Z^{+}200 Series

EVALUATION DATA

DWG No.: IA709-53-01		
APPD	CHK	DWG
17/5/12	Ron B. 16/5/12	yanir 08/01/2012

TDK-Lambda

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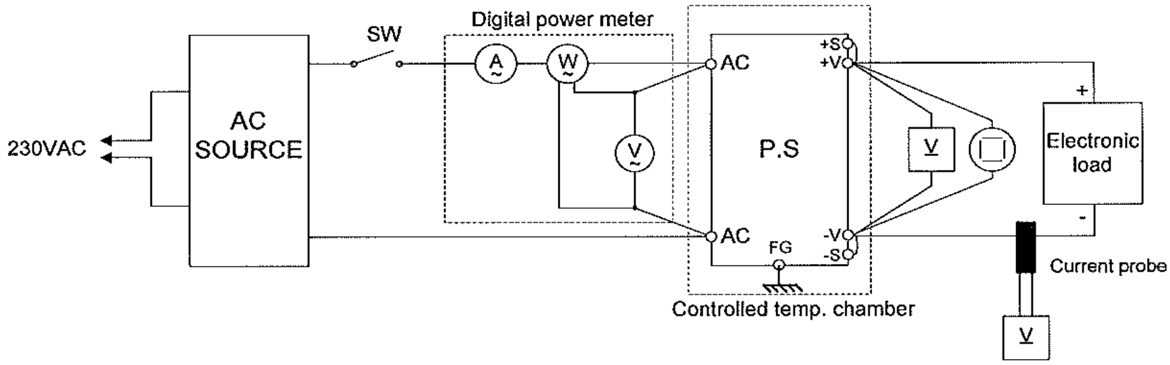
TERMINOLOGY USED
Definition

Vin	Input voltage
Vout	Output voltage
Iin	Input current
Iout	Output current
Ta	Ambient temperature
C.V	Constant voltage mode
C.C	Constant current mode

1. EVALUATION METHOD

1.1 Circuit used for determination

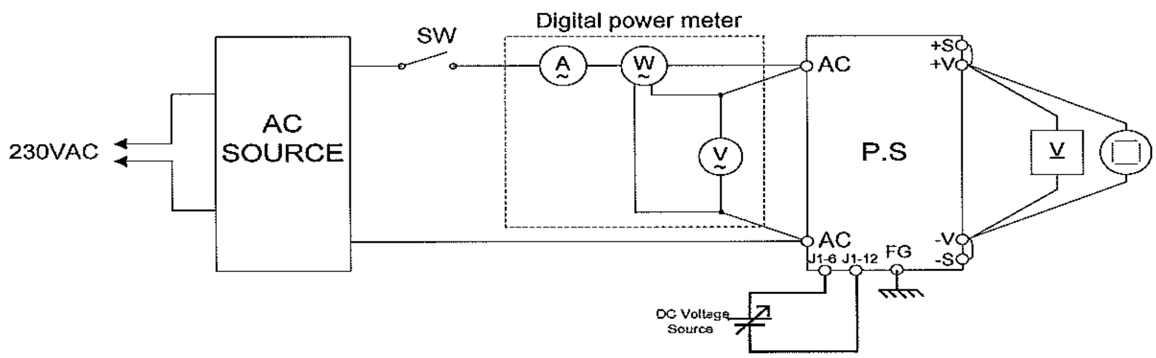
(1) Steady state data



(2) Warm up voltage drift characteristic same as Steady state data

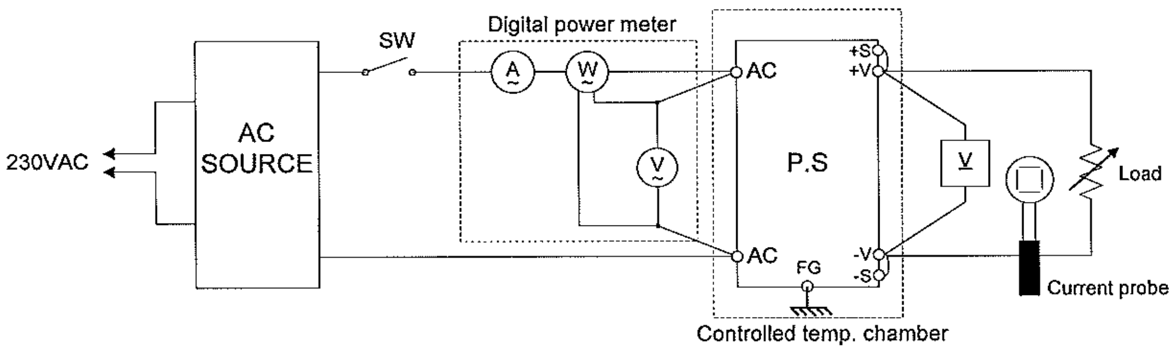
(3) Warm up current drift characteristic same as Steady state data

(4) Over voltage protection (OVP) characteristics



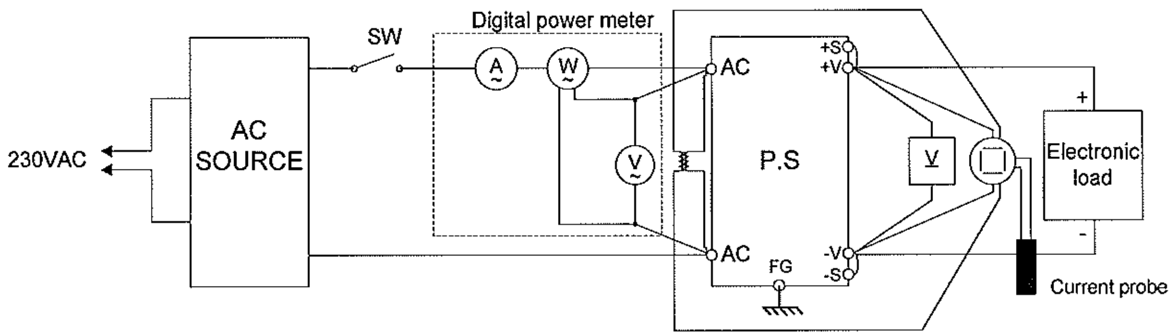
(5) Output voltage rise/fall characteristics same as Steady state data

(6) Output current rise/fall characteristics

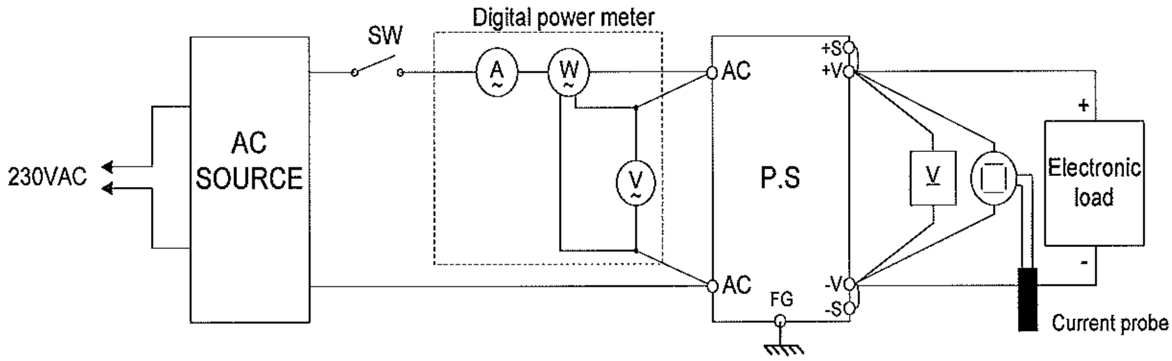


1.1 Circuit used for determination

(7) Dynamic line voltage and current response characteristics

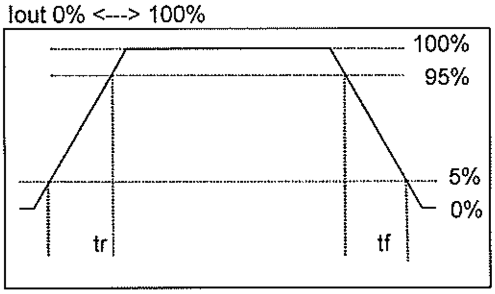


(8) Dynamic load voltage and current response characteristics

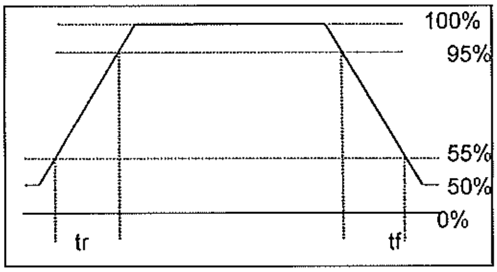


Constant Voltage mode

Output current waveform
Iout 0% <---> 100%

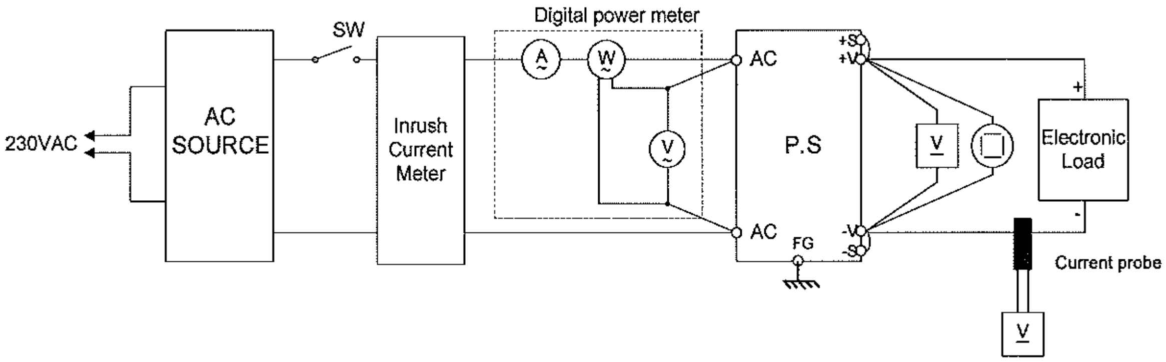


Output current waveform
Iout 50% <---> 100%



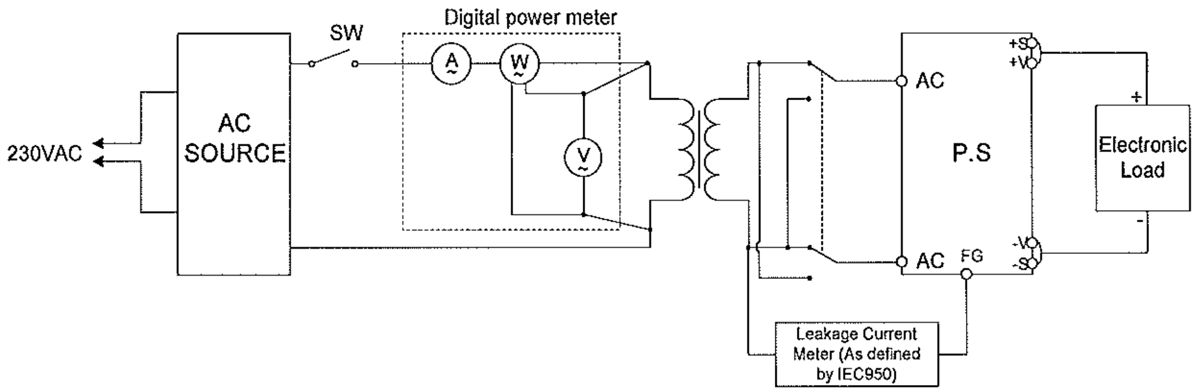
1.1 Circuit used for determination

(9) Response to brown-out characteristic



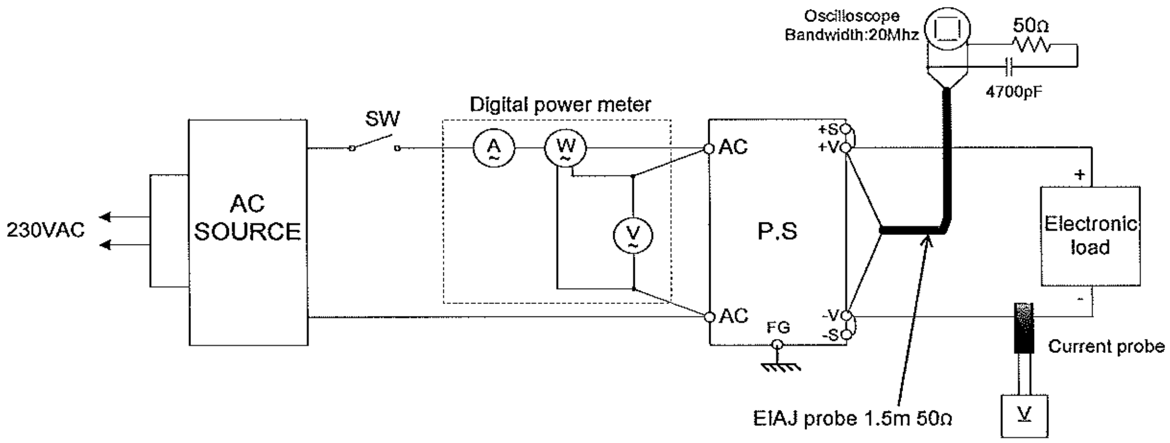
(10) Inrush current characteristics same as Response to brown-out

(11) Leakage current characteristics



(12) Output Voltage ripple & noise waveform 10V up to 100V models

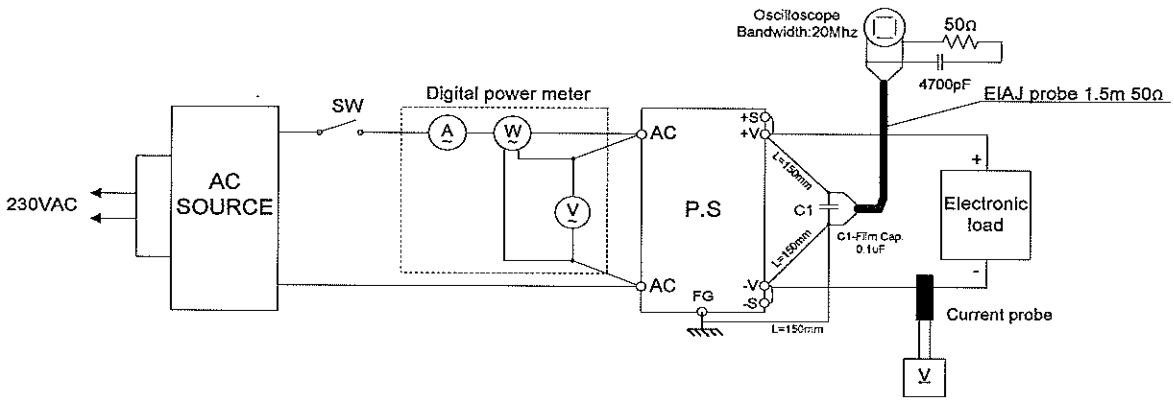
(a) Normal mode (JEITA Standard RC-9131A)



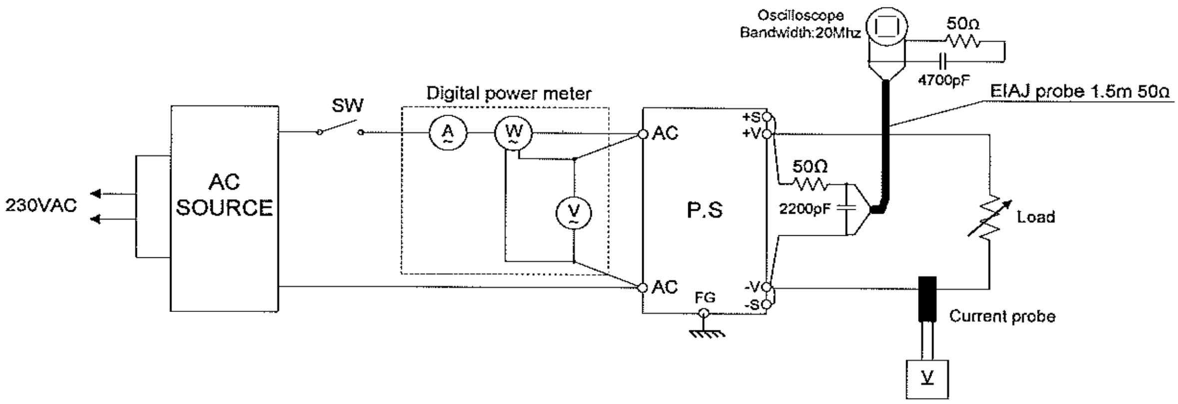
1.1 Circuit used for determination

(12) Output Voltage ripple & noise waveform 10V up to 100V models

(b) Normal + Common mode



(13) Output Current rms ripple 10V to 100V models



Notes:
(*) Ouput Current rms ripple =Output Voltage rms ripple divided by the Load resistance.

1.2 List of equipment used

	EQUIPMENT USED	MANUFACTURER	MODEL No.
1	Digital oscilloscope	YOKOGAWA	DL7100
2	Digital oscilloscope	YOKOGAWA	DL1740EL
3	Digital multimeter	AGILENT	34401A
4	Digital power meter	YOKOGAWA	WT230
5	AC Source	CHROMA	6590
6	AC Source	CHROMA	6530
7	Electronic load	H&H	ZS6060 SC150
8	Electronic load	H&H	ZS7006
9	Electronic load	H&H	ZS7060
10	Electronic load	CHROMA	63203
11	Electronic load	CHROMA	63204
12	Electronic load	CHROMA	63206
13	Controlled temp. chamber	THERMOTRON	SM-16-3800
14	Controlled temp. chamber	THERMOTRON	SE-600-5-5
15	Controlled temp. chamber	THERMOTRON	SE-600-6-6
16	Leakage Current Tester	KIKUSUI	TOS3200
17	Voltage probe	YOKOGAWA	700988
18	Current probe	YOKOGAWA	701933
19	Current probe	LEM Danfysik	IT 60-S Ultrastab
20	Inrush Current Meter	TAKAMISAWA	PSA-210
21	Data Acquisition/Switch Unit	AGILENT	34970A

2.1 Steady state data

(1) Regulation - Line & Load, Temperature drift

Z10-20

Conditions: Ta = 25°C

1. Regulation - Line & Load, C.V mode (Readings in [V])

	Vin (AC)					
Io	85	100	200	265	Line Regulation	
0%	10.0004	10.0004	10.0004	10.0004	0.0	0.000
25%	10.0003	10.0003	10.0003	10.0003	0.0	0.000
50%	10.0002	10.0002	10.0002	10.0002	0.0	0.000
75%	10.0001	10.0001	10.0001	10.0001	0.0	0.000
100%	10.0000	10.0000	10.0000	10.0000	0.0	0.000
Load Regulation	0.4	0.4	0.4	0.4	ΔV(mV)	(%)
	0.004	0.004	0.004	0.004	(%)	

2. Temperature drift, C.V mode

Conditions: Vin:100Vac
Iout:100%

Ta	0°C	25°C	50°C	Temp. Coefficient (0°C~50°C)	
Vout	10.002	9.999	9.997	5 mV	10 ppm/°C

2.1 Steady state data

(1) Regulation - Line & Load, Temperature drift

Z36-6

Conditions: Ta = 25°C

1. Regulation - Line & Load, C.V mode (Readings in [V])

	Vin (AC)					
Io	85	100	200	265	Line Regulation	
0%	36.0025	36.0025	36.0025	36.0025	0.0	0.000
25%	36.0024	36.0025	36.0025	36.0024	0.1	0.000
50%	36.0024	36.0024	36.0024	36.0024	0.0	0.000
75%	36.0023	36.0024	36.0024	36.0024	0.1	0.000
100%	36.0023	36.0023	36.0023	36.0024	0.1	0.000
Load Regulation	0.2	0.2	0.2	0.1	ΔV(mV)	(%)
	0.001	0.001	0.001	0.000	(%)	

2. Temperature drift, C.V mode

Conditions: Vin:100Vac
Iout:100%

Ta	0°C	25°C	50°C	Temp. Coefficient (0°C~50°C)	
Vout	36.006	36.006	36.005	1 mV	1 ppm/°C

2.1 Steady state data

(1) Regulation - Line & Load, Temperature drift

Z100-2

Conditions: Ta = 25°C

1. Regulation - Line & Load, C.V mode (Readings in [V])

	Vin (AC)					
Io	**85**	**100**	**200**	**265**	**Line Regulation**	
0%	100.0100	100.0100	100.0100	100.0100	0.0	0.000
25%	100.0100	100.0100	100.0100	100.0100	0.0	0.000
50%	100.0100	100.0100	100.0100	100.0100	0.0	0.000
75%	100.0099	100.0099	100.0099	100.0099	0.0	0.000
100%	100.0098	100.0098	100.0098	100.0098	0.0	0.000
Load Regulation	0.2	0.2	0.2	0.2	**ΔV(mV)**	**(%)**
	0.000	0.000	0.000	0.000	**(%)**	

2. Temperature drift, C.V mode

Conditions: Vin:100Vac
Iout:100%

Ta	**0°C**	**25°C**	**50°C**	**Temp. Coefficient (0°C~50°C)**	
Vout	99.989	100.002	100.028	39 mV	8 ppm/°C

2.1 Steady state data

(1) Regulation - Line & Load, Temperature drift

Z10-20

Conditions: Ta = 25°C

1. Regulation - Line & Load, C.C mode (*) (Readings in [A])

	Vin (AC)					
Vo	**85**	**100**	**200**	**265**	**Line Regulation**	
0%	20.0072	20.0061	20.0066	20.0064	1.1	0.005
25%	20.0079	20.0077	20.0064	20.0066	1.5	0.007
50%	20.0088	20.0087	20.0073	20.0069	1.9	0.009
75%	20.0095	20.0093	20.0080	20.0072	2.3	0.011
100%	20.0101	20.0099	20.0089	20.0073	2.8	0.014
Load Regulation	2.9	3.8	2.5	0.9	**ΔI(mA)**	**(%)**
	0.014	0.019	0.012	0.004	**(%)**	

Notes:
(*) Not including load regulation thermal drift effect.

2. Temperature drift, C.C mode

Conditions: Vin:100Vac
Iout:100%

Ta	**0°C**	**25°C**	**50°C**	**Temp. Coefficient (0°C~50°C)**	
Iout	20.0401	20.0418	20.0376	4.2 mA	8 ppm/°C

2.1 Steady state data

(1) Regulation - Line & Load, Temperature drift

Z36-6

Conditions: Ta = 25°C

1. Regulation - Line & Load, C.C mode (*) (Readings in [A])

	Vin (AC)					
Vo	**85**	**100**	**200**	**265**	**Line Regulation**	
0%	5.9976	5.9976	5.9976	5.9976	0.0	0.000
25%	5.9972	5.9972	5.9972	5.9972	0.0	0.000
50%	5.9970	5.9970	5.9970	5.9970	0.0	0.000
75%	5.9968	5.9968	5.9968	5.9968	0.0	0.000
100%	5.9966	5.9966	5.9966	5.9965	0.1	0.002
Load Regulation	1.0	1.0	1.0	1.1	**ΔI(mA)**	**(%)**
	0.017	0.017	0.017	0.018	**(%)**	

Notes:
(*) Not including load regulation thermal drift effect.

2. Temperature drift, C.C mode

Conditions: Vin:100Vac
Iout:100%

Ta	**0°C**	**25°C**	**50°C**	**Temp. Coefficient (0°C~50°C)**	
Iout	6.0024	5.9979	5.9980	4.5 mA	30 ppm/°C

2.1 Steady state data

(1) Regulation - Line & Load, Temperature drift

Z100-2

Conditions: Ta = 25°C

1. Regulation - Line & Load, C.C mode (*) (Readings in [A])

	Vin (AC)					
Vo	**85**	**100**	**200**	**265**	**Line Regulation**	
0%	2.0012	2.0012	2.0012	2.0012	0.0	0.000
25%	2.0009	2.0009	2.0009	2.0009	0.0	0.000
50%	2.0007	2.0007	2.0006	2.0006	0.1	0.005
75%	2.0005	2.0005	2.0004	2.0004	0.1	0.005
100%	2.0002	2.0002	2.0002	2.0001	0.1	0.005
Load Regulation	1.0	1.0	1.0	1.1	**ΔI(mA)**	**(%)**
	0.050	0.050	0.050	0.055	**(%)**	

Notes:
(*) Not including load regulation thermal drift effect.

2. Temperature drift, C.C mode

Conditions: Vin:100Vac
Iout:100%

Ta	**0°C**	**25°C**	**50°C**	**Temp. Coefficient (0°C~50°C)**	
Iout	3.9992	3.9981	3.9993	1.2 mA	12 ppm/°C

2.1 Steady state data

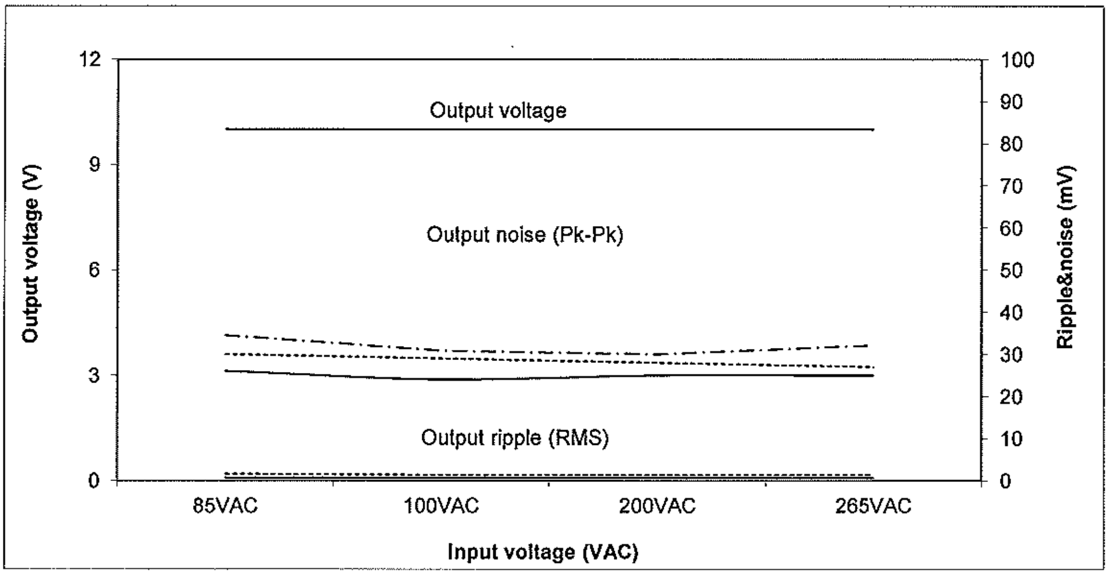
(2) Output voltage and ripple voltage v.s input voltage

C.V mode

Conditions: Iout:100%

Z10-20

Ta: 0°C -------------
25°C —·—·—·—·—
50°C ————



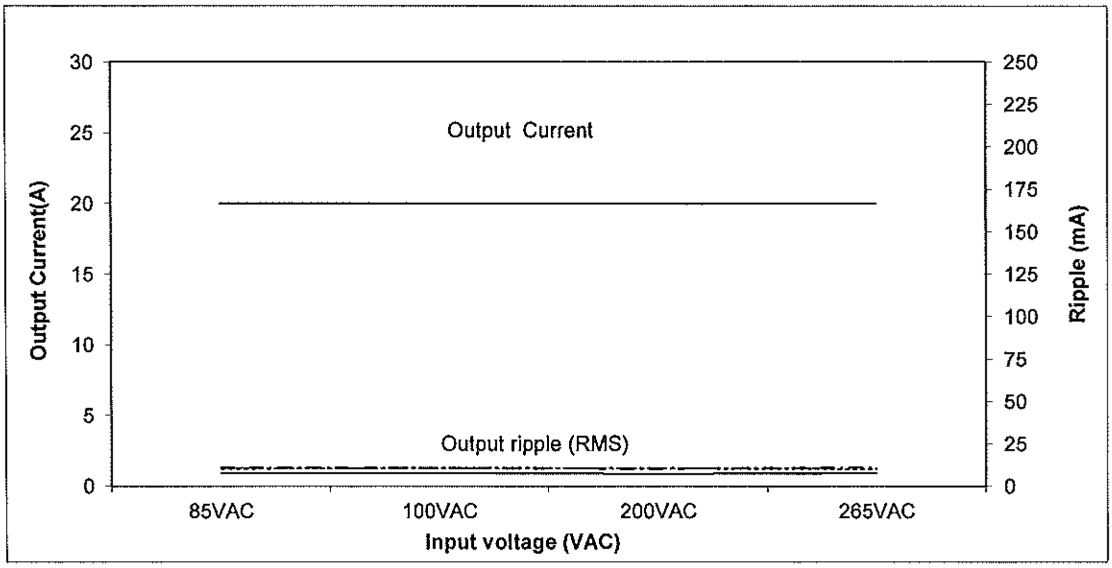
(3) Output current and ripple current v.s input voltage

C.C mode

Conditions: Vout:100%

Z10-20

Ta: 0°C -------------
25°C —·—·—·—·—
50°C ————



2.1 Steady state data

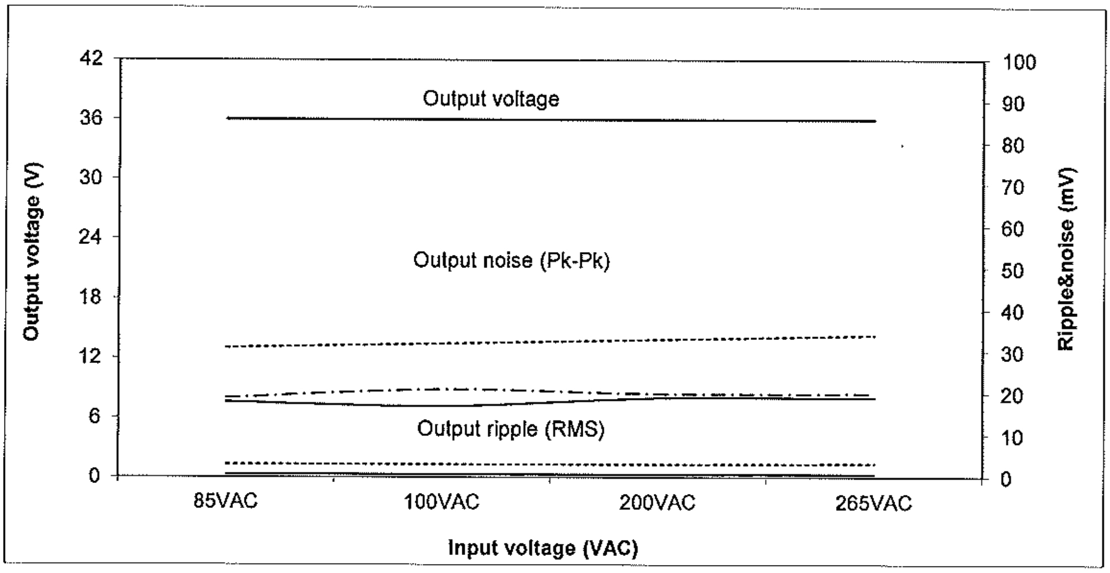
(2) Output voltage and ripple voltage v.s input voltage

C.V mode

Conditions: Iout:100%

Z36-6

Ta: 0˚C ------------
25˚C -·-·-·-·-·-
50˚C ————



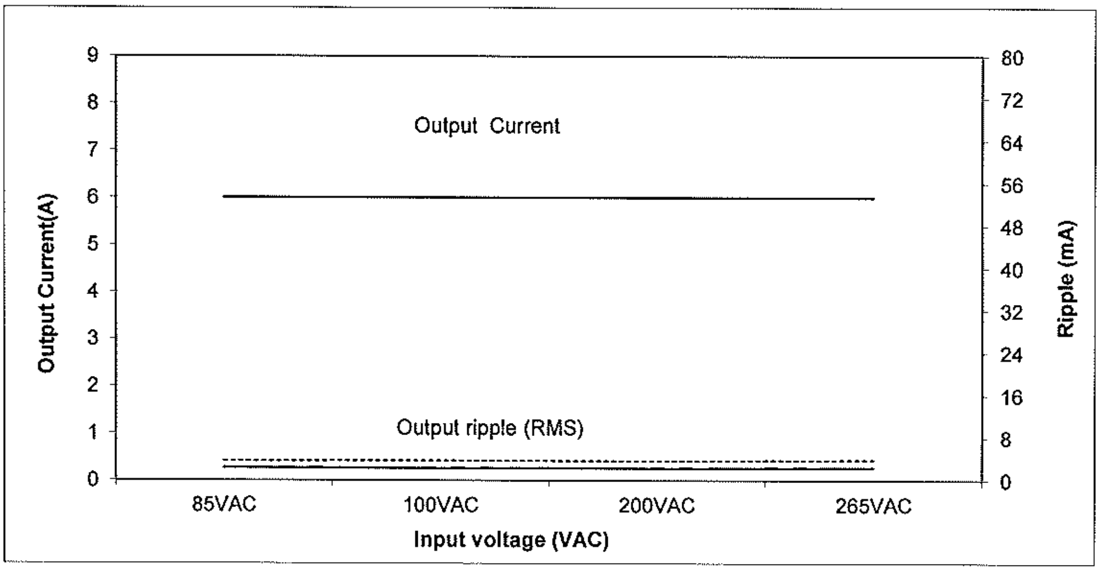
(3) Output current and ripple current v.s input voltage

C.C mode

Conditions: Vout:100%

Z36-6

Ta: 0˚C ------------
25˚C -·-·-·-·-·-
50˚C ————



2.1 Steady state data

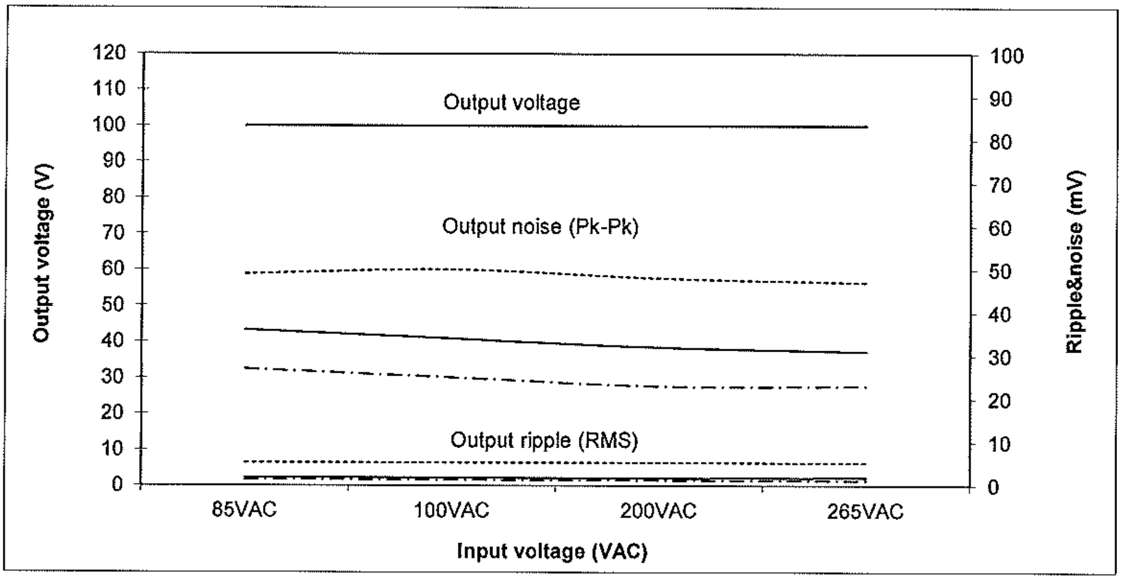
(2) Output voltage and ripple voltage v.s input voltage

C.V mode

Conditions: Iout:100%

Z100-2

Ta: 0°C ------------
25°C —·—·—·—·—
50°C ————————



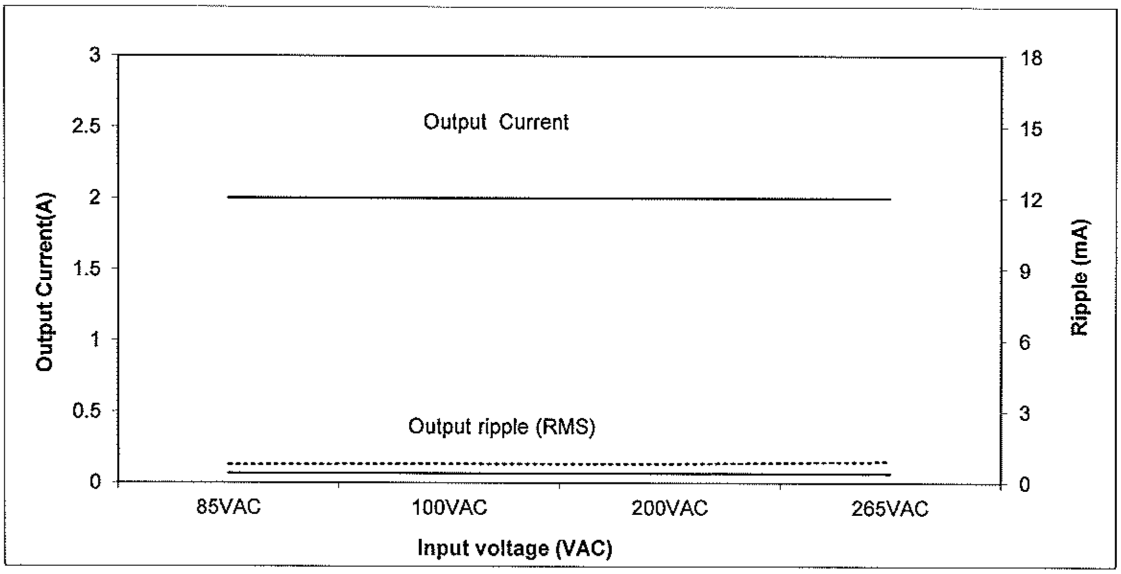
(3) Output current and ripple current v.s input voltage

C.C mode

Conditions: Vout:100%

Z100-2

Ta: 0°C ------------
25°C —·—·—·—·—
50°C ————————



2.1 Steady state data

(4) Efficiency and Input current vs. Output current

Conditions:

Vin: 85 VAC

100VAC

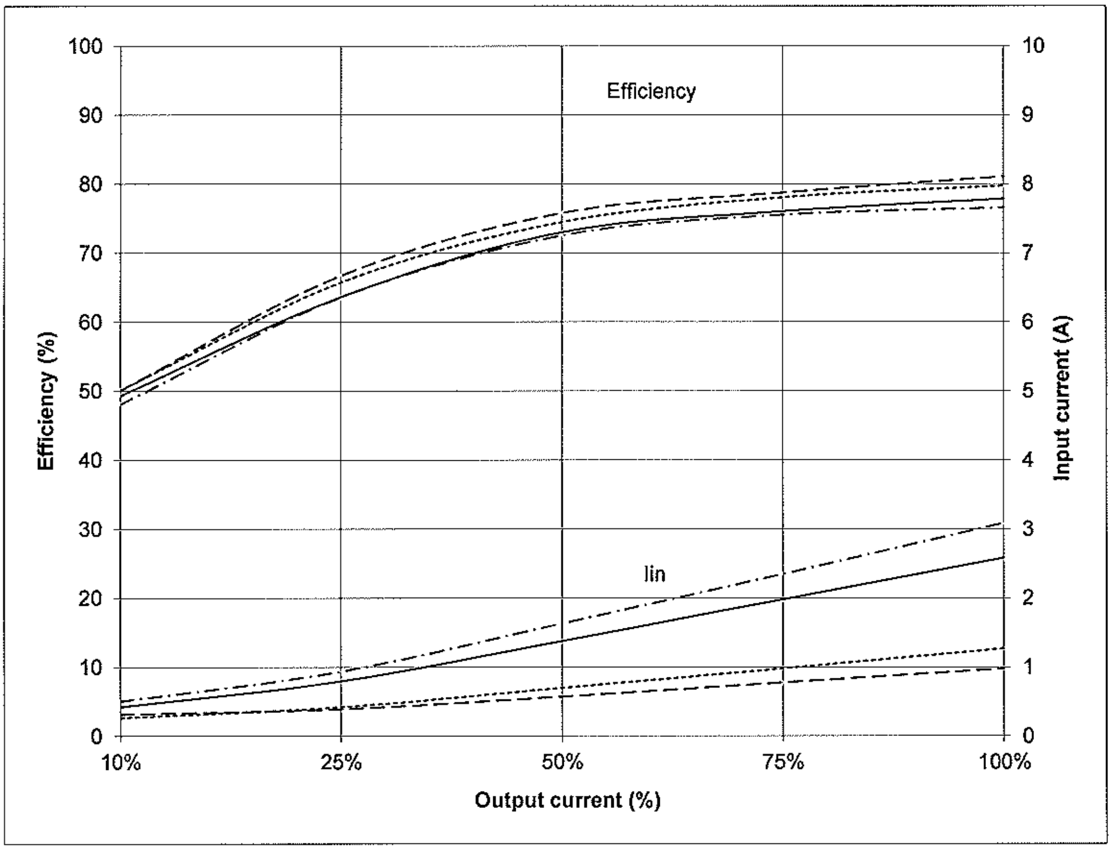
200 VAC

265 VAC

Vout:100%

Ta: 25°C

Z10-20

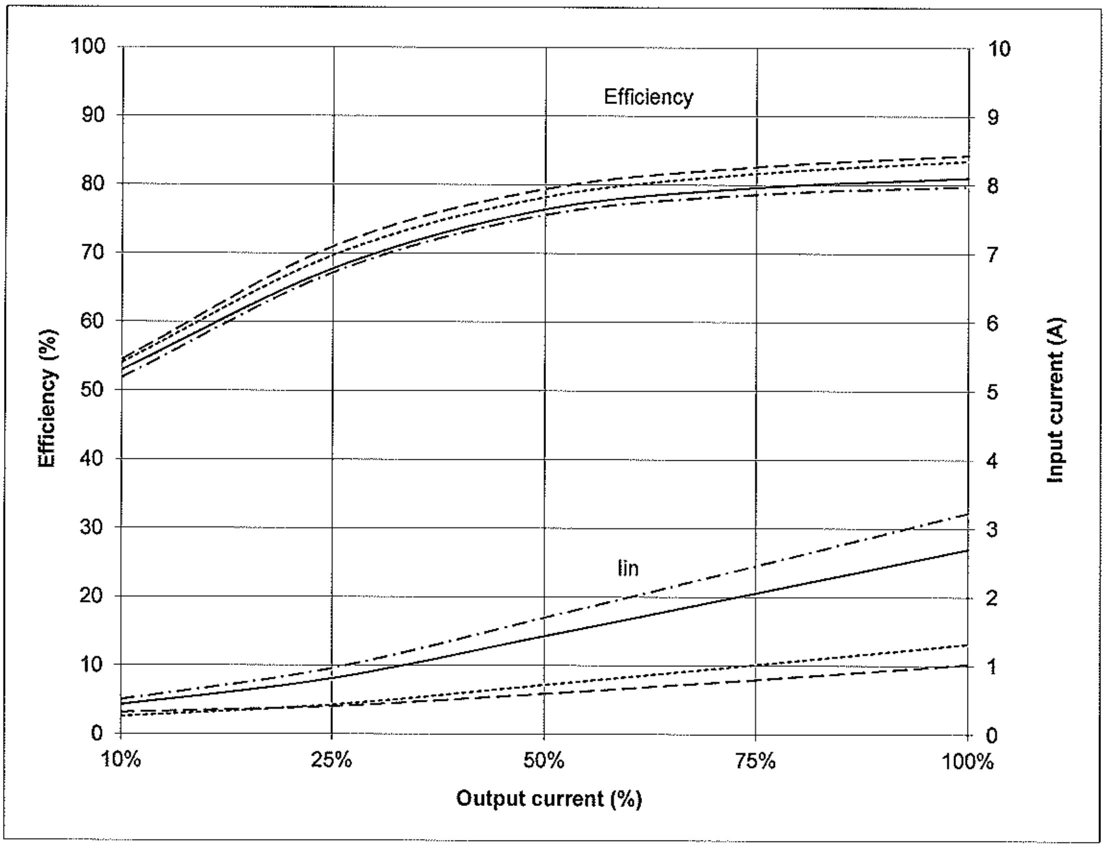


2.1 Steady state data

(4) Efficiency and Input current vs. Output current

Conditions:
Vin: 85 VAC
100VAC
200 VAC
265 VAC
Vout:100%
Ta: 25°C

Z36-6

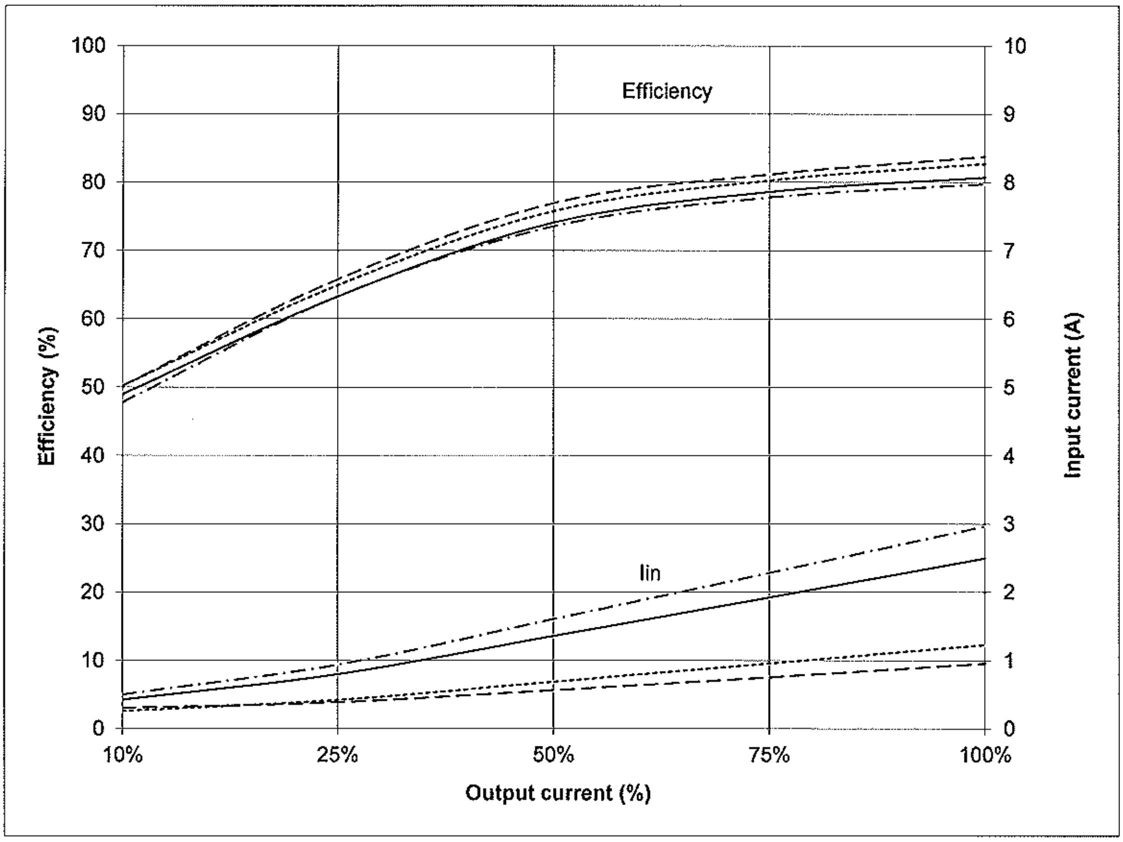


2.1 Steady state data

(4) Efficiency and Input current vs. Output current

Conditions:
Vin: 85 VAC
100VAC
200 VAC
265 VAC
Vout:100%
Ta: 25°C

Z100-2

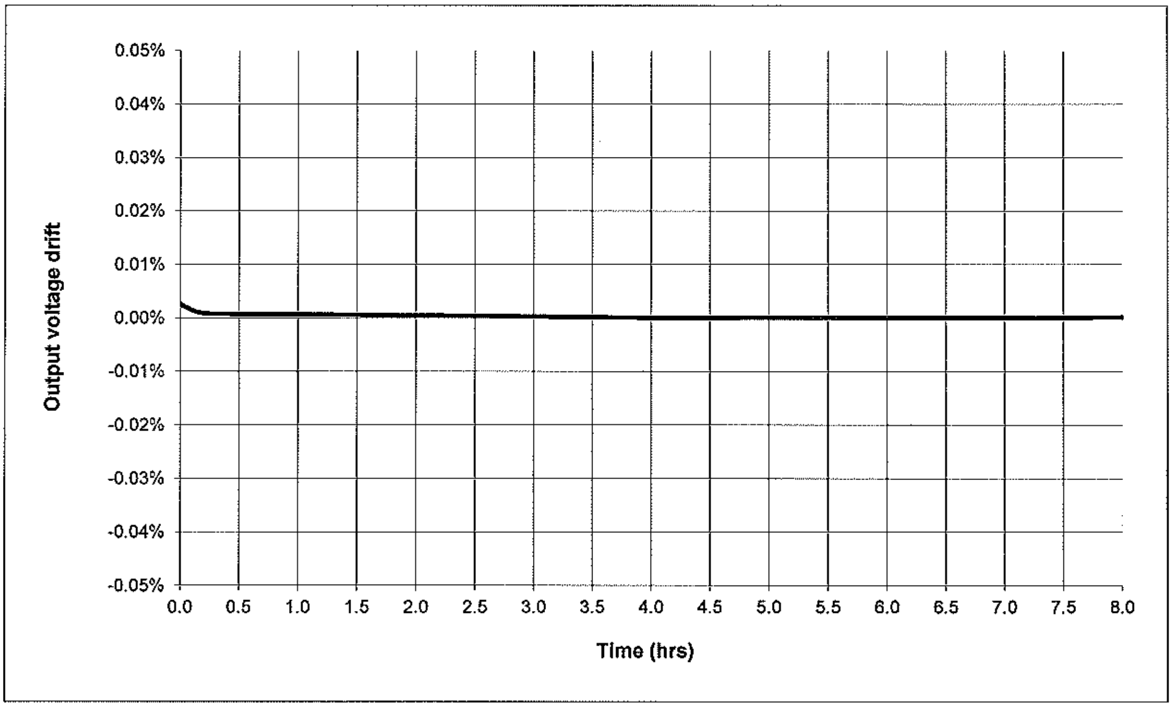


2.2 Warm up drift & stability

Conditions: Vin:100Vac
Vout: 100%
Iout: 100%
Ta = 25°C

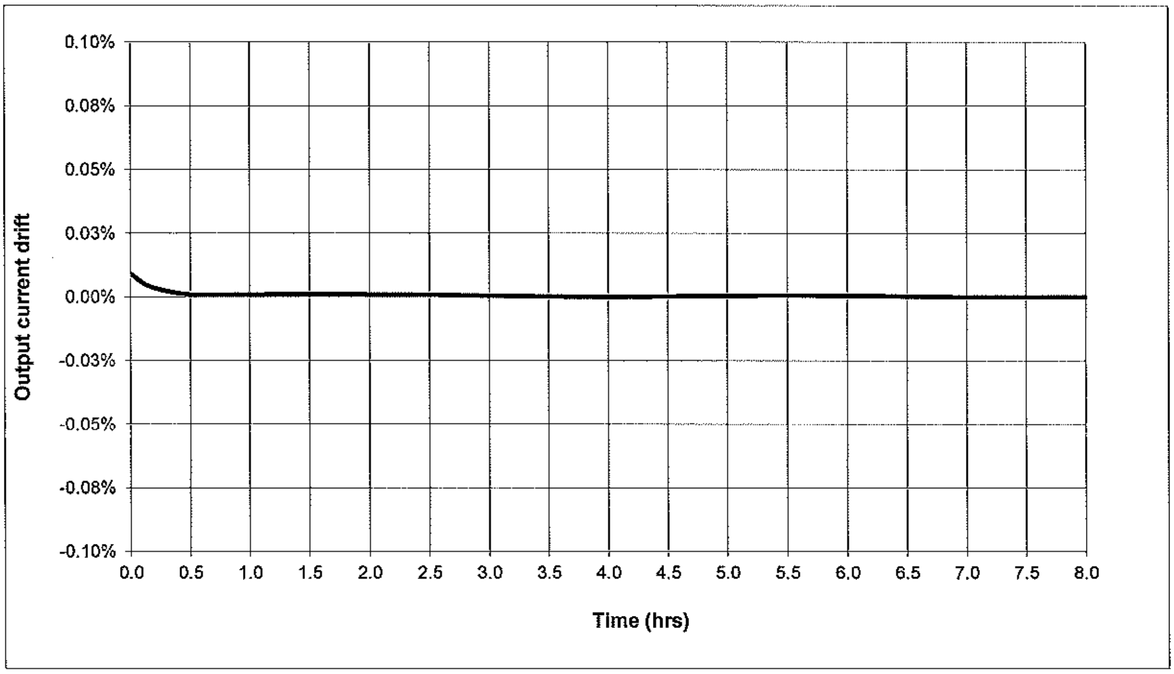
C.V mode

Z10-20



C.C mode

Z10-20

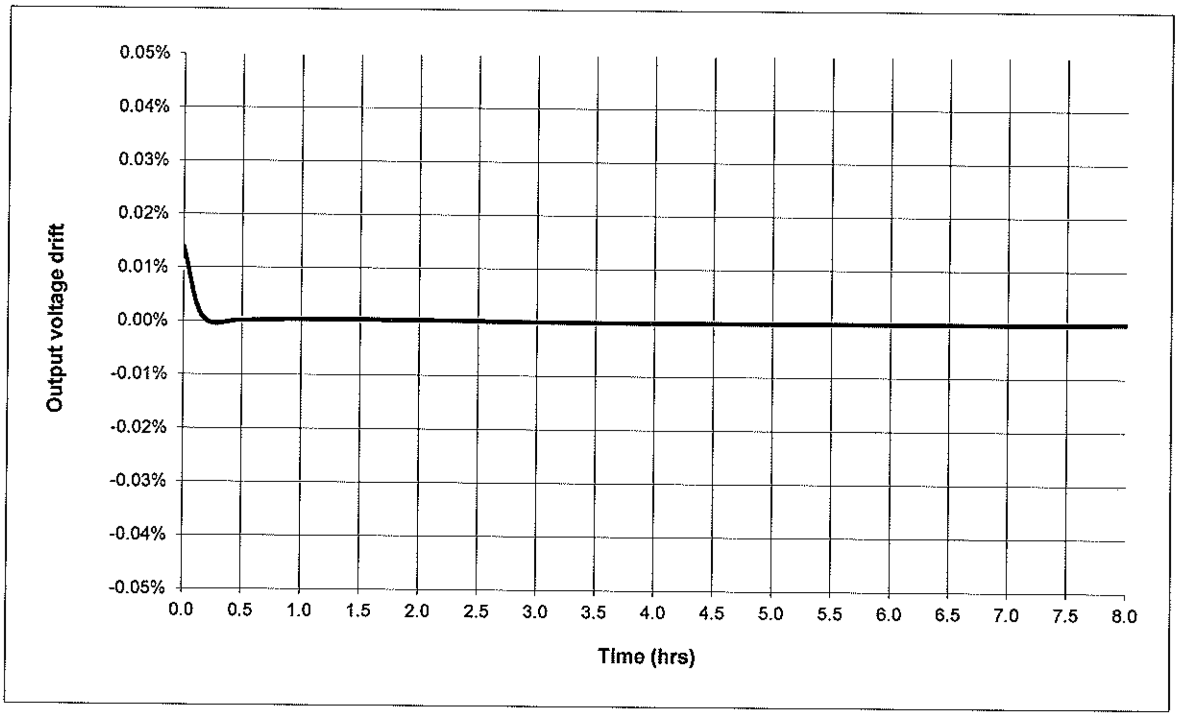


2.2 Warm up drift & stability

Conditions: Vin:100Vac
Vout: 100%
Iout: 100%
Ta = 25°C

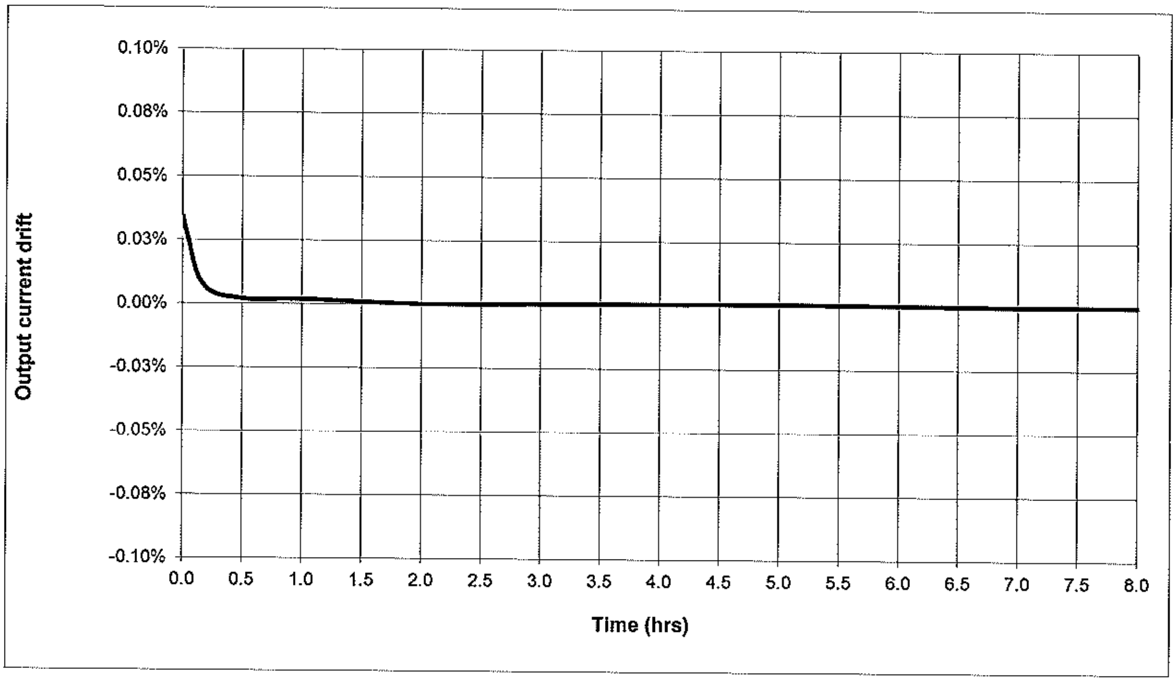
C.V mode

Z36-6



C.C mode

Z36-6

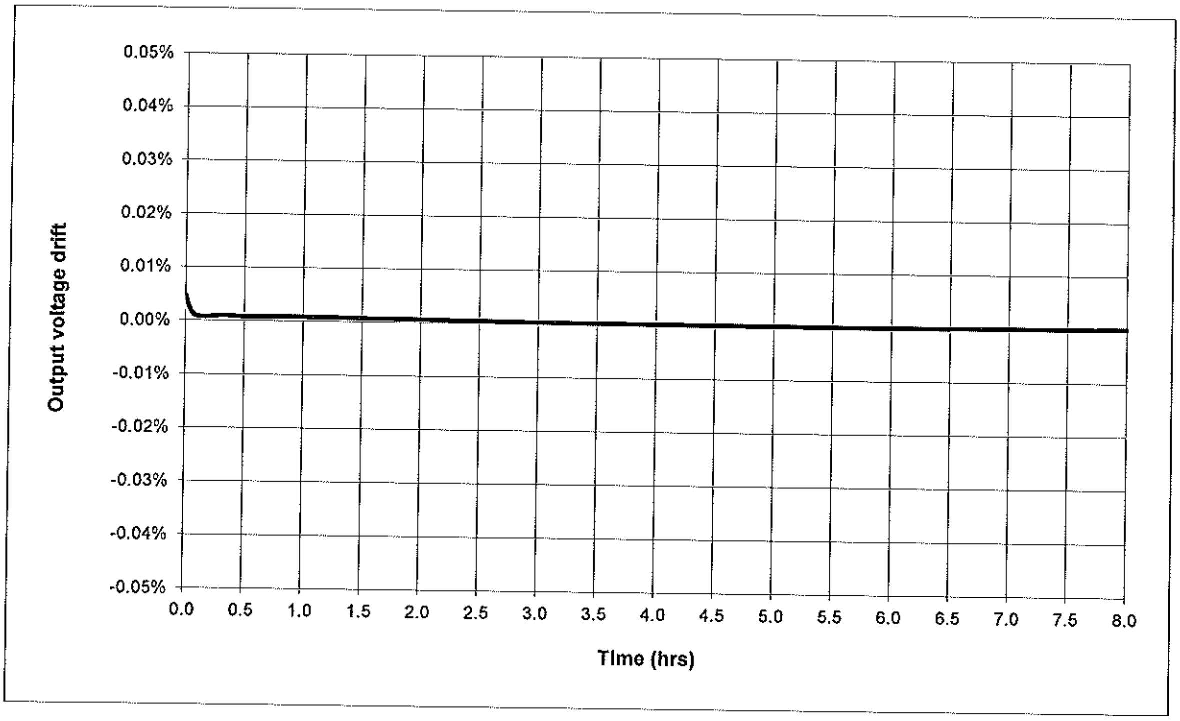


2.2 Warm up drift & stability

Conditions: Vin:100Vac
Vout: 100%
Iout: 100%
Ta = 25°C

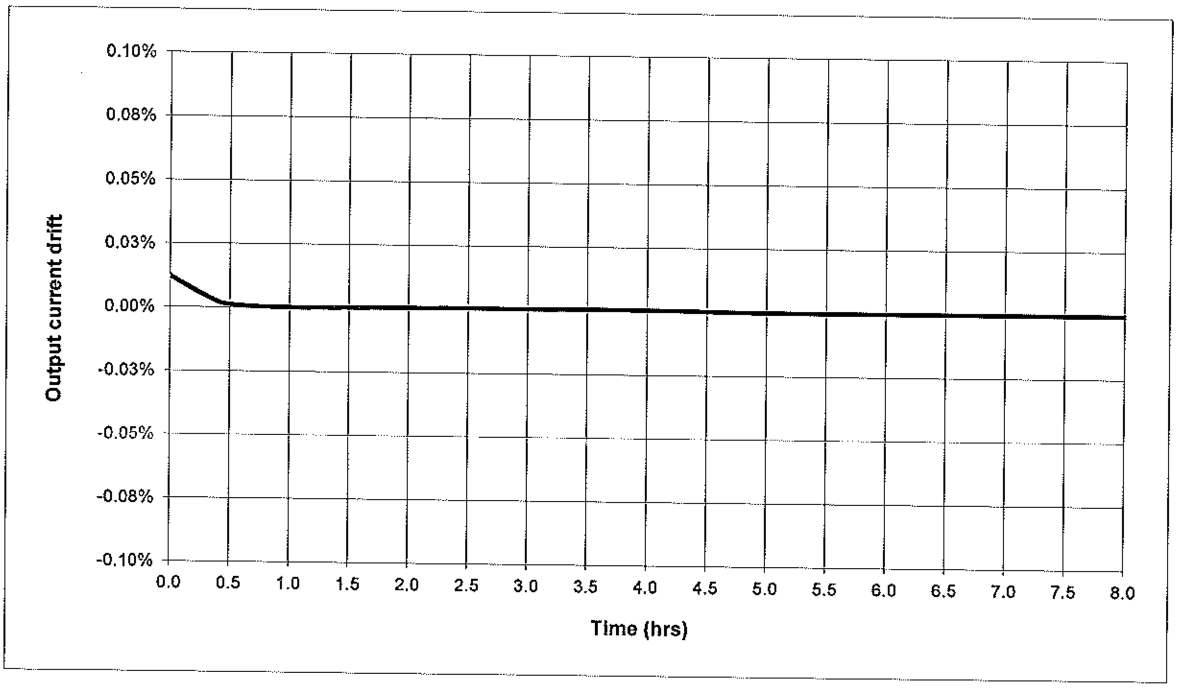
C.V mode

Z100-2



C.C mode

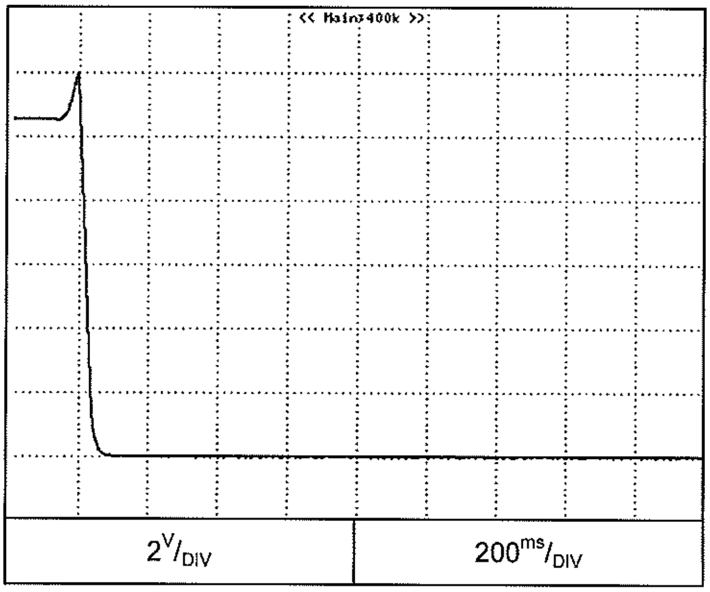
Z100-2



2.3 Over voltage protection (OVP) characteristic

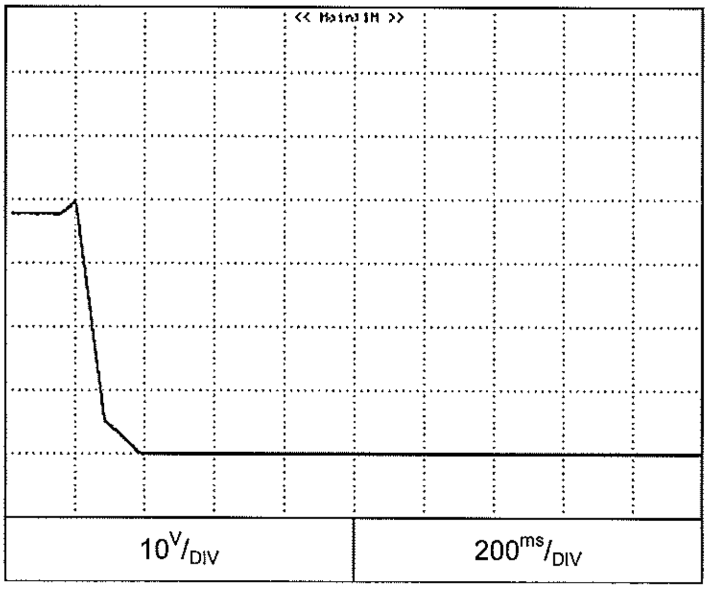
Conditions: Vin:100Vac
Iout: 0%
Ta = 25°C

Z10-20



OVP setting:12V

Z36-6

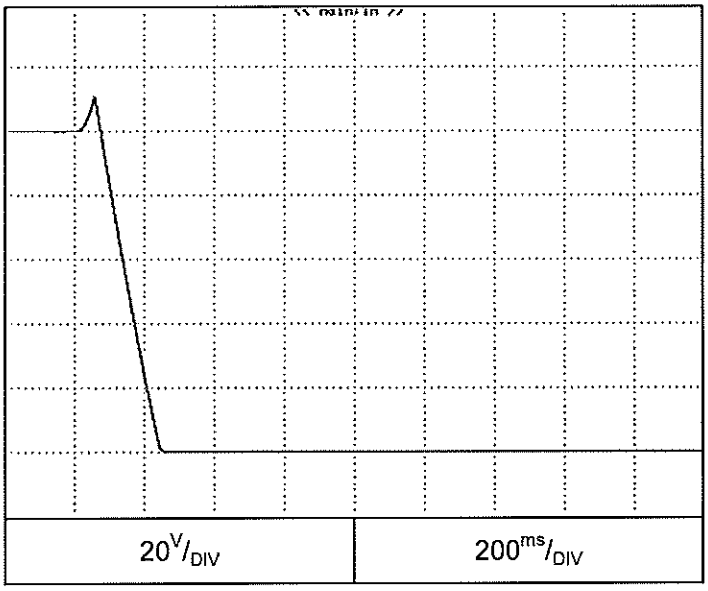


OVP setting: 40V

2.3 Over voltage protection (OVP) characteristic

Conditions: Vin:100Vac
Iout: 0%
Ta = 25°C

Z100-2



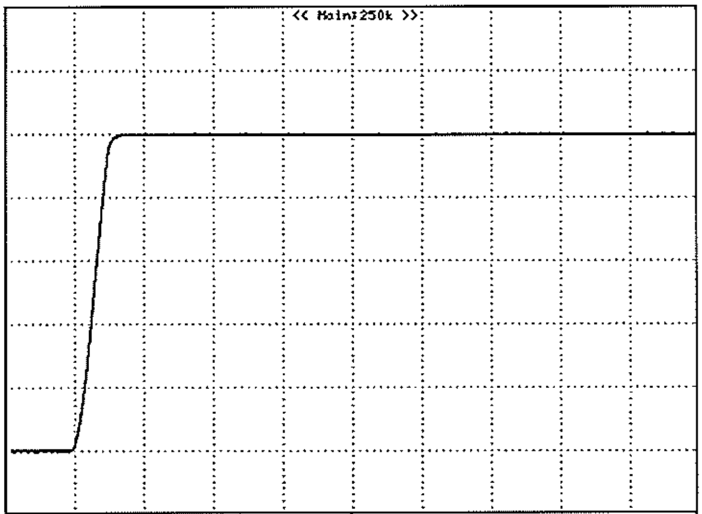
OVP setting: 110V

2.4 ON/OFF Output rise characteristics

Conditions: Vin:100Vac
Vout: 100%
Iout: 0%
Iset=105%
Ta = 25°C

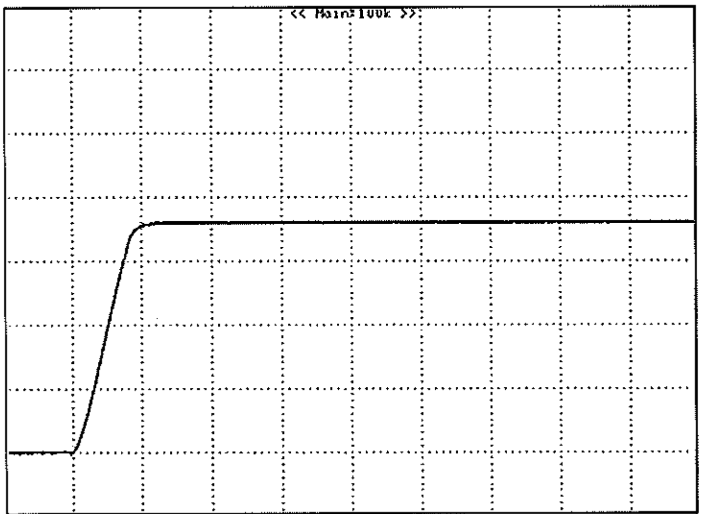
C.V mode

Z10-20



$2^V/_{DIV}$	$5^{ms}/_{DIV}$

Z36-6



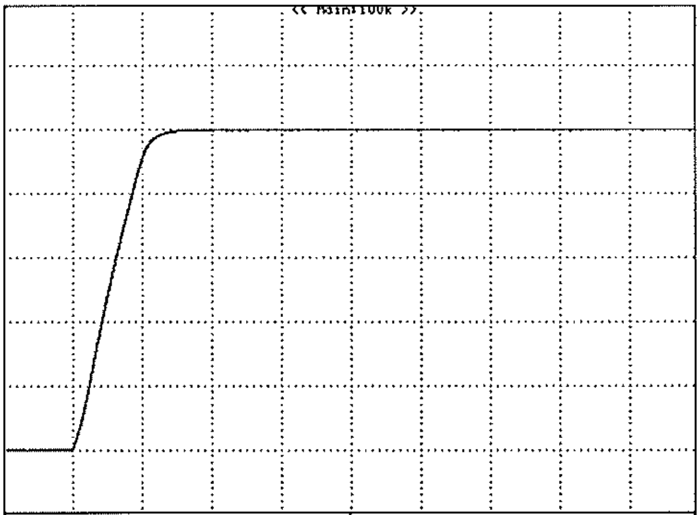
$10^V/_{DIV}$	$5^{ms}/_{DIV}$

2.4 ON/OFF Output rise characteristics

Conditions: Vin:100Vac
Vout: 100%
Iout: 0%
Iset=105%
Ta = 25°C

C.V mode

Z100-2



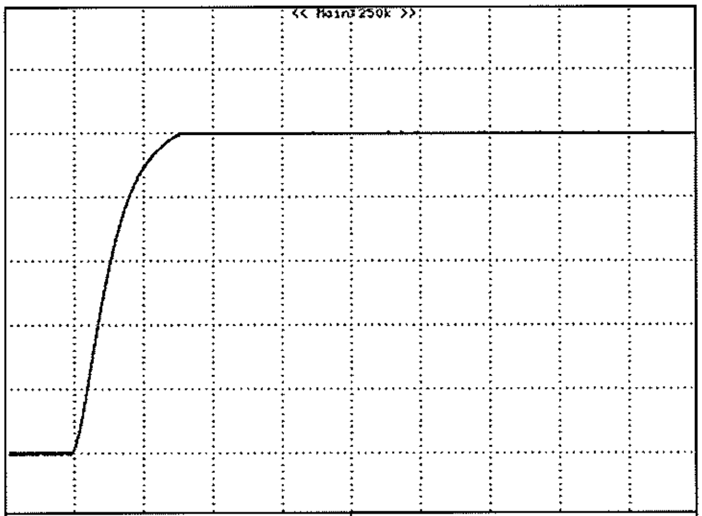
$20^{V}/_{DIV}$	$5^{ms}/_{DIV}$

2.4 ON/OFF Output rise characteristics

Conditions: Vin:100Vac
Vout: 100%
Iout: 100%
Iset=105%
Load: CR
Ta = 25°C

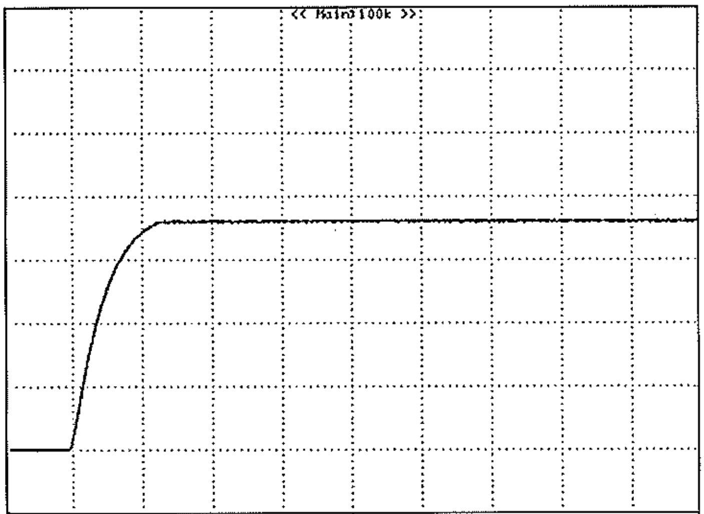
C.V mode

Z10-20



$2^{V}/_{DIV}$	$5^{ms}/_{DIV}$

Z36-6



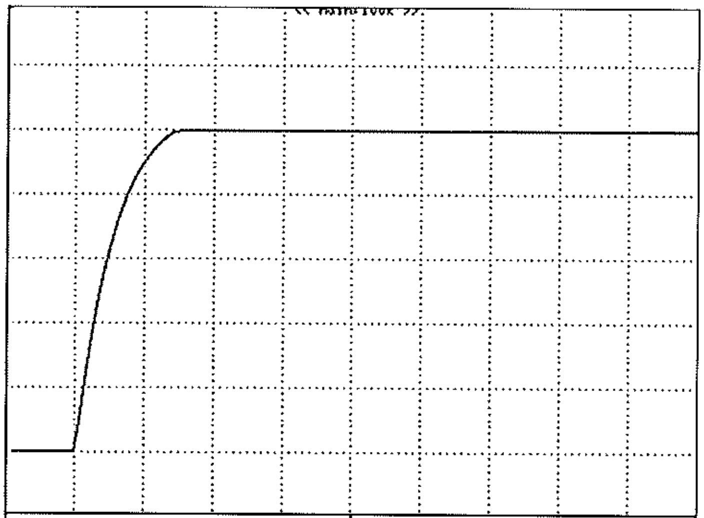
$10^{V}/_{DIV}$	$10^{ms}/_{DIV}$

2.4 ON/OFF Output rise characteristics

Conditions: Vin:100Vac
Vout: 100%
Iout: 100%
Iset=105%
Load: CR
Ta = 25°C

C.V mode

Z100-2



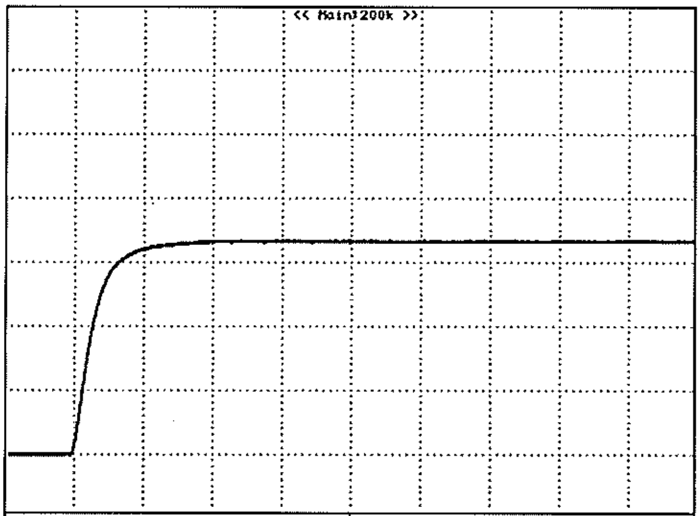
20 V/DIV	20 ms/DIV

2.4 ON/OFF Output rise characteristics

Conditions: Vin:100Vac
Vout: 100%
Iout: 100%
Vset=105%
Load: CR
Ta = 25°C

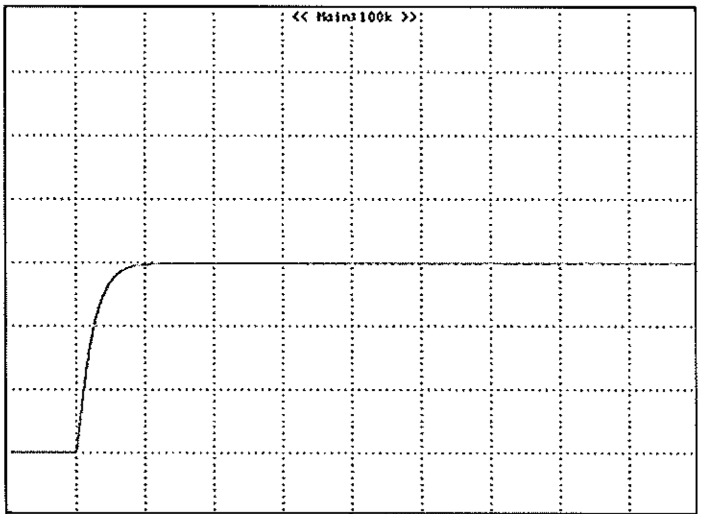
C.C mode

Z10-20



$6^{A}/_{DIV}$	$10^{ms}/_{DIV}$

Z36-6



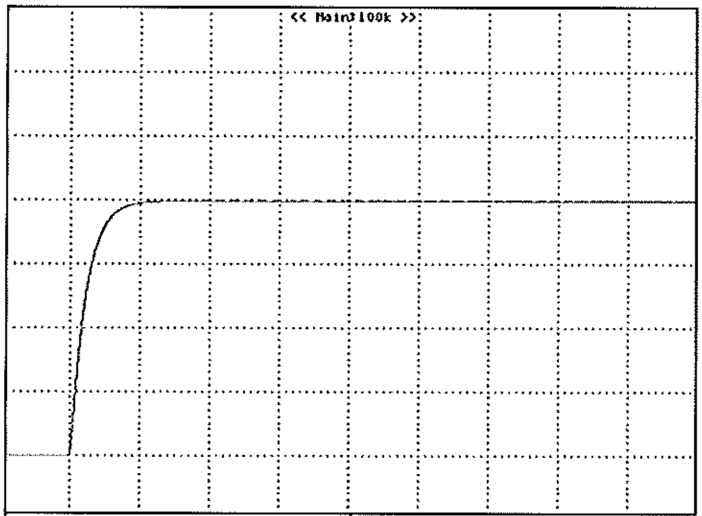
$2^{A}/_{DIV}$	$10^{ms}/_{DIV}$

2.4 ON/OFF Output rise characteristics

Conditions: Vin:100Vac
Vout: 100%
Iout: 100%
Vset=105%
Load: CR
Ta = 25°C

C.C mode

Z100-2



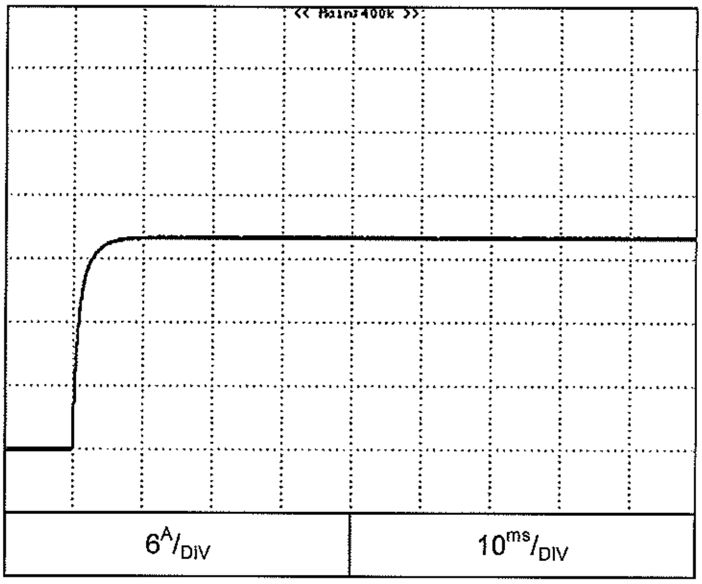
0.5 A/DIV	50 ms/DIV

2.4 ON/OFF Output rise characteristics

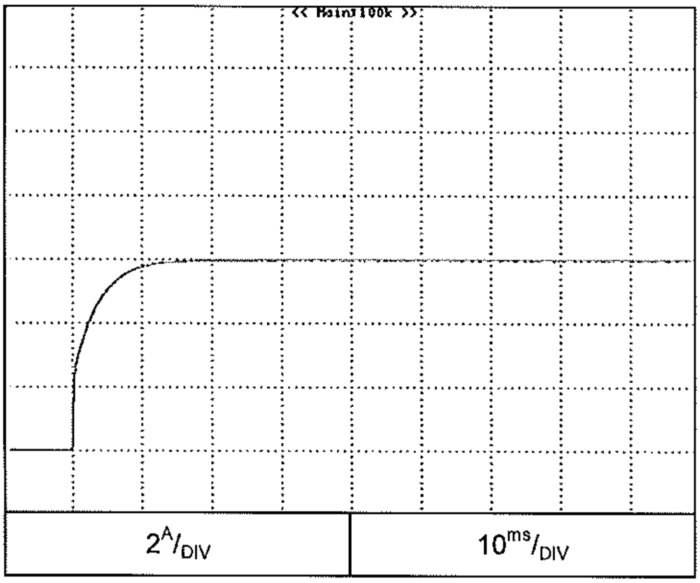
Conditions: Vin:100Vac
Iout: 100%
Vset=105%
shorted output
Ta = 25°C

C.C mode

Z10-20



Z36-6

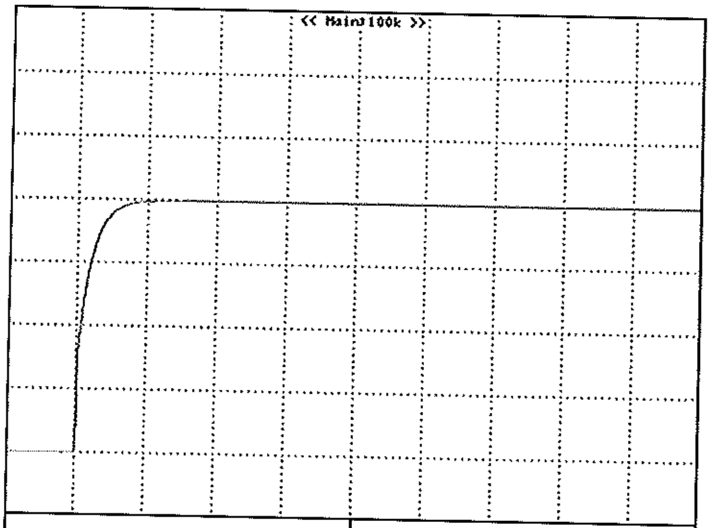


2.4 ON/OFF Output rise characteristics

Conditions: Vin:100Vac
Iout: 100%
Vset=105%
shorted output
Ta = 25°C

C.C mode

Z100-2



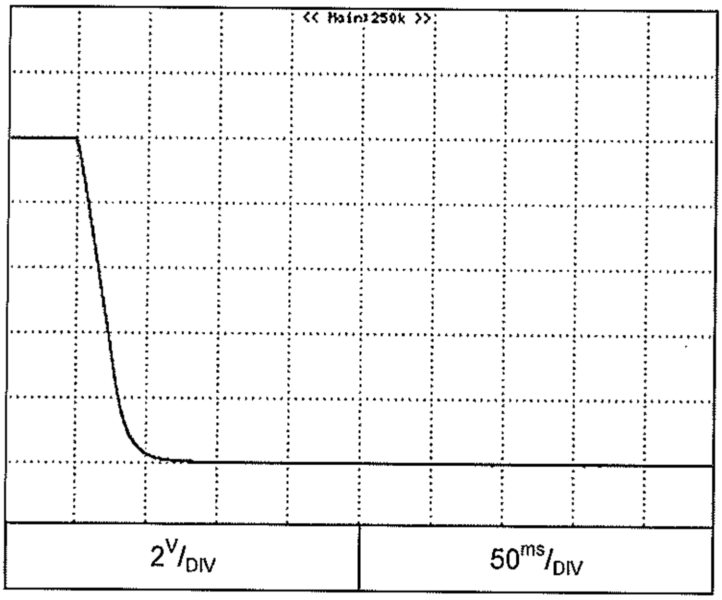
0.5A/DIV	20ms/DIV

2.5 ON/OFF Output fall characteristics

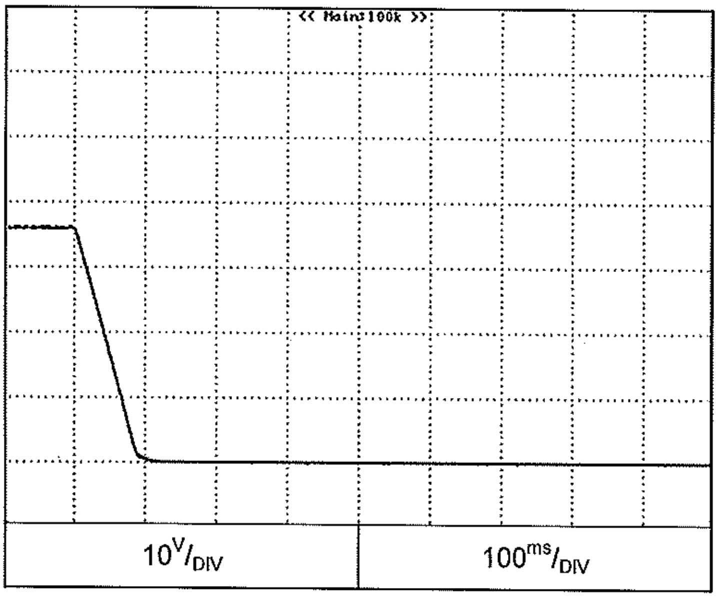
Conditions: Vin:100Vac
Vout: 100%
Iout: 0%
Iset=105%
Ta = 25°C

C.V mode

Z10-20



Z36-6

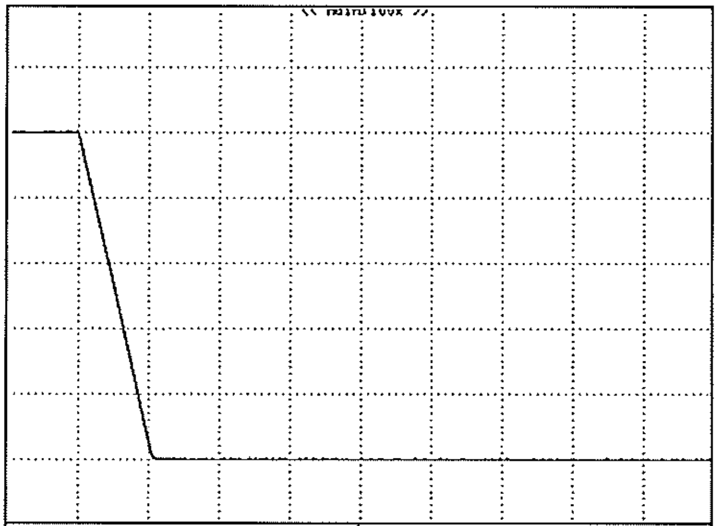


2.5 ON/OFF Output fall characteristics

Conditions: Vin:100Vac
Vout: 100%
Iout: 0%
Iset=105%
Ta = 25°C

C.V mode

Z100-2



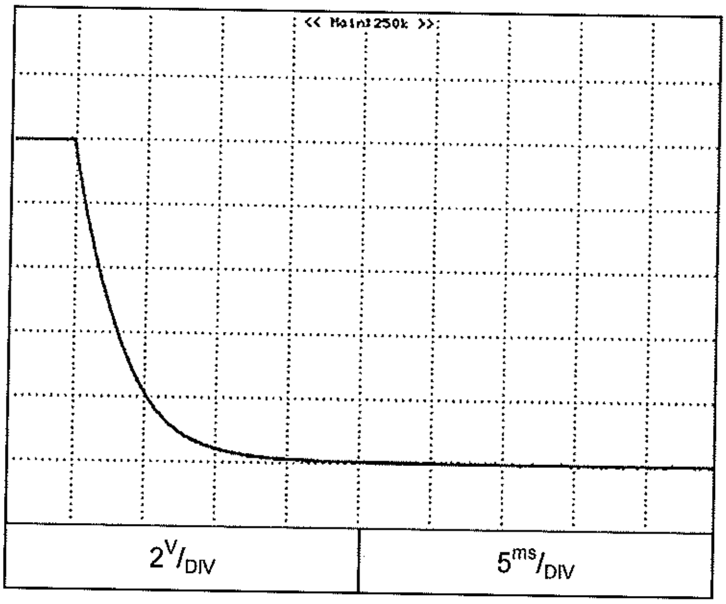
$20^{V}/_{DIV}$	$100^{ms}/_{DIV}$

2.5 ON/OFF Output fall characteristics

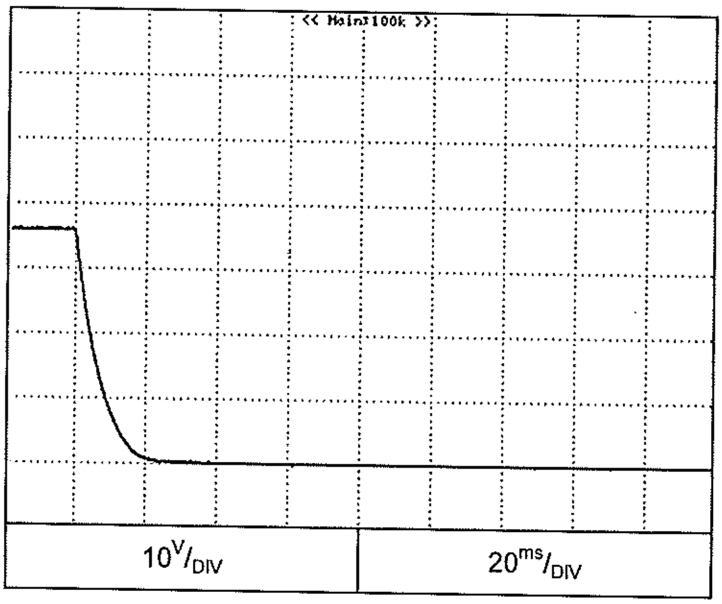
Conditions: Vin:100Vac
Vout: 100%
Iout: 100%
Iset=105%
Load: CR
Ta = 25°C

C.V mode

Z10-20



Z36-6

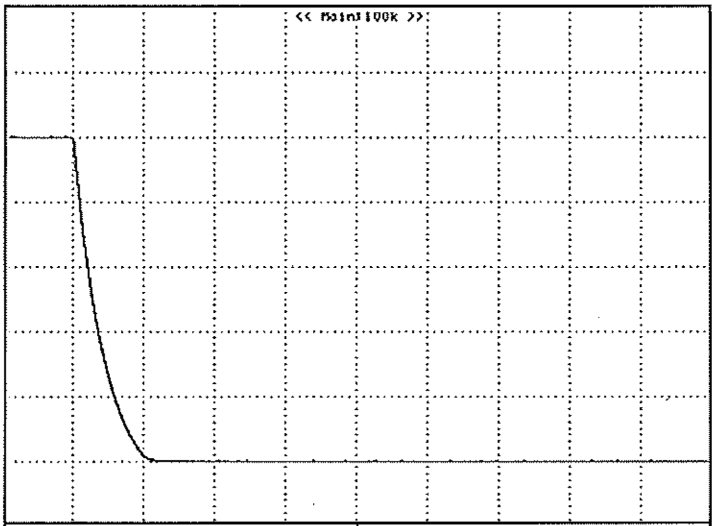


2.5 ON/OFF Output fall characteristics

Conditions: Vin:100Vac
Vout: 100%
Iout: 100%
Iset=105%
Load: CR
Ta = 25°C

C.V mode

Z100-2



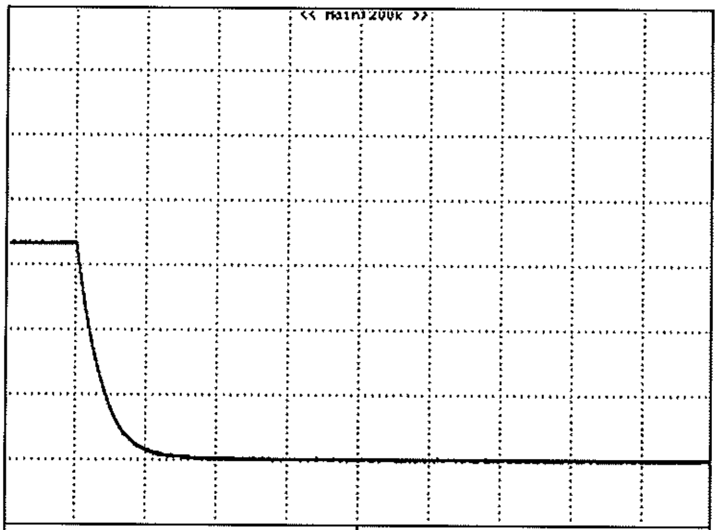
20V/DIV	20ms/DIV

2.5 ON/OFF Output fall characteristics

Conditions: Vin:100Vac
Vout: 100%
Iout: 100%
Vset=105%
Load: CR
Ta = 25°C

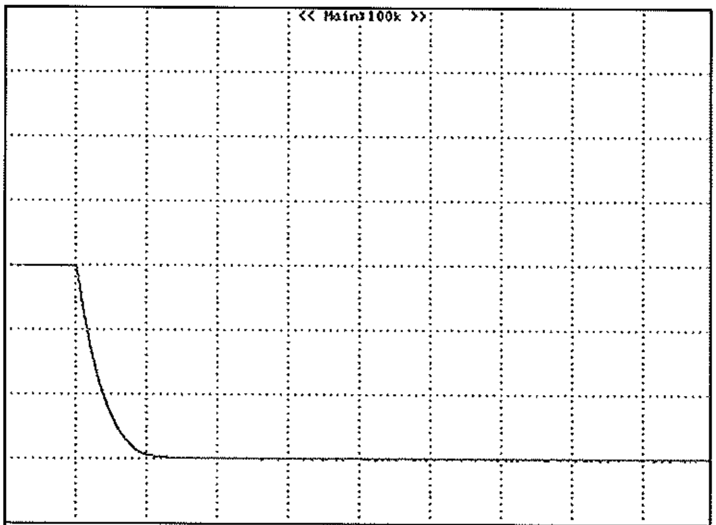
C.C mode

Z10-20



6 A/DIV	5 ms/DIV

Z36-6



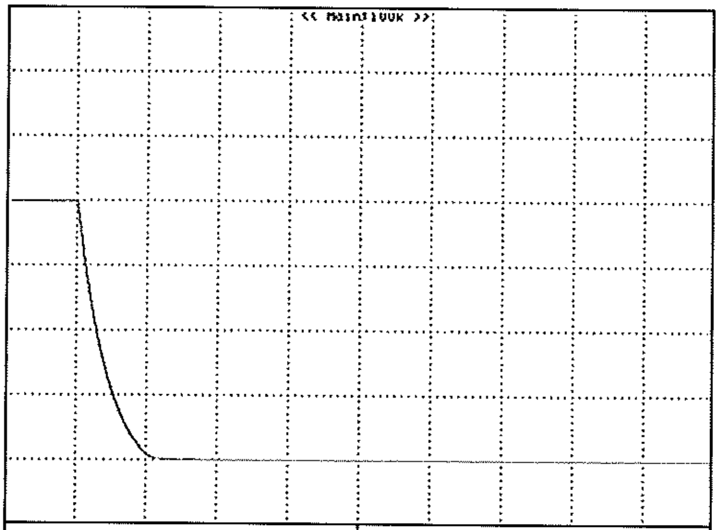
2 A/DIV	10 ms/DIV

2.5 ON/OFF Output fall characteristics

Conditions: Vin:100Vac
Vout: 100%
Iout: 100%
Vset=105%
Load: CR
Ta = 25°C

C.C mode

Z100-2



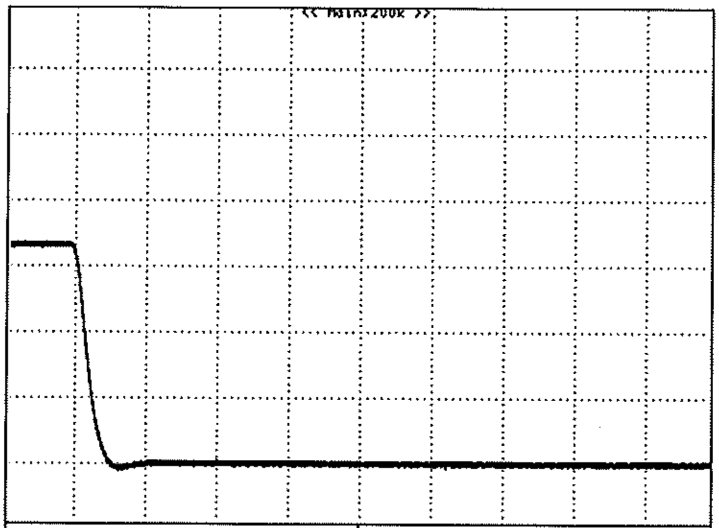
$0.5^{A}/_{DIV}$	$20^{ms}/_{DIV}$

2.5 ON/OFF Output fall characteristics

Conditions: Vin:100Vac
Iout: 100%
Vset=105%
shorted output
Ta = 25°C

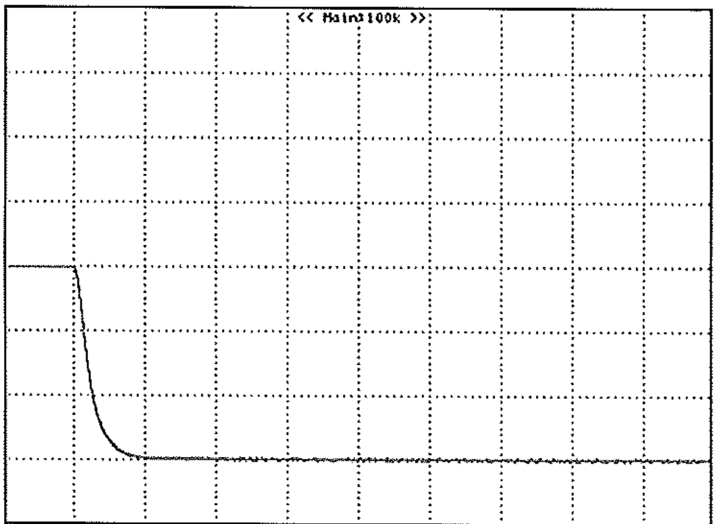
C.C mode

Z10-20



6 A/DIV	1 ms/DIV

Z36-6



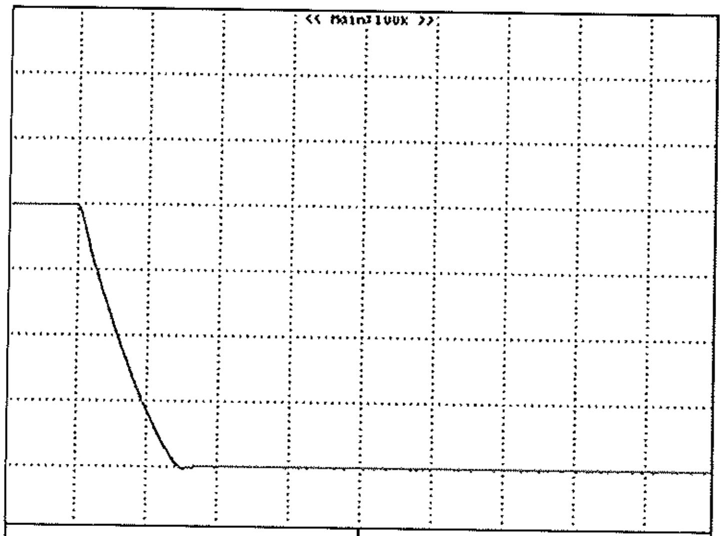
2 A/DIV	1 ms/DIV

2.5 ON/OFF Output fall characteristics

Conditions: Vin:100Vac
Iout: 100%
Vset=105%
shorted output
Ta = 25°C

C.C mode

Z100-2

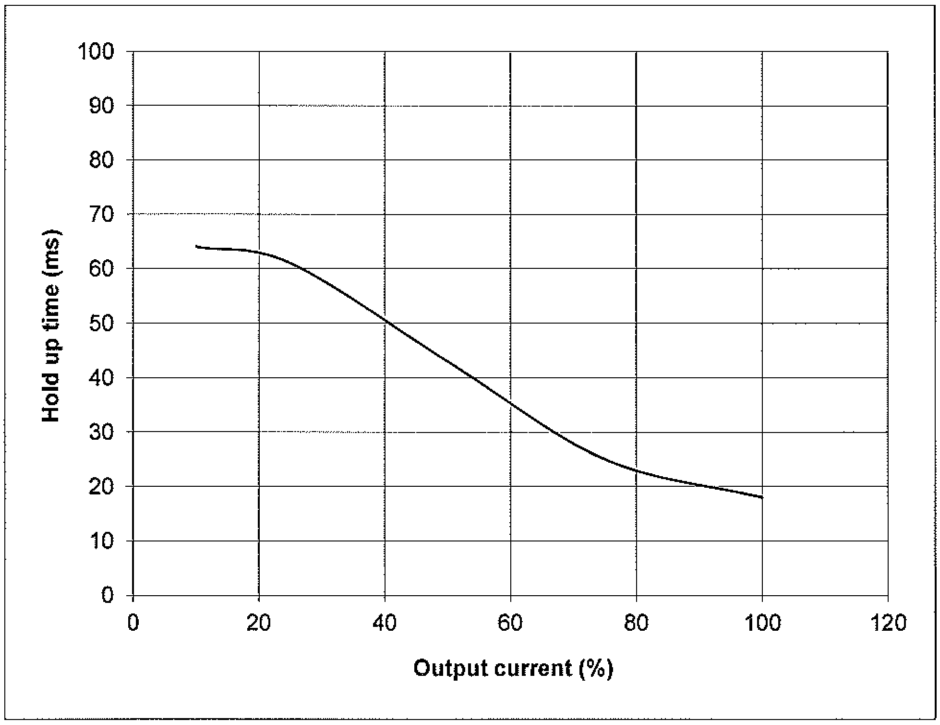


0.5A/DIV	1ms/DIV

2.6 Hold up time characteristics

Conditions: Vin:100Vac
Vout: 100%
Ta = 25°C

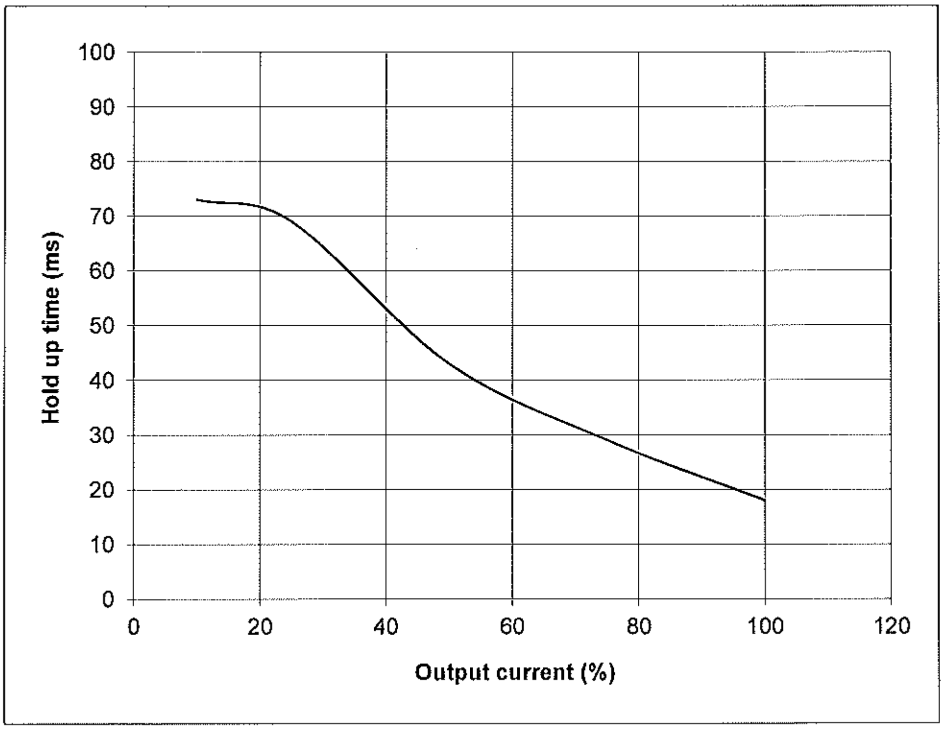
Z10-20



2.6 Hold up time characteristics

Conditions: Vin:100Vac
Vout: 100%
Ta = 25°C

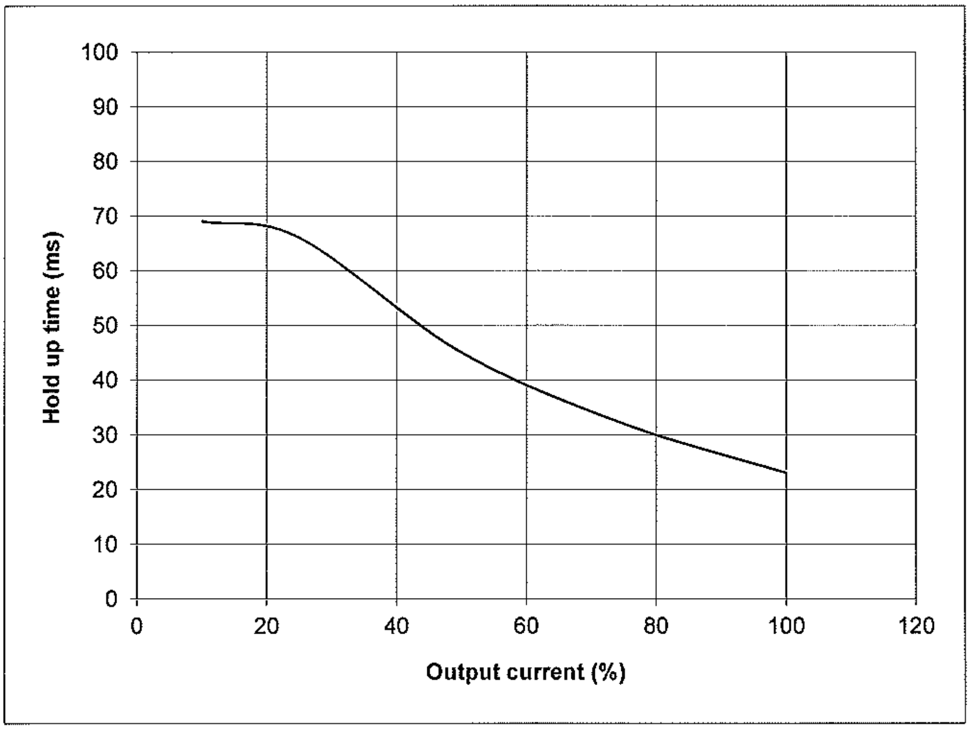
Z36-6



2.6 Hold up time characteristics

Conditions: Vin:100Vac
Vout: 100%
Ta = 25°C

Z100-2

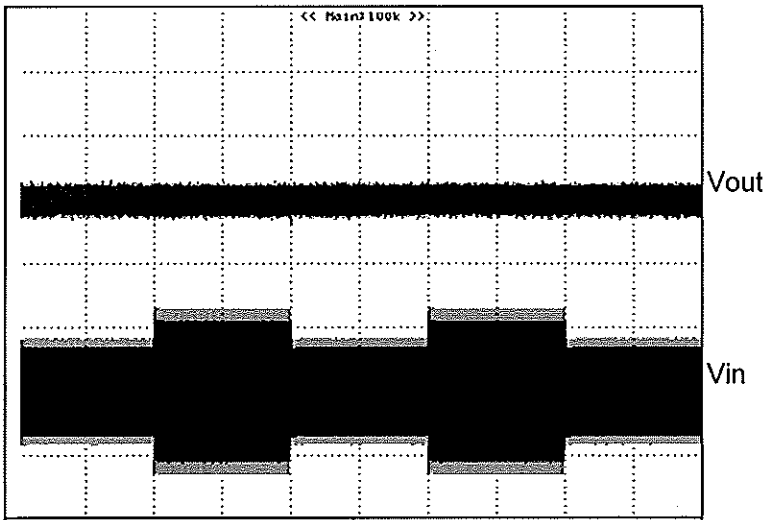


2.7 Dynamic line response characteristics

Conditions: Vin:85↔132V
Vout: 100%
Iout: 100%
Ta = 25°C

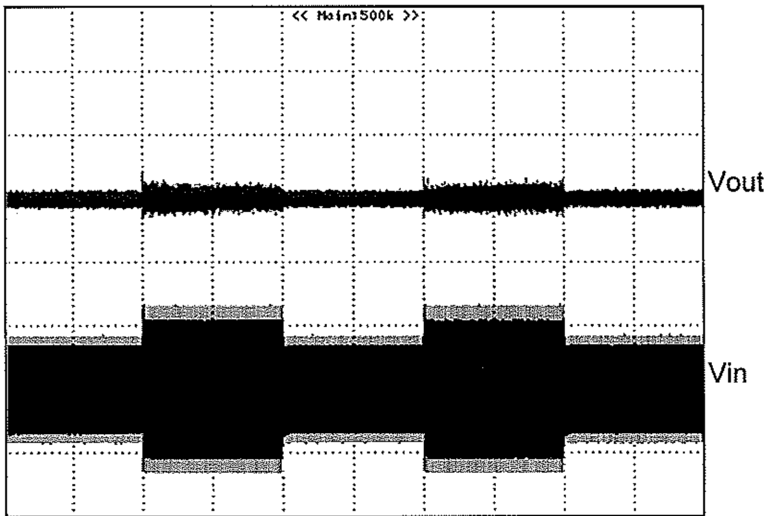
C.V mode

Z10-20



Vout: $10^{mv}/_{DIV}$	$500^{ms}/_{DIV}$

Conditions: Vin:170↔265V
Vout: 100%
Iout: 100%
Ta = 25°C



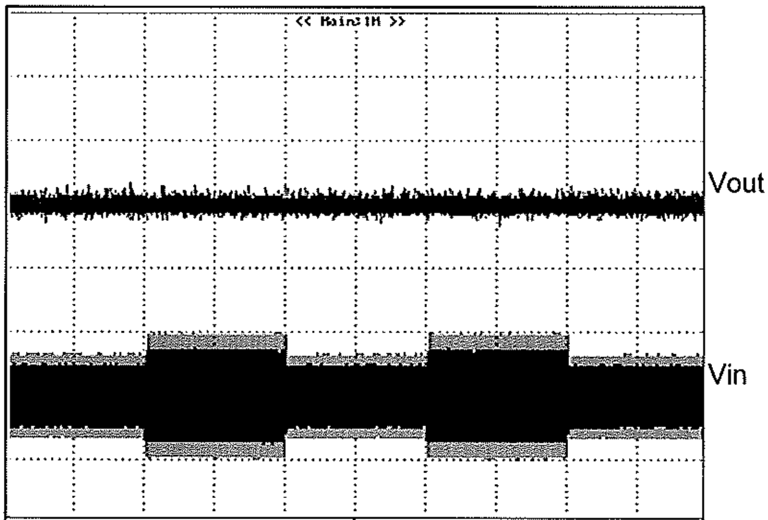
Vout: $20^{mv}/_{DIV}$	$500^{ms}/_{DIV}$

2.7 Dynamic line response characteristics

Conditions: Vin:85↔132V
Vout: 100%
Iout: 100%
Ta = 25°C

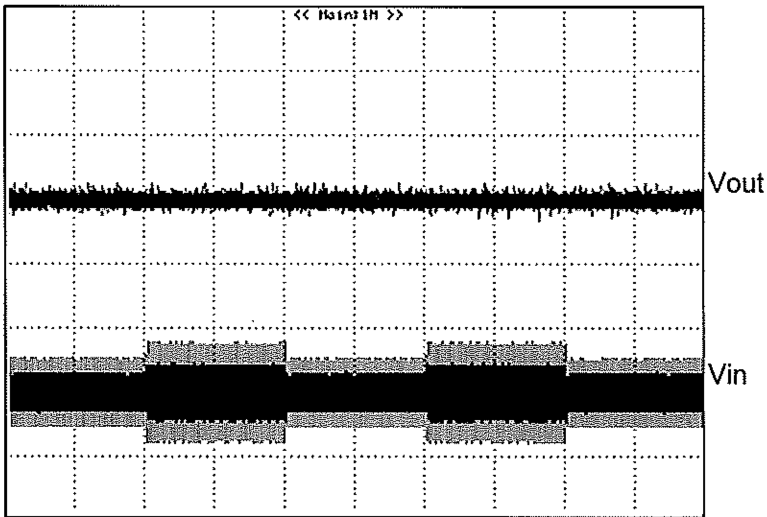
C.V mode

Z36-6



Vout: 100^{mv}/$_{DIV}$	500^{ms}/$_{DIV}$

Conditions: Vin:170↔265V
Vout: 100%
Iout: 100%
Ta = 25°C



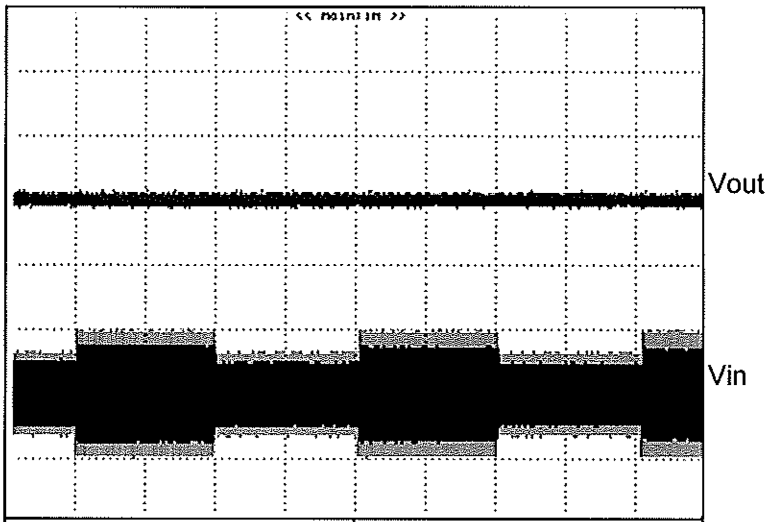
Vout: 100^{mv}/$_{DIV}$	500^{ms}/$_{DIV}$

2.7 Dynamic line response characteristics

Conditions: Vin:85↔132V
Vout: 100%
Iout: 100%
Ta = 25°C

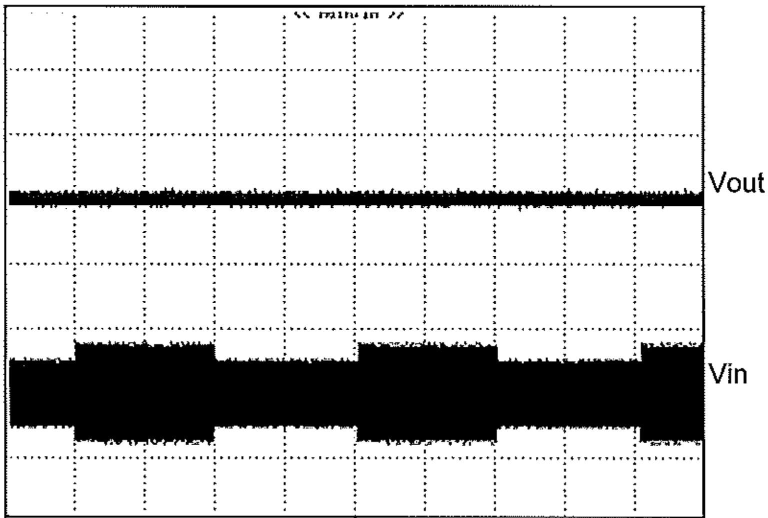
C.V mode

Z100-2



Vout: 100^{mv}/$_{DIV}$	500^{ms}/$_{DIV}$

Conditions: Vin:170↔265V
Vout: 100%
Iout: 100%
Ta = 25°C



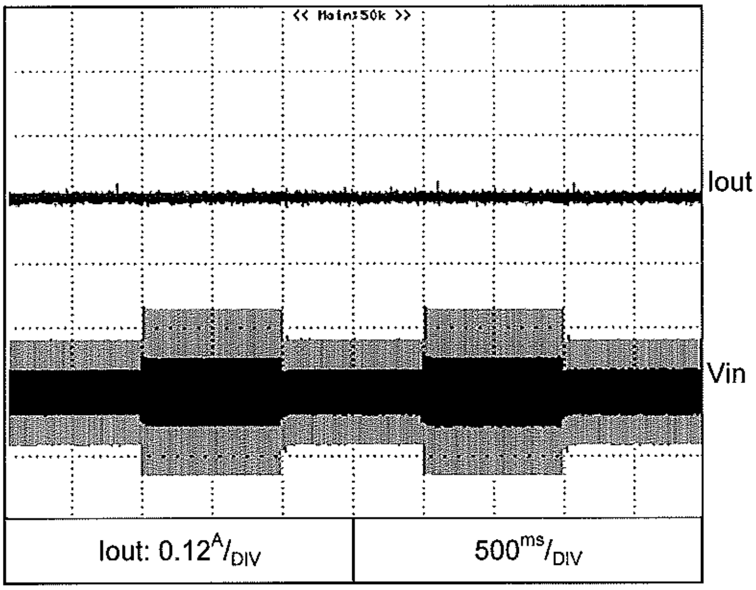
Vout: 100^{mv}/$_{DIV}$	500^{ms}/$_{DIV}$

2.7 Dynamic line response characteristics

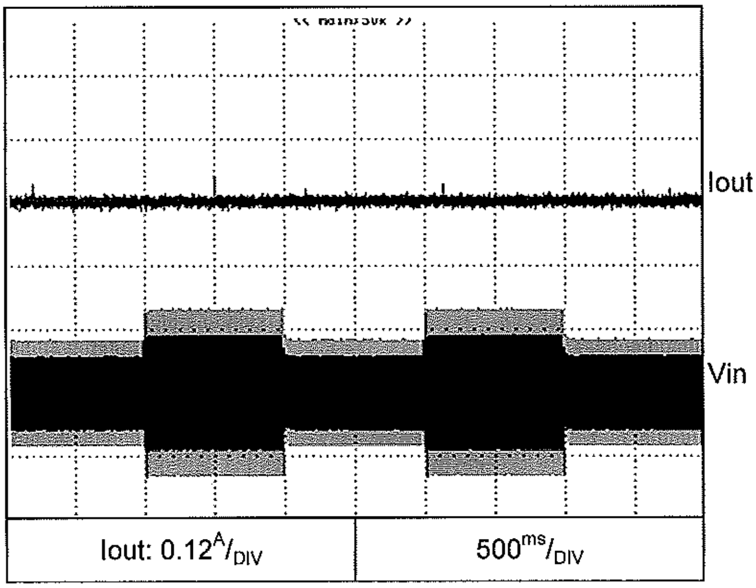
Conditions: Vin:85↔132V
Vout: 100%
Iout: 100%
Ta = 25°C

C.C mode

Z10-20



Conditions: Vin:170↔265V
Vout: 100%
Iout: 100%
Ta = 25°C

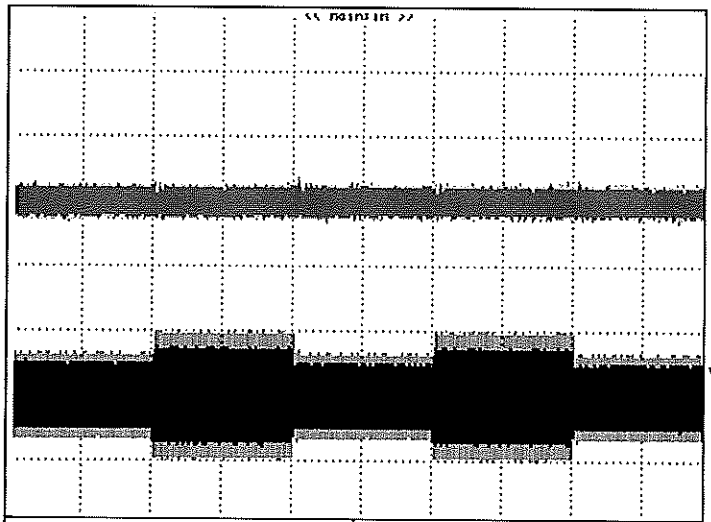


2.7 Dynamic line response characteristics

C.C mode

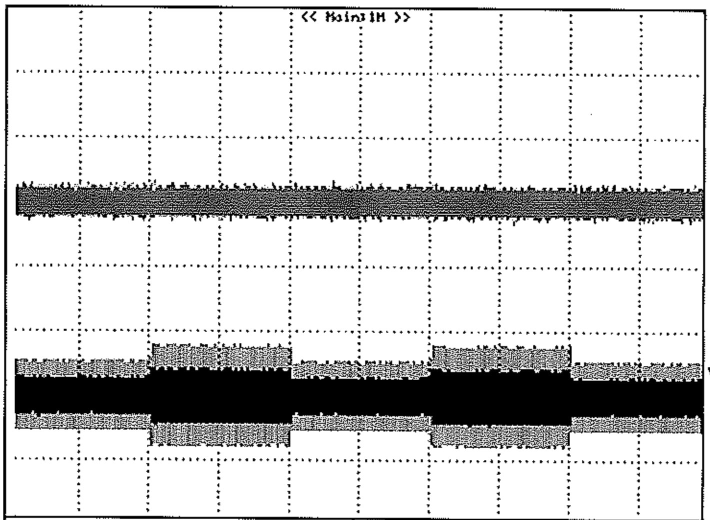
Conditions: Vin:85↔132V
Vout: 100%
Iout: 100%
Ta = 25°C

Z36-6



Iout: 20$^{mA}/_{DIV}$	500$^{ms}/_{DIV}$

Conditions: Vin:170↔265V
Vout: 100%
Iout: 100%
Ta = 25°C



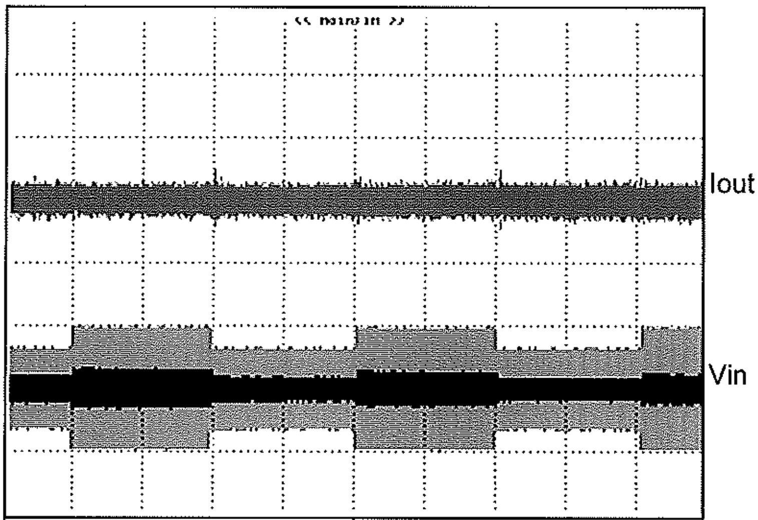
Iout: 20$^{mA}/_{DIV}$	500$^{ms}/_{DIV}$

2.7 Dynamic line response characteristics

C.C mode

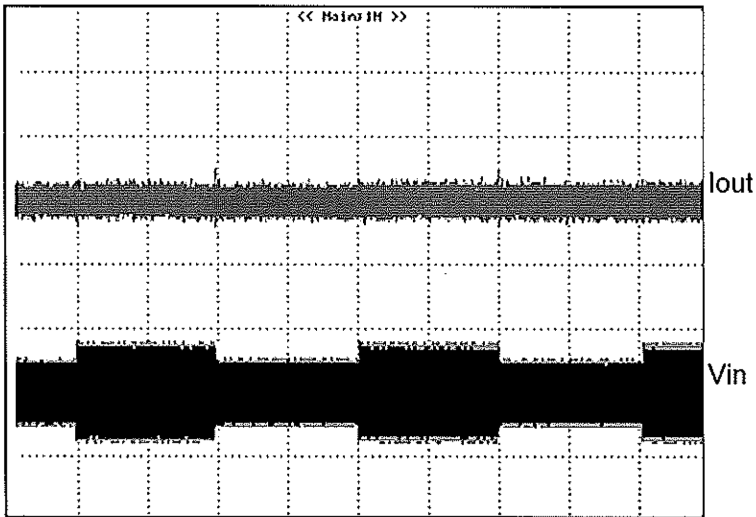
Conditions: Vin:85↔132V
Vout: 100%
Iout: 100%
Ta = 25°C

Z100-2



Iout: $20^{mA}/_{DIV}$	$500^{ms}/_{DIV}$

Conditions: Vin:170↔265V
Vout: 100%
Iout: 100%
Ta = 25°C



Iout: $20^{mA}/_{DIV}$	$500^{ms}/_{DIV}$

2.8 Dynamic load response characteristics

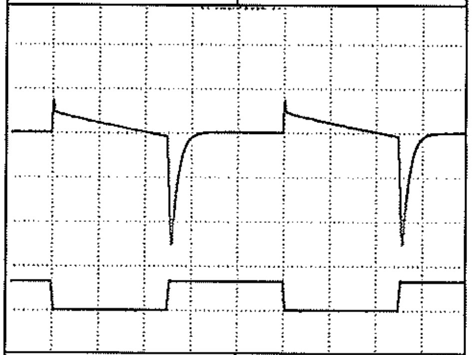
C.V mode

Conditions: Vin:100Vac
Vout: 100%
Ta = 25°C

Load current: tr=tf=100us

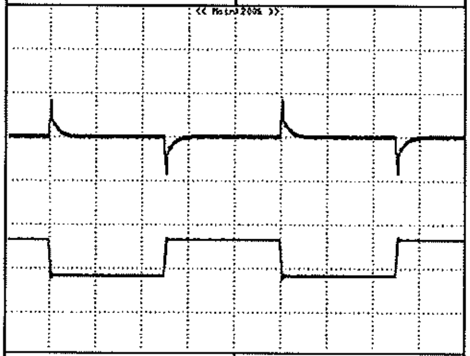
Z10-20

Iout:0%↔100%	f:100HZ



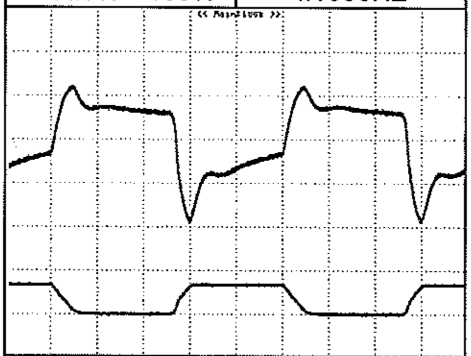
0.2V/DIV	2ms/DIV
1.48%	-5.19%

Iout:50%↔100%	f:100HZ



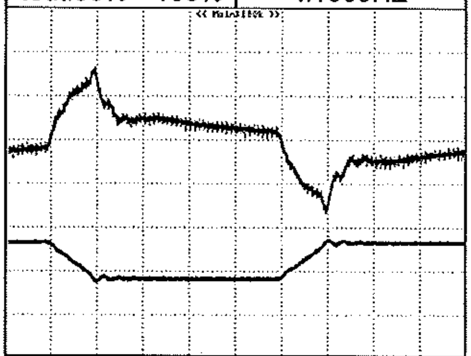
0.1V/DIV	2ms/DIV
0.85%	-0.85%

Iout:0%↔100%	f:1000HZ



0.1V/DIV	200us/DIV
1.23%	-1.91%

Iout:50%↔100%	f:1000HZ



0.05V/DIV	100us/DIV
0.82%	-0.83%

2.8 Dynamic load response characteristics

C.V mode

Conditions: Vin:100Vac
Vout: 100%
Ta = 25°C

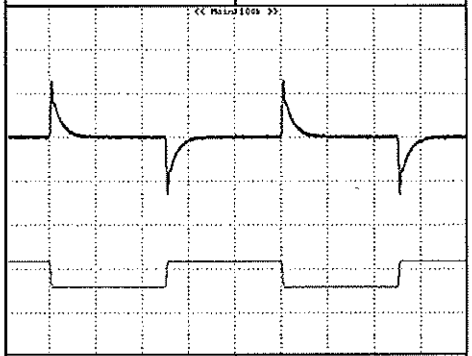
Load current: tr=tf=100us

Z36-6

Iout:0%↔100%	f:100HZ

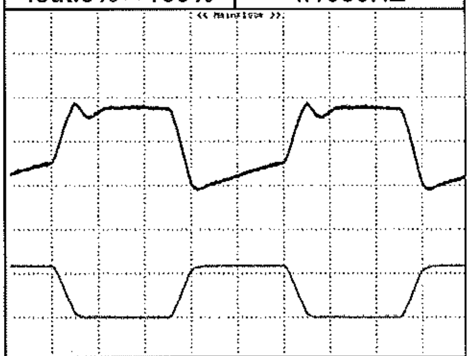
$0.5^{V}/_{DIV}$	$2^{ms}/_{DIV}$
0.72%	-2.97%

Iout:50%↔100%	f:100HZ



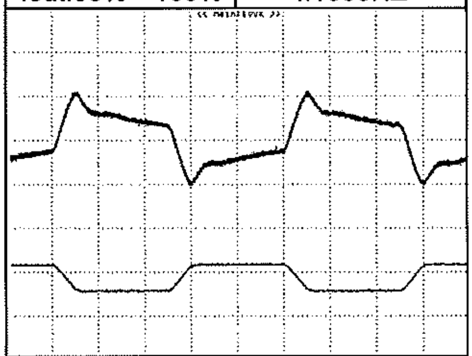
$0.1^{V}/_{DIV}$	$2^{ms}/_{DIV}$
0.36%	-0.36%

Iout:0%↔100%	f:1000HZ



$0.2^{V}/_{DIV}$	$200^{us}/_{DIV}$
0.49%	-0.62%

Iout:50%↔100%	f:1000HZ



$0.1^{V}/_{DIV}$	$200^{us}/_{DIV}$
0.31%	-0.28%

2.8 Dynamic load response characteristics

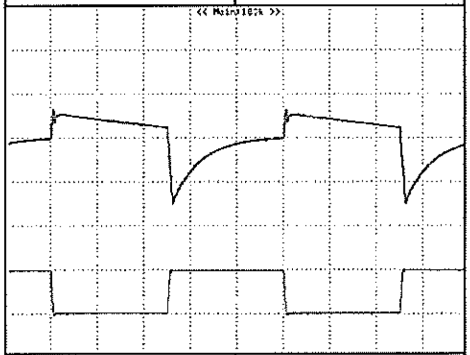
Conditions: Vin:100Vac
Vout: 100%
Ta = 25°C

C.V mode

Load current: tr=tf=100us

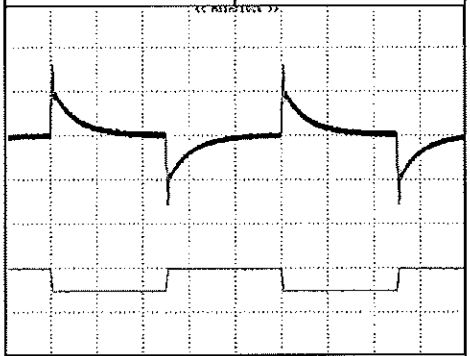
Z100-2

Iout:0%↔100%	f:100HZ



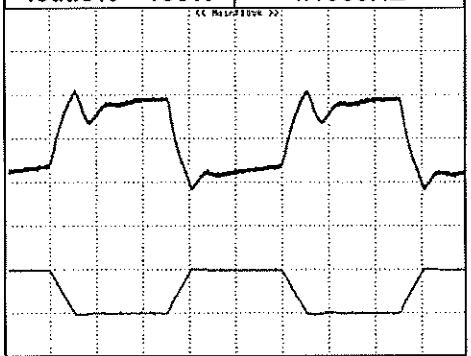
$0.05^{V}/_{DIV}$	$2^{ms}/_{DIV}$
0.32%	-0.74%

Iout:50%↔100%	f:100HZ



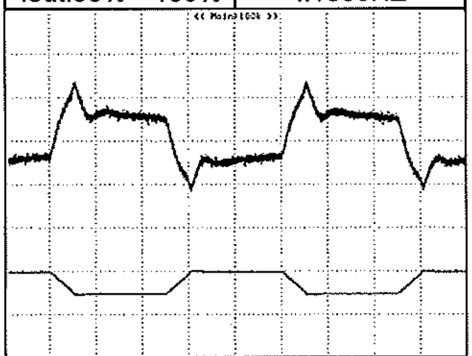
$0.01^{V}/_{DIV}$	$2^{ms}/_{DIV}$
0.16%	-0.16%

Iout:0%↔100%	f:1000HZ



$0.02^{V}/_{DIV}$	$200^{us}/_{DIV}$
0.22%	-0.24%

Iout:50%↔100%	f:1000HZ



$0.01^{V}/_{DIV}$	$200^{us}/_{DIV}$
0.13%	-0.12%

2.8 Dynamic load response characteristics

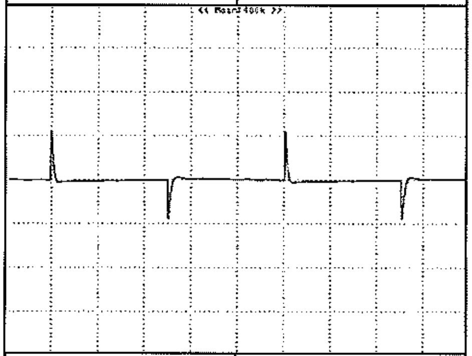
Conditions: Vin:100Vac
Ta = 25°C

C.C mode

Z10-20

Io=20A

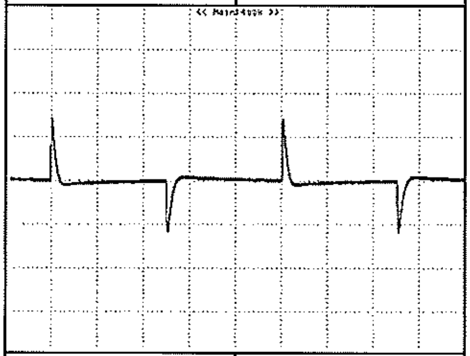
Vout:9↔7.5V	f:10HZ



$3^{A}/_{DIV}$	$20^{ms}/_{DIV}$
16.35%	-13.51%

Io=10A

Vout:9↔7.5V	f:10HZ

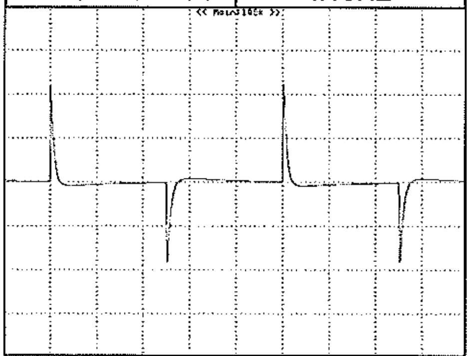


$1.2^{A}/_{DIV}$	$20^{ms}/_{DIV}$
10.05%	-7.08%

Z36-6

Io=6A

Vout:32.4↔27V	f:10HZ



$0.5^{A}/_{DIV}$	$20^{ms}/_{DIV}$
18.38%	-15.33%

Io=3A

Vout:32.4↔27V	f:10HZ

$0.2^{A}/_{DIV}$	$20^{ms}/_{DIV}$
9.26%	-7.77%

2.8 Dynamic load response characteristics

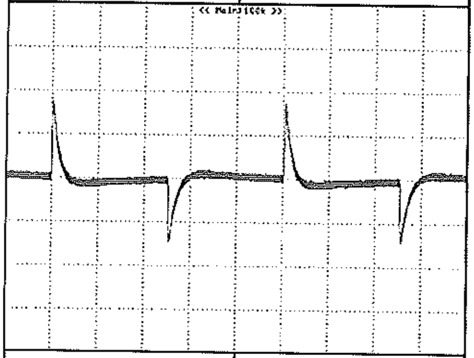
Conditions: Vin:100Vac
Ta = 25°C

C.C mode

Z100-2

Io=2A

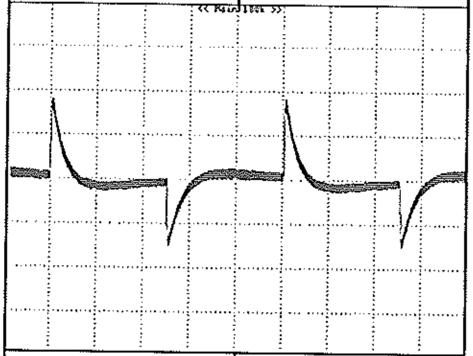
Vout:90↔75V	f:10HZ



0.2A/DIV	20ms/DIV
17.95%	-15.32%

Io=1A

Vout:90↔75V	f:10HZ



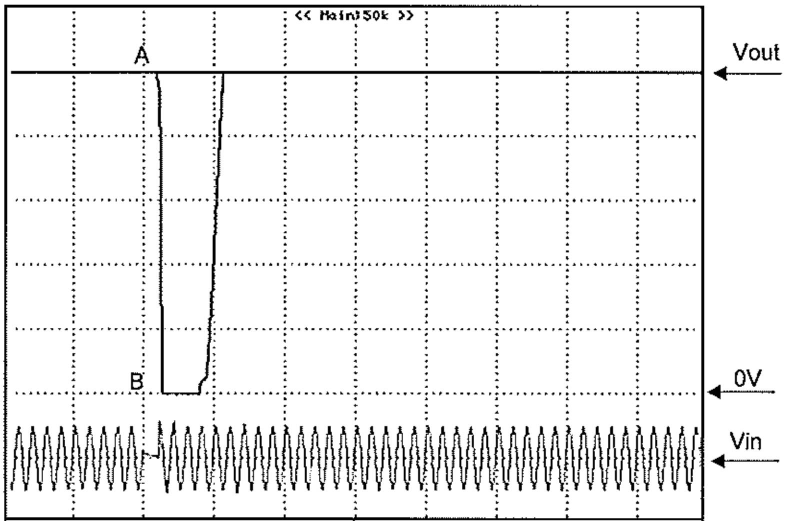
0.1A/DIV	20ms/DIV
8.65%	-7.52%

2.9 Response to brown-out characteristics

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

C.V mode

Z10-20



Vout: 2V/DIV	100ms/DIV

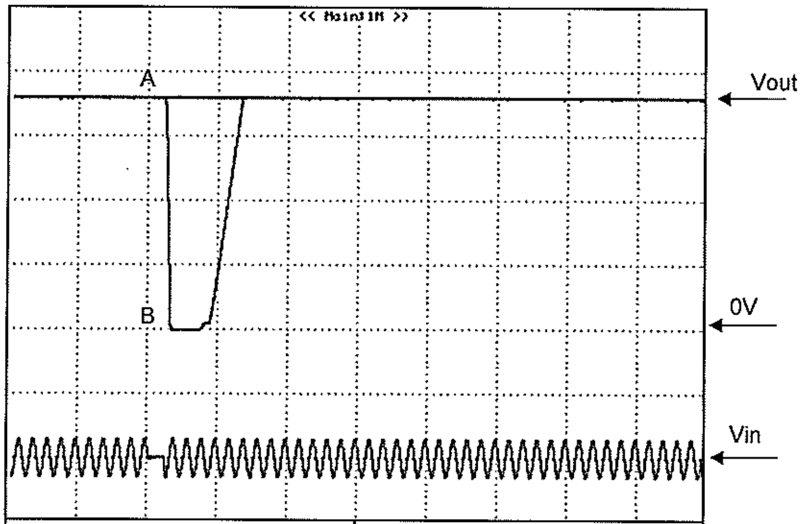
Brown-out time
A -17mS
B -24mS

2.9 Response to brown-out characteristics

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

C.V mode

Z36-6



Vout: 10V/DIV	100ms/DIV

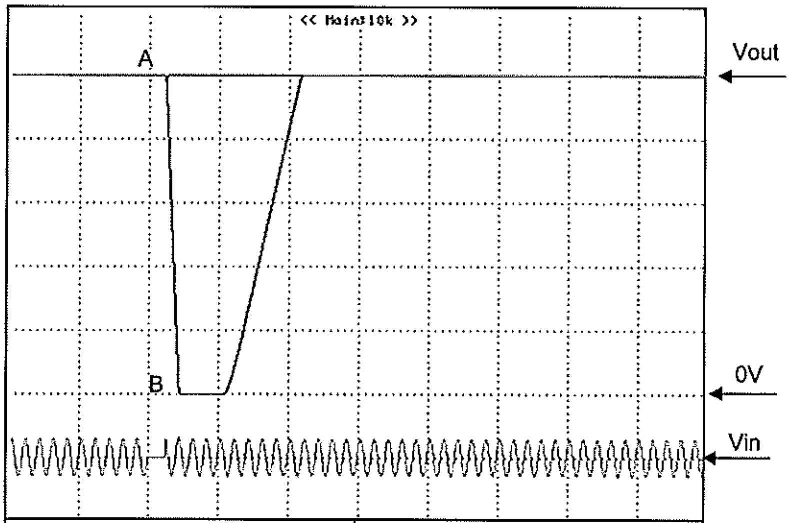
Brown-out time
A - 18ms
B - 22ms

2.9 Response to brown-out characteristics

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

C.V mode

Z100-2



Vout: 20V/DIV	100ms/DIV

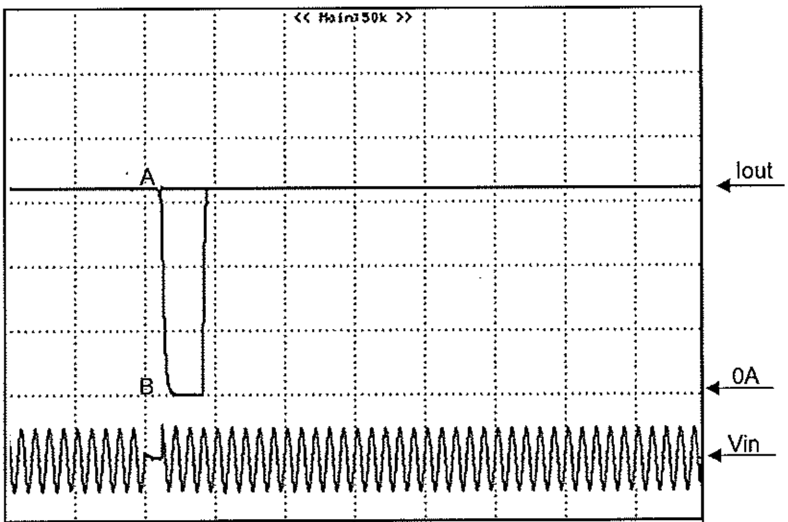
Brown-out time
A - 23ms
B - 24ms

2.9 Response to brown-out characteristics

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

C.C mode

Z10-20



Iout: 6A/DIV	100ms/DIV

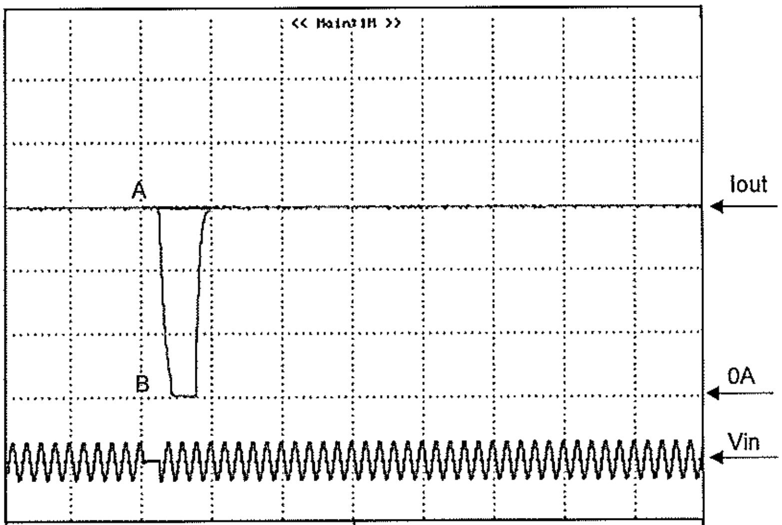
Brown-out time
A -20mS
B -23mS

2.9 Response to brown-out characteristics

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

C.C mode

Z36-6



Iout: $2^{A}/_{DIV}$	$100^{ms}/_{DIV}$

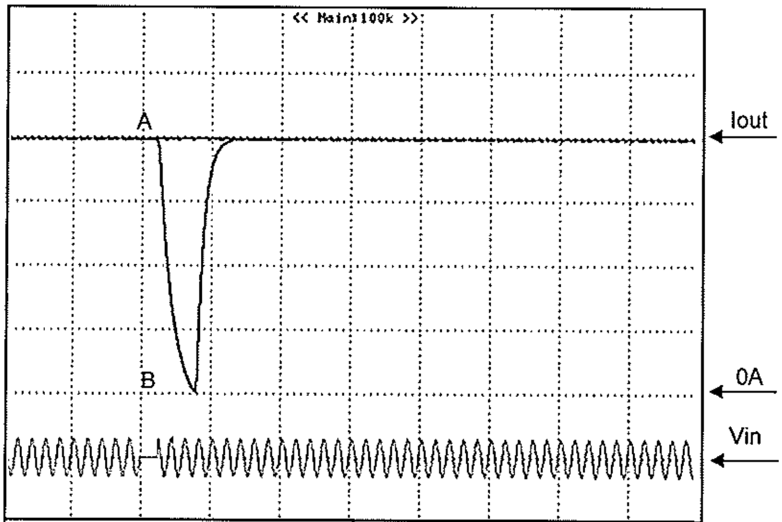
Brown-out time
A - 19ms
B - 23ms

2.9 Response to brown-out characteristics

C.C mode

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

Z100-2



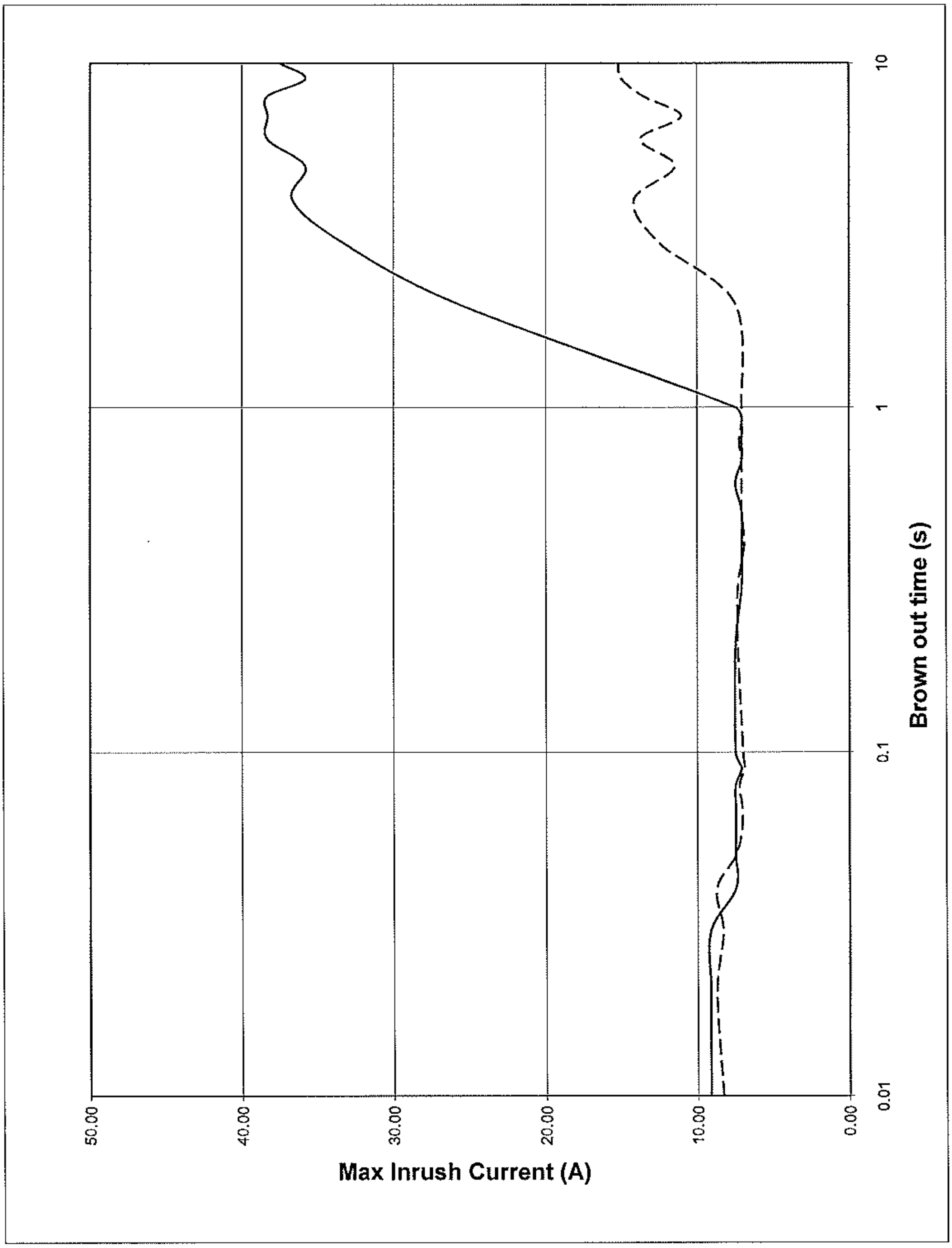
Iout: 0.5 A/DIV	100 ms/DIV

Brown-out time
A - 23ms
B - 24ms

2.10 Inrush Current Characteristics during line brown outs

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

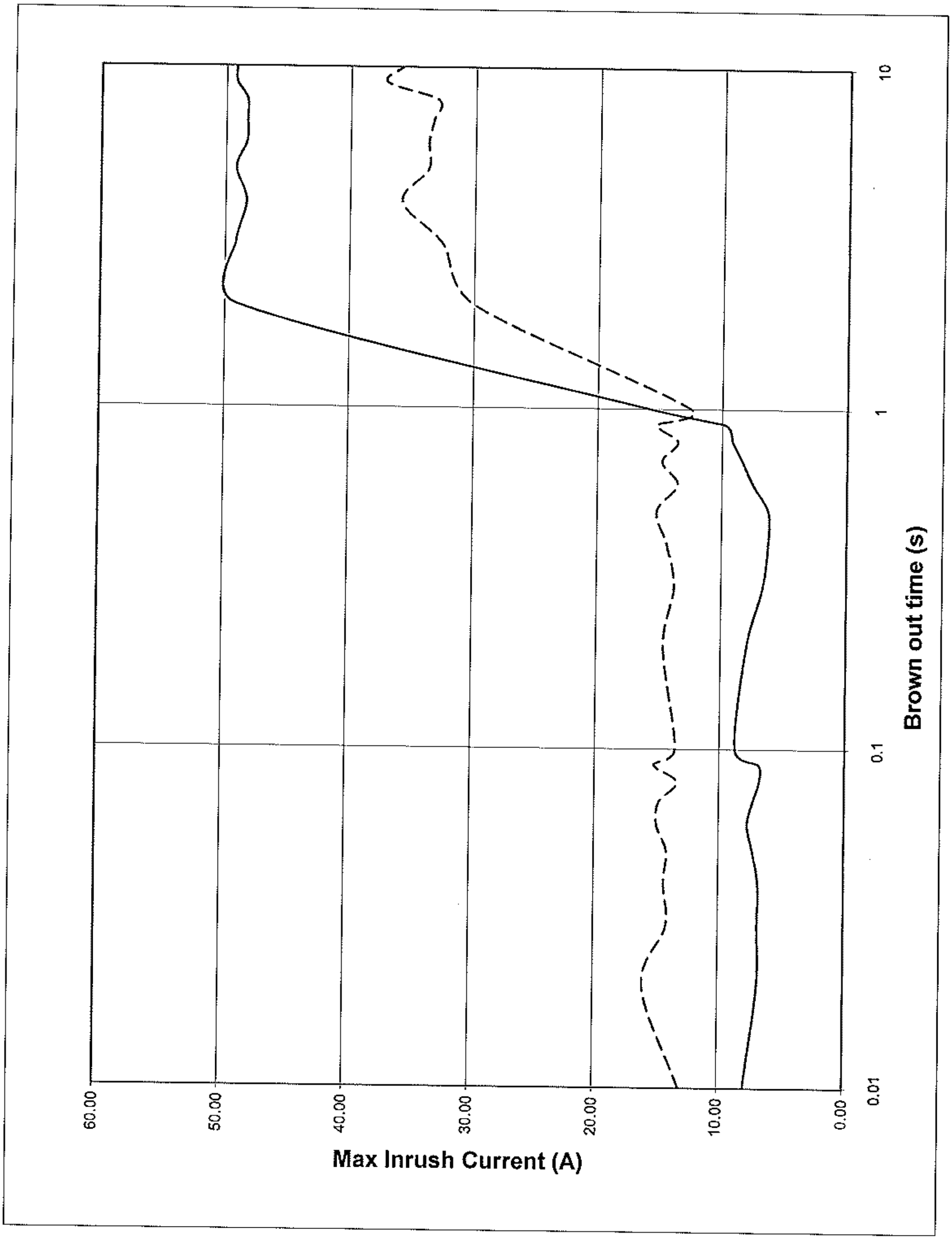
Z10-20



2.10 Inrush Current Characteristics during line brown outs

Conditions: Vin: 200VAC
Vout: 100%
Iout: 0% ----------
Iout: 100% ———
Ta = 25°C

Z10-20



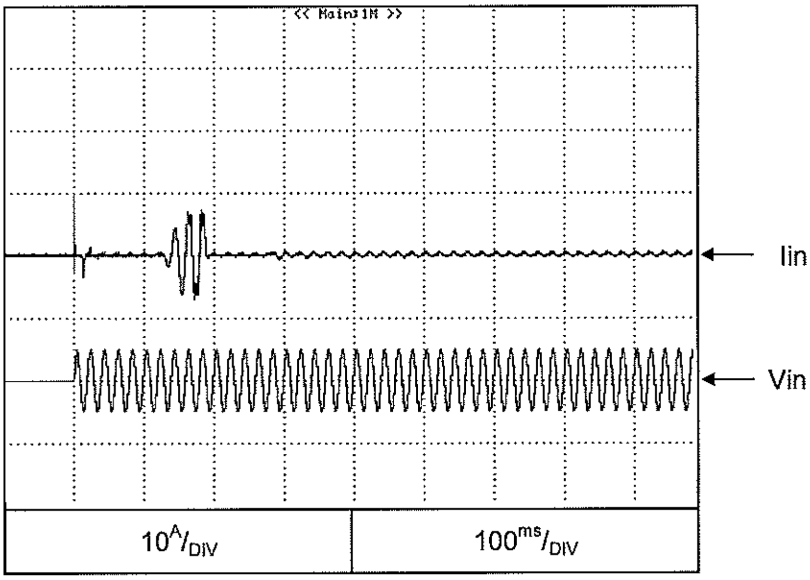
2.11 Inrush current waveform

Conditions: Vin: 100V
Vout: 100%
Iout: 100%
Ta = 25°C

Z10-20

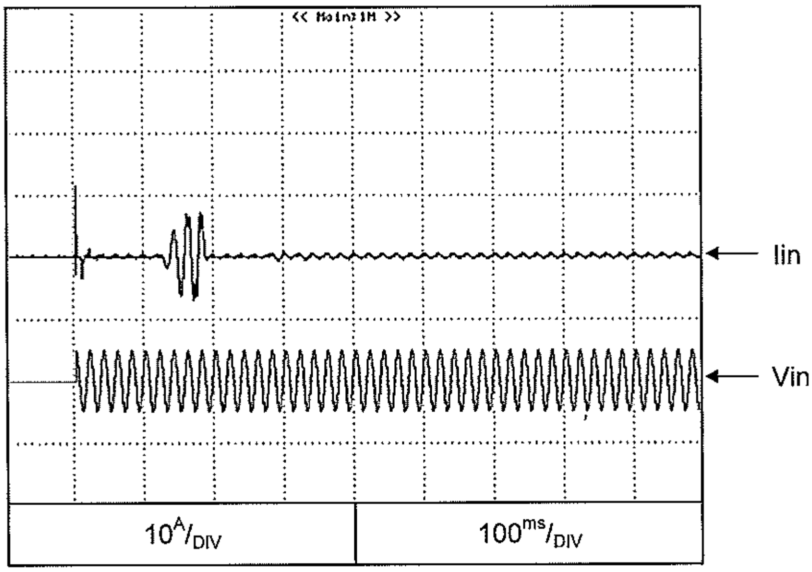
Switch on phase angle of input AC voltage

Φ=0°



Switch on phase angle of input AC voltage

Φ=90°



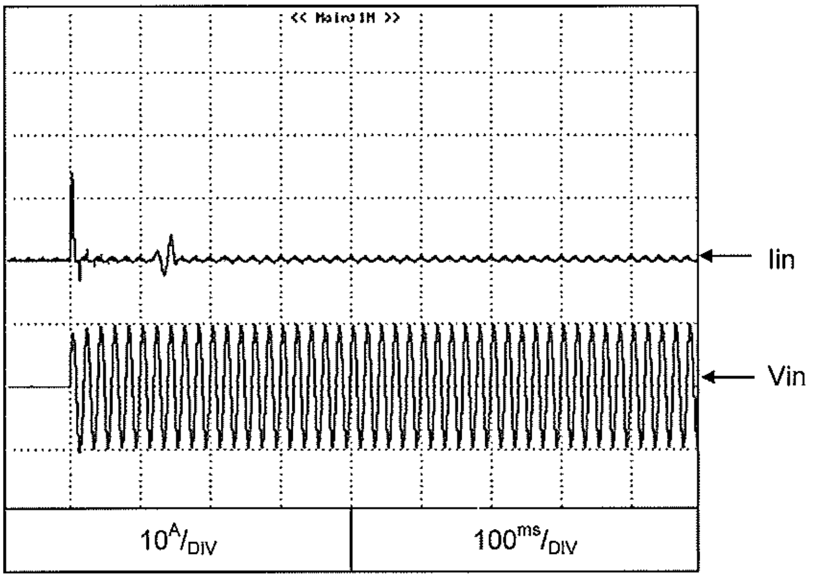
2.11 Inrush current waveform

Conditions: Vin: 200V
Vout: 100%
Iout: 100%
Ta = 25°C

Z10-20

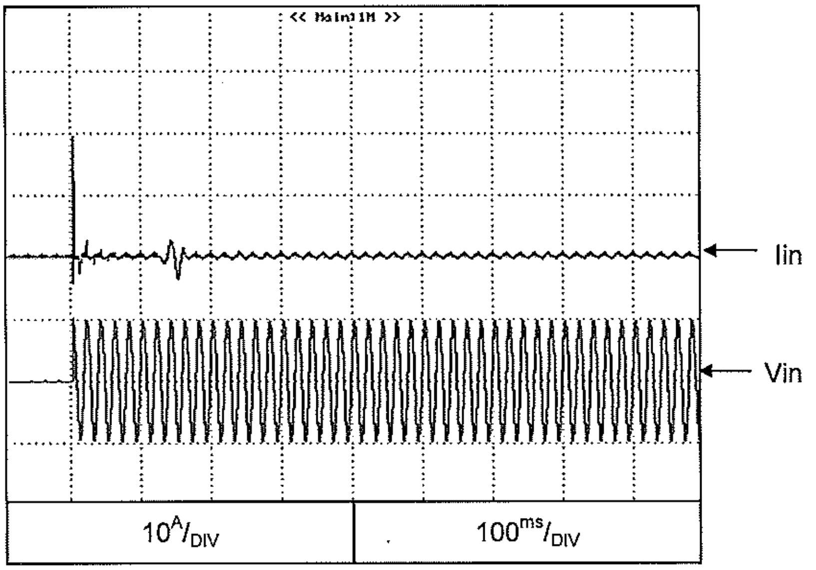
Switch on phase angle of input AC voltage

Φ=0°



Switch on phase angle of input AC voltage

Φ=90°



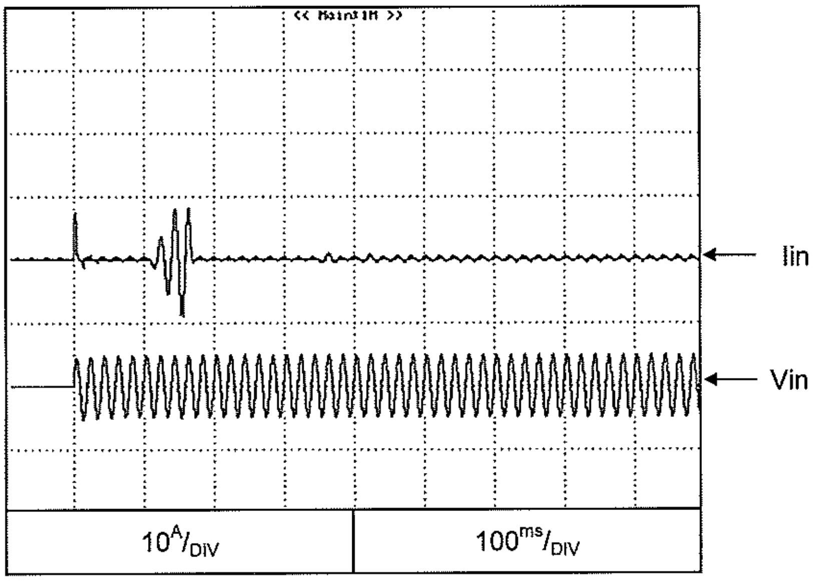
2.11 Inrush current waveform

Conditions: Vin: 100V
Vout: 100%
Iout: 100%
Ta = 25°C

Z100-2

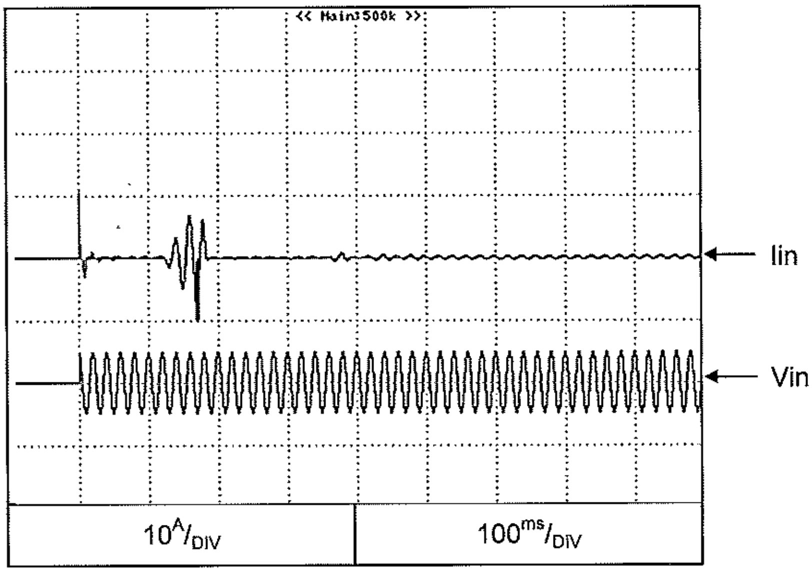
Switch on phase angle of input AC voltage

Φ=0°



Switch on phase angle of input AC voltage

Φ=90°



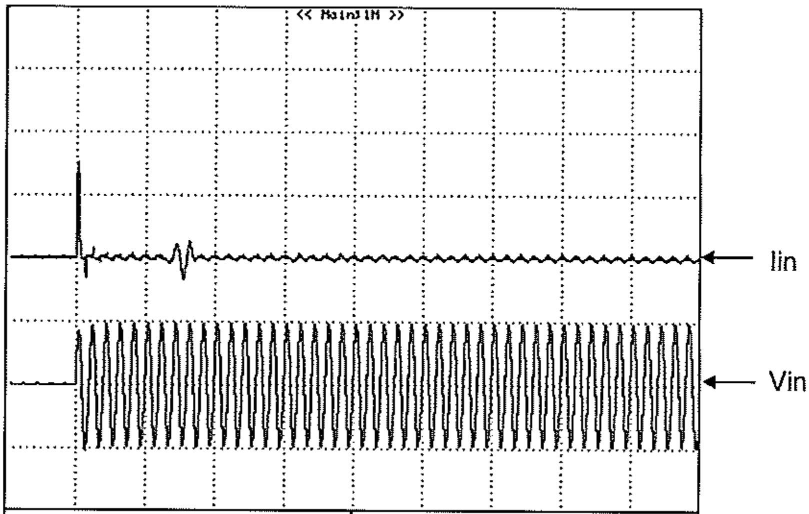
2.11 Inrush current waveform

Conditions: Vin: 200V
Vout: 100%
Iout: 100%
Ta = 25°C

Z100-2

Switch on phase angle of input AC voltage

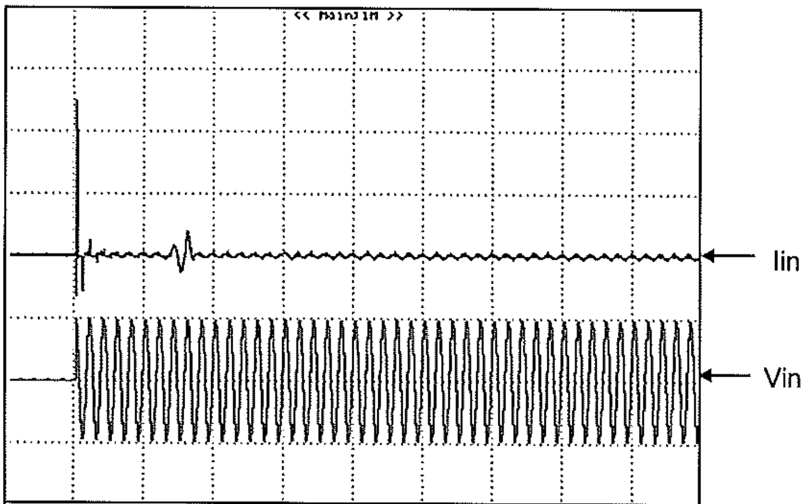
Φ=0°



$10^{A}/_{DIV}$	$100^{ms}/_{DIV}$

Switch on phase angle of input AC voltage

Φ=90°

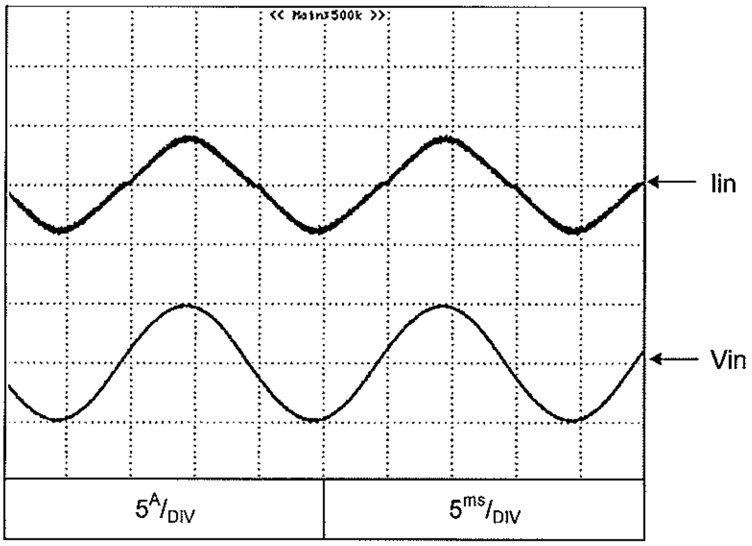


$10^{A}/_{DIV}$	$100^{ms}/_{DIV}$

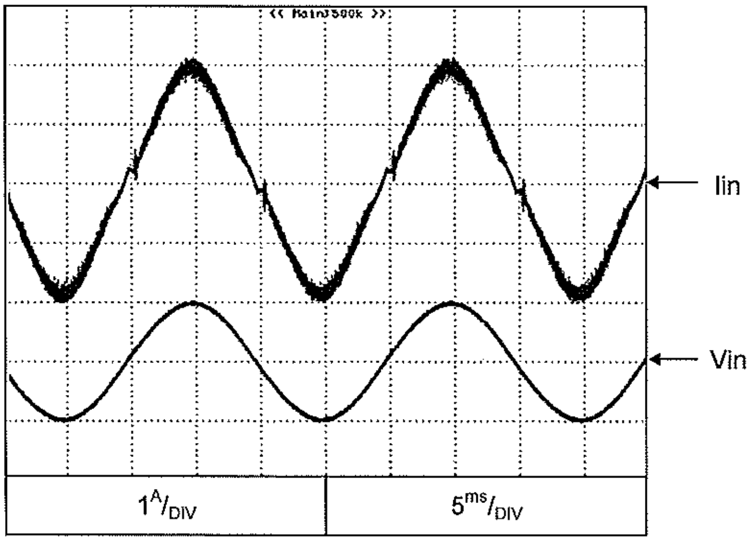
2.12 Input current waveform

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

Z10-20



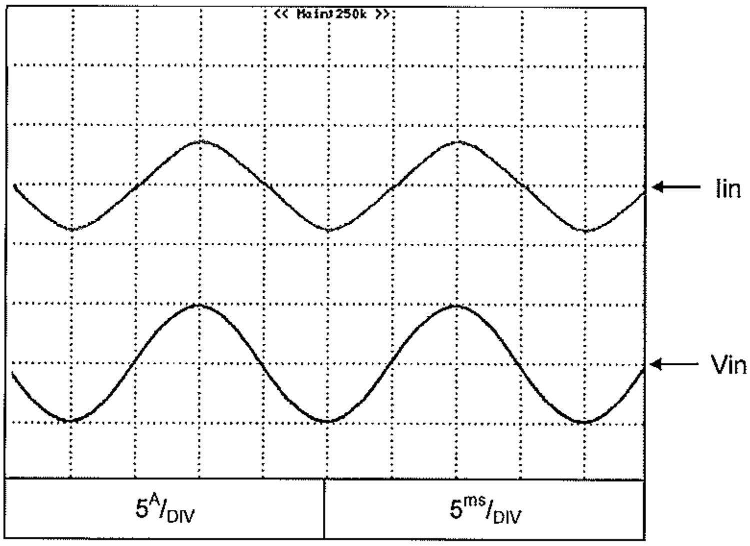
Conditions: Vin: 200VAC
Vout: 100%
Iout: 100%
Ta = 25°C



2.12 Input current waveform

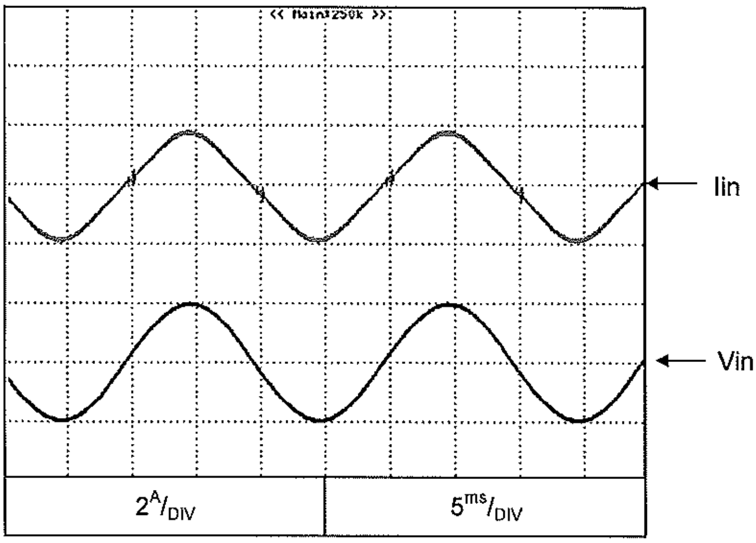
Conditions: Vin: 100VAC
Vout: 100%
Iout: 100%
Ta = 25°C

Z100-2



Conditions: Vin: 200VAC
Vout: 100%
Iout: 100%
Ta = 25°C

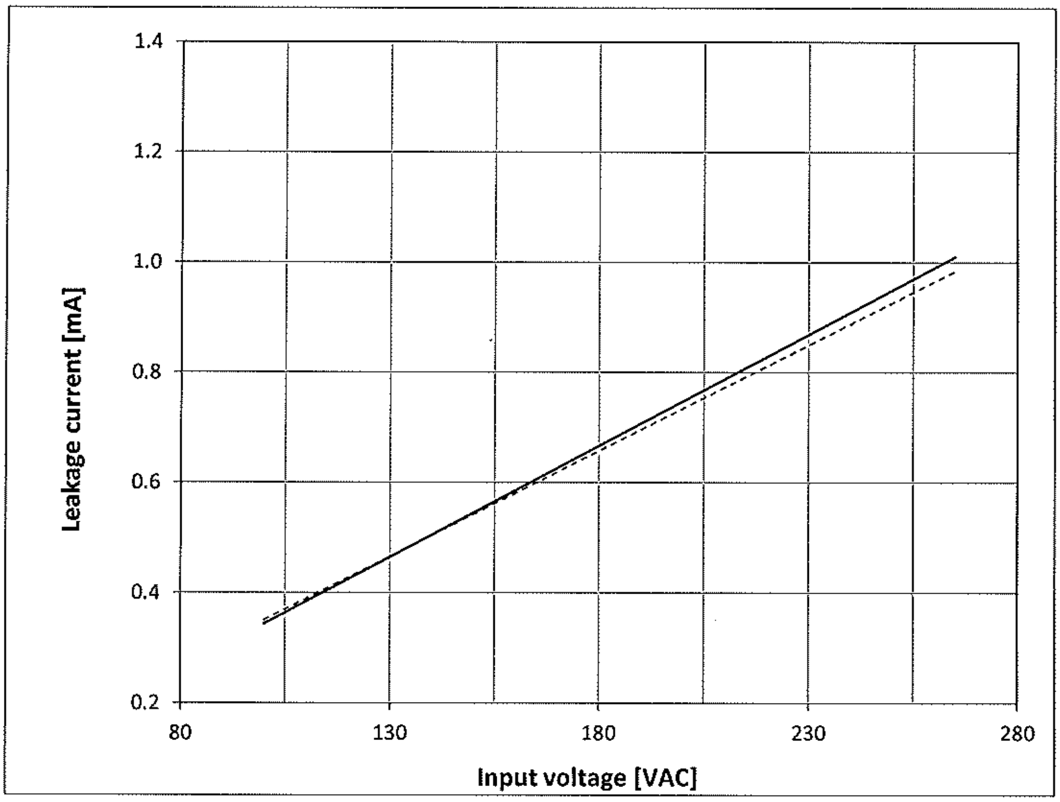
Z100-2



2.13 Leakage current characteristics

Conditions: Vin: 100~265Vac
Iout: 0% - - - - -
Iout:100% ———
Ta = 25°C
f=50HZ

Z36-6



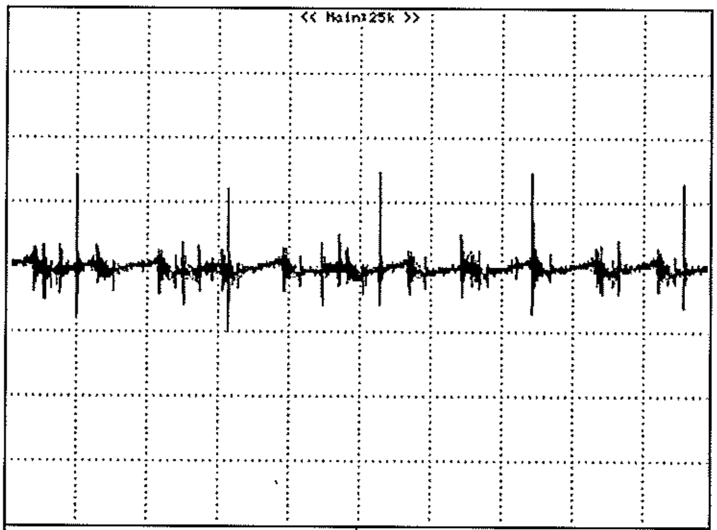
2.14 Output voltage ripple & noise waveform

C.V mode

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

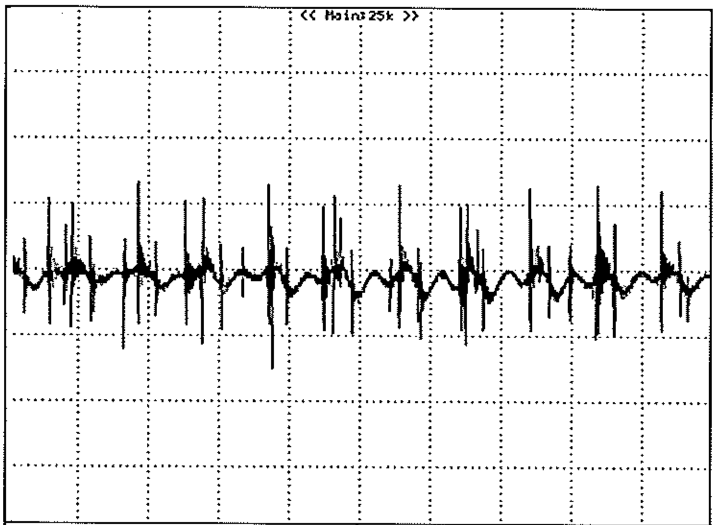
Normal Mode

Z10-20



$10^{mV}/_{DIV}$	$5^{us}/_{DIV}$

Z36-6



$5^{mV}/_{DIV}$	$5^{us}/_{DIV}$

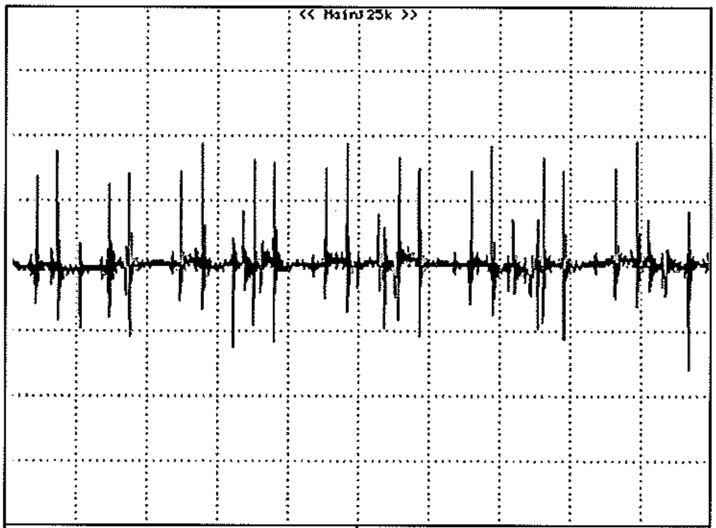
2.14 Output voltage ripple & noise waveform

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

C.V mode

Normal Mode

Z100-2



5 mV/DIV	5 us/DIV