ZWS15C

RELIABILITY DATA

信頼性データ

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* 試験結果は、代表データでありますが、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.

1. MTBF計算値 Calculated Values of MTBF

MODEL : ZWS15C-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λG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 λG is given to each part and MTBF is calculated by the count of each part.

<算出式>

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

λequip : 全機器故障率 (故障数 / 10^6時間)
Total Equipment Failure Rate (Failure / 10^6Hours)

λG : i 番目の同属部品に対する故障率 (故障数 / 10^6時間)
Generic Failure Rate for The ith Generic Part (Failure / 10^6Hours)

ni : 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

πQ : i 番目の同属部品に対する品質ファクタ (πQ=1)
Generic Quality Factor for The ith Generic Part (πQ=1)

(2) MTBF値 MTBF Values

GF : 地上、固定 (Ground, Fixed)

RCR-9102B

MTBF ≒ 379,236 時間 (Hours)

2. 部品ディレーティング Components Derating

MODEL : ZWS15C-5, ZWS15C-24

(1) 算出方法 Calculating Method

(a) 測定方法 Measuring method

取付方法 : 標準取付 : A Mounting method Standard mounting : A	周囲温度 : 50°C Ambient temperature
入力電圧 : 100, 200VAC Input voltage	出力電圧、電流 : 5V, Full load Output voltage & current

取付方法 : 標準取付 : A Mounting method Standard mounting : A	周囲温度 : 50°C Ambient temperature
入力電圧 : 100, 200VAC Input voltage	出力電圧、電流 : 24V, Full load Output voltage & current

(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

$$\theta j-c = \frac{Tj(max) - Tc}{Pj(max)} \qquad \theta j-l = \frac{Tj(max) - Tl}{Pj(max)}$$

Tc : ディ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

Tl : ディ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

Pj(max) : 最大接合点(チャネル)損失
(Pch(max)) Maximum Junction (channel) Dissipation

Tj(max) : 最大接合点(チャネル)温度
ch(max)) Maximum Junction (channel) Temperature

θj-c : 接合点(チャネル)からケースまでの熱抵抗
(θch-c) Thermal Impedance between Junction (channel) and Case

θj-l : 接合点(チャネル)からリードまでの熱抵抗
(θch-l) Thermal Impedance between Junction (channel) and Lead

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

部品番号 Location No.	Vin = 100VAC Vout = 5VDC Load = 100% Ta = 50°C Convection cooling		
D101	Tj (max) = 150 °C	θj-l = 25 °C/W	
	Pd = 0.48 W	ΔTl = 41 °C	Tl = 91 °C
D1UBA80-7062	Tj = Tl + ((θj-l) × Pd) = 102.9 °C		
SHINDENGEN	D.F. = 68.6 %		
D102	Tj (max) = 175 °C	θj-c = 16.6 °C/W	
	Pd = 0.17 W	ΔTc = 61 °C	Tc = 111 °C
S1JLW	Tj = Tc + ((θj-c) × Pd) = 113.9 °C		
TAIWAN SEMI	D.F. = 65.1 %		
D103	Tj (max) = 175 °C	θj-c = 16.6 °C/W	
	Pd = 0.18 W	ΔTc = 43 °C	Tc = 93 °C
S1JLW	Tj = Tc + ((θj-c) × Pd) = 96.1 °C		
TAIWAN SEMI	D.F. = 54.9 %		
D201	Tj (max) = 175 °C	θj-l = 7.0 °C/W	
	Pd = 1.01 W	ΔTl = 71 °C	Tl = 121 °C
TSUP15M60SH	Tj = Tl + ((θj-l) × Pd) = 130.6 °C		
TAIWAN SEMI	D.F. = 74.6 %		
A1	Tj (max) = 150 °C	θj-c = 10.06 °C/W	
	Pd = 0.45 W	ΔTc = 56 °C	Tc = 106 °C
ICE5AR0680BZS	Tj = Tc + ((θj-c) × Pd) = 110.6 °C		
INFINEON	D.F. = 73.7 %		
PC1	Tj (max) = 110 °C	θj-c = 245.68 °C/W	
	Pd = 1 mW	ΔTc = 28 °C	Tc = 78 °C
EL817(B)-VG	Tj = Tc + ((θj-c) × Pd) = 78.3 °C		
EVERLIGHT	D.F. = 71.2 %		

部品番号 Location No.	Vin = 200VAC Vout = 5VDC Load = 100% Ta = 50°C Convection cooling		
D101	Tj (max) = 150 °C	θj-l = 25 °C/W	
	Pd = 0.28 W	ΔTl = 32 °C	Tl = 82 °C
D1UBA80-7062	Tj = Tl + ((θj-l) × Pd) = 88.9 °C		
SHINDENGEN	D.F. = 59.3 %		
D102	Tj (max) = 175 °C	θj-c = 16.6 °C/W	
	Pd = 0.18 W	ΔTc = 58 °C	Tc = 108 °C
S1JLW	Tj = Tc + ((θj-c) × Pd) = 111.1 °C		
TAIWAN SEMI	D.F. = 63.5 %		
D103	Tj (max) = 175 °C	θj-c = 16.6 °C/W	
	Pd = 0.17 W	ΔTc = 39 °C	Tc = 89 °C
S1JLW	Tj = Tc + ((θj-c) × Pd) = 91.9 °C		
TAIWAN SEMI	D.F. = 52.5 %		
D201	Tj (max) = 175 °C	θj-l = 7.0 °C/W	
	Pd = 1.01 W	ΔTl = 72 °C	Tl = 122 °C
TSUP15M60SH	Tj = Tl + ((θj-l) × Pd) = 131.6 °C		
TAIWAN SEMI	D.F. = 75.2 %		
A1	Tj (max) = 150 °C	θj-c = 10.06 °C/W	
	Pd = 0.75 W	ΔTc = 57 °C	Tc = 107 °C
ICE5AR0680BZS	Tj = Tc + ((θj-c) × Pd) = 112.0 °C		
INFINEON	D.F. = 74.7 %		
PC1	Tj (max) = 110 °C	θj-c = 245.68 °C/W	
	Pd = 1 mW	ΔTc = 27 °C	Tc = 77 °C
EL817(B)-VG	Tj = Tc + ((θj-c) × Pd) = 77.3 °C		
EVERLIGHT	D.F. = 70.3 %		

部品番号 Location No.	Vin = 100VAC Vout = 5VDC Load = 100% Ta = 70°C Force air cooling		
D101	Tj (max) = 150 °C	θj-l = 25 °C/W	
	Pd = 0.48 W	ΔTl = 16 °C	Tl = 86 °C
D1UBA80-7062	Tj = Tl + ((θj-l) × Pd) = 97.9 °C		
SHINDENGEN	D.F. = 65.3 %		
D102	Tj (max) = 175 °C	θj-c = 16.6 °C/W	
	Pd = 0.17 W	ΔTc = 23 °C	Tc = 93 °C
S1JLW	Tj = Tc + ((θj-c) × Pd) = 95.9 °C		
TAIWAN SEMI	D.F. = 54.8%		
D103	Tj (max) = 175 °C	θj-c = 16.6 °C/W	
	Pd = 0.18 W	ΔTc = 15 °C	Tc = 85 °C
S1JLW	Tj = Tc + ((θj-c) × Pd) = 88.1 °C		
TAIWAN SEMI	D.F. = 50.3 %		
D201	Tj (max) = 175 °C	θj-l = 7 °C/W	
	Pd = 1.01 W	ΔTl = 46 °C	Tl = 116 °C
TSUP15M60SH	Tj = Tl + ((θj-l) × Pd) = 123.1 °C		
TAIWAN SEMI	D.F. = 70.4 %		
A1	Tj (max) = 150 °C	θj-c = 10.06 °C/W	
	Pd = 0.45 W	ΔTc = 22 °C	Tc = 92 °C
ICE5AR0680BZS	Tj = Tc + ((θj-c) × Pd) = 96.6 °C		
INFINEON	D.F. = 64.4 %		
PC1	Tj (max) = 110 °C	θj-c = 245.68 °C/W	
	Pd = 1 mW	ΔTc = 5 °C	Tc = 75 °C
EL817(B)-VG	Tj = Tc + ((θj-c) × Pd) = 75.3 °C		
EVERLIGHT	D.F. = 68.5 %		

部品番号 Location No.	Vin = 200VAC Vout = 5VDC Load = 100% Ta = 70°C Force air cooling		
D101	Tj (max) = 150 °C	θj-l = 25 °C/W	
	Pd = 0.28 W	ΔTl = 11 °C	Tl = 81 °C
D1UBA80-7062	Tj = Tl + ((θj-l) × Pd) = 87.9 °C		
SHINDENGEN	D.F. = 58.6 %		
D102	Tj (max) = 175 °C	θj-c = 16.6 °C/W	
	Pd = 0.18 W	ΔTc = 22 °C	Tc = 92 °C
S1JLW	Tj = Tc + ((θj-c) × Pd) = 95.1 °C		
TAIWAN SEMI	D.F. = 54.3 %		
D103	Tj (max) = 175 °C	θj-c = 16.6 °C/W	
	Pd = 73 mW	ΔTc = 13 °C	Tc = 83 °C
S1JLW	Tj = Tc + ((θj-c) × Pd) = 84.3 °C		
TAIWAN SEMI	D.F. = 48.1 %		
D201	Tj (max) = 175 °C	θj-l = 7 °C/W	
	Pd = 1.01 W	ΔTl = 46 °C	Tl = 116 °C
TSUP15M60SH	Tj = Tl + ((θj-l) × Pd) = 123.1 °C		
TAIWAN SEMI	D.F. = 70.4 %		
A1	Tj (max) = 150 °C	θj-c = 10.06 °C/W	
	Pd = 0.75 W	ΔTc = 25 °C	Tc = 95 °C
ICE5AR0680BZS	Tj = Tc + ((θj-c) × Pd) = 102.6 °C		
INFINEON	D.F. = 68.4 %		
PC1	Tj (max) = 110 °C	θj-c = 245.68 °C/W	
	Pd = 1 mW	ΔTc = 5 °C	Tc = 75 °C
EL817(B)-VG	Tj = Tc + ((θj-c) × Pd) = 75.3 °C		
EVERLIGHT	D.F. = 68.5 %		

部品番号 Location No.	Vin = 100VAC Vout = 24VDC Load = 100% Ta = 50°C Convection cooling		
D101	Tj (max) = 150 °C	θj-l = 25 °C/W	
	Pd = 0.50 W	ΔTl = 38 °C	Tl = 88 °C
D1UBA80-7062	Tj = Tl + ((θj-l) × Pd) = 100.5 °C		
SHINDENGEN	D.F. = 67.0 %		
D102	Tj (max) = 175 °C	θj-c = 16.6 °C/W	
	Pd = 41 mW	ΔTc = 50 °C	Tc = 100 °C
S1JLW	Tj = Tc + ((θj-c) × Pd) = 100.7 °C		
TAIWAN SEMI	D.F. = 57.5 %		
D103	Tj (max) = 175 °C	θj-c = 16.6 °C/W	
	Pd = 34 mW	ΔTc = 37 °C	Tc = 87 °C
S1JLW	Tj = Tc + ((θj-c) × Pd) = 87.8 °C		
TAIWAN SEMI	D.F. = 50.2 %		
D201	Tj (max) = 175 °C	θj-l = 9.5 °C/W	
	Pd = 0.42 W	ΔTl = 43 °C	Tl = 93 °C
TPMR6G	Tj = Tl + ((θj-l) × Pd) = 97.0 °C		
TAIWAN SEMI	D.F. = 55.5 %		
A1	Tj (max) = 150 °C	θj-c = 10.06 °C/W	
	Pd = 0.46 W	ΔTc = 55 °C	Tc = 105 °C
ICE5AR0680BZS	Tj = Tc + ((θj-c) × Pd) = 109.6 °C		
INFINEON	D.F. = 73.1 %		
PC1	Tj (max) = 110 °C	θj-c = 245.68 °C/W	
	Pd = 1 mW	ΔTc = 24 °C	Tc = 74 °C
EL817(B)-VG	Tj = Tc + ((θj-c) × Pd) = 74.3 °C		
EVERLIGHT	D.F. = 67.5 %		

部品番号 Location No.	Vin = 200VAC Vout = 24VDC Load = 100% Ta = 50°C Convection cooling		
D101	Tj (max) = 150 °C	θj-l = 25 °C/W	
	Pd = 0.33 W	ΔTl = 32 °C	Tl = 82 °C
D1UBA80-7062	Tj = Tl + ((θj-l) × Pd) = 90.3 °C		
SHINDENGEN	D.F. = 60.2 %		
D102	Tj (max) = 175 °C	θj-c = 16.6 °C/W	
	Pd = 62 mW	ΔTc = 51 °C	Tc = 101 °C
S1JLW	Tj = Tc + ((θj-c) × Pd) = 102.1 °C		
TAIWAN SEMI	D.F. = 58.3 %		
D103	Tj (max) = 175 °C	θj-c = 16.6 °C/W	
	Pd = 37 mW	ΔTc = 35 °C	Tc = 85 °C
S1JLW	Tj = Tc + ((θj-c) × Pd) = 85.9 °C		
TAIWAN SEMI	D.F. = 49.1 %		
D201	Tj (max) = 175 °C	θj-l = 9.5 °C/W	
	Pd = 0.53 W	ΔTl = 48 °C	Tl = 98 °C
TPMR6G	Tj = Tl + ((θj-l) × Pd) = 103.1 °C		
TAIWAN SEMI	D.F. = 58.9 %		
A1	Tj (max) = 150 °C	θj-c = 10.06 °C/W	
	Pd = 0.57 W	ΔTc = 58 °C	Tc = 108 °C
ICE5AR0680BZS	Tj = Tc + ((θj-c) × Pd) = 115.1 °C		
INFINEON	D.F. = 76.7 %		
PC1	Tj (max) = 110 °C	θj-c = 245.68 °C/W	
	Pd = 1 mW	ΔTc = 24 °C	Tc = 74 °C
EL817(B)-VG	Tj = Tc + ((θj-c) × Pd) = 74.3 °C		
EVERLIGHT	D.F. = 67.5 %		

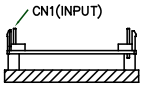
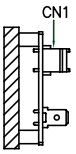
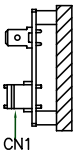
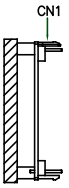
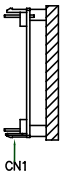
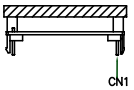
部品番号 Location No.	Vin = 100VAC Vout = 24VDC Load = 100% Ta = 70°C Force air cooling		
D101	Tj (max) = 150 °C	θj-l = 25 °C/W	
	Pd = 0.50 W	ΔTl = 17 °C	Tl = 87°C
D1UBA80-7062	Tj = Tl + ((θj-l) × Pd) = 99.5 °C		
SHINDENGEN	D.F. = 66.3 %		
D102	Tj (max) = 175 °C	θj-c = 16.6 °C/W	
	Pd = 41 mW	ΔTc = 20 °C	Tc = 90 °C
S1JLW	Tj = Tc + ((θj-c) × Pd) = 90.7 °C		
TAIWAN SEMI	D.F. = 51.8 %		
D103	Tj (max) = 175 °C	θj-c = 16.6 °C/W	
	Pj = 34 mW	ΔTc = 12 °C	Tc = 82 °C
S1JLW	Tj = Tc + ((θj-c) × Pd) = 82.6 °C		
TAIWAN SEMI	D.F. = 47.2 %		
D201	Tj (max) = 175 °C	θj-l = 9.5 °C/W	
	Pd = 0.42 W	ΔTl = 23 °C	Tl = 93 °C
TPMR6G	Tj = Tl + ((θj-l) × Pd) = 96.8 °C		
TAIWAN SEMI	D.F. = 55.3 %		
A1	Tj (max) = 150 °C	θj-c = 6.55 °C/W	
	Pd = 0.46 W	ΔTc = 24 °C	Tc = 94 °C
ICE5AR0680BZS	Tj = Tc + ((θj-c) × Pd) = 97.0 °C		
INFINEON	D.F. = 64.7 %		
PC1	Tj (max) = 110 °C	θj-c = 245.68 °C/W	
	Pd = 1 mW	ΔTc = 4 °C	Tc = 74 °C
EL817(B)-VG	Tj = Tc + ((θj-c) × Pd) = 74.3 °C		
EVERLIGHT	D.F. = 67.5 %		

部品番号 Location No.	Vin = 200VAC Vout = 24VDC Load = 100% Ta = 70°C Force air cooling		
D101	Tj (max) = 150 °C	θj-l = 25 °C/W	
	Pd = 0.33 W	ΔTl = 13 °C	Tl = 83 °C
D1UBA80-7062	Tj = Tl + ((θj-l) × Pd) = 91.3 °C		
SHINDENGEN	D.F. = 60.9%		
D102	Tj (max) = 175 °C	θj-c = 16.6 °C/W	
	Pd = 62 mW	ΔTc = 21 °C	Tc = 91 °C
S1JLW	Tj = Tc + ((θj-c) × Pd) = 92.1 °C		
TAIWAN SEMI	D.F. = 52.6 %		
D103	Tj (max) = 175 °C	θj-c = 16.6 °C/W	
	Pd = 37 mW	ΔTc = 11 °C	Tc = 81 °C
S1JLW	Tj = Tc + ((θj-c) × Pd) = 81.7 °C		
TAIWAN SEMI	D.F. = 46.7 %		
D201	Tj (max) = 175 °C	θj-l = 9.5 °C/W	
	Pd = 0.53 W	ΔTl = 27 °C	Tl = 97 °C
TPMR6G	Tj = Tl + ((θj-l) × Pd) = 102.1 °C		
TAIWAN SEMI	D.F. = 58.3 %		
A1	Tj (max) = 150 °C	θj-c = 10.06 °C/W	
	Pd = 0.57 W	ΔTc = 27 °C	Tc = 97 °C
ICE5AR0680BZS	Tj = Tc + ((θj-c) × Pd) = 102.8 °C		
INFINEON	D.F. = 68.5 %		
PC1	Tj (max) = 110 °C	θj-c = 245.68 °C/W	
	Pd = 1 mW	ΔTc = 4 °C	Tc = 74 °C
EL817(B)-VG	Tj = Tc + ((θj-c) × Pd) = 74.3 °C		
EVERLIGHT	D.F. = 67.5 %		

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

MODEL : ZWS15C-5

(1) 測定条件 Measuring Conditions

	Mounting A	Mounting B	Mounting C	Mounting D	Mounting E	Mounting F
取付方法 Mounting Method (標準取付 : A) (Standard Mounting : A)						
入力電圧 Vin Input Voltage	100VAC / 200VAC					
出力電圧 Vout Output Voltage	5V					
出力電流 Iout Output Current	3A					

(2) 測定結果 Measuring Results

		ΔT Temperature Rise (°C)					
出力ディレーティング Output Derating		100VAC					
		Ta=50°C Convection cooling					
部品番号	部品名	取付方向					
Location No.	Part name	Mounting A	Mounting B	Mounting C	Mounting D	Mounting E	Mounting F
A1	IPD	56	56	48	53	49	56
A201	CHIP IC	25	28	19	20	28	29
C3	E.CAP.	33	33	31	33	30	34
C4	E.CAP.	31	37	27	29	31	32
C54	E.CAP.	30	28	26	25	33	31
D101	BRIDGE DIODE	41	33	36	43	32	43
D102	DIODE	61	54	53	57	53	63
D103	DIODE	43	42	36	41	38	45
D201	S.B.D	71	65	69	72	73	80
T1	TRANSFORMER	55	47	50	48	52	54
L1	BALUN COIL	47	44	42	49	40	47
L51	CHOKE COIL	46	42	42	39	49	47
PC1	PHOTO COUPLER	28	36	22	25	29	33

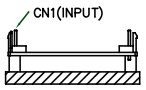
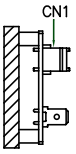
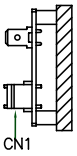
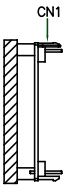
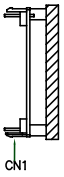
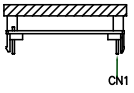
		ΔT Temperature Rise (°C)					
出力ディレーティング Output Derating		200VAC					
		Ta=50°C Convection cooling					
部品番号	部品名	取付方向					
Location No.	Part name	Mounting A	Mounting B	Mounting C	Mounting D	Mounting E	Mounting F
A1	IPD	57	57	49	55	48	57
A201	CHIP IC	24	27	19	20	26	28
C3	E.CAP.	35	31	27	33	25	33
C4	E.CAP.	32	35	26	30	28	34
C54	E.CAP.	30	28	26	26	32	31
D101	BRIDGE DIODE	32	26	27	36	24	34
D102	DIODE	58	51	51	55	49	60
D103	DIODE	39	38	32	39	32	41
D201	S.B.D	72	65	69	72	72	80
T1	TRANSFORMER	55	47	51	49	51	54
L1	BALUN COIL	28	25	24	33	22	29
L51	CHOKE COIL	46	42	42	39	48	47
PC1	PHOTO COUPLER	27	35	21	25	27	32

出力ディレーティング Output Derating		ΔT Temperature Rise (°C)					
		100VAC					
		Ta=70°C Force air cooling					
部品番号	部品名	取付方向					
Location No.	Part name	Mounting A	Mounting B	Mounting C	Mounting D	Mounting E	Mounting F
A1	IPD	22	30	31	22	23	22
A201	CHIP IC	5	5	6	5	5	5
C3	E.CAP.	9	17	17	9	9	8
C4	E.CAP.	7	14	16	7	7	7
C54	E.CAP.	9	4	5	9	8	8
D101	BRIDGE DIODE	16	14	18	15	15	15
D102	DIODE	23	24	25	23	23	23
D103	DIODE	15	20	21	15	14	15
D201	S.B.D	46	44	43	47	47	47
T1	TRANSFORMER	25	17	17	25	25	24
L1	BALUN COIL	27	25	19	28	27	26
L51	CHOKE COIL	21	12	12	21	21	21
PC1	PHOTO COUPLER	5	9	11	5	5	5

出力ディレーティング Output Derating		ΔT Temperature Rise (°C)					
		200VAC					
		Ta=70°C Force air cooling					
部品番号	部品名	取付方向					
Location No.	Part name	Mounting A	Mounting B	Mounting C	Mounting D	Mounting E	Mounting F
A1	IPD	25	33	33	25	26	24
A201	CHIP IC	5	6	6	5	5	5
C3	E.CAP.	8	16	15	8	8	7
C4	E.CAP.	7	13	15	7	7	7
C54	E.CAP.	9	4	5	9	8	8
D101	BRIDGE DIODE	11	10	13	11	11	11
D102	DIODE	22	23	25	22	23	22
D103	DIODE	13	18	19	14	13	13
D201	S.B.D	46	44	43	47	47	47
T1	TRANSFORMER	25	17	17	25	25	25
L1	BALUN COIL	13	13	9	13	13	12
L51	CHOKE COIL	21	12	12	21	21	21
PC1	PHOTO COUPLER	5	9	11	5	5	5

MODEL : ZWS15C-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	Mounting F
						
入力電圧 Vin Input Voltage	100VAC / 200VAC					
出力電圧 Vout Output Voltage	24V					
出力電流 Iout Output Current	0.7A / 0.85A					

(2) 測定結果 Measuring Results

出力ディレーティング Output Derating		ΔT Temperature Rise (°C) 100VAC Ta=50°C Convection cooling					
部品番号 Location No.	部品名 Part name	取付方向 Mounting A	Mounting B	Mounting C	Mounting D	Mounting E	Mounting F
A1	IPD	55	54	47	50	50	53
A201	CHIP IC	20	22	15	15	24	23
C3	E.CAP.	34	32	29	34	30	34
C4	E.CAP.	31	33	25	28	29	32
C54	E.CAP.	19	17	15	14	22	18
D101	BRIDGE DIODE	38	32	34	37	32	40
D102	DIODE	50	43	43	44	46	44
D103	DIODE	37	35	30	34	33	38
D201	S.B.D	43	37	42	39	45	47
T1	TRANSFORMER	35	30	32	30	37	36
L1	BALUN COIL	49	46	46	50	43	49
L51	CHOKE COIL	25	22	22	20	29	26
PC1	PHOTO COUPLER	24	29	19	20	27	28

出力ディレーティング Output Derating		ΔT Temperature Rise (°C) 200VAC Ta=50°C Convection cooling					
部品番号 Location No.	部品名 Part name	取付方向 Mounting A	Mounting B	Mounting C	Mounting D	Mounting E	Mounting F
A1	IPD	58	57	49	54	51	56
A201	CHIP IC	21	23	16	16	25	24
C3	E.CAP.	32	30	27	33	27	32
C4	E.CAP.	31	33	25	29	28	32
C54	E.CAP.	21	19	17	16	24	21
D101	BRIDGE DIODE	32	27	28	34	26	34
D102	DIODE	51	44	44	46	46	46
D103	DIODE	35	34	29	34	30	37
D201	S.B.D	48	42	48	45	49	52
T1	TRANSFORMER	40	35	36	35	40	40
L1	BALUN COIL	31	28	29	36	26	32
L51	CHOKE COIL	28	25	24	23	32	29
PC1	PHOTO COUPLER	24	31	19	21	26	28

出力ディレーティング Output Derating		ΔT Temperature Rise °C)					
		100VAC					
		Ta=70°C Force air cooling					
部品番号	部品名	取付方向					
Location No.	Part name	Mounting A	Mounting B	Mounting C	Mounting D	Mounting E	Mounting F
A1	IPD	24	26	26	24	24	23
A201	CHIP IC	5	5	6	5	5	5
C3	E.CAP.	12	12	13	12	12	11
C4	E.CAP.	6	8	9	7	6	6
C54	E.CAP.	4	3	4	4	4	4
D101	BRIDGE DIODE	17	16	18	18	18	16
D102	DIODE	20	18	20	21	21	20
D103	DIODE	12	12	14	12	12	10
D201	S.B.D	23	21	22	23	24	24
T1	TRANSFORMER	13	11	12	13	14	13
L1	BALUN COIL	29	29	30	30	29	30
L51	CHOKE COIL	7	5	6	7	8	8
PC1	PHOTO COUPLER	4	6	6	4	4	4

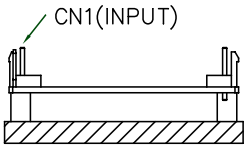
出力ディレーティング Output Derating		ΔT Temperature Rise °C)					
		200VAC					
		Ta=70°C Force air cooling					
部品番号	部品名	取付方向					
Location No.	Part name	Mounting A	Mounting B	Mounting C	Mounting D	Mounting E	Mounting F
A1	IPD	27	30	30	27	27	26
A201	CHIP IC	5	5	6	5	5	5
C3	E.CAP.	11	11	12	11	11	10
C4	E.CAP.	7	8	9	7	6	6
C54	E.CAP.	5	4	4	5	5	5
D101	BRIDGE DIODE	13	13	15	14	14	12
D102	DIODE	21	19	21	22	21	21
D103	DIODE	11	12	14	11	11	10
D201	S.B.D	27	25	26	27	28	28
T1	TRANSFORMER	15	14	15	15	17	16
L1	BALUN COIL	17	17	18	17	16	17
L51	CHOKE COIL	8	7	7	8	9	10
PC1	PHOTO COUPLER	4	6	6	5	4	4

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

MODEL ： ZWS15C

空冷条件：自然空冷　Cooling condition：Convection cooling

取付方向 A
Mounting A

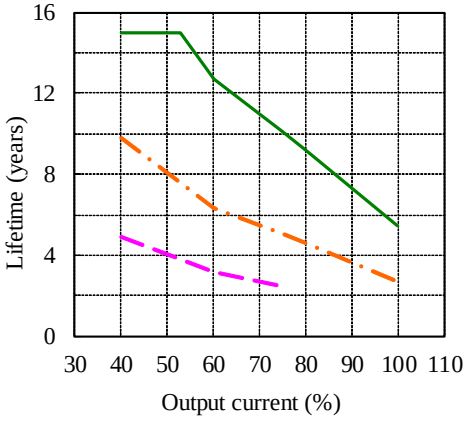


Conditions　Ta　40°C :　50°C :　60°C :

5V

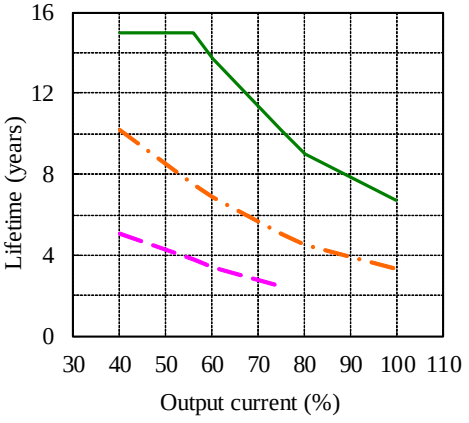
Vin = 100VAC

Load \ Ta	Lifetime (years) 40℃	50℃	60℃
40%	15.0	9.8	4.9
60%	12.7	6.3	3.2
80%	9.2	4.6	-
100%	5.4	2.7	-



Vin = 200VAC

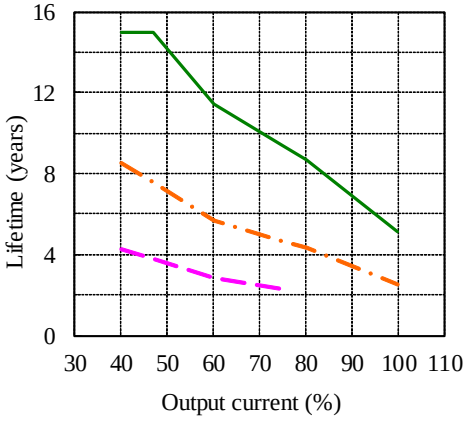
Load \ Ta	Lifetime (years) 40℃	50℃	60℃
40%	15.0	10.2	5.1
60%	13.7	6.9	3.4
80%	9.0	4.5	-
100%	6.7	3.3	-



24V

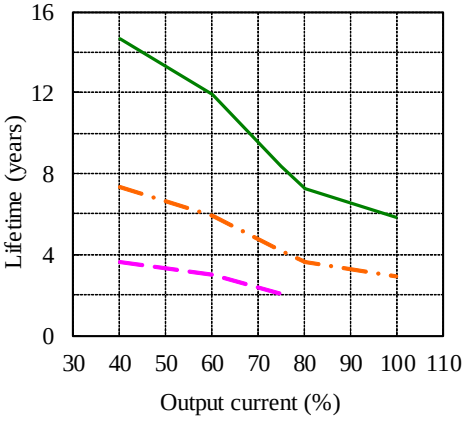
Vin = 100VAC

Load \ Ta	Lifetime (years) 40℃	50℃	60℃
40%	15.0	8.6	4.3
60%	11.4	5.7	2.9
80%	8.7	4.3	-
100%	5.1	2.6	-



Vin = 200VAC

Load \ Ta	Lifetime (years) 40℃	50℃	60℃
40%	14.7	7.3	3.7
60%	11.9	5.9	3.0
80%	7.2	3.6	-
100%	5.9	2.9	-

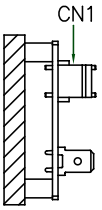


MODEL ： ZWS15C

空冷条件： 自然空冷　Cooling condition：Convection cooling

取付方向 B

Mounting B

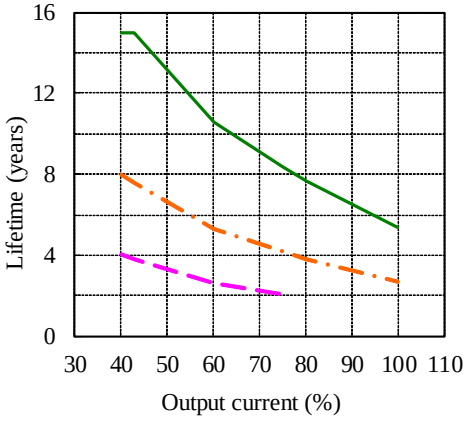


Conditions　Ta　40°C :　50°C :　60°C :

5V

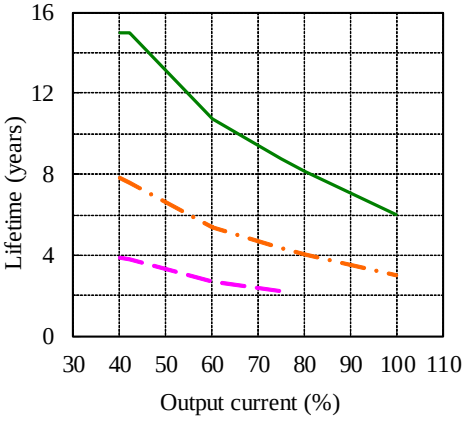
Vin = 100VAC

Load \ Ta	Lifetime (years) 40℃	50℃	60℃
40%	15.0	8.0	4.0
60%	10.6	5.3	2.7
80%	7.7	3.8	-
100%	5.4	2.7	-



Vin = 200VAC

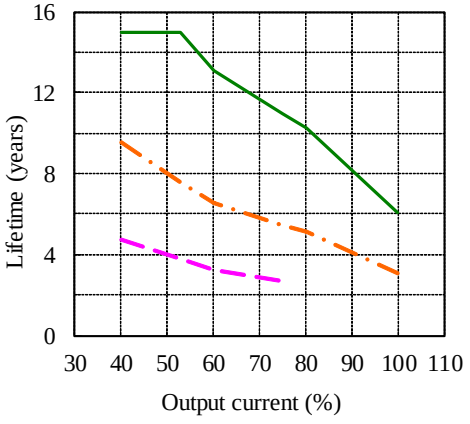
Load \ Ta	Lifetime (years) 40℃	50℃	60℃
40%	15.0	7.8	3.9
60%	10.7	5.4	2.7
80%	8.1	4.1	-
100%	6.0	3.0	-



24V

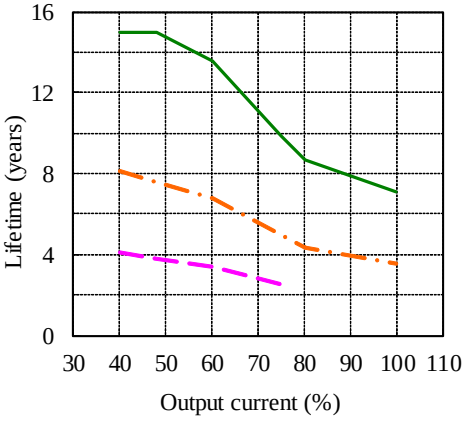
Vin = 100VAC

Load \ Ta	Lifetime (years) 40℃	50℃	60℃
40%	15.0	9.5	4.8
60%	13.1	6.5	3.3
80%	10.2	5.1	-
100%	6.1	3.1	-



Vin = 200VAC

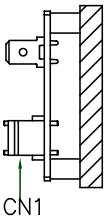
Load \ Ta	Lifetime (years) 40℃	50℃	60℃
40%	15.0	8.1	4.1
60%	13.6	6.8	3.4
80%	8.7	4.3	-
100%	7.1	3.6	-



MODEL ： ZWS15C

空冷条件： 自然空冷　Cooling condition：Convection cooling

取付方向 C
Mounting C

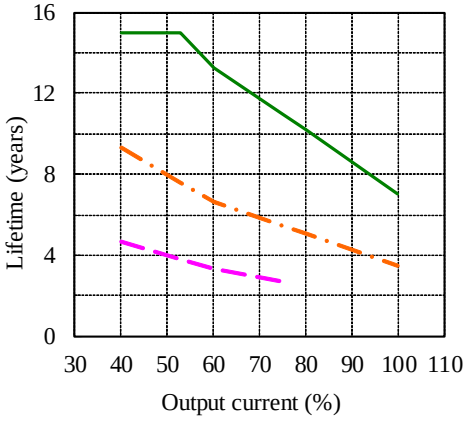


Conditions　Ta　40°C :　50°C :　60°C :

5V

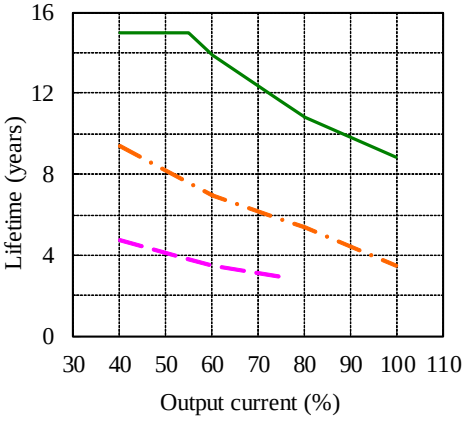
Vin = 100VAC

Load \ Ta	Lifetime (years) 40℃	50℃	60℃
40%	15.0	9.4	4.7
60%	13.3	6.6	3.3
80%	10.2	5.1	-
100%	7.0	3.5	-



Vin = 200VAC

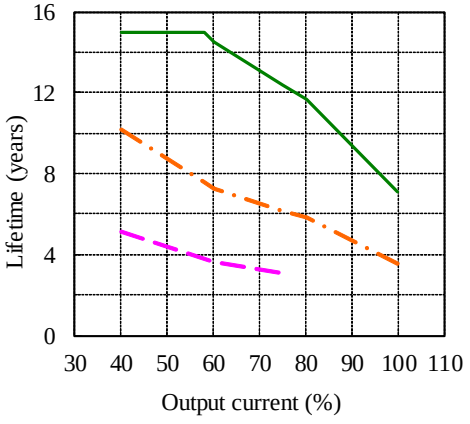
Load \ Ta	Lifetime (years) 40℃	50℃	60℃
40%	15.0	9.4	4.7
60%	13.9	6.9	3.5
80%	10.8	5.4	-
100%	8.9	3.5	-



24V

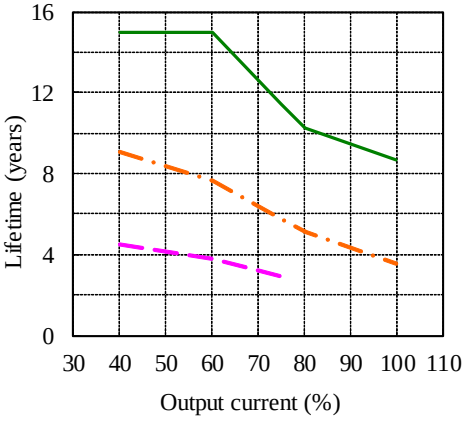
Vin = 100VAC

Load \ Ta	Lifetime (years) 40℃	50℃	60℃
40%	15.0	10.2	5.1
60%	14.5	7.3	3.6
80%	11.6	5.8	-
100%	7.1	3.5	-



Vin = 200VAC

Load \ Ta	Lifetime (years) 40℃	50℃	60℃
40%	15.0	9.0	4.5
60%	15.0	7.6	3.8
80%	10.3	5.1	-
100%	8.7	3.5	-

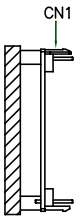


MODEL ： ZWS15C

空冷条件： 自然空冷　Cooling condition：Convection cooling

取付方向 D

Mounting D

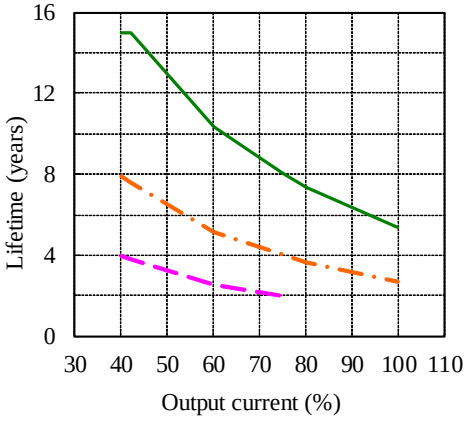


Conditions　Ta　40°C :　50°C :　60°C :

5V

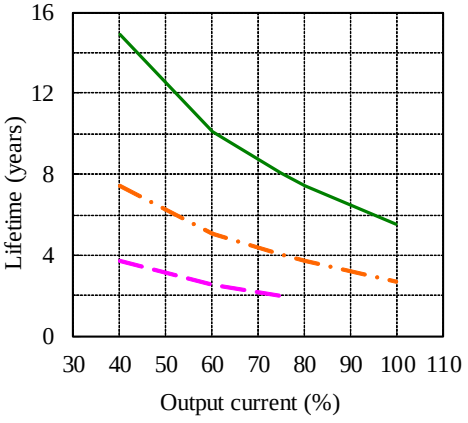
Vin = 100VAC

Load \ Ta	Lifetime (years) 40℃	50℃	60℃
40%	15.0	7.9	3.9
60%	10.3	5.2	2.6
80%	7.3	3.7	-
100%	5.4	2.7	-



Vin = 200VAC

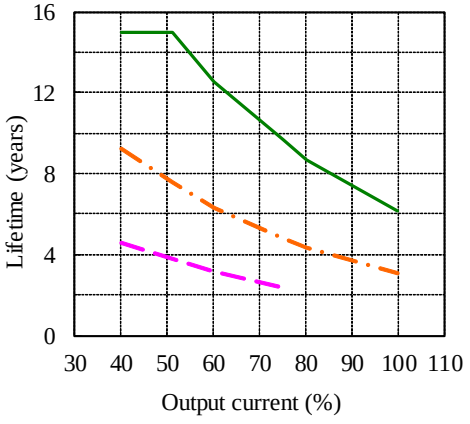
Load \ Ta	Lifetime (years) 40℃	50℃	60℃
40%	14.9	7.4	3.7
60%	10.1	5.1	2.5
80%	7.4	3.7	-
100%	5.5	2.7	-



24V

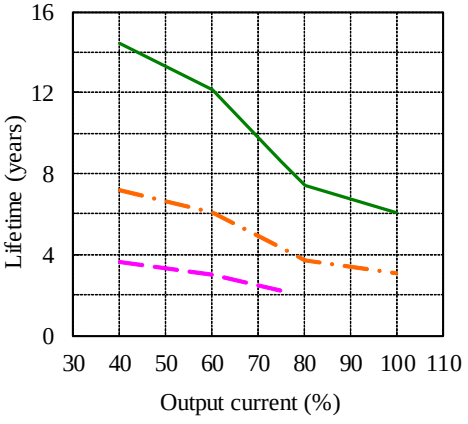
Vin = 100VAC

Load \ Ta	Lifetime (years) 40℃	50℃	60℃
40%	15.0	9.2	4.6
60%	12.6	6.3	3.1
80%	8.7	4.3	-
100%	6.2	3.1	-



Vin = 200VAC

Load \ Ta	Lifetime (years) 40℃	50℃	60℃
40%	14.4	7.2	3.6
60%	12.2	6.1	3.0
80%	7.4	3.7	-
100%	6.1	3.1	-

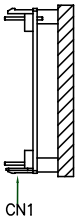


MODEL ： ZWS15C

空冷条件： 自然空冷　Cooling condition：Convection cooling

取付方向 E

Mounting E

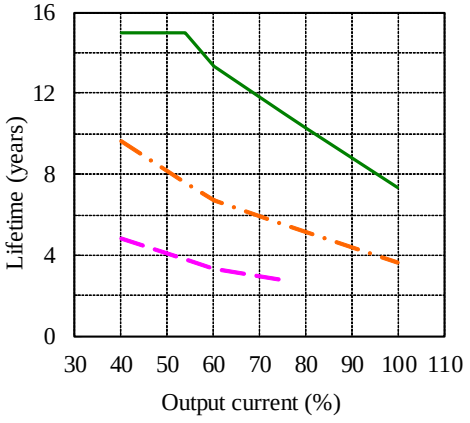


Conditions　Ta　40°C :　50°C :　60°C :

5V

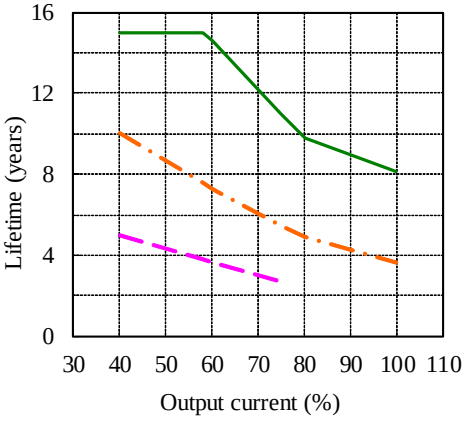
Vin = 100VAC

Load \ Ta	Lifetime (years)		
	40℃	50℃	60℃
40%	15.0	9.7	4.8
60%	13.4	6.7	3.3
80%	10.2	5.1	-
100%	7.4	3.7	-



Vin = 200VAC

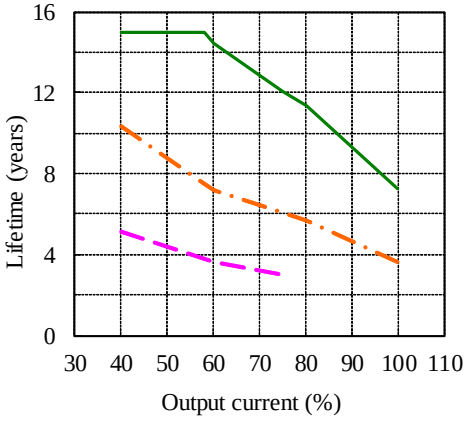
Load \ Ta	Lifetime (years)		
	40℃	50℃	60℃
40%	15.0	10.0	5.0
60%	14.6	7.3	3.6
80%	9.8	4.9	-
100%	8.1	3.7	-



24V

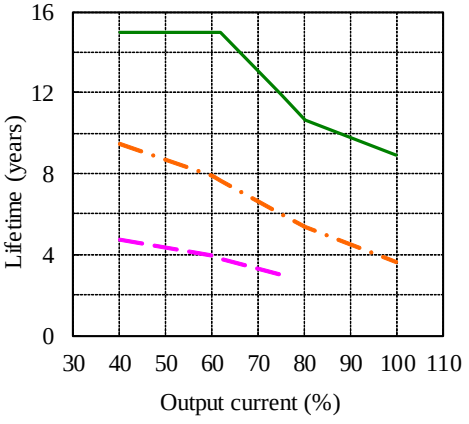
Vin = 100VAC

Load \ Ta	Lifetime (years)		
	40℃	50℃	60℃
40%	15.0	10.3	5.2
60%	14.4	7.2	3.6
80%	11.3	5.7	-
100%	7.3	3.6	-



Vin = 200VAC

Load \ Ta	Lifetime (years)		
	40℃	50℃	60℃
40%	15.0	9.5	4.7
60%	15.0	7.9	3.9
80%	10.7	5.3	-
100%	8.9	3.6	-

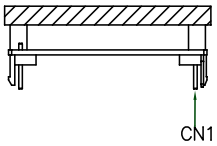


MODEL ： ZWS15C

空冷条件： 自然空冷　Cooling condition：Convection cooling

取付方向 F

Mounting F

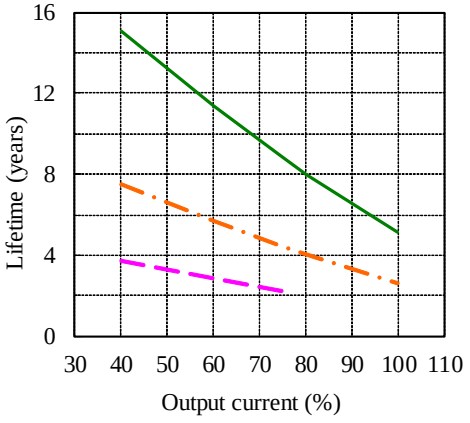


Conditions　Ta　40°C :　50°C :　60°C :

5V

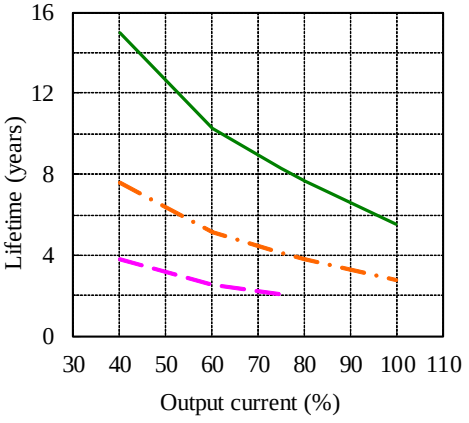
Vin = 100VAC

Load \ Ta	Lifetime (years)		
	40℃	50℃	60℃
40%	15.0	7.5	3.8
60%	11.4	5.7	2.9
80%	8.0	4.0	-
100%	5.2	2.6	-



Vin = 200VAC

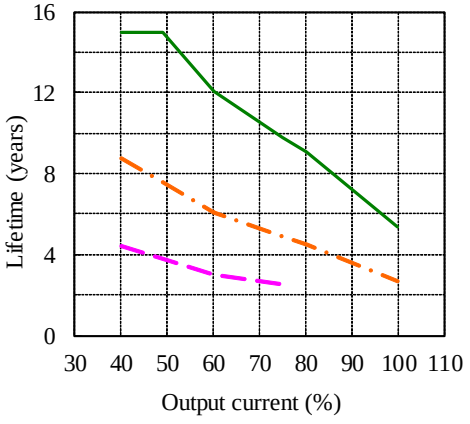
Load \ Ta	Lifetime (years)		
	40℃	50℃	60℃
40%	15.0	7.6	3.8
60%	10.3	5.1	2.6
80%	7.7	3.8	-
100%	5.5	2.8	-



24V

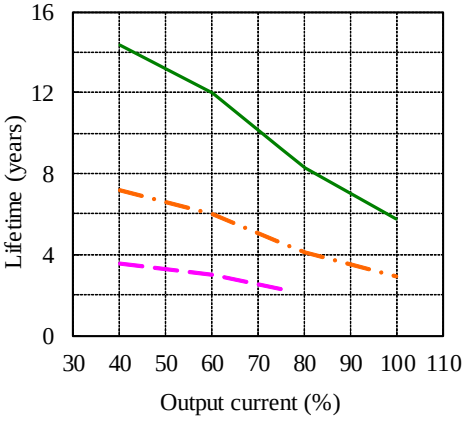
Vin = 100VAC

Load \ Ta	Lifetime (years)		
	40℃	50℃	60℃
40%	15.0	8.8	4.4
60%	12.1	6.0	3.0
80%	9.0	4.5	-
100%	5.4	2.7	-



Vin = 200VAC

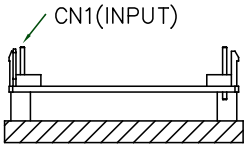
Load \ Ta	Lifetime (years)		
	40℃	50℃	60℃
40%	14.4	7.2	3.6
60%	12.0	6.0	3.0
80%	8.3	4.1	-
100%	5.8	2.9	-



MODEL ： ZWS15C

空冷条件：強制空冷　Cooling condition：Force air cooling

取付方向 A
Mounting A

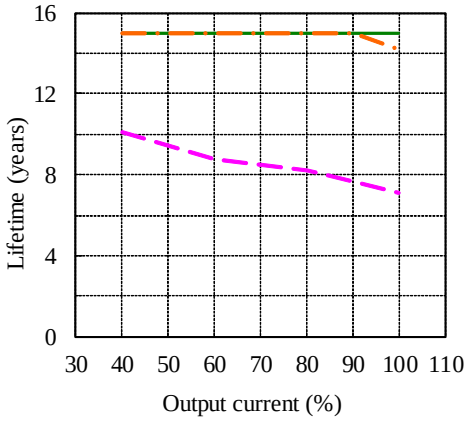


Conditions　Ta　40°C :　50°C :　60°C :

5V

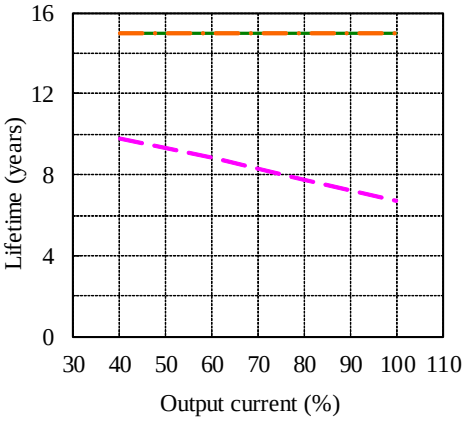
Vin = 100VAC

Load \ Ta	Lifetime (years) 40℃	50℃	60℃
40%	15.0	15.0	10.1
60%	15.0	15.0	8.7
80%	15.0	15.0	8.2
100%	15.0	14.2	7.1



Vin = 200VAC

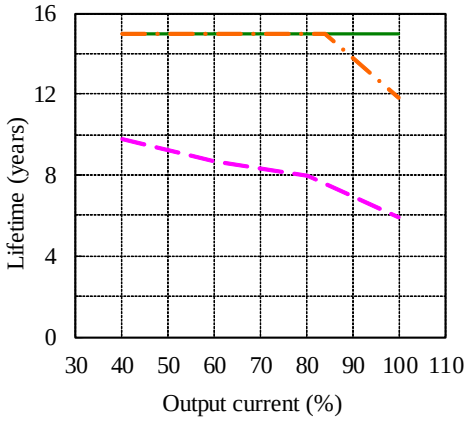
Load \ Ta	Lifetime (years) 40℃	50℃	60℃
40%	15.0	15.0	9.8
60%	15.0	15.0	8.9
80%	15.0	15.0	7.8
100%	15.0	15.0	7.7



24V

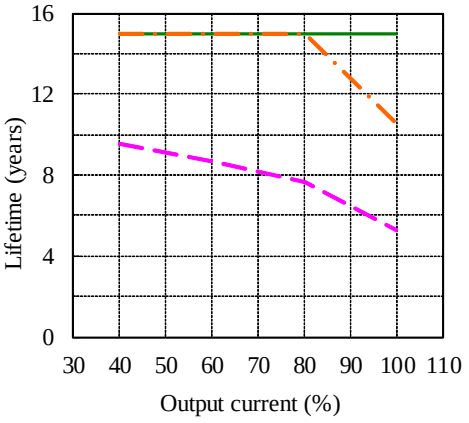
Vin = 100VAC

Load \ Ta	Lifetime (years) 40℃	50℃	60℃
40%	15.0	15.0	9.8
60%	15.0	15.0	8.7
80%	15.0	15.0	8.0
100%	15.0	11.8	5.9



Vin = 200VAC

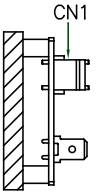
Load \ Ta	Lifetime (years) 40℃	50℃	60℃
40%	15.0	15.0	9.6
60%	15.0	15.0	8.6
80%	15.0	15.0	7.6
100%	15.0	10.6	5.3



MODEL ： ZWS15C

空冷条件： 強制空冷　Cooling condition: Force air cooling

取付方向 B
Mounting B

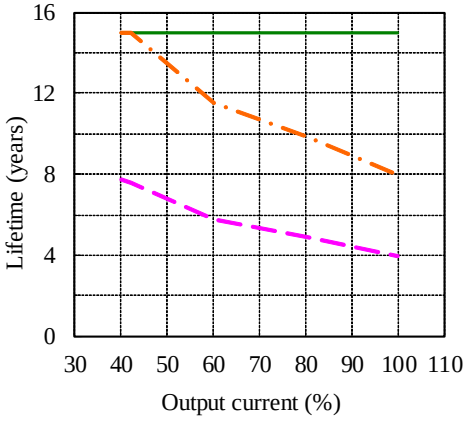


Conditions　Ta　40°C :
50°C :
60°C :

5V

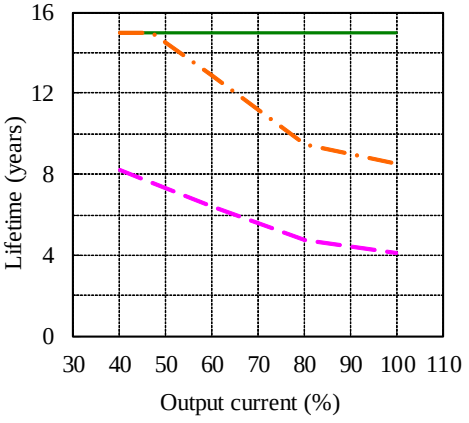
Vin = 100VAC

Load \ Ta	Lifetime (years) 40℃	50℃	60℃
40%	15.0	15.0	7.8
60%	15.0	11.6	5.8
80%	15.0	9.9	4.9
100%	15.0	8.0	4.0



Vin = 200VAC

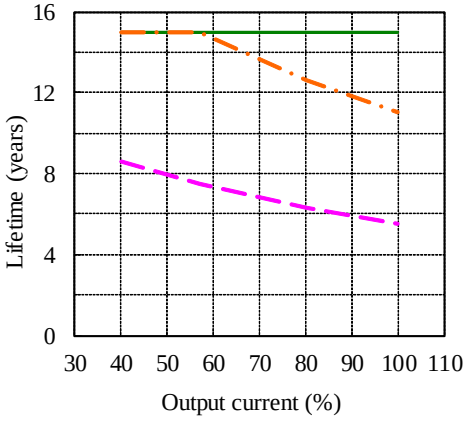
Load \ Ta	Lifetime (years) 40℃	50℃	60℃
40%	15.0	15.0	8.2
60%	15.0	12.8	6.4
80%	15.0	9.5	4.7
100%	15.0	8.9	4.5



24V

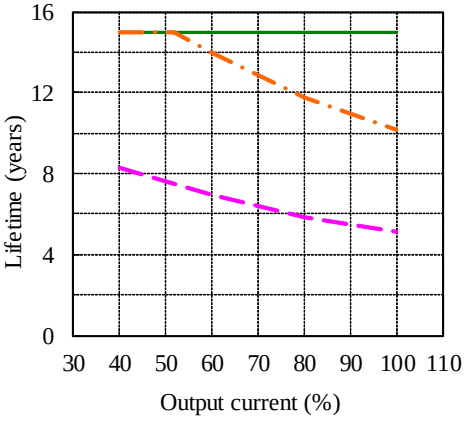
Vin = 100VAC

Load \ Ta	Lifetime (years) 40℃	50℃	60℃
40%	15.0	15.0	8.6
60%	15.0	14.7	7.3
80%	15.0	12.6	6.3
100%	15.0	11.1	5.5



Vin = 200VAC

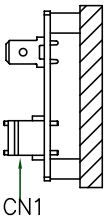
Load \ Ta	Lifetime (years) 40℃	50℃	60℃
40%	15.0	15.0	8.3
60%	15.0	13.9	7.0
80%	15.0	11.7	5.9
100%	15.0	10.2	5.1



MODEL ： ZWS15C

空冷条件： 強制空冷　Cooling condition: Force air cooling

取付方向 C
Mounting C

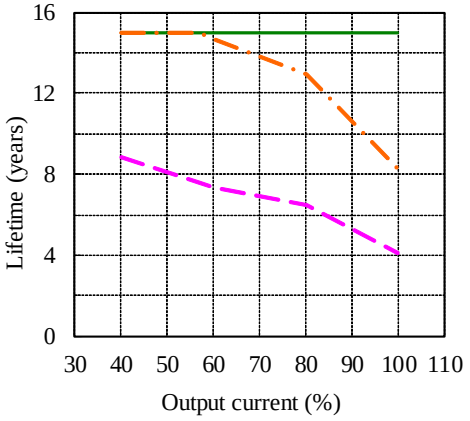


Conditions　Ta　40°C :
50°C :
60°C :

5V

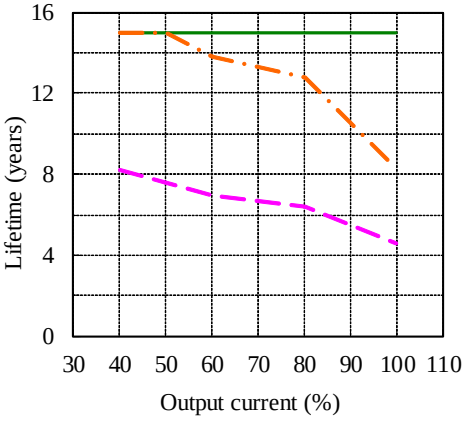
Vin = 100VAC

Load \ Ta	Lifetime (years)		
	40℃	50℃	60℃
40%	15.0	15.0	8.8
60%	15.0	14.7	7.3
80%	15.0	12.9	6.5
100%	15.0	8.3	4.1



Vin = 200VAC

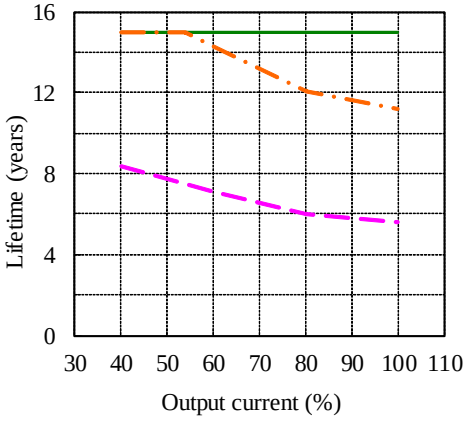
Load \ Ta	Lifetime (years)		
	40℃	50℃	60℃
40%	15.0	15.0	8.2
60%	15.0	13.8	6.9
80%	15.0	12.8	6.4
100%	15.0	8.3	4.6



24V

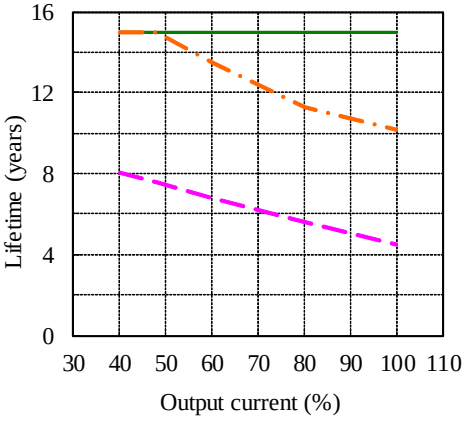
Vin = 100VAC

Load \ Ta	Lifetime (years)		
	40℃	50℃	60℃
40%	15.0	15.0	8.3
60%	15.0	14.3	7.1
80%	15.0	12.1	6.0
100%	15.0	11.2	5.6



Vin = 200VAC

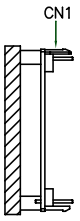
Load \ Ta	Lifetime (years)		
	40℃	50℃	60℃
40%	15.0	15.0	8.1
60%	15.0	13.5	6.8
80%	15.0	11.3	5.6
100%	15.0	11.2	5.1



MODEL ： ZWS15C

空冷条件：強制空冷　Cooling condition：Force air cooling

取付方向 D
Mounting D

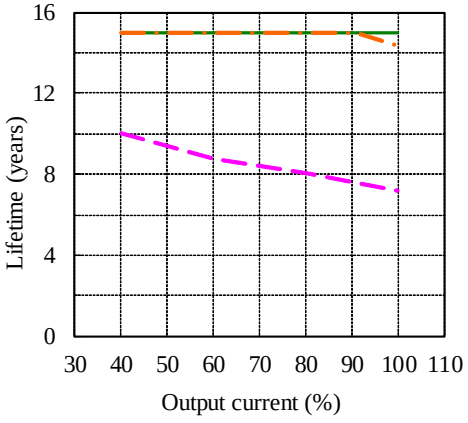


Conditions　Ta　40°C :
50°C :
60°C :

5V

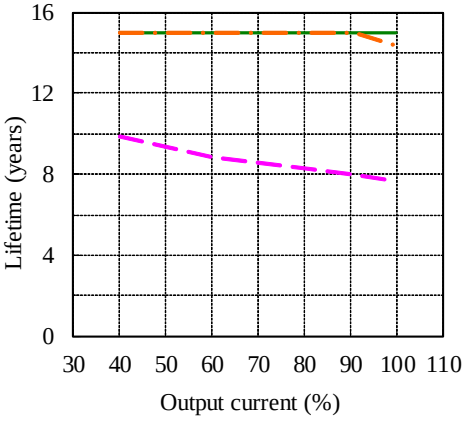
Vin = 100VAC

Load \ Ta	Lifetime (years)		
	40℃	50℃	60℃
40%	15.0	15.0	10.0
60%	15.0	15.0	8.7
80%	15.0	15.0	8.1
100%	15.0	14.3	7.2



Vin = 200VAC

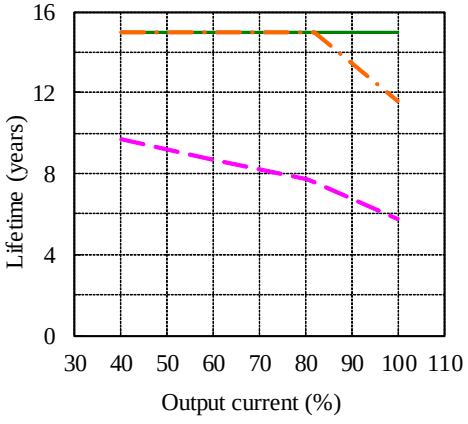
Load \ Ta	Lifetime (years)		
	40℃	50℃	60℃
40%	15.0	15.0	9.9
60%	15.0	15.0	8.8
80%	15.0	15.0	8.3
100%	15.0	14.3	7.7



24V

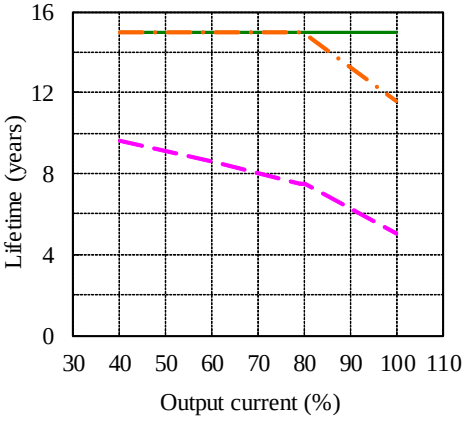
Vin = 100VAC

Load \ Ta	Lifetime (years)		
	40℃	50℃	60℃
40%	15.0	15.0	9.7
60%	15.0	15.0	8.7
80%	15.0	15.0	7.8
100%	15.0	11.6	5.8



Vin = 200VAC

Load \ Ta	Lifetime (years)		
	40℃	50℃	60℃
40%	15.0	15.0	9.6
60%	15.0	15.0	8.6
80%	15.0	14.9	7.5
100%	15.0	11.6	5.0

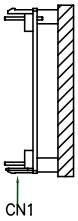


MODEL ： ZWS15C

空冷条件：強制空冷　Cooling condition：Force air cooling

取付方向 E

Mounting E

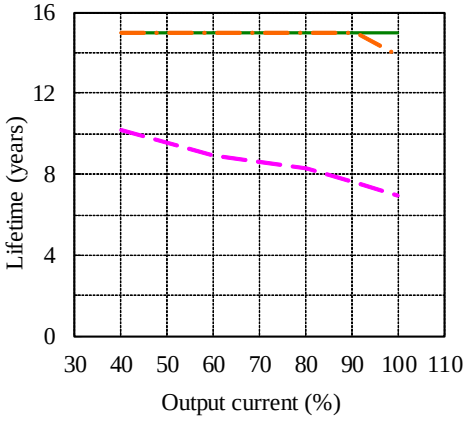


Conditions　Ta　40°C :　50°C :　60°C :

5V

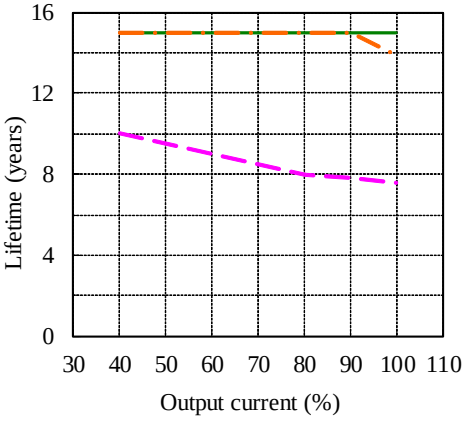
Vin = 100VAC

Load \ Ta	Lifetime (years)		
	40℃	50℃	60℃
40%	15.0	15.0	10.2
60%	15.0	15.0	8.9
80%	15.0	15.0	8.3
100%	15.0	13.9	6.9



Vin = 200VAC

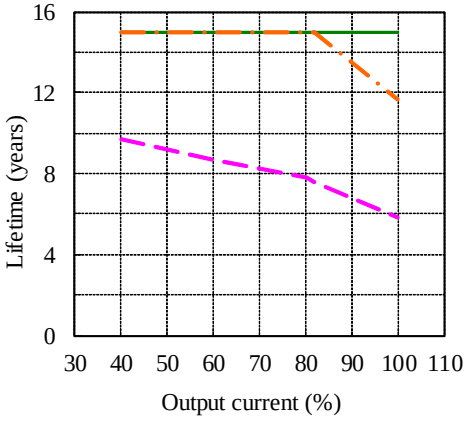
Load \ Ta	Lifetime (years)		
	40℃	50℃	60℃
40%	15.0	15.0	10.0
60%	15.0	15.0	9.0
80%	15.0	15.0	8.0
100%	15.0	13.9	7.6



24V

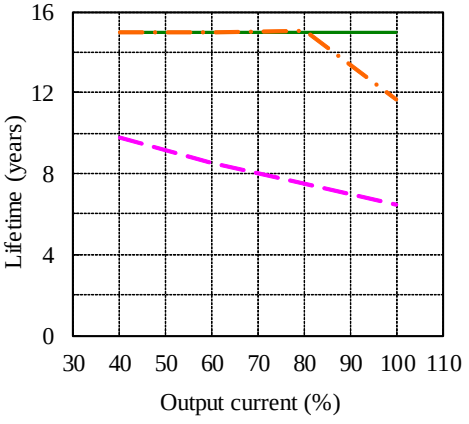
Vin = 100VAC

Load \ Ta	Lifetime (years)		
	40℃	50℃	60℃
40%	15.0	15.0	9.7
60%	15.0	15.0	8.6
80%	15.0	15.0	7.8
100%	15.0	11.6	5.8



Vin = 200VAC

Load \ Ta	Lifetime (years)		
	40℃	50℃	60℃
40%	15.0	15.0	9.8
60%	15.0	15.0	8.5
80%	15.0	15.0	7.5
100%	15.0	11.6	6.4

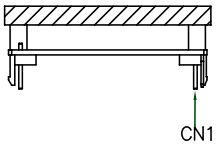


MODEL ： ZWS15C

空冷条件：強制空冷　Cooling condition：Force air cooling

取付方向 F

Mounting F

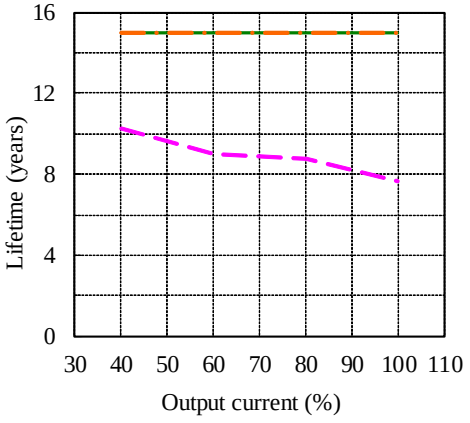


Conditions　Ta　40°C :　50°C :　60°C :

5V

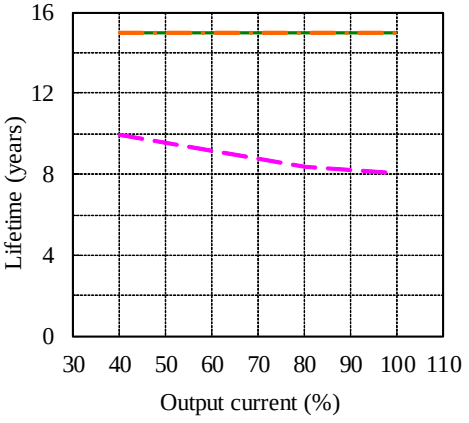
Vin = 100VAC

Load \ Ta	Lifetime (years) 40℃	50℃	60℃
40%	15.0	15.0	10.3
60%	15.0	15.0	9.0
80%	15.0	15.0	8.7
100%	15.0	15.0	7.7



Vin = 200VAC

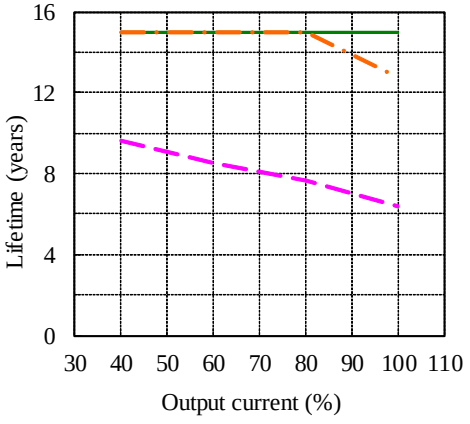
Load \ Ta	Lifetime (years) 40℃	50℃	60℃
40%	15.0	15.0	10.0
60%	15.0	15.0	9.2
80%	15.0	15.0	8.4
100%	15.0	15.0	8.1



24V

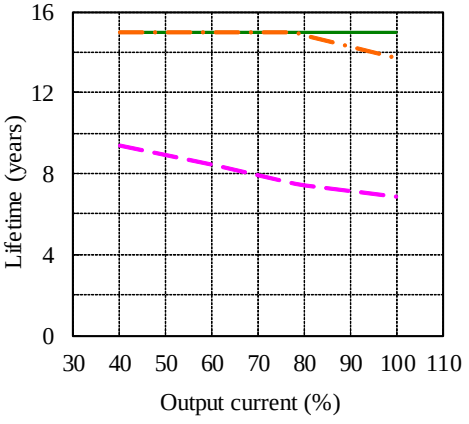
Vin = 100VAC

Load \ Ta	Lifetime (years) 40℃	50℃	60℃
40%	15.0	15.0	9.6
60%	15.0	15.0	8.5
80%	15.0	15.0	7.6
100%	15.0	12.8	6.4



Vin = 200VAC

Load \ Ta	Lifetime (years) 40℃	50℃	60℃
40%	15.0	15.0	9.4
60%	15.0	15.0	8.4
80%	15.0	14.8	7.4
100%	15.0	13.7	6.9



5. アブノーマル試験 Abnormal Test

MODEL : ZWS15C-5

(1) 試験条件 Test Conditions

Input : 265VAC Output : 5V, Full load Ta : 25°C

(2) 試験結果 Test Results

(Da : Damaged)

No.	Test position		Test mode		Test result													
					a	b	c	d	e	f	g	h	I	j	k	l		
	部品No. Location No.	試験端子 Test point	ショート Short	オープン Open	発火 Fire	発煙 Smoke	破裂 Burst	異臭 Smell	赤熱 Red hot	破損 Damaged	ヒューズ断 Fuse blown	OVP	OCP	出力断 No output	変化なし No change	その他 Others	記事 Note	
1	C3		O							O	O			O			Da : D101	
2				O										O				
3	C4		O											O				
4				O												O	Hiccup	
5	D101	DC-DC	O							O	O			O			Da : D101,A1	
6		AC-"+"	O								O			O				
7		DC "+"		O										O				
8		DC "−"		O										O				
9		AC		O										O				
10	D102	A-K	O													O	Hiccup	
11		A/K		O											O			
12	D103	A-K	O											O				
13		A/K		O												O	Hiccup	
14	D201	A-K	O													O	Hiccup	
15		A/K		O										O				
16	A1	1-2	O											O				
17		2-3	O											O				
18		3-4	O											O				
19		7-8	O											O				
20		1		O											O			
21		2		O										O				
22		3		O										O				
23		4		O										O				
24		5		O										O				
25		7		O										O				
26		8		O										O				

(Da : Damaged)

No.	Test position		Test mode		Test result												
					a	b	c	d	e	f	g	h	I	j	k	l	
	部品No. Location No.	試験端子 Test point	ショート Short	オープン Open	発火 Fire	発煙 Smoke	破裂 Burst	異臭 Smell	赤熱 Red hot	破損 Damaged	ヒューズ断 Fuse blown	OVP	OCP	出力断 No output	変化なし No change	その他 Others	記事 Note
27	T1	1-3	O											O			
28		4-5	O													O	Hiccup
29		9-7	O											O			
30		1		O										O			
31		3		O										O			
32		4		O												O	Hiccup
33		5		O												O	Hiccup
34		7		O										O			
35		9		O										O			
36	L1	1-3	O								O			O			
37		2-4	O								O			O			
38		1		O										O			
39		2		O										O			
40		3		O										O			
41		4		O										O			

6. 振動試験 Vibration Test

MODEL ： ZWS15C-5 / ZWS15C-24

(1) 振動試験種類 Vibration Test Class

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

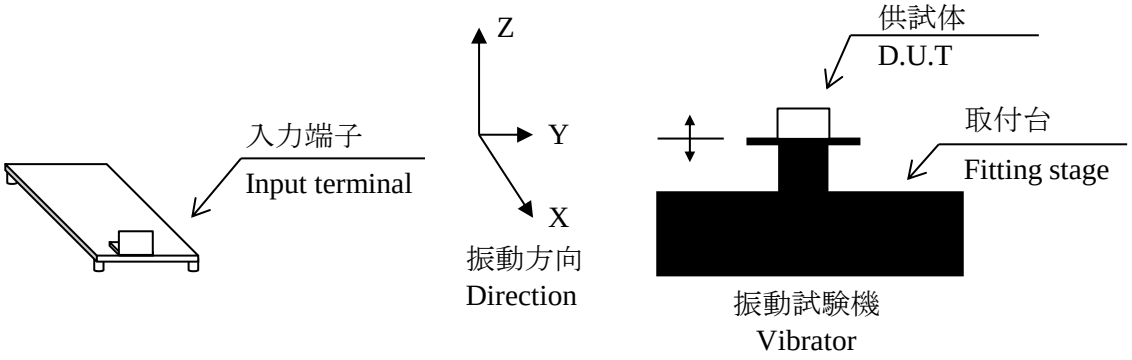
(2) 使用振動試験装置 Equipment Used

IMV (株) 製 EM2201
IMV CORP.

(3) 試験条件 Test Conditions

・周波数範囲 Sweep frequency	： 10~55Hz	・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. 破損しない事
   Not o be broken.
2. 試験後の出力に異常がない事
   No abnormal output after test.

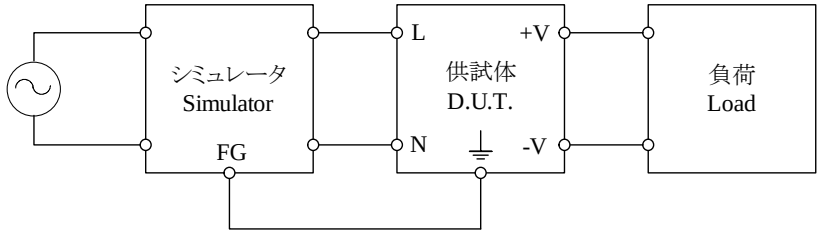
(6) 試験結果 Test Results

合格 OK

7. ノイズシミュレート試験 Noise Simulate Test

MODEL : ZWS15C-5 / ZWS15C-24

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



シミュレータ : INS-4040（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	・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

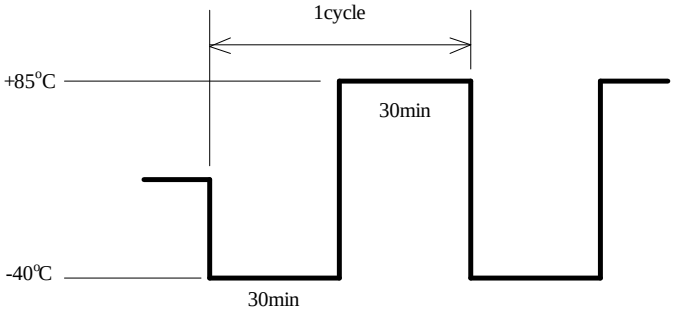
MODEL ： ZWS15C-5 / ZWS15C-24

(1) 使用冷熱衝撃装置 Equipment Used (Thermal Shock Chamber)

HITACHI(株) 製　　ES-71LH
HITACHI CORP.

(2) 試験条件 Test Conditions

・電源周囲温度　　：-40℃ ⇔ 85℃
Ambient Temperature
・試験時間　　：図参照
Test Time　　Refer to Dwg.
・試験サイクル　　：100 サイクル
Test Cycle　　100 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。100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. 100 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 voltage after test.

(5) 試験結果 Test Results

合格 OK