

ZWS150BAF/A

SPECIFICATIONS

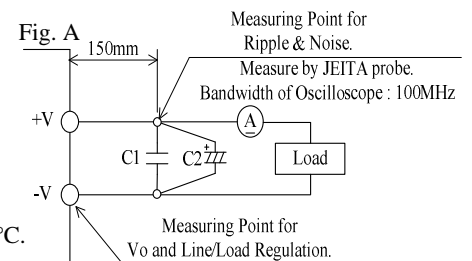
A250-01-01/A-A

ITEMS		MODEL	ZWS150BAF -3/A	ZWS150BAF -5/A	ZWS150BAF -12/A	ZWS150BAF -15/A	ZWS150BAF -24/A	ZWS150BAF -48/A	
1	Nominal Output Voltage	V	3.3	5	12	15	24	48	
2	Maximum Output Current	A	30	30	12.5	10.0	6.3	3.2	
3	Maximum Output Power	W	99.0	150.0	150.0	150.0	151.2	153.6	
4	Efficiency (Typ) (*1)	100VAC	%	82	85	85	86	88	89
		200VAC	%	84	87	88	89	90	91
5	Input Voltage Range (*2)	-	85 - 265VAC (47 - 63Hz) or 120 - 370VDC						
6	Input Current (Typ) (*1)	A	1.3/0.65	1.9/0.95					
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	Power Factor (Typ) (*1)	-	0.96/0.89	0.98/0.93					
10	Output Voltage Range	V	2.97 - 3.63	4.5 - 5.5	10.8 - 13.2	13.5 - 16.5	21.6 - 26.4	39.5 - 52.8	
11	Maximum Ripple & Noise (*4)	0≤Ta≤70°C	mV	120	120	150	150	150	200
		-10≤Ta<0°C	mV	160	160	180	180	180	240
12	Maximum Line Regulation (*4)(*5)	mV	20	20	48	60	96	192	
13	Maximum Load Regulation (*4)(*6)	mV	40	40	96	120	150	240	
14	Temperature Coefficient (*4)	-	Less than 0.02% / °C						
15	Over Current Protection (*7)	A	31.5 -	31.5 -	13.13 -	10.5 -	6.62 -	3.36 -	
16	Over Voltage Protection (*8)	V	3.79 - 4.95	5.75 - 7.00	13.8 - 16.2	17.3 - 20.3	27.6 - 32.4	55.2 - 64.8	
17	Hold-up Time (Typ) (*1)	-	20ms						
18	Leakage Current (*9)	-	Less than 0.5mA. 0.2mA(Typ) at 100VAC / 0.4mA(Typ) at 230VAC						
19	Parallel Operation	-	-						
20	Series Operation	-	Possible						
21	Operating Temperature (*10)	-	Convection : -10 - +60°C (-10 - +40°C:100%, +50°C:75%, +60°C:50%)						
22	Operating Humidity	-	30 - 90%RH (No Condensing)						
23	Storage Temperature	-	-30 - +75°C						
24	Storage Humidity	-	10 - 90%RH (No Condensing)						
25	Cooling	-	Convection Cooling						
26	Withstand Voltage	-	Input - FG : 2kVAC (10mA), Input - Output : 3kVAC (10mA) Output - FG : 500VAC (20mA) 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	-	Less than 196.1m/s ²						
30	Safety	-	Approved by UL60950-1, CSA60950-1, EN60950-1, EN50178(OV II), Designed to meet DENAN at 100VAC only.						
31	Conducted Emission	-	Designed to meet EN55011/EN55022-B, FCC-B, VCCI-B						
32	Radiated Emission	-	Designed to meet EN55011/EN55022-B, FCC-B, VCCI-B						
33	Immunity	-	Designed to meet IEC61000-6-2 IEC61000-4-2, -3, -4, -5, -6, -8, -11						
34	Weight (Typ)	g	600						
35	Size (W x H x D)	mm	85 x 47 x 188 (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 in-rush current to Noise Filter for less than 0.2ms.
- *4. Please refer to Fig. A for measurement of Vo, line & load regulation and ripple voltage.
- *5. 85 - 265VAC, constant load.
- *6. No load-Full load, constant input voltage.
- *7. 3.3, 5V model: Constant current limit and hiccup with automatic recovery.
12 - 48V model: Constant current limit with automatic recovery.
Avoid to operate at over load or short circuit condition for more than 30seconds.
- *8. OVP circuit will shut down output, manual reset (Re power on).
- *9. Measured by the each measuring method of UL, CSA, EN and DENAN(at 60Hz), Ta=25°C.
- *10. Output Derating
 - Derating at standard mounting. Refer to output derating curve(A250-01-02/A-).
 - When forced air cooling, refer to output derating curve(A250-01-03/A-).
 - Load (%) is percent of maximum output power or maximum output current, whichever is greater.



C1 : Film Cap. 0.1 μF
C2 : Elect. Cap. 100 μF

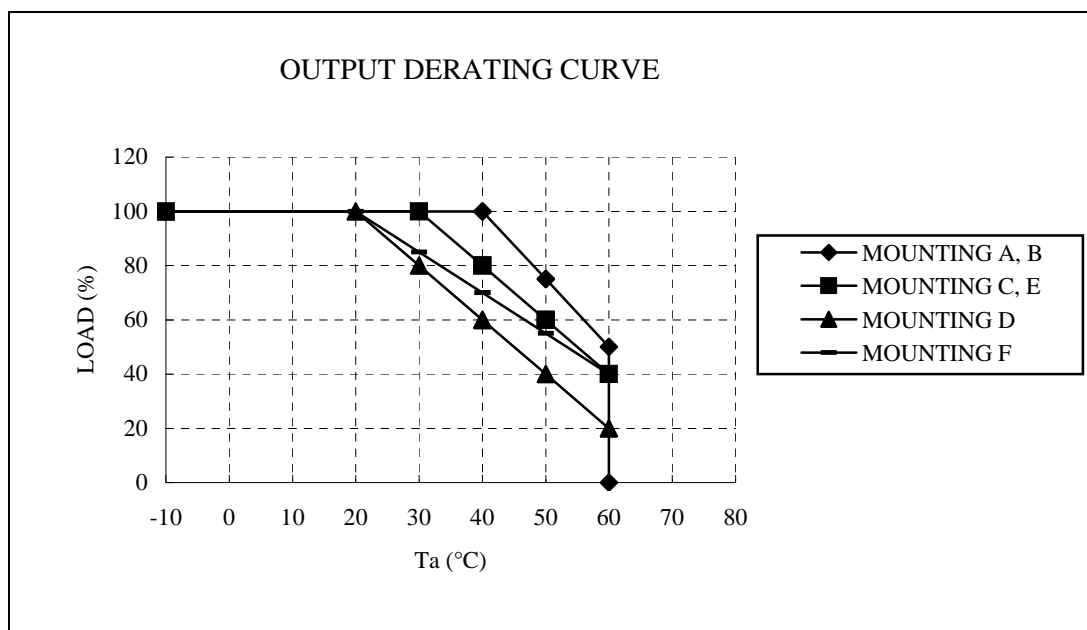
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OUTPUT DERATING

A250-01-02/A

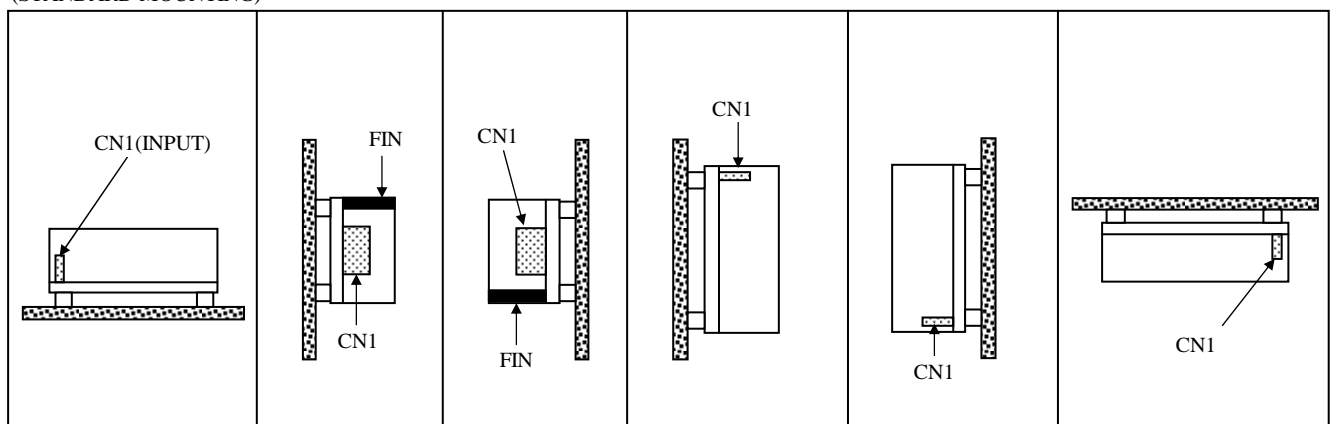
*COOLING : CONVECTION COOLING

Ta (°C)	LOAD (%)	LOAD (%)	LOAD (%)	LOAD (%)
	MOUNTING A, B	MOUNTING C, E	MOUNTING D	MOUNTING F
-10 - +20	100	100	100	100
30	100	100	80	85
40	100	80	60	70
50	75	60	40	55
60	50	40	20	40



MOUNTING A MOUNTING B MOUNTING C MOUNTING D MOUNTING E MOUNTING F

(STANDARD MOUNTING)



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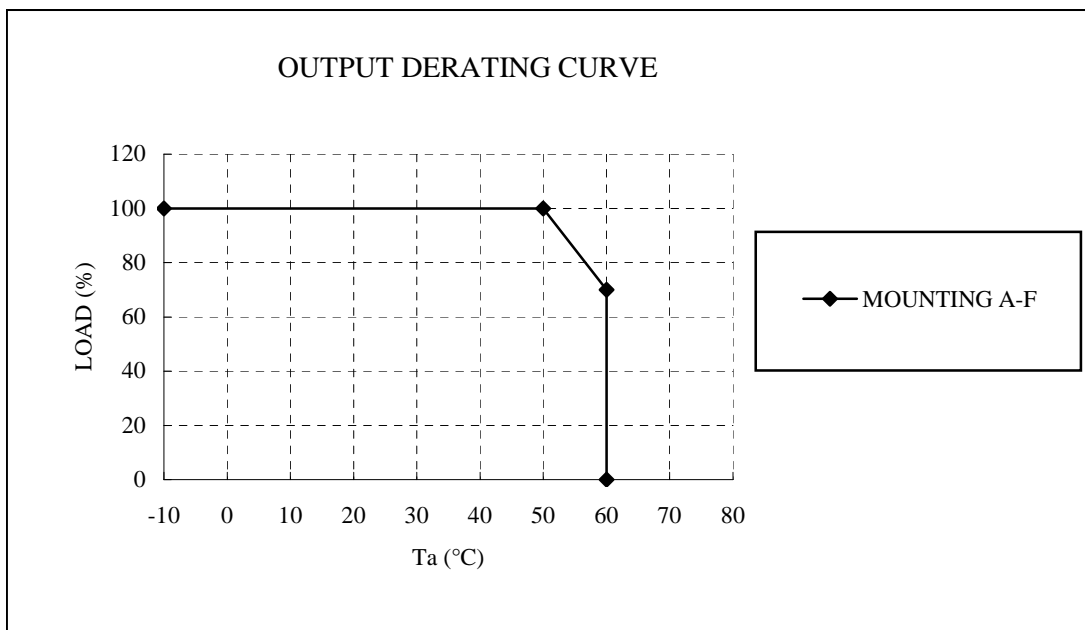
OUTPUT DERATING

A250-01-03/A

*COOLING : FORCED AIR COOLING

Ta (°C)	LOAD (%)
	MOUNTING A-F
-10 - +50	100
60	70

Air velocity $\geq 0.7\text{m/s}$: Air must flow through component side.



MOUNTING A

MOUNTING B

MOUNTING C

MOUNTING D

MOUNTING E

MOUNTING F

(STANDARD MOUNTING)

