

**ZWS150B/L**

SPECIFICATIONS

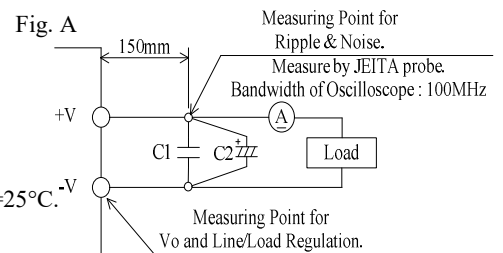
A246-01-01/L-B

ITEMS		MODEL	ZWS150B -3/L	ZWS150B -5/L	ZWS150B -12/L	ZWS150B -15/L	ZWS150B -24/L	ZWS150B -48/L	
1	Nominal Output Voltage	V	3.3	5	12	15	24	48	
2	Maximum Output Current	A	30	30	12.5	10	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	86	86	88	89	90
		200VAC	%	83	87	87	89	90	91
5	Input Voltage Range (*2)	-	85- 132VAC / 170- 264VAC (Auto Selectable) / 47-63Hz						
6	Input Current (Typ) (*1)	A	2.6/1.3		3.5/1.9				
7	Inrush Current (Typ) (*1)(*3)	-	28A at Cold Start						
8	Output Voltage Range	V	2.97 - 3.63	4.5 - 5.5	10.8 - 13.2	13.5 - 16.5	21.6 - 26.4	43.2 - 52.8	
9	Maximum Ripple & Noise (*4)(*5)	0≤Ta≤70°C	mV	120	120	150	150	150	200
		-10≤Ta<0°C	mV	160	160	180	180	180	240
10	Maximum Line Regulation (*4)(*6)	mV	20	20	48	60	96	192	
11	Maximum Load Regulation (*4)(*7)	mV	40	40	96	120	150	240	
12	Temperature Coefficient (*4)	-	Less than 0.02% / °C						
13	Over Current Protection (*8)	A	31.5 -	31.5 -	13.13 -	10.5 -	6.62 -	3.36 -	
14	Over Voltage Protection (*9)	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	
15	Hold-up Time (Typ) (*1)	-	20ms						
16	Leakage Current (*10)	-	Less than 0.5mA. 0.2mA(Typ) at 100VAC / 0.4mA(Typ) at 230VAC						
17	Parallel Operation	-	-						
18	Series Operation	-	Possible						
19	Operating Temperature (*11)	-	Convection : -10 - +60°C (-10 - +40°C:100%, +50°C:70%, +60°C:20%)						
20	Operating Humidity	-	30 - 90%RH (No Condensing)						
21	Storage Temperature	-	-30 - +75°C						
22	Storage Humidity	-	10 - 90%RH (No Condensing)						
23	Cooling	-	Convection Cooling						
24	Withstand Voltage	-	Input - FG : 2kVAC (10mA), Input - Output : 3kVAC (10mA) Output - FG : 500VAC (20mA) for 1min						
25	Isolation Resistance	-	More than 100MΩ at 25°C and 70%RH Output - FG : 500VDC						
26	Vibration	-	At no operating, 10 - 55Hz (Sweep for 1min) 19.6m/s <sup>2</sup> Constant, X,Y,Z 1hour each.						
27	Shock	-	Less than 196.1m/s <sup>2</sup>						
28	Safety	-	Approved by UL62368-1, CSA62368-1, EN62368-1, UL60950-1, CSA60950-1, EN60950-1 (Expire date of 60950-1 : 20/12/2020), EN50178(OV II) Designed to meet DENAN at 100VAC Only.						
29	Conducted Emission	-	Designed to meet EN55011/EN55032-B, FCC-B, VCCI-B						
30	Radiated Emission	-	Designed to meet EN55011/EN55032-B, FCC-B, VCCI-B						
31	Immunity	-	Designed to meet IEC61000-6-2 IEC61000-4-2, -3, -4, -5, -6, -8, -11						
32	Weight (Typ)	g	510						
33	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 - 120VAC/200 - 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. 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.
- \*6. 85 - 132VAC/170 - 264VAC, constant load.
- \*7. No load-Full load, constant input voltage.
- \*8. 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.
- \*9. OVP circuit will shut down output, manual reset (Re power on).
- \*10. Measured by the each measuring method of UL, CSA, EN and DENAN(at 60Hz), Ta=25°C.
- \*11. Output Deratings
  - Derating at standard mounting. Refer to output derating curve(A246-01-02/L- ).
  - When forced air cooling, refer to output derating curve(A246-01-03/L- ).
  - 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

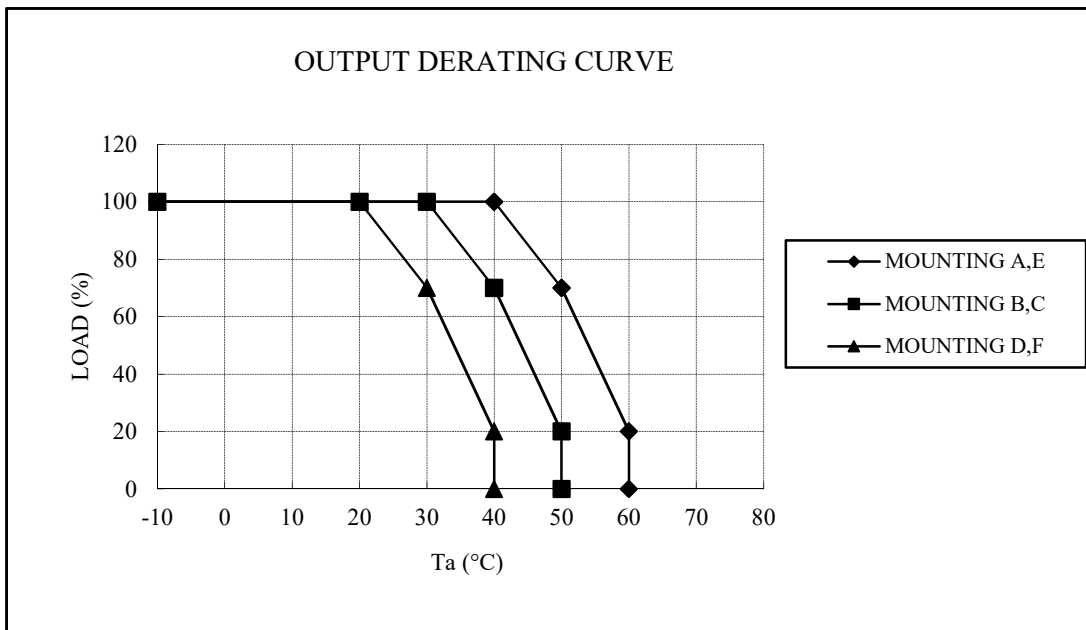
**ZWS150B/L**

OUTPUT DERATING

A246-01-02/L

\*COOLING : CONVECTION COOLING

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



MOUNTING A

MOUNTING B

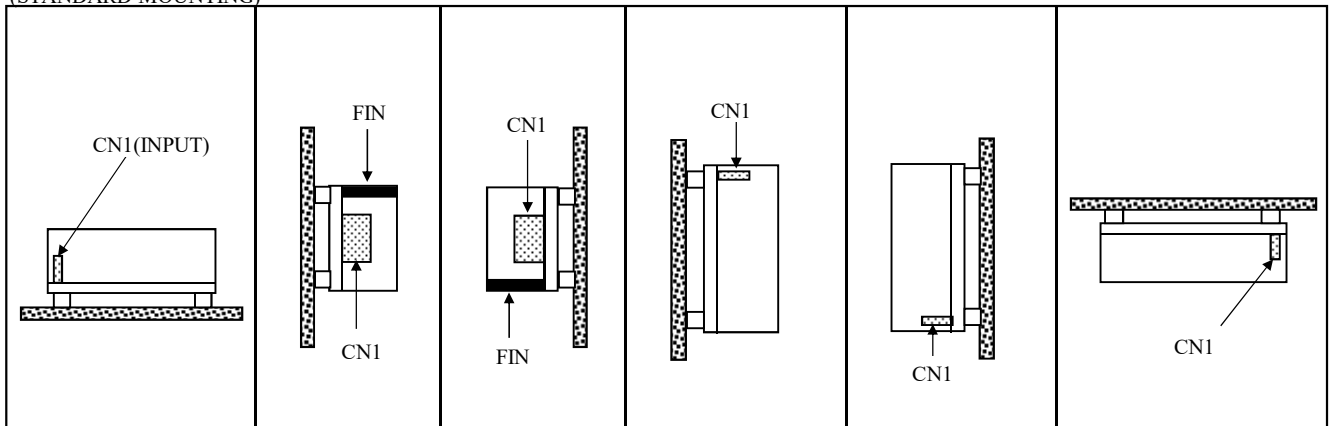
MOUNTING C

MOUNTING D

MOUNTING E

MOUNTING F

(STANDARD MOUNTING)



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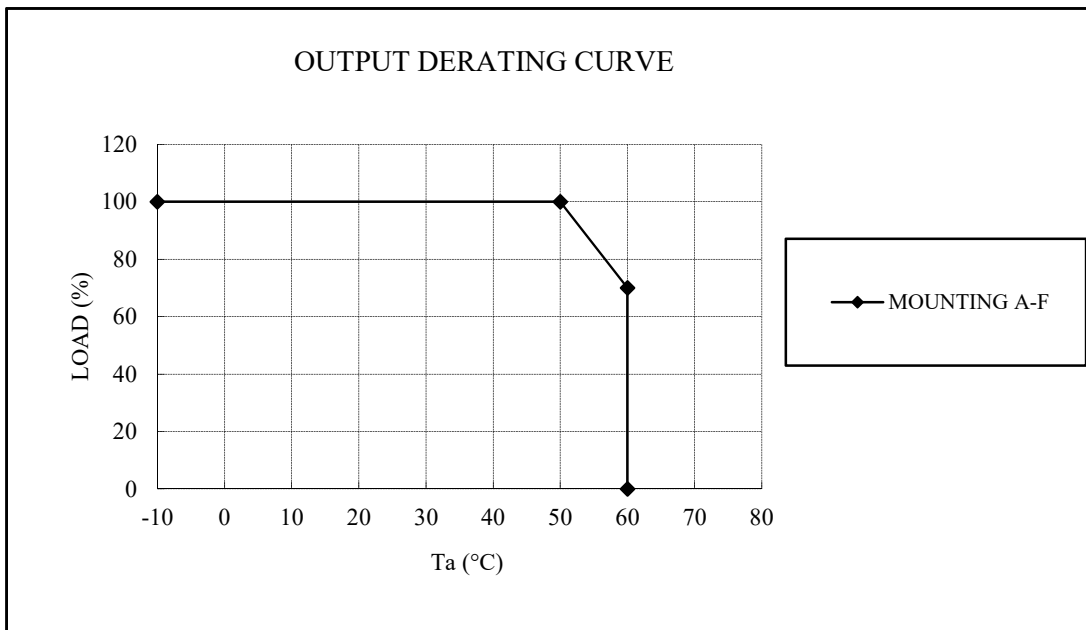
OUTPUT DERATING

A246-01-03/L

\*COOLING : FORCED AIR COOLING

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

Air Velocity  $\geq$  0.7m/s : Air must flow through component side.



MOUNTING A

MOUNTING B

MOUNTING C

MOUNTING D

MOUNTING E

MOUNTING F

(STANDARD MOUNTING)

