

# PH300S280-\*

## EVALUATION DATA

### 型式データ

DWG No. C113-53-01			
承認	承認	査閲	担当
<i>Murayama</i>	<i>K. Watanabe</i>	<i>S. Tomida</i>	<i>H. Tanaka</i>
<i>5/Sep/97</i>	<i>3/Sep/97</i>	<i>3/Sep/97</i>	<i>3/Sep/97</i>

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使用記号 Terminology used

定義 Definition

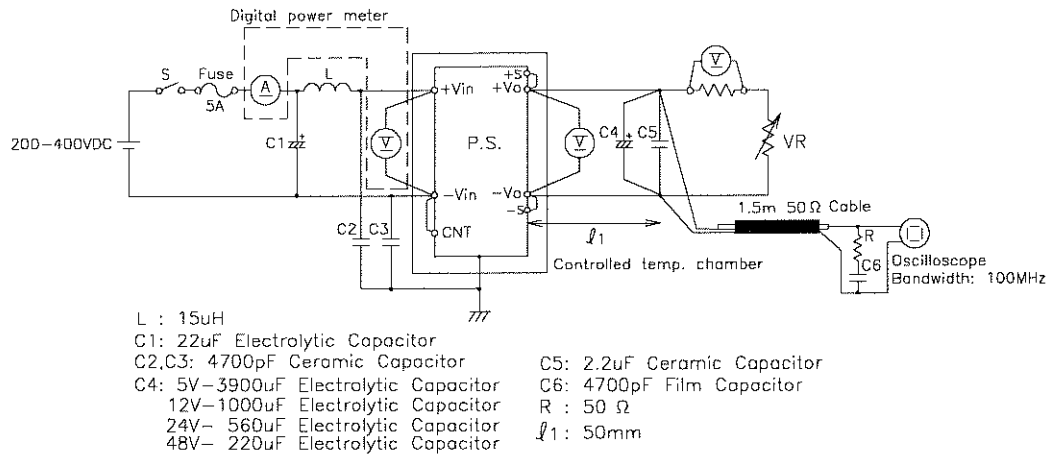
Vin	.....	入力電圧	Input Voltage
Vout	.....	出力電圧	Output Voltage
Vcnt	.....	CNT電圧	CNT(ON/OFF Control) Voltage
Iin	.....	入力電流	Input Current
Iout	.....	出力電流	Output Current
Tp	.....	ベースプレート温度	Base-Plate Temperature

## 1. 1

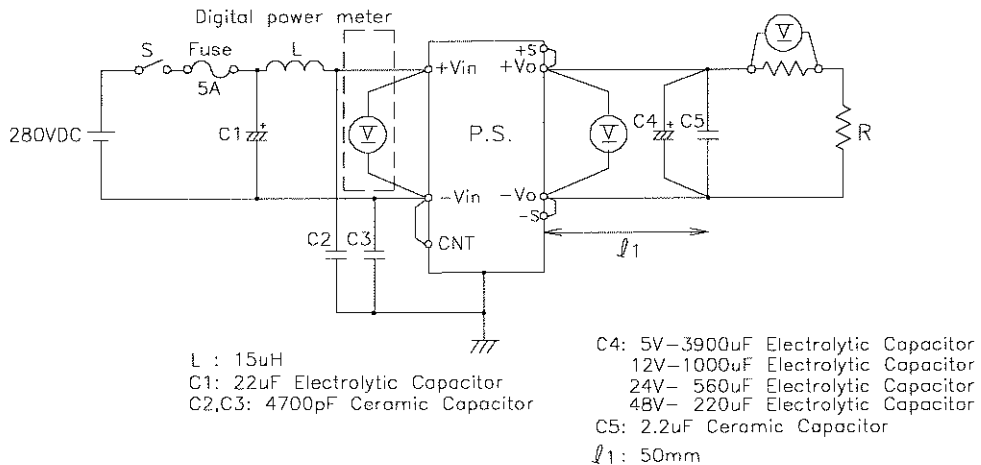
## 測定回路

## Circuit used for determination

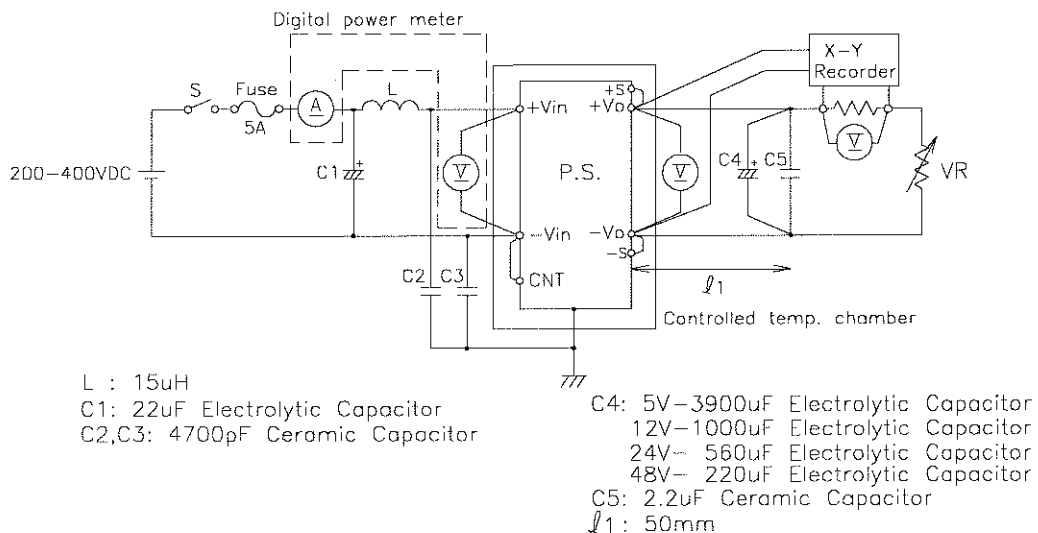
## (1) 静特性 Steady state data



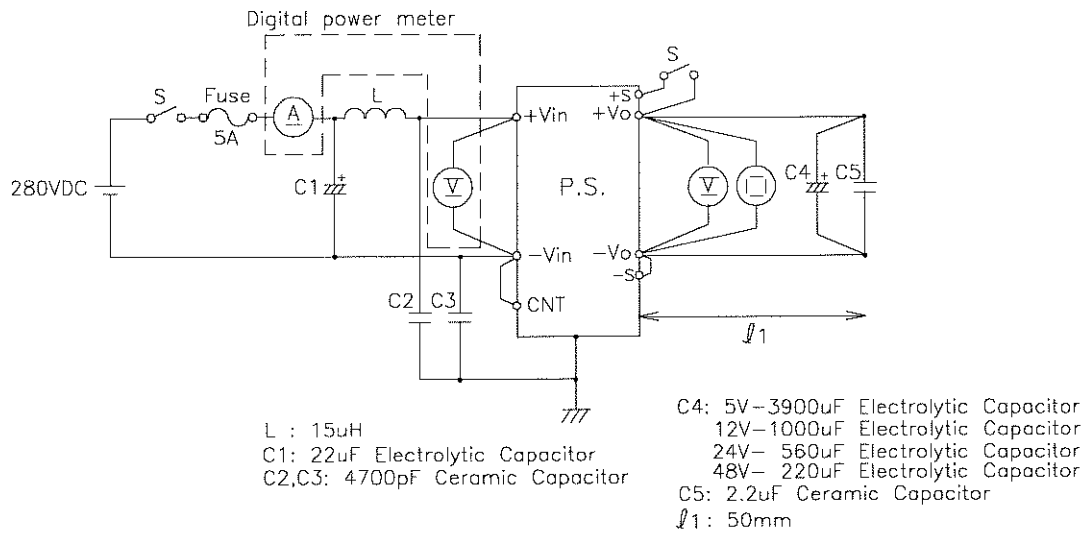
## (2) 通電ドリフト特性 Warm up voltage drift characteristics



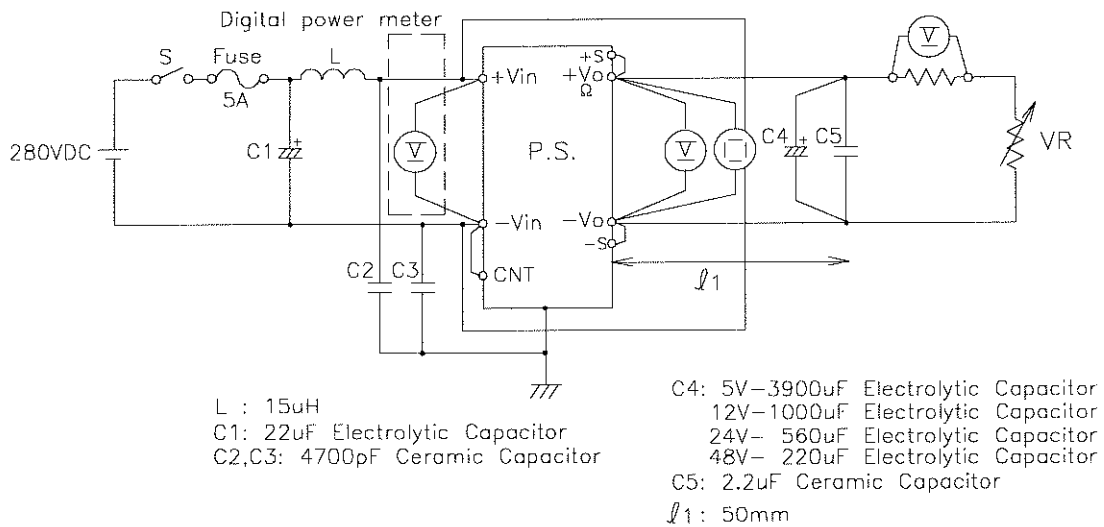
## (3) 過電流保護特性 Over current protection (O.C.P.) characteristics



(4) 過電圧保護特性 Over voltage protection (O.V.P.) characteristics



(5) 出力立ち上がり特性 Output rise characteristics

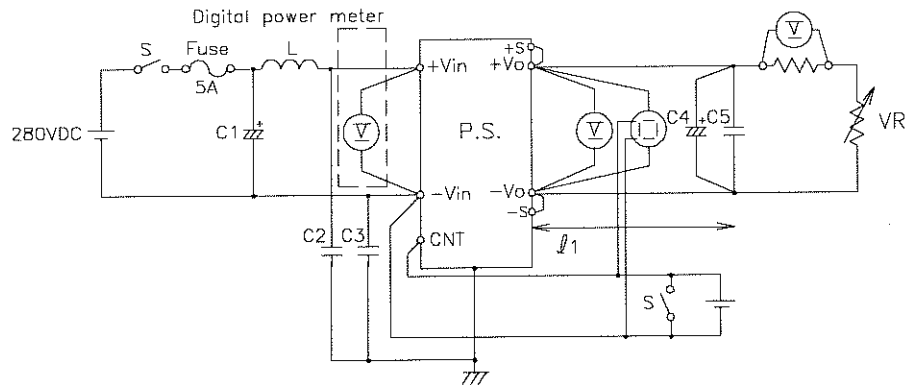


(6) 出力立ち下がり特性 Output fall characteristics

出力立ち上がり特性と同じ  
 Same as output rise characteristics

(7) 出力立ち上がり特性 (ON/OFFコントロール時)

Output rise characteristics with ON/OFF CONTROL



- L : 15uH
- C1: 22uF Electrolytic Capacitor
- C2,C3: 4700pF Ceramic Capacitor
- C4: 5V-3900uF Electrolytic Capacitor
- 12V-1000uF Electrolytic Capacitor
- 24V- 560uF Electrolytic Capacitor
- 48V- 220uF Electrolytic Capacitor
- C5: 2.2uF Ceramic Capacitor
- ℓ1: 50mm

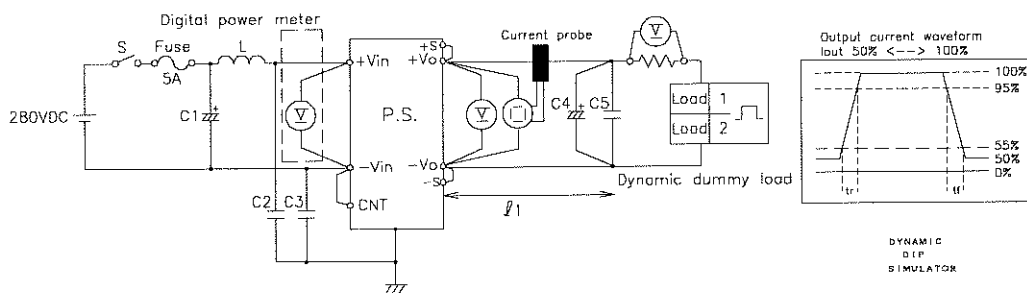
(8) 出力立ち下がり特性 (ON/OFFコントロール時)

Output fall characteristics with ON/OFF CONTROL

出力立ち下がり特性 (ON/OFFコントロール時) と同じ

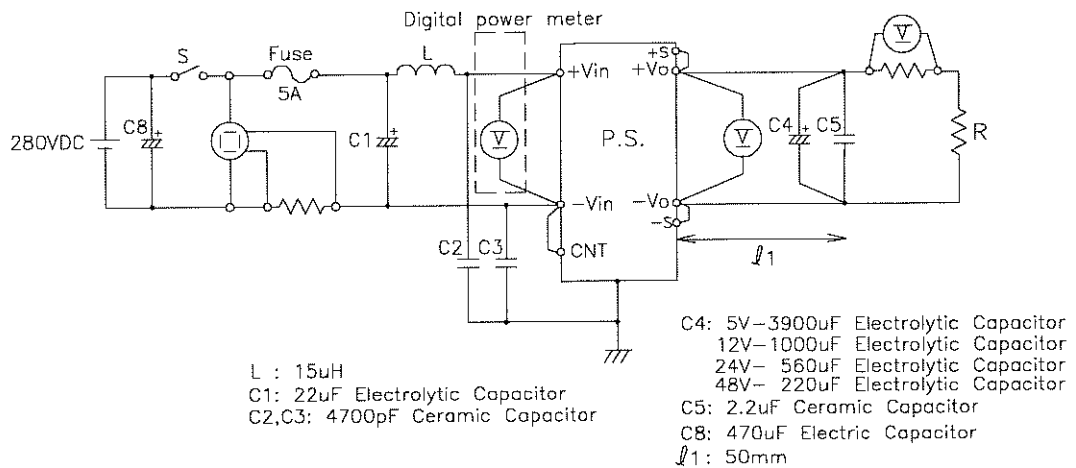
Same as output rise characteristics with ON/OFF CONTROL

(9) 過渡応答 (負荷急変) 特性 Dynamic load response characteristics



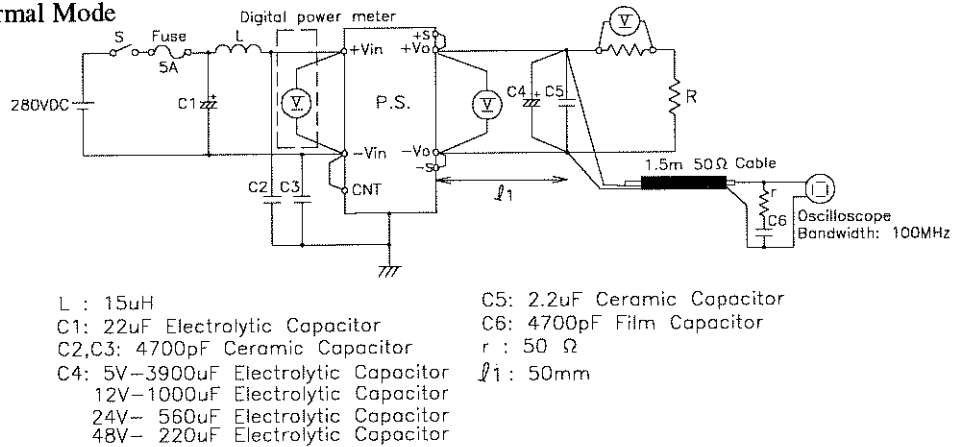
- L : 15uH
- C1: 22uF Electrolytic Capacitor
- C2,C3: 4700pF Ceramic Capacitor
- C4: 5V-3900uF Electrolytic Capacitor
- 12V-1000uF Electrolytic Capacitor
- 24V- 560uF Electrolytic Capacitor
- 48V- 220uF Electrolytic Capacitor
- C5: 2.2uF Ceramic Capacitor
- ℓ1: 50mm

(10) 入力サージ電流 (突入電流) 特性 Inrush current characteristics

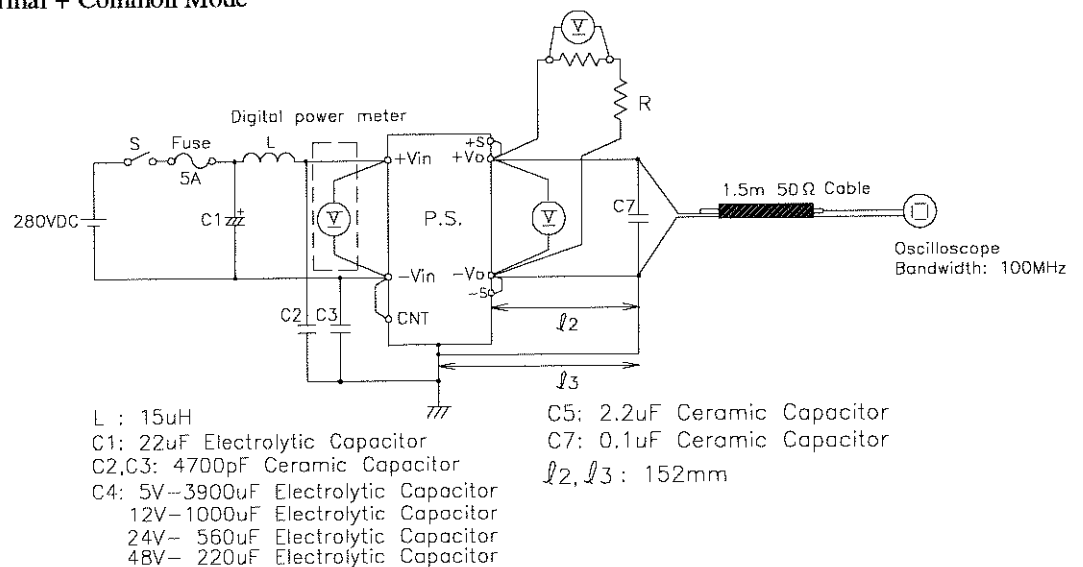


(11) 出力リップル、ノイズ波形 Output ripple and noise waveform

(a) Normal Mode



(b) Normal + Common Mode

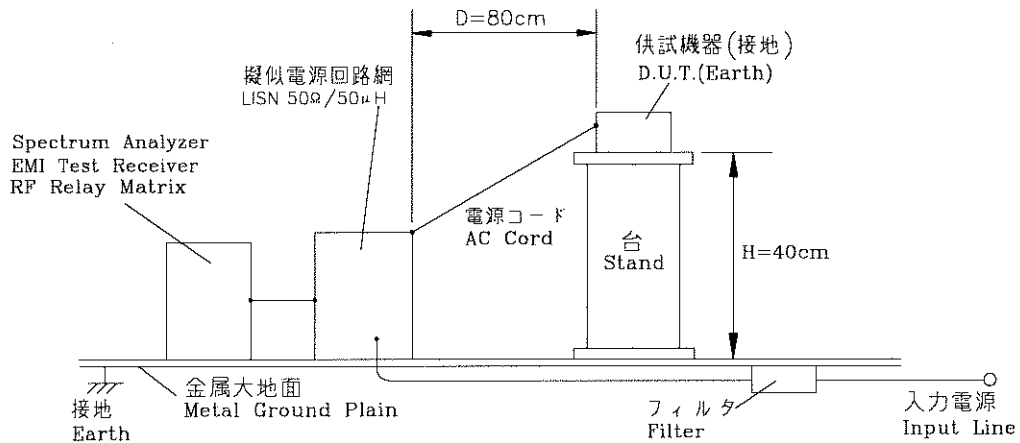


## (12) EMI 特性

## Electro-Magnetic Interference characteristics

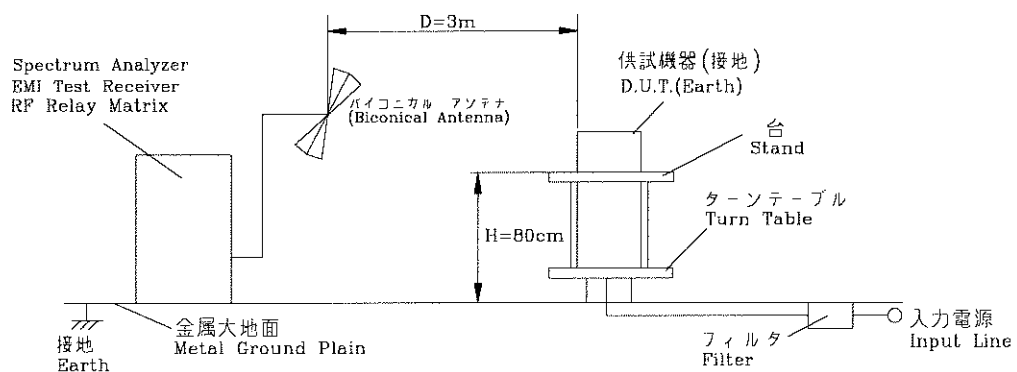
## (a) 雑音端子電圧 (帰還ノイズ)

## Conducted Emission Noise



## (b) 雑音電界強度 (輻射ノイズ)

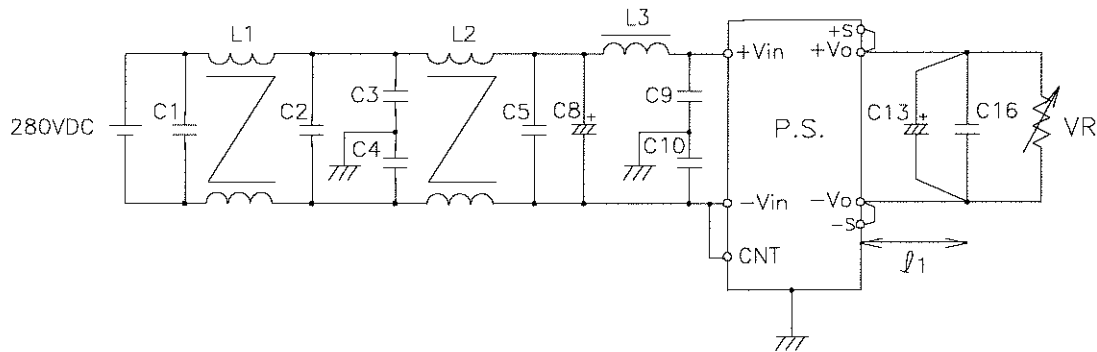
## Radiated Emission Noise





(1) VCCI class A 対応アプリケーションシステム

VCCI class A application system

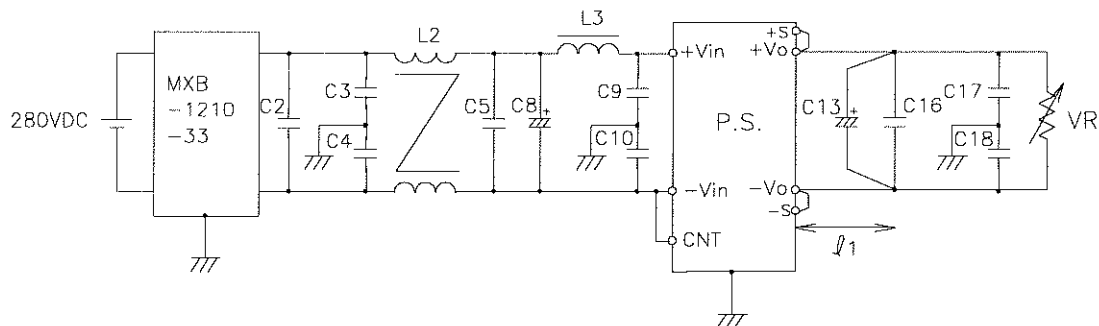


L1 : 1mH  
 L2 : 3mH  
 L3 : 15uH  
 C1,C2,C5 : 0.68uF Film Capacitor  
 C3,C4,C9,C10 : 4700pF Ceramic Capacitor  
 C8 : 22uF Electrolytic Capacitor

C13 : 5V-3900uF Electrolytic Capacitor  
 12V-1000uF Electrolytic Capacitor  
 24V- 560uF Electrolytic Capacitor  
 48V- 220uF Electrolytic Capacitor  
 C16 : 2.2uF Ceramic Capacitor  
 ϕ1: 50mm

(2) VCCI class B 対応アプリケーションシステム

VCCI class B application system



L2 : 10mH  
 L3 : 15uH  
 C2,C5 : 1uF Film Capacitor  
 C3,C4,C9,C10 : 4700pF Ceramic Capacitor  
 C8 : 22uF Electrolytic Capacitor

C13 : 5V-3900uF Electrolytic Capacitor  
 12V-1000uF Electrolytic Capacitor  
 24V- 560uF Electrolytic Capacitor  
 48V- 220uF Electrolytic Capacitor  
 C16 : 2.2uF Ceramic Capacitor  
 C17 : 0.1uF Film Capacitor (For 24V only)  
 C18 : 0.1uF Film Capacitor (For 24V,48V only)  
 ϕ1: 50mm

## 1.2 使用測定機器 List of equipment used

	EQUIPMENT USED	MANUFACTURER	MODEL NO.
1	OSCILLO SCOPE	HITACHI DENSHI	V-1100A
2	DIGITAL STORAGE OSCILLOSCOPE	TEKTRONIX	TDS540B
3	DIGITAL MULTIMETER	ADVANTEST	R6341A
4	DIGITAL POWER METER	YOKOGAWA ELECT.	WT110
5	CURRENT PROBE/AMPLIFIER	TEKTRONIX	A6303/AM503
6	DYNAMIC DUMMY LOAD	TAKASAGO	FK-1000L
7	AC POWER SUPPLY	KIKUSUI	PCR4000L
8	X-Y RECORDER	GRAPHTEC	WX4309
9	CONTROLLED TEMP. CHANBER	TABAI ESPEC	SH-240
10	SPECTRUM ANALYZER	ROHDE & SCHWARZ	FSA
11	EMI TEST RECEIVER	ROHDE & SCHWARZ	ESHS10
12	EMI TEST RECEIVER	ROHDE & SCHWARZ	ESVS10
13	RF RELAY MATRIX	ROHDE & SCHWARZ	PSU
14	LISN	KYORITU DENSHI	KNW-242
15	ANTENNA(BICONICAL ANTENNA)	SCHWARZBECK	BBA9106

## 2. 特性データ

## 2.1 静特性 Steady state data

(1) 入力、負荷、温度変動 Regulation - line and load, temperature drift

5V

## 1. Regulation - line and load

condition  $T_p : 25^\circ\text{C}$ 

$I_{out} \setminus V_{in}$	200VDC	280VDC	400VDC	line regulation	
0%	5.007V	5.007V	5.007V	0mV	0.00%
50%	5.004V	5.004V	5.006V	2mV	0.04%
100%	5.004V	5.006V	5.007V	3mV	0.06%
load	3mV	3mV	1mV		
regulation	0.06%	0.06%	0.02%		

## 2. Temperature drift

conditions  $V_{in} : 280\text{VDC}$  $I_{out} : 100\%$ 

$T_p$	$-20^\circ\text{C}$	$25^\circ\text{C}$	$100^\circ\text{C}$	temperature stability	
$V_{out}$	4.999V	5.006V	5.002V	7mV	0.14%

12V

## 1. Regulation - line and load

condition  $T_p : 25^\circ\text{C}$ 

$I_{out} \setminus V_{in}$	200VDC	280VDC	400VDC	line regulation	
0%	12.030V	12.030V	12.031V	1mV	0.008%
50%	12.022V	12.022V	12.022V	0mV	0.000%
100%	12.018V	12.020V	12.020V	2mV	0.017%
load	12mV	10mV	11mV		
regulation	0.100%	0.083%	0.092%		

## 2. Temperature drift

conditions  $V_{in} : 280\text{VDC}$  $I_{out} : 100\%$ 

$T_p$	$-20^\circ\text{C}$	$25^\circ\text{C}$	$90^\circ\text{C}$	$100^\circ\text{C}$	temperature stability	
$V_{out}$	12.008V	12.023V	12.011V	12.006V *1)	17mV	0.142%

\*1)  $I_{out} : 83\%$

## 2. 特性データ

## 2.1 静特性 Steady state data

(1) 入力、負荷、温度変動 Regulation - line and load, temperature drift

24V

## 1. Regulation - line and load

condition  $T_p : 25^\circ\text{C}$ 

Iout \ Vin	200VDC	280VDC	400VDC	line regulation	
0%	24.090V	24.093V	24.093V	3mV	0.013%
50%	24.066V	24.065V	24.066V	1mV	0.008%
100%	24.061V	24.062V	24.064V	3mV	0.013%
load	29mV	31mV	29mV		
regulation	0.121%	0.129%	0.121%		

## 2. Temperature drift

conditions Vin : 280VDC

Iout : 100%

$T_p$	$-20^\circ\text{C}$	$25^\circ\text{C}$	$90^\circ\text{C}$	$100^\circ\text{C}$	temperature stability	
Vout	24.104V	24.100V	24.031V	24.018V *2	86mV	0.358%

\*2) Iout : 83%

48V

## 1. Regulation - line and load

condition  $T_p : 25^\circ\text{C}$ 

Iout \ Vin	200VDC	280VDC	400VDC	line regulation	
0%	48.070V	48.080V	48.090V	20mV	0.042%
50%	48.050V	48.060V	48.060V	10mV	0.021%
100%	48.040V	48.050V	48.050V	10mV	0.021%
load	30mV	30mV	40mV		
regulation	0.063%	0.063%	0.083%		

## 2. Temperature drift

conditions Vin : 280VDC

Iout : 100%

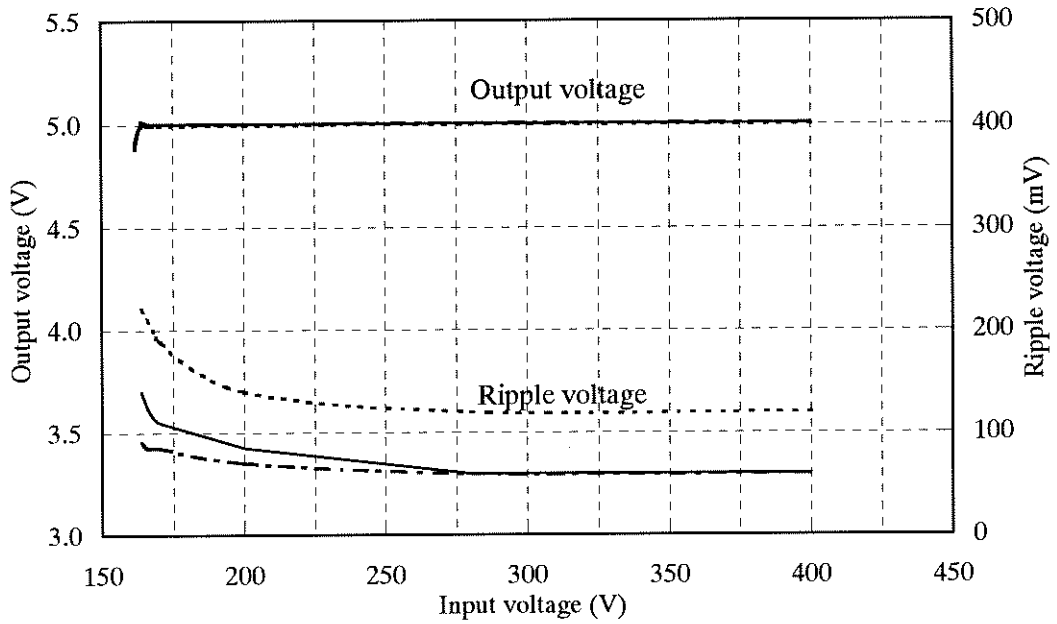
$T_p$	$-20^\circ\text{C}$	$25^\circ\text{C}$	$90^\circ\text{C}$	$100^\circ\text{C}$	temperature stability	
Vout	47.92V	47.94V	47.89V	47.88V *3	60mV	0.125%

\*3) Iout : 83%

2.1 (2) 出力電圧、リップル電圧対入力電圧  
Output voltage and ripple voltage v.s. input voltage

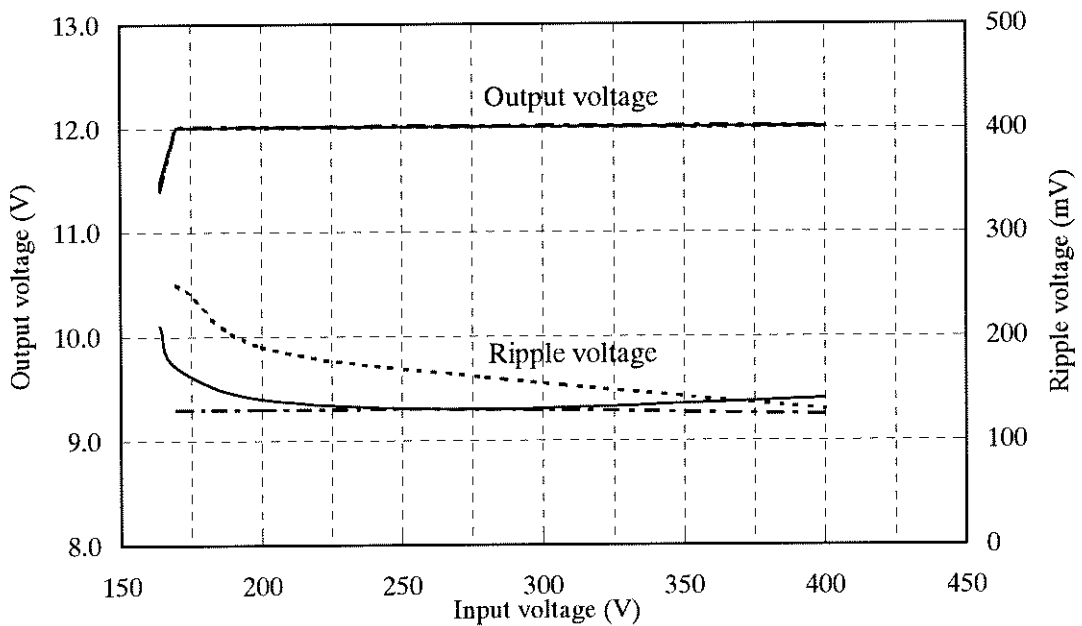
5V

Conditions Iout : 100 %  
Tp : -20 °C .....  
: 25 °C - - - - -  
: 100 °C \_\_\_\_\_



12V

Conditions Iout : 100 %  
Tp : -20 °C .....  
: 25 °C - - - - -  
: 90 °C \_\_\_\_\_\*4



\*4) Tp : 100 °C, Iout : 83% においても同等の特性を示します。  
Same characteristics at Tp : 100 °C, Iout : 83%.

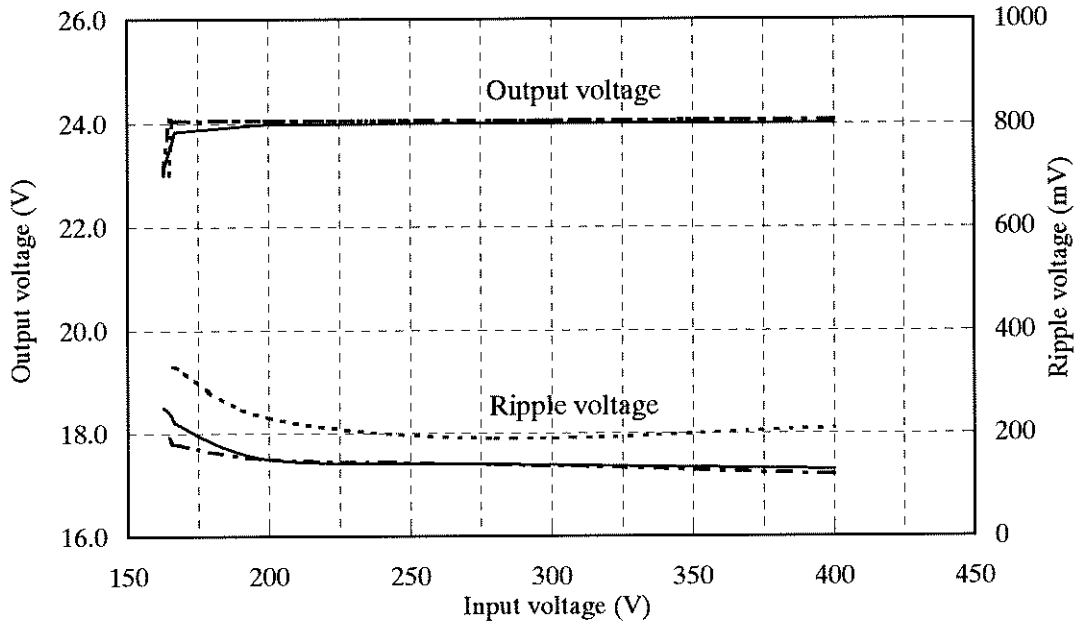
2.1 (2) 出力電圧、リップル電圧対入力電圧

Output voltage and ripple voltage v.s. input voltage

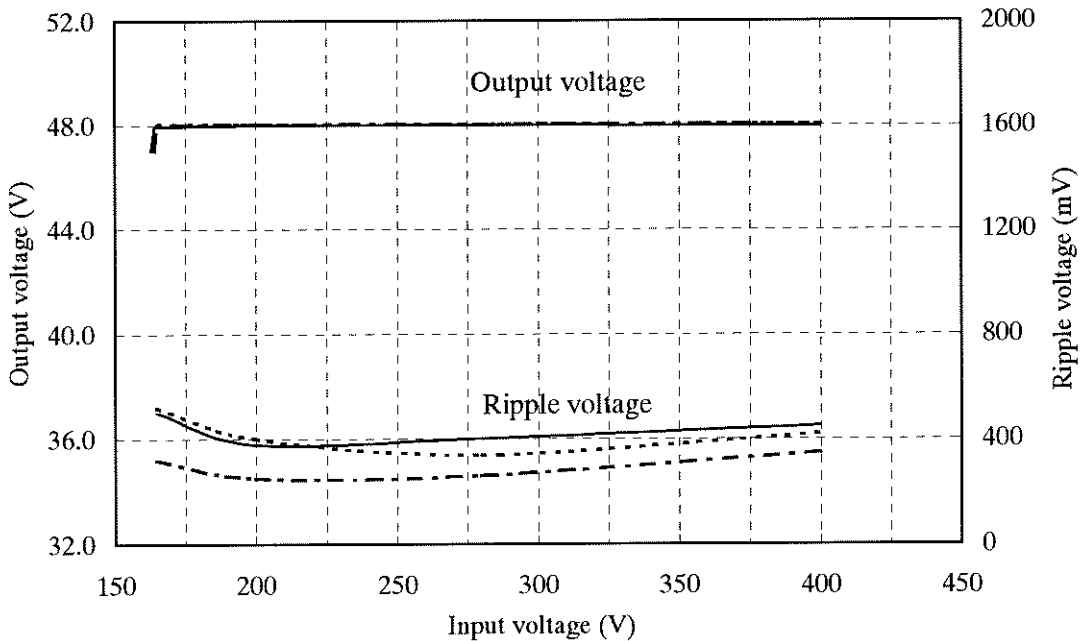
Conditions Iout : 100 %

Tp : -20 °C .....  
 : 25 °C - - - - -  
 : 90 °C ———\*5

24V



48V



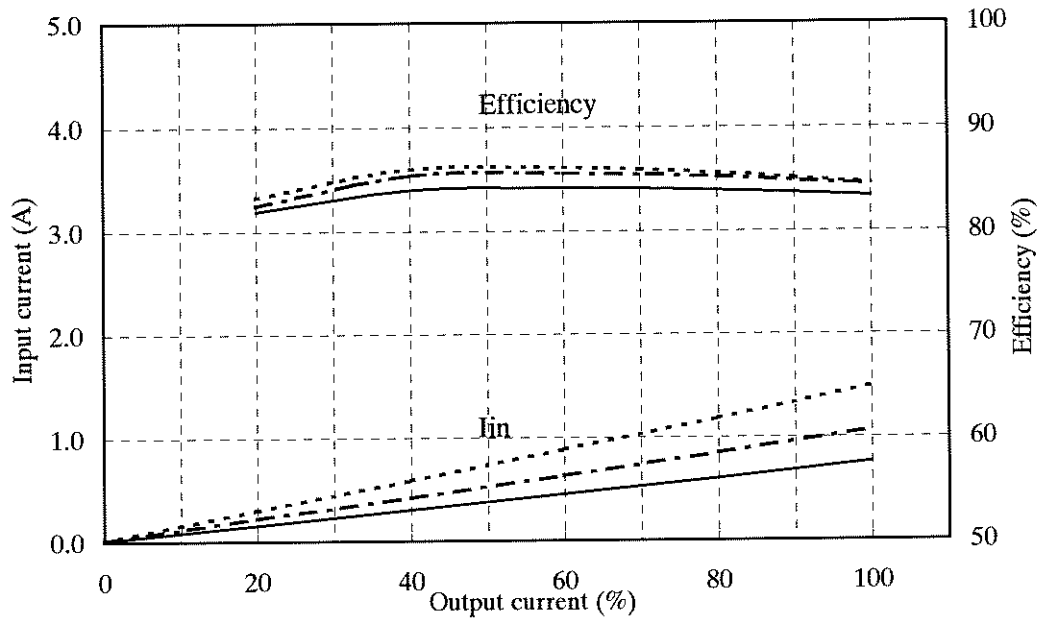
\*5) Tp : 100°C, Iout : 83% においても同等の特性を示します。  
 Same characteristics at Tp : 100°C, Iout : 83%.

2.1 (3) 効率、入力電流対出力電流

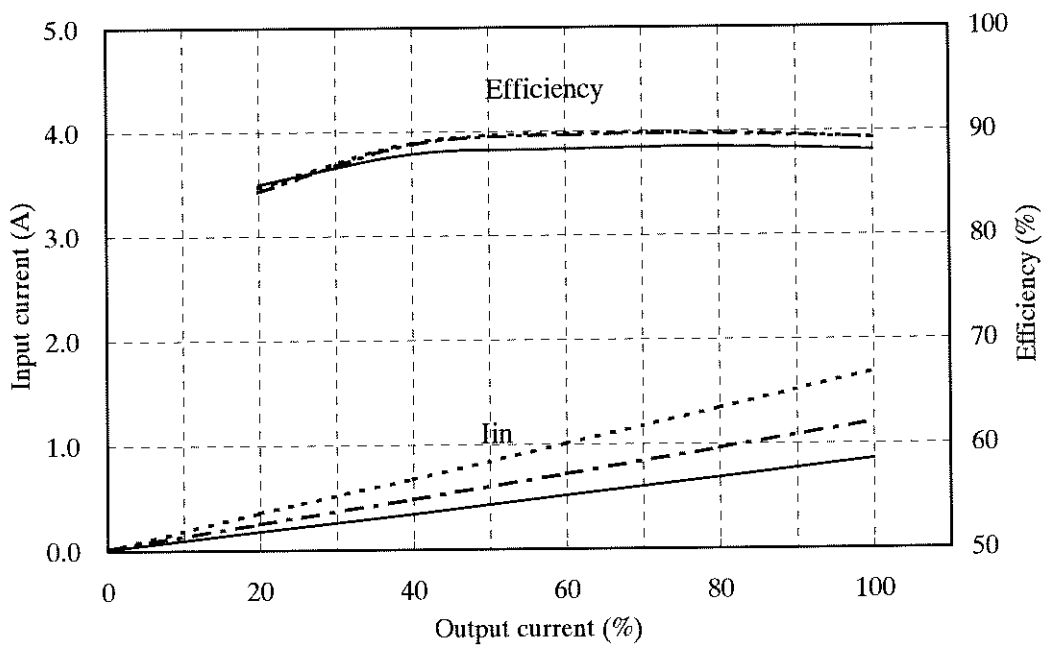
Efficiency and input current v.s. output current

Conditions Vin : 200 VDC .....  
 : 280 VDC - - - -  
 : 400 VDC ————  
 Tp : 25 °C

5V



12V

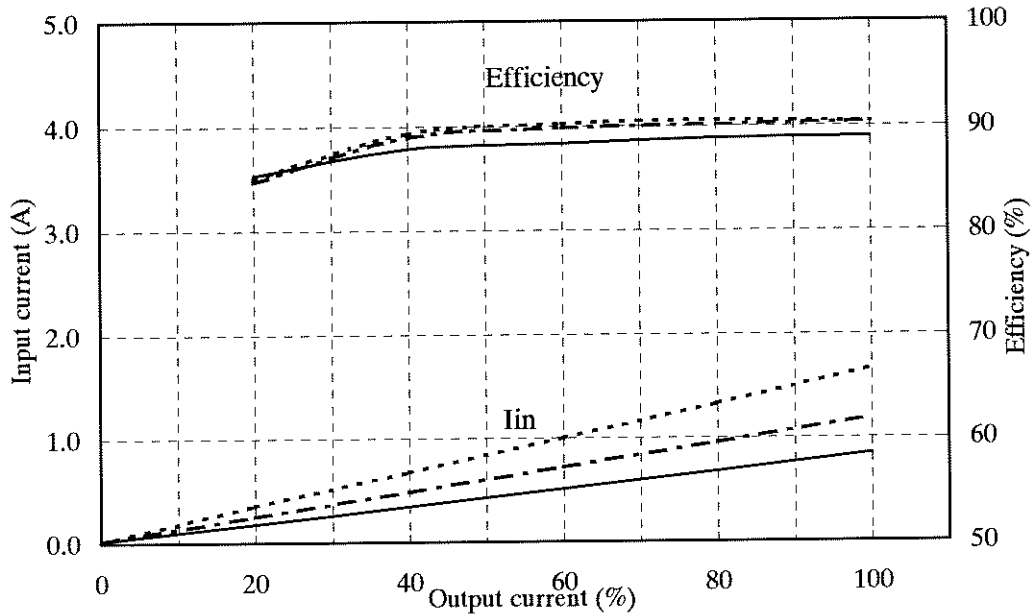


2.1 (3) 効率、入力電流対出力電流

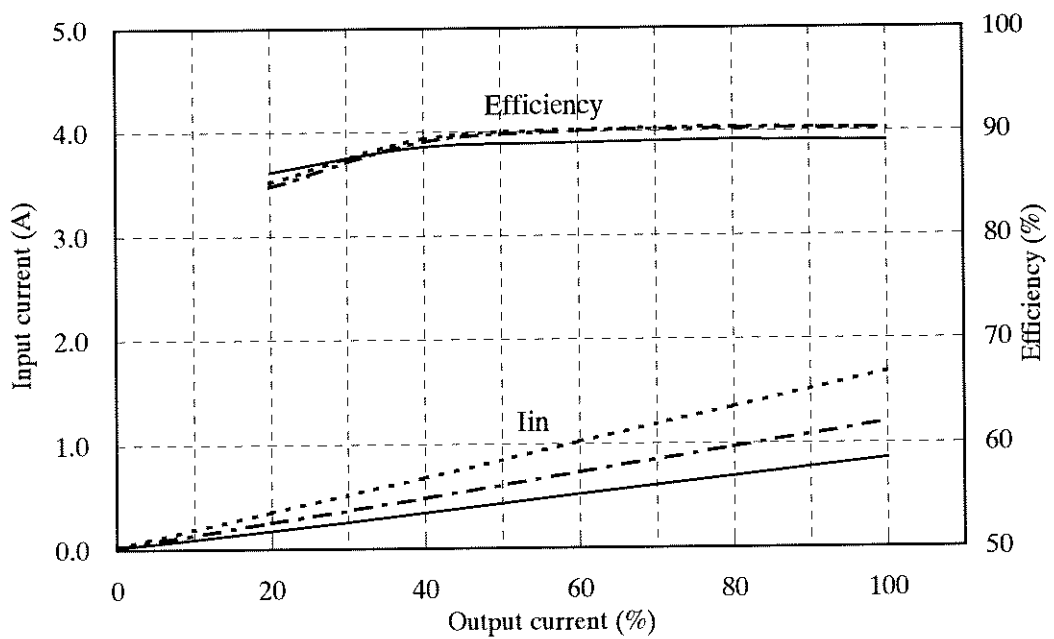
Efficiency and input current v.s. output current

Conditions Vin : 200 VDC .....  
 : 280 VDC - - - -  
 : 400 VDC ————  
 Tp : 25 °C

24V



48V



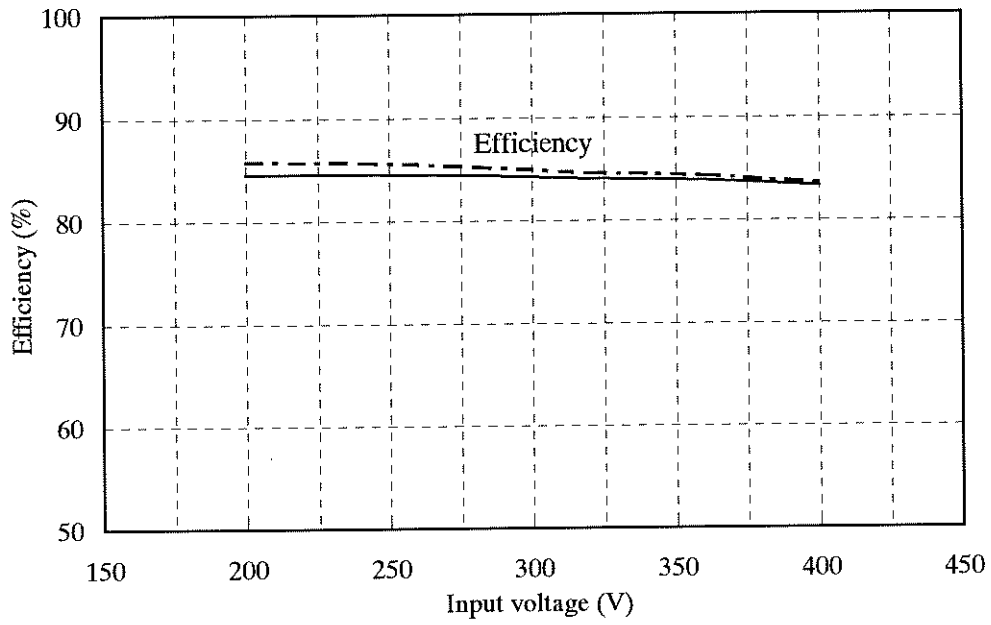


2.1 (4) 効率対入力電圧  
Efficiency v.s. input voltage

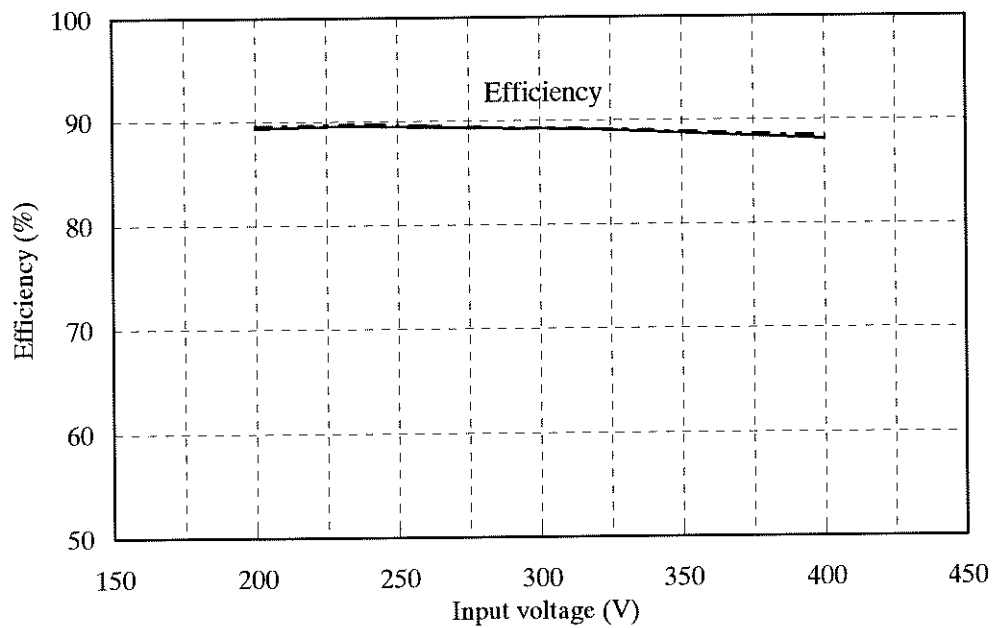
Conditions T<sub>p</sub> : 25 °C

I<sub>out</sub> : 50 % - - - - -  
100 % ———

5V



12V

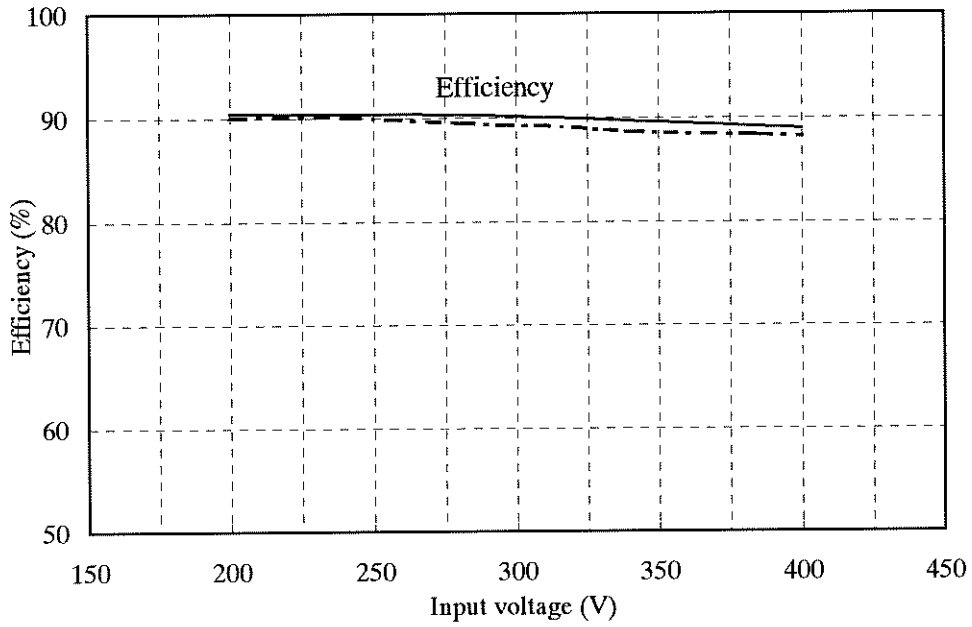


2.1 (4) 効率対入力電圧  
Efficiency v.s. input voltage

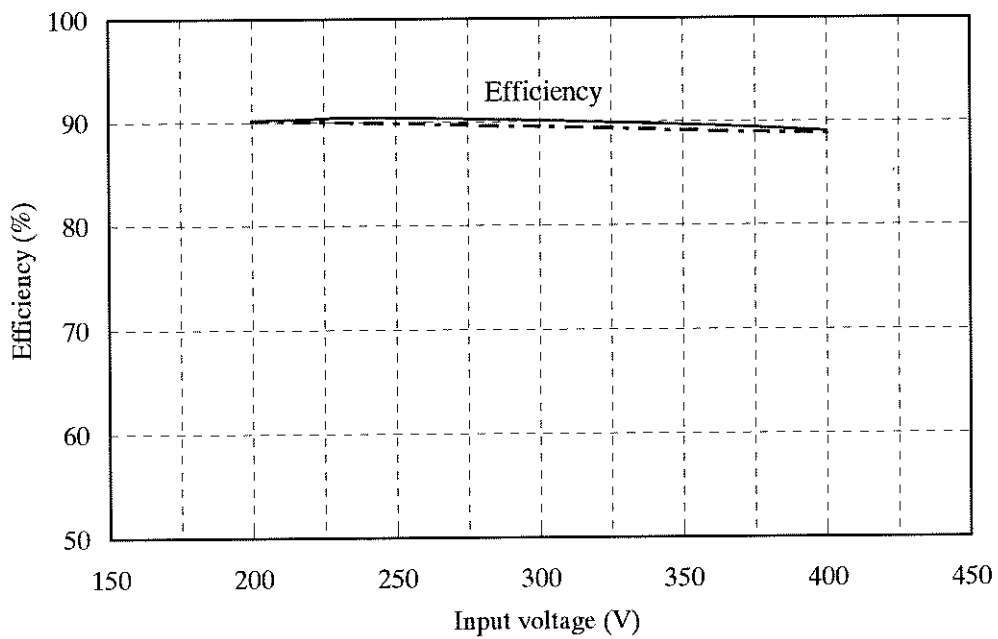
Conditions T<sub>p</sub> : 25 °C

I<sub>out</sub> : 50 % - - - -  
100 % ————

24V



48V



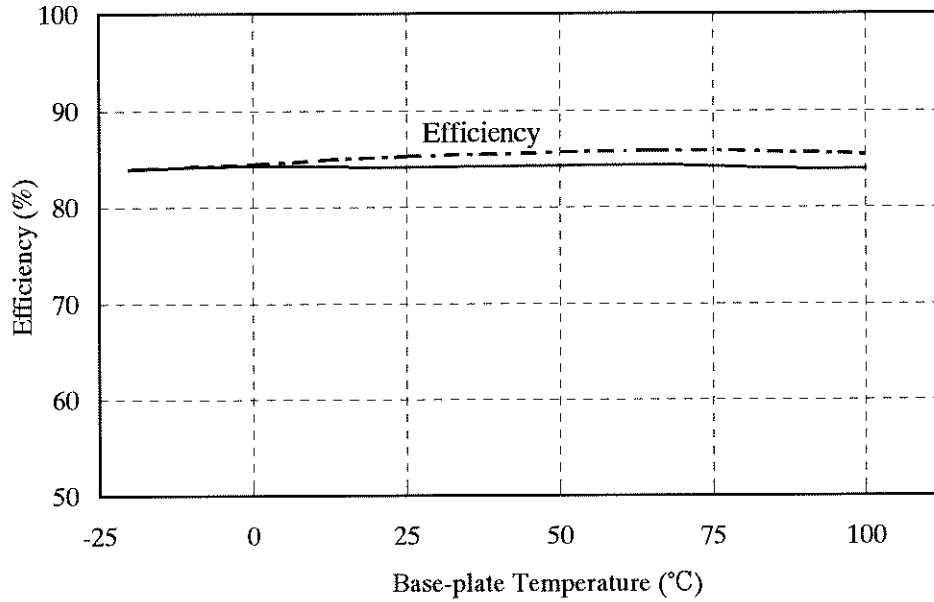
2.1 (5) 効率対ベースプレート温度

Efficiency v.s. base-plate temperature

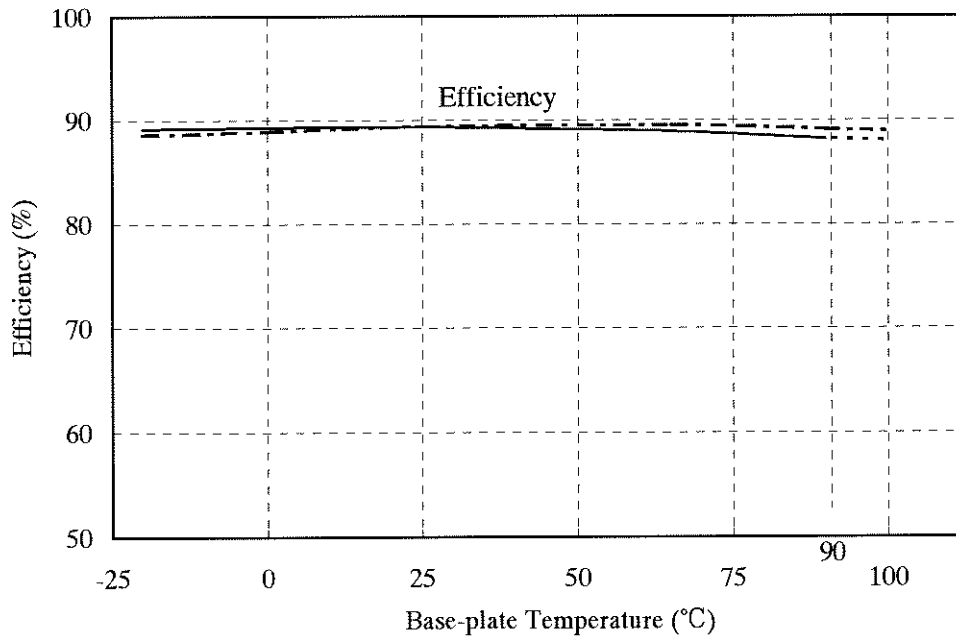
Conditions Vin : 280 VDC

Iout : 50 % - - - -  
 100 % ————  
 83 % ······

5V



12V



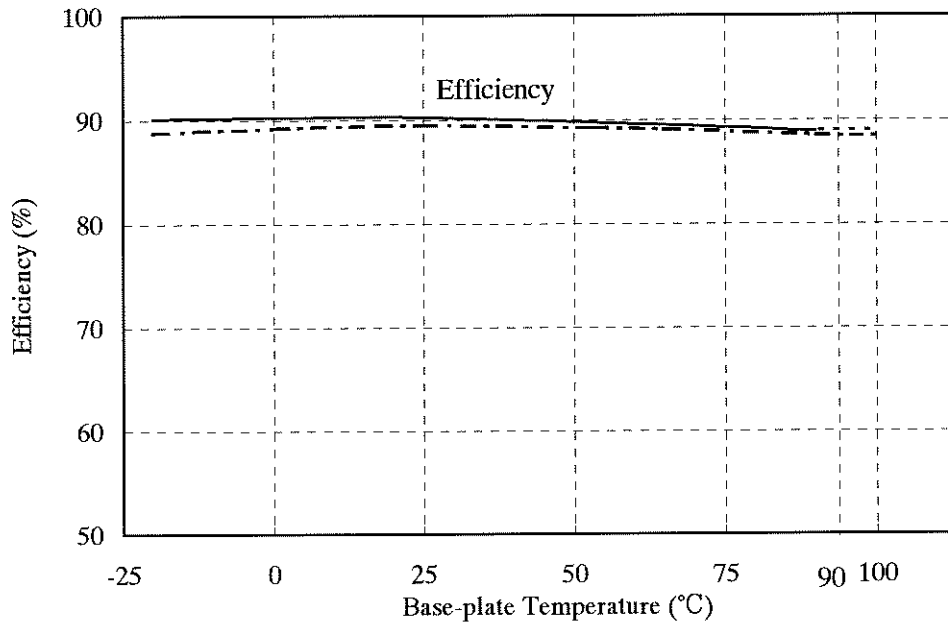
2.1 (5) 効率対ベースプレート温度

Efficiency v.s. base-plate temperature

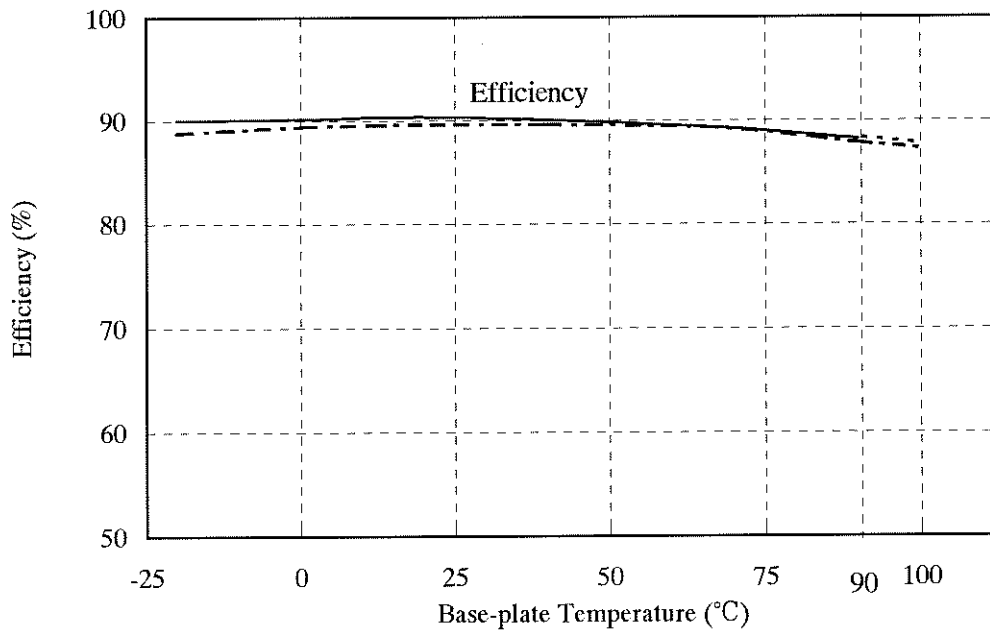
Conditions Vin : 280 VDC

Iout : 50 % - - - -  
 100 % ————  
 83 % ······

24V



48V



2.2 通電ドリフト特性

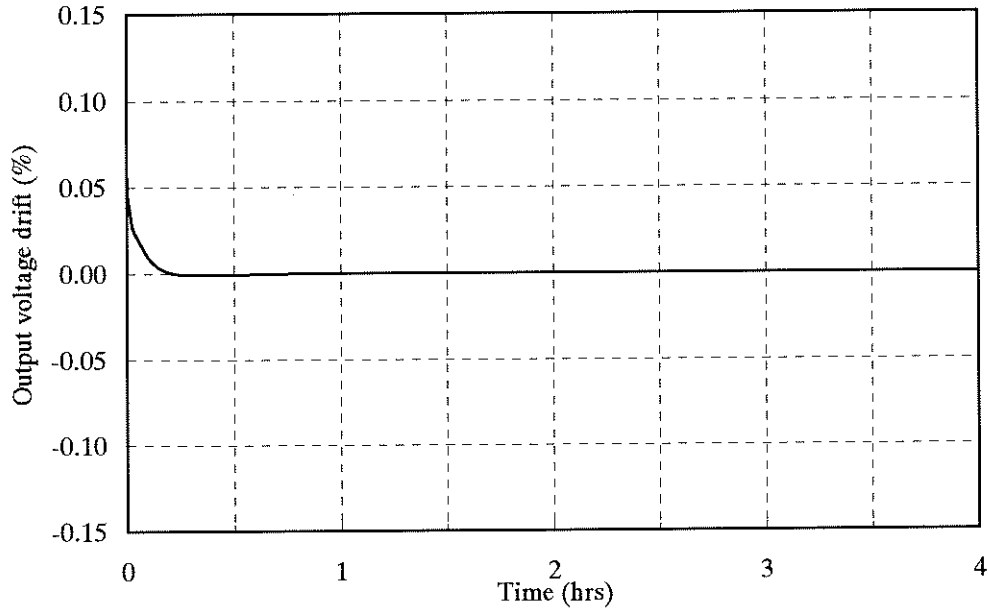
Warm up voltage drift characteristics

Conditions  $V_{in}$  : 280 VDC

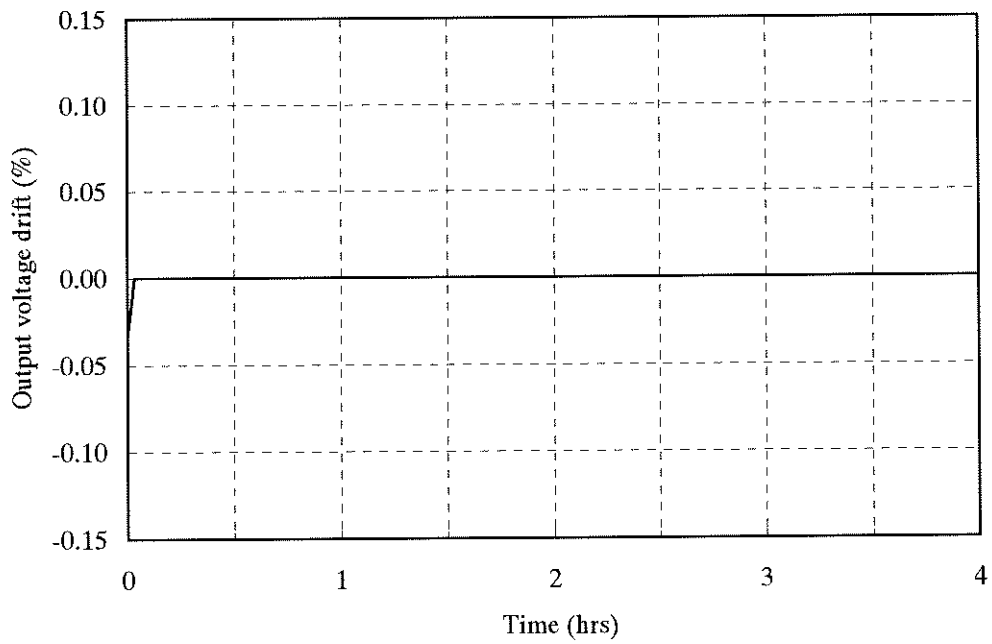
$I_{out}$  : 100 %

$T_p$  : 25 °C

5V



12V



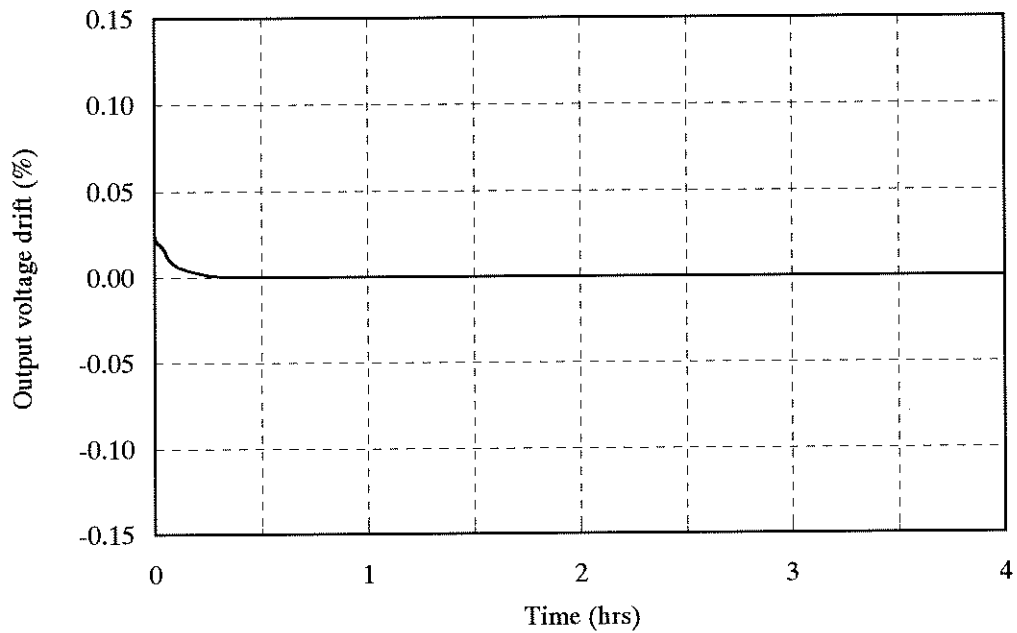
2.2 通電ドリフト特性  
Warm up voltage drift characteristics

Conditions  $V_{in}$  : 280 VDC

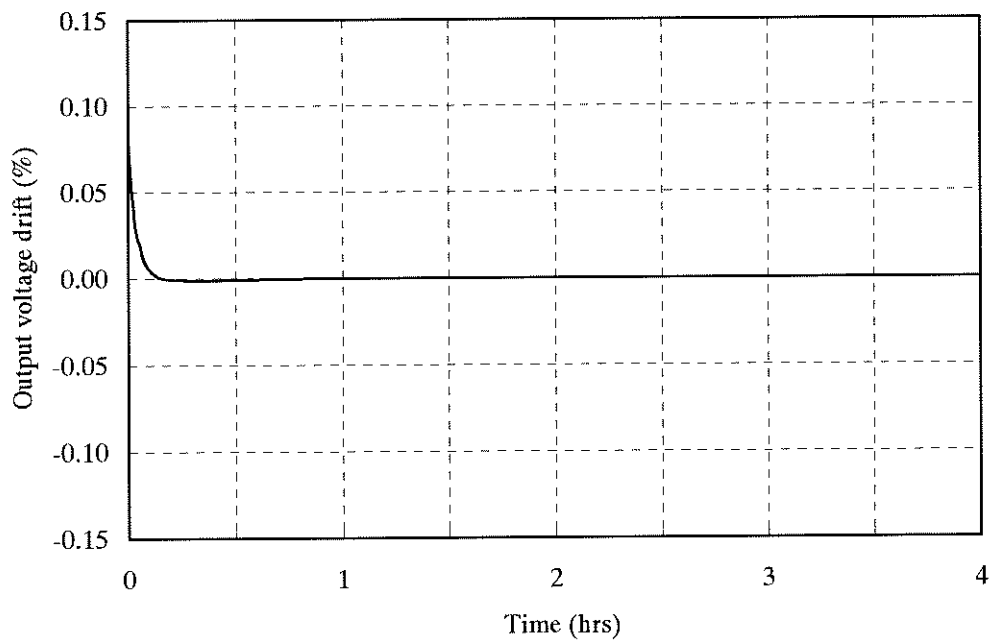
$I_o$  : 100 %

$T_p$  : 25 °C

24V



48V

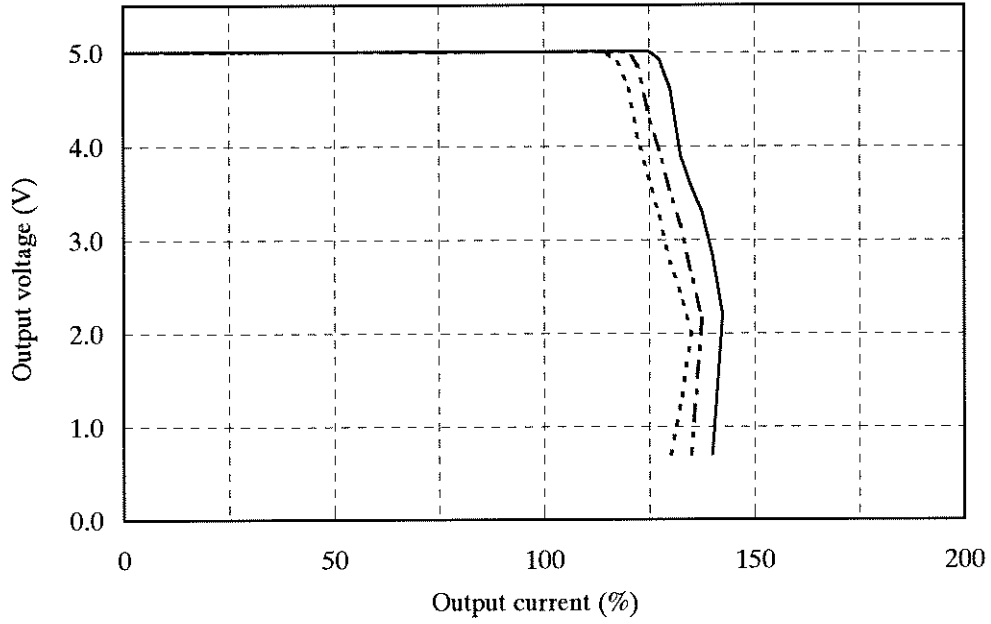


2.3 過電流保護特性

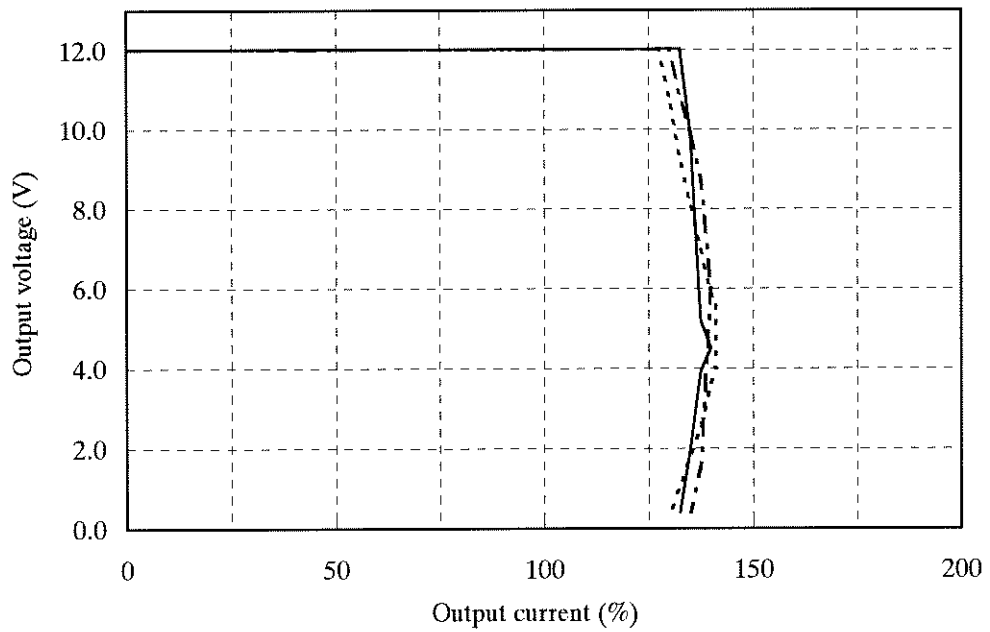
Over current protection (OCP) characteristics

Conditions Vin : 200 VDC .....  
 : 280 VDC - - - - -  
 : 400 VDC ————  
 Tp : 25 °C

5V



12V

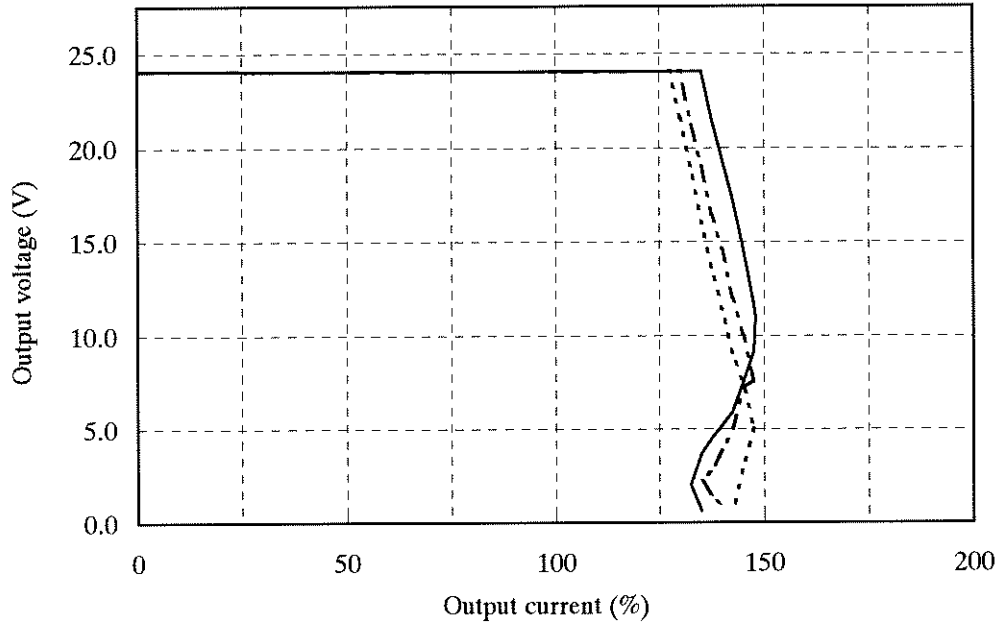


2.3 過電流保護特性

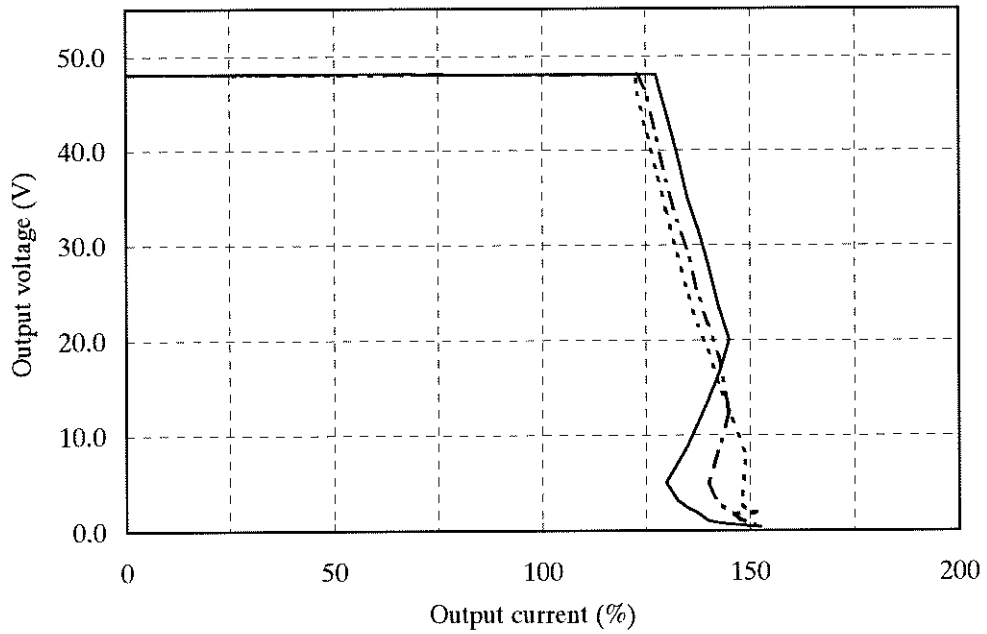
Over current protection (OCP) characteristics

Conditions Vin : 200 VDC .....  
 : 280 VDC - - - - -  
 : 400 VDC ————  
 Tp : 25 °C

24V



48V



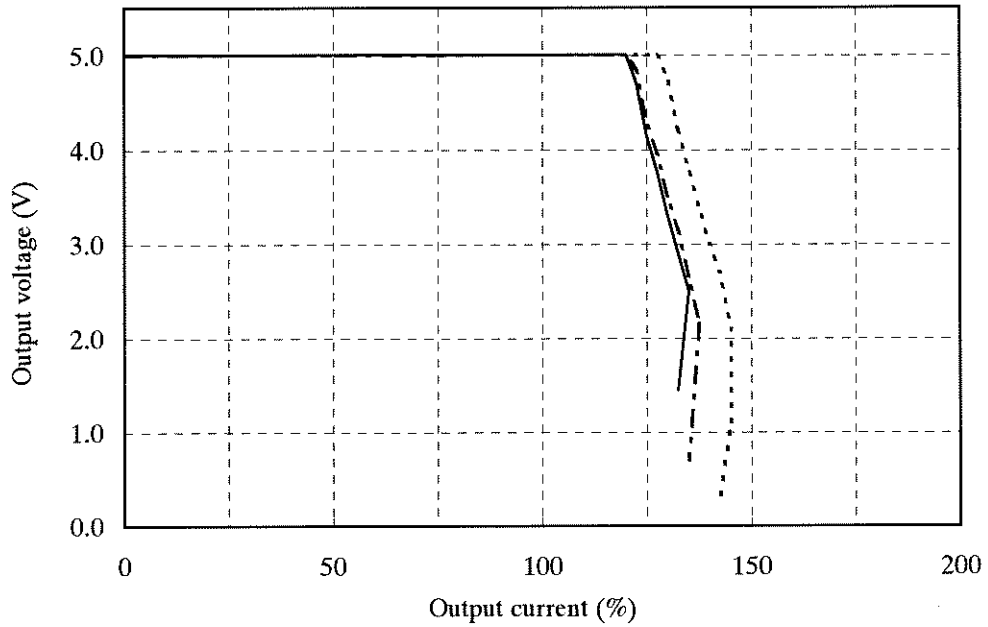


2.3 過電流保護特性

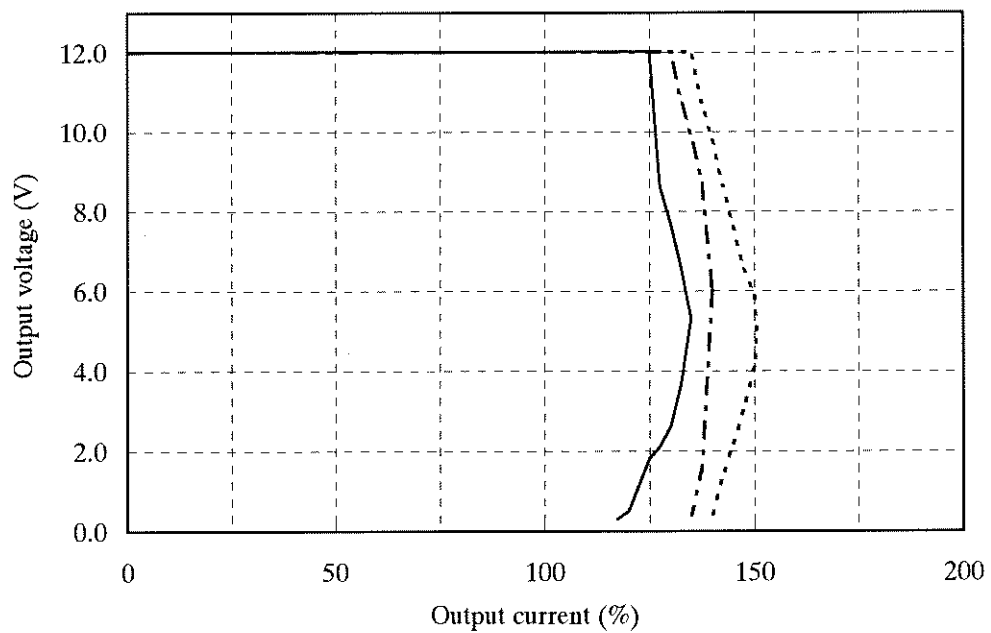
Over current protection (OCP) characteristics

Conditions  $T_p$  : -20 °C .....  
 : 25 °C .....  
 : 100 °C .....  
 $V_{in}$  : 280 VDC

5V



12V

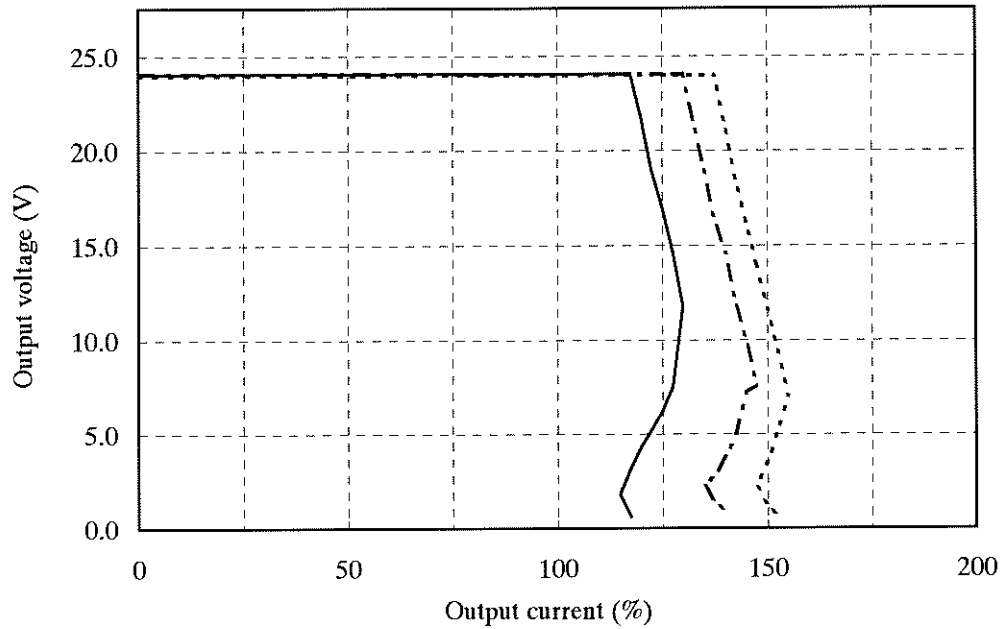


2.3 過電流保護特性

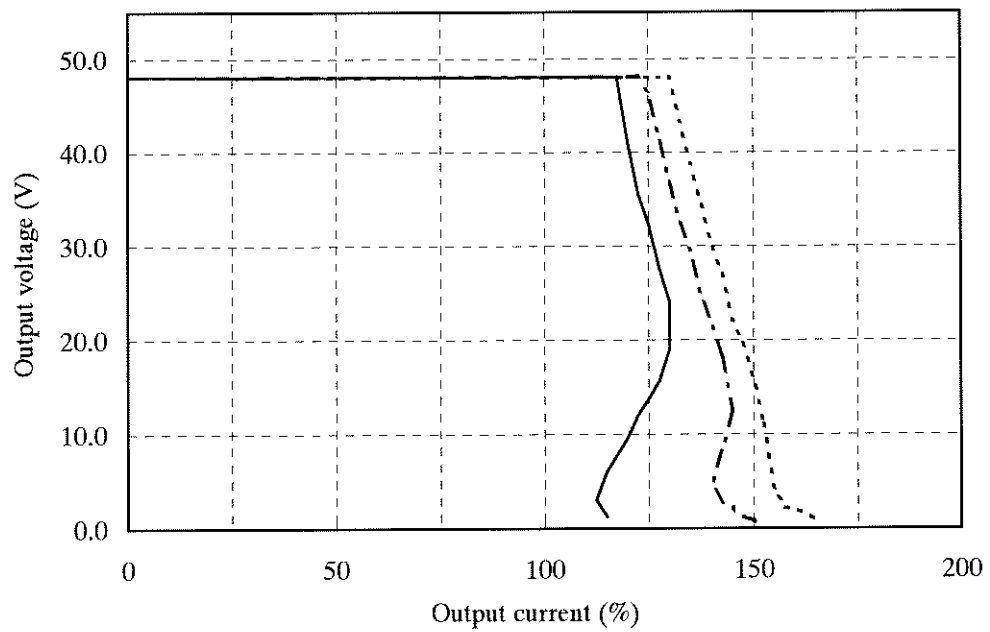
Over current protection (OCP) characteristics

Conditions  $T_p$  : -20 °C .....  
 : 25 °C .....  
 : 100 °C .....  
 $V_{in}$  : 280 VDC

24V



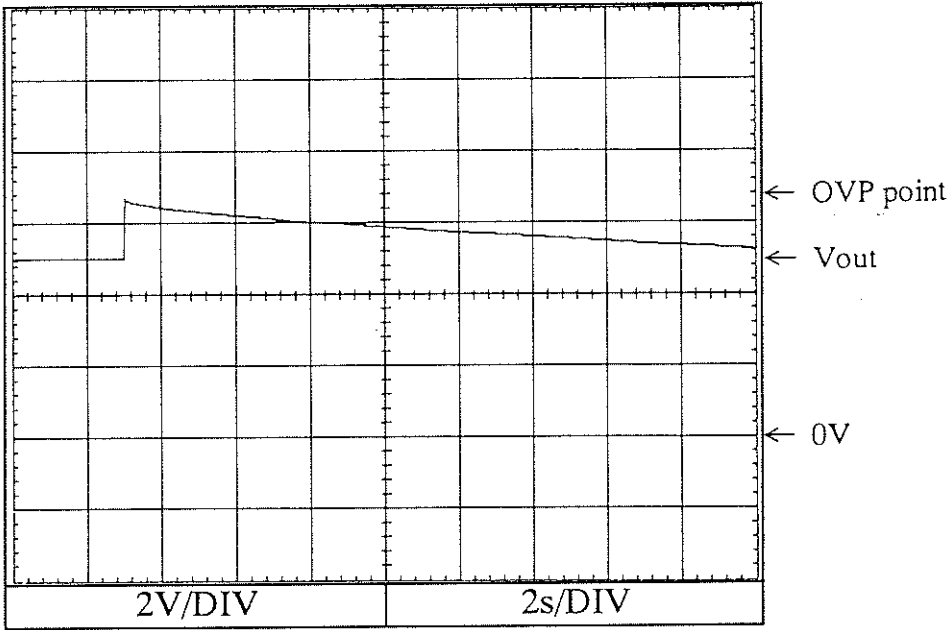
48V



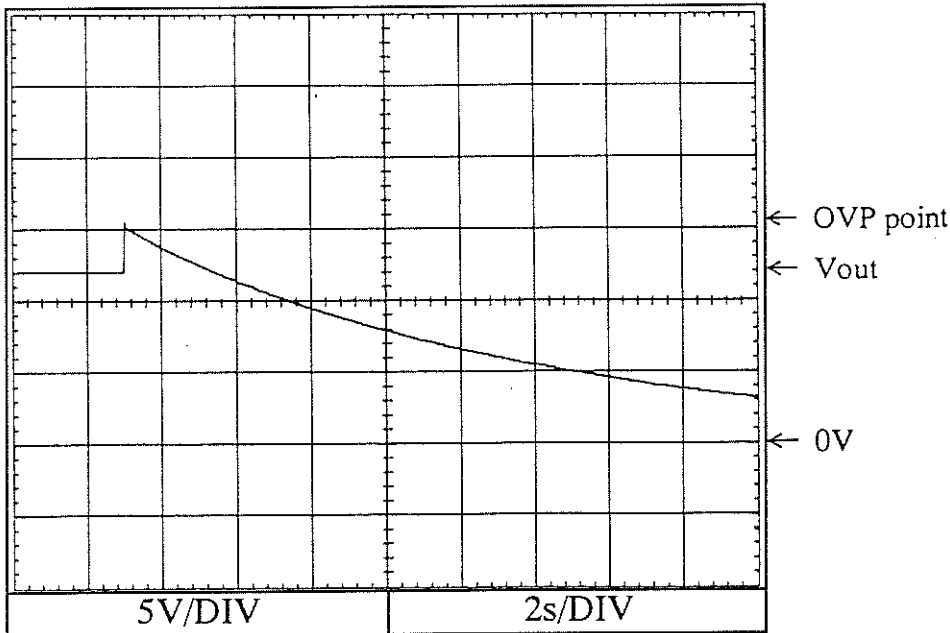
2.4 過電圧保護特性  
Over voltage protection (OVP) characteristics

Conditions Vin : 280 VDC  
Iout : 0 %  
Tp : 25 °C

5V



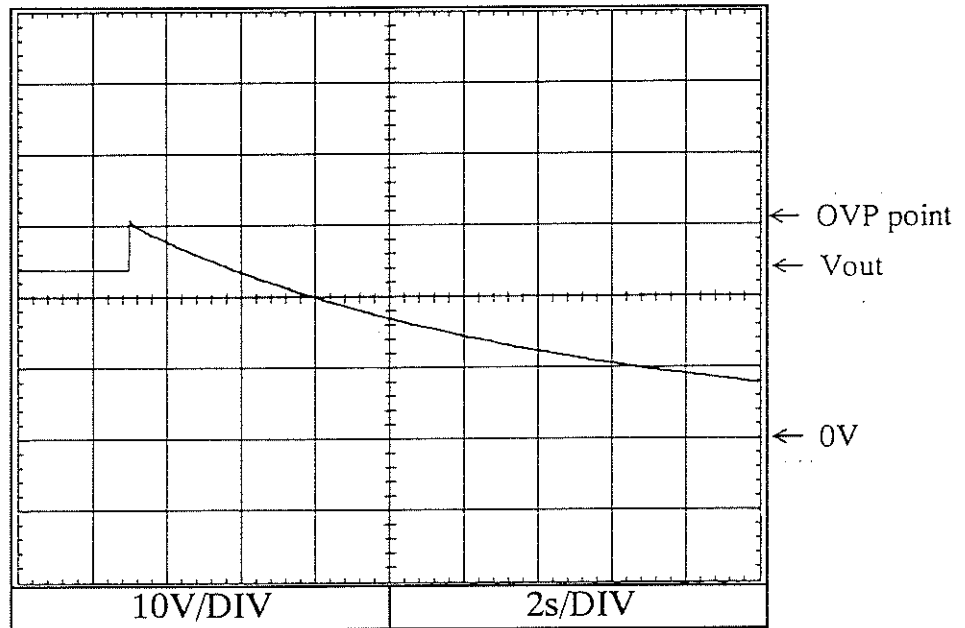
12V



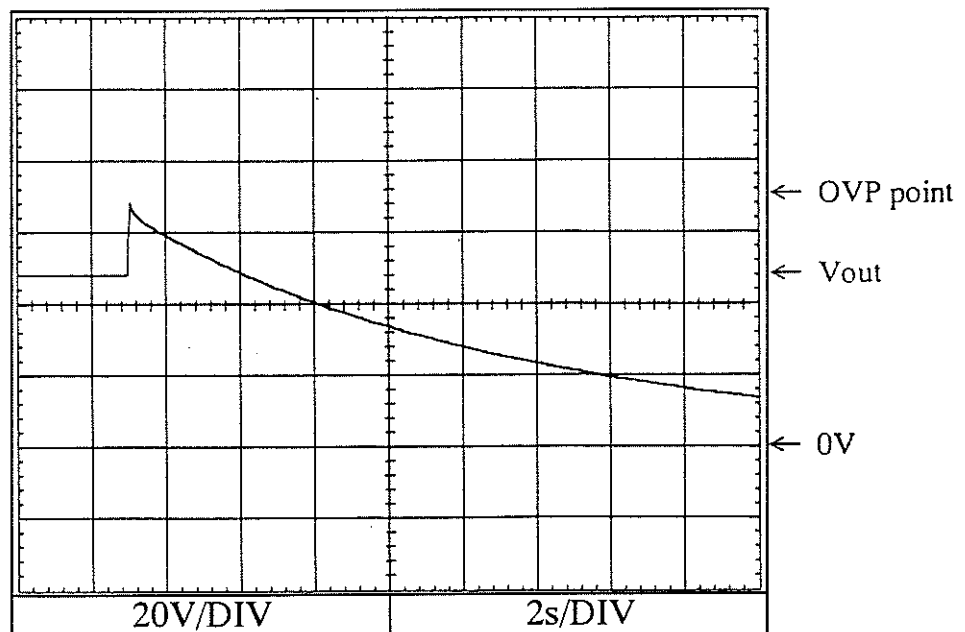
2.4 過電圧保護特性  
Over voltage protection (OVP) characteristics

Conditions Vin : 280 VDC  
Iout : 0 %  
Tp : 25 °C

24V



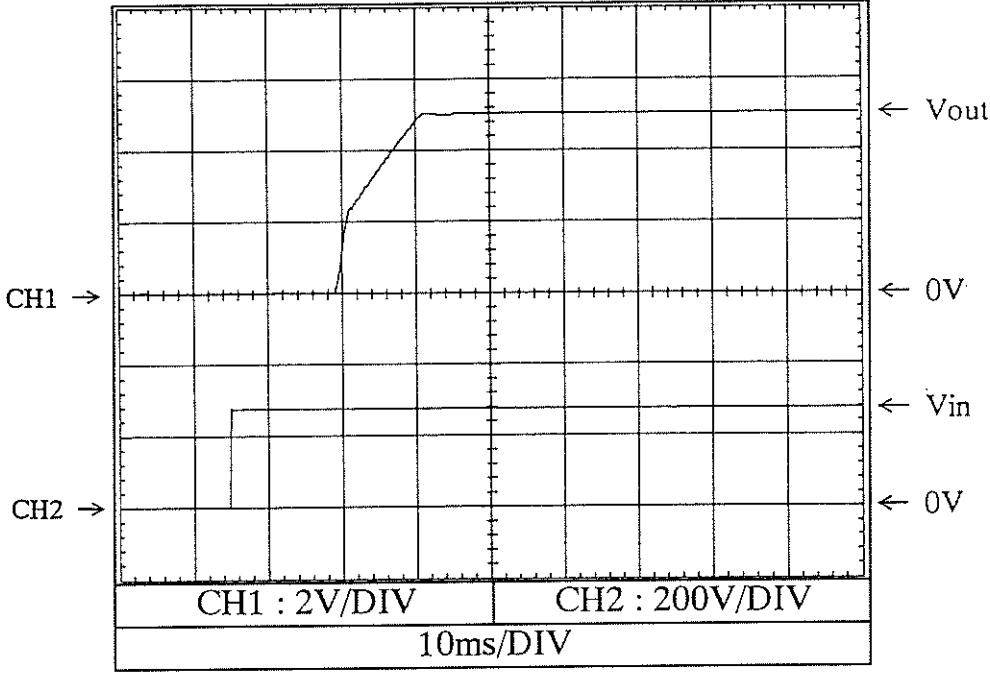
48V



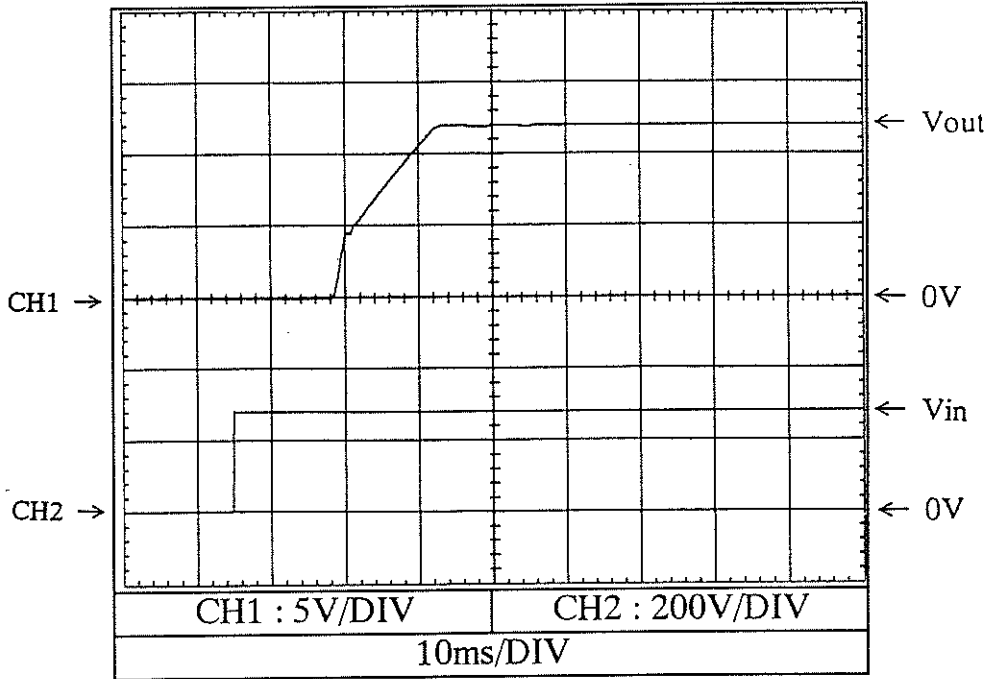
2.5 出力立ち上がり特性  
Output rise characteristics

Conditions Vin : 280 VDC  
Iout : 0 %  
Tp : 25 °C

5V



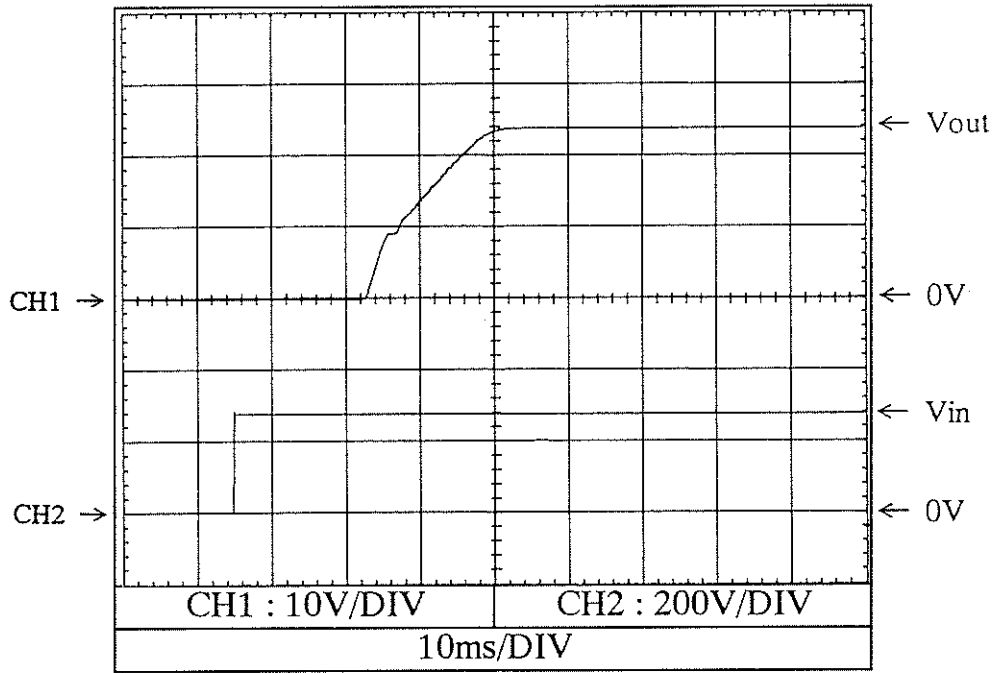
12V



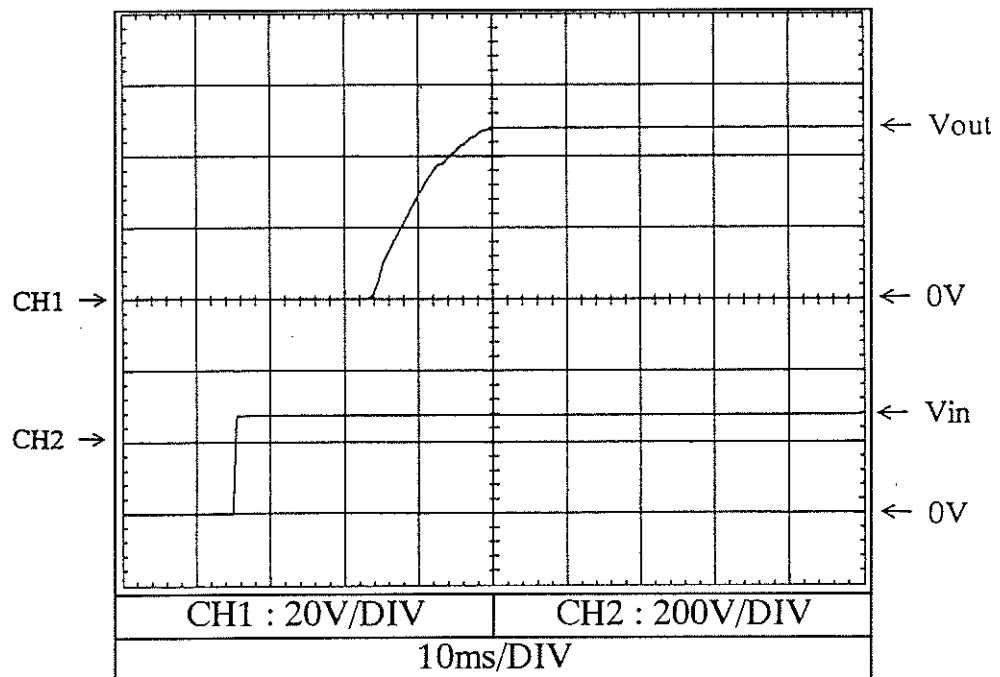
2.5 出力立ち上がり特性  
Output rise characteristics

Conditions Vin : 280 VDC  
Iout : 0 %  
Tp : 25 °C

24V



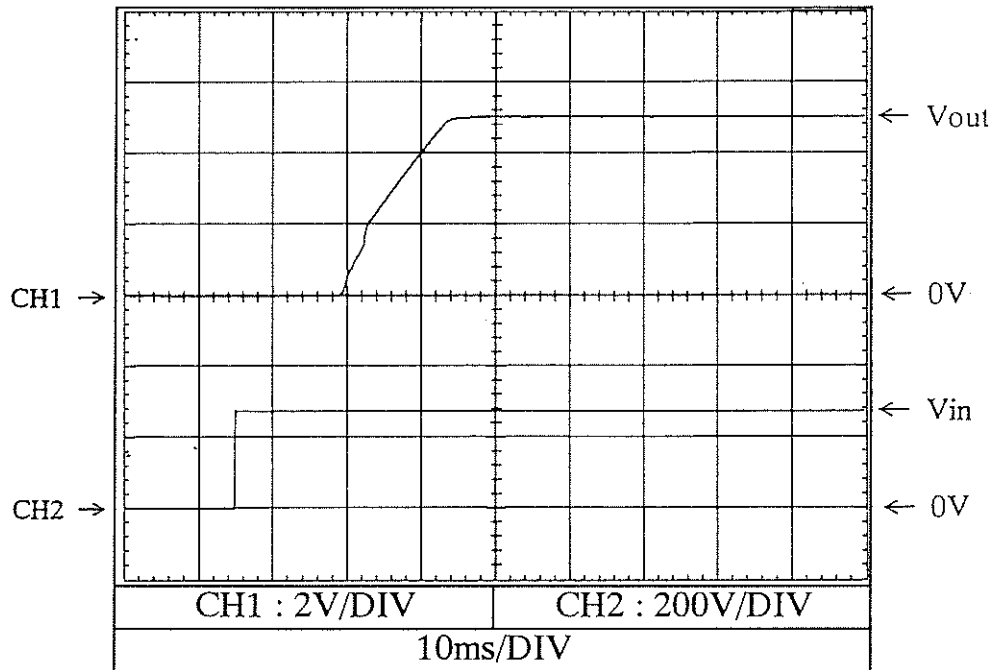
48V



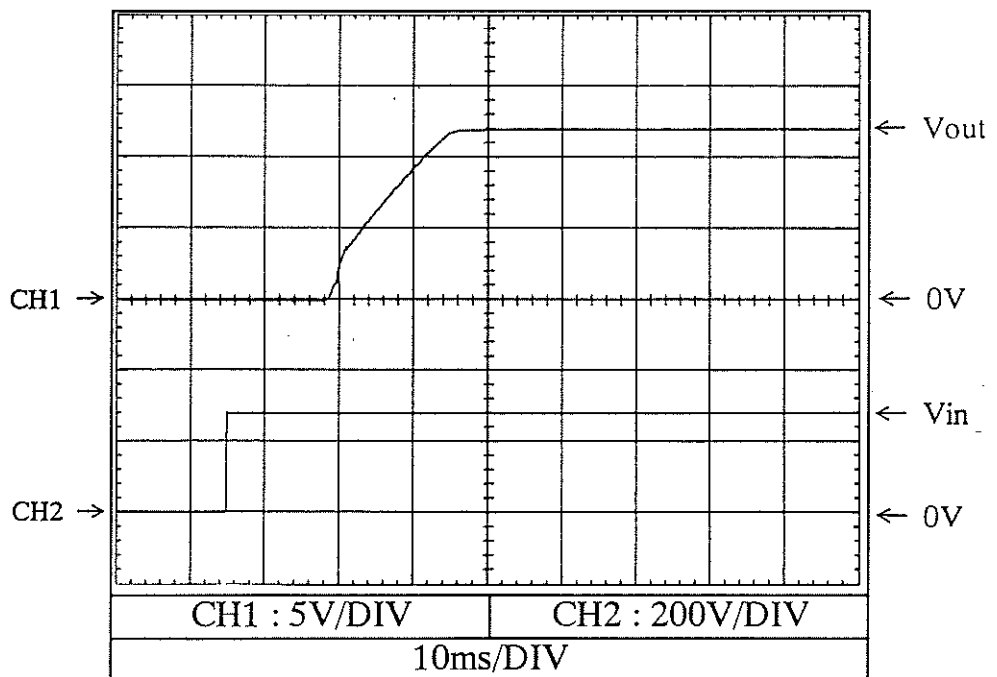
2.5 出力立ち上がり特性  
Output rise characteristics

Conditions Vin : 280 VDC  
Iout : 100 %  
Tp : 25 °C

5V



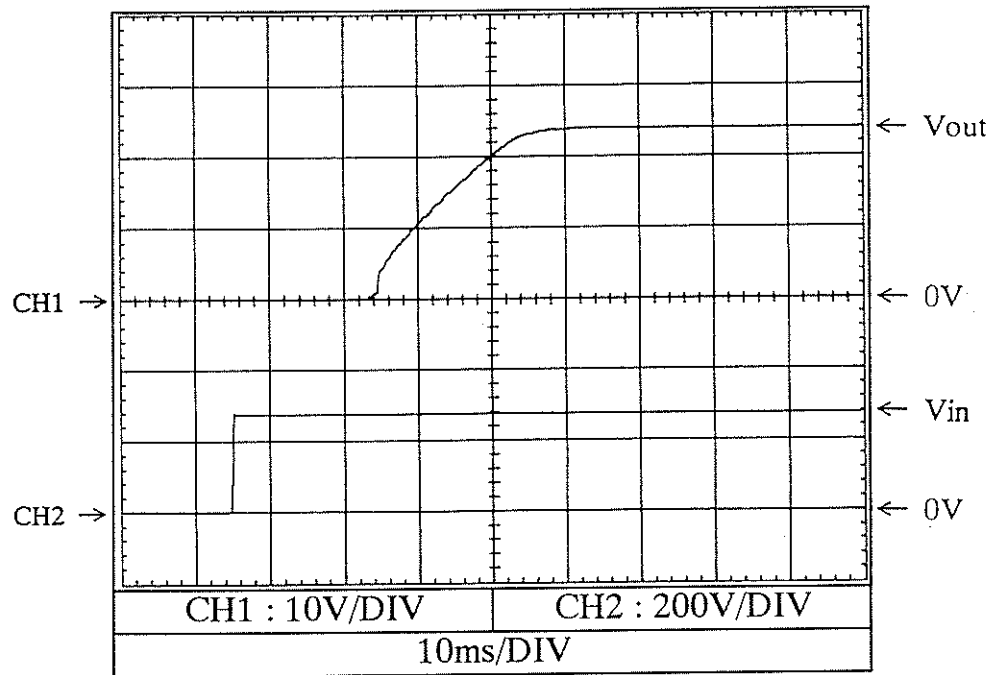
12V



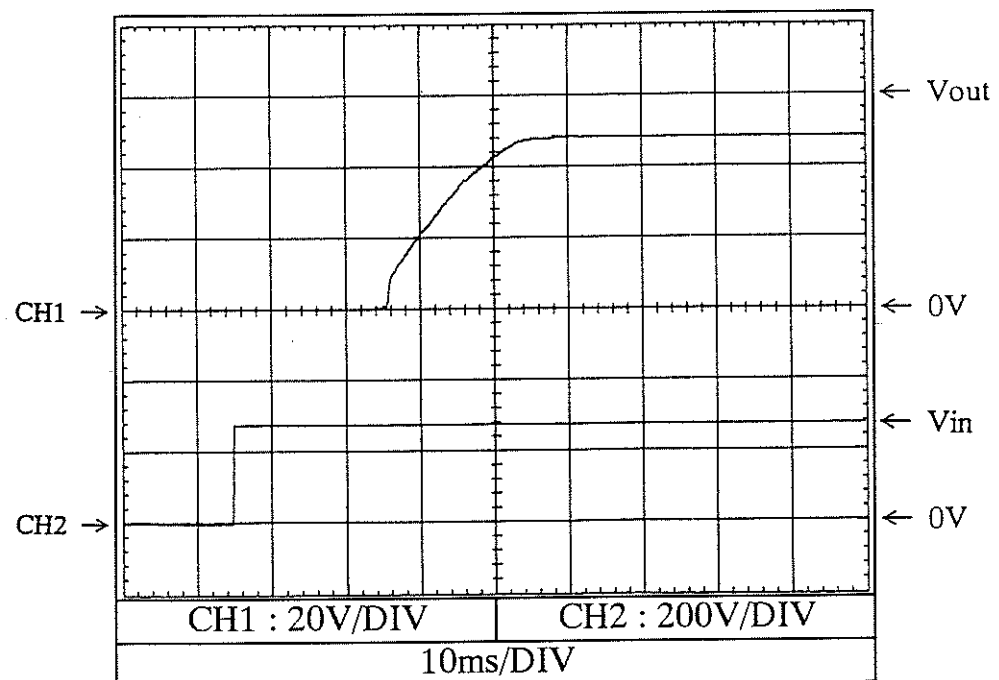
2.5 出力立ち上がり特性  
Output rise characteristics

Conditions Vin : 280 VDC  
Iout : 100 %  
Tp : 25 °C

24V



48V

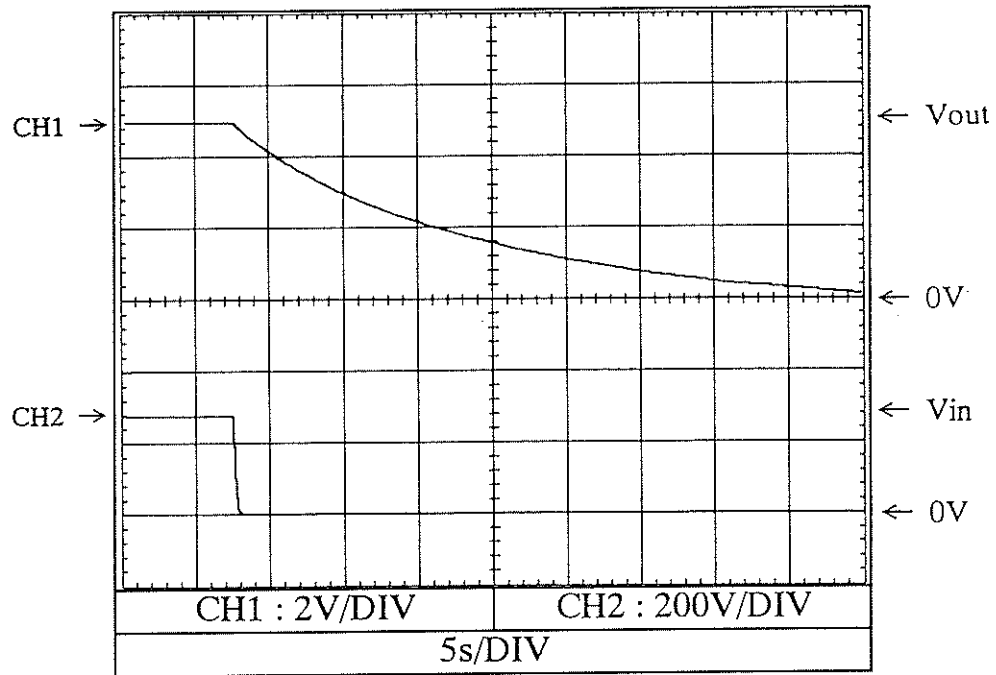




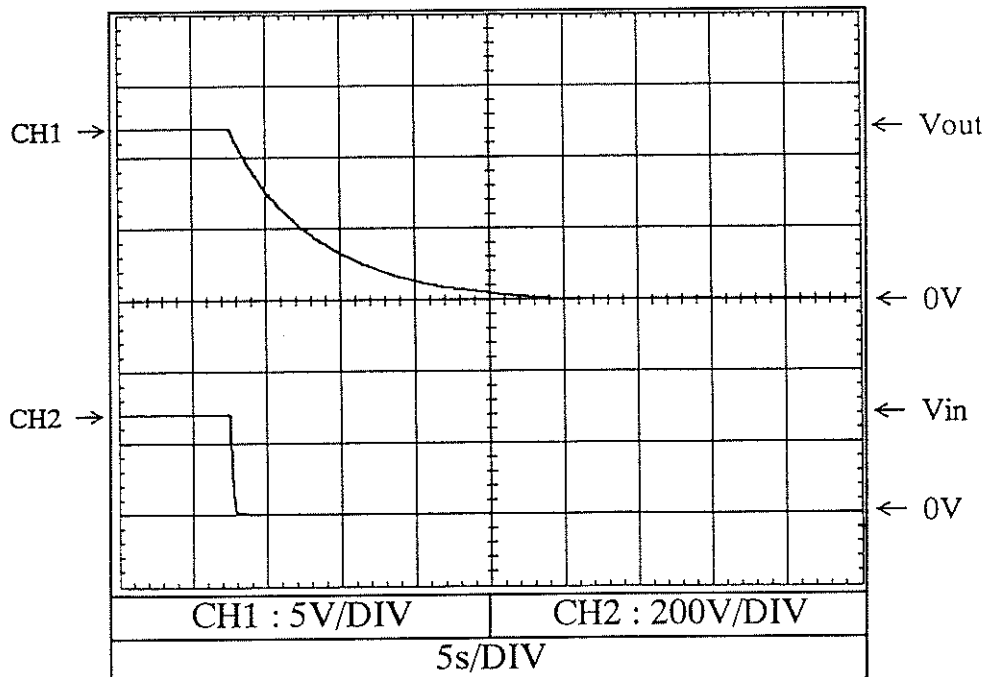
2.6 出力立ち下がり特性  
Output fall characteristics

Conditions Vin : 280 VDC  
Iout : 0 %  
Tp : 25 °C

5V



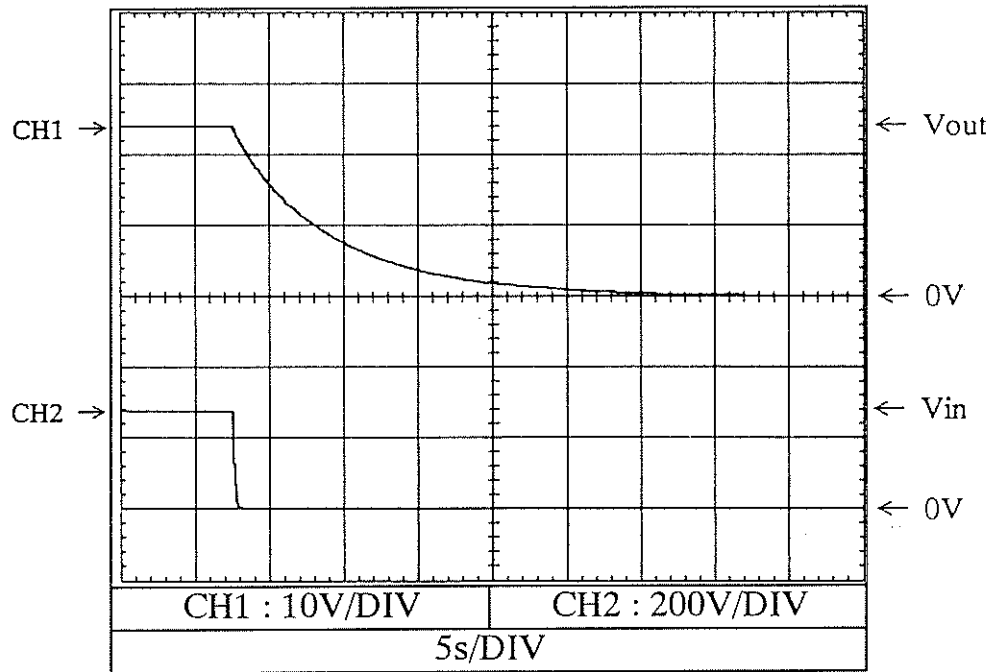
12V



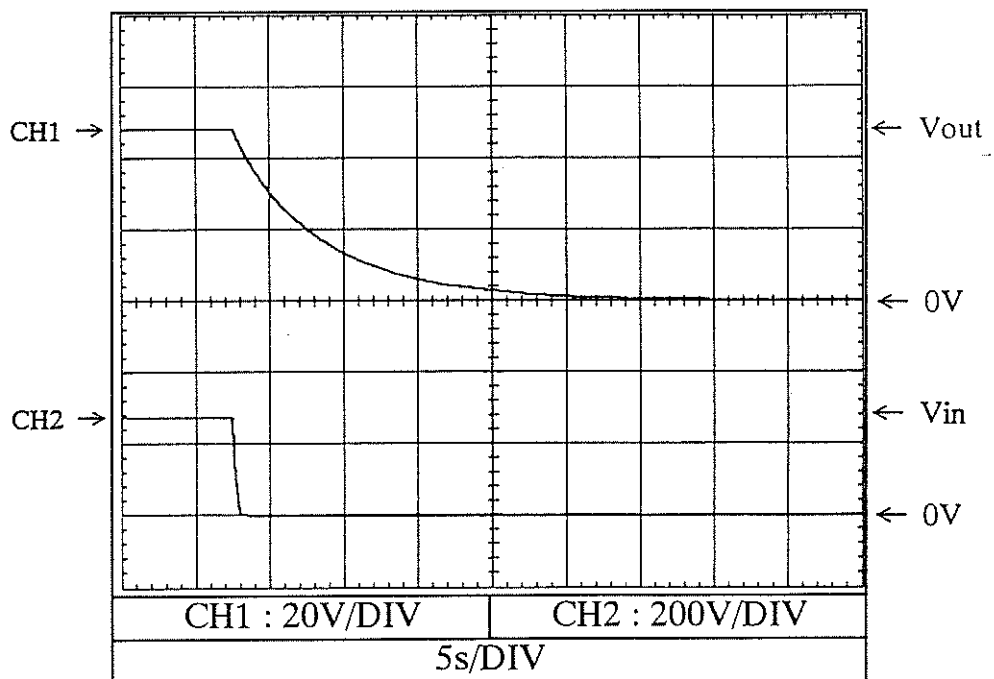
2.6 出力立ち下がり特性  
Output fall characteristics

Conditions Vin : 280 VDC  
Iout : 0 %  
Tp : 25 °C

24V



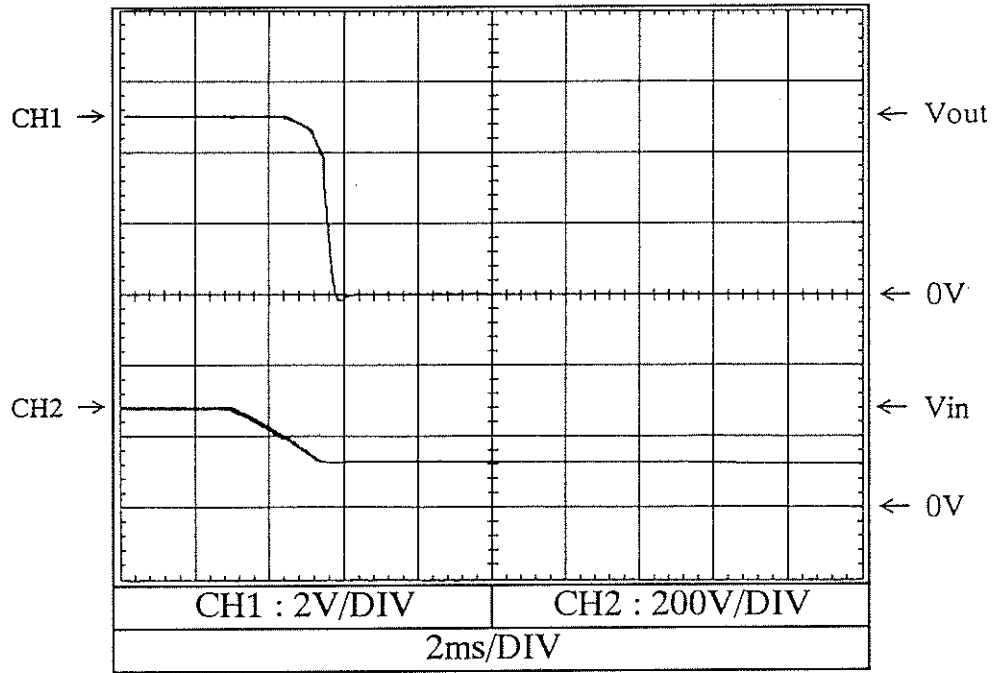
48V



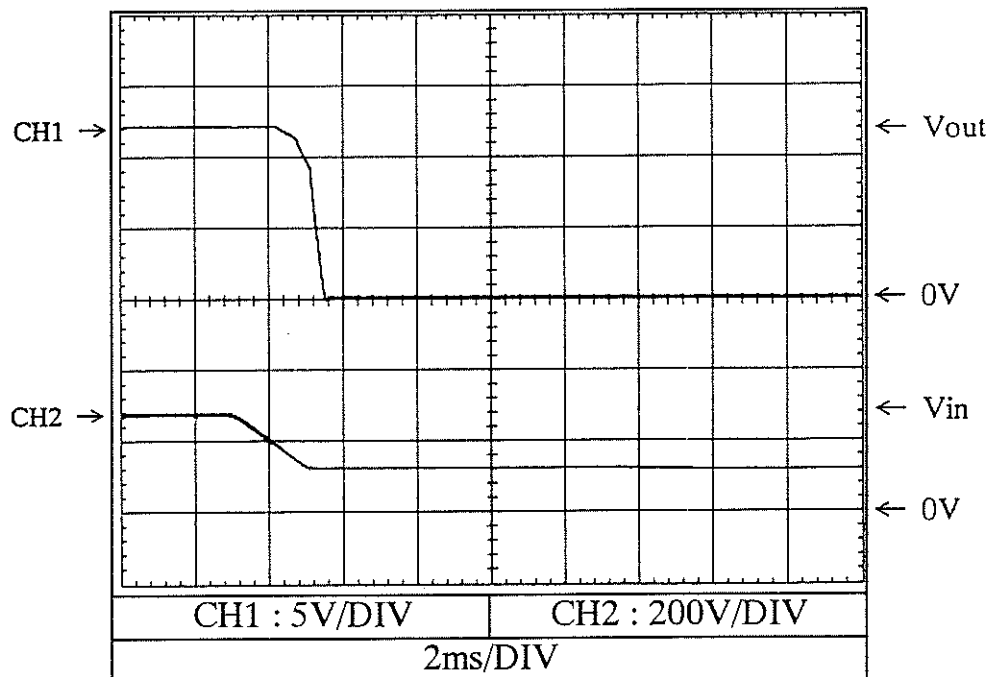
2.6 出力立ち下がり特性  
Output fall characteristics

Conditions Vin : 280 VDC  
Iout : 100 %  
Tp : 25 °C

5V



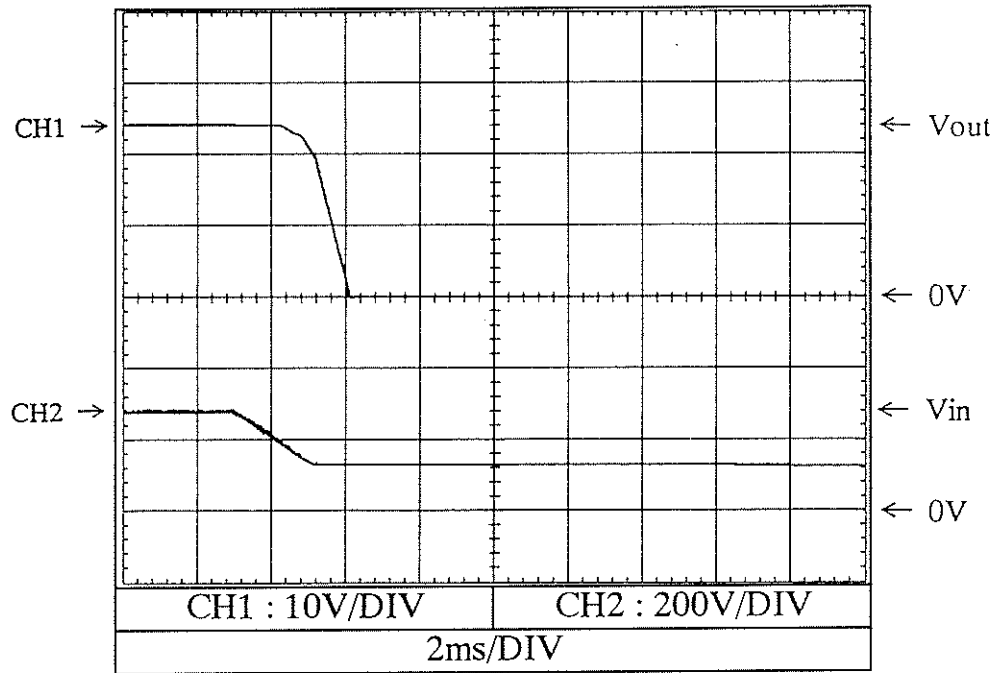
12V



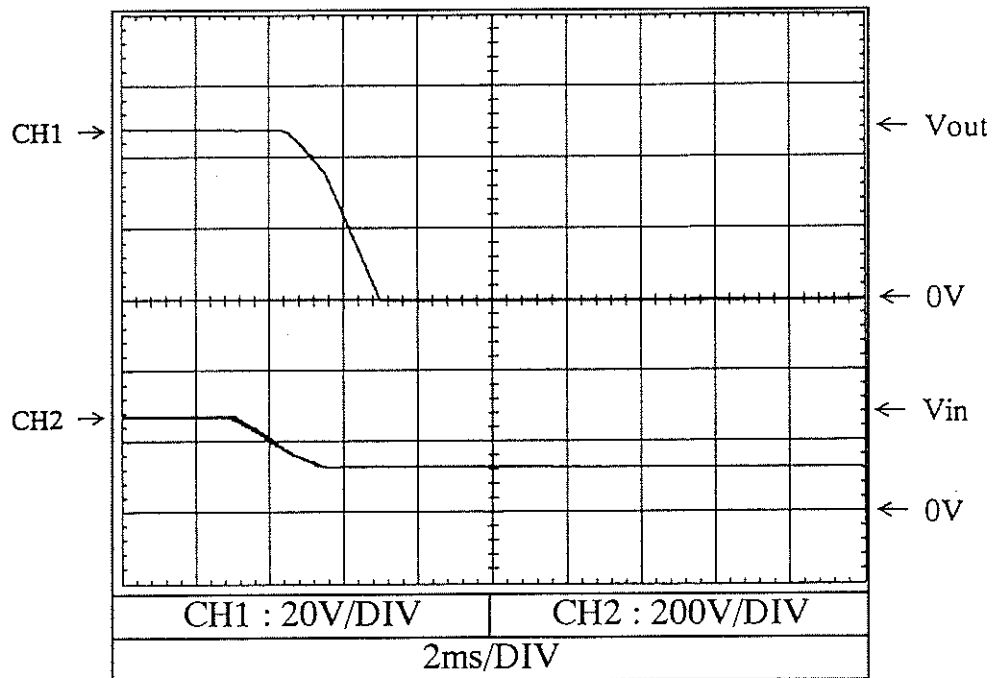
2.6 出力立ち下がり特性  
Output fall characteristics

Conditions Vin : 280 VDC  
Iout : 100 %  
Tp : 25 °C

24V



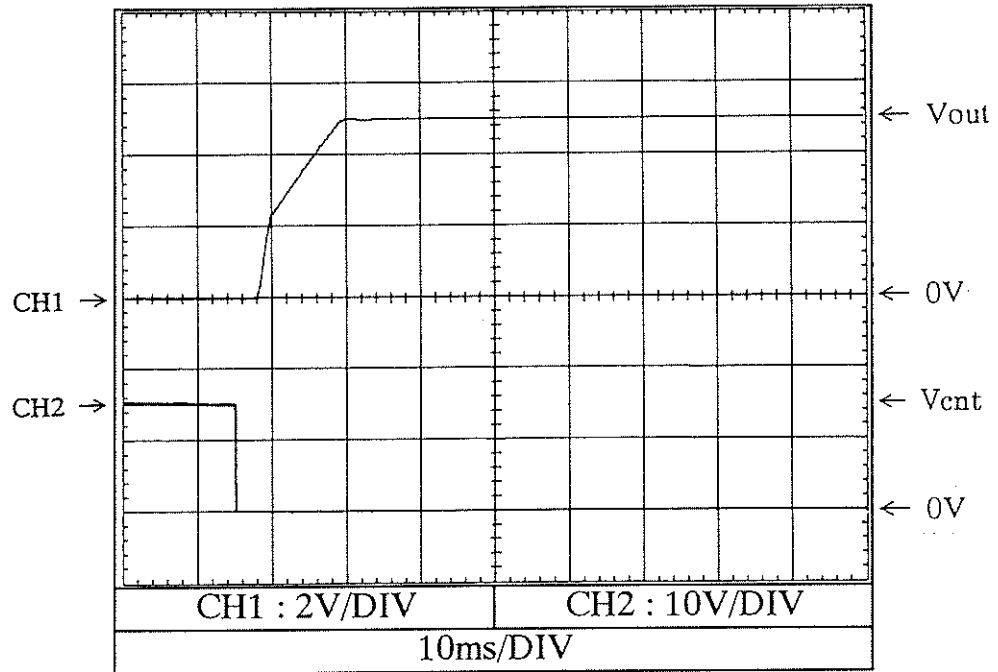
48V



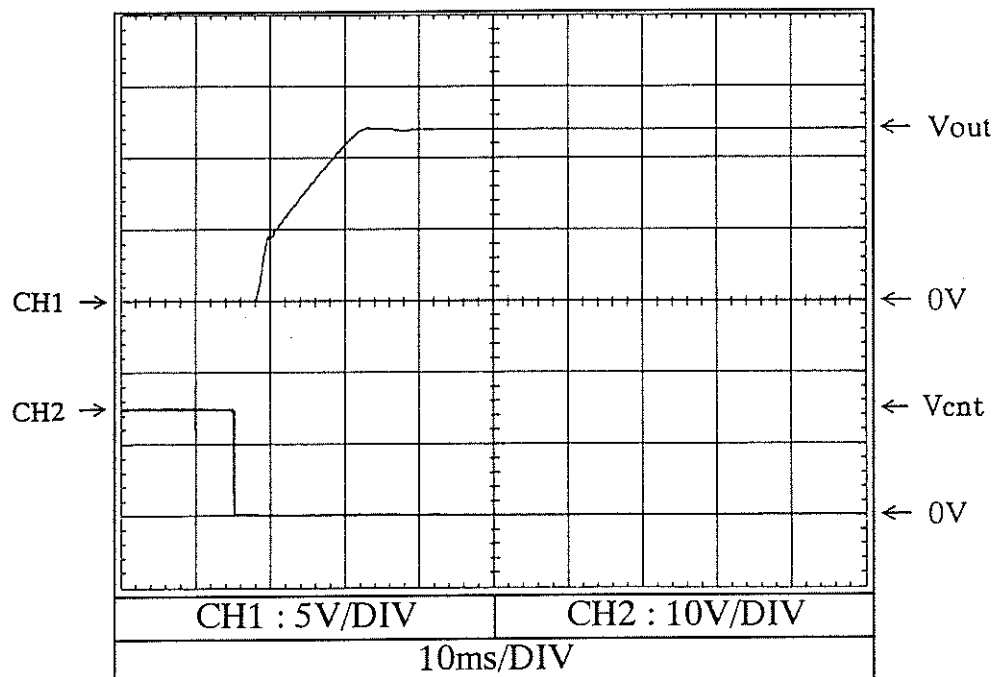
2.7 出力立ち上がり特性 (ON/OFFコントロール時)  
 Output rise characteristics with ON/OFF CONTROL

Conditions Vin : 280 VDC  
 Iout : 0 %  
 Tp : 25 °C

5V



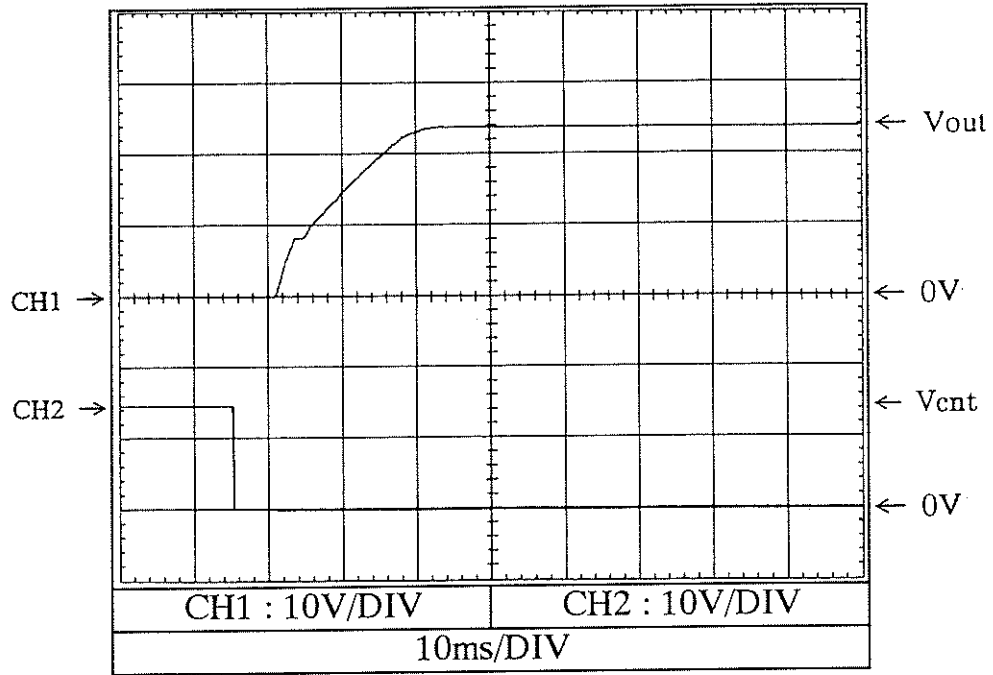
12V



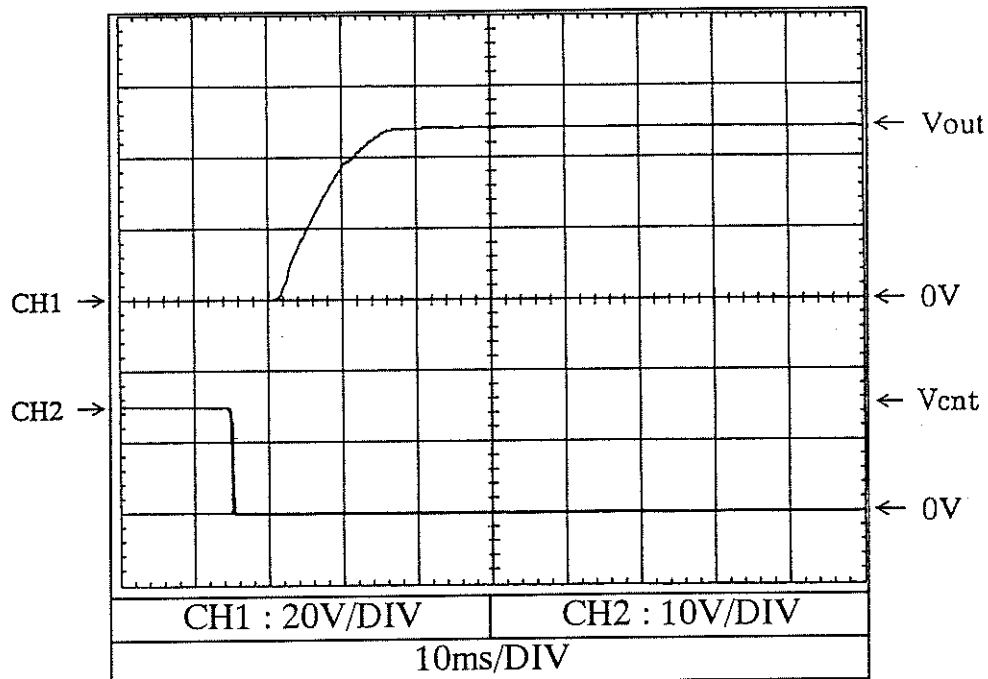
2.7 出力立ち上がり特性 (ON/OFFコントロール時)  
 Output rise characteristics with ON/OFF CONTROL

Conditions Vin : 280 VDC  
 Iout : 0 %  
 Tp : 25 °C

24V



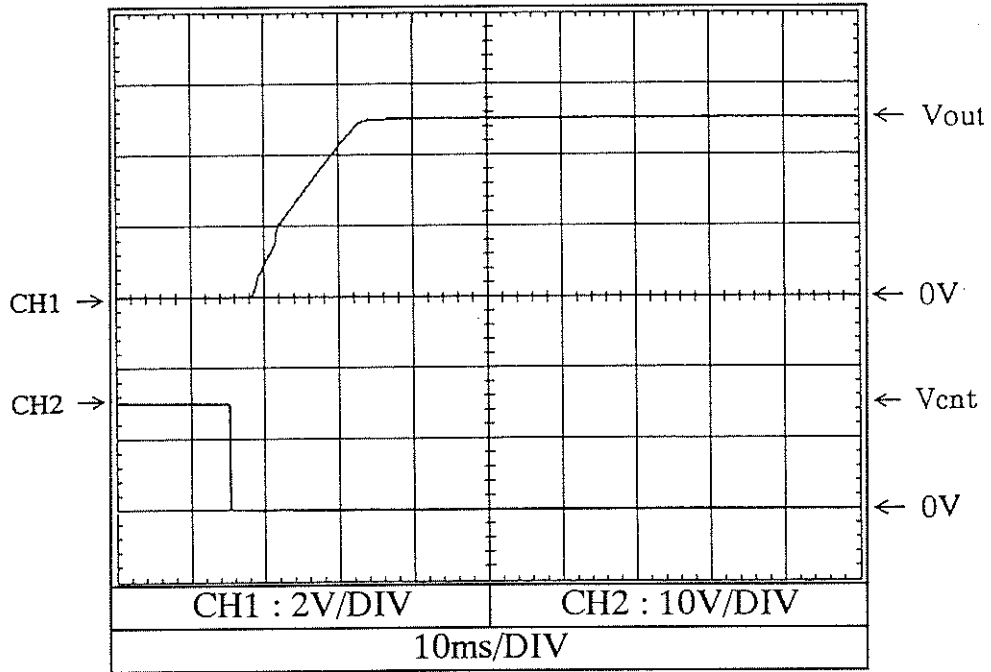
48V



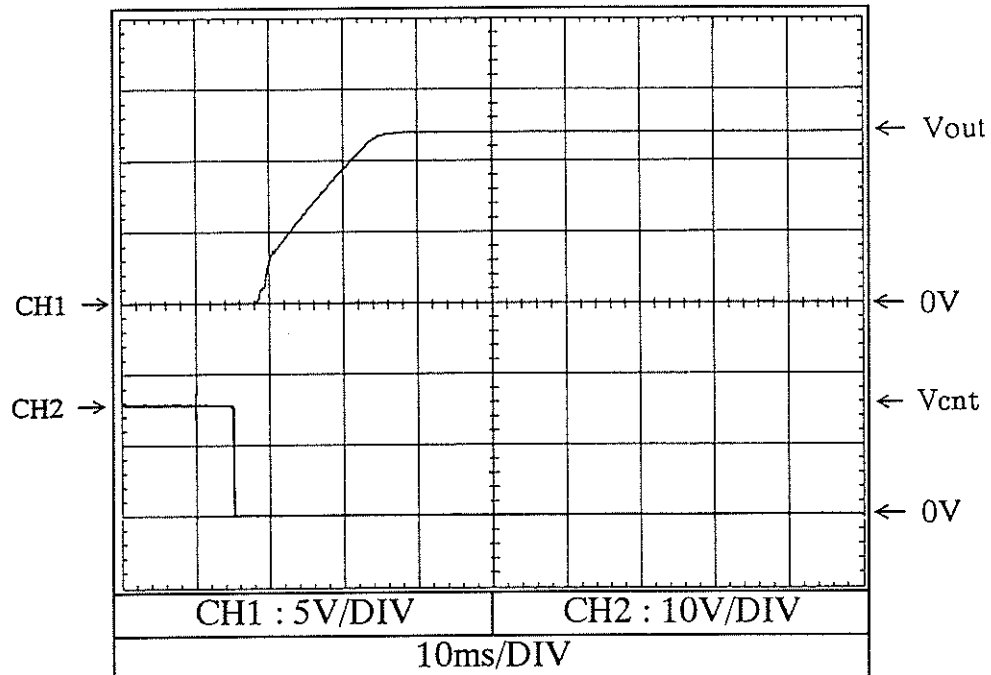
2.7 出力立ち上がり特性 (ON/OFFコントロール時)  
 Output rise characteristics with ON/OFF CONTROL

Conditions Vin : 280 VDC  
 Iout : 100 %  
 Tp : 25 °C

5V



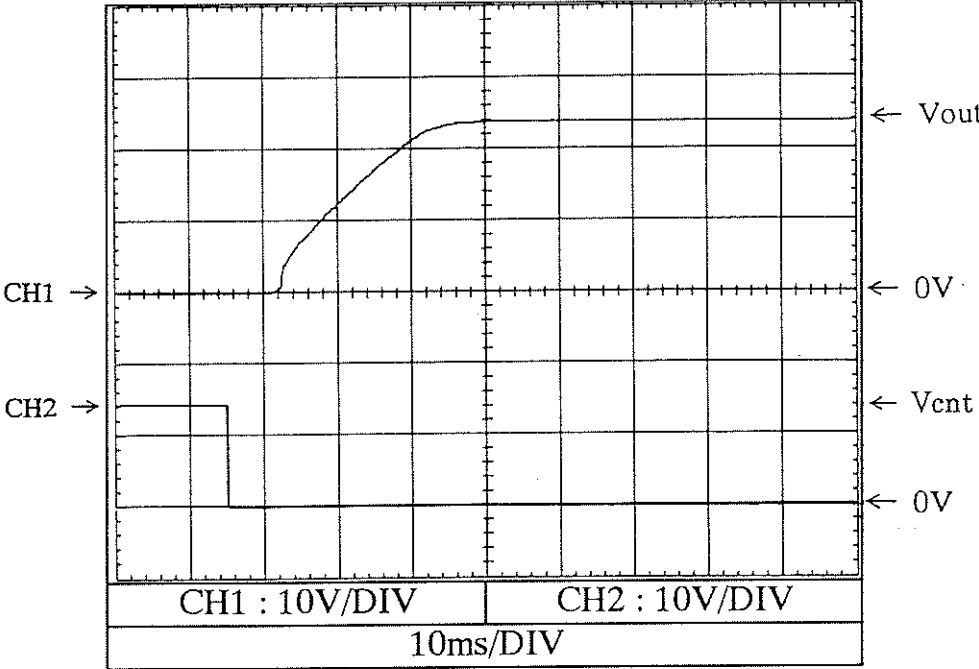
12V



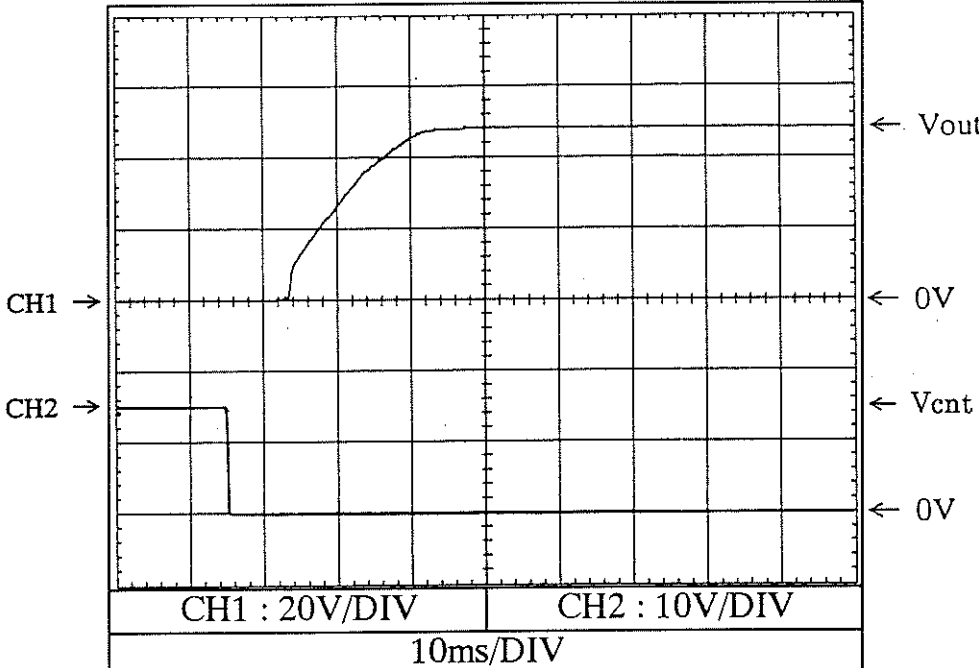
2.7 出力立ち上がり特性 (ON/OFFコントロール時)  
Output rise characteristics with ON/OFF CONTROL

Conditions Vin : 280 VDC  
Iout : 100 %  
Tp : 25 °C

24V



48V

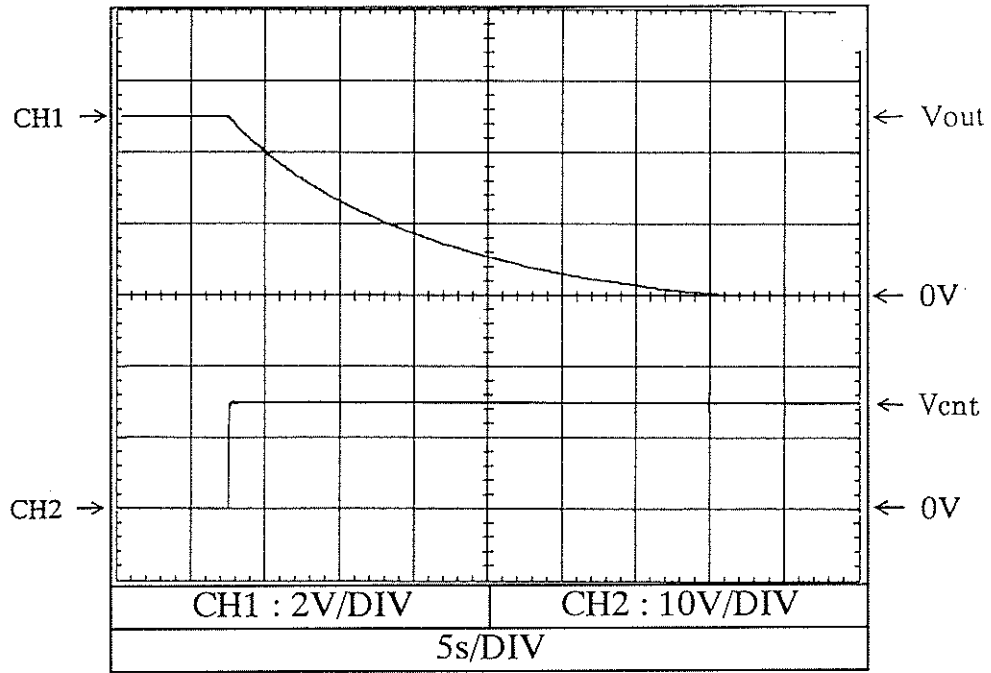




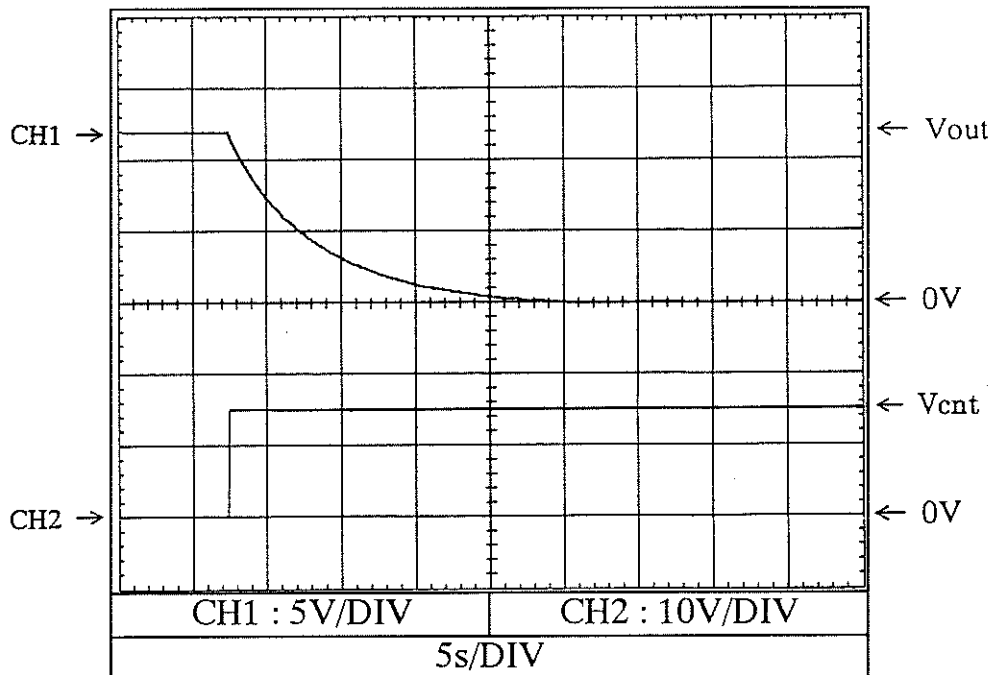
2.8 出力立ち下がり特性 (ON/OFFコントロール時)  
Output fall characteristics with ON/OFF CONTROL

Conditions Vin : 280 VDC  
Iout : 0 %  
Tp : 25 °C

5V



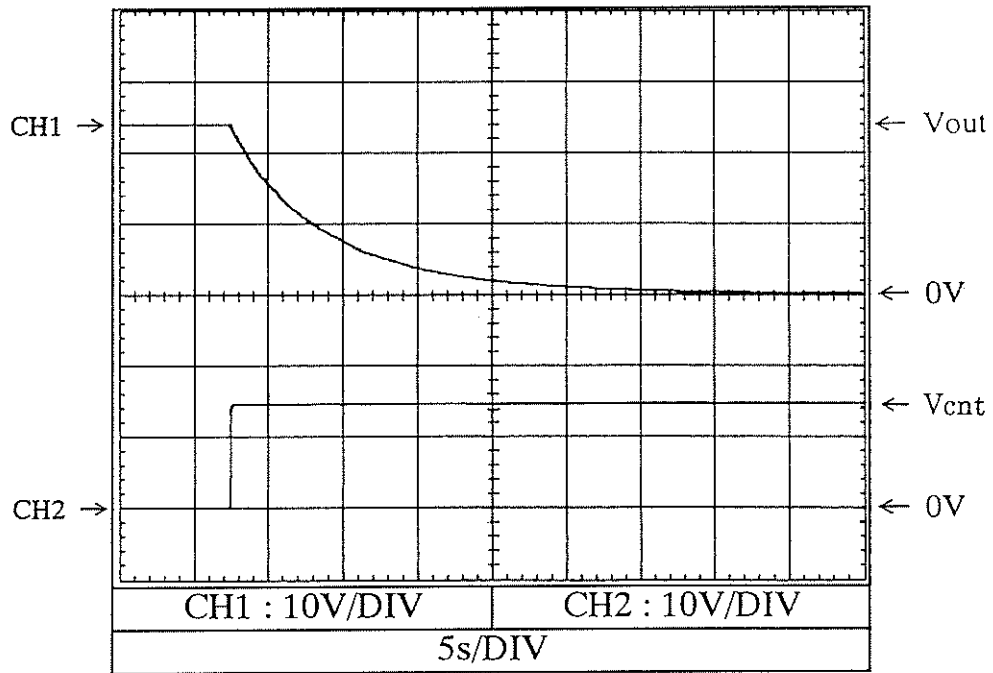
12V



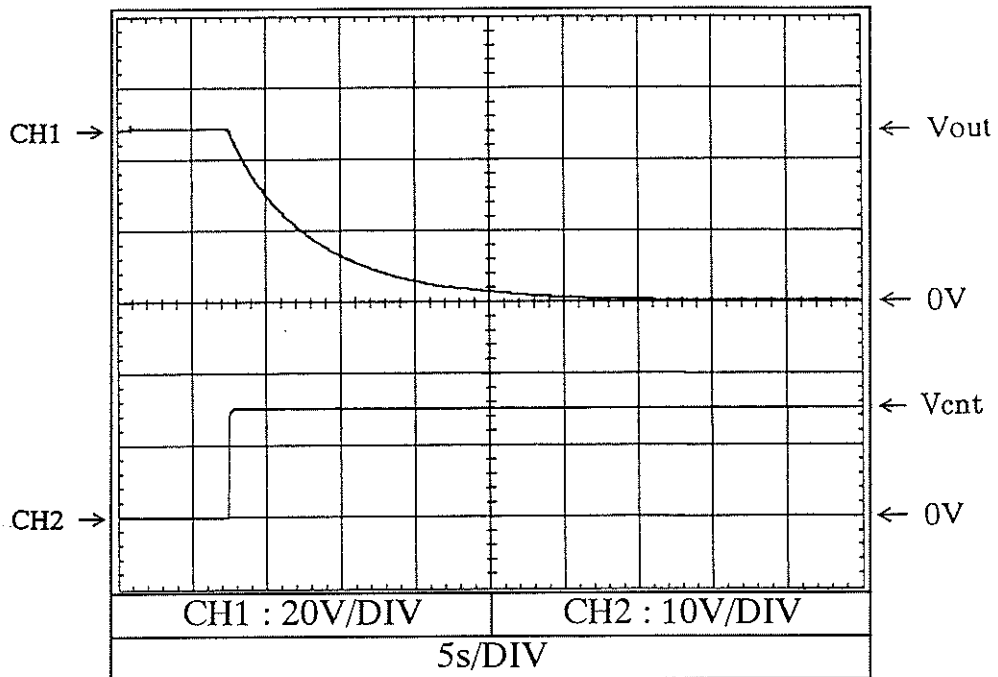
2.8 出力立ち下がり特性 (ON/OFFコントロール時)  
Output fall characteristics with ON/OFF CONTROL

Conditions Vin : 280 VDC  
Iout : 0 %  
Tp : 25 °C

24V



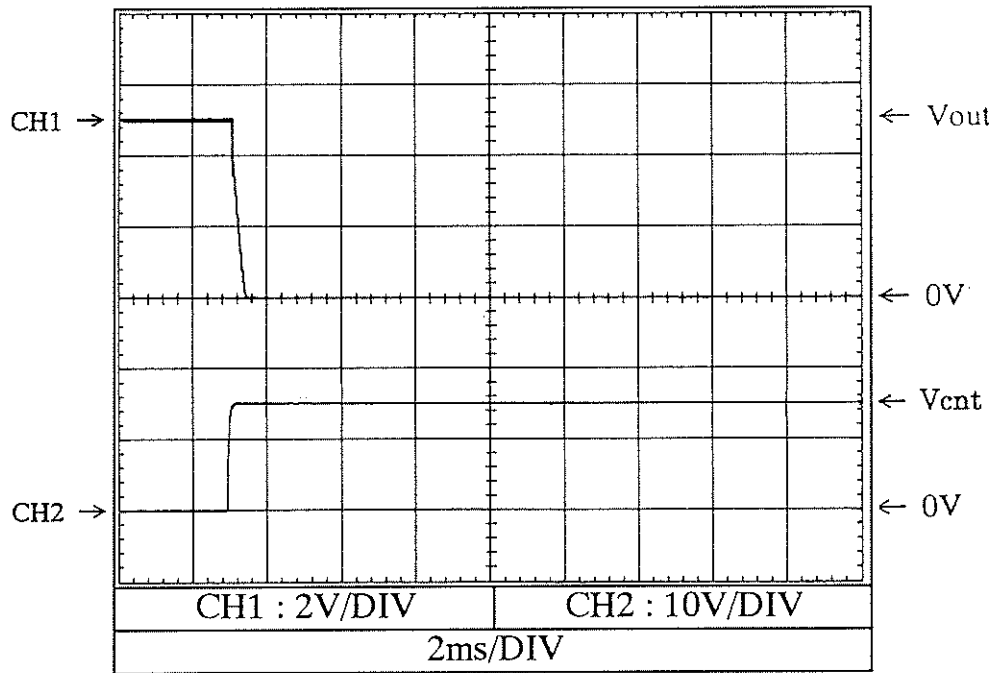
48V



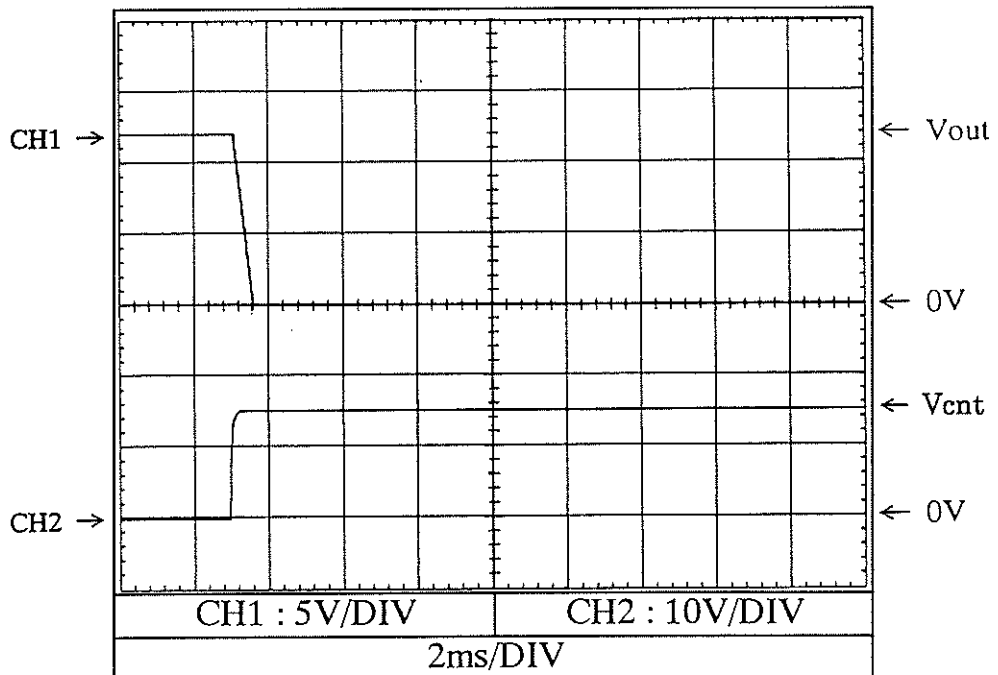
2.8 出力立ち下がり特性 (ON/OFFコントロール時)  
 Output fall characteristics with ON/OFF CONTROL

Conditions Vin : 280 VDC  
 Iout : 100 %  
 Tp : 25 °C

5V



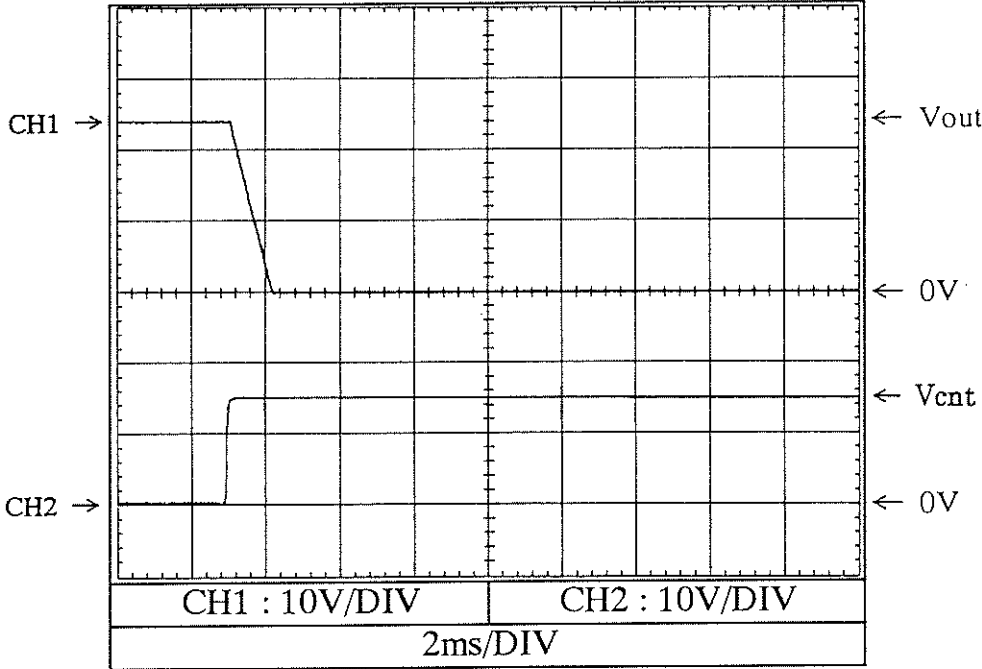
12V



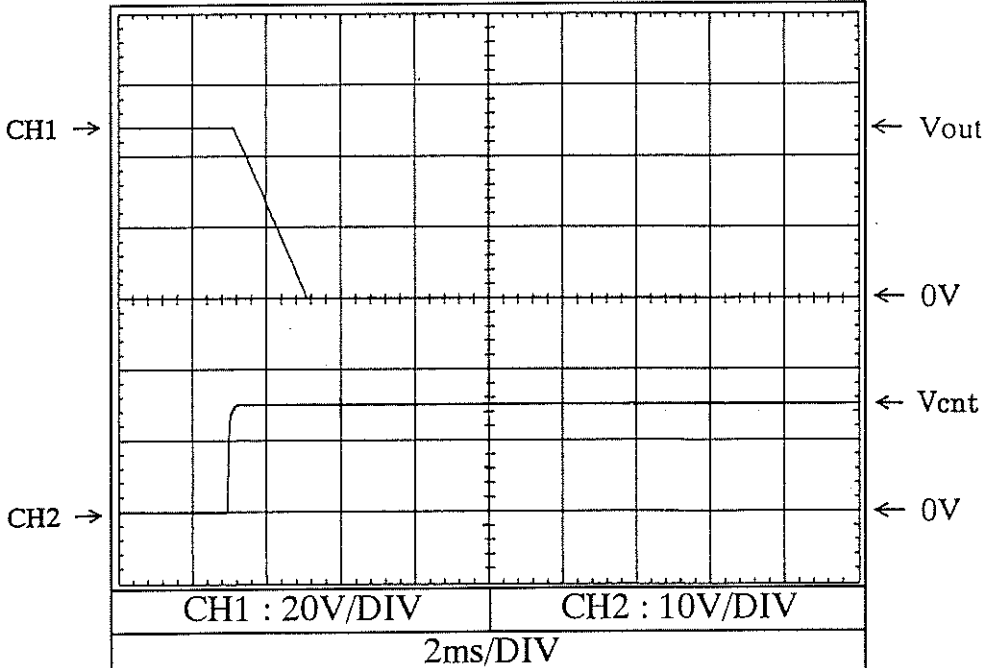
2.8 出力立ち下がり特性 (ON/OFFコントロール時)  
Output fall characteristics with ON/OFF CONTROL

Conditions Vin : 280 VDC  
Iout : 100 %  
Tp : 25 °C

24V



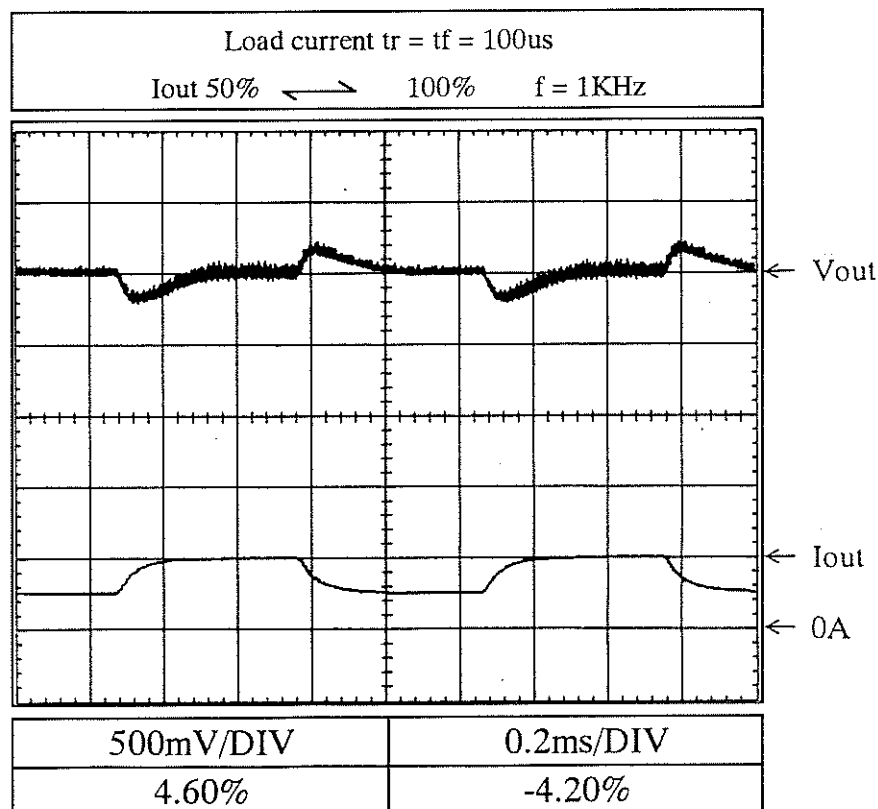
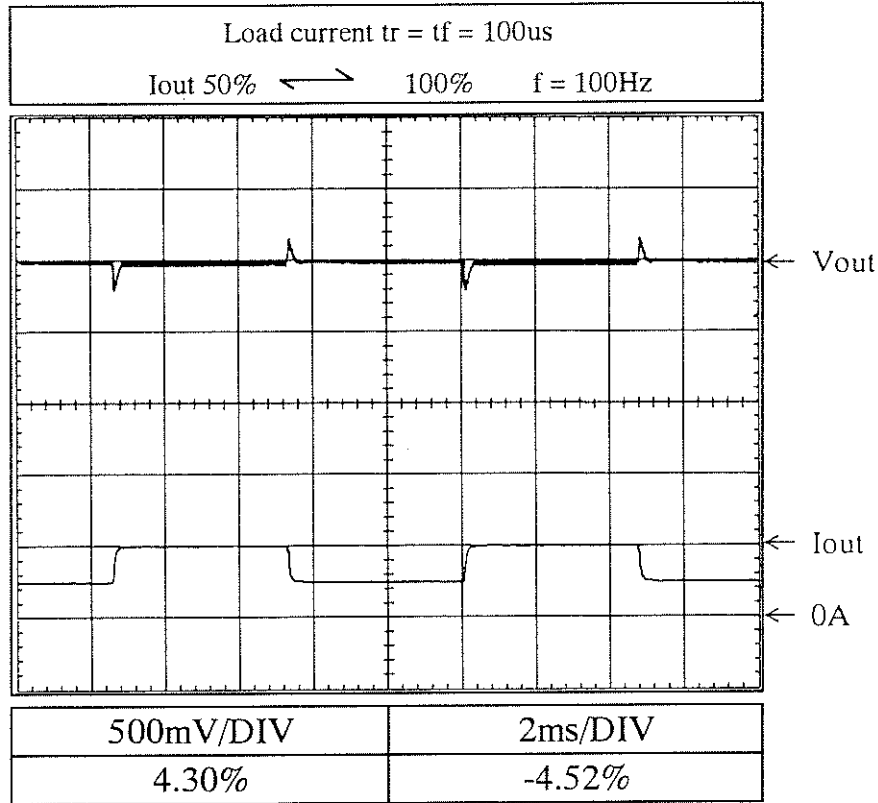
48V



2.9 過渡応答（負荷急変）特性  
Dynamic load response characteristics

Conditions Vin : 280 VDC  
Tp : 25 °C

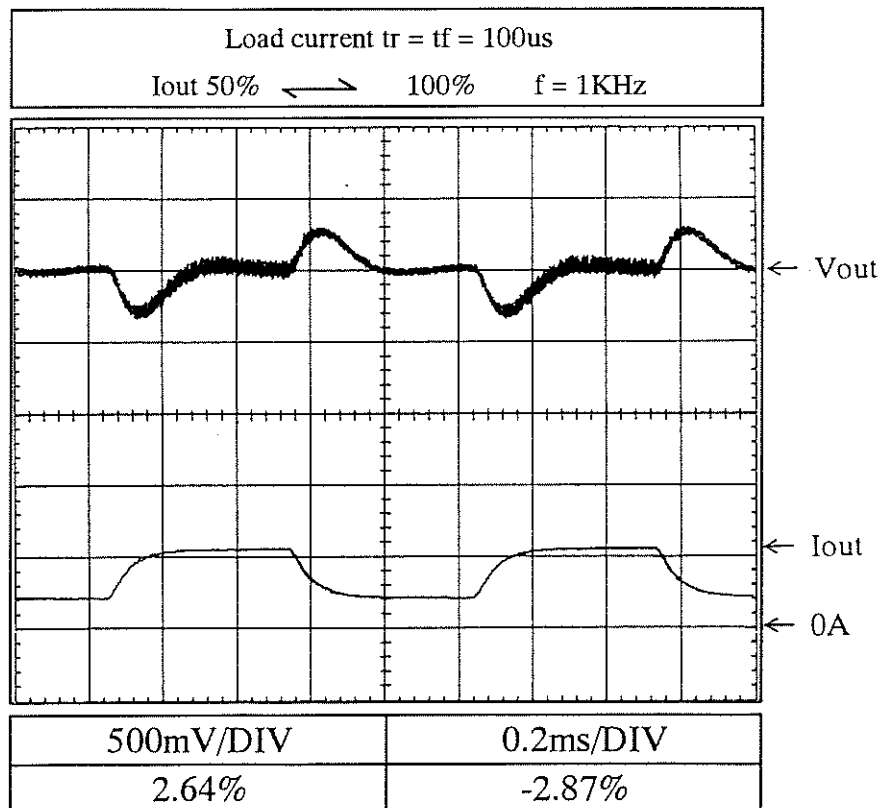
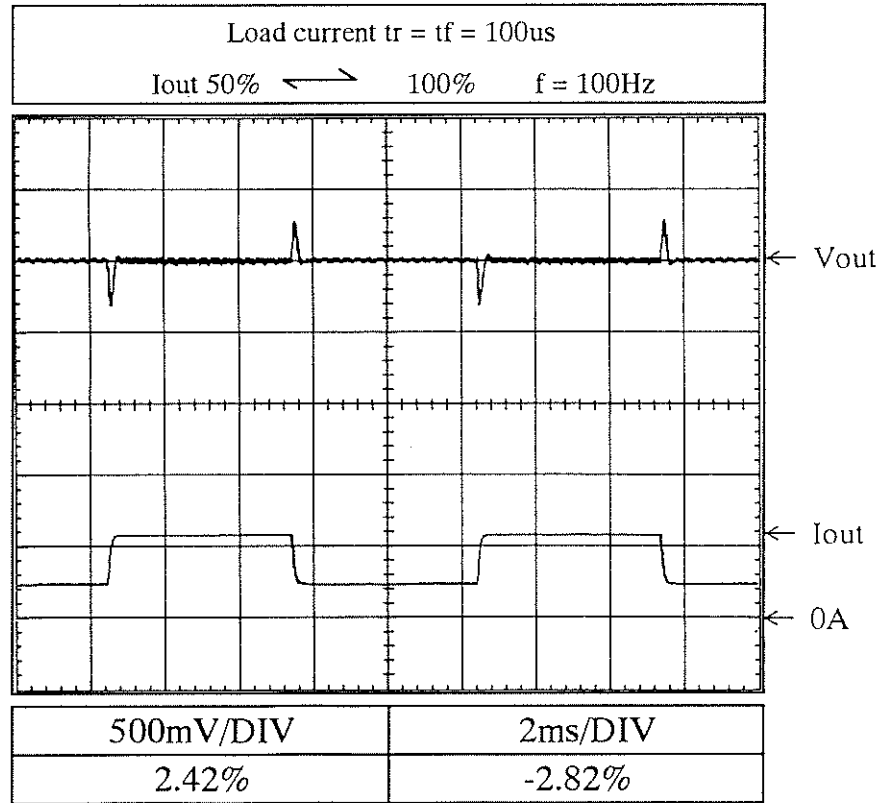
5V



2.9 過渡応答（負荷急変）特性  
Dynamic load response characteristics

Conditions Vin : 280 VDC  
Tp : 25 °C

12V



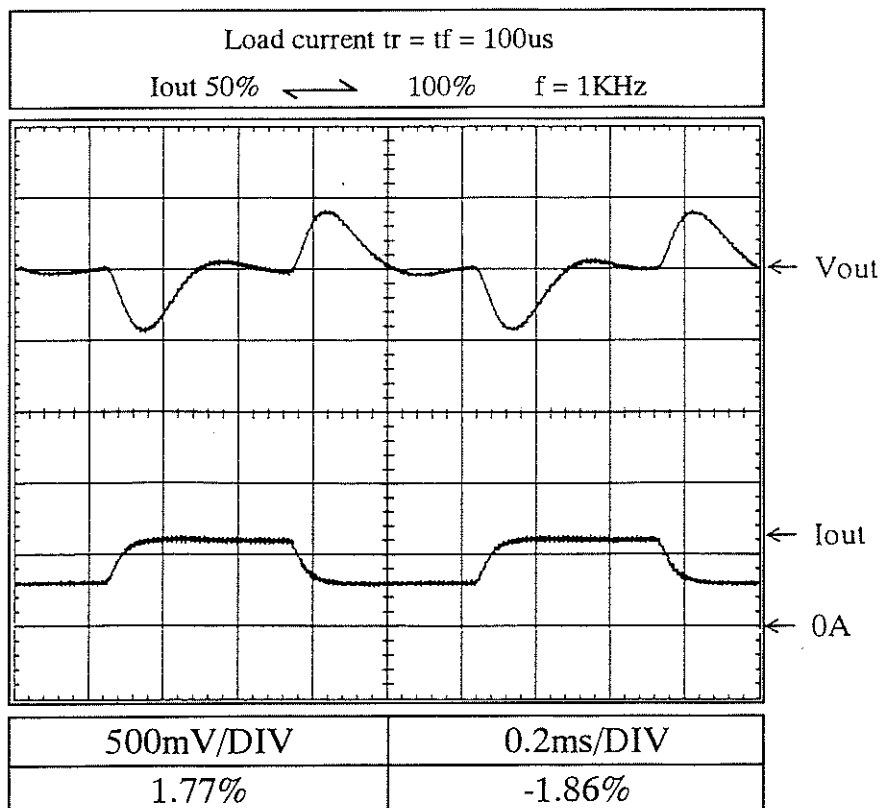
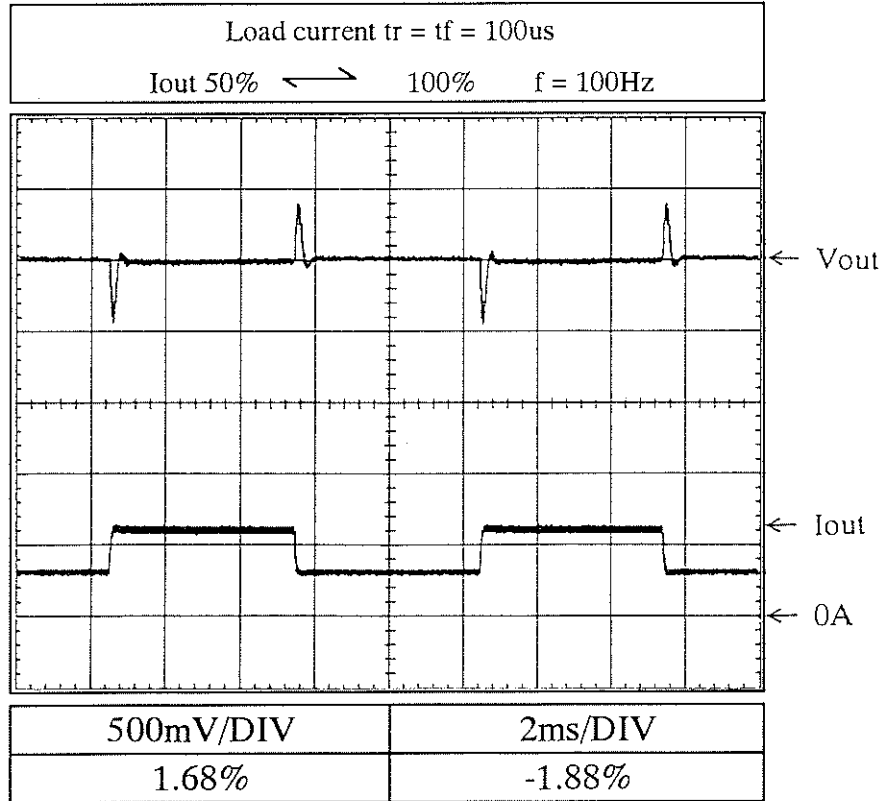
2.9 過渡応答（負荷急変）特性

Dynamic load response characteristics

Conditions Vin : 280 VDC

Tp : 25 °C

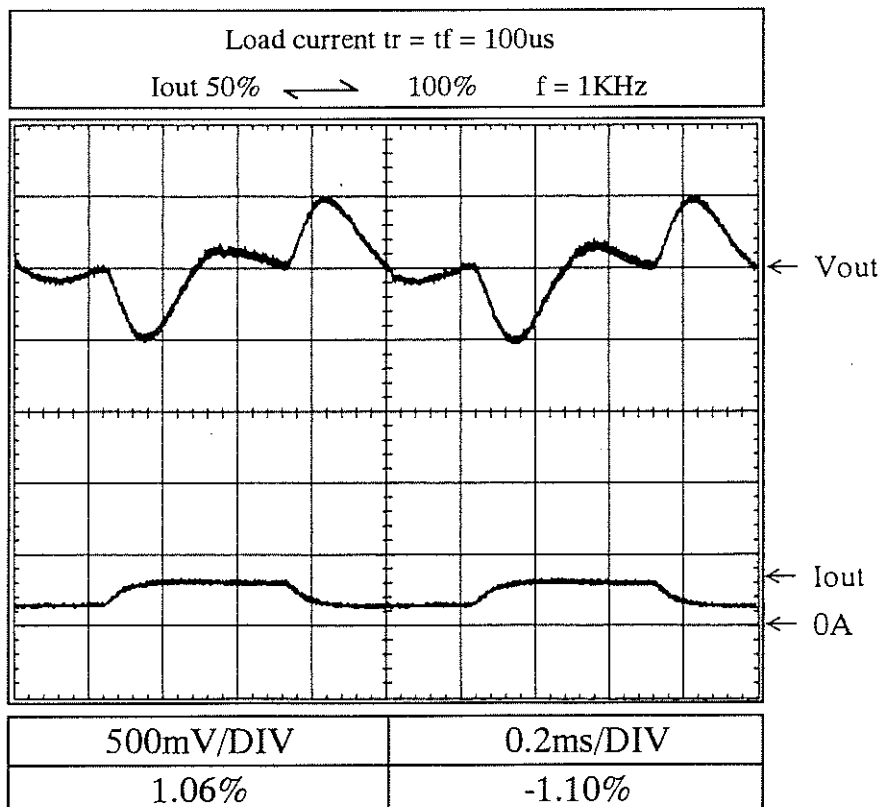
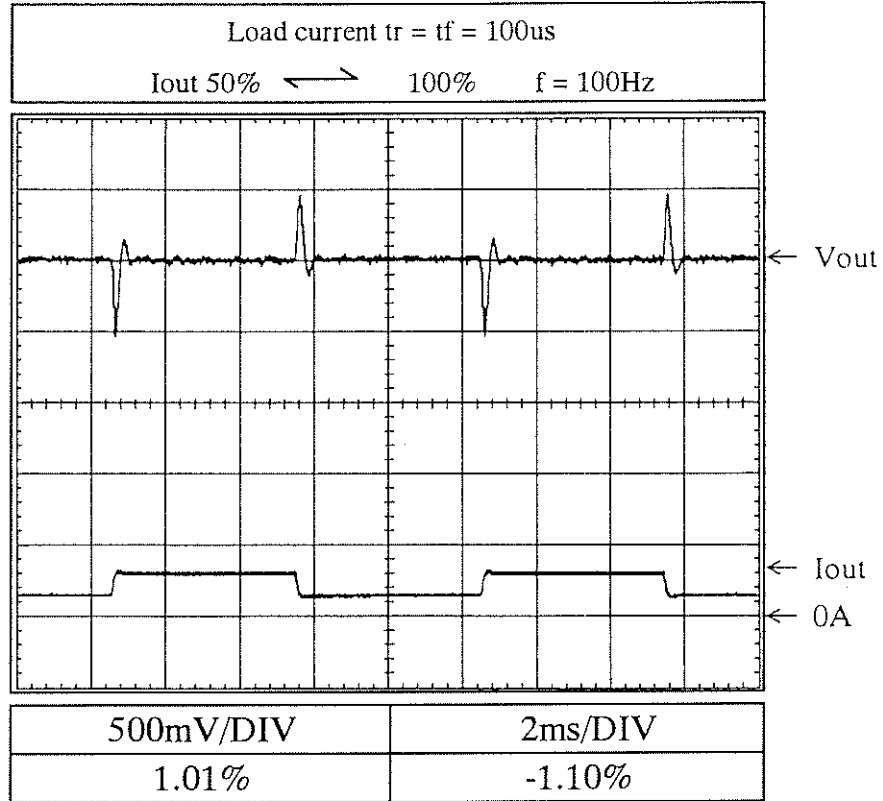
24V



2.9 過渡応答（負荷急変）特性  
Dynamic load response characteristics

Conditions Vin : 280 VDC  
Tp : 25 °C

48V

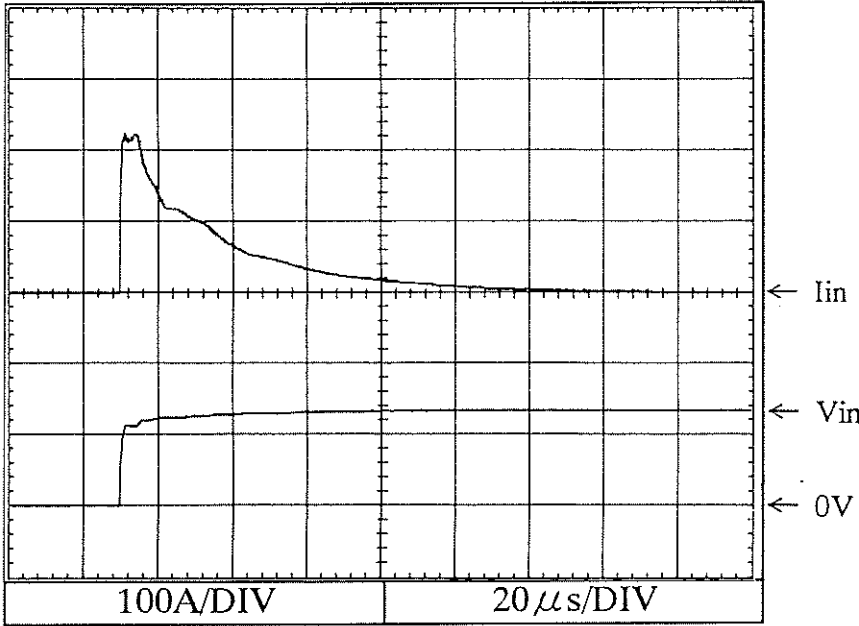




2.10 入力サージ電流 (突入電流) 特性  
Inrush current waveform

Conditions Vin : 280 VDC  
Iout : 100 %  
Tp : 25 °C

5V

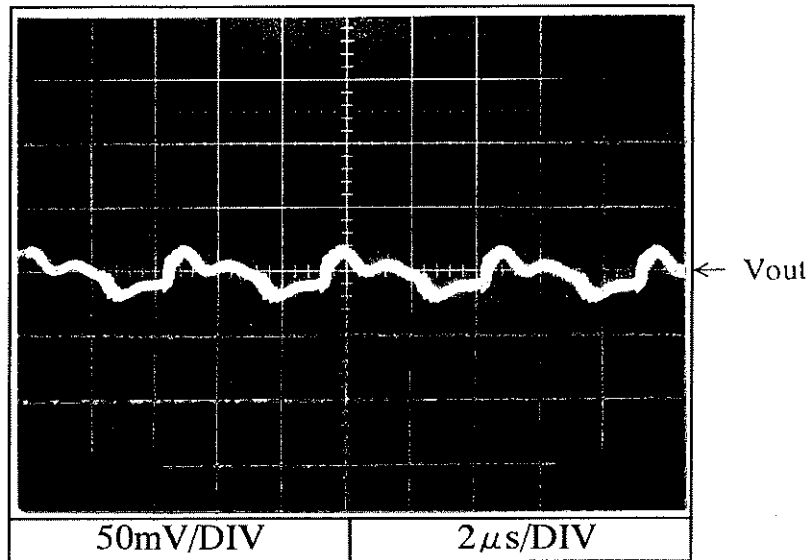


2.11 出力リップル、ノイズ波形  
Output ripple and noise waveform

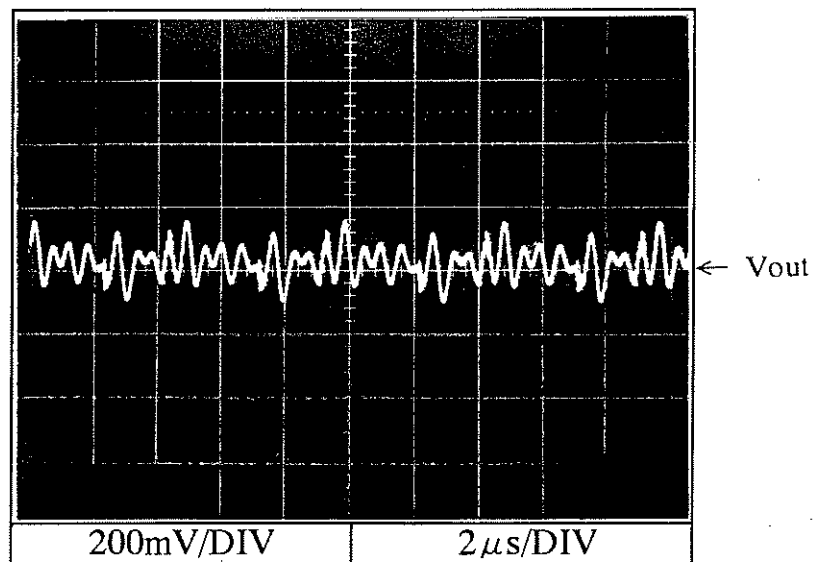
Conditions  $V_{in}$  : 280 VDC  
 $I_{out}$  : 100 %  
 $T_p$  : 25 °C

5V

NORMAL MODE



NORMAL + COMMON MODE



2.11 出力リップル、ノイズ波形  
Output ripple and noise waveform

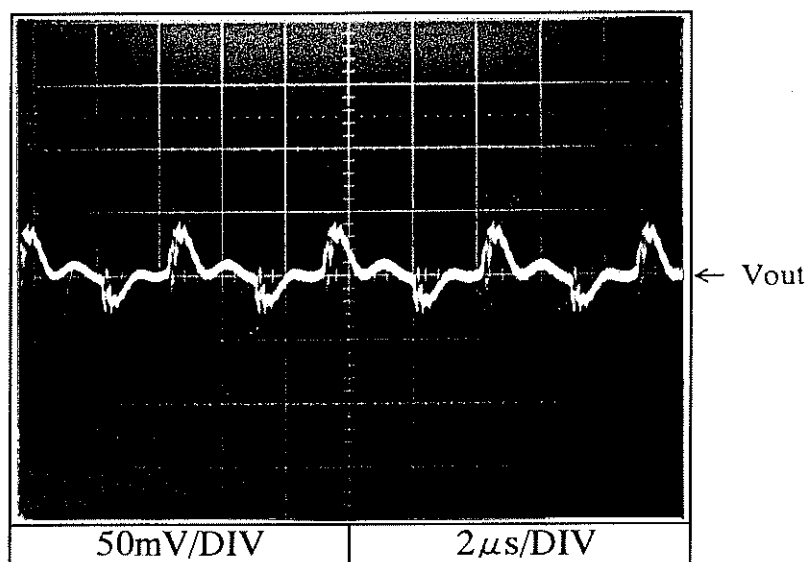
12V

Conditions  $V_{in}$  : 280 VDC

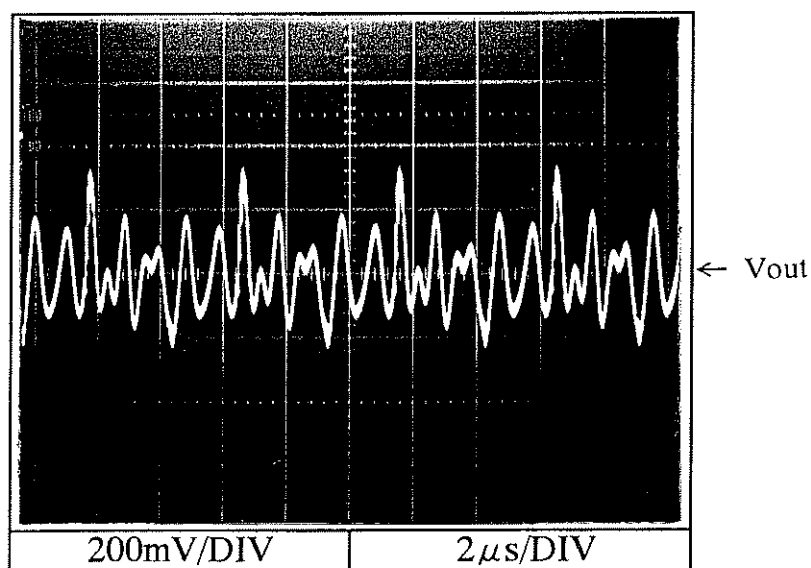
$I_{out}$  : 100 %

$T_p$  : 25 °C

NORMAL MODE



NORMAL + COMMON MODE

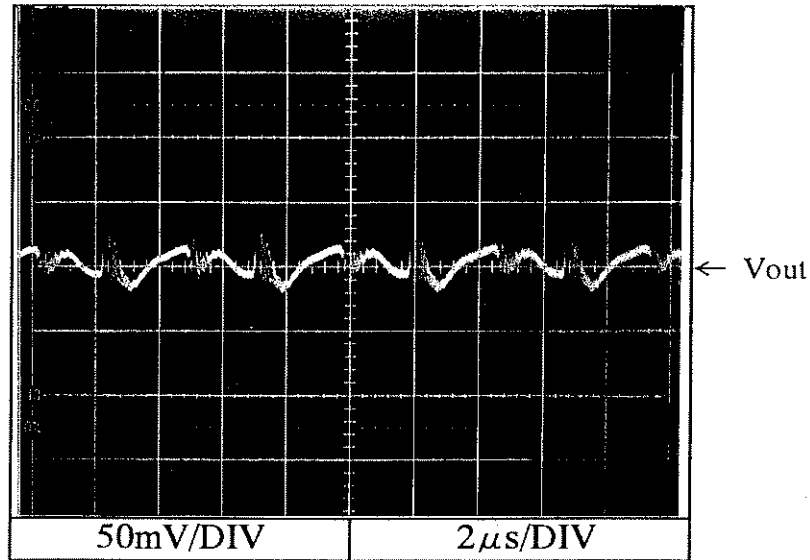


2.11 出力リップル、ノイズ波形  
Output ripple and noise waveform

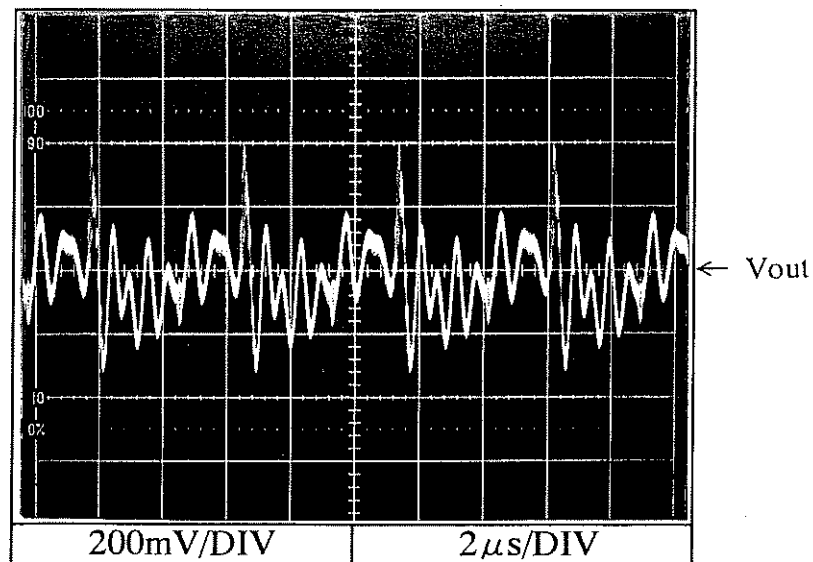
24V

Conditions Vin : 280 VDC  
Iout : 100 %  
Tp : 25 °C

NORMAL MODE



NORMAL + COMMON MODE

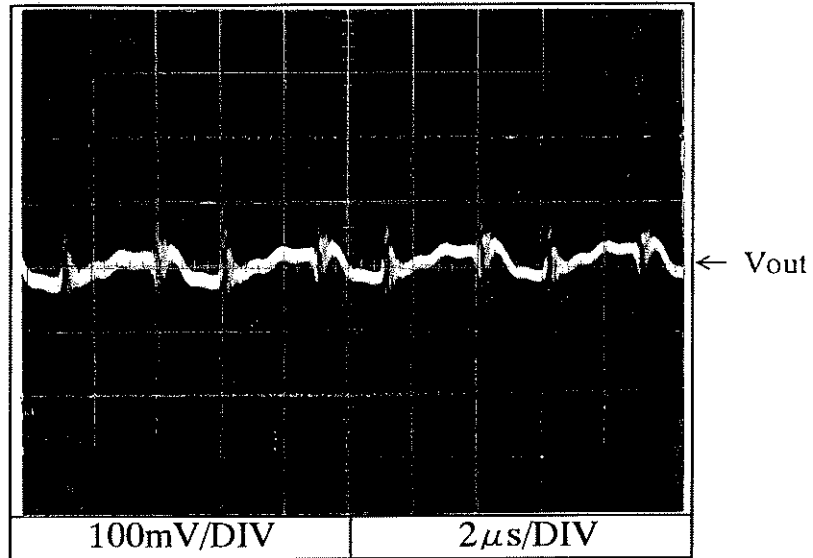


2.11 出力リップル、ノイズ波形  
Output ripple and noise waveform

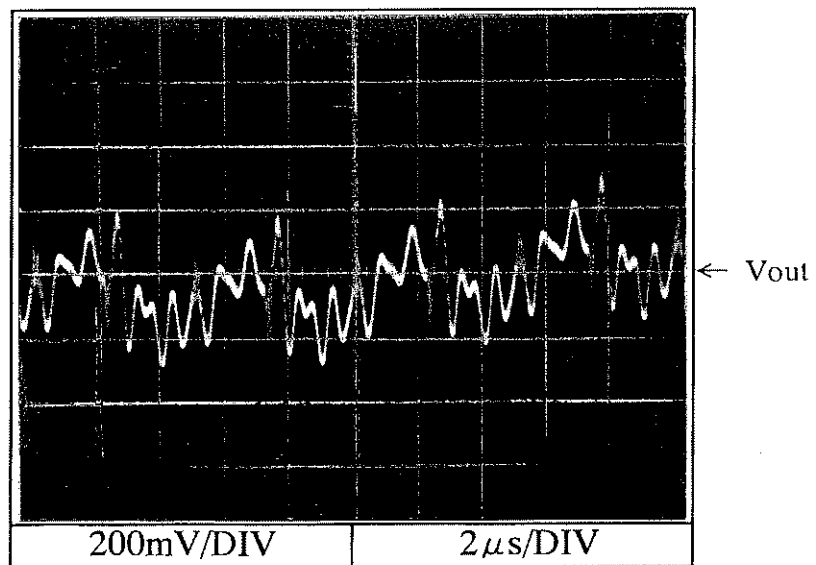
48V

Conditions  $V_{in}$  : 280 VDC  
 $I_{out}$  : 100 %  
 $T_p$  : 25 °C

NORMAL MODE



NORMAL + COMMON MODE



2.12 EMI特性

Electro-Magnetic Interference characteristics

(a) 雑音端子電圧 (帰還ノイズ)

Conditions Vin : 280 VDC

Conducted Emission Noise

Iout : 100 %

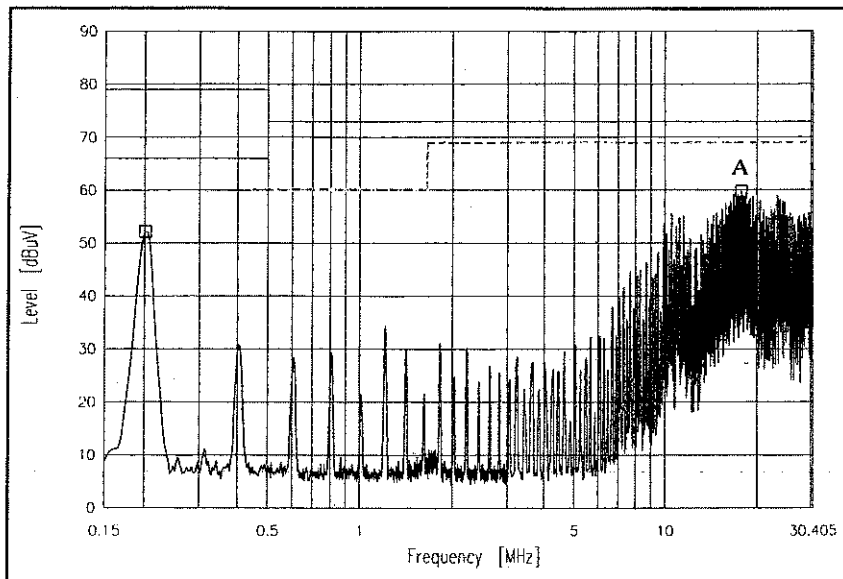
(1) VCCI class A 対応アプリケーションシステム

Tp : 25 °C

VCCI class A application system

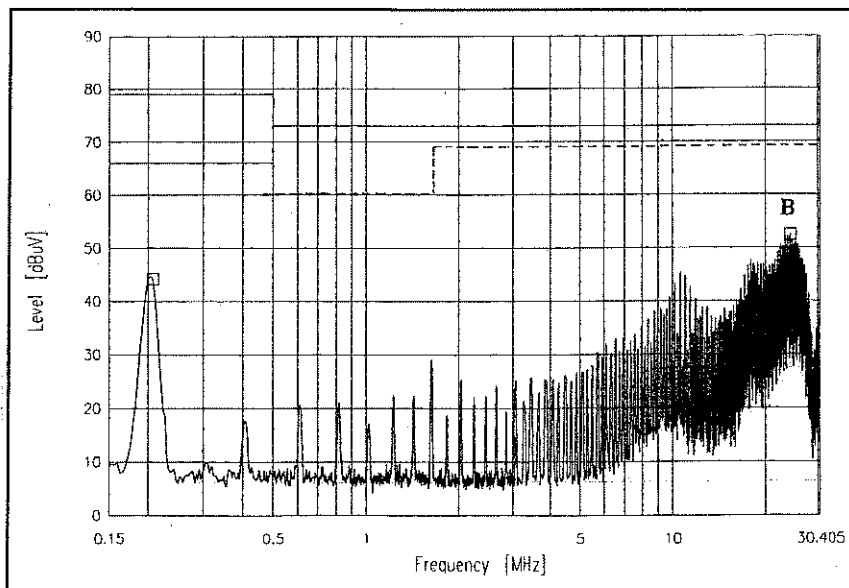
5V

Point A (17.743MHz)		
Ref.	Limit	Measure
Data	(dBuV)	(dBuV)
QP	73.0	58.5
AV	60.0	56.9



12V

Point B (24.182MHz)		
Ref.	Limit	Measure
Data	(dBuV)	(dBuV)
QP	73.0	51.4
AV	60.0	49.9



2.12 EMI特性

Electro-Magnetic Interference characteristics

(a) 雑音端子電圧 (帰還ノイズ)

Conducted Emission Noise

(1) VCCI class A 対応アプリケーションシステム

VCCI class A application system

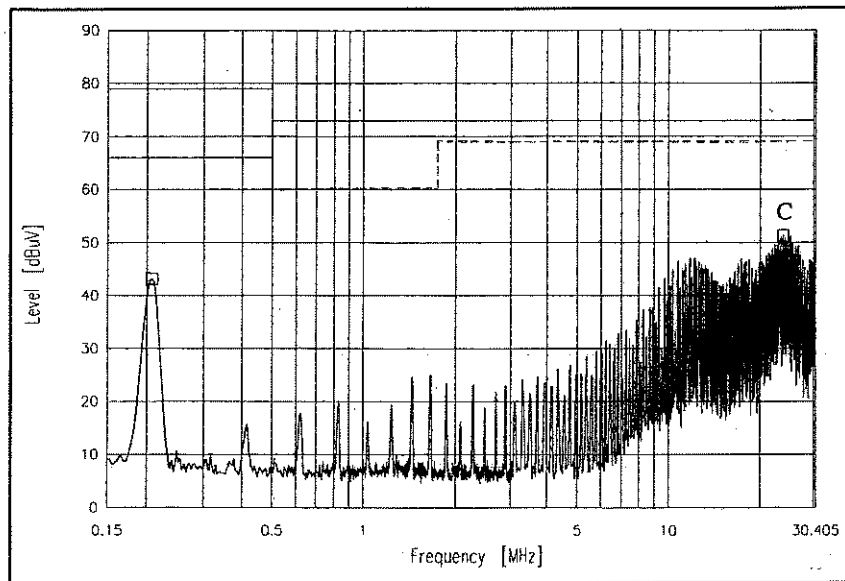
Conditions Vin : 280 VDC

Iout : 100 %

Tp : 25 °C

24V

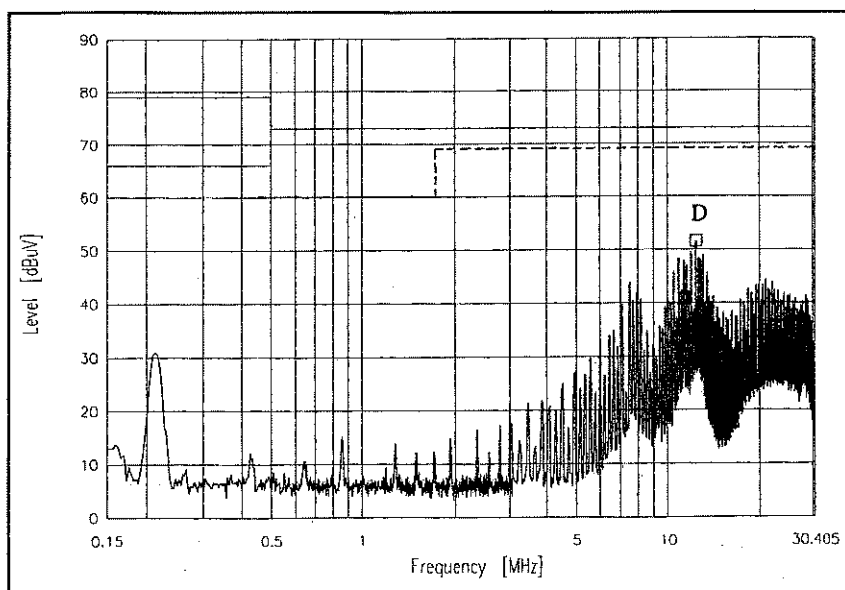
Point C (23.739MHz)		
Ref.	Limit	Measure
Data	(dBuV)	(dBuV)
QP	73.0	51.1
AV	60.0	49.8



VCCI class A  
QP Limit  
FCC class A  
QP Limit  
VCCI class A  
AV Limit

48V

Point D (12.367MHz)		
Ref.	Limit	Measure
Data	(dBuV)	(dBuV)
QP	73.0	50.6
AV	60.0	50.6



VCCI class A  
QP Limit  
FCC class A  
QP Limit  
VCCI class A  
AV Limit

2.12 EMI特性

Electro-Magnetic Interference characteristics

(b) 雑音電界強度 (輻射ノイズ)

Radiated Emission Noise

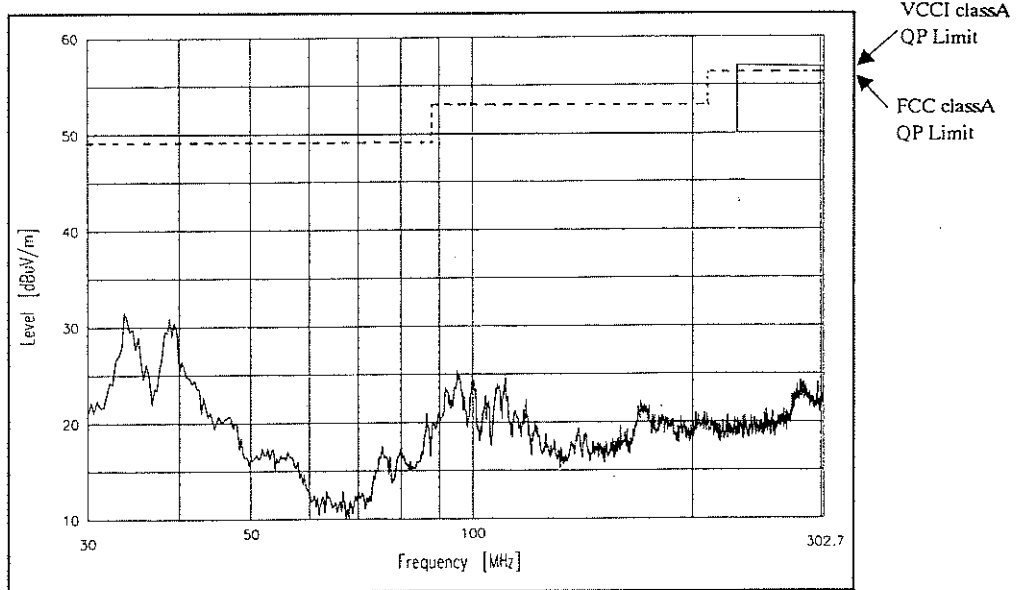
(1) VCCI class A 対応アプリケーションシステム

VCCI class A application system

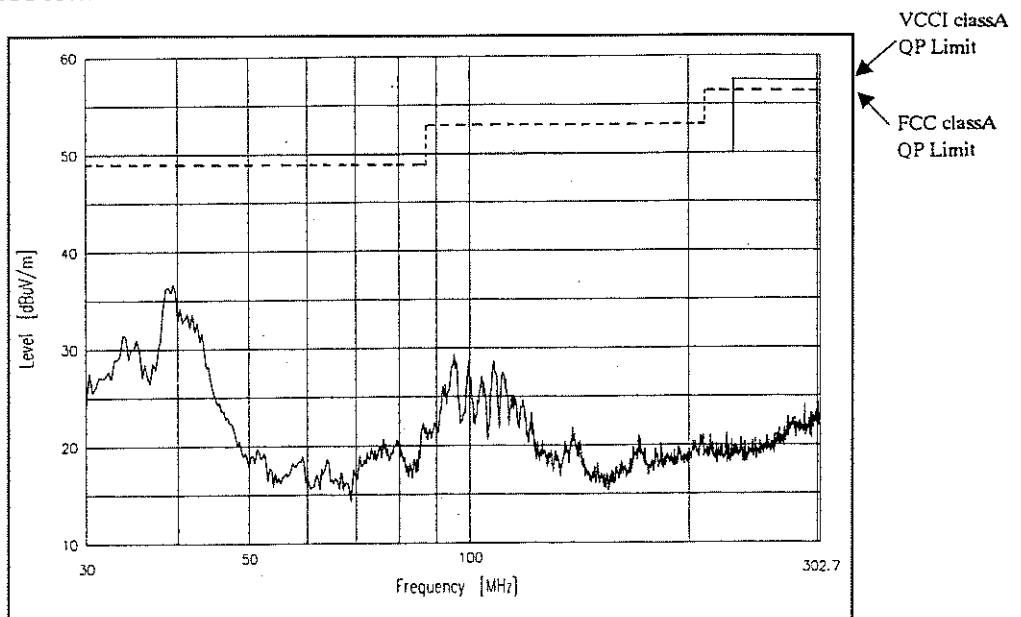
Conditions Vin : 280 VDC  
Iout : 100 %  
Tp : 25 °C

5V

HORIZONTAL:



VERTICAL:





2.12 EMI特性

Electro-Magnetic Interference characteristics

(b) 雑音電界強度 (輻射ノイズ)

Conditions Vin : 280 VDC

Radiated Emission Noise

Iout : 100 %

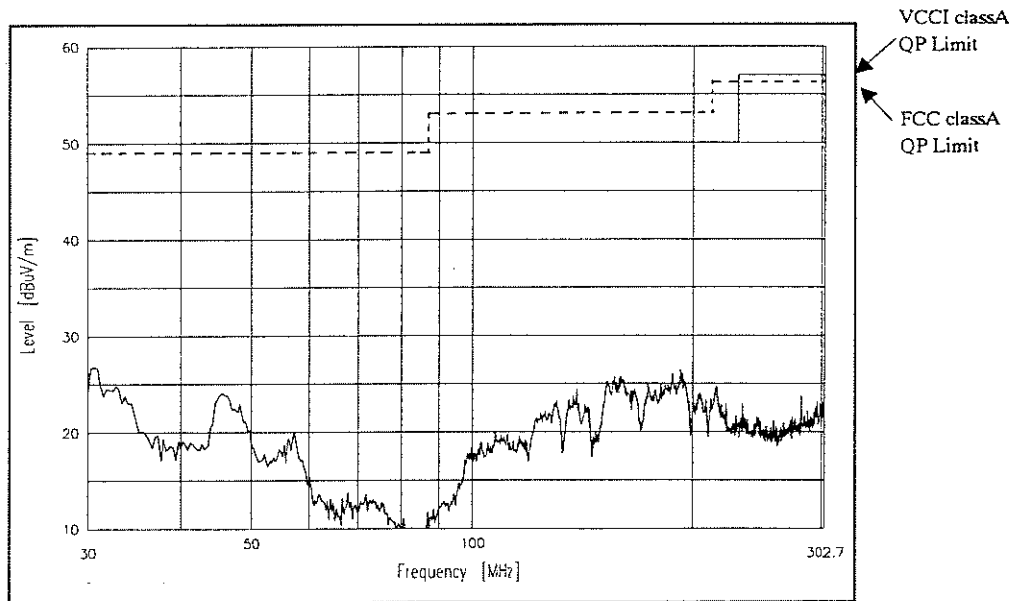
(1) VCCI class A 対応アプリケーションシステム

Tp : 25 °C

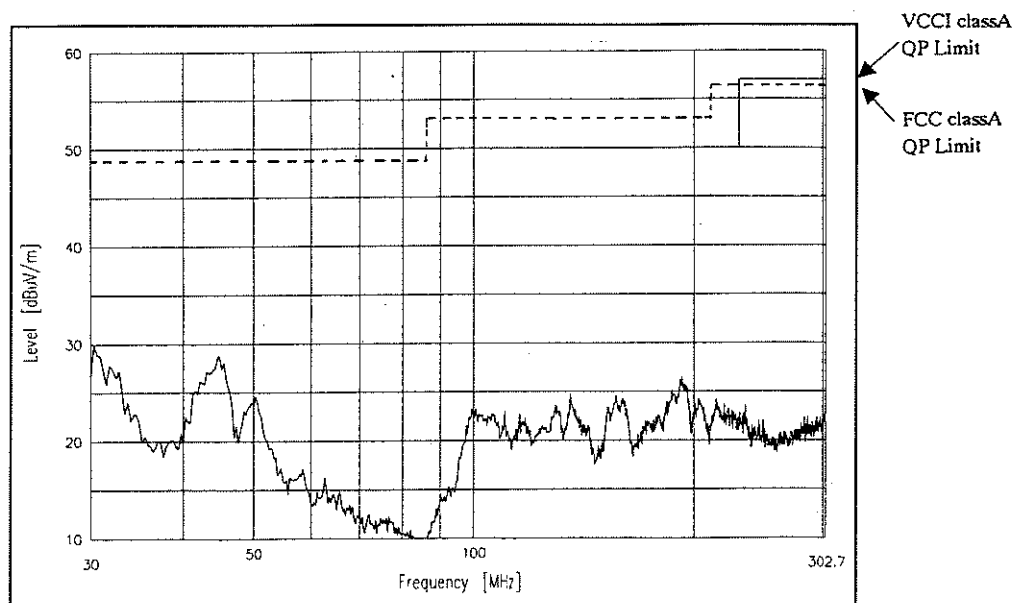
VCCI class A application system

12V

HORIZONTAL:



VERTICAL:



2.12 EMI特性

Electro-Magnetic Interference characteristics

(b) 雑音電界強度 (輻射ノイズ)

Radiated Emission Noise

(1) VCCI class A 対応アプリケーションシステム

VCCI class A application system

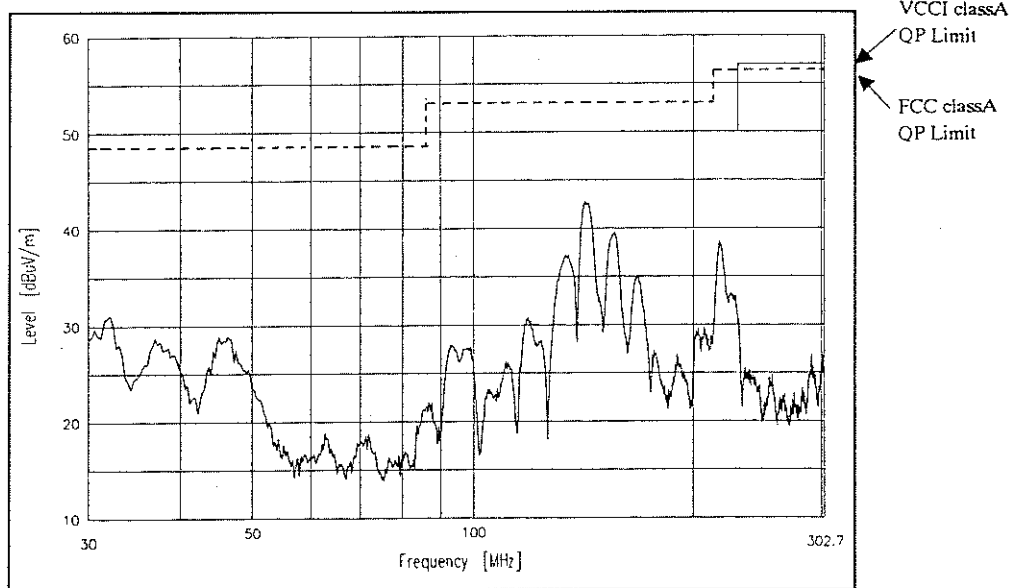
Conditions Vin : 280 VDC

Iout : 100 %

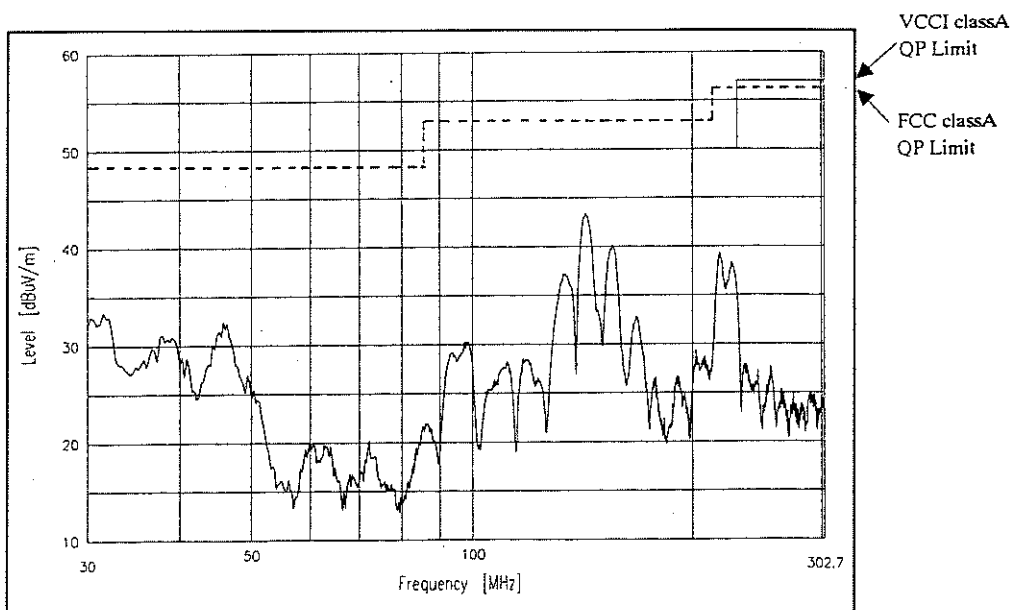
Tp : 25 °C

24V

HORIZONTAL:



VERTICAL:



2.12 EMI特性

Electro-Magnetic Interference characteristics

(b) 雑音電界強度 (輻射ノイズ)

Conditions Vin : 280 VDC

Radiated Emission Noise

Iout : 100 %

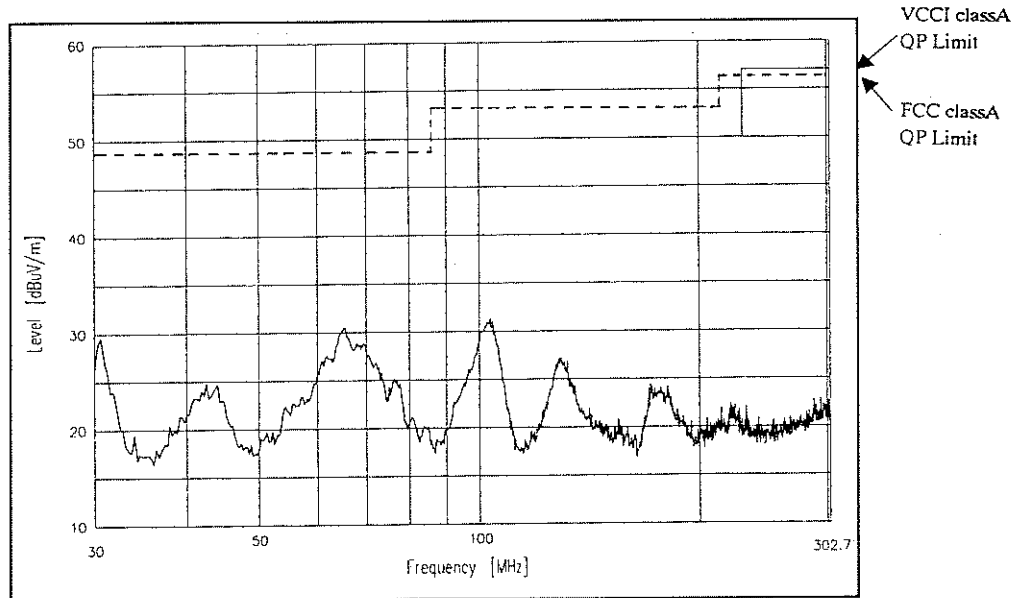
(1) VCCI class A 対応アプリケーションシステム

Tp : 25 °C

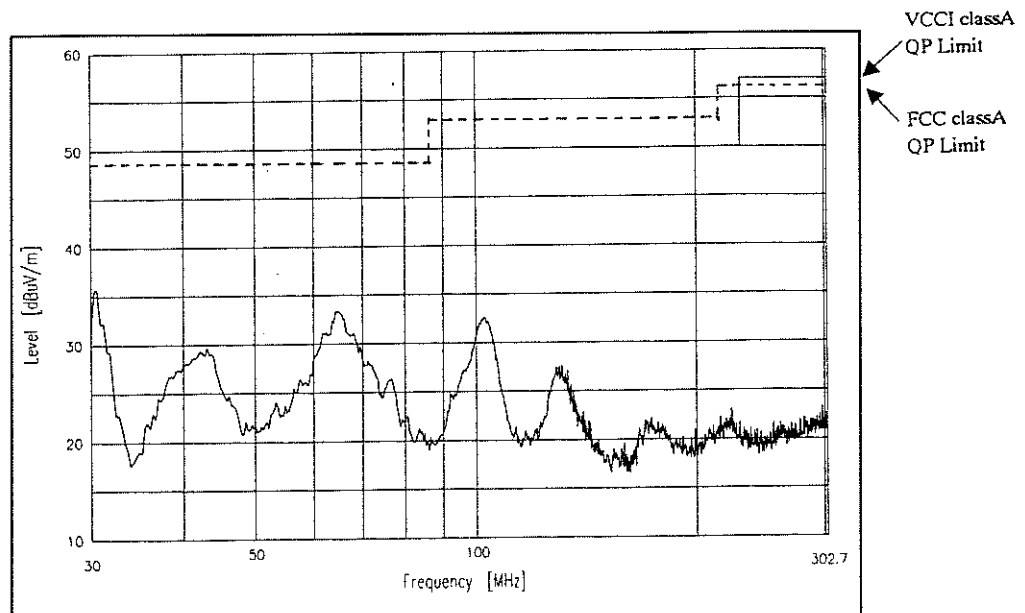
VCCI class A application system

48V

HORIZONTAL:



VERTICAL:



2.12 EMI特性

Electro-Magnetic Interference characteristics

(a) 雑音端子電圧 (帰還ノイズ)

Conducted Emission Noise

(2) VCCI class B 対応アプリケーションシステム

VCCI class B application system

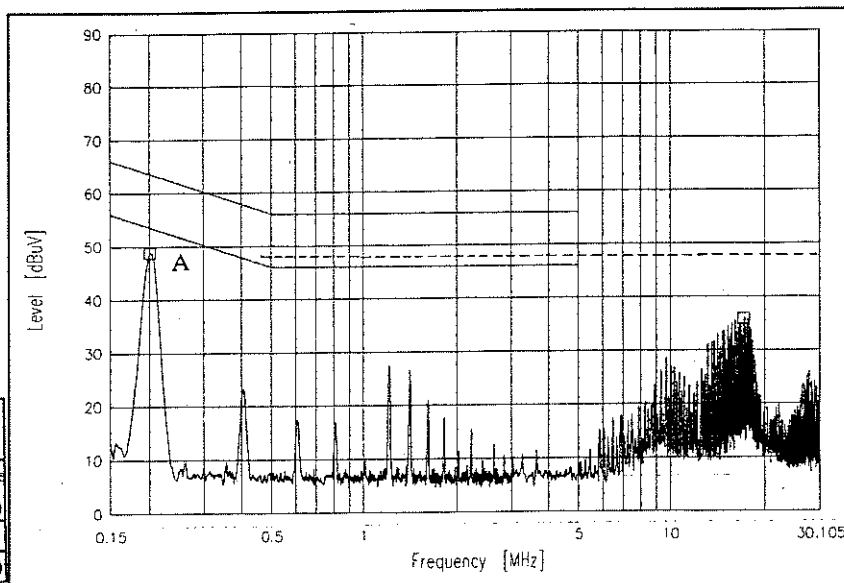
Conditions Vin : 280 VDC

Iout : 100 %

Tp : 25 °C

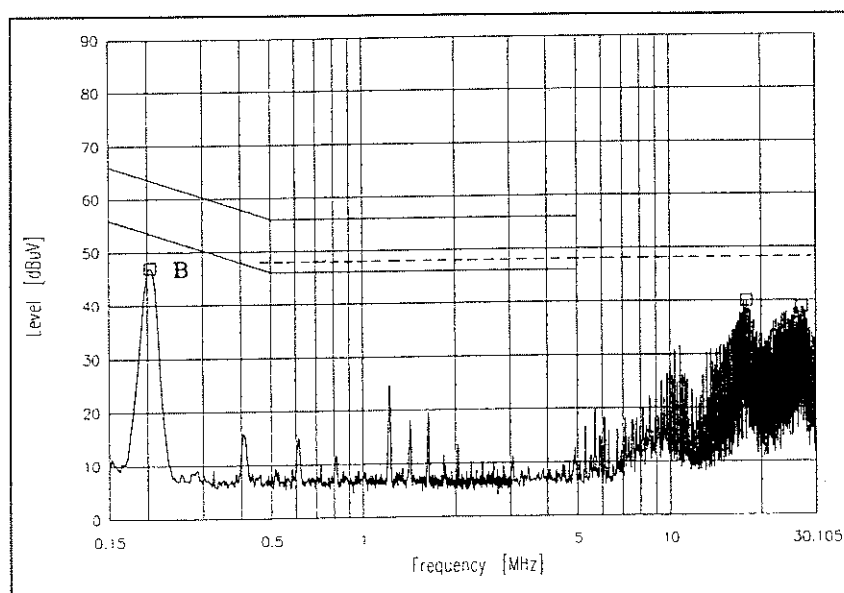
5V

Ref.	Point A (202kHz)	
	Limit (dBuV)	Measure (dBuV)
QP	63.5	48.1
AV	53.5	48.0



12V

Ref.	Point B (203kHz)	
	Limit (dBuV)	Measure (dBuV)
QP	63.5	46.8
AV	53.5	46.6



2.12 EMI特性

Electro-Magnetic Interference characteristics

(a) 雑音端子電圧 (帰還ノイズ)

Conducted Emission Noise

(2) VCCI class B 対応アプリケーションシステム

VCCI class B application system

Conditions

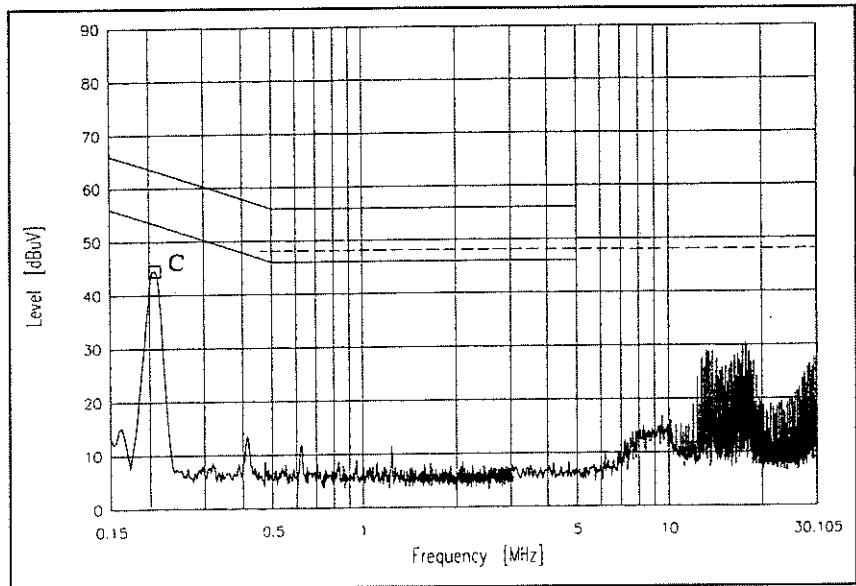
Vin : 280 VDC

Iout : 100 %

Tp : 25 °C

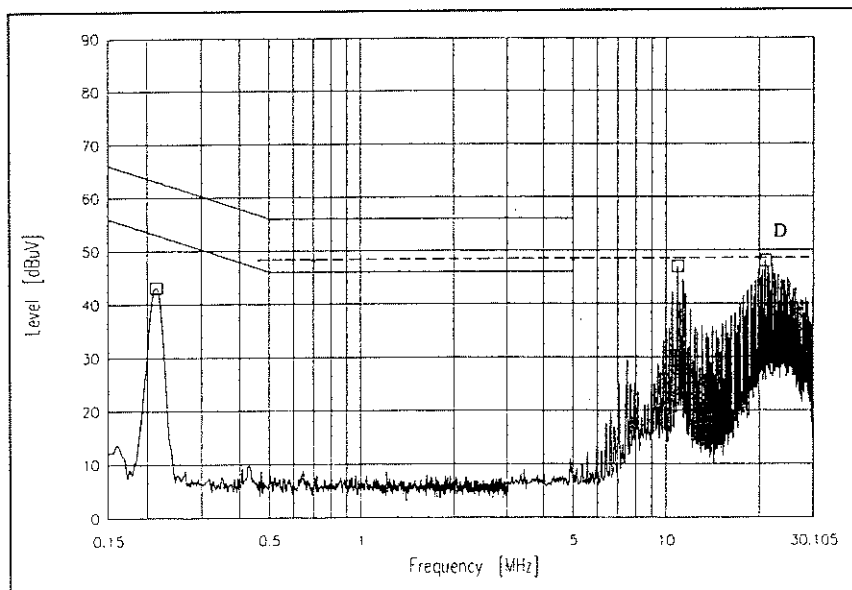
24V

Ref.	Point C (206kHz)	
	Limit (dBuV)	Measure (dBuV)
QP	63.4	43.9
AV	53.4	43.8



48V

Ref.	Point D (20.891MHz)	
	Limit (dBuV)	Measure (dBuV)
QP	60.0	46.3
AV	50.0	45.8



2.12 EMI特性

Electro-Magnetic Interference characteristics

(b) 雑音電界強度 (輻射ノイズ)

Conditions Vin : 280 VDC

Radiated Emission Noise

Iout : 100 %

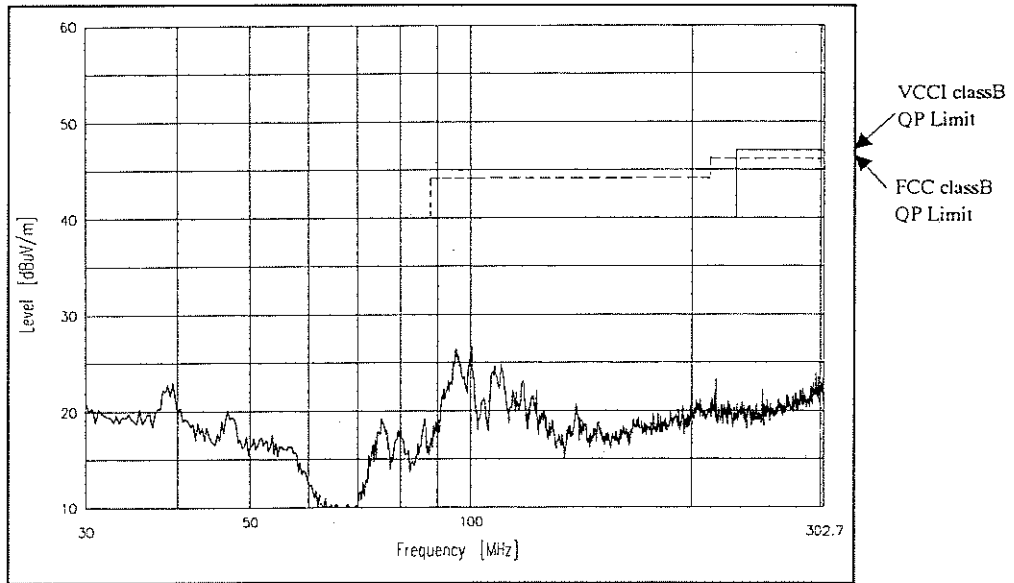
(2) VCCI class B 対応アプリケーションシステム

Tp : 25 °C

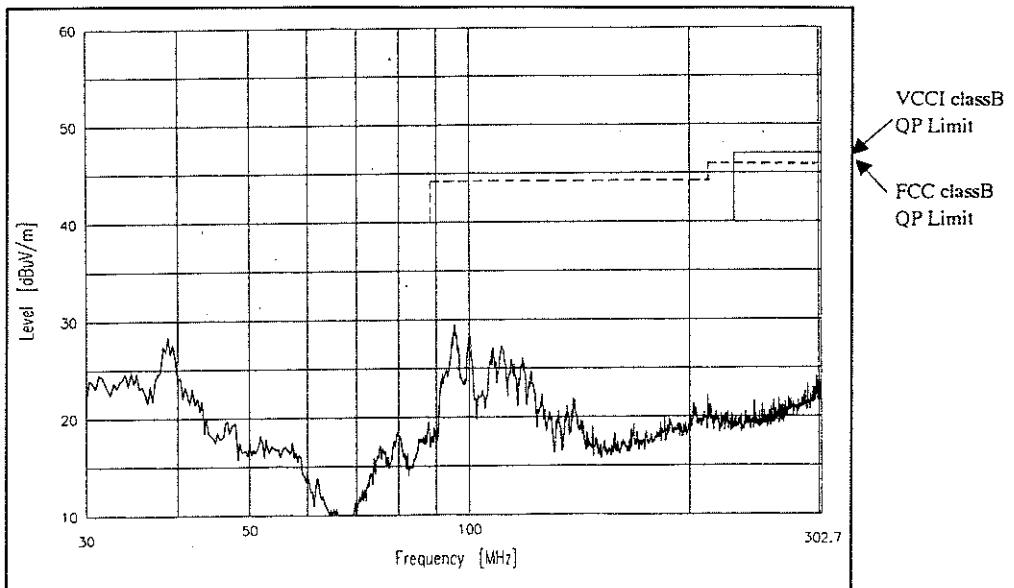
VCCI class B application system

5V

HORIZONTAL:



VERTICAL:



2.12 EMI特性

Electro-Magnetic Interference characteristics

(b) 雑音電界強度 (輻射ノイズ)

Radiated Emission Noise

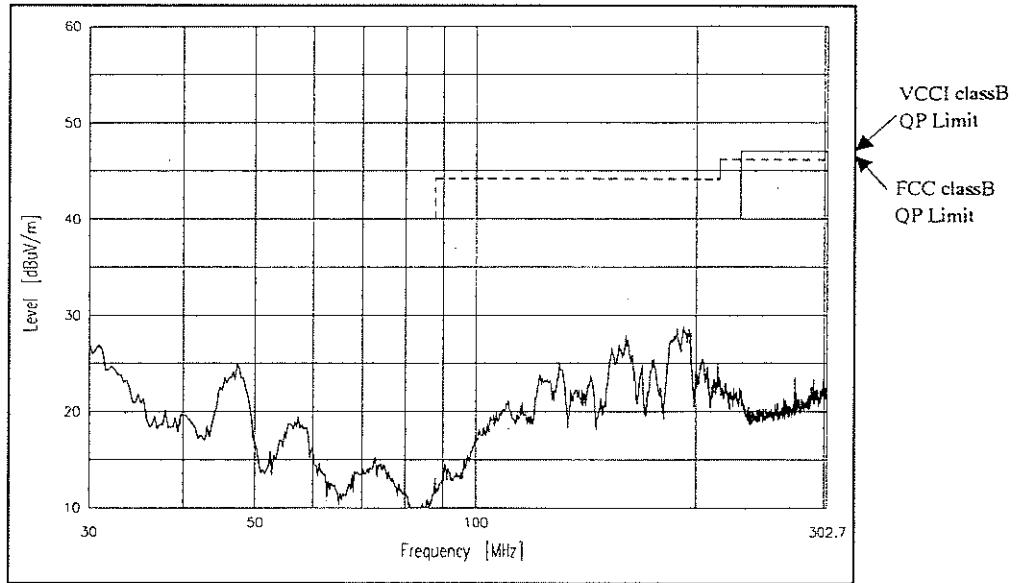
(2) VCCI class B 対応アプリケーションシステム

VCCI class B application system

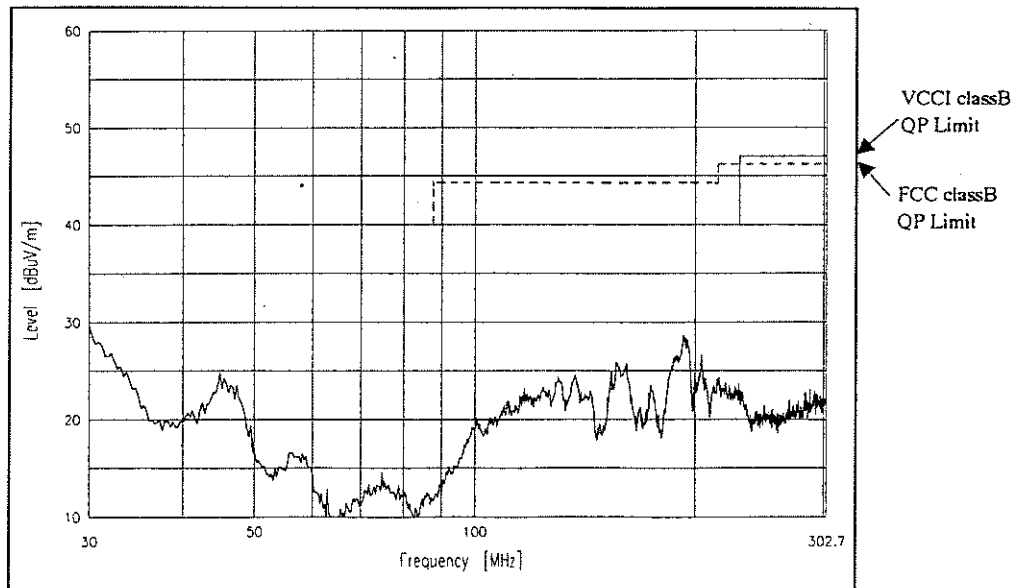
Conditions Vin : 280 VDC  
Iout : 100 %  
Tp : 25 °C

12V

HORIZONTAL:



VERTICAL:



2.12 EMI特性

Electro-Magnetic Interference characteristics

(b) 雑音電界強度 (輻射ノイズ)

Radiated Emission Noise

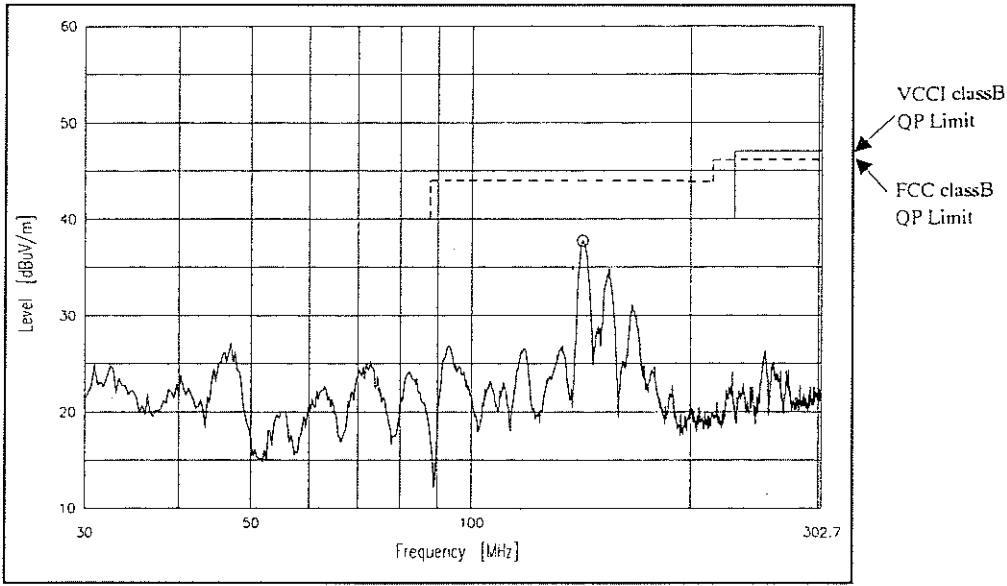
(2) VCCI class B 対応アプリケーションシステム

VCCI class B application system

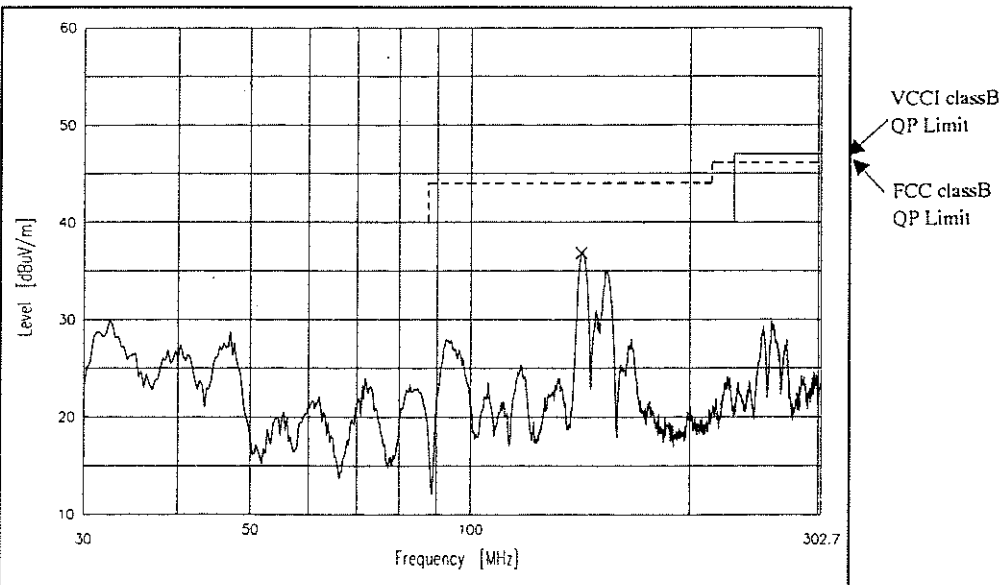
Conditions Vin : 280 VDC  
Iout : 100 %  
Tp : 25 °C

24V

HORIZONTAL:



VERTICAL:





2.12 EMI特性

Electro-Magnetic Interference characteristics

(b) 雑音電界強度 (輻射ノイズ)

Radiated Emission Noise

(2) VCCI class B 対応アプリケーションシステム

VCCI class B application system

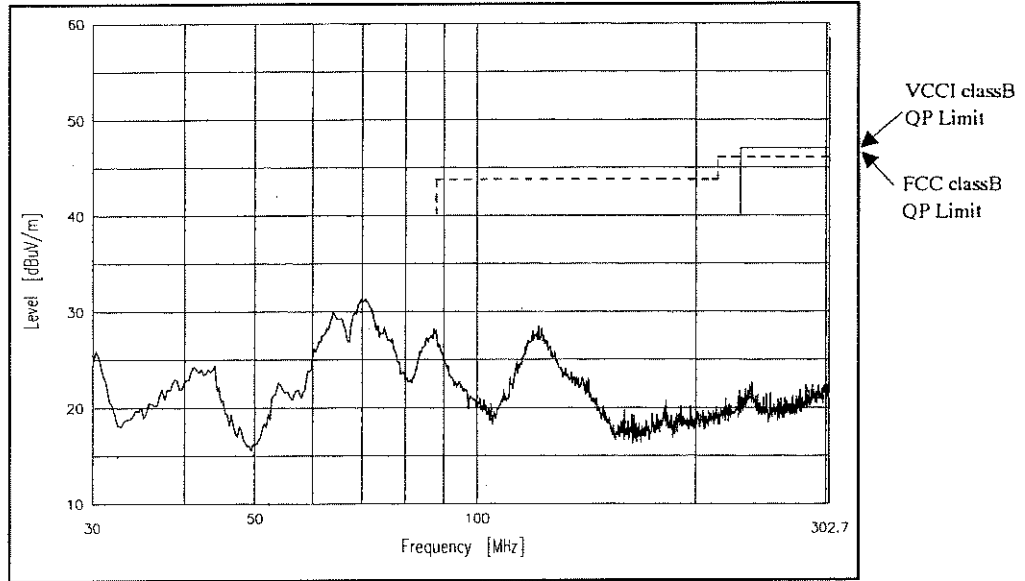
Conditions Vin : 280 VDC

Iout : 100 %

Tp : 25 °C

48V

HORIZONTAL:



VERTICAL:

