

KWD10

RELIABILITY DATA

信頼性データ

No. RD-08T-646A		
承認	査閲	担当
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※信頼性試験は代表データであり、この値は実力値とお考え願います。

※本データに掲載してあります内蔵部品の名称は、本製品を開発した当初のものです。

これらは改善等の為に変更されている可能性もありますが、ご了承下さい。

The following data are typical values and the data to be considered as ability values.

The built-in components names on this data are the things the time of Development.

Please understand that it may be changed for an improvement etc.

M . T . B . F

1. Method of calculation

This calculation is by the components count method laid down by the DC Stabilized Power Supplies (Switching mode) committee of EIAJ.

The MTBF is determined by means of a fixed component failure rate λ_c given to each component and the number of component count of each type of component. λ_c is determined based on MIL-HDBK-217D.

Please refer to the EIAJ handbook no. RCF-9021 for detail.

Formula:

$$MTBF = \frac{1}{\lambda_{equipment}} = \frac{1}{\sum_{i=1}^n N_i (\lambda_c)_i} \times 10^6 \quad (Hrs)$$

$\lambda_{equipment}$ = Total equipment failure rate (Failures/10⁶hrs)

λ_c = Failure rate of the ith component

N_i = Number of ith component

n = Number of categories of components

2. MTBF Value

Temperature 25°C

MTBF = 84877 hrs.

Components Derating Data

(At Nominal Line and Rated Load, Ambient Temperature 50°C)

Calculation Method

A. Semiconductors

The derating factor is taken as the ratio of the actual operating junction temperature taking into consideration operating ambient temperature, power loss and thermal resistance to the maximum rated junction temperature specifications of the components.

B. IC, Resistors, Capacitors etc.

Operating ambient temperature, operating condition, power loss for each individual component are all designed to meet the requirements of Nemic-Lambda's design standard.

C. Thermal Resistance Calculation

$$\theta_{jc} = \frac{T_j(\max) - T_c}{P_c(\max)}$$

$$\theta_{ja} = \frac{T_j(\max) - T_a}{P_c(\max)}$$

T_c : Case Temperature (Normally 25°C)

T_a : Ambient Temperature (Normally 25°C)

$P_c(\max)$: Maximum Power Loss

$T_j(\max)$: Maximum Junction Temperature

θ_{jc} : Junction to Case Thermal Resistance

θ_{ja} : Junction to ambient Thermal Resistance

認 APPD		設 計 ENGR		図面番号 DWG-No.	PA774-56-02 - <input type="checkbox"/>
検 印 C H K		製 印 D W G			

SEMICONDUCTOR DERATING

DWG. NO. : PA774-56-03

DATE : 6-DEC-92

MODEL : KWD10-1212

VIN = AC 100V LOAD = 100% Ta = 50°C

Q1 2SK1510 FUJI	Tchmax = 150 °C	$\Theta_{ch-c} = 1.563$ °C/W	Pdmax = 80 W
	Pd = 0.365 W	$\Delta T_c = 47.9$ °C	Tc = 97.9 °C
	Tch = Tc + (Θ_{ch-c})*Pd = 98.5 °C		
	D.F. = 65.6 %		
Q2 2SC2873-Y TOSHIBA	Tjmax = 150 °C	$\Theta_{j-c} = 125$ °C/W	Pdmax = 1 W
	Pd = 0.0 W	$\Delta T_c = 39.1$ °C	Tc = 89.1 °C
	Tj = Tc + (Θ_{j-c})*Pd = 89.1 °C		
	D.F. = 59.4 %		
A1 UC2842ADW UNITRODE	Tjmax = 150 °C	$\Theta_{j-c} = 70$ °C/W	Pdmax = 0.725 W
	Pd = 0.38 W	$\Delta T_c = 49.4$ °C	Tc = 99.4 °C
	Tj = Tc + (Θ_{j-c})*Pd = 126.0 °C		
	D.F. = 84.0 %		
A2 HA17431UA HITACHI	Tjmax = 125 °C	$\Theta_{j-c} = 259.7$ °C/W	Pdmax = 0.385 W
	Pd = 21 mW	$\Delta T_c = 38.9$ °C	Tc = 88.9 °C
	Tj = Tc + (Θ_{j-c})*Pd = 94.4 °C		
	D.F. = 75.5 %		
PC1 (LED) TLP121GR TOSHIBA	Tjmax = 125 °C	$\Theta_{j-c} = 400$ °C/W	Pdmax = 50 mW
	If = 1.8 mA	$\Delta T_c = 38.5$ °C	Tc = 88.5 °C
	ALLOWABLE If (max) = 26.0 mA (at 88.5°C)		
	D.F. = 6.9 %		
PC1 (TRANSISTOR) TLP121GR TOSHIBA	Tjmax = 125 °C	$\Theta_{j-c} = 400$ °C/W	Pdmax = 150 mW
	Pd = 5.2 mW	$\Delta T_c = 38.5$ °C	Tc = 88.5 °C
	Tj = Tc + (Θ_{j-c})*Pd = 90.6 °C		
	D.F. = 72.5 %		
D1 S1WB(A)60B SHINDENGEN	Tjmax = 150 °C	$\Theta_{j-l} = 10$ °C/W	Pdmax = 12.5 W
	Pd = 0.206 W	$\Delta T_l = 34.6$ °C	T(lead) = 84.6 °C
	Tj = Tl + (Θ_{j-l})*Pd = 86.7 °C		
	D.F. = 57.8 %		

SEMICONDUCTOR DERATING

DWG. NO. : PA774-56-04

DATE : 6-DEC-92

MODEL : KWD10-1212

VIN = AC 100V

LOAD = 100%

Ta = 50°C

D2 EC8FS6 NIHON-INTER	Tjmax = 150 °C	$\Theta_{j-l} = 23$ °C/W	Pdmax = 5.43 W
	Pd = 30 mW	$\Delta T_l = 48.7$ °C	T(lead) = 98.7 °C
	Tj = Tl + (Θ_{j-l})*Pd =		99.4 °C
	D.F. = 66.3 %		
D3 1SS184TE85L TOSHIBA	Tjmax = 125 °C	$\Theta_{j-l} = 100$ °C/W	Pdmax = 150 mW
	Pd = 0.0 W	$\Delta T_l = 45.7$ °C	T(lead) = 95.7 °C
	Tj = Tl + (Θ_{j-l})*Pd =		95.7 °C
	D.F. = 76.6 %		
D4 1SS184TE85L TOSHIBA	Tjmax = 125 °C	$\Theta_{j-l} = 100$ °C/W	Pdmax = 150 mW
	Pd = 5.23 mW	$\Delta T_l = 46.3$ °C	T(lead) = 96.3 °C
	Tj = Tl + (Θ_{j-l})*Pd =		96.8 °C
	D.F. = 77.5 %		
D5 D1FL20U SHINDENGEN	Tjmax = 150 °C	$\Theta_{j-l} = 23$ °C/W	Pdmax = 5.43 W
	Pd = 27.28 mW	$\Delta T_l = 48.7$ °C	T(lead) = 98.7 °C
	Tj = Tl + (Θ_{j-l})*Pd =		99.3 °C
	D.F. = 66.2 %		
D6 D1FL20U SHINDENGEN	Tjmax = 150 °C	$\Theta_{j-l} = 23$ °C/W	Pdmax = 5.43 W
	Pd = 0.219 W	$\Delta T_l = 55.4$ °C	T(lead) = 105.4 °C
	Tj = Tl + (Θ_{j-l})*Pd =		110.4 °C
	D.F. = 73.6 %		
D7 D1FL20U SHINDENGEN	Tjmax = 150 °C	$\Theta_{j-l} = 23$ °C/W	Pdmax = 5.43 W
	Pd = 0.219 W	$\Delta T_l = 55.4$ °C	T(lead) = 105.4 °C
	Tj = Tl + (Θ_{j-l})*Pd =		110.4 °C
	D.F. = 73.6 %		
D10 D1FL20U SHINDENGEN	Tjmax = 150 °C	$\Theta_{j-l} = 23$ °C/W	Pdmax = 5.43 W
	Pd = 0.219 W	$\Delta T_l = 54.3$ °C	T(lead) = 104.3 °C
	Tj = Tl + (Θ_{j-l})*Pd =		109.3 °C
	D.F. = 72.9 %		

SEMICONDUCTOR DERATING

DWG. NO. : PA774-56-05

DATE : 6-DEC-92

MODEL : KWD10-1212

VIN = AC 100V		LOAD = 100%		Ta = 50°C	
D11 D1FL20U SHINDENGEN	Tjmax = 150 °C		Θj-l = 23 °C/W		Pdmax = 5.43 W
	Pd = 0.219 W		ΔTl = 54.3 °C		T(lead) = 104.3 °C
	Tj = Tl + (Θj-l)*Pd = 109.3 °C				
	D.F. = 72.9 %				
ZD1 1N4744A MOTOROLA	Tjmax = 200 °C		Θj-l = 175 °C/W		Pdmax = 1 W
	Pd = 0.0 W		ΔTl = 35.4 °C		T(lead) = 85.4 °C
	Tj = Tl + (Θj-l)*Pd = 85.4 °C				
	D.F. = 42.7 %				
ZD2 02CZ12-Z TOSHIBA	Tjmax = 150 °C		Θj-l = 100 °C/W		Pdmax = 150 mW
	Pd = 21.6 mW		ΔTl = 45.4 °C		T(lead) = 95.4 °C
	Tj = Tl + (Θj-l)*Pd = 97.6 °C				
	D.F. = 65.0 %				

TDK-Lambda

dT TEMPERATURE RISE

DWG. NO. PA774-66-02

MODEL : KWD10-1212

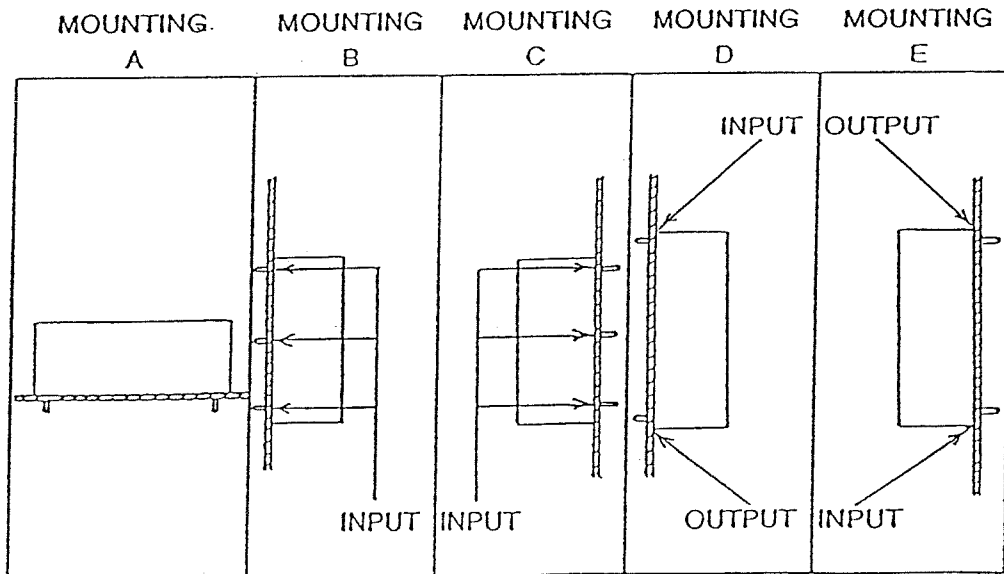
DATE : 31-DEC.-1992

INPUT VOLTAGE = 100VAC

Ta = 50 °C		dT TEMPERATURE RISE (°C)				
OUTPUT DERATING (%)		100%	100%	100%	100%	100%
SYMBOL	PARTS NAME	MOUNTING A	MOUNTING B	MOUNTING C	MOUNTING D	MOUNTING E
Q1	MOSFET	47.9	47.0	45.9	46.7	46.0
A1	PWM IC	49.4	48.9	46.4	48.2	46.3
D5	SBD	48.7	46.8	46.8	47.0	46.5
T1	X'TMER	48.4	47.0	47.9	46.7	47.8
C6	E.CAP	38.8	39.1	36.6	37.8	37.4
C18	OS CAP.	41.0	39.8	39.8	38.8	41.7
C21	OS CAP.	39.0	38.8	37.3	37.0	39.6

INPUT VOLTAGE = 200VAC

Ta = 50 °C		dT TEMPERATURE RISE (°C)				
OUTPUT DERATING (%)		100%	100%	100%	100%	100%
SYMBOL	PARTS NAME	MOUNTING A	MOUNTING B	MOUNTING C	MOUNTING D	MOUNTING E
Q1	MOSFET	55.3	54.0	53.4	53.5	53.2
A1	PWM IC	53.8	52.9	50.8	52.5	50.8
D5	SBD	53.2	50.9	51.6	51.1	50.8
T1	X'TMER	52.7	50.9	52.6	50.6	52.1
C6	E.CAP	43.1	43.4	41.2	42.0	42.0
C18	OS CAP.	44.0	42.6	43.1	41.4	45.0
C21	OS CAP.	42.2	41.7	40.6	39.7	43.0



ELECTROLYTIC CAPACITOR LIFETIME VERSUS LOAD

MODEL : KWD10-1212

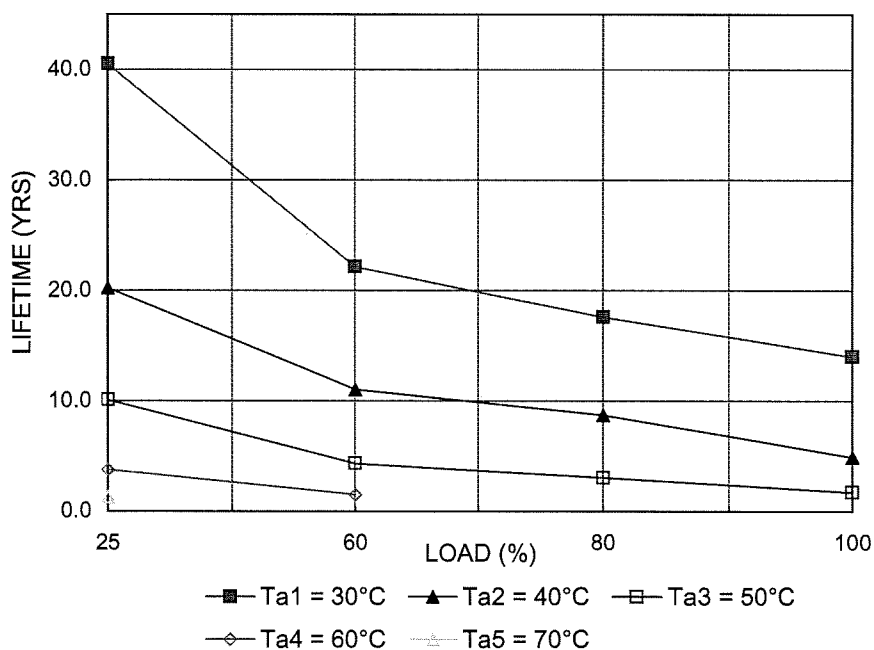
MOUNTING : A

VIN : 100VAC

DATE: SEPT 12, 2008

LOAD (%)	LIFETIME (YRS)				
	Ta = 30°C	Ta = 40°C	Ta = 50°C	Ta = 60°C	Ta = 70°C
25	40.5	20.3	10.1	3.8	1.3
60	22.2	11.1	4.3	1.5	
80	17.6	8.8	3.1		
100	14.0	4.9	1.7		

GRAPH OF ELECTROLYTIC CAPACITOR LIFETIME VS LOAD
MOUNTING A KWD10-1212



計算式 FORMULA

- | | |
|---|--|
| <p>1. アルミ電解コンデンサ
AL. Electrolytic capacitor
$L = L_0 \times 2^{(105-T_c)/10}$ (year)</p> | <p>L : 電解コンデンサ推定寿命計算値
Elec. Capacitor computed life.
(24時間連続稼働、365日)
(24 hrs per day, 365 days per year)</p> |
| <p>2. OSコンデンサ
O.S capacitor
$L = L_0 \times 10^{(105-T_c)/22}$ (year)</p> | <p>L₀ : 電解コンデンサ保証寿命値
Guarantee life for Elec. cap.
T_c : 電解コンデンサのケース温度
Case temperature of Elec. cap.</p> |

ELECTROLYTIC CAPACITOR LIFETIME VERSUS LOAD

MODEL : KWD10-1212

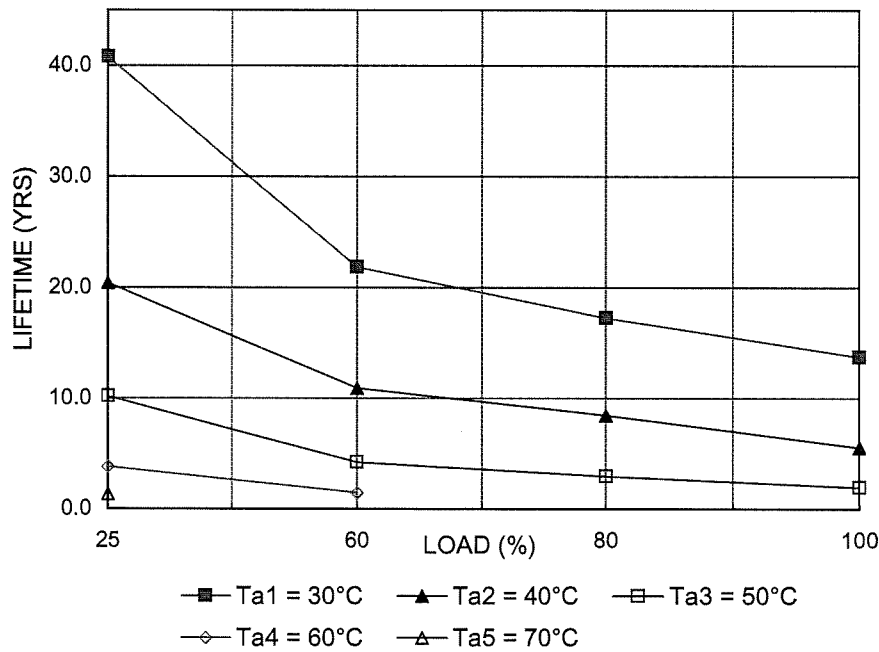
MOUNTING : B

VIN : 100VAC

DATE: SEPT 12, 2008

LOAD (%)	LIFETIME (YRS)				
	Ta = 30°C	Ta = 40°C	Ta = 50°C	Ta = 60°C	Ta = 70°C
25	40.8	20.4	10.2	3.8	1.3
60	21.9	10.9	4.3	1.5	
80	17.3	8.5	3.0		
100	13.7	5.6	2.0		

GRAPH OF ELECTROLYTIC CAPACITOR LIFETIME VS LOAD
MOUNTING B KWD10-1212



計算式 FORMULA

1. アルミ電解コンデンサ
AL. Electrolytic capacitor

$$L = L_0 \times 2^{(105-T_c)/10} \quad (\text{year})$$

2. OSコンデンサ
O.S capacitor

$$L = L_0 \times 10^{(105-T_c)/22} \quad (\text{year})$$

L : 電解コンデンサ推定寿命計算値
Elec. Capacitor computed life.
(24時間連続稼動、365日)
(24 hrs per day, 365 days per year)

L₀ : 電解コンデンサ保証寿命値
Guarantee life for Elec. cap.

T_c : 電解コンデンサのケース温度
Case temperature of Elec. cap.

ELECTROLYTIC CAPACITOR LIFETIME VERSUS LOAD

MODEL : KWD10-1212

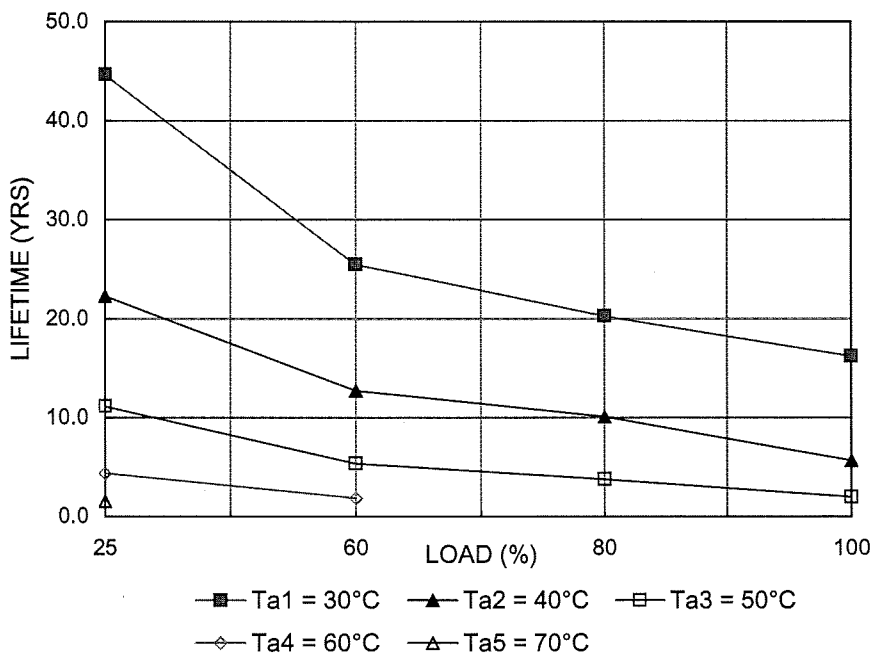
MOUNTING : C

VIN : 100VAC

DATE: SEPT 12, 2008

LOAD (%)	LIFETIME (YRS)				
	Ta = 30°C	Ta = 40°C	Ta = 50°C	Ta = 60°C	Ta = 70°C
25	44.7	22.3	11.2	4.4	1.5
60	25.5	12.7	5.4	1.9	
80	20.3	10.1	3.8		
100	16.2	5.7	2.0		

GRAPH OF ELECTROLYTIC CAPACITOR LIFETIME VS LOAD
MOUNTING C KWD10-1212



計算式 **FORMULA**

1. アルミ電解コンデンサ
AL. Electrolytic capacitor

$$L = L_0 \times 2^{(105-T_c)/10} \quad (\text{year})$$

L : 電解コンデンサ推定寿命計算値
Elec. Capacitor computed life.
(24時間連続稼動、365日)
(24 hrs per day, 365 days per year)

2. OSコンデンサ
O.S capacitor

$$L = L_0 \times 10^{(105-T_c)/22} \quad (\text{year})$$

L₀ : 電解コンデンサ保証寿命値
Guarantee life for Elec. cap.
T_c : 電解コンデンサのケース温度
Case temperature of Elec. cap.

ELECTROLYTIC CAPACITOR LIFETIME VERSUS LOAD

MODEL : KWD10-1212

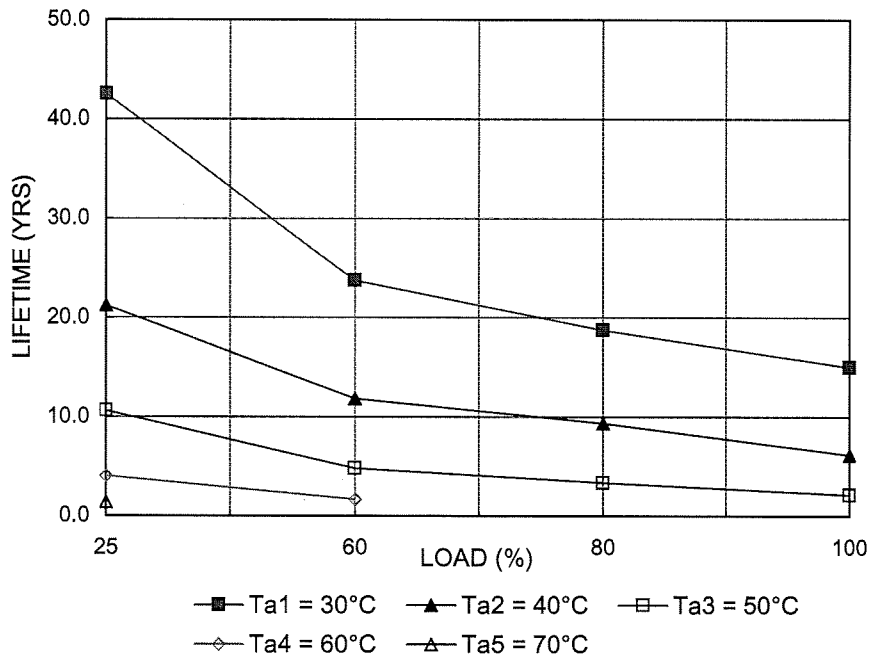
MOUNTING : D

VIN : 100VAC

DATE: SEPT 12, 2008

LOAD (%)	LIFETIME (YRS)				
	Ta = 30°C	Ta = 40°C	Ta = 50°C	Ta = 60°C	Ta = 70°C
25	42.5	21.3	10.6	4.1	1.4
60	23.8	11.9	4.8	1.7	
80	18.8	9.4	3.4		
100	15.0	6.2	2.2		

GRAPH OF ELECTROLYTIC CAPACITOR LIFETIME VS LOAD
MOUNTING D KWD10-1212



計算式 **FORMULA**

- | | |
|---|--|
| <p>1. アルミ電解コンデンサ
AL. Electrolytic capacitor
$L = L_o \times 2^{(105-T_c)/10}$ (year)</p> | <p>L : 電解コンデンサ推定寿命計算値
Elec. Capacitor computed life.
(24時間連続稼働、365日)
(24 hrs per day, 365 days per year)</p> |
| <p>2. OSコンデンサ
O.S capacitor
$L = L_o \times 10^{(105-T_c)/22}$ (year)</p> | <p>L_o : 電解コンデンサ保証寿命値
Guarantee life for Elec. cap.
T_c : 電解コンデンサのケース温度
Case temperature of Elec. cap.</p> |

ELECTROLYTIC CAPACITOR LIFETIME VERSUS LOAD

MODEL : KWD10-1212

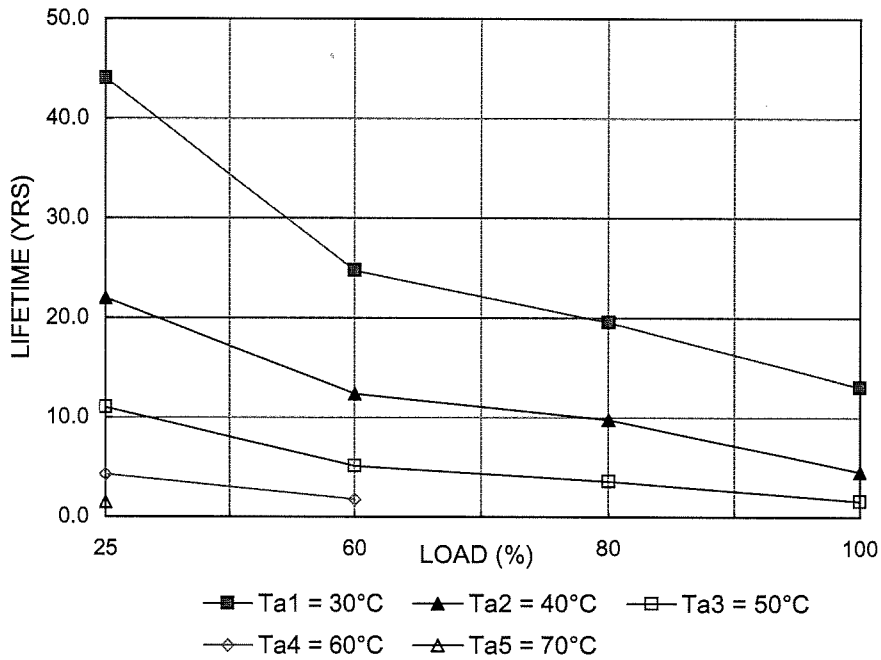
MOUNTING : E

VIN : 100VAC

DATE: SEPT 12, 2008

LOAD (%)	LIFETIME (YRS)				
	Ta = 30°C	Ta = 40°C	Ta = 50°C	Ta = 60°C	Ta = 70°C
25	44.0	22.0	11.0	4.3	1.5
60	24.8	12.4	5.1	1.8	
80	19.6	9.8	3.6		
100	13.0	4.6	1.6		

GRAPH OF ELECTROLYTIC CAPACITOR LIFETIME VS LOAD
MOUNTING E KWD10-1212



計算式 **FORMULA**

- | | |
|---|--|
| <p>1. アルミ電解コンデンサ
AL. Electrolytic capacitor
$L = L_0 \times 2^{(105-T_c)/10}$ (year)</p> | <p>L : 電解コンデンサ推定寿命計算値
Elec. Capacitor computed life.
(24時間連続稼動、365日)
(24 hrs per day, 365 days per year)</p> |
| <p>2. OSコンデンサ
O.S capacitor
$L = L_0 \times 10^{(105-T_c)/22}$ (year)</p> | <p>L₀ : 電解コンデンサ保証寿命値
Guarantee life for Elec. cap.
T_c : 電解コンデンサのケース温度
Case temperature of Elec. cap.</p> |

ELECTROLYTIC CAPACITOR LIFETIME VERSUS LOAD

MODEL : KWD10-1212

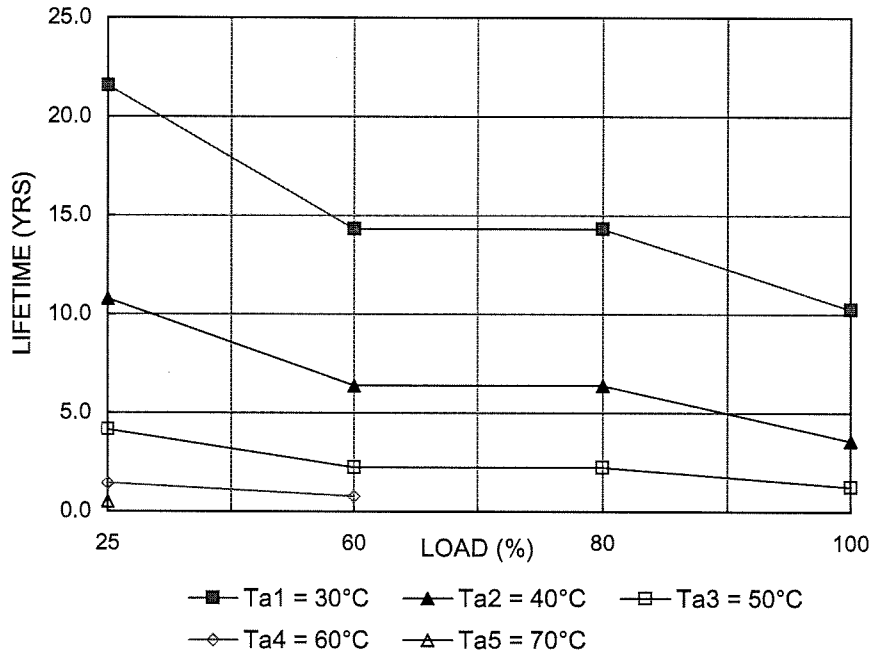
MOUNTING : A

VIN : 200VAC

DATE: SEPT 12, 2008

LOAD (%)	LIFETIME (YRS)				
	Ta = 30°C	Ta = 40°C	Ta = 50°C	Ta = 60°C	Ta = 70°C
25	21.6	10.8	4.2	1.5	0.5
60	14.3	6.4	2.2	0.8	
80	14.3	6.4	2.2		
100	10.2	3.6	1.3		

GRAPH OF ELECTROLYTIC CAPACITOR LIFETIME VS LOAD
MOUNTING A KWD10-1212



計算式 **FORMULA**

- | | |
|---|--|
| <p>1. アルミ電解コンデンサ
AL. Electrolytic capacitor
$L = L_o \times 2^{(105-T_c)/10}$ (year)</p> | <p>L : 電解コンデンサ推定寿命計算値
Elec. Capacitor computed life.
(24時間連続稼働、365日)
(24 hrs per day, 365 days per year)</p> |
| <p>2. OSコンデンサ
O.S capacitor
$L = L_o \times 10^{(105-T_c)/22}$ (year)</p> | <p>L_o : 電解コンデンサ保証寿命値
Guarantee life for Elec. cap.
T_c : 電解コンデンサのケース温度
Case temperature of Elec. cap.</p> |

ELECTROLYTIC CAPACITOR LIFETIME VERSUS LOAD

MODEL : KWD10-1212

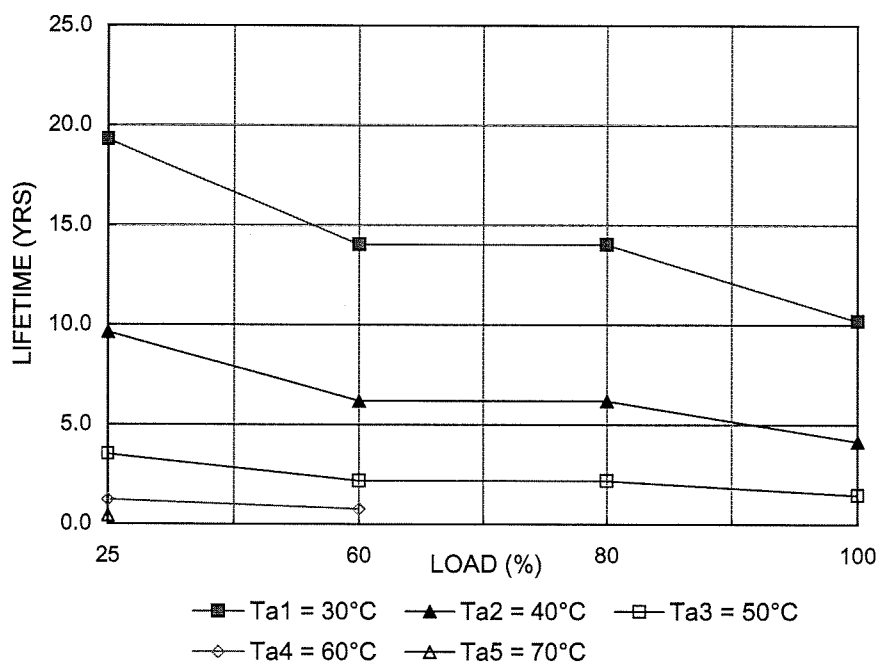
MOUNTING : B

VIN : 200VAC

DATE: SEPT 12, 2008

LOAD (%)	LIFETIME (YRS)				
	Ta = 30°C	Ta = 40°C	Ta = 50°C	Ta = 60°C	Ta = 70°C
25	19.3	9.7	3.5	1.2	0.4
60	14.0	6.2	2.2	0.8	
80	14.0	6.2	2.2		
100	10.2	4.2	1.5		

GRAPH OF ELECTROLYTIC CAPACITOR LIFETIME VS LOAD
MOUNTING B KWD10-1212



計算式 FORMULA

- | | | | |
|---|---|------------------|--|
| 1. アルミ電解コンデンサ
AL. Electrolytic capacitor | $L = L_o \times 2^{(105-T_c)/10}$ (year) | L : | 電解コンデンサ推定寿命計算値
Elec. Capacitor computed life.
(24時間連続稼動、365日)
(24 hrs per day, 365 days per year) |
| 2. OSコンデンサ
O.S capacitor | $L = L_o \times 10^{(105-T_c)/22}$ (year) | L _o : | 電解コンデンサ保証寿命値
Guarantee life for Elec. cap. |
| | | T _c : | 電解コンデンサのケース温度
Case temperature of Elec. cap. |

ELECTROLYTIC CAPACITOR LIFETIME VERSUS LOAD

MODEL : KWD10-1212

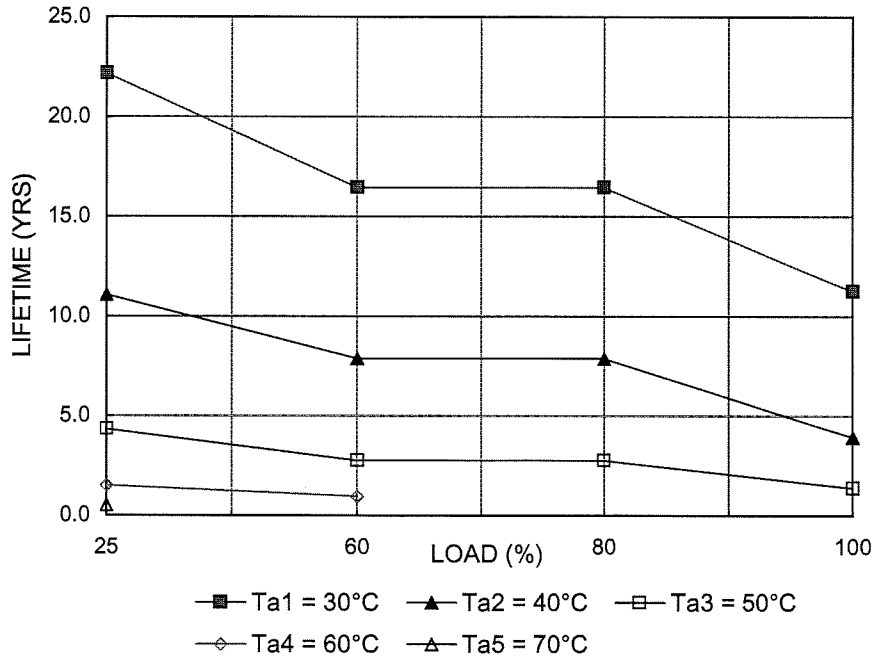
MOUNTING : C

VIN : 200VAC

DATE: SEPT 12, 2008

LOAD (%)	LIFETIME (YRS)				
	Ta = 30°C	Ta = 40°C	Ta = 50°C	Ta = 60°C	Ta = 70°C
25	22.2	11.1	4.3	1.5	0.5
60	16.5	7.9	2.8	1.0	
80	16.5	7.9	2.8		
100	11.3	4.0	1.4		

GRAPH OF ELECTROLYTIC CAPACITOR LIFETIME VS LOAD
MOUNTING C KWD10-1212



計算式 **FORMULA**

1. アルミ電解コンデンサ
AL. Electrolytic capacitor
 $L = L_o \times 2^{(105-T_c)/10}$ (year)

L : 電解コンデンサ推定寿命計算値
Elec. Capacitor computed life.
(24時間連続稼動、365日)
(24 hrs per day, 365 days per year)

2. OSコンデンサ
O.S capacitor
 $L = L_o \times 10^{(105-T_c)/22}$ (year)

L_o : 電解コンデンサ保証寿命値
Guarantee life for Elec. cap.
T_c : 電解コンデンサのケース温度
Case temperature of Elec. cap.

ELECTROLYTIC CAPACITOR LIFETIME VERSUS LOAD

MODEL : KWD10-1212

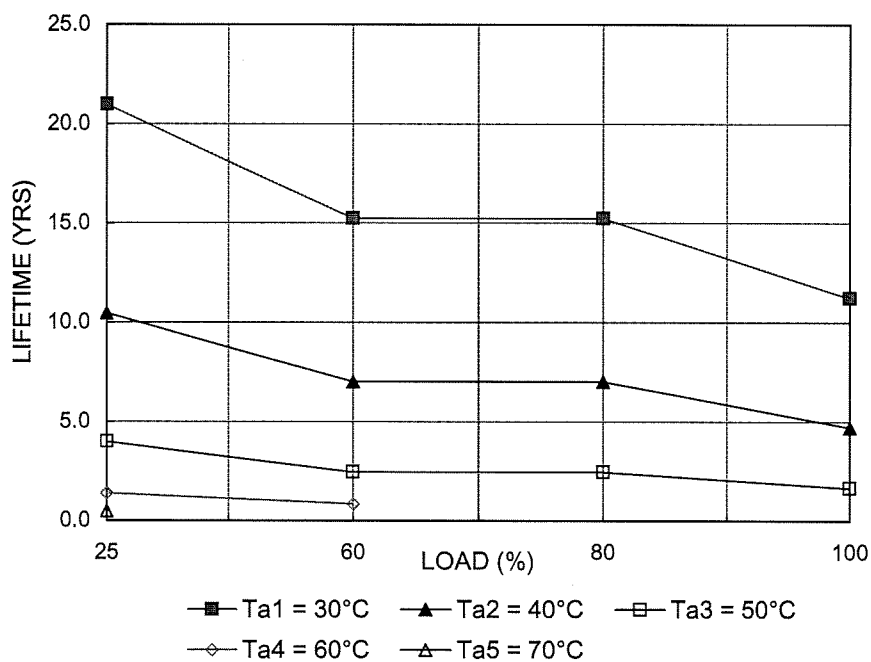
MOUNTING : D

VIN : 200VAC

DATE: SEPT 12, 2008

LOAD (%)	LIFETIME (YRS)				
	Ta = 30°C	Ta = 40°C	Ta = 50°C	Ta = 60°C	Ta = 70°C
25	21.0	10.5	4.0	1.4	0.5
60	15.3	7.0	2.5	0.9	
80	15.3	7.0	2.5		
100	11.2	4.7	1.7		

GRAPH OF ELECTROLYTIC CAPACITOR LIFETIME VS LOAD
MOUNTING D KWD10-1212



計算式 FORMULA

- | | |
|---|--|
| <p>1. アルミ電解コンデンサ
AL. Electrolytic capacitor
$L = L_0 \times 2^{(105-T_c)/10}$ (year)</p> | <p>L : 電解コンデンサ推定寿命計算値
Elec. Capacitor computed life.
(24時間連続稼動、365日)
(24 hrs per day, 365 days per year)</p> |
| <p>2. OSコンデンサ
O.S capacitor
$L = L_0 \times 10^{(105-T_c)/22}$ (year)</p> | <p>L₀ : 電解コンデンサ保証寿命値
Guarantee life for Elec. cap.
T_c : 電解コンデンサのケース温度
Case temperature of Elec. cap.</p> |

ELECTROLYTIC CAPACITOR LIFETIME VERSUS LOAD

MODEL : KWD10-1212

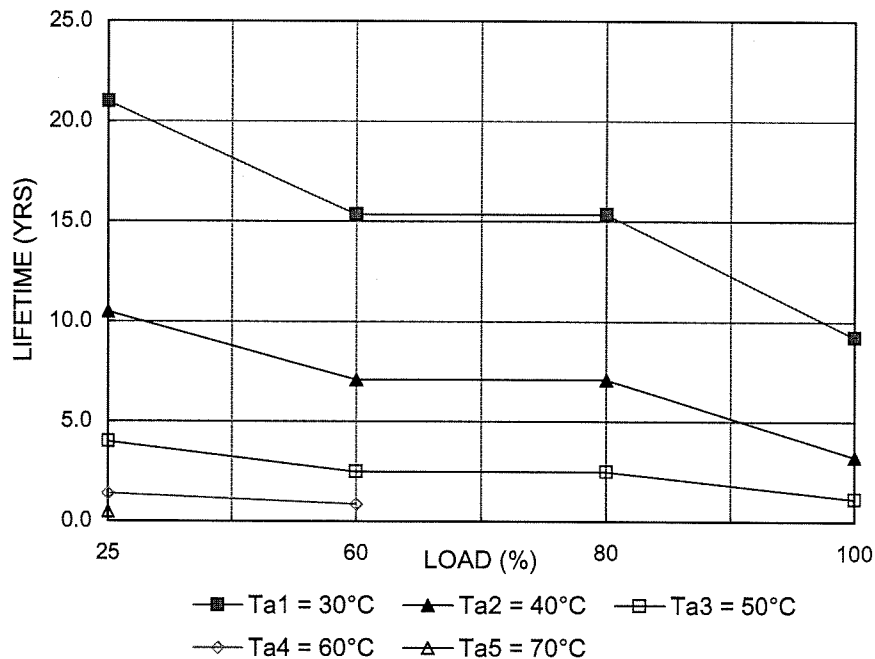
MOUNTING : E

VIN : 200VAC

DATE: SEPT 12, 2008

LOAD (%)	LIFETIME (YRS)				
	Ta = 30°C	Ta = 40°C	Ta = 50°C	Ta = 60°C	Ta = 70°C
25	21.0	10.5	4.0	1.4	0.5
60	15.4	7.1	2.5	0.9	
80	15.4	7.1	2.5		
100	9.2	3.2	1.1		

GRAPH OF ELECTROLYTIC CAPACITOR LIFETIME VS LOAD
MOUNTING E KWD10-1212



計算式 FORMULA

- | | |
|---|--|
| <p>1. アルミ電解コンデンサ
AL. Electrolytic capacitor
$L = L_o \times 2^{(105-T_c)/10}$ (year)</p> | <p>L : 電解コンデンサ推定寿命計算値
Elec. Capacitor computed life.
(24時間連続稼動、365日)
(24 hrs per day, 365 days per year)</p> |
| <p>2. OSコンデンサ
O.S capacitor
$L = L_o \times 10^{(105-T_c)/22}$ (year)</p> | <p>L_o : 電解コンデンサ保証寿命値
Guarantee life for Elec. cap.
T_c : 電解コンデンサのケース温度
Case temperature of Elec. cap.</p> |

MODEL: KWD10-1212		ABNORMAL TESTING										TEST CONDITIONS			APPROVED BY		TESTED BY										
		TEST MODE												LOAD = 100%			Vin = 200VAC Ta = 25°C		CCNFD 27/01/93		M. W. ...						
	PARTS NAME	PART NO.			SHORT	OPEN	FIRE	SMOKE A	SMOKE B	BURST	SMELL	HOT	DAMAGE	FUSE	BLOWN	O.C.P.	O.V.P.	NO OUTPUT	NO CHANGE	OTHERS	NOTE	OK	RETEST	NO GOOD			
																									SMOKE A	SMOKE B	BURST
1	MOSFET	Q1	D-G		Y								Y	Y								Q1,R24,R25,R26,R17,A1.	Y				
2	2SK1510-01L		D-S		Y							Y	Y										Q1,R24,R25,R26,R17,A1.	Y			
3			G-S		Y													Y						Y			
4			D			Y												Y						Y			
5			S			Y												Y						Y			
6			G			Y												Y						Y			
7																											
8	TRANSISTOR	Q2	C-E		Y													Y						Y			
9	2SC2873-Y-TE12L		C-B		Y													Y						Y			
10			B-E		Y													Y						Y			
11			C			Y																		Y			
12			E			Y																		Y			
13			B			Y																		Y			
14																											
15	I.C.	A1	1-2		Y																			Y			
16	UC2842ADW		2-3		Y													Y						Y			
17			3-4		Y													Y						Y			
18			4-5		Y													Y						Y			
19			5-6		Y													Y						Y			
20			6-7		Y													Y						Y			
21			7-8		Y																			Y			
22			9-10		Y																			Y			
23			10-11		Y																			Y			
24			11-12		Y														Y					Y			
25																											

*** A: SLIGHT B: PROLONGED

MODEL : KWD10-1212	ABNORMAL TESTING											TEST CONDITIONS			APPROVED CCME 15/03/93	TESTED W. [Signature]	DWG NO: PA774-57-03								
												LOAD = 100%	ViN = 200VAC	Ta = 25°C											
	PARTS NAME	PART NO.	TEST MODE										TEST CONDITIONS	TESTED											
			SHORT	OPEN	FIRE	SMOKE A	SMOKE B	BURST	SMELL	HOT	DAMAGE	FUSE	BLOWN	O.C.P.	O.V.P.	NO OUTPUT	NO CHANGE	OTHERS	NOTE	OK	TEST	GOOD	NO		
1																									
2		A1	12-13	Y												Y									
3			13-14	Y												Y									
4			14-15	Y												Y									
5			15-16	Y												Y									
6			1		Y																				
7			2		Y											Y									
8			3		Y																				
9			4		Y																				
10			5		Y											Y									
11			6		Y											Y									
12			7		Y											Y									
13			8		Y											Y									
14			9		Y											Y									
15			10		Y											Y									
16			11		Y											Y									
17			12		Y											Y									
18			13		Y											Y									
19			14		Y											Y									
20			15		Y											Y									
21			16		Y											Y									
22																									
23																									
24																									
25																									

*** A: SLIGHT B: PROLONGED

MODEL : KWD10-1212		ABNORMAL TESTING													TEST CONDITIONS		APPROVED		TESTED									
		TEST MODE													LOAD = 100%	TEST CONDITIONS Vin = 200VAC Ta = 25°C	CCNEO 15763/93	<i>Kidner</i>										
PARTS NAME	PART NO.																											
		SHORT	OPEN	FIRE	SMOKE A	SMOKE B	BURST	SMELL	RED HOT	DAMAGE	FUSE BLOWN	OC.P.	OV.P.	NO OUTPUT	NO CHANGE	OTHERS	NOTE											
1 SHUNT REGULATOR HA17431UA-TL	A2	Y	Y													Y	Hiccup; Vout low											
2		Y														Y	Hiccup; Vout low											
3		Y																										
4			Y													Y												
5			Y													Y												
6			Y													Y												
7																												
8 PHOTO COUPLER	PC1		Y									Y																
9 TLP121GR-TPL			Y											Y														
10																												
11			Y																									
12			Y																									
13			Y																									
14																												
15 CHIP BRIDGE	D1		Y								Y																	
16 S1WB(A)60B	D1													Y														
17	D1		Y								Y																	
18	D1		Y											Y														
19																												
20																												
21 CHIP DIODE	D2		Y																									
22 EC8FS6-TE12L	A-K															Y	Hiccup											
23																												
24 1SS184-TE85L	D3		Y													Y												
25			Y													Y												


*** A : SLIGHT B : PROLONGED

MODEL : KWD10-1212		ABNORMAL TESTING												TEST CONDITIONS		APPROVED		TESTED						
														LOAD = 100%		Vin = 200VAC Ta = 25°C		CCMEO 15/03/93		M. Khan				
PARTS NAME	PART NO.	TEST MODE				SHORT	OPEN	FIRE	SMOKE A	SMOKE B	BURST	SMELL	RED HOT	DAMAGE	FUSE BLOWN	O.C.P.	O.V.P.	NO OUTPUT	NO CHANGE	OTHERS	NOTE	OK	TEST	GOOD
		S	A	B	K																			
1SS184-TE85L	D4		A-K		Y													Y				Y		
			A-K			Y												Y				Y		
CHIP DIODE	D5		A-K		Y												Y					Y		
D1FL20U			A-K			Y											Y					Y		
CHIP DIODE	D6		A-K		Y											Y				Hiccup		Y		
D1FL20U			A-K			Y										Y						Y		
CHIP DIODE	D7		A-K		Y											Y				Hiccup		Y		
D1FL20U			A-K			Y										Y						Y		
NOT ASSIGNED	D8																							
NOT ASSIGNED	D9																							
CHIP DIODE	D10		A-K		Y											Y				Hiccup		Y		
D1FL20U			A-K			Y										Y						Y		
CHIP DIODE	D11		A-K		Y											Y				Hiccup		Y		
D1FL20U			A-K			Y										Y						Y		

*** A: SLIGHT B: PROLONGED

MODEL : KWD10-1212		ABNORMAL TESTING										TEST CONDITIONS			APPROVED	TESTED								
												LOAD = 100%	Vin = 200VAC Ta = 25°C	CCME 15/03/93	<i>Walter</i>									
PARTS NAME	PART NO.	TEST MODE		SHORT	OPEN	FIRE	SMOKE A	SMOKE B	BURST	SMELL	RED HOT	DAMAGE	FUSE BLOWN	O.C.P.	O.V.P.	NO. OUTPUT	NO CHANGE	OTHERS	NOTE	OK	RETEST	NO GOOD		
		A	B																					
1	NOT ASSIGNED	D12	A-K																					
2			A-K																					
3																								
4	NOT ASSIGNED	D13	A-K																					
5			A-K																					
6																								
7	ZENER DIODE	ZD1	A-K	Y											Y				Hiccup		Y			
8	1N4744A		A-K		Y											Y					Y			
9																								
10	CHIP ZENER	ZD2	A-K	Y												Y					Y			
11	02CZ12Z-TE85L		A-K		Y																Y			
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
21																								
22																								
23																								
24																								
25																								

*** A: SUGHT B: PROLONGED

MODEL: KWD10-1212		ABNORMAL TESTING												TEST CONDITIONS		APPROVED	TESTED										
														LOAD = 100%	Vin = 200VAC Ta = 25°C	CCNEO 15/03/93											
	PARTS NAME	PART NO.	TEST MODE												NOTE	OK	R E T E S T	N O G O O D									
			OPEN	SHORT	FIRE	SMOKE A	SMOKE B	BURST	SMELL	RED HOT	DAMAGE	FUSE	BLOWN	O.C.P.					V.P.	NO OUTPUT	NO CHANG	OTHERS					
1	CAP. FILM	C1		Y												Y					Y						
2	MKC-S683M																Y						Y				
3																											
4	CAP. CERAMIC	C2		Y											Y									Y			
5	ECKDNS101MB																							Y			
6																											
7	NOT ASSIGNED	C3																									
8																											
9																											
10	CAP. CERAMIC	C4		Y																				Y			
11	DE7100F222MVA1N																								Y		
12																											
13	CAP. CERAMIC	C5		Y																					Y		
14	DE7100F222MVA1N																								Y		
15																											
16	CAP. ELECT	C6		Y													Y								Y		
17	LXA400VBSN-47(M)																								Y		
18																											
19	CHIP CAP. CERAMIC	C7		Y																					Y		
20	GR43-2W5R103K500FT																								Y		
21																											
22	CHIP CAP. CERAMIC	C8		Y																					Y		
23	C3216X7R1E334KT																								Y		
24																											
25	NOT ASSIGNED	C9																									

*** A: SLIGHT B: PROLONGED

MODEL : KWD10-1212		ABNORMAL TESTING										TEST CONDITIONS				APPROVED	TESTED											
												LOAD = 100%				Vin = 200VAC Ta = 25°C	RCN/EO 27/10/93											
PARTS NAME	PART NO.	TEST MODE										TEST CONDITIONS				NOTE	OK	TESTED										
		SHORT	OPEN	OFF	S M O K E E A	S M O K E E B	B U R S T	S M E L L	R E D H O T	D A M A G E	F U S B L O W N	O . V . P .	O . C . P .	N O U T P U T	N O C H A N G E				O T H E R S									
1 O.S CAP	C18	Y	Y														Hiccup		Y									
2 20SA33M+H																				Y								
3																												
4 CHIP CERAMIC CAP.	C19	Y	Y																		Y							
5 CM21W5R471K200BT																						Y						
6																							Y					
7 CHIP CERAMIC CAP	C20	Y	Y																				Y					
8 C25Y5U1E106Z																								Y				
9																									Y			
10 O.S. CAP	C21	Y	Y																						Y			
11 20SA33M+H																										Y		
12																											Y	
13 CAP. CERAMIC	C22	Y	Y																							Y		
14 DE7100F22MVA1N																											Y	
15																											Y	
16 CHIP CERAMIC CAP	C23	Y	Y																								Y	
17 C2012X7R1H473KT																											Y	
18																												
19																												
20																												
21																												
22																												
23																												
24																												
25																												

*** A : SLIGHT B : PROLONGED

MODEL : KWD10 - 1212		ABNORMAL TESTING														TEST CONDITIONS		DWG NO: PA774-57-10																
PARTS NAME		PART NO.		TEST MODE												TEST CONDITIONS		APPROVED		TESTED														
				OPEN	SHORT	FIRE	SMOKE	SMOKE	BURST	SMELL	RED	DAMAGE	FUSION	BLOWN	O.C.P.	V.P.P.	NO. OUTPUT	NO CHANGE	OTHERS	NOTE	OK	TEST												
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	LOAD = 100%	TEST CONDITIONS	APPROVED	TESTED						
CHIP RESISTOR	ERJ8GEYJ304V	R1		Y	Y																							CC/EO	1/5/03/23	Not tested				
CHIP RESISTOR	ERJ8GEYJ304V	R2		Y	Y																													
CHIP RESISTOR	ERJ8GEYJ304V	R3		Y	Y																													
METAL O. RESISTOR	ERG1SJ-623	R4		Y	Y																													
METAL O. RESISTOR	ERG1SJ-623	R5		Y	Y																													
CHIP RESISTOR	ERJ8GEYJ823V	R6		Y	Y																													
CHIP RESISTOR	ERJ8GEYJ823V	R7		Y	Y																													
CHIP RESISTOR	ERJ8GEYJ823V	R8		Y	Y																													


*** A: SLIGHT B: PROLONGED

MODEL : KWD10-1212		ABNORMAL TESTING													TEST CONDITIONS		APPROVED	TESTED													
															LOAD = 100%	Vin = 200VAC Ta = 25°C	CCNEO 14/03/93	<i>[Signature]</i>													
PARTS NAME	PART NO.	TEST MODE											O . V . P .	O . C . P .	N O O U T P U T	N O C H A N G E	O T H E R S	N O T E	O K	R E T E S T	N O G O O D										
		S H O R T	O P E N	F I R E	S M O K E	S M O K E	A B	B U R S T	S M E L L	R E D H O T	D A M A G E	F U S B L O W N																			
1	CHIP RESISTOR	R9	Y														Y									Y					
2	ERJ8GEYJ823V			Y																											
3																															
4	CHIP RESISTOR	R10	Y																												
5	ERJ8GEYJ100V			Y																											
6																															
7	CHIP RESISTOR	R11	Y																												
8	ERJ8GEYJ563V			Y																											
9																															
10	CHIP RESISTOR	R12	Y																												
11	ERJ8GEYJ332V			Y																											
12																															
13	CHIP RESISTOR	R13	Y																												
14	ERJ8GEYJ101V			Y																											
15																															
16	CHIP RESISTOR	R14	Y																												
17	CR1/10W2211DV			Y																											
18																															
19	CHIP RESISTOR	R15	Y																												
20	CR1/10W152JV			Y																											
21																															
22	CHIP RESISTOR	R16	Y																												
23	CR1/10W331JV			Y																											
24																															
25																															

*** A : SLIGHT B : PROLONGED

MODEL : KWD10-1212		ABNORMAL TESTING										TEST CONDITIONS				APPROVED	TESTED				
												LOAD = 100%	TEST CONDITIONS	CCN/EO	<i>[Signature]</i>						
													Vin = 200VAC Ta = 25°C	1/703/93							
PARTS NAME	PART NO.	TEST MODE										O . V . P .	O . C . P .	N O U T P U T	N O C H A N G E	O T H E R S	N O T E	O K	R E T E S T	N O G O O D	
		S H O R T	O P E N	F I R E	S M O K E A	S M O K E B	B U R S T	S M E L L	R E D H O T	D A M A G E	F U S E B L O W N										
1 CHIP RESISTOR	R17	Y	Y											Y					Y		
2 ERJ8GEYJ100V			Y																Y		
3																					
4 CHIP RESISTOR	R18	Y	Y											Y					Y		
5 ERJ8GEYJ510V																					
6																					
7 CHIP RESISTOR	R19	Y	Y											Y					Y		
8 CR1/10W 102JV																					
9																					
10 CHIP RESISTOR	R20	Y	Y											Y					Y		
11 ERJ8GEYJ300V																					
12																					
13 CHIP RESISTOR	R21	Y	Y											Y					Y		
14 ERJ8GEYJ300V																					
15																					
16 CHIP RESISTOR	R22	Y	Y											Y					Y		
17 ERJ8GEYJ300V																					
18																					
19 CHIP RESISTOR	R23	Y	Y											Y					Y		
20 CR1/10W 183JV																					
21																					
22 CHIP RESISTOR	R24	Y	Y																Y	V _{ds} unstable	
23 ERJ8GEYJ4R7V																					
24																					
25																					

*** A : SLIGHT B : PROLONGED

MODEL : KWD10-1212		ABNORMAL TESTING										TEST CONDITIONS		APPROVED	TESTED						
												LOAD = 100%	Vin. = 200VAC Ta = 25°C	CCN/FO 15/03/93							
PARTS NAME	PART NO.	TEST MODE										NOTE	OK	RETEST	NO GOOD						
		SHORT	OPEN	FIRE	SMOKE A	SMOKE B	BURST	SMELL	HOT	DAMAGE	FUSE BLOWN					O.C.P.	O.V.P.	NO OUTPUT	NO CHANGE	OTHERS	
1 CHIP RESISTOR	R25	Y	Y															Y			
2 ERJ8GEYJ4R7V																			Y		
3																					
4 CHIP RESISTOR	R26	Y	Y																Y		
5 ERJ8GEYJ4R7V																			Y		
6																					
7 CHIP RESISTOR	R27	Y	Y																Y		
8 ERJ8GEYJ150V																			Y		
9																					
10 CHIP RESISTOR	R28	Y	Y																Y		
11 ERJ8GEYJ150V																			Y		
12																					
13 CHIP RESISTOR	R29	Y	Y																Y		
14 ERJ8GEYJ150V																			Y		
15																					
16 CHIP RESISTOR	R30	Y	Y																Y		
17 ERJ8GEYJ150V																			Y		
18																					
19 CHIP RESISTOR	R31	Y	Y																Y		
20 ERJ8GEYJ132V																			Y		
21																					
22 CHIP RESISTOR	R32	Y	Y																Y		
23 ERJ8GEYJ132V																			Y		
24																					
25																					

*** A : SUGHT B : PROLONGED

TDK-Lambda

MODEL : KWD10-1212		ABNORMAL TESTING														TEST CONDITIONS			DWG NO: PA774-57-14		
PARTS NAME		PART NO.	TEST MODE											TEST CONDITIONS			APPROVED	TESTED			
			OPEN	SHORT	FIRE	SMOKE A	SMOKE B	BURST	SMELL	RED HOT	DAMAGE	FUSE BLOWN	OC.P.	OV.P.	NO OUTPUT	NO CHANGES	OTHERS	NOTE	OK	TEST	NO GOOD
1	CHIP RESISTOR	R33		Y												Y			Y		
2	ERJ8GEYJ150V			Y												Y			Y		
3																					
4	CHIP RESISTOR	R34		Y												Y			Y		
5	ERJ8GEYJ150V			Y												Y			Y		
6																					
7	CHIP RESISTOR	R35		Y												Y			Y		
8	ERJ8GEYJ150V			Y												Y			Y		
9																					
10	CHIP RESISTOR	R36		Y												Y			Y		
11	ERJ8GEYJ150V			Y												Y			Y		
12																					
13	CHIP RESISTOR	R37		Y									Y						Y		
14	ERJ8GEYJ132V			Y									Y						Y		
15																					
16	CHIP RESISTOR	R38		Y									Y						Y		
17	ERJ8GEYJ132V			Y									Y						Y		
18																					
19	CHIP RESISTOR	R39		Y									Y						Y		
20	ERJ8GEYJ621V			Y									Y						Y		
21																					
22	CHIP RESISTOR	R40		Y									Y						Y		
23	CR1/10W222JV			Y									Y						Y		
24																					
25																					

*** A : SLIGHT B : PROLONGED

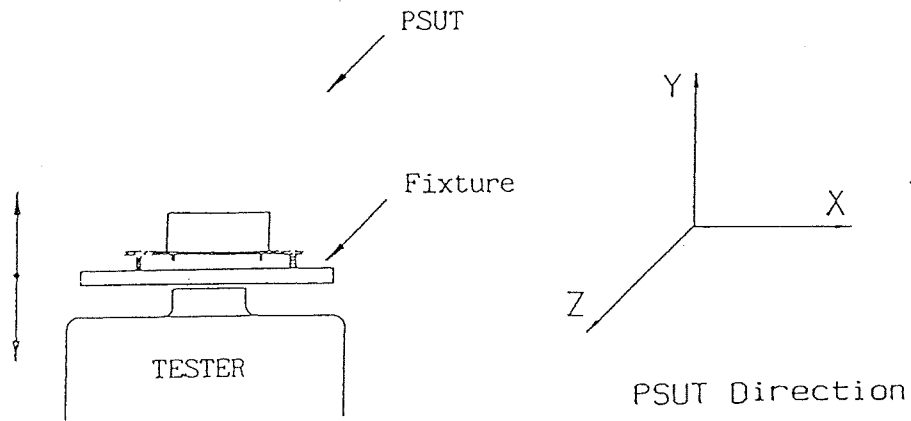
VIBRATION TEST

TYPES OF VIBRATION TEST :

- A) OSCILLATOR FREQUENCY SWEEP
- B) RESONANCE FREQUENCY

EQUIPMENT : EMIC CORPORATION VIBRATION TEST SYSTEM F-400-BM-E47
 VIBRATION GENERATOR 905-FN

PROCEDURE :



VIBRATION TEST WITH FREQUENCY SWEEP

FREQUENCY	10 ~ 55 Hz.
SWEEP TIME	1 min.
ACCELERATION	MAX 10G.
AMPLITUDE	165mmPP CONSTANT.
DIRECTION	X, Y, Z.
DURATION	1 hr. for each direction.

TEST POINT :

1. Output voltage (Apply some shock when checking the o/p voltage, and observe any abnormalities.)
2. Ripple voltage (At AC 100V input and output)
3. Mechanical Condition (No breakage)

認 APPD	<i>[Signature]</i> 5/MAR/93	設 計 ENGR	<i>[Signature]</i> 27 - NOV - 92	図面番号 D W G - No.	PA774-64-01	<input type="checkbox"/>
検 図 C H K	CCNEO 30 - DEC - 92	製 図 D W G	WILLIAM PHIN 25 - NOV - 92			

DATE

TEST RESULTS :
(after vibration)

TEST POINT	OUTPUT VOLTAGE (V)			RIPPLE VOLTAGE (mV)			MECHANICAL CONDITION	NOTE
	CH1	CH2	CH3	CH1	CH2	CH3		
BEFORE DIRECT TEST	11.687	11.584	—	35	35	—	O.K	
X	11.692	11.588	—	35	35	—	O.K	
Y	11.695	11.596	—	35	35	—	O.K	
Z	11.693	11.591	—	35	35	—	O.K	

EVALUATION RESULT :

PASS

/


FAIL

VISUAL INSPECTION RESULT :

PASS

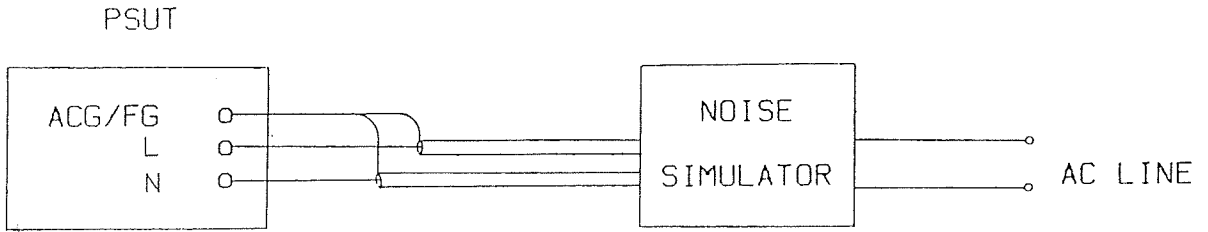
/

FAIL

認 APPD		設 計 ENGR		図面番号 DWG - No.	
検 図 CHK		製 図 DWG			

NOISE SIMULATION TEST

Circuit for measurement and equipment used :



MODEL : ENS-24X (SANKI)

Testing Conditions :

- Input Voltage : AC100V
- Output Voltage : Rated
- Output Current : 0% , 100%
- Ambient Temp. : 25 °C

Settings :

- MODE Normal , Common
- TRIG SELECT Line or Ext (Line)
- PULSE WIDTH 50, 200, 800, 1000ns
- PHASE SHIFT 0 ~ 360 Degree
- POLARITY + , -
- NOISE LEVEL 0 ~ 2KV

Acceptance Criteria :

- 1) No damage of PSUT
- 2) No output failure
(eg. Over/Undershoot \leq 3% of Vo)
- 3) Check any abnormalities (eg. noise)

Evaluation Result :

(PASS) / FAIL

認 APPD	<i>[Signature]</i> 15 MAR 93	設 計 ENGR	<i>[Signature]</i> 12. 1. 93	図面番号 DWG-No.	PA774-61-01 -
検 査 CHK	CCNEO 12.01.93	製 作 DWG	Ramen 12. 1. 93		

ELECTROSTATIC DISCHARGE TEST

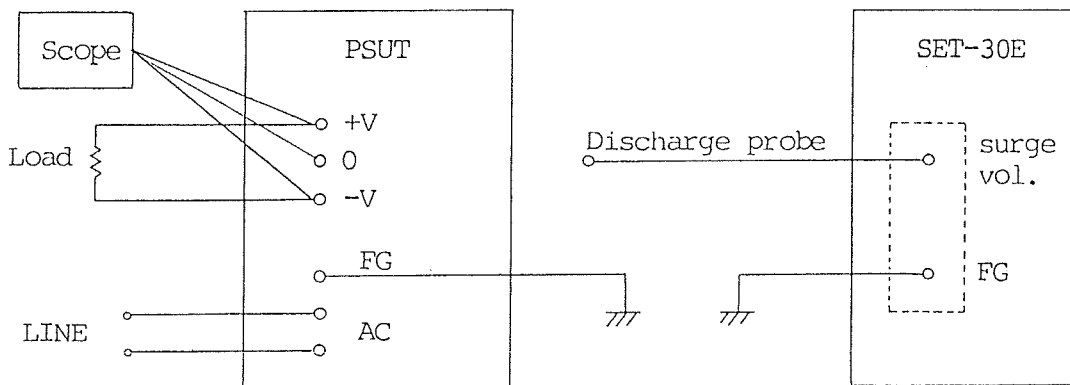
EQUIPMENT : SET-30E (SANKI ELECTRONIC)

Discharge Resistor : 250 ohm
Capacitor unit : 200 pF

CONDITIONS : Ambient Temperature : 25°C
Input Voltage : AC100V
Output Voltage : Rated
Output Current : Rated
Applied Voltage : ±3kV, ±5kV, ±10kV, ±15kV

PROCEDURE : The PSUT should be in a good working condition. Discharge the applied voltage to the touchable parts of the PSUT (Chassis, Input Terminal, Output Terminal, FG Terminal, ACG Terminal) and check any abnormalities.

Each point to be tested 3 times with different polarity. Voltage should be applied from 3kV to 15kV.



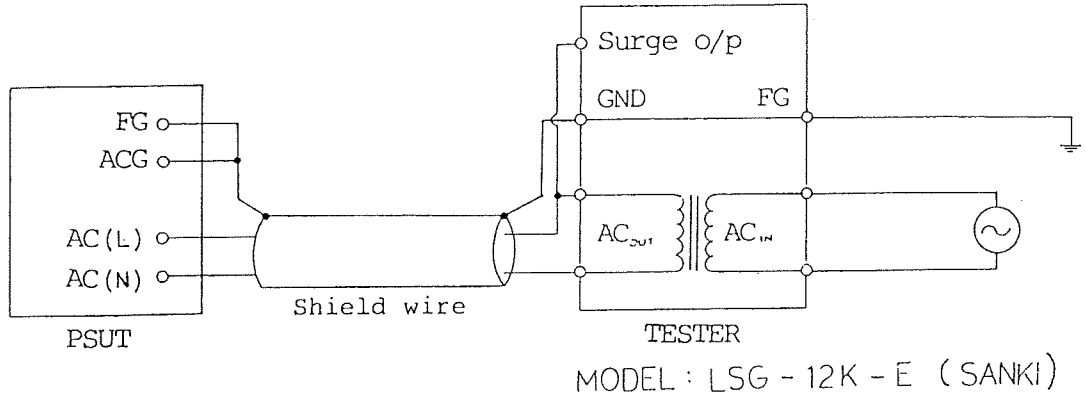
- ACCEPTANCE CRITERIA :
1. No damage of PSUT
 2. No output failure ($\Delta V_o \leq 3\%$ of V_o)
 3. No abnormalities

EVALUATION RESULT : PASS / -FAIL

認 APPD	<i>[Signature]</i> 15 MAR 93	設 計 ENGR	<i>psk</i> 12.1.93	図面番号 DWG-No.	PA774-62-01
検 査 CHK	CCNEO. 12.01.93	製 図 DWG	<i>Ram/In/M</i> 12.1.93		

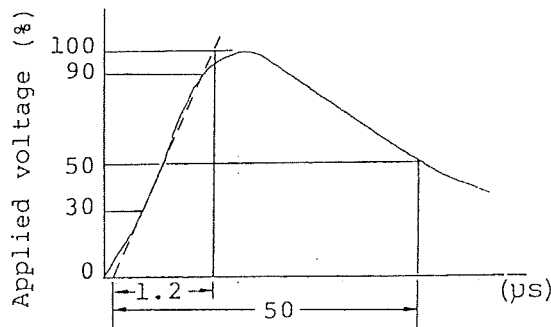
LIGHTNING SURGE TEST

TEST CIRCUIT, TEST EQUIPMENT



- CONDITIONS :
- Input Voltage : AC100V
 - Output Voltage : Rated
 - Output Current : Rated
 - Applied Voltage : From 3kV in steps of 0.5kV
Check the max. withstand voltage
 - Applied Point : Between FG - AC
 - Number of Test : Each voltage 3 times
 - Polarity : + , -
 - Ambient Temp. : 25°C

APPLIED VOLTAGE WAVEFORM :



- ACCEPTANCE CRITERIA :
1. No damage to the PSUT
 2. No output failure
 3. No abnormalities

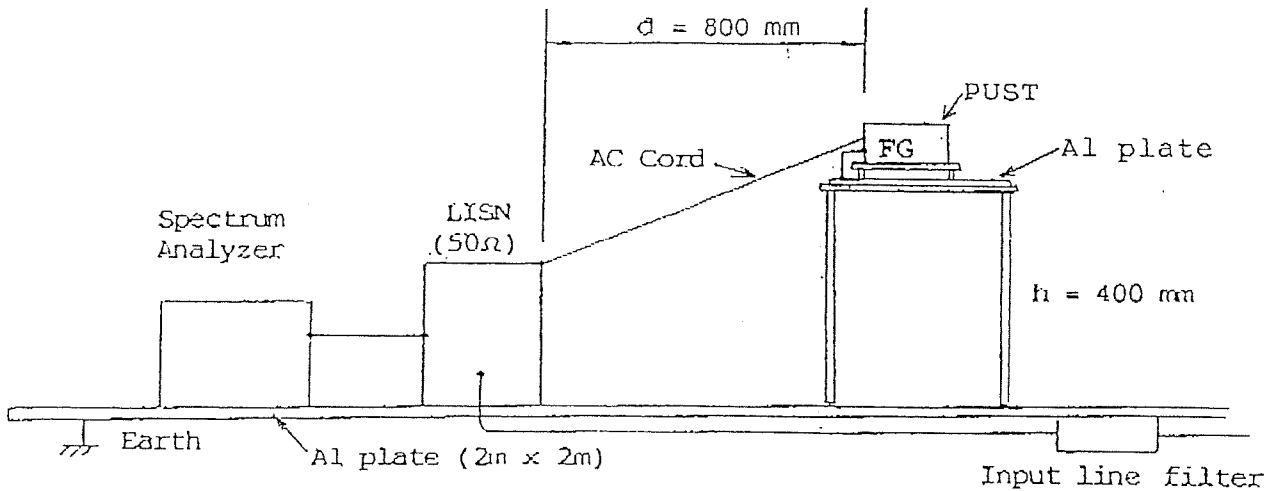
EVALUATION RESULT :

PASS / FAIL
5KV

認・ APPD	<i>[Signature]</i> 8. MAR. 93	設 計 ENGR	<i>[Signature]</i> 12. 1. 93	図面番号 DWG - No.	PA774-74-01 -
検 査 CHK	CCNEO. 12. 01. 93	製 作 DWG	Ramash. M. 12. 1. 93		

EMI TEST

TEST CIRCUIT :



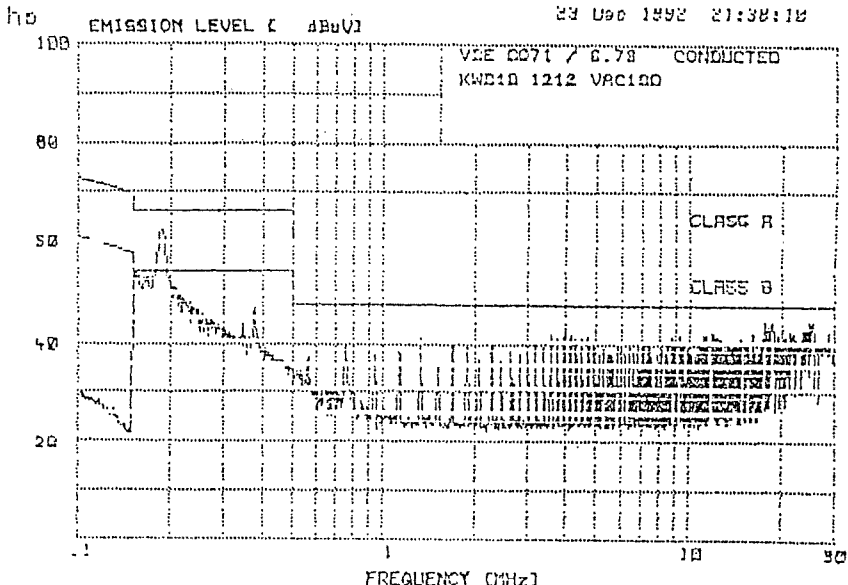
TEST EQUIPMENTS :

SPECTRUM ANALYZER	8568B	HEWLETT PACKARD
QUASI-PEAK ADAPTER	85650A	HEWLETT PACKARD
RF PRESELECTOR	85685A	HEWLETT PACKARD
LISN	3825/2	ENCO

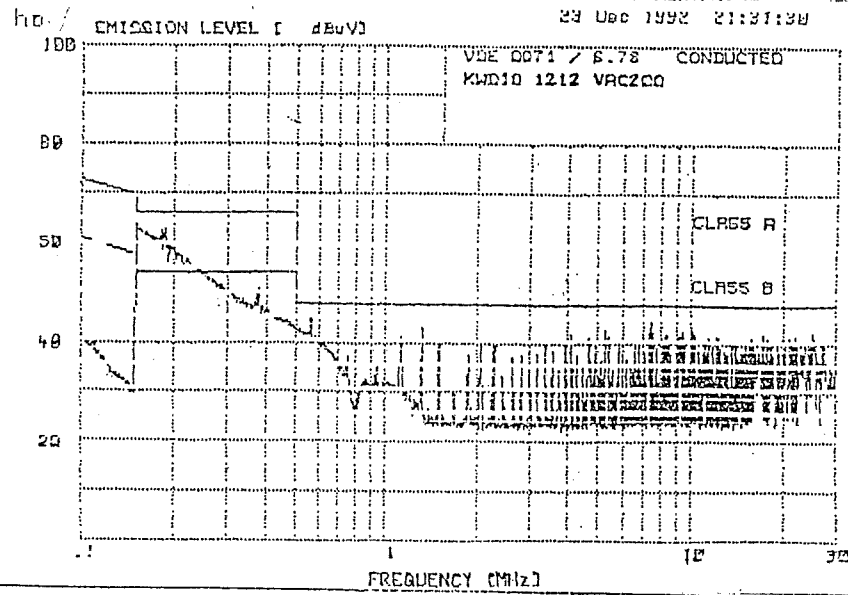
CONDITIONS :

INPUT VOLTAGE	:	AC100V, AC200V
OUTPUT VOLTAGE	:	RATED
OUTPUT CURRENT	:	RATED
AMBIENT TEMP	:	25°C

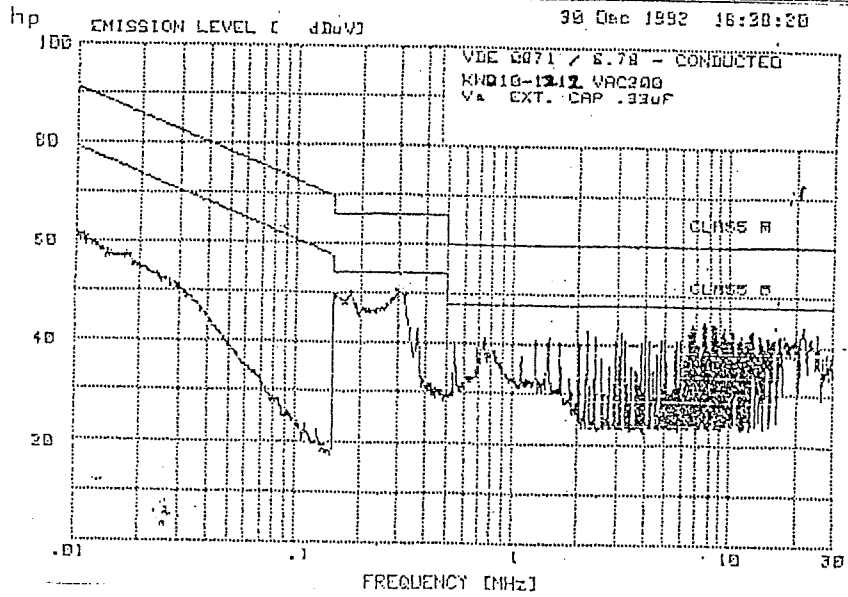
認 APPD		設 計 ENGR		図面符号 DWG-No.	
検 図 CHK		製 図 DWG			□



Vin = 100Vac



Vin = 200Vac



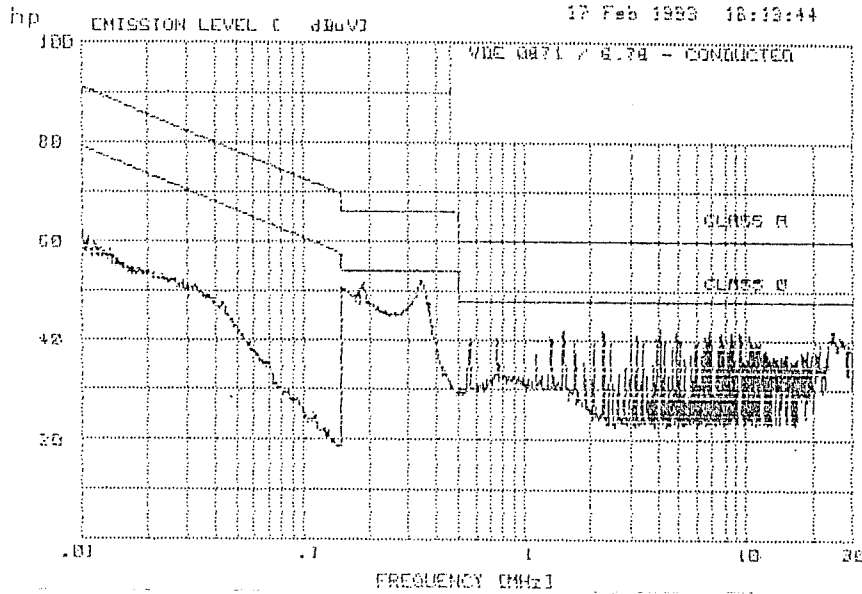
Vin = 200Vac
V D E
with external cap.
0.33μF between
AC(L) and AC(N)

認 APPD	.	設 計 ENGR	.	図面番号 DWG - No.	PA774-70-02- <input type="checkbox"/>
検 図 CHK	.	製 図 DWG	.		

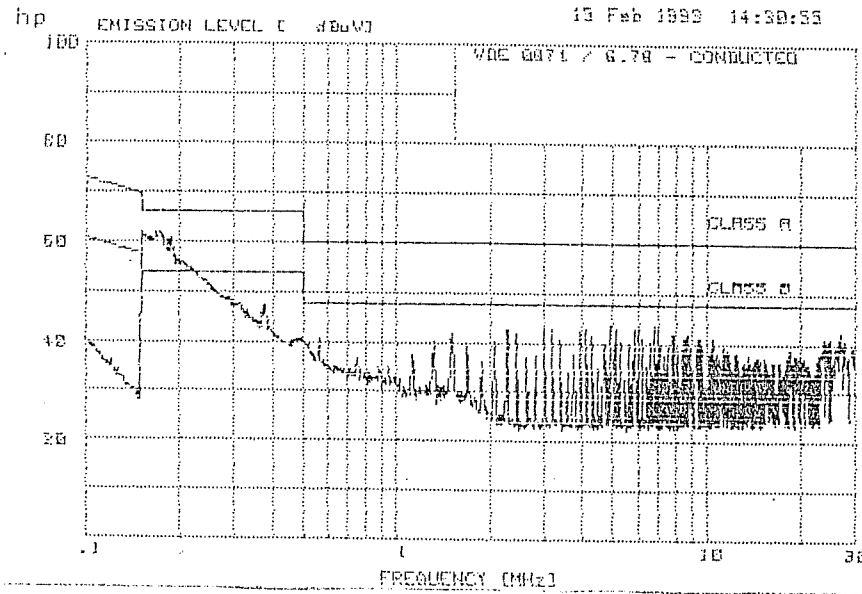
KWD 10-1515

LOAD = 100%

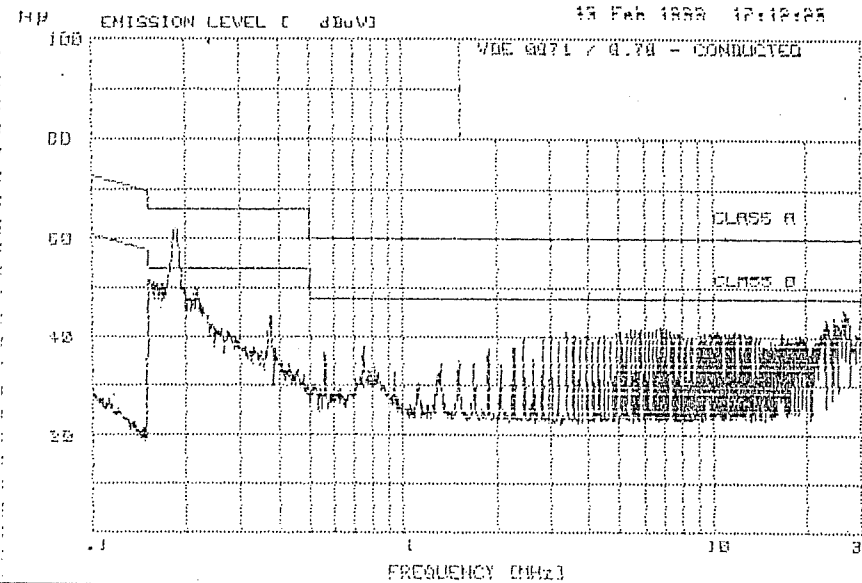
DATE 15 · MAR · 1993 ·



Vin = 100Vac



Vin = 200Vac



Vin = 200Vac

V D E
with external cap.
0.33μF between
AC(L) and AC(N)

認 APPD	.	設 計 ENGR	.
検 図 C H K	.	製 図 D W G	.

図面番号
D W G - No.

PA774-70-03

