

JWT75

EVALUATION DATA

型式データ

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使用記号 Terminology used

	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
Ta 周囲温度	Ambient temperature

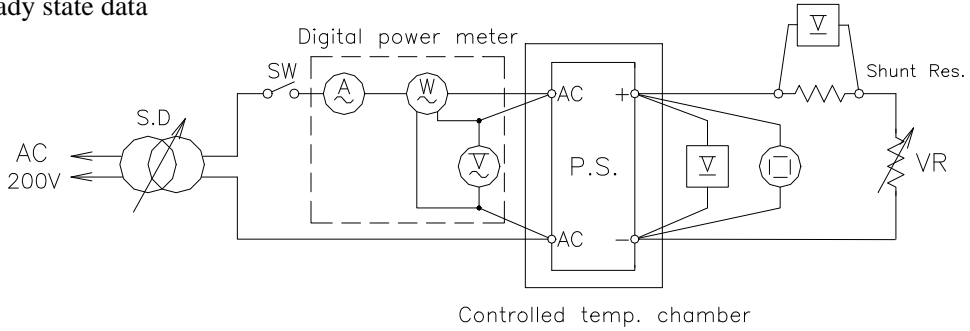
1. 1

測定回路

Circuit used for determination

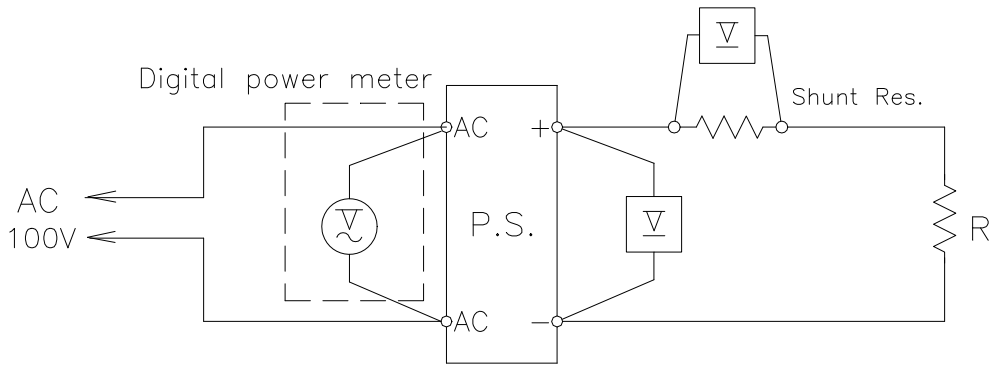
(1) 静特性

Steady state data



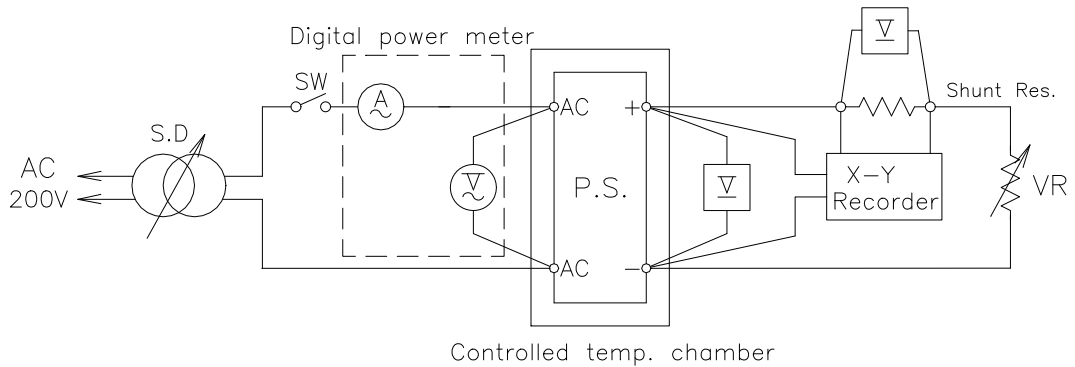
(2) 通電ドリフト特性

Warm up voltage drift characteristics



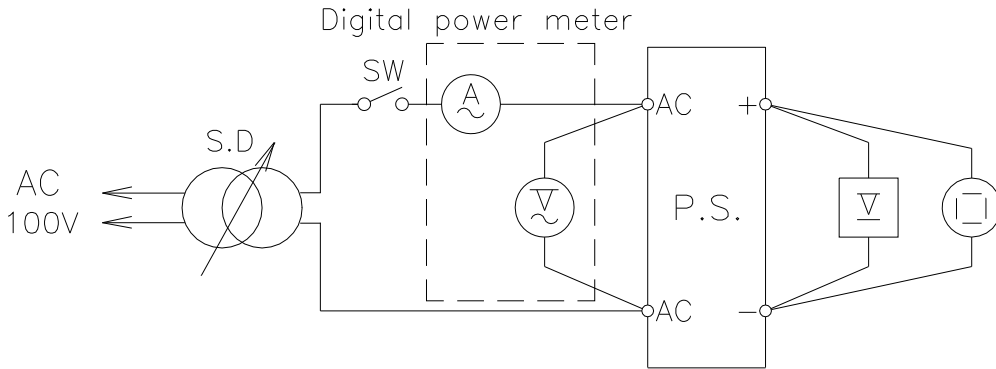
(3) 過電流保護特性

Over current protection (O.C.P.) characteristics



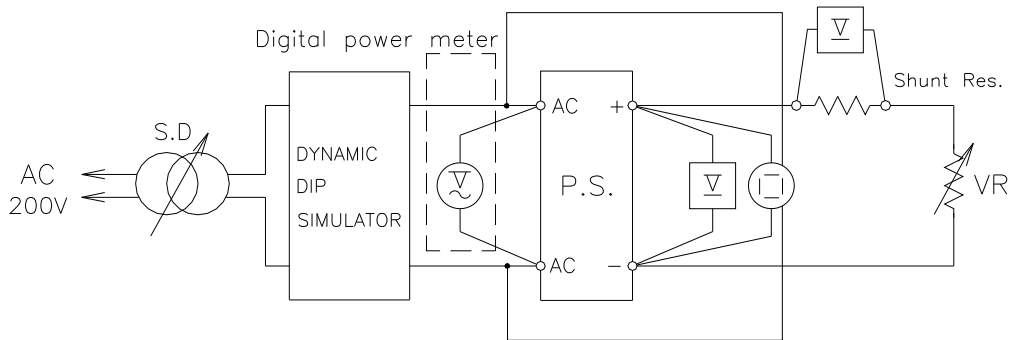
(4) 過電圧保護特性

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

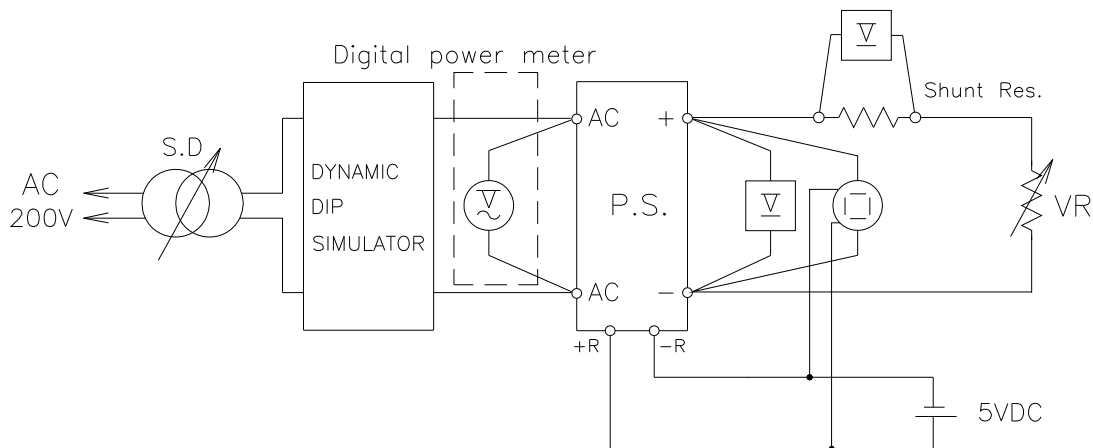
Output fall characteristics

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

標準品 JWT75-*/R にて対応 For alternative standard model JWT75-*/R



(8) 出力立ち下がり特性 (ON/OFF コントロール時)

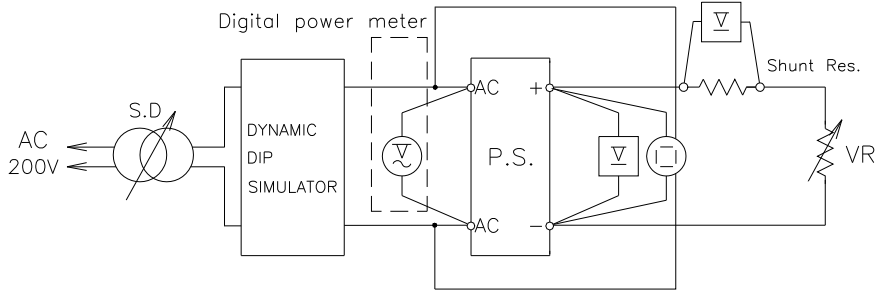
Output fall characteristics with ON/OFF CONTROL

準標準品 JWT75-*/R にて対応 For alternative standard model JWT75-*/R

Same as output rise characteristics with ON/OFF CONTROL

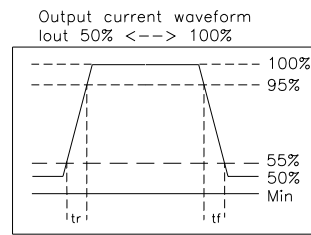
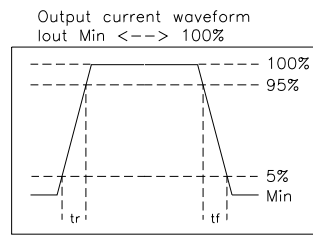
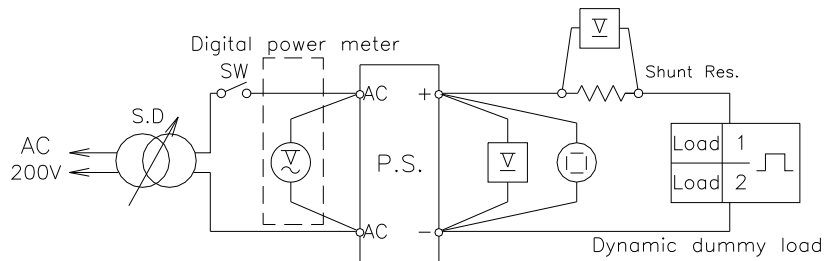
(9) 過渡応答 (入力急変) 特性

Dynamic line response characteristics



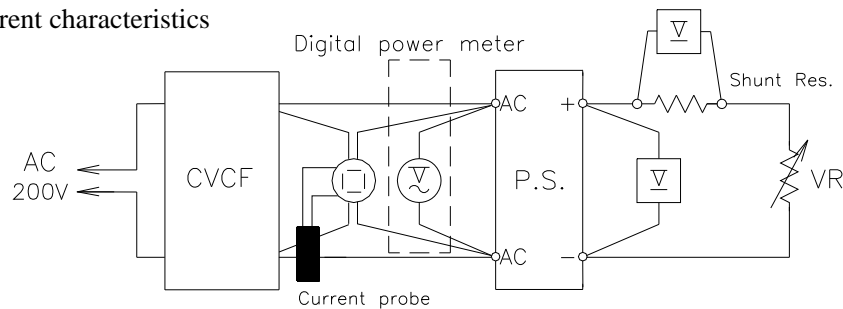
(10) 過渡応答 (負荷急変) 特性

Dynamic load response characteristics



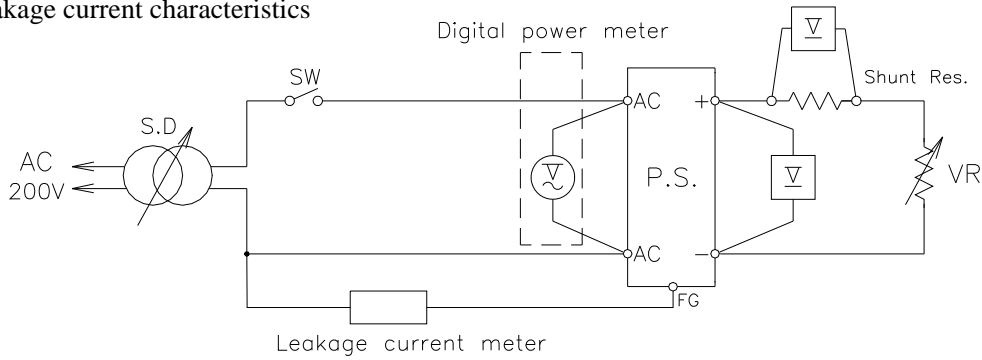
(11) 入力サージ電流 (突入電流) 特性

Inrush current characteristics



(12) リーク電流

Leakage current characteristics

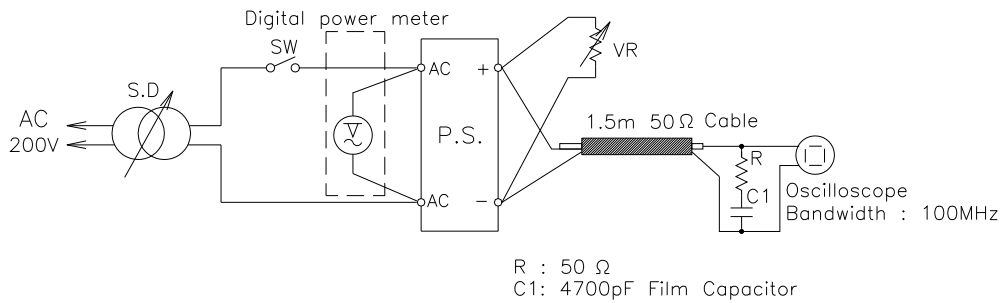


NOTE : Leakage current measured through a 1k ohm resistor.
 Range used ---AC+DC (For YOKOGAWA TYPE 3226)
 ---AC (For SIMPSON MODEL 229-2)

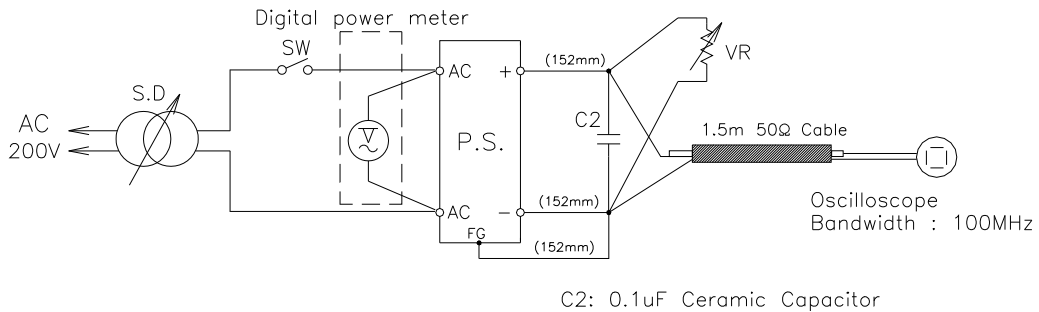
(13) 出力リップルノイズ

Output ripple noise

(a) Normal Mode



(b) Normal + Common Mode

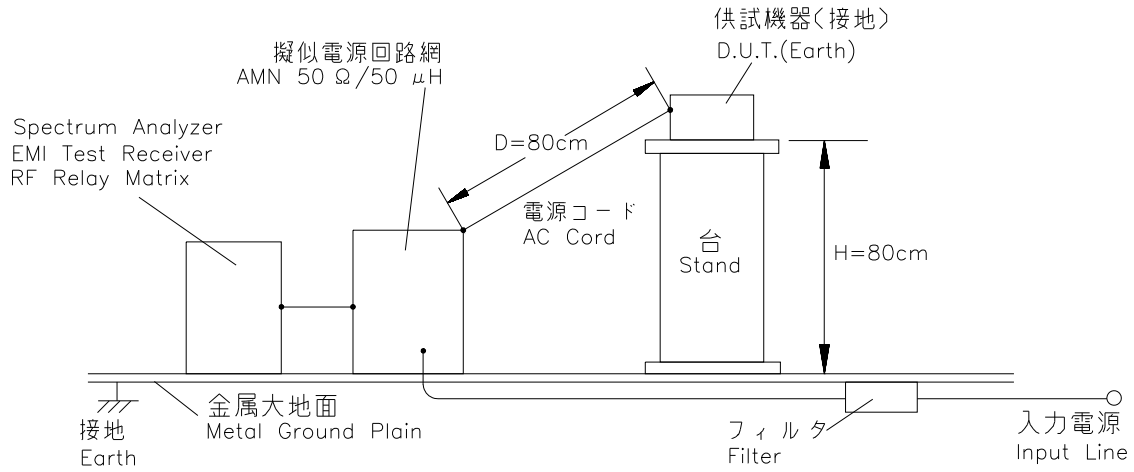


(14) EMI 特性

Electro-Magnetic Interference characteristics

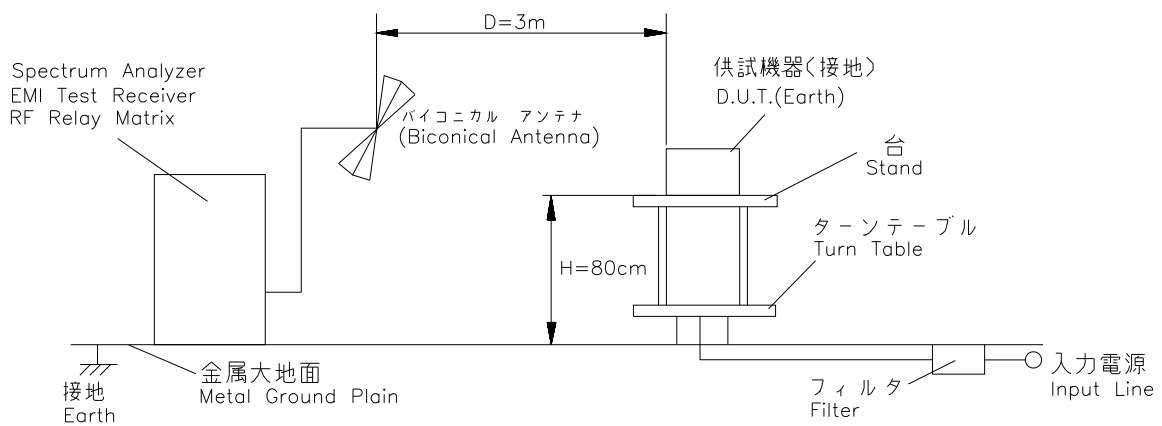
(a) 雑音端子電圧 (帰還ノイズ)

Conducted Emission Noise



(b) 雑音電界強度 (輻射ノイズ)

Radiated Emission Noise



1.2 使用測定機器 LIST OF EQUIPMENT USED

	EQUIPMENT USED	MANUFACTURER	MODEL NO.
1	OSCILLOSCOPE	HITACHI DENSHI	V-1100A
2	DIGITAL STORAGE OSCILLOSCOPE	TEKTRONIX	TDS540D
3	DIGITAL MULTIMETER	ADVANTEST	R6341A
4	DIGITAL POWER METER	YOKOGAWA ELECT.	WT110
5	DC AMPERE METER	YOKOGAWA ELECT.	TYPE2051
6	CURRENT PROBE/AMPLIFIER	TEKTRONIX	A6303/AM503
7	DYNAMIC DUMMY LOAD	TAKASAGO	FK-2000L
8	SLIDE REGULATOR	MATSUNAGA	SD-1520
9	CVCF	KIKUSUI	PCR6000
10	LEAKAGE CURRENT METER	SIMPSON	229-2
11	LEAKAGE CURRENT METER	YOKOGAWA	TYPE3226
12	X-Y RECORDER	GRAPHTEC	WX3000
13	DYNAMIC DIP SIMULATOR	TAKAMISAWA CYBERNETICS	PSA-300
14	CONTROLLED TEMP. CHAMBER	TABAI ESPEC	SH-240
15	SPECTRUM ANALYZER	ROHDE & SCHWARZ	FSA
16	EMI TEST RECEIVER	ROHDE & SCHWARZ	ESHS10
17	EMI TEST RECEIVER	ROHDE & SCHWARZ	ESVS10
18	RF RELAY MATRIX	ROHDE & SCHWARZ	PSU
19	AMN	KYORITU DENSHI	KNW-242
20	ANTENA(BICONICAL ANTENA)	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

V1 : 5V

conditions Ta : 25°C
Iout
V1 : -A
V2 : 2.5A
V3 : 0.5A

1. Regulation - line and load

Iout \ Vin	85VAC	100VAC	200VAC	265VAC	line regulation	
0.8A	5.024V	5.024V	5.024V	5.024V	0mV	0.00%
4A	5.017V	5.017V	5.017V	5.017V	0mV	0.00%
8A	5.008V	5.008V	5.008V	5.008V	0mV	0.00%
load	16mV	16mV	16mV	16mV		
regulation	0.32%	0.32%	0.32%	0.32%		

2. Temperature drift

conditions Vin : 100VAC
V1 : 8A
V2 : 2.5A
V3 : 0.5A

Ta	-10°C	+25°C	+50°C	temperature stability	
Vo	5.016V	5.008V	5.003V	13mV	0.26%

V2 : +12V

conditions Ta : 25°C
Iout
V1 : 4.4A
V2 : -A
V3 : 0.5A

1. Regulation - line and load

Iout \ Vin	85VAC	100VAC	200VAC	265VAC	line regulation	
0A	11.996V	11.996V	11.996V	11.996V	0mV	0.00%
2A	11.995V	11.995V	11.995V	11.995V	0mV	0.00%
4A	11.993V	11.993V	11.993V	11.993V	0mV	0.00%
load	3mV	3mV	3mV	3mV		
regulation	0.03%	0.03%	0.03%	0.03%		

2. Temperature drift

conditions Vin : 100VAC
V1 : 4.4A
V2 : 4A
V3 : 0.5A

Ta	-10°C	+25°C	+50°C	temperature stability	
Vo	11.992V	11.993V	11.992V	1mV	0.01%

V3 : -12V

conditions Ta : 25°C
Iout
V1 : 8A
V2 : 2.5A
V3 : -A

1. Regulation - line and load

Iout \ Vin	85VAC	100VAC	200VAC	265VAC	line regulation	
0A	-11.934V	-11.934V	-11.934V	-11.934V	0mV	0.00%
0.25A	-11.920V	-11.920V	-11.920V	-11.920V	0mV	0.00%
0.5A	-11.909V	-11.909V	-11.909V	-11.909V	0mV	0.00%
load	25mV	25mV	25mV	25mV		
regulation	0.21%	0.21%	0.21%	0.21%		

2. Temperature drift

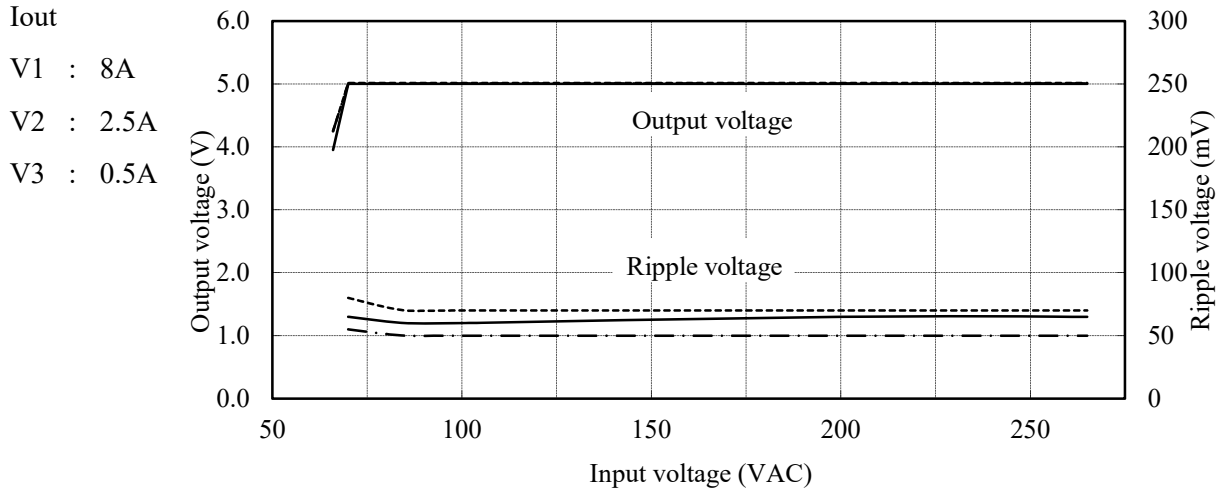
conditions Vin : 100VAC
V1 : 8A
V2 : 2.5A
V3 : 0.5A

Ta	-10°C	+25°C	+50°C	temperature stability	
Vo	-11.873V	-11.909V	-11.929V	56mV	0.47%

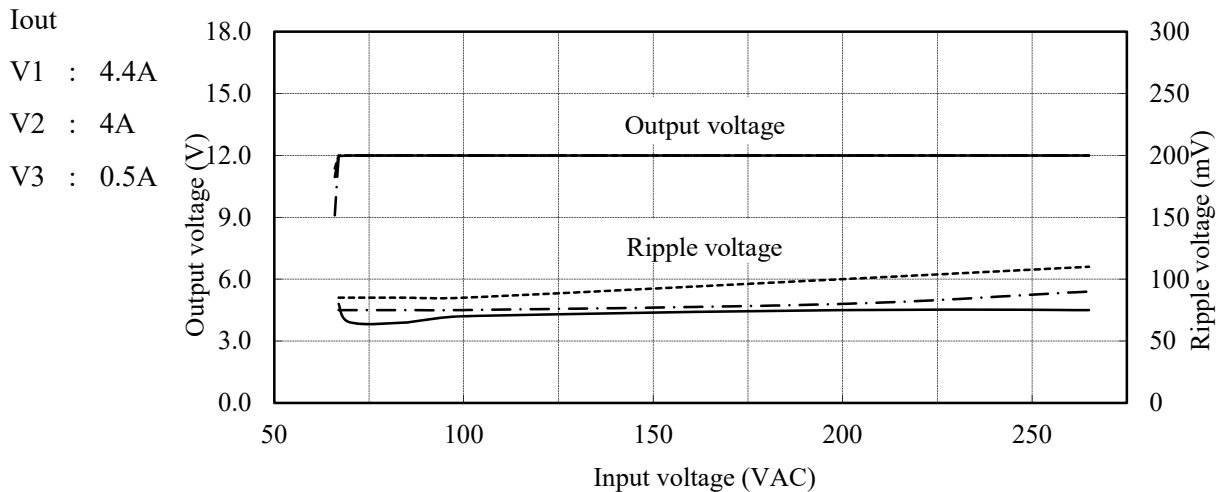
2.1 (2) 出力電圧、リップル電圧対入力電圧
Output voltage and Ripple voltage v.s. Input voltage

Conditions Ta : -10°C - - - - -
: 25°C - · - · - · -
: 50°C ———

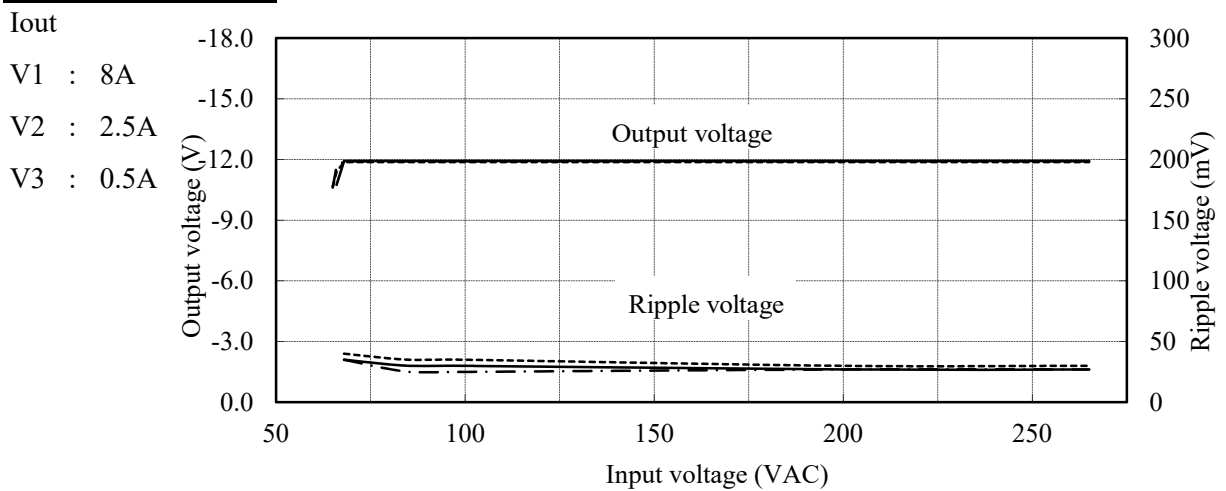
V1 : 5V



V2 : +12V



V3 : -12V

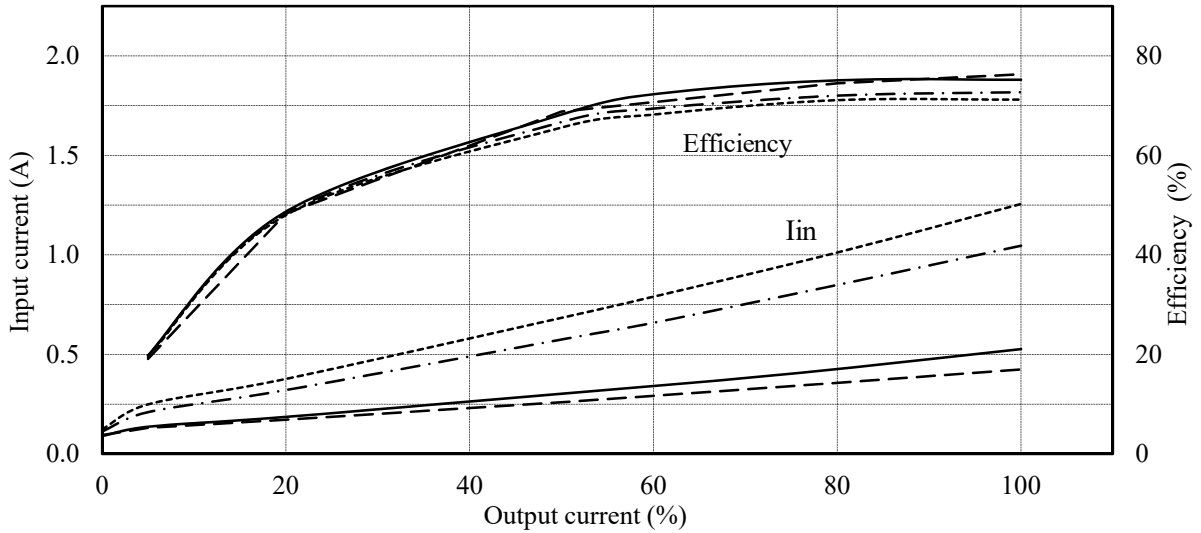


2.1 (3) 効率、入力電流対出力電流

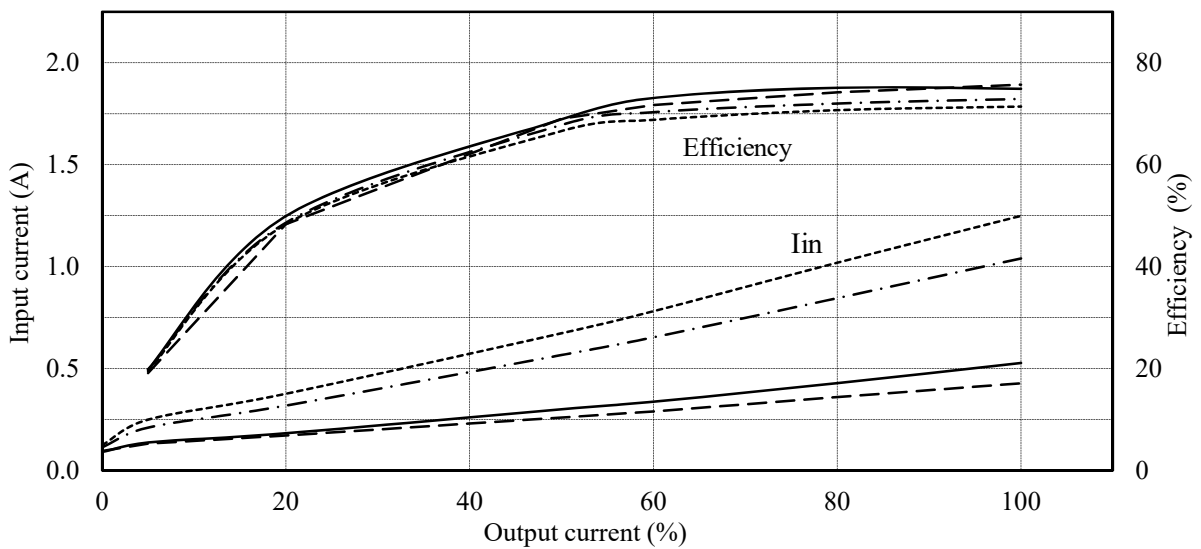
Efficiency and Input current v.s. Output current

Conditions V_{in} : 85VAC
 : 100VAC -.-.-
 : 200VAC ———
 : 265VAC - - - -

I_{out}
 $V1$: 8A
 $V2$: 2.5A
 $V3$: 0.5A
 T_a : 25°C



I_{out}
 $V1$: 4.4A
 $V2$: 4A
 $V3$: 0.5A
 T_a : 25°C

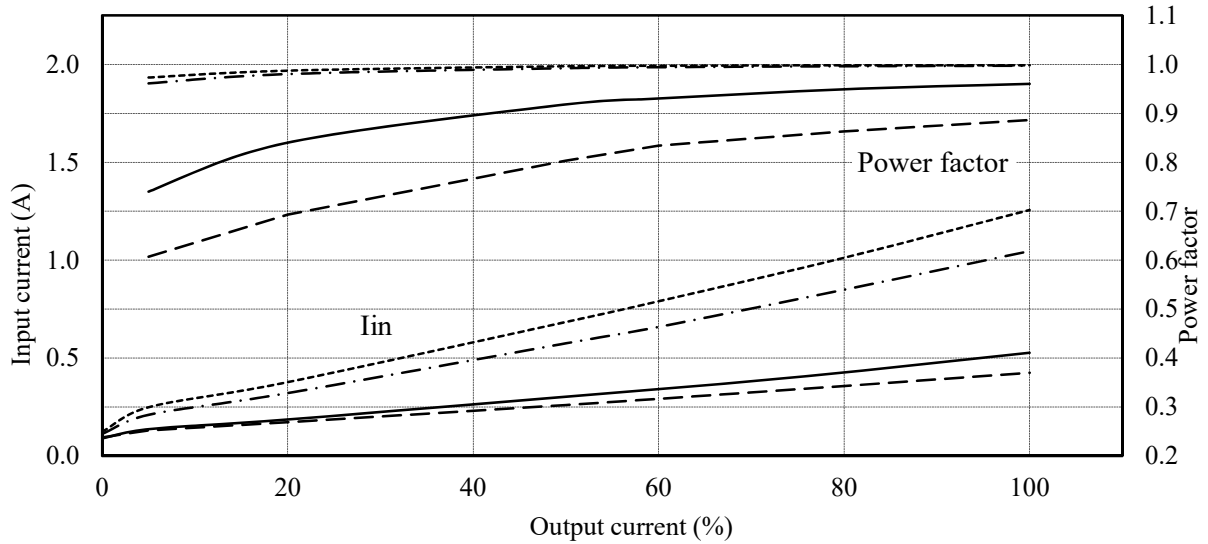


2.1 (4) 力率、入力電流対出力電流

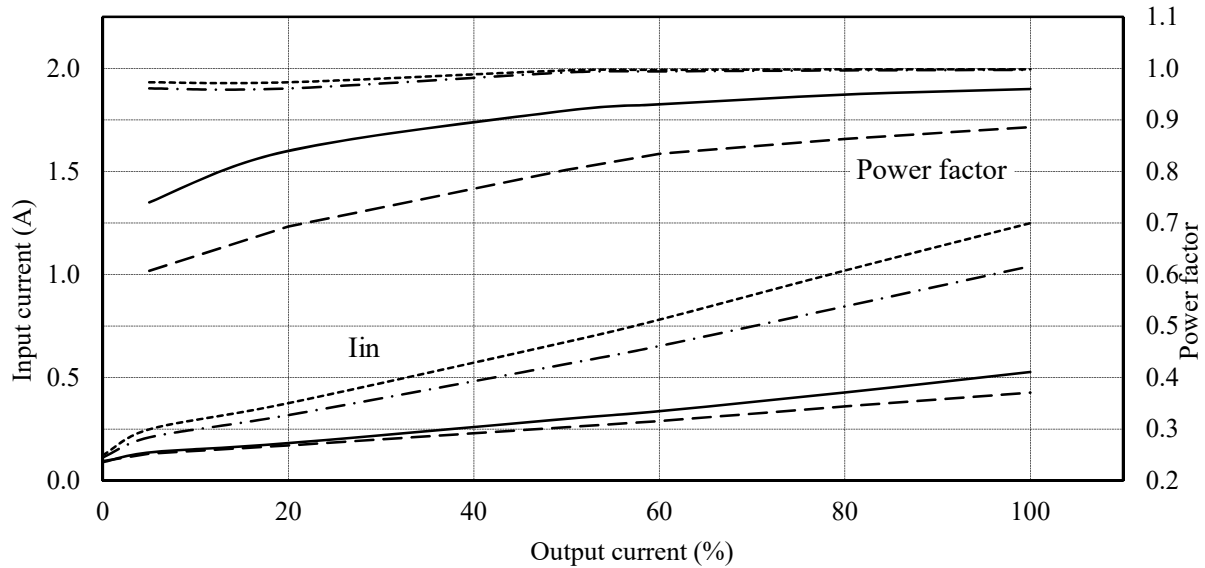
Power factor and Input current v.s. Output current

Conditions Vin : 85VAC -----
 : 100VAC -.-.-.-
 : 200VAC ————
 : 265VAC - - - -

Iout
 V1 : 8A
 V2 : 2.5A
 V3 : 0.5A
 Ta : 25°C



Iout
 V1 : 4.4A
 V2 : 4A
 V3 : 0.5A
 Ta : 25°C

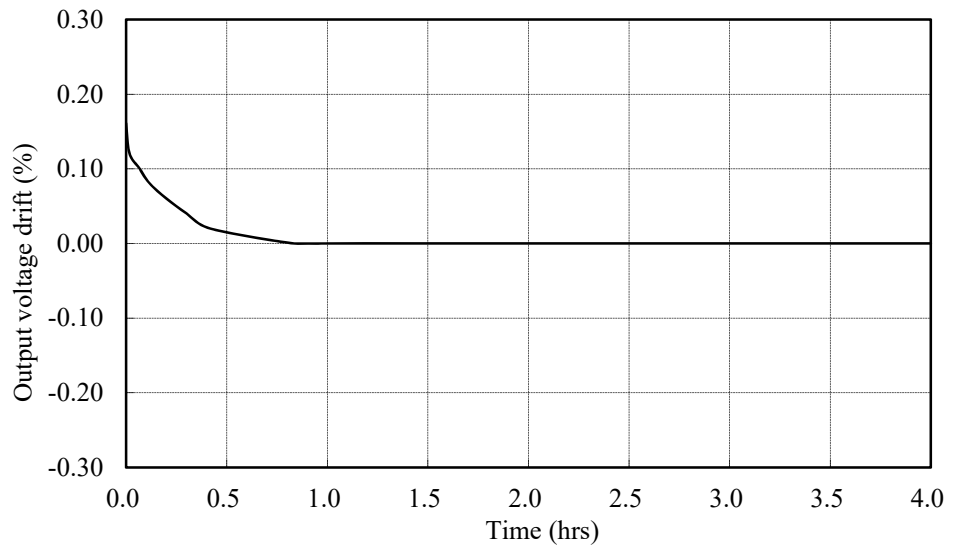


2.2 通電ドリフト特性
Warm up voltage drift characteristics

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

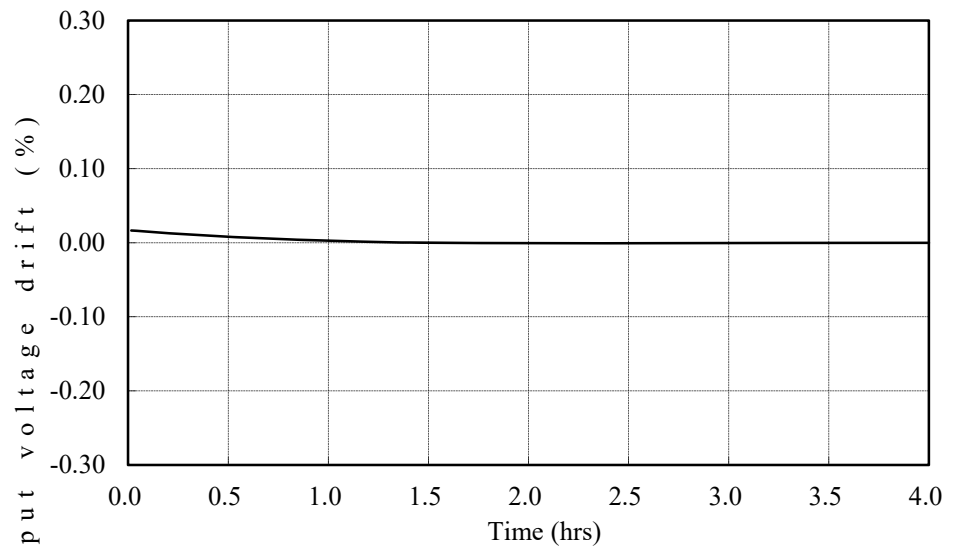
V1 : 5V

I_{out}
V1 : 8A
V2 : 2.5A
V3 : 0.5A



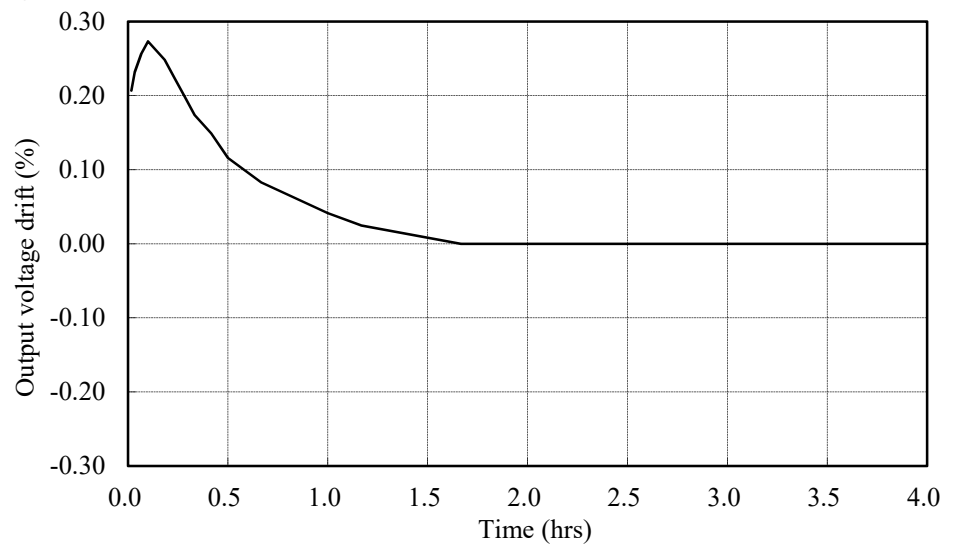
V2 : +12V

I_{out}
V1 : 4.4A
V2 : 4A
V3 : 0.5A



V3 : -12V

I_{out}
V1 : 8A
V2 : 2.5A
V3 : 0.5A



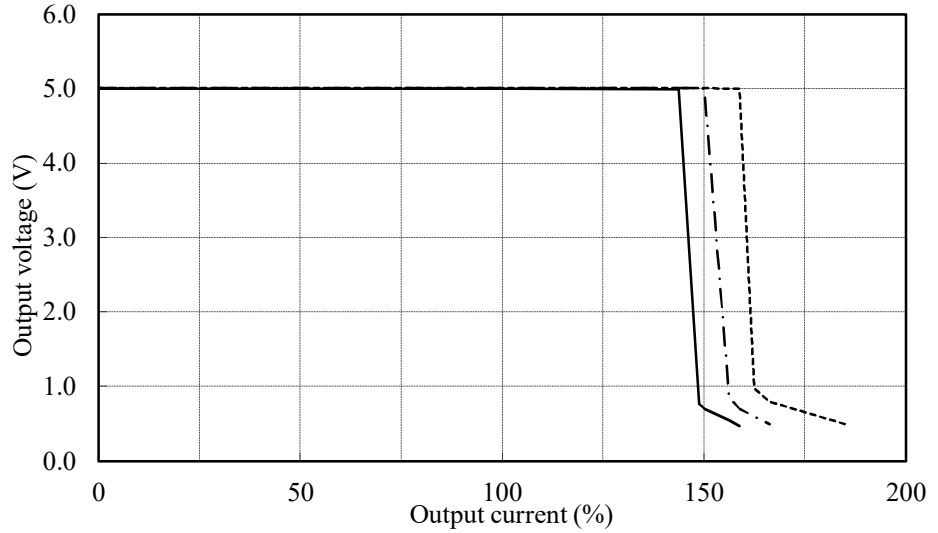
2.3 過電流保護特性

Over current protection (OCP) characteristics

Conditions Ta : -10°C -----
 : 25°C - · - · - ·
 : 50°C _____
 Vin : 85-265VAC

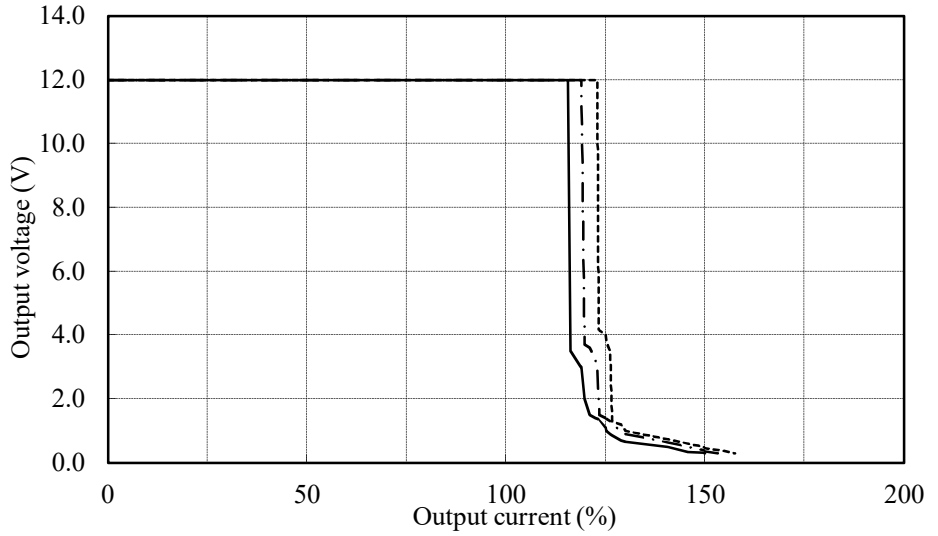
V1 : 5V

Iout
 V1 : - A
 V2 : 2.5A
 V3 : 0.5A



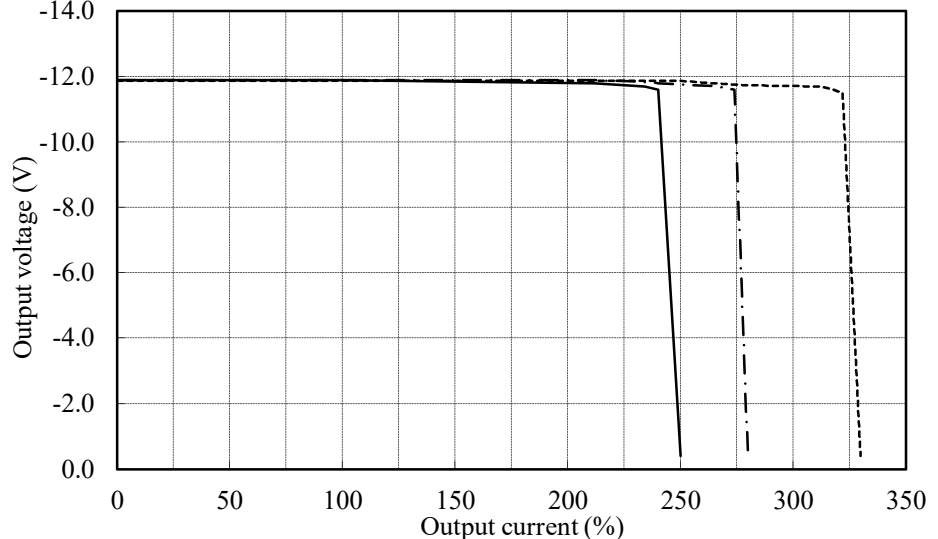
V2 : +12V

Iout
 V1 : 4.4A
 V2 : - A
 V3 : 0.5A



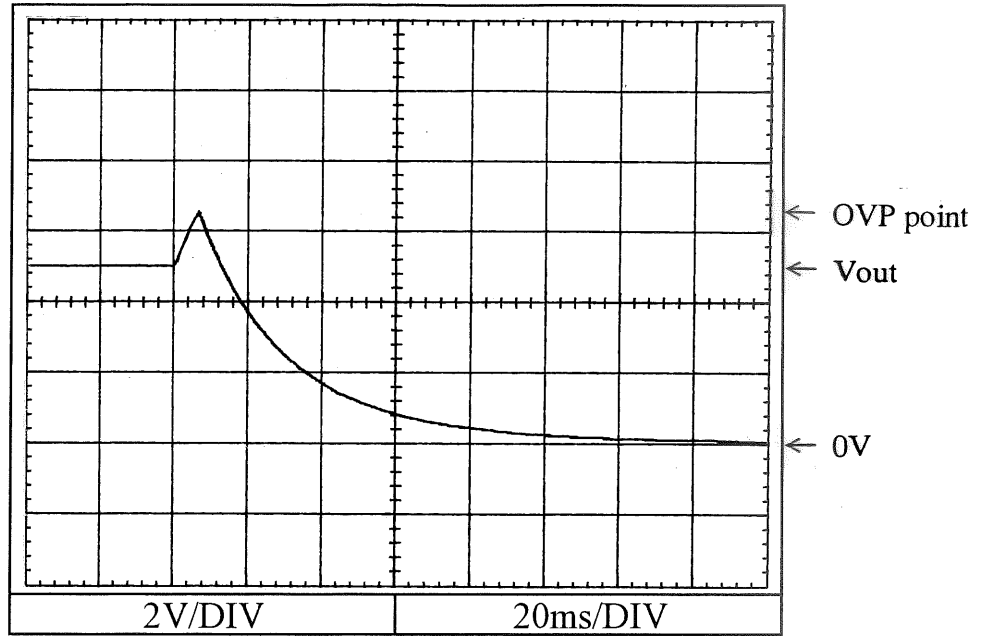
V3 : -12V

Iout
 V1 : 8A
 V2 : 2.5A
 V3 : - A



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

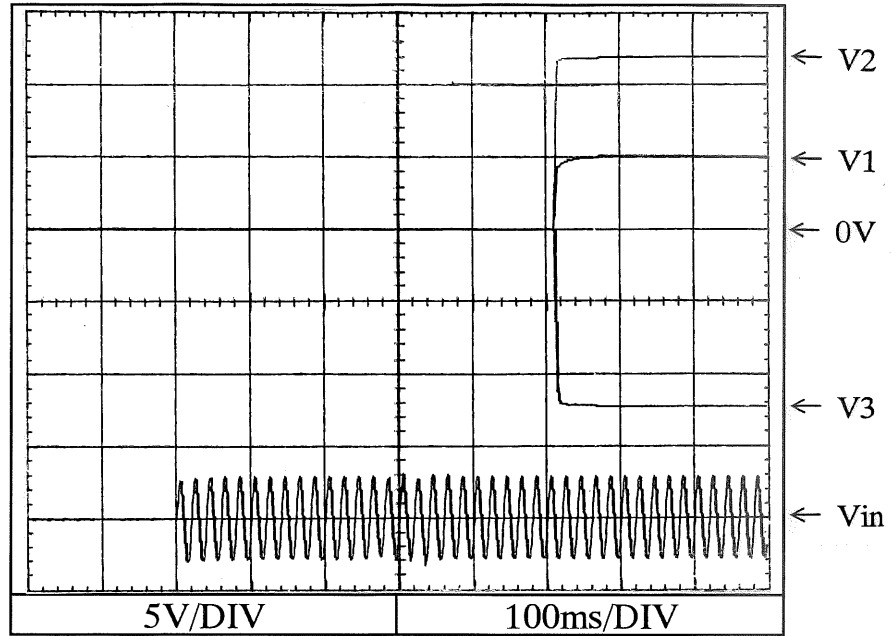
Conditions Vin : 100VAC
Iout
V1 : 0.8A
V2 : 0A
V3 : 0A
Ta : 25°C



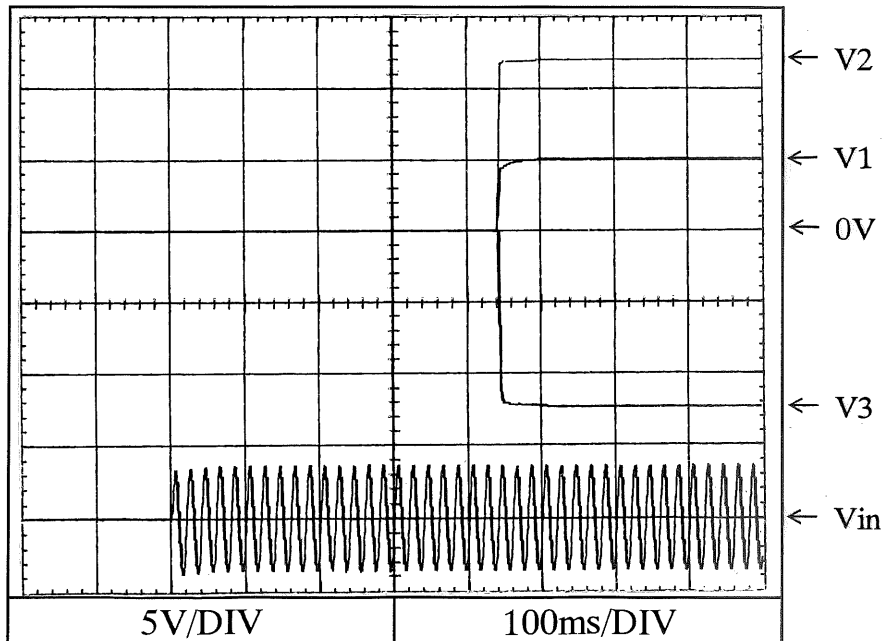
2.5 出力立ち上がり特性
Output rise characteristics

Conditions Ta : 25°C
Iout : 0.8A
V1 : 0.8A
V2 : 0A
V3 : 0A

Vin : 85VAC



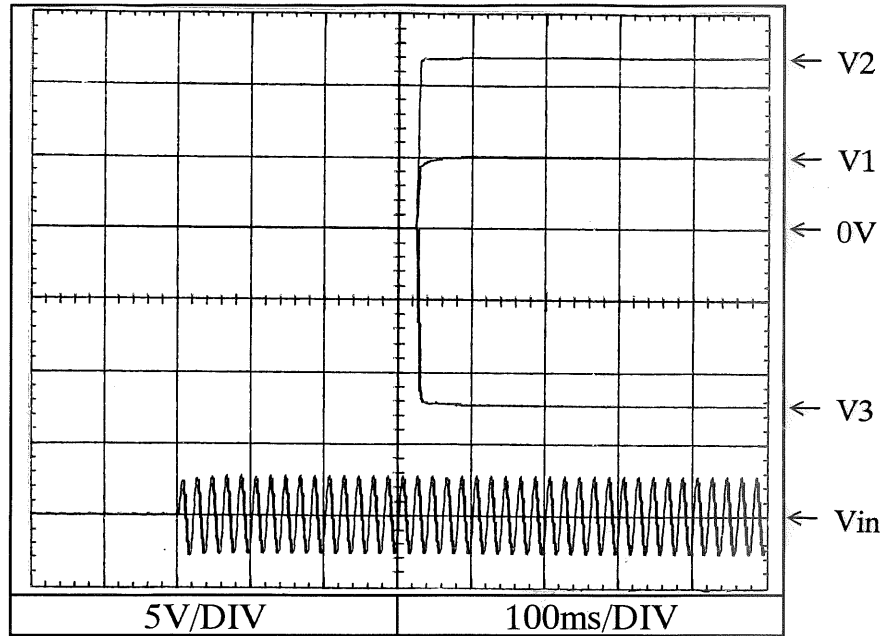
Vin : 100VAC



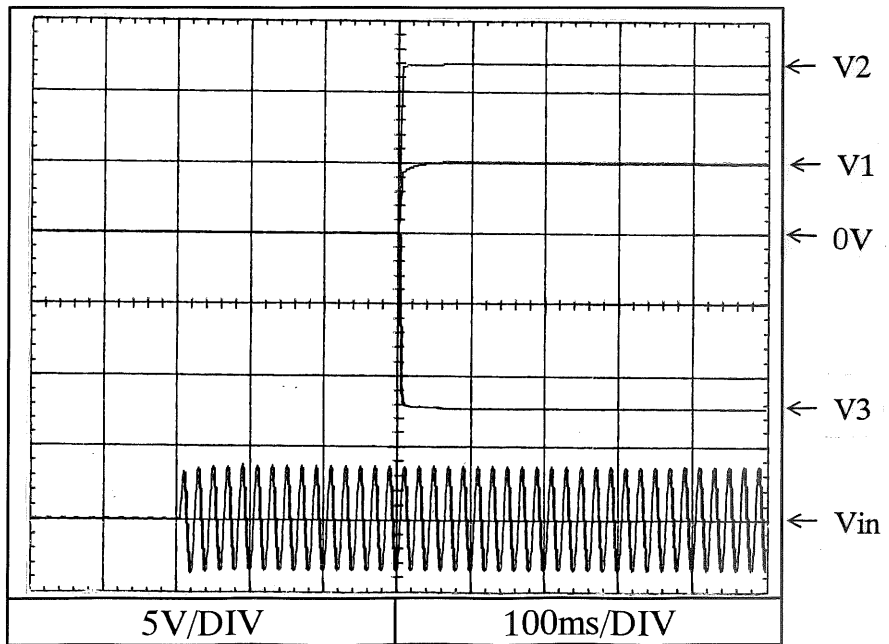
2.5 出力立ち上がり特性
Output rise characteristics

Conditions Ta : 25°C
Iout : 0.8A
V1 : 0.8A
V2 : 0A
V3 : 0A

Vin : 200VAC



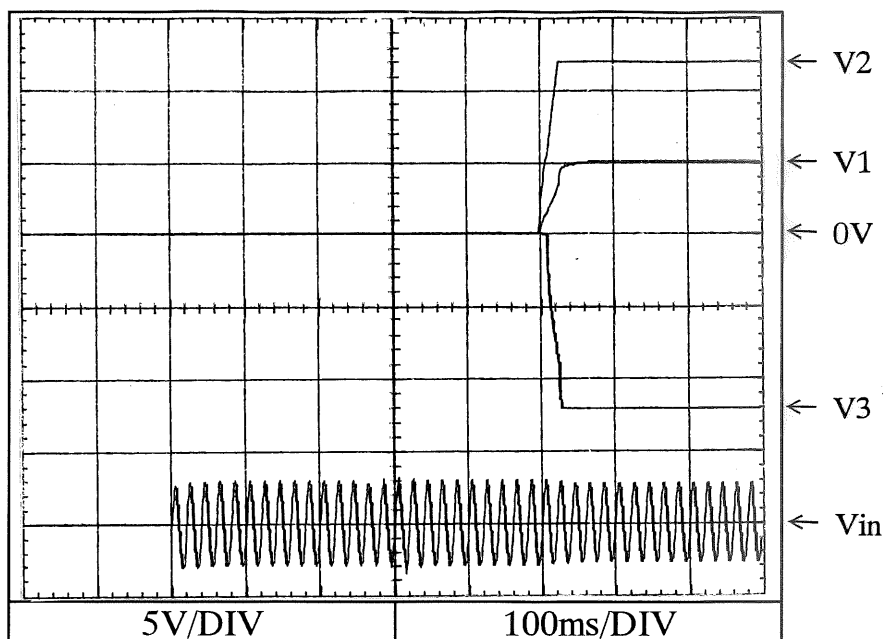
Vin : 265VAC



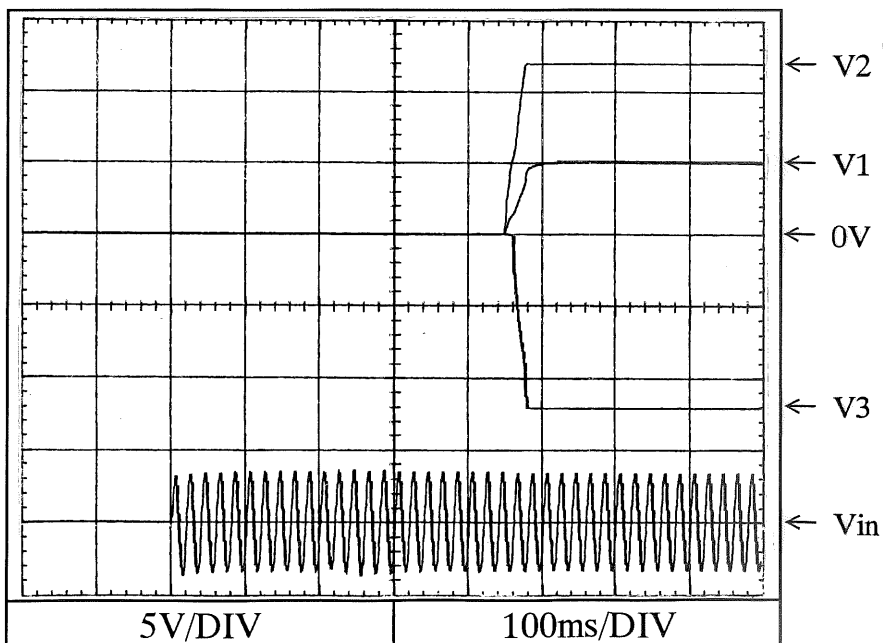
2.5 出力立ち上がり特性
Output rise characteristics

Conditions Ta : 25°C
Iout : 8A
V1 : 8A
V2 : 2.5A
V3 : 0.5A

Vin : 85VAC



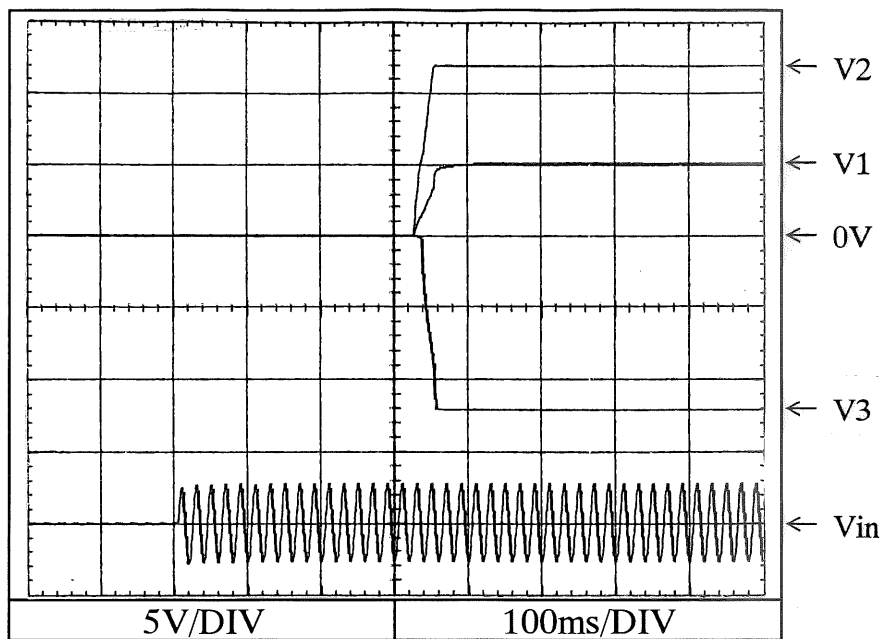
Vin : 100VAC



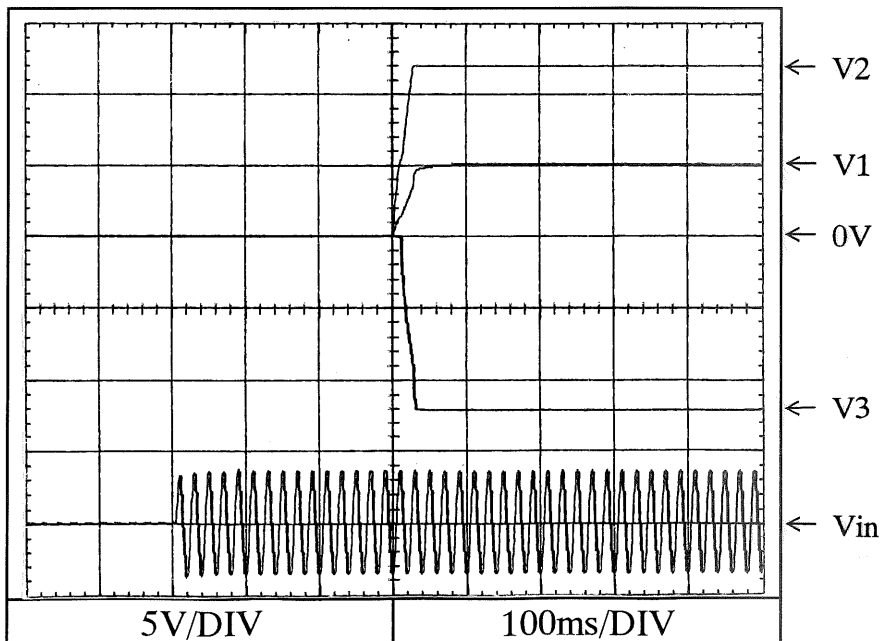
2.5 出力立ち上がり特性
Output rise characteristics

Conditions Ta : 25°C
Iout : 8A
V1 : 2.5A
V2 : 2.5A
V3 : 0.5A

Vin : 200VAC



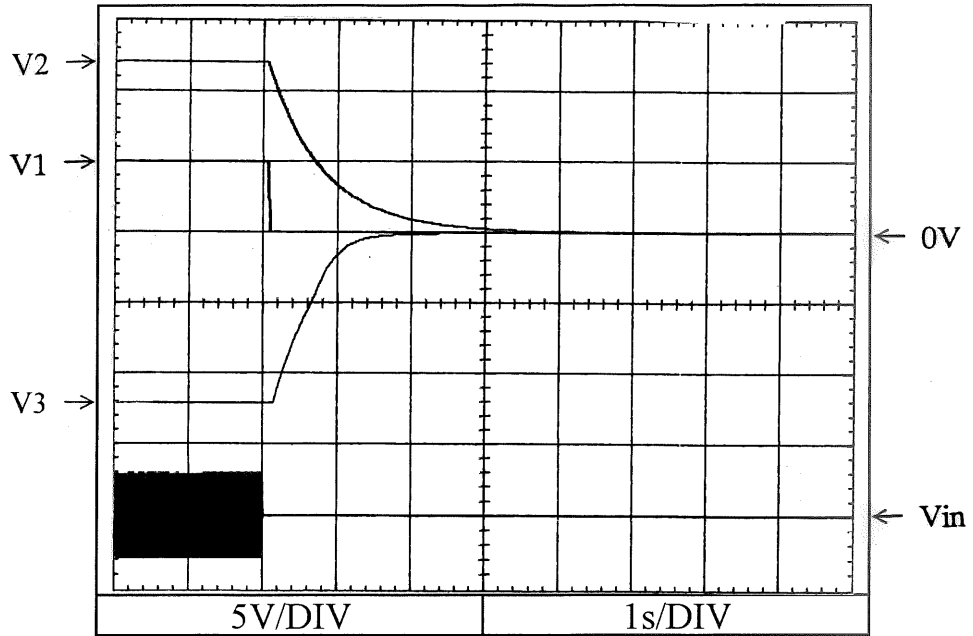
Vin : 265VAC



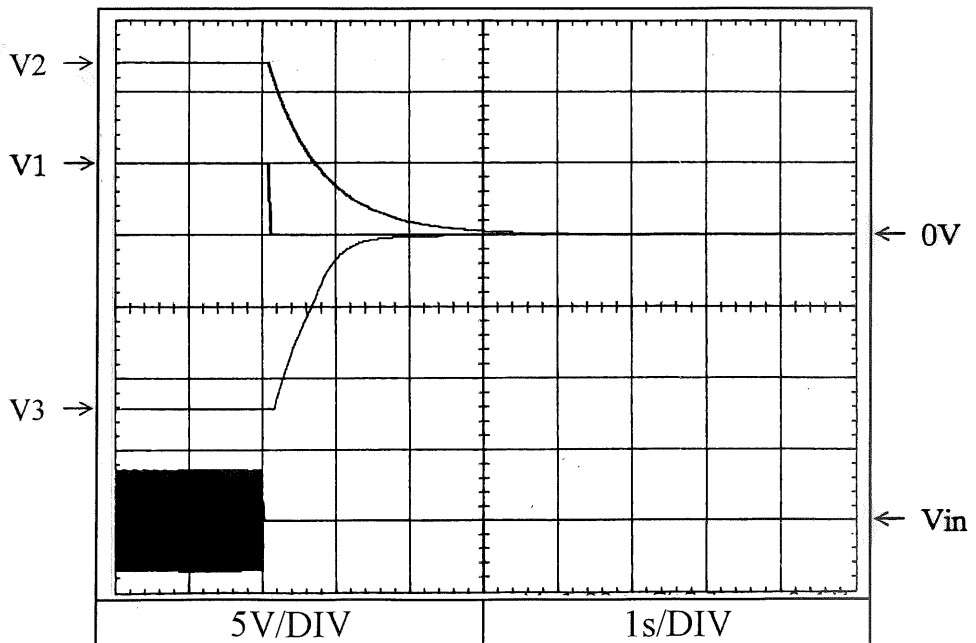
2.6 出力立ち下がり特性
Output fall characteristics

Conditions Ta : 25°C
Iout : 0.8A
V1 : 0.8A
V2 : 0A
V3 : 0A

Vin : 85VAC



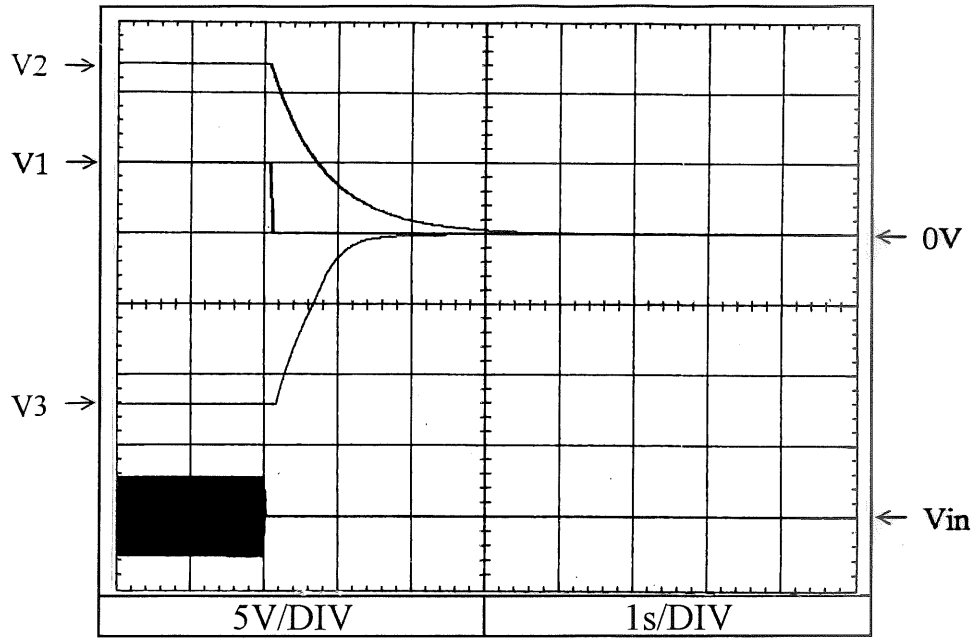
Vin : 100VAC



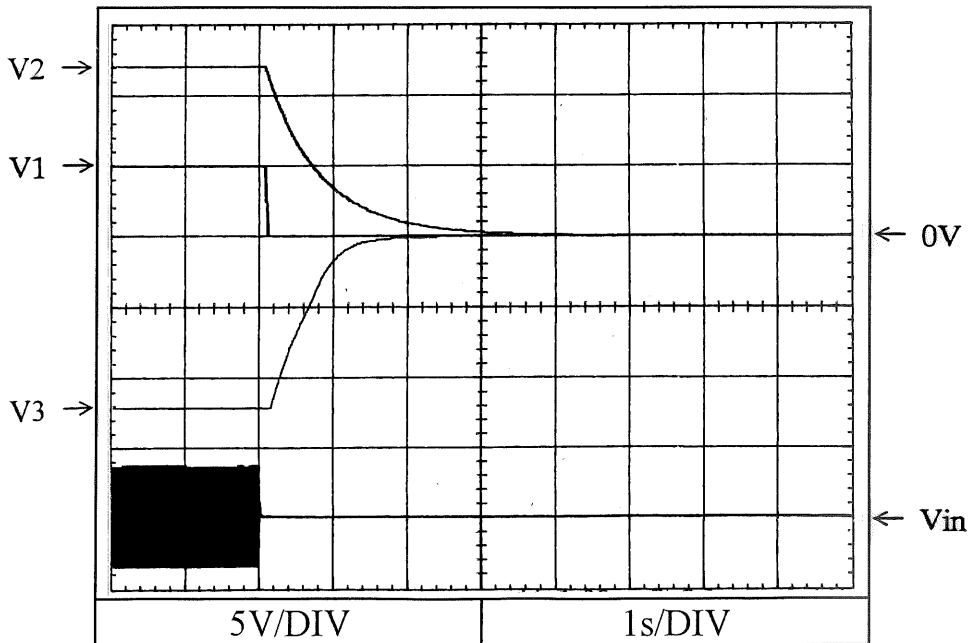
2.6 出力立ち下がり特性
Output fall characteristics

Conditions Ta : 25°C
Iout : 0.8A
V1 : 0.8A
V2 : 0A
V3 : 0A

Vin : 200VAC



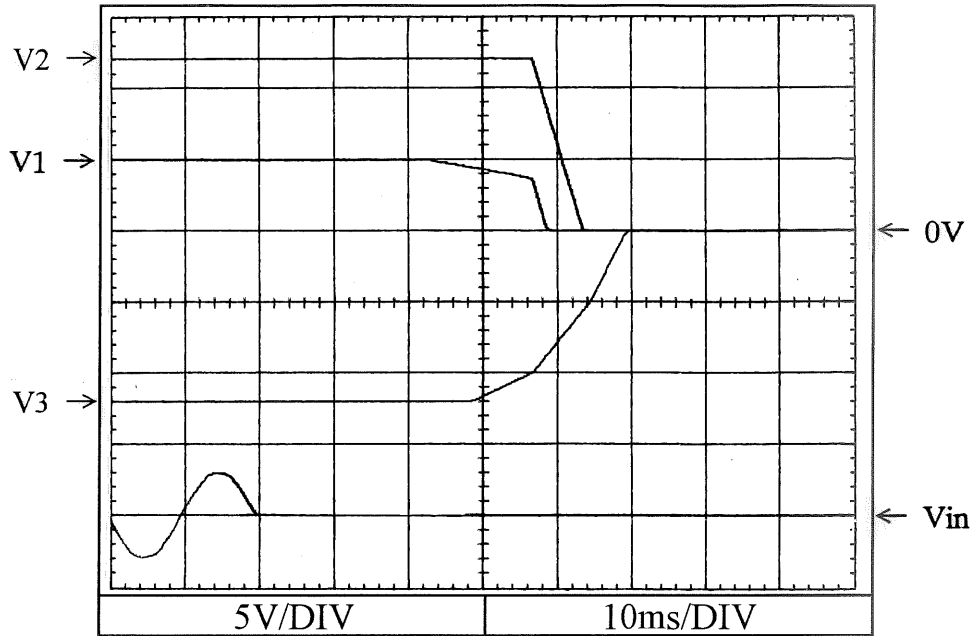
Vin : 265VAC



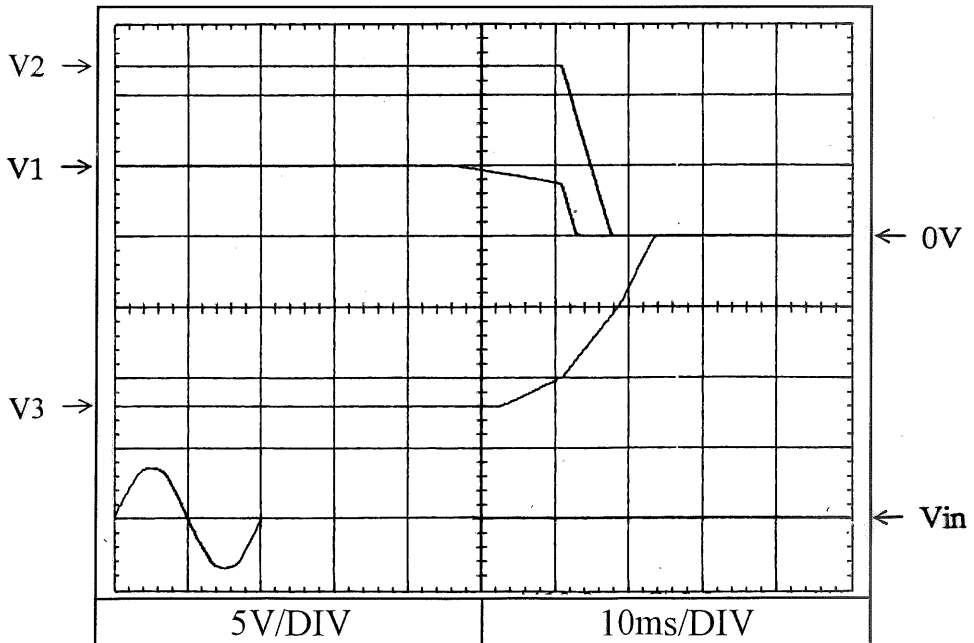
2.6 出力立ち下がり特性
Output fall characteristics

Conditions Ta : 25°C
Iout : 8A
V1 : 2.5A
V2 : 2.5A
V3 : 0.5A

Vin : 85VAC



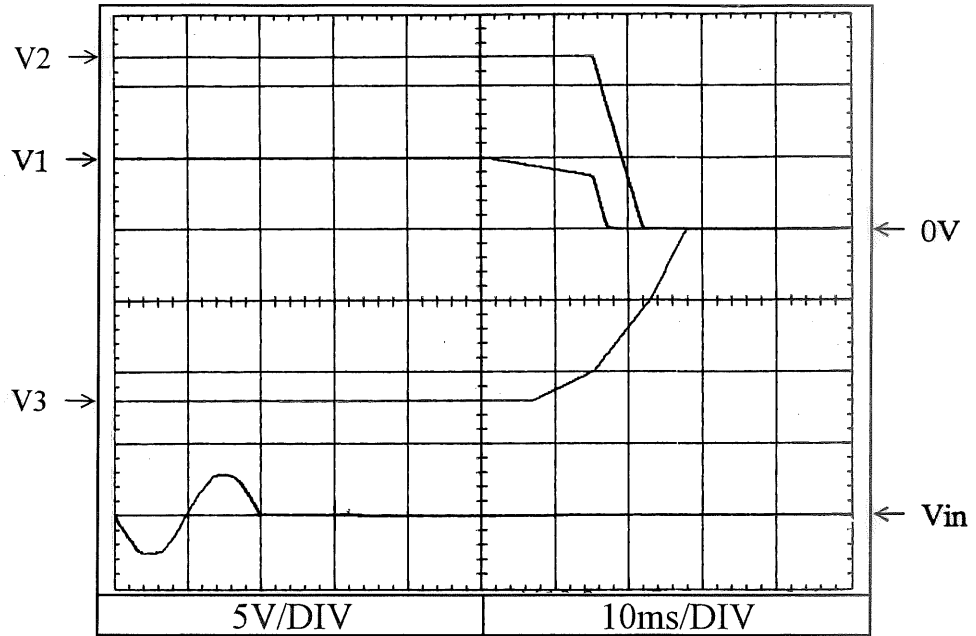
Vin : 100VAC



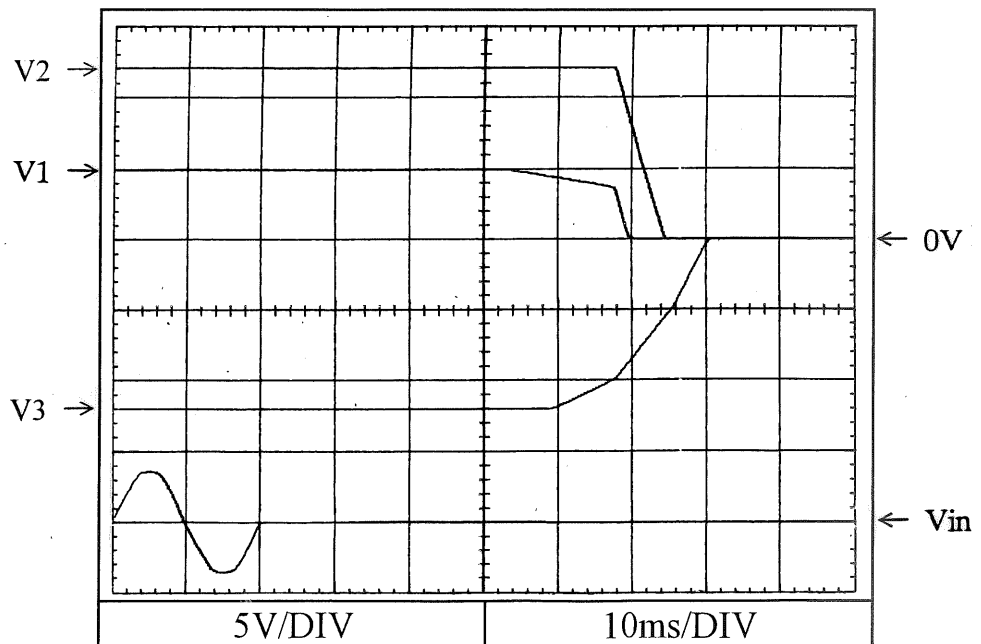
2.6 出力立ち下がり特性
Output fall characteristics

Conditions Ta : 25°C
Iout : 8A
V1 : 8A
V2 : 2.5A
V3 : 0.5A

Vin : 200VAC

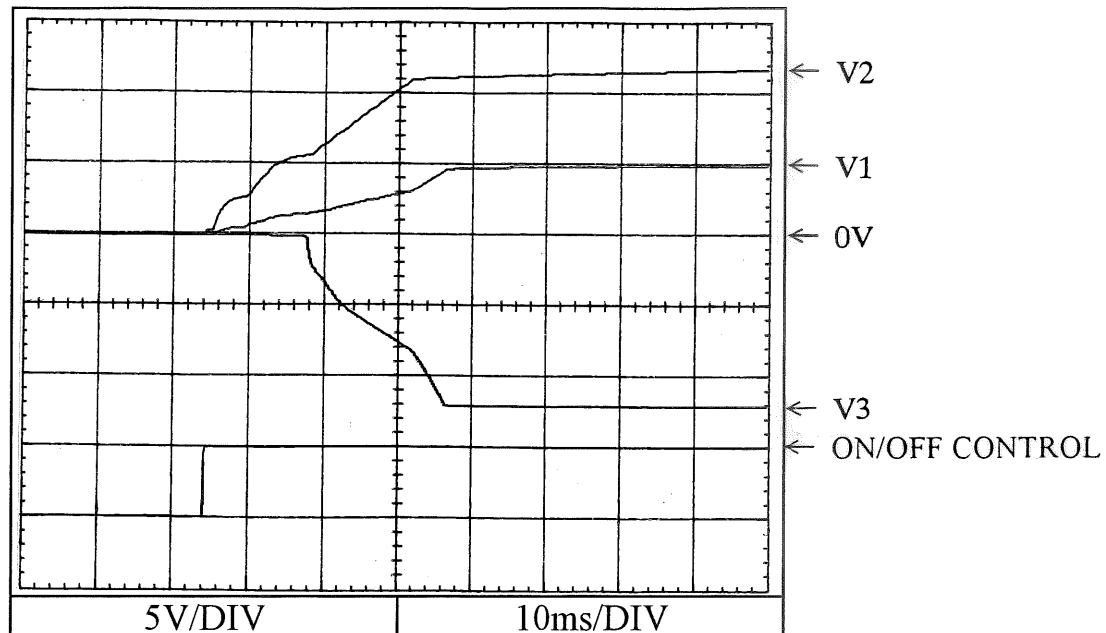


Vin : 265VAC



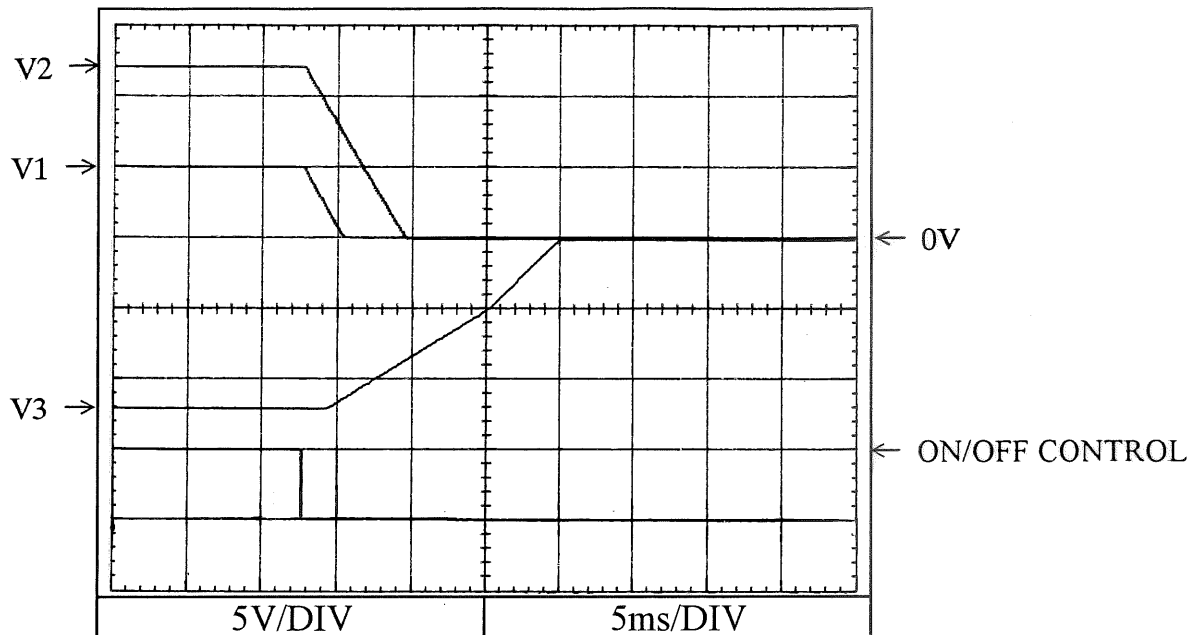
2.7 ON/OFFコントロール時出力立ち上がり特性
 Output rise characteristics with ON/OFF CONTROL
 準標準品 JWT75-*/R にて対応
 For alternative standard model JWT75-*/R

Conditions Vin : 100VAC
 Iout : 8A
 V1 : 2.5A
 V2 : 0.5A
 V3 : 25°C
 Ta : 25°C



2.8 ON/OFFコントロール時出力立ち下がり特性
 Output fall characteristics with ON/OFF CONTROL
 準標準品 JWT75-*/R にて対応
 For alternative standard model JWT75-*/R

Conditions Vin : 100VAC
 Iout : 8A
 V1 : 2.5A
 V2 : 0.5A
 V3 : 25°C
 Ta : 25°C

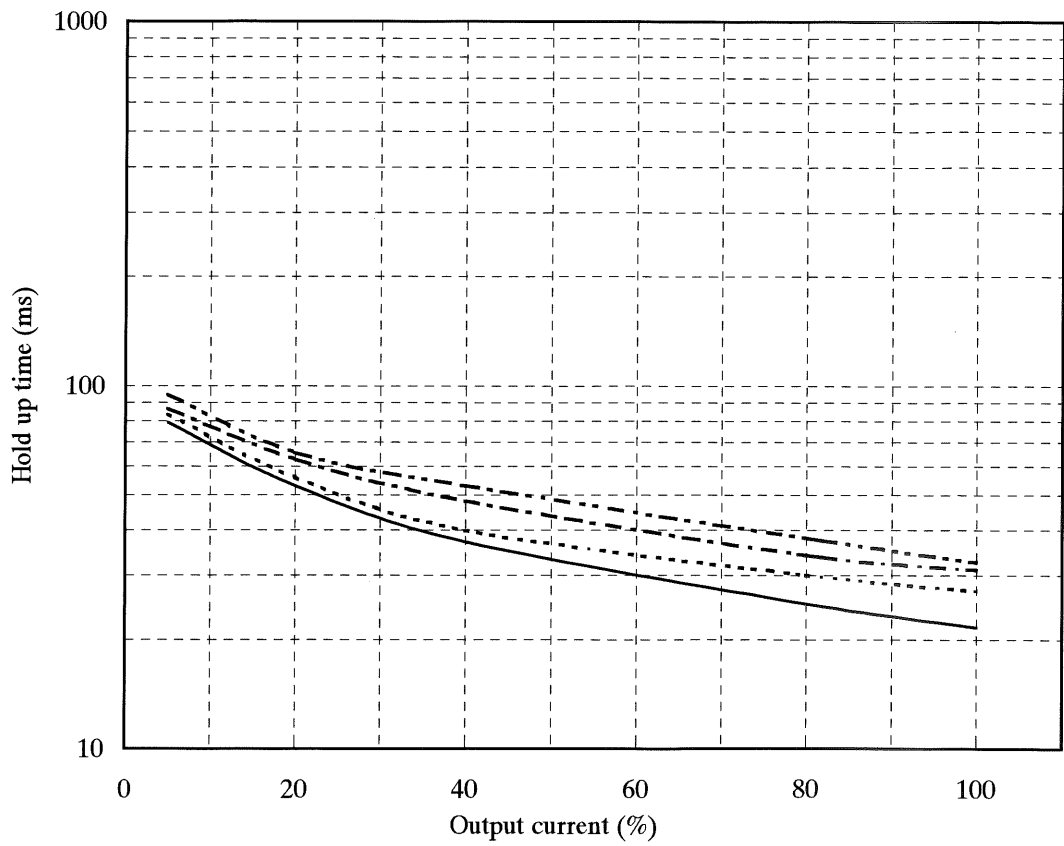


2.9 出力保持時間特性
Hold up time characteristics

Conditions Vin : 85VAC ———
: 100VAC
: 200VAC - - - -
: 265VAC - · - · -

Iout
V1 : 8A
V2 : 2.5A
V3 : 0.5A
Ta : 25°C

V1 : 5V



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

Conditions Vin : 85VAC \leftrightarrow 132VAC(A)
170VAC \leftrightarrow 265VAC(B)
Ta : 25°C

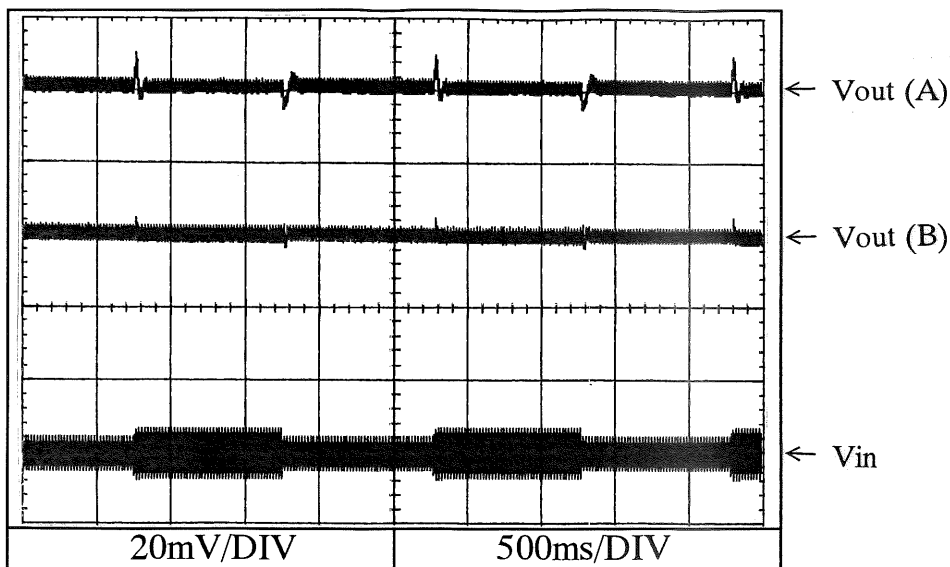
V1 : 5V

Iout

V1 : 8A

V2 : 2.5A

V3 : 0.5A



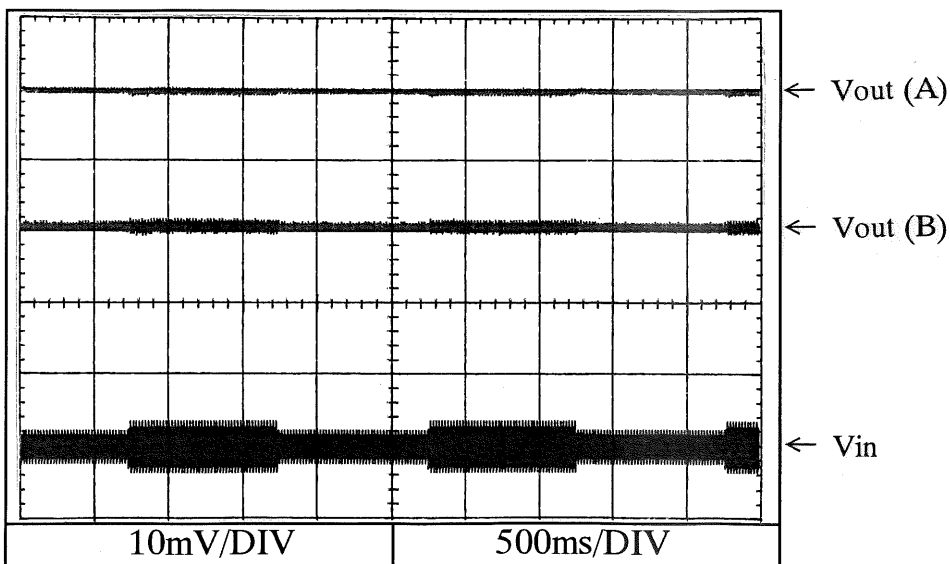
V2 : +12V

Iout

V1 : 4.4A

V2 : 4A

V3 : 0.5A



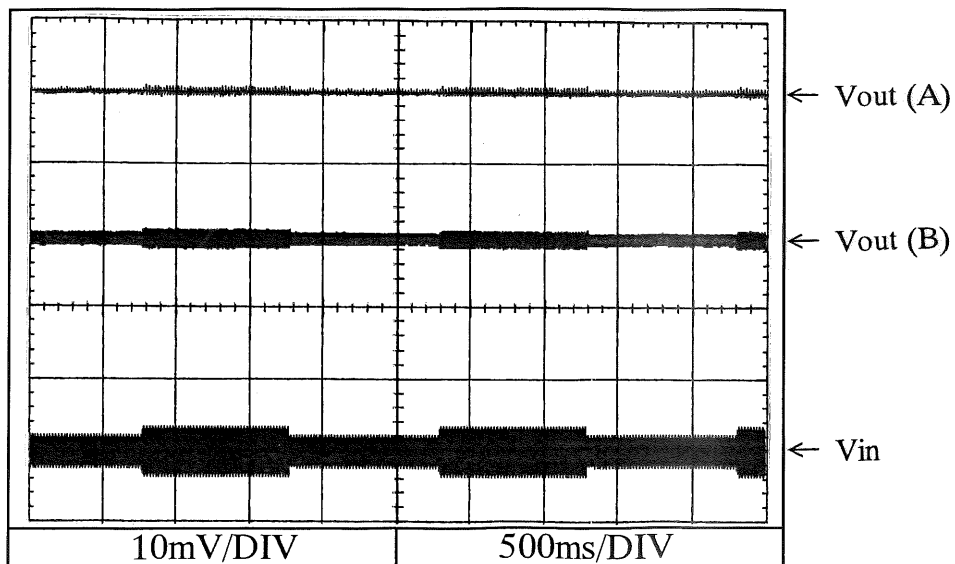
V3 : -12V

Iout

V1 : 8A

V2 : 2.5A

V3 : 0.5A

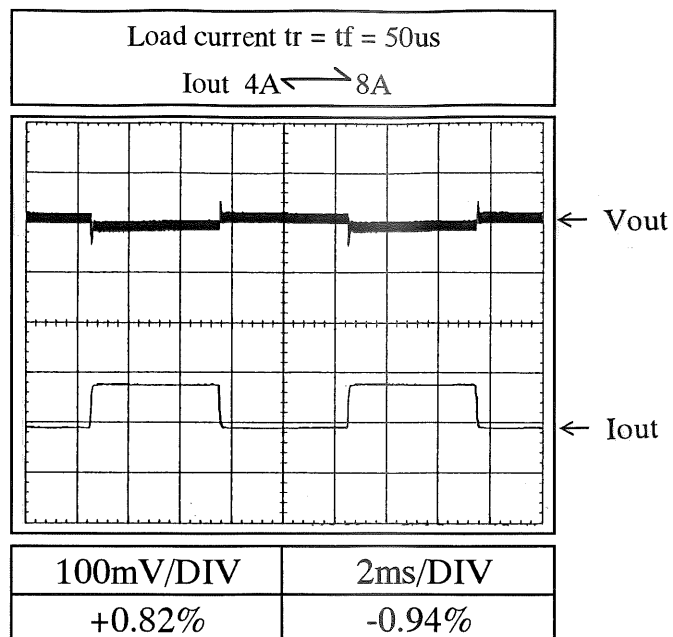
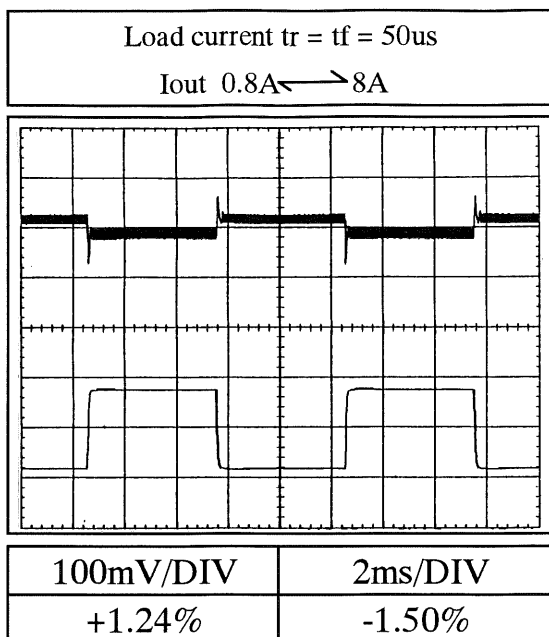


2.11 過渡応答（負荷急変）特性
Dynamic load response characteristics

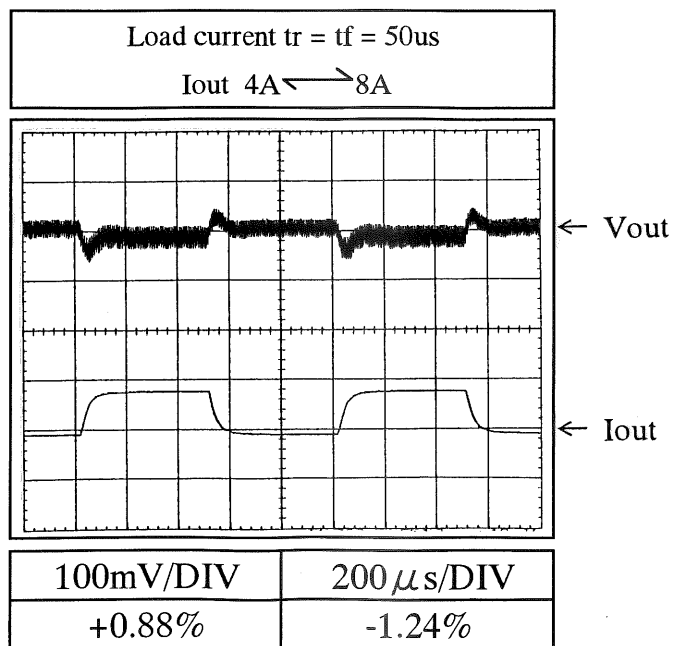
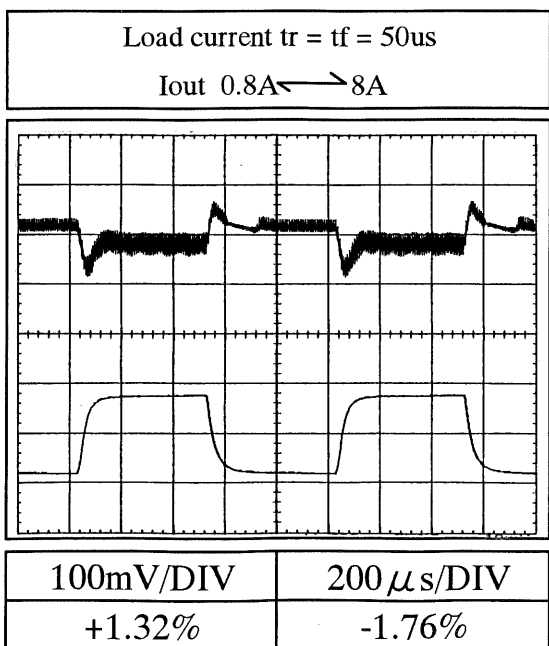
Conditions Vin : 100VAC
Iout :
V1 : -A
V2 : 2.5A
V3 : 0.5A
Ta : 25°C

V1 : 5V

f=100Hz



f=1kHz

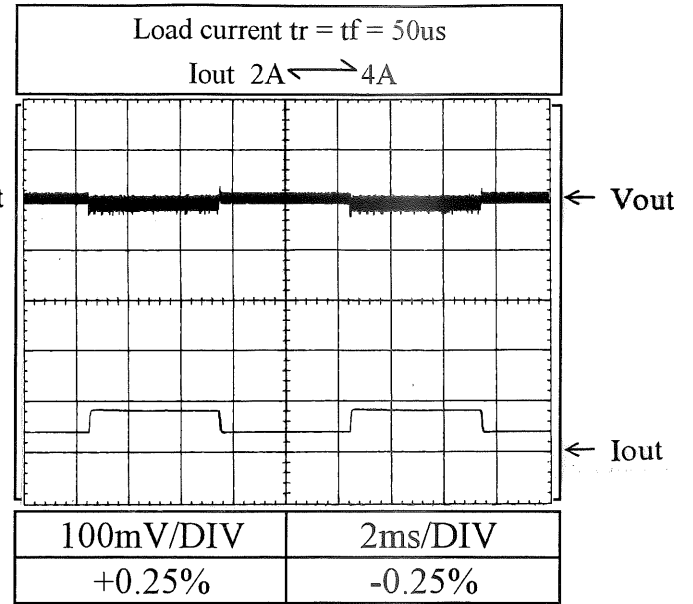
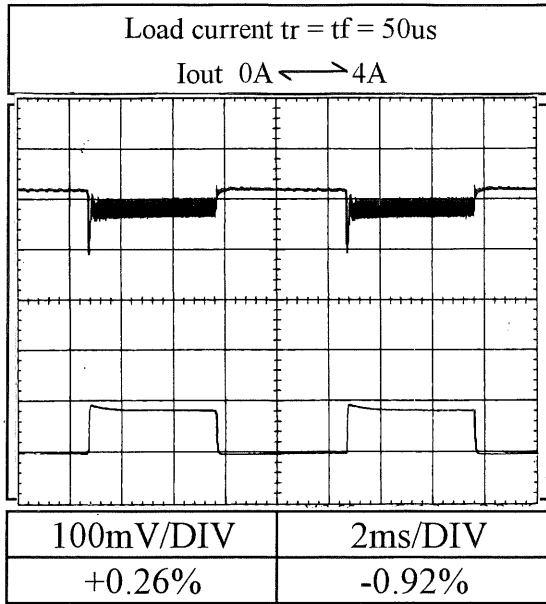


2.11 過渡応答 (負荷急変) 特性
Dynamic load response characteristics

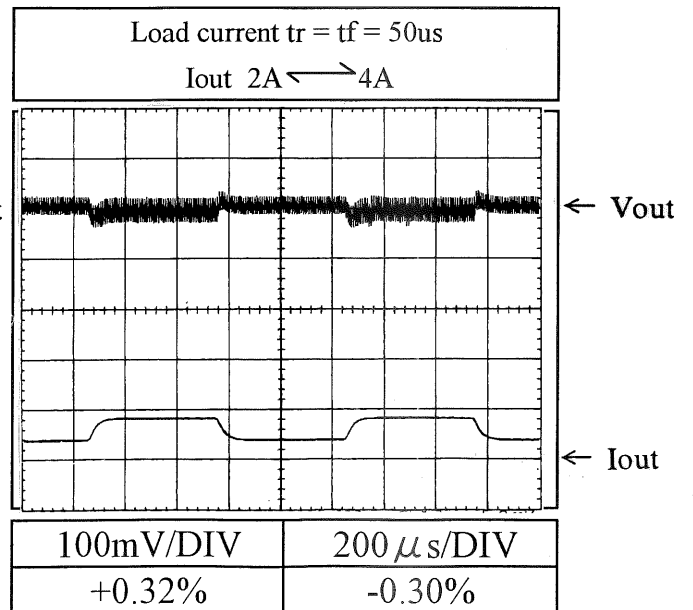
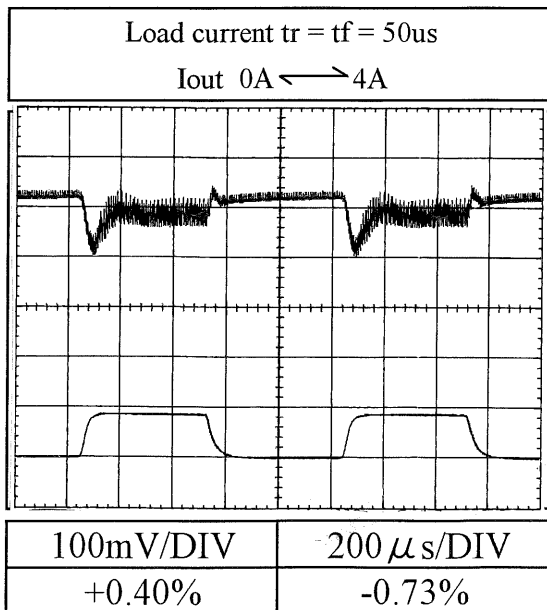
Conditions Vin : 100VAC
Iout
V1 : 4.4A
V2 : -A
V3 : 0.5A
Ta : 25°C

V2 : +12V

f=100Hz



f=1kHz

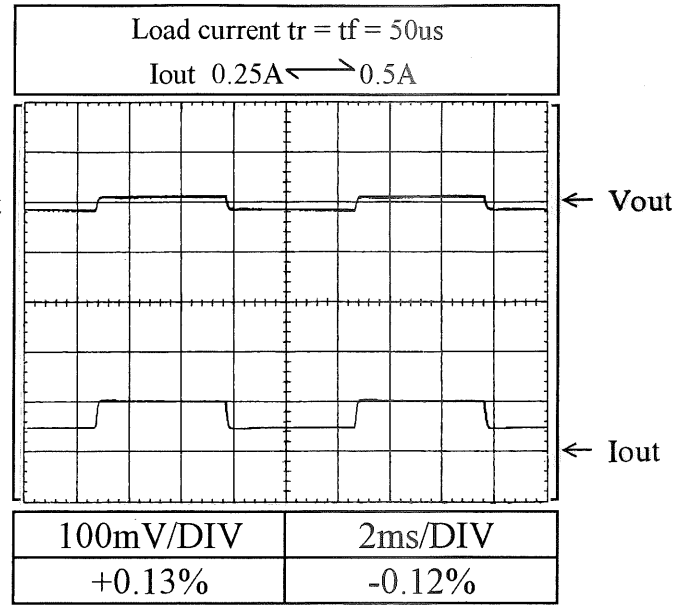
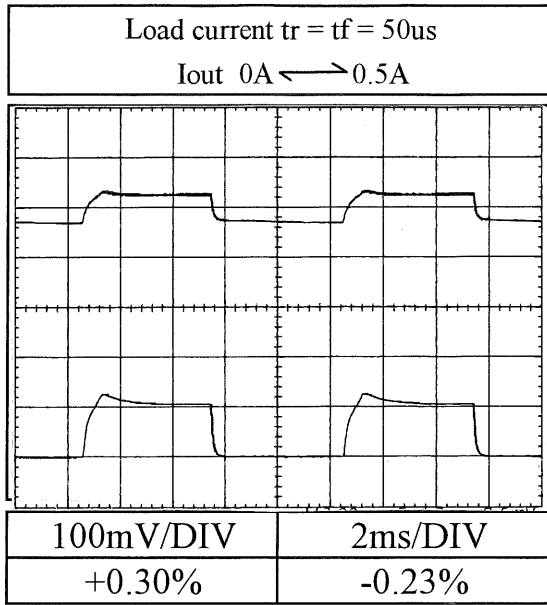


2.11 過渡応答（負荷急変）特性
Dynamic load response characteristics

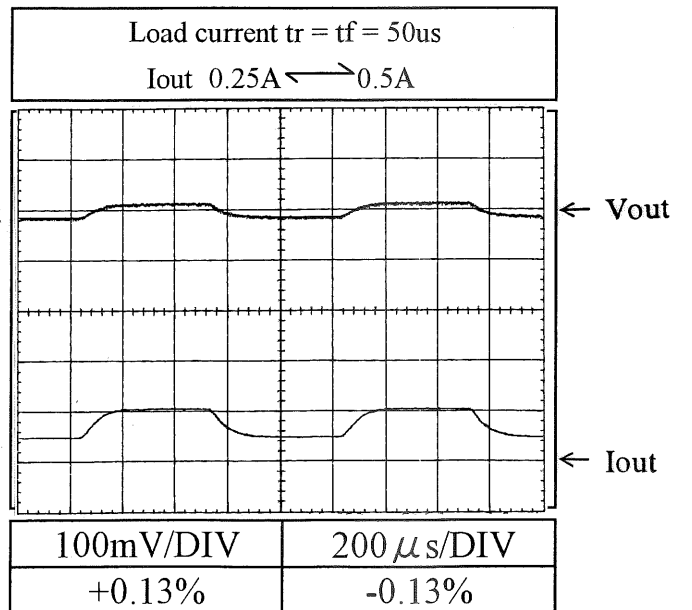
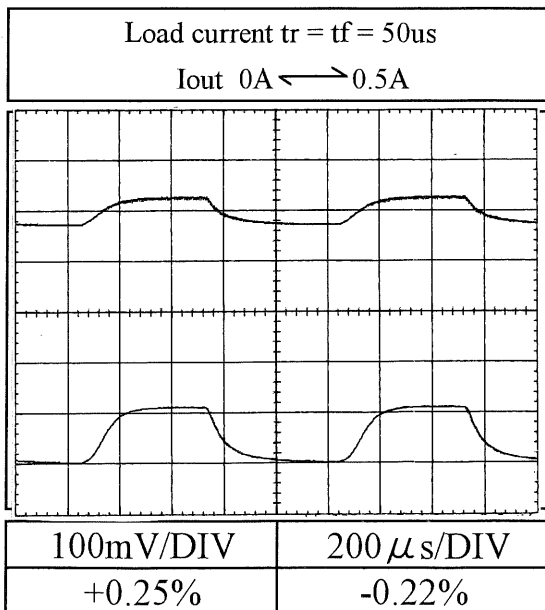
Conditions V_{in} : 100VAC
 I_{out}
 $V1$: 8A
 $V2$: 2.5A
 $V3$: -A
 T_a : 25°C

V3 : -12V

f=100Hz



f=1kHz



2.12 入力電圧瞬停特性

Response to brown out characteristics

Conditions V_{in} : 100VAC

T_a : 25°C

V1 : 5V

Iout

V1 : 8A

V2 : 2.5A

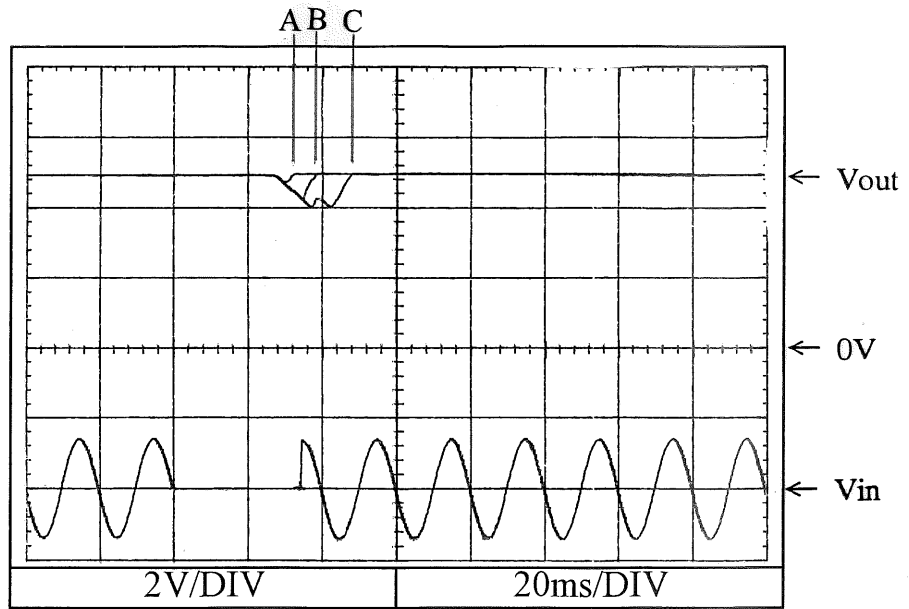
V3 : 0.5A

Brown out time

A: 27ms

B: 34ms

C: 36ms



V2 : +12V

Iout

V1 : 4.4A

V2 : 4A

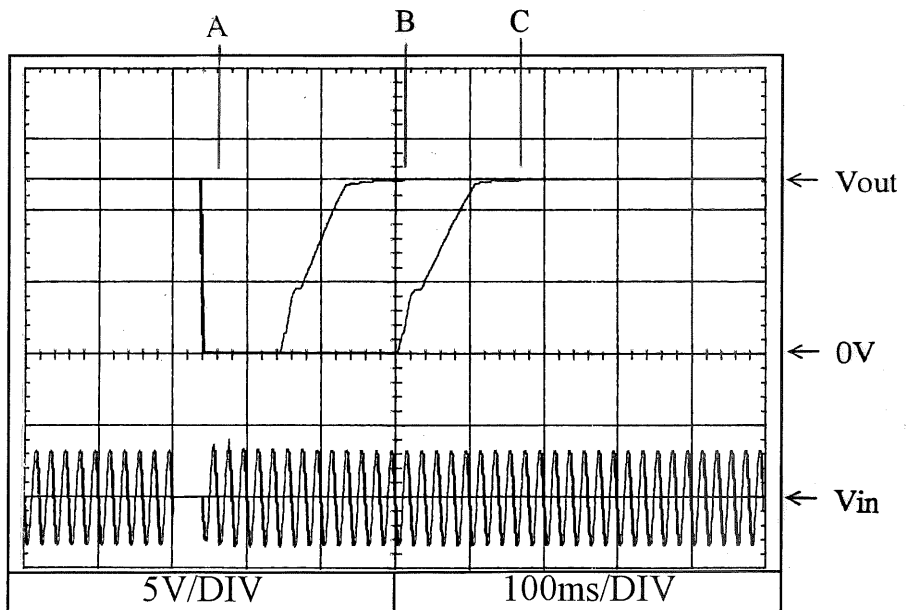
V3 : 0.5A

Brown out time

A: 35ms

B: 38ms

C: 42ms



V3 : -12V

Iout

V1 : 8A

V2 : 2.5A

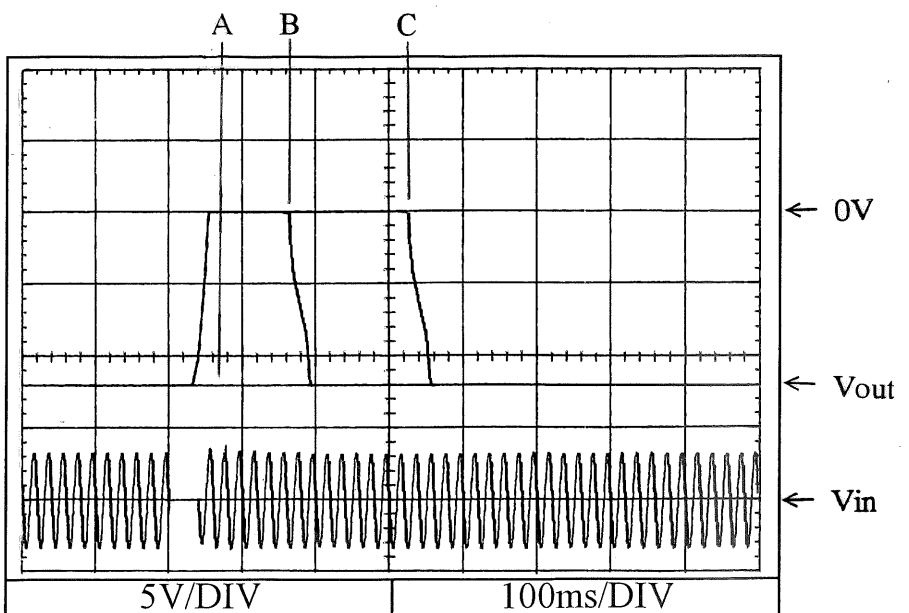
V3 : 0.5A

Brown out time

A: 35ms

B: 40ms

C: 45ms



2.12 入力電圧瞬停特性

Response to brown out characteristics

Conditions V_{in} : 200VAC

T_a : 25°C

V1 : 5V

Iout

V1 : 8A

V2 : 2.5A

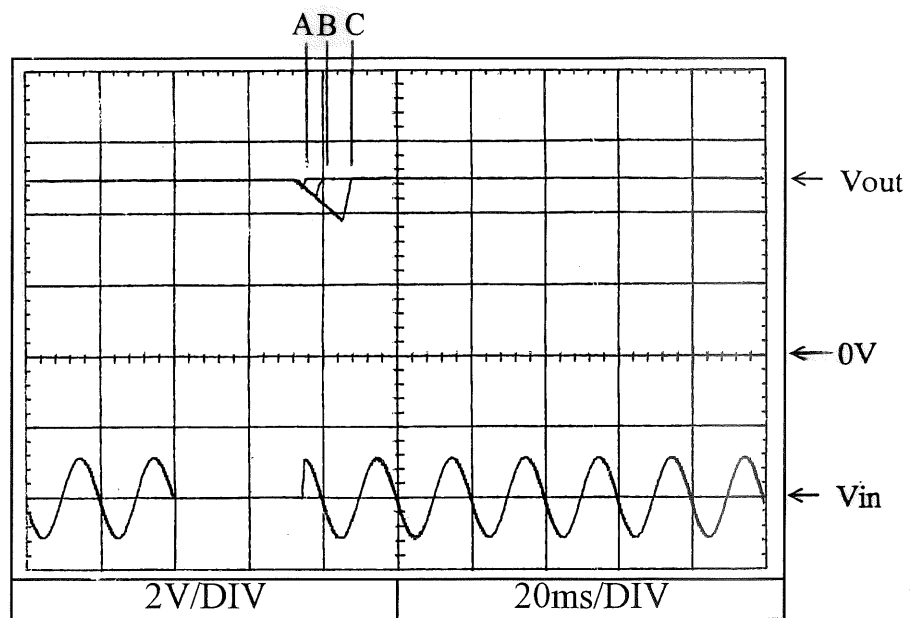
V3 : 0.5A

Brown out time

A : 34ms

B : 37ms

C : 44ms



V2 : +12V

Iout

V1 : 4.4A

V2 : 4A

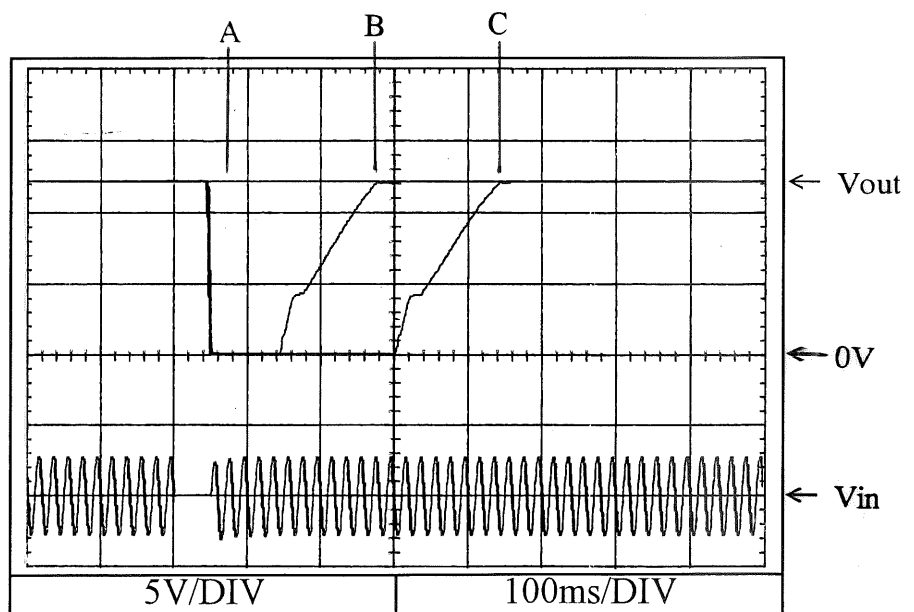
V3 : 0.5A

Brown out time

A : 43ms

B : 45ms

C : 55ms



V3 : -12V

Iout

V1 : 8A

V2 : 2.5A

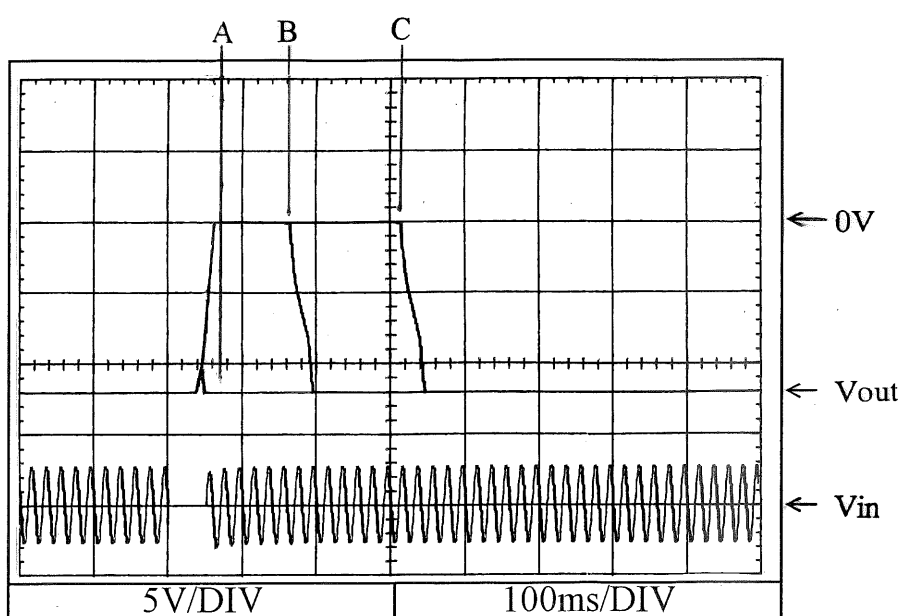
V3 : 0.5A

Brown out time

A : 43ms

B : 50ms

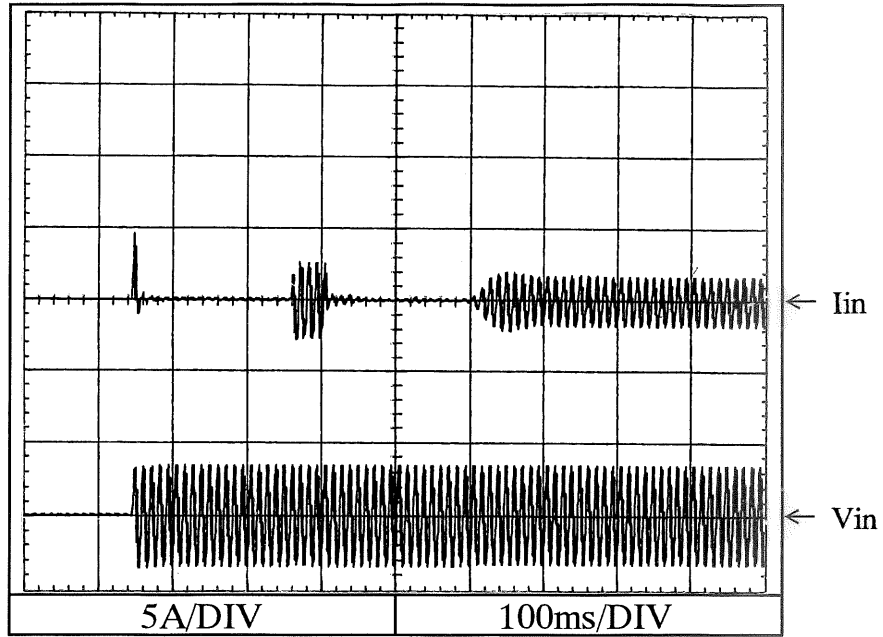
C : 53ms



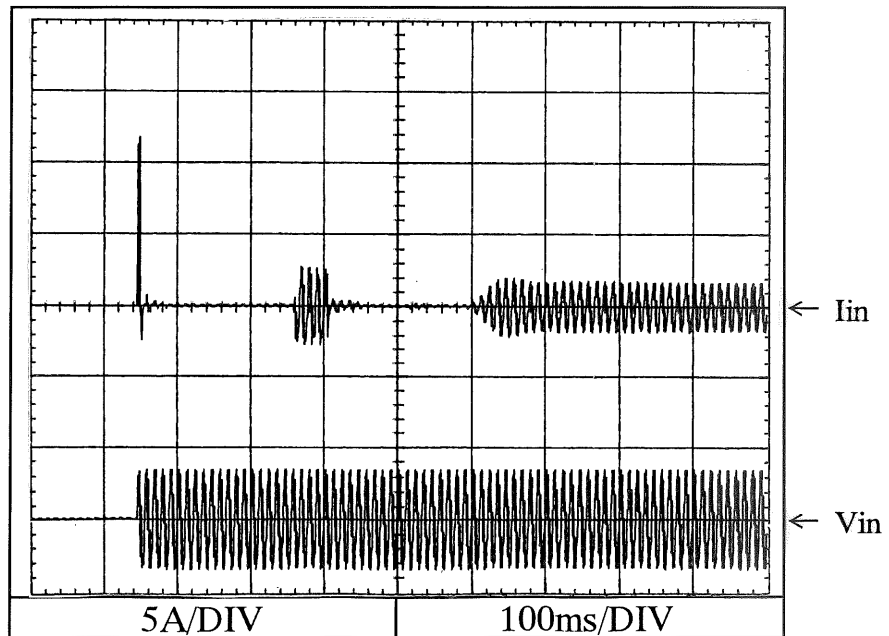
2.13 入力サージ電流 (突入電流) 特性
Inrush current waveform

Conditions Vin : 100VAC
Iout :
V1 : 8A
V2 : 2.5A
V3 : 0.5A
Ta : 25°C

Switch on phase angle
of input AC voltage
 $\phi = 0^\circ$



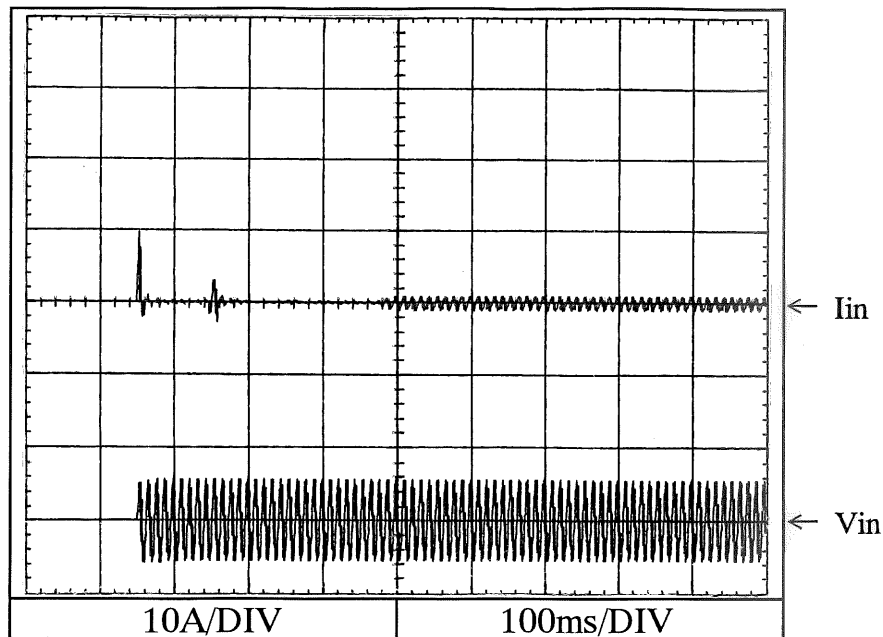
Switch on phase angle
of input AC voltage
 $\phi = 90^\circ$



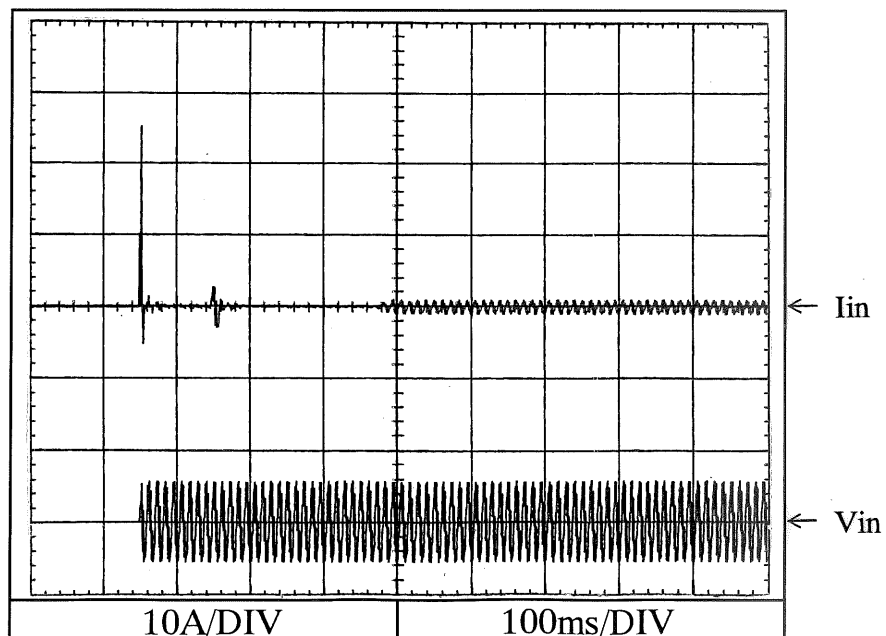
2.13 入力サージ電流 (突入電流) 特性
Inrush current waveform

Conditions Vin : 200VAC
Iout : 8A
V1 : 2.5A
V2 : 0.5A
V3 : 0.5A
Ta : 25°C

Switch on phase angle
of input AC voltage
 $\phi = 0^\circ$



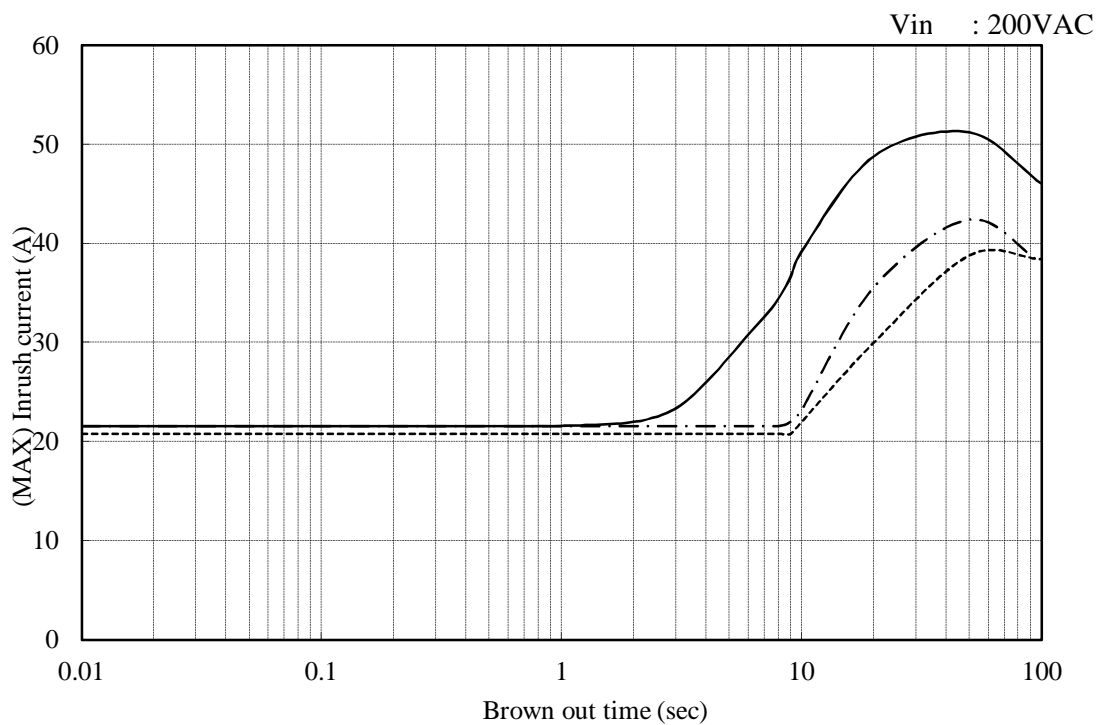
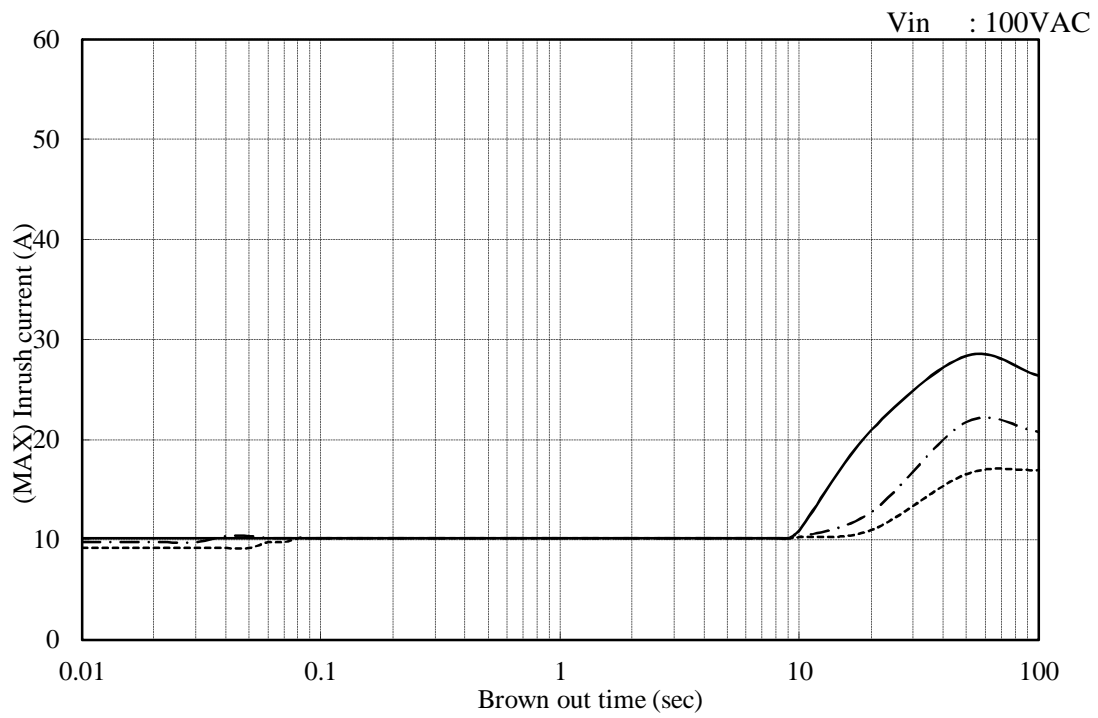
Switch on phase angle
of input AC voltage
 $\phi = 90^\circ$



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

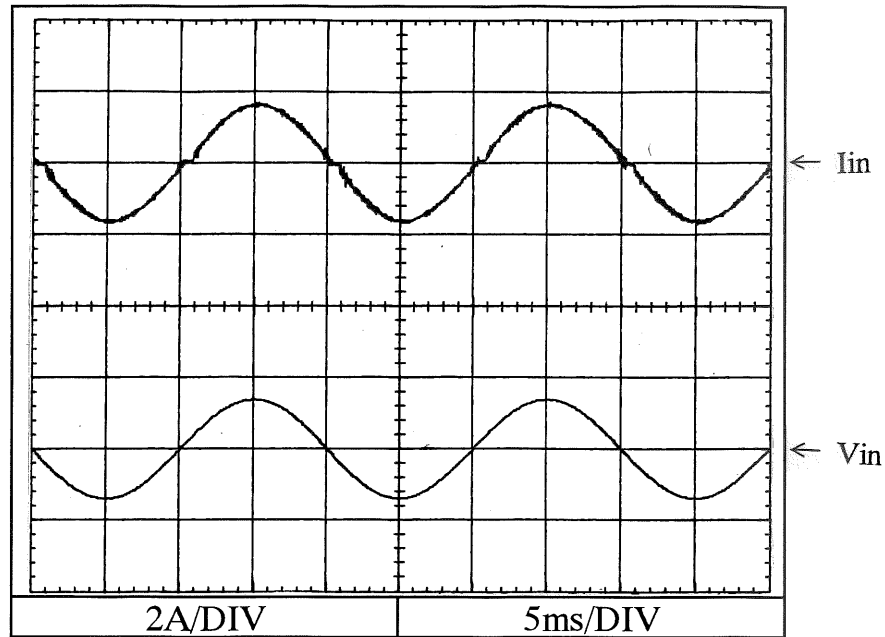
Conditions Ta : 25-C

Iout :	V1	V2	V3	
	0.8A	0A	0A	-----
	4A	1.25A	0.25A	- - - - -
	8A	2.5A	0.5A	—————

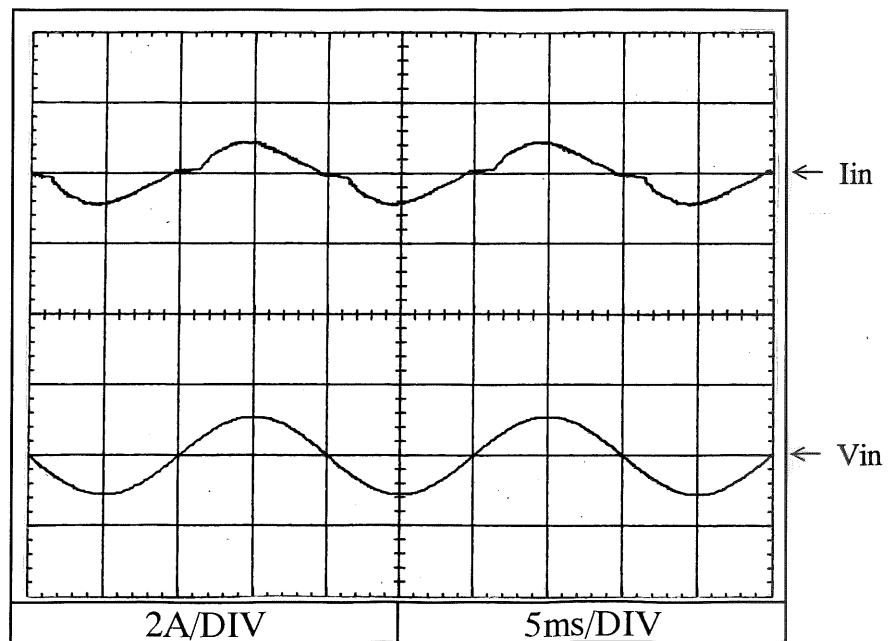


2.15 入力電流波形
Input current waveform

Conditions Vin : 100VAC
Iout
V1 : 8A
V2 : 2.5A
V3 : 0.5A
Ta : 25°C

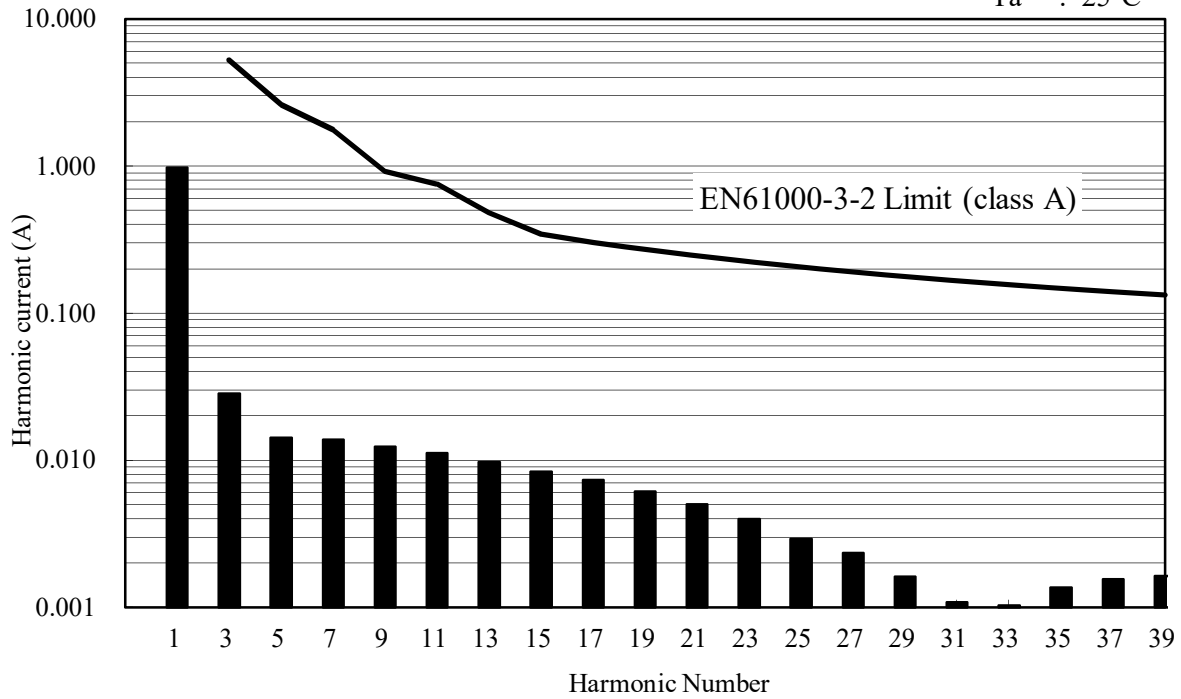


Conditions Vin : 200VAC
Iout
V1 : 8A
V2 : 2.5A
V3 : 0.5A
Ta : 25°C

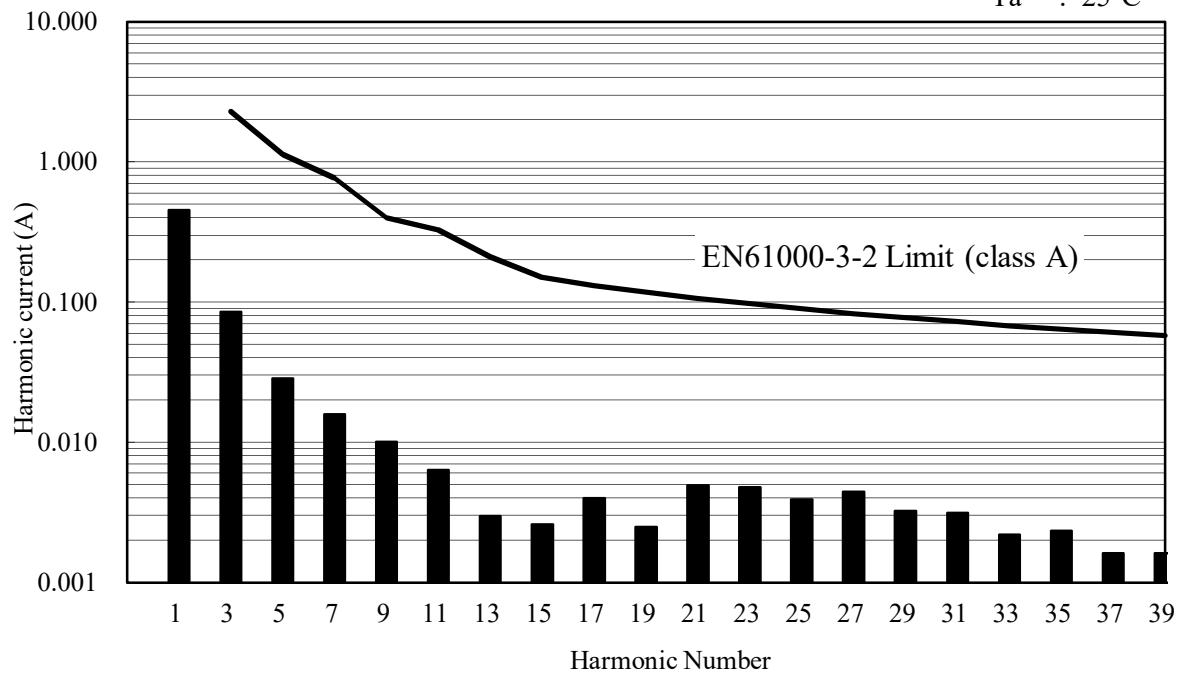


2.16 高調波成分
Input current harmonics

Conditions Vin : 100VAC
Iout
V1 : 8A
V2 : 2.5A
V3 : 0.5A
Ta : 25°C



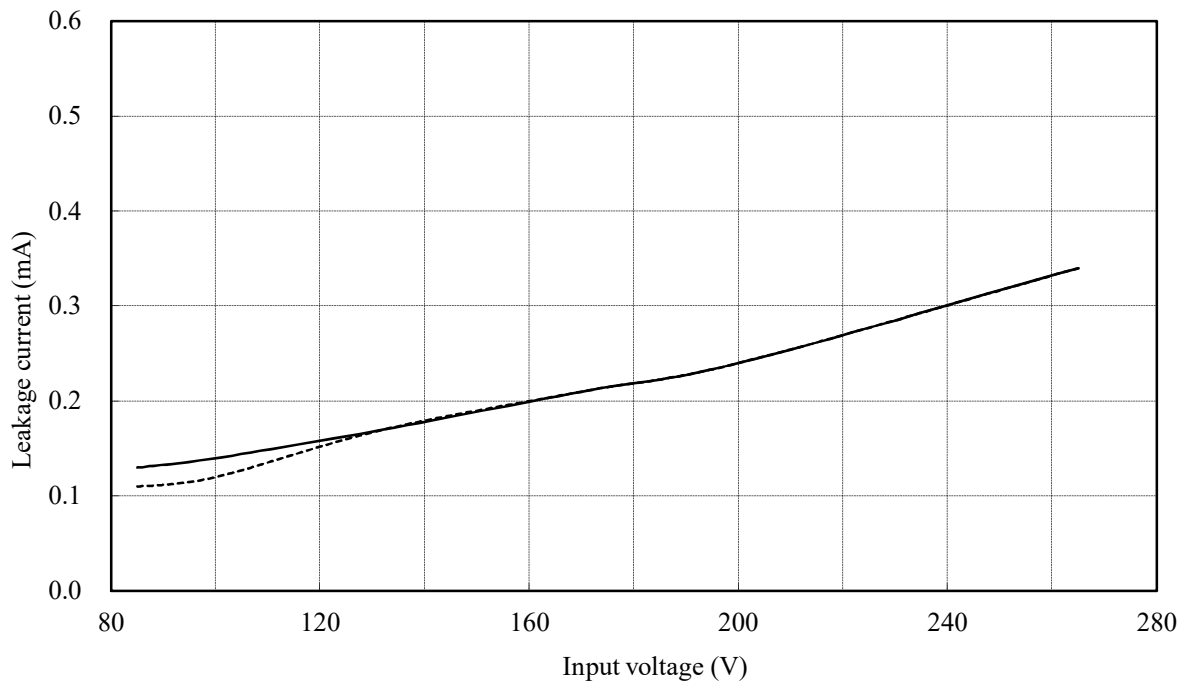
Conditions Vin : 230VAC
Iout
V1 : 8A
V2 : 2.5A
V3 : 0.5A
Ta : 25°C



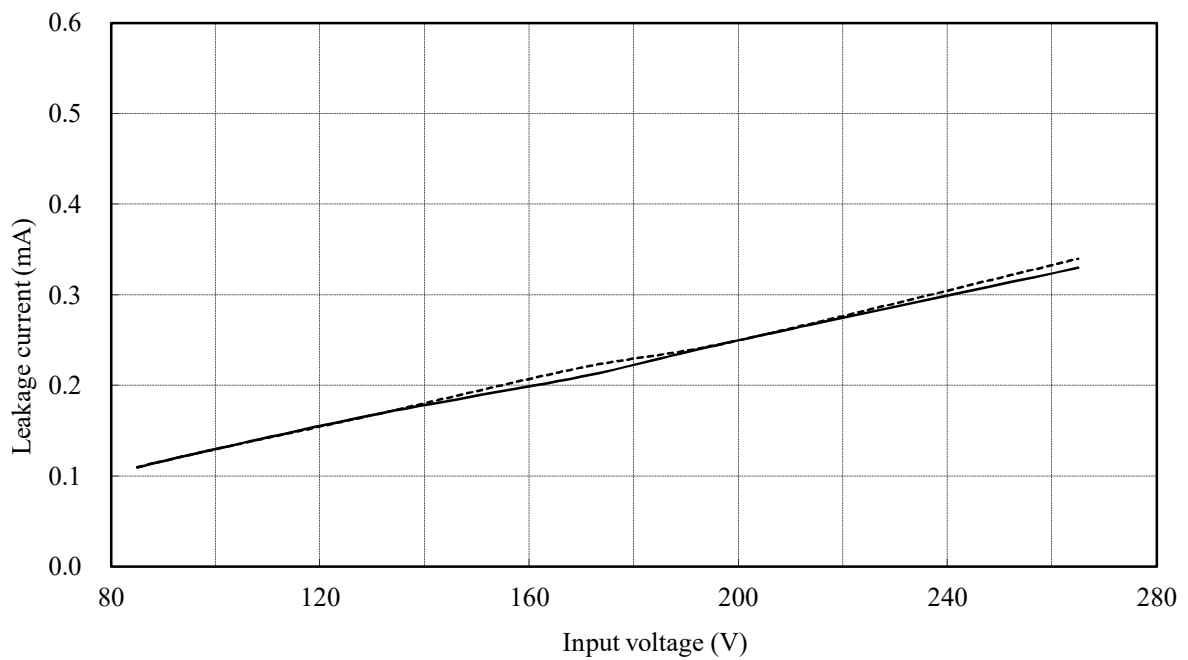
2.17 リーク電流特性
Leakage current characteristics

Conditions Iout : -----
 V1 : 0.8A
 V2 : 0A
 V3 : 0A
 Iout : _____
 V1 : 8A
 V2 : 2.5A
 V3 : 0.5A
 Ta : 25°C
 f : 50Hz

Equipment used : TYPE 3226 (Yokogawa)



Equipment used : MODEL 229-2 (Simpson)



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

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

NORMAL MODE

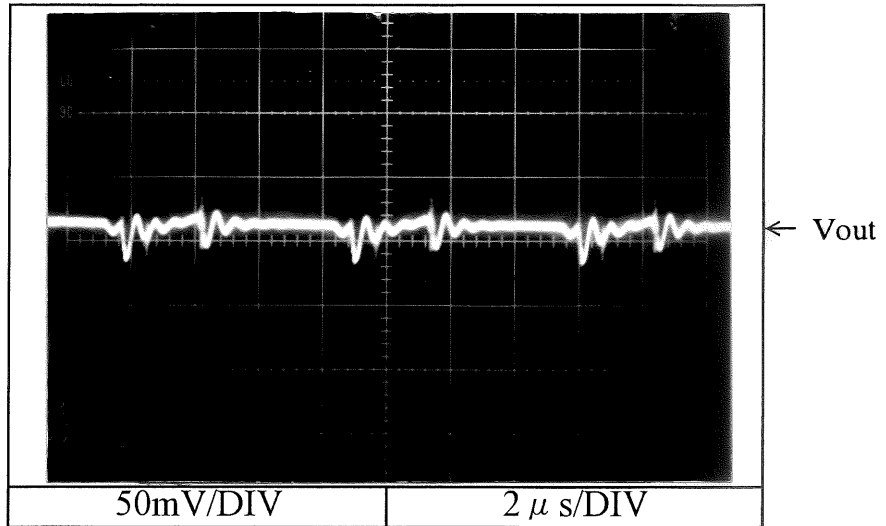
V1 : 5V

Iout

V1 : 8A

V2 : 2.5A

V3 : 0.5A



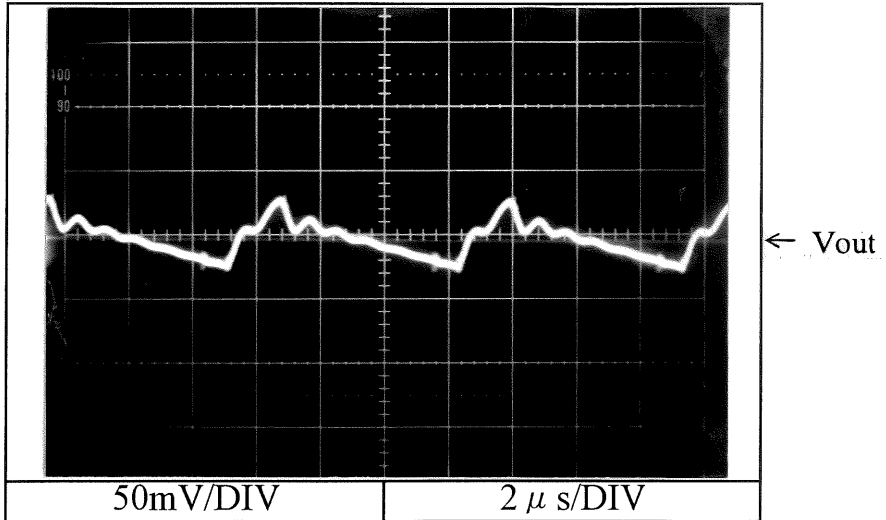
V2 : +12V

Iout

V1 : 4A

V2 : 4.4A

V3 : 0.5A



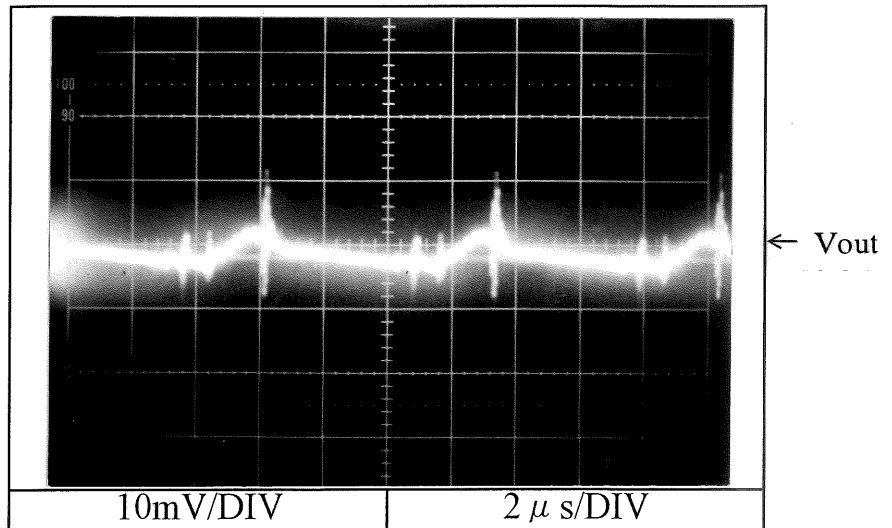
V3 : -12V

Iout

V1 : 8A

V2 : 2.5A

V3 : 0.5A



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

Conditions Vin : 100VAC
Ta : 25°C

NORMAL MODE + COMMON MODE

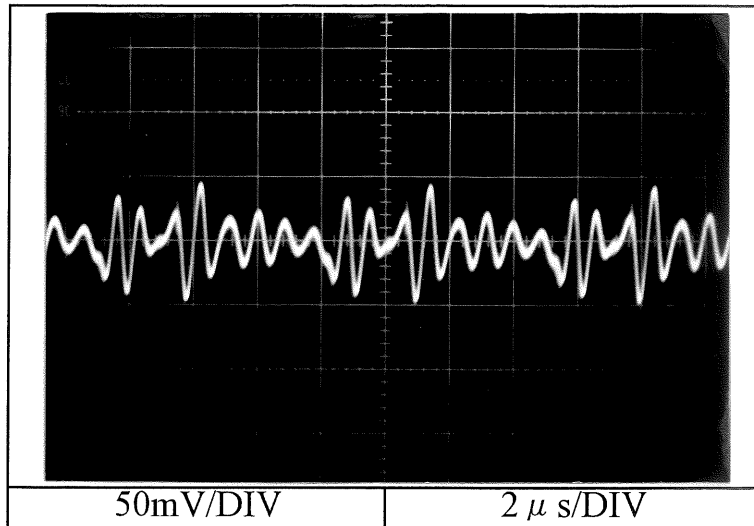
V1 : 5V

Iout

V1 : 8A

V2 : 2.5A

V3 : 0.5A



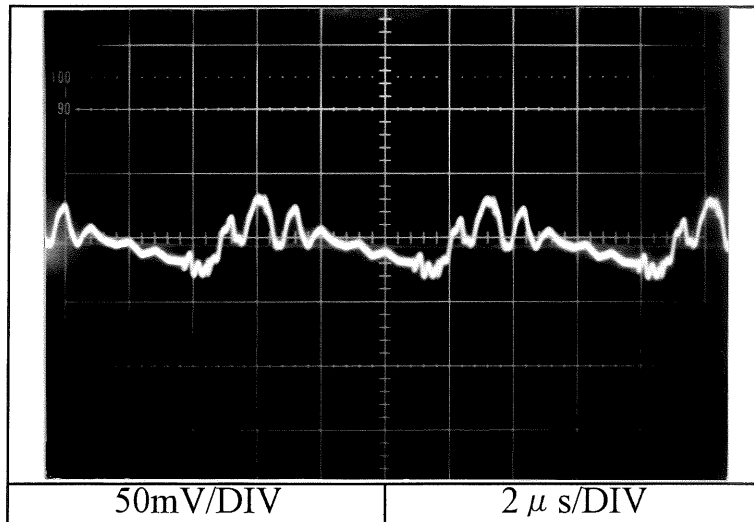
V2 : +12V

Iout

V1 : 4A

V2 : 4.4A

V3 : 0.5A



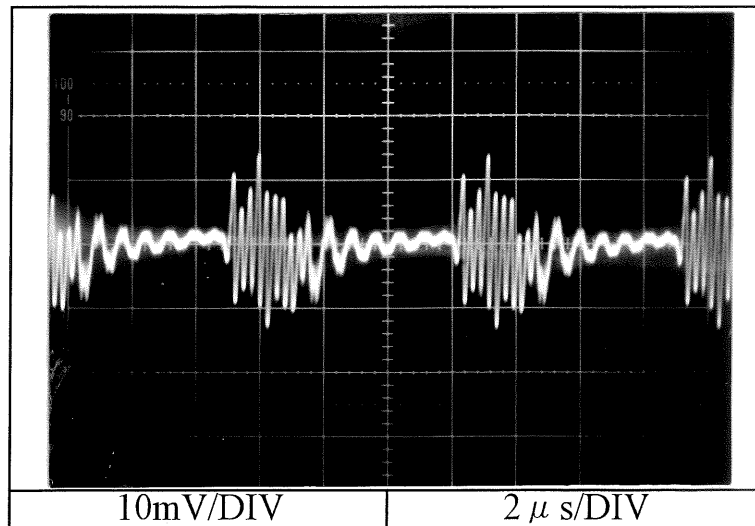
V3 : -12V

Iout

V1 : 8A

V2 : 2.5A

V3 : 0.5A



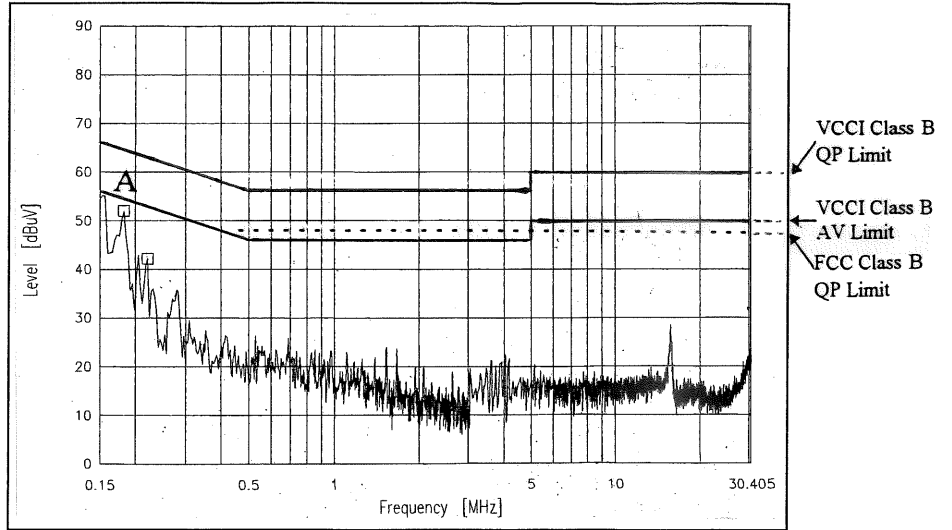
2.19 EMI 特性
Electro-Magnetic Interference characteristics

雑音端子電圧

Conducted Emission Noise

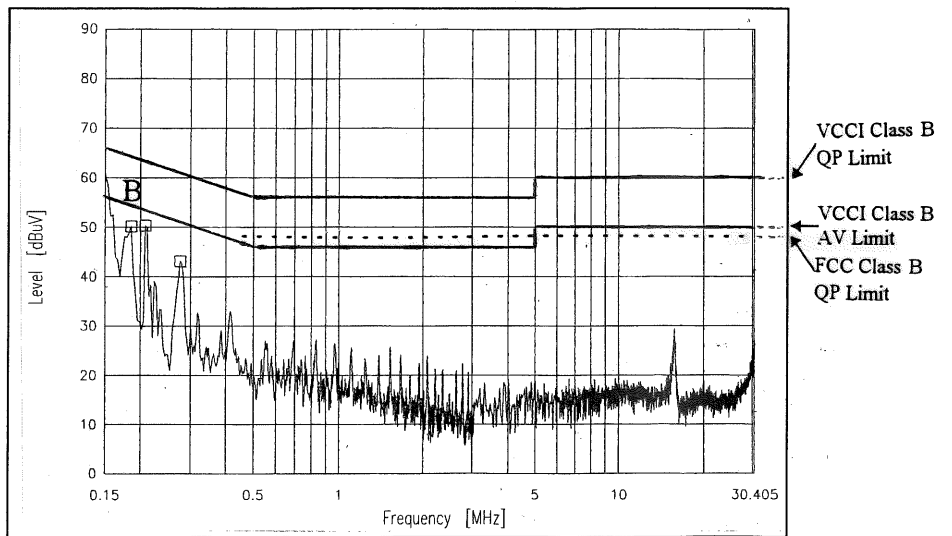
Conditions V_{in} : 100VAC
 I_{out} :
 V_1 : 8A
 V_2 : 2.5A
 V_3 : 0.5A

Ref.	Point A (177kHz)	
	Data	Measure (dBuV)
QP	64.6	46.6
AV	54.6	41.5



Phase : L

Ref.	Point B (177kHz)	
	Data	Measure (dBuV)
QP	64.6	46.4
AV	54.6	41.6



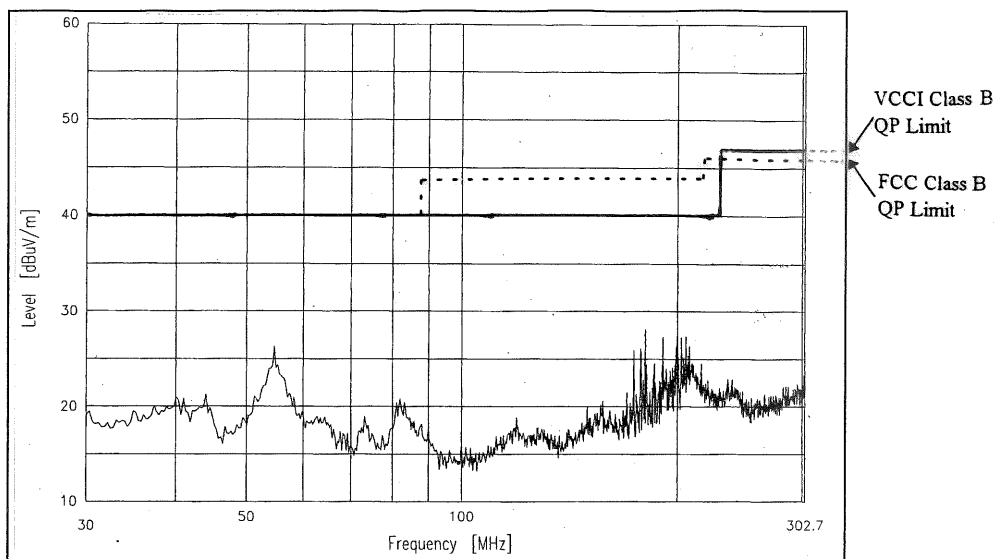
Phase : N

2.19 EMI 特性
Electro-Magnetic Interference characteristics

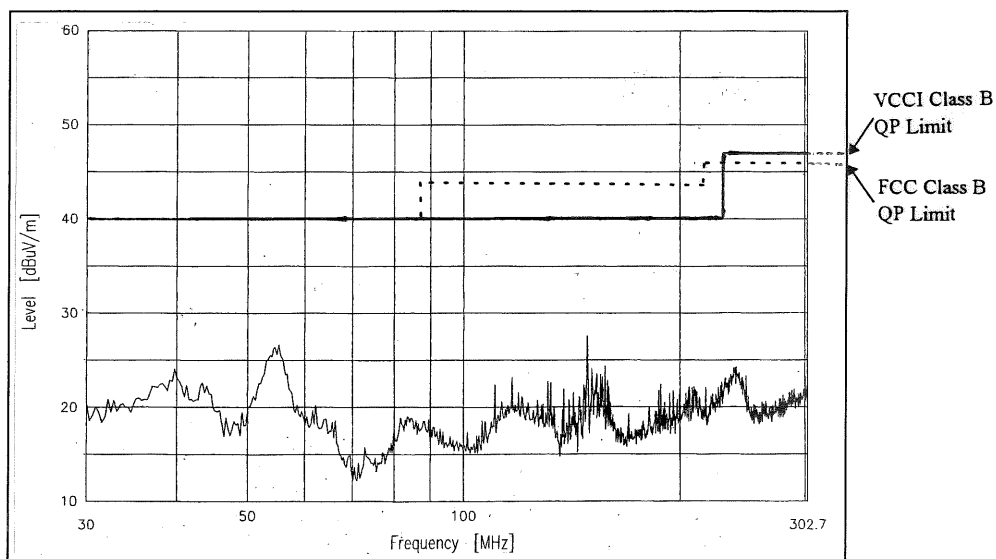
Conditions Vin : 100VAC
Iout .
V1 : 8A
V2 : 2.5A
V3 : 0.5A

雑音電界強度
Radiated Emission Noise

HORIZONTAL:



VERTICAL:



EN55011-B,EN55032-Bの限界値はVCCI class Bの限界値と同じ
Limits of EN55032-B are same as its VCCI class B.