

HVP450 SERIES



450 Watt 53VDC / 12VDC Dual Output Model

- 10.23 x 3.23 x 1.57" Hot-Swap Package

Features:

- Universal AC Input Range (90-264 VAC)
- Active Power Factor Correction (0.98 PF Typical)
- Hot-Swap / N+1 Redundant Operation
- Analog / I²C / PMBus Interface for Status & Control
- Front Panel LED Indicators
- Class B Emissions
- 2 Year Warranty

INPUT:

Input Voltage	90~264 VAC (Universal AC Input)
Input Frequency	47-63Hz
Inrush Current	35.2Arms @ 230 VAC Cold Start
Input Current	4.4 / 2.24A @ 115 / 230 VAC
Input Protection	Single Fuse
Hold-Up Time	10ms Minimum @ 115 VAC Minimum
Leakage Current	<1000 μ A @ 230 VAC Maximum
Power Factor	EN61000-3-2 (0.99 PF Typical)
No Load power	9 Watt Typical

GENERAL:

Efficiency	Up to 92% (see 80 Plus test, page 3)
Operating Temperature	-10-70°C, derate linearly to 60% load at 50-70°C
Storage Temperature	-40°C to +85°C
Over-Temp Protection	Auto-Recovery
Cooling	Internal Ball Bearing Fans
Operating Humidity	5-90% RH, Non-Condensing
Vibration	5 ~ 50 Hz, acceleration 7.35 m/s*s on X,Y and Z Axis
MTBF	>100k Hrs (according to MIL-HBK-217F) at 30°C

OUTPUT:

Adjustment Range	Via I ² C / PMBus Interface
Minimum Load	none required
Line Regulation	\pm 1%
Load Regulation	\pm 2% (5VSB = \pm 5%)
Ripple & Noise	\pm 1% pk-pk @ 20MHz
Overload Protection	120-135% of max power (Foldback)
Over Voltage	Latching before 130% of nominal
Short Circuit Protection	Trip without damage & auto-recovery
Transient Response	recovers <2ms following a 25% load change
Switching Frequency	55KHz

APPROVALS:

Emissions	EN55022 "B", FCC Part 15 Subject J Class B
Safety Approvals	IEC 60950-1 Class I

STATUS / CONTROL:

5VSB	500mA (Always present and on)
DC Okay	Active Low
Fan Fail	Active Low
Enable	Active Low
P/S Present	Pull to Low
Current Share	V1 Only
AC Fail	Active Low

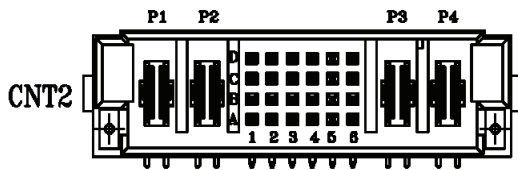
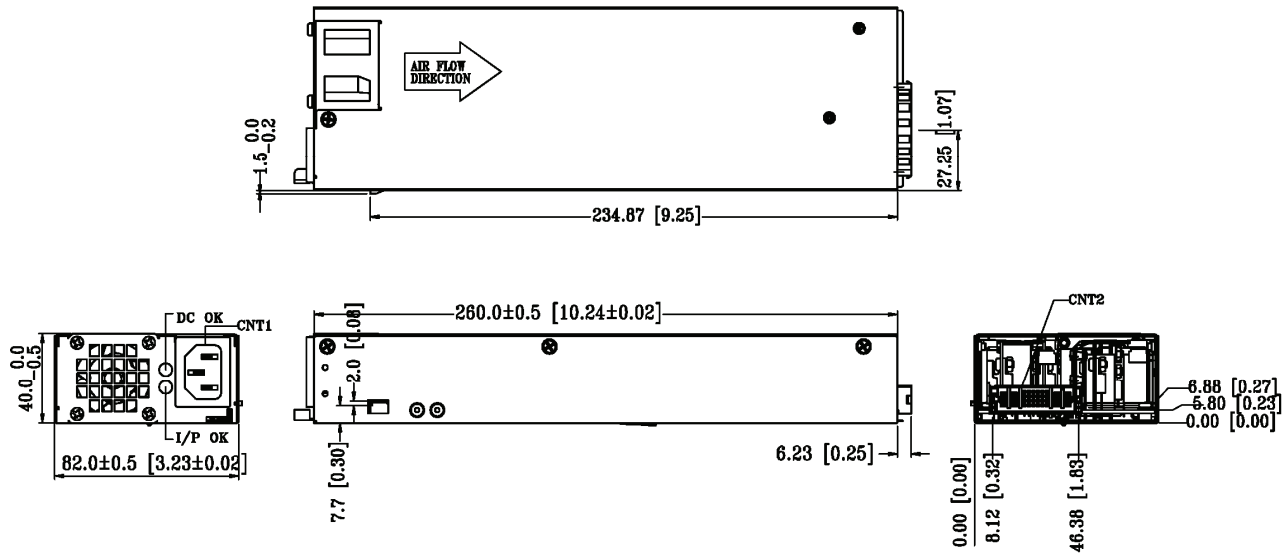
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Output Specifications:

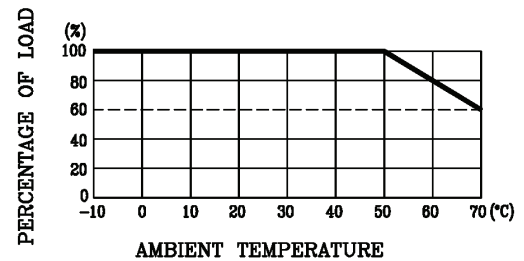
Model:	V1	I _{out}	V2	I _{out}	V3	I _{out}
HVP450-D530I	+53V	6.5A	+12V	9A	5Vsb	500mA

* Maximum Output Power ≤450 Watts

Mechanical Dimensions:



DERATING CHART



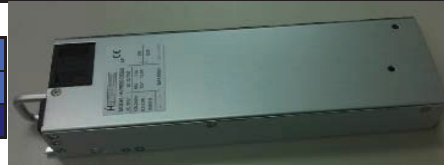
INPUT & OUTPUT CONNECTORS PIN ASSIGNMENT

CNT1			CNT2						P3	P4		
L	N	G	P1	P2	D1	D2	D3	D4			D5	D6
LINE	NEUTRAL	GND	VO2	COM	Albet	A2	DGND	5VSB	N/A	53V_CS	VO1 RTN	VO1
					C1	C2	C3	C4	C5	C6		
					PS PRNT	A1	PS EN IN	DCOK 12V L	N/A	N/A		
					B1	B2	B3	B4	B5	B6		
					12V_CS	A0	PS EN OUT	DCOK 53V L	N/A	N/A		
					A1	A2	A3	A4	A5	A6		
SCL	SDA	AC FAIL	FAN FAL	N/A	N/A							

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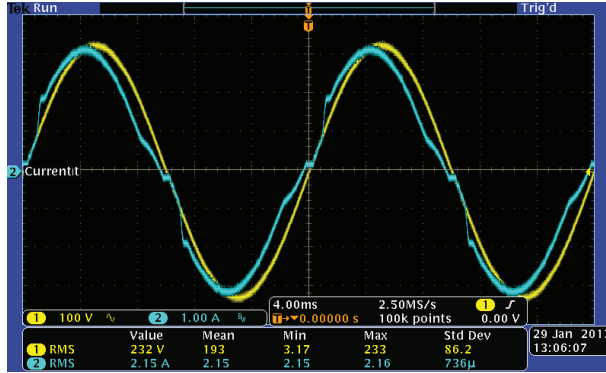
80 PLUS Verification and Testing Report

TYPICAL EFFICIENCY (50% Load):	91.22%
AVERAGE EFFICIENCY:	89.65%
80 PLUS COMPLIANT:	YES



Input Current and Voltage Waveforms

Manufacturer	HiTRON Electronic Corporation
Model Number	HVP450-D5301
Serial Number	N/A
Year	2013
Type	1U
Test Date	29-Jan-13



Input AC current Waveform (I_{inD} = 9.17% , 100% Load)

Rated Specifications	Value	Units
Input Voltage	100-240	Volts
Input Current		Amps
Input Frequency	50-60	Hz
Rated Output Power	452.5	Watts

Note: All measurements were taken with input voltage at 230V nominal and 50 Hz

I _{RMS} A	PF	I _{THD} %	Load %	Fraction of Load	Input Watts	Interbal Fan Power (W)	DC Terminal Voltage(V) / DC Load Current (A)					Output Watts	Efficiency %
							56V	12V	N/A	N/A	N/A		
0.3603	0.7337	17.89	*10%	Low	60.81	0.549	53 / 0.65	12 / 0.9				45.437	75.62%
0.5412	0.8682	13.41	20%	Light	108.09	0.549	53 / 1.3	12 / 1.8				91.3	84.97%
1.1355	0.9545	11.18	50%	Typical	249.51	0.549	53 / 3.25	12 / 4.5				227.05	91.22%
2.1773	0.9759	9.17	100%	Full	489.73	1.548	53 / 6.5	12 / 9.0				452.72	92.76%

* 10% load results are for informative purposes only and not included in certification requirements.

** Fan power should be recorded if Fan exists, but is not included in the efficiency calculations.

