

**HWS30A/HDA**

SPECIFICATIONS

A256-01-01/HDA-B

ITEMS		MODEL	HWS30A -3/HDA	HWS30A -5/HDA	HWS30A -12/HDA	HWS30A -15/HDA	HWS30A -24/HDA	HWS30A -48/HDA
1	Nominal Output Voltage	V	3.3	5	12	15	24	48
2	Maximum Output Current	A	6	6	2.5	2	1.3	0.65
3	Maximum Output Power	W	20.0	30.0	30.0	30.0	31.2	31.2
4	Efficiency (Typ.) (*1)	100VAC	% 75	80	84	85	86	86
		200VAC	% 77	82	86	87	88	87
5	Input Voltage Range (*2)	-	85 - 265VAC (47 - 63Hz) or 120 - 370VDC					
6	Input Current (Typ.) (*1)	A	0.5/0.3	0.65/0.4				
7	Inrush Current (Typ.) (*1)(*3)	-	14A at 100VAC, 28A at 200VAC, Ta=25°C, Cold Start					
8	PFHC	-	Designed to meet IEC61000-3-2					
9	Output Voltage Range	V	2.97 - 3.96	4.0 - 6.0	9.6 - 14.4	12.0 - 18.0	19.2 - 28.8	38.4 - 52.8
10	Maximum Ripple & Noise (*4)	0≤Ta≤71°C	mV 120	120	150	150	150	200
		-10≤Ta<0°C	mV 160	160	180	180	180	240
11	Maximum Line Regulation (*5)	mV	20	20	48	60	96	192
12	Maximum Load Regulation (*6)	mV	40	40	96	120	150	240
13	Temperature Coefficient	-	Less than 0.02% / °C					
14	Over Current Protection (*7)	A	6.3 ≤	6.3 ≤	2.62 ≤	2.1 ≤	1.36 ≤	0.68 ≤
15	Over Voltage Protection (*8)	V	4.13 - 4.95	6.25 - 7.25	15.0 - 17.4	18.8 - 21.8	30.0 - 34.8	55.2 - 64.8
16	Hold-up Time (Typ.) (*1)	-	20ms					
17	Leakage Current (*9)	-	Less than 0.5mA. 0.2mA (Typ) at 100VAC / 0.4mA (Typ) at 230VAC					
18	Remote Sensing	-	-					
19	Parallel Operation	-	-					
20	Series Operation	-	Possible					
21	Operating Temperature (*10)	-	-10 to +71°C (-10 to +50°C:100%, +60°C:60%, +71°C:40%) Guarantee Start up at -40 to -10°C					
22	Operating Humidity	-	30 to 90%RH (No Condensing)					
23	Storage Temperature	-	-40 to +85°C					
24	Storage Humidity	-	10 to 95%RH (No Condensing)					
25	Cooling	-	Convection Cooling					
26	Withstand Voltage	-	Input - FG : 2kVAC (20mA), Input - Output : 3kVAC (20mA) Output - FG : 500VAC (20mA) for 1min					
27	Isolation Resistance	-	More than 100MΩ at 25°C and 70%RH Output - FG : 500VDC					
28	Vibration (*11)	-	At no operating, 10 - 55Hz (Sweep for 1min) 19.6m/s <sup>2</sup> Constant, X,Y,Z 1hour each. Designed to meet MIL-STD-810F 514.5 Category 4, 10					
29	Shock	-	Less than 196.1m/s <sup>2</sup> Designed to meet MIL-STD-810F 516.5 Procedure I, VI					
30	Safety	-	Approved by UL62368-1, CSA62368-1, EN62368-1, UL60950-1, CSA60950-1, EN60950-1 (Expire date of 60950-1 : 20/12/2020) UL508, CSA C22.2 No.107.1-01. Designed to meet Den-an Appendix 8 at 100VAC only.					
31	Line DIP	-	Designed to meet SEMI-F47 (200VAC Line only)					
32	Conducted Emission (*12)	-	Designed to meet EN55011/EN55032-B, FCC-B, VCCI-B					
33	Radiated Emission (*12)	-	Designed to meet EN55011/EN55032-B, FCC-B, VCCI-B					
34	Immunity (*12)	-	Designed to meet IEC61000-6-2 IEC61000-4-2, -3, -4, -5, -6, -8, -11					
35	Weight (Typ.)	-	240g					
36	Size (W x H x D)	mm	31.5 x 82 x 95 ( Refer to Outline Drawing )					

\*Read instruction manual carefully, before using the power supply unit.

=NOTES=

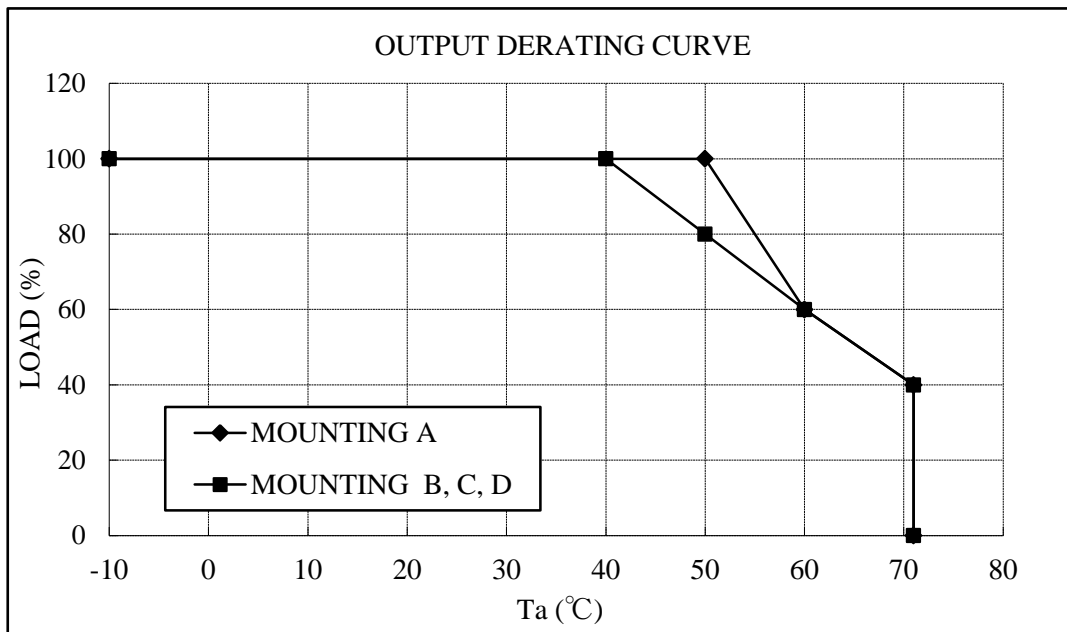
- \*1. At 100VAC/200VAC, Ta=25°C, nominal output voltage and maximum output power.
- \*2. For cases where conformance to various safety specs (UL, CSA, EN) are required, to be described as 100 - 240VAC(50 - 60Hz).
- \*3. Not applicable for the inrush current to Noise Filter for less than 0.2ms.
- \*4. Measure with JEITA RC-9131B probe, Bandwidth of scope :100MHz.  
For start up at low ambient temperature and low input voltage, output ripple noise might not meet specification.  
However, specification can be met after one second.
- \*5. 85 - 265VAC, constant load.
- \*6. No load-Full load, constant input voltage.
- \*7. Hiccup with automatic recovery. Avoid to operate at over load or short circuit condition.
- \*8. OVP circuit will shut down output, manual reset (Re power on).
- \*9. Measured by the each measuring method of UL, CSA, EN and Den-an (at 60Hz), Ta=25°C.
- \*10. Output Derating
  - Derating at standard mounting. Refer to OUTPUT DERATING CURVE (A256-01-02/HDA- ).
  - Load (%) is percent of maximum output power or maximum output current, do not exceed its derating of maximum load.
  - For conditions of start up at -40°C to -10°C, refer to derating curve (A256-01-03/HD- ).
- \*11. Category 4 exposure levels : Track transportation over U.S. highways, Composite two-wheeled trailer.
- \*12. The power supply is considered a component which will be installed into a final equipment.  
The final equipment should be re-evaluated that it meets EMC directives.

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OUTPUT DERATING

A256-01-02/HDA

Ta (°C)	LOAD (%)	
	MOUNTING A	MOUNTING B, C, D
-10 - +40	100	100
50	100	80
60	60	60
71	40	40



MOUNTING A

(STANDARD MOUNTING)

MOUNTING B

MOUNTING C

MOUNTING D

DON'T USE

