

ZWS150BAF/A

SPECIFICATIONS

A250-01-01/A-B

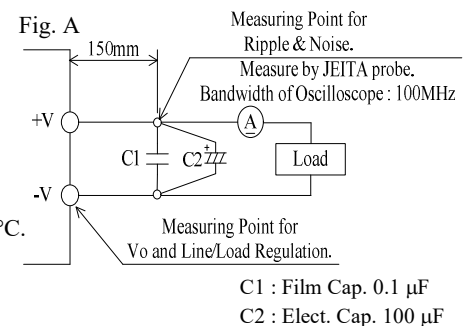
| ITEMS | | MODEL | ZWS150BAF -3/A | ZWS150BAF -5/A | ZWS150BAF -12/A | ZWS150BAF -15/A | ZWS150BAF -24/A | ZWS150BAF -48/A | |
|-------|----------------------------------|------------|--|-------------------|--------------------|--------------------|--------------------|--------------------|-----|
| 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 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. | | | | | | |
| 31 | Conducted Emission | - | Designed to meet EN55011/EN55032-B, FCC-B, VCCI-B | | | | | | |
| 32 | Radiated Emission | - | Designed to meet EN55011/EN55032-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 inrush 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.



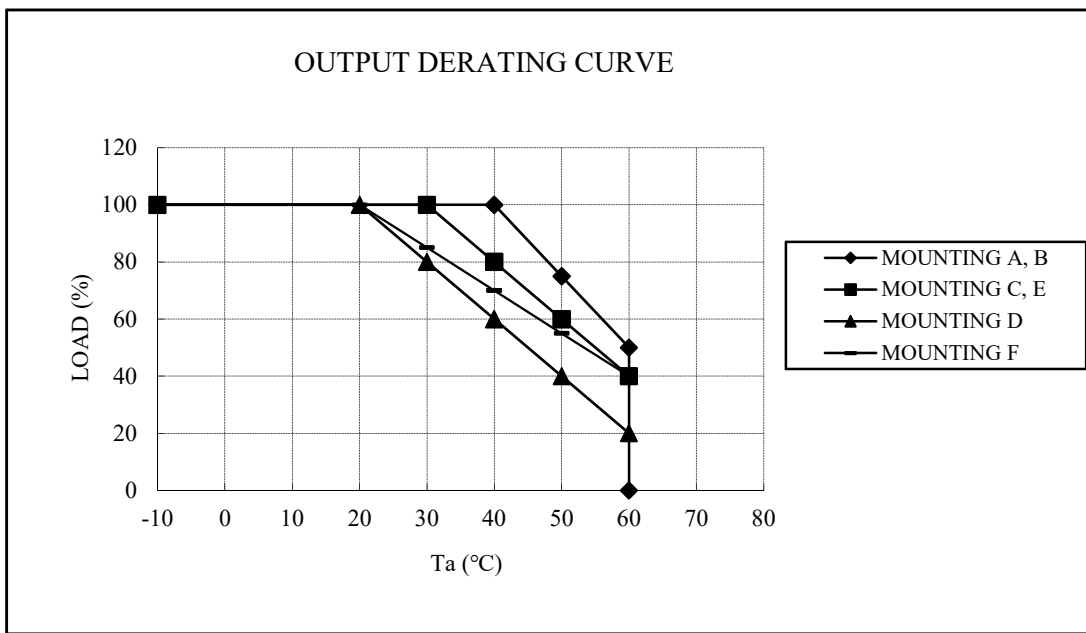
ZWS150BAF/A

OUTPUT DERATING

A250-01-02/A

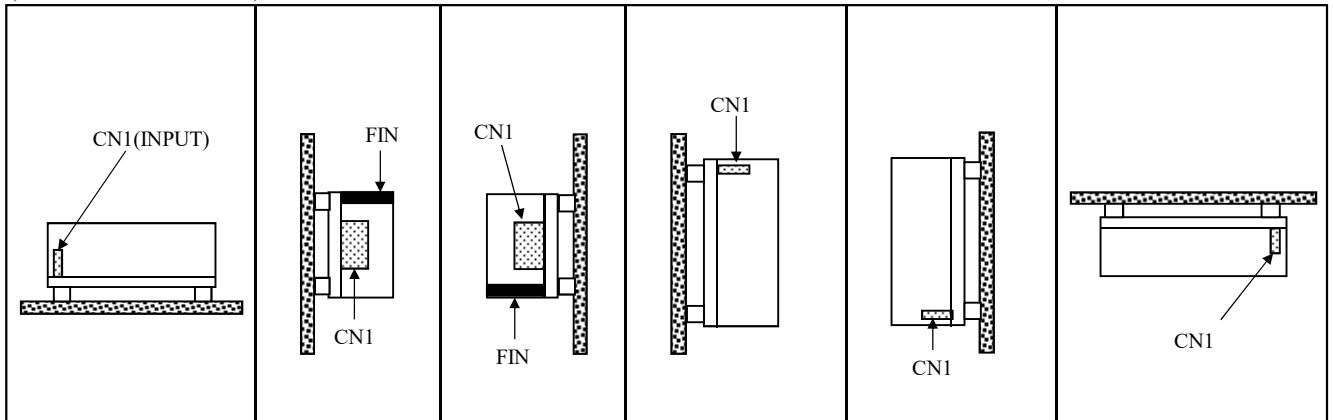
*COOLING : CONVECTION COOLING

| 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)



ZWS150BAF/A

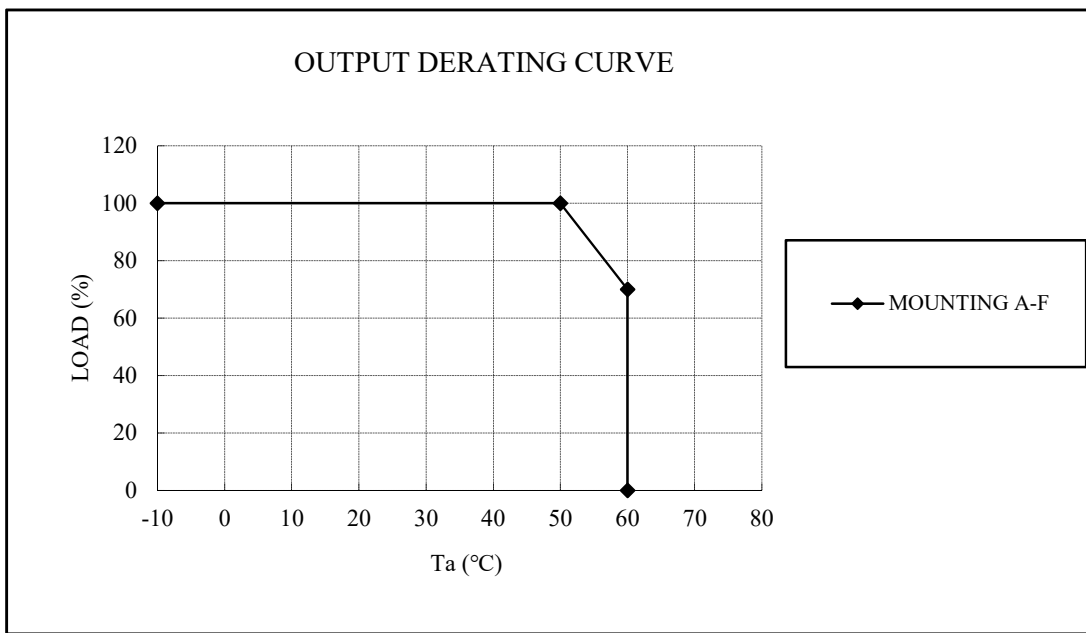
OUTPUT DERATING

A250-01-03/A

*COOLING : FORCED AIR COOLING

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

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



MOUNTING A

MOUNTING B

MOUNTING C

MOUNTING D

MOUNTING E

MOUNTING F

(STANDARD MOUNTING)

