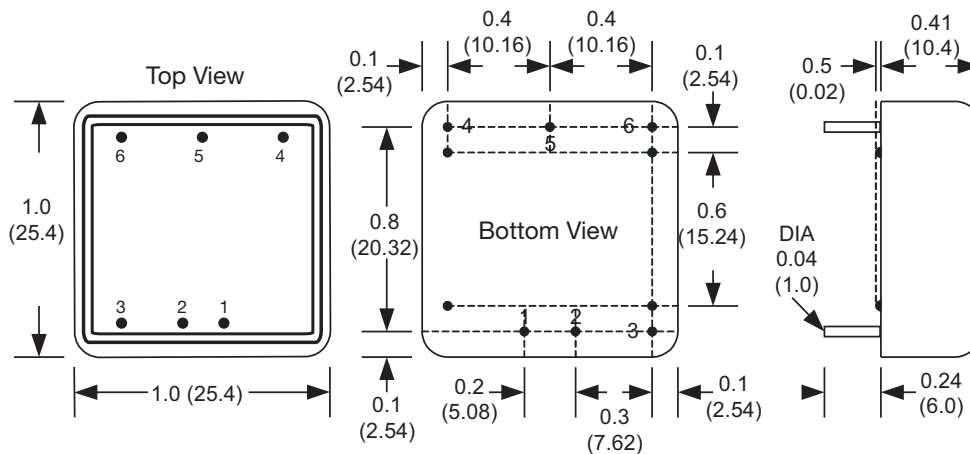
### EMC: Immunity

| Phenomenon         | Standard    | Test Level    | Criteria | Notes & Conditions                                    |
|--------------------|-------------|---------------|----------|-------------------------------------------------------|
| ESD Immunity       | EN61000-4-2 | ±6 kV / ±8 kV | A        | Contact Discharge / Air Discharge                     |
| Radiated Immunity  | EN61000-4-3 | 20 Vrms       | A        |                                                       |
| EFT/Burst          | EN61000-4-4 | 2 kV          | A        | External input filter required, see applications note |
| Surge              | EN61000-4-5 | 2 kV          | A        | External input filter required, see applications note |
| Conducted Immunity | EN61000-4-6 | 10 V rms      | A        |                                                       |
| Magnetic Fields    | EN61000-4-8 | 100 A/m       | A        |                                                       |

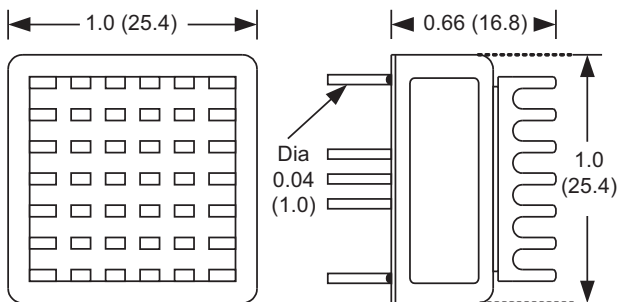
### Safety Approvals

| Safety Agency | Safety Standard        | Notes & Conditions |
|---------------|------------------------|--------------------|
| UL/cUL        | UL60950-1, UL62368-1   |                    |
| IEC/EN        | IEC/EN60950-1, 62368-1 |                    |

### Mechanical Details



### Optional Heatsink (-HK)



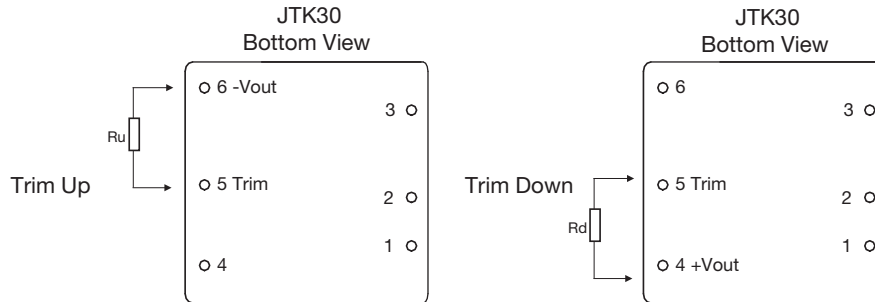
| Pin Connections |               |               |
|-----------------|---------------|---------------|
| Pin             | Single        | Dual          |
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| 2               | -Vin          | -Vin          |
| 3               | Remote On/Off | Remote On/Off |
| 4               | +Vout         | +Vout         |
| 5               | Trim          | Common        |
| 6               | -Vout         | -Vout         |

### Notes

- All dimensions are in inches (mm)
- Weight: 0.042 lbs (19 g) approx.
- Pin diameter: 0.04±0.002 (1.0±0.05)
- Pin pitch tolerance: ±0.014 (±0.35)
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### Application Notes

#### External Output Trimming



Note: Trim function applies to single output models only.

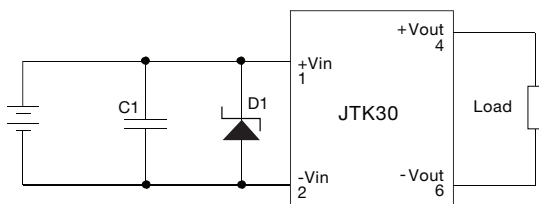
#### Trim Down Resistor Values ( $R_d$ )

| Models | 1%        | 2%        | 3%        | 4%        | 5%        | 6%        | 7%        | 8%        | 9%        | 10%       |
|--------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|        | Voutx0.99 | Voutx0.98 | Voutx0.97 | Voutx0.96 | Voutx0.95 | Voutx0.94 | Voutx0.93 | Voutx0.92 | Voutx0.91 | Voutx0.90 |
| 3V3    | 817.54 k  | 362.23 k  | 215.45 k  | 142.96 k  | 99.75 k   | 71.06 k   | 50.62 k   | 35.33 k   | 23.45 k   | 13.96 k   |
| 5V     | 117.89 k  | 61.63 k   | 38.39 k   | 25.69 k   | 17.68 k   | 12.18 k   | 8.16 k    | 5.10 k    | 2.68 k    | 0.74 k    |
| 12V    | 345.03 k  | 164.83 k  | 98.86 k   | 64.65 k   | 43.71 k   | 29.57 k   | 19.39 k   | 11.7 k    | 5.70 k    | 0.87 k    |
| 15V    | 174.37 k  | 91.10 k   | 56.59 k   | 37.71 k   | 25.8 k    | 17.6 k    | 11.61 k   | 7.05 k    | 3.45 k    | 0.55 k    |

#### Trim Up Resistor Values ( $R_u$ )

| Models | 1%        | 2%        | 3%        | 4%        | 5%        | 6%        | 7%        | 8%        | 9%        | 10%       |
|--------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|        | Voutx1.01 | Voutx1.02 | Voutx1.03 | Voutx1.04 | Voutx1.05 | Voutx1.06 | Voutx1.07 | Voutx1.08 | Voutx1.09 | Voutx1.10 |
| 3V3    | 567.59 k  | 263.17 k  | 158.47 k  | 105.50 k  | 73.51 k   | 52.10 k   | 36.76 k   | 25.24 k   | 16.26 k   | 9.07 k    |
| 5V     | 616.02 k  | 221.40 k  | 131.34 k  | 91.43 k   | 68.9 k    | 54.43 k   | 44.35 k   | 36.93 k   | 31.24 k   | 26.73 k   |
| 12V    | 1015.59 k | 448.88 k  | 280.56 k  | 199.79 k  | 152.36 k  | 121.16 k  | 99.08 k   | 82.63 k   | 69.89 k   | 59.75 k   |
| 15V    | 661.51 k  | 231.25 k  | 134.02 k  | 91.04 k   | 66.82 k   | 51.27 k   | 40.45 k   | 32.48 k   | 26.36 k   | 21.52 k   |

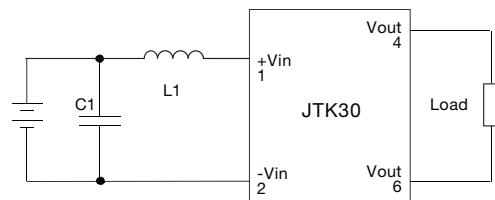
#### External Filter for Surge and EFT



$C_1$  is 330  $\mu$ F, 100 V electrolytic capacitor  
 $D_1$  is 58 V, 3 kW TVS for 24 V input or 120 V, 3 kW TVS for 48 V input

| Models  | $C_1$             | $D_1$          |
|---------|-------------------|----------------|
| JTK3024 | 330 $\mu$ F/100 V | TVS 58 V 3 kW  |
| JTK3048 | 330 $\mu$ F/100 V | TVS 120 V 3 kW |

#### External EMI Filter



| Models  | $C_1$                   | $L_1$        |
|---------|-------------------------|--------------|
| JTK3024 | 1206, 3.3 $\mu$ F/100 V | 0.82 $\mu$ H |
| JTK3048 | 1206, 1 $\mu$ F/100 V   | 2.2 $\mu$ H  |



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

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- Поставка более 17-ти миллионов наименований электронных компонентов;
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- Оперативные сроки поставки под заказ (от 5 рабочих дней);
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- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

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- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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