SWS1000L

(3V,15V,36V,48V,60V Models)

EVALUATION DATA

DWG.No PA578-53-02		
APPD	CHK	DWG
22-Aug-08	22-Aug-08	22-Aug-08

INDEX

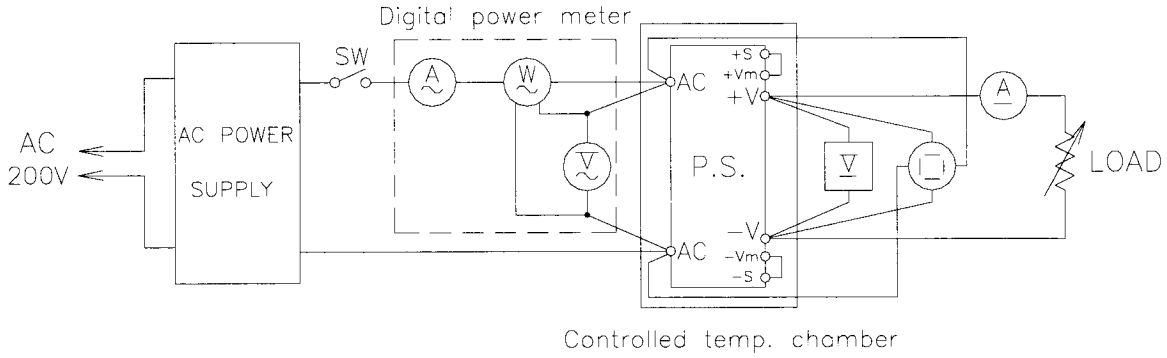
Terminology used

	Definition	
Vin	. . . . .	Input voltage
Vout	. . . . .	Output voltage
Iin	. . . . .	Input current
Iout	. . . . .	Output current
Ta	. . . . .	Ambient temperature
f	. . . . .	Frequency
FG	. . . . .	Frame Ground

1. Evaluation Method

1.1 Circuit used for determination

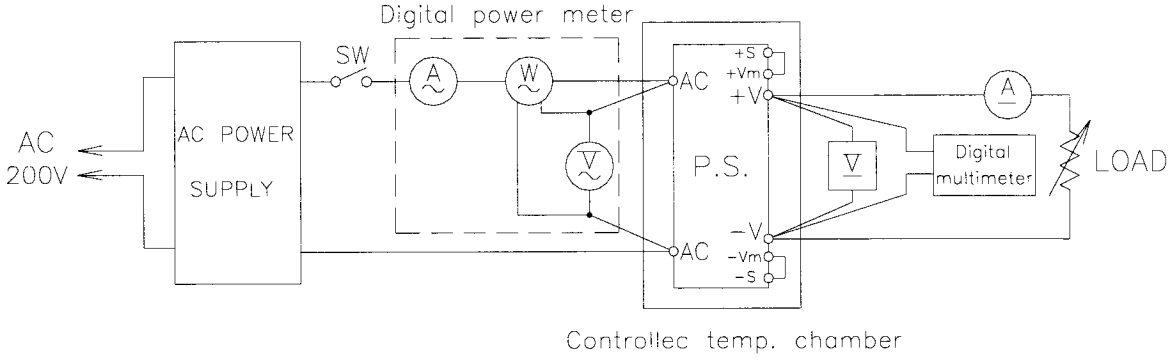
(1) Steady state data



(2) Warm up voltage drift characteristics

Same as Steady state data

(3) Over current protection (OCP) characteristics



(4) Over voltage protection (OVP) characteristics

Same as Steady state data

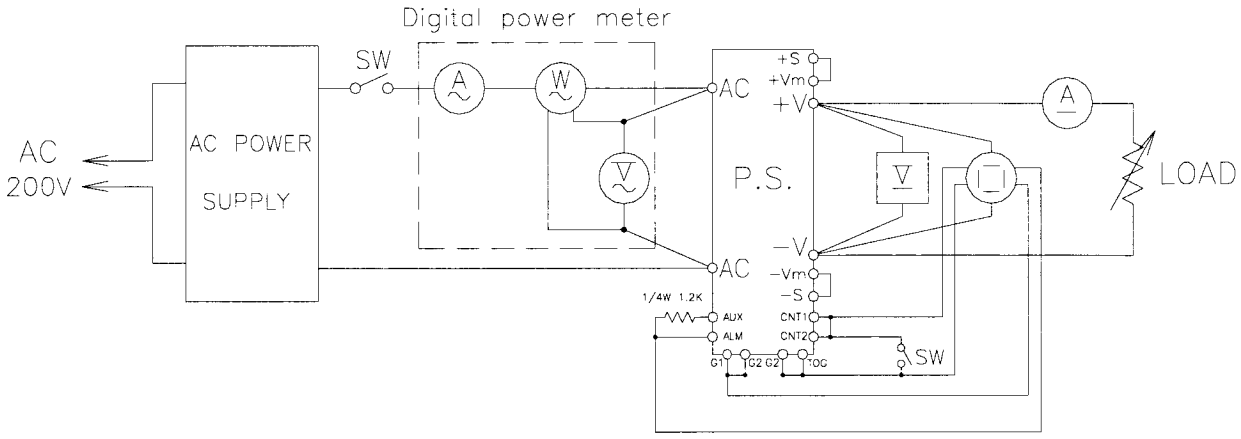
(5) Output rise characteristics

Same as Steady state data

(6) Output fall characteristics

Same as Steady state data

(7) Output rise characteristics with ON/OFF CONTROL



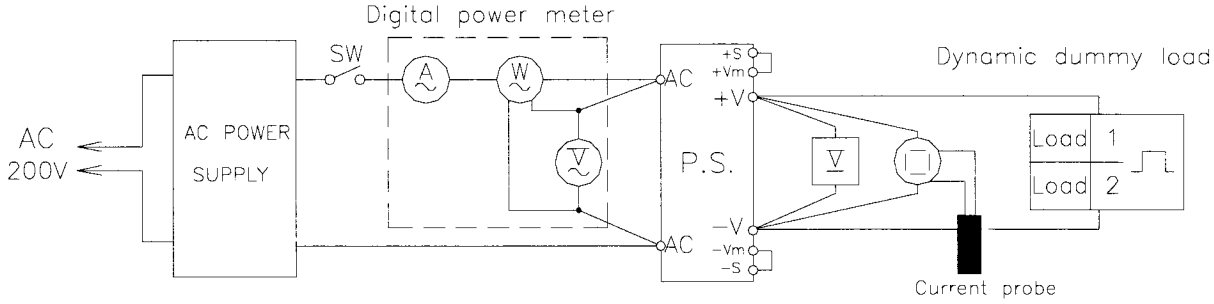
(8) Output fall characteristics with ON/OFF CONTROL

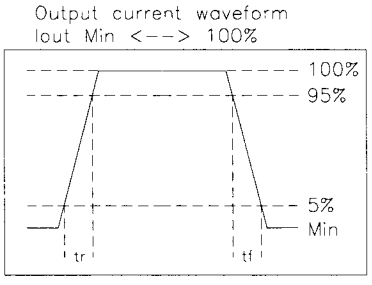
Same as Output rise characteristics with ON/OFF CONTROL

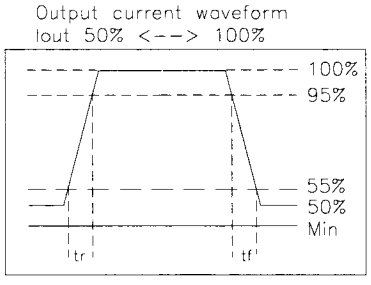
(9) Dynamic line response characteristics

Same as Steady state data

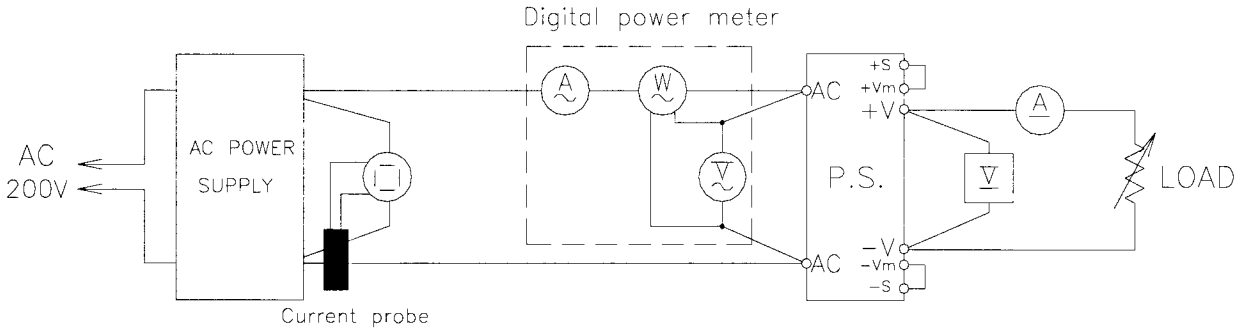
(10) Dynamic load response characteristics



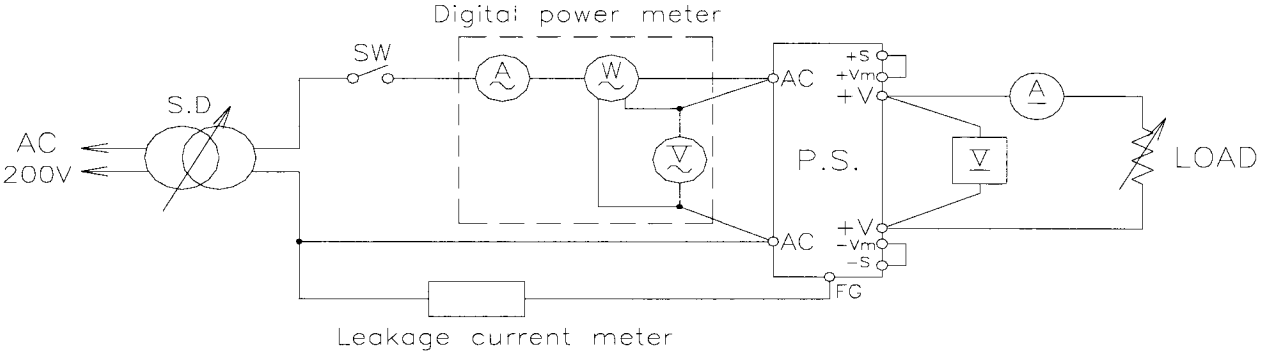




(11) Inrush current characteristics



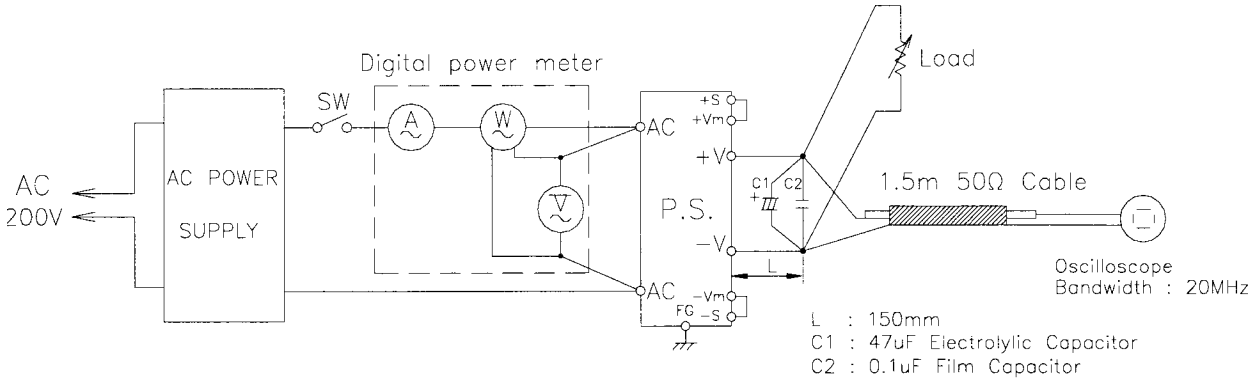
(12) Leakage current characteristics



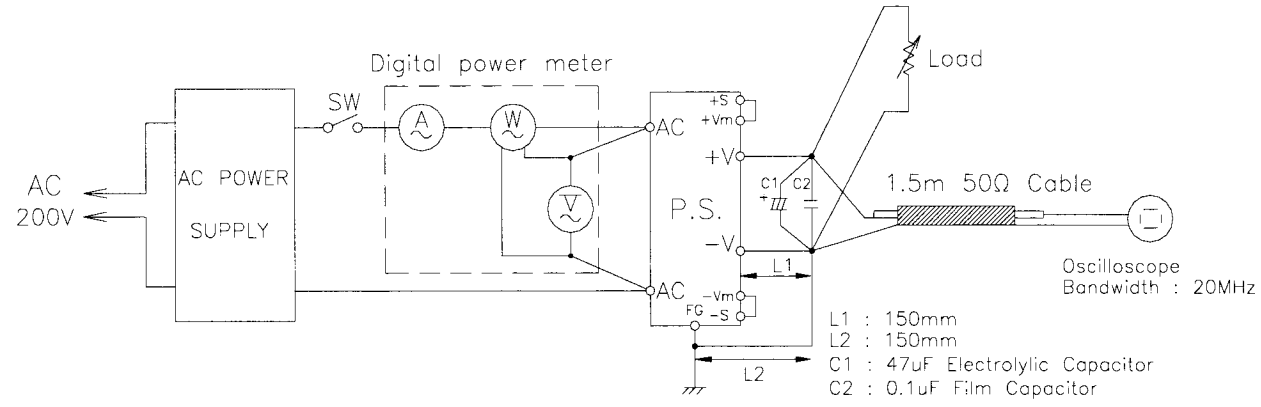
Range used---AC (For SIMPSON TYPE 228)

(13) Output ripple and noise waveform

(a) Normal Mode (using a twisted pair terminated with 0.1uF and 47uF capacitor at 20MHz)



(b) Normal + Common Mode

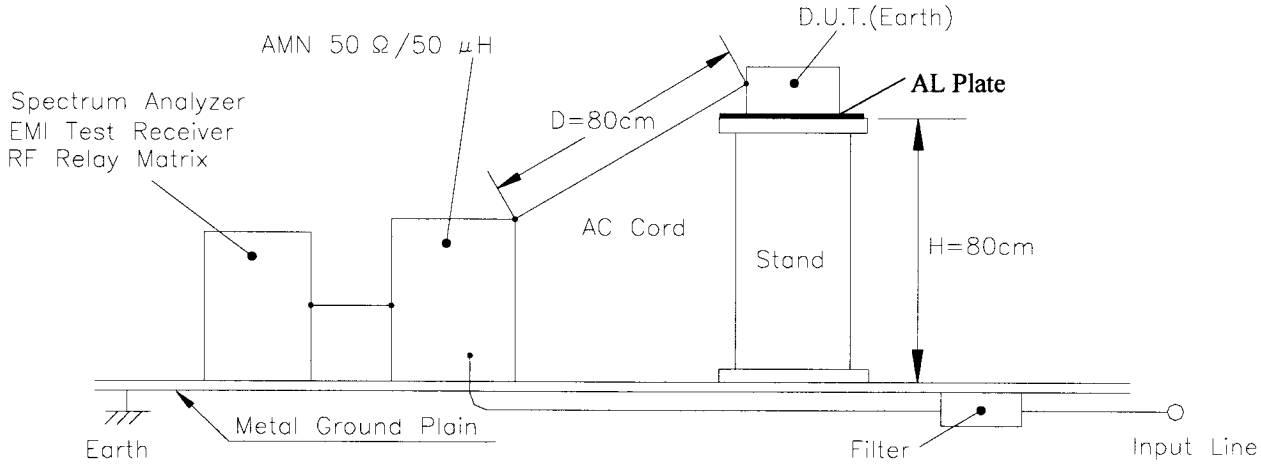


(14) Standby current

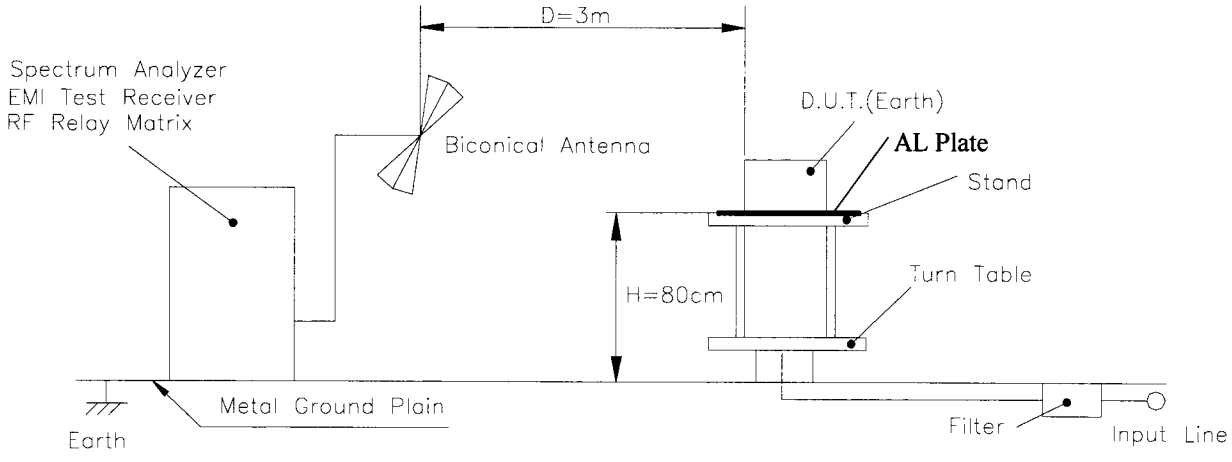
Same as Steady state data

(15) Electro-Magnetic Interference characteristics

(a) Conducted Emission Noise



(b) Radiated Emission Noise



1.2 List of equipment used

	EQUIPMENT USED	MANUFACTURER	MODEL NO.
1	OSCILLOSCOPE	TEKTRONIX	TAS 475
2	DIGITAL STORAGE OSCILLOSCOPE	TEKTRONIX	TDS 7054/5052/460A
3	DIGITAL MULTIMETER	FLUKE	45
4	DIGITAL POWER METER	YOKOGAWA	WT110/WT210
5	CURRENT PROBE/AMPLIFIER	TEKTRONIX	TCP404XL/TCPA400
6	DYNAMIC DUMMY LOAD	CHROMA	63201
7	DYNAMIC DUMMY LOAD	KIKUSUI	PLZ1004W
8	CONTROLLED TEMP. CHAMBER	ESPEC	SU-661/SH-661
9	LEAKAGE CURRENT METER	SIMPSON	228
11	AC SOURCE	CHROMA	61605/6530
12	POWER ANALYZER	SCHAFFNER	NSG1007
13	EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI-03
14	EMI TEST RECEIVER	ROHDE&SCHWARZ	ESI26
15	LISN	ROHDE&SCHWARZ	ENV216
16	ANTENNA	ROHDE&SCHWARZ	HL562

2. Characteristics

2.1 Steady state data

(1) Regulation - line and load, Temperature drift

3.3V

1. Regulation-line and load — Conditions: Ta = 25°C

Iout \ Vin	85VAC	115VAC	230VAC	265VAC	line regulation	
0%	3.308V	3.306V	3.306V	3.306V	0.002V	0.061%
50%	3.306V	3.305V	3.306V	3.305V	0.001V	0.030%
100%	3.304V	3.303V	3.304V	3.304V	0.001V	0.030%
load	0.004V	0.003V	0.002V	0.002V		
regulation	0.121%	0.091%	0.061%	0.061%		

2. Temperature drift — Conditions: Vin = 115VAC, Iout = 100%

Ta	-20°C	+25°C	+50°C	temperature stability	
Vout	3.298V	3.303V	3.305V	0.007V	0.21%

15V

1. Regulation-line and load — Conditions: Ta = 25°C

Iout \ Vin	85VAC	115VAC	230VAC	265VAC	line regulation	
0%	15.023V	15.023V	15.023V	15.022V	0.001V	0.007%
50%	15.020V	15.021V	15.022V	15.021V	0.002V	0.013%
100%	15.018V	15.017V	15.017V	15.016V	0.002V	0.013%
load	0.005V	0.006V	0.006V	0.006V		
regulation	0.033%	0.040%	0.040%	0.040%		

2. Temperature drift — Conditions: Vin =115VAC, Iout =100%

Ta	-20°C	+25°C	+50°C	temperature stability	
Vout	14.987V	15.017V	15.030V	0.043V	0.29%

36V

1. Regulation-line and load — Conditions: Ta = 25°C

Iout \ Vin	85VAC	115VAC	230VAC	265VAC	line regulation	
0%	35.989V	35.990V	35.991V	35.989V	0.002V	0.006%
50%	35.988V	35.989V	35.989V	35.989V	0.001V	0.003%
100%	35.990V	35.989V	35.989V	35.991V	0.002V	0.006%
load	0.002V	0.001V	0.002V	0.002V		
regulation	0.006%	0.003%	0.006%	0.006%		

2. Temperature drift — Conditions: Vin = 115VAC, Iout = 100%

Ta	-20°C	+25°C	+50°C	temperature stability	
Vout	35.938V	35.989V	36.027V	0.089V	0.25%

2.1 Steady state data

(1) Regulation - line and load, Temperature drift

48V

1. Regulation-line and load — Conditions: Ta = 25°C

Iout \ Vin	85VAC	115VAC	230VAC	265VAC	line regulation	
0%	48.080V	48.079V	48.075V	48.074V	0.006V	0.013%
50%	48.076V	48.075V	48.072V	48.069V	0.007V	0.015%
100%	48.071V	48.070V	48.066V	48.063V	0.008V	0.017%
load	0.009V	0.009V	0.009V	0.011V		
regulation	0.019%	0.019%	0.019%	0.023%		

2. Temperature drift — Conditions: Vin =115VAC, Iout =100%

Ta	-20°C	+25°C	+50°C	temperature stability	
Vout	47.975V	48.070V	48.143V	0.168V	0.35%

60V

1. Regulation-line and load — Conditions: Ta = 25°C

Iout \ Vin	85VAC	115VAC	230VAC	265VAC	line regulation	
0%	59.982V	59.978V	59.975V	59.972V	0.010V	0.017%
50%	59.987V	59.986V	59.983V	59.980V	0.007V	0.012%
100%	59.997V	59.993V	59.988V	59.985V	0.012V	0.020%
load	0.015V	0.015V	0.013V	0.013V		
regulation	0.025%	0.025%	0.022%	0.022%		

2. Temperature drift — Conditions: Vin = 115VAC, Iout = 100%

Ta	-20°C	+25°C	+50°C	temperature stability	
Vout	59.842V	59.993V	60.069V	0.227V	0.38%

2.1 Steady state data

Conditions Iout : 100%

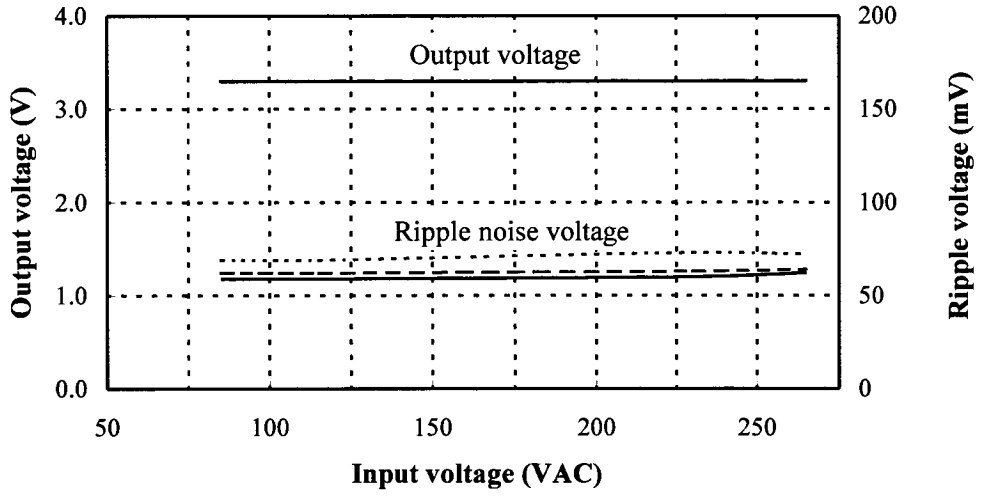
(2) Output voltage and Ripple voltage v.s. Input voltage

Ta : -20°C ------

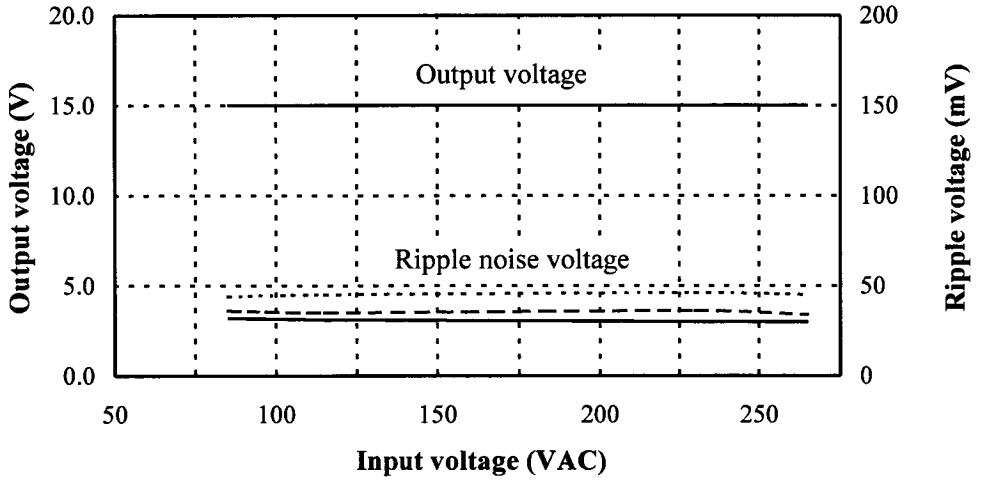
: 25°C – – – –

: 50°C ——

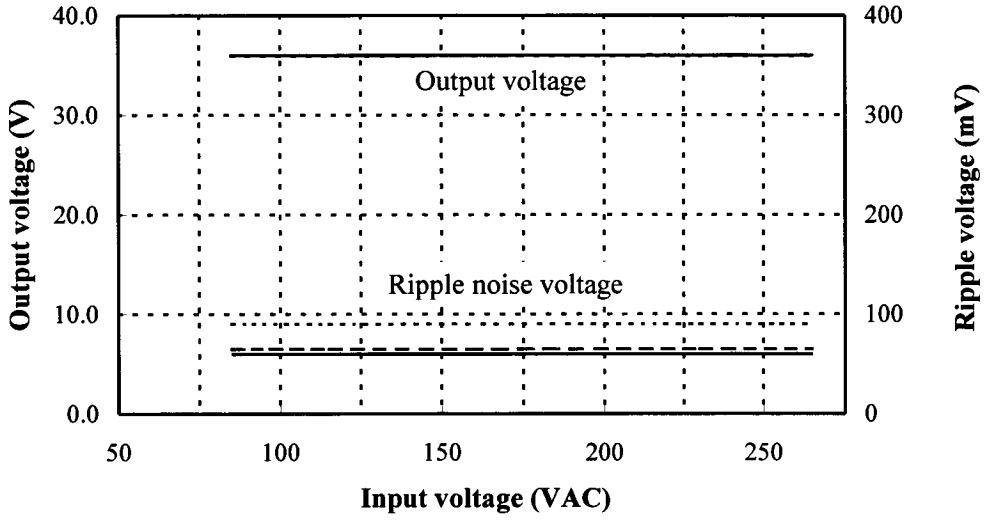
3.3V



15V



36V



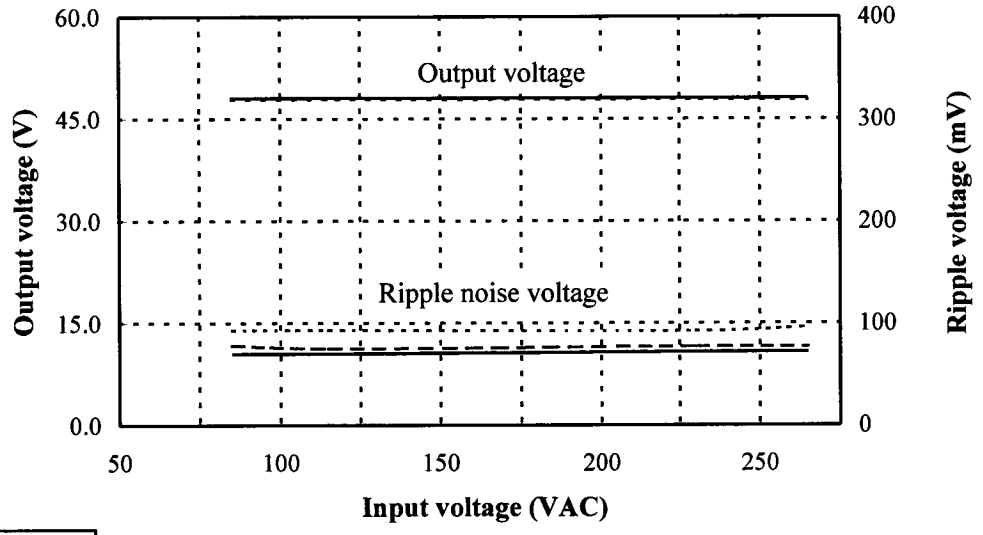
2.1 Steady state data

Conditions Iout : 100%

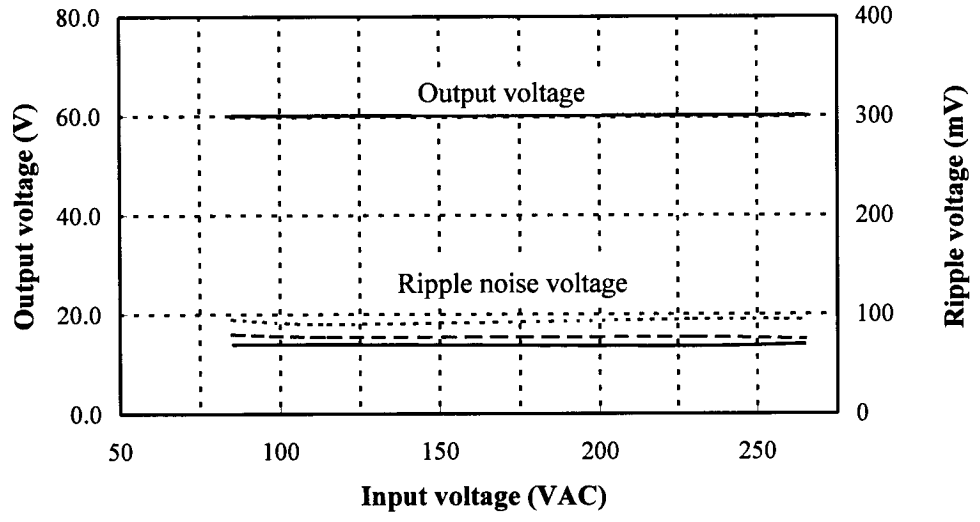
(2) Output voltage and Ripple voltage v.s. Input voltage

Ta : -20°C ------
: 25°C - - - -
: 50°C ——

48V



60V

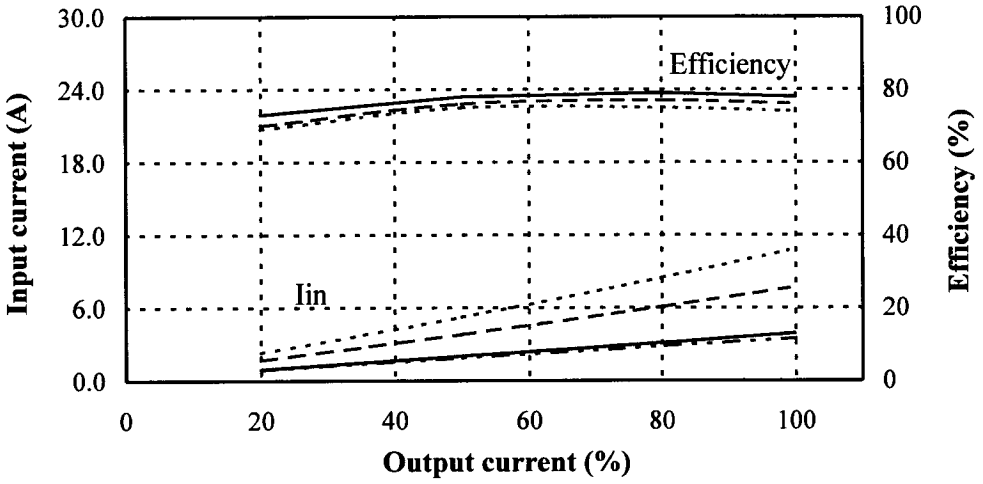


2.1 Steady state data

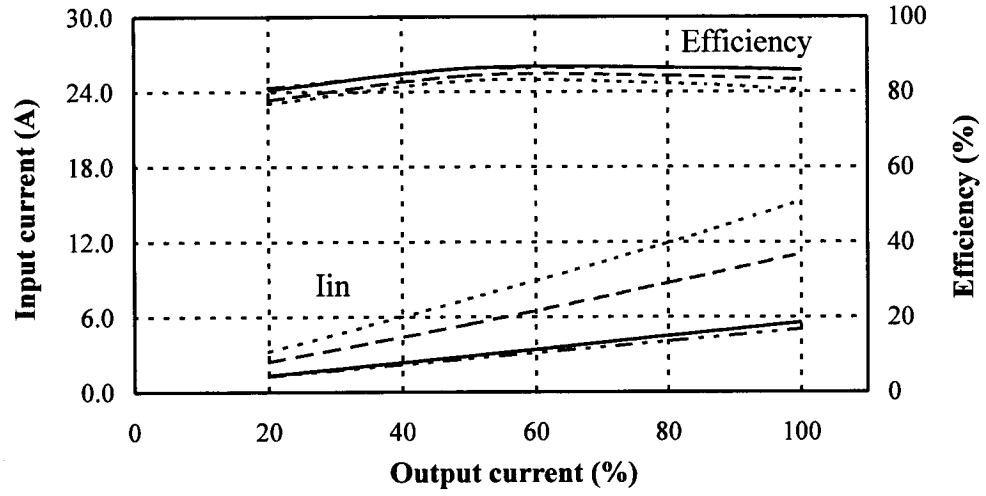
Conditions Vin : 85VAC ------
: 115VAC - - - -
: 230VAC ——
: 265VAC —·—·—
Ta : 25°C

(3) Efficiency and input current v.s. output current

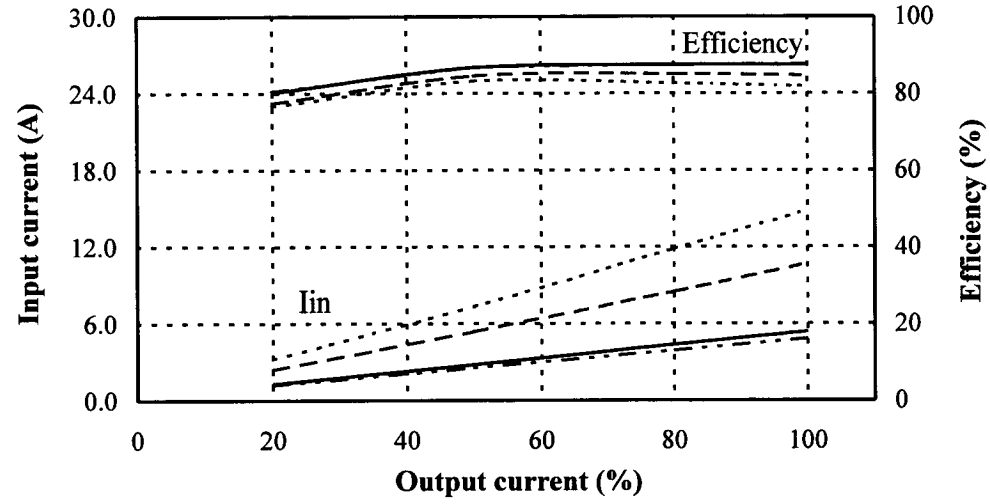
3.3V



15V



36V

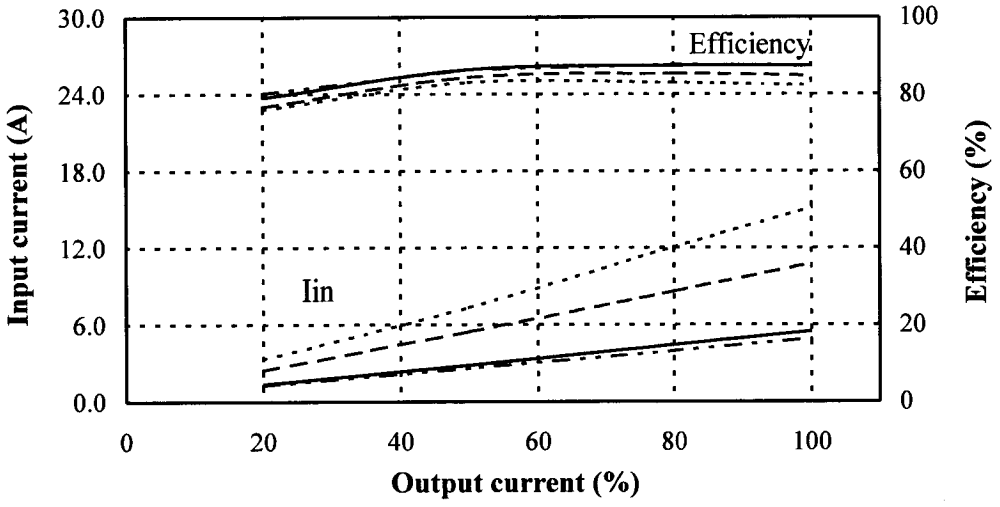


2.1 Steady state data

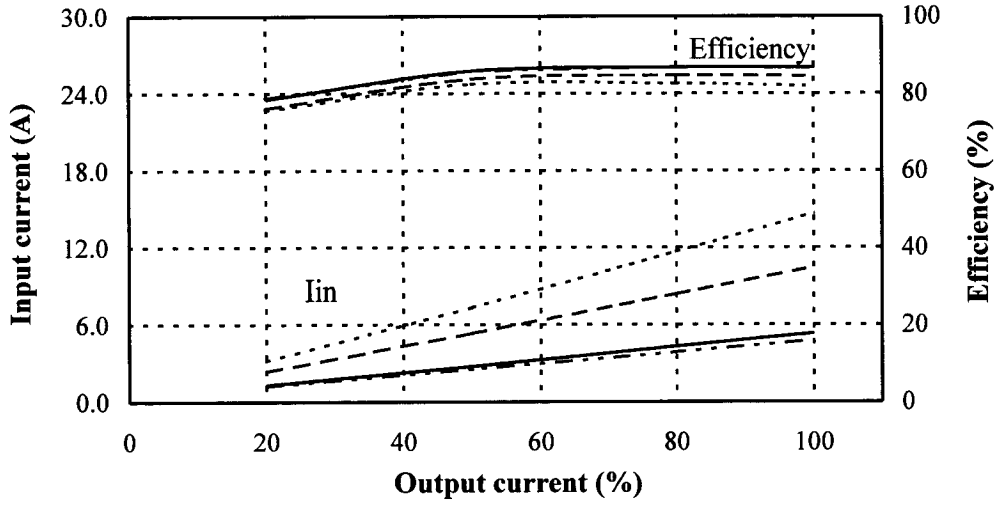
(3) Efficiency and input current v.s. output current

Conditions Vin : 85VAC ------
: 115VAC – – – –
: 230VAC ——
: 265VAC –·–·–·–
Ta : 25°C

48V



60V



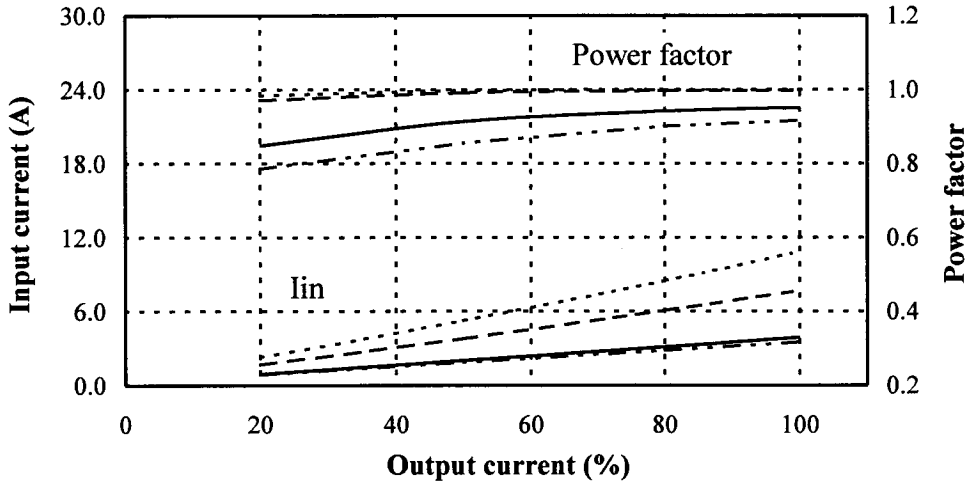
2.1 Steady state data

Conditions Vin : 85VAC ------
: 115VAC – – – –
: 230VAC ———
: 265VAC –·–·–·–

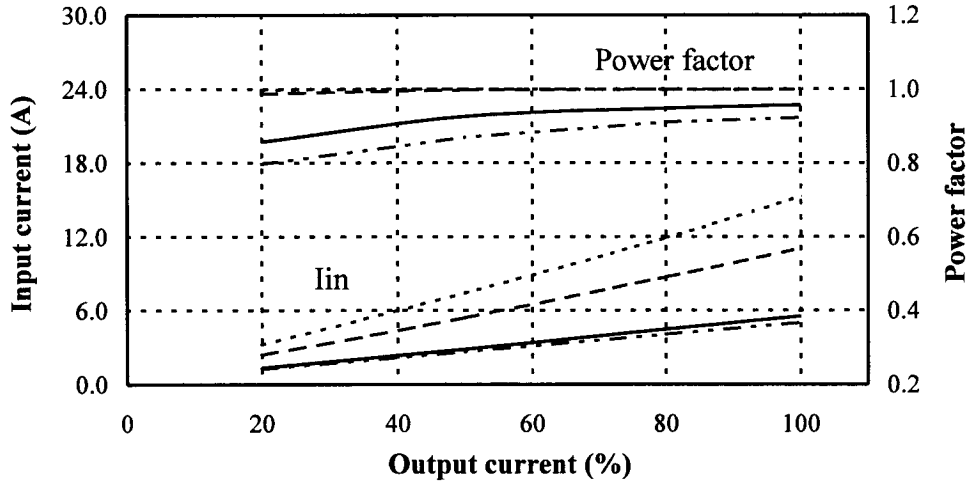
(4) Power factor and input current v.s. output current

Ta : 25°C

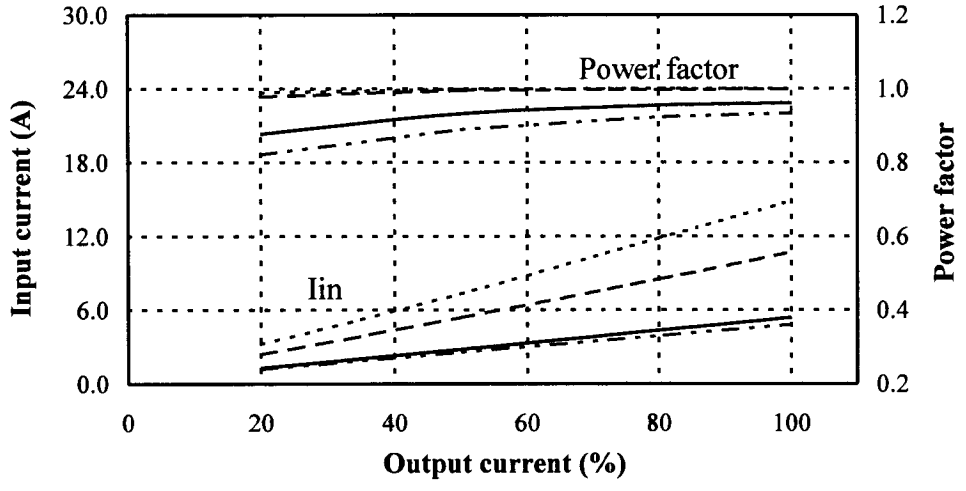
3.3V



15V



36V

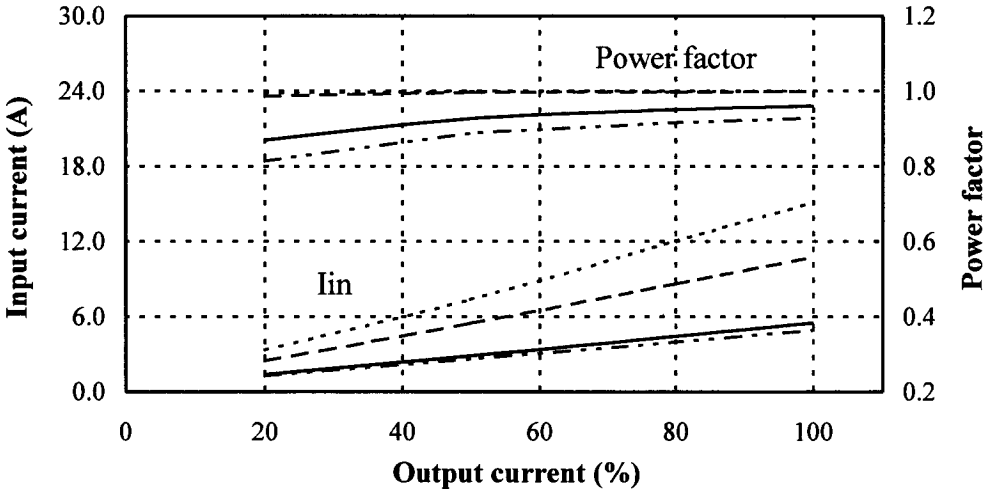


2.1 Steady state data

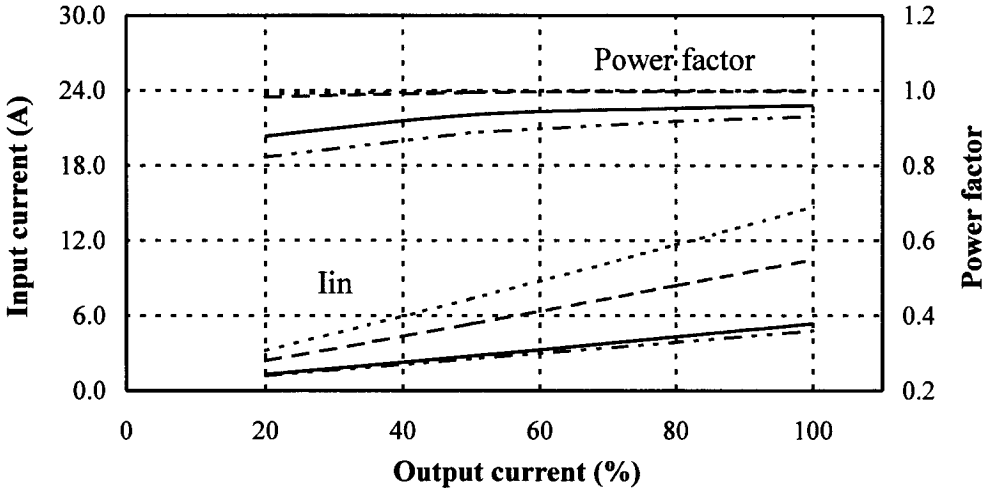
Conditions Vin : 85VAC ------
: 115VAC – – – –
: 230VAC ———
: 265VAC –·–·–·–
Ta : 25°C

(4) Power factor and input current v.s. output current

48V



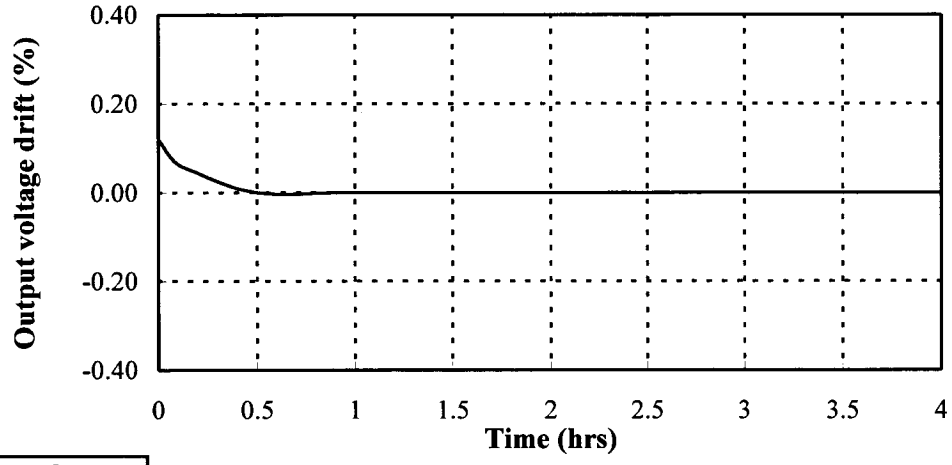
60V



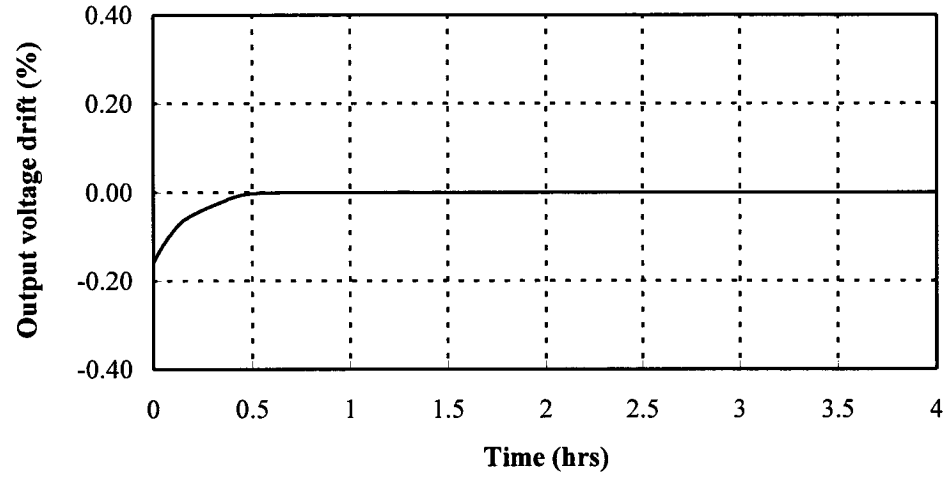
2.2 Warm up voltage drift characteristics

Conditions Vin : 115VAC
Iout : 100%
Ta : 25°C

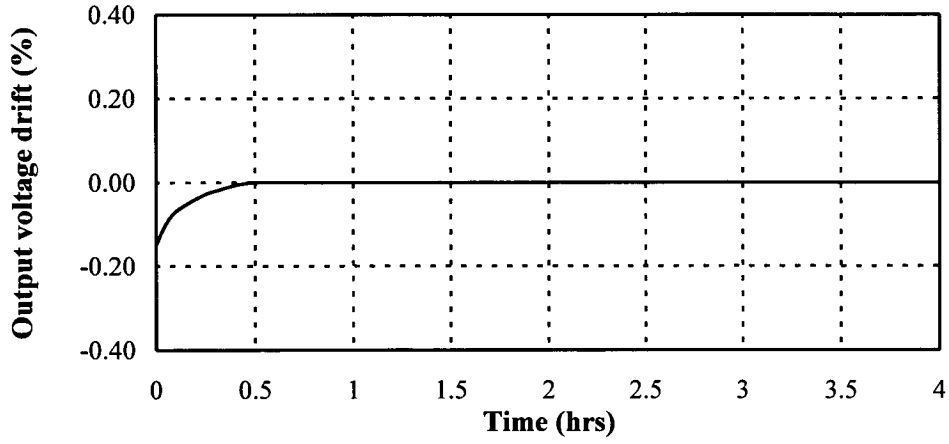
3.3V



15V



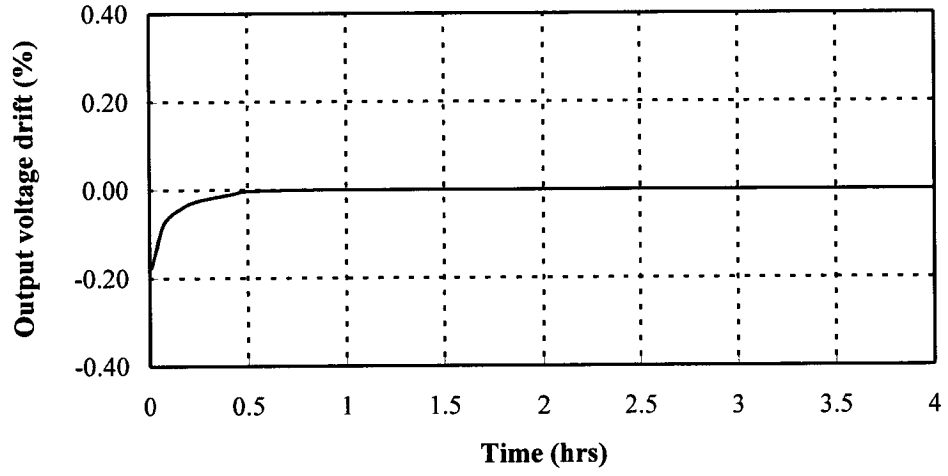
36V



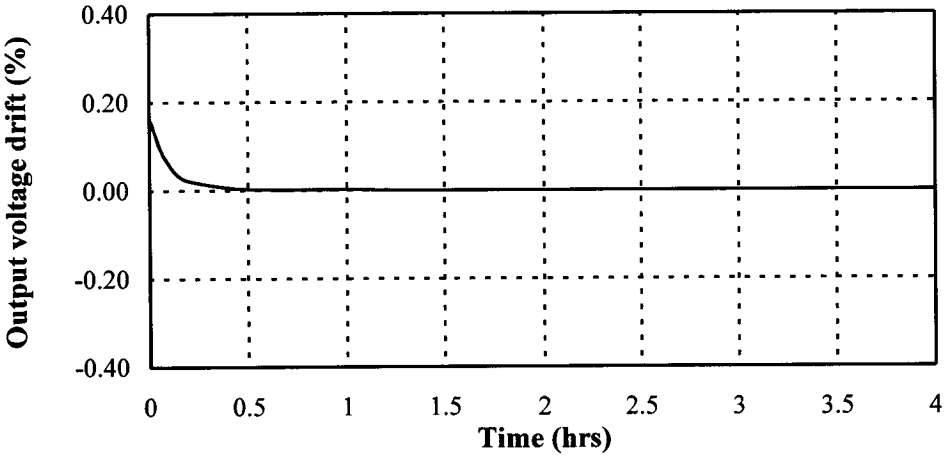
2.2 Warm up voltage drift characteristics

Conditions Vin : 115VAC
Iout : 100%
Ta : 25°C

48V



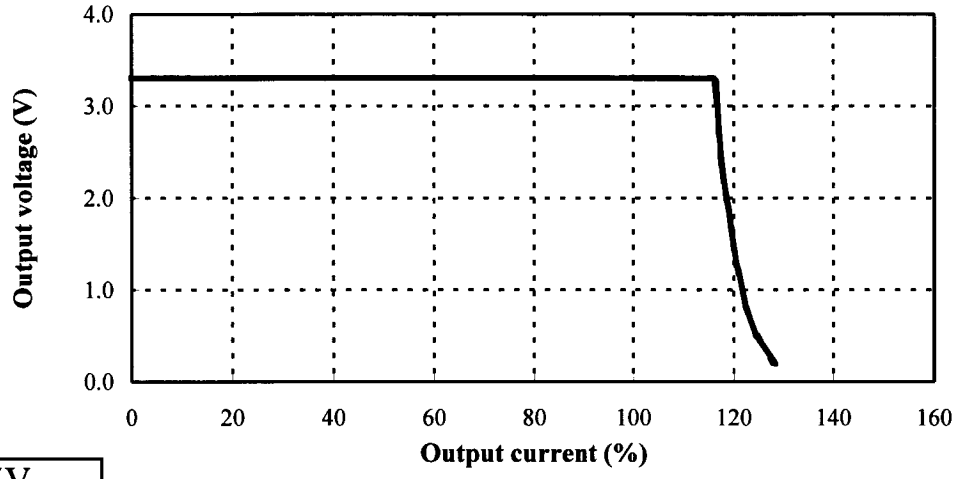
60V



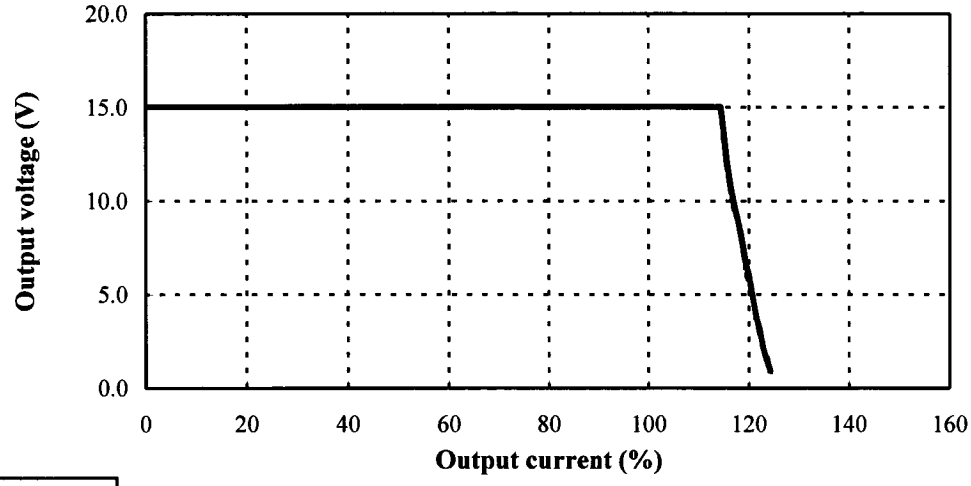
2.3 Over current protection (OCP) characteristics

Conditions Vin : 85 VAC ----
115 VAC -·-·-·-
230 VAC ——
265 VAC - - - - -
Ta : 25℃

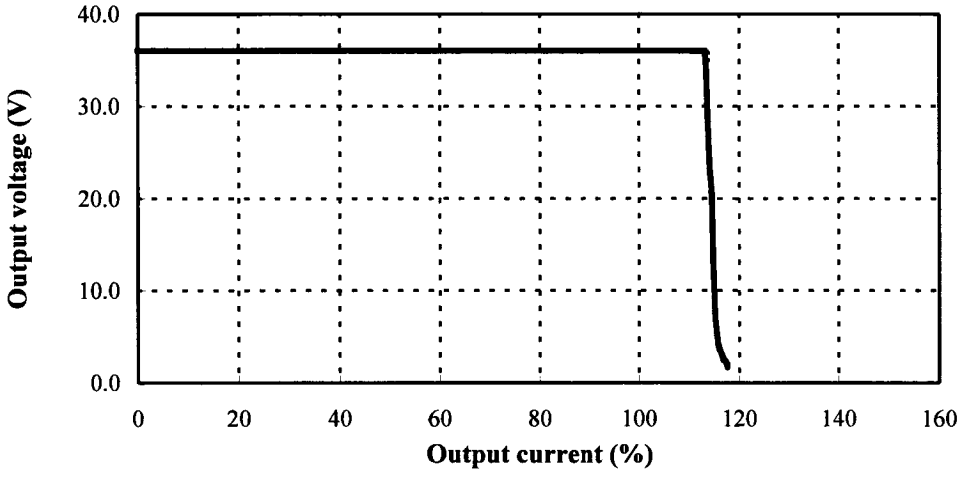
3.3V



15V



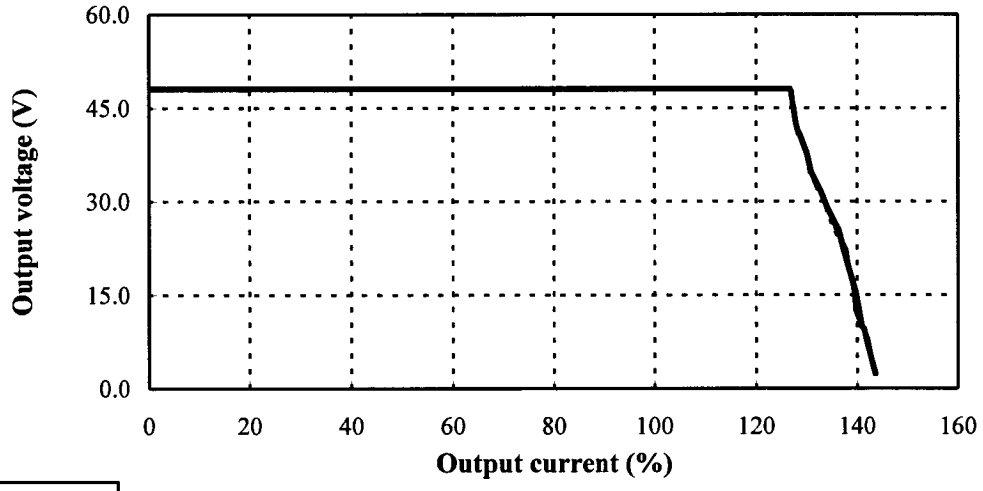
36V



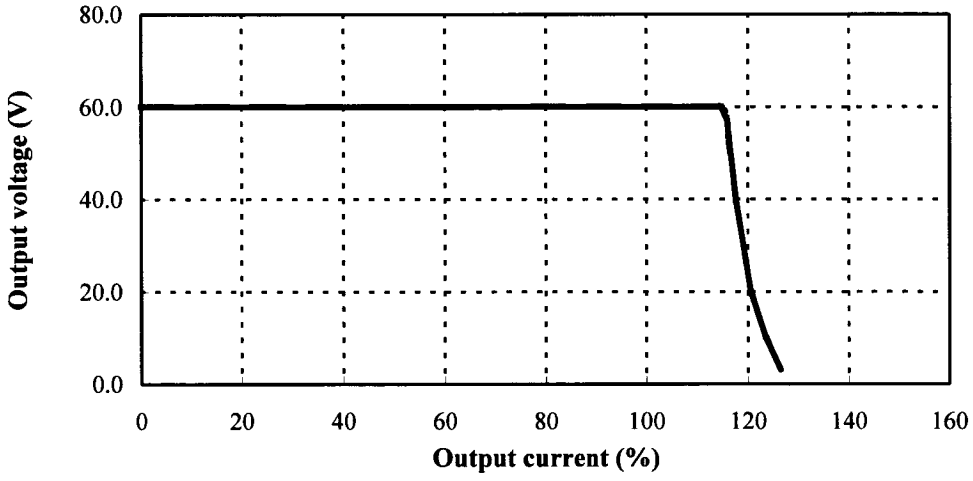
2.3 Over current protection (OCP) characteristics

Conditions Vin : 85 VAC ----
115 VAC -·-·-·-
230 VAC ———
265 VAC - - - - - -
Ta : 25℃

48V



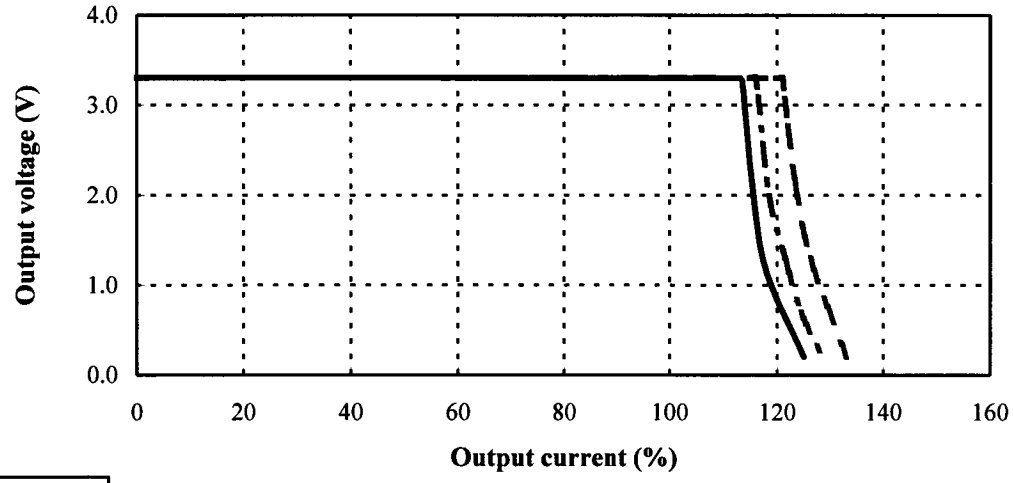
60V



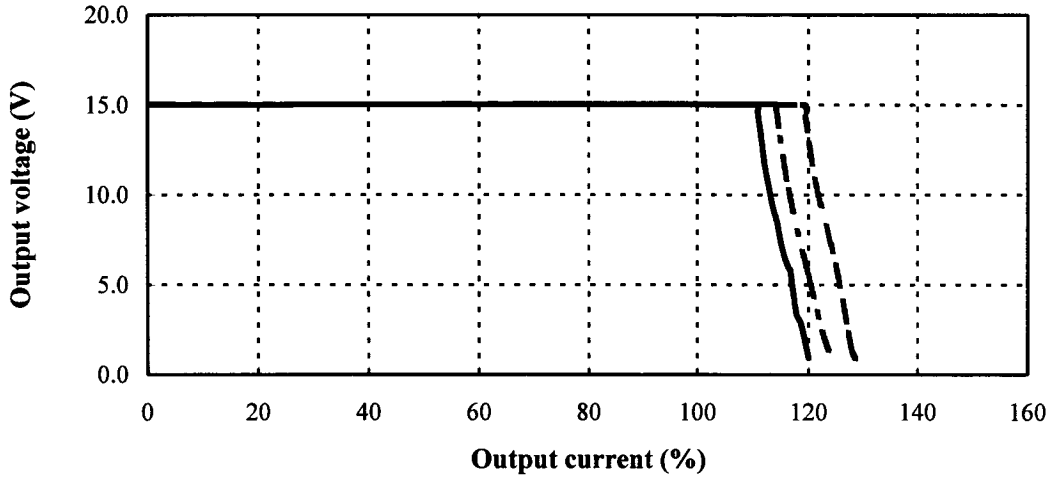
2.3 Over current protection (OCP) characteristics

Conditions: Vin : 115VAC
Ta : -20℃ - - - - -
25℃ -·-·-·-
50℃ ———

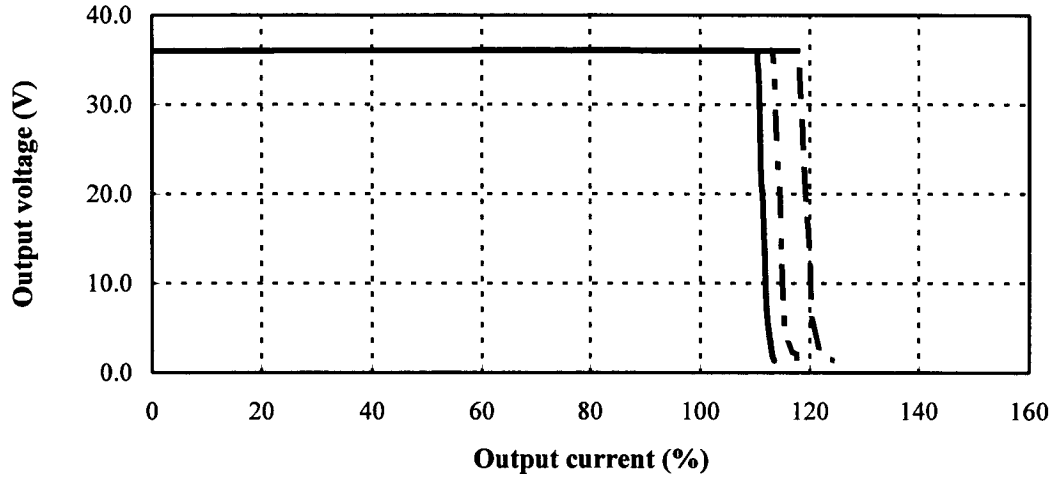
3.3V



15V



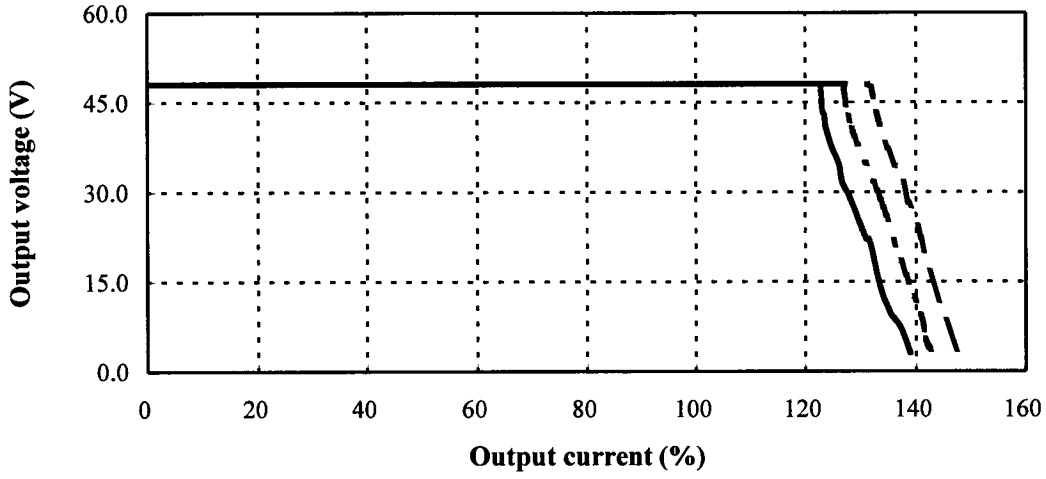
36V



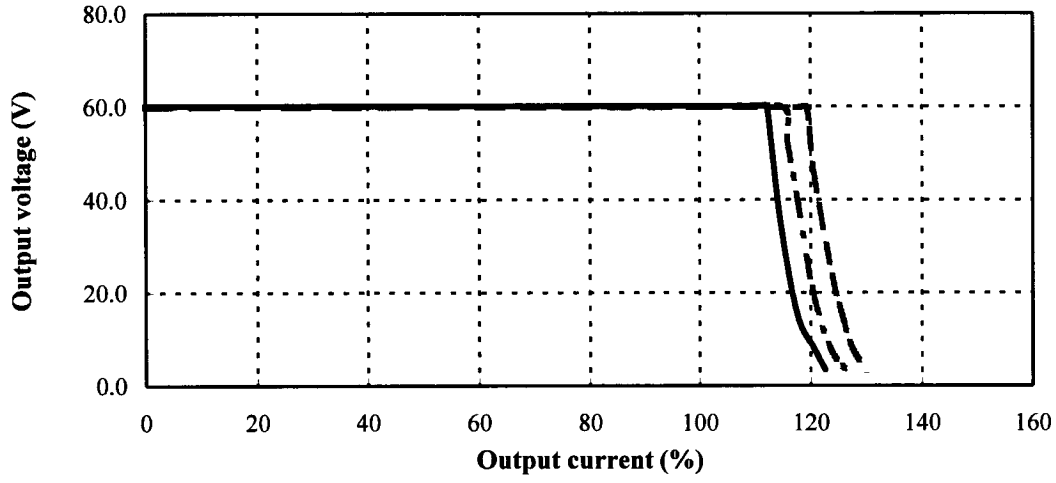
2.3 Over current protection (OCP) characteristics

Conditions: Vin : 115VAC
Ta : -20℃ – – – – –
25℃ - · - · - · -
50℃ ———

48V



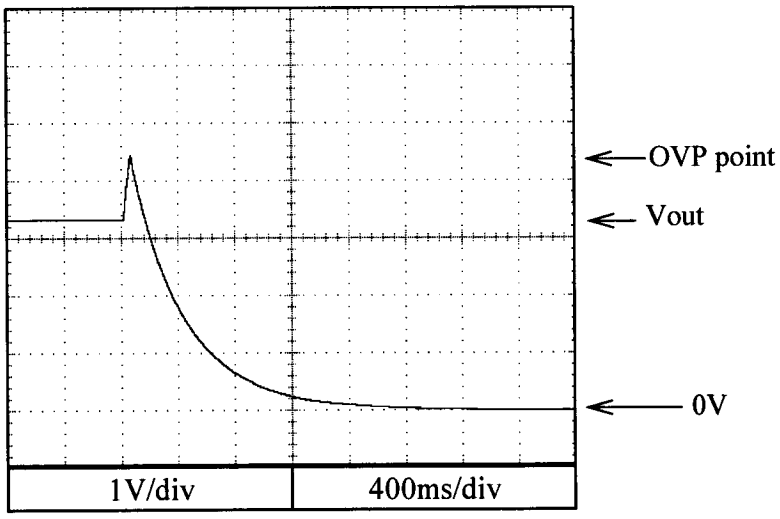
60V



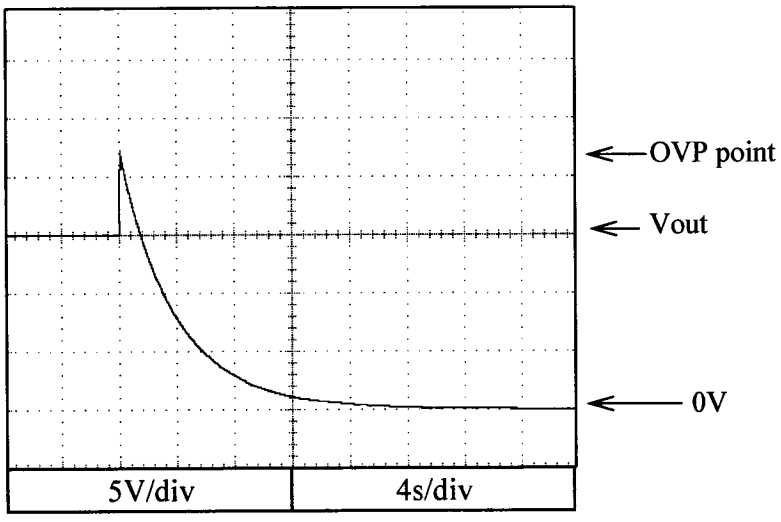
2.4 Over voltage protection (OVP) characteristics

Conditions; Vin : 115VAC
Iout : 0%
Ta : 25°C

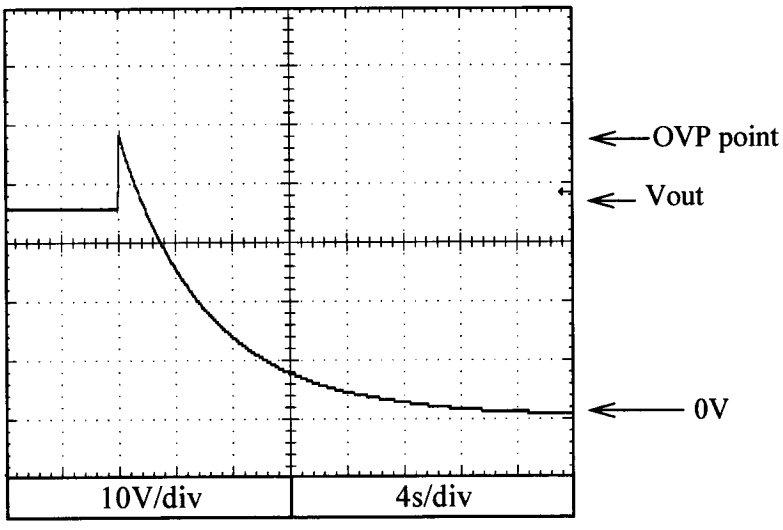
3.3V



15V



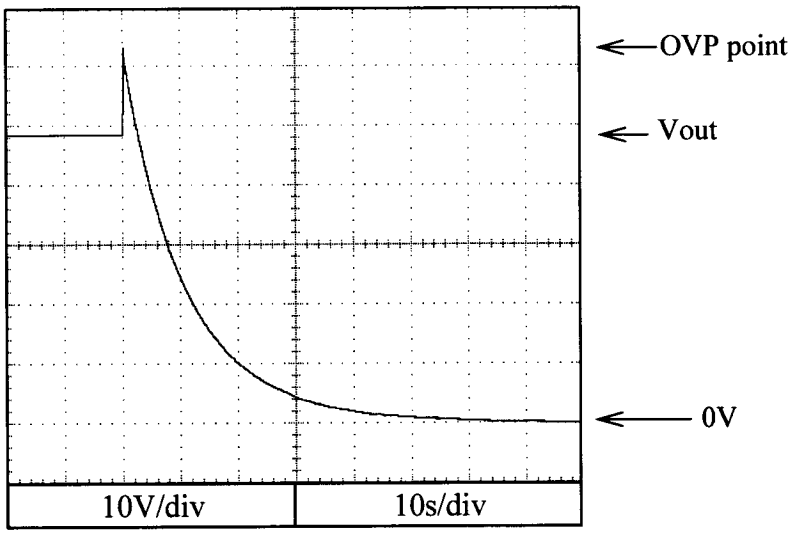
36V



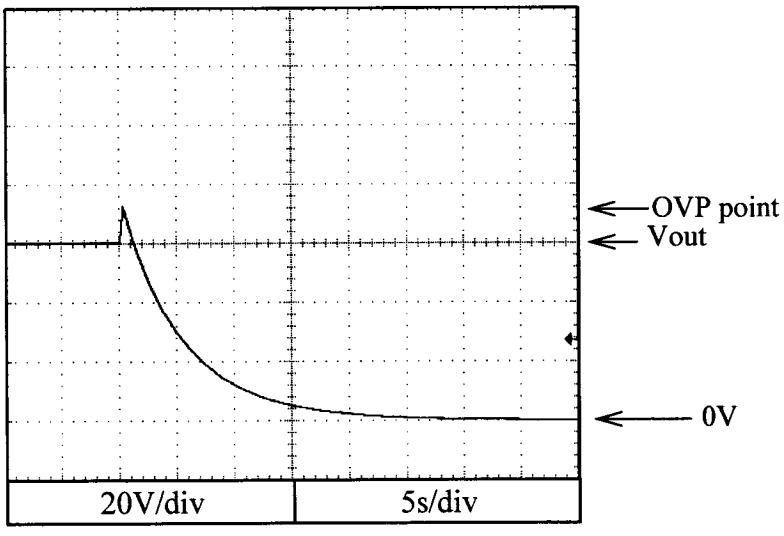
2.4 Over voltage protection (OVP) characteristics

Conditions; Vin : 115VAC
Iout : 0%
Ta : 25°C

48V



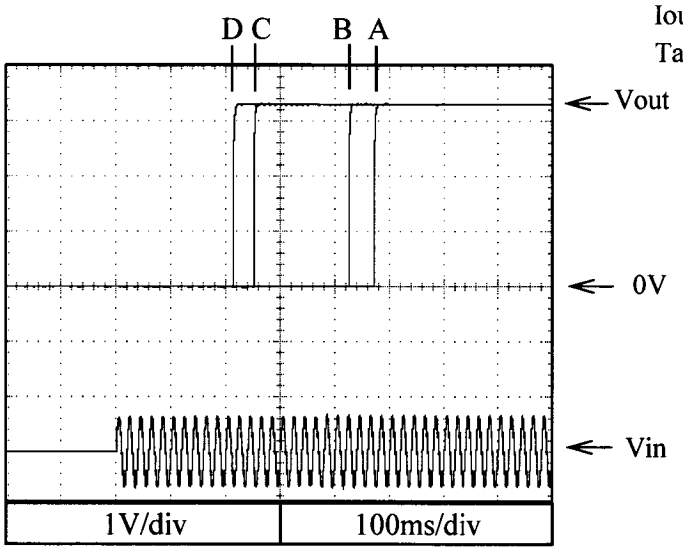
60V



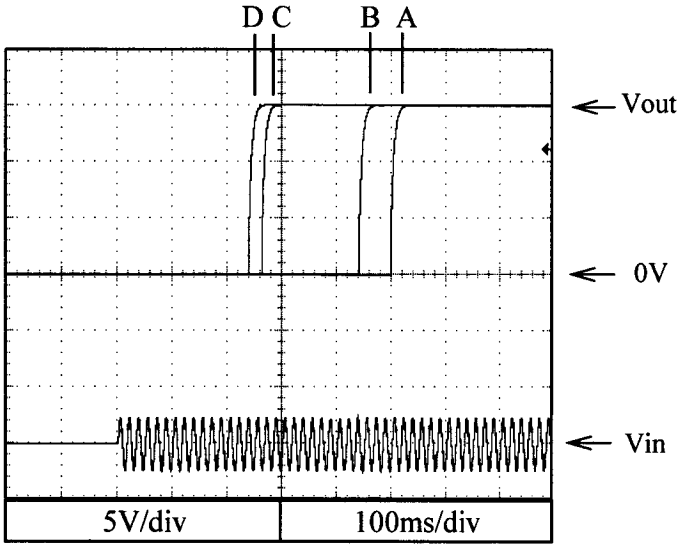
2.5 Output rise characteristics

Conditions; Vin : 85VAC (A)
: 115VAC (B)
: 230VAC (C)
: 265VAC (D)
Iout : 0%
Ta : 25°C

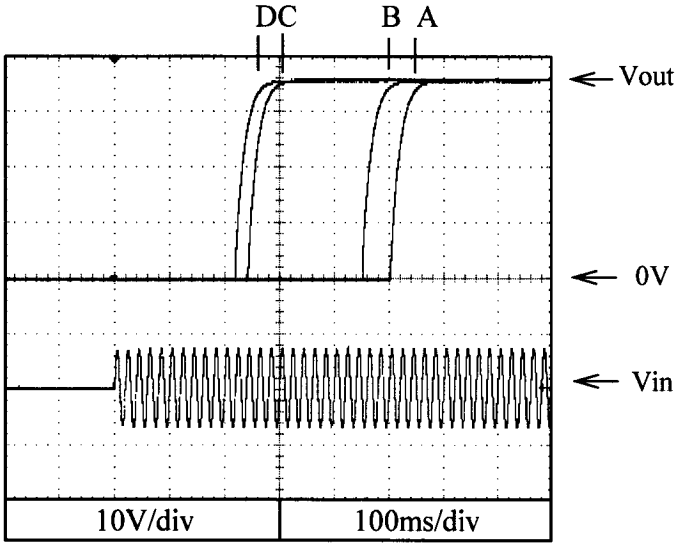
3.3V



15V



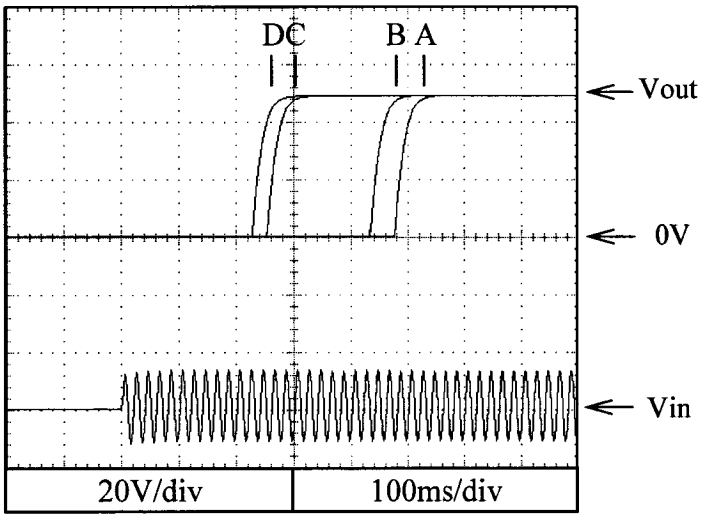
36V



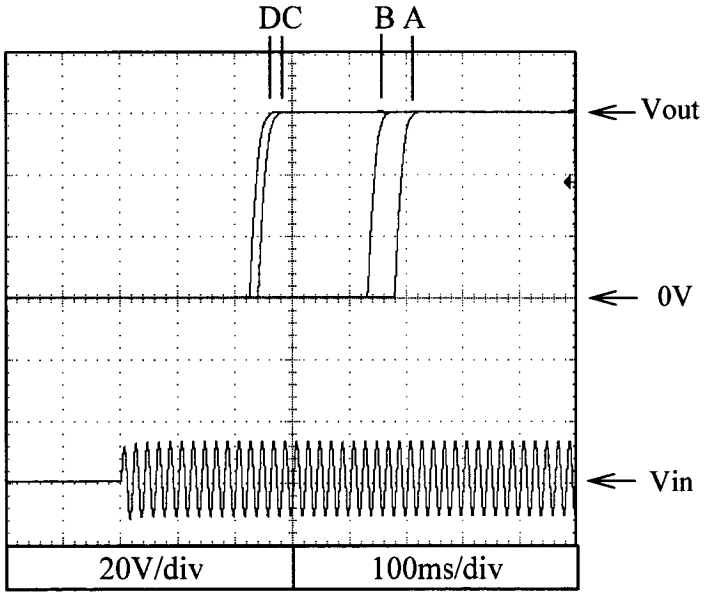
2.5 Output rise characteristics

Conditions; Vin : 85VAC (A)
: 115VAC (B)
: 230VAC (C)
: 265VAC (D)
Iout : 0%
Ta : 25°C

48V



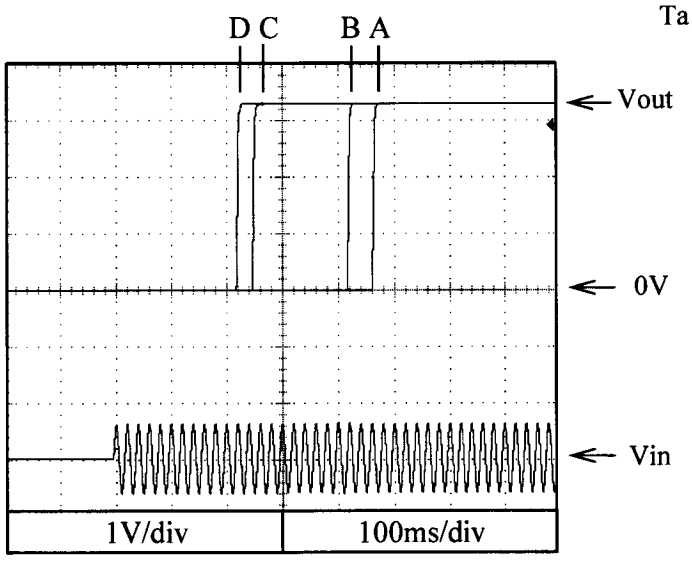
60V



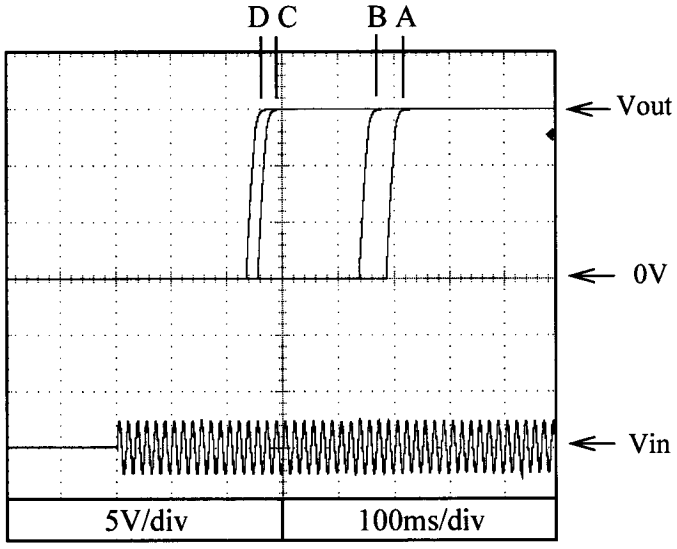
2.5 Output rise characteristics

Conditions; Vin : 85VAC (A)
: 115VAC (B)
: 230VAC (C)
: 265VAC (D)
Iout : 100%
Ta : 25°C

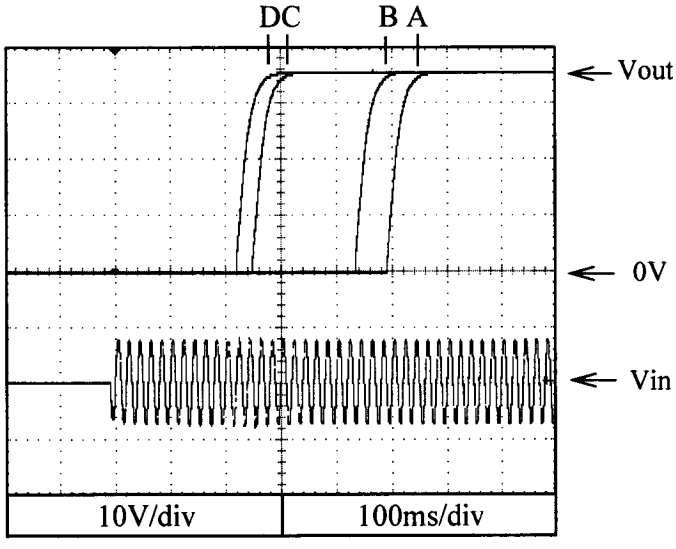
3.3V



15V



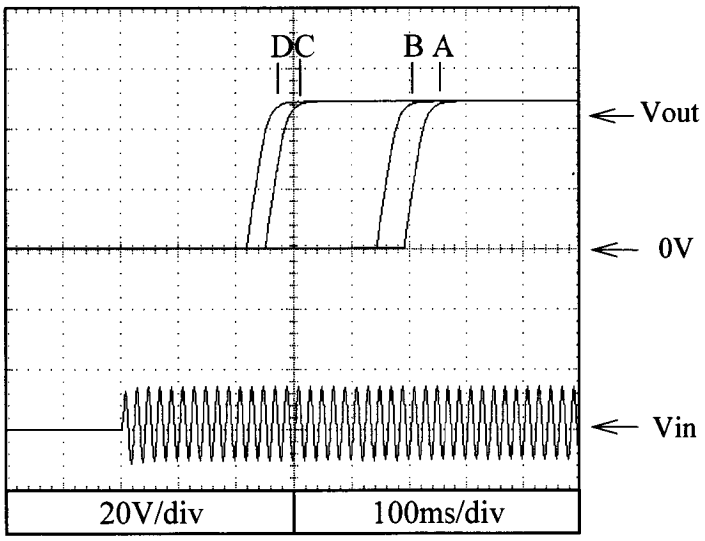
36V



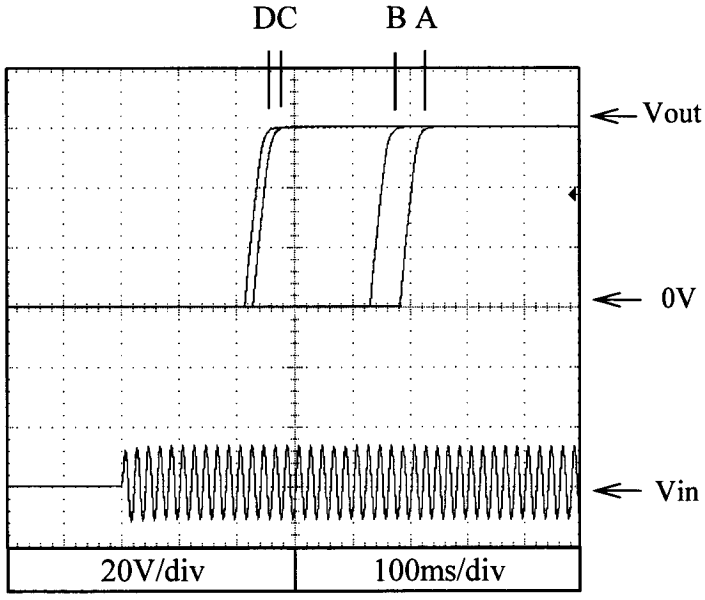
2.5 Output rise characteristics

Conditions; Vin : 85VAC (A)
: 115VAC (B)
: 230VAC (C)
: 265VAC (D)
Iout : 100%
Ta : 25°C

48V



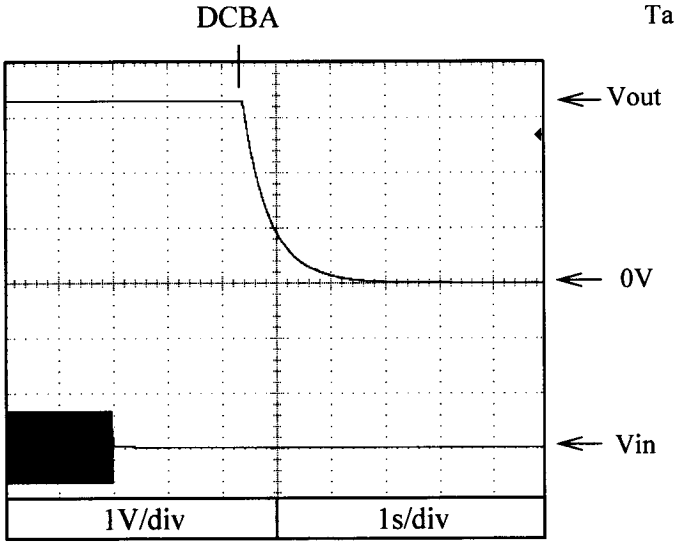
60V



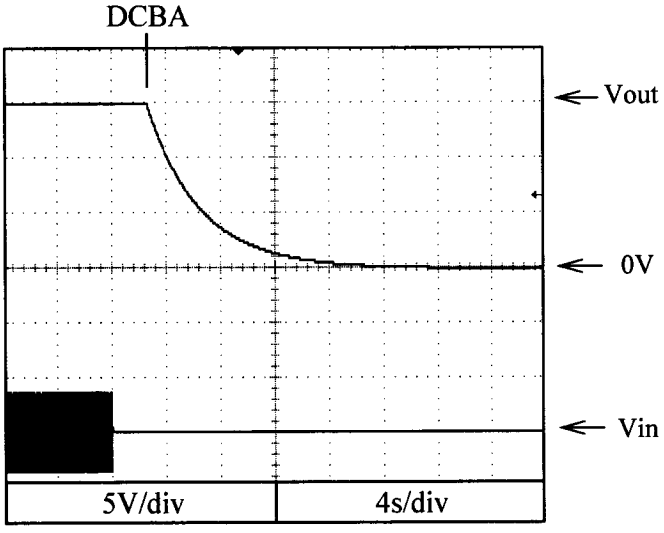
2.6 Output fall characteristics

Conditions; Vin : 85VAC (A)
: 115VAC (B)
: 230VAC (C)
: 265VAC (D)
Iout : 0%
Ta : 25°C

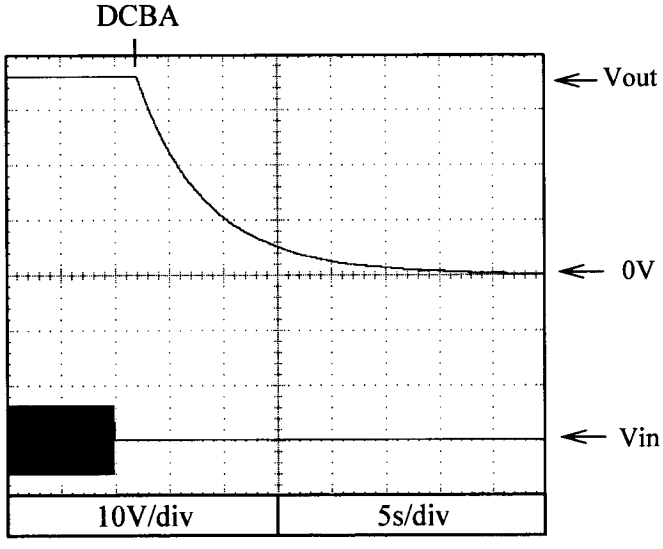
3.3V



15V



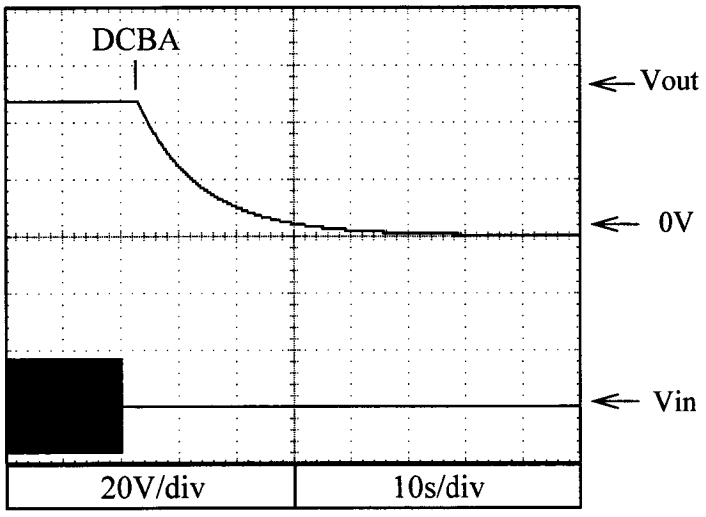
36V



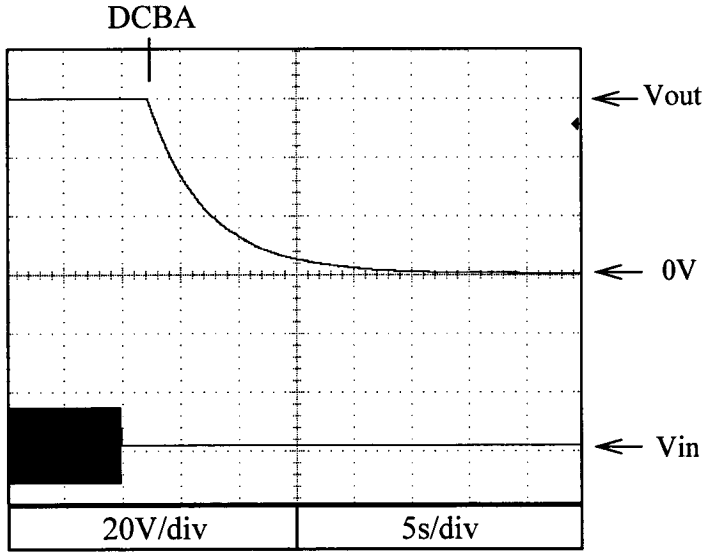
2.6 Output fall characteristics

Conditions; Vin : 85VAC (A)
: 115VAC (B)
: 230VAC (C)
: 265VAC (D)
Iout : 0%
Ta : 25°C

48V



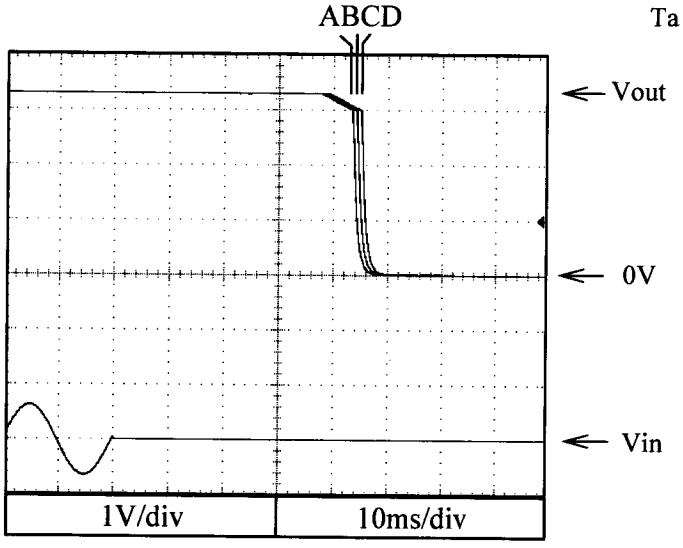
60V



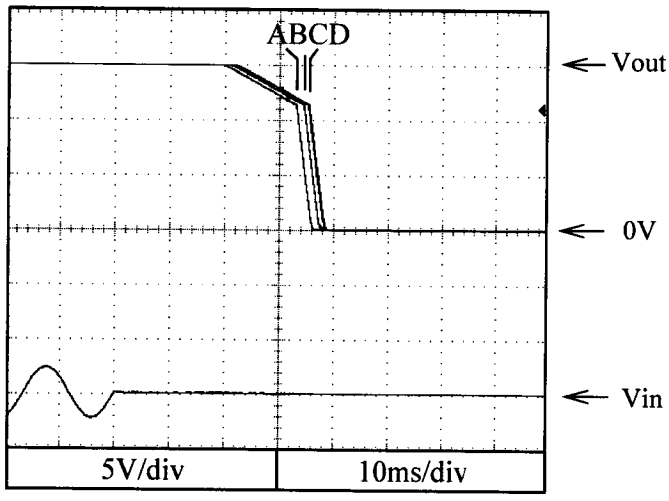
2.6 Output fall characteristics

Conditions; Vin : 85VAC (A)
: 115VAC (B)
: 230VAC (C)
: 265VAC (D)
Iout : 100%
Ta : 25°C

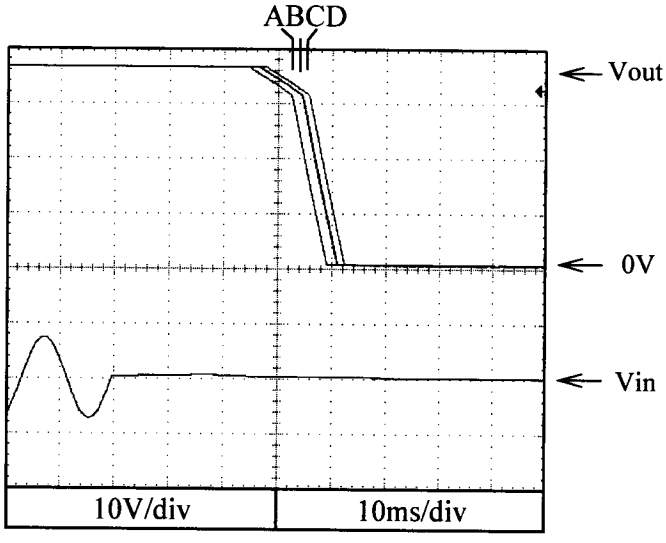
3.3V



15V



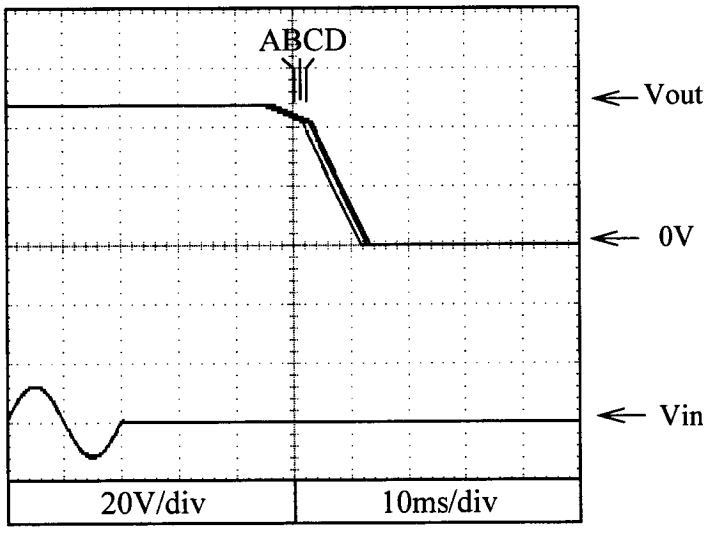
36V



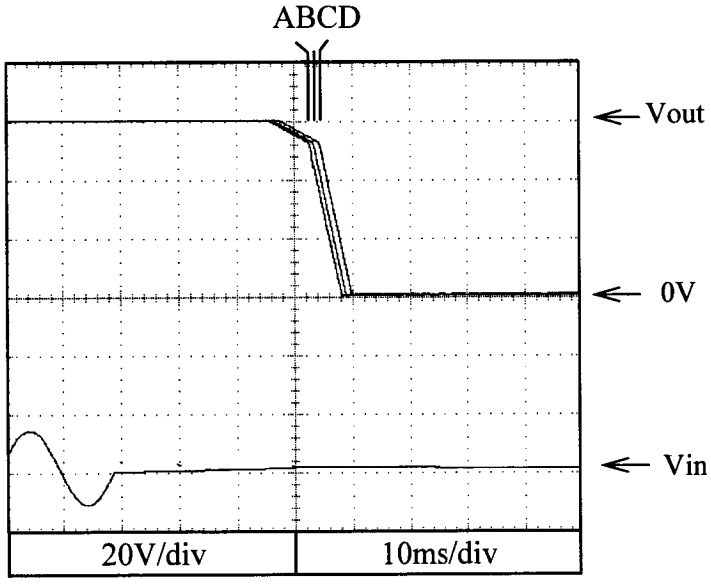
2.6 Output fall characteristics

Conditions; Vin : 85VAC (A)
: 115VAC (B)
: 230VAC (C)
: 265VAC (D)
Iout : 100%
Ta : 25°C

48V



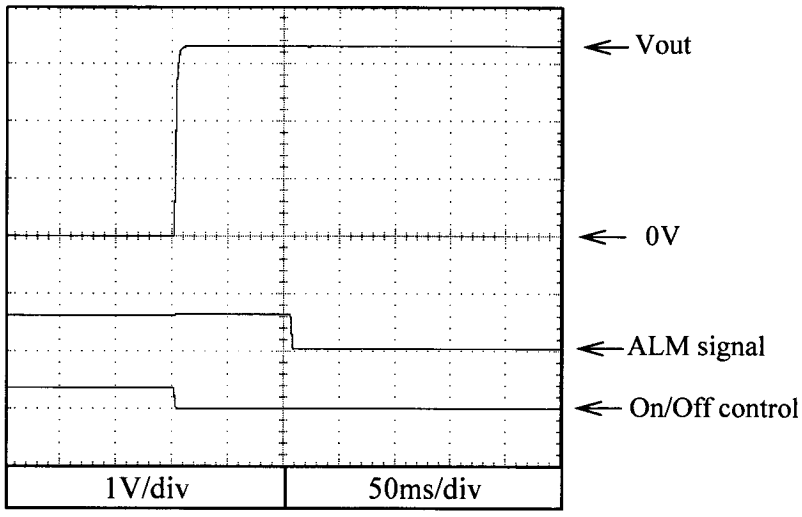
60V



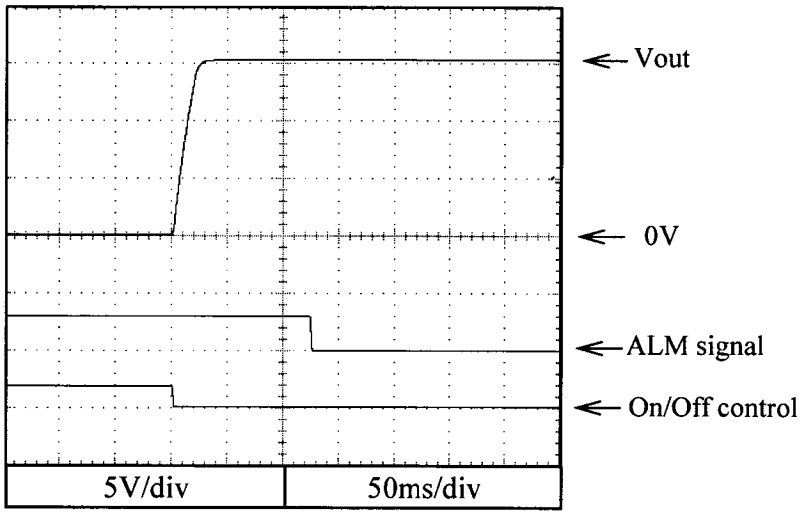
2.7 Output rise characteristics with On/Off control

Conditions; Vin : 115VAC
Iout : 100%
Ta : 25°C

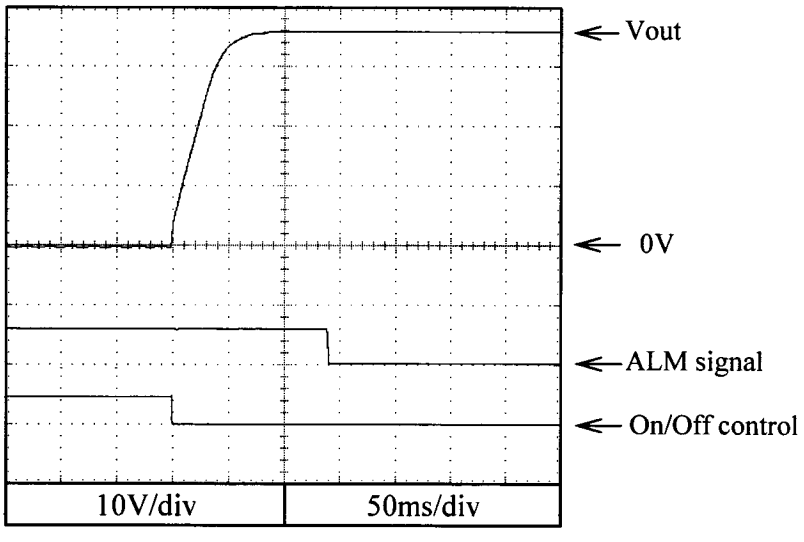
3.3V



15V



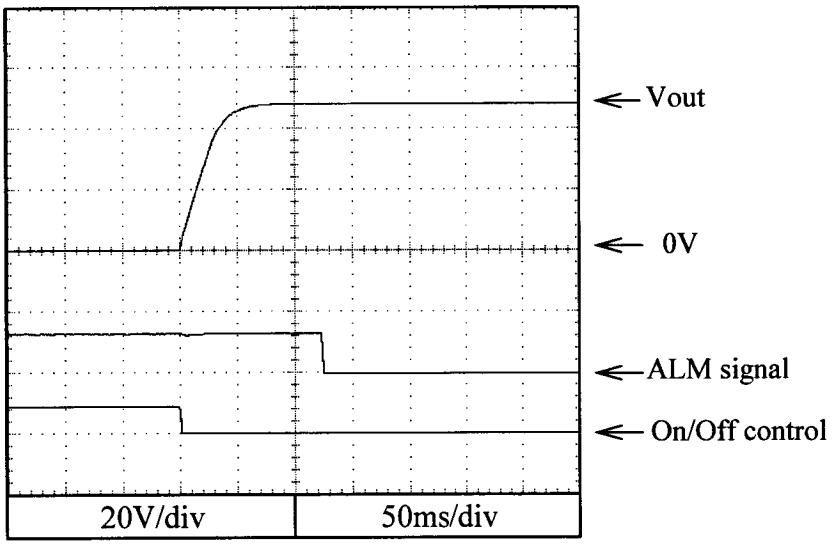
36V



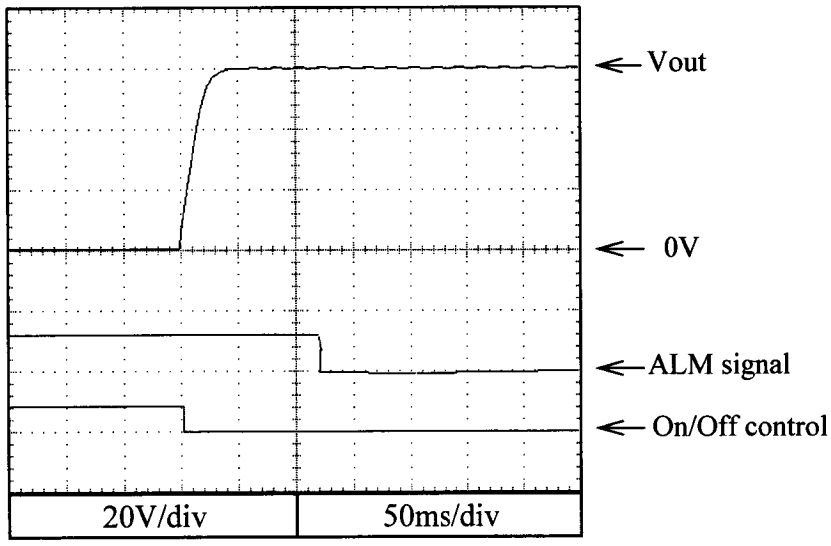
2.7 Output rise characteristics with On/Off control

Conditions; Vin : 115VAC
Iout : 100%
Ta : 25°C

48V



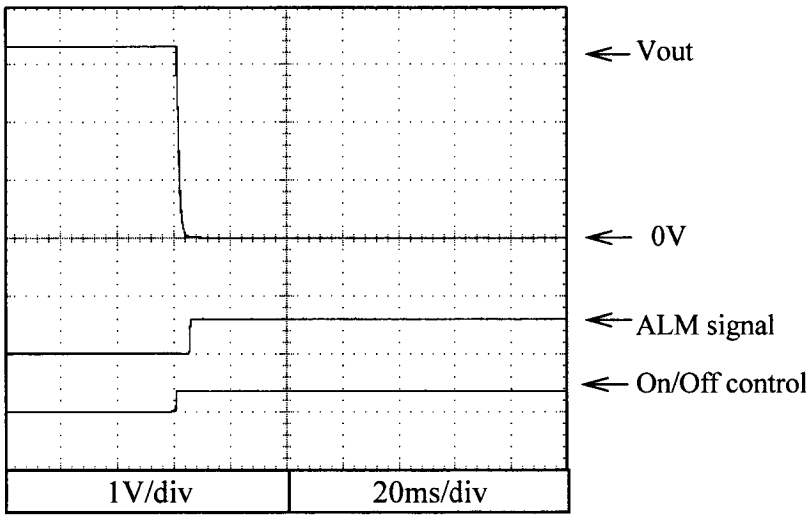
60V



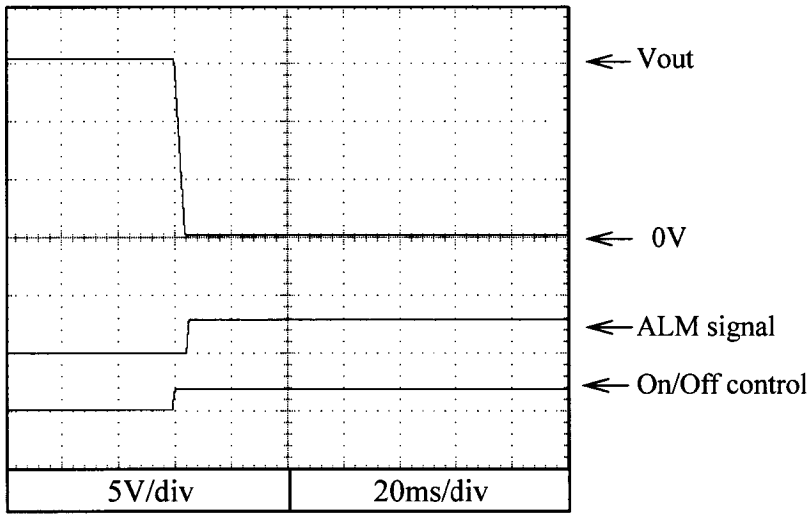
2.8 Output fall characteristics with On/Off control

Conditions; Vin : 115VAC
Iout : 100%
Ta : 25°C

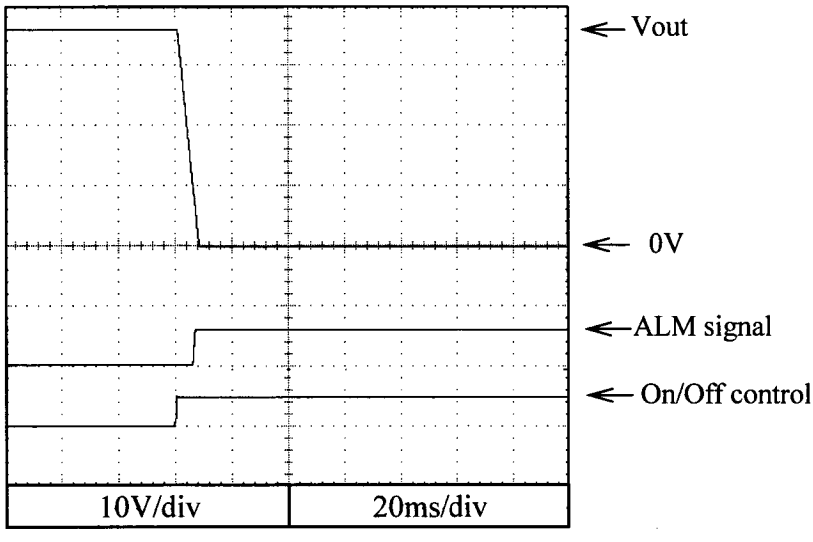
3.3V



15V



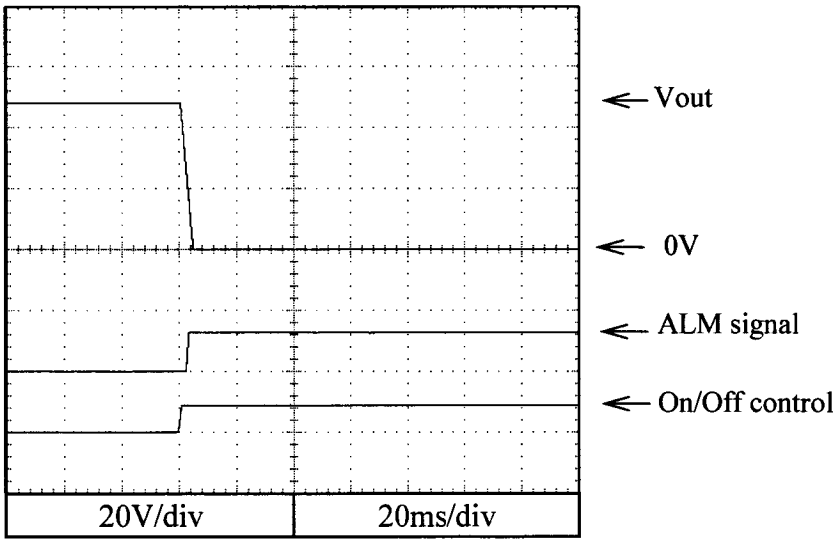
36V



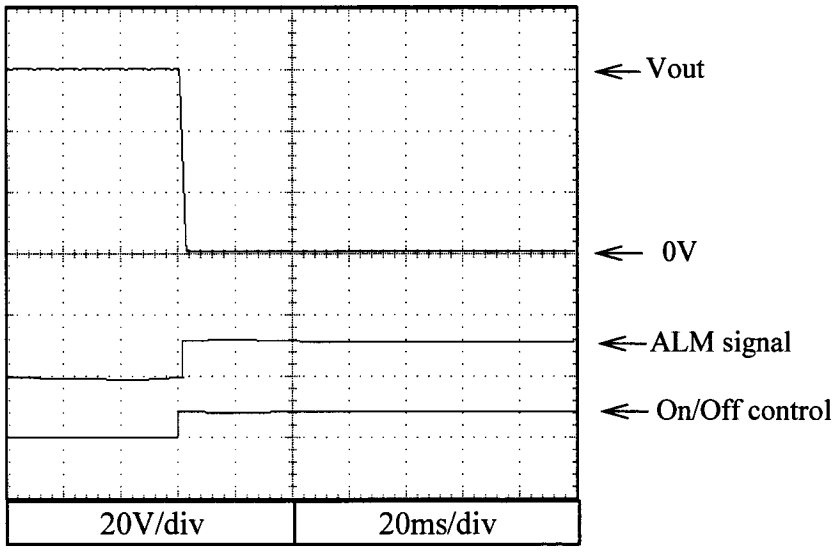
2.8 Output fall characteristics with On/Off control

Conditions; Vin : 115VAC
Iout : 100%
Ta : 25°C

48V



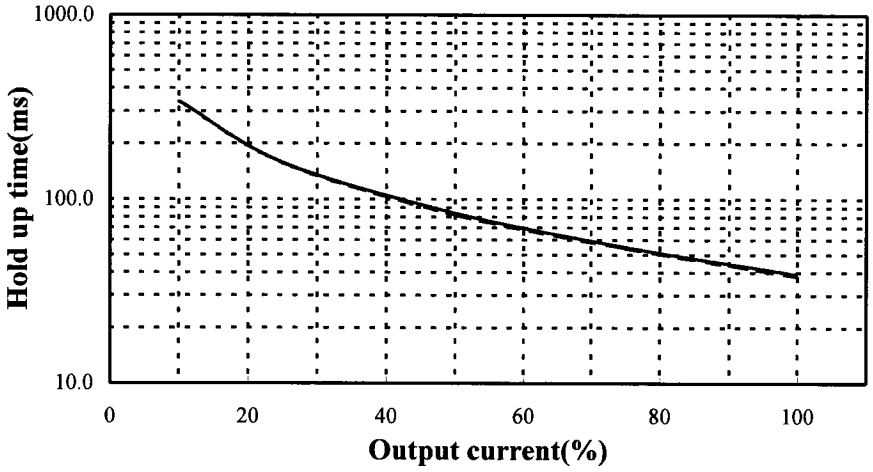
60V



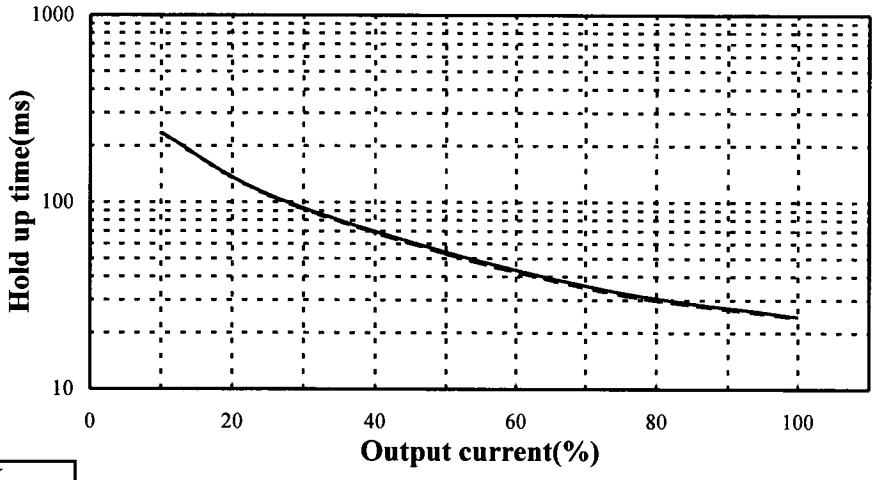
2.9 Hold up time characteristics

Conditions; Vin : 115VAC - - - - -
: 230VAC ———
Ta : 25°C

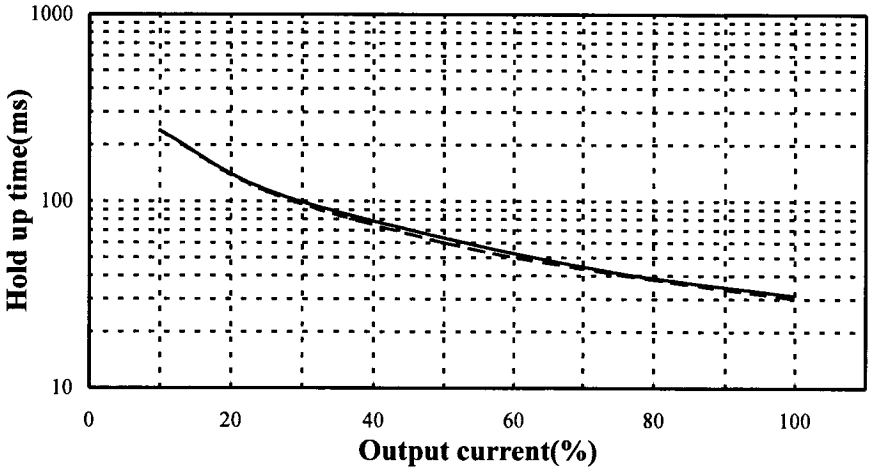
3.3V



15V



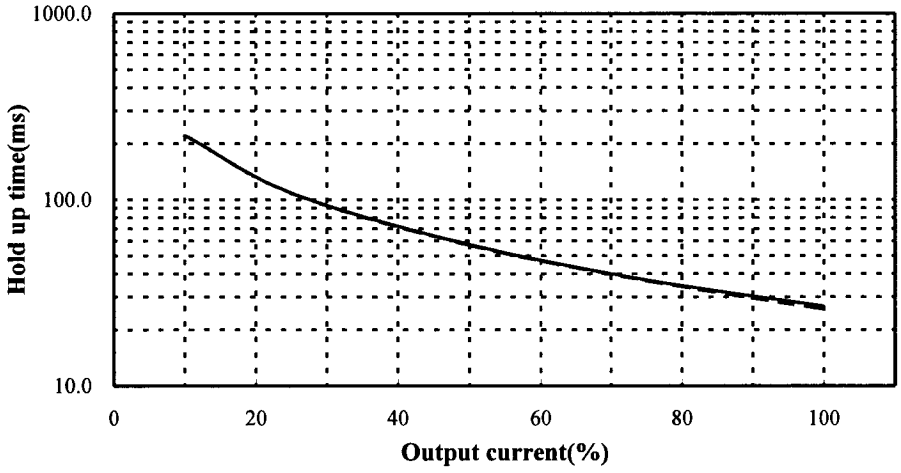
36V



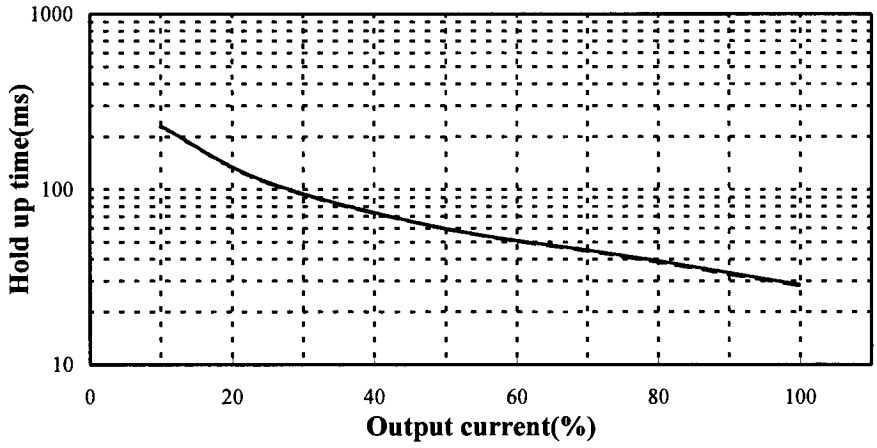
2.9 Hold up time characteristics

Conditions; Vin : 115VAC - - - - -
: 230VAC ———
Ta : 25°C

48V



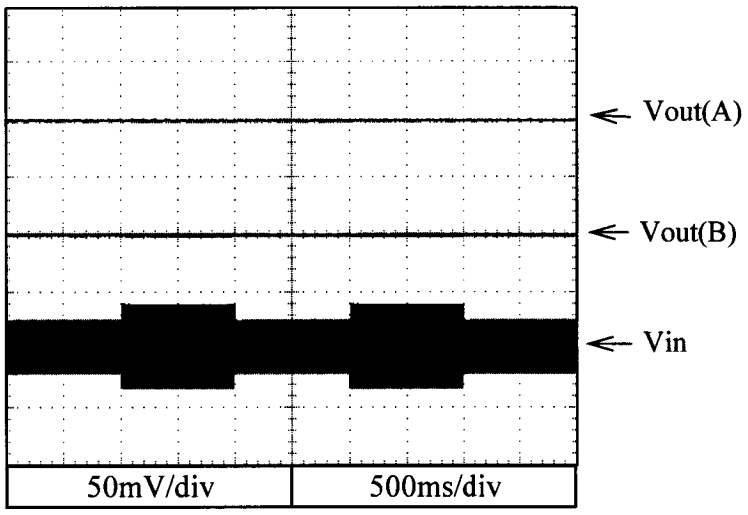
60V



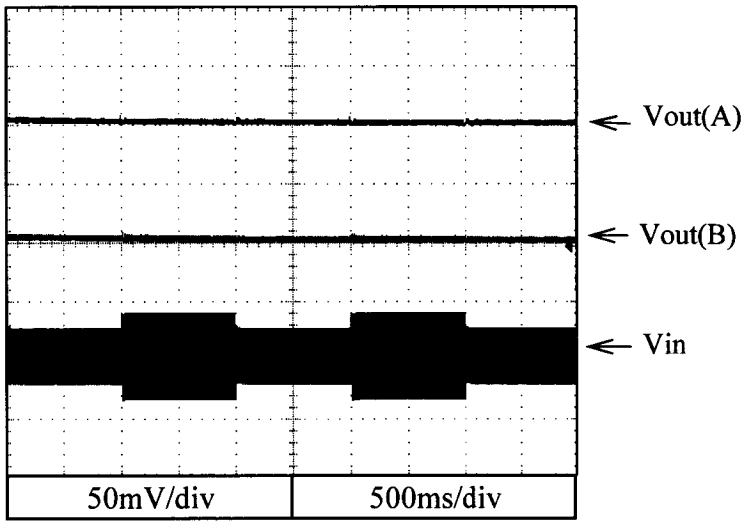
2.10 Dynamic line response characteristics

Conditions; Vin : 85VAC ⇔ 132VAC(A)
170VAC ⇔ 265VAC(B)
Iout : 100%
Ta : 25°C

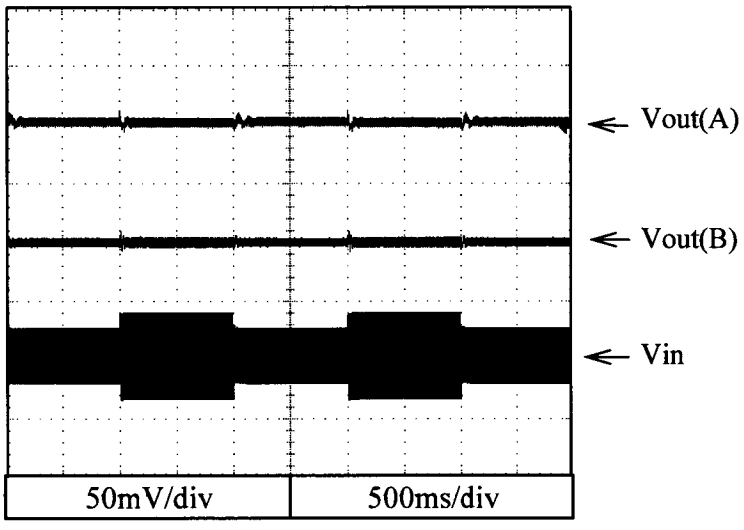
3.3V



15V



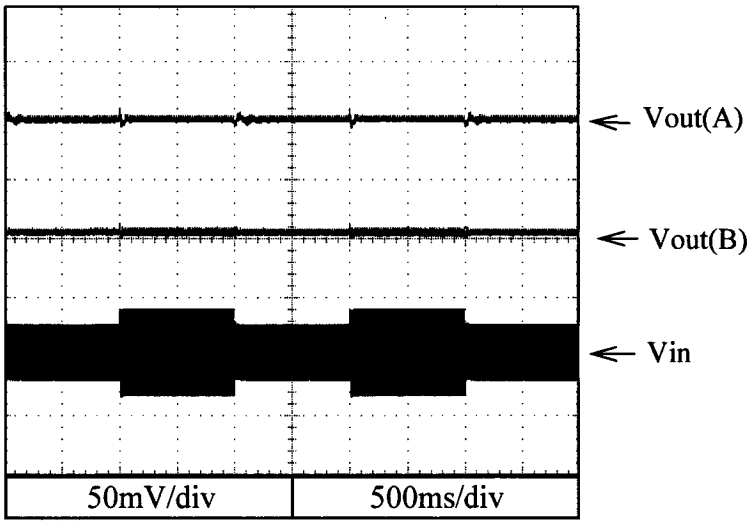
36V



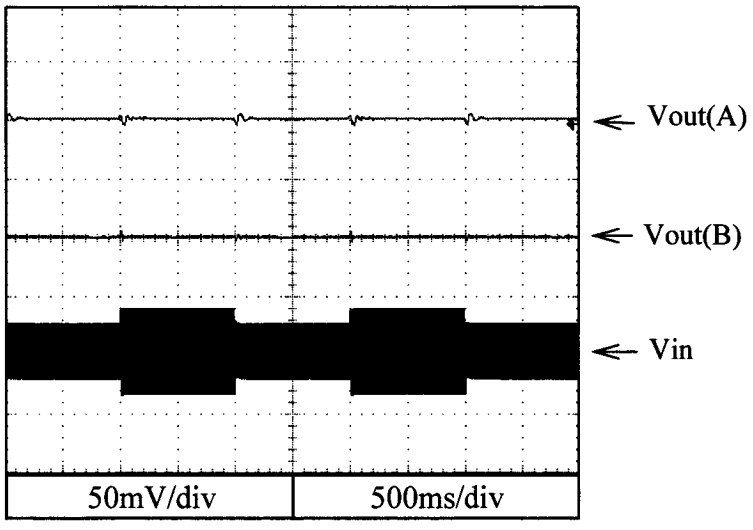
2.10 Dynamic line response characteristics

Conditions; Vin : 85VAC ⇔ 132VAC(A)
170VAC ⇔ 265VAC(B)
Iout : 100%
Ta : 25°C

48V



60V

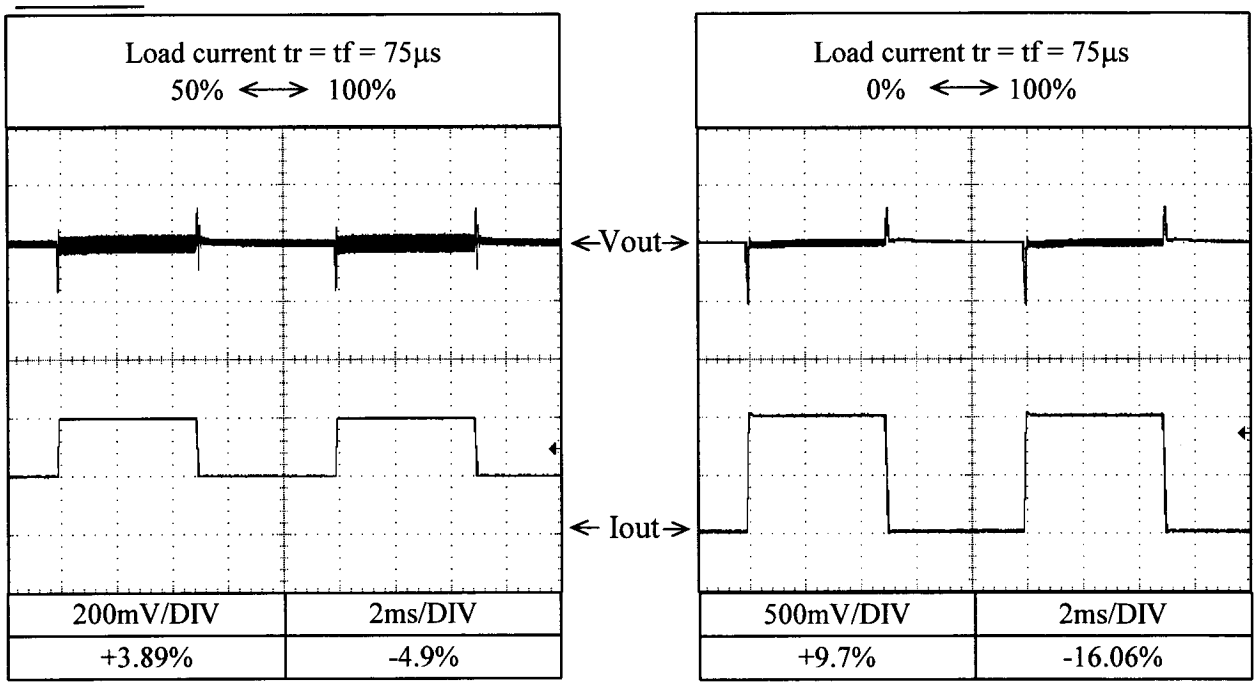


2.11 Dynamic load response characteristics

Conditions; Vin : 115VAC
Ta : 25°C

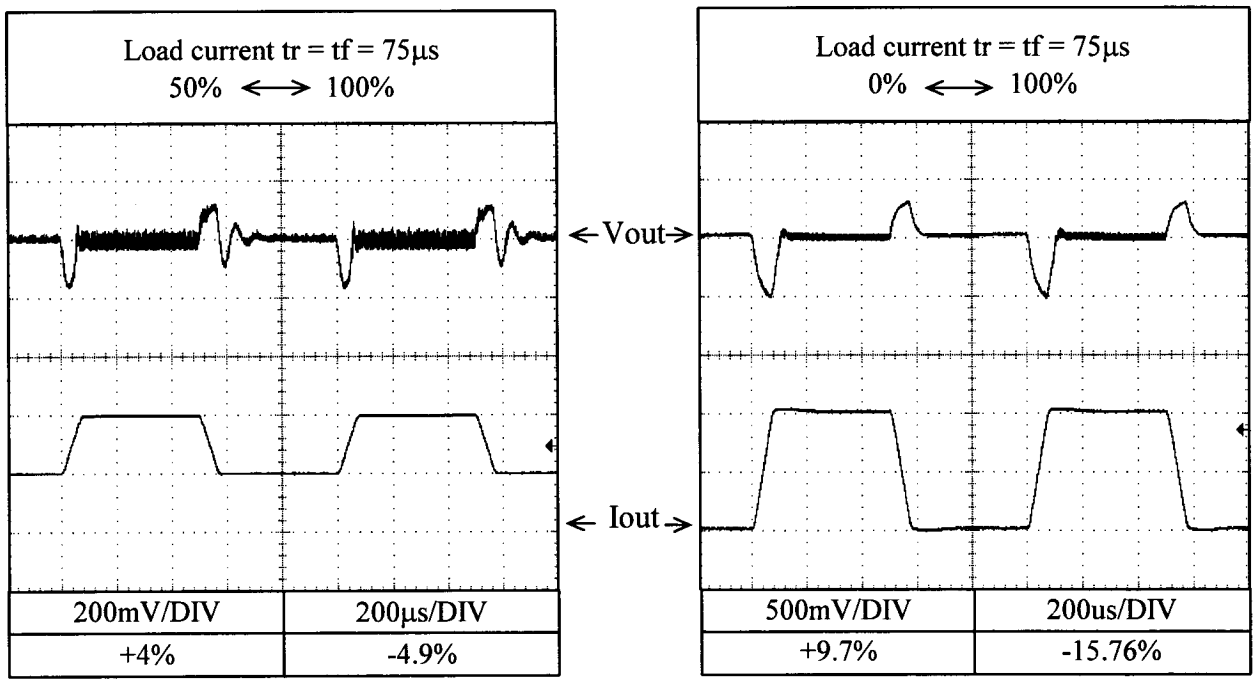
3.3V

f=100Hz



200mV/DIV	2ms/DIV	500mV/DIV	2ms/DIV
+3.89%	-4.9%	+9.7%	-16.06%

f=1kHz



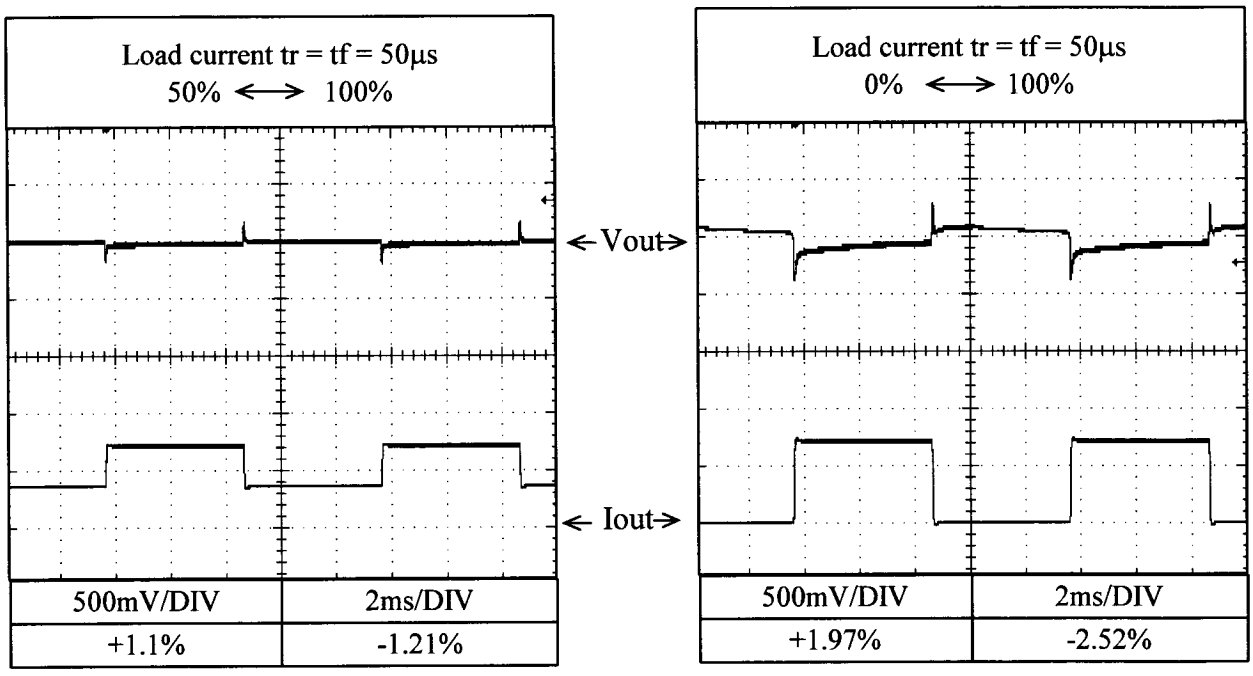
200mV/DIV	200μs/DIV	500mV/DIV	200us/DIV
+4%	-4.9%	+9.7%	-15.76%

2.11 Dynamic load response characteristics

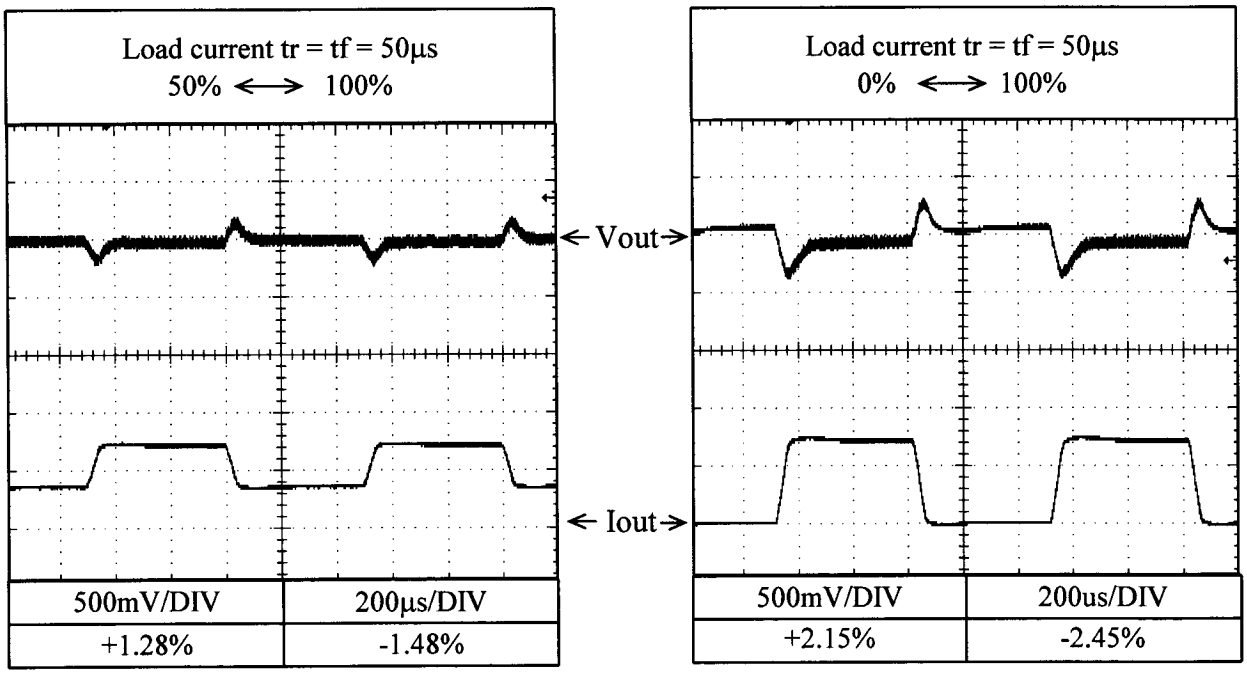
Conditions; Vin : 115VAC
Ta : 25°C

15V

f=100Hz



f=1kHz

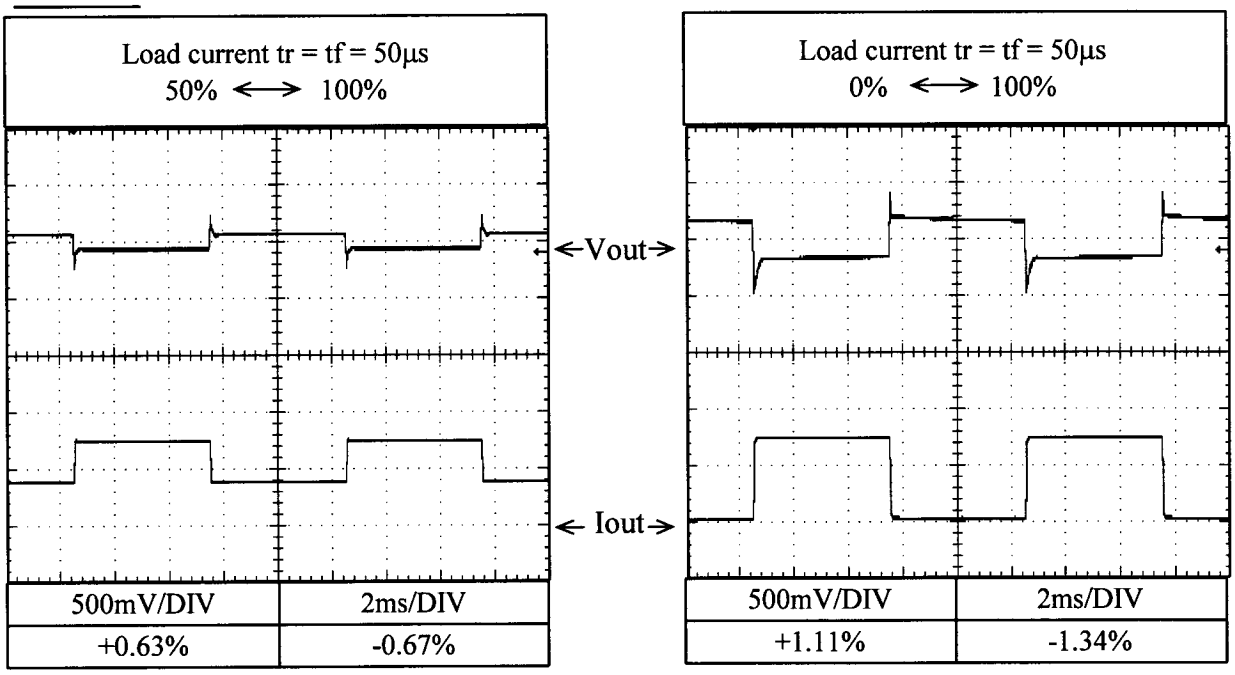


2.11 Dynamic load response characteristics

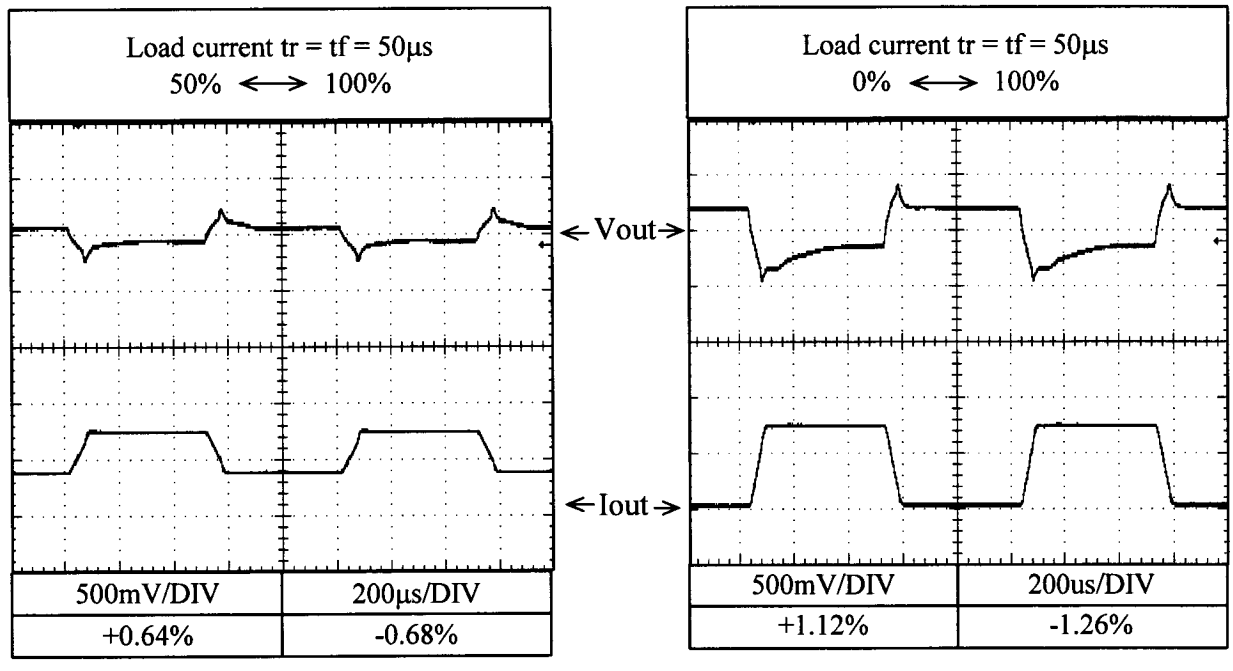
Conditions; Vin : 115VAC
Ta : 25°C

36V

f=100Hz



f=1kHz

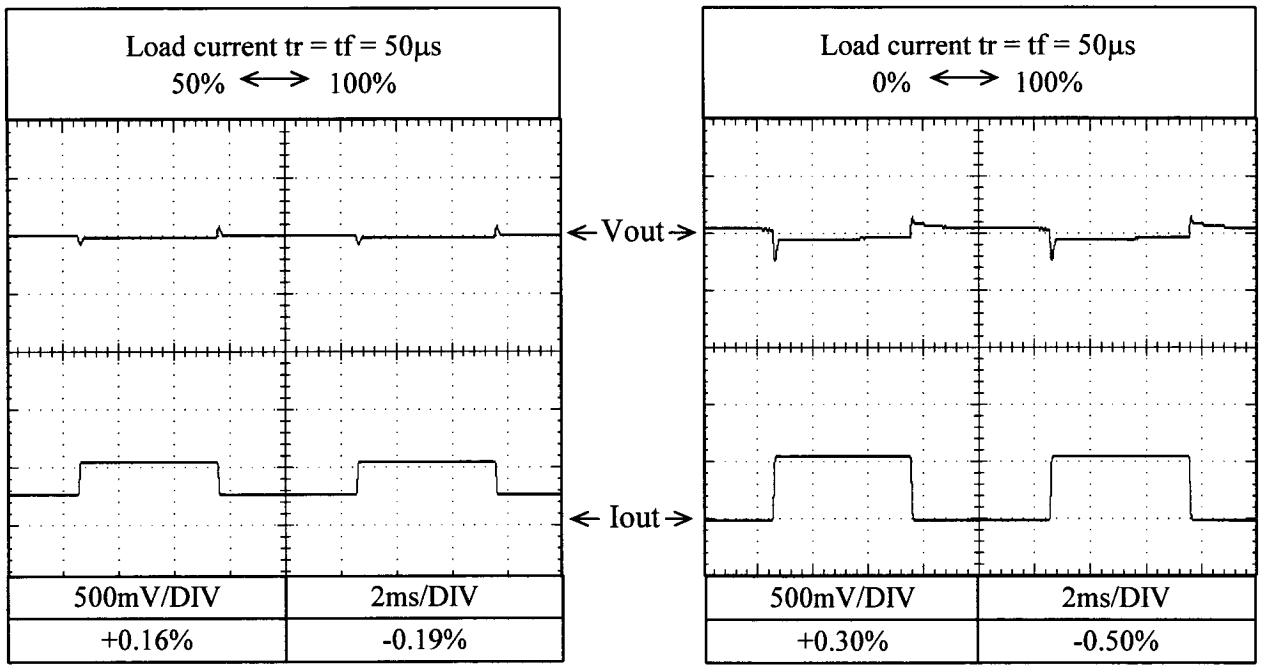


2.11 Dynamic load response characteristics

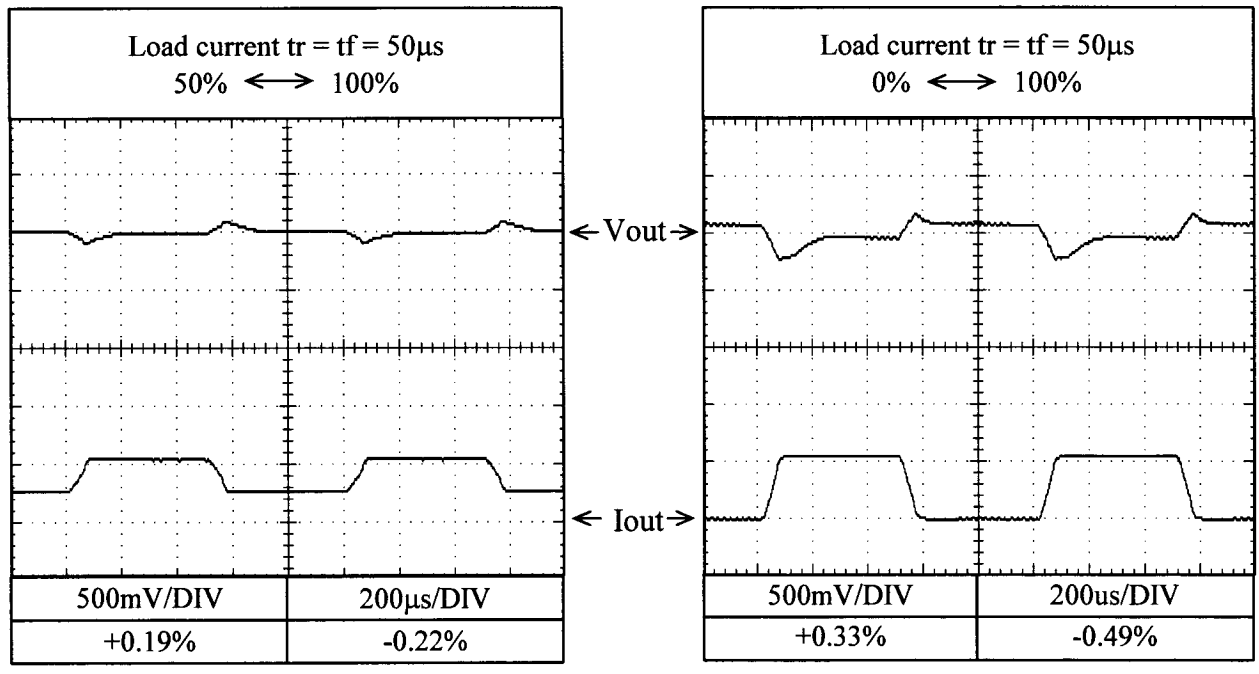
Conditions; Vin : 115VAC
Ta : 25°C

48V

f=100Hz



f=1kHz

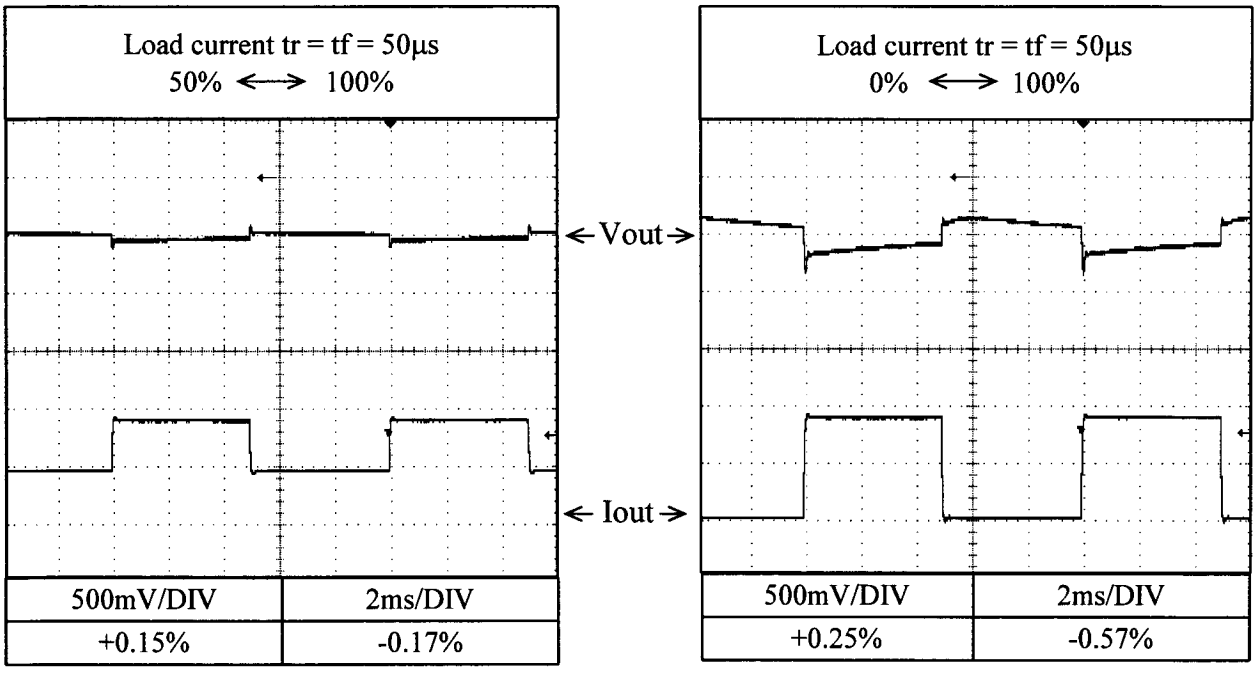


2.11 Dynamic load response characteristics

Conditions; Vin : 115VAC
Ta : 25°C

60V

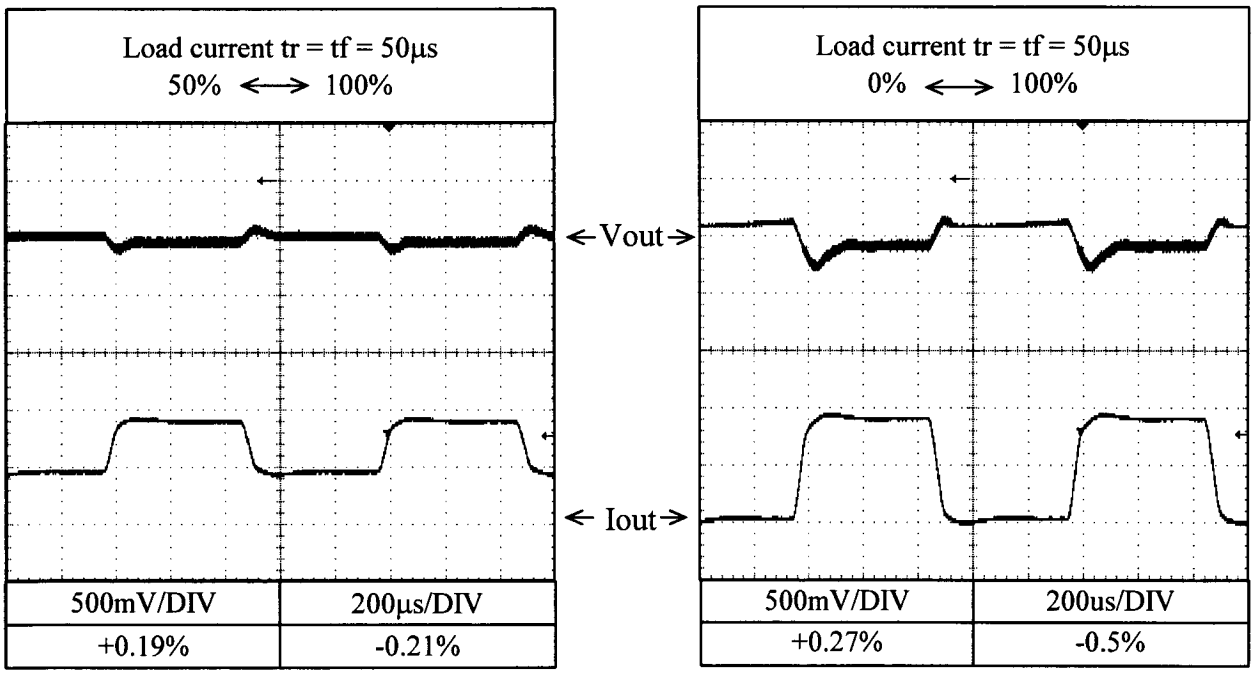
f=100Hz



500mV/DIV	2ms/DIV
+0.15%	-0.17%

500mV/DIV	2ms/DIV
+0.25%	-0.57%

f=1kHz



500mV/DIV	200μs/DIV
+0.19%	-0.21%

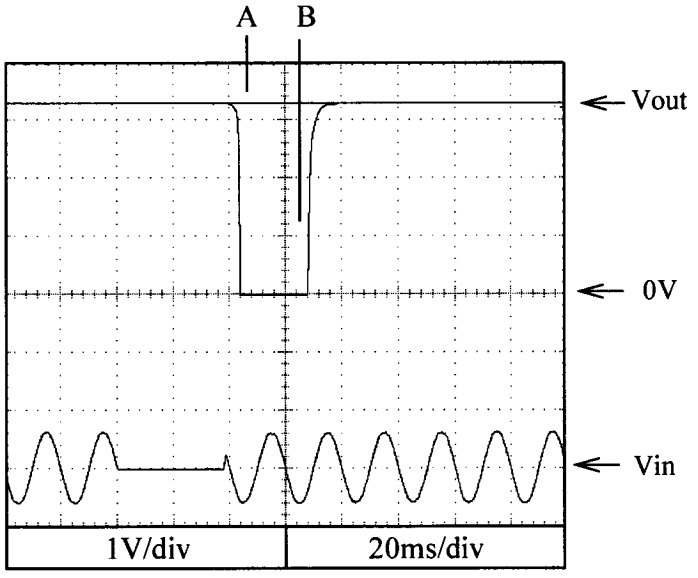
500mV/DIV	200us/DIV
+0.27%	-0.5%

2.12 Response to brownout characteristics

Conditions; Vin : 115VAC
Iout : 100%
Ta : 25°C

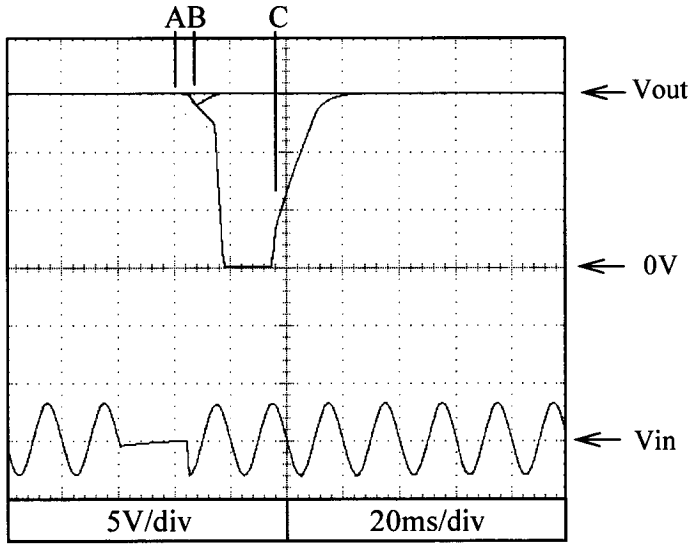
3.3V

A=37ms
B=38ms



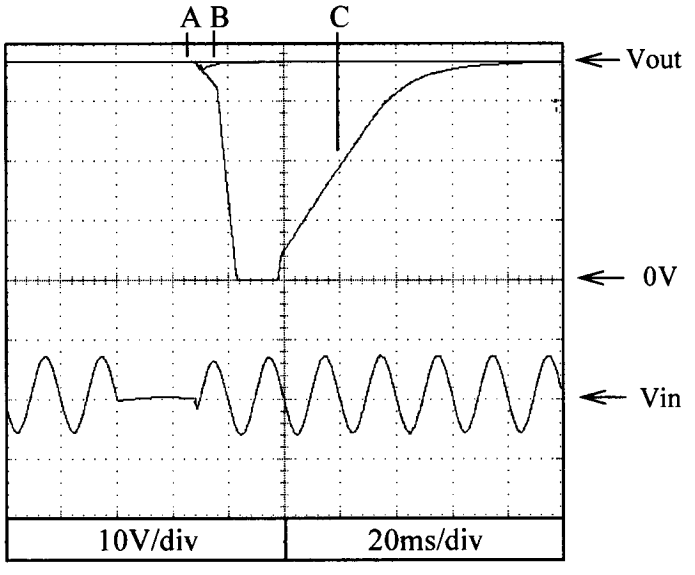
15V

A=24ms
B=25ms
C=27ms



36V

A=26ms
B=27ms
C=29ms

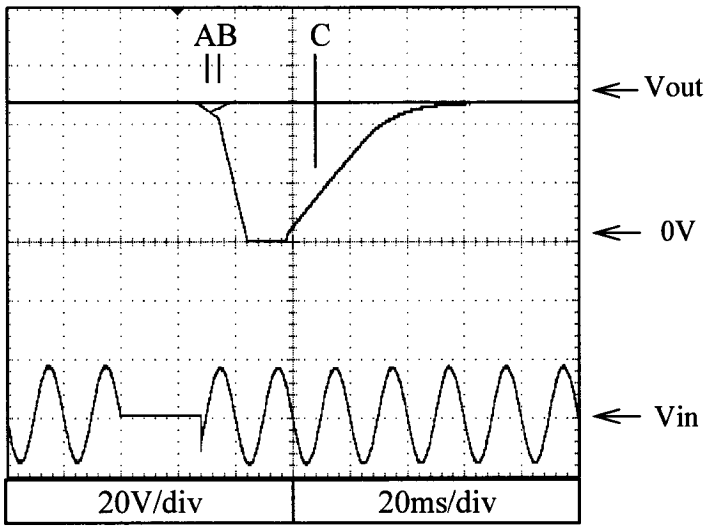


2.12 Response to brownout characteristics

Conditions; Vin : 115VAC
Iout : 100%
Ta : 25°C

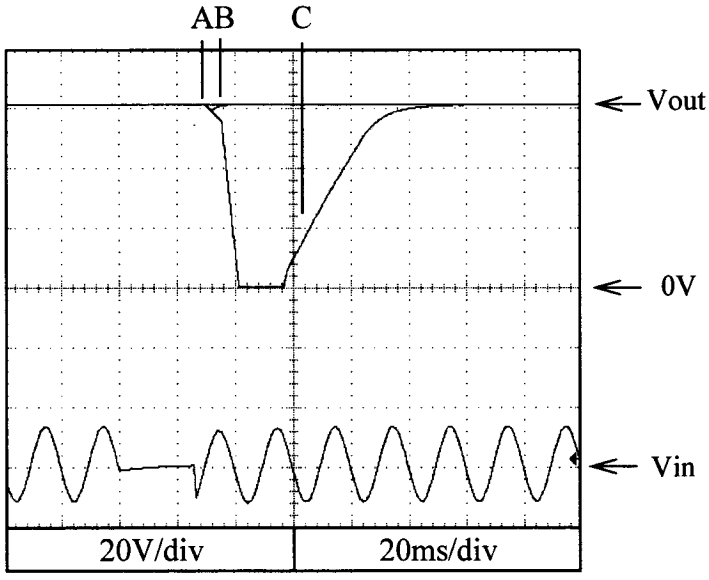
48V

A=26ms
B=27ms
C=28ms



60V

A=25ms
B=26ms
C=27ms

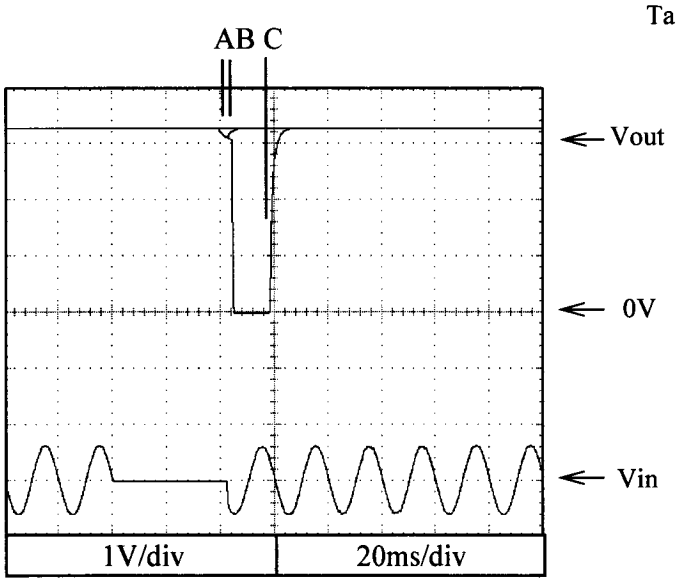


2.12 Response to brownout characteristics

Conditions; Vin : 230VAC
Iout : 100%
Ta : 25°C

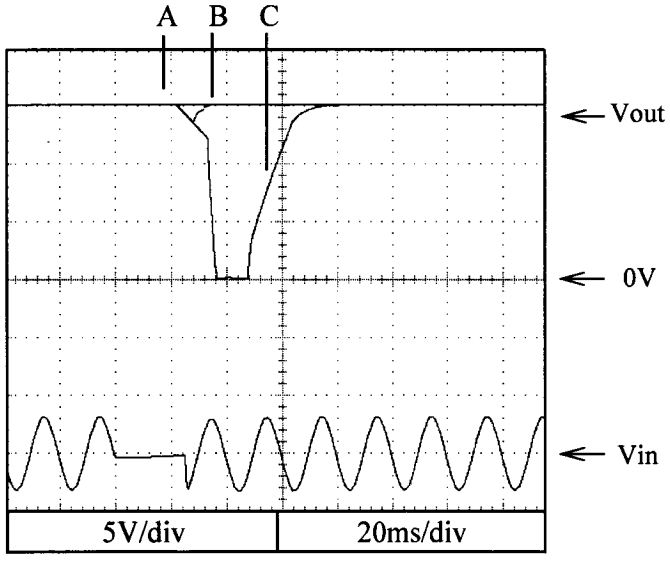
3.3V

A=38ms
B=39ms
C=42ms



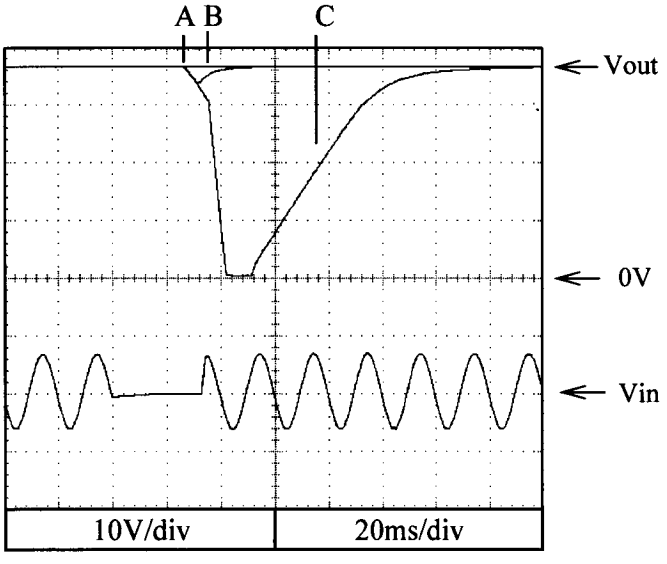
15V

A=25ms
B=26ms
C=30ms



36V

A=27ms
B=28ms
C=33ms

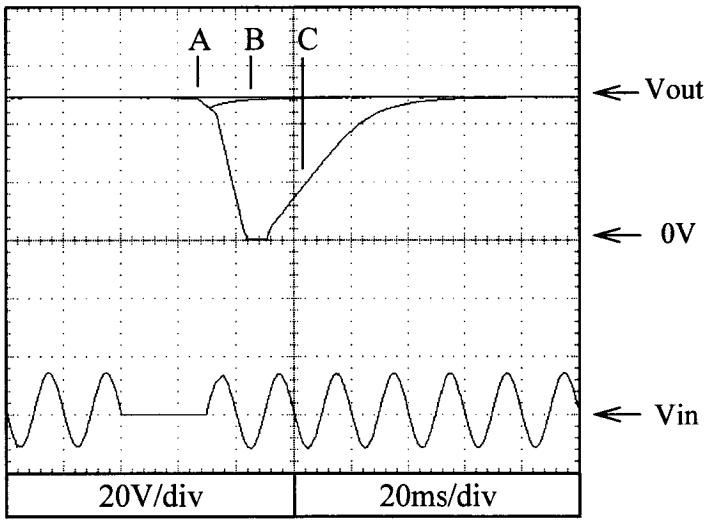


2.12 Response to brownout characteristics

Conditions; Vin : 230VAC
Iout : 100%
Ta : 25°C

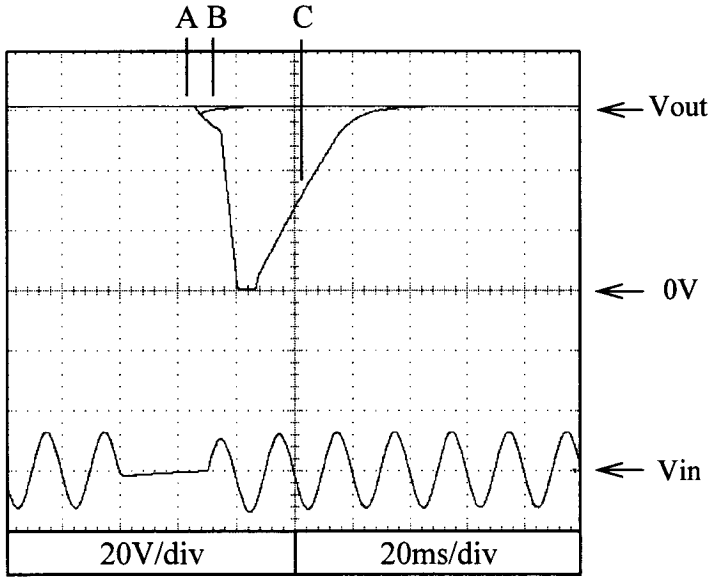
48V

A=27ms
B=30ms
C=34ms



60V

A=26ms
B=28ms
C=31ms

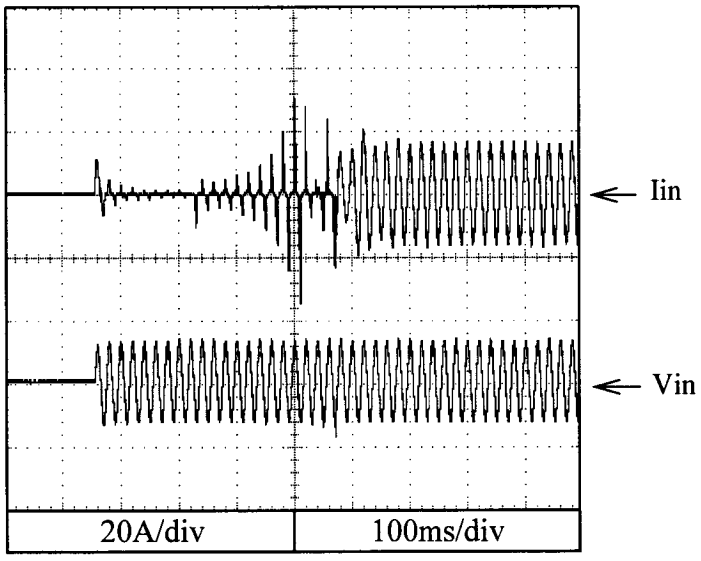


2.13 Inrush current waveform

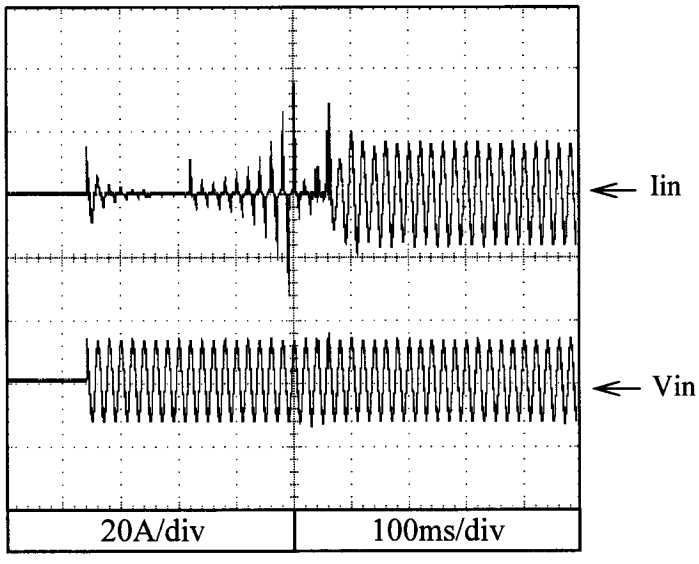
Conditions; Vin : 115VAC
Iout : 100%
Ta : 25°C

15V

Switch on phase angle of input AC voltage
$\phi = 0^{o}$



Switch on phase angle of input AC voltage
$\phi = 90^{o}$

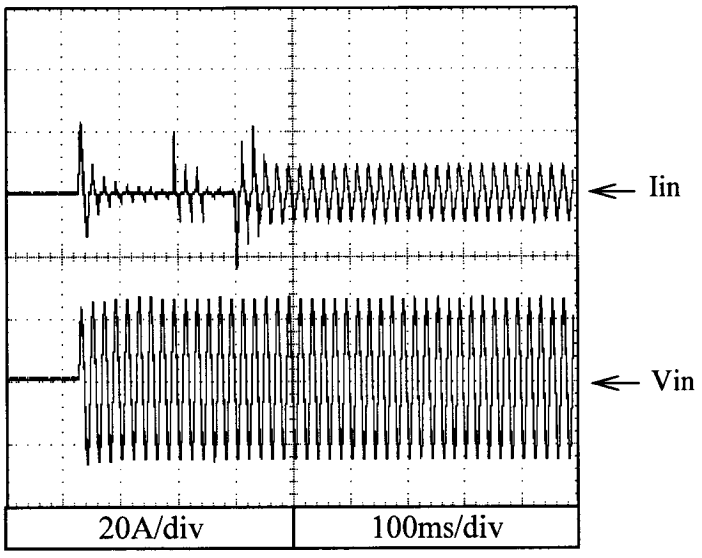


2.13 Inrush current waveform

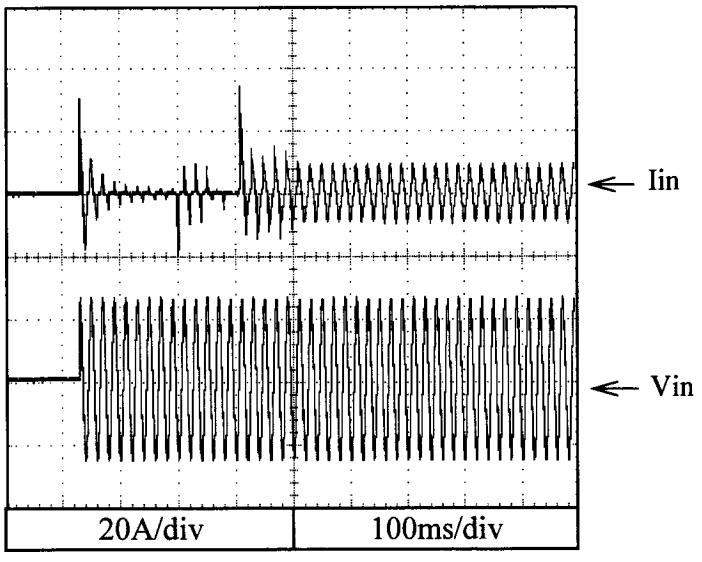
Conditions; Vin : 230VAC
Iout : 100%
Ta : 25°C

15V

Switch on phase angle of input AC voltage $\phi = 0^{o}$



Switch on phase angle of input AC voltage $\phi = 90^{o}$

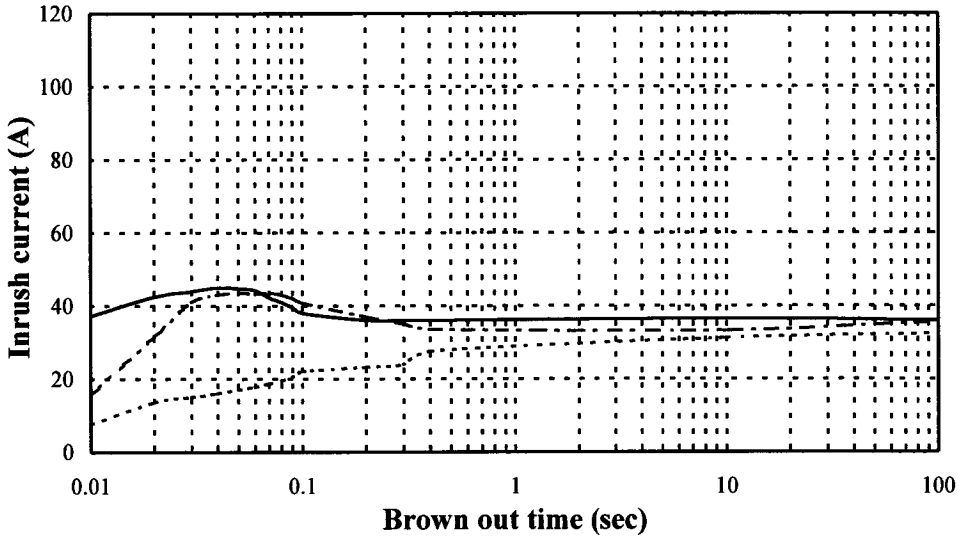


2.14 Inrush current characteristics

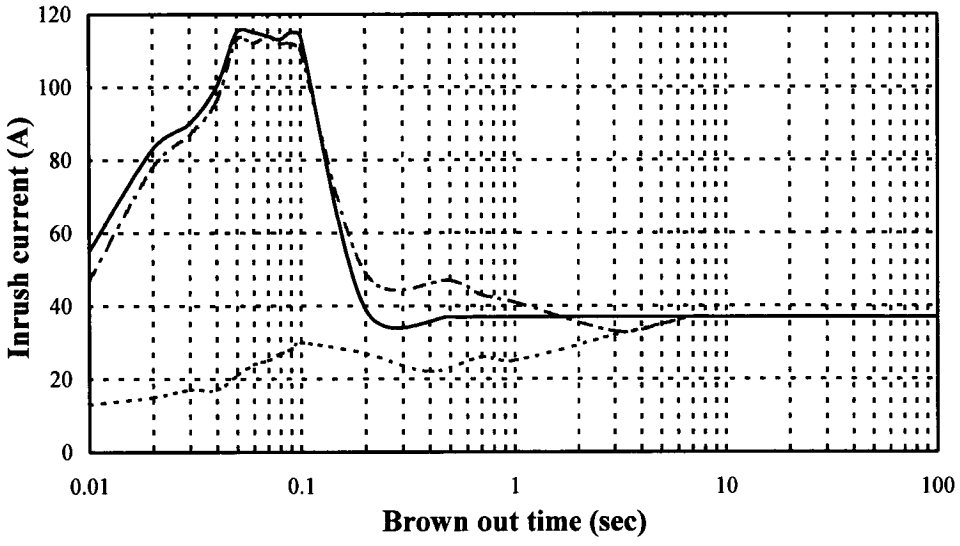
Conditions Iout : 0% -------
: 50% - · - · - · -
: 100% ———
Ta : 25°C

15V

Vin: 115VAC



Vin: 230VAC



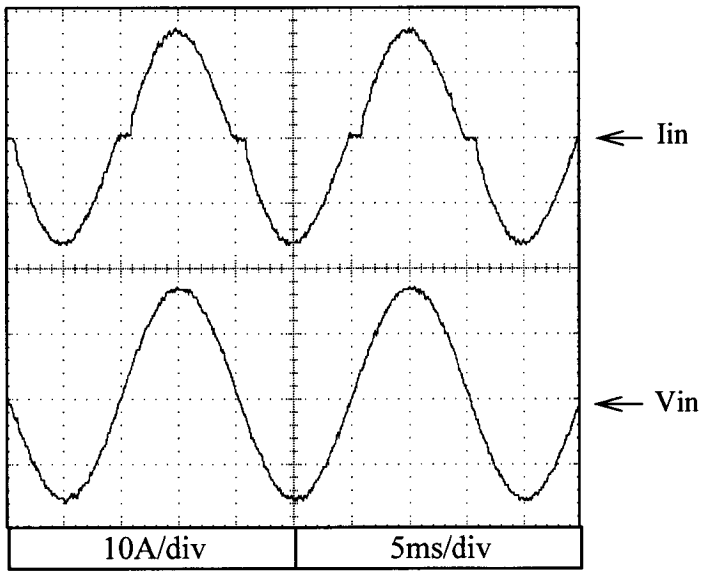
Above data included secondary inrush current.

2.15 Input current waveform

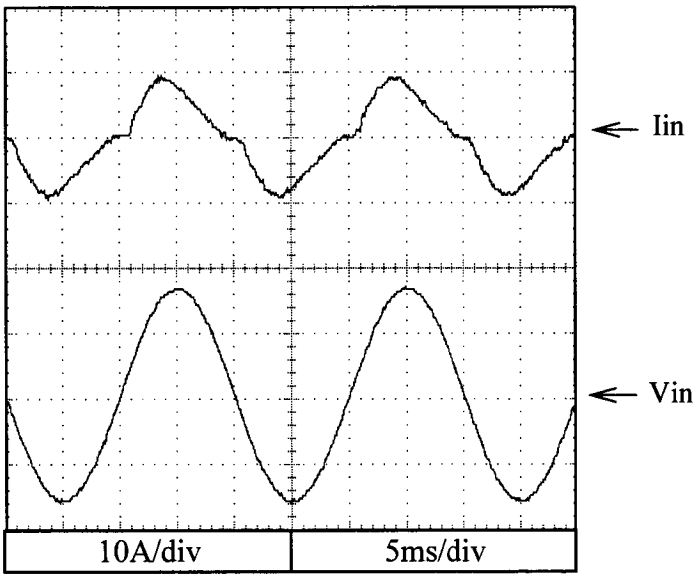
Conditions; Iout : 100%
Ta : 25°C

15V

Vin = 115VAC



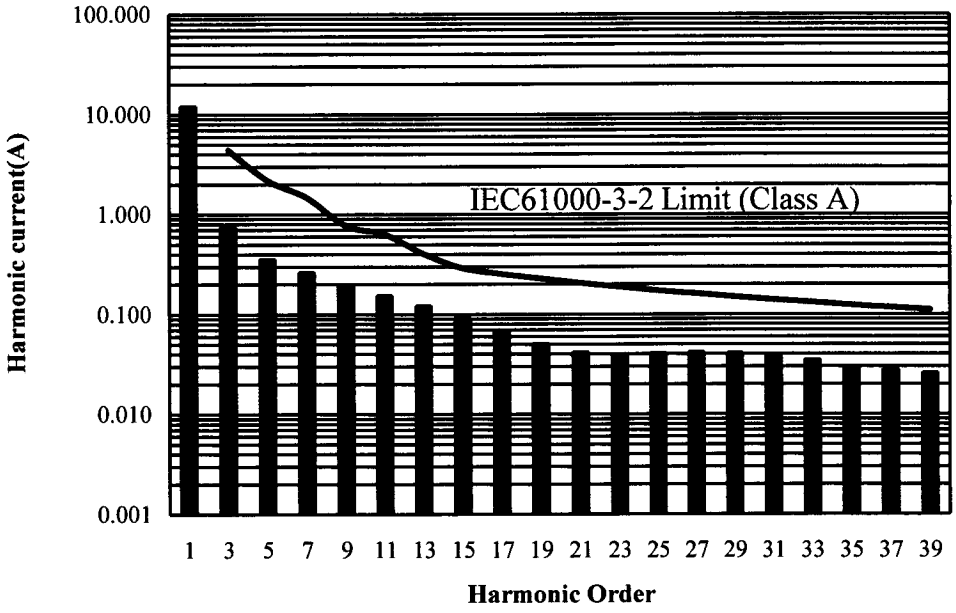
Vin = 230VAC



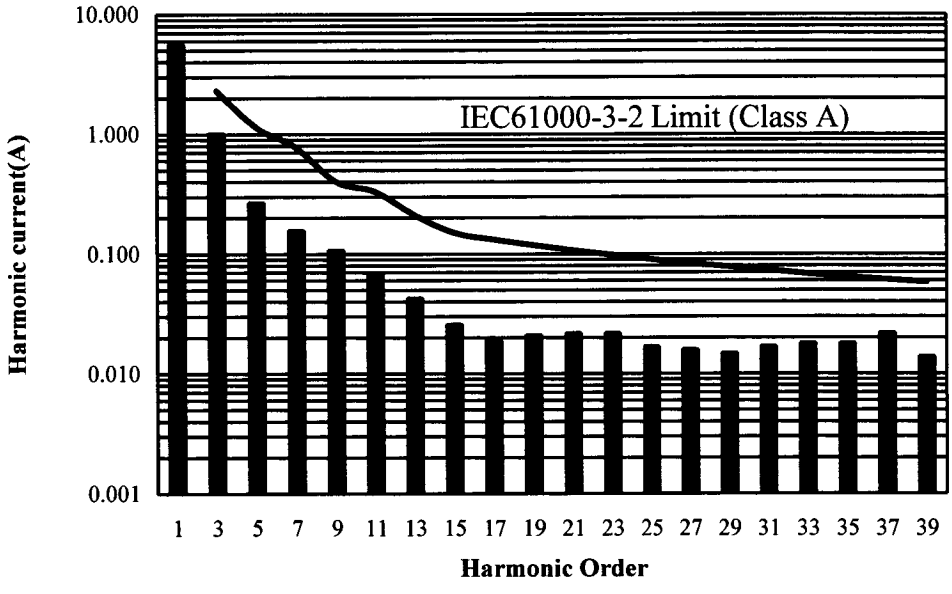
2.16 Input current harmonics

Conditions; Vin : 115VAC
Iout : 100%
Ta : 25°C

15V



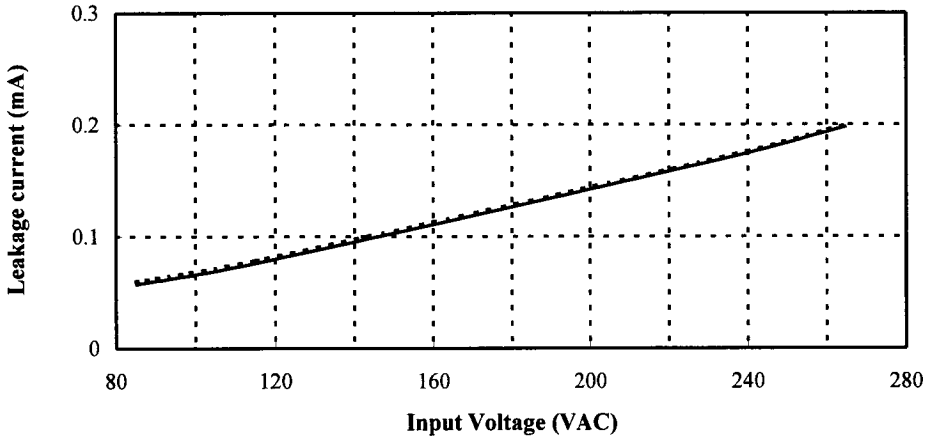
Conditions; Vin : 230VAC
Iout : 100%
Ta : 25°C



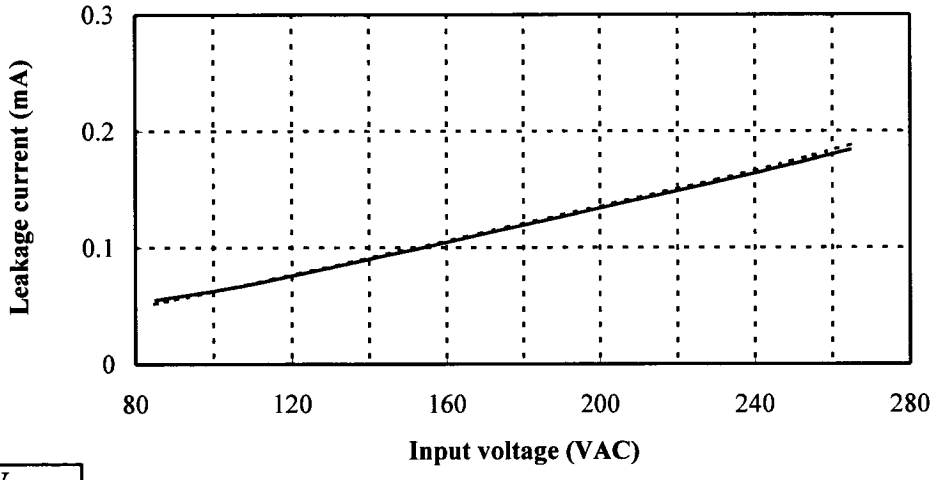
2.17 Leakage current characteristics

Conditions; Iout : 0% ———
: 100% ------
Ta : 25°C
f : 50Hz
Equipment used : MODEL 228
(Simpson)

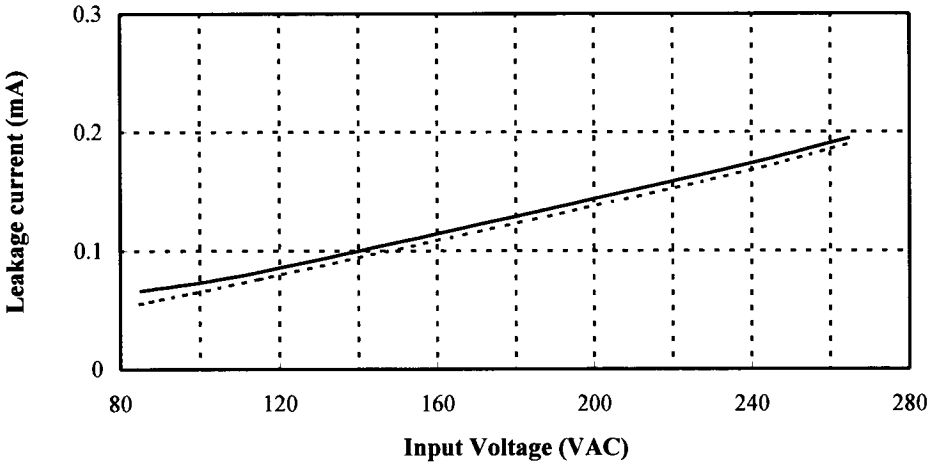
3.3V



15V



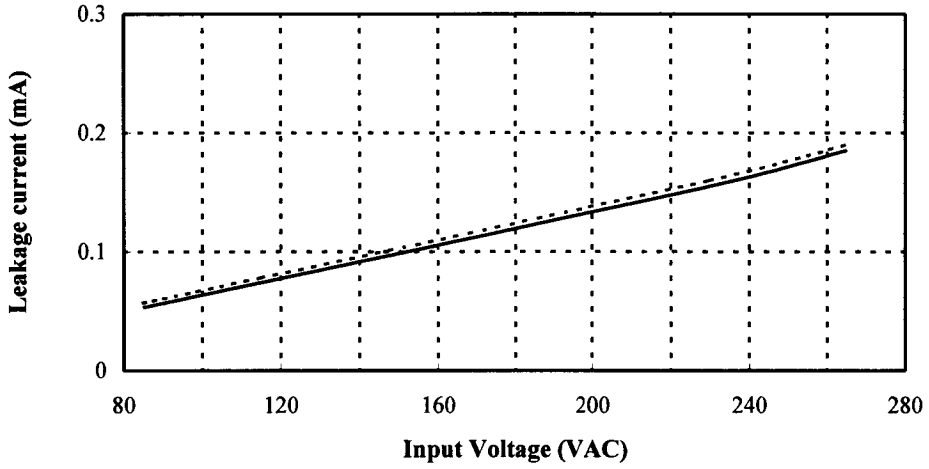
36V



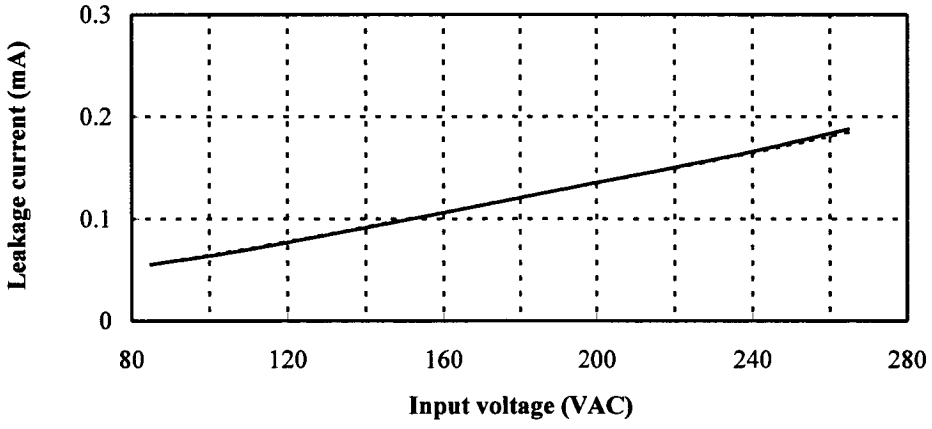
2.17 Leakage current characteristics

Conditions; Iout : 0% ——
: 100% ------
Ta : 25°C
f : 50Hz
Equipment used : MODEL 228
(Simpson)

48V



60V

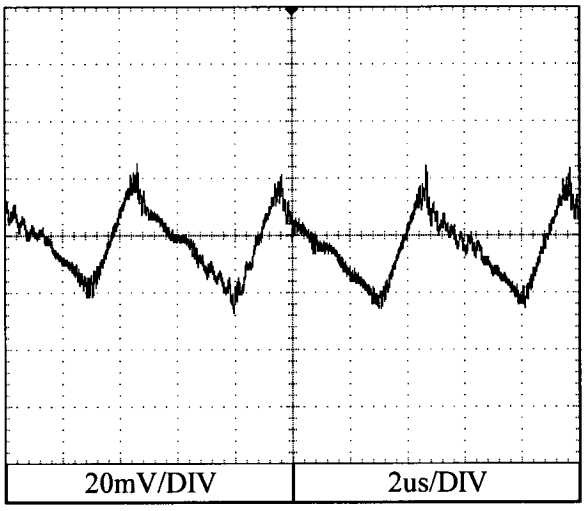


2.18 Output ripple and noise waveform

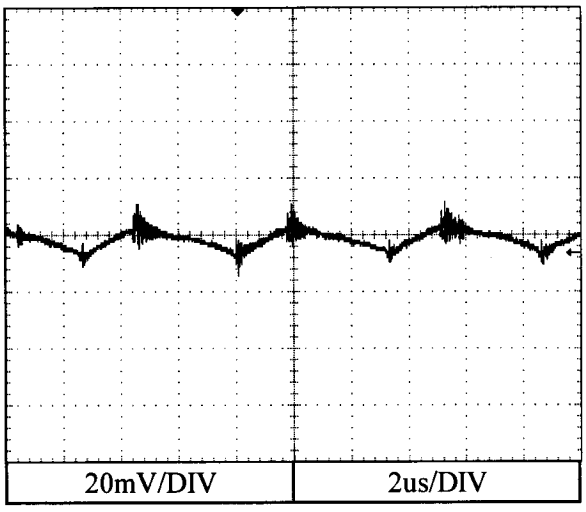
Conditions; Vin : 115VAC
Iout : 100%
Ta : 25°C

NORMAL MODE

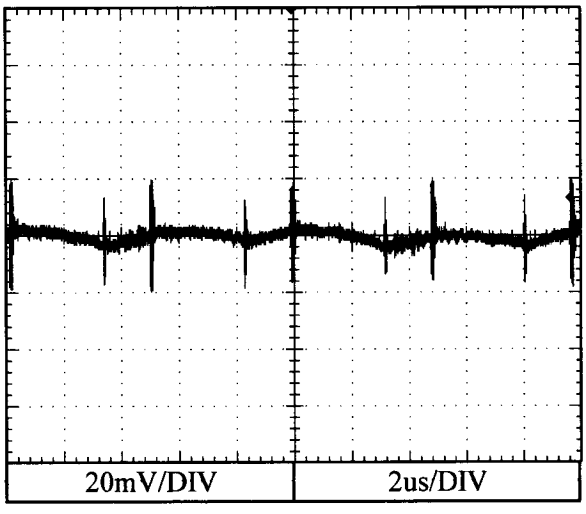
3.3V



15V



36V

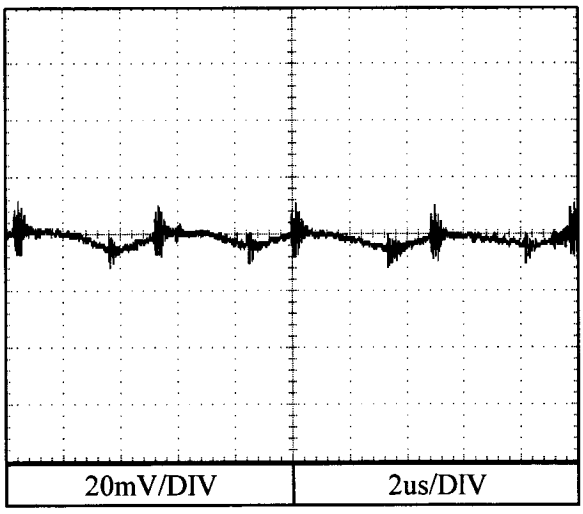


2.18 Output ripple and noise waveform

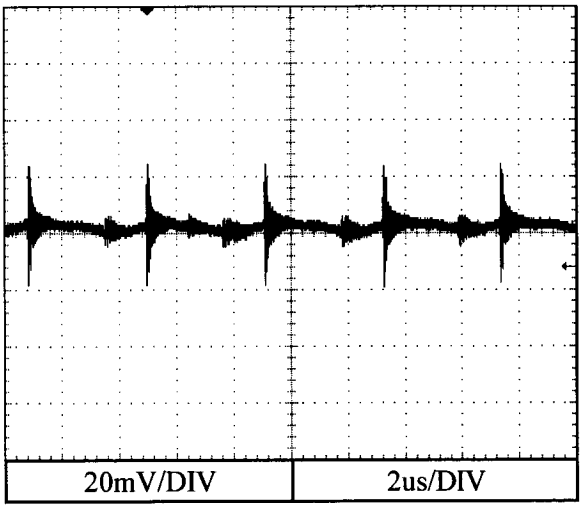
Conditions; Vin : 115VAC
Iout : 100%
Ta : 25°C

NORMAL MODE

48V



60V

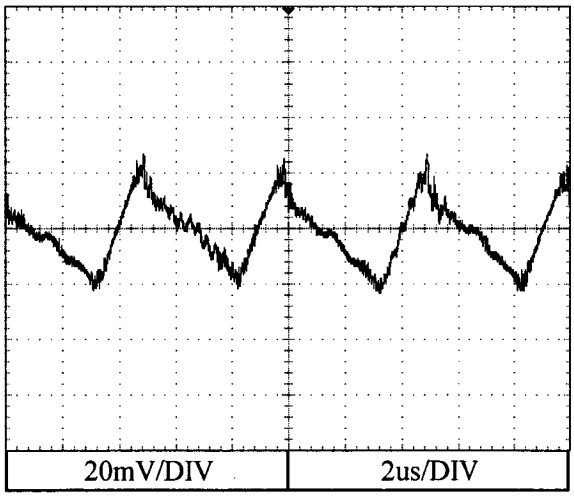


2.18 Output ripple and noise waveform

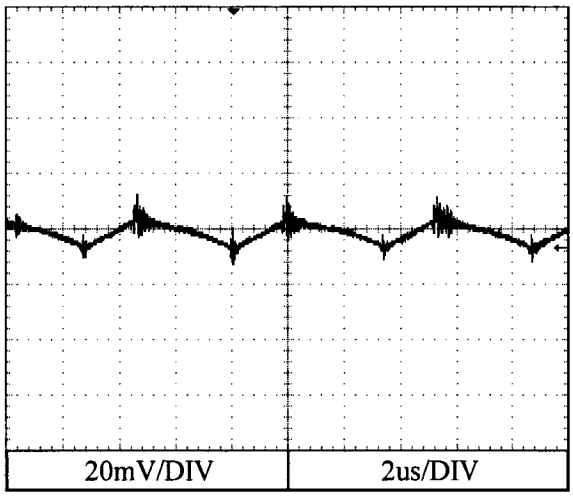
Conditions; Vin : 115VAC
Iout : 100%
Ta : 25°C

NORMAL+COMMON MODE

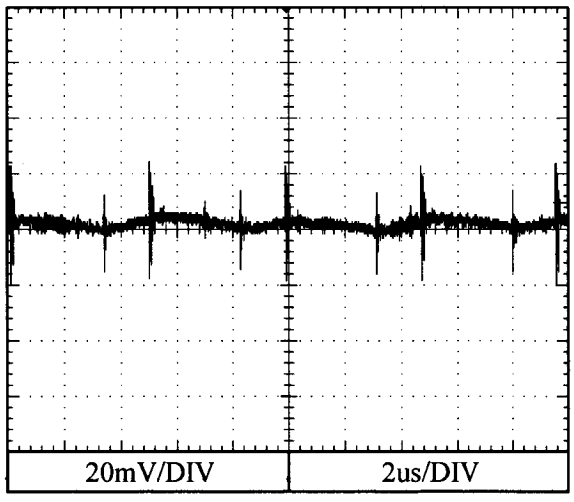
3.3V



15V



36V

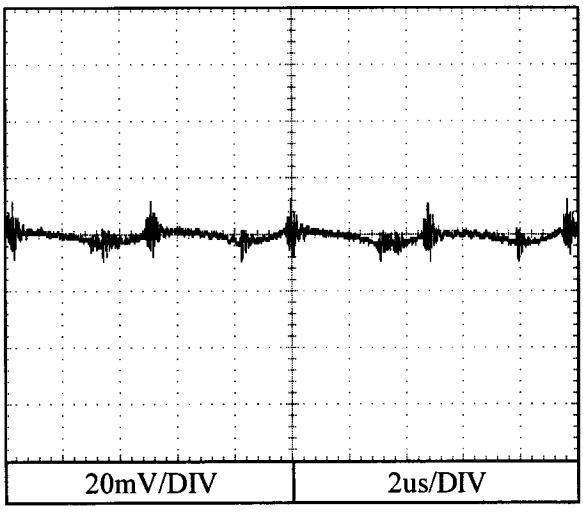


2.18 Output ripple and noise waveform

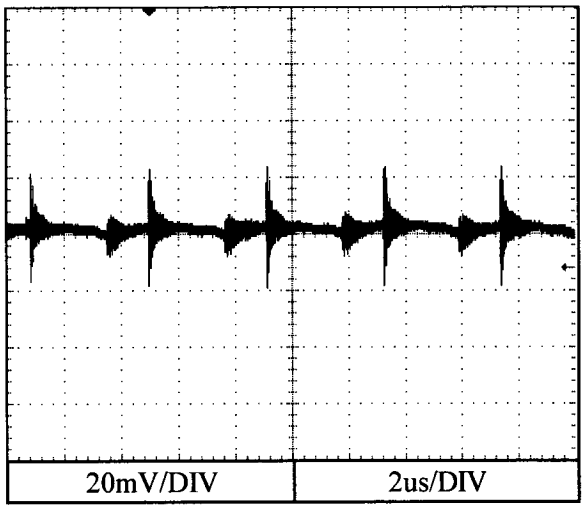
Conditions; Vin : 115VAC
Iout : 100%
Ta : 25°C

NORMAL+COMMON MODE

48V



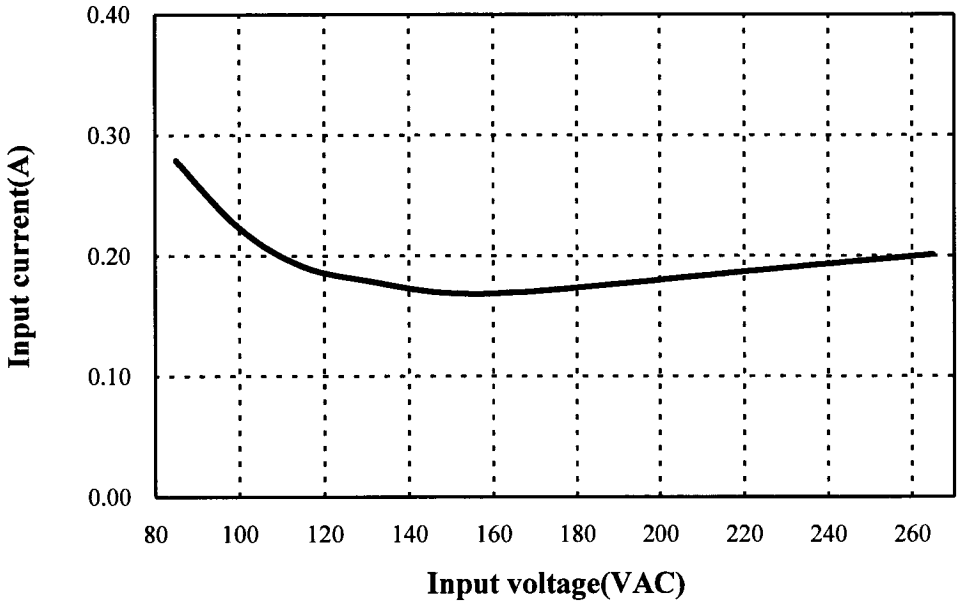
60V



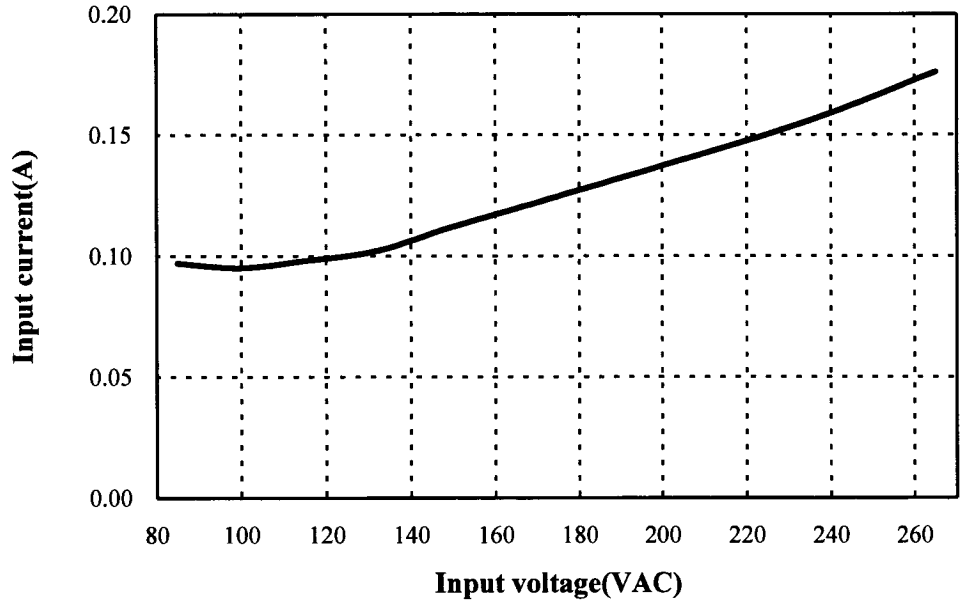
2.19 Standby current Conditions; Ta : 25°C

15V

Io=0%



Remote control OFF



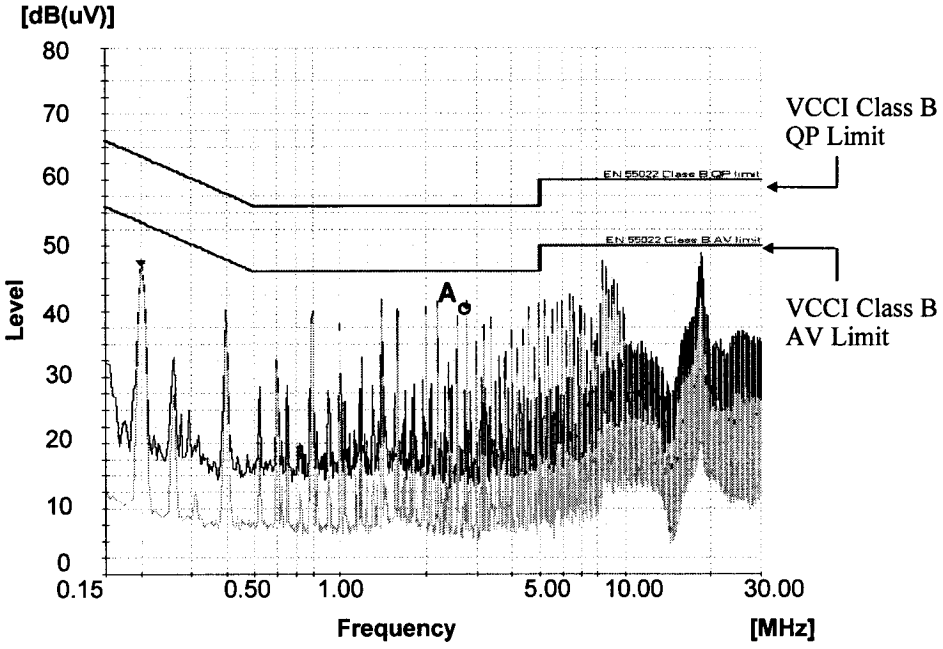
2.20 Electro-Magnetic Interference characteristics

Conditions Vin : 230VAC
Iout : 100%

Conducted Emission

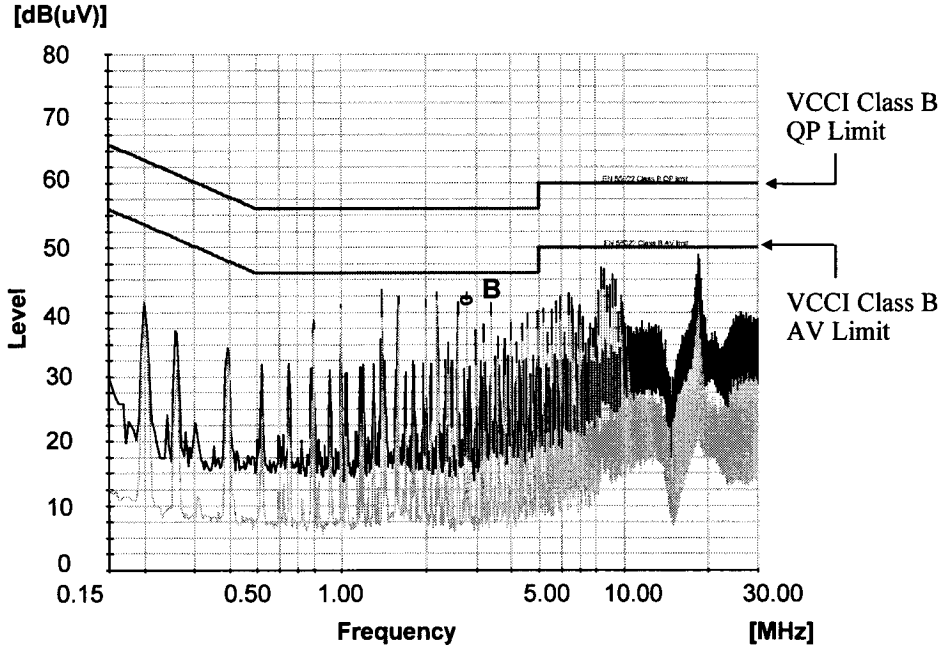
3.3V

Ref. / Data	Point A (2.786MHz) Limit (dBμV)	Measure (dBμV)
QP	56.0	40.8
AV	46.0	40.6



Phase : L

Ref. / Data	Point B (3.797MHz) Limit (dBμV)	Measure (dBμV)
QP	56.0	42.3
AV	46.0	42.0



Phase : N

Limit of EN55011-B,EN55022-B are same as its VCCI Class B.

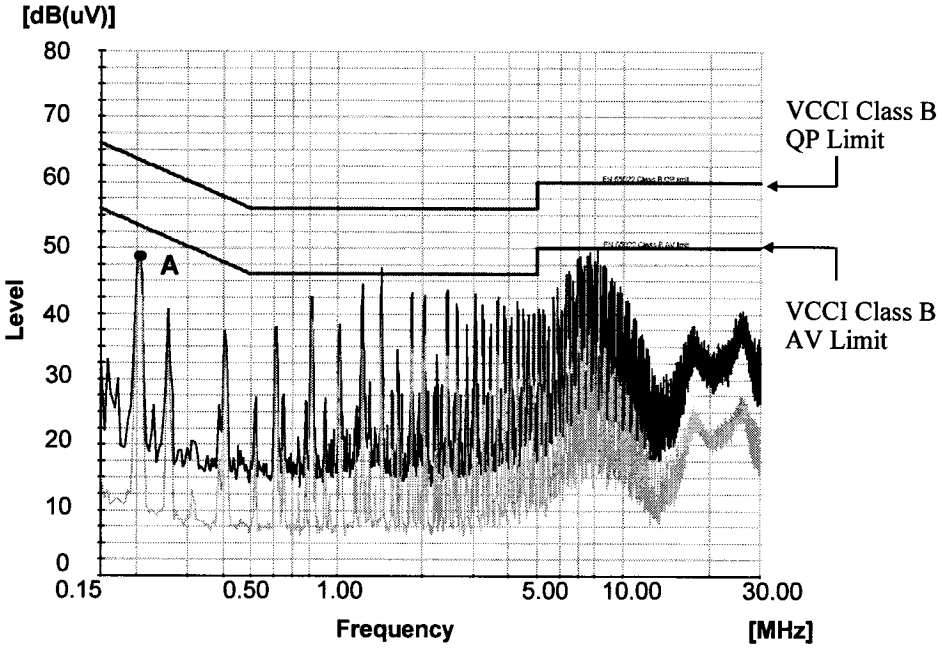
2.20 Electro-Magnetic Interference characteristics

Conditions Vin : 230VAC
Iout : 100%

Conducted Emission

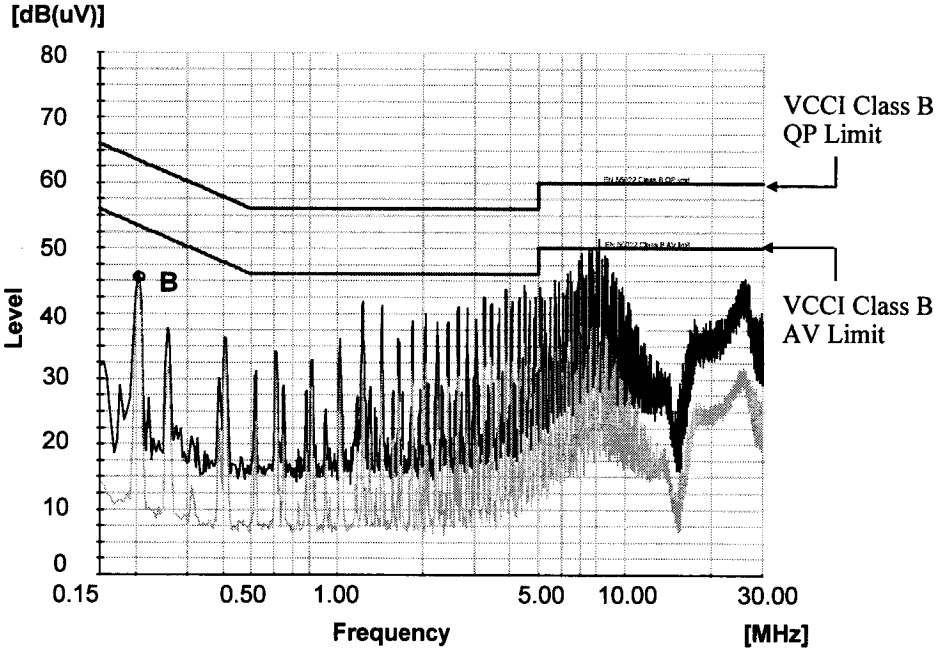
15V

Ref. / Data	Point A (0.204MHz) Limit (dBμV)	Measure (dBμV)
QP	63.4	48.6
AV	53.4	48.7



Phase : L

Ref. / Data	Point B (0.204MHz) Limit (dBμV)	Measure (dBμV)
QP	63.4	45.0
AV	53.4	45.1



Phase : N

Limit of EN55011-B,EN55022-B are same as its VCCI Class B.

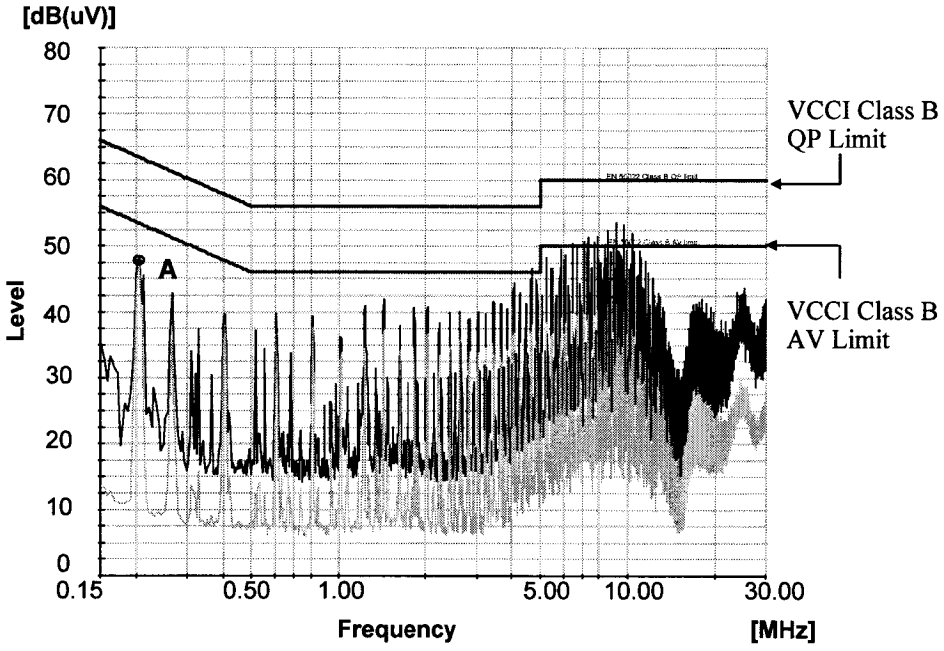
2.20 Electro-Magnetic Interference characteristics

Conditions Vin : 230VAC
Iout : 100%

Conducted Emission

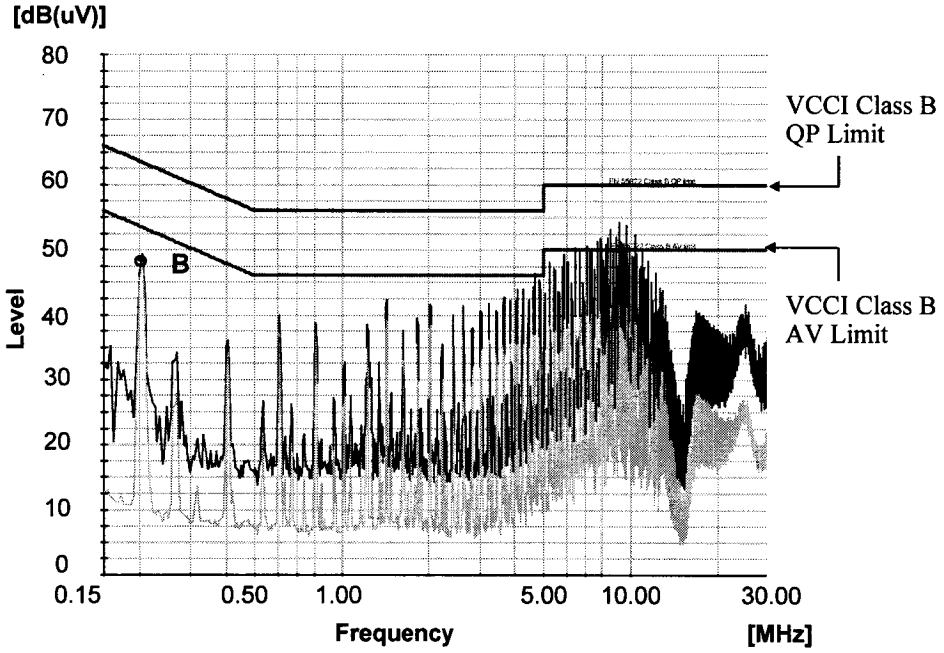
36V

Ref. / Data	Point A (0.202MHz) Limit (dBμV)	Measure (dBμV)
QP	63.5	47.6
AV	53.5	47.5



Phase : L

Ref. / Data	Point B (0.202MHz) Limit (dBμV)	Measure (dBμV)
QP	63.5	48.4
AV	53.5	48.4



Phase : N

Limit of EN55011-B,EN55022-B are same as its VCCI Class B.

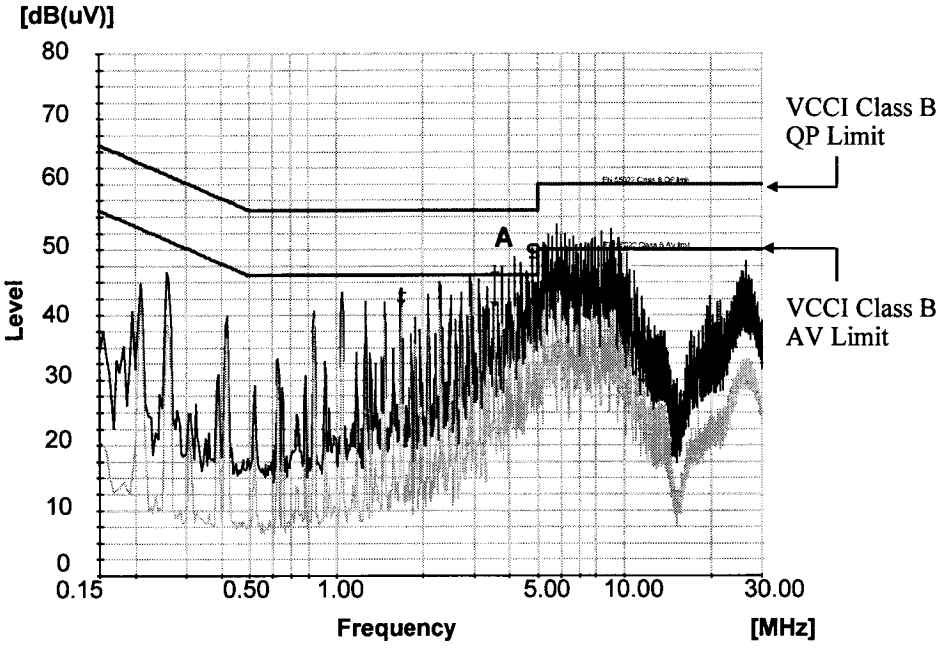
2.20 Electro-Magnetic Interference characteristics

Conditions Vin : 230VAC
Iout : 100%

Conducted Emission

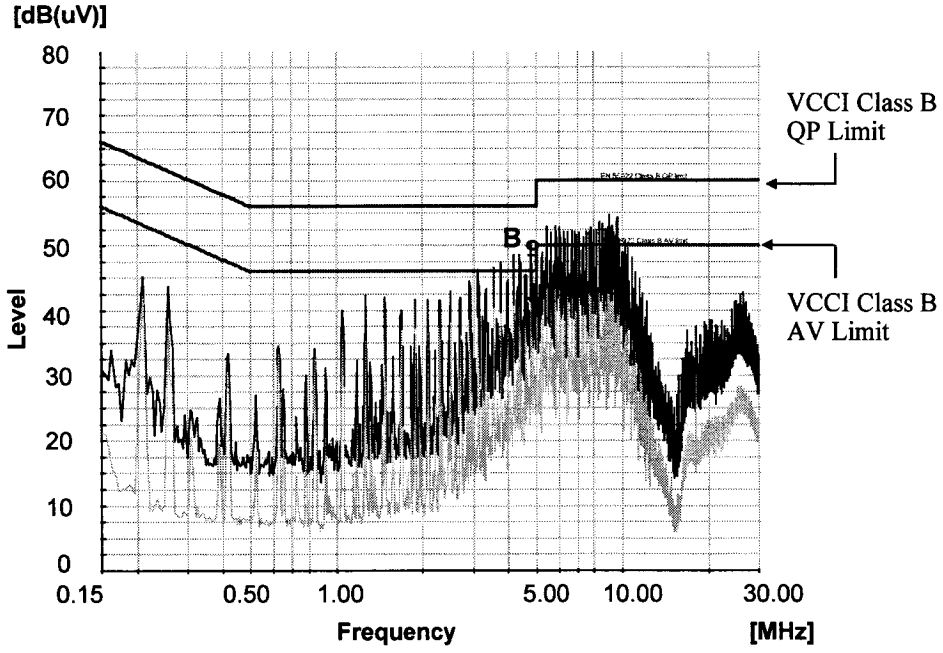
48V

Ref. / Data	Point A (4.802MHz) Limit (dBμV)	Measure (dBμV)
QP	56.0	48.7
AV	46.0	41.7



Phase : L

Ref. / Data	Point B (4.803MHz) Limit (dBμV)	Measure (dBμV)
QP	56.0	48.5
AV	46.0	41.6



Phase : N

Limit of EN55011-B,EN55022-B are same as its VCCI Class B.

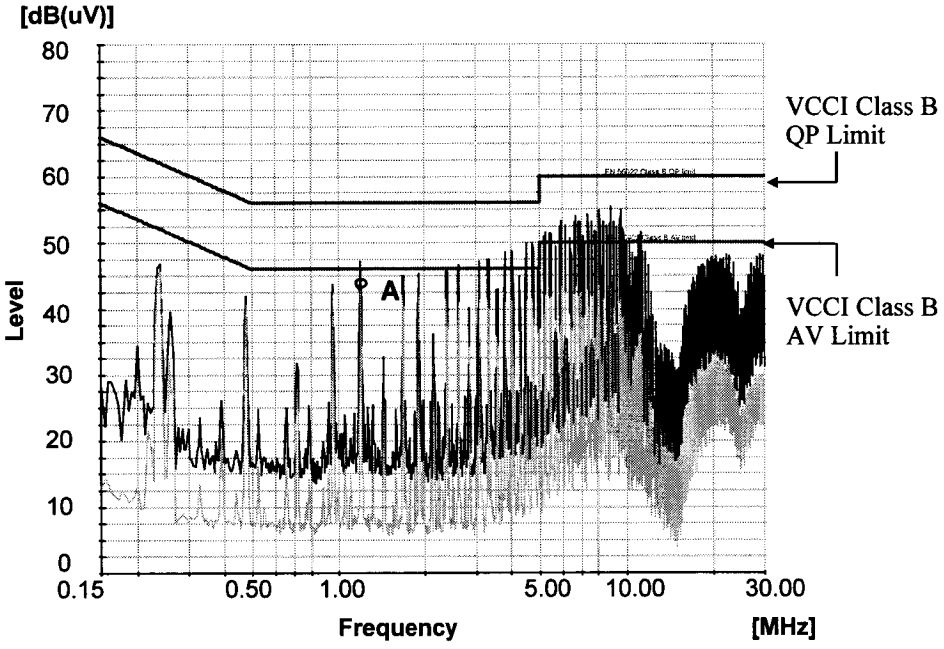
2.20 Electro-Magnetic Interference characteristics

Conditions Vin : 230VAC
Iout : 100%

Conducted Emission

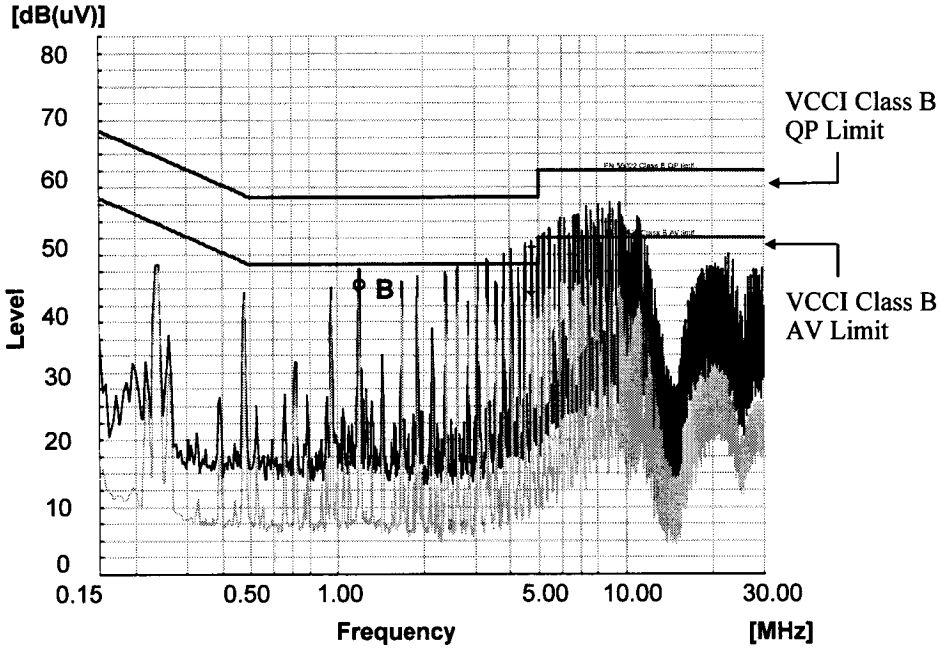
60V

Ref. / Data	Point A (1.1865MHz) Limit (dBμV)	Measure (dBμV)
QP	56.0	44.4
AV	46.0	42.2



Phase : L

Ref. / Data	Point B (1.1875MHz) Limit (dBμV)	Measure (dBμV)
QP	56.0	43.6
AV	46.0	42.0



Phase : N

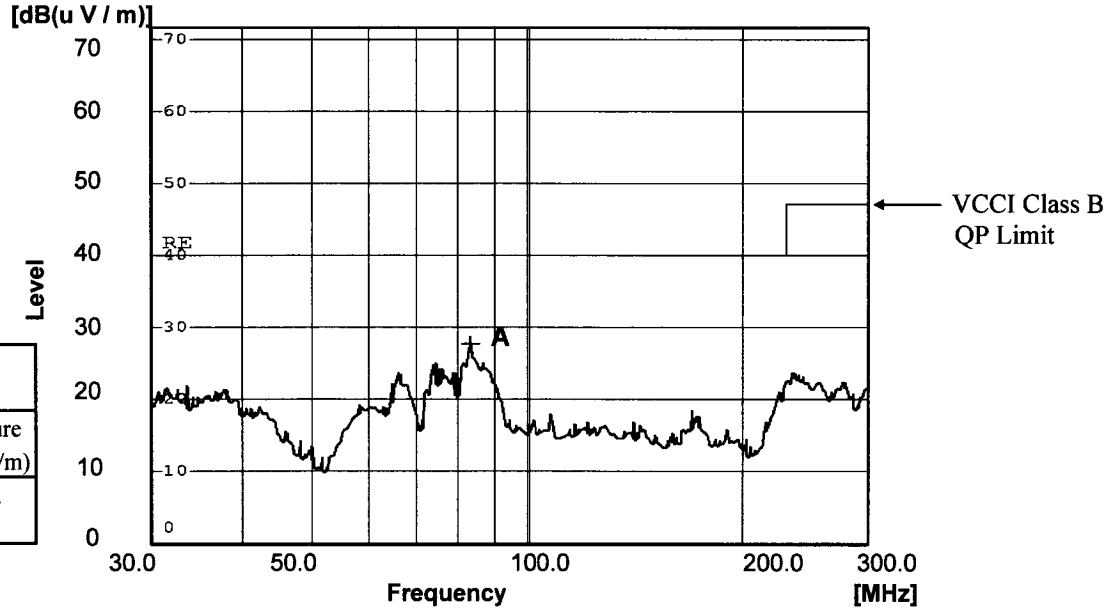
Limit of EN55011-B,EN55022-B are same as its VCCI Class B.

2.20 Electro-Magnetic Interference characteristics Conditions Vin : 230VAC
Iout : 100%

Radiated Emission

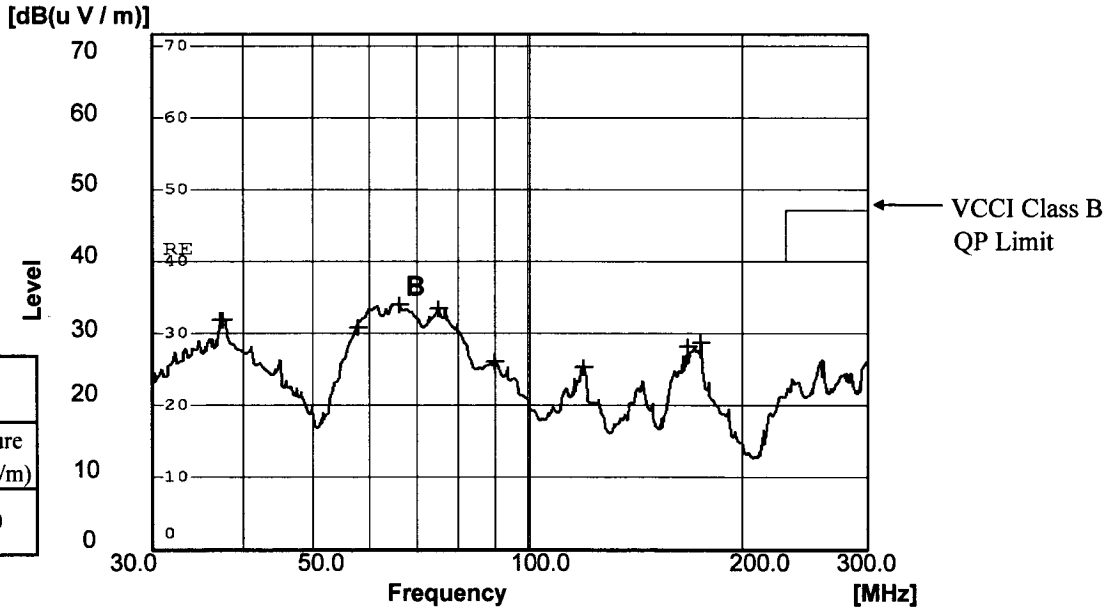
3.3V

HORIZONTAL



Point A (83.56MHz)	
Limit (dBµV/m)	Measure (dBµV/m)
40.0	27.7

VERTICAL



Point B (66.12MHz)	
Limit (dBµV/m)	Measure (dBµV/m)
40.0	33.0

Limit of EN55011-B,EN55022-B are same as its VCCI Class B.

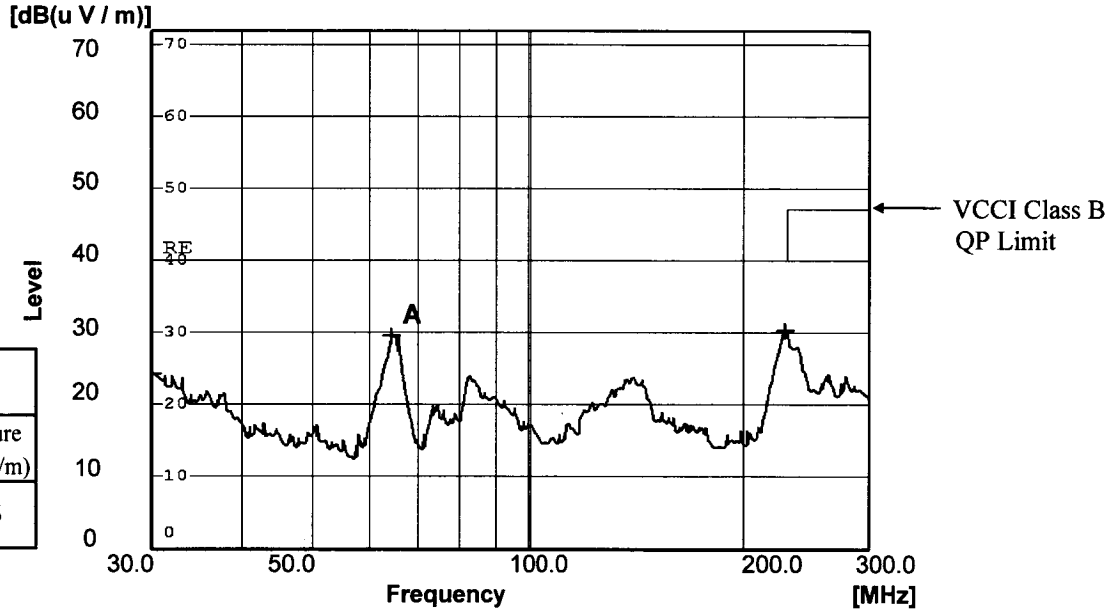
2.20 Electro-Magnetic Interference characteristics

Conditions Vin : 230VAC
Iout : 100%

Radiated Emission

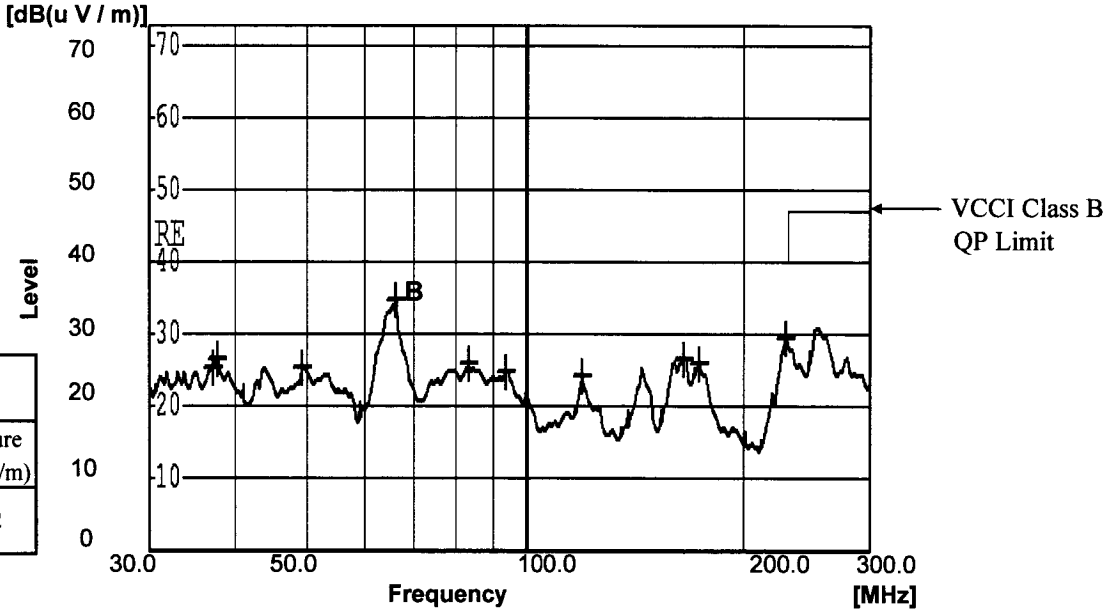
15V

HORIZONTAL



Point A (64.4MHz)	
Limit (dBµV/m)	Measure (dBµV/m)
40.0	29.6

VERTICAL



Point B (66.04MHz)	
Limit (dBµV/m)	Measure (dBµV/m)
40.0	31.2

Limit of EN55011-B,EN55022-B are same as its VCCI Class B.

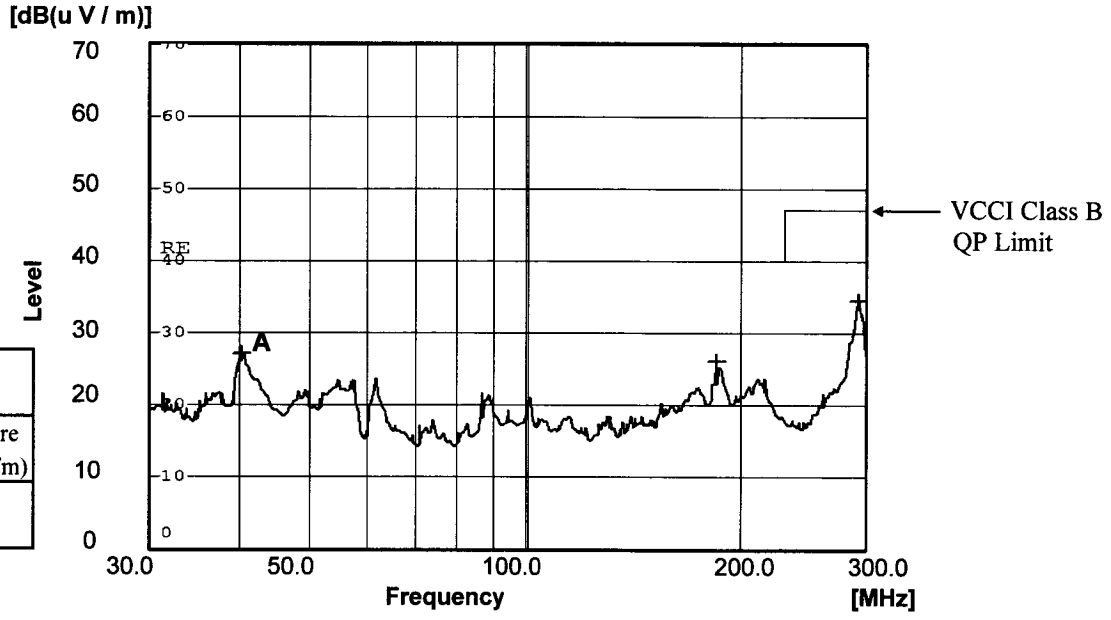
2.20 Electro-Magnetic Interference characteristics

Conditions Vin : 230VAC
Iout : 100%

Radiated Emission

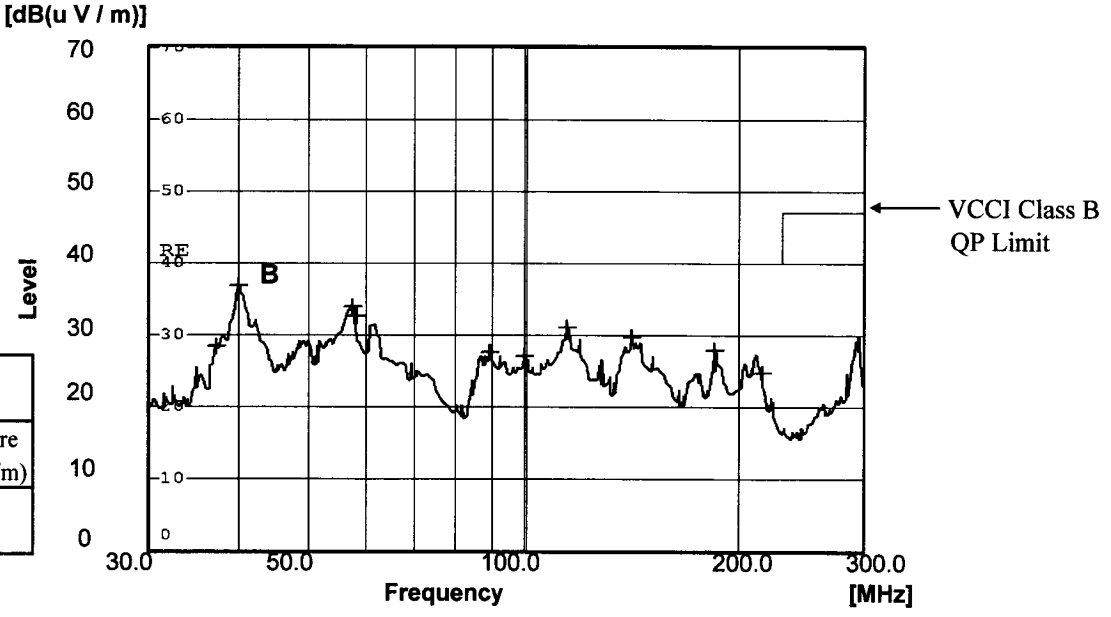
36V

HORIZONTAL



Point A (40.12MHz)	
Limit (dBμV/m)	Measure (dBμV/m)
40.0	25.4

VERTICAL



Point B (40.04MHz)	
Limit (dBμV/m)	Measure (dBμV/m)
40.0	36.3

Limit of EN55011-B,EN55022-B are same as its VCCI Class B.

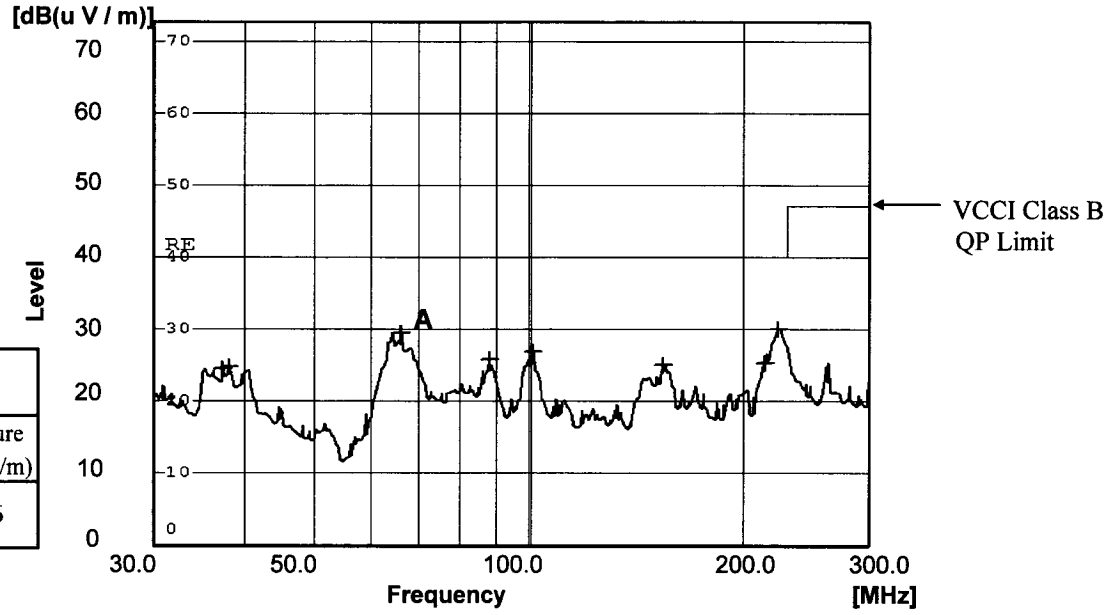
2.20 Electro-Magnetic Interference characteristics

Conditions Vin : 230VAC
Iout : 100%

Radiated Emission

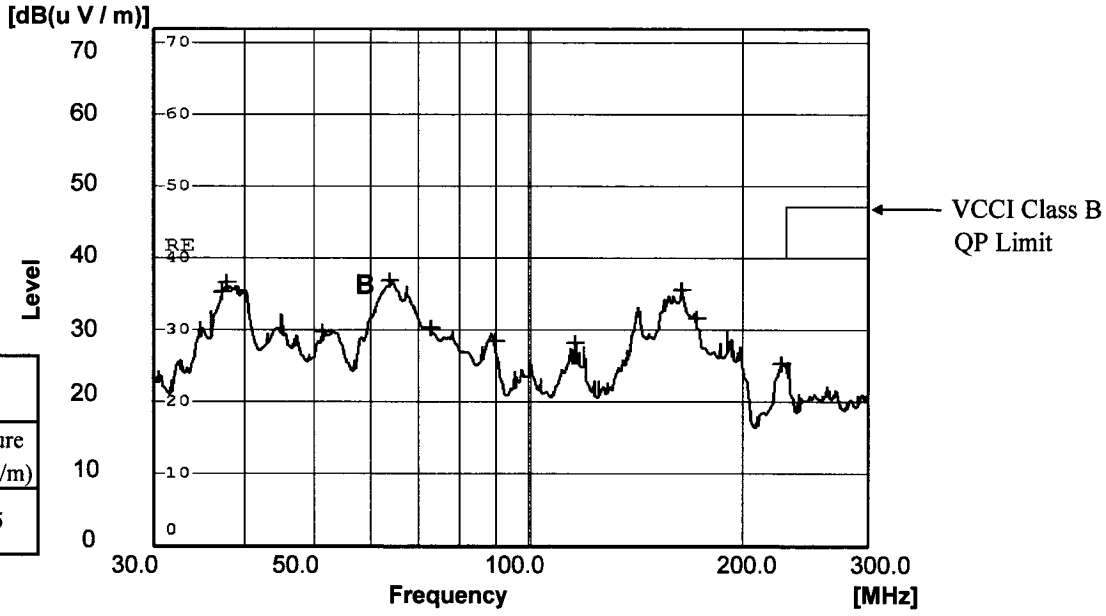
48V

HORIZONTAL



Point A (66.24MHz)	
Limit (dBμV/m)	Measure (dBμV/m)
40.0	29.6

VERTICAL



Point B (63.8MHz)	
Limit (dBμV/m)	Measure (dBμV/m)
40.0	36.5

Limit of EN55011-B,EN55022-B are same as its VCCI Class B.

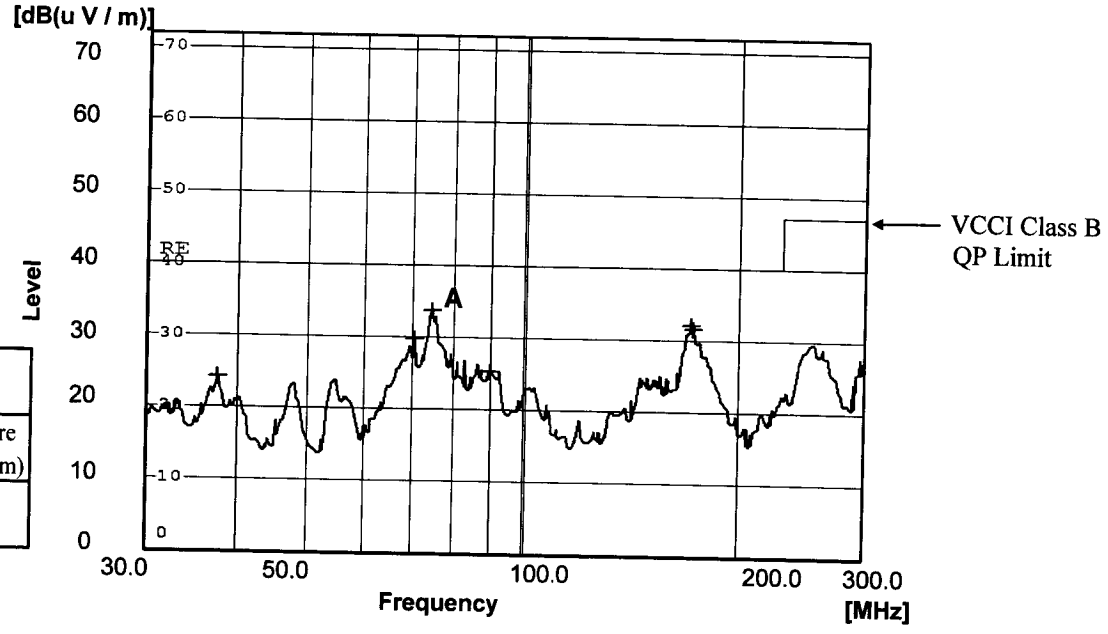
2.20 Electro-Magnetic Interference characteristics

Conditions Vin : 230VAC
Iout : 100%

Radiated Emission

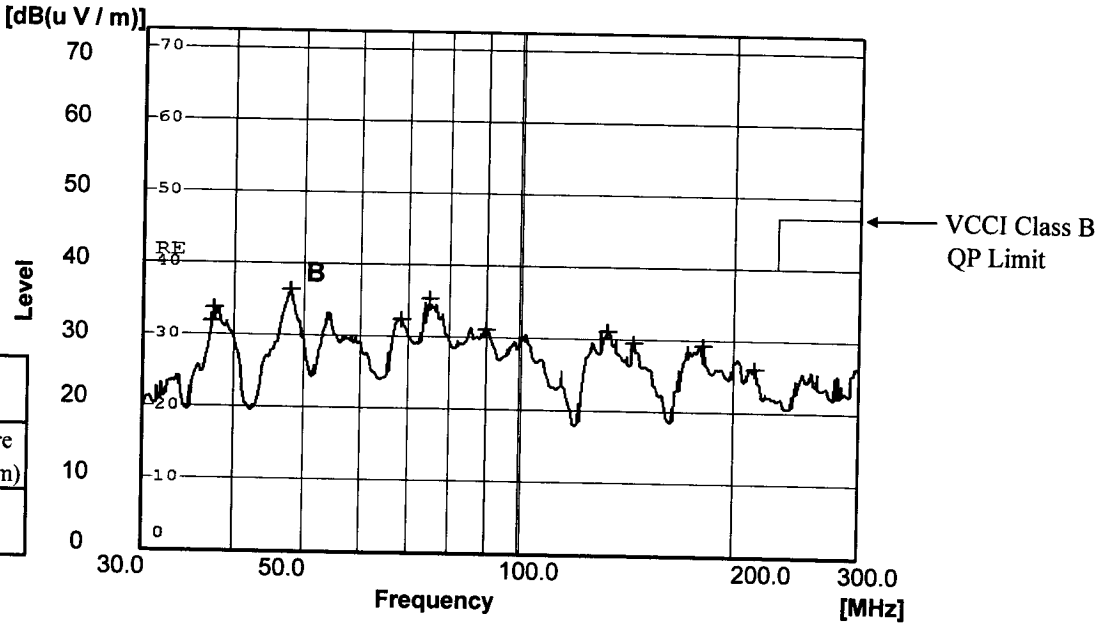
60V

HORIZONTAL



Point A (74.48MHz)	
Limit (dBμV/m)	Measure (dBμV/m)
40.0	32.1

VERTICAL



Point B (47.8MHz)	
Limit (dBμV/m)	Measure (dBμV/m)
40.0	36.2

Limit of EN55011-B,EN55022-B are same as its VCCI Class B.