TDK-Lambda

ZWS300BAF

SPECIFICATIONS

A254-01-01

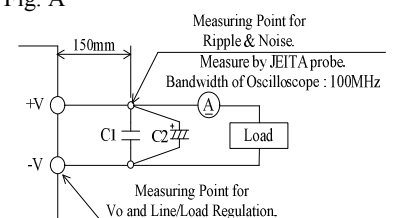|	MODEL ITEMS			ZWS300BAF -24	ZWS300BAF -36	ZWS300BAF -48
1	Nominal Output Voltage		V	24	36	48
2	Maximum Output Current		A	12.5	8.4	6.3
3	Maximum Output Power		W	300.0	302.4	302.4
4	Efficiency (Typ)	100VAC	%		88	
	(*1)	200VAC	%		91	
5	Input Voltage Range (*2)(*3)		-		85 - 265VAC (47 - 63Hz) or 120 - 370VDC	
6	Input Current (Typ) (*1)		A		3.6/1.8	
7	Inrush Current (Typ) (*1)(*4)		-		15A at 100VAC, 30A at 200VAC, Ta=25°C, Cold Start	
8	PFHC		-		Designed to meet IEC61000-3-2	
9	Power Factor (Typ) (*1)		-		0.97/0.93	
10	Output Voltage Range		V	21.6 - 27.5	32.4 - 39.6	39.5 - 52.8
11	Maximum Ripple & Noise	$0 \leq Ta \leq 70°C$	mV	150	250	250
	(*5)	$-10 \leq Ta < 0°C$	mV	180	300	300
12	Maximum Line Regulation (*5)(*6)		mV	96	144	192
13	Maximum Load Regulation (*5)(*7)		mV	150	240	240
14	Temperature Coefficient (*5)		-		Less than 0.02% / °C	
15	Over Current Protection (*8)		A	14.7 -	9.87 -	7.35 -
16	Over Voltage Protection (*9)		V	28.8 - 33.6	41.4 - 48.6	55.2 - 64.8
17	Hold-up Time (Typ) (*1)		-	18ms(typ) at 100VAC & Rated O/P Power, 20ms(typ) at 100VAC & 80% Load		
18	Leakage Current (*10)		-	Less than 0.5mA. 0.2mA (Typ) at 100VAC / 0.4mA (Typ) at 230VAC		
19	Remote Control		-		Option	
20	Parallel Operation		-		-	
21	Series Operation		-		Possible	
22	Operating Temperature (*11)		-	-10 - +70°C (-10 - +45°C:100%, +50°C:88%, +60°C:64%, 70°C:40%)		
23	Operating Humidity		-		30 - 90%RH (No Condensing)	
24	Storage Temperature		-		-30 - +75°C	
25	Storage Humidity		-		10 - 90%RH (No Condensing)	
26	Cooling		-		Convection Cooling	
27	Withstand Voltage		-	Input - FG : 2kVAC (10mA), Input - Output : 3kVAC (10mA) Output - FG : 500VAC (20mA) for 1min		
28	Isolation Resistance		-	More than 100MΩ at 25°C and 70%RH Output - FG : 500VDC		
29	Vibration		-	At no operating, 10 - 55Hz (Sweep for 1min) 19.6m/s^2 Constant, X,Y,Z 1hour each.		
30	Shock		-	Less than 196.1m/s^2		
31	Safety		-	Approved by UL60950-1, CSA60950-1, EN60950-1, EN50178 (OV II), Designed to meet DENAN at 100VAC only.		
32	Conducted Emission		-	Designed to meet EN55011/EN55022-B, FCC-B, VCCI-B		
33	Radiated Emission		-	Designed to meet EN55011/EN55022-B, FCC-B, VCCI-B		
34	Immunity		-	Designed to meet IEC61000-6-2 IEC61000-4-2, -3, -4, -5, -6, -8, -11		
35	Weight (Typ)		g		540	
36	Size (W x H x D)		mm	84 x 42 x 180 (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. Output derating needed when input voltage less than 90VAC. Refer to LOAD vs. INPUT VOLTAGE (A254-01-02_).

*4. Not applicable for the in-rush current to Noise Filter for less than 0.2ms.

*5. Please refer to Fig. A for measurement of Vo, line & load regulation and ripple voltage.

*6. 90 - 265VAC, constant load.

*7. No load-Full load, constant input voltage.

*8. Constant current limit with automatic recovery.
Avoid to operate at over load or short circuit condition.

*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 Derating
- Derating at standard mounting. Refer to LOAD vs. AMBIENT TEMPERATURE (A254-01-02_).
- When forced air cooling, refer to forced air cooling specifications (A254-01-03_, A254-01-04_).
- Load (%) is percent of maximum output power or maximum output current, do not exceed its derating of maximum load.

Fig. A

Measuring Point for Ripple & Noise.
Measure by JEITA probe.
Bandwidth of Oscilloscope : 100MHz
150mm
+V
C1 C2
Load
-V
Measuring Point for Vo and Line/Load Regulation.

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

ZWS300BAF
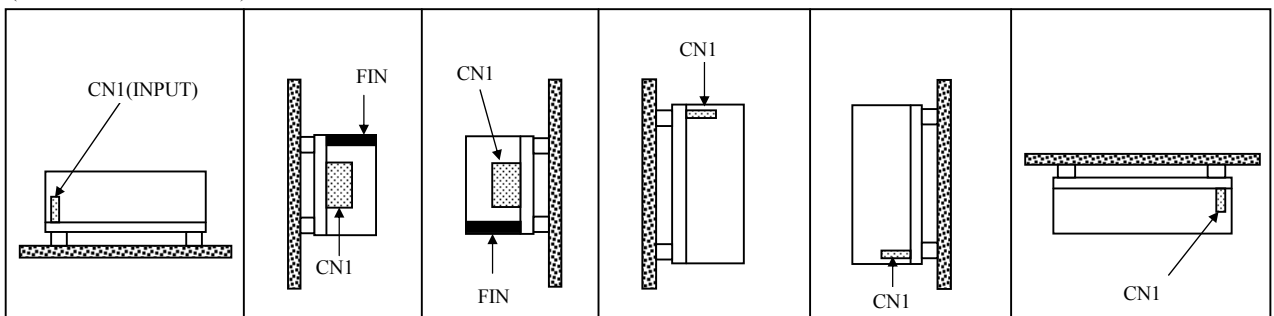
OUTPUT DERATING

A254-01-02

*COOLING : CONVECTION COOLING

Ta (°C)	LOAD (%) MOUNTING A,B	MOUNTING C
-10 - +40	100	100
45	100	86
50	88	73
60	64	46
70	40	20

Ta (°C)	LOAD (%) MOUNTING D	MOUNTING E,F
-10 - +20	100	100
30	84	82
40	68	64
50	52	46
60	36	28
70	20	10

INPUT VOLTAGE (VAC)	LOAD (%) MOUNTING A-F
85	80
90 - 265	100
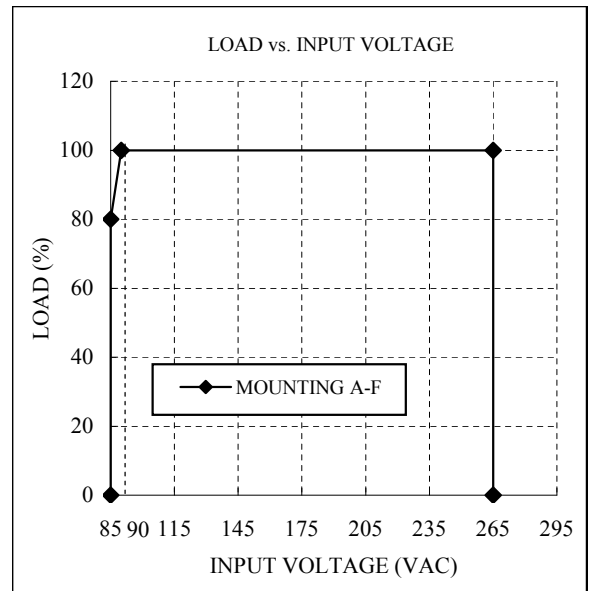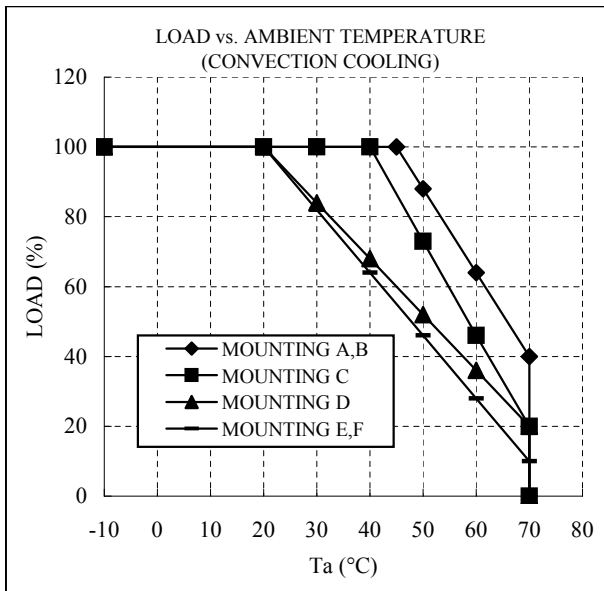
LOAD vs. AMBIENT TEMPERATURE (CONVECTION COOLING)

LOAD vs. INPUT VOLTAGE

MOUNTING A (STANDARD MOUNTING) | MOUNTING B | MOUNTING C | MOUNTING D | MOUNTING E | MOUNTING F

CN1(INPUT) | FIN | CN1 | CN1 | CN1 | CN1 | CN1 | FIN

ZWS300BAF

SPECIFICATIONS (FORCED AIR COOLING)

A254-01-03

	MODEL ITEMS			ZWS300BAF -24	ZWS300BAF -36	ZWS300BAF -48
1	Nominal Output Voltage		V	24	36	48
2	Maximum Output Current	(*1)	A	14.0	9.4	7.0
3	Maximum Output Power	(*1)	W	336.0	338.4	336.0
4	Efficiency (Typ)	100VAC	%	87		
	(*2)	200VAC	%	90		
5	Input Voltage Range	(*3)(*4)	-	85 - 265VAC (47 - 63Hz) or 120 - 370VDC		
6	Input Current (Typ)	(*2)	A	4.0/2.0		
7	Hold-up Time (Typ)	(*2)	-	16ms(typ) at 100VAC & Rated O/P Power, 20ms(typ) at 100VAC & 70% Load		
8	Operating Temperature		-	-10 - +70°C (-10 - +50°C:100%, +60°C:80%, +70°C:60%) (Air velocity≥0.7m/s)		
		(*5)	-	-10 - +70°C (-10 - +60°C:100%, +70°C:70%) (Air velocity ≥ 1.4m/s)		
9	Cooling	(*1)	-	Forced Air Cooling		
10	Radiated Emission		-	Designed to meet EN55011/EN55022-A, FCC-A, VCCI-A		

*For other specification items, refer to standard specificatons.

=NOTES=

*1. Forced air cooling with air velocity more than 0.7m/s or 1.4m/s.
(Measured at component side of PCB, air must flow through component side).

*2. At 100VAC/200VAC, Ta=25°C, nominal output voltage and maximum output power.

*3. For cases where conformance to various safety specs (UL, CSA, EN) are required, to be described as 100 - 240VAC (50-60Hz).

*4. Output derating needed when input voltage less than 90VAC. Refer to LOAD vs. INPUT VOLTAGE (A254-01-02_).

*5. Output Derating
- When forced air cooling, refer to LOAD vs. AMBIENT TEMPERATURE (A254-01-04_).
- Load (%) is percent of maximum output power or maximum output current, do not exceed its derating of maximum load.
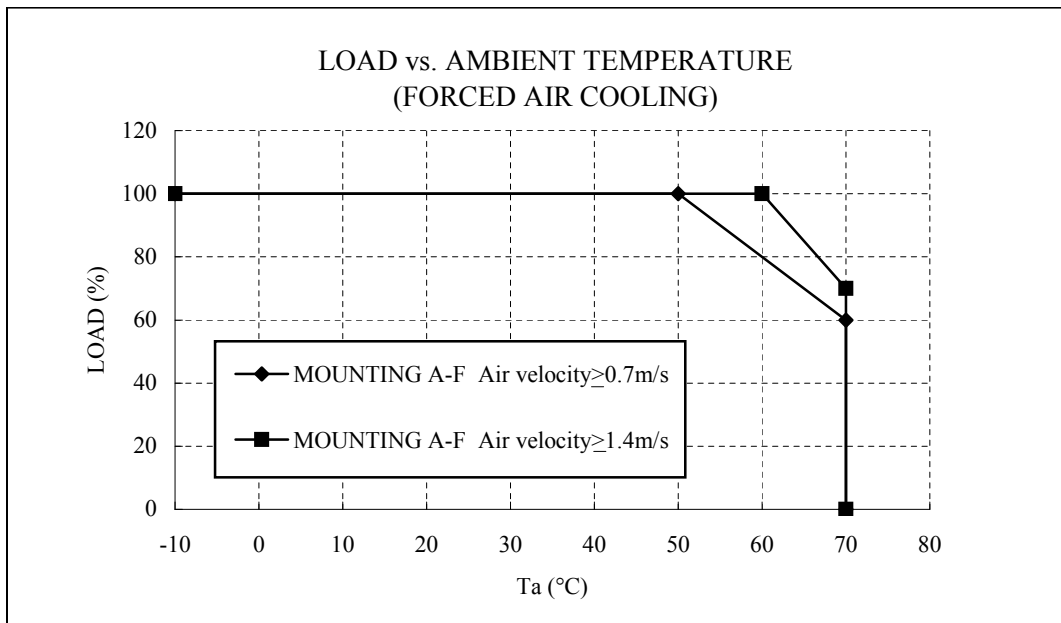
ZWS300BAF

OUTPUT DERATING

A254-01-04

*COOLING : FORCED AIR COOLING

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

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

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

Air velocity ≥ 1.4m/s :
Air must flow through component side.

LOAD vs. AMBIENT TEMPERATURE
(FORCED AIR COOLING)

MOUNTING A (STANDARD MOUNTING)	MOUNTING B	MOUNTING C	MOUNTING D	MOUNTING E	MOUNTING F