JASPER ELECTRONICS

Innovative Specialty DC Power Systems

CONTACT

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Model GPAD501MXX-1Y Convection / Conduction Cooled Power Supply

90-264 VAC / Single 500W Output

GENERAL OVERVIEW

Jasper's highly efficient and compact Low-Noise (Fanless) Convection / Conduction Cooled Power Supplies are the ideal choice for low-voltage, high-current, high-power density applications including medical equipment, IT, sensitive electronics, and other applications where audible noise and maintenance must be kept to a minimum. Because there are no fans to fail or require periodic cleaning, maintenance is reduced and MTBF is enhanced. Units can also be optionally ruggedized against shock, vibration, and humidity to meet MIL-STDs such as MIL-STD-810 and MIL-STD-167 for military applications.

These Jasper GPAD-Series supplies, available from 200-500 Watts continuous output power, can be used in either convection cooling or conduction cooling configurations. The factory recommends conduction cooling when used in ambient temperatures over +50°C. All models have a 3 year warranty. Please see below for more details.

FEATURES ON SELECT MODELS INCLUDE:

- Wide operating temperature: -20 to +70°C
- Power factor: ≥0.95
- Output over voltage, over current, short circuit and over temperature protection
- Flame retardant and moisture-proof design
- Low leakage current ≤0.7mA
- LED Lamp working status indication
- High efficiency
- Compact size of 255x50x30mm (LxWxH)
- Two supplies can be used in parallel

PARTIAL 500W GPAD MODEL SELECTION

MODEL	INPUT VOLTAGE (VAC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (A)	RATED POWER (W)	DIMENSION (LxWxH)
GPAD501M12-1C	90-264	12	0-42	500	255 x 50 x 30mm
GPAD501M15-1A	90-264	15	0-33	500	255 x 50 x 30mm
GPAD501M24-1A	90-264	24	0-21	500	255 x 50 x 30mm
GPAD501M28-1F	90-264	28	0-18	500	255 x 50 x 30mm
GPAD501M36-1F	90-264	36	0-14	500	255 x 50 x 30mm
GPAD501M48-1A	90-264	48	0-10.5	500	255 x 50 x 30mm
GPAD501M54-1J	90-264	54	0-9	500	255 x 50 x 30mm

EUROPEAN STANDARDS

Rev B-June-14-2026

PARTIAL 400W GPAD MODEL SELECTION WITH CURRENT SHARING

MODEL	INPUT VOLTAGE (VAC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (A)	RATED POWER (W)	DIMENSION (LxWxH)
GPAD501M12-1C	90-264	12	0-42	500	255 x 50 x 30mm
GPAD501M15-1A	90-264	15	0-33	500	255 x 50 x 30mm
GPAD501M24-1A	90-264	24	0-21	500	255 x 50 x 30mm
GPAD501M28-1F	90-264	28	0-18	500	255 x 50 x 30mm
GPAD501M36-1F	90-264	36	0-14	500	255 x 50 x 30mm
GPAD501M48-1A	90-264	48	0-10.5	500	255 x 50 x 30mm
GPAD501M54-1J	90-264	54	0-9	500	255 x 50 x 30mm

TECHNICAL SPECIFICATIONS

INPUT CHARACTERISTICS

Parameter	Min	Typ	Max	Unit	Remark
Input Voltage Range	90	220	264	VAC	
Input Current			6.5	A	
Inrush Current			50	A	220 VAC input, rated load
Input Frequency Range	47	50	63	Hz	
Power Factor	0.95				220 VAC input, rated load
Harmonic Distortion			15	%	230 VAC input, rated / half load

OUTPUT CHARACTERISTICS

Parameter		Min	Typ	Max	Unit	Remark
Output Voltage	GPAD501M12-1C		+12V		VDC	The output voltage is set according to requirements
	GPAD501M15-1A		+15V		VDC	
	GPAD501M24-1A		+24V		VDC	
	GPAD501M28-1F		+28V		VDC	
	GPAD501M36-1F		+36V		VDC	
	GPAD501M48-1A		+48V		VDC	
	GPAD501M54-1J		+54V		VDC	
Output Current	GPAD501M12-1C	0		42	A	The output voltage is set according to requirements
	GPAD501M15-1A	0		33	A	
	GPAD501M24-1A	0		21	A	
	GPAD501M28-1F	0		18	A	
	GPAD501M36-1F	0		14	A	
	GPAD501M48-1A	0		10.5	A	
	GPAD501M54-1J	0		9	A	
Output Power				500	W	
Efficiency			90		%	220VAC input, rated loss
Ripple & Noise (Peak-Peak)				240	m Vp-p	Rated input and load range. output is decoupled by a high frequency 0.1 µF cap and one 10µF electrolytic capacitors. Bandwidth set at 20MHz
Load Regulation				±2	%	
Line Regulation				±0.5	%	
Temperature Coefficient				±0.03	% / °C	

**Specifications subject to change without notice.*

ON / OFF Overshoot			±10	%	
Dynamic Response Overshoot			±5	%	25%~50%~25%, 50%~75%~50% load change, rate 0.1 A / us, cycle time 4ms
Dynamic Response Recovery Time			200	ūS	
Start-Up Time			2	S	220 VAC input, rated load
Isolation Time**					Two power supplies can be used in parallel. In order to obtain a better current sharing effect when in use, it is necessary to connect the current sharing buses of the two power supplies in parallel.

****Option for model with current sharing feature, for example: GPAD501M12-1CF**

PROTECTION

Parameter		Min	Typ	Max	Unit	Remark
Over Voltage Protect	**GPAD501M12-1C**	14			VDC	220VAC input, half load, hiccup mode
	GPAD501M15-1A	17			VDC	
	GPAD501M24-1A	26			VDC	
	GPAD501M28-1F	30			VDC	
	GPAD501M36-1F	38			VDC	
	GPAD501M48-1A	50			VDC	
	GPAD501M54-1J	56			VDC	
Over Current Protect	**GPAD501M12-1C**	44			A	Hiccup mode, self recovery
	GPAD501M15-1A	35			A	
	GPAD501M24-1A	23			A	
	GPAD501M28-1F	20			A	
	GPAD501M36-1FF	16			A	
	GPAD501M48-1A	13			A	
	GPAD501M54-1J	11			A	
Short Circuit Protect		Can withstand permanent short. Self recover.				
Over Temperature Protect		Hiccup mode, self recovery				
High Temperature Protect		Heat is dissipated through the power supply chassis. Avoid touching chassis while in operation				

SAFETY AND INSULATION CLASS

Parameter	Standard Requirement	Remark
Input-Output	3000VAC/≤10mA/1 min	No arcing, no breakdown
Input-Earth	1500VAC/≤10mA/1 min	
Output-Earth	500VDC/≤10mA /1 min	
Ground Continuity	<0.1Ω	Test Current: 32A, Test duration: 120S
Insulation Resistance	≥10MΩ	Normal atmospheric pressure, Relative humidity <90%, non-condensing, Test voltage: 500VDC
Leakage Current	≤0.7m A	264VAC/ 50HZ Input

EMC TEST

Test Item	Test Requirement	Standard
ESD	Air Discharge, ±8KV	IEC 61000-4-2 (Criterion A)
	Contact Discharge, ±6KV	IEC 61000-4-2 (Criterion A)
Radiated RF field (RS)	Freq: 80MHz~2GHz; Field Strength: 3V/m; Amplitude 80% AM (1kHz)	IEC 61000-4-3 (Criterion A)
Immunity to Conducted Disturbance (CS)	Freq: 0.15 MHz ~ 80 MHz , Field Strength: 3V/m, Amplitude modulation: 80% AM (1kHz)	IEC 61000-4-6 (Criterion A)

**Specifications subject to change without notice.*

Fast Transient / Burst	± 2kV , Repeat frequency:5KHz & 100KHz	IEC 61000-4-4 (Criterion A)
Surge	Line-Line: 1 KV, Line-Earth: 2KV	IEC 61000-4-5 (Criterion A)
Conducted Emission (CE)	Class B	CISPR22; EN55022; GB9254
Radiated Emission (RE)	Class B	

ENVIRONMENTAL

Parameter	Min	Typ	Max	Unit	Remark
Operating Temperature	-30		70	℃	Need to mount a heat-sink, the temperature of the heat-sink cannot exceed 65℃
Storage Temperature	-40		85	℃	
Relative Humidity	20		95	%	Non-condensing
Storage Relative Humidity	5		95	%	Non-condensing
Altitude			5000	m	For 3000~4000m, operating temperature decrease 1℃ for every increase of 200m
Cooling					Natural conduction heat dissipation
Vibration	Freq: 10Hz~55Hz (Sinusoidal), Amplitude: 0.35 mm				
Shock	Acceleration: 150 m/s^2, Duration: 11 ms				
Impact (Collision)	Collision waveform: half sine wave; Acceleration: 180m/s2; Pulse Width: 6ms; 6-phase, impact 100 times				
Static Pressure Test	TL=Wt*(S-1)*F*9.8(N) TL: Applied pressure, Unit: N: Wt: Package weight. Unit:kg: S: Allow stacking layers, select the maximum stacking layers; F: Safety factor, usually select 5: Duration: $2h_o$				
Moisture Proof	GB/T2423.4-1993 Alternating damp heat experiment, 24~45℃, 95%RH, 48h				
Anti-Mold	GB/T2423.16-1999 Mold test, level 2				
MTBF	≥150,000h				

MECHANICAL

L x W x H (mm)	255 x 50 x 30
Weight (Kg)	0.55Kg

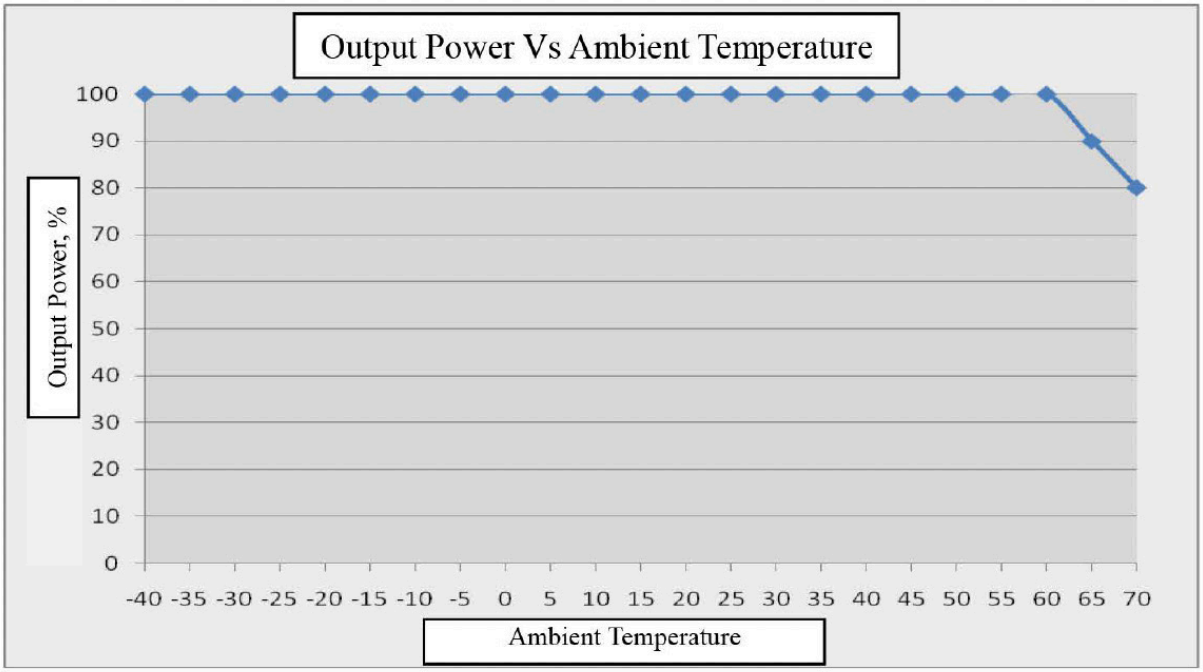
PIN DEFINITION

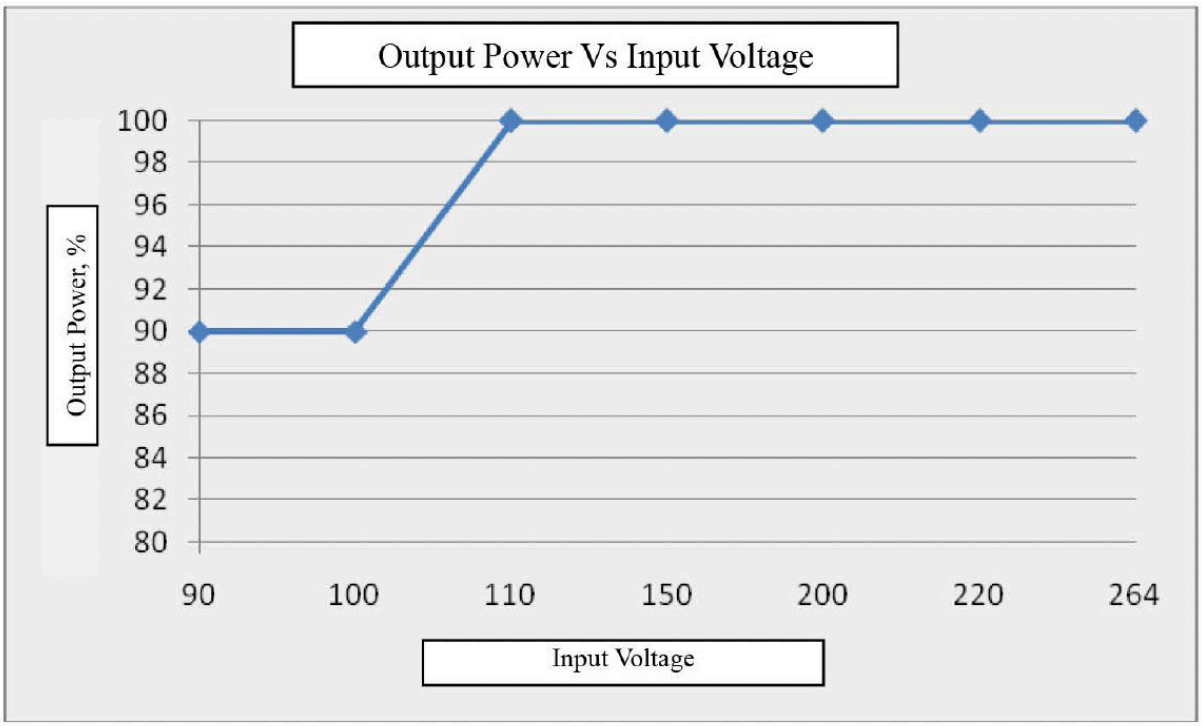
	Description	Pin Function	Maximum Torque
Input Terminal	AC Input	L	0.5N.M
	AC Input	N	
	Protective Earth	PE	
Output Terminal	Output Positive	V+	0.8N.M
	Output Positive	V+	
	Output Negative	V-	
	Output Negative	V-	
Current Sharing Signal Terminal	Current Sharing Bus	SHARE	NA
	Signal Ground (Output Ground)	GND	
	Power Supply Status Indication Signal	S+	

**Specifications subject to change without notice.*

DERATING CURVE

Output Power vs Ambient Temperature & Input Voltage is as follows:





PACKAGING AND SHIPPING

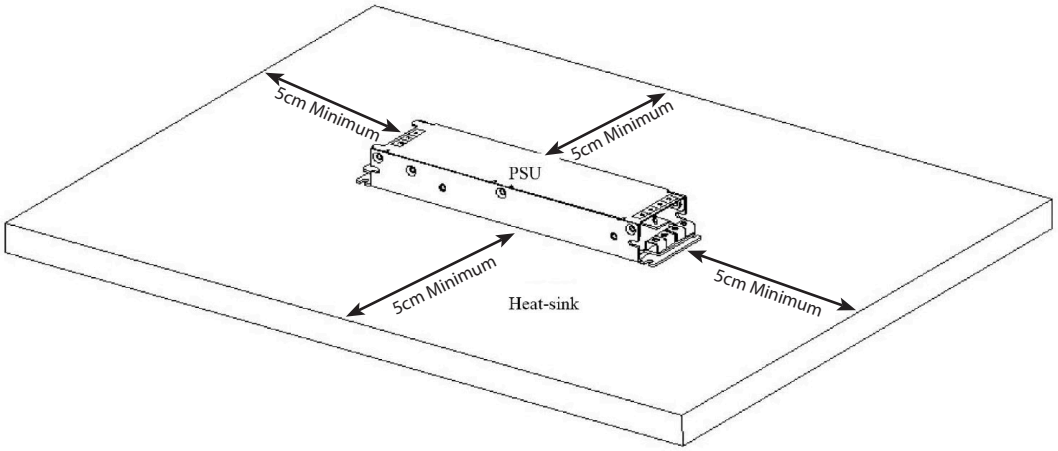
JE ships FOB Origin from the Anaheim, CA factory or our other subsidiary facilities.

LIMITED WARRANTY POLICY

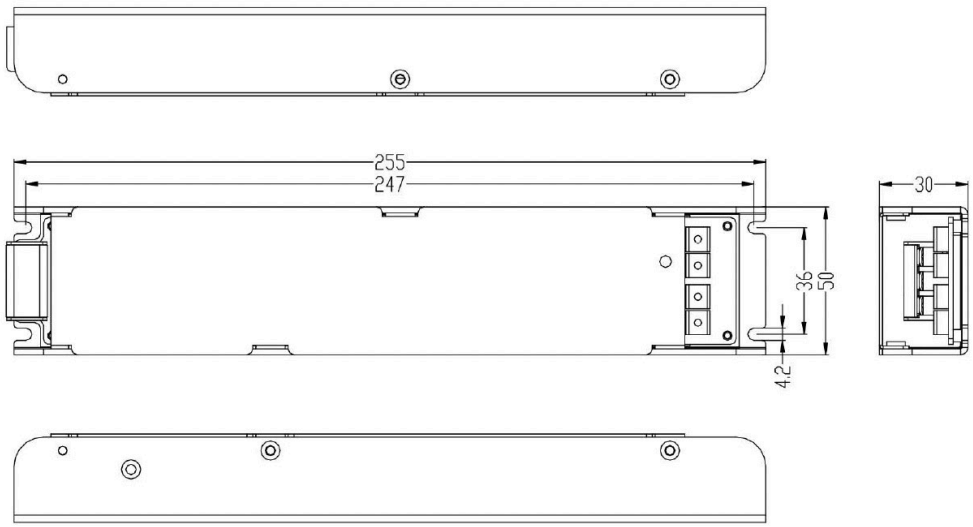
All Jasper Electronics (JE) standard GPAD model power supplies and products are guaranteed to be free of defects in workmanship and materials for a minimum of three (3) years from the date of original shipment, when operated within specification. Non-standard (custom) power supplies and products may be warranted on an individual basis. The unused portion of this warranty is fully transferable with the original equipment in which the power supply is installed. Please see our website for full warranty statement.

CONVECTION vs. CONDUCTION CONFIGURATION

In stock form, Jasper GPAD Supplies dissipate heat by natural convection. The factory recommends that conduction cooling be used for applications with ambient temperatures in excess of +50°C. For conduction cooling, please ensure that there is a heatsink (or casing) at the bottom of the power supply, and that its surface is smooth. The heatsink / casing surface must be sealed to the bottom of the power supply by adding thermal compound or silicone oil. In some applications, the GPAD supplies are mounted to liquid cooled metallic cold plates to remove heat. Generally, the recommended heatsink size is 400mm x 300mm x 20mm (L x W x H). Note: If the recommended external heat dissipation conditions are not met, the unit may shut down to protect itself against overheating. Please reduce the load accordingly in order to prevent an overheating condition.



GPAD MECHANICAL OUTLINE



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INNOVATIVE SPECIALTY DC POWER SYSTEMS

Standard and Custom Power Supplies from 5W to 10KW

TRAFFIC CONTROL POWER SUPPLIES

- 70-400+ Watts / 120 and 220 VAC Models Available
- CALTRANS TEES, NYSDOT, CDOT, GDOT Compliant for 332, 334, 336, 342, 344, and 346 Series cabinets
- RoHS and NEMA Compliant
- Custom labeling and barcoding available
- Ruggedization against shock / vibration / humidity available

CUSTOM POWER DISTRIBUTION ASSEMBLIES (PDAs)

- Compliant with TEES 2020
- 1U smaller than the PDA2-LX and PDA3-LX
- User accessible slots as specified
- Custom labeling and barcoding available
- Ruggedization against shock / vibration / humidity available

COMPACT PCI

- AC or DC input, 175W - 500W DC output, active PFC
- 3U x 8HP, 6U x 8HP sizes
- PICMG 2.11 compliant, UL/CSA, NEMKO/TUV/CE certified, ROHS compliant
- Ruggedization against shock/ vibration/ humidity optional

Primary Applications: Industrial Computing, Military, Satellite Comm, Test, Transportation, Telecom, Aerospace

SPECIALTY HOT-SWAPPABLE POWER SUPPLIES

- 200-1500W, Universal Input, 5-54VDC Output
- Hot Swap. N+1, 90+% Efficiency
- 1U Form Factors
- 30+ Variations for Various Applications Including Nuclear
- Ruggedization against shock/ vibration/ humidity optional

Primary Applications: Medical Equipment, Military, Test, Automotive, Computing, Audio, Sensitive Electronics

RACK POWER SYSTEMS

- 200W-1500W, 2-8 slots, single or mixed output voltages, up to 10KW total
- Single, dual, or individual unit AC or DC input
- Internally or externally redundant DC outputs
- Standard 19" and 23" size or user-specified configurations also available
- Ruggedization against shock/ vibration/ humidity optional

Primary Applications: Medical Equipment, Military, Test, Automotive, Computing, Audio, Sensitive Electronics

CUSTOMS & MODIFIED STANDARDS

- 75W-2KW
- Single to 7 outputs
- Designed and built to custom or semi-custom specifications
- Ruggedization against shock/ vibration/ humidity optional
- Custom electrical specs, chassis, paint, labeling, connectors, interface all available

Primary Applications: Medical Equipment, Military, Test, Automotive, Computing, Audio, Sensitive Electronics

LOW NOISE CONVECTION / CONDUCTION COOLED POWER SUPPLIES

- 200W-500W, 90—264VAC full range input with 12-54 VDC Output
- Wide operating temperature range / high efficiency
- Small form factors
- Ruggedization against shock/ vibration/ humidity optional

Primary Applications: Medical Equipment, Military, IT, Sensitive Electronics

MEDICAL ADAPTERS

- 6W-250W, Efficiency levels V & VI
- Desktop, Wall-mount, and Interchangeable AC plug types
- Large selection of output connectors – additional cable lengths available
- UL60601 (medical) approved adapters available
- Ruggedization against shock/ vibration/ humidity optional

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