

ZWS50C/L

SPECIFICATIONS (1/2)

FA014-01-01/L

ITEMS		MODEL	ZWS50C-5/L	ZWS50C-12/L	ZWS50C-15/L	ZWS50C-24/L	ZWS50C-48/L
INPUT							
Input Voltage Range	(*2)(*12)	-	85 - 265VAC (47 ~ 63Hz)				
Efficiency (Typ.)	(*1)	%	80 / 81	83 / 86	84 / 87	85 / 87	86 / 88
Input Current (Typ.)	(*1)	A	1.1 / 0.7	1.2 / 1.0			
Inrush Current (Typ.)	(*1)(*3)	-	30A / 60A at Cold Start				
PFHC		-	-				
Power Factor (Typ.)		-	-				
OUTPUT							
Nominal Output Voltage		V	5	12	15	24	48
Output Voltage Range		-	Fixed (Shipment condition : 5V : ±3.5% ; 12V,15V,24V : ±4.5% ; 48V : ±4.0%)				
Maximum Output Current	100VAC	A	6.00	4.30	3.50	2.10	1.10
	200VAC		7.00	5.00	4.00	2.50	1.25
Maximum Output Power	100VAC	W	30.0	51.6	52.5	50.4	52.8
	200VAC		35.0	60.0	60.0	60.0	60.0
Maximum Line Regulation	(*4)(*5)	%	0.40	0.40	0.40	0.40	0.40
Maximum Load Regulation	(*4)(*6)	%	2.40	2.40	1.00	0.80	0.80
Temperature Coefficient	(*4)	-	Less than 0.02% / °C				
Maximum Ripple & Noise (*4)	0 ≤ Ta ≤ 70°C, 35 ~ 100% Load	mV	120	150	150	150	200
	-10 ≤ Ta < 0°C, 35 ~ 100% Load	mV	160	180	180	180	180
	-10 ≤ Ta ≤ 70°C, 0 ~ 35% Load	mV	200	240	240	240	240
Hold-up Time (Typ.)	(*10)	-	20ms				
Leakage Current	(*9)	-	Less than 0.15/0.30mA. (100VAC/230VAC, 60Hz)				
Over Current Protection	(*7)	-	> 105%				
Over Voltage Protection	(*8)	-	> 115%				
FUNCTION							
Remote ON/OFF Control		-	None				
Remote Sensing		-	None				
Parallel Operation		-	Not Possible				
Series Operation		-	Possible				
ENVIRONMENT							
Operating Temperature	(*11)(*12)	-	-10 to +65°C (-10 to +40°C : 100% ; +65°C : 50%)				
Storage Temperature		-	-30 to +75°C				
Operating Humidity		-	30 to 90%RH (No Condensing)				
Storage Humidity		-	10 to 95%RH (No Condensing)				
Vibration	(*13)	-	At no operating, 10 to 55Hz (Sweep for 1min) 19.6m/s ² Constant, X,Y,Z 1hour each.				
Shock	(*13)	-	At no operating, Less than 196.1m/s ²				
Cooling		-	Convection Cooling / Forced Air Cooling				
ISOLATION							
Isolation Class / Class of Protection		-	Class I (L,N,FG) or Class II (L,N)				
Withstand Voltage		-	Input - Output : 3kVAC (10mA), Input - FG : 2kVAC (10mA), Output - FG : 750VAC (20mA) for 1min				
Isolation Resistance		-	More than 100MΩ at 25°C and 70%RH Output - FG : 500VDC				
STANDARD AND COMPLIANCE							
Safety		-	Approved by EN60335-1, IEC/UL/CSA/EN62368-1 (Attitude ≤ 4,000m) Approved by IEC/EN61558-1, IEC/EN61558-2-16 (Attitude ≤ 2,000m) Design to meet IEC60335-1 Design to meet Den-an appendix 12 (J62368-1, J61558-1, J61558-2-16, J60335-1)				
Conducted Emission	(*13)	-	Designed to meet EN55011/EN55032-B, FCC-B, VCCI-B				
Radiated Emission	(*13)	-	Designed to meet EN55011/EN55032-B, FCC-B, VCCI-B				
Immunity	(*13)	-	Designed to meet IEC61000-6-2, IEC61000-4-2, -3, -4, -5, -6, -8, -11				
MECHANICAL							
Weight (Typ.)		g	205				
Size (W x H x D)		mm	64.5 x 39.5 x 94.0 (Refer to Outline Drawing)				

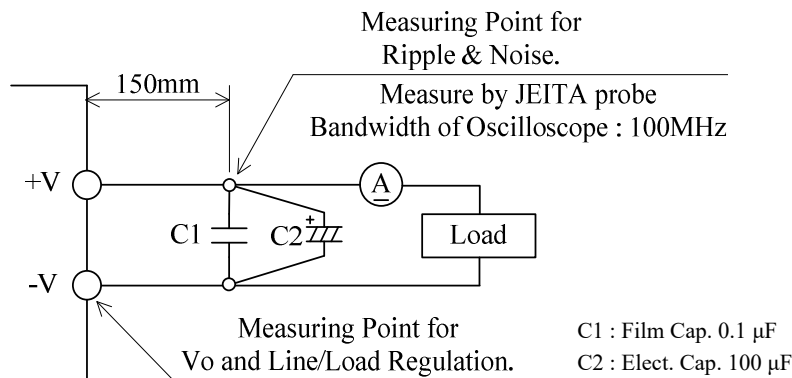
SPECIFICATIONS (2/2)

*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 to full load, constant input voltage.
- *7. Current limiting (Hiccup) with automatic recovery.
Avoid to operate at over load or short circuit condition.
- *8. OVP circuit will be 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. At 100VAC, Ta=25°C, nominal output voltage and 80% output power.
- *11. Output Deratings,
 - Convection cooling output derating. Refer to OUTPUT DERATING vs. AMBIENT TEMPERATURE (FA014-01-03/L_).
 - Forced air cooling output derating. Refer to OUTPUT DERATING vs. AMBIENT TEMPERATURE (FA014-01-04/L_).
 Load (%) is percent of maximum output power or maximum output current, whichever is greater.
It must not exceed its specification and derating.
- *12. Output derating needed when input voltage less than 90VAC. Refer to INPUT VOLTAGE vs. OUTPUT DERATING (FA014-01-02_).
- *13. The result is evaluated by TDK-Lambda standard measurement condition.
The power supply is considered a component which will be installed into a final equipment.
The final equipment should be re-evaluated that it meets EMC, Vibration and Shock directives.

Fig. A



OUTPUT DERATING (2/3)

FA014-01-03/L

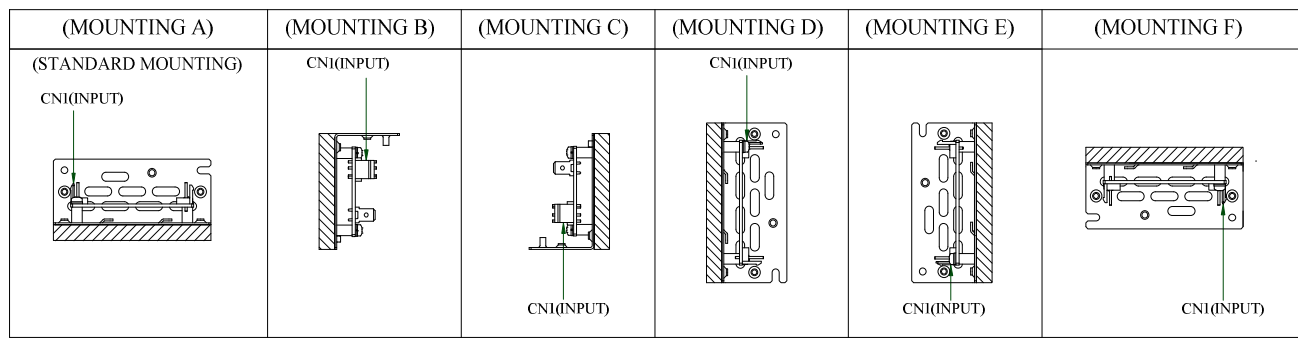
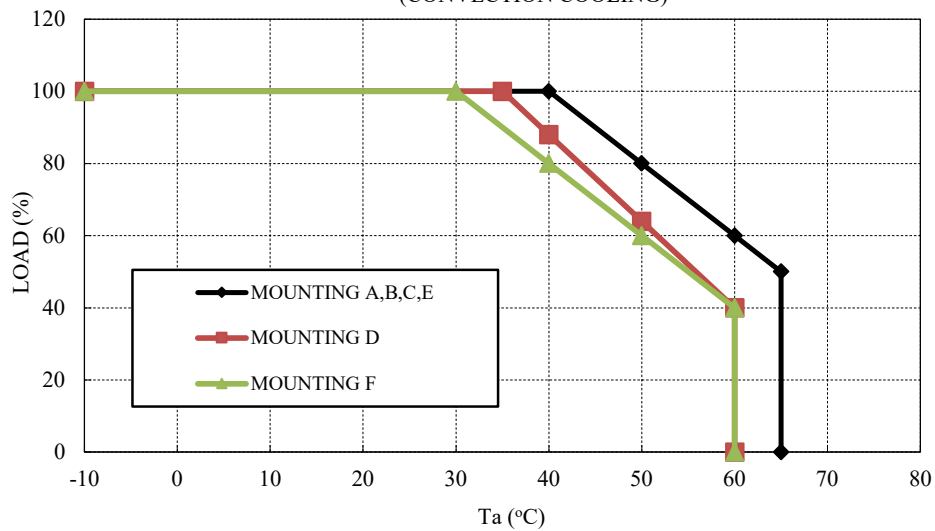
OUTPUT DERATING vs. AMBIENT TEMPERATURE

*COOLING : CONVECTION COOLING

Load (%) is percent of maximum output power or maximum output current, whichever is greater.
It must not exceed its specification and derating.

Ta (°C)	LOAD (%)		
	MOUNTING A,B,C,E	MOUNTING D	MOUNTING F
-10 - +30	100	100	100
35	100	100	90
40	100	88	80
50	80	64	60
60	60	40	40
65	50	-	-

LOAD vs. AMBIENT TEMPERATURE
(CONVECTION COOLING)



OUTPUT DERATING (3/3)

FA014-01-04/L

OUTPUT DERATING vs. AMBIENT TEMPERATURE

*COOLING : FORCED AIR COOLING

Load (%) is percent of maximum output power or maximum output current, whichever is greater.
It must not exceed its specification and derating.

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

Air velocity $\geq 0.8\text{m/s}$: Air must flow through components side.

