HWS15/A

SPECIFICATIONS

A224-01-01/A-B

	ITEMS / MODEL			HWS15 -3/A	HWS15 -5/A	HWS15 -12/A	HWS15 -15/A	HWS15 -24/A	HWS15 -48/A
1	Nominal Output Voltage		V	3.3	5	12	15	24	48
2	Maximum Output Current		A	3	3	1.3	1	0.65	0.33
3	Maximum Output Power		W	10	15	15.6	15	15.6	15.8
4	Efficiency (Typ) (*1)	100VAC	%	68	77	80	80	82	80
		200VAC	%	71	79	81	81	83	80
5	Input Voltage Range (*2)		-	85 ~ 265VAC (47 ~ 63Hz) or 120 ~ 370VDC					
6	Input Current (100/200VAC)(Typ) (*1)		A	0.3/0.15	0.4/0.2				
7	Inrush Current(Typ) (*3)		-	14A at 100VAC, 28A at 200VAC, Ta=25°C, Cold Start					
8	PFHC		-	Built 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	0≤Ta≤60°C	mV	120	120	150	150	200	200
	(*4)	-10≤Ta<0°C	mV	160	160	180	180	240	240
11	Maximum Line Regulation (*5)		mV	20	20	48	60	96	192
12	Maximum Load Regulation (*6)		mV	40	40	96	120	192	384
13	Temperature Coefficient		-	Less than 0.02% / °C					
14	Over Current Protection (*7)		A	3.15 ~	3.15 ~	1.36 ~	1.05 ~	0.68 ~	0.34 ~
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) (*9)		-	20ms					
17	Leakage Current (*10)		-	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 (*11)		-	-10 ~+60°C (-10 ~+40°C:100%,+50°C:60%,+60°C:20%)					
22	Operating Humidity		-	30 ~ 90%RH (No dewdrop)					
23	Storage Temperature		-	-30 ~ +85°C					
24	Storage Humidity		-	10 ~ 95%RH (No dewdrop)					
25	Cooling		-	Convection Cooling					
26	Withstand Voltage		-	Input - FG : 2kVAC (20mA), Input - Output : 3kVAC (20mA) Output - FG : 500VAC (100mA) for 1min					
27	Isolation Resistance		-	More than 100MΩ at 25°C and 70%RH Output - FG : 500VDC					
28	Vibration		-	At no operating, 10 ~ 55Hz (Sweep for 1min) 19.6m/s^2 Constant, X,Y,Z 1hour each.					
29	Shock (In package)		-	Less than 196.1m/s^2					
30	Safety (*12)		-	Approved by UL60950-1, CSA60950-1, EN60950-1, EN50178 Built to meet UL508, DENAN					
31	Line DIP		-	Built to meet SEMI-F47 (200VAC Line only)					
32	Conducted Emission		-	Built to meet EN55011/EN55022-B, FCC-B, VCCI-B					
33	Radiated Emission		-	Built to meet EN55011/EN55022-B, FCC-B, VCCI-B					
34	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					
35	Weight(Typ.)		-	210g					
36	Size (W x H x D)		mm	31.5 x 82 x 80 (Refer to Outline Drawing)					

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

=NOTES=

*1. At 100/200VAC, Ta=25°C 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 in-rush current to Noise Filter for less than 0.2ms.
*4. Measure with JEITA RC-9131A probe, Bandwidth of scope :100MHz.
For start up at low ambient temperature and low input voltage, output ripple noise might not meet specification.
However, there is no overshoot at start up and output ripple noise specification can be met after one second.
*5. 85 ~ 265VAC , constant load.
*6. No load-Full load, constant input voltage.
*7. Foldback current limit with automatic recovery. Not operate at over load or dead short condition for more than 30seconds.
*8. OVP circuit will shutdown output, manual reset (Re power on).
*9. At 100/200VAC , Ta=25°C, nominal output voltage and maximum output current.
*10. Measured by the each measuring method of UL,CSA,EN and DENAN(at 60Hz).
*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 (A224-01-02/A_).
*12. As for DENAN, built to meet at 100VAC.

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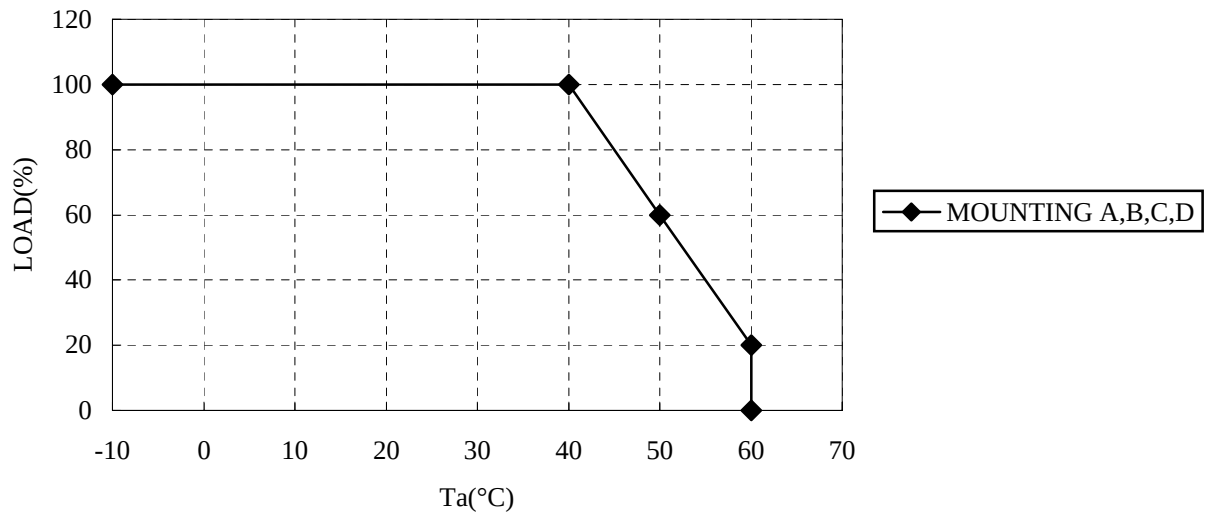
OUTPUT DERATING

A224-01-02/A

Ta(°C)	LOAD(%)
	MOUNTING A,B,C,D
-10 ~+40	100
50	60
60	20

OUTPUT DERATING CURVE



MOUNTING A (STANDARD MOUNTING) | MOUNTING B | MOUNTING C | MOUNTING D | DON'T USE