

SPECIFICATIONS

MODEL		HWS1500	HWS1500	HWS1500	HWS1500	HWS1500	HWS1500	HWS1500	HWS1500	HWS1500	HWS1500	HWS1500	
ITEMS		-3	-5	-6	-7	-12	-15	-24	-36	-48	-60		
1	Nominal Output Voltage	V	3.3	5	6	7.5	12	15	24	36	48	60	
2	Maximum Output Current	at 100VAC	A	300	300	250	200	125	100	65	42	32	25.6
		at 200VAC	A	300	300	250	200	125	100	70	46.5	32	28
3	Peak Output Current (*13)	at 200VAC	A	-	300	240	-	-	105	70	-	42	
4	Maximum Output Power	at 100VAC	W	990	1500	1500	1500	1500	1560	1512	1536	1536	
		at 200VAC	W	990	1500	1500	1500	1500	1680	1674	1536	1680	
5	Peak Output Power (*13)	at 200VAC	W	-	1800	1800	-	-	2520	2520	-	2520	
6	Efficiency (Typ) (*1)	at 100VAC	%	72	77	79	81	82	83	84	84	86	86
		at 200VAC	%	75	81	82	83	85	87	88	88	90	90
7	Input Voltage Range (*2)	-	85 - 265VAC (47 - 63Hz)										
8	Input Current (100/200VAC)(Typ) (*1)	A	15.0/8.0	19.5/10.0				19.0/10.0					
9	Inrush Current (Typ) (*3)	-	20A at 100VAC, 40A at 200VAC										
10	PFHC	-	Built to meet IEC61000-3-2										
11	Power Factor (100/230VAC)(Typ) (*1)	-	0.98/0.94										
12	Output Voltage Range	V	2.64 - 3.96	4.0 - 6.0	4.8 - 7.2	6.0 - 9.0	9.6 - 14.4	12.0 - 18.0	19.2 - 28.8	28.8 - 43.2	38.4 - 52.8	48.0 - 66.0	
13	Maximum Ripple & Noise (*4)	+25 - +70°C	mV	150	150	150	150	150	150	200	200	200	400
		0°C	mV	200	200	200	200	150	150	200	200	200	400
		-10°C	mV	220	220	220	220	200	200	200	240	400	600
14	Maximum Line Regulation (*5)	mV	36	36	36	40	48	60	96	144	192	240	
15	Maximum Load Regulation (*6)	mV	60	60	60	60	72	90	144	150	288	360	
16	Temperature Coefficient	-	Less than 0.02% / °C										
17	Over Current Protection (*7)	A	315.0 -	315.0 -	262.5 -	210.0 -	131.2 -	105.0 -	68.2 -	44.1 -	33.6 -	26.8 -	
18	Over Voltage Protection (*8)	V	4.12 - 4.62	6.25 - 7.0	7.5 - 8.4	9.37 - 10.5	15.0 - 17.4	18.7 - 21.8	30.0 - 34.8	45.0 - 49.7	55.2 - 64.8	69.0 - 75.0	
19	Hold-up Time (Typ) (*9)	-	20ms			16ms		20ms					
20	Leakage Current (*10)	-	1.5mA MAX at 100VAC / 240VAC										
21	Remote Sensing	-	Possible										
22	Remote ON/OFF control	-	Possible										
23	Monitoring Signal	-	PF(Open Collector Output)										
24	Output Voltage External Control	-	Possible										
25	Parallel Operation	-	Possible										
26	Series Operation	-	Possible										
27	Operating Temperature (*11)	at Input Voltage 100VAC/200VAC	-10 - +40°C	W	990	1500			1560/1680	1512/1674	1536	1536/1680	
			+50°C	W	825	1250	1500		1560/1680	1512/1674	1536	1536/1680	
			+60°C	W	660	1000	1125		1170/1260	1134/1255	1152	1152/1260	
			+70°C	W	495	750			780/840	756/837	768	768/840	
28	Operating Humidity	-	10 - 90%RH (No dewdrop)										
29	Storage Temperature	-	-30 - +85°C										
30	Storage Humidity	-	10 - 95%RH (No dewdrop)										
31	Cooling	-	Forced Air By Blower Fan										
32	Withstand Voltage	-	Input - FG : 2kVAC (20mA), Input - Output : 3kVAC (20mA), Output - CNT : 100VAC (100mA) Output - FG : 500VAC (300mA), (60V model 651VAC(390mA)) for 1min.										
33	Isolation Resistance	-	More than 100Mohm Output - FG ... 500VDC More than 10Mohm Output - CNT ... 100VDC at 25°C and 70%RH										
34	Vibration	-	At no operating, 10 - 55Hz (Sweep for 1min.) 19.6m/s ² Constant, X,Y,Z 1h each.										
35	Shock (In package)	-	Less than 196.1m/s ²										
36	Safety (*12)	-	Built to meet UL60950-1, CSA60950-1, EN60950-1, EN50178. Built to meet DENAN.										
37	Line DIP	-	Built to meet SEMI-F47 (200VAC Line only)										
38	Conducted Emission	-	Built to meet EN55011/EN55022-A, FCC-classA, VCCI-classA.										
39	Radiated Emission	-	Built to meet EN55011/EN55022-A, FCC-classA, VCCI-classA.										
40	Immunity	-	Built to meet IEC61000-4-2(Level 2,3), -3(Level 3), -4(Level 3), -5(Level 3,4), -6(Level 3), -8(Level 4), -11										
41	Weight (Typ)	g	4000					3800					
42	Size (W x H x D)	mm	126.5 x 82 x 280 (Refer to Outline Drawing)										

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

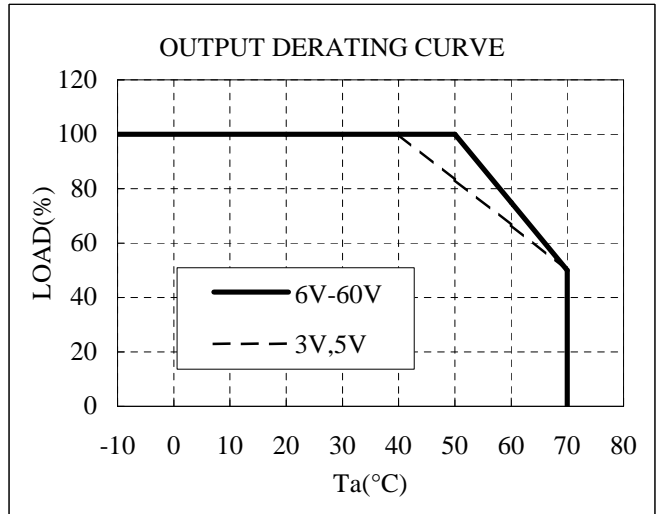
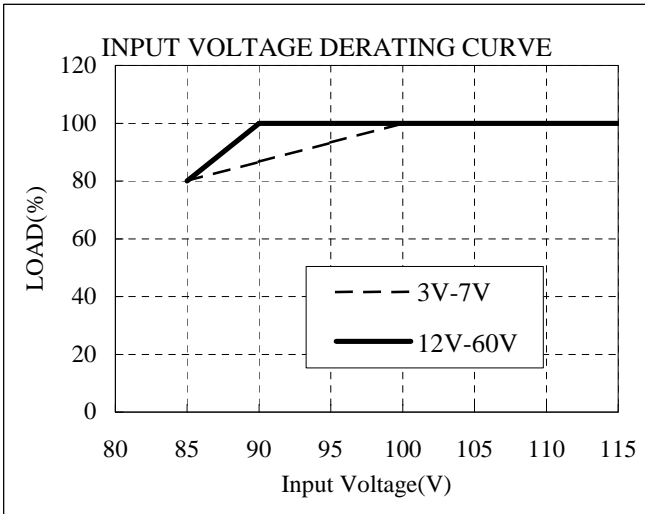
=NOTES=

- *1. At Ta=25°C and maximum output power.
- *2. For cases where conformance to various safety specs (UL, CSA, EN) are required, input voltage range will be 100 - 240VAC(50/60Hz).
- *3. First in-rush current. Not applicable for the in-rush current to Noise Filter less than 0.2ms.
- *4. Measure with JEITA RC-9131A probe, Bandwidth of scope :100MHZ.
(at 100uF electric capacitor and 0.47uF film capacitor on the test fixture board.)
Between -10 degrees C and 25 degrees C, it becomes the value which connected each value in a straight line.
- *5. 85 - 265VAC , constant load.
- *6. No load-Full load, constant input voltage.
- *7. Constant current limit with automatic recovery. An output will be intercepted if it continues for about 5 seconds.
Output current exceeding maximum rated output current for more then 10 seconds continuously will result to output shutdown.
- *8. OVP circuit will shut down output, manual reset (Power cycle) or ON/OFF CNT signal reset.
- *9. At 100/200VAC, nominal output voltage and maximum output current.
- *10. Measured by the each measuring method of UL, CSA, EN and DENAN (at 60Hz), Ta=25°C.
- *11. Ratings - Derating at standard mounting.
- Load (%) is percent of maximum output power or maximum output current, whichever is greater.
- As for other mountings, refer to derating curve (DA006-01-02_).
- *12. As for DENAN, built to meet at 100VAC.
- *13. Peak output current is less than 10 seconds, and duty 35% max.

OUTPUT DERATING

DA006-01-02C

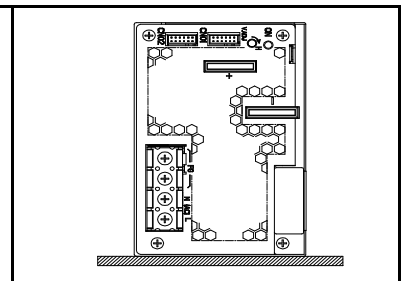
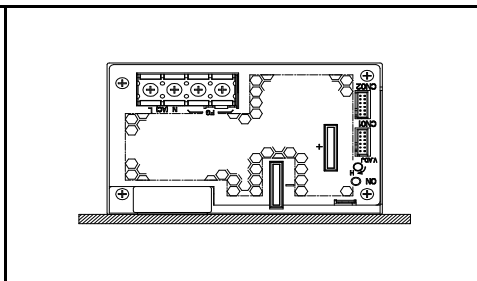
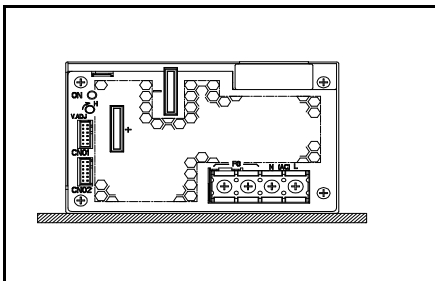
Ta (°C)	LOAD(%)					
	Mounting	A,B,C,D				
	Input	85V		100V-		90V-
Output	3V,5V	6V-60V	3V,5V	6V,7V	12V-60V	
-10 ~ +40		80	80	100	100	100
50		66.6	80	83.3	100	100
60		53.3	60	66.7	75	75
70		40	40	50	50	50



MOUNTING A
(STANDARD MOUNTING)

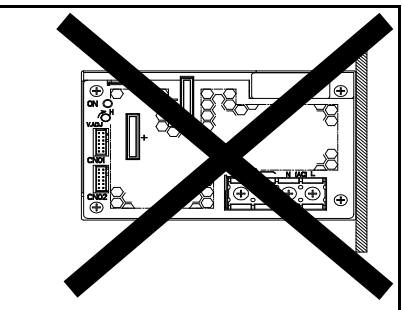
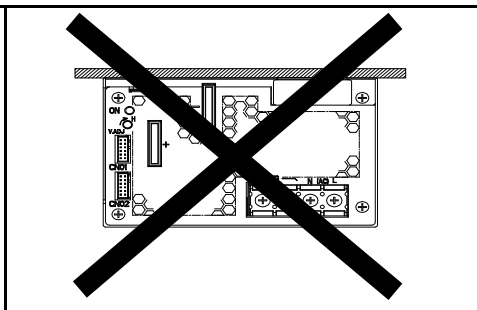
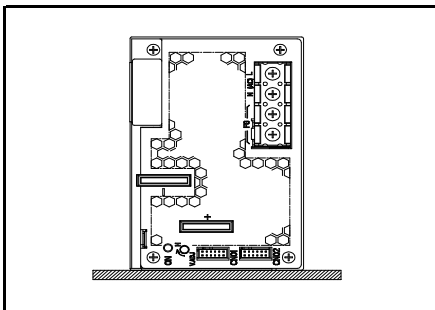
MOUNTING B

MOUNTING C



MOUNTING D

Inhibit



SPECIFICATIONS

DA006-01-03

MODEL		HWS1500-36	
ITEMS			
1	Nominal Output Voltage	V	36
2	Maximum Output Current	at 100VAC	A
		at 200VAC	A
3	Peak output Current (*13)	at 200VAC	A
4	Maximum Output Power	at 100VAC	W
		at 200VAC	W
5	Peak Output Power (*13)	at 200VAC	W
6	Efficiency (Typ) (*1)	at 100VAC	%
		at 200VAC	%
7	Input Voltage Range (*2)	-	85 ~ 265VAC (47 ~ 63Hz)
8	Input Current (100/200VAC)(Typ) (*1)	A	19.0/10.0
9	Inrush Current (Typ) (*3)	-	20A at 100VAC, 40A at 200VAC
10	PFHC	-	Built to meet IEC61000-3-2
11	Power Factor (100/230VAC)(Typ) (*1)	-	0.98/0.94
12	Output Voltage Range	V	28.8~43.2
13	Maximum Ripple & Noise (*4)	0 ~ +70°C	mV
		-10 ~ 0°C	mV
14	Maximum Line Regulation (*5)	mV	144
15	Maximum Load Regulation (*6)	mV	150
16	Temperature Coefficient	-	Less than 0.02%/°C
17	Over Current Protection (*7)	-	105%~
18	Over Voltage Protection (*8)	V	45.0~49.7
19	Hold-up Time (Typ) (*9)	-	20ms
20	Leakage Current (*10)	-	1.5mA MAX at 100VAC / 240VAC
21	Remote Sensing	-	Possible
22	Remote ON/OFF control	-	Possible
23	Parallel Operation	-	Possible
24	Series Operation	-	Possible
25	Operating Temperature (*11)	-	-10 ~ +70 (-10 ~ +50°C:100%, +60°C:75%, +70°C:50%), start up -20~70°C
26	Operating Humidity	-	10 ~ 90%RH (No dewdrop)
27	Storage Temperature	-	-30 ~ +85°C
28	Storage Humidity	-	10 ~ 95%RH (No dewdrop)
29	Cooling	-	Forced Air By Blower Fan
30	Withstand Voltage	-	Input - FG : 2kVAC (20mA), Input - Output : 3kVAC (20mA) Output-FG : 500VAC (300mA), Output-CNT:100VAC (100mA) for 1min.
31	Isolation Resistance	-	More than 100Mohm Output - FG ... 500VDC More than 10Mohm Output - CNT ... 100VDC at 25°C and 70%RH
32	Vibration	-	At no operating, 10 ~ 55Hz (Sweep for 1min.) 19.6m/s ² Constant, X,Y,Z 1h each.
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35	Line DIP	-	Built to meet SEMI-F47 (200VAC Line only)
36	Conducted Emission	-	Built to meet EN55011/EN55022-A, FCC-ClassA, VCCI-ClassA.
37	Radiated Emission	-	Built to meet EN55011/EN55022-A, FCC-ClassA, VCCI-ClassA.
38	Immunity	-	Built to meet IEC61000-4-2(Level 2,3), -3(Level 3), -4(Level 3), -5(Level 3,4), -6(Level 3), -8(Level 4), -11
39	Weight (Typ)	g	3800
40	Size (W x H x D)	mm	126.5 x 82 x 280 (Refer to Outline Drawing)

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