SWS300A

RELIABILITY DATA

DWG No. CA768-57-01A		
APPD	CHK	DWG
19-JAN-10	kevin He 19-Jan-10	19-Jan-10

I N D E X

Terminology used

FG .....Frame Ground

※ The above data is typical value. As all units have nearly the same characteristics, the data to be considered as ability value.

1. Calculated values of MTBF

MODEL : SWS300A-5

(1) Calculating method

Calculated based on part count reliability projection of JEITA (RCR-9102).

Individual failure rates λ_G is given to each part and MTBF is calculated by the count of each part.

<Formula> :

$$\mathrm{MTBF} = \frac{1}{\lambda_{\mathrm{equip}}} = \frac{1}{\sum_{i=1}^{n} N_i (\lambda_G \pi_Q)_i} \times 10^6 \ (\mathrm{Hours})$$

λ_{equip} : Total equipment failure rate (Failure/10^6 Hours)

λ_G : Generic failure rate for the ith generic part (Failure/10^6 Hours)

N_i : Quantity of ith generic part

n : Number of different generic part categories

π_Q : Generic quality factor for the ith generic part (π_Q =1)

(2) MTBF values

G_F : (Ground , Fixed)

MTBF =392,742 (Hours)

However MTBF calculation for fan isn't included.

2. Component derating

MODEL : SWS300A-5

(1) Calculating method

(a) Measuring Conditions

Input	:	115 , 230VAC	Ambient temperature	:	50°C
Output	:	5V 55A(100%)	Mounting method	:	Mounting A,B,C,D

(b) Semiconductors

Compared with maximum junction temperature and actual one which is calculated based on case temperature, power dissipation and thermal impedance.

(c) IC, Resistors, Capacitors, etc.

Ambient temperature, operating condition, power dissipation and so on are within derating criteria.

(d) Calculating Method of Thermal Impedance

$$\theta_{j-c} = \frac{T_{j(max)} - T_c}{P_{c(max)}} \qquad \theta_{j-a} = \frac{T_{j(max)} - T_a}{P_{c(max)}} \qquad \theta_{j-l} = \frac{T_{j(max)} - T_l}{P_{c(max)}}$$

T_c : Case temperature at start point of derating ; 25°C in general

T_a : Ambient temperature at start point of derating ; 25°C in general

T_l : Lead temperature at start point of derating ; 25°C in general

$P_{c(max)}$ ($P_{ch(max)}$) : Maximum collector(channel) dissipation

$T_{j(max)}$ ($T_{ch(max)}$) : Maximum junction(channel) temperature

θ_{j-c} (θ_{ch-c}) : Thermal impedance between junction(channel) and case

θ_{j-a} : Thermal impedance between junction and air

θ_{j-l} : Thermal impedance between junction and lead

2. Component derating list

Location No.	Vin = 115VAC Load = 100% Ta = 50°C		
Q1 FDA18N50 FAIRCHILD	Tch(max) = 150°C, Pch =11.7W, Tch = Tc + ((θ ch-c) × Pch) =89.3°C D.F. = 59.7%	θ ch-c = 0.52°C/W, Δ Tc = 33.2°C,	Pch(max) = 239W, Tc = 83.2 °C
Q2 FQA9N90C_F109 FAIRCHILD	Tch(max) = 150 °C, Pch =13.7 W, Tch = Tc + ((θ ch-c) × Pch) = 89.7°C D.F. = 59.8%	θ ch-c = 0.45°C/W, Δ Tc =33.5 °C,	Pch(max) = 280W, Tc =83.5 °C
D1 RS1005M RECTRON	Tj(max) = 150°C, Pd = 5.5W, Tj = Tc + ((θ j-c) × Pd) = 99.9°C D.F. = 66.6%	θ j-c = 1.2°C/W, Δ Tc =43.3°C,	Tc = 93.3°C
D2 FFP08S60STU FAIRCHILD	Tj(max) = 150 °C, Pd = 3.14 W, Tj = Tc + ((θ j-c) × Pd) = 97.3°C D.F. =64.9%	θ j-c = 2.5°C/W, Δ Tc = 39.4°C,	Tc = 89.4°C
D3, D4 1NU41(TPA2,Q) TOSHIBA	Tj(max) = 150°C, Pd =0.13W, Tj = Tc + ((θ j-c) × Pd) =91.3 °C D.F. = 60.9%	θ j-l = 34°C/W, Δ Tc =36.9 °C,	Tc = 86.9°C
D51,D52 S60SC4MT-5000 SINDENGEN	Tj(max) = 150°C, Pd =19.9W, Tj = Tc + ((θ j-c) × Pd) =107.8 °C D.F. = 71.9%	θ j-c = 0.5°C/W, Δ Tc =47.8 °C,	Tc = 97.8°C
A51 TA7812S(Q) TOSHIBA	Tj(max) = 150°C, Pd =1.2W, Tj = Tc + ((θ j-c) × Pd) =95.3 °C D.F. = 63.5%	θ j-c = 6.25°C/W, Δ Tc =37.8 °C,	Tc = 87.8°C
A101 FA5602M-H1-TE1 FUJI-ELEC.	Tj(max) = 150°C, Pd =0.24W, Tj = Tc + ((θ j-c) × Pd) =93.3 °C D.F. = 62.2%	θ j-c = 50°C/W, Δ Tc =31.3 °C,	Tc = 81.3°C
A102 M51995AFP CF0J RENESAS	Tj(max) = 150°C, Pd =0.35W, Tj = Tc + ((θ j-c) × Pd) =96.1 °C D.F. = 64.1%	θ j-c = 40°C/W, Δ Tc =32.1 °C,	Tc = 82.1°C
A201 TA76431F TOSHIBA	Tj(max) = 150°C, Pd =0.01W, Tj = Tc + ((θ j-c) × Pd) =64.7 °C D.F. = 43.1%	θ j-c = 250°C/W, Δ Tc =12.2 °C,	Tc = 62.2°C
PC1 TLP721F (LED) TOSHIBA	Tj(max) = 125 °C, If = 0 mA, ALLOWABLE I_F(max) = 32mA (at Tc = 65.3°C) D.F. =0 %	ΔI_f/°C = -0.7mA /°C, Δ Tc = 15.3 °C,	I_f(max)=60mA, Tc= 65.3°C
PC1 TLP721F (Transistor) TOSHIBA	Tj(max) = 125 °C, Pd = 0 W, Tj = Tc + ((θ j-a) × Pd) =65.3 °C D.F. = 52.2 %	θ j-a = 667°C/W, Δ Tc = 15.3 °C,	Pc(max) = 150 mW, Tc= 65.3 °C
PC2 TLP721F (LED) TOSHIBA	Tj(max) = 125 °C, If = 1.3 mA, ALLOWABLE I_F(max) = 32mA (at Tc = 64.5°C) D.F. = 4.1 %	ΔI_f/°C = -0.7mA /°C, Δ Tc =14.5 °C,	I_f(max)=60mA, Tc= 64.5°C
PC2 TLP721F (Transistor) TOSHIBA	Tj(max) = 125 °C, Pd = 33 mW, Tj = Tc + ((θ j-a) × Pd) =84.5 °C D.F. = 67.6 %	θ j-a = 667°C/W, Δ Tc =14.5 °C,	Pc(max) = 150 mW, Tc= 64.5 °C

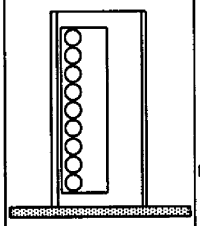
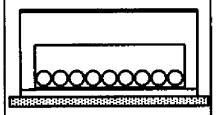
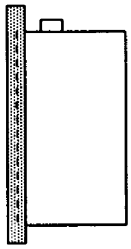
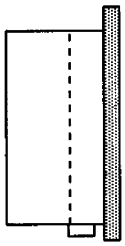
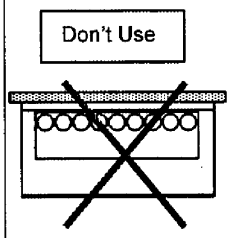
2. Component derating list

Location No.	Vin = 230VAC Load = 100% Ta = 50°C		
Q1 FDA18N50 FAIRCHILD	Tch(max) = 150°C, Pch =4.5W, Tch = Tc + ((θ ch-c) × Pch) =78.0°C D.F. = 52%	θ ch-c = 0.52°C/W, Δ Tc = 25.7°C,	Pch(max) = 239W, Tc = 75.7 °C
Q2 FQA9N90C_F109 FAIRCHILD	Tch(max) = 150 °C, Pch =12.9 W, Tch = Tc + ((θ ch-c) × Pch) = 84.8°C D.F. = 59.8%	θ ch-c = 0.45°C/W, Δ Tc =29 °C,	Pch(max) = 280W, Tc =79 °C
D1 RS1005M RECTRON	Tj(max) = 150°C, Pd = 2.5W, Tj = Tc + ((θ j-c) × Pd) = 74.8°C D.F. = 49.9%	θ j-c = 1.2°C/W, Δ Tc =21.8°C,	Tc = 71.8°C
D2 FFP08S60STU FAIRCHILD	Tj(max) = 150 °C, Pd = 2.14 W, Tj = Tc + ((θ j-c) × Pd) = 87.5°C D.F. =58.3%	θ j-c = 2.5°C/W, Δ Tc = 32.1°C,	Tc = 82.1°C
D3, D4 1NU41(TPA2,Q) TOSHIBA	Tj(max) = 150°C, Pd =0.13W, Tj = Tc + ((θ j-c) × Pd) =87.2 °C D.F. = 58.1%	θ j-l = 34°C/W, Δ Tc =32.8 °C,	Tc = 82.8°C
D51,D52 S60SC4MT-5000 SINDENGEN	Tj(max) = 150°C, Pd =20.1W, Tj = Tc + ((θ j-c) × Pd) =106.5 °C D.F. = 71.0%	θ j-c = 0.5°C/W, Δ Tc =46.4 °C,	Tc = 96.4°C
A51 TA7812S(Q) TOSHIBA	Tj(max) = 150°C, Pd =1.2W, Tj = Tc + ((θ j-c) × Pd) =95.4 °C D.F. = 63.6%	θ j-c = 6.25°C/W, Δ Tc =37.9 °C,	Tc = 87.9°C
A101 FA5602M-H1-TE1 FUJI-ELEC.	Tj(max) = 150°C, Pd =0.24W, Tj = Tc + ((θ j-c) × Pd) =88.7 °C D.F. = 59.1%	θ j-c = 50°C/W, Δ Tc =26.7 °C,	Tc = 76.7°C
A102 M51995AFP CF0J RENESAS	Tj(max) = 150°C, Pd =0.35W, Tj = Tc + ((θ j-c) × Pd) =96.0 °C D.F. = 64.0%	θ j-c = 40°C/W, Δ Tc =32.0 °C,	Tc = 82.0°C
A201 TA76431F(TE12L,F) TOSHIBA	Tj(max) = 150°C, Pd =0.01W, Tj = Tc + ((θ j-c) × Pd) =65 °C D.F. = 43.3%	θ j-c = 250°C/W, Δ Tc =12.5 °C,	Tc = 62.5°C
PC1 TLP721F (LED) TOSHIBA	Tj(max) = 125 °C, If = 0 mA, ALLOWABLE I_F(max) = 36mA (at Tc = 64.6°C) D.F. =0 %	ΔI_f/°C = -0.7mA /°C, Δ Tc = 14.6 °C,	I_f(max)=60mA, Tc= 64.6°C
PC1 TLP721F (Transistor) TOSHIBA	Tj(max) = 125 °C, Pd = 0 W, Tj = Tc + ((θ j-a) × Pd) =64.6 °C D.F. = 51.7 %	θ j-a = 667°C/W, Δ Tc = 14.6 °C,	Pc(max) = 150 mW, Tc= 64.6 °C
PC2 TLP721F (LED) TOSHIBA	Tj(max) = 125 °C, If = 1.3 mA, ALLOWABLE I_F(max) = 33mA (at Tc = 63°C) D.F. = 3.9 %	ΔI_f/°C = -0.7mA /°C, Δ Tc =13 °C,	I_f(max)=60mA, Tc= 63°C
PC2 TLP721F (Transistor) TOSHIBA	Tj(max) = 125 °C, Pd = 33 mW, Tj = Tc + ((θ j-a) × Pd) =83.6 °C D.F. = 66.9 %	θ j-a = 667°C/W, Δ Tc =13 °C,	Pc(max) = 150 mW, Tc= 63 °C

3. Main components temperature rise ΔT list

MODEL : SWS300A-5

Conditions

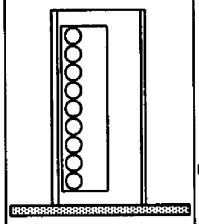
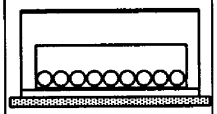
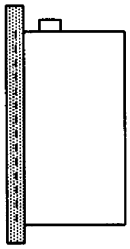
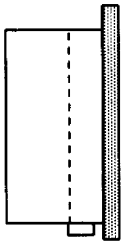
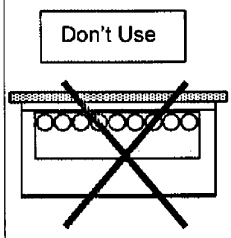
Mounting Method (Standard Mounting Method:(A))	(A) 	(B) 	(C) 	(D) 	
Input Voltage (VAC)	115				
Output Voltage (VDC)	5				
Output Current (A)	55				

Output derating		ΔT Temperature rise (°C)							
		Io=100% (Ta =50°C)				Io=50% (Ta =65°C)			
Location No.	Parts Name	Mounting A	Mounting B	Mounting C	Mounting D	Mounting A	Mounting B	Mounting C	Mounting D
L1	BALUN COIL	25.3	25.0	27.8	28.8	7.0	5.8	6.5	8.4
L2	BALUN COIL	40.9	41.2	41.4	41.3	13.1	12.1	12.1	12.9
L3	CHOKE COIL	37.3	38.2	39.8	38.5	22.2	21.3	21.8	22.0
L51	CHOKE COIL	40.9	41.8	42.5	43.3	18.6	17.2	17.7	18.9
T1	TRANSE PULSE	47.0	49.4	52.8	50.6	18.5	18.3	19.2	19.9
D1	BRIDGE DIODE	40.2	40.4	43.3	41.4	17.9	17.4	18.5	18.5
D2	PFC DIODE	37.8	39.0	39.4	35.1	18.4	17.3	17.4	17.8
D51~D52	SBD	45.3	47.0	47.8	46.2	18.7	17.9	18.9	19.1
Q1	MOS FET	32.0	32.6	32.6	33.2	14.6	13.3	13.8	14.6
Q2	MOS FET	32.0	32.5	33	33.5	13.8	12.8	13.4	14.3
A51	3TERM. REG.	36.7	37.4	37.8	37.6	26.9	25.7	27.1	28.1
A101	CHIP IC	30.0	30.4	30.4	31.3	20.3	20.0	19.5	19.7
A102	CHIP IC	31.6	31.2	32.1	31.1	23.6	22.9	23.5	24.1
A201	CHIP IC	6.5	5.7	12.2	11.9	7.5	5.4	5.4	6.6
A202	CHIP IC	19.6	20.2	23.6	21.4	12.9	11.8	13.1	13.6
C6	E. CAP.	15.8	15.6	17.1	16.0	7.5	6.0	6.5	6.6
C8	E. CAP.	18.5	19.4	20.8	20.0	9.1	9.2	8.1	9.1
C9	E. CAP.	19.2	21.6	22.2	23.2	9.1	8.4	8.9	10.2
C10	E. CAP.	19.4	20.4	17.5	20.0	8.6	7.7	7.7	8.1
C11	E. CAP.	19.9	20.0	18.4	20.4	13.6	12.4	11.9	13.4
C51	E. CAP.	8.8	10.6	9.0	10.2	4.7	2.6	3.3	4.5
C54	E. CAP.	27.6	27.8	28.6	26.9	9.6	9.4	10.0	10.5

3. Main components temperature rise ΔT list

MODEL : SWS300A-5

Conditions

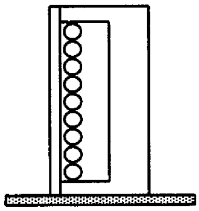
	(A)	(B)	(C)	(D)	
Mounting Method (Standard Mounting Method:(A))					
Input Voltage (VAC)	230				
Output Voltage (VDC)	5				
Output Current (A)	55				

Output derating		ΔT Temperature rise (°C)							
		Io=100% (Ta =50°C)				Io=50% (Ta =65°C)			
Location No.	Parts Name	Mounting A	Mounting B	Mounting C	Mounting D	Mounting A	Mounting B	Mounting C	Mounting D
L1	BALUN COIL	10.0	10.0	10.3	12.9	4.0	3.9	3.5	4.6
L2	BALUN COIL	15.7	15.3	14.2	14.8	5.9	4.2	5.6	5.3
L3	CHOKE COIL	23.4	24.2	23.6	23.4	11.9	12.5	14.0	12.9
L51	CHOKE COIL	41.8	41.1	42.3	42.6	18.4	17.0	18.6	18.3
T1	TRANSE PULSE	46.6	48.6	50.6	49.5	18.0	18.0	19.4	19.5
D1	BRIDGE DIODE	19.6	20.9	21.8	21.0	9.4	8.2	9.4	9.7
D2	PFC DIODE	29.7	32.1	30.3	27.4	13.4	14.3	14.7	13.7
D51~D52	SBD	45.3	46.4	45.8	45.0	18.6	17.6	19.4	19.0
Q1	MOS FET	23.7	25.7	24.1	25.6	11.3	11.7	12.1	12.2
Q2	MOS FET	27.2	29.0	28.0	28.9	12.3	12.4	12.7	13.3
A51	3TERM. REG.	36.4	37.9	37.4	37.3	25.8	26.6	28.9	28.0
A101	CHIP IC	26.6	26.2	26.7	28.6	18.4	16.5	18.2	17.4
A102	CHIP IC	31.0	31.5	32.0	31.2	22.4	21.8	24.0	22.9
A201	CHIP IC	6.3	5.9	12.5	12.0	6.5	5.2	6.2	5.8
A202	CHIP IC	20.2	20.3	23.5	21.5	12.3	12.6	13.8	13.0
C6	E. CAP.	12.6	12.0	12.5	11.7	5.2	4.3	5.4	4.6
C8	E. CAP.	13.1	14.0	14.8	14.0	5.6	5.6	6.4	6.2
C9	E. CAP.	18.0	21.0	19.3	21.8	8.2	8.2	9.4	9.2
C10	E. CAP.	18.7	18.8	16.2	17.3	7.4	7.8	7.9	7.2
C11	E. CAP.	16.1	16.6	14.4	15.9	10.2	10.6	11.8	11.0
C51	E. CAP.	8.9	11.6	8.2	10.2	4.0	3.0	3.8	4.2
C54	E. CAP.	27.7	28.0	28.5	26.7	9.8	9.2	9.8	10.6

4. Electrolytic capacitor life time

MODEL : SWS300A-5

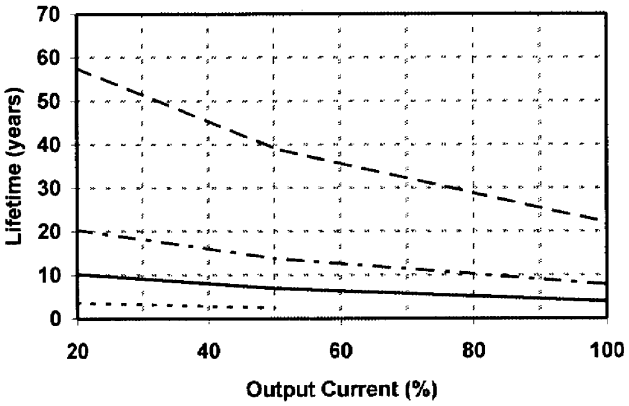
Mounting A



Conditions Ta 25°C ------
40°C -·-·-·-
50°C ————
65°C --------

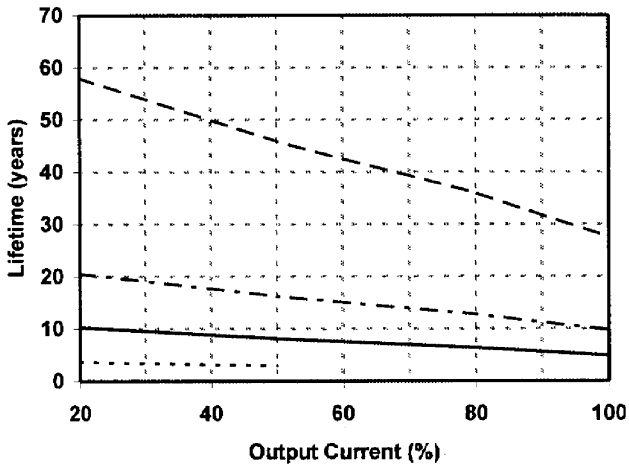
Vin = 115VAC

Load (%)	Lifetime (years)			
	Ta = 25°C	Ta = 40°C	Ta = 50°C	Ta = 65°C
20	57.6	20.4	10.2	3.6
50	39.1	13.8	6.9	2.4
80	28.8	10.2	5.1	
100	22.0	7.8	3.9	



Vin = 230VAC

Load (%)	Lifetime (years)			
	Ta = 25°C	Ta = 40°C	Ta = 50°C	Ta = 65°C
20	58.0	20.5	10.3	3.6
50	45.9	16.2	8.1	2.9
80	36.0	12.7	6.4	
100	27.5	9.7	4.9	



Formula:

1. For 105°C Elect. capacitor
   $L = Lo * 2^{(105-\Delta T-Ta)/10} / (8 * 365)$ (years)

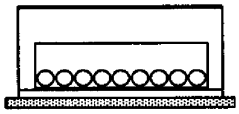
2. For 85°C Elect. capacitor
   $L = Lo * 2^{(85-\Delta T-Ta)/10} / (8 * 365)$ (years)

Where:
L —— Elec. Capacitor computed life (8 hours per day , 365 days operation)
Lo —— Guarantee life for Elec. capacitor
Ta —— Ambient temperature
ΔT —— Temperature rise of Elec. capacitor

4. Electrolytic capacitor life time

MODEL : SWS300A-5

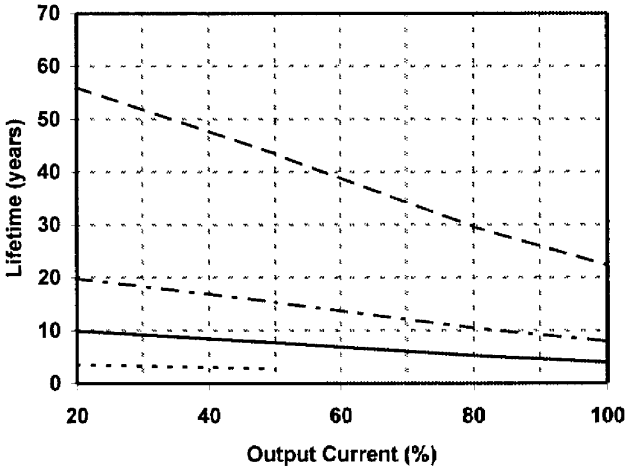
Mounting B



Conditions Ta 25°C – – – – –
40°C – · – · –
50°C ————
65°C - - - - - - -

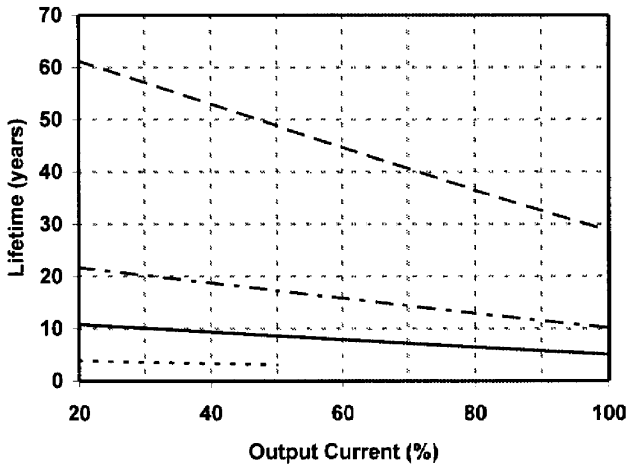
Vin = 115VAC

Load (%)	Lifetime (years)			
	Ta = 25°C	Ta = 40°C	Ta = 50°C	Ta = 65°C
20	56.1	19.8	9.9	3.5
50	43.4	15.3	7.7	2.7
80	29.6	10.5	5.2	
100	22.3	7.9	3.9	



Vin = 230VAC

Load (%)	Lifetime (years)			
	Ta = 25°C	Ta = 40°C	Ta = 50°C	Ta = 65°C
20	61.4	21.7	10.8	3.8
50	48.8	17.3	8.6	3.1
80	36.5	12.9	6.4	
100	28.6	10.1	5.1	



Formula:

1. For 105°C Elect. capacitor
   $L = Lo * 2^{(105-\Delta T-Ta)/10} / (8 * 365)$ (years)

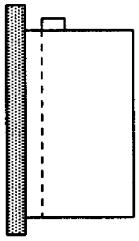
2. For 85°C Elect. capacitor
   $L = Lo * 2^{(85-\Delta T-Ta)/10} / (8 * 365)$ (years)

Where:
L —— Elec. Capacitor computed life (8 hours per day , 365 days operation)
Lo —— Guarantee life for Elec. capacitor
Ta —— Ambient temperature
ΔT —— Temperature rise of Elec. capacitor

4. Electrolytic capacitor life time

MODEL : SWS300A-5

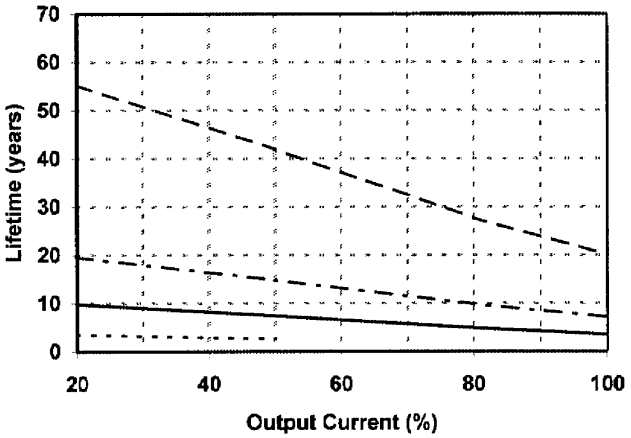
Mounting C



Conditions Ta 25°C ------
40°C -·-·-·-
50°C ————
65°C --------

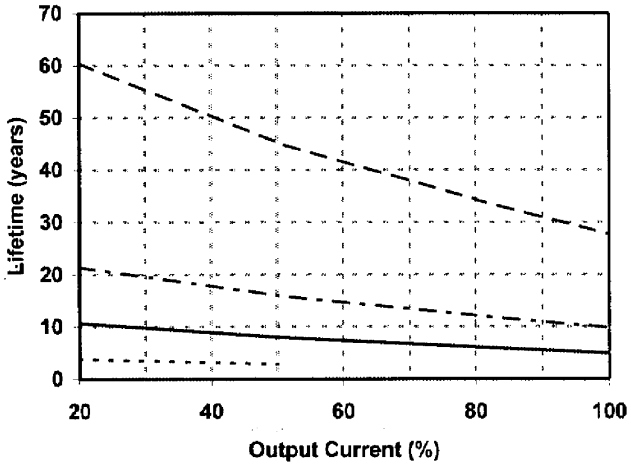
Vin = 115VAC

Load (%)	Lifetime (years)			
	Ta = 25°C	Ta = 40°C	Ta = 50°C	Ta = 65°C
20	55.3	19.5	9.8	3.5
50	41.9	14.8	7.4	2.6
80	27.6	9.8	4.9	
100	20.1	7.1	3.6	



Vin = 230VAC

Load (%)	Lifetime (years)			
	Ta = 25°C	Ta = 40°C	Ta = 50°C	Ta = 65°C
20	60.5	21.4	10.7	3.8
50	45.2	16.0	8.0	2.8
80	34.3	12.1	6.1	
100	27.6	9.8	4.9	



Formula:

1. For 105°C Elect. capacitor
   $L = Lo * 2^{(105-\Delta T-Ta)/10} / (8 * 365)$ (years)

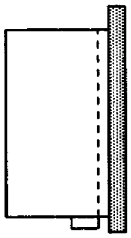
2. For 85°C Elect. capacitor
   $L = Lo * 2^{(85-\Delta T-Ta)/10} / (8 * 365)$ (years)

Where:
L —— Elec. Capacitor computed life (8 hours per day , 365 days operation)
Lo —— Guarantee life for Elec. capacitor
Ta —— Ambient temperature
ΔT —— Temperature rise of Elec. capacitor

4. Electrolytic capacitor life time

MODEL : SWS300A-5

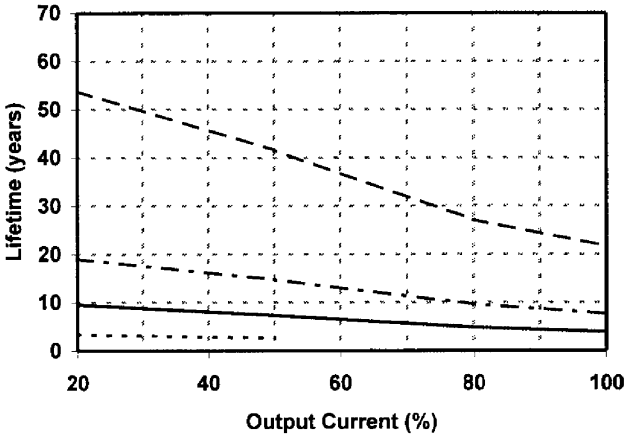
Mounting D



Conditions Ta 25°C ------
40°C -·-·-·-
50°C ——————
65°C --------

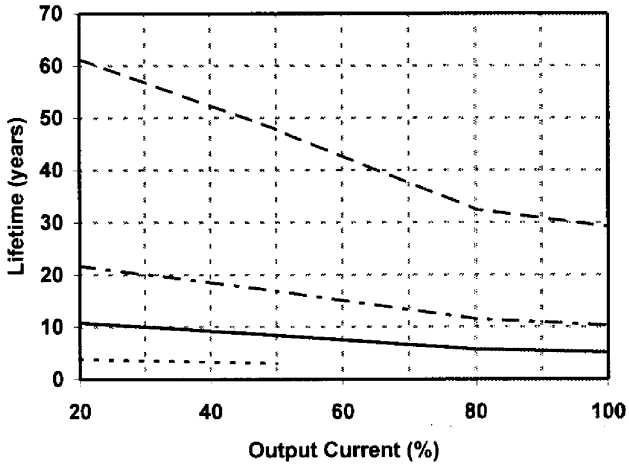
Vin = 115VAC

Load (%)	Lifetime (years)			
	Ta = 25°C	Ta = 40°C	Ta = 50°C	Ta = 65°C
20	53.8	19.0	9.5	3.4
50	41.6	14.7	7.4	2.6
80	27.1	9.6	4.8	
100	21.7	7.7	3.8	



Vin = 230VAC

Load (%)	Lifetime (years)			
	Ta = 25°C	Ta = 40°C	Ta = 50°C	Ta = 65°C
20	61.4	21.7	10.8	3.8
50	47.8	16.9	8.5	3.0
80	32.4	11.5	5.7	
100	29.2	10.3	5.2	



Formula:

1. For 105°C Elect. capacitor

$L = Lo * 2^{(105-\Delta T-Ta)/10} / (8 * 365)$ (years)

2. For 85°C Elect. capacitor

$L = Lo * 2^{(85-\Delta T-Ta)/10} / (8 * 365)$ (years)

Where:
- L —— Elec. Capacitor computed life (8 hours per day , 365 days operation)
- Lo —— Guarantee life for Elec. capacitor
- Ta —— Ambient temperature
- ΔT —— Temperature rise of Elec. capacitor

5. Vibration test

MODEL : SWS300A-5

(1) Vibration Test Class

Frequency Variable Endurance Test

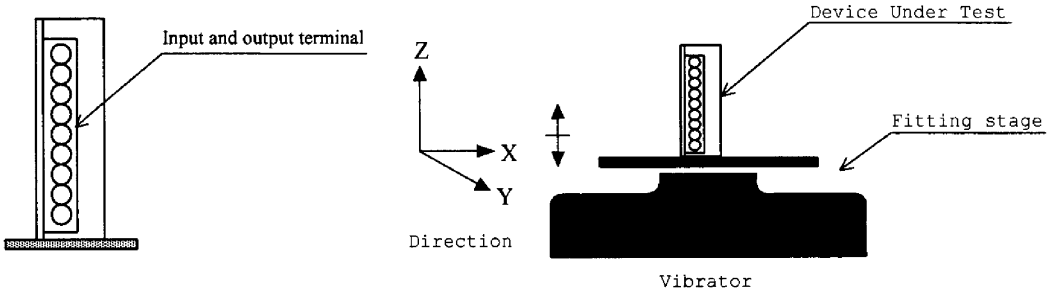
(2) Equipment Used

- Controller : DP550 (DP CORP. USA)
- Vibrator : V870 (LDS CORP. UK)

(3) Test Conditions

- Sweep frequency 10 ~ 55Hz
- Sweep time 1.0 min.
- Acceleration Constant 19.6m/s^2 (2G)
- Direction X, Y, Z.
- Test time 1 hour each

(4) Test Method



(5) Test Results

O K

Vin : 115VAC

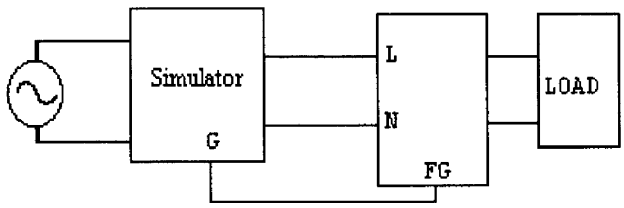
Iout : 100%

Check item		Output Voltage (V)	Ripple Voltage (mVp-p)	D.U.T.State
Before Test		4.998	55	————
After Test	X	4.997	56	OK
	Y	4.997	56	OK
	Z	4.997	57	OK

6. Noise simulate test

MODEL : SWS300A-5

(1) Test circuit and equipment



Simulator : INS-400L Noise Laboratory Co.,LTD

(2) Test conditions

• Input voltage	:	115, 230VAC	• Noise level	:	0V~2.0kV
• Output voltage	:	Rated	• Phase shift	:	0° ~ 360°
• Output current	:	0%, 100%	• Polarity	:	+ , −
• Ambient temperature	:	25°C	• Mode	:	Normal, Common
• Pulse width	:	50ns ~ 1000ns	• Trigger select	:	Line

(3) Acceptable conditions

1. Not to be broken.
2. Not to be shut down output.
3. No other out of orders.

(4) Test result

O K

7. Thermal shock test

MODEL : SWS300A-5

(1) Equipment used

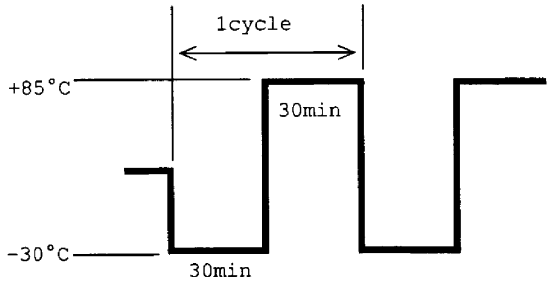
THERMAL SHOCK CHAMBER TSA-101S-W (ESPEC CORP.)

(2) The number of D.U.T.(Device Under Test)

1 unit

(3) Test Conditions

- Ambient temperature : -30°C ⟷ 85°C
- Test time : Refer to drawing
- Test cycle : 100 cycles
- Not operating : NO



(4) Test Method

Before testing, check if there is no abnormal output, then put the D.U.T. in testing chamber, and test it according to the above cycle. 100 cycles later, leave it for 1 hour at the room temperature, then check if there is no abnormal output.

(5) Test Results

O K

Vin : 115VAC			5V			
Io : 100%			From		To	
Ripple&Noise		mV	50		50	
Line regulation	Full load	mV	1		1	
Load regulation	Vin:115V	mV	18		18	
Efficiency	Pin	W	366.5		366.5	
	Vout	V	4.99	74.9%	4.99	74.9%
	Iout	A	55		55	
Solder condition • etc.			———		OK	

8. Fan life expectancy

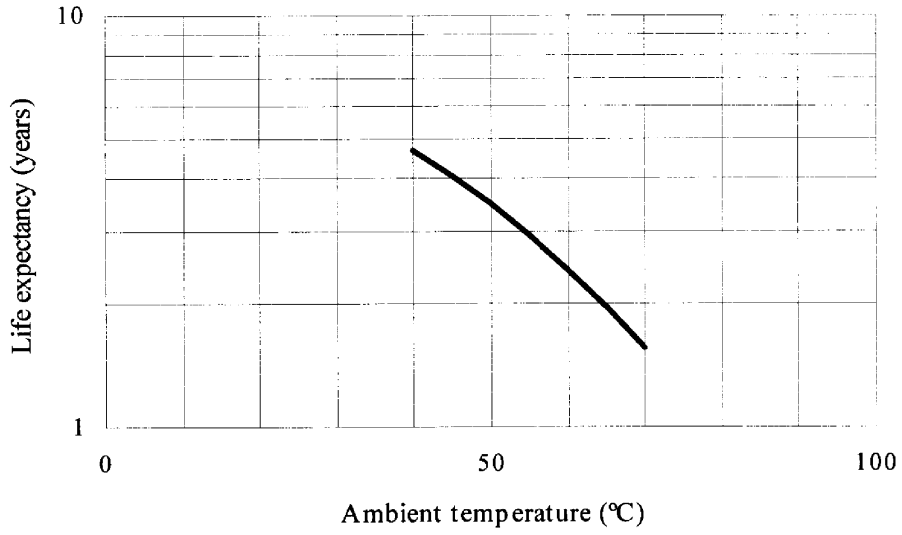
MODEL: SWS300A

(1) Part name

AFB0512HB-E903 (DELTA)

(2) Life expectancy

The data shows fan life expectancy for fan only by manufacture (90% survival rate).
Fig1 shows measuring point of ambient temperature.



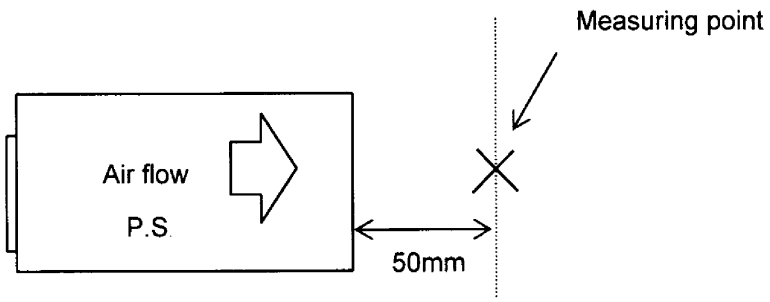


Fig1. Measuring point of ambient temperature.

1year = 365 day x 24 hours/day = 8760 hours