

**CUT75J**

**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。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 : CUT75J-522

## (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 $\lambda_G$ 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  $\lambda_G$  is given to each part and MTBF is calculated  
 by the count of each part.

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

時間(Hours)

$\lambda_{equip}$  : 全機器故障率 (故障数/10<sup>6</sup>時間)  
 Total Equipment Failure Rate (Failure/10<sup>6</sup>Hours)

$\lambda_G$  : i番目の同属部品に対する故障率 (故障数/10<sup>6</sup>時間)  
 Generic Failure Rate for The ith Generic Part (Failure/10<sup>6</sup>Hours)

$n_i$  : 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

$\pi_Q$  : 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 ≒ 169,333 時間 (Hours)

## 2. 部品デレーティング Components Derating

MODEL : CUT75J-522

## (1) 算出方法 Calculating Method

## (a) 測定方法 Measuring method

・取付方法 Mounting method	: 標準取付 : B Standard mounting : B	・周囲温度 Ambient temperature	: 50°C
・入力電圧 Input voltage	: 100, 230VAC	・出力電圧、電流 Output voltage & current	: 5V, 8A(100%) +12V, 2.5A(100%) -12V, 0.5A(100%)

## (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

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

Tc : 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

Tl : 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

Pj(max) : 最大チャネル損失  
(Pch(max)) Maximum Channel Dissipation

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

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

$\theta_{j-l}$  : 接合点(チャネル)からリードまでの熱抵抗  
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.	$V_{in} = 100VAC$	Load = 100%	$T_a = 50^{\circ}C$
D1 D3SB60 SHINDENGEN	$T_j(\max) = 150^{\circ}C$ $P_d = 1.389W$ $T_j = T_c + ((\theta_{j-c}) \times P_d) = 117.9^{\circ}C$ D.F. = 78.6 %	$\theta_{j-c} = 6.0^{\circ}C/W$ $\Delta T_c = 59.6^{\circ}C$	$T_c = 109.6^{\circ}C$
Q1 FMV06N60ES FUJI ELECTRIC	$T_{ch}(\max) = 150^{\circ}C$ $P_{ch} = 0.959 W$ $T_j = T_c + ((\theta_{ch-c}) \times P_{ch}) = 98.0^{\circ}C$ D.F. = 65.3 %	$\theta_{ch-c} = 3.38^{\circ}C/W$ $\Delta T_c = 44.7^{\circ}C$	$P_{ch}(\max) = 37 W$ $T_c = 94.7^{\circ}C$
Q2 FMV06N60ES FUJI ELECTRIC	$T_{ch}(\max) = 150^{\circ}C$ $P_{ch} = 0.739 W$ $T_j = T_c + ((\theta_{ch-c}) \times P_{ch}) = 95.1^{\circ}C$ D.F. = 63.4 %	$\theta_{ch-c} = 3.38^{\circ}C/W$ $\Delta T_c = 42.6^{\circ}C$	$P_{ch}(\max) = 37 W$ $T_c = 92.6^{\circ}C$
D51 STPS30H60CFP ST	$T_j(\max) = 175^{\circ}C$ $P_d = 4.758W$ $T_j = T_c + ((\theta_{j-c}) \times P_d) = 141.0^{\circ}C$ D.F. = 80.6 %	$\theta_{j-c} = 3.95^{\circ}C/W$ $\Delta T_c = 72.2^{\circ}C$	$T_c = 122.2^{\circ}C$
D61 YG865C12R FUJI ELECTRIC	$T_j(\max) = 150^{\circ}C$ $P_d = 1.367W$ $T_j = T_c + ((\theta_{j-c}) \times P_d) = 106.0^{\circ}C$ D.F. = 70.7 %	$\theta_{j-c} = 1.75^{\circ}C/W$ $\Delta T_c = 53.6^{\circ}C$	$T_c = 103.6^{\circ}C$
D62 YG865C12R FUJI ELECTRIC	$T_j(\max) = 150^{\circ}C$ $P_d = 0.221W$ $T_j = T_c + ((\theta_{j-c}) \times P_d) = 97.9^{\circ}C$ D.F. = 65.3 %	$\theta_{j-c} = 1.75^{\circ}C/W$ $\Delta T_c = 47.5^{\circ}C$	$T_c = 97.5^{\circ}C$

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

部品番号 Location No.	$V_{in} = 200VAC$	Load = 100%	$T_a = 50^{\circ}C$
D1 D3SB60 SHINDENGEN	$T_j(\max) = 150^{\circ}C$ $P_d = 0.629W$ $T_j = T_c + ((\theta_{j-c}) \times P_d) = 94.2^{\circ}C$ D.F. = 62.8 %	$\theta_{j-c} = 6.0^{\circ}C/W$ $\Delta T_c = 40.4^{\circ}C$	$T_c = 90.4^{\circ}C$
Q1 FMV06N60ES FUJI ELECTRIC	$T_{ch}(\max) = 150^{\circ}C$ $P_{ch} = 0.951 W$ $T_j = T_c + ((\theta_{ch-c}) \times P_{ch}) = 93.9^{\circ}C$ D.F. = 62.6 %	$\theta_{ch-c} = 3.38^{\circ}C/W$ $\Delta T_c = 40.7^{\circ}C$	$P_{ch}(\max) = 37 W$ $T_c = 90.7^{\circ}C$
Q2 FMV06N60ES FUJI ELECTRIC	$T_{ch}(\max) = 150^{\circ}C$ $P_{ch} = 0.821 W$ $T_j = T_c + ((\theta_{ch-c}) \times P_{ch}) = 92.6^{\circ}C$ D.F. = 61.7 %	$\theta_{ch-c} = 3.38^{\circ}C/W$ $\Delta T_c = 39.8^{\circ}C$	$P_{ch}(\max) = 37 W$ $T_c = 89.8^{\circ}C$
D51 STPS30H60CFP ST	$T_j(\max) = 175^{\circ}C$ $P_d = 4.776W$ $T_j = T_c + ((\theta_{j-c}) \times P_d) = 137.5^{\circ}C$ D.F. = 78.6 %	$\theta_{j-c} = 3.95^{\circ}C/W$ $\Delta T_c = 68.6^{\circ}C$	$T_c = 118.6^{\circ}C$
D61 YG865C12R FUJI ELECTRIC	$T_j(\max) = 150^{\circ}C$ $P_d = 1.369W$ $T_j = T_c + ((\theta_{j-c}) \times P_d) = 104.0^{\circ}C$ D.F. = 69.3 %	$\theta_{j-c} = 1.75^{\circ}C/W$ $\Delta T_c = 51.6^{\circ}C$	$T_c = 101.6^{\circ}C$
D62 YG865C12R FUJI ELECTRIC	$T_j(\max) = 150^{\circ}C$ $P_d = 0.224W$ $T_j = T_c + ((\theta_{j-c}) \times P_d) = 96.6^{\circ}C$ D.F. = 64.4 %	$\theta_{j-c} = 1.75^{\circ}C/W$ $\Delta T_c = 46.2^{\circ}C$	$T_c = 96.2^{\circ}C$

**MODEL : CUT75J-5FF****(1) 算出方法 Calculating Method**

## (a) 測定方法 Measuring method

・取付方法 Mounting method	: 標準取付 : B Standard mounting : B	・周囲温度 Ambient temperature	: 50°C
・入力電圧 Input voltage	: 100, 230VAC	・出力電圧、電流 Output voltage & current	: 5V, 8A(100%) +15V, 2A(100%) -15V, 0.4A(100%)

## (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

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

T<sub>c</sub> : デイ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<sub>l</sub> : デイ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<sub>j</sub>(max) : 最大チャネル損失  
(P<sub>ch</sub>(max)) Maximum Channel Dissipation

T<sub>j</sub>(max) : 最大接合点(チャネル)温度  
(T<sub>ch</sub>(max)) Maximum Junction (channel) Temperature

θ<sub>j-c</sub> : 接合点(チャネル)からケースまでの熱抵抗  
(θ<sub>ch-c</sub>) Thermal Impedance between Junction (channel) and Case

θ<sub>j-l</sub> : 接合点(チャネル)からリードまでの熱抵抗  
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.	$V_{in} = 100VAC$	Load = 100%	$T_a = 50^{\circ}C$
D1 D3SB60 SHINDENGEN	$T_j(\max) = 150^{\circ}C$ $P_d = 1.451W$ $T_j = T_c + ((\theta_{j-c}) \times P_d) = 107.6^{\circ}C$ D.F. = 71.7%	$\theta_{j-c} = 6.0^{\circ}C/W$ $\Delta T_c = 48.9^{\circ}C$	$T_c = 98.9^{\circ}C$
Q1 FMV06N60ES FUJI ELECTRIC	$T_{ch}(\max) = 150^{\circ}C$ $P_{ch} = 0.959W$ $T_j = T_c + ((\theta_{ch-c}) \times P_{ch}) = 99.6^{\circ}C$ D.F. = 66.4%	$\theta_{ch-c} = 3.38^{\circ}C/W$ $\Delta T_c = 46.3^{\circ}C$	$P_{ch}(\max) = 37W$ $T_c = 96.3^{\circ}C$
Q2 FMV06N60ES FUJI ELECTRIC	$T_{ch}(\max) = 150^{\circ}C$ $P_{ch} = 0.802W$ $T_j = T_c + ((\theta_{ch-c}) \times P_{ch}) = 96.0^{\circ}C$ D.F. = 64.0%	$\theta_{ch-c} = 3.38^{\circ}C/W$ $\Delta T_c = 43.3^{\circ}C$	$P_{ch}(\max) = 37W$ $T_c = 93.3^{\circ}C$
D51 STPS30H60CFP ST	$T_j(\max) = 175^{\circ}C$ $P_d = 4.758W$ $T_j = T_c + ((\theta_{j-c}) \times P_d) = 135.1^{\circ}C$ D.F. = 77.2%	$\theta_{j-c} = 3.95^{\circ}C/W$ $\Delta T_c = 66.3^{\circ}C$	$T_c = 116.3^{\circ}C$
D61 YG862C15R FUJI ELECTRIC	$T_j(\max) = 150^{\circ}C$ $P_d = 1.150W$ $T_j = T_c + ((\theta_{j-c}) \times P_d) = 101.6^{\circ}C$ D.F. = 67.7%	$\theta_{j-c} = 3.0^{\circ}C/W$ $\Delta T_c = 48.1^{\circ}C$	$T_c = 98.1^{\circ}C$
D62 YG862C15R FUJI ELECTRIC	$T_j(\max) = 150^{\circ}C$ $P_d = 0.181W$ $T_j = T_c + ((\theta_{j-c}) \times P_d) = 93.0^{\circ}C$ D.F. = 62.0%	$\theta_{j-c} = 3.0^{\circ}C/W$ $\Delta T_c = 42.5^{\circ}C$	$T_c = 92.5^{\circ}C$



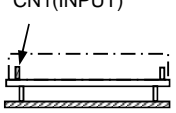
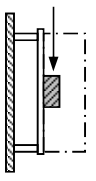
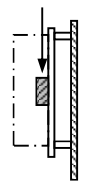
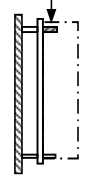
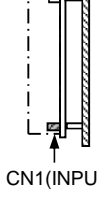
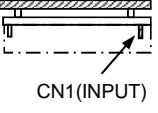
## (2) 部品デレーティング表 Component Derating List

部品番号 Location No.	$V_{in} = 200VAC$	Load = 100%	$T_a = 50^{\circ}C$
D1 D3SB60 SHINDENGEN	$T_j(\max) = 150^{\circ}C$ $P_d = 0.63W$ $T_j = T_c + ((\theta_{j-c}) \times P_d) = 91.3^{\circ}C$ D.F. = 60.9 %	$\theta_{j-c} = 6.0^{\circ}C/W$ $\Delta T_c = 37.5^{\circ}C$	$T_c = 87.5^{\circ}C$
Q1 FMV06N60ES FUJI ELECTRIC	$T_{ch}(\max) = 150^{\circ}C$ $P_{ch} = 0.951W$ $T_j = T_c + ((\theta_{ch-c}) \times P_{ch}) = 97.2^{\circ}C$ D.F. = 64.8 %	$\theta_{ch-c} = 3.38^{\circ}C/W$ $\Delta T_c = 44.0^{\circ}C$	$P_{ch}(\max) = 37W$ $T_c = 94.0^{\circ}C$
Q2 FMV06N60ES FUJI ELECTRIC	$T_{ch}(\max) = 150^{\circ}C$ $P_{ch} = 0.928W$ $T_j = T_c + ((\theta_{ch-c}) \times P_{ch}) = 95.0^{\circ}C$ D.F. = 63.3 %	$\theta_{ch-c} = 3.38^{\circ}C/W$ $\Delta T_c = 41.8^{\circ}C$	$P_{ch}(\max) = 37W$ $T_c = 91.8^{\circ}C$
D51 STPS30H60CFP ST	$T_j(\max) = 175^{\circ}C$ $P_d = 4.776W$ $T_j = T_c + ((\theta_{j-c}) \times P_d) = 132.7^{\circ}C$ D.F. = 75.8 %	$\theta_{j-c} = 3.95^{\circ}C/W$ $\Delta T_c = 63.8^{\circ}C$	$T_c = 113.8^{\circ}C$
D61 YG862C15R FUJI ELECTRIC	$T_j(\max) = 150^{\circ}C$ $P_d = 1.153W$ $T_j = T_c + ((\theta_{j-c}) \times P_d) = 99.9^{\circ}C$ D.F. = 66.6 %	$\theta_{j-c} = 3.0^{\circ}C/W$ $\Delta T_c = 46.4^{\circ}C$	$T_c = 96.4^{\circ}C$
D62 YG862C15R FUJI ELECTRIC	$T_j(\max) = 150^{\circ}C$ $P_d = 0.187W$ $T_j = T_c + ((\theta_{j-c}) \times P_d) = 91.6^{\circ}C$ D.F. = 61.0 %	$\theta_{j-c} = 3.0^{\circ}C/W$ $\Delta T_c = 41.0^{\circ}C$	$T_c = 91.0^{\circ}C$

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

MODEL : CUT75J-522

## (1) 測定条件 Measuring Conditions

取付方法 Mounting Method	Mounting A	Mounting B	Mounting C	Mounting D	Mounting E	Mounting F
(標準取付 : B) (Standard Mounting : B)						
入力電圧 $V_{in}$ Input Voltage	100VAC					
出力電圧 $V_o$ Output Voltage	5VDC, +12VDC, -12VDC					
出力電流 $I_o$ Output Current	8A, 2.5A, 0.5A (100%)					

## (2) 測定結果 Measuring Results

出力デレーティング Output Derating		$\Delta T$ Temperature Rise ( $^{\circ}C$ )					
		$I_o=100\%$					
		$T_a=45^{\circ}C$	$T_a=50^{\circ}C$	$T_a=45^{\circ}C$	$T_a=45^{\circ}C$	$T_a=45^{\circ}C$	$T_a=40^{\circ}C$
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	取付方向 Mounting F
D1	BRIDGE DIODE	59	60	57	66	58	68
Q1	MOSFET	53	45	49	54	53	63
Q2	MOSFET	52	43	48	53	51	61
T1 WIRE	TRANSFORMER WIRE	64	55	53	60	65	70
T1 CORE	TRANSFORMER CORE	56	47	45	50	54	59
T2 WIRE	TRANSFORMER WIRE	52	46	54	55	57	64
T2 CORE	TRANSFORMER CORE	43	35	43	45	45	50
D51	S.B.D	73	72	69	72	78	81
D61	S.B.D	57	54	55	55	61	66
D62	S.B.D	49	48	50	49	56	60

MODEL : CUT75J-522

## (1) 測定条件 Measuring Conditions

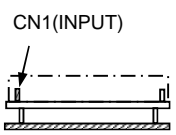
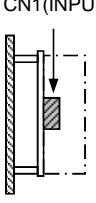
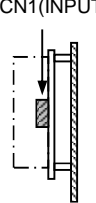
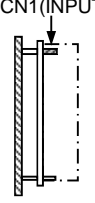
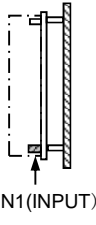
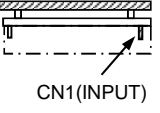
取付方法 Mounting Method	Mounting A	Mounting B	Mounting C	Mounting D	Mounting E	Mounting F
(標準取付 : B) (Standard Mounting : B)						
入力電圧 $V_{in}$ Input Voltage	200VAC					
出力電圧 $V_o$ Output Voltage	5VDC, +12VDC, -12VDC					
出力電流 $I_o$ Output Current	8A, 2.5A, 0.5A (100%)					

## (2) 測定結果 Measuring Results

出力デレーティング Output Derating		$\Delta T$ Temperature Rise ( $^{\circ}C$ )					
		$I_o=100\%$					
		$T_a=45^{\circ}C$	$T_a=50^{\circ}C$	$T_a=45^{\circ}C$	$T_a=45^{\circ}C$	$T_a=45^{\circ}C$	$T_a=40^{\circ}C$
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	取付方向 Mounting F
D1	BRIDGE DIODE	41	40	39	48	39	50
Q1	MOSFET	47	41	44	50	45	56
Q2	MOSFET	47	40	45	50	45	56
T1 WIRE	TRANSFORMER WIRE	61	53	51	57	59	66
T1 CORE	TRANSFORMER CORE	54	47	45	49	51	57
T2 WIRE	TRANSFORMER WIRE	51	46	54	54	54	62
T2 CORE	TRANSFORMER CORE	44	37	46	45	44	50
D51	S.B.D	69	69	67	68	72	77
D61	S.B.D	55	52	53	53	57	62
D62	S.B.D	47	46	49	48	52	58

MODEL : CUT75J-5FF

## (1) 測定条件 Measuring Conditions

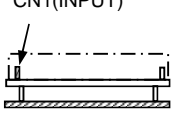
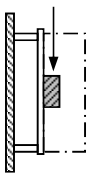
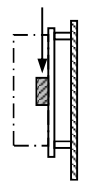
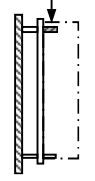
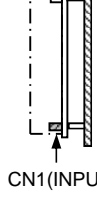
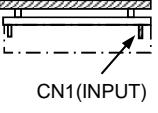
取付方法 Mounting Method	Mounting A	Mounting B	Mounting C	Mounting D	Mounting E	Mounting F
(標準取付 : B) (Standard Mounting : B)						
入力電圧 $V_{in}$ Input Voltage	100VAC					
出力電圧 $V_o$ Output Voltage	5VDC, +15VDC, -15VDC					
出力電流 $I_o$ Output Current	8A, 2A, 0.4A (100%)					

## (2) 測定結果 Measuring Results

出力デレーティング Output Derating		$\Delta T$ Temperature Rise ( $^{\circ}C$ )					
		$I_o=100\%$					
		$T_a=45^{\circ}C$	$T_a=50^{\circ}C$	$T_a=45^{\circ}C$	$T_a=45^{\circ}C$	$T_a=45^{\circ}C$	$T_a=40^{\circ}C$
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	取付方向 Mounting F
D1	BRIDGE DIODE	54	49	55	60	55	65
Q1	MOSFET	51	46	51	57	55	60
Q2	MOSFET	48	43	49	55	51	57
T1 WIRE	TRANSFORMER WIRE	63	57	56	63	66	68
T1 CORE	TRANSFORMER CORE	55	48	45	50	55	55
T2 WIRE	TRANSFORMER WIRE	42	38	49	49	50	52
T2 CORE	TRANSFORMER CORE	39	33	43	42	43	42
D51	S.B.D	66	66	66	68	72	74
D61	S.B.D	51	48	52	52	56	57
D62	S.B.D	43	43	47	46	50	51

MODEL : CUT75J-5FF

## (1) 測定条件 Measuring Conditions

取付方法 Mounting Method	Mounting A	Mounting B	Mounting C	Mounting D	Mounting E	Mounting F
(標準取付 : B) (Standard Mounting : B)						
入力電圧 $V_{in}$ Input Voltage	200VAC					
出力電圧 $V_o$ Output Voltage	5VDC, +15VDC, -15VDC					
出力電流 $I_o$ Output Current	8A, 2A, 0.4A (100%)					

## (2) 測定結果 Measuring Results

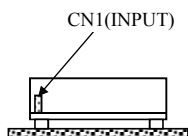
出力デレーティング Output Derating		$\Delta T$ Temperature Rise ( $^{\circ}C$ )					
		$I_o=100\%$					
		$T_a=45^{\circ}C$	$T_a=50^{\circ}C$	$T_a=45^{\circ}C$	$T_a=45^{\circ}C$	$T_a=45^{\circ}C$	$T_a=40^{\circ}C$
部品番号 Location No.	部品名 Part name	取付方向 Mounting A	取付方向 Mounting B	取付方向 Mounting C	取付方向 Mounting D	取付方向 Mounting E	取付方向 Mounting F
D1	BRIDGE DIODE	38	38	39	46	39	48
Q1	MOSFET	46	44	45	53	47	54
Q2	MOSFET	44	42	45	52	46	52
T1 WIRE	TRANSFORMER WIRE	60	56	54	60	61	65
T1 CORE	TRANSFORMER CORE	53	47	45	48	52	54
T2 WIRE	TRANSFORMER WIRE	42	38	48	49	48	51
T2 CORE	TRANSFORMER CORE	40	34	43	43	42	43
D51	S.B.D	63	64	63	65	68	70
D61	S.B.D	49	46	49	50	53	54
D62	S.B.D	42	41	45	44	47	49

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

MODEL : CUT75J-522

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

取付方向 A  
Mounting A



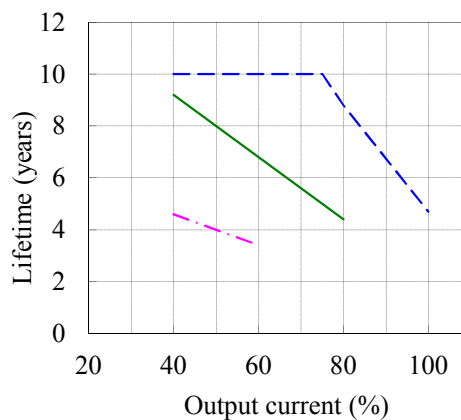
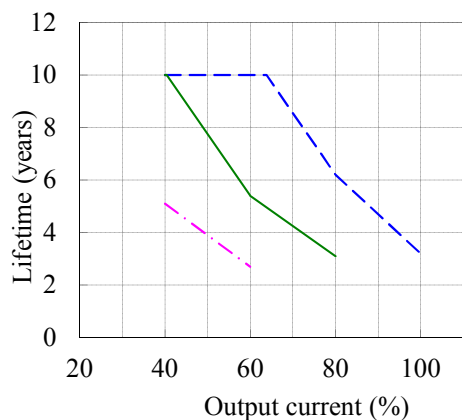
Conditions Ta 40°C : - - - - -  
50°C : ————  
60°C : ······

Vin=100VAC

Load	Ta	Lifetime (years)		
		40°C	50°C	60°C
40		10.0	10.0	5.1
60		10.0	5.4	2.7
80		6.2	3.1	-
100		3.2	-	-

Vin=200VAC

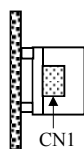
Load	Ta	Lifetime (years)		
		40°C	50°C	60°C
40		10.0	9.2	4.6
60		10.0	6.8	3.4
80		8.8	4.4	-
100		4.7	-	-



**MODEL : CUT75J-522**

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

取付方向 B  
Mounting B



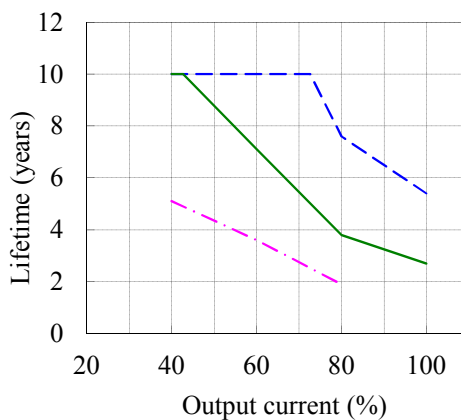
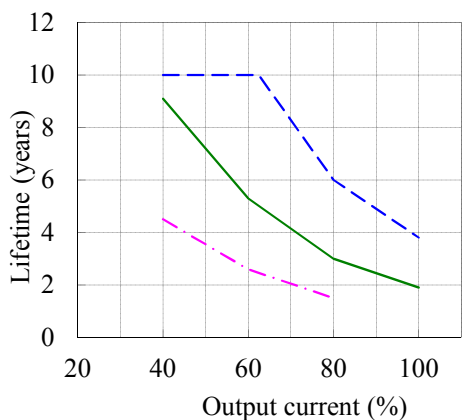
Conditions Ta 40°C : - - - - -  
50°C : ————  
60°C : ······

Vin=100VAC

Load	Ta	Lifetime (years)		
		40°C	50°C	60°C
40		10.0	9.1	4.5
60		10.0	5.3	2.6
80		6.0	3.0	1.5
100		3.8	1.9	-

Vin=200VAC

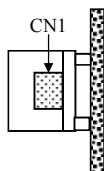
Load	Ta	Lifetime (years)		
		40°C	50°C	60°C
40		10.0	10.0	5.1
60		10.0	7.1	3.6
80		7.6	3.8	1.9
100		5.4	2.7	-



**MODEL : CUT75J-522**

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

取付方向 C  
Mounting C



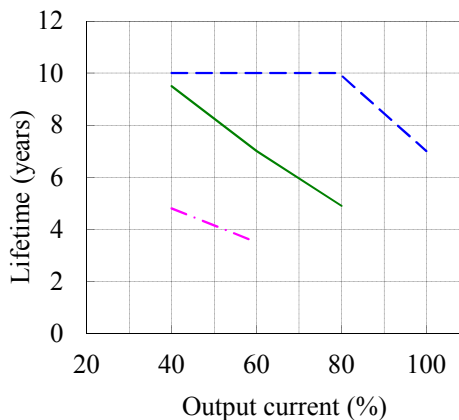
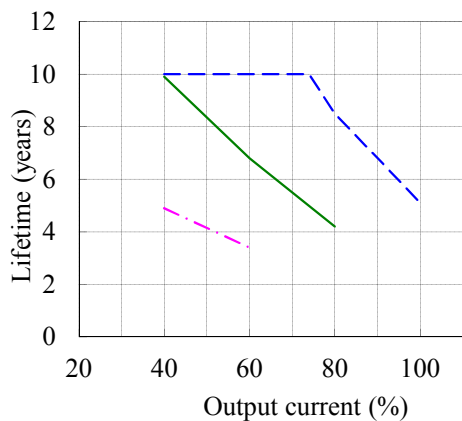
Conditions Ta 40°C : - - - - -  
50°C : ————  
60°C : ······

Vin=100VAC

Load	Ta	Lifetime (years)		
		40°C	50°C	60°C
40		10.0	9.9	4.9
60		10.0	6.8	3.4
80		8.5	4.2	-
100		5.1	-	-

Vin=200VAC

Load	Ta	Lifetime (years)		
		40°C	50°C	60°C
40		10.0	9.5	4.8
60		10.0	7.0	3.5
80		9.9	4.9	-
100		7.0	-	-

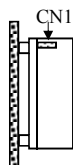




**MODEL : CUT75J-522**

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

取付方向 D  
Mounting D



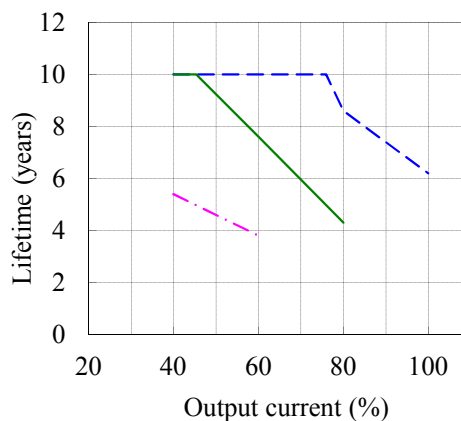
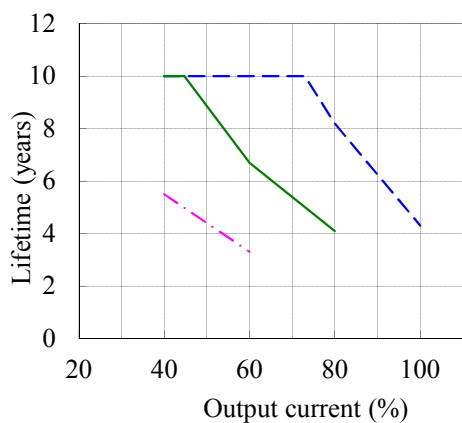
Conditions Ta 40°C : - - - - -  
50°C : ————  
60°C : ······

Vin=100VAC

Load	Ta	Lifetime (years)		
		40°C	50°C	60°C
40		10.0	10.0	5.5
60		10.0	6.7	3.3
80		8.2	4.1	-
100		4.3	-	-

Vin=200VAC

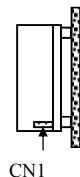
Load	Ta	Lifetime (years)		
		40°C	50°C	60°C
40		10.0	10.0	5.4
60		10.0	7.6	3.8
80		8.6	4.3	-
100		6.2	-	-



**MODEL : CUT75J-522**

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

取付方向 E  
Mounting E



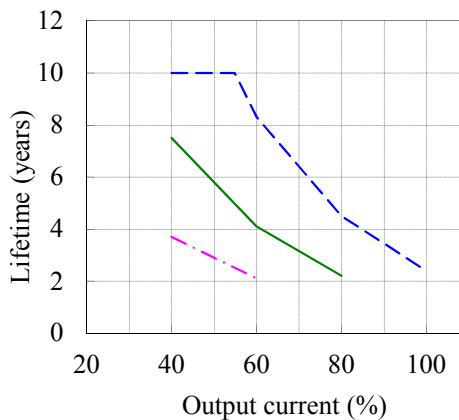
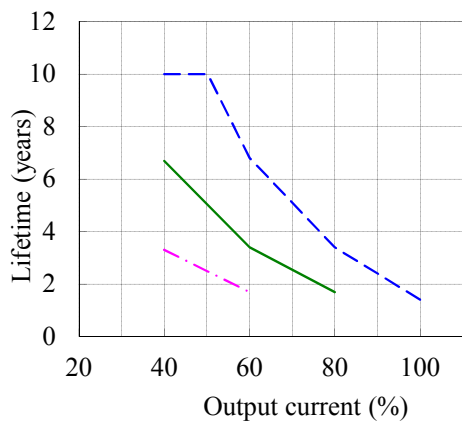
Conditions Ta 40°C : - - - - -  
50°C : ————  
60°C : ······

Vin=100VAC

Load	Ta	Lifetime (years)		
		40°C	50°C	60°C
40		10.0	6.7	3.3
60		6.8	3.4	1.7
80		3.4	1.7	-
100		1.4	-	-

Vin=200VAC

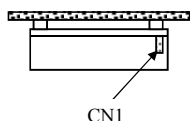
Load	Ta	Lifetime (years)		
		40°C	50°C	60°C
40		10.0	7.5	3.7
60		8.3	4.1	2.1
80		4.5	2.2	-
100		2.4	-	-



**MODEL : CUT75J-522**

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

取付方向 F  
Mounting F



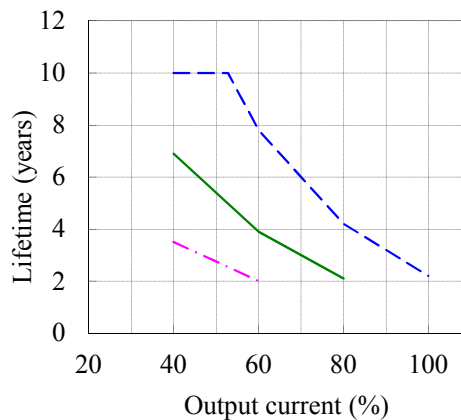
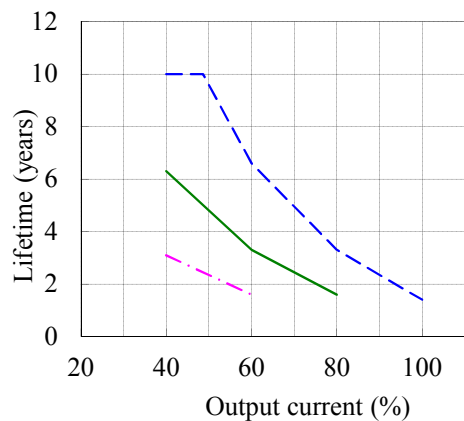
Conditions Ta 40°C : - - - - -  
50°C : ————  
60°C : ······

Vin=100VAC

Load	Ta	Lifetime (years)		
		40°C	50°C	60°C
40		10.0	6.3	3.1
60		6.6	3.3	1.6
80		3.3	1.6	-
100		1.4	-	-

Vin=200VAC

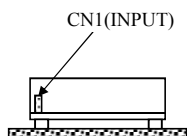
Load	Ta	Lifetime (years)		
		40°C	50°C	60°C
40		10.0	6.9	3.5
60		7.8	3.9	2.0
80		4.2	2.1	-
100		2.2	-	-



**MODEL : CUT75J-5FF**

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

取付方向 A  
Mounting A



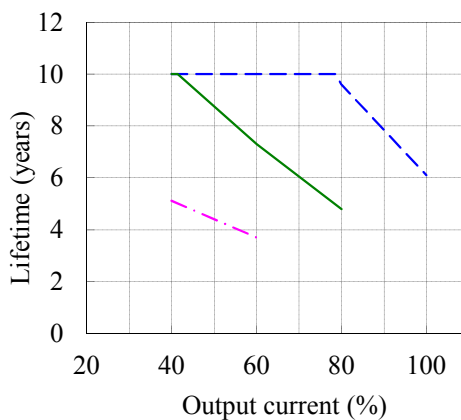
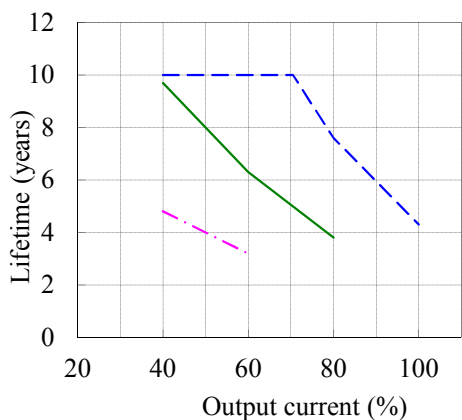
Conditions Ta 40°C : - - - - -  
50°C : ————  
60°C : ······

Vin=100VAC

Load	Ta	Lifetime (years)		
		40°C	50°C	60°C
40		10.0	9.7	4.8
60		10.0	6.3	3.2
80		7.6	3.8	-
100		4.3	-	-

Vin=200VAC

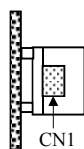
Load	Ta	Lifetime (years)		
		40°C	50°C	60°C
40		10.0	10.0	5.1
60		10.0	7.3	3.7
80		9.6	4.8	-
100		6.1	-	-



**MODEL : CUT75J-5FF**

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

取付方向 B  
Mounting B



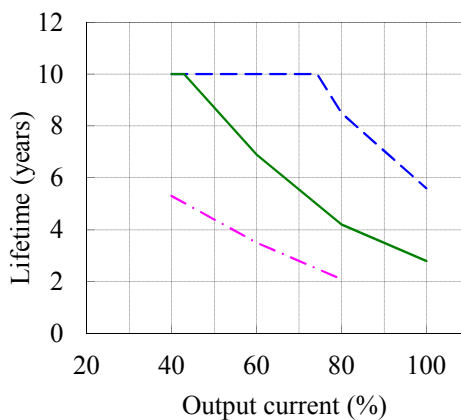
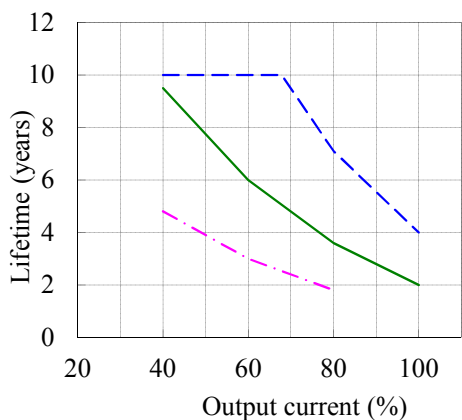
Conditions Ta 40°C : - - - - -  
50°C : ————  
60°C : ······

Vin=100VAC

Load	Ta	Lifetime (years)		
		40°C	50°C	60°C
40		10.0	9.5	4.8
60		10.0	6.0	3.0
80		7.1	3.6	1.8
100		4.0	2.0	-

Vin=200VAC

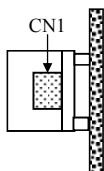
Load	Ta	Lifetime (years)		
		40°C	50°C	60°C
40		10.0	10.0	5.3
60		10.0	6.9	3.5
80		8.5	4.2	2.1
100		5.6	2.8	-



**MODEL : CUT75J-5FF**

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

取付方向 C  
Mounting C



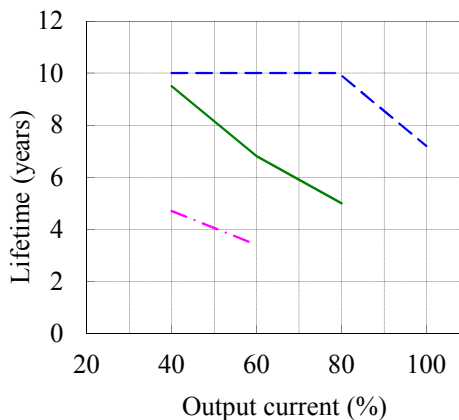
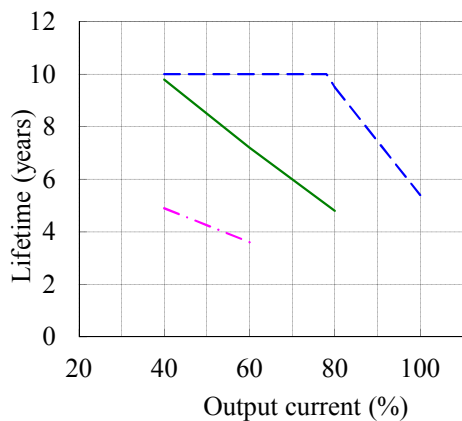
Conditions Ta 40°C : - - - - -  
50°C : ————  
60°C : ······

Vin=100VAC

Load	Ta	Lifetime (years)		
		40°C	50°C	60°C
40		10.0	9.8	4.9
60		10.0	7.2	3.6
80		9.5	4.8	-
100		5.4	-	-

Vin=200VAC

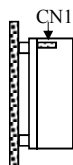
Load	Ta	Lifetime (years)		
		40°C	50°C	60°C
40		10.0	9.5	4.7
60		10.0	6.8	3.4
80		9.9	5.0	-
100		7.2	-	-



**MODEL : CUT75J-5FF**

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

取付方向 D  
Mounting D



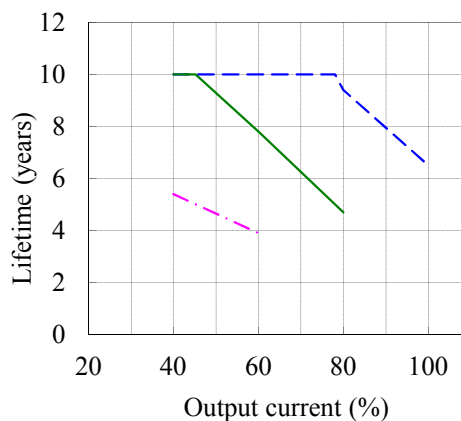
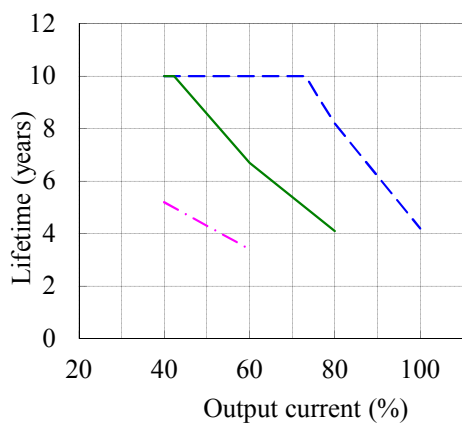
Conditions Ta 40°C : - - - - -  
50°C : ————  
60°C : ······

Vin=100VAC

Load	Ta	Lifetime (years)		
		40°C	50°C	60°C
40		10.0	10.0	5.2
60		10.0	6.7	3.4
80		8.2	4.1	-
100		4.2	-	-

Vin=200VAC

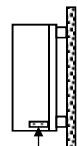
Load	Ta	Lifetime (years)		
		40°C	50°C	60°C
40		10.0	10.0	5.4
60		10.0	7.8	3.9
80		9.4	4.7	-
100		6.5	-	-



**MODEL : CUT75J-5FF**

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

取付方向 E  
Mounting E



CNI

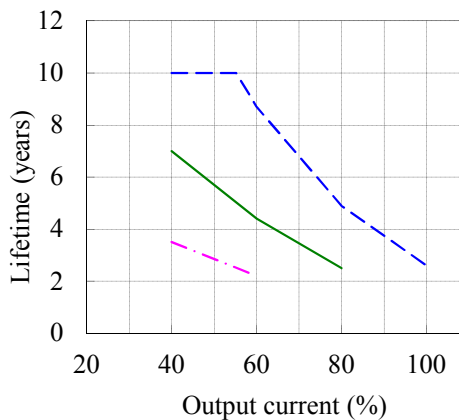
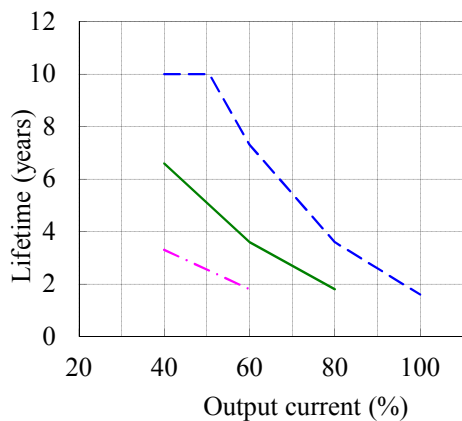
Conditions Ta 40°C : - - - - -  
50°C : ————  
60°C : ······

Vin=100VAC

Load	Ta	Lifetime (years)		
		40°C	50°C	60°C
40		10.0	6.6	3.3
60		7.3	3.6	1.8
80		3.6	1.8	-
100		1.6	-	-

Vin=200VAC

Load	Ta	Lifetime (years)		
		40°C	50°C	60°C
40		10.0	7.0	3.5
60		8.7	4.4	2.2
80		4.9	2.5	-
100		2.6	-	-

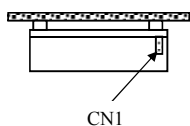




**MODEL : CUT75J-5FF**

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

取付方向 F  
Mounting F



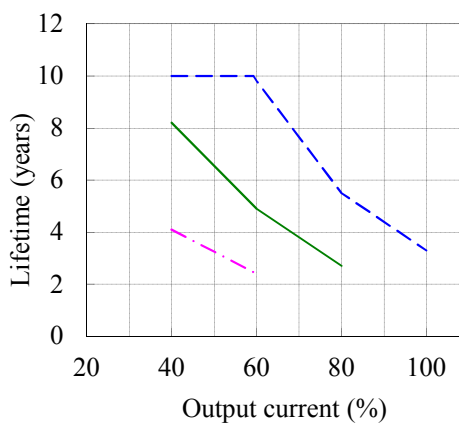
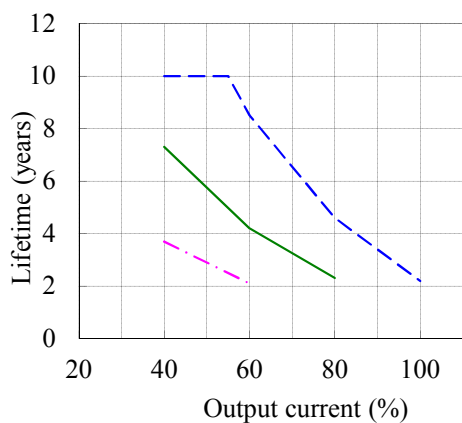
Conditions Ta 40°C : - - - - -  
50°C : ————  
60°C : ······

Vin=100VAC

Load	Ta	Lifetime (years)		
		40°C	50°C	60°C
40		10.0	7.3	3.7
60		8.5	4.2	2.1
80		4.6	2.3	-
100		2.2	-	-

Vin=200VAC

Load	Ta	Lifetime (years)		
		40°C	50°C	60°C
40		10.0	8.2	4.1
60		9.8	4.9	2.4
80		5.5	2.7	-
100		3.3	-	-



## 5. アブノーマル試験 Abnormal Test

MODEL : CUT75J-522

## (1) 試験条件 Test Conditions

Input : 200VAC Output : 5V/8A; +12V/2.5A; -12V/0.5A 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.	試験端子	ショート	オープン	a	b	c	d	e	f	g	h	I	j	k		l
	Location No.	Test point	Short	Open	発火	発煙	破裂	異臭	赤熱	破損	ヒューズ断	OVP	OCP	出力断	変化なし	その他	
					Fire	Smoke	Burst	Smell	Red hot	Damaged	Fuse blown			No output	No change	Others	
1	A102	1~2	○												○		
2		2~3	○												○		CH1 only
3		3~4	○													○	
4		5~6	○								○	○			○		Da: Z101,Q1
5		6~7	○													○	
6		7~8	○													○	
7		1		○												○	
8		2		○									○		○		
9		3		○													○ CH1 Hiccup
10		4		○							○	○			○		Da: A102,Q1,Z101,R106
11		5		○											○		CH1 only
12		6		○											○		CH1 only
13		8		○												○	
14	A104	1~2	○												○		
15		2~3	○												○		CH2,CH3 only
16		3~4	○												○		
17		5~6	○								○	○			○		Da: Z102,Q2
18		6~7	○													○	
19		7~8	○													○	
20		1		○												○	
21		2		○									○		○		
22		3		○													○ CH2,3 Hiccup
23		4		○							○	○			○		Da: A104,Z102,Q2,R155
24	5		○											○		CH2,CH3 only	
25	6		○											○		CH2,CH3 only	
26	8		○												○		
27	Q1	G		○						○	○			○		Da: Z101,Q1	
28		D		○										○		CH1 only	
29		S		○										○		CH1 only	
30		G~S	○												○		CH1 only
31		D~G	○								○	○			○		Da: Z101,Q1
32		D~S	○								○	○			○		Da: Z101

( Da : Damaged )

No.	Test position		Test mode		Test result											記事 Note		
	部品No.	Test point	ショート	オープン	a	b	c	d	e	f	g	h	I	j	k		l	
	Location No.		Short	Open	発火	発煙	破裂	異臭	赤熱	破損	ヒューズ断	OVP	OCP	出力断	変化なし	その他		
33	Q2	G		○						○	○			○			Da: Z102,Q2	
34		D		○										○			CH2,CH3 only	
35		S		○										○			CH2,CH3 only	
36		G - S	○											○				CH2,CH3 only
37		D - G	○								○	○			○			Da: Z102,Q2
38		D - S	○								○	○			○			Da: Z102
39	C6		○								○			○				
40				○												○	Audible noise, all output ripple increase	
41	D1	1~2(3~4)	○								○			○				
42		2~3	○								○			○				
43		1~4	○								○			○				
44		1(4)		○										○				
45		2(3)		○										○				
46	D51		○										○	○			CH1 only	
47				○						○				○			Da: A102, CH1 only	
48	D61		○											○			CH2,CH3 only	
49				○										○			CH2,CH3 only	
50	D62		○											○			CH2,CH3 only	
51				○								○		○				
52	T1	1~3	○							○	○			○			Da: Z101,Q1,R106	
53		3~4	○								○			○				
54		4~5	○											○			CH1 only	
55		9,10~11,12	○											○	○			CH1 only
56		1(3)		○										○				CH1 only
57		4(5)		○													○	CH1 Hiccup
58	9(10,11,12)		○												○			
59	T2	1~3	○											○			CH2,CH3 only	
60		3~4	○							○	○			○			Da: Z302	
61		4~6	○							○	○			○			Da: Z102,Q2,R155,R156	
62		7~9	○											○	○			CH2,CH3 only
63		10~11	○											○	○			CH2,CH3 only
64		1(3)		○													○	CH2,CH3 Hiccup
65		4(6)		○										○				CH2,CH3 only
66		7(9)		○										○	○			
67		10(11)		○										○	○			

## 6. 振動試験 Vibration Test

MODEL : CUT75J-5FF

### (1) 振動試験種類 Vibration Test Class

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

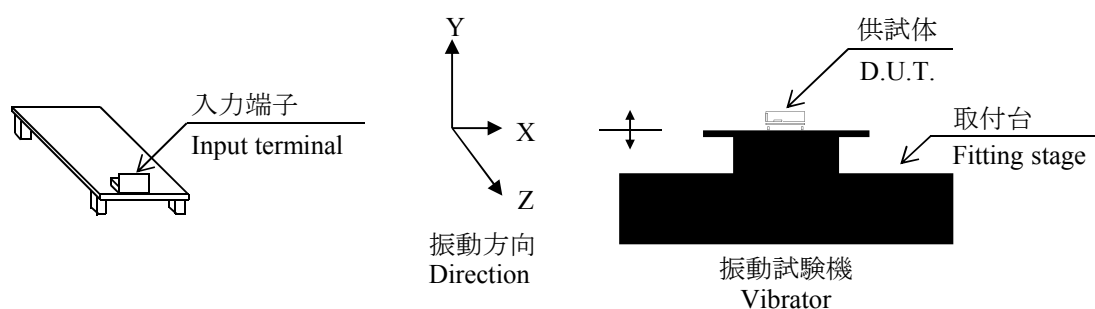
### (2) 使用振動試験装置 Equipment Used

Vibrator V870 (LDS CORP. UK)

### (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 $19.6\text{m/s}^2$ (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.

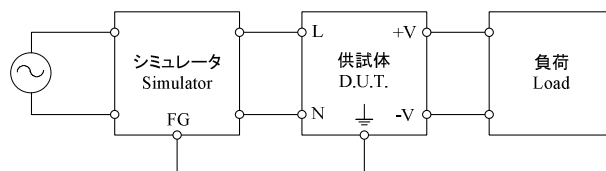
### (6) 試験結果 Test Results

合格 OK

## 7. ノイズシミュレート試験 Noise Simulate Test

MODEL : CUT75J-5FF

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



シミュレータ : INS-400L (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%, 100%	・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. 破壊しない事  
Not to be broken.
2. 出力がダウンしない事  
Not to be shut down output.
3. その他異常のない事  
No other out of orders.

## (4) 試験結果 Test Results

合格 OK

## 8. 熱衝撃試験 Thermal Shock Test

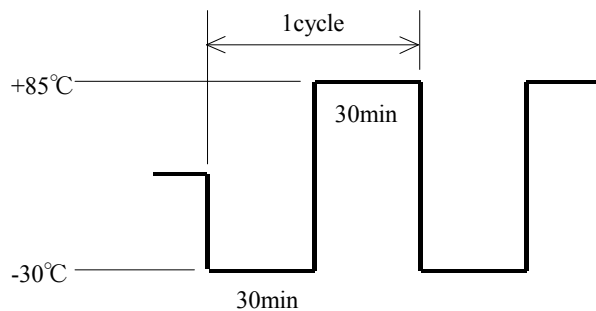
MODEL : CUT75J-5FF

## (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 : -30°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