

VS100P

EVALUATION DATA

型式データ

DWG No. A221-53-01		
APPD	CHK	DWG
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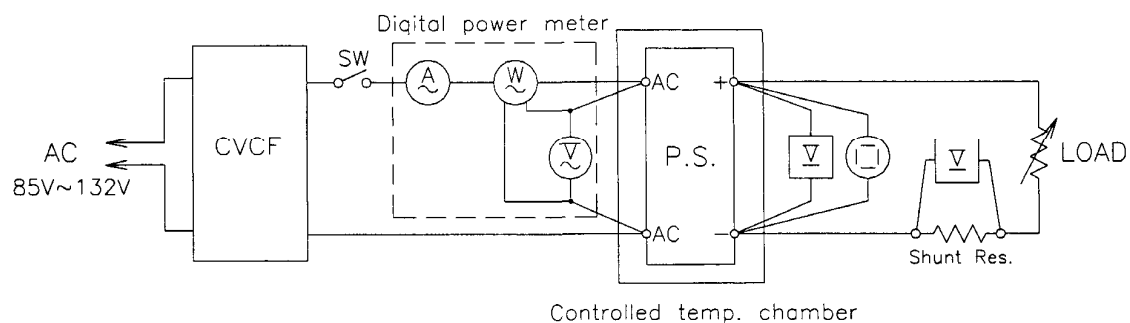
使用記号 Terminology used

	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} 平均出力電流 Average Output current
T_a 周囲温度 Ambient temperature

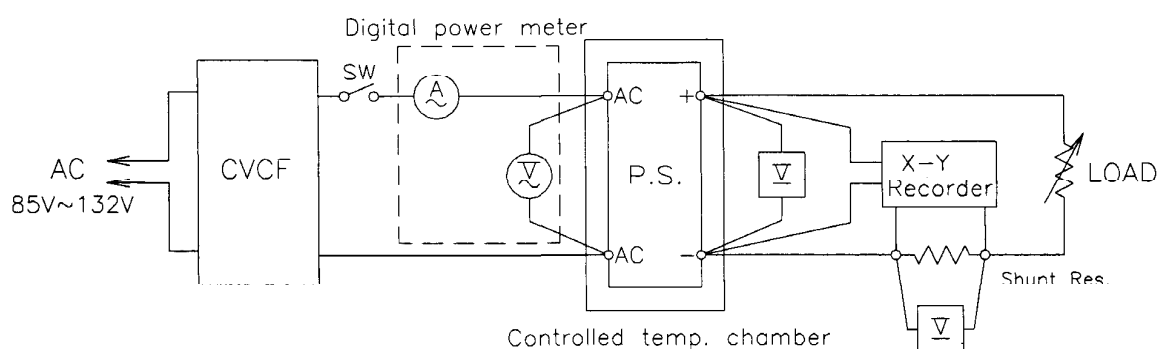
1. 測定方法 Evaluation Method

1.1 測定回路 Circuit used for determination

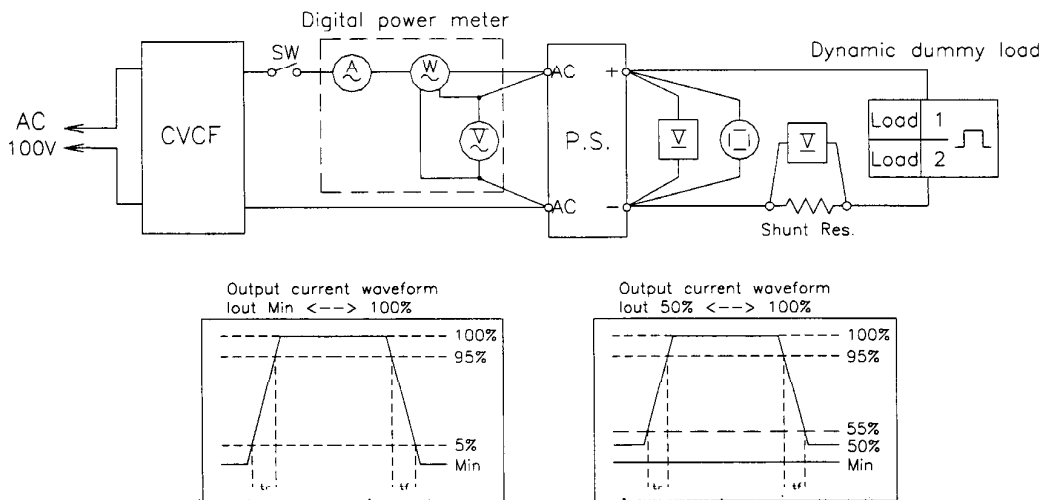
- (1) 静特性 Steady state data
- (2) 通電ドリフト特性 Warm up voltage drift characteristics
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- (6) 過渡応答（入力急変）特性 Dynamic line response characteristics
- (7) 出力保持時間特性 Hold up time characteristics
- (8) 入力電圧瞬停特性 Response to brown out characteristics



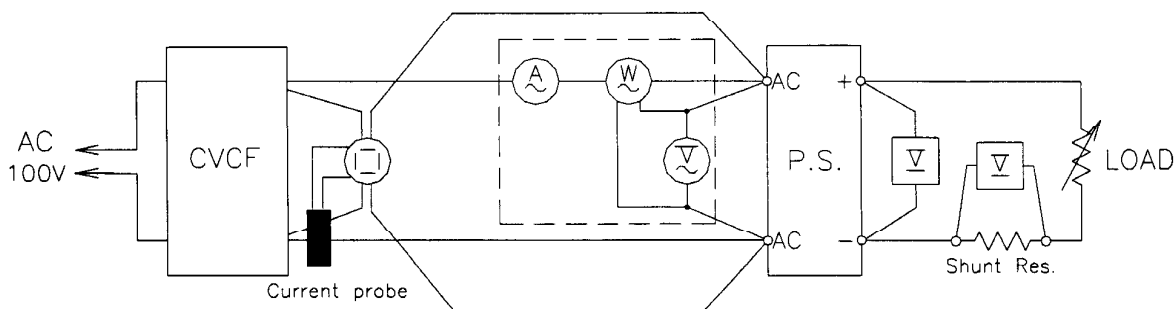
- (9) 過電流保護特性 Over current protection (OCP) characteristics



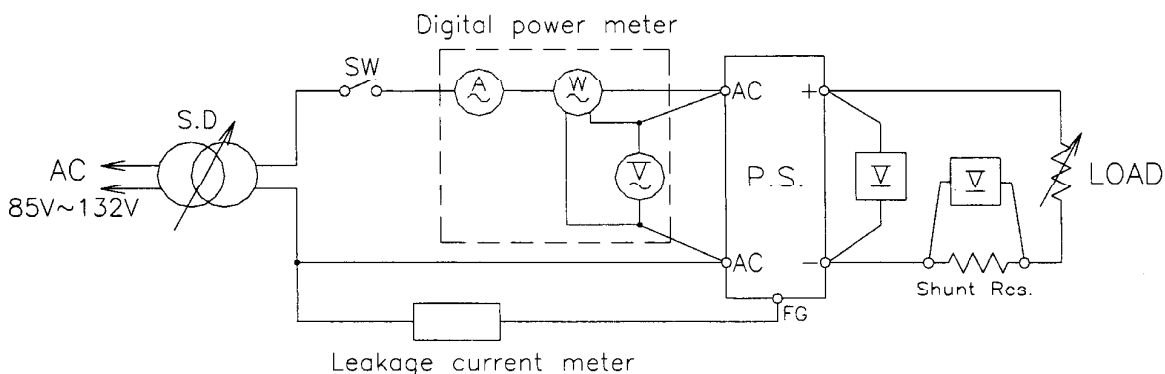
(10) 過渡応答（負荷急変）特性 Dynamic load response characteristics



(11) 入力電サージ電流（突入電流）特性 Inrush current characteristics



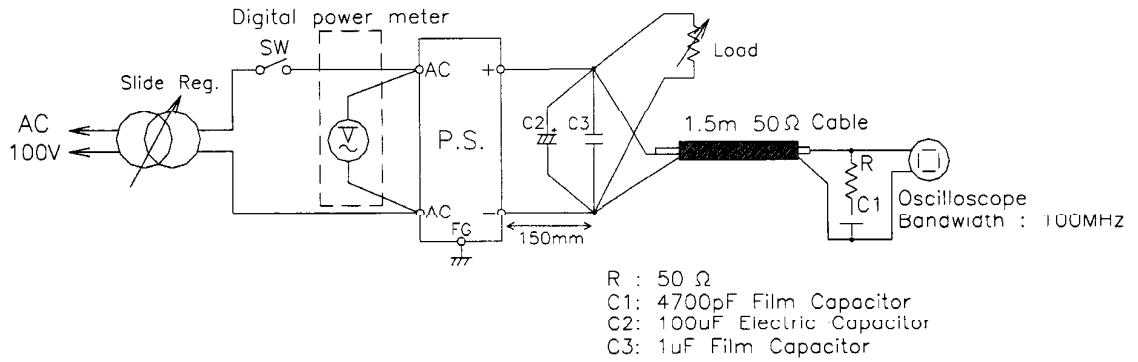
(12) リーク電流特性 Leakage current characteristics



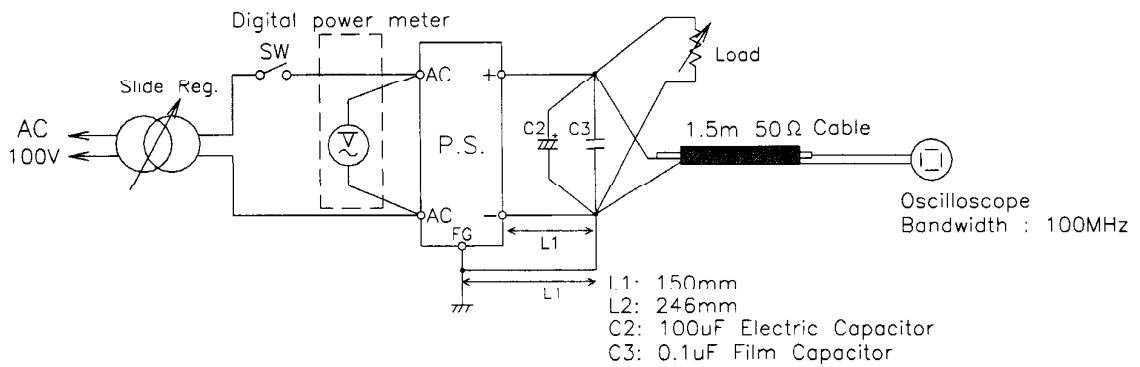
NOTE : Leakage current measured through a 1k ohm resistor.
 Range used ---AC+DC (For YOKOGAWA TYPE 3226)
 ---AC (For SIMPSON MODEL 229-2)

(13) 出力リップル、ノイズ特性 Output ripple and noise characteristics

(a) Normal Mode (JEITA Standard RC-9131)

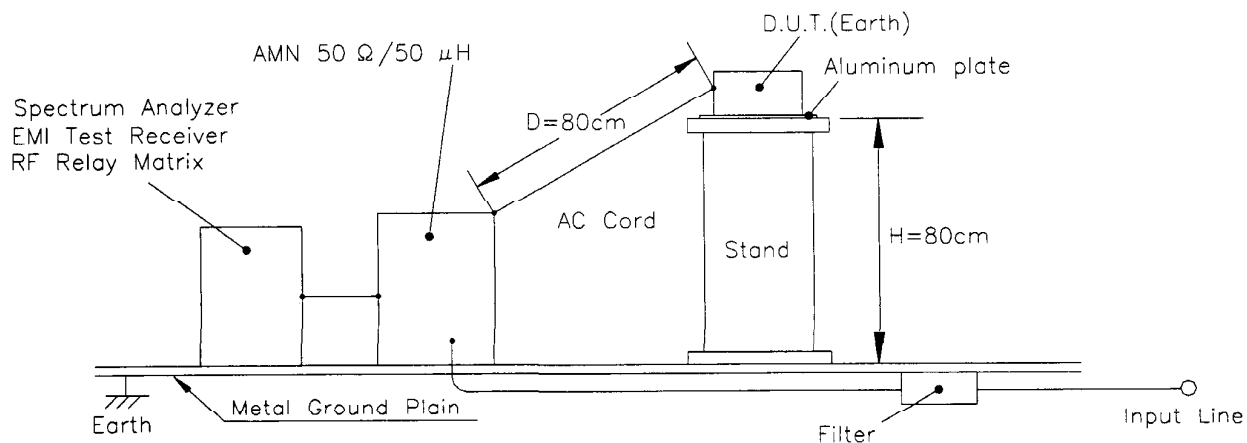


(b) Normal + Common Mode

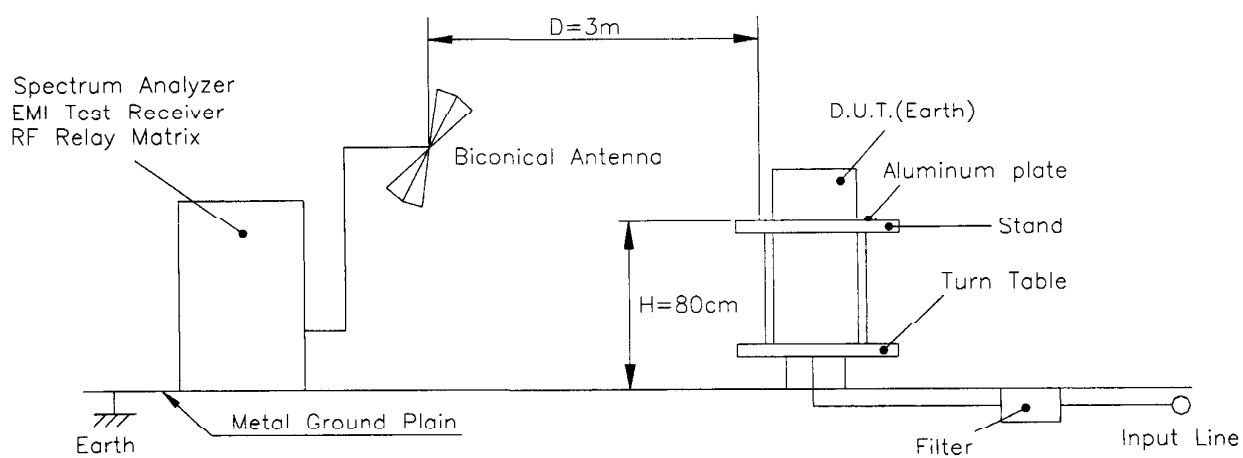


(14) EMI 特性 Electro-Magnetic Interference characteristics

(a) 雑音端子電圧 Conducted Emission Noise



(b) 雑音電界強度 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-1565/V-1100A
2	DIGITAL STORAGE OSCILLOSCOPE	TEKTRONIX	TDS540D
3	DIGITAL MULTIMETER	YOKOGAWA ELECT.	7544/1/1
4	DIGITAL POWER METER	YOKOGAWA ELECT.	WT110
5	SHUNT RESISTOR	YOKOGAWA ELECT.	2215
6	CURRENT PROBE/AMPLIFIER	TEKTRONIX	TM502A/AM503
7	DYNAMIC DUMMY LOAD	TAKASAGO	FK-600L
8	SLIDE REGURATOR	MATSUNAGA	SD-2652
9	CVCF	TAKASAGO	AA2000XG
10	LEAKAGE CURRENT METER	SIMPSON	229-2
11	LEAKAGE CURRENT METER	YOKOGAWA	TYPE3226
12	CONTROLLED TEMP. CHANBER	TABAI ESPEC	SH-240
13	SPECTRUM ANALYZER	ROHDE & SCHWARZ	FSA
14	EMI TEST RECEIVER	ROIIDE & SCHWARZ	ESHS10
15	EMI TEST RECEIVER	ROHDE & SCHWARZ	ESVS10
16	RF RELAY MATRIX	ROHDE & SCHWARZ	PSU
17	AMN	KYORITU DENSHI	KNW-242
18	ANTENA(BICONICAL ANTENA)	SCHWARZBECK	BBA9106
19	MULTIFUNCTION SYNTHESIZER	NF ELECTRONIC INSTRUMENTS	DF1940

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

1. Regulation - Line and Load Condition Ta : 25°C

Iout \ Vin	85VAC	100VAC	132VAC	Line regulation	
	0%	23.964V	23.968V	23.968V	4mV
50%	23.965V	23.966V	23.966V	1mV	0.004%
100%	23.966V	23.966V	23.966V	0mV	0.000%
Load regulation	2mV	2mV	2mV		
	0.008%	0.008%	0.008%		

2. Temperature drift Conditions Vin : 100VAC

Iout : 100%

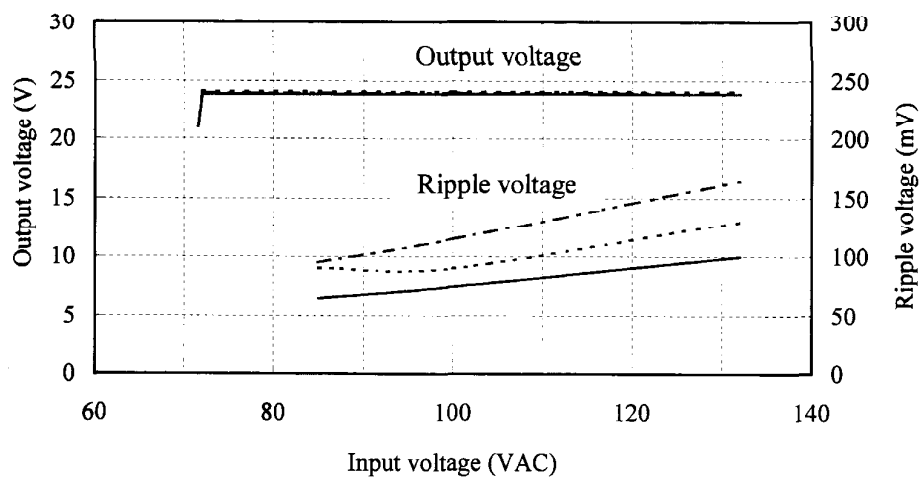
Ta	-10°C	+25°C	+50°C	Temperature stability	
Vout	24.073V	23.966V	23.882V	191mV	0.796%

(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

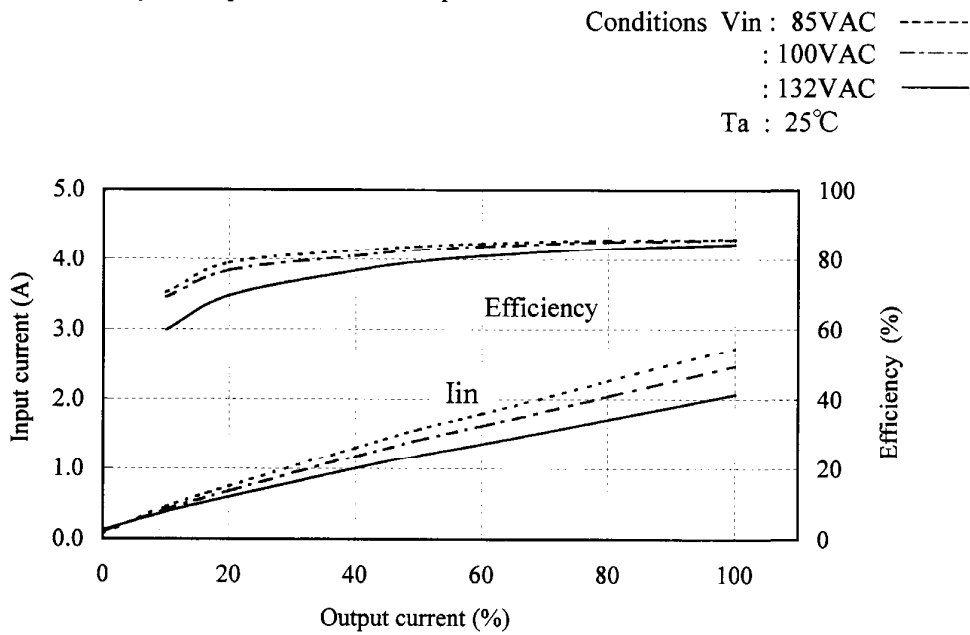
Conditions Iout : 100%

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



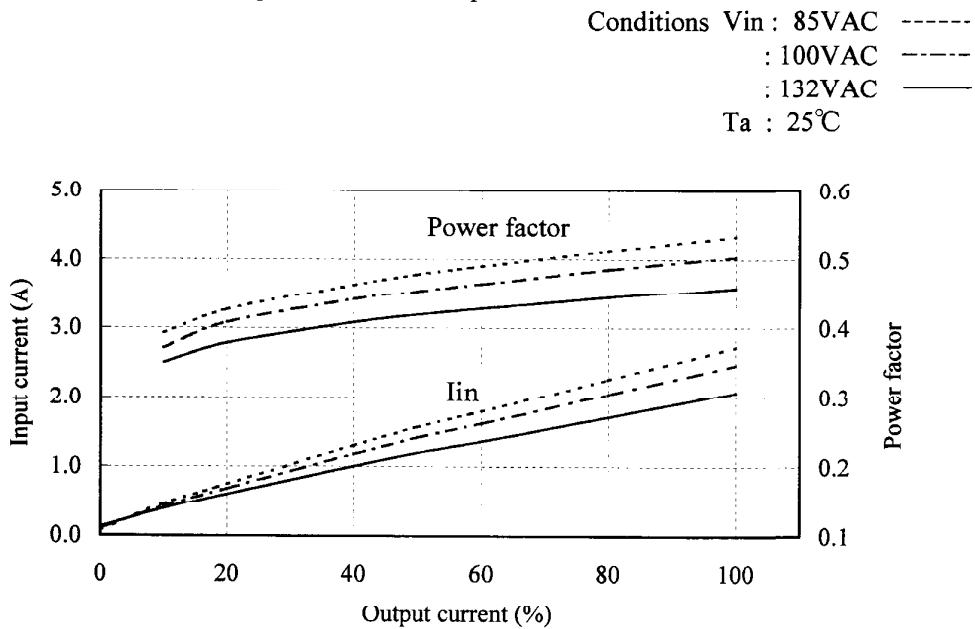
(3) 効率、入力電流 対 出力電流

Efficiency and Input current v.s. Output current



(4) 力率、入力電流 対 出力電流

Power factor and Input current v.s. Output current



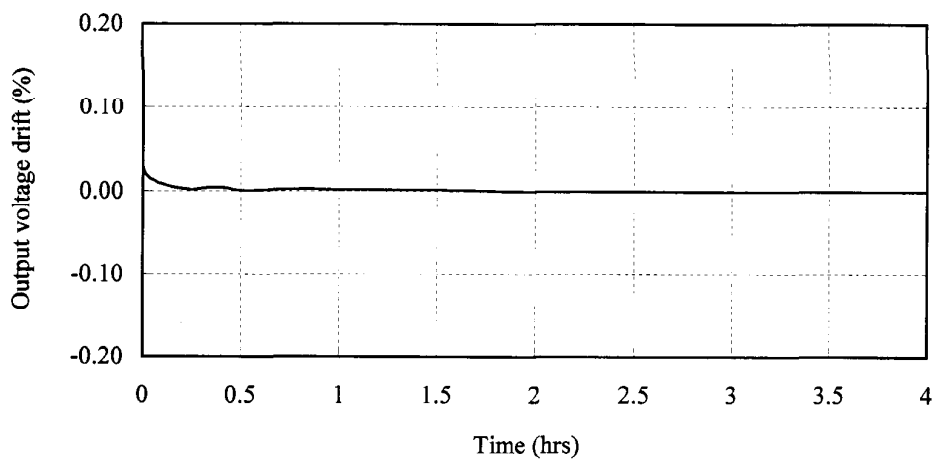
2.2 通電ドリフト特性

Warm up voltage drift characteristics

Conditions V_{in} : 100VAC

I_o : 100%

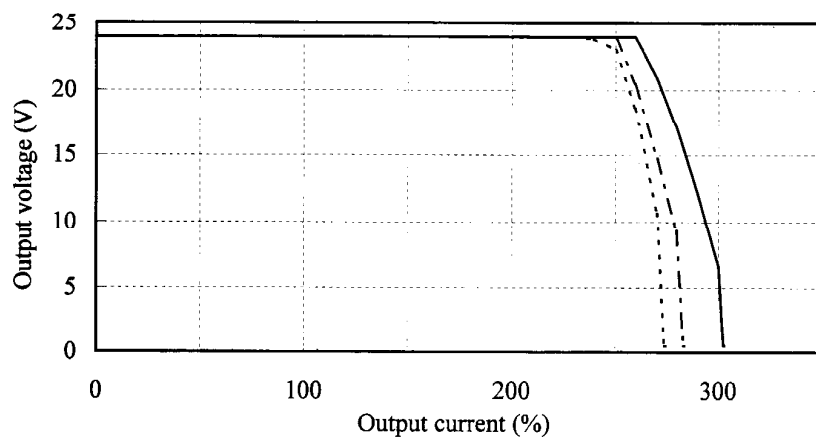
T_a : 25°C



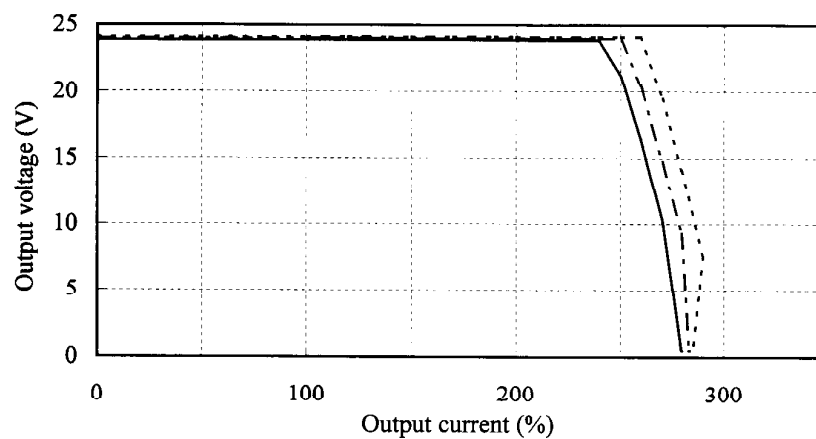
2.3 過電流保護特性

Over current protection (OCP) characteristics

Conditions Vin : 85VAC -----
 : 100VAC - - - - -
 : 132VAC ————
 Ta : 25°C



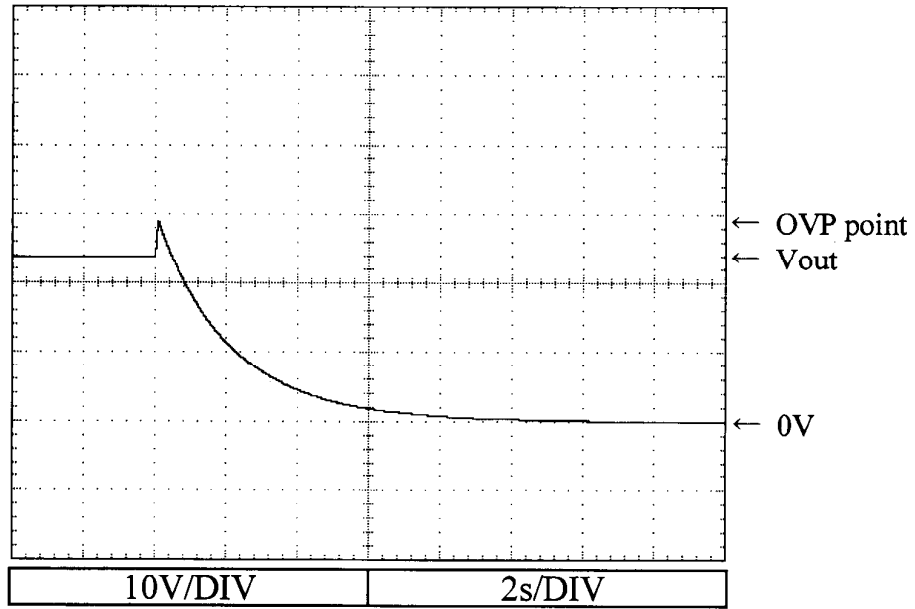
Conditions Vin : 100VAC
 Ta : -10°C -----
 : 25°C - - - - -
 : 50°C ————



2.4 過電圧保護特性

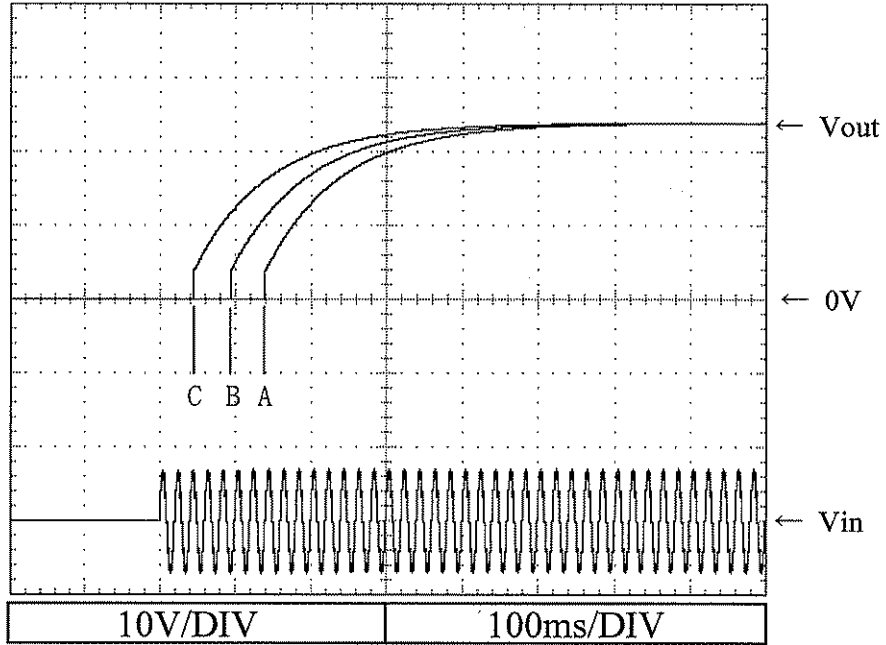
Over voltage protection (OVP) characteristics

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

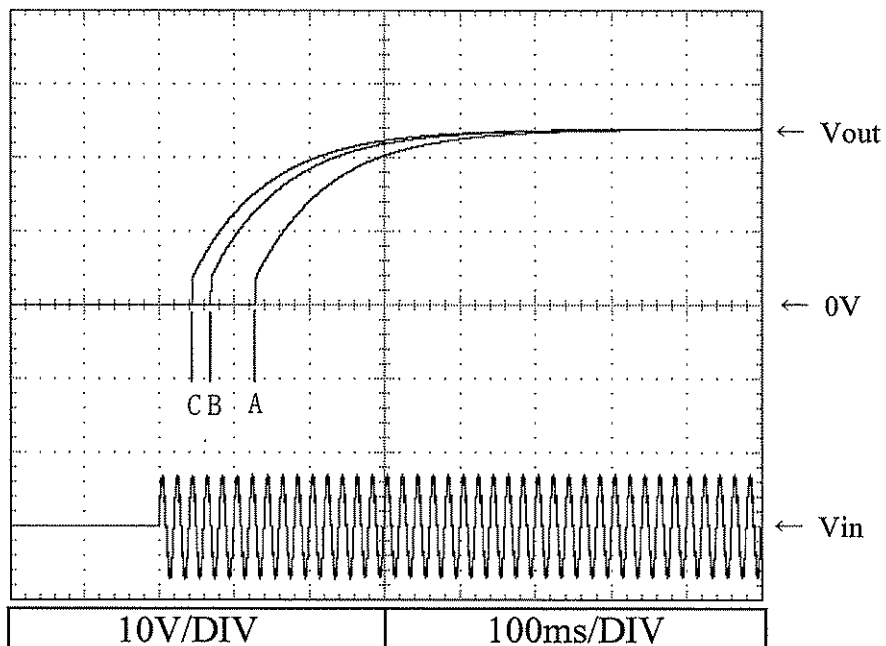


2.5 出力立ち上がり特性
Output rise characteristics

Conditions Vin : 85VAC (A)
: 100VAC (B)
: 132VAC (C)
Iout : 0%
Ta : 25°C

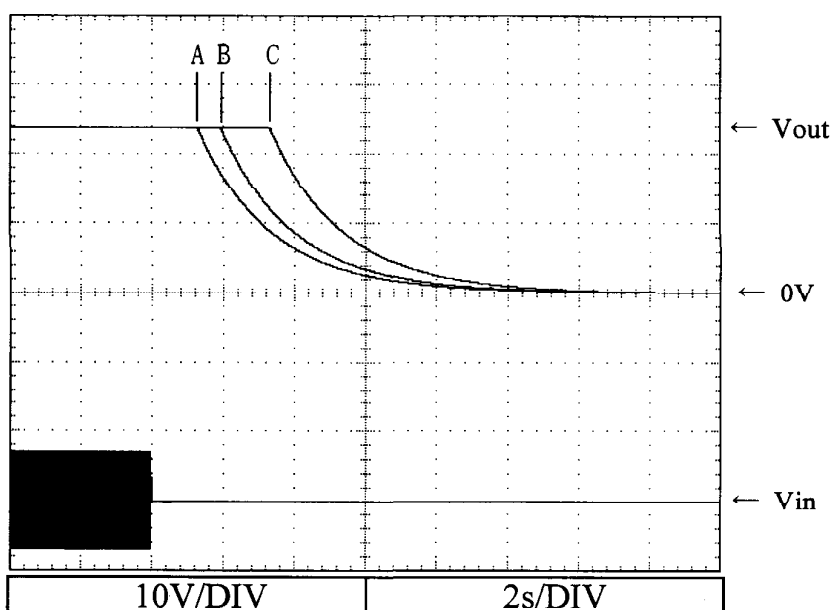


Conditions Vin : 85VAC (A)
: 100VAC (B)
: 132VAC (C)
Iout : 100%
Ta : 25°C

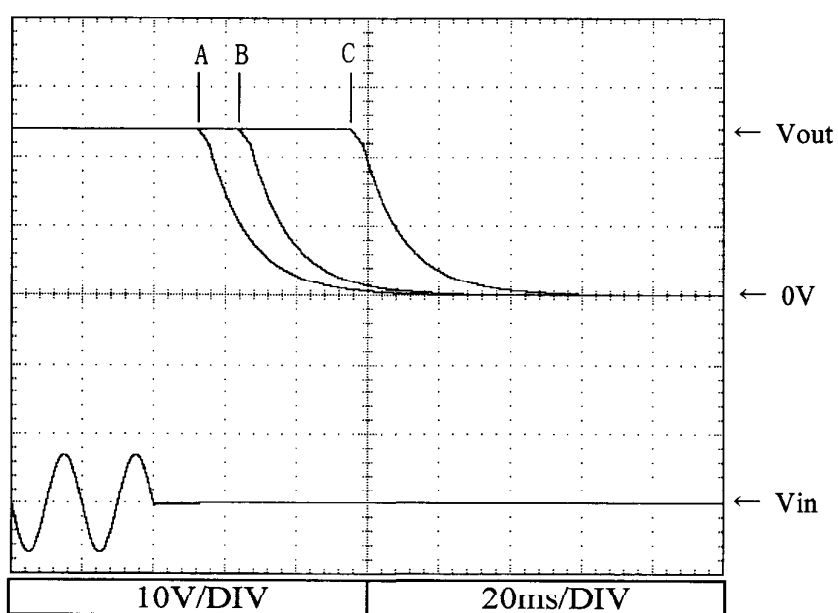


2.6 出力立ち下がり特性
Output fall characteristics

Conditions Vin : 85VAC (A)
: 100VAC (B)
: 132VAC (C)
Iout : 0%
Ta : 25°C



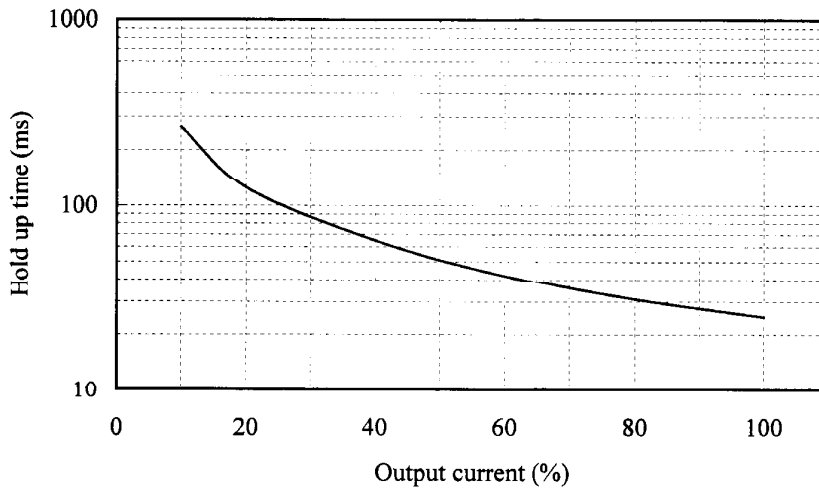
Conditions Vin : 85VAC (A)
: 100VAC (B)
: 132VAC (C)
Iout : 100%
Ta : 25°C



2.7 出力保持時間特性

Hold up time characteristics

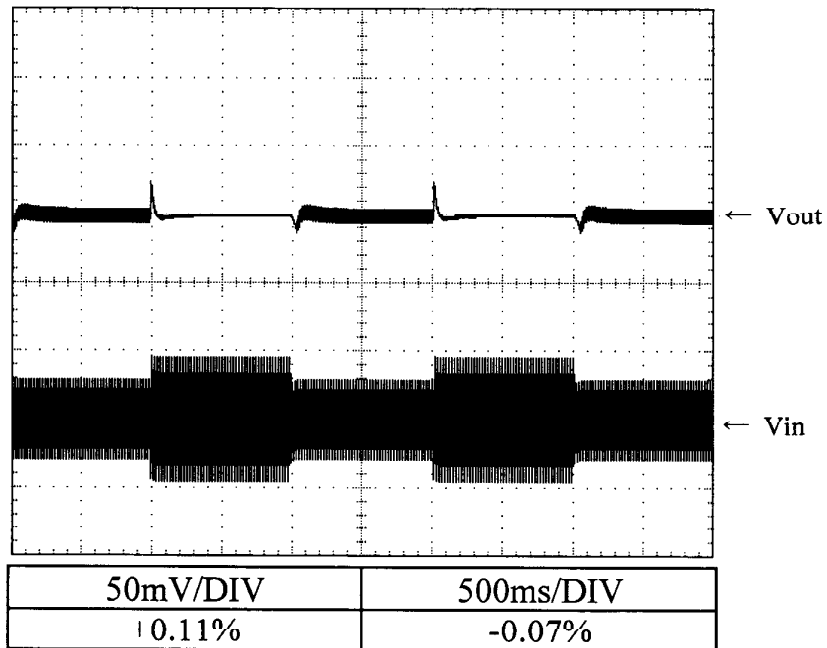
Conditions Vin : 100VAC
Ta : 25°C



2.8 過渡応答 (入力急変) 特性

Dynamic line response characteristics

Conditions Vin : 85VAC ↔ 132VAC
Iout : 100%
Ta : 25°C



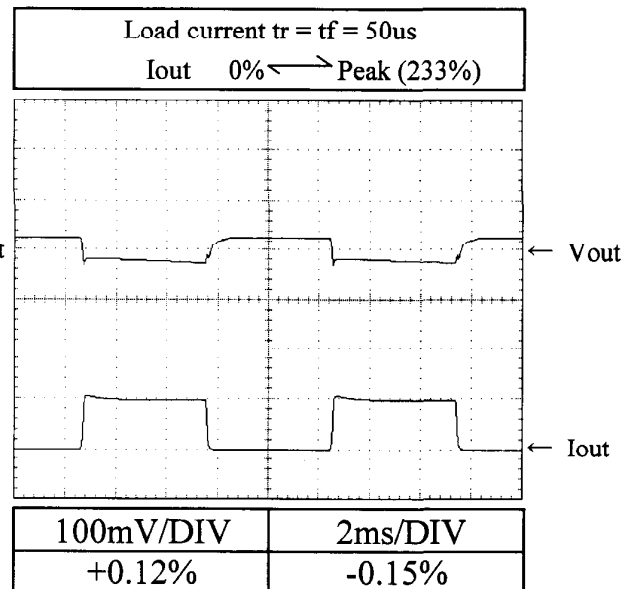
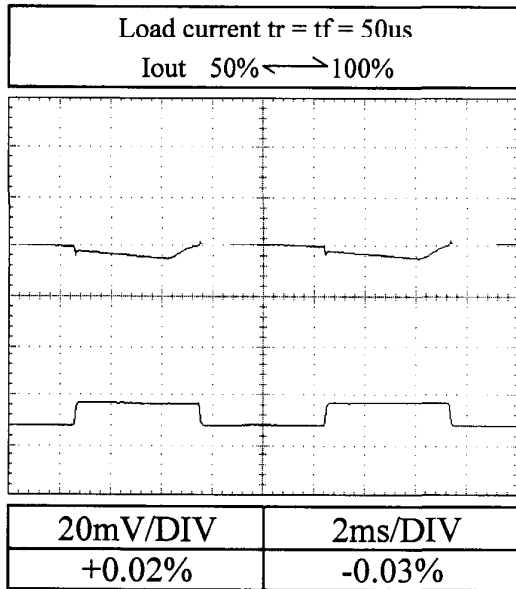
2.9 過渡応答 (負荷急変) 特性

Dynamic load response characteristics

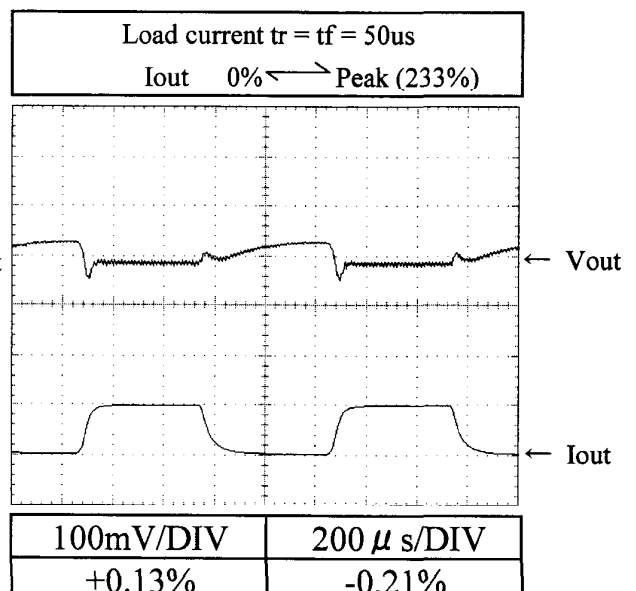
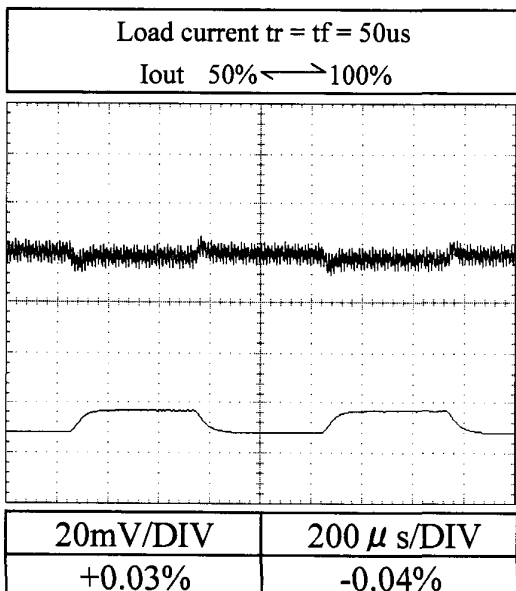
Conditions V_{in} : 100VAC

T_a : 25°C

$f=100\text{Hz}$



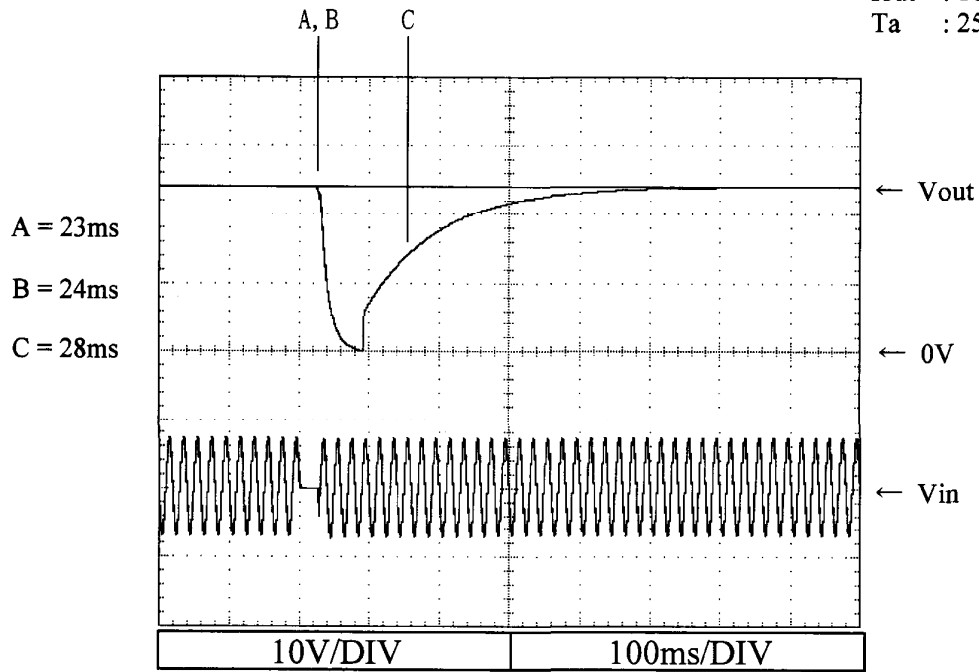
$f=1\text{kHz}$



2.10 入力電圧瞬停特性

Response to brown out characteristics

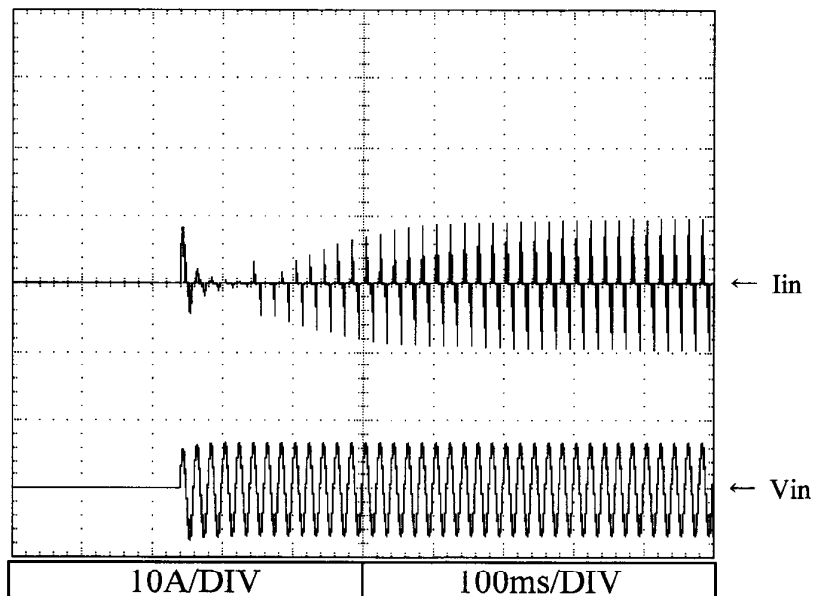
Conditions Vin : 100VAC
Iout : 100%
Ta : 25°C



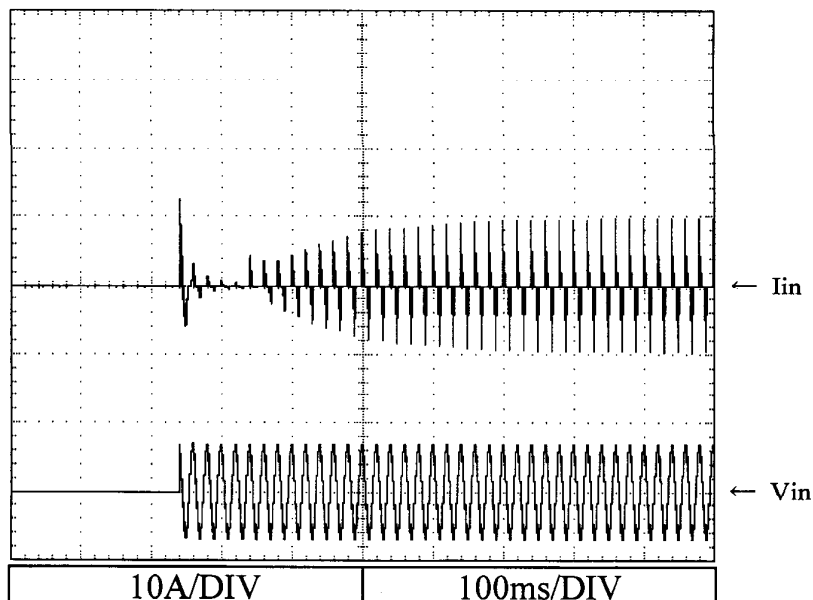
2.11 入力サージ電流 (突入電流) 特性
Inrush current waveform

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

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

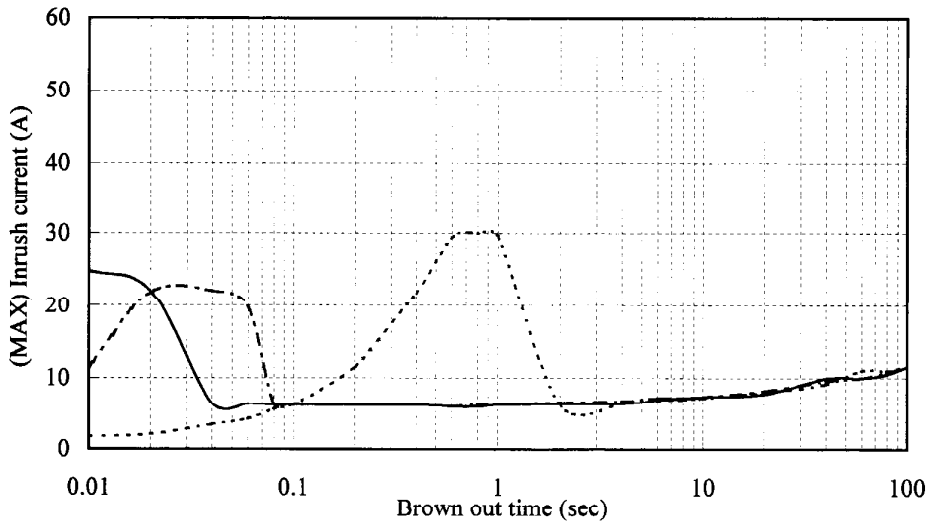


Switch on phase angle
of input AC voltage
 $\phi = 90^\circ$



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

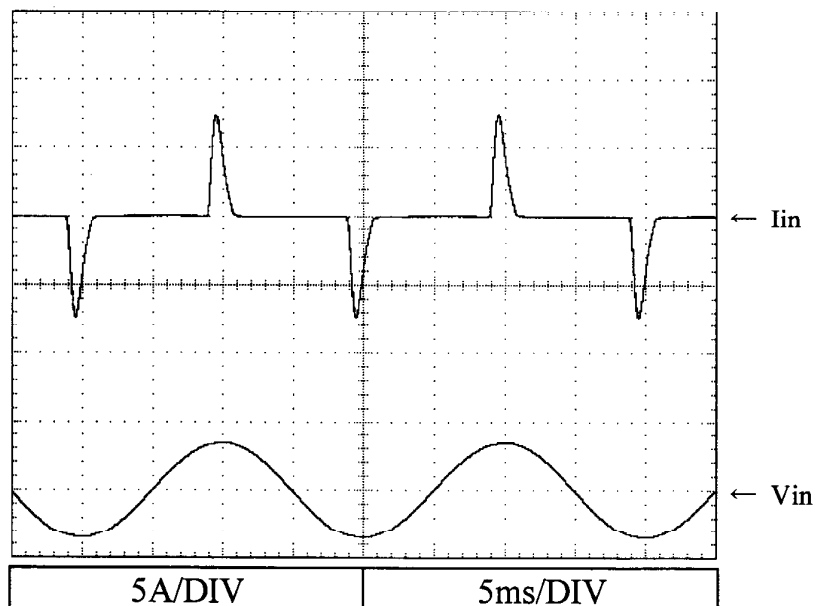
Conditions Vin : 100VAC
Iout : 0% -----
 : 50% - - - - -
 : 100% ———
Ta : 25°C



※ 上記値は、2次突入電流を含んだ値である。
Above data includes secondary inrush current.

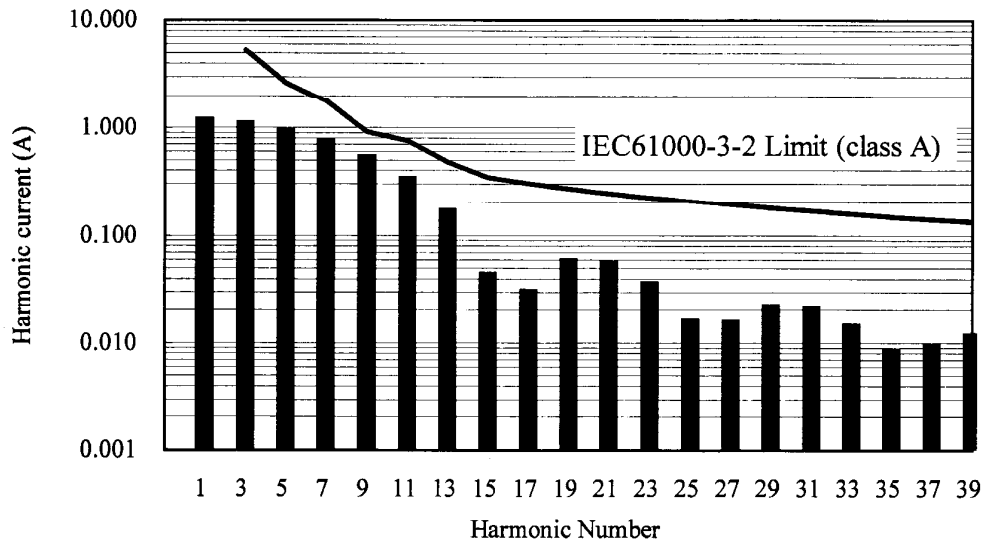
2.13 入力電流波形
Input current waveform

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



2.14 高調波成分
Input current harmonics

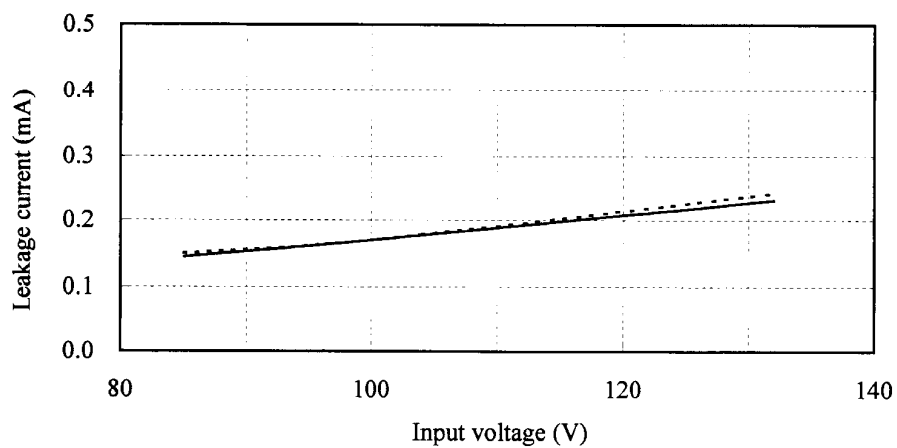
Conditions Vin : 100VAC
Iout : 100%
Ta : 25°C



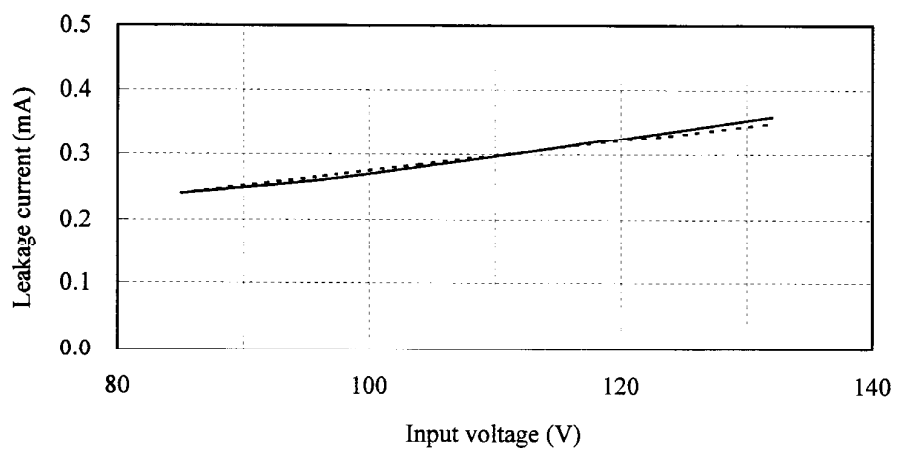
2.15 リーク電流特性
Leakage current characteristics

Conditions Iout : 0% -----
 : 100% -----
 Ta : 25°C
 f : 50Hz

Equipment used : MODEL 229-2 (SIMPSON)



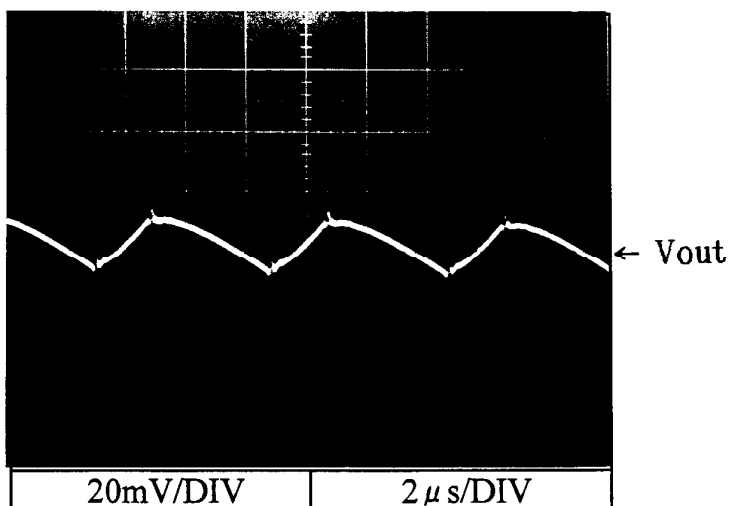
Equipment used : TYPE3226 (YOKOGAWA)



2.16 出カリップル、ノイズ波形
Output ripple and noise waveform

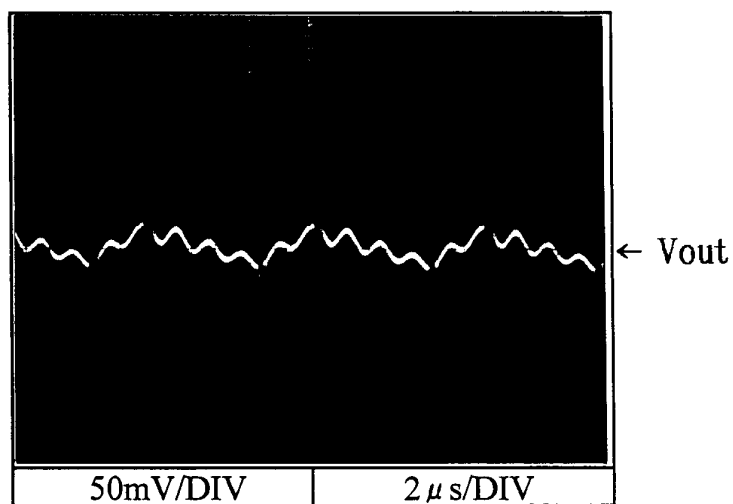
Conditions V_{in} : 100VAC
 I_{out} : 100%
 T_a : 25°C

NORMAL MODE



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

NORMAL + COMMON MODE



2.17 EMI特性

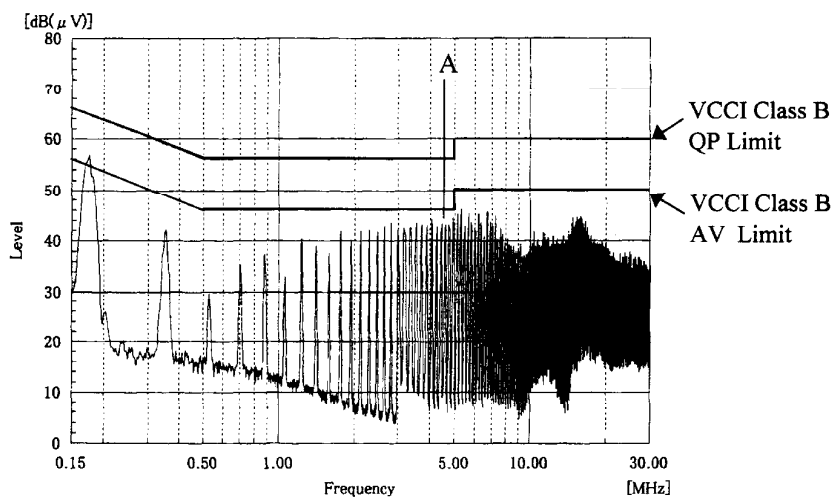
Electro-Magnetic Interference characteristics

Conditions Vin : 100VAC
Iout : 100%

雑音端子電圧

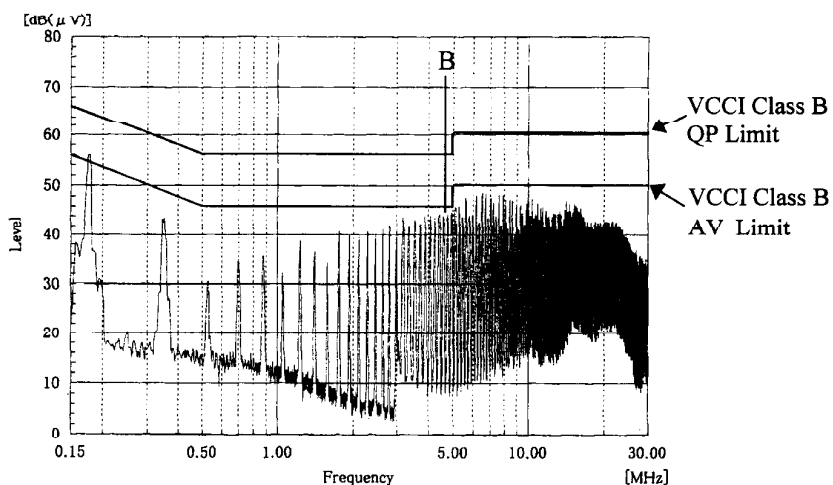
Conducted Emission

Point A (4.51MHz)		
Ref. Data	Limit (dBuV)	Measure (dBuV)
QP	56.0	43.6
AV	46.0	38.9



Phase : N

Point B (4.69MHz)		
Ref. Data	Limit (dBuV)	Measure (dBuV)
QP	56.0	44.2
AV	46.0	40.1



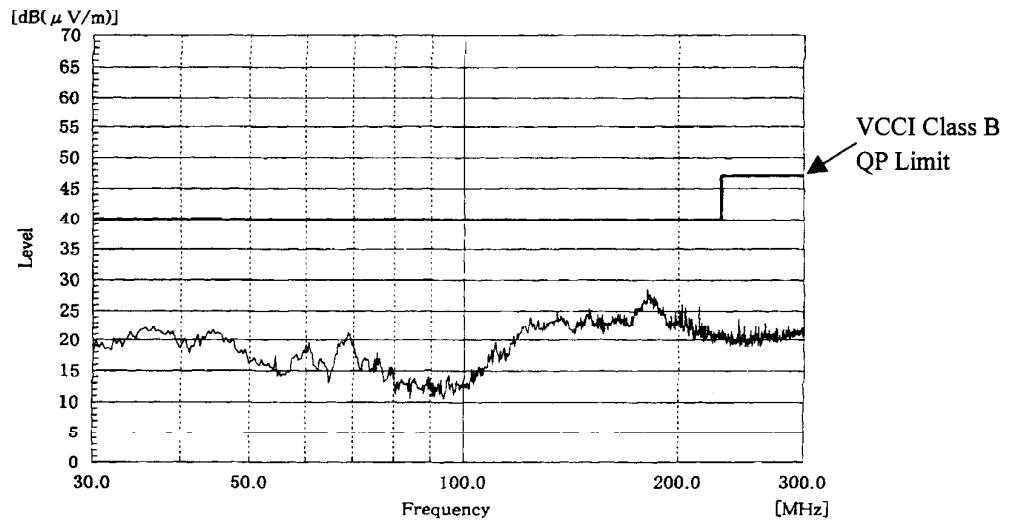
Phase : I.

EN55011-B,EN55022-Bの限界値はVCCI class Bの限界値と同じ
Limit of EN55022-B are same as its VCCI class B.

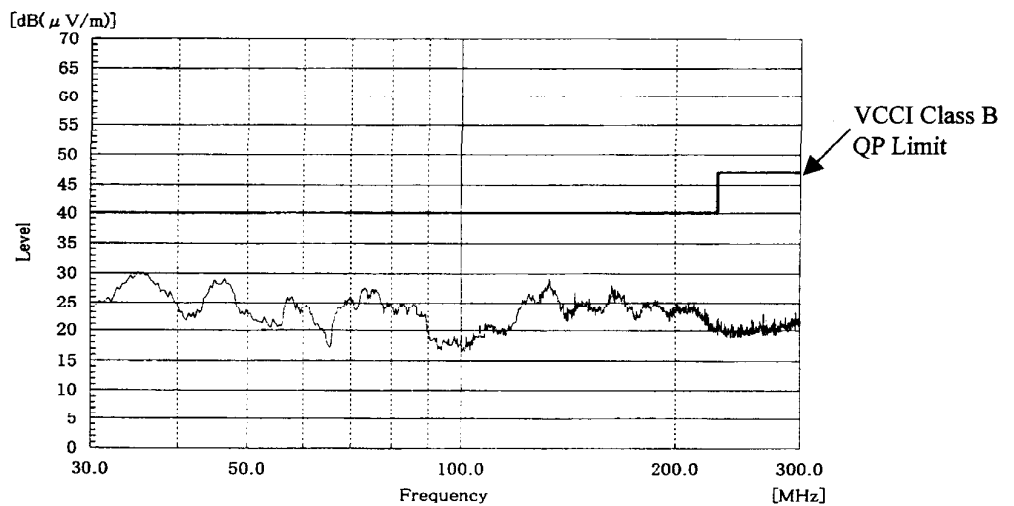
Conditions Vin : 100VAC
Iout : 100%

雑音電界強度
Radiated Emission

HORIZONTAL:



VERTICAL:



EN55011-B, EN55022-Bの限界値はVCCI class Bの限界値と同じ
Limit of EN55022-B are same as its VCCI class B.