

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

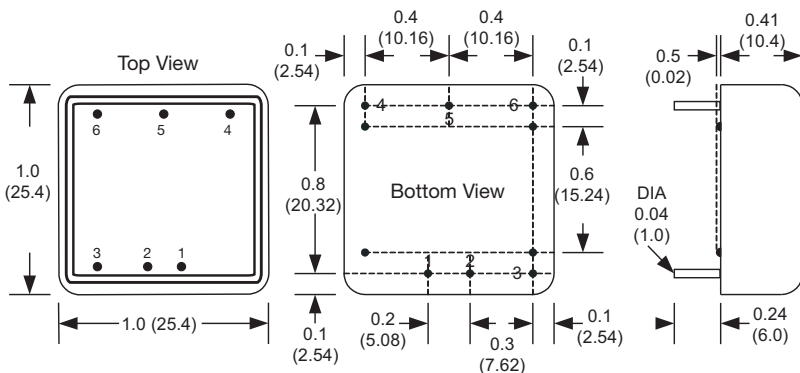
Input Voltage	Output Voltage	Output Current	Input Current ⁽¹⁾		OVP setting	Efficiency	Max. capacitive load ⁽²⁾	Model Number ⁽³⁾
			No Load	Full Load				
9-36 V	3.3 V	7.0 A	10 mA	1095 mA	3.9 V	88%	10000 μ F	JTK3024S3V3
	5.0 V	6.0 A	10 mA	1405 mA	6.2 V	89%	7200 μ F	JTK3024S05
	12.0 V	2.5 A	10 mA	1405 mA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

Notes

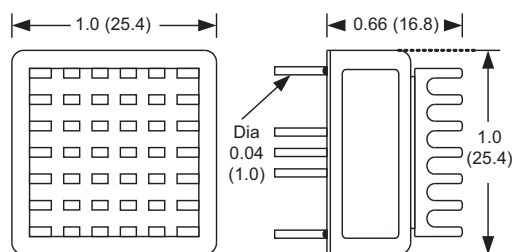
1. Input currents measured at nominal input voltage.
2. Maximum capacitive load is per output.

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: ± 0.014 (± 0.35)
5. Case tolerance: ± 0.02 (± 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 μ H inductor and 47 μ 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	± 10			%	Single Output Versions
Initial Set Accuracy			± 1	%	At full load
Minimum Load	0			%	No minimum load required
Line Regulation			± 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			± 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 μ F/25 V X7R MLCC on output Dual output with 10 μ F/25 V X7R MLCC on each output 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	%/°C	
Overvoltage Protection					See Models and Ratings table
Remote On/Off	Output is on if remote on/off (pin 3) is open 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 ⁹			Ω	
Isolation Capacitance			2000	pF	
Power Density			73	W/in ³	
Mean Time Between Failure	370			kHrs	MIL-HDBK-217F, +25 °C GB
Weight		0.042 (19.0)		lb (g)	

Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating Temperature	-40		+100	°C	Derate from 100% load at +55 °C to 50% load at +80 °C or from 100% load at 60 °C to 50% load at 85 °C with optional heatsink
Storage Temperature	-55		+125	°C	
Case Temperature			+105	°C	
Humidity			95	%RH	Non-condensing
Cooling					Natural convection

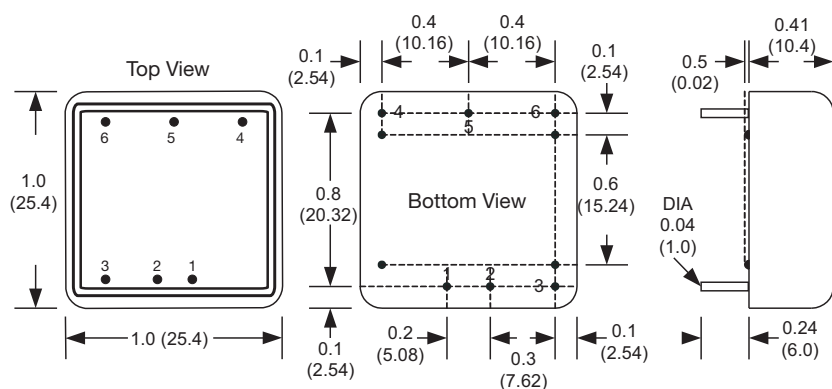
EMC: Emissions

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

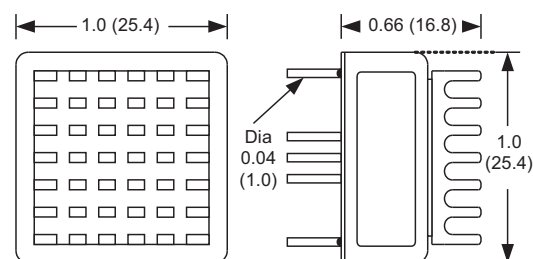
EMC: Immunity

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	

Mechanical Details



Optional Heatsink (-HK)



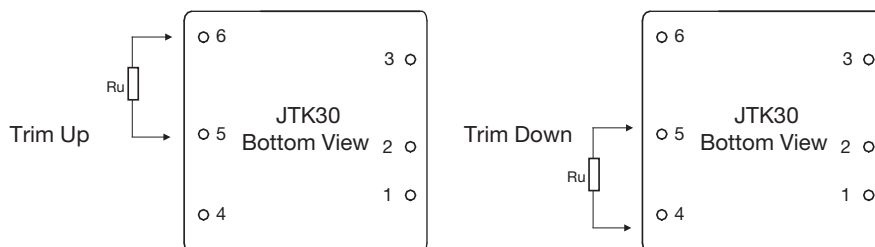
Notes

- 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)
- Case tolerance: ±0.02 (±0.5)

Pin Connections		
Pin	Single	Dual
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Application Notes

External Output Trimming



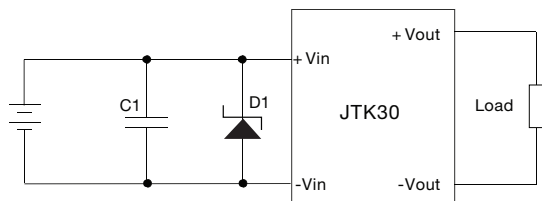
Trim Down Resistor Values (Rd)

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	72.61 k	32.55 k	19.20 k	12.52 k	8.51 k	5.84 k	3.94 k	2.51 k	1.39 k	0.50 k
5V	138.88 k	62.41 k	36.92 k	24.18 k	16.53 k	11.44 k	7.79 k	5.06 k	2.94 k	1.24 k
12V	413.55 k	184.55 k	108.22 k	70.05 k	47.15 k	31.88 k	20.98 k	12.80 k	6.44 k	1.35 k
15V	530.73 k	238.61 k	141.24 k	92.56 k	63.35 k	43.87 k	29.96 k	19.53 k	11.41 k	4.92 k

Trim Up Resistor Values (Ru)

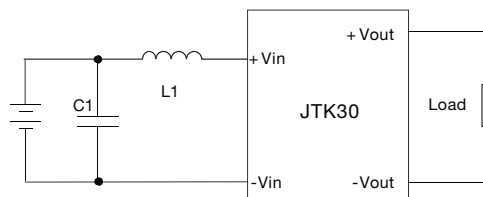
Models	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
	Voutx1.01	Voutx1.02	Voutx1.03	Voutx1.04	Voutx1.05	Voutx1.06	Voutx1.07	Voutx1.08	Voutx1.09	Voutx1.10
3V3	60.84 k	27.40 k	16.25 k	10.68 k	7.34 k	5.11 k	3.51 k	2.32 k	1.39 k	0.65 k
5V	106.87 k	47.76 k	28.06 k	18.21 k	12.30 k	8.36 k	5.55 k	3.44 k	1.79 k	0.48 k
12V	351.00 k	157.50 k	93.00 k	60.75 k	41.40 k	28.50 k	19.29 k	12.37 k	7.00 k	2.70 k
15V	422.77 k	189.89 k	112.26 k	73.44 k	50.15 k	34.63 k	23.54 k	15.22 k	8.75 k	3.58 k

External Filter for Surge and EFT



C1 is 330 μ F, 100 V electrolytic capacitor
D1 is 58 V, 3 kW TVS for 24 V input or 120 V, 3 kW TVS for 48 V input

External EMI Filter



Models	C1	L1
JTK3024	335 k / 50 V, X7R 1206	0.82 μ H
JTK3048	105 k / 50 V, X7R 1206	2.2 μ H