

CUS75EB

RELIABILITY DATA

信頼性データ

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※ 試験結果は、代表データではありますが、全ての製品はほぼ同等な特性を示します。
従いまして、以下の結果は参考値とお考え願います。

Test results are typical data. Nevertheless the following results are considered to be
reference data because all units have nearly the same characteristics.

評価負荷条件 Load conditions

Output voltage : 5V, 12V, 15V, 24V, 48V

Vin	Iout: Full load	5V	12V	15V	24V	48V
88 - 370VDC	100%	12.0A	6.3A	5.1A	3.2A	1.6A

*入力電圧が115VAC以下の場合、下記のとおり出力ディレーティングが必要です。

Output derating is needed when input voltage is less than 115VAC.

Output voltage : 5V

Vin	Iout: Full load	5V
85VAC	80%	9.6A
100 - 265VAC	100%	12.0A

Output voltage : 12V, 15V, 24V, 48V

Vin	Iout: Full load	12V	15V	24V	48V
85VAC	80%	5.04A	4.08A	2.56A	1.28A
115 - 265VAC	100%	6.3A	5.1A	3.2A	1.6A

1. MTBF計算値 Calculated Values of MTBF

MODEL : CUS75EB-5

(1) 算出方法 Calculating Method

JEITA (RCR-9102B)の部品点数法で算出されています。
 それぞれの部品ごとに、部品故障率 λ_G が与えられ、各々の点数によって決定されます。
 Calculated based on part count reliability projection of JEITA (RCR-9102B).
 Individual failure rates λ_G is given to each part and MTBF is calculated
 by the count of each part.

<算出式>

$$MTBF = \frac{1}{\lambda_{equip}} \times 10^6 = \frac{1}{\sum_{i=1}^n n_i (\lambda_G \pi_Q)_i} \times 10^6 \quad \text{時間(Hours)}$$

λ_{equip} : 全機器故障率 (故障数/10⁶時間)

Total Equipment Failure Rate (Failure/10⁶Hours)

λ_G : i番目の同属部品に対する故障率 (故障数/10⁶時間)

Generic Failure Rate for The ith Generic Part (Failure/10⁶Hours)

n_i : i番目の同属部品の個数

Quantity of ith Generic Part

n : 異なった同属部品のカテゴリーの数

Number of Different Generic Part Categories

π_Q : i番目の同属部品に対する品質ファクタ ($\pi_Q=1$)

Generic Quality Factor for The ith Generic Part ($\pi_Q=1$)

(2) MTBF値 MTBF Values

G_F : 地上固定 (Ground, Fixed)

RCR-9102B

MTBF ≒ 252,564 時間 (Hours)

2. 部品デレーティング Components Derating

MODEL : CUS75EB

(1) 算出方法 Calculating Method

(a) 測定方法 Measuring method

Output voltage :5V

・取付方法 Mounting method	: 標準取付 : A Standard mounting : A	・周囲温度 Ambient temperature	: 40°C
・入力電圧 Input voltage	: 110, 220VDC	・出力電圧、電流 Output voltage & current	: 5V, Full load

Output voltage :24V

・取付方法 Mounting method	: 標準取付 : A Standard mounting : A	・周囲温度 Ambient temperature	: 50°C
・入力電圧 Input voltage	: 110, 220VDC	・出力電圧、電流 Output voltage & current	: 24V, Full load

(b) 半導体 Semiconductors

ケース温度、消費電力、熱抵抗より使用状態の接合点温度を求め
最大定格、接合点温度との比較を求めました。

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

(c) IC、抵抗、コンデンサ等 IC, Resistors, Capacitors, etc.

周囲温度、使用状態、消費電力など、個々の値は設計基準内に入っています。

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

(d) 熱抵抗算出方法 Calculating method of thermal impedance

$$\theta_{j-c} = \frac{T_j(\max) - T_c}{P_j(\max)} \quad \theta_{j-l} = \frac{T_j(\max) - T_l}{P_j(\max)}$$

T_c : デレーティングの始まるケース温度 一般に25°C
Case Temperature at Start Point of Derating; 25°C in General

T_l : デレーティングの始まるリード温度 一般に25°C
Lead Temperature at Start Point of Derating; 25°C in General

P_j(max) : 最大チャネル損失
(P_{ch}(max)) Maximum Channel Dissipation

T_j(max) : 最大接合点(チャネル)温度
(T_{ch}(max)) Maximum Junction (channel) Temperature

θ_{j-c} : 接合点(チャネル)からケースまでの熱抵抗
(θ_{ch-c}) Thermal Impedance between Junction (channel) and Case

θ_{j-l} : 接合点(チャネル)からリードまでの熱抵抗
(θ_{ch-l}) Thermal Impedance between Junction (channel) and Lead

(2) 部品デレーティング表 Component Derating List

部品番号 Location No.	Vin = 110VDC	Vout = 5V	Load = Full load	Ta = 40°C
Q1 TK16A60W,S4VX TOSHIBA	Tch (max) = 150 °C Pch = 1.53 W Tch = Tc + ($\theta_{ch-c} \times Pch$) = 101.1 °C D.F. = 67.4 %	$\theta_{ch-c} = 3.13$ °C/W $\Delta Tc = 56.3$ °C		Tc = 96.3 °C
D51A, D51B FCQS30A065 NIHON INTER	Tj (max) = 150 °C Pd = 2.4 W Tj = Tc + ($\theta_{j-c} \times Pd$) = 129.6 °C D.F. = 86.4 %	$\theta_{j-c} = 1.5$ °C/W $\Delta Tc = 86.0$ °C		Tc = 126.0 °C
D1 D3SB60-7000 SHINDENGEN	Tj (max) = 150 °C Pd = 1.1 W Tj = Tc + ($\theta_{j-c} \times Pd$) = 107.4 °C D.F. = 71.6 %	$\theta_{j-c} = 5.5$ °C/W $\Delta Tc = 61.3$ °C		Tc = 101.3 °C

部品番号 Location No.	Vin = 220VDC	Vout = 5V	Load = Full load	Ta = 40°C
Q1 TK16A60W,S4VX TOSHIBA	Tch (max) = 150 °C Pch = 1.65 W Tch = Tc + ($\theta_{ch-c} \times Pch$) = 99.0 °C D.F. = 66.0 %	$\theta_{ch-c} = 3.13$ °C/W $\Delta Tc = 53.8$ °C		Tc = 93.8 °C
D51A, D51B FCQS30A065 NIHON INTER	Tj (max) = 150 °C Pd = 2.4 W Tj = Tc + ($\theta_{j-c} \times Pd$) = 127.4 °C D.F. = 84.9 %	$\theta_{j-c} = 1.5$ °C/W $\Delta Tc = 83.8$ °C		Tc = 123.8 °C
D1 D3SB60-7000 SHINDENGEN	Tj (max) = 150 °C Pd = 0.5 W Tj = Tc + ($\theta_{j-c} \times Pd$) = 91.5 °C D.F. = 61.0 %	$\theta_{j-c} = 5.5$ °C/W $\Delta Tc = 48.7$ °C		Tc = 88.7 °C

(2) 部品デレーティング表 Component Derating List

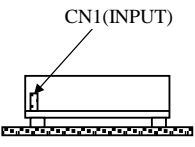
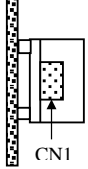
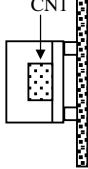
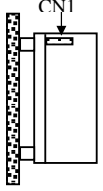
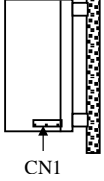
部品番号 Location No.	Vin = 110VDC	Vout = 24V	Load = Full load	Ta = 50°C
Q1 TK16A60W,S4VX TOSHIBA	Tch (max) = 150 °C Pch = 1.88 W Tch = Tc + ($\theta_{ch-c} \times Pch$) = 118.4 °C D.F. = 78.9 %	$\theta_{ch-c} = 3.13$ °C/W $\Delta Tc = 62.5$ °C		Tc = 112.5 °C
D51A YG902C2R FUJI ELECTRIC	Tj (max) = 150 °C Pd = 1.98 W Tj = Tc + ($\theta_{j-c} \times Pd$) = 118.6 °C D.F. = 79.1 %	$\theta_{j-c} = 3.5$ °C/W $\Delta Tc = 61.7$ °C		Tc = 111.7 °C
D1 D3SB60-7000 SHINDENGEN	Tj (max) = 150 °C Pd = 1.25 W Tj = Tc + ($\theta_{j-c} \times Pd$) = 119.4 °C D.F. = 79.6 %	$\theta_{j-c} = 5.5$ °C/W $\Delta Tc = 62.5$ °C		Tc = 112.5 °C

部品番号 Location No.	Vin = 220VDC	Vout = 24V	Load = Full load	Ta = 50°C
Q1 TK16A60W,S4VX TOSHIBA	Tch (max) = 150 °C Pch = 1.92 W Tch = Tc + ($\theta_{ch-c} \times Pch$) = 103.6 °C D.F. = 69.1 %	$\theta_{ch-c} = 3.13$ °C/W $\Delta Tc = 47.6$ °C		Tc = 97.6 °C
D51A YG902C2R FUJI ELECTRIC	Tj (max) = 150 °C Pd = 1.98 W Tj = Tc + ($\theta_{j-c} \times Pd$) = 117.1 °C D.F. = 78.1 %	$\theta_{j-c} = 3.5$ °C/W $\Delta Tc = 60.2$ °C		Tc = 110.2 °C
D1 D3SB60-7000 SHINDENGEN	Tj (max) = 150 °C Pd = 0.52 W Tj = Tc + ($\theta_{j-c} \times Pd$) = 96.3 °C D.F. = 64.2 %	$\theta_{j-c} = 5.5$ °C/W $\Delta Tc = 43.4$ °C		Tc = 93.4 °C

3. 主要部品温度上昇値 Main Components Temperature Rise ΔT List

MODEL : CUS75EB-5

(1) 測定条件 Measuring Conditions

取付方法 Mounting Method (標準取付 : A) (Standard Mounting : A)	Mounting A	Mounting B	Mounting C	Mounting D	Mounting E
					
入力電圧 V_{in} Input Voltage	110VDC				
出力電圧 V_o Output Voltage	5VDC				
出力電流 I_o Output Current	Full load				

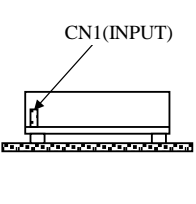
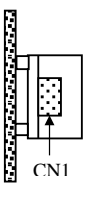
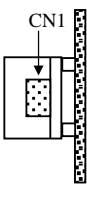
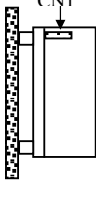
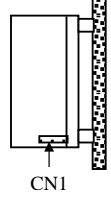
(2) 測定結果 Measuring Results

出力ディレーティング Output Derating		ΔT Temperature Rise ($^{\circ}C$)				
		$T_a=40^{\circ}C$	$T_a=40^{\circ}C$	$T_a=40^{\circ}C$	$T_a=40^{\circ}C$	$T_a=35^{\circ}C$
部品番号 Location No.	部品名 Part name	取付方向 Mounting A	取付方向 Mounting B	取付方向 Mounting C	取付方向 Mounting D	取付方向 Mounting E
D1	BRIDGE DIODE	61.3	57.7	60.1	69.2	59.3
D51A	DIODE	86.0	86.7	88.5	88.1	89.2
D51B	DIODE	84.8	84.1	86.6	87.0	89.9
Q1	MOS FET	56.3	59.1	57.6	66.2	57.2
A101	CHIP IC	44.7	43.1	51.7	52.4	49.1
A201	CHIP IC	47.9	46.0	54.5	53.5	54.1
T1	TRANS	72.1	64.0	67.7	77.4	75.4
L1	BALUN	35.2	33.0	39.0	46.8	35.8
L2	BALUN	41.0	41.3	44.2	54.6	38.7
C5	E.CAP.	39.5	35.2	47.4	47.6	41.9
C51A	E.CAP.	49.3	45.1	55.9	53.9	55.1
PC101	PHOTO COUPLER	41.8	40.3	49.1	48.6	46.8

3. 主要部品温度上昇値 Main Components Temperature Rise ΔT List

MODEL : CUS75EB-5

(1) 測定条件 Measuring Conditions

取付方法 Mounting Method (標準取付 : A) (Standard Mounting : A)	Mounting A	Mounting B	Mounting C	Mounting D	Mounting E
					
入力電圧 V_{in} Input Voltage	220VDC				
出力電圧 V_o Output Voltage	5VDC				
出力電流 I_o Output Current	Full load				

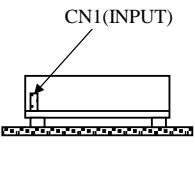
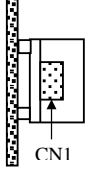
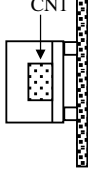
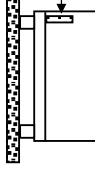
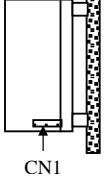
(2) 測定結果 Measuring Results

出力ディレーティング Output Derating		ΔT Temperature Rise ($^{\circ}C$)				
		$T_a=40^{\circ}C$	$T_a=40^{\circ}C$	$T_a=40^{\circ}C$	$T_a=40^{\circ}C$	$T_a=35^{\circ}C$
部品番号 Location No.	部品名 Part name	取付方向	取付方向	取付方向	取付方向	取付方向
		Mounting A	Mounting B	Mounting C	Mounting D	Mounting E
D1	BRIDGE DIODE	48.7	45.0	49.2	58.4	46.2
D51A	DIODE	83.8	84.9	86.4	85.9	86.0
D51B	DIODE	82.7	82.3	84.6	84.9	86.9
Q1	MOS FET	53.8	55.1	55.8	63.9	53.9
A101	CHIP IC	41.3	39.8	48.4	49.3	44.4
A201	CHIP IC	46.2	44.3	52.7	51.7	51.3
T1	TRANS	69.9	62.3	66.0	75.9	72.2
L1	BALUN	27.0	25.1	31.6	39.4	26.4
L2	BALUN	32.0	31.4	36.2	45.9	29.5
C5	E.CAP.	36.5	31.8	44.1	44.1	37.2
C51A	E.CAP.	48.4	43.1	54.5	51.3	52.3
PC101	PHOTO COUPLER	39.2	37.8	46.8	46.3	43.0

3. 主要部品温度上昇値 Main Components Temperature Rise ΔT List

MODEL : CUS75EB-24

(1) 測定条件 Measuring Conditions

取付方法 Mounting Method (標準取付 : A) (Standard Mounting : A)	Mounting A	Mounting B	Mounting C	Mounting D	Mounting E
					
入力電圧 V_{in} Input Voltage	110VDC				
出力電圧 V_o Output Voltage	24VDC				
出力電流 I_o Output Current	Full load				

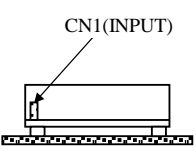
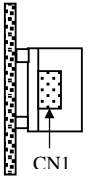
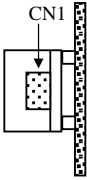
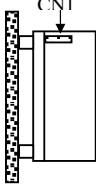
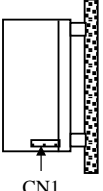
(2) 測定結果 Measuring Results

出力ディレーティング Output Derating		ΔT Temperature Rise ($^{\circ}C$)				
		$T_a=50^{\circ}C$	$T_a=50^{\circ}C$	$T_a=50^{\circ}C$	$T_a=50^{\circ}C$	$T_a=50^{\circ}C$
部品番号 Location No.	部品名 Part name	取付方向 Mounting A	取付方向 Mounting B	取付方向 Mounting C	取付方向 Mounting D	取付方向 Mounting E
D1	BRIDGE DIODE	62.5	62.6	66.5	69.8	64.4
D51A	DIODE	61.7	63.2	64.0	65.7	72.4
Q1	MOS FET	62.5	65.3	63.0	68.1	62.5
A101	CHIP IC	41.5	39.0	49.4	45.9	46.6
A201	CHIP IC	37.7	35.4	43.4	40.4	45.7
T1	TRANS	63.2	58.7	62.4	67.0	71.6
L1	BALUN	39.2	37.0	42.7	48.1	38.2
L2	BALUN	44.4	46.4	49.5	57.4	43.2
C5	E.CAP.	30.4	25.9	40.0	34.0	35.8
C51A	E.CAP.	26.6	24.0	32.6	27.8	36.2
PC101	PHOTO COUPLER	34.6	32.3	41.8	38.4	40.4

3. 主要部品温度上昇値 Main Components Temperature Rise ΔT List

MODEL : CUS75EB-24

(1) 測定条件 Measuring Conditions

取付方法 Mounting Method (標準取付 : A) (Standard Mounting : A)	Mounting A	Mounting B	Mounting C	Mounting D	Mounting E
					
入力電圧 V_{in} Input Voltage	220VDC				
出力電圧 V_o Output Voltage	24VDC				
出力電流 I_o Output Current	Full load				

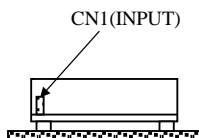
(2) 測定結果 Measuring Results

出力ディレーティング Output Derating		ΔT Temperature Rise ($^{\circ}C$)				
		$T_a=50^{\circ}C$	$T_a=50^{\circ}C$	$T_a=50^{\circ}C$	$T_a=50^{\circ}C$	$T_a=50^{\circ}C$
部品番号 Location No.	部品名 Part name	取付方向 Mounting A	取付方向 Mounting B	取付方向 Mounting C	取付方向 Mounting D	取付方向 Mounting E
D1	BRIDGE DIODE	43.4	43.2	47.3	52.3	44.9
D51A	DIODE	60.2	61.8	62.7	64.6	69.0
Q1	MOS FET	47.6	49.4	49.0	55.6	47.8
A101	CHIP IC	36.0	33.8	43.3	41.3	49.4
A201	CHIP IC	35.3	33.4	40.9	38.6	41.6
T1	TRANS	61.8	57.9	61.5	66.7	67.4
L1	BALUN	27.0	25.4	30.4	36.4	26.1
L2	BALUN	30.5	31.3	35.0	42.6	29.4
C5	E.CAP.	26.0	21.8	34.7	29.8	29.0
C51A	E.CAP.	25.2	22.6	31.4	26.2	32.7
PC101	PHOTO COUPLER	30.6	28.5	37.4	35.0	34.7

4. 電解コンデンサ推定寿命計算値 Electrolytic Capacitor Lifetime

MODEL : CUS75EB

取付方向 A
Mounting A

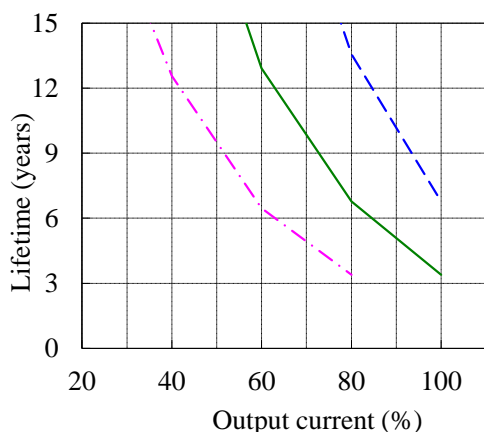


Conditions Ta 30°C : - - - -
40°C : ————
50°C : ······

5V

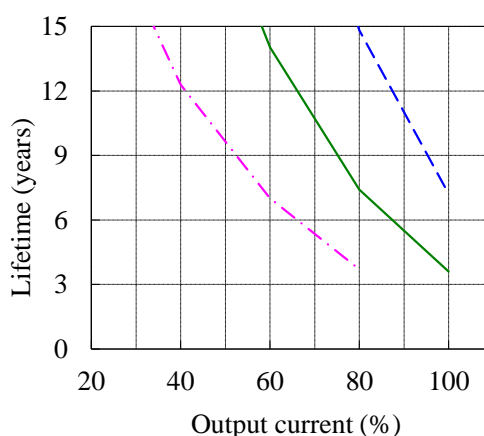
Vin=110VDC

Load	Lifetime (years)		
	Ta 30°C	Ta 40°C	Ta 50°C
20%	15.0	15.0	15.0
40%	15.0	15.0	12.6
60%	15.0	12.9	6.5
80%	13.6	6.8	3.4
100%	6.8	3.4	-



Vin=220VDC

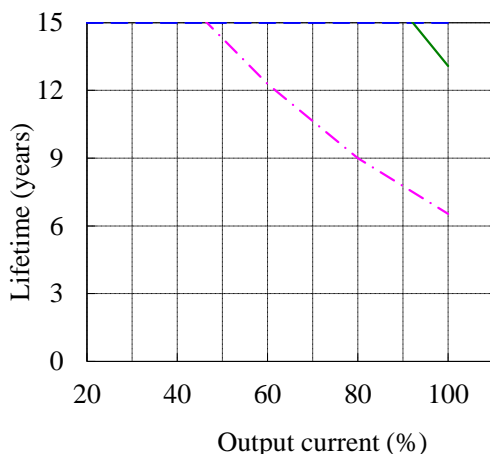
Load	Lifetime (years)		
	Ta 30°C	Ta 40°C	Ta 50°C
20%	15.0	15.0	15.0
40%	15.0	15.0	12.3
60%	15.0	14.0	7.0
80%	14.8	7.4	3.7
100%	7.2	3.6	-



24V

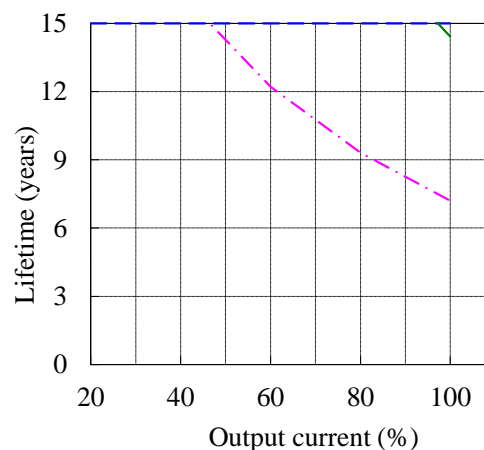
Vin=110VDC

Load	Lifetime (years)		
	Ta 30°C	Ta 40°C	Ta 50°C
20%	15.0	15.0	15.0
40%	15.0	15.0	15.0
60%	15.0	15.0	12.3
80%	15.0	15.0	9.0
100%	15.0	13.1	6.5



Vin=220VDC

Load	Lifetime (years)		
	Ta 30°C	Ta 40°C	Ta 50°C
20%	15.0	15.0	15.0
40%	15.0	15.0	15.0
60%	15.0	15.0	12.2
80%	15.0	15.0	9.3
100%	15.0	14.4	7.2

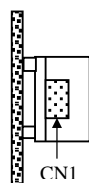


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The life time is calculated based on our method and doesn't include the seal rubber degradation effect etc.

4. 電解コンデンサ推定寿命計算値 Electrolytic Capacitor Lifetime

MODEL : CUS75EB

取付方向 B
Mounting B

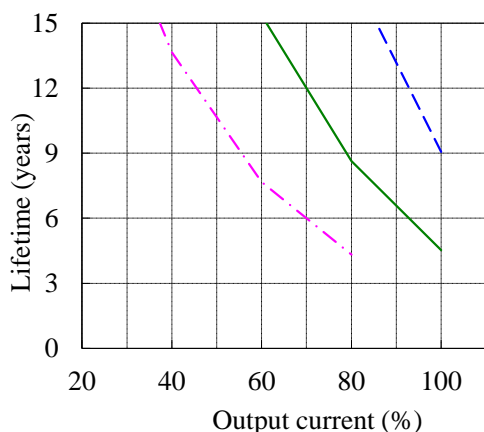


Conditions Ta 30°C : - - - -
40°C : ————
50°C : ······

5V

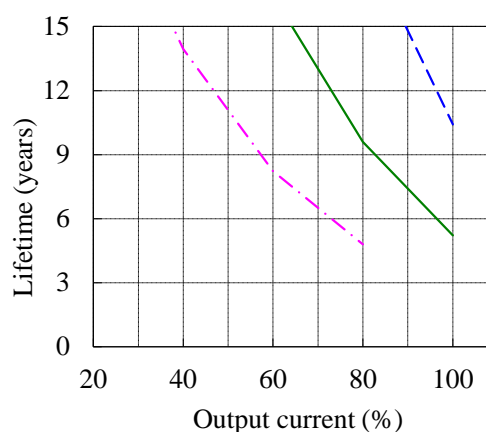
Vin=110VDC

Load	Lifetime (years)		
	Ta 30°C	Ta 40°C	Ta 50°C
20%	15.0	15.0	15.0
40%	15.0	15.0	13.7
60%	15.0	15.0	7.7
80%	15.0	8.6	4.3
100%	9.1	4.5	-



Vin=220VDC

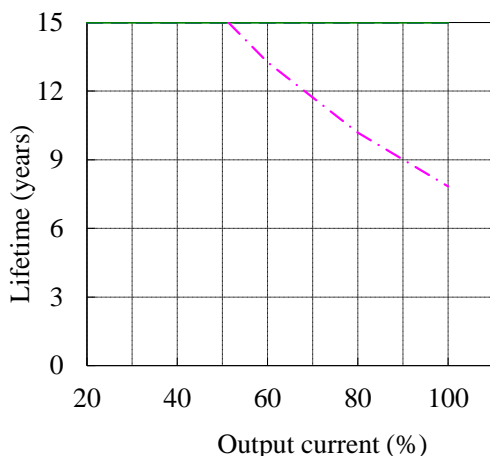
Load	Lifetime (years)		
	Ta 30°C	Ta 40°C	Ta 50°C
20%	15.0	15.0	15.0
40%	15.0	15.0	13.9
60%	15.0	15.0	8.2
80%	15.0	9.6	4.8
100%	10.4	5.2	-



24V

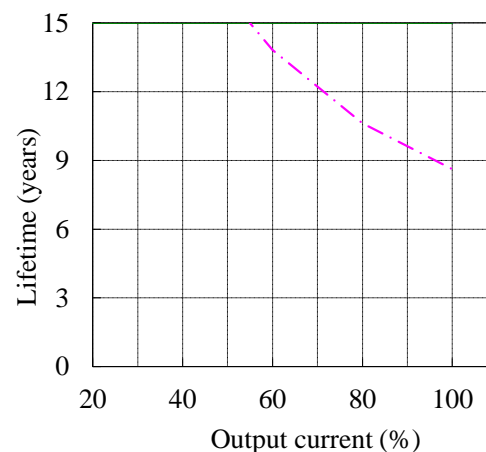
Vin=110VDC

Load	Lifetime (years)		
	Ta 30°C	Ta 40°C	Ta 50°C
20%	15.0	15.0	15.0
40%	15.0	15.0	15.0
60%	15.0	15.0	13.3
80%	15.0	15.0	10.2
100%	15.0	15.0	7.8



Vin=220VDC

Load	Lifetime (years)		
	Ta 30°C	Ta 40°C	Ta 50°C
20%	15.0	15.0	15.0
40%	15.0	15.0	15.0
60%	15.0	15.0	13.8
80%	15.0	15.0	10.6
100%	15.0	15.0	8.6

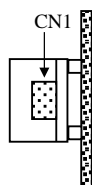


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The life time is calculated based on our method and doesn't include the seal rubber degradation effect etc.

4. 電解コンデンサ推定寿命計算値 Electrolytic Capacitor Lifetime

MODEL : CUS75EB

取付方向 C
Mounting C

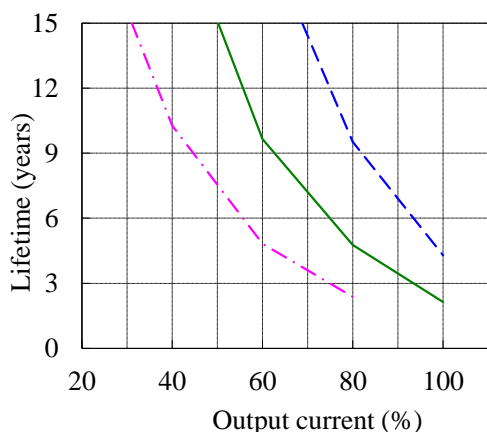


Conditions Ta 30°C : - - - -
40°C : ————
50°C : ······

5V

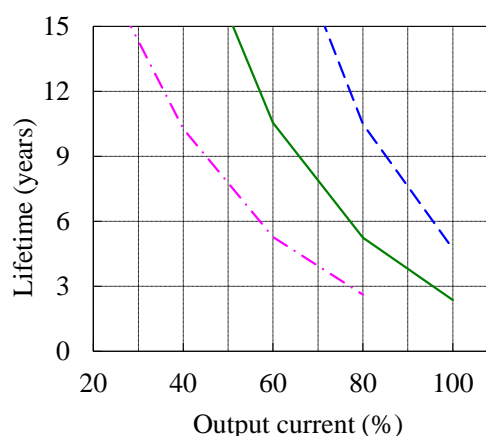
Vin=110VDC

Load	Ta		
	30°C	40°C	50°C
20%	15.0	15.0	15.0
40%	15.0	15.0	10.3
60%	15.0	9.7	4.8
80%	9.5	4.8	2.4
100%	4.3	2.1	-



Vin=220VDC

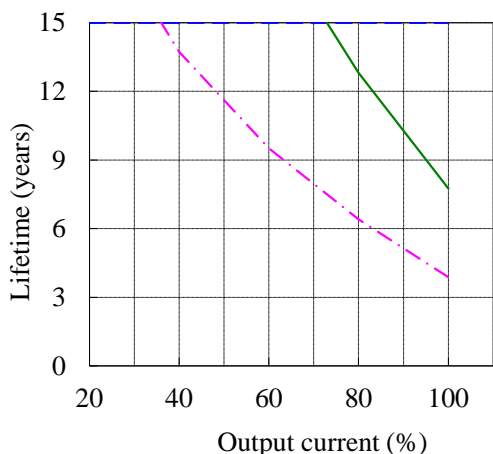
Load	Ta		
	30°C	40°C	50°C
20%	15.0	15.0	15.0
40%	15.0	15.0	10.3
60%	15.0	10.6	5.3
80%	10.5	5.2	2.6
100%	4.7	2.4	-



24V

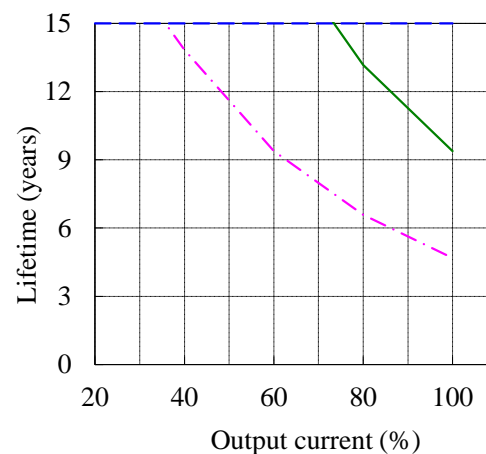
Vin=110VDC

Load	Ta		
	30°C	40°C	50°C
20%	15.0	15.0	15.0
40%	15.0	15.0	13.7
60%	15.0	15.0	9.5
80%	15.0	12.8	6.4
100%	15.0	7.7	3.9



Vin=220VDC

Load	Ta		
	30°C	40°C	50°C
20%	15.0	15.0	15.0
40%	15.0	15.0	13.8
60%	15.0	15.0	9.4
80%	15.0	13.2	6.6
100%	15.0	9.4	4.7

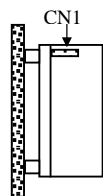


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4. 電解コンデンサ推定寿命計算値 Electrolytic Capacitor Lifetime

MODEL : CUS75EB

取付方向 D
Mounting D

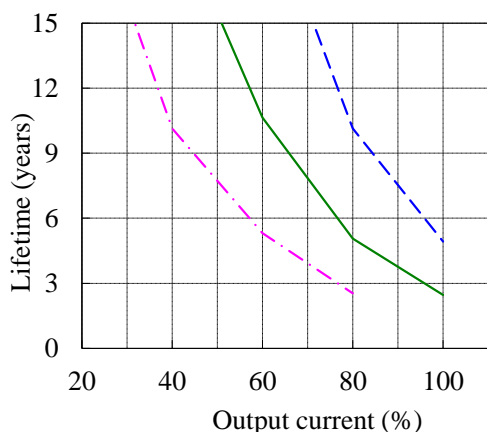


Conditions Ta 30°C : - - - -
40°C : ————
50°C : - · - · -

5V

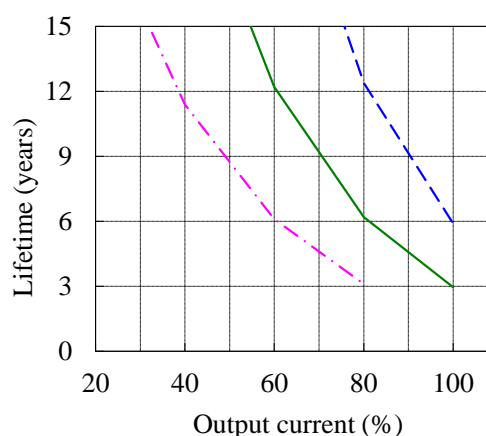
Vin=110VDC

Load	Ta	Lifetime (years)		
		30°C	40°C	50°C
20%		15.0	15.0	15.0
40%		15.0	15.0	10.1
60%		15.0	10.6	5.3
80%		10.1	5.1	2.5
100%		4.9	2.5	-



Vin=220VDC

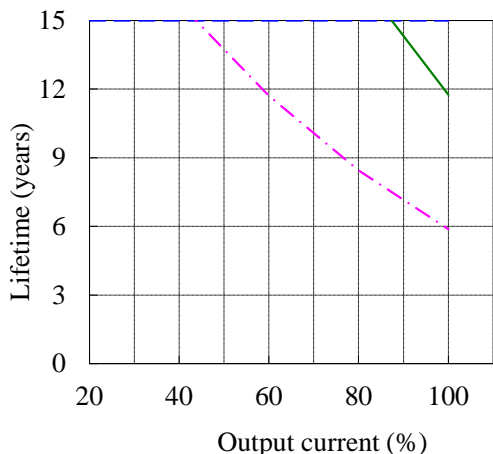
Load	Ta	Lifetime (years)		
		30°C	40°C	50°C
20%		15.0	15.0	15.0
40%		15.0	15.0	11.4
60%		15.0	12.2	6.1
80%		12.4	6.2	3.1
100%		5.9	3.0	-



24V

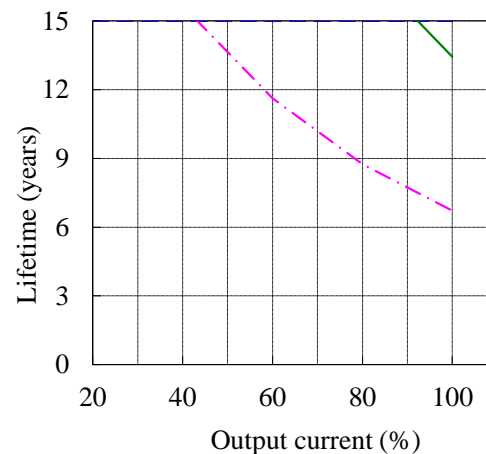
Vin=110VDC

Load	Ta	Lifetime (years)		
		30°C	40°C	50°C
20%		15.0	15.0	15.0
40%		15.0	15.0	15.0
60%		15.0	15.0	11.7
80%		15.0	15.0	8.5
100%		15.0	11.7	5.9



Vin=220VDC

Load	Ta	Lifetime (years)		
		30°C	40°C	50°C
20%		15.0	15.0	15.0
40%		15.0	15.0	15.0
60%		15.0	15.0	11.6
80%		15.0	15.0	8.7
100%		15.0	13.4	6.7

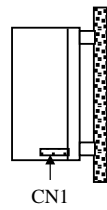


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4. 電解コンデンサ推定寿命計算値 Electrolytic Capacitor Lifetime

MODEL : CUS75EB

取付方向 E
Mounting E

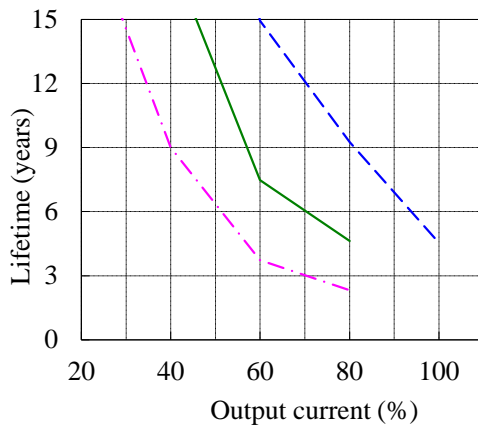


Conditions Ta 30°C : - - - - -
40°C : ————
50°C : ······

5V

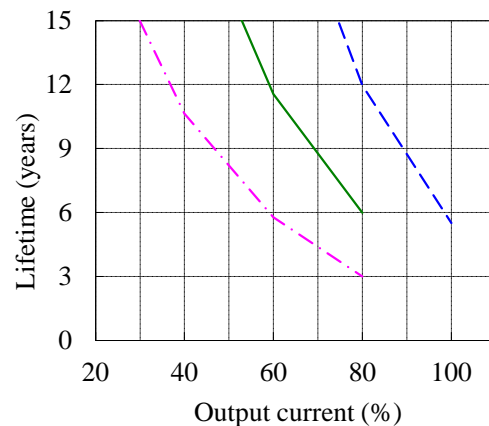
Vin=110VDC

Load	Ta		
	30°C	40°C	50°C
20%	15.0	15.0	15.0
40%	15.0	15.0	9.0
60%	14.9	7.5	3.7
80%	9.3	4.6	2.3
100%	4.5	-	-



Vin=220VDC

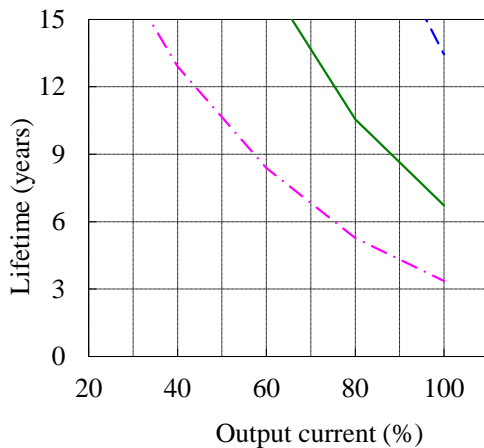
Load	Ta		
	30°C	40°C	50°C
20%	15.0	15.0	15.0
40%	15.0	15.0	10.6
60%	15.0	11.6	5.8
80%	12.0	6.0	3.0
100%	5.5	-	-



24V

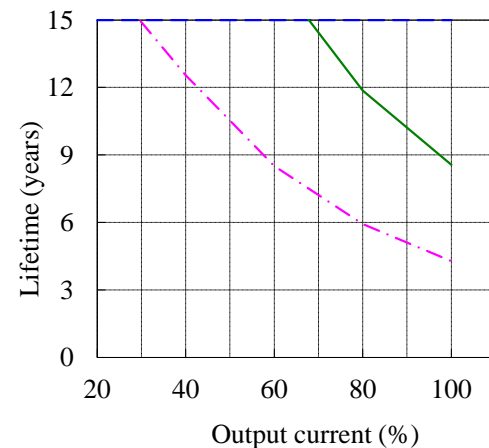
Vin=110VDC

Load	Ta		
	30°C	40°C	50°C
20%	15.0	15.0	15.0
40%	15.0	15.0	12.9
60%	15.0	15.0	8.4
80%	15.0	10.5	5.3
100%	13.4	6.7	3.4



Vin=220VDC

Load	Ta		
	30°C	40°C	50°C
20%	15.0	15.0	15.0
40%	15.0	15.0	12.5
60%	15.0	15.0	8.5
80%	15.0	11.9	5.9
100%	15.0	8.6	4.3



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5. アブノーマル試験 Abnormal Test

MODEL : CUS75EB-5

(1) 試験条件 Test Conditions

Input : 265VAC Output : 5V, 12A Ta : 25°C

(2) 試験結果 Test Results

(Da : Damaged)

No.	Test position		Test mode		Test result											記事 Note	
	部品No. Location No.	試験端子 Test point	ショート Short	オープン Open	a 発火 Fire	b 発煙 Smoke	c 破裂 Burst	d 異臭 Smell	e 赤熱 Red hot	f 破損 Damaged	g ヒューズ断 Fuse blown	h OVP	I OCP	j 出力断 No output	k 変化なし No change		l その他 Others
1	Q1	D-S	○							○	○			○			Da: F1A, Z101
2		D-G	○							○	○			○			Da: F1A, Q1, Z101, A101
3		G-S	○											○			
4		D		○										○			
5		S		○										○			
6		G		○							○	○		○			
7	C5		○							○	○		○				Da: F1A
8			○										○				
9	C51A		○									○					
10			○													○	Output ripple increase
11	D1	AC-AC	○							○	○			○			Da: F1A
12		DC-DC	○							○	○			○			Da: F1A
13		AC-DC	○							○	○			○			Da: F1A
14		AC		○										○			
15		DC		○										○			
16	D51A	A-K	○											○			
17		A		○						○				○			Da: D51B
18		K		○						○				○			Da: D51B
19	D101		○													○	Output hiccup
20				○										○			
21	T1	1-6	○											○			
22		4-5	○											○			
23		8,9-11,12	○											○			
24		1		○										○			
25		4		○												○	Output hiccup
26		8,9		○										○			
27	L51		○													○	Output ripple increase
28				○						○	○			○			Da: F1A, Q1, Z101, A101

6. 振動試験 Vibration Test

MODEL : CUS75EB-5

(1) 振動試験種類 Vibration Test Class

掃引振動数耐久試験 Frequency variable endurance test

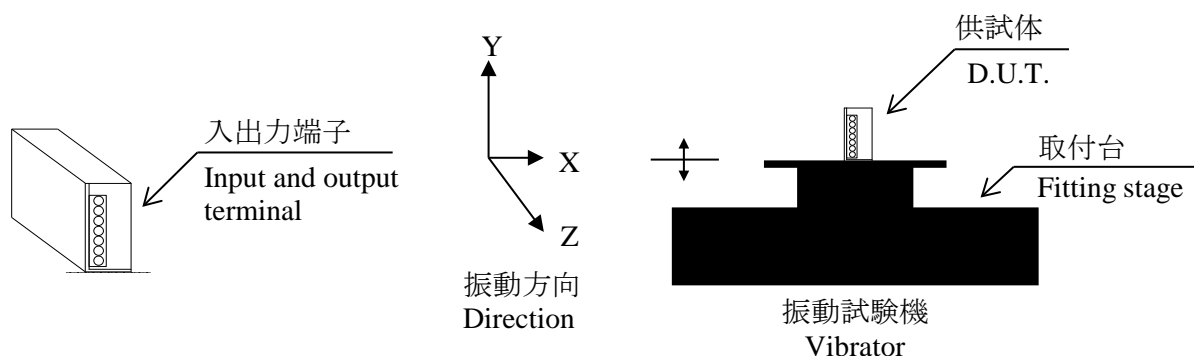
(2) 使用振動試験装置 Equipment Used

Unholtz Dickie Corp. SAI30-R16C

(3) 試験条件 Test Conditions

・周波数範囲 Sweep frequency	: 10~500Hz	・振動方向 Direction	: X, Y, Z
・掃引時間 Sweep time	: 1.0分間 1.0min	・試験時間 Sweep count	: 各方向共 1時間 1 hour each
・加速度 Acceleration	: 一定 19.6m/s ² (2G) Constant		

(4) 試験方法 Test Method



(5) 判定条件 Acceptable Conditions

1. 破壊しない事
Not to be broken.
2. 試験後の出力に異常がない事
No abnormal output after test.

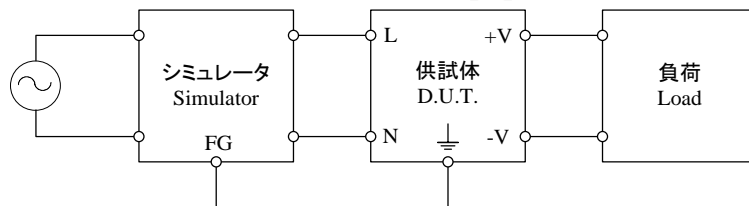
(6) 試験結果 Test Results

合格 OK

7. ノイズシミュレート試験 Noise Simulate Test

MODEL : CUS75EB-5

(1) 試験回路及び測定器 Test Circuit and Equipment



シミュレータ : INS-4320(A) (ノイズ研究所)
 Simulator (Noise Laboratory Co.,LTD)

(2) 試験条件 Test Conditions

・入力電圧 Input voltage	: 100/230VAC, 110/220VDC	・ノイズ電圧 Noise level	: 0~2kV
・出力電圧 Output Voltage	: 定格 Rated	・位相 Phase	: 0~360 deg
・出力電流 Output current	: 0%, Full Load	・極性 Polarity	: +, -
・周囲温度 Ambient temperature	: 25°C	・印加モード Mode	: コモン、ノーマル Common, Normal
・パルス幅 Pulse width	: 50~1000ns	・トリガ選択 Trigger select	: Line

(3) 判定条件 Acceptable Conditions

1. 試験中、5%を超える出力電圧の変動のない事
The regulation of output voltage must not exceed 5% of initial value during test.
2. 試験後の出力電圧は初期値から変動していない事
The output voltage must be within the regulation of specification after the test.
3. 発煙・発火のない事
Smoke and fire are not allowed.

(4) 試験結果 Test Results

合格 OK

8. 熱衝撃試験 Thermal Shock Test

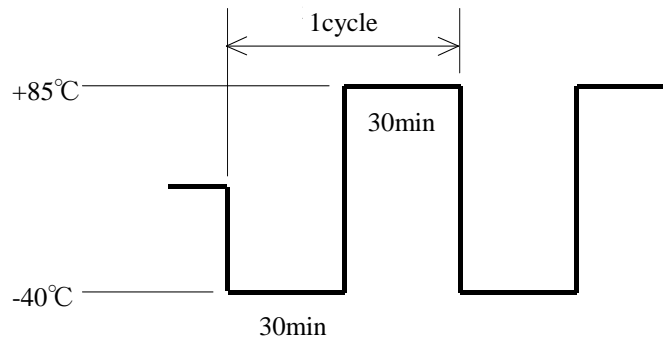
MODEL : CUS75EB-5

(1) 使用計測器 Equipment Used

TSA-101S-W : ESPEC

(2) 試験条件 Test Conditions

- ・電源周囲温度 : -40°C ⇔ 85°C
Ambient Temperature
- ・試験時間 : 図参照
Test Time Refer to Dwg.
- ・試験サイクル : 200 サイクル
Test Cycle 200 Cycles
- ・非動作
Not Operating



(3) 試験方法 Test Method

初期測定の後、供試品を試験槽に入れ、上記サイクルで試験を行う。200サイクル後に、供試品を常温常湿下に1時間放置し、出力に異常がない事を確認する。

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. 200 cycles later, leave it for 1 hour at the room temperature, then check if there is no abnormal output.

(4) 判定条件 Acceptable Conditions

試験後の出力に異常がない事
No abnormal output after test.

(5) 試験結果 Test Results

合格 OK