PF1000A-360

Evaluation Data

型式データ

I N D E X

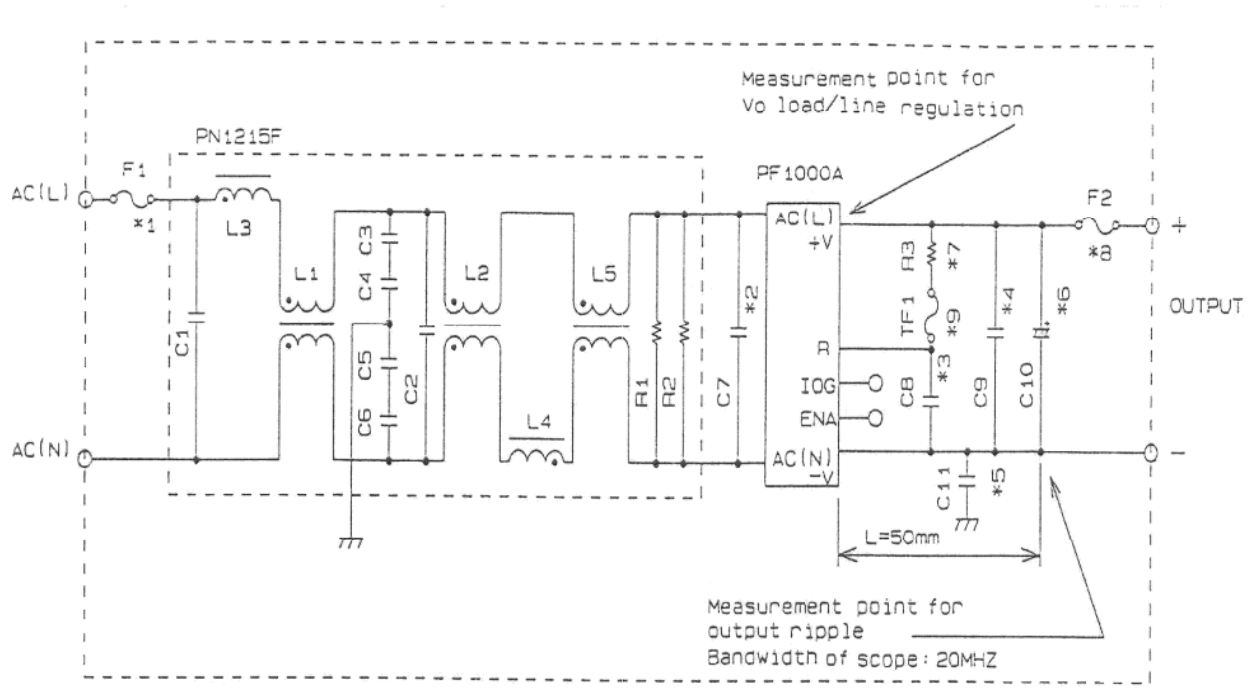
PAGE

使用記号 Terminology used

	定義 Definition
Vin ・・・・・・・・・・・・・・・・・・・・	入力電圧 Input voltage
Vout ・・・・・・・・・・・・・・・・・・・・	出力電圧 Output voltage
Iin ・・・・・・・・・・・・・・・・・・・・・	入力電流 Input current
Iout ・・・・・・・・・・・・・・・・・・・・	出力電流 Output current
f ・・・・・・・・・・・・・・・・・・・・・・	周波数 Frequency
Po ・・・・・・・・・・・・・・・・・・・・・	出力電力（最大出力電力） Output power(Maximum Output power)
Tp ・・・・・・・・・・・・・・・・・・・・・	ベースプレート温度 Base-plate temperature

1．評価測定方法　Evaluation Method

1. 1 基本回路　Standard application circuit

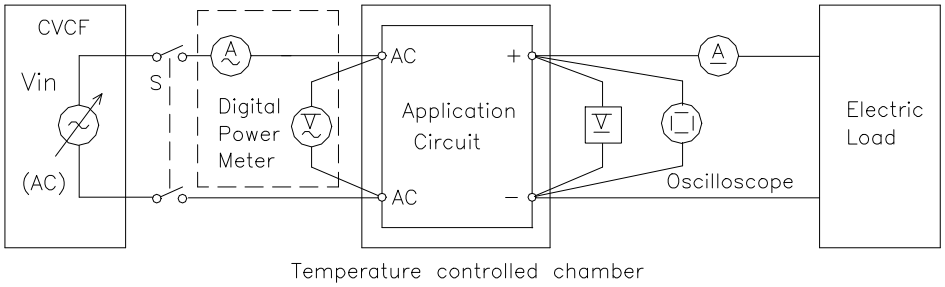


C1	AC250V	0.47uF	C9	630V	0.82uF
C2	AC250V	1.5uF	C10	450V	270uFX5
C3	AC250V	15000pF	C11	AC400V	4700pF
C4	AC250V	15000pF	F1	AC250V	20A
C5	AC250V	15000pF	F2	DC600V	6A
C6	AC250V	15000pF	TF1	THERMAL FUSE	
C7	AC250V	1uFX3		130 °C 250V 2A	
C8	630V	0.82uF X2			

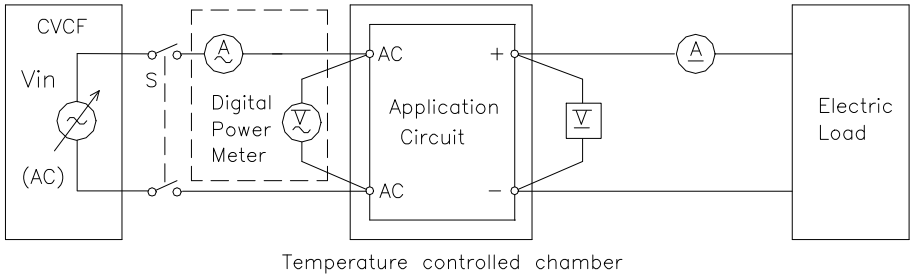
L1	2.6mHX2
L2	2.6mHX2
L3	120uH
L4	120uH
L5	16uHX2
R1	1/2W 470kohm
R2	1/2W 470kohm
R3	10w 5.1ohm

1.2 測定回路 Measurement Circuit

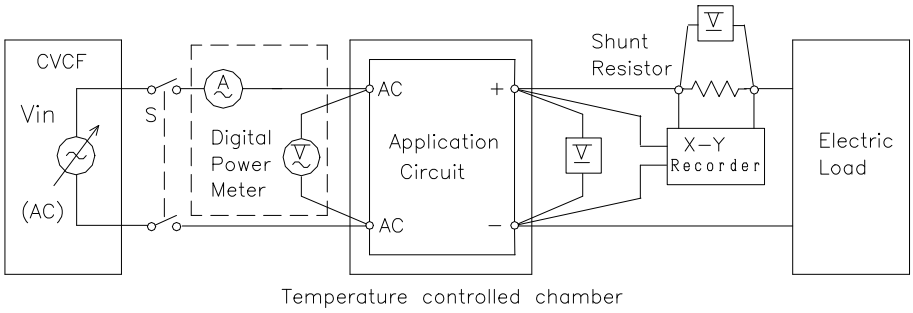
(1) 静特性 Steady state data



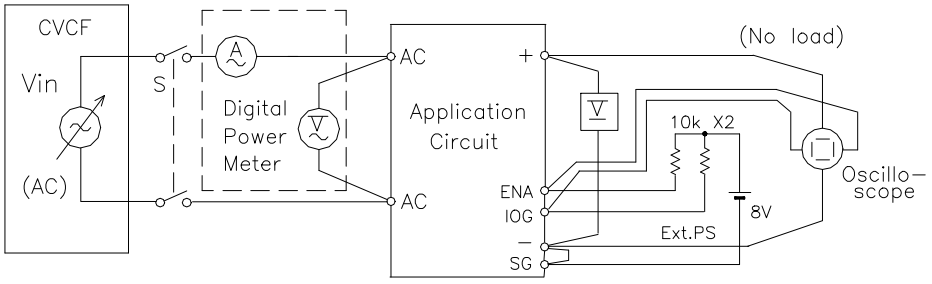
(2) 通電ドリフト特性 Warm up voltage drift characteristics



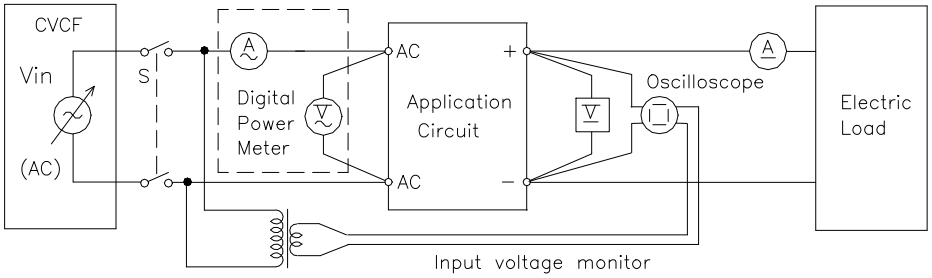
(3) 電流制限特性 Current limit characteristics



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



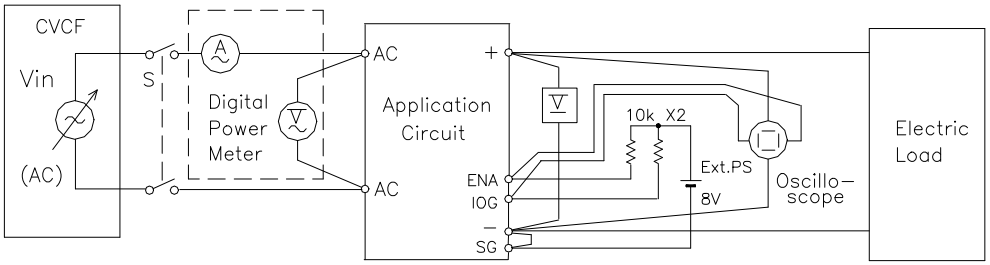
(5) 出力立ち上がり特性　Output rise characteristics



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

上記(5)と同じ　　Same as (5) above

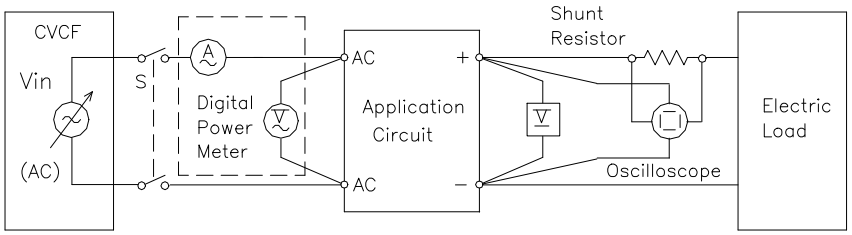
(7) ＩＯＧ・ＥＮＡ 信号対出力電圧　　IOG & ENA signal vs. output voltage



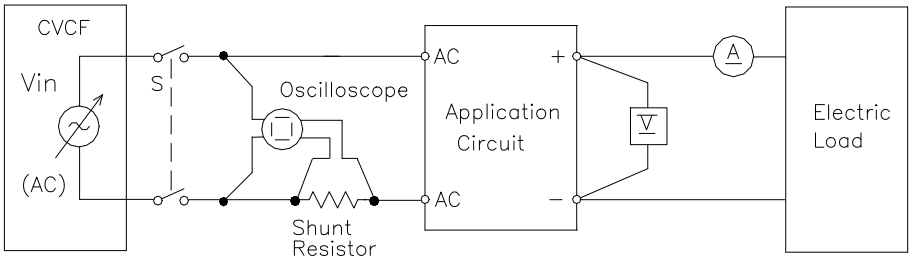
(8) 過渡応答（入力急変）特性　　Dynamic line response characteristics

上記(5)と同じ　　Same as (5) above

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



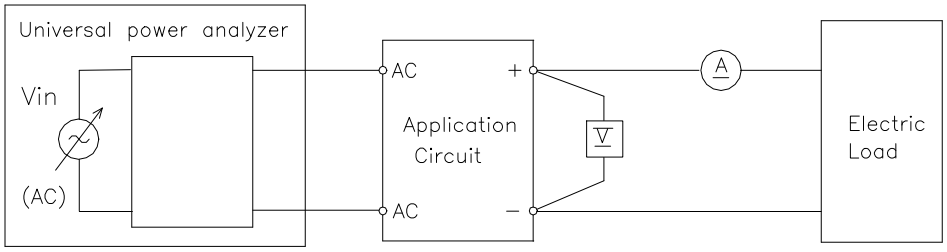
(10) 入力サージ電流（突入電流）特性　　Inrush current characteristics



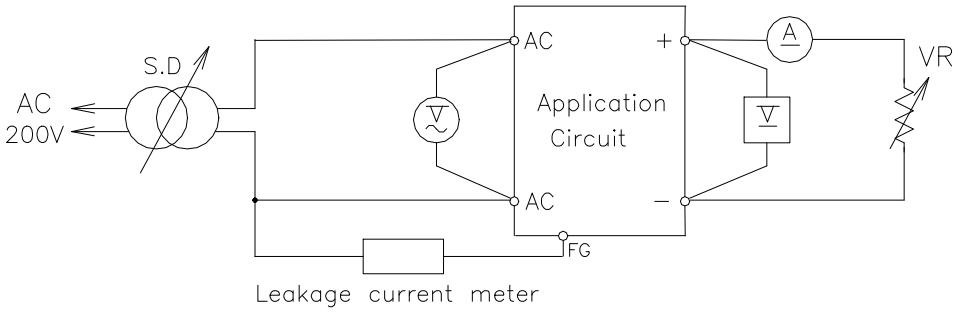
(11) 入力電流波形　Input current waveform

上記(9)と同じ　Same as (9) above

(12) 入力電流高調波成分　Input current hermonics



(13) リーク電流特性　Leakage current characteristics



NOTE : Leakage current measured through a 1k ohm resistor.
Range used---AC+DC (For YOKOGAWA TYPE 3226)

1. 3　使用測定機器　List of equipment used

	EQUIPMENT USED	MANUFACTURER	MODEL NO.
1	OSCILLOSCOPE	TEKTRONIX	2465B
2	DIGITAL STORAGE OSCILLOSCOPE	TEKTRONIX	TDS540B
3	DIGITAL MULTIMETER	YOKOGAWA ELECT.	7544
4	DIGITAL POWER METER	YOKOGAWA ELECT.	WT110
5	SHUNT RESISTOR	YOKOGAWA ELECT.	2215
6	CURRENT PROBE/AMPLIFIER	TEKTRONIX	A6303/AM503
7	DYNAMIC DUMMY LOAD	TAKASAGO	FK-1000H
8	DYNAMIC DUMMY LOAD BOOSTER	TAKASAGO	FK-1000HB
9	CVCF	KIKUSUI	PCR2000L
10	LEAKAGE CURRENT METER	YOKOGAWA	TYPE3226
11	X-Y RECORDER	GRAPHTEC	WX3000
12	CONTROLLED TEMP. CHAMBER	TABAI ESPEC	SU-240

2. 特性データ　Characteristics

2.1 静特性　Steady state data

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

360V　　Po=1008W

1. Regulation - line and load　　Condition Tp : 25 °C

Iout \ Vin	85VAC	100VAC	200VAC	255VAC	line regulation	
0%	360.2V	360.2V	360.3V	360.3V	0.1V	0.03%
50%	360.4V	360.4V	360.7V	360.6V	0.3V	0.09%
100%	360.3V	360.5V	360.7V	360.6V	0.4V	0.11%
load regulation	0.2V	0.3V	0.4V	0.3V		
	0.06%	0.09%	0.11%	0.09%		

2. Temperature drift　　Conditions Vin : 100VAC
Iout : 100%

Tp	-20 °C	+25 °C	+85 °C	temperature stability	
Vout	361.1V	360.2V	360.1V	1.0V	0.28%

360V　　Po=1512W

1. Regulation - line and load　　Condition Tp : 25 °C

Iout \ Vin	170VAC	200VAC	255VAC	line regulation	
0%	360.3V	360.3V	360.3V	0.0V	0.00%
50%	360.8V	360.7V	360.6V	0.2V	0.06%
100%	360.9V	360.8V	360.6V	0.3V	0.09%
load regulation	0.6V	0.5V	0.3V		
	0.17%	0.14%	0.09%		

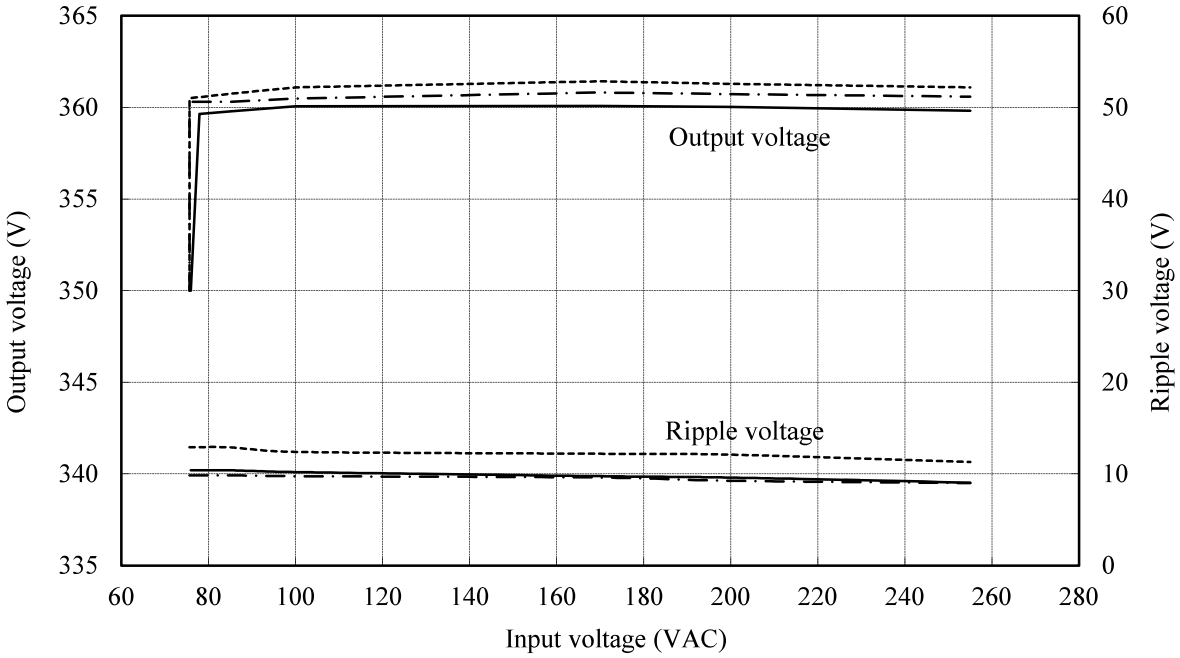
2. Temperature drift　　Conditions Vin : 200VAC
Iout : 100%

Tp	-20 °C	+25 °C	+85 °C	temperature stability	
Vout	361.4V	360.5V	360.2V	1.2V	0.33%

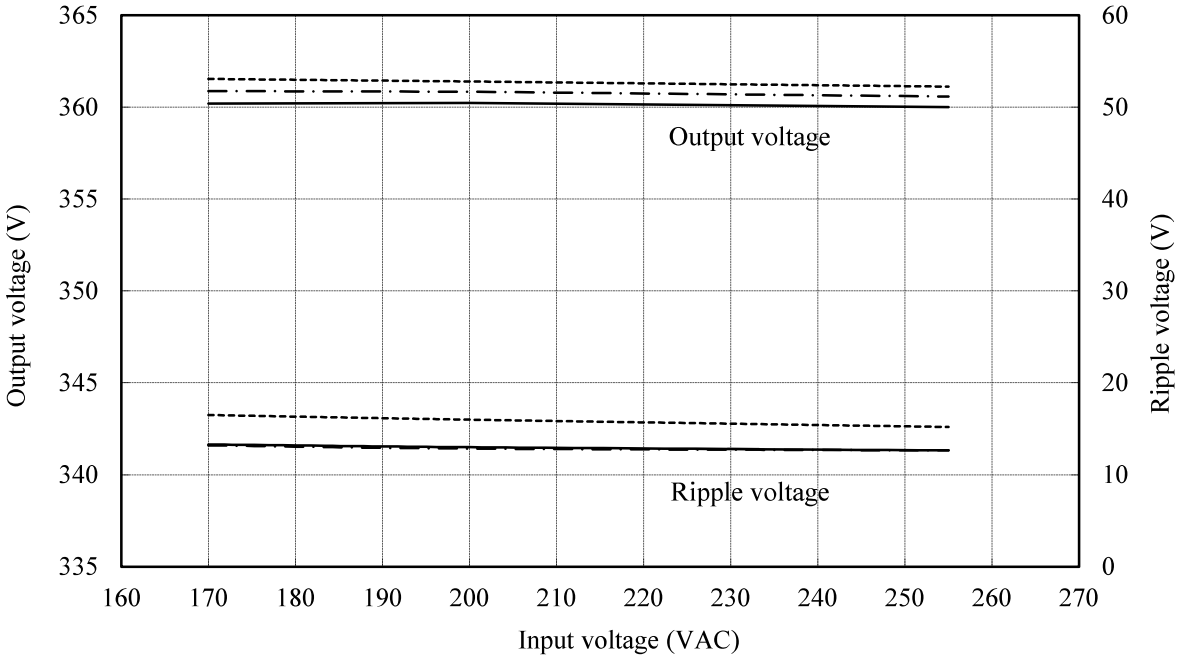
(2) 出力電圧・リップル電圧対入力電圧
Output voltage and ripple voltage vs. input voltage

Conditions Cout : 1350 uF
Tp : -20 °C
: 25 °C
: 85 °C

360V Po=1008W



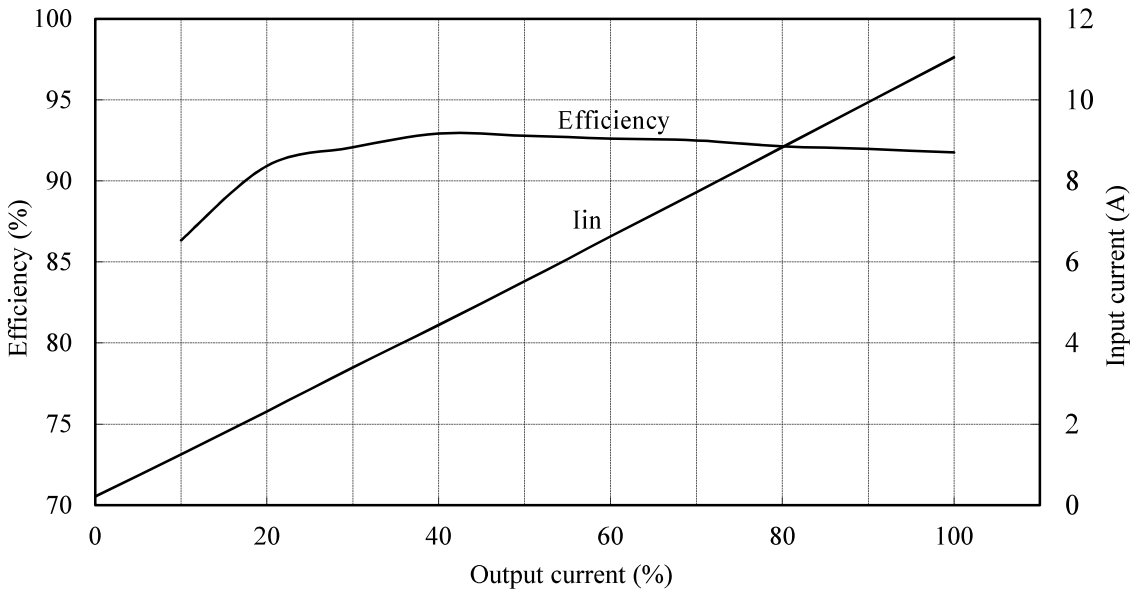
360V Po=1512W



(3) 効率・入力電流対出力電流
Efficiency and input current vs. output current

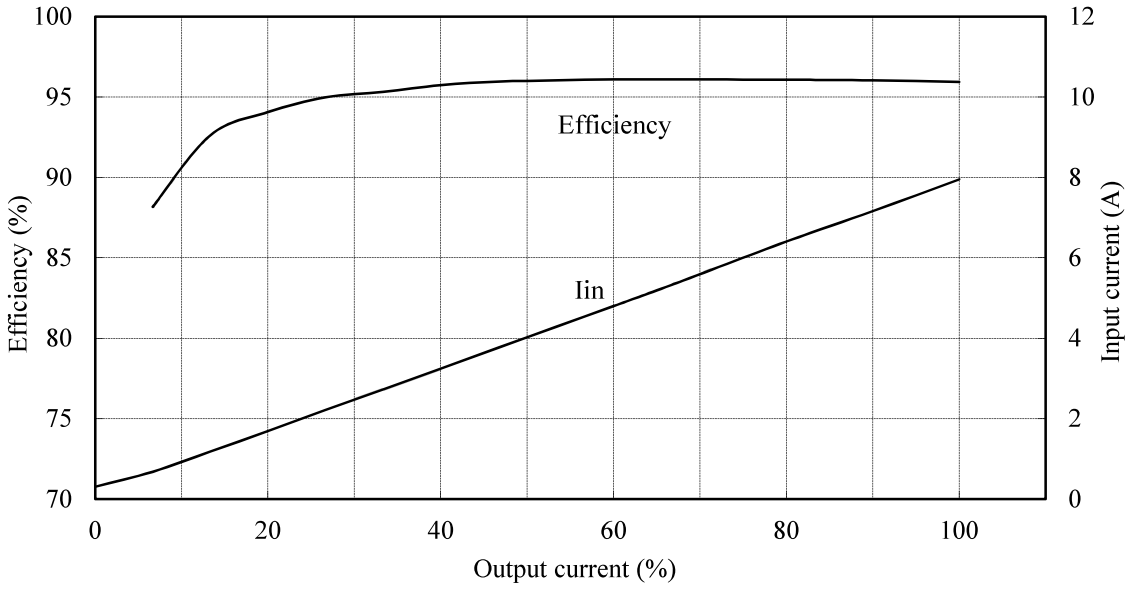
Conditions Vin : 100 VAC
Tp : 25 °C

360V Po=1008W



Conditions Vin : 200 VAC
Tp : 25 °C

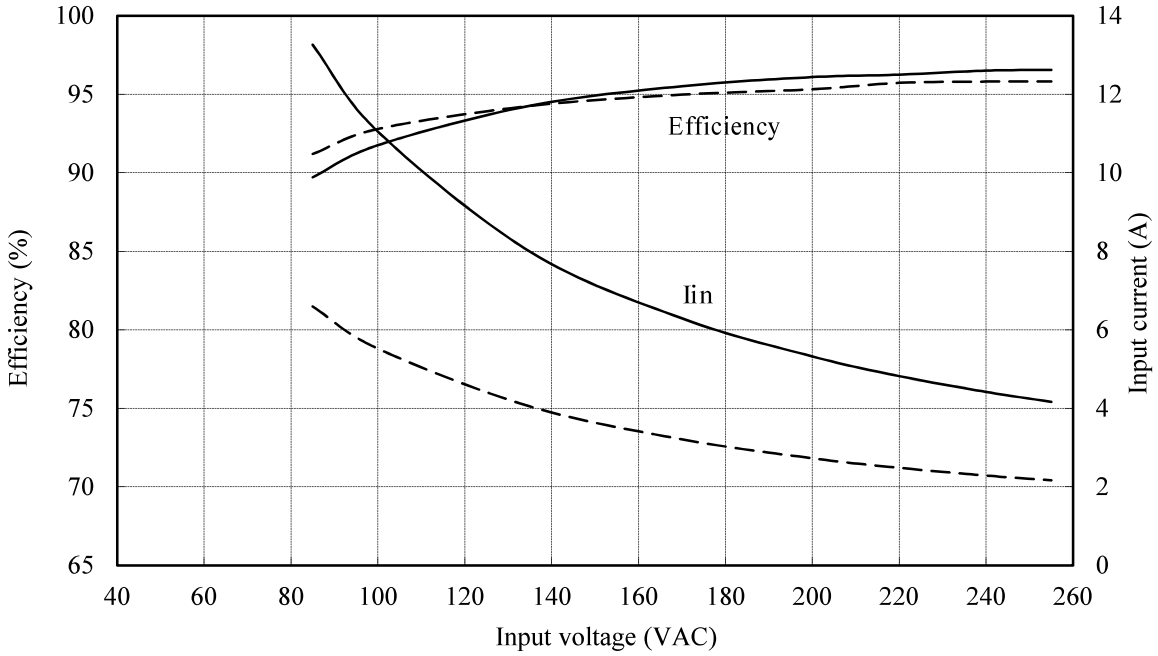
360V Po=1512W



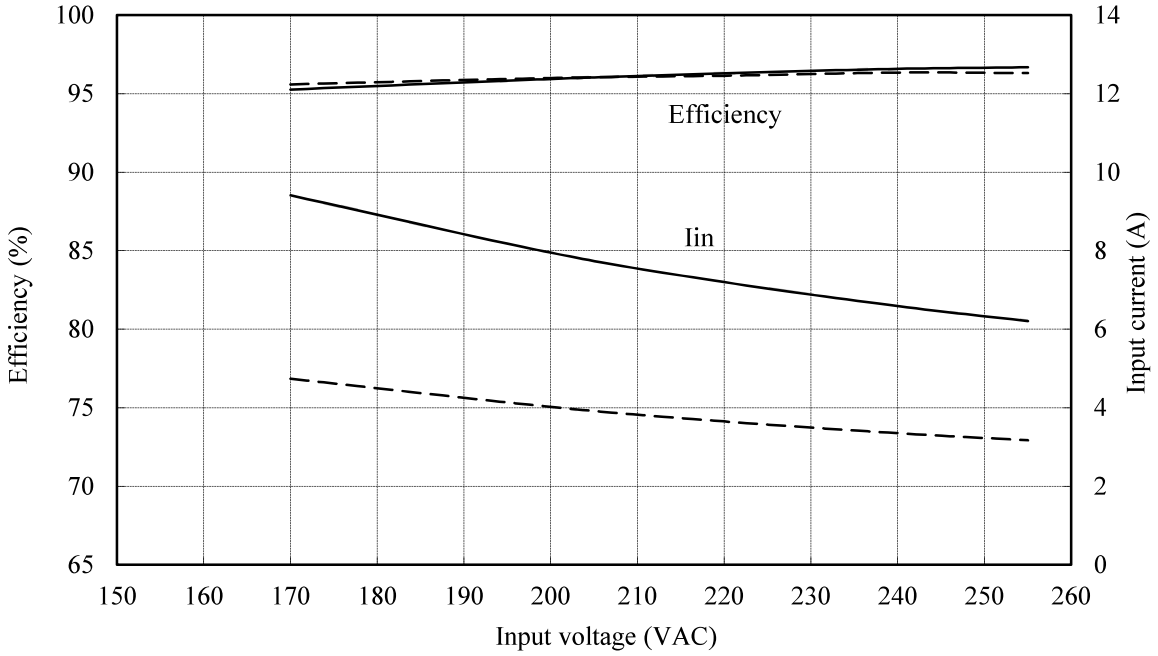
(4) 効率対入力電圧
Efficiency vs. input voltage

Conditions Iout : 100 % ——
50 % - - - -
Tp : 25 °C

360V Po=1008W



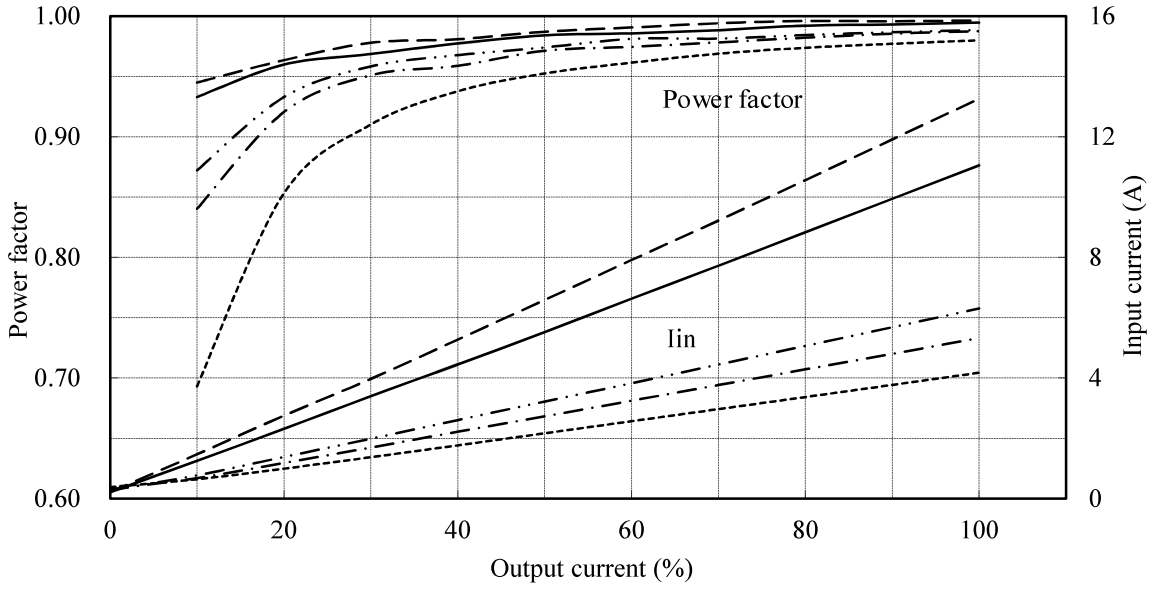
360V Po=1512W



(5) 力率・入力電流対出力電流
Power factor and input current vs. output current

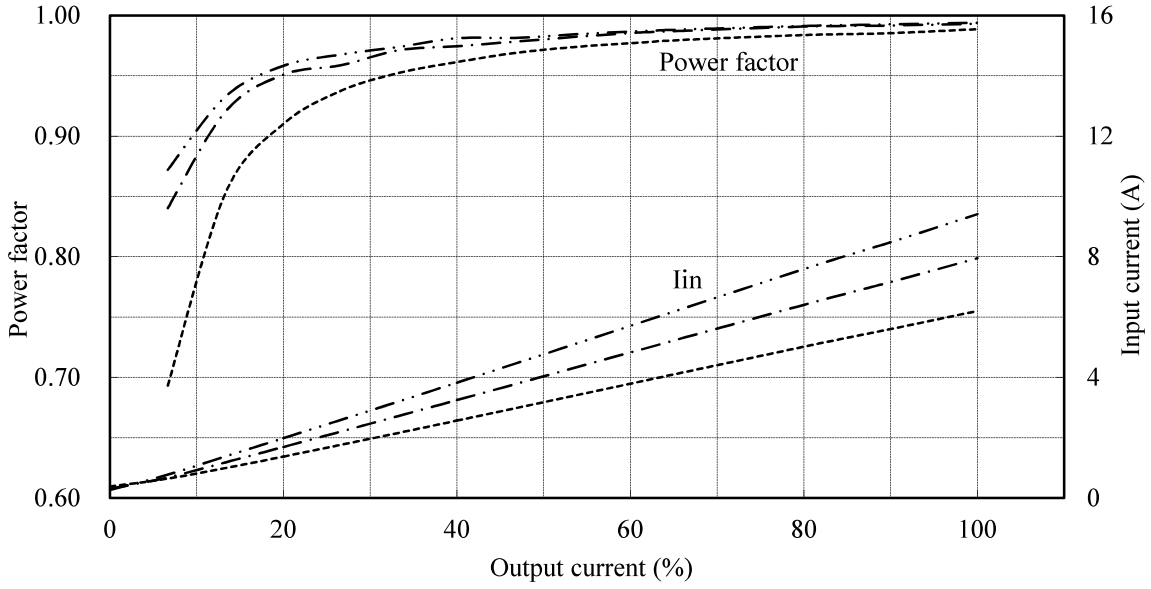
Conditions Vin : 85 VAC
100 VAC
170 VAC
200 VAC
255 VAC

360V Po=1008W Tp : 25 °C



Conditions Vin : 170 VAC
200 VAC
255 VAC

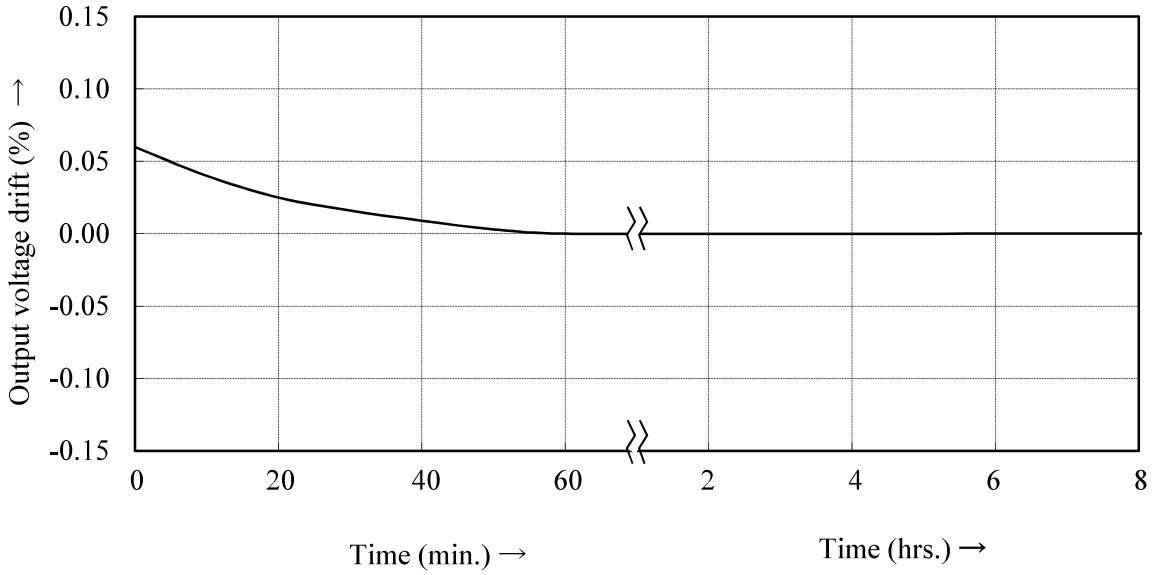
360V Po=1512W Tp : 25 °C



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

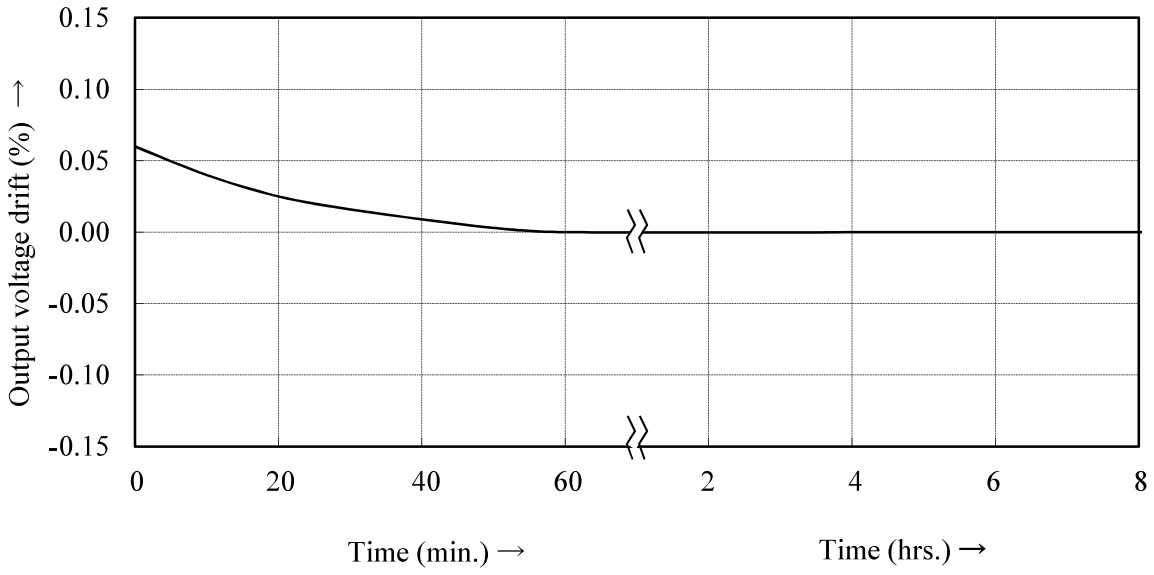
Conditions Vin : 100 VAC
Iout : 100 %
Tp : 25 °C

360V　　Po=1008W



Conditions Vin : 200 VAC
Iout : 100 %
Tp : 25 °C

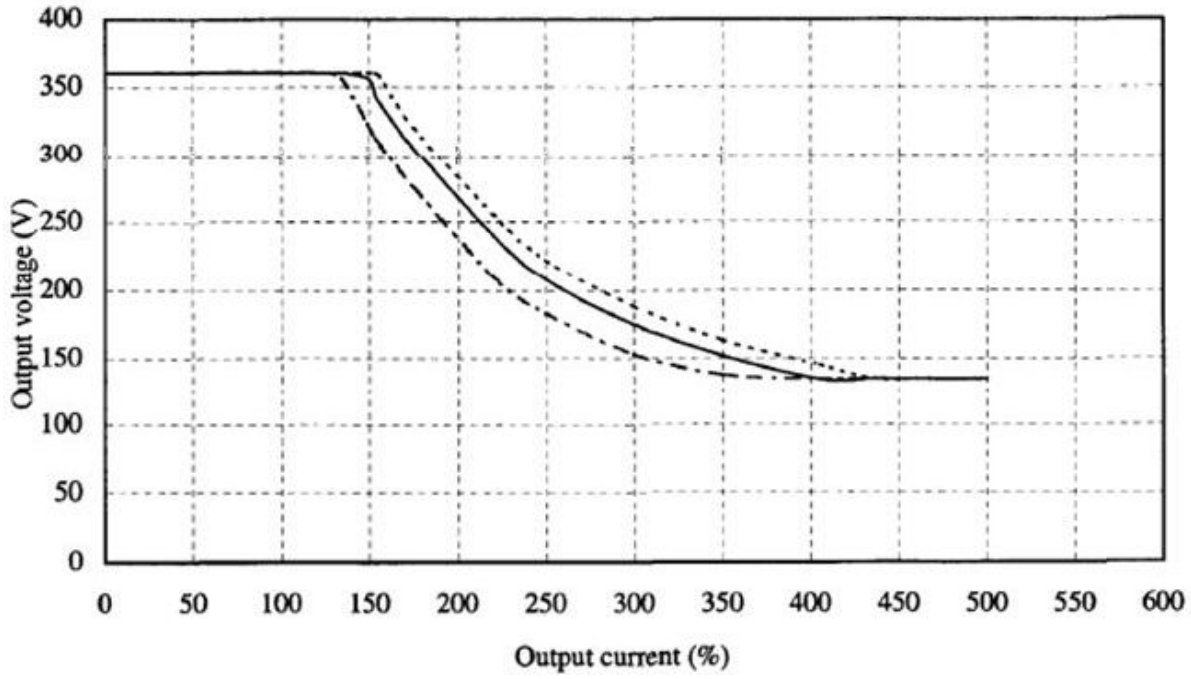
360V　　Po=1512W



2.3 電流制限特性
Current limit characteristics

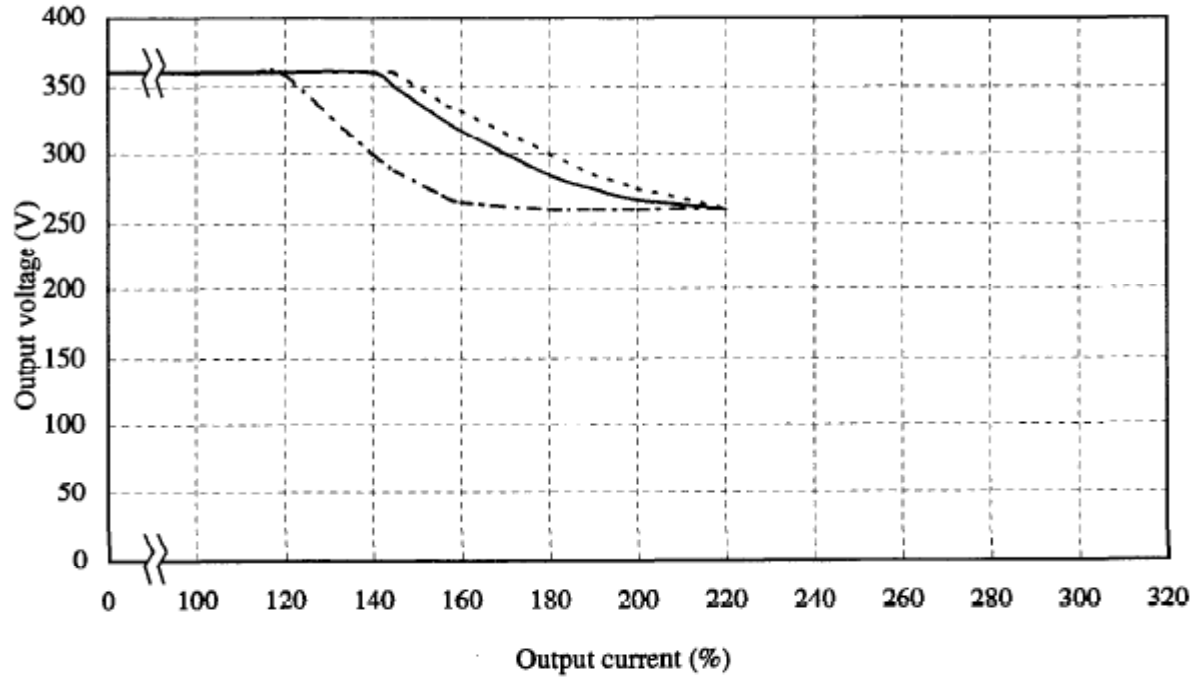
Conditions Tp : -20°C
25°C
85°C

360V Po = 1008W Vin : 100VAC



Conditions Tp : -20°C
25°C
85°C

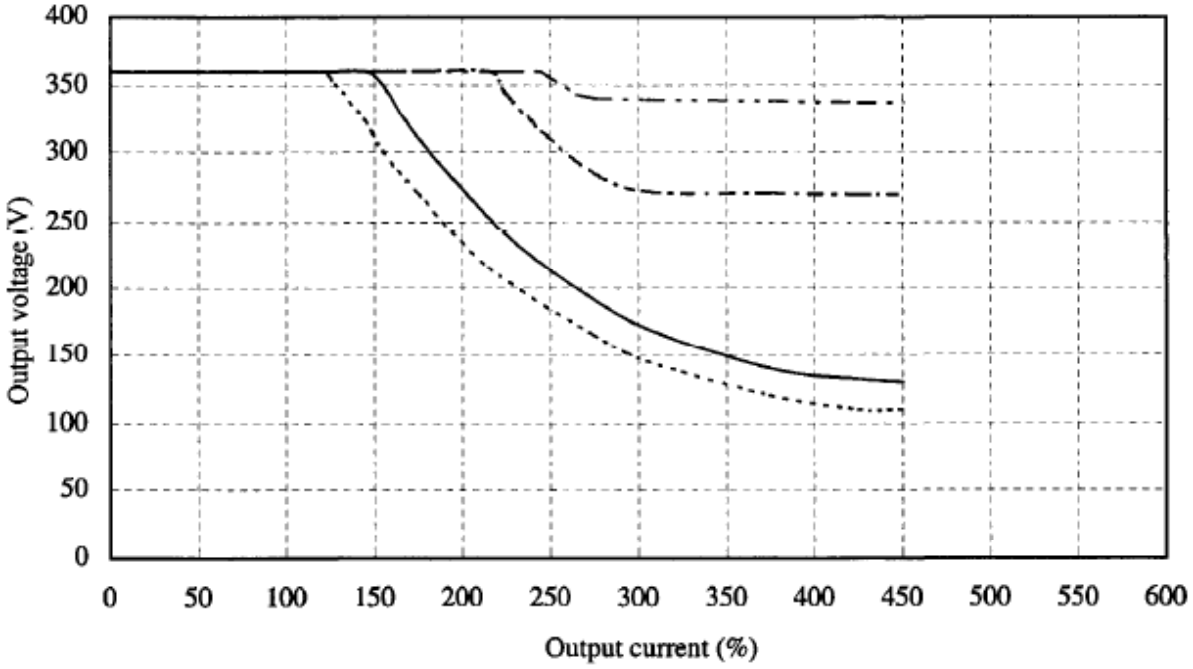
360V Po = 1512W Vin : 200VAC



2.3 電流制限特性
Current limit characteristics

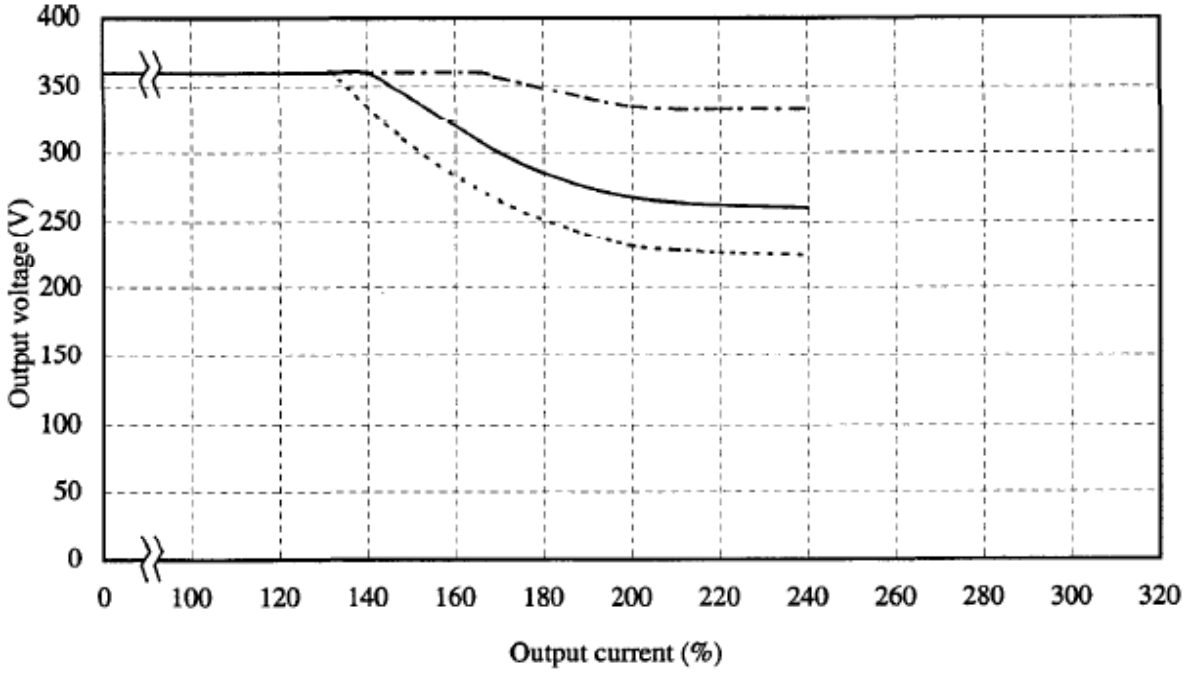
Conditions Vin : 85VAC
100VAC
200VAC
255VAC

360V　　Po = 1008W　　Tp : 25°C



Conditions Vin : 170VAC
200VAC
255VAC

360V　　Po = 1512W　　Tp : 25°C

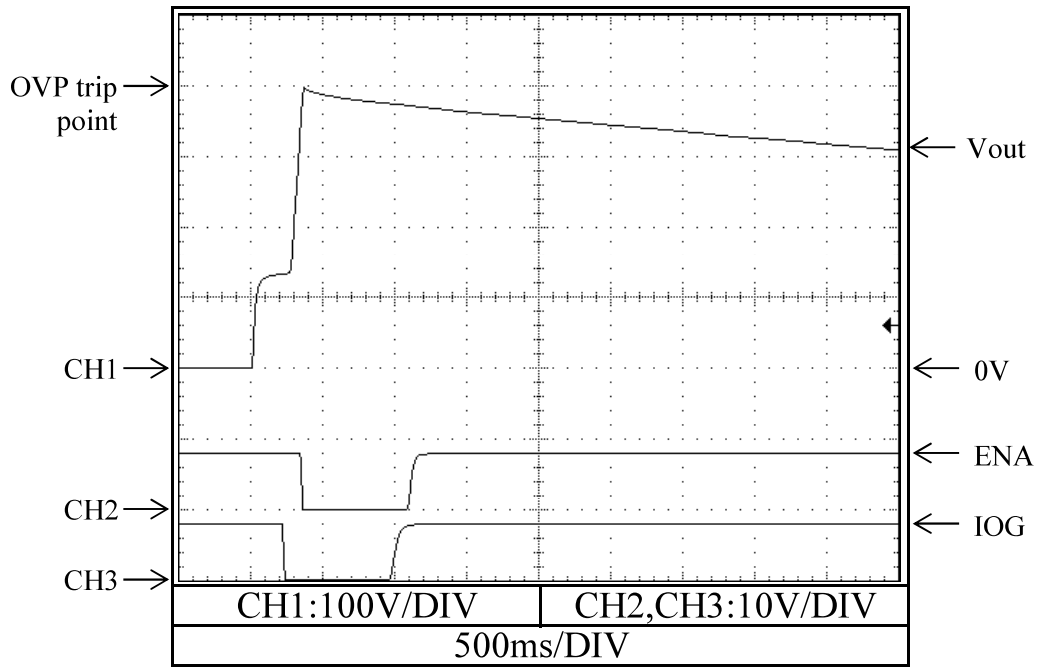


2.4 過電圧保護特性

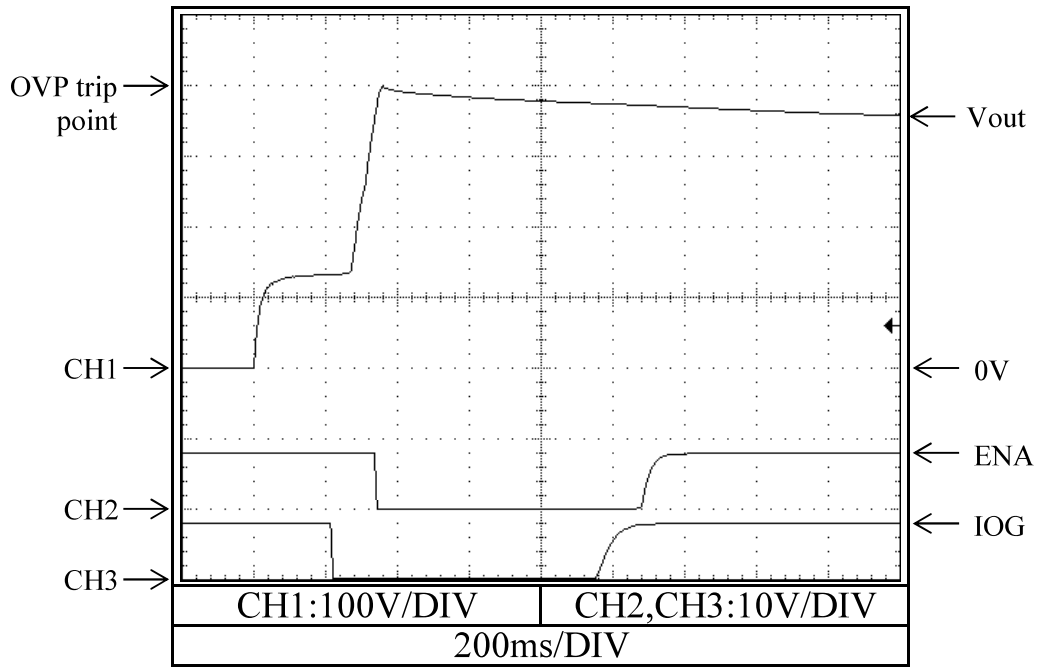
Over voltage protection (OVP)

Conditions Vin : 100VAC
Iout : 0%
Tp : 25°C

360V



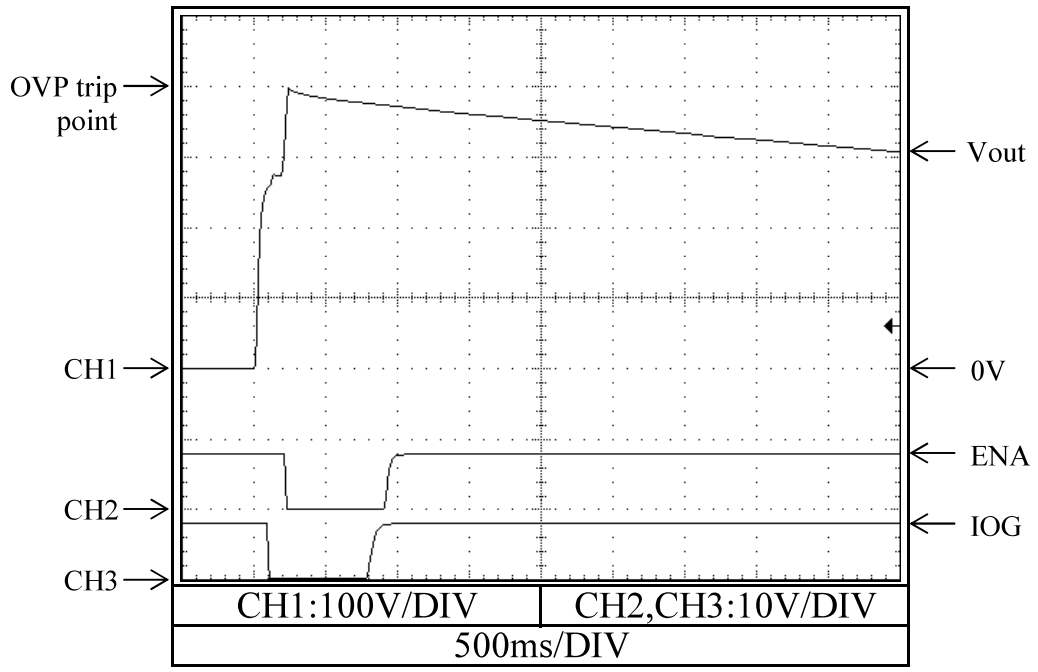
360V



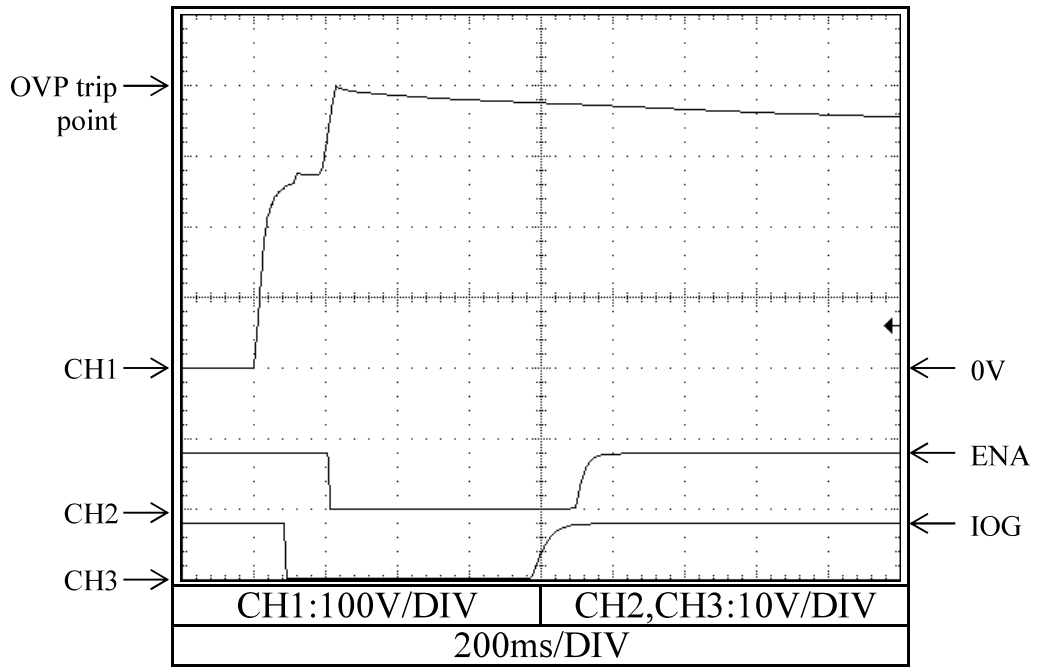
2.4 過電圧保護特性
Over voltage protection (OVP)

Conditions Vin : 200VAC
Iout : 0%
Tp : 25°C

360V



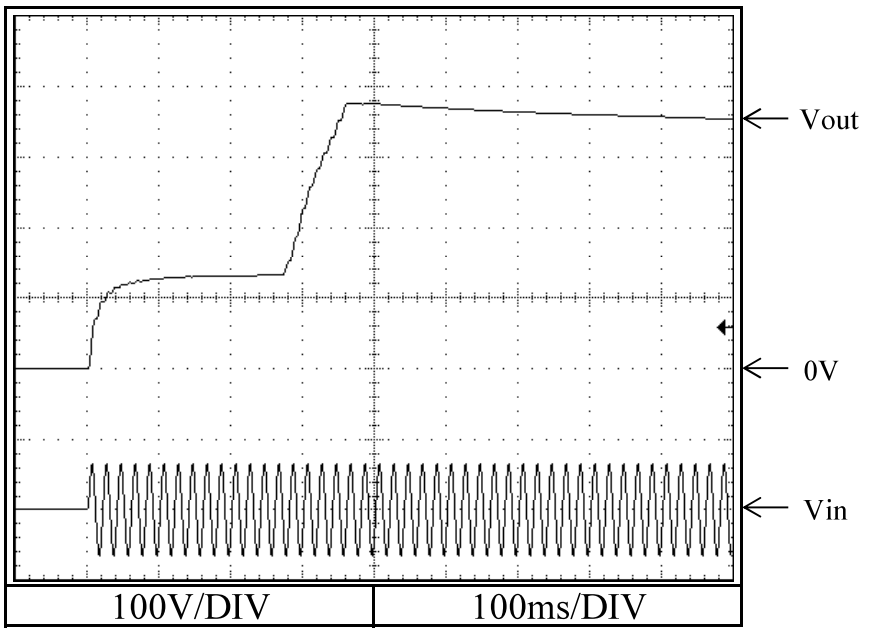
360V



2.5 出力立上り特性
Output rise characteristics

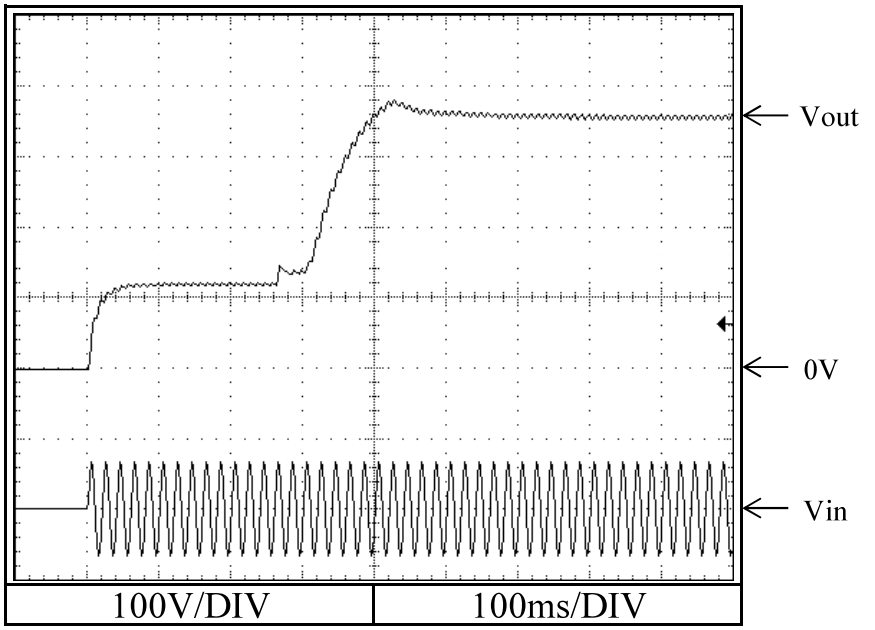
Conditions Vin : 100VAC
Iout : 0%
Tp : 25°C

360V



Conditions Vin : 100VAC
Iout : 100% (Po=1008W)
Tp : 25°C

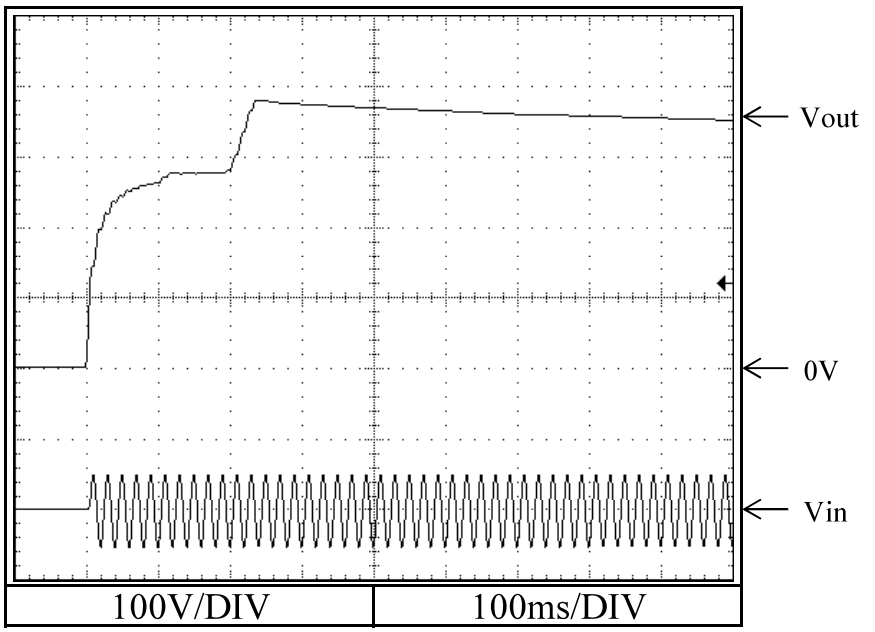
360V



2.5 出力立上り特性
Output rise characteristics

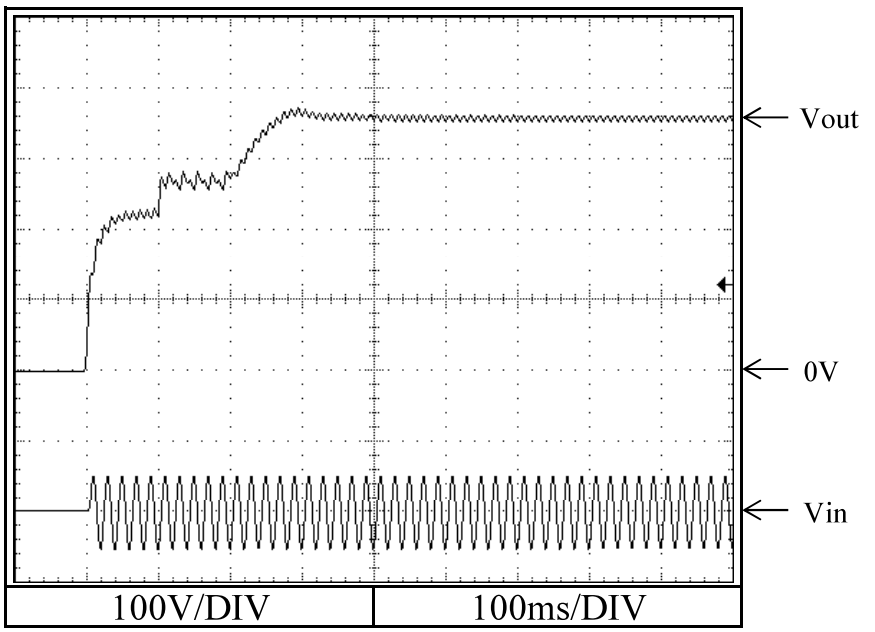
Conditions Vin : 200VAC
Iout : 0%
Tp : 25°C

360V



Conditions Vin : 200VAC
Iout : 100% (Po=1512W)
Tp : 25°C

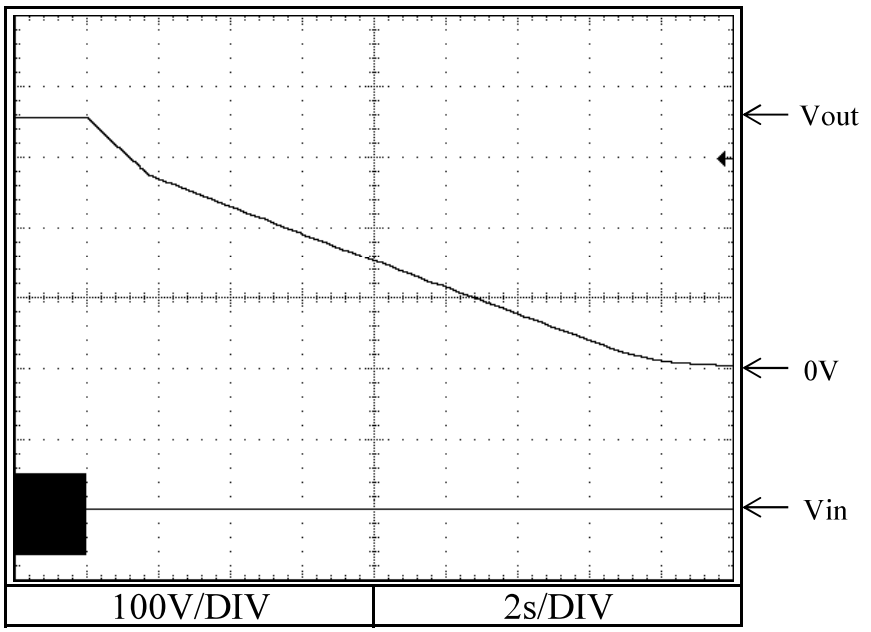
360V



2.6 出力立下り特性
Output fall characteristics

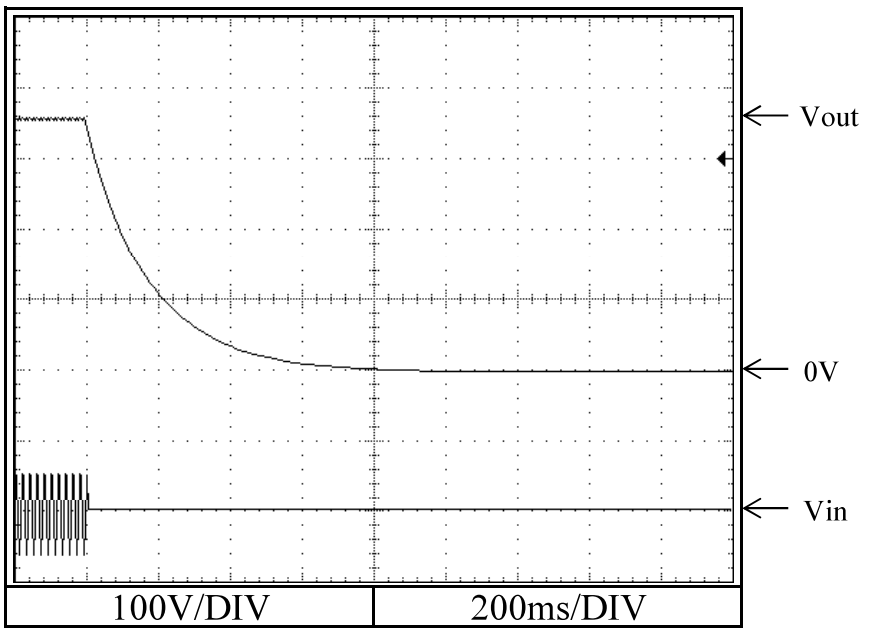
Conditions Vin : 100VAC
Iout : 0%
Tp : 25°C

360V



Conditions Vin : 100VAC
Iout : 100% (Po=1008W)
Tp : 25°C

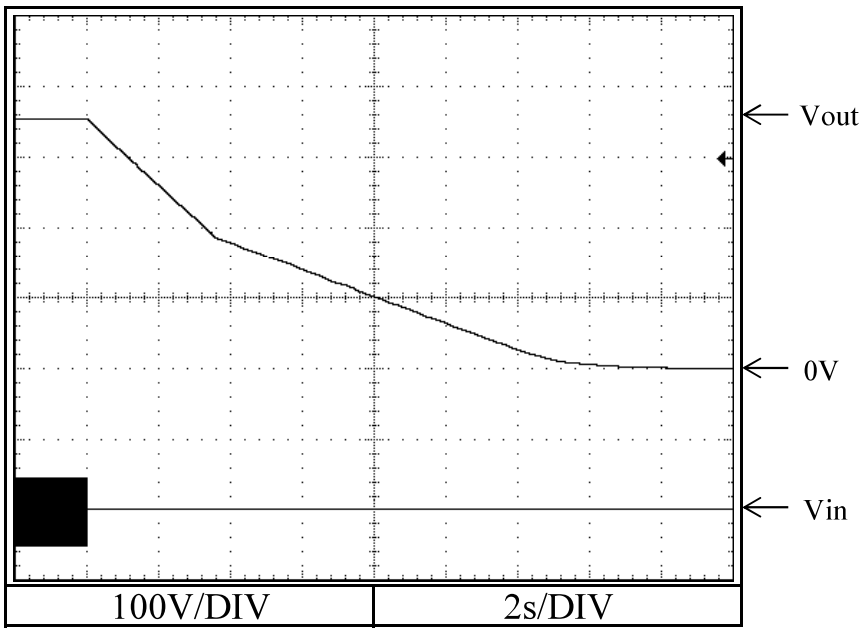
360V



2.6 出力立下り特性
Output fall characteristics

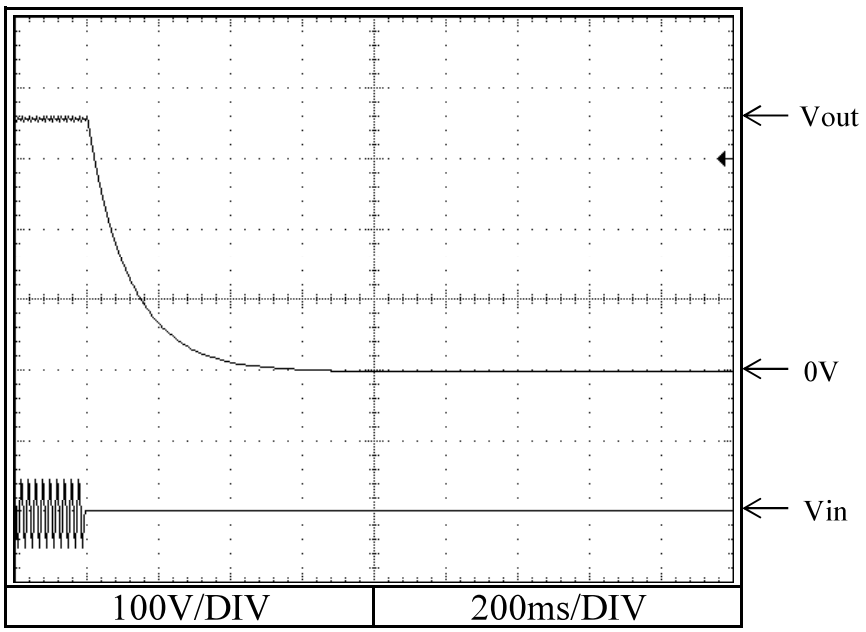
Conditions Vin : 200VAC
Iout : 0%
Tp : 25°C

360V



Conditions Vin : 200VAC
Iout : 100% (Po=1512W)
Tp : 25°C

360V

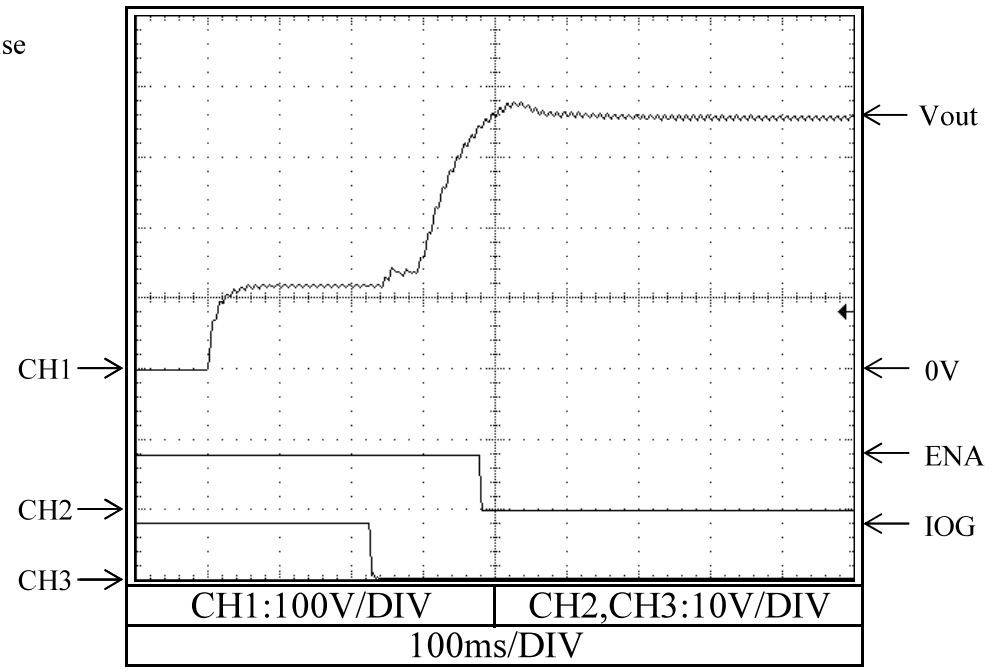


2.7 ＩＯＧ・ＥＮＡ信号対出力電圧
IOG & ENA signals vs. output voltage

Conditions Vin : 100VAC
Iout : 100%
Tp : 25°C

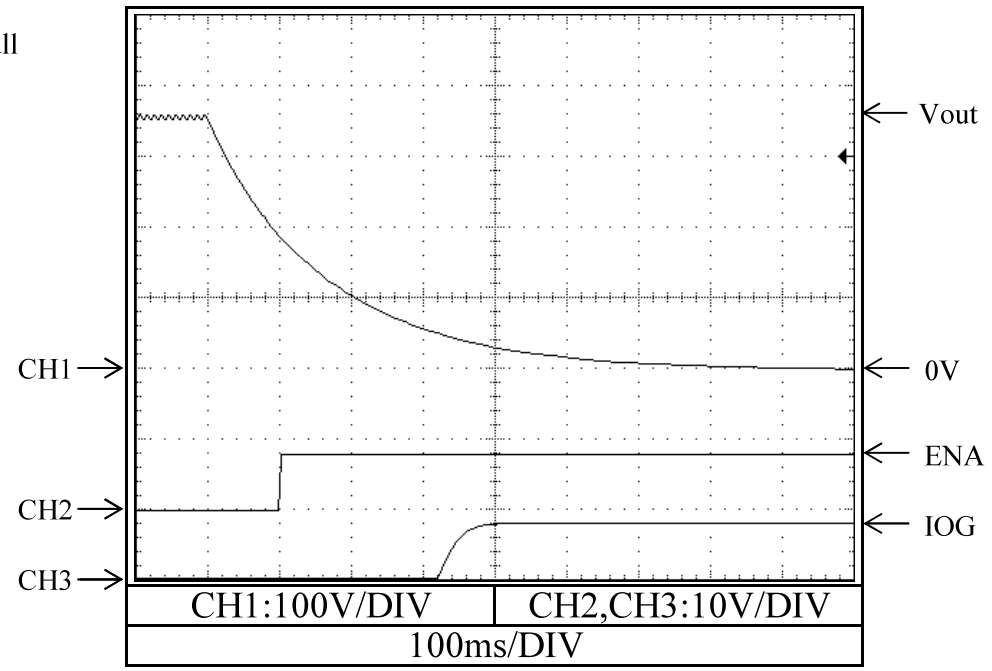
360V

(A) Rise



360V

(B) Fall

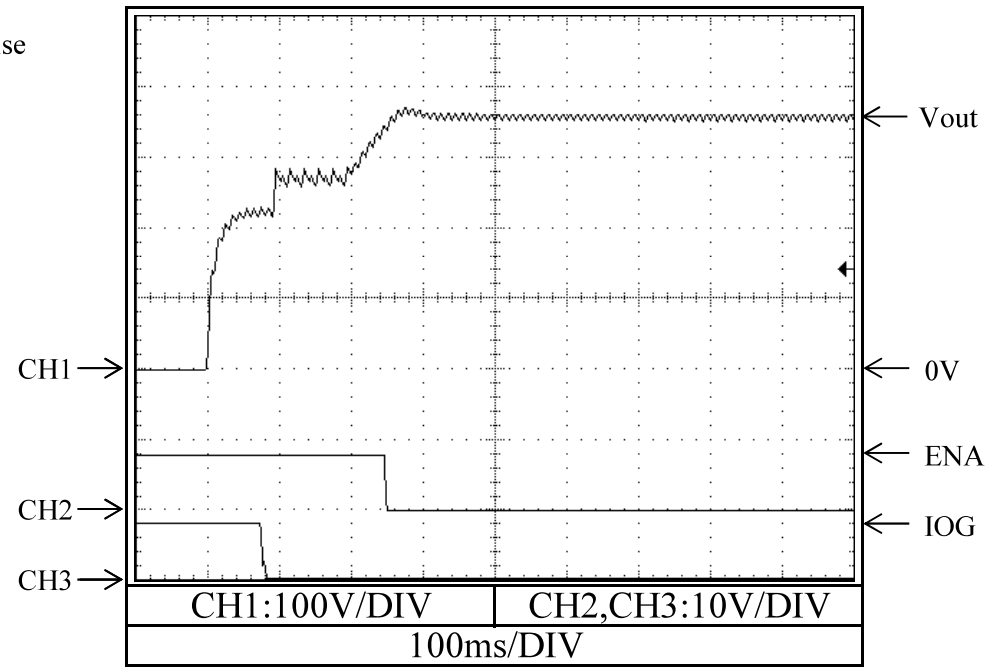


2.7 ＩＯＧ・ＥＮＡ信号対出力電圧
IOG & ENA signals vs. output voltage

Conditions Vin : 200VAC
Iout : 100%
Tp : 25°C

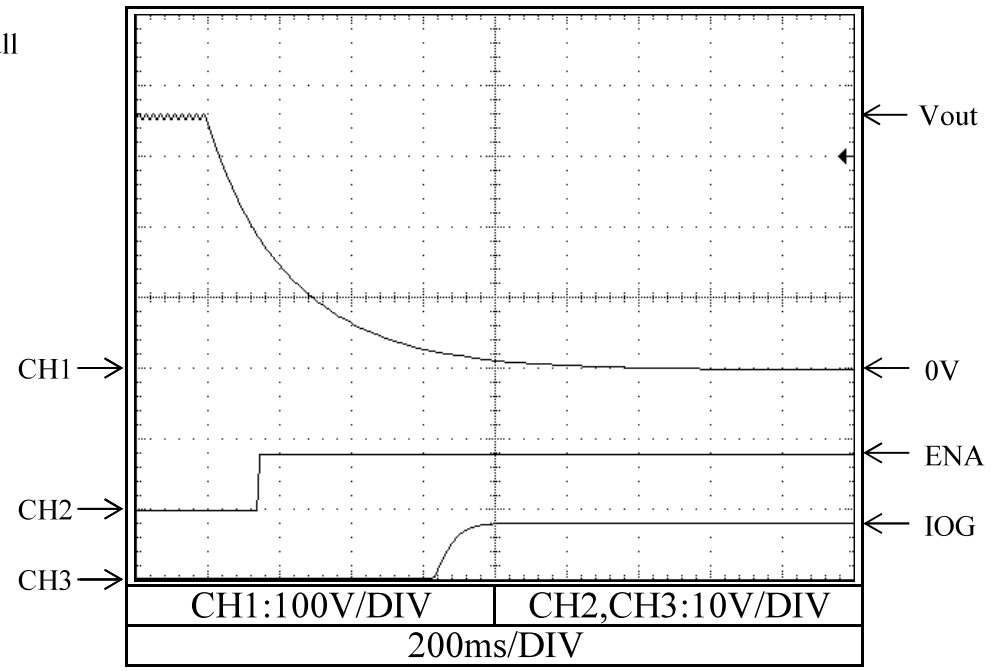
360V

(A) Rise



360V

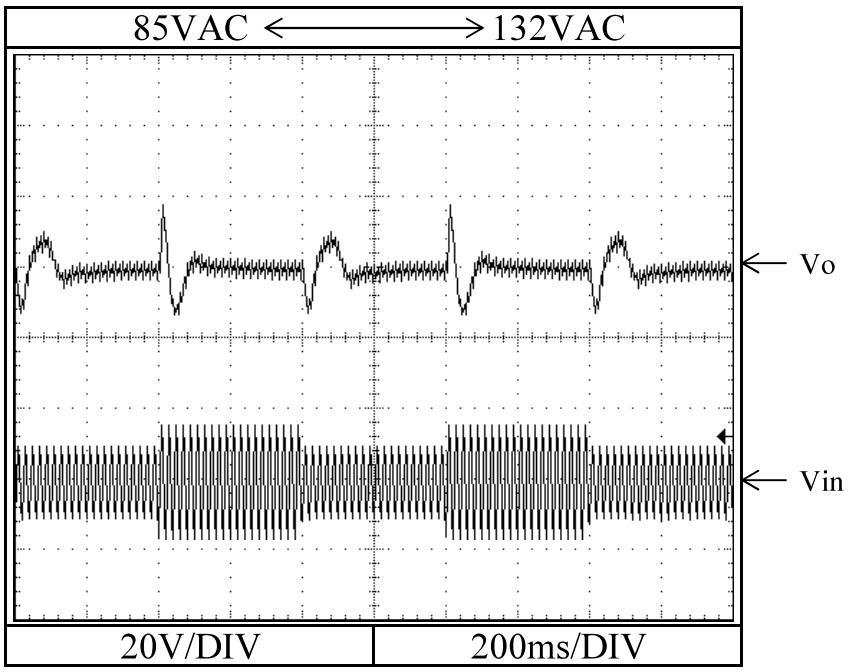
(B) Fall



2.8 過渡応答（入力急変）特性
Dynamic line responce characteristics

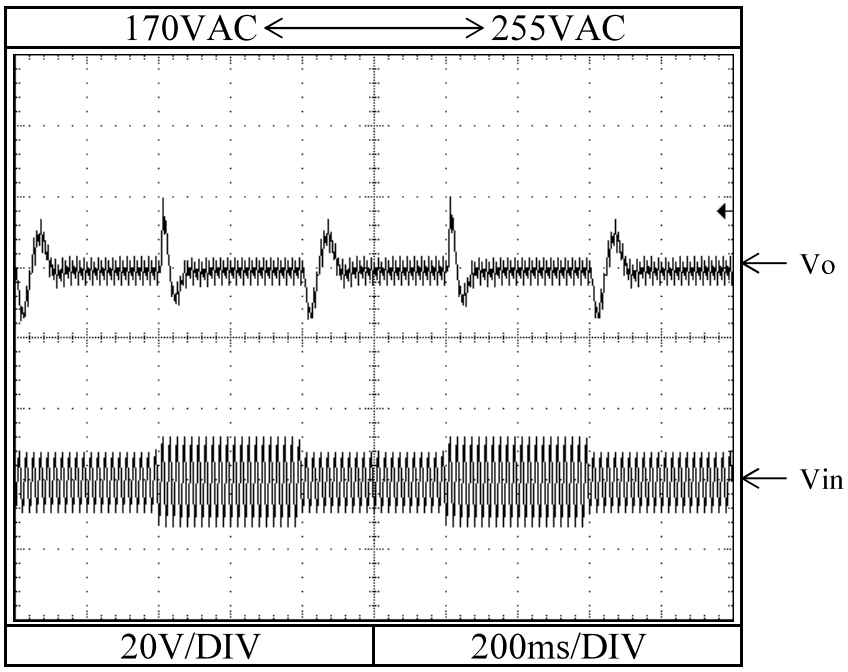
Conditions Iout : 100% (Po=1008W)
Tp : 25°C

360V



Conditions Iout : 100% (Po=1512W)
Tp : 25°C

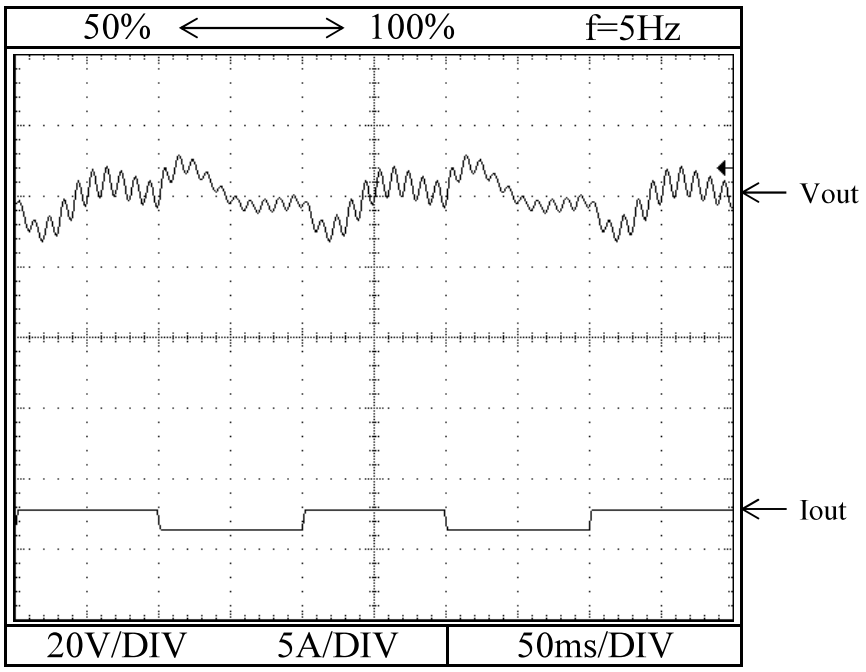
360V



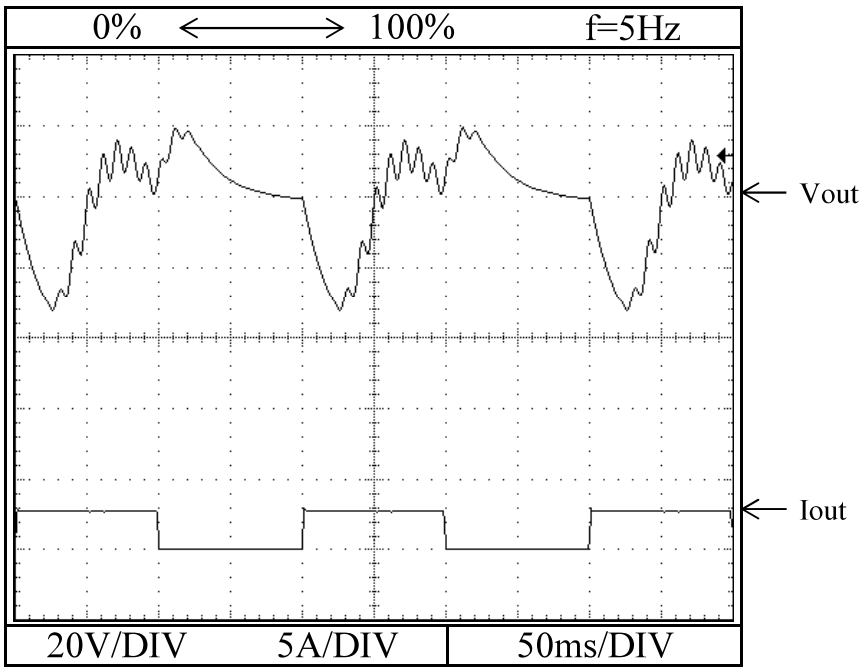
2.9 過渡応答（負荷急変）特性
Dynamic load responce characteristics

Conditions Vin : 100VAC
Tp : 25°C

360V Po=1008W



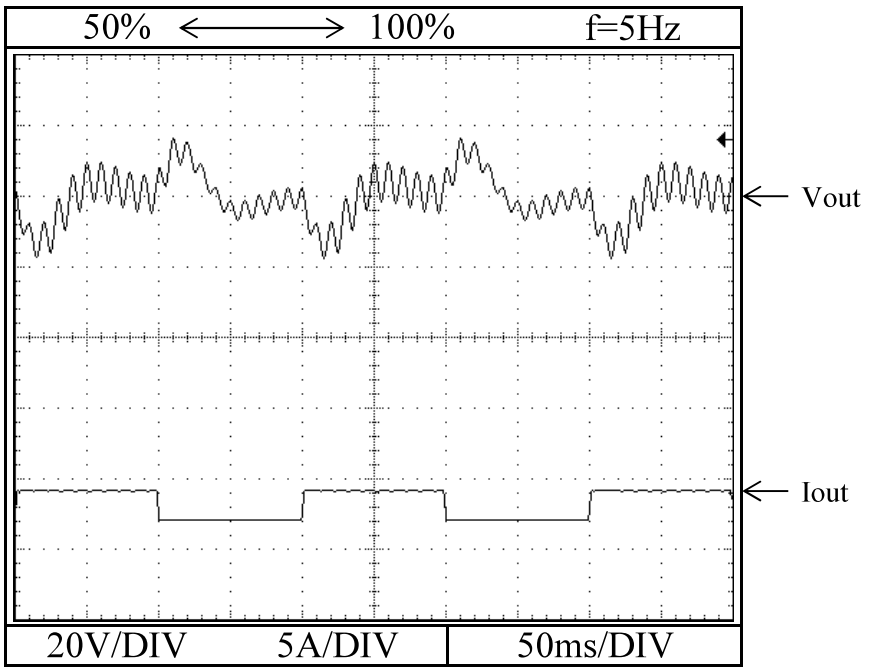
360V



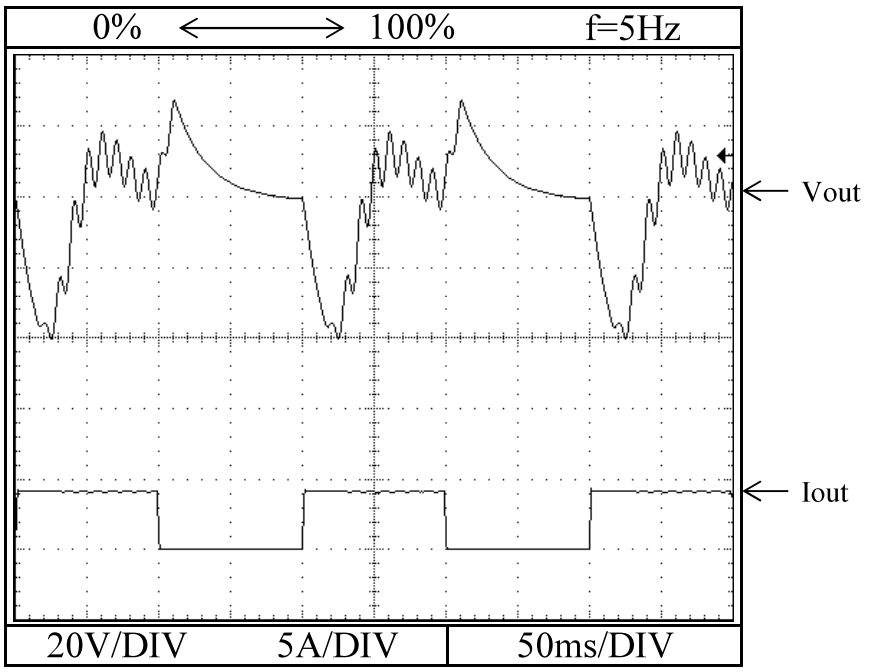
2.9 過渡応答（負荷急変）特性
Dynamic load responce characteristics

Conditions Vin : 200VAC
Tp : 25°C

360V Po=1512W



360V

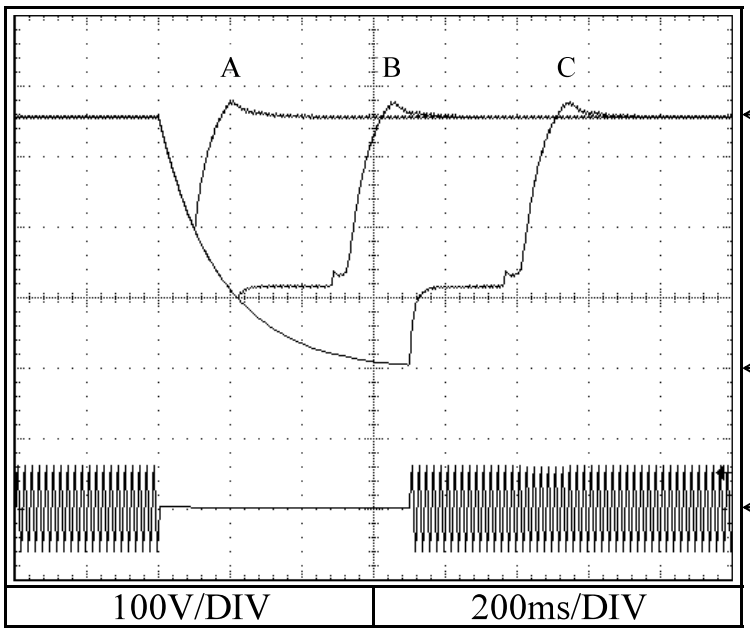


2.10 入力瞬停特性

Responce to brown out characteristics

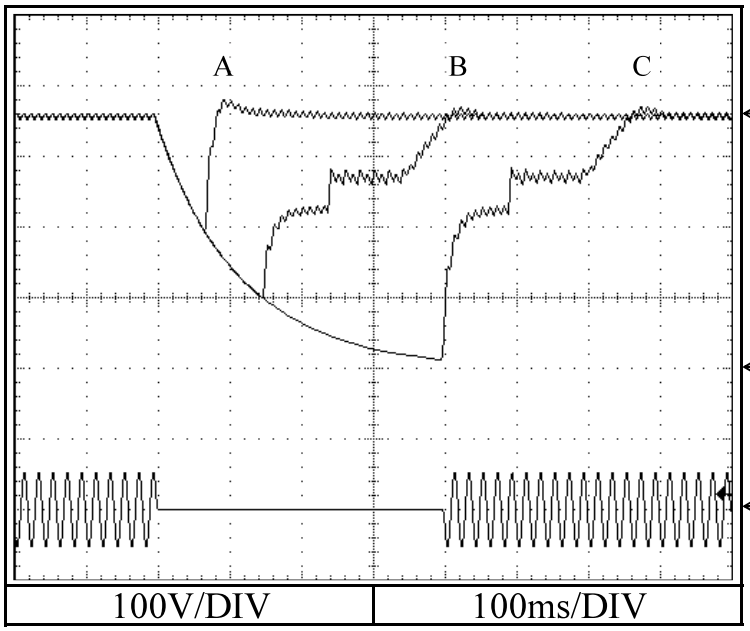
Conditions Vin : 100VAC
Iout : 100%
Tp : 25°C
brown out time
A : 100ms
B : 220ms
C : 700ms

360V



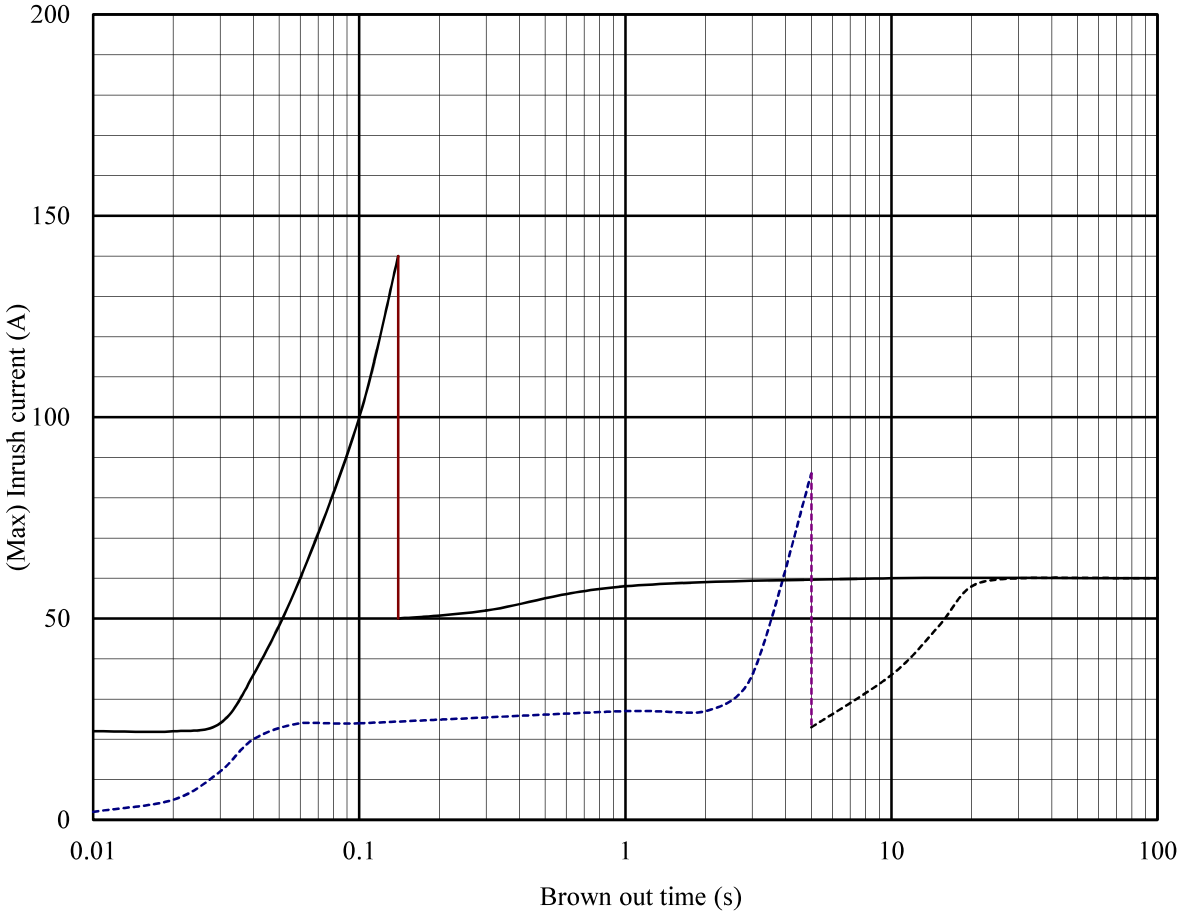
Conditions Vin : 200VAC
Iout : 100%
Tp : 25°C
brown out time
A : 70ms
B : 150ms
C : 400ms

360V



2.11 瞬停時突入電流特性
Inrush current characteristics

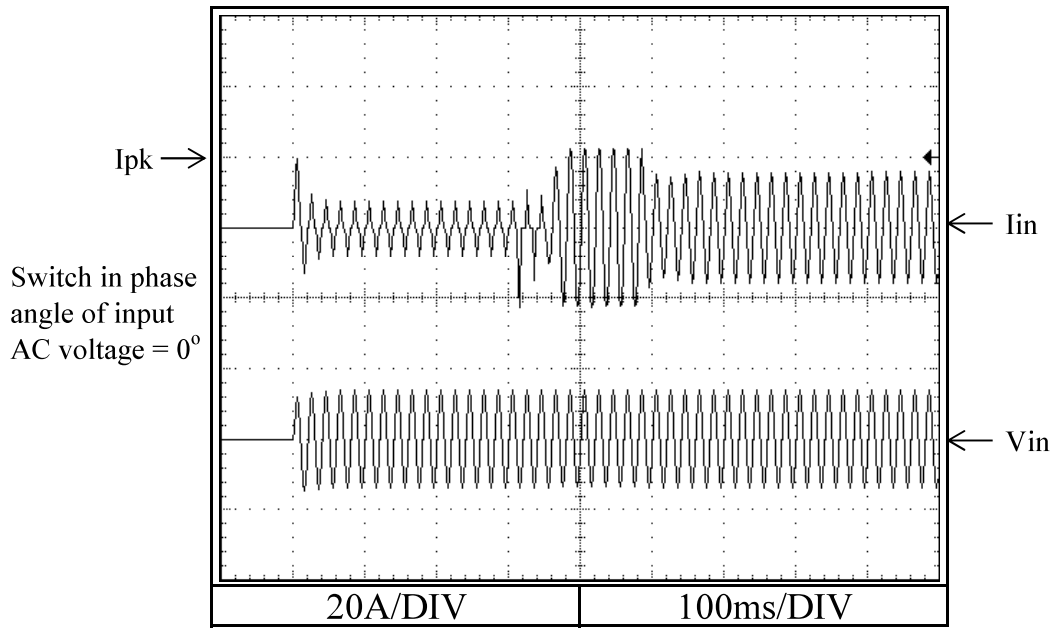
Conditions Cout : 2000 uF
Vin : 240 VAC
Iout : 0 % ------
: 100 % ——
Tp : 25 °C



2.12 入力サージ電流（突入電流）波形
Inrush current waveform

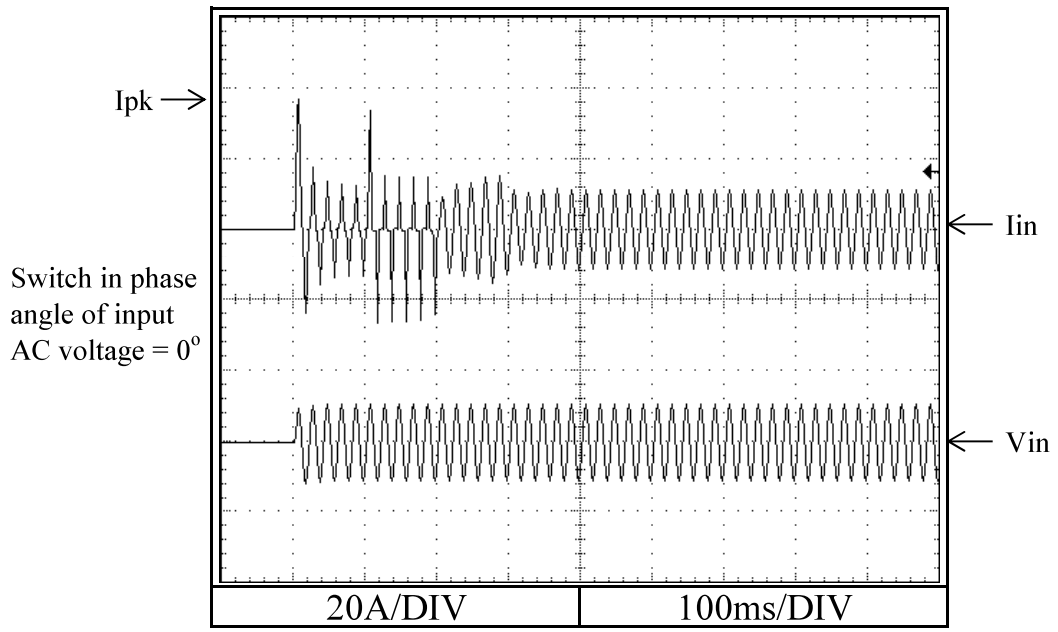
Conditions Vin : 100VAC
Tp : 25°C

360V Po=1008W



Conditions Vin : 200VAC
Tp : 25°C

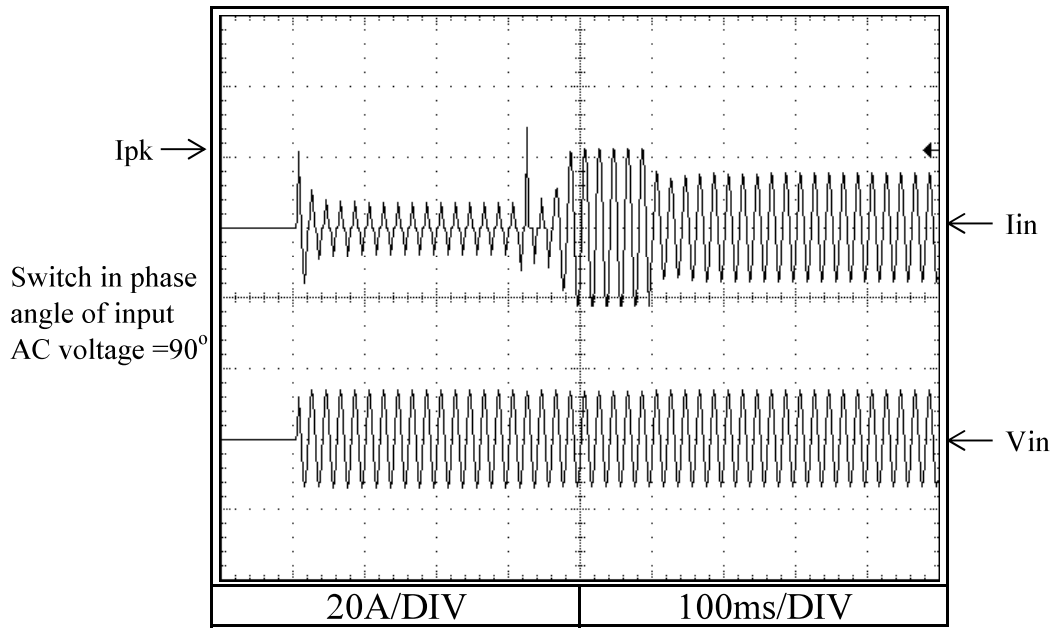
360V Po=1512W



2.12 入力サージ電流（突入電流）波形
Inrush current waveform

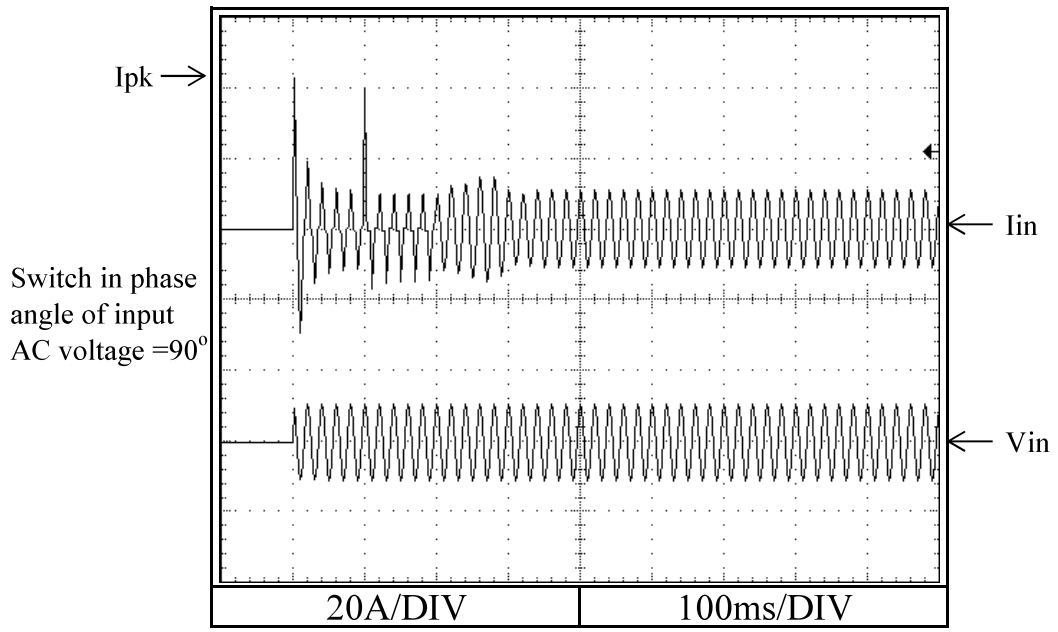
Conditions Vin : 100VAC
Tp : 25°C

360V Po=1008W



Conditions Vin : 200VAC
Tp : 25°C

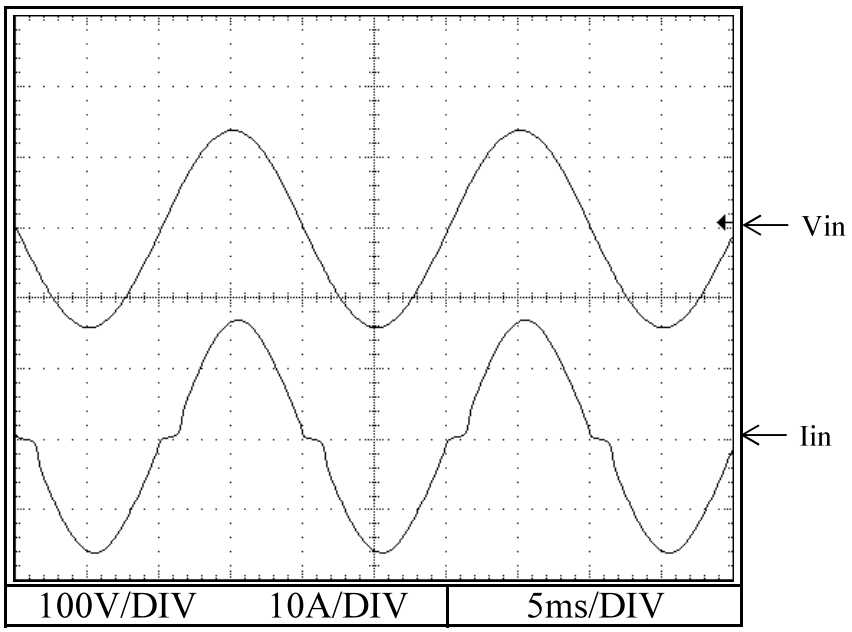
360V Po=1512W



2.13 入力電流波形
Inrush current waveform

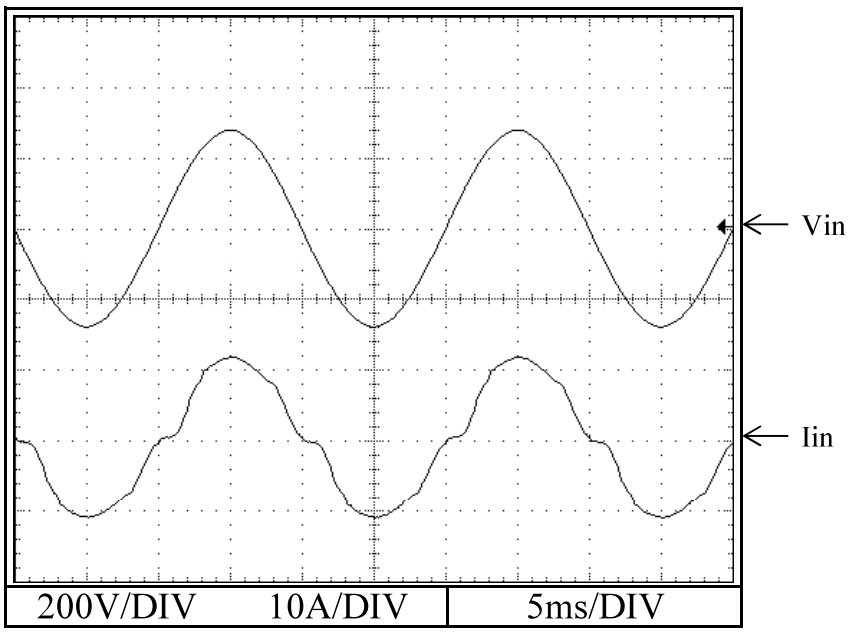
Conditions Vin : 100VAC
Io : 100% (Po=1008W)
Tp : 25°C

360V



Conditions Vin : 200VAC
Iout : 100% (Po=1512W)
Tp : 25°C

360V

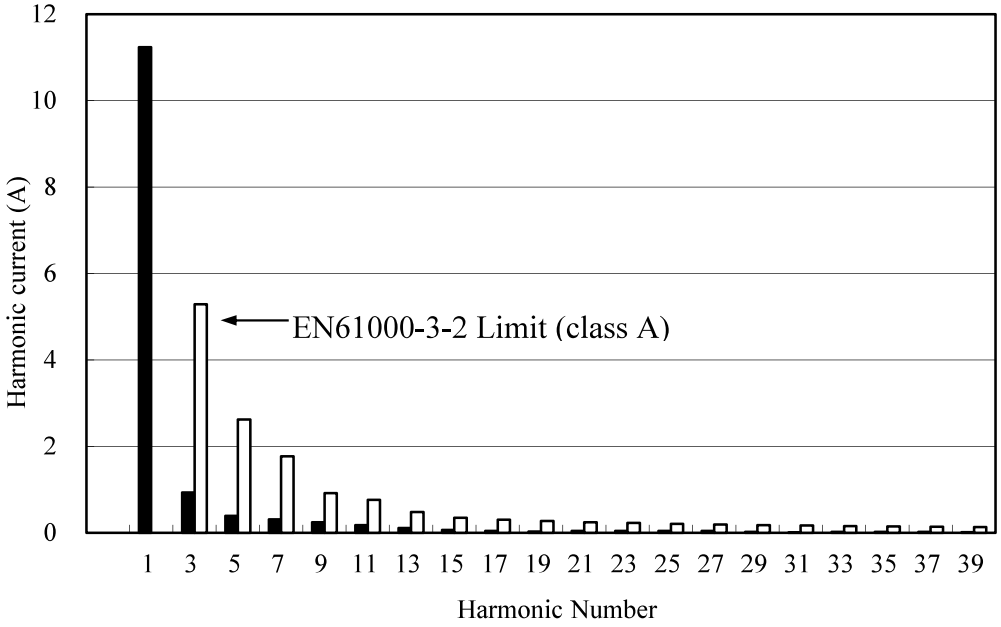


2.14 高調波成分

Input current harmonics

Conditions Vin :100VAC
Iout :100%
Tp :25°C

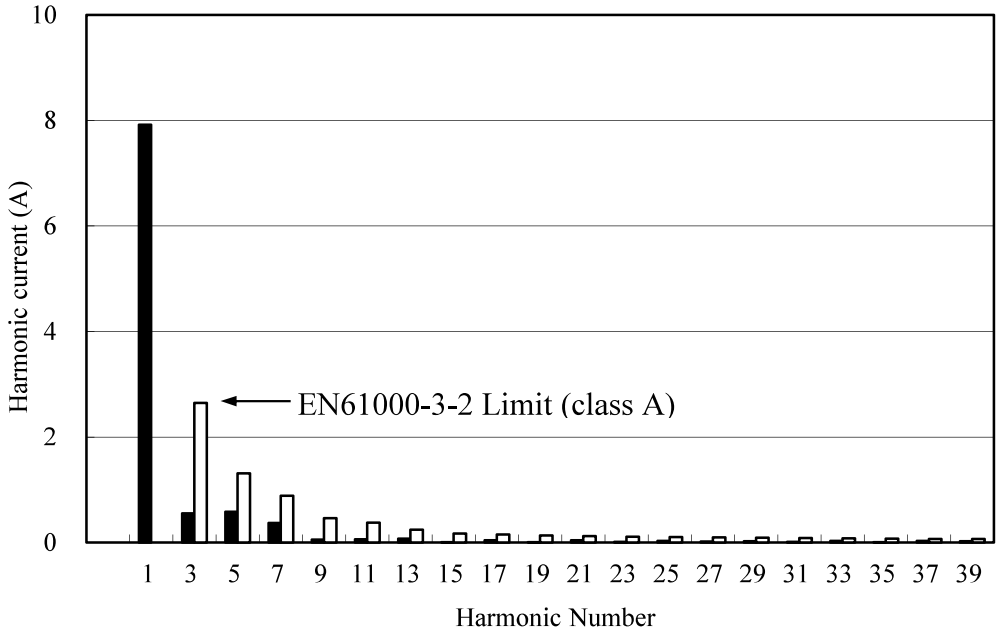
360V Po=1008W



Order No.	current(A)
1	11.24
2	0.00
3	0.93
4	0.01
5	0.39
6	0.00
7	0.31
8	0.00
9	0.24

Conditions Vin :200VAC
Iout :100%
Tp :25°C

360V Po=1512W

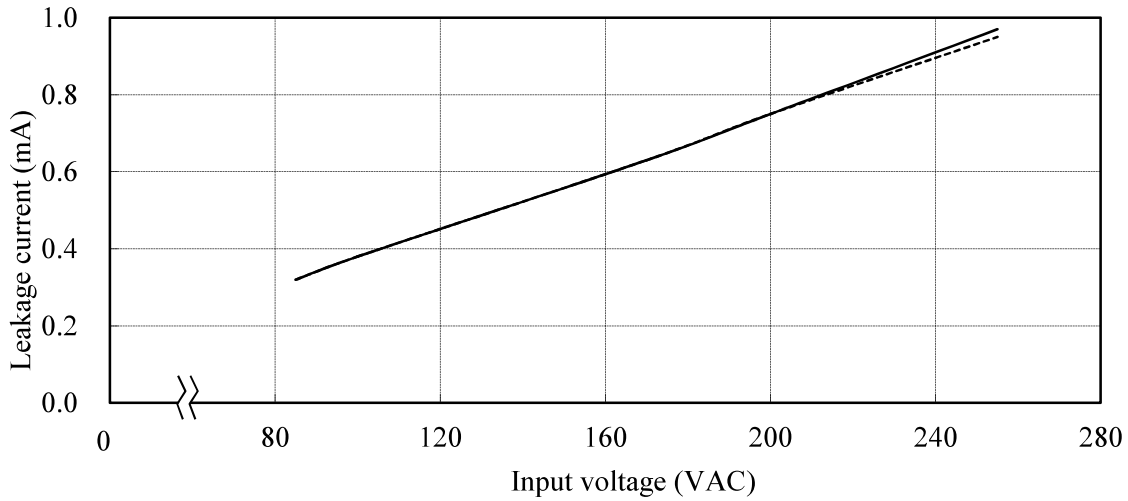


Order No.	current(A)
1	7.92
2	0.00
3	0.55
4	0.00
5	0.58
6	0.00
7	0.37
8	0.00
9	0.06

2.15 リーク電流特性
Leakage current characteristics

Conditions Iout : 0% -------
: 100% ———
Ta : 25°C
f : 50Hz
Equipment used : TYPE3226(YOKOGAWA)

360V Po=1008W



360V Po=1512W