

PF500A-360

Evaluation Data

型式データ

I N D E X

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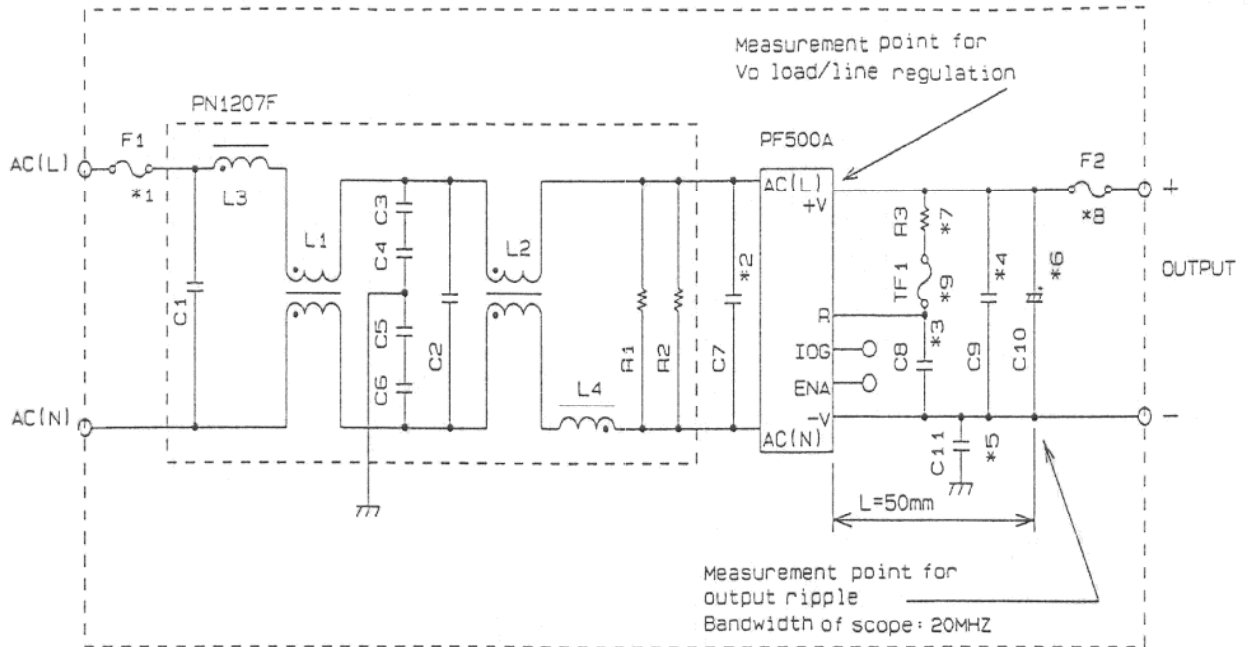
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使用記号 Terminology used

	定義	Definition
V_{in} ·····	入力電圧	Input voltage
V_{out} ·····	出力電圧	Output voltage
I_{in} ·····	入力電流	Input current
I_{out} ·····	出力電流	Output current
f ·····	周波数	Frequency
P_o ·····	出力電力 (最大出力電力)	Output power (Maximum Output power)
T_p ·····	ベースプレート温度	Base-plate temperature

1. 評価測定方法 Evaluation Method

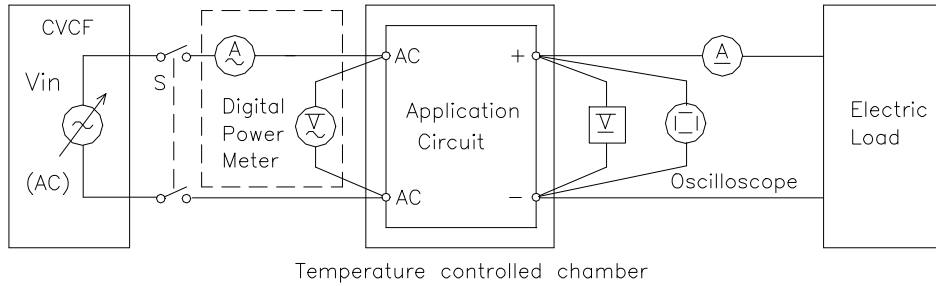
1.1 基本回路 Standard application circuit



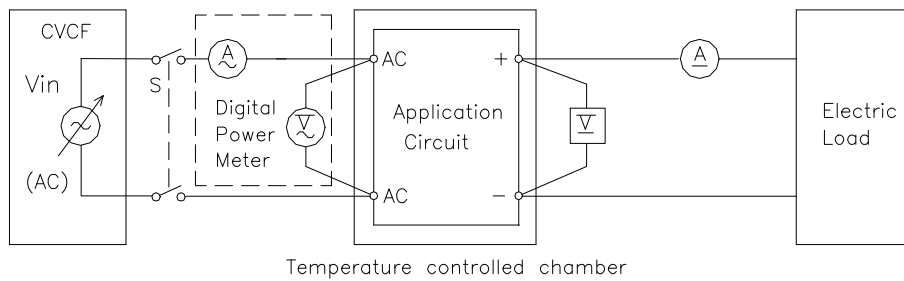
C1	AC250V	0.47uF	C9	630V	0.47uF	L1	2.8mHx2
C2	AC250V	1.5uF	C10	450V	220uFx3	L2	2.8mHx2
C3	AC250V	10000pF	C11	AC400V	4700pF	L3	150uH
C4	AC250V	10000pF	F1	AC250V	10A	L4	150uH
C5	AC250V	10000pF	F2	DC600V	3A	R1	1/2W 470kohm
C6	AC250V	10000pF	TF1	THERMAL FUSE		R2	1/2W 470kohm
C7	AC250V	1uFx2		130°C 250V 2A		R3	10w 5.1ohm
C8	630V	0.82uF					

1.2 測定回路 Measurement Circuit

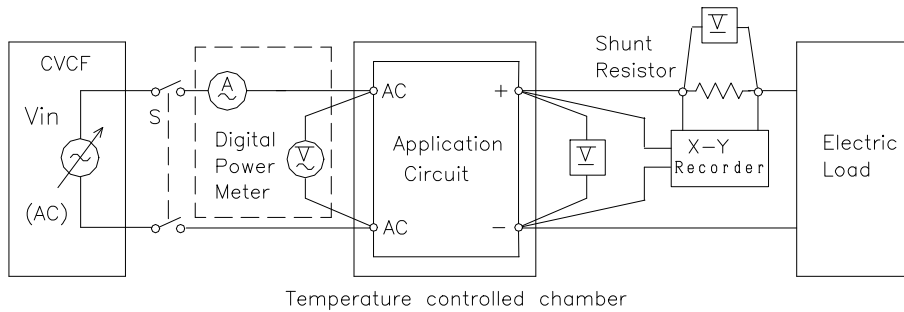
(1) 静特性 Steady state data



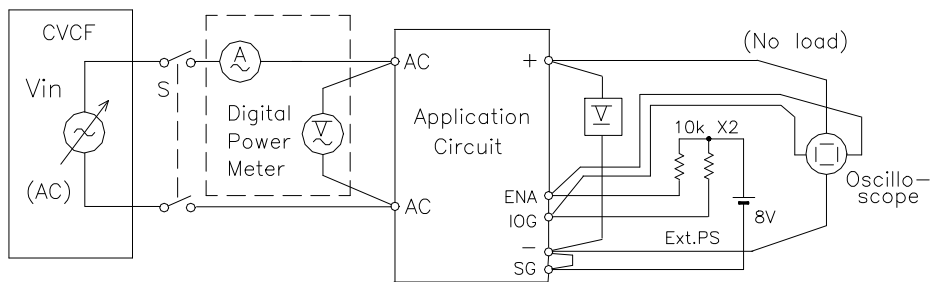
(2) 通電ドリフト特性 Warm up voltage drift characteristics



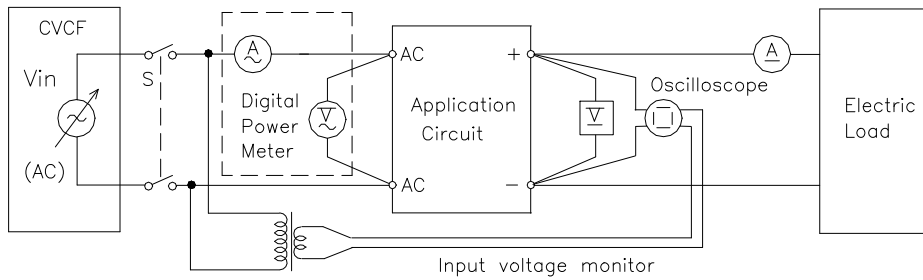
(3) 電流制限特性 Current limit characteristics



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



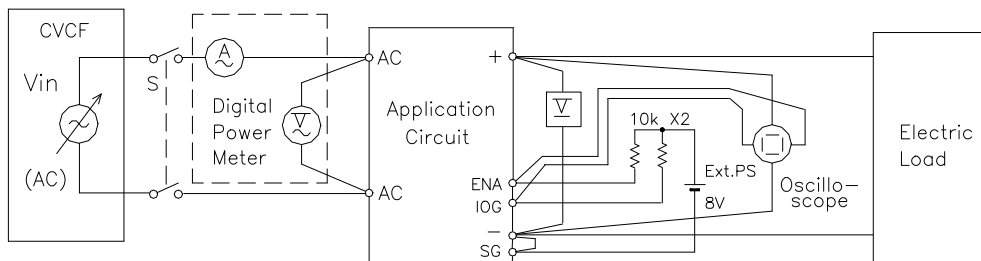
(5) 出力立ち上がり特性 Output rise characteristics



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

上記(5)と同じ Same as (5) above

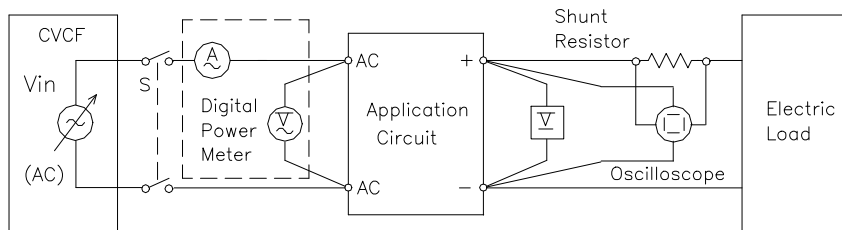
(7) IOG・ENA 信号対出力電圧 IOG & ENA signal vs. output voltage



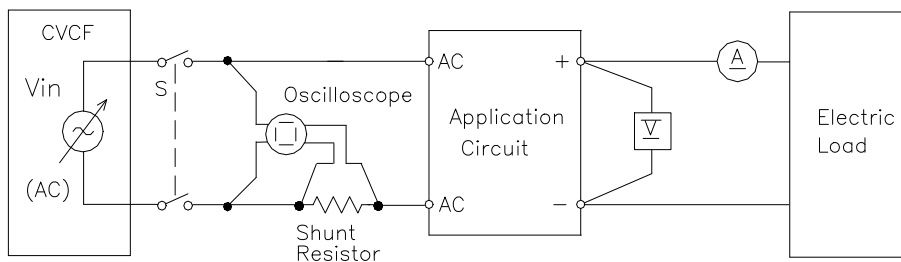
(8) 過渡応答（入力急変）特性 Dynamic line response characteristics

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

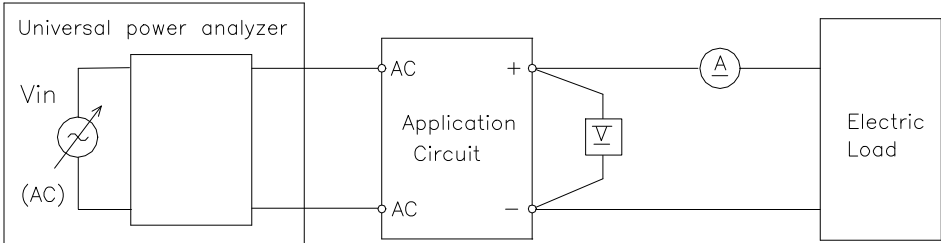


(10) 入力サージ電流（突入電流）特性 Inrush current characteristics

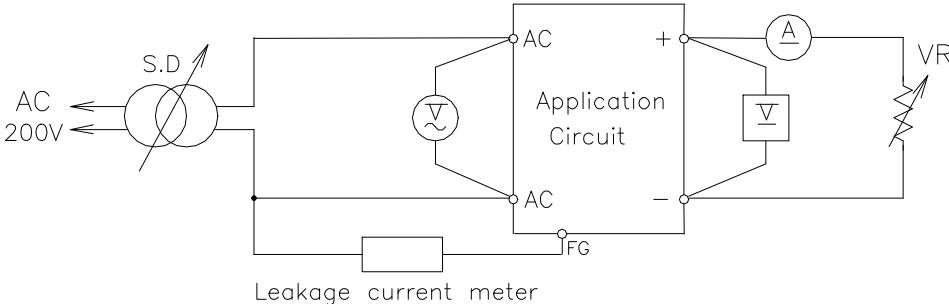


(11) 入力電流波形 Input current waveform
上記(9)と同じ Same as (9) above

(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	CVCF	KIKUSUI	PCR2000L
9	LEAKAGE CURRENT METER	YOKOGAWA	TYPE3226
10	X-Y RECORDER	GRAPHTEC	WX3000
11	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=504W

1. Regulation - line and load

Condition Tp : 25 °C

Iout \ Vin	85VAC	100VAC	200VAC	255VAC	line regulation	
0%	360.6V	360.6V	360.6V	360.7V	0.1V	0.03%
50%	360.5V	360.5V	360.6V	360.7V	0.2V	0.06%
100%	360.3V	360.4V	360.6V	360.6V	0.4V	0.11%
load regulation	0.3V	0.2V	0.1V	0.1V		
	0.08%	0.06%	0.03%	0.03%		

2. Temperature drift

Conditions Vin : 100VAC

Iout : 100%

Tp	-20 °C	+25 °C	+85 °C	temperature stability	
Vout	360.6V	360.4V	359.9V	0.7V	0.19%

360V

Po=756W

1. Regulation - line and load

Condition Tp : 25 °C

Iout \ Vin	170VAC	200VAC	255VAC	line regulation	
0%	360.6V	360.6V	360.7V	0.1V	0.03%
50%	360.6V	360.6V	360.7V	0.1V	0.03%
100%	360.5V	360.5V	360.6V	0.1V	0.03%
load regulation	0.1V	0.1V	0.1V		
	0.03%	0.03%	0.03%		

2. Temperature drift

Conditions Vin : 200VAC

Iout : 100%

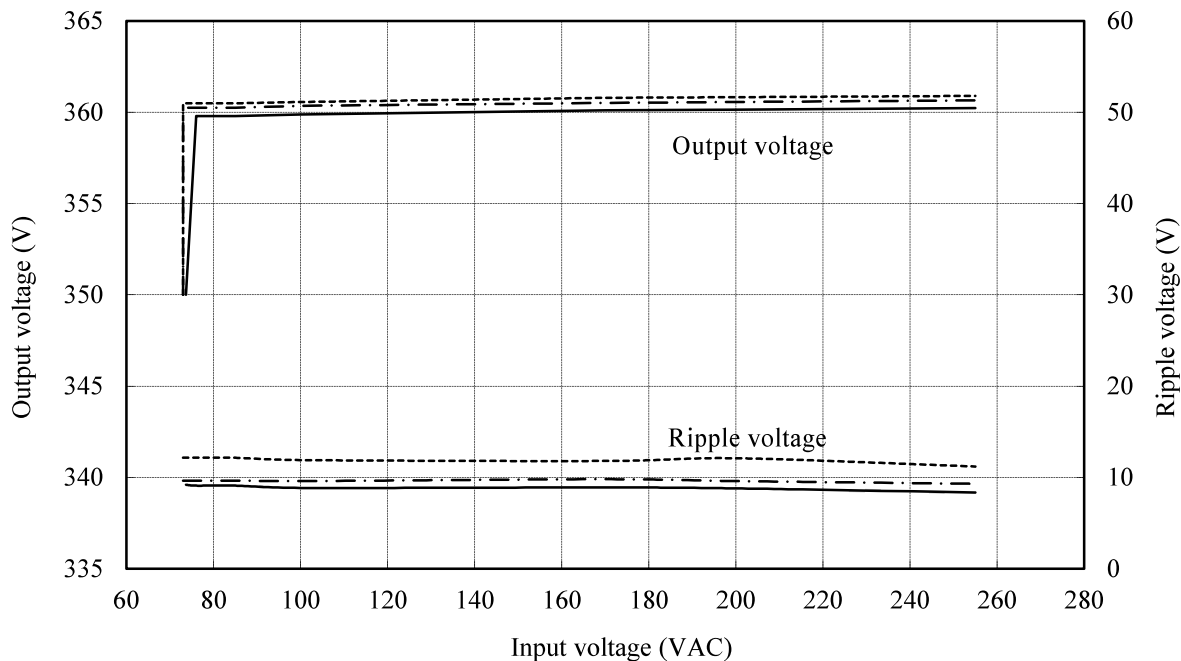
Tp	-20 °C	+25 °C	+85 °C	temperature stability	
Vout	360.7V	360.5V	360.0V	0.8V	0.22%

(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 : 660 uF
 Tp : -20 °C -----
 : 25 °C - · - · - ·
 : 85 °C _____

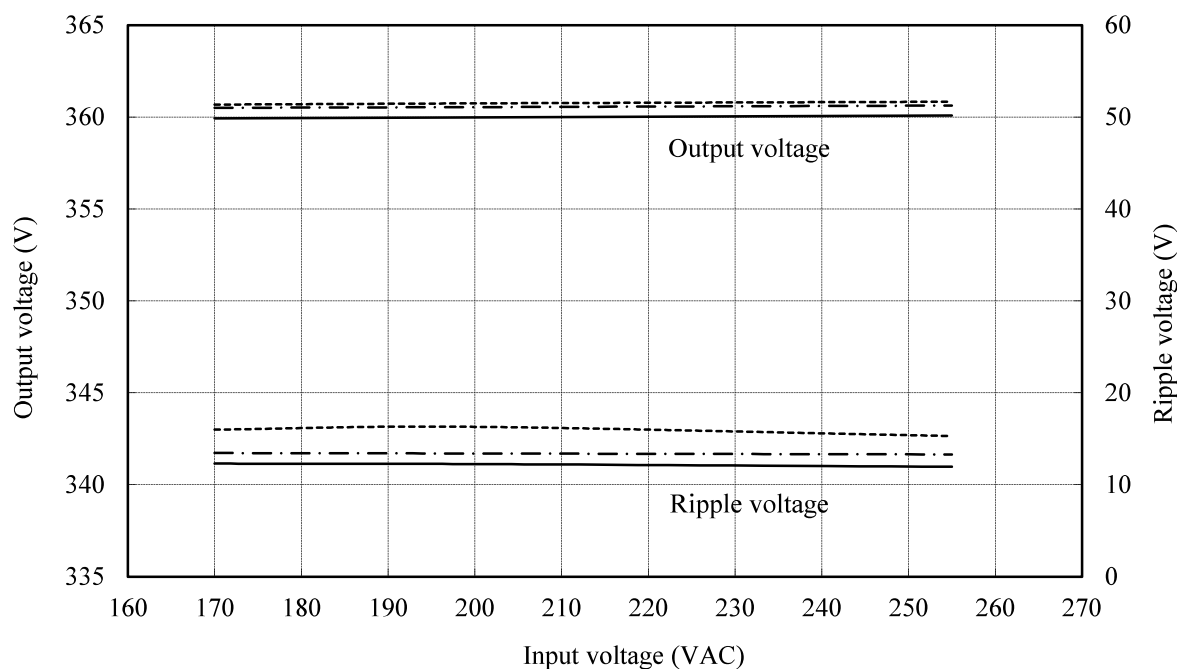
360V

Po=504W



360V

Po=756W

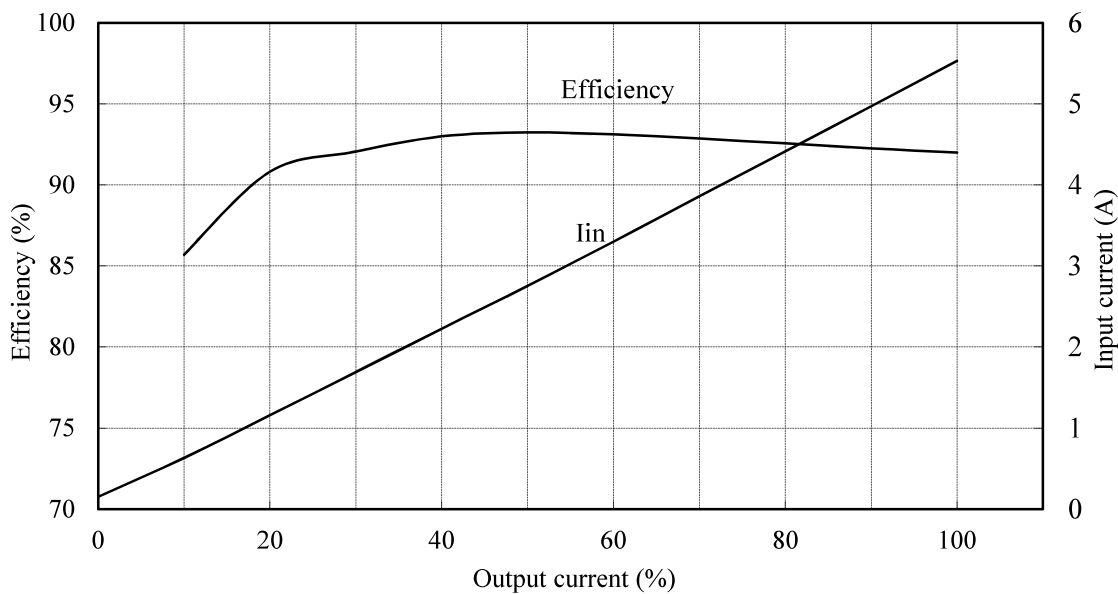


(3) 効率・入力電流対出力電流
Efficiency and input current vs. output current

Conditions V_{in} : 100 VAC
 T_p : 25 °C

360V

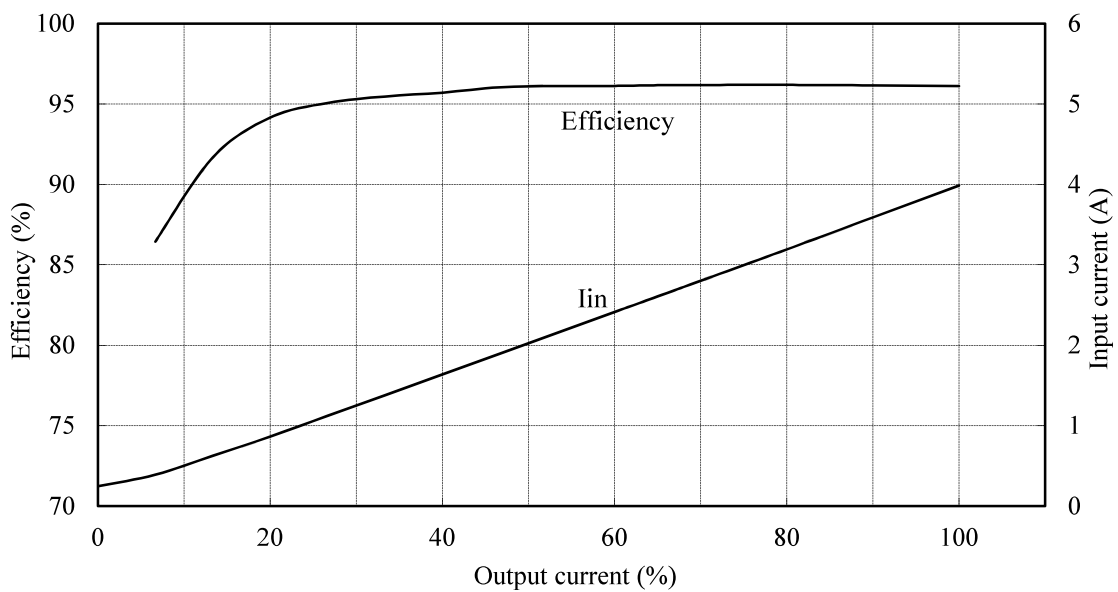
$P_o=504W$



Conditions V_{in} : 200 VAC
 T_p : 25 °C

360V

$P_o=756W$

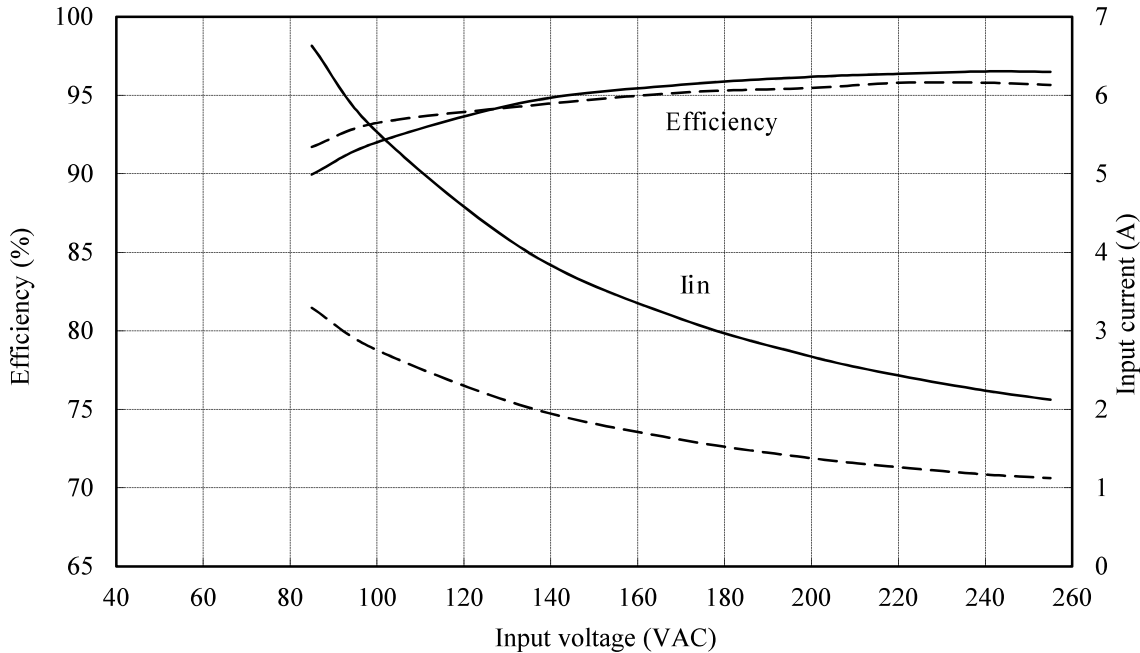


(4) 効率対入力電圧
Efficiency vs. input voltage

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

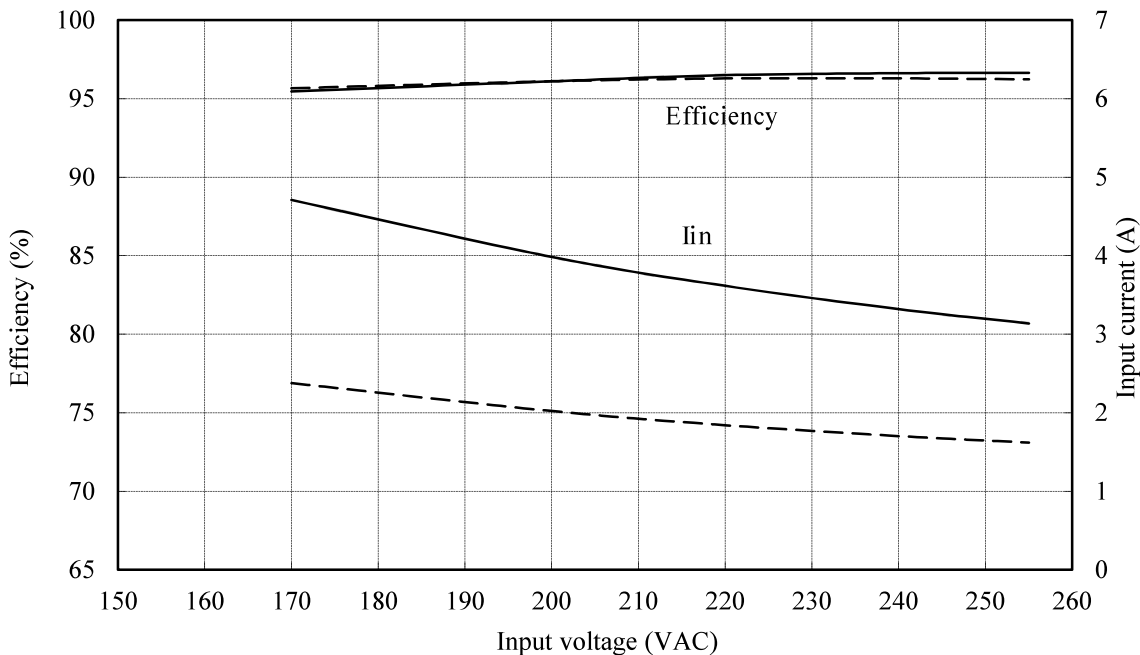
360V

Po=504W



360V

Po=756W



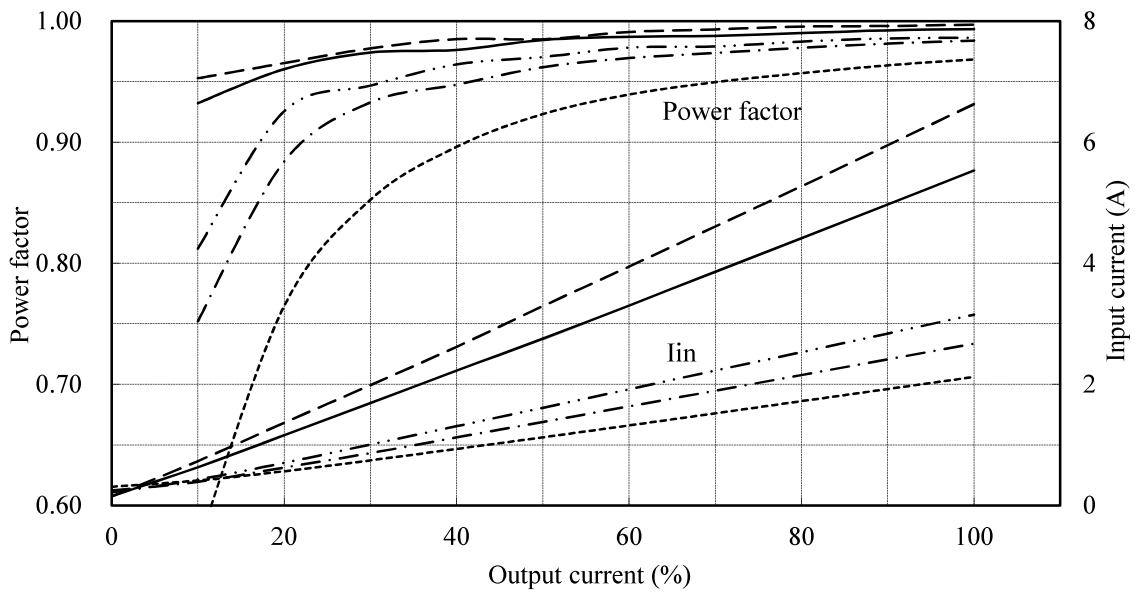
(5) 力率・入力電流対出力電流
Power factor and input current vs. output current

Conditions Vin : 85 VAC ---
 100 VAC ———
 170 VAC - · - · - ·
 200 VAC - · - · - ·
 255 VAC - - - - -

360V

Po=504W

Tp : 25 °C

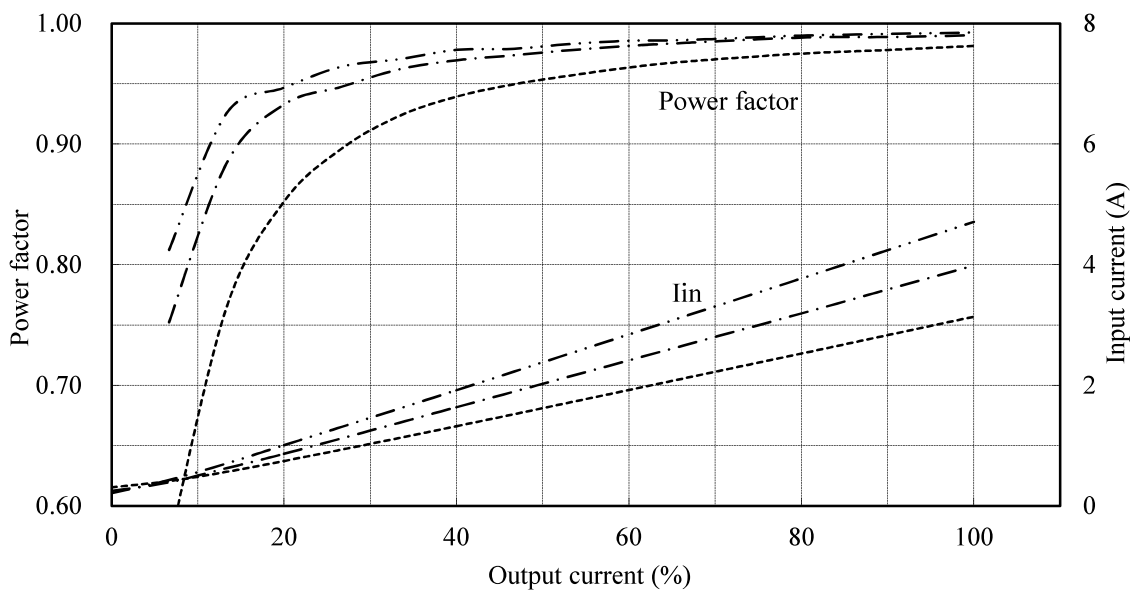


Conditions Vin : 170 VAC - · - · - ·
 200 VAC - · - · - ·
 255 VAC - - - - -

360V

Po=756W

Tp : 25 °C



2.2 通電ドリフト特性

Warm up voltage drift characteristics

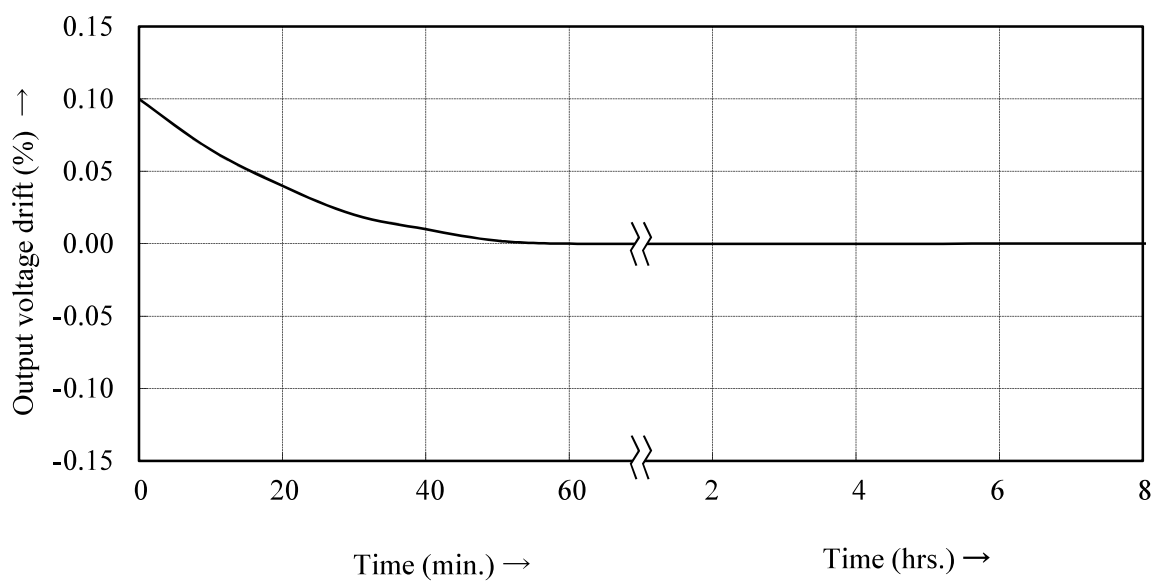
Conditions V_{in} : 100 VAC

I_o : 100 %

T_p : 25 °C

360V

$P_o=504W$



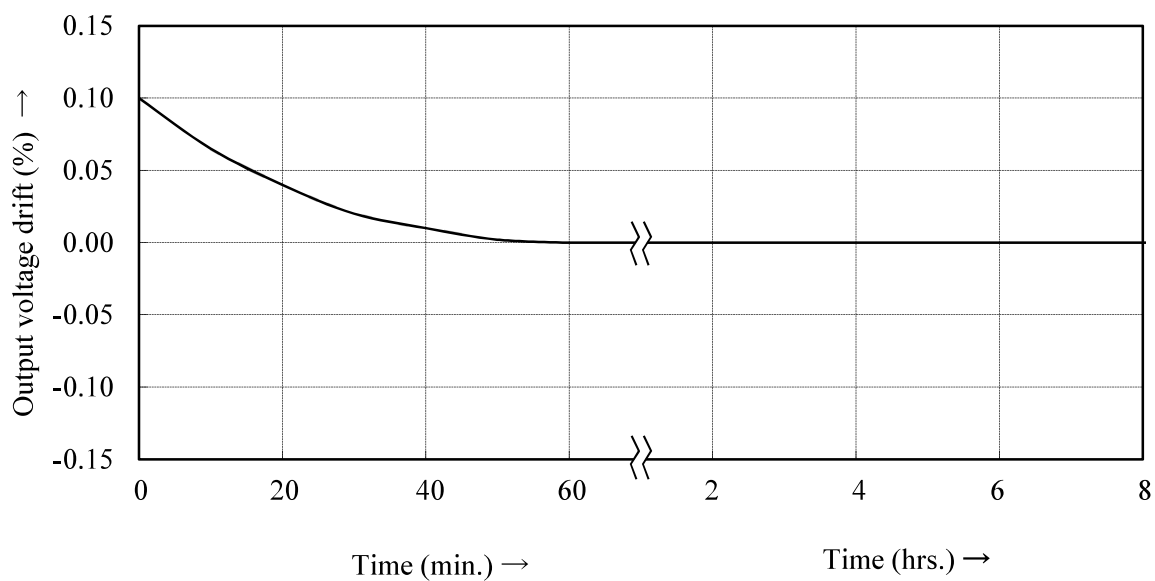
Conditions V_{in} : 200 VAC

I_o : 100 %

T_p : 25 °C

360V

$P_o=756W$

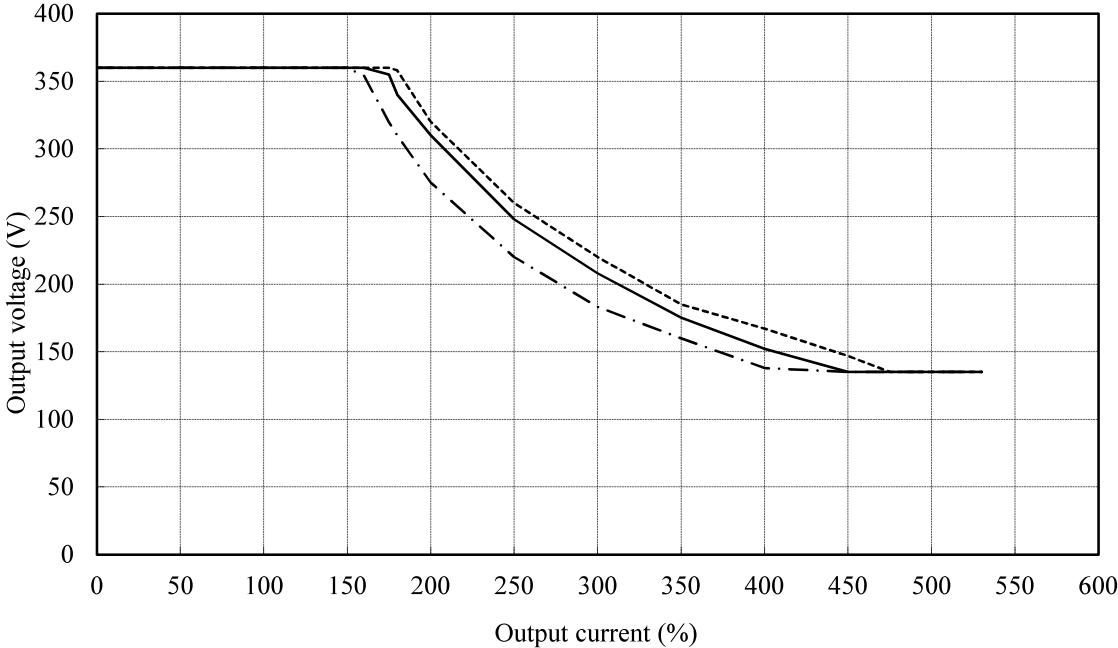


2.3 電流制限特性
Current limit characteristics

Conditions Tp : -20°C -----
 25°C ———
 85°C - · - · -
Vin : 100VAC

360V

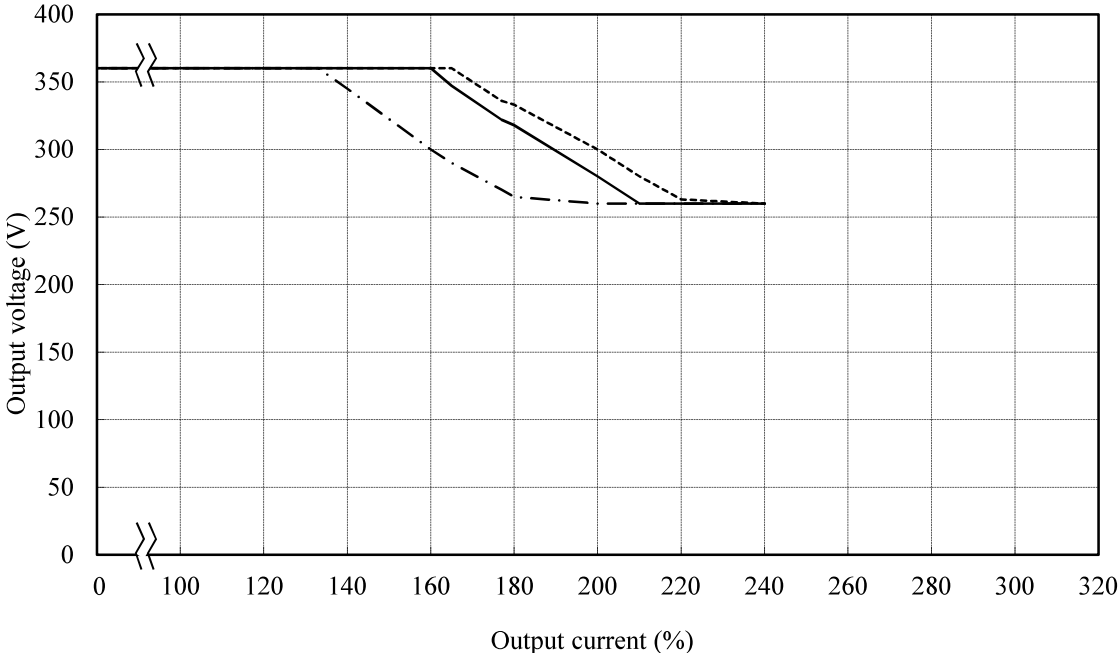
Po = 504W



Conditions Tp : -20°C -----
 : 25°C ———
 : 85°C - · - · -
Vin : 200VAC

360V

Po = 756W



2.3 電流制限特性

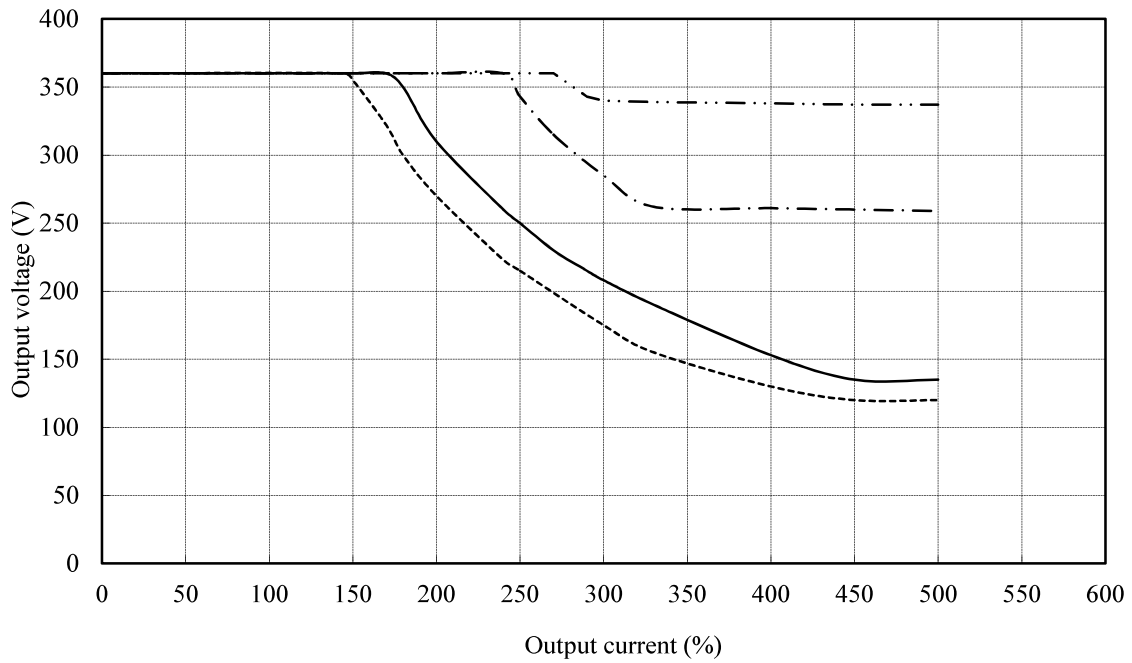
Current limit characteristics

Conditions Vin : 85VAC -----
 100VAC —————
 200VAC - - - - -
 255VAC - · - · - ·

360V

Po = 504W

Tp : 25°C

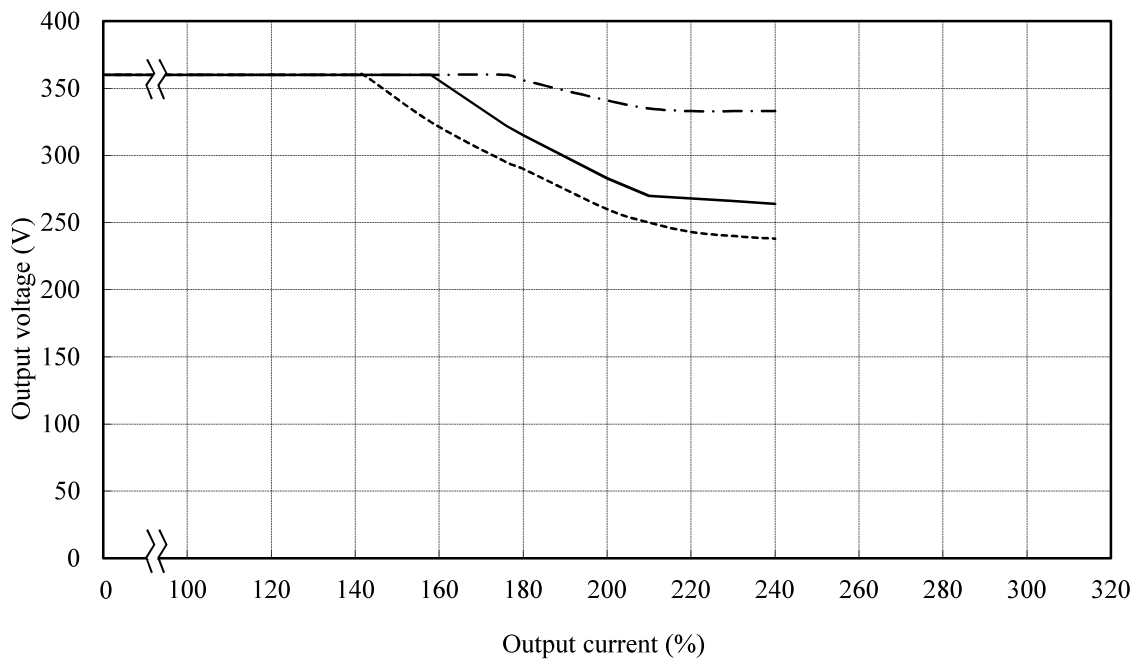


Conditions Vin : 170VAC -----
 200VAC —————
 255VAC - - - - -

360V

Po = 756W

Tp : 25°C

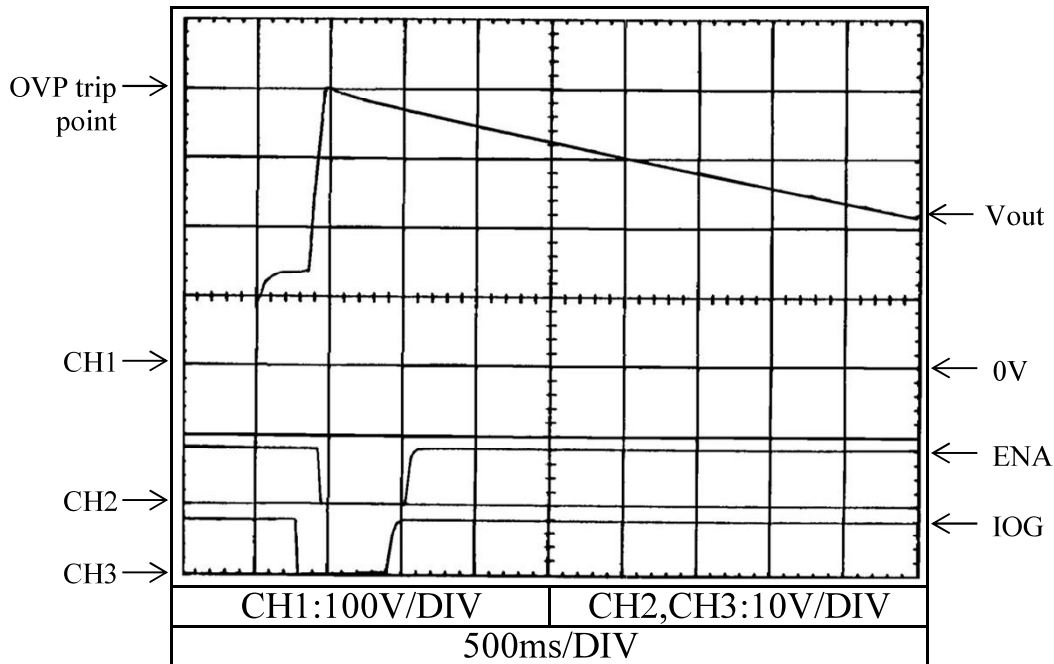


2.4 過電圧保護特性

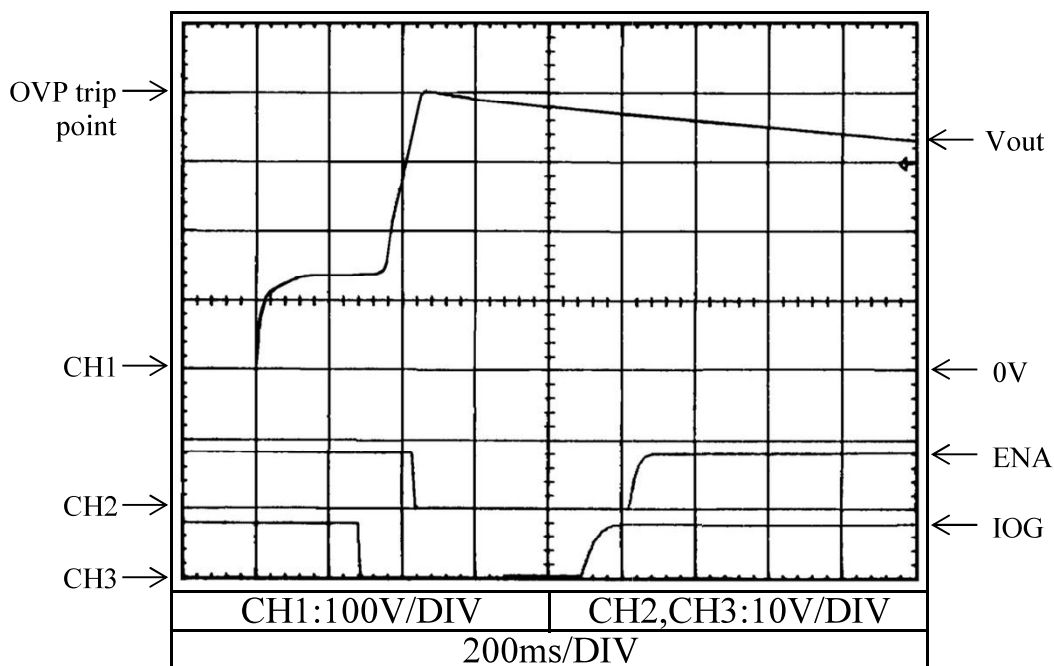
Over voltage protection (OVP)

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

360V



360V

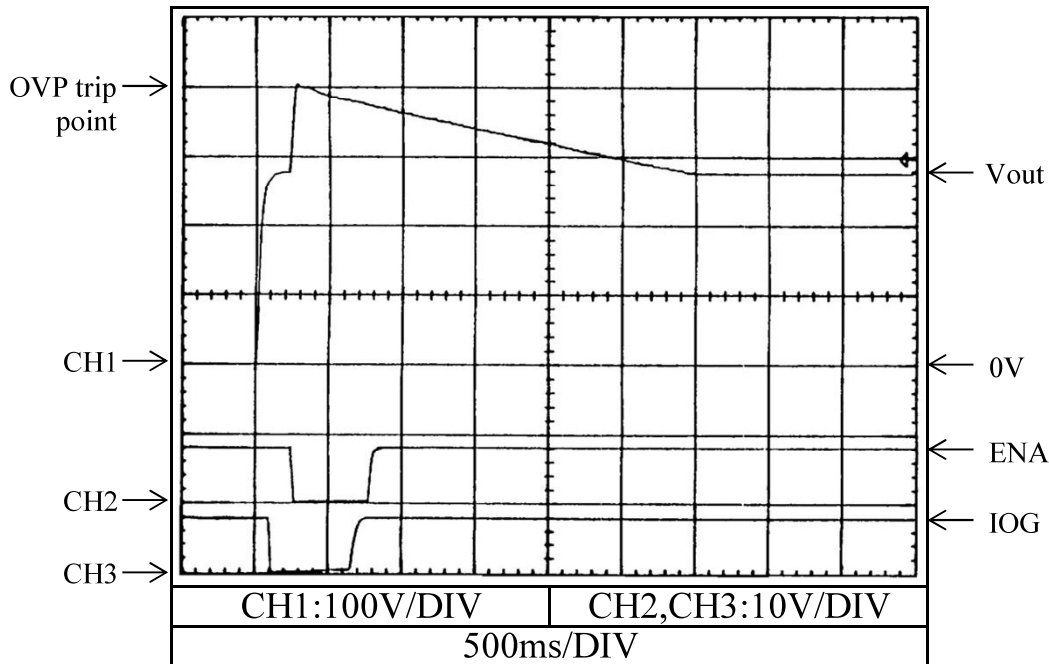


2.4 過電圧保護特性

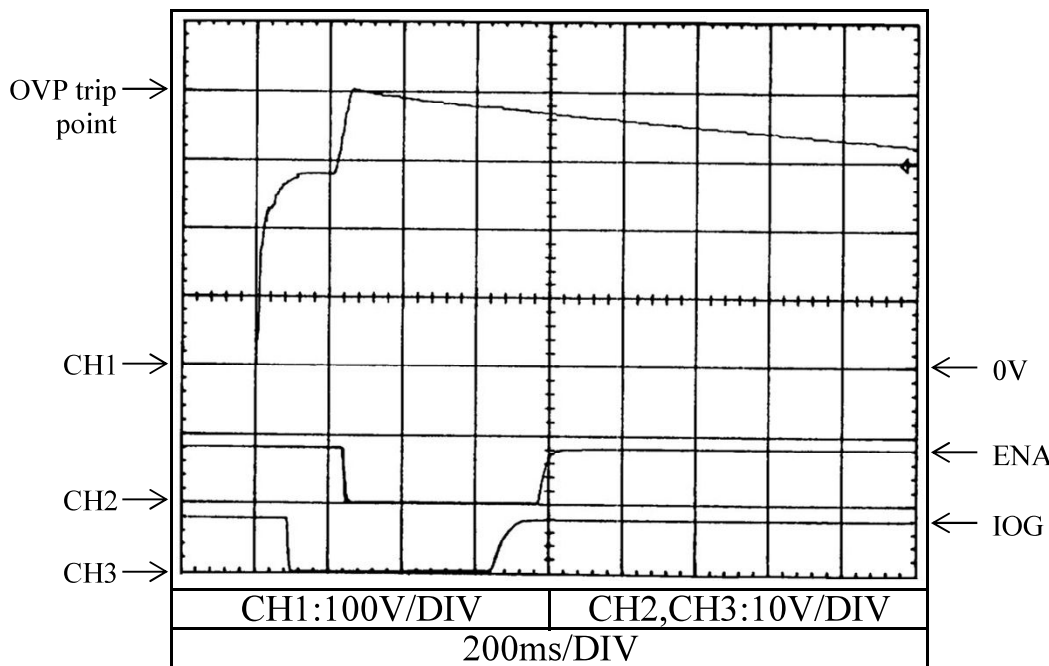
Over voltage protection (OVP)

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

360V



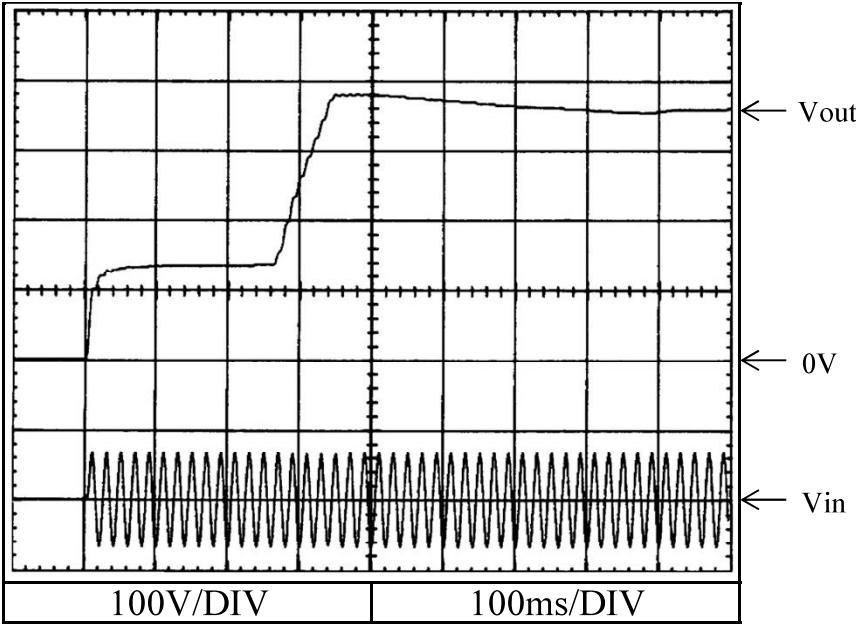
360V



2.5 出力立上り特性
Output rise characteristics

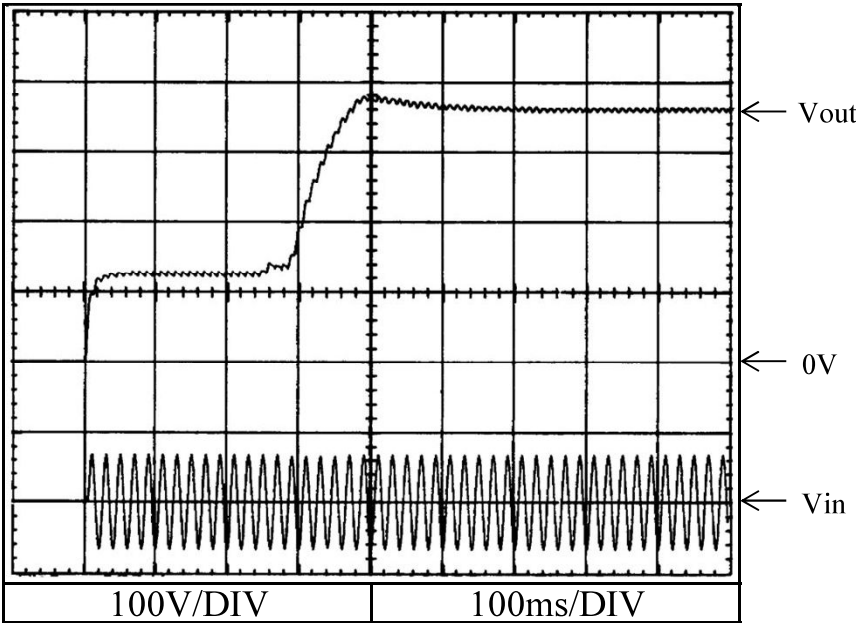
Conditions Vin : 100VAC
Iout : 0%
Tp : 25°C

360V



Conditions Vin : 100VAC
Iout : 100% (Po=504W)
Tp : 25°C

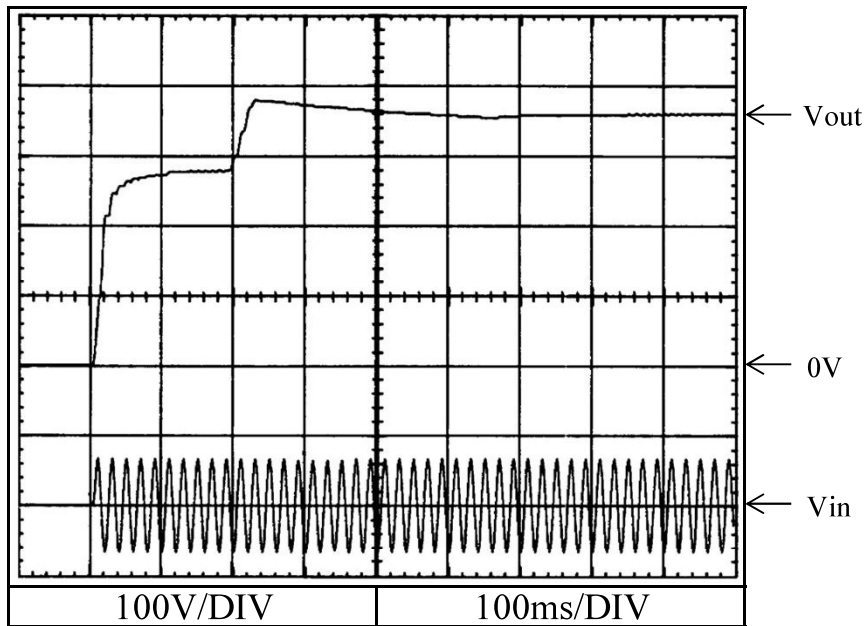
360V



2.5 出力立上り特性
Output rise characteristics

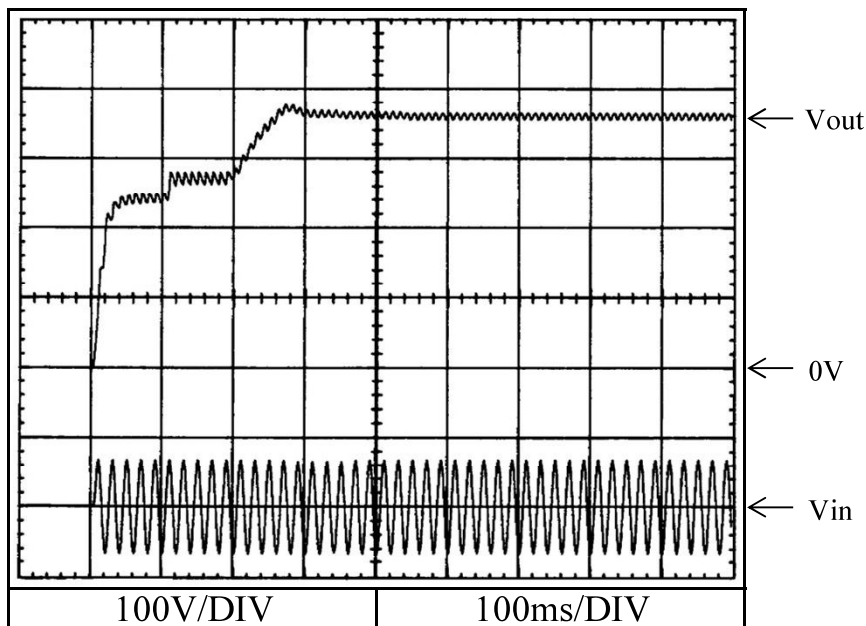
Conditions V_{in} : 200VAC
 I_{out} : 0%
 T_p : 25°C

360V



Conditions V_{in} : 200VAC
 I_{out} : 100% ($P_o=756W$)
 T_p : 25°C

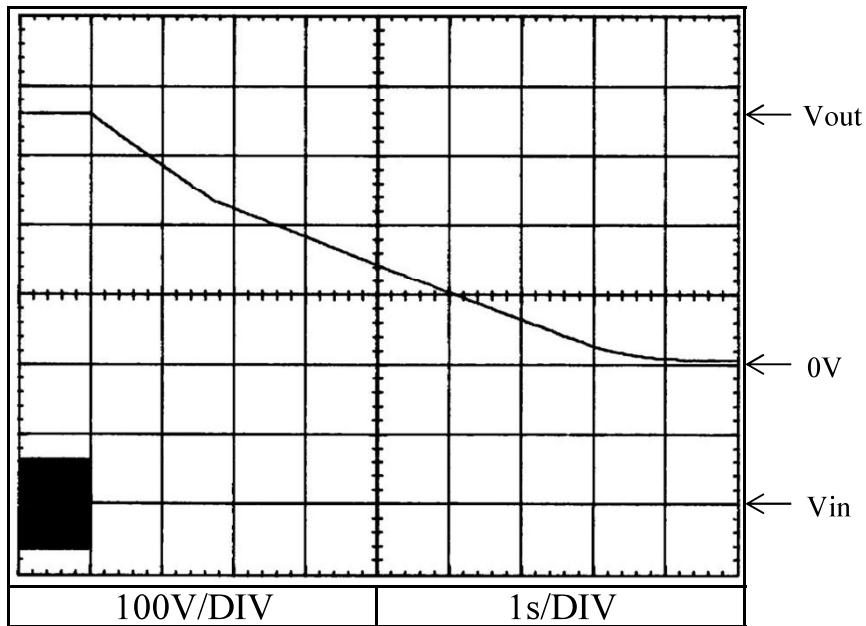
360V



2.6 出力立下り特性
Output fall characteristics

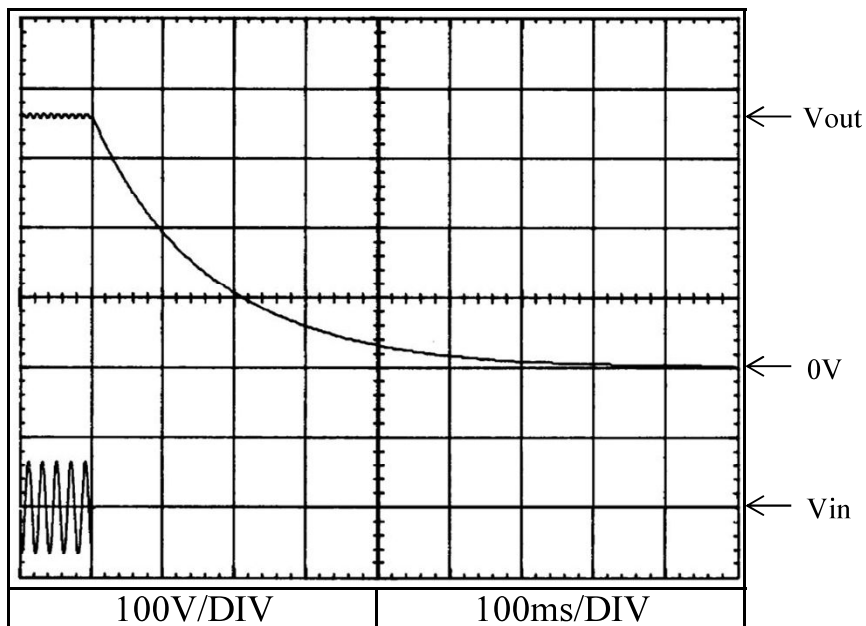
Conditions Vin : 100VAC
Iout : 0%
Tp : 25°C

360V



Conditions Vin : 100VAC
Iout : 100% (Po=504W)
Tp : 25°C

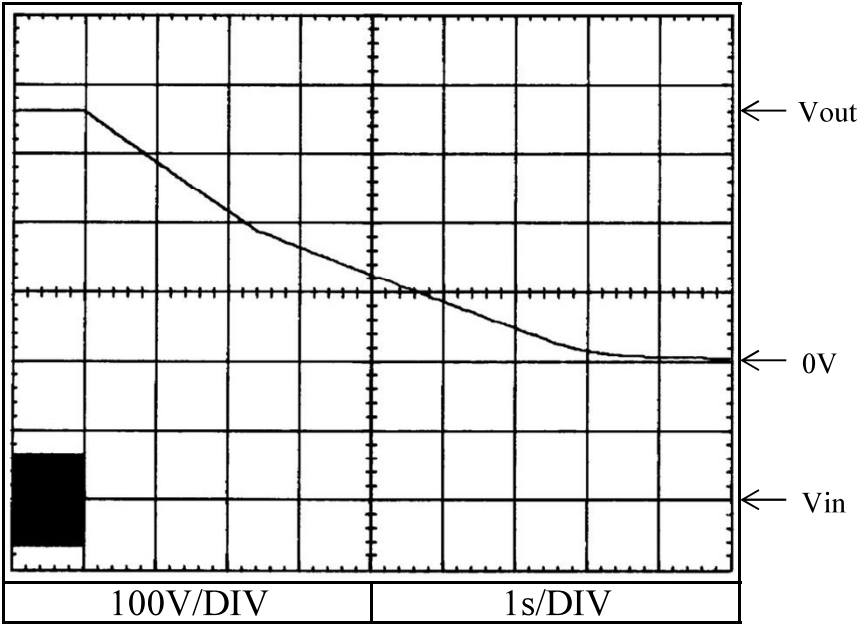
360V



2.6 出力立下り特性
Output fall characteristics

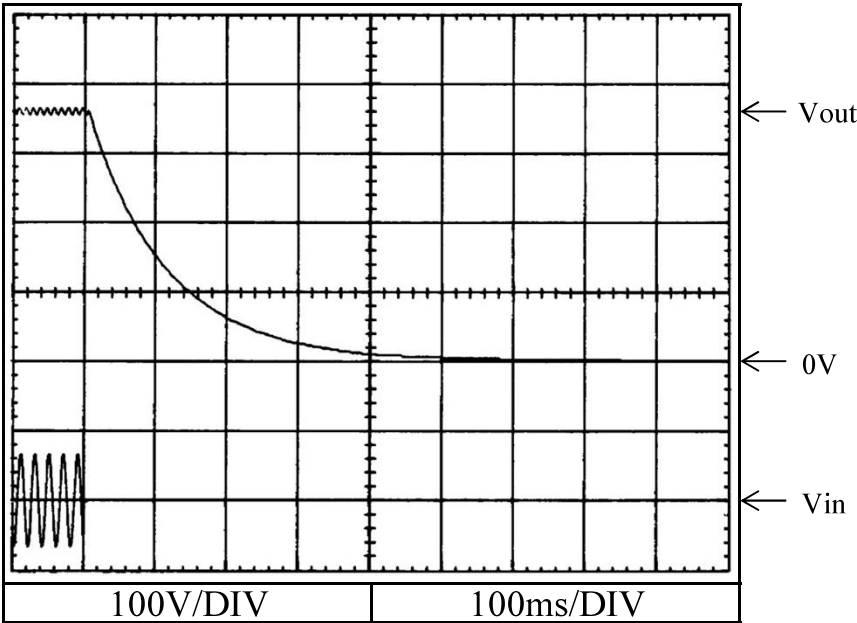
Conditions Vin : 200VAC
Iout : 0%
Tp : 25°C

360V



Conditions Vin : 200VAC
Iout : 100% (Po=756W)
Tp : 25°C

360V

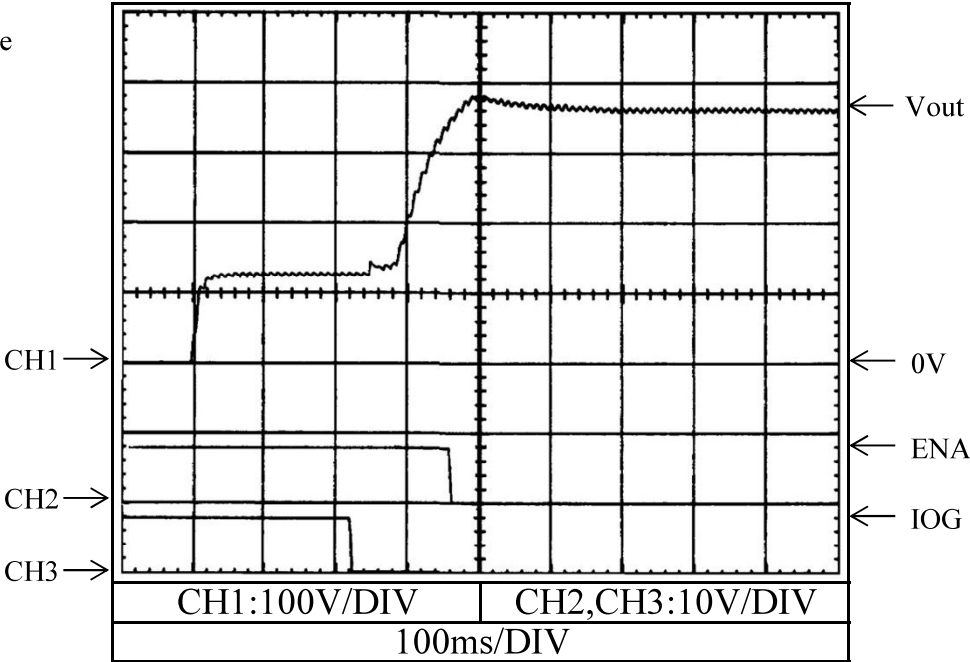


2.7 IOG・ENA信号对出力電圧
IOG & ENA signals vs. output voltage

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

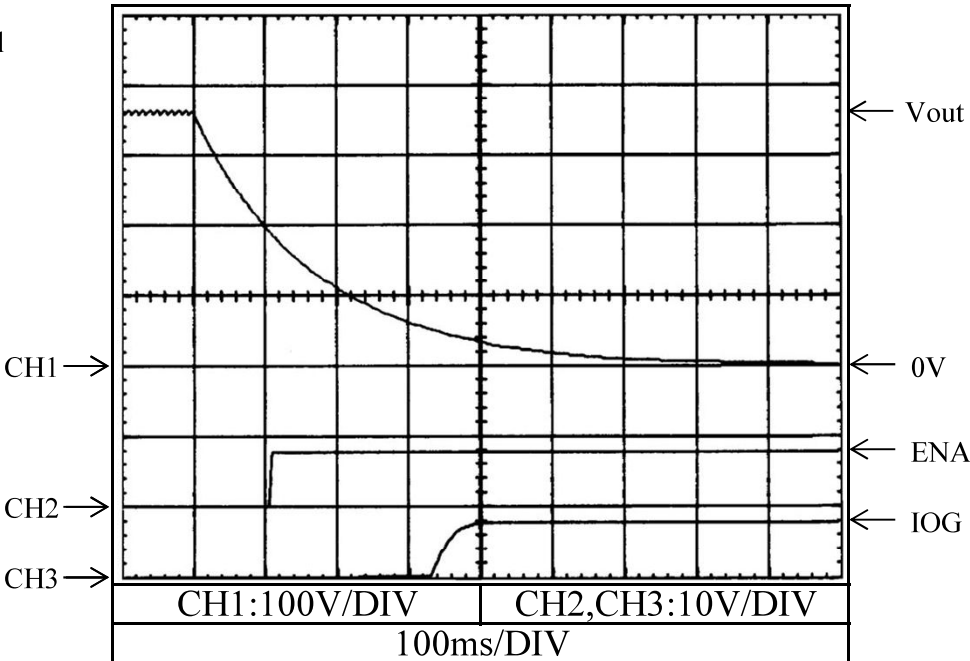
360V

(A) Rise



360V

(B) Fall

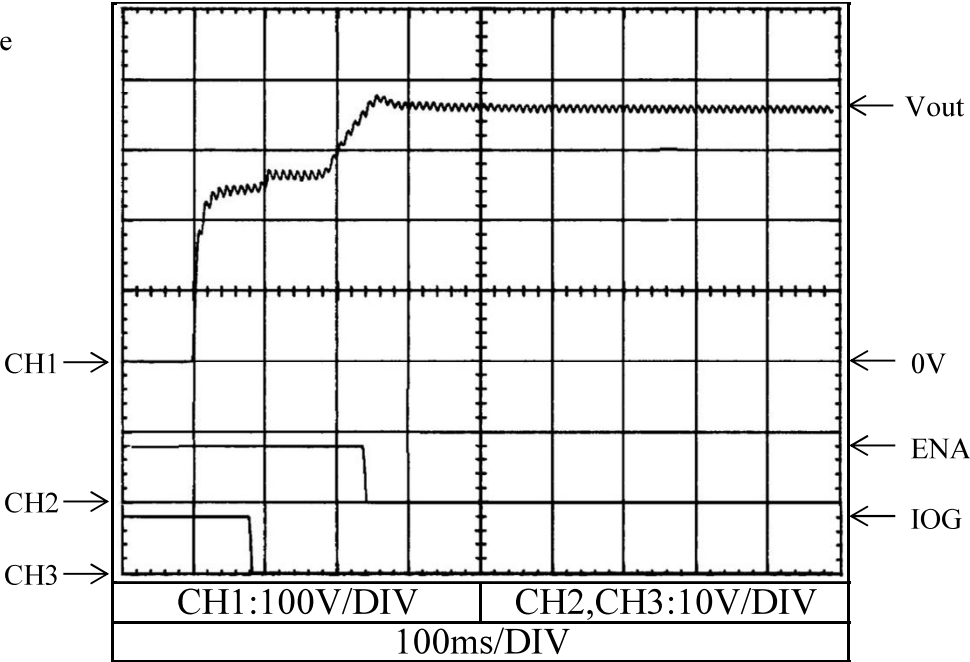


2.7 IOG・ENA信号对出力電圧
IOG & ENA signals vs output voltage

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

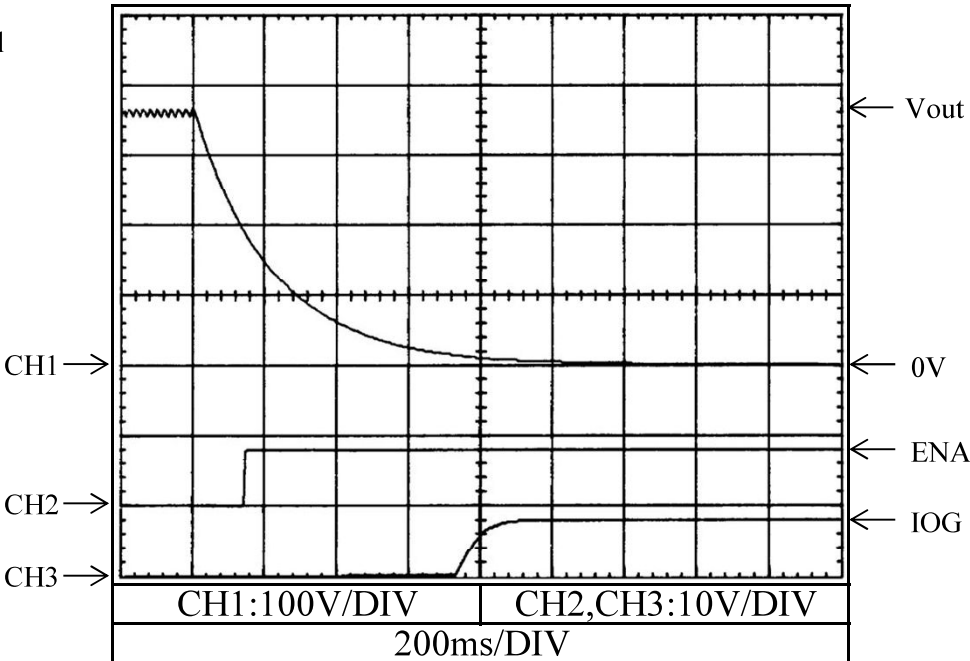
360V

(A) Rise



360V

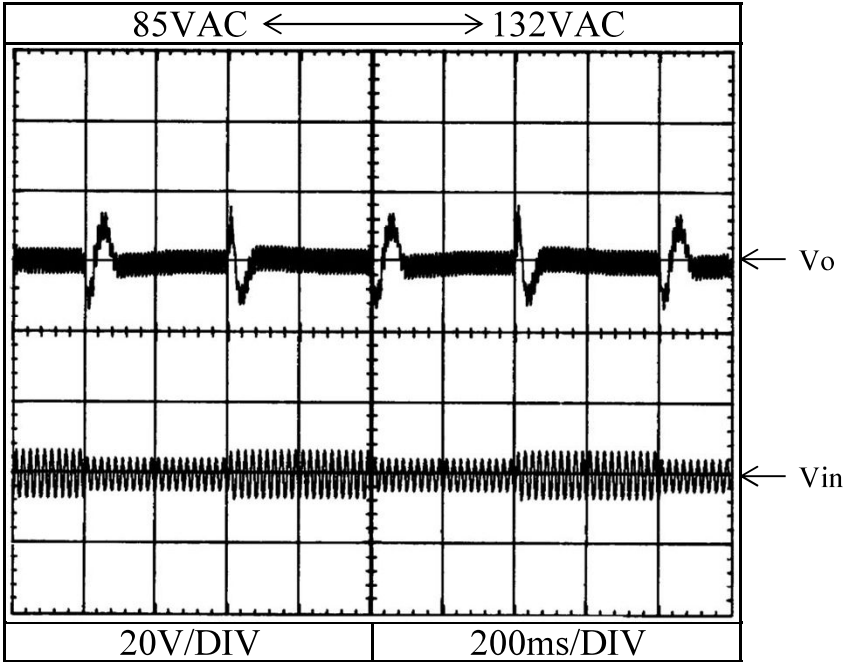
(B) Fall



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

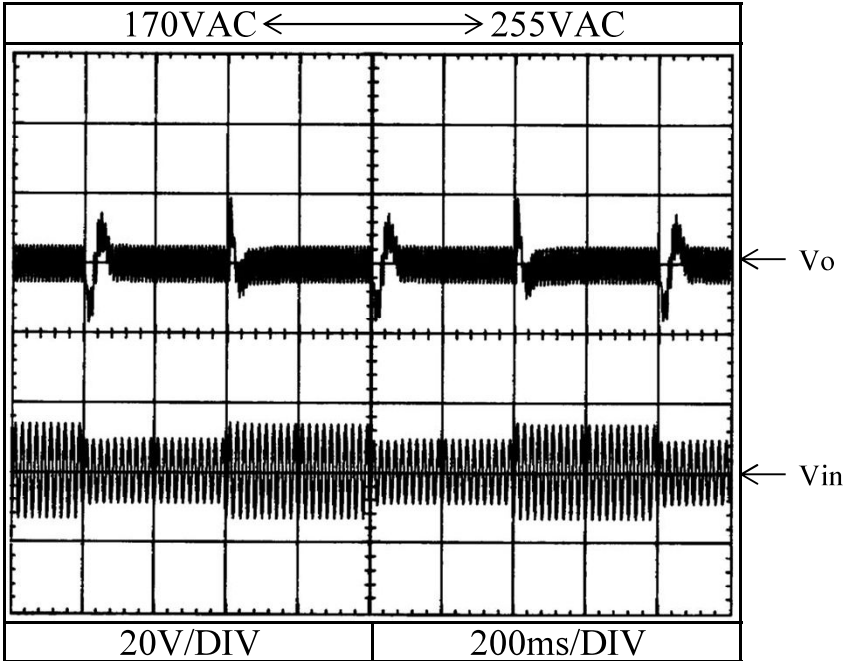
Conditions Iout : 100% (Po=504W)
Tp : 25°C

360V



Conditions Iout : 100% (Po=756W)
Tp : 25°C

360V

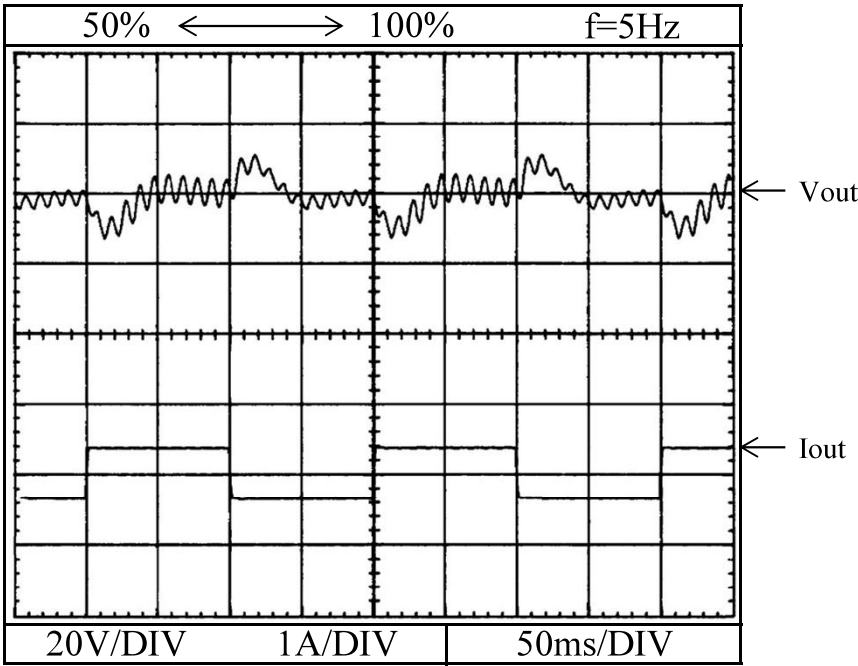


2.9 過渡応答 (負荷急変) 特性
Dynamic load response characteristics

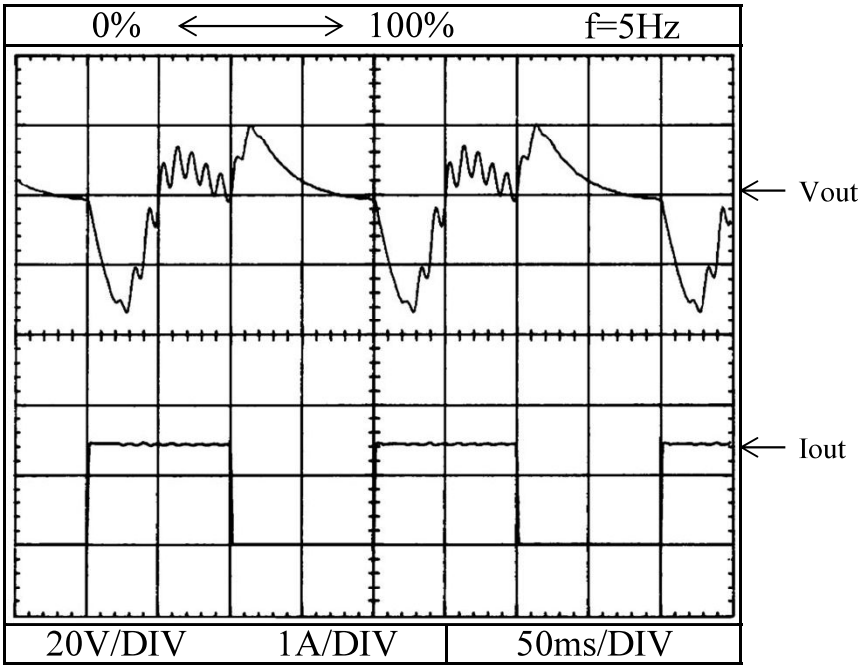
Conditions Vin : 100VAC
Tp : 25°C

360V

Po=504W



360V

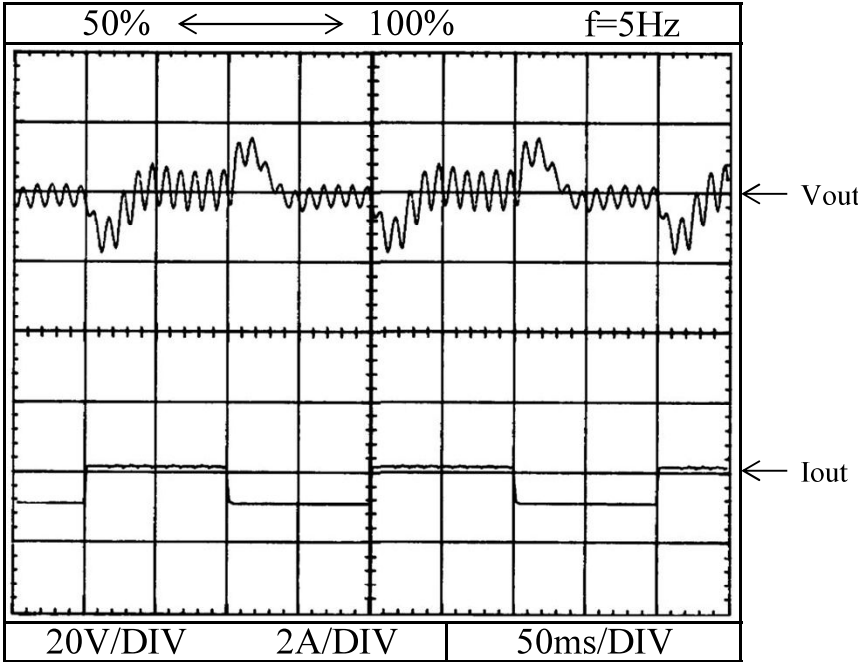


2.9 過渡応答 (負荷急変) 特性
Dynamic load response characteristics

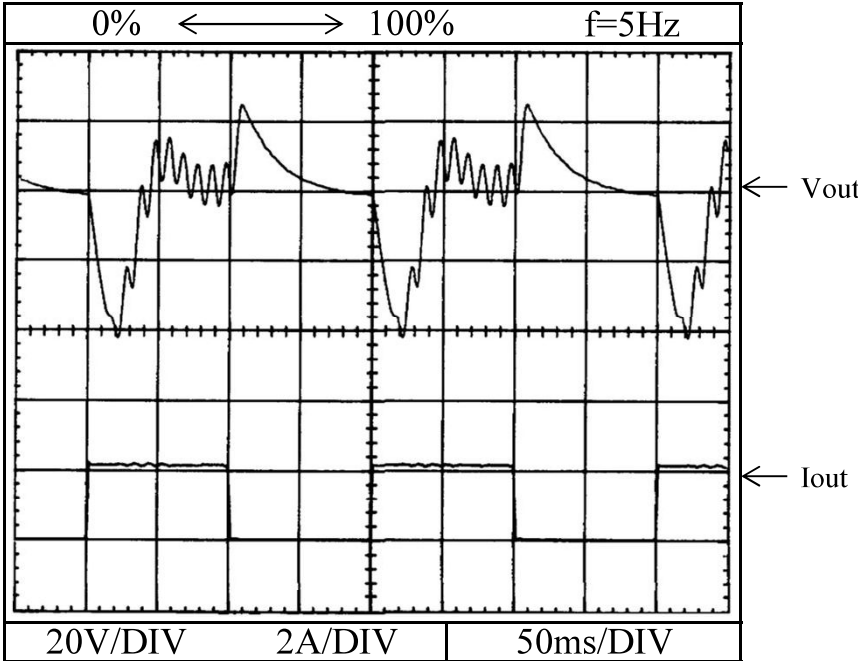
Conditions V_{in} : 200VAC
 T_p : 25°C

360V

$P_o=756W$



360V

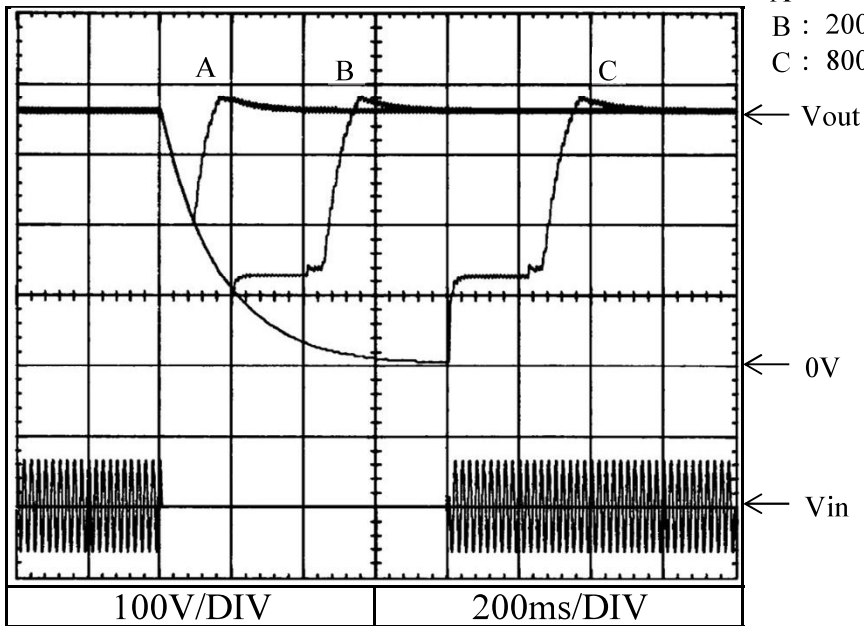


2.10 入力瞬停特性

Response to brown out characteristics

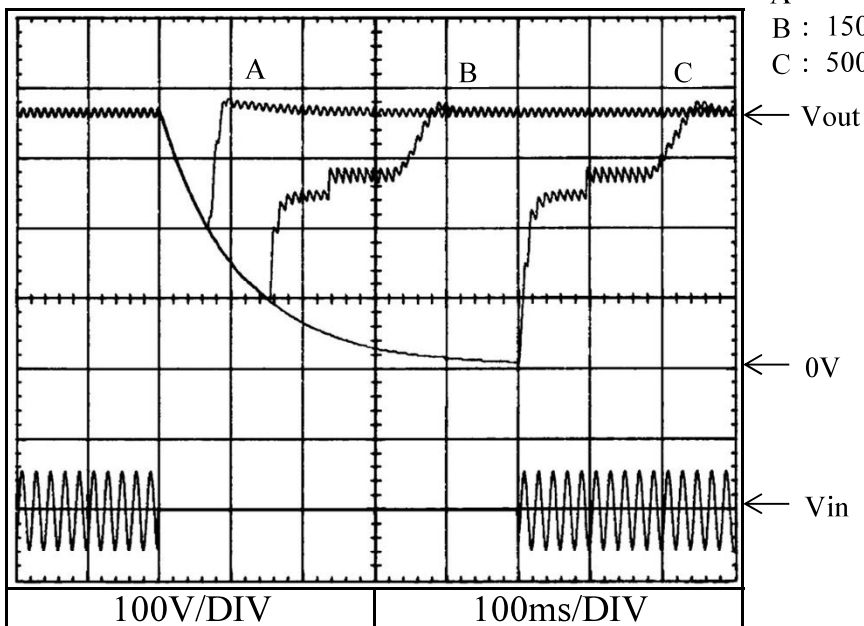
Conditions Vin : 100VAC
 Iout : 100%
 Tp : 25°C
 brown out time
 A : 92ms
 B : 200ms
 C : 800ms

360V



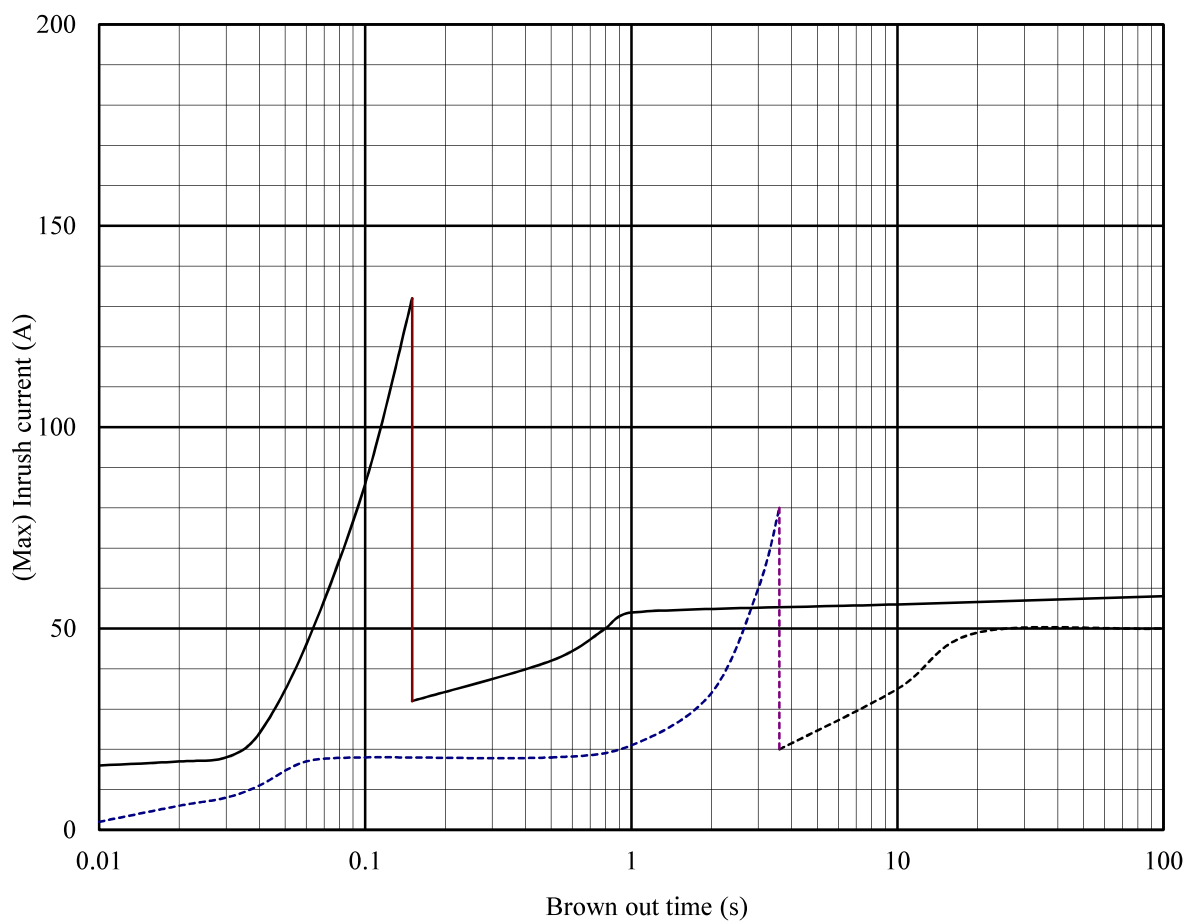
Conditions Vin : 200VAC
 Iout : 100%
 Tp : 25°C
 brown out time
 A : 65ms
 B : 150ms
 C : 500ms

360V



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

Conditions Cout : 1200 uF
 Vin : 240 V
 Iout : 0 % -----
 : 100 % -----
 Tp : 25 °C

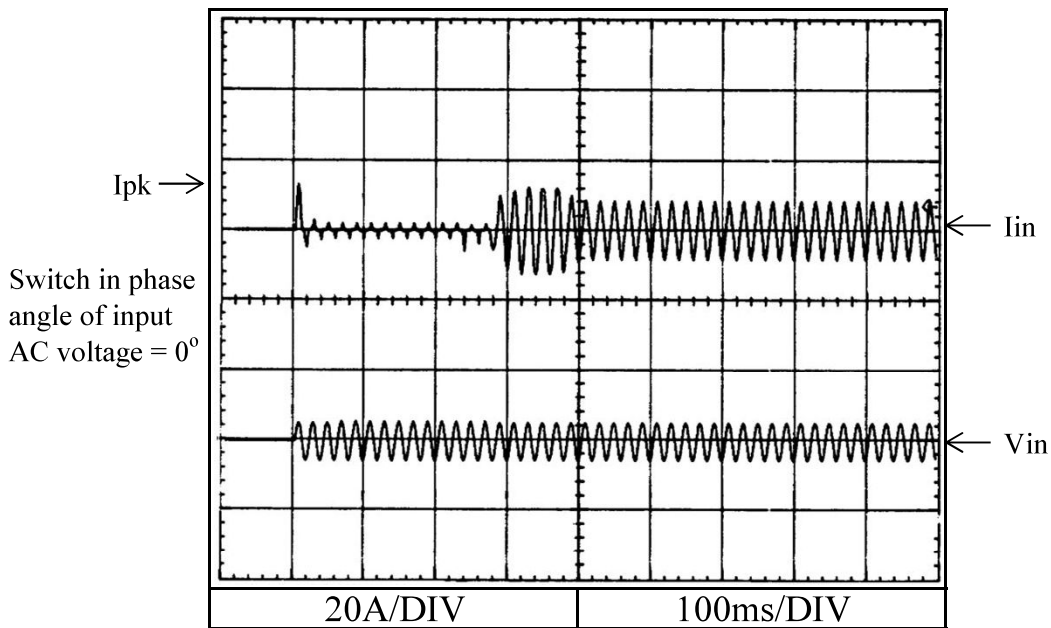


2.12 入力サージ電流（突入電流）波形
Inrush current waveform

Conditions V_{in} : 100VAC
 T_p : 25°C

360V

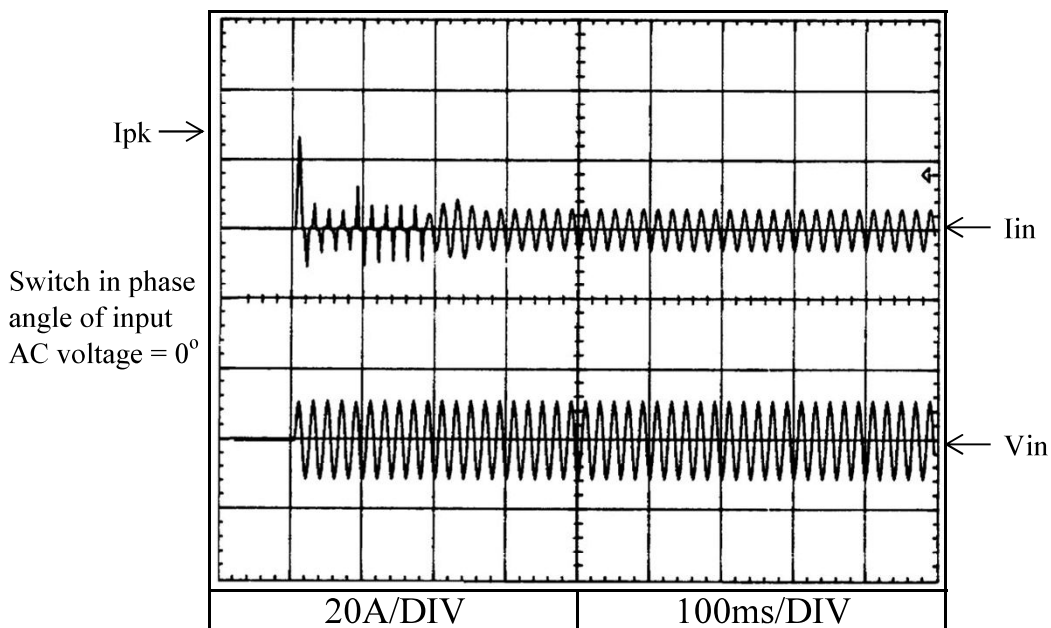
$P_o=504W$



Conditions V_{in} : 200VAC
 T_p : 25°C

360V

$P_o=756W$

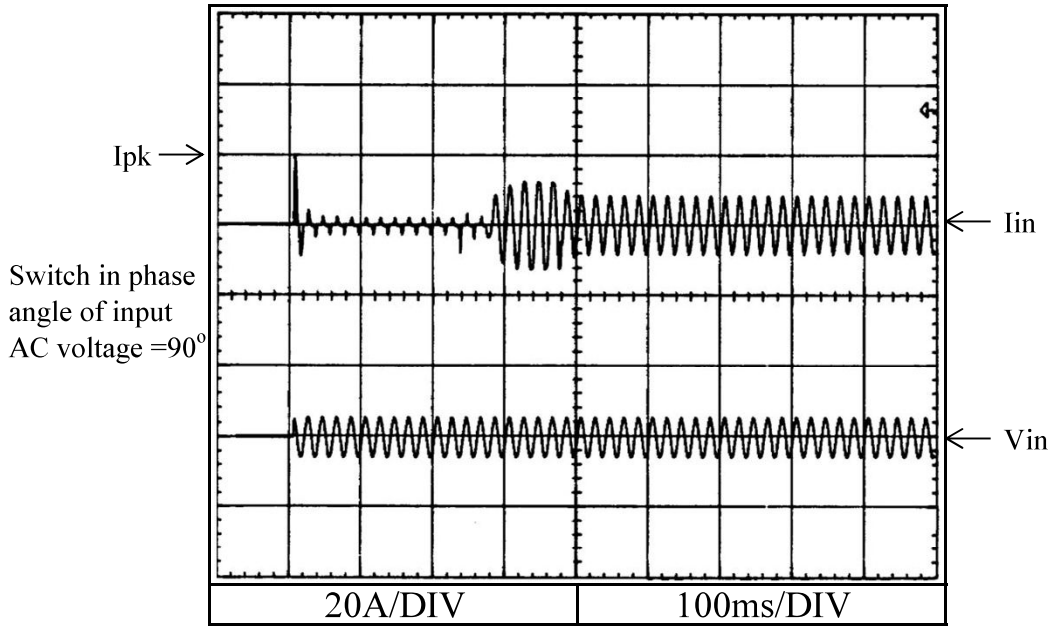


2.12 入力サージ電流 (突入電流) 波形
Inrush current waveform

Conditions V_{in} : 100VAC
 T_p : 25°C

360V

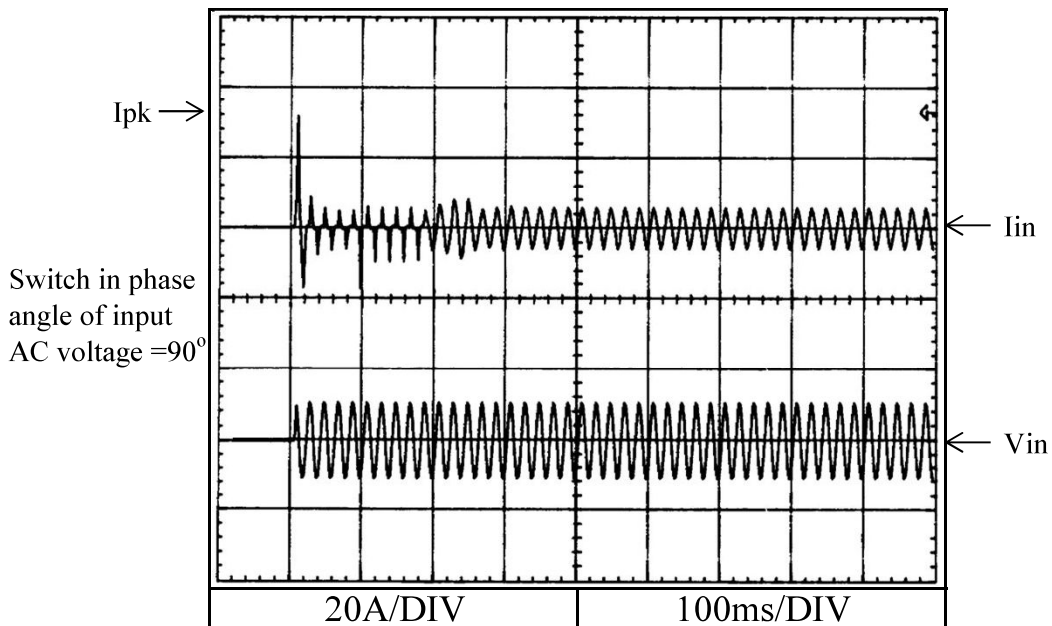
$P_o=504W$



Conditions V_{in} : 200VAC
 T_p : 25°C

360V

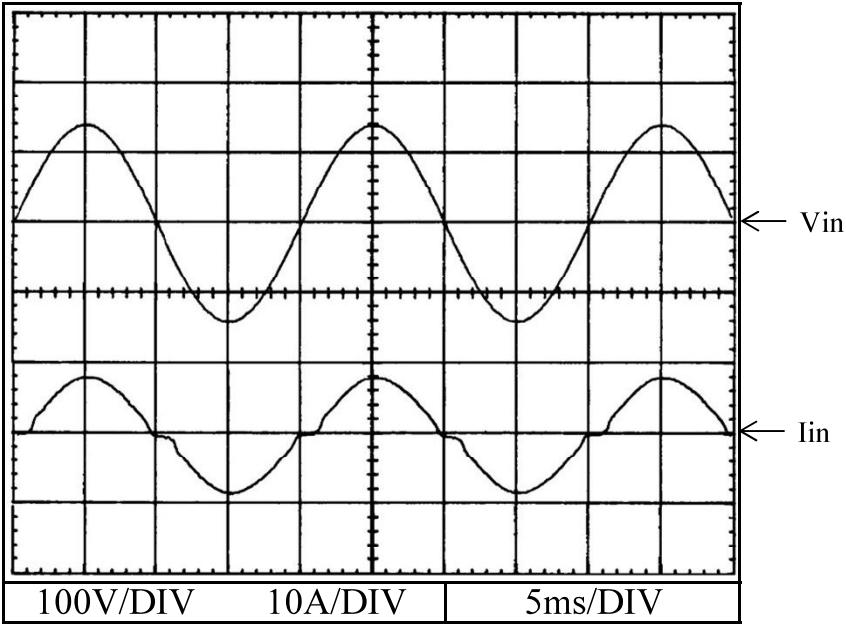
$P_o=756W$



2.13 入力電流波形
Inrush current waveform

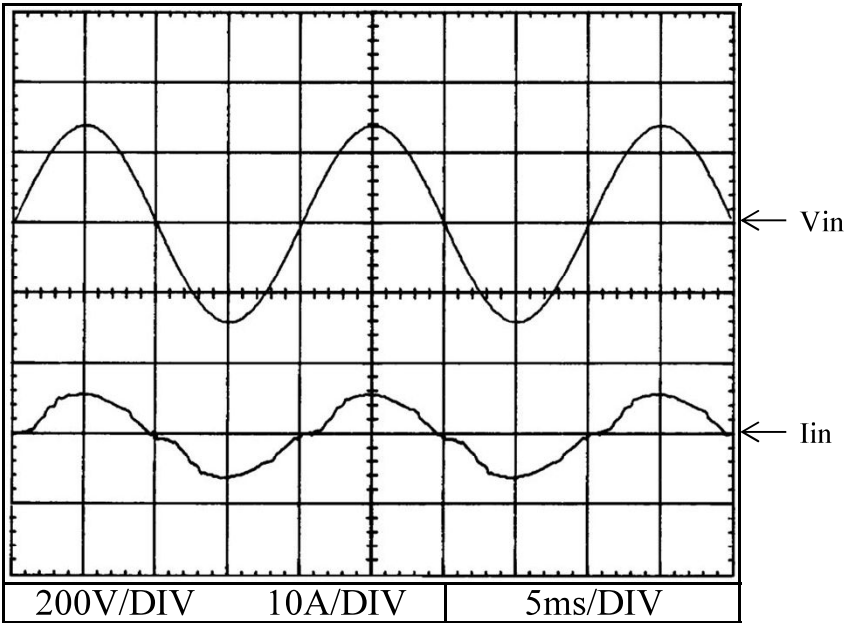
Conditions V_{in} : 100VAC
 I_o : 100% ($P_o=504W$)
 T_p : 25°C

360V



Conditions V_{in} : 200VAC
 I_{out} : 100% ($P_o=756W$)
 T_p : 25°C

360V



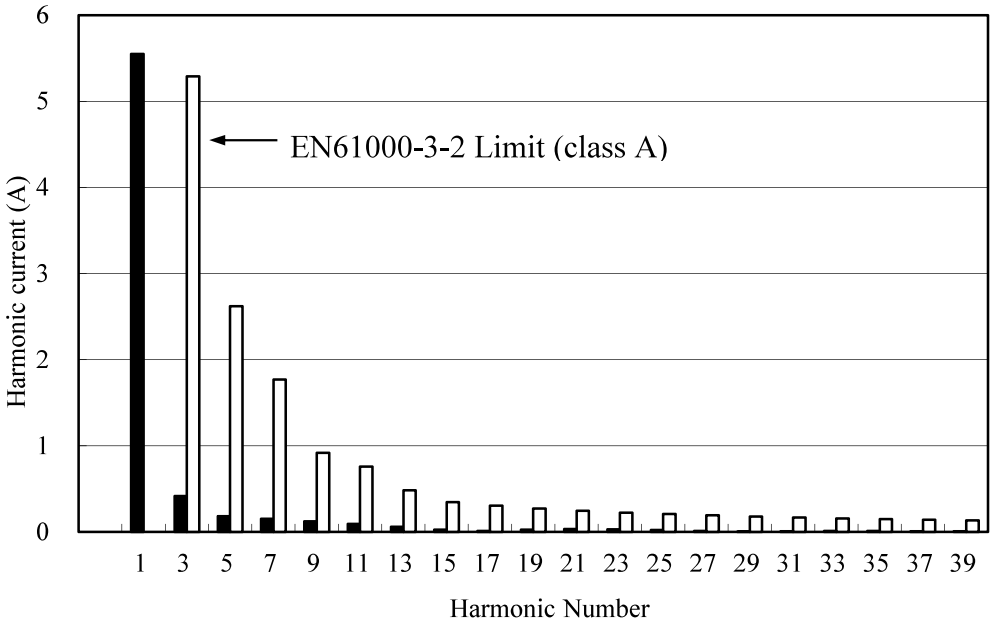
2.14 高調波成分

Input current harmonics

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

360V

Po=504W

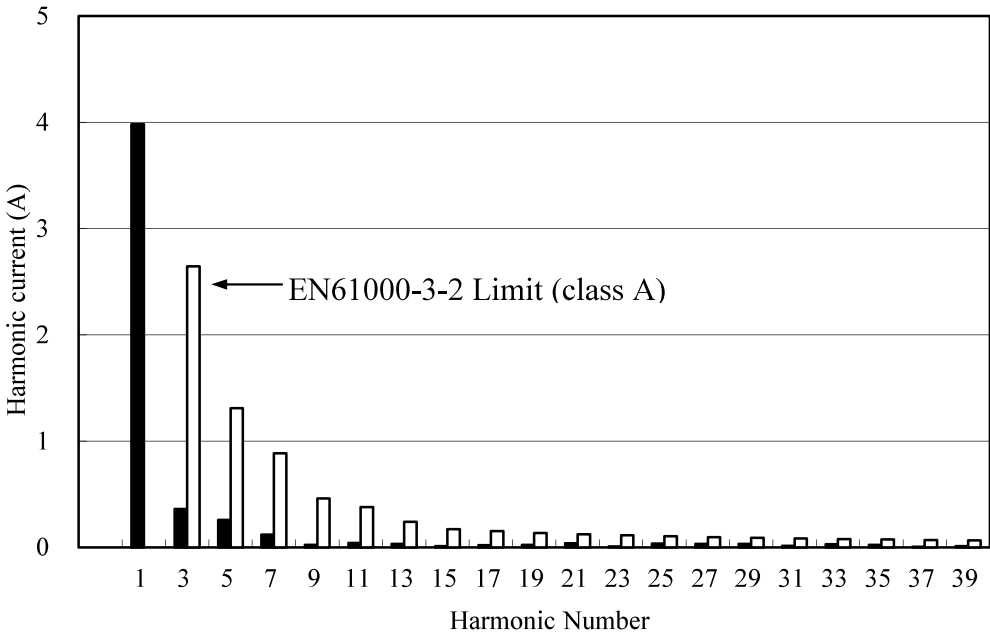


Order No.	current(A)
1	5.55
2	0.00
3	0.42
4	0.00
5	0.18
6	0.00
7	0.15
8	0.00
9	0.12

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

360V

Po=756W



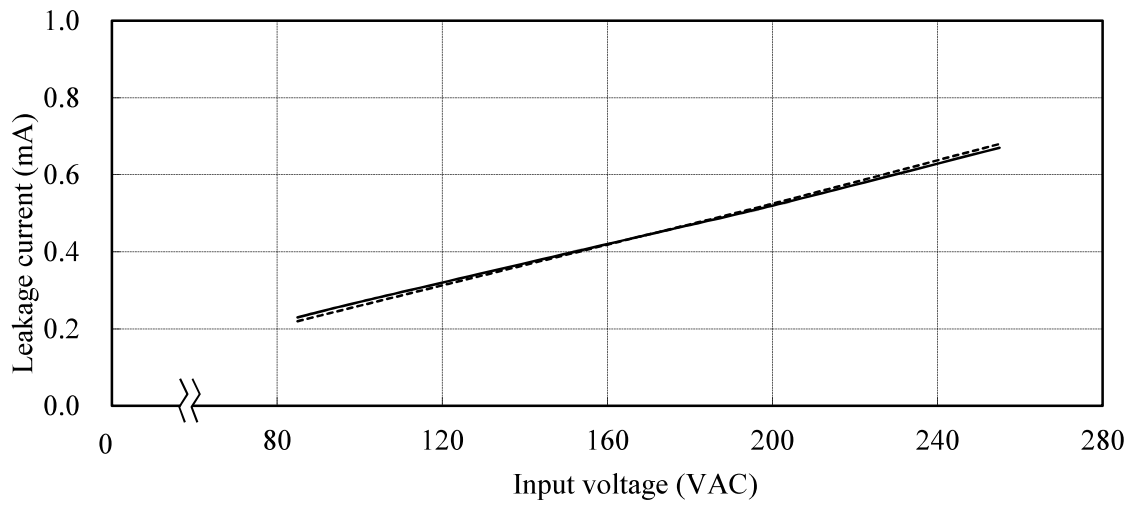
Order No.	current(A)
1	3.98
2	0.00
3	0.36
4	0.00
5	0.26
6	0.00
7	0.12
8	0.00
9	0.02

2.15 リーク電流特性
Leakage current characteristics

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

360V

Po=504W



360V

Po=756W

