GENESYS™ 1kW

EVALUATION DATA

DWG: IA881-53-01		
APPD	CHK	DWG
31/05/20	31.05.2020	Michael Goldsberg 31/05/2020

TDK-LAMBDA

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TERMINOLOGY USED

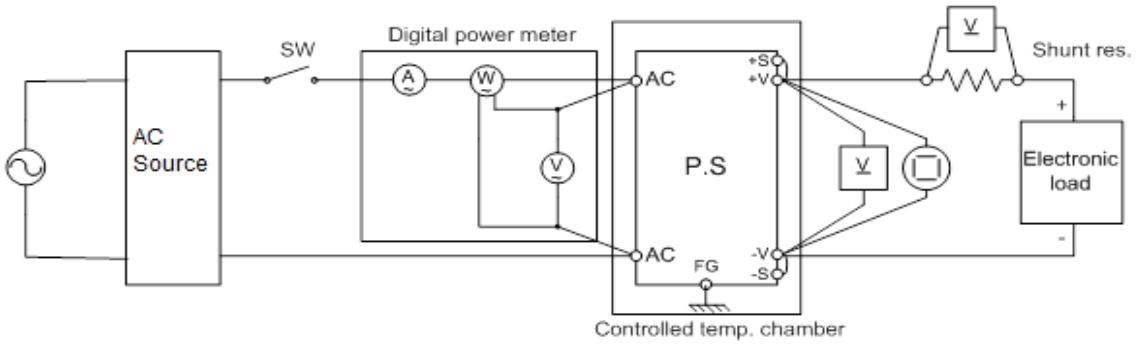
Definition

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

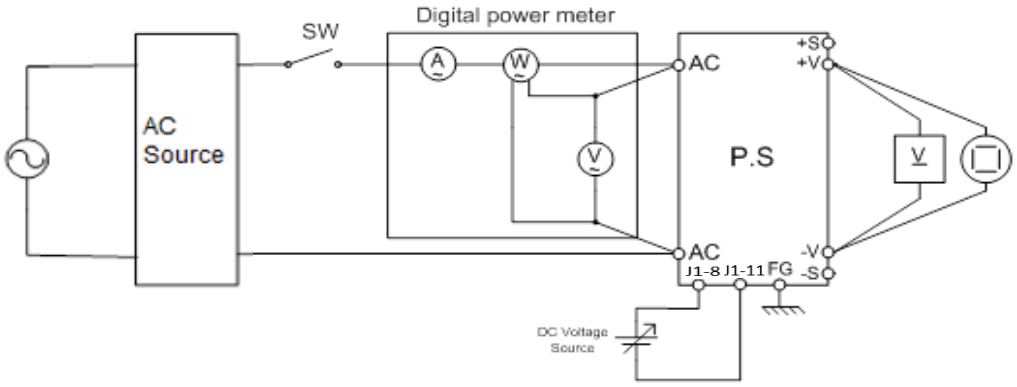
1. EVALUATION METHOD

1.1 Circuit used for determination

(1) Steady state data

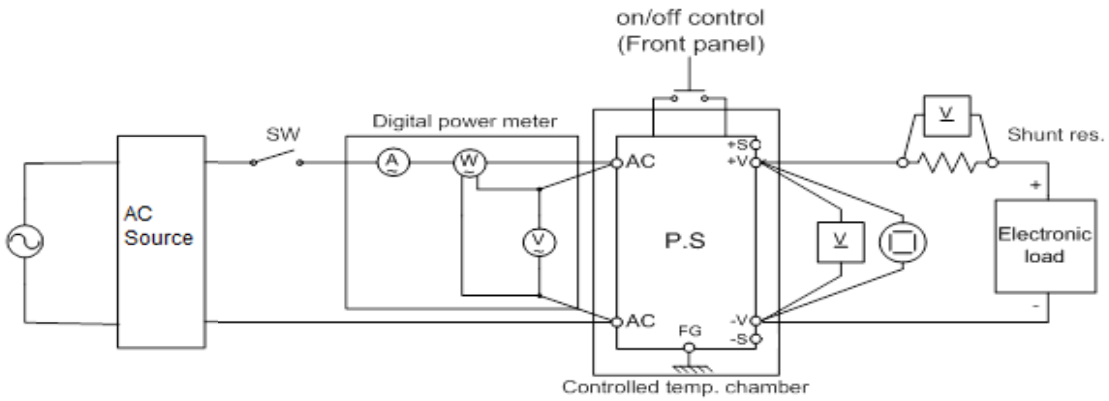


(2) Over voltage protection (OVP) characteristics

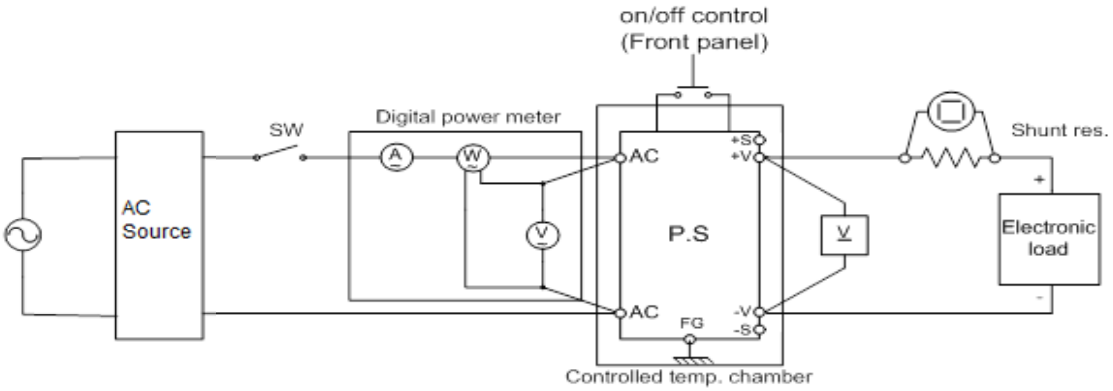


(3) Output rise/fall characteristics

Constant Voltage mode

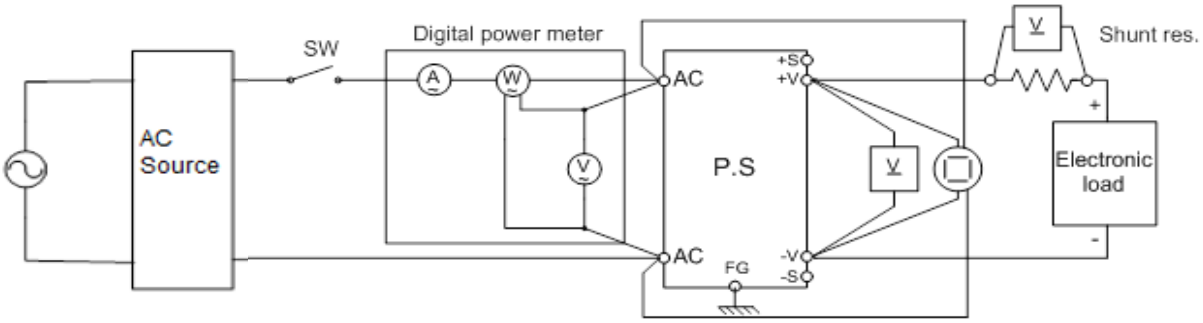


Constant Current mode

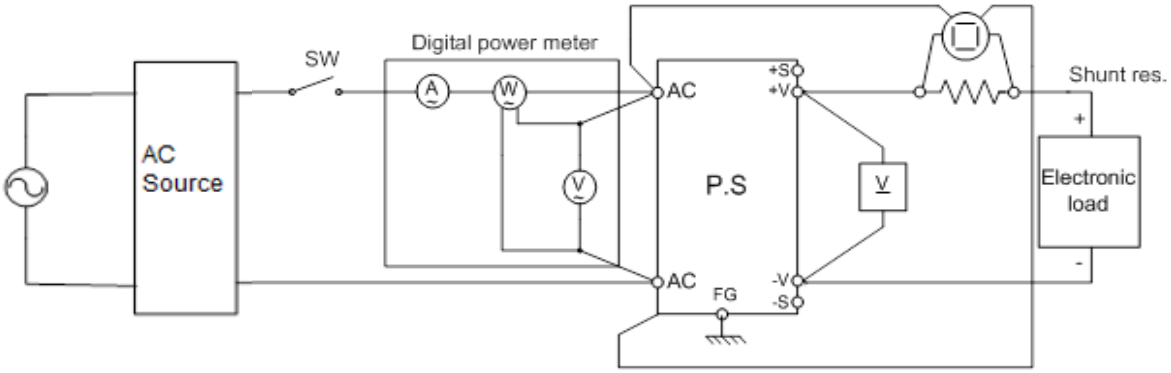


(4) Dynamic line response characteristics

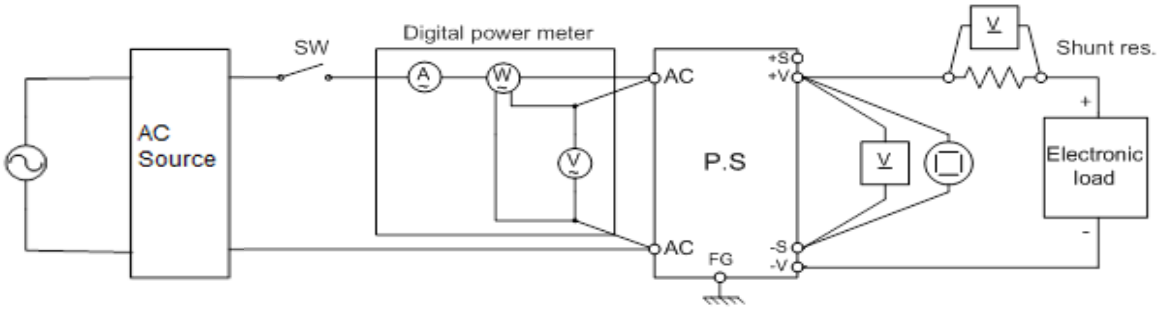
Constant Voltage mode



Constant Current mode

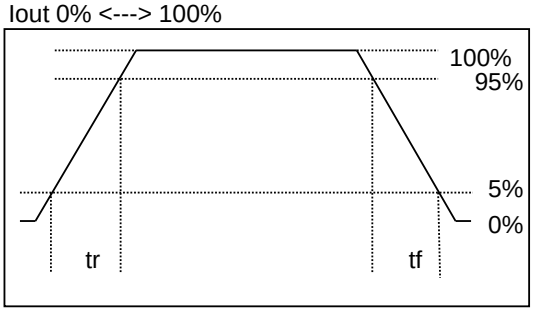


(5) Dynamic load response characteristics



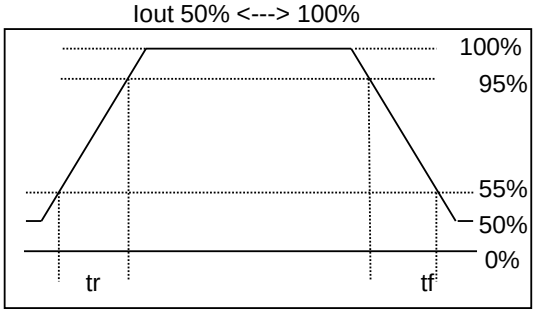
Output current waveform

Iout 0% <---> 100%



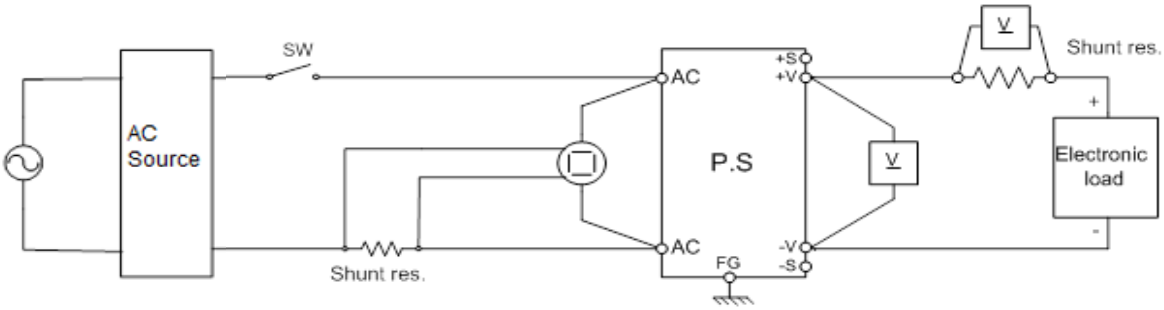
Output current waveform

Iout 50% <---> 100%

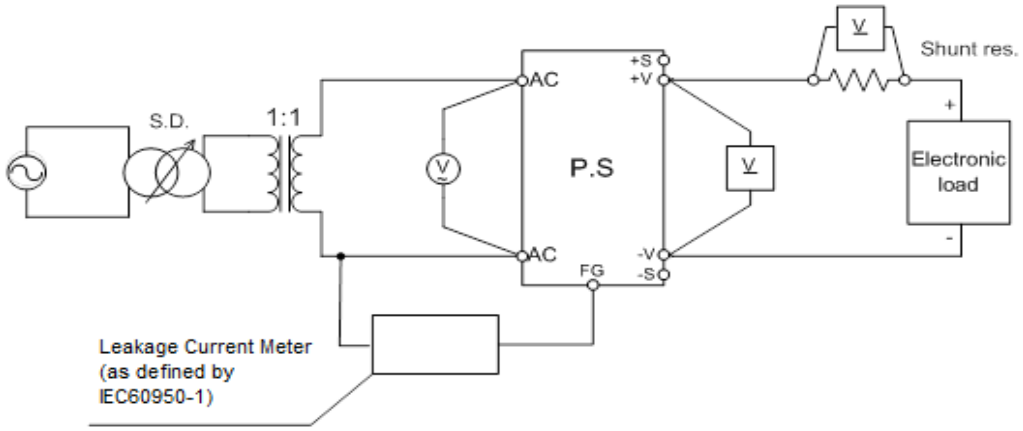


(6) Inrush current characteristics

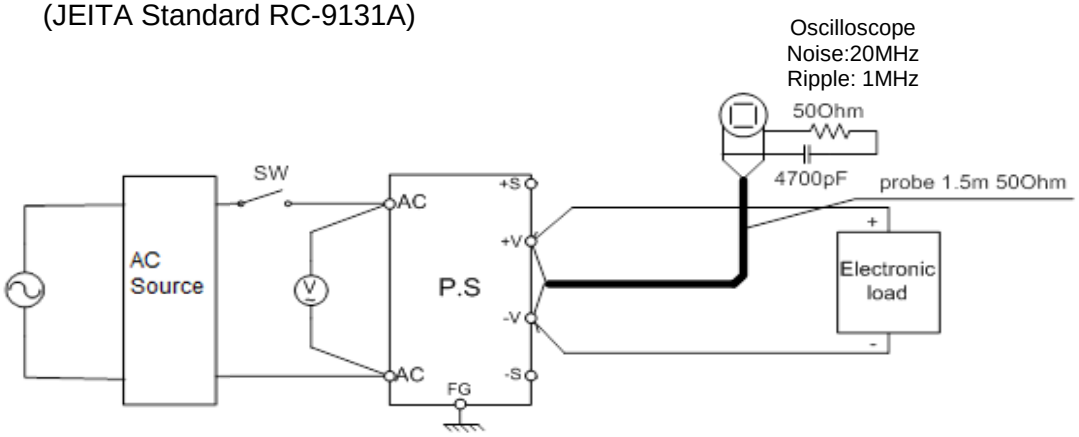
Constant Voltage mode



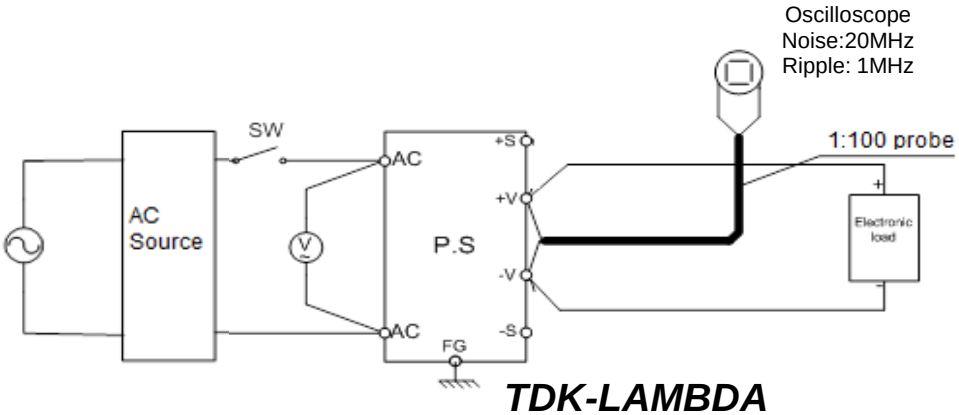
(7) Leakage current characteristics



(8) Output ripple & noise waveform (10V to 150V models)
(JEITA Standard RC-9131A)



(9) Output ripple & noise waveform (300V to 600V models)



1.2 List of equipment used

	EQUIPMENT USED	MANUFACTURER	MODEL No.
1	Storage oscilloscope	YOKOGAWA	DLM2034
2	Storage oscilloscope	YOKOGAWA	DL1740
3	Digital multimeter	AGILENT	34401A
4	Digital power meter	YOKOGAWA	WT110
5	AC Source	CHROMA	6530
6	AC Source	CHROMA	6560
7	Electronic load	H&H	ZS1880
8	Electronic load	H&H	ZS4260
9	Electronic load	H&H	ZS7060
10	Electronic load	CHROMA	63201
11	Electronic load	CHROMA	63202
12	Electronic load	CHROMA	63206A
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	Current probe	YOKOGAWA	701931
18	Transducer	LEM	IT700-SB
19	Transducer	LEM	IT60-S
20	Transducer	LEM	IT200-S

(1). Regulation - Line & Load, Temperature drift

G10-100

Conditions: Ta = 25°C

1. Regulation - Line & Load

	Vin							
Io	85VAC	100VAC	115VAC	200VAC	230VAC	265VAC	Line Regulation	
0%	10.0000	10.0000	10.0000	10.0000	10.0000	10.0000	0.0	0.000%
25%	9.9997	9.9997	9.9997	9.9997	9.9997	9.9997	0.0	0.000%
50%	9.9995	9.9995	9.9995	9.9995	9.9995	9.9995	0.0	0.000%
75%	9.9993	9.9993	9.9993	9.9993	9.9993	9.9993	0.0	0.000%
100%	9.9991	9.9991	9.9991	9.9991	9.9991	9.9991	0.0	0.000%
Load	0.9	0.9	0.9	0.9	0.9	0.9	ΔV(mV)	
Regulation	0.009%	0.009%	0.009%	0.009%	0.009%	0.009%		

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	9.9990	9.9987	9.9983	0.7	mV	1	ppm/˚C

G60-17

Conditions: Ta = 25°C

1. Regulation - Line & Load, C.V mode /

	Vin							
Io	85VAC	100VAC	115VAC	200VAC	230VAC	265VAC	Line Regulation	
0%	59.9981	59.9982	59.9982	59.9980	59.9981	59.9983	0.3	0.001%
25%	59.9978	59.9979	59.9977	59.9978	59.9976	59.9978	0.3	0.001%
50%	59.9977	59.9976	59.9978	59.9977	59.9978	59.9977	0.2	0.000%
75%	59.9976	59.9977	59.9976	59.9977	59.9975	59.9976	0.2	0.000%
100%	59.9974	59.9974	59.9975	59.9975	59.9974	59.9974	0.1	0.000%
Load	0.7	0.8	0.7	0.5	0.7	0.9	ΔV(mV)	
Regulation	0.001%	0.001%	0.001%	0.001%	0.001%	0.002%		

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	59.9921	59.9994	60.0037	11.6	mV	4	ppm/˚C

(1). Regulation - Line & Load, Temperature drift

G150-7

Conditions: Ta = 25°C

1. Regulation - Line & Load

	Vin							
Io	85VAC	100VAC	115VAC	200VAC	230VAC	265VAC	Line Regulation	
0%	150.0023	150.0023	150.0026	150.0022	150.0026	150.0024	0.4	0.000%
25%	150.0018	150.0020	150.0018	150.0017	150.0016	150.0017	0.4	0.000%
50%	150.0015	150.0015	150.0018	150.0019	150.0015	150.0016	0.4	0.000%
75%	150.0017	150.0015	150.0017	150.0017	150.0017	150.0017	0.2	0.000%
100%	150.0016	150.0018	150.0014	150.0014	150.0017	150.0015	0.4	0.000%
Load	0.8	0.8	1.2	0.8	1.1	0.9	ΔV(mV)	
Regulation	0.001%	0.001%	0.001%	0.001%	0.001%	0.001%		

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	149.985	149.989	149.980	9	mV	1	ppm/˚C

G600-1.7

Conditions: Ta = 25°C

1. Regulation - Line & Load, C.V mode /

	Vin							
Io	85VAC	100VAC	115VAC	200VAC	230VAC	265VAC	Line Regulation	
0%	599.8873	599.8856	599.8838	599.8810	599.8792	599.8778	9.5	0.002%
25%	599.8719	599.8710	599.8704	599.8704	599.8684	599.8676	4.3	0.001%
50%	599.8663	599.8662	599.8646	599.8649	599.8639	599.8633	3.0	0.001%
75%	599.8632	599.8616	599.8619	599.8641	599.8626	599.8634	2.5	0.000%
100%	599.8643	599.8625	599.8630	599.8666	599.8654	599.8648	4.1	0.001%
Load	24.1	24.0	21.9	16.9	16.6	14.5	ΔV(mV)	
Regulation	0.004%	0.004%	0.004%	0.003%	0.003%	0.002%		

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	599.9790	599.9950	599.9770	18	mV	1	ppm/˚C

(1). Regulation - Line & Load, Temperature drift

G10-100

Conditions: Ta = 25°C

1. Regulation - Line & Load, C.C mode (*)

	Vin							
Vo	85VAC	100VAC	115VAC	200VAC	230VAC	265VAC	Line Regulation	
0%	99.9522	99.9494	99.9486	99.9522	99.9484	99.9479	4.3	0.004%
25%	99.9484	99.9449	99.9445	99.9467	99.9454	99.9464	3.9	0.004%
50%	99.9410	99.9377	99.9378	99.9400	99.9374	99.9381	3.6	0.004%
75%	99.9418	99.9401	99.9400	99.9410	99.9386	99.9386	3.2	0.003%
100%	99.9434	99.9404	99.9406	99.9415	99.9392	99.9391	4.3	0.004%
Load	11.2	11.7	10.8	12.2	11.0	9.8	ΔI(mA)	
Regulation	0.011%	0.012%	0.011%	0.012%	0.011%	0.010%		

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	99.991	99.993	99.992	2	mA	0.4	ppm/˚C

G60-17

1. Regulation - Line & Load, C.C mode (*)

	Vin							
Vo	85VAC	100VAC	115VAC	200VAC	230VAC	265VAC	Line Regulation	
0%	16.9910	16.9909	16.9910	16.9908	16.9907	16.9907	0.3	0.002%
25%	16.9915	16.9916	16.9915	16.9914	16.9912	16.9912	0.4	0.002%
50%	16.9923	16.9920	16.9922	16.9920	16.9921	16.9920	0.3	0.002%
75%	16.9925	16.9925	16.9925	16.9928	16.9927	16.9925	0.3	0.002%
100%	16.9923	16.9922	16.9921	16.9921	16.9921	16.9921	0.2	0.001%
Load	1.5	1.6	1.5	2.0	2.0	1.8	ΔI(mA)	
Regulation	0.009%	0.009%	0.009%	0.012%	0.012%	0.011%		

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	16.968	16.976	16.994	26.0	mA	31	ppm/˚C

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

(1). Regulation - Line & Load, Temperature drift

G150-7

Conditions: Ta = 25°C

1. Regulation - Line & Load, C.C mode (*)

	Vin							
Vo	85VAC	100VAC	115VAC	200VAC	230VAC	265VAC	Line Regulation	
0%	6.9907	6.9907	6.9907	6.9906	6.9905	6.9905	0.2	0.003%
25%	6.9910	6.9909	6.9909	6.9908	6.9908	6.9908	0.2	0.003%
50%	6.9914	6.9914	6.9913	6.9912	6.9912	6.9912	0.2	0.003%
75%	6.9916	6.9915	6.9916	6.9915	6.9914	6.9915	0.2	0.003%
100%	6.9915	6.9915	6.9915	6.9914	6.9914	6.9914	0.1	0.001%
Load	0.9	0.8	0.9	0.9	0.9	1.0	ΔI(mA)	
Regulation	0.013%	0.011%	0.013%	0.013%	0.013%	0.014%		

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	6.993	6.997	7.005	11.2	mA	32	ppm/˚C

G600-1.7

1. Regulation - Line & Load, C.C mode (*)

	Vin							
Vo	85VAC	100VAC	115VAC	200VAC	230VAC	265VAC	Line Regulation	
0%	1.698	1.698	1.698	1.698	1.698	1.698	0.2	0.012%
25%	1.697	1.697	1.697	1.698	1.698	1.698	0.1	0.006%
50%	1.698	1.698	1.698	1.698	1.698	1.698	0.0	0.000%
75%	1.698	1.698	1.698	1.698	1.698	1.698	0.0	0.000%
100%	1.698	1.698	1.698	1.698	1.698	1.698	0.0	0.000%
Load	0.2	0.2	0.2	0.1	0.2	0.1	ΔI(mA)	
Regulation	0.012%	0.012%	0.012%	0.006%	0.012%	0.006%		

2. Temperature drift, C.C mode

Conditions: Vin:100VAC
Iout:100%

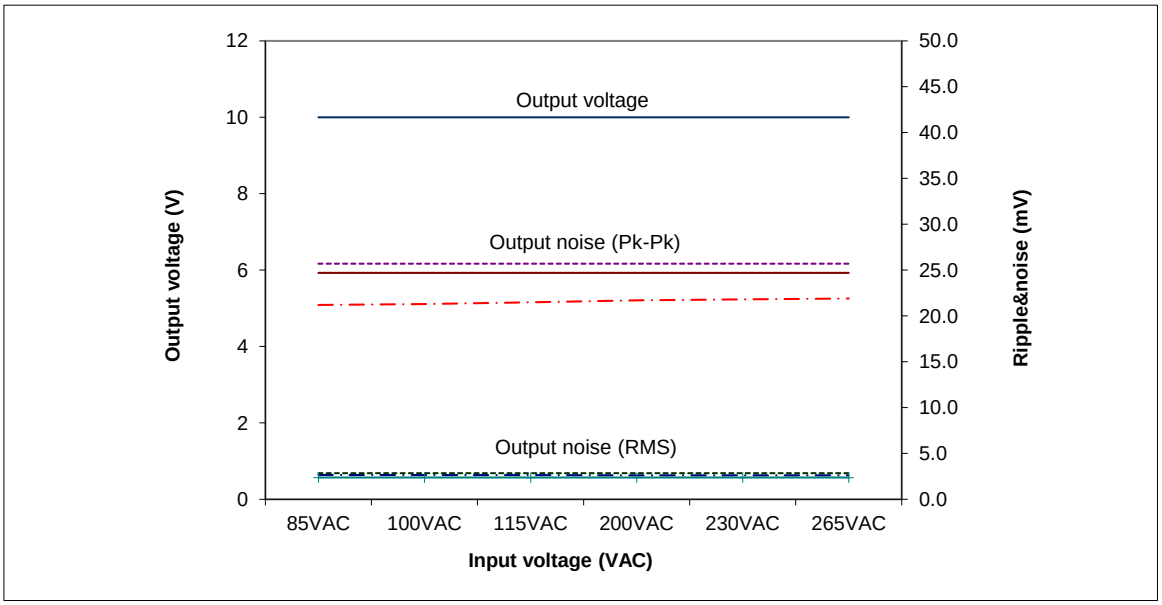
Ta	0°C	25°C	50°C	Temp. Coefficient (0˚C~50˚C)			
Iout	1.6993	1.6995	1.7001	0.8	mA	9	ppm/˚C

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

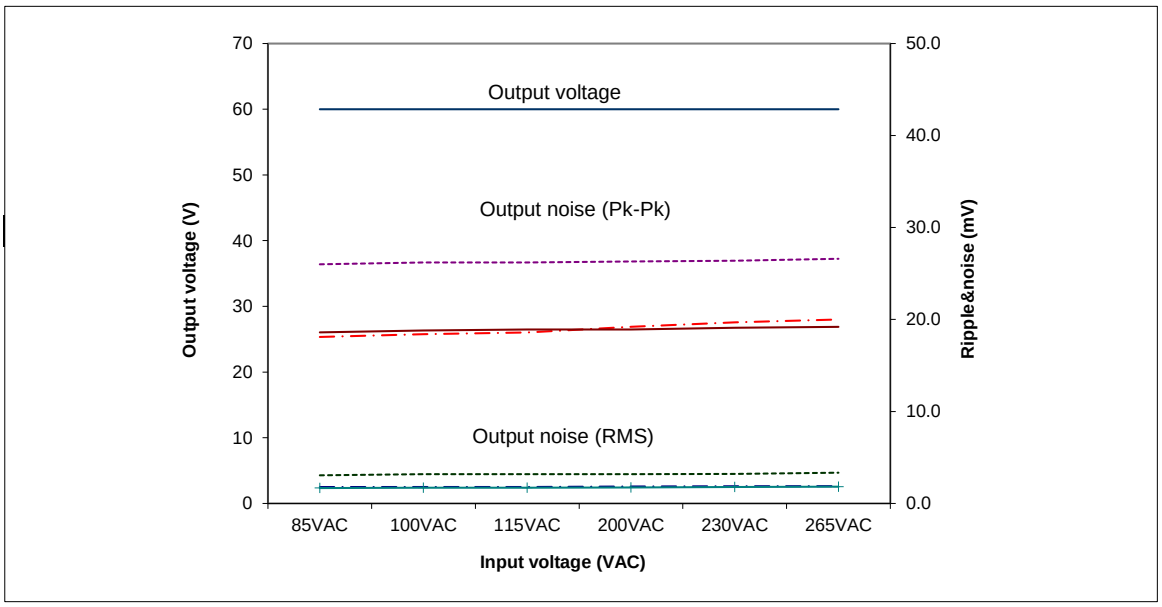
(2). Output voltage and ripple voltage vs. input voltage
C.V mode

Conditions: Iout:100%
Ta: 0˚C
25˚C
50˚C

G10-100



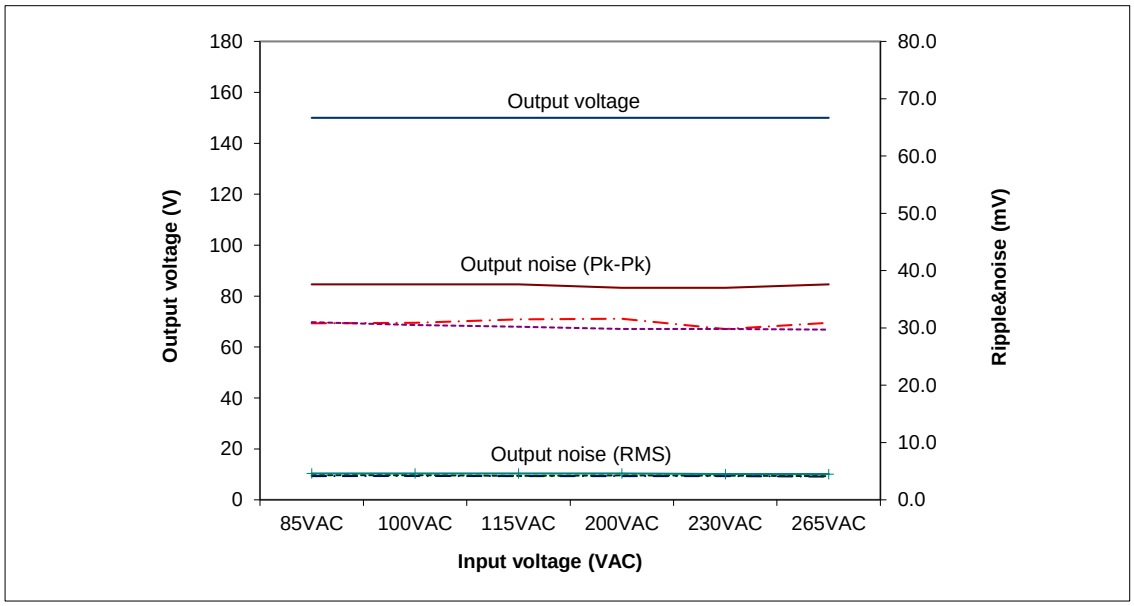
G60-17



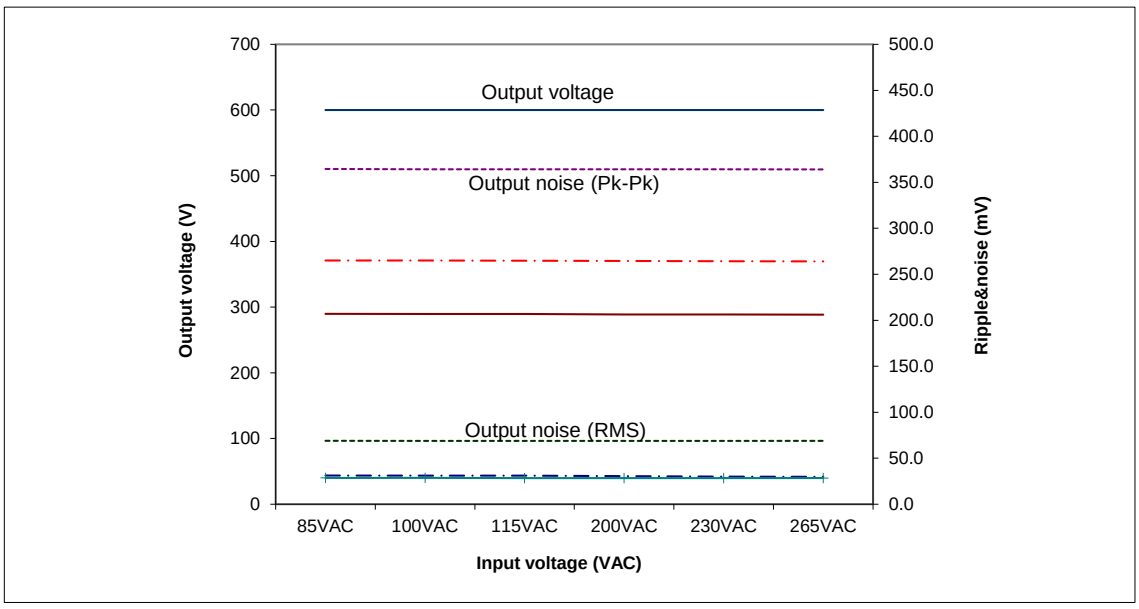
(2). Output voltage and ripple voltage vs. input voltage
C.V mode

Conditions: Iout:100%
Ta: 0˚C
25˚C
50˚C

G150-7



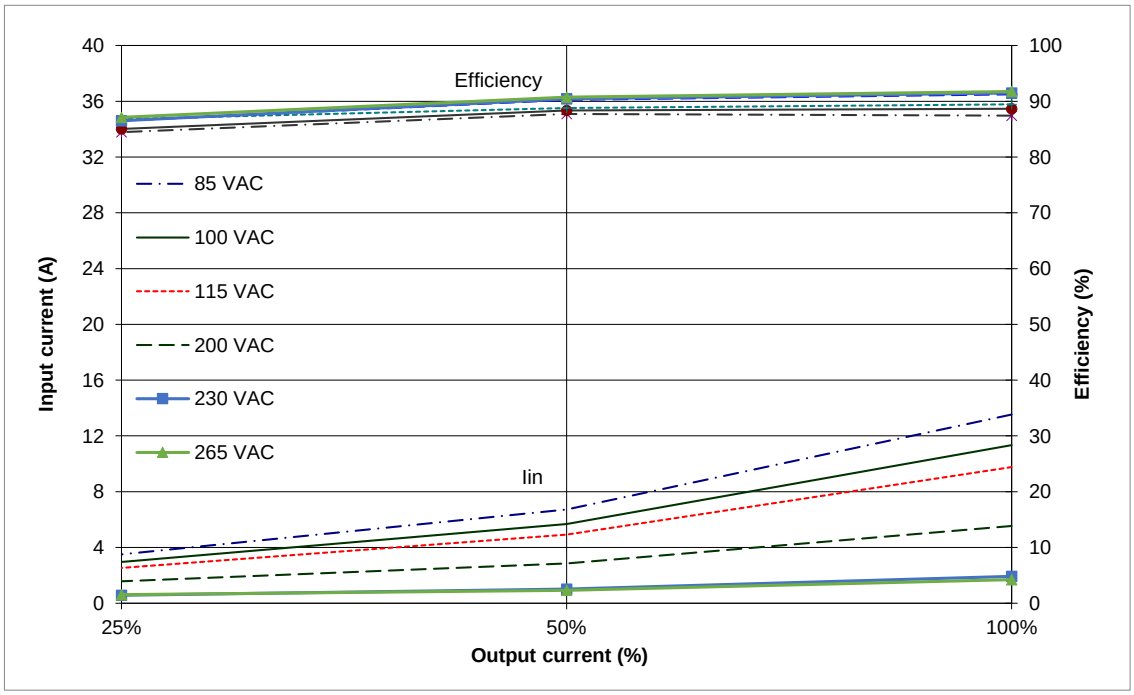
G600-1.7



(3). Efficiency and Input current vs. Output current

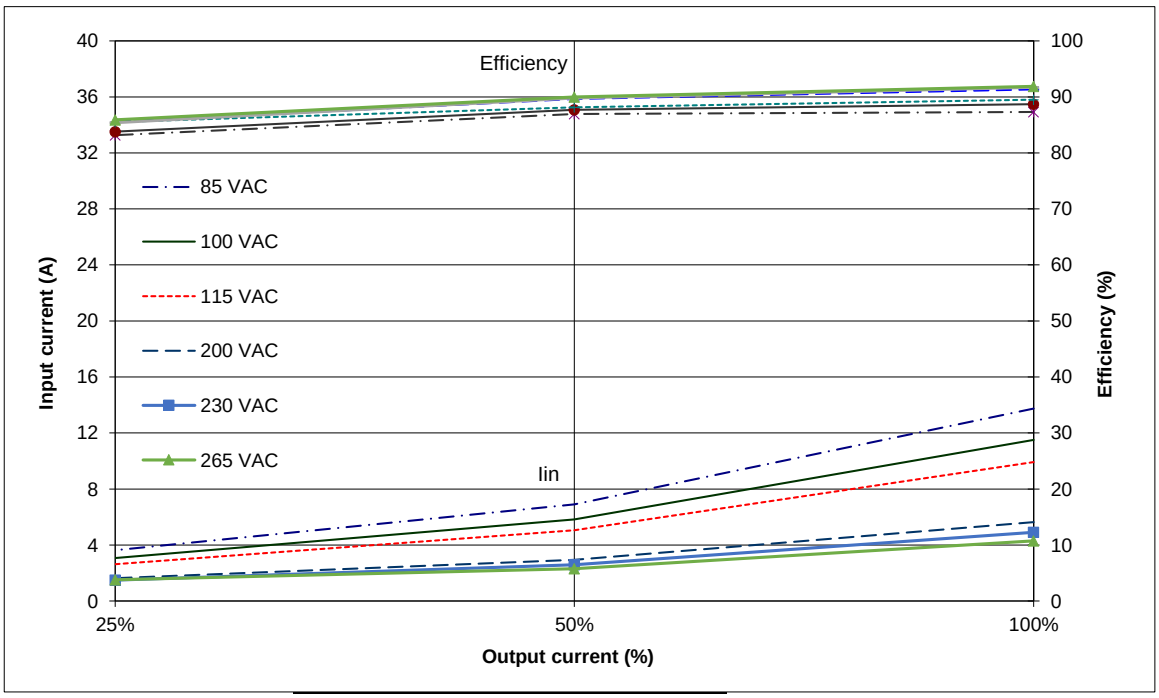
Conditions:
Vin: 85~265 VAC
Vout:100%
Ta:25˚C

G10-100



Conditions:
Vin: 85~265 VAC
Vout:100%
Ta:25˚C

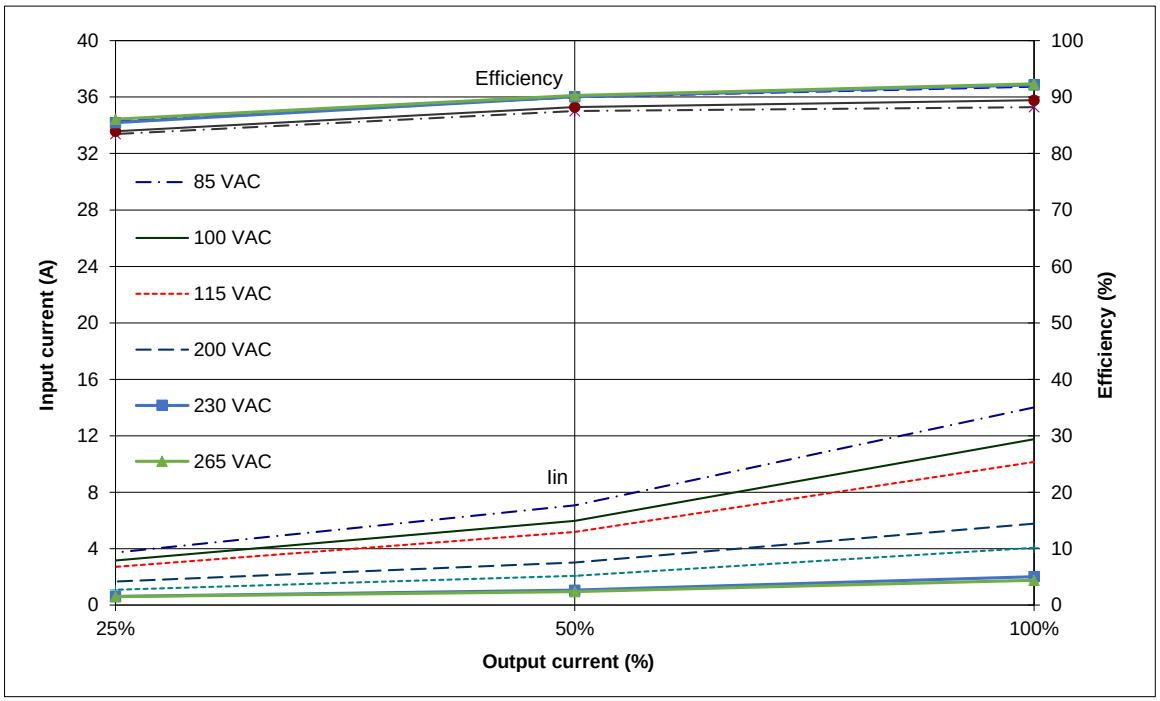
G60-17



(3). Efficiency and Input current vs. Output current

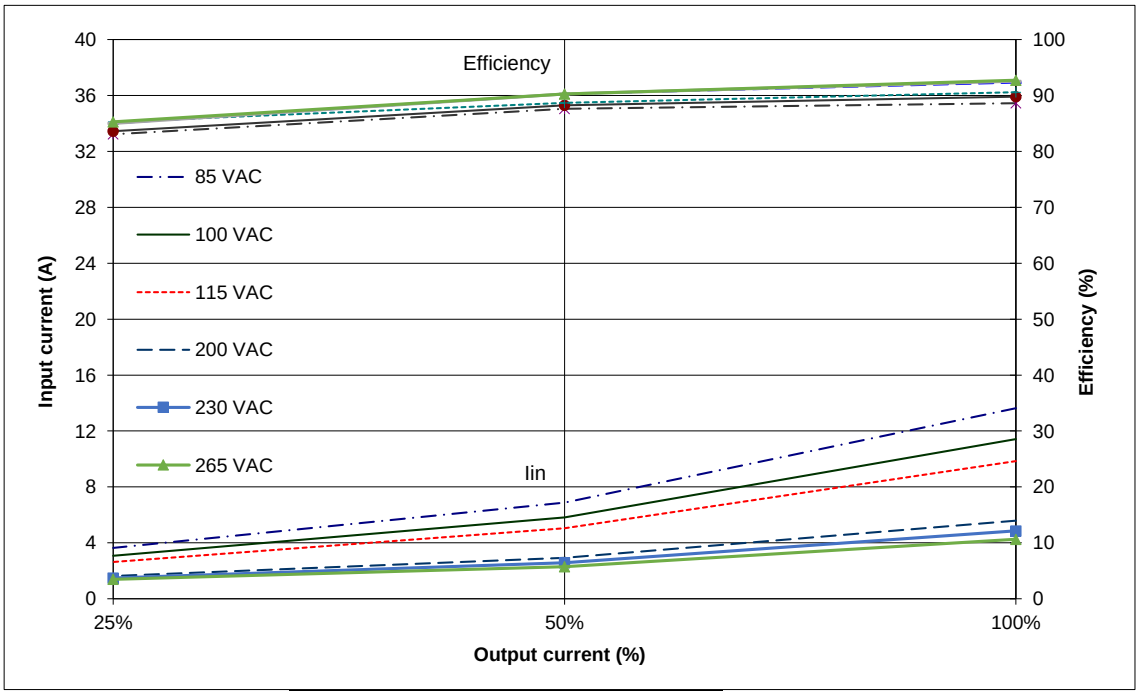
Conditions:
Vin: 85~265 VAC
Vout:100%
Ta:25˚C

G150-7



Conditions:
Vin: 85~265 VAC
Vout:100%
Ta:25˚C

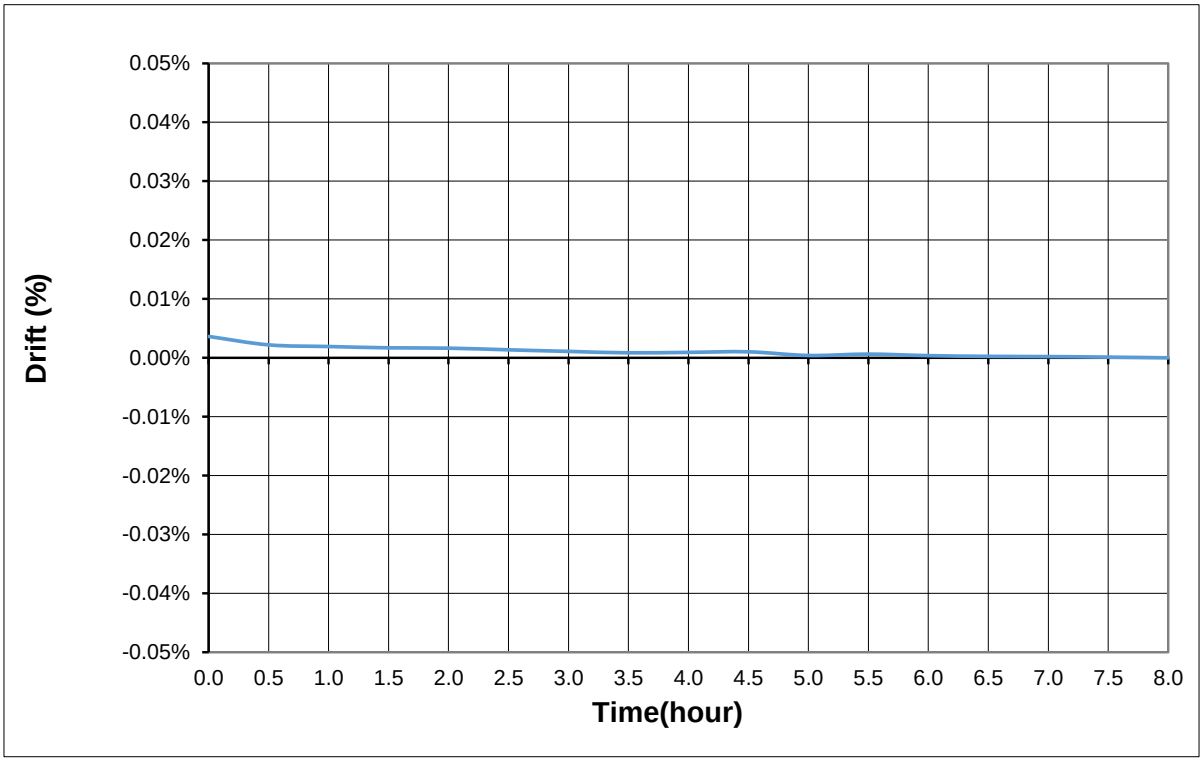
G600-1.7



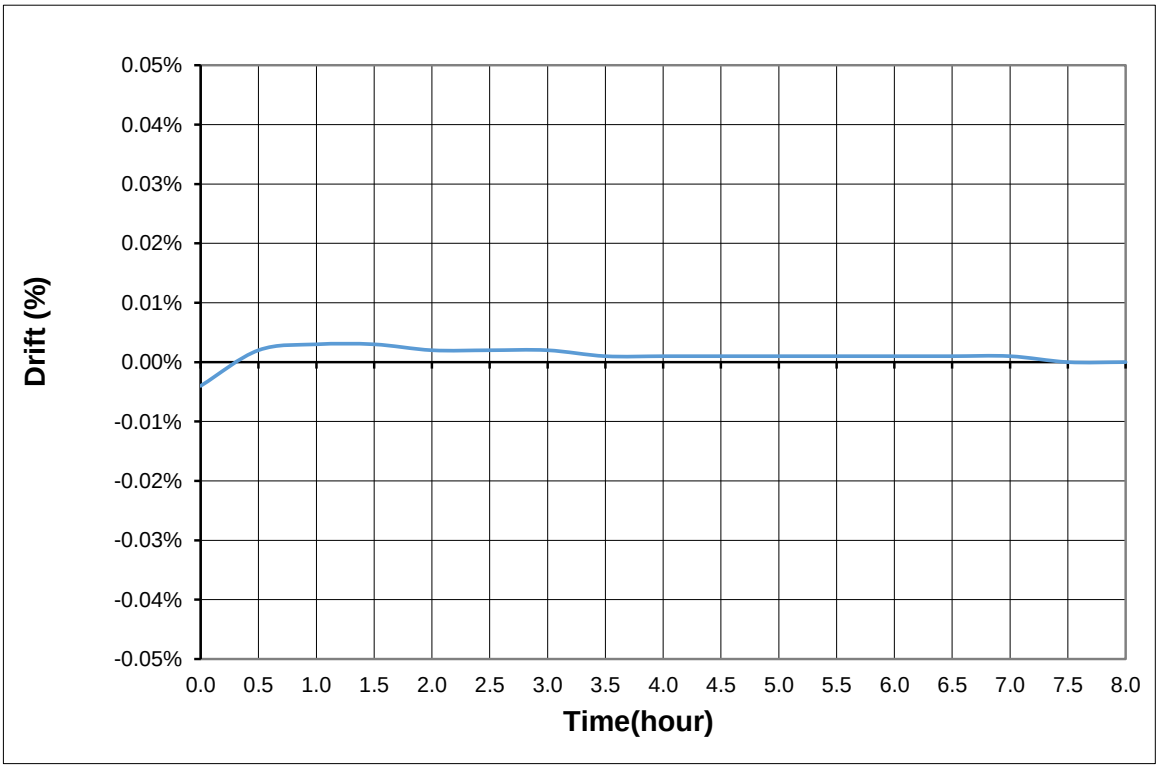
2.2 Warm up drift & stability

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

G10-100 C.V mode



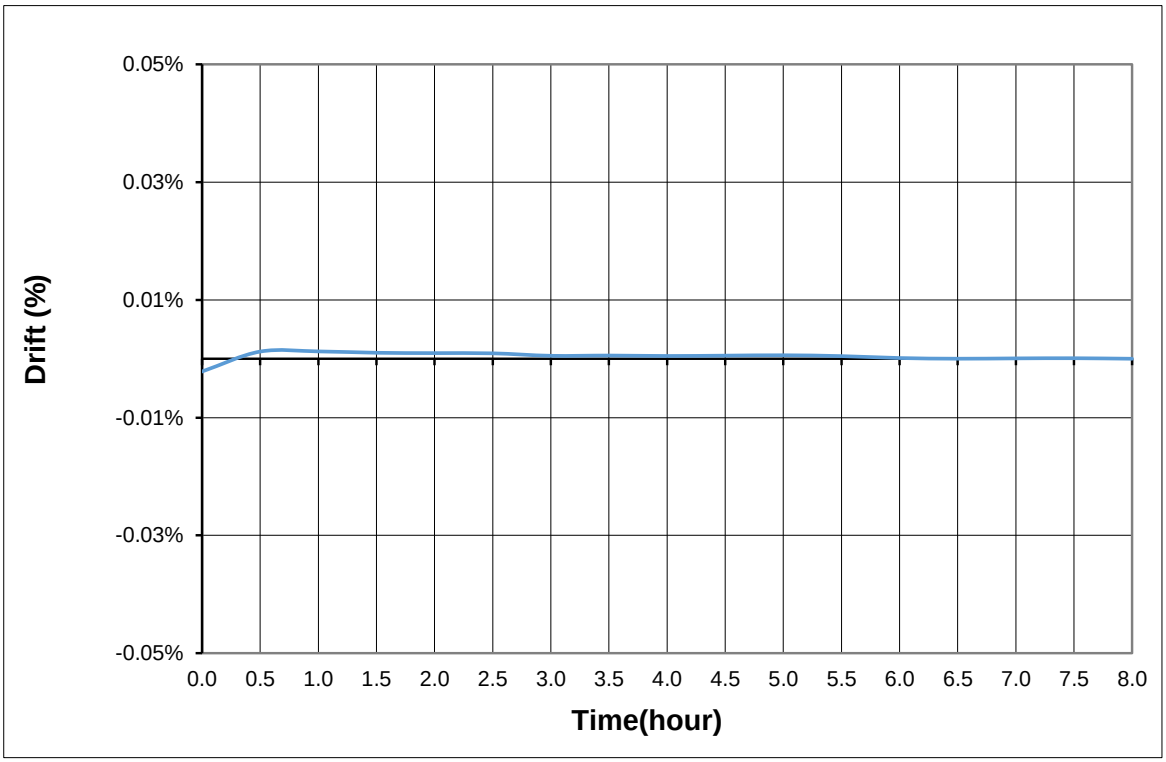
G10-100 C.C mode



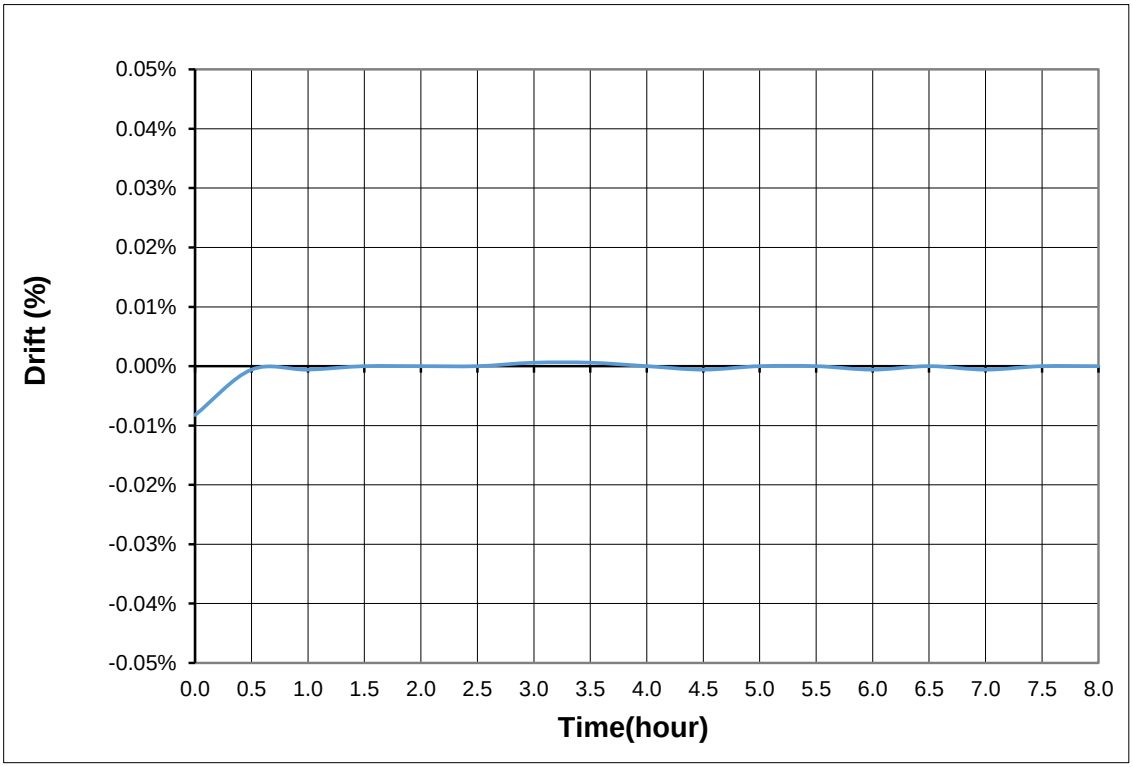
2.2 Warm up drift & stability

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

G60-17 C.V mode



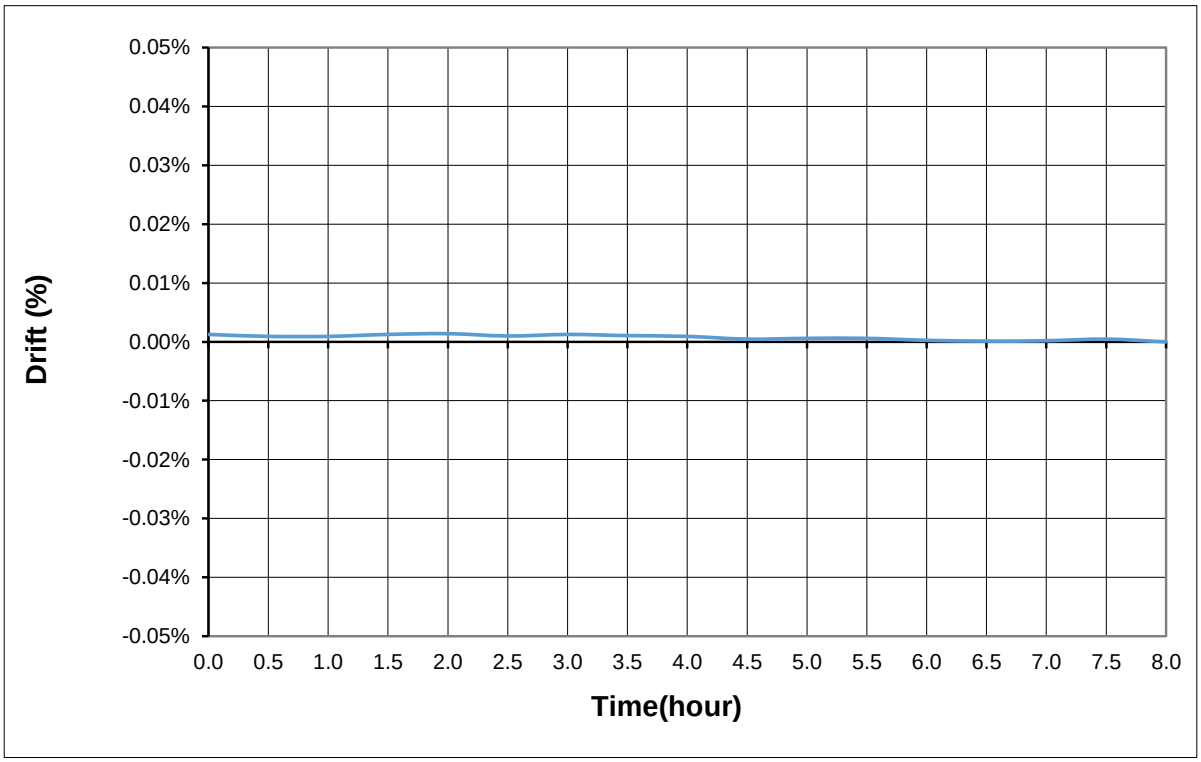
G60-17 C.C mode



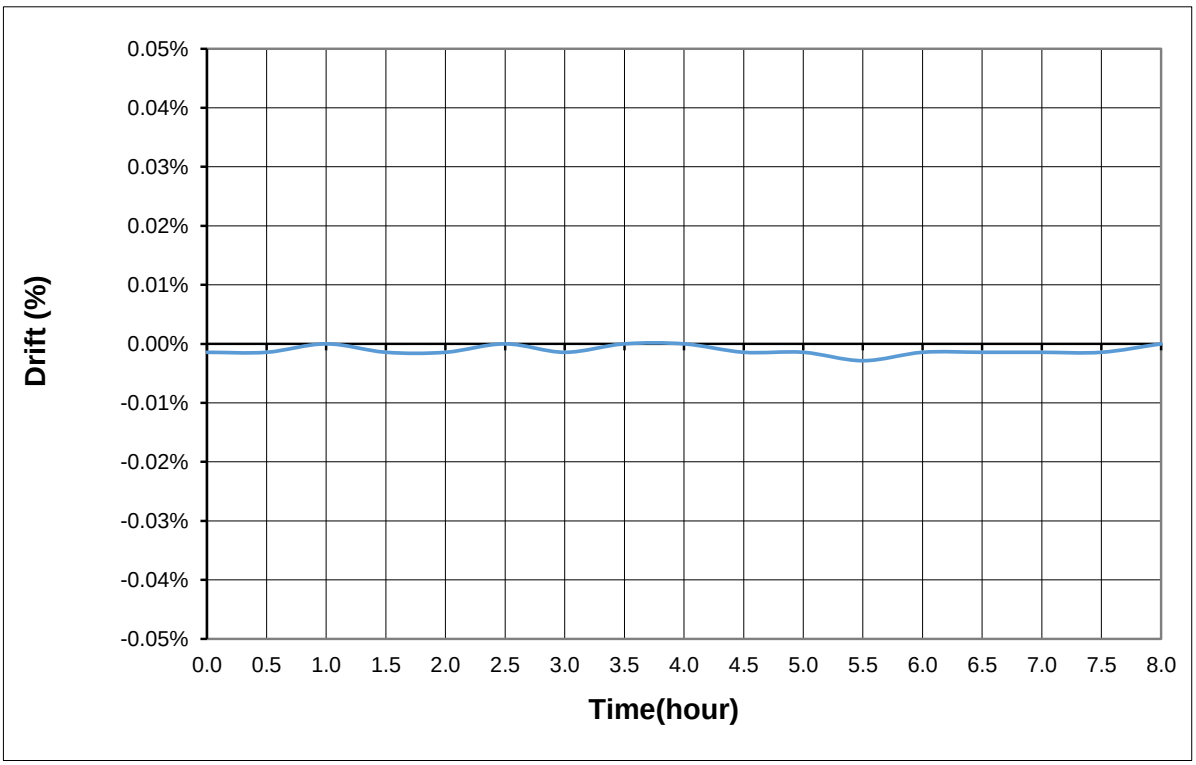
2.2 Warm up drift & stability

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

G150-7 C.V mode



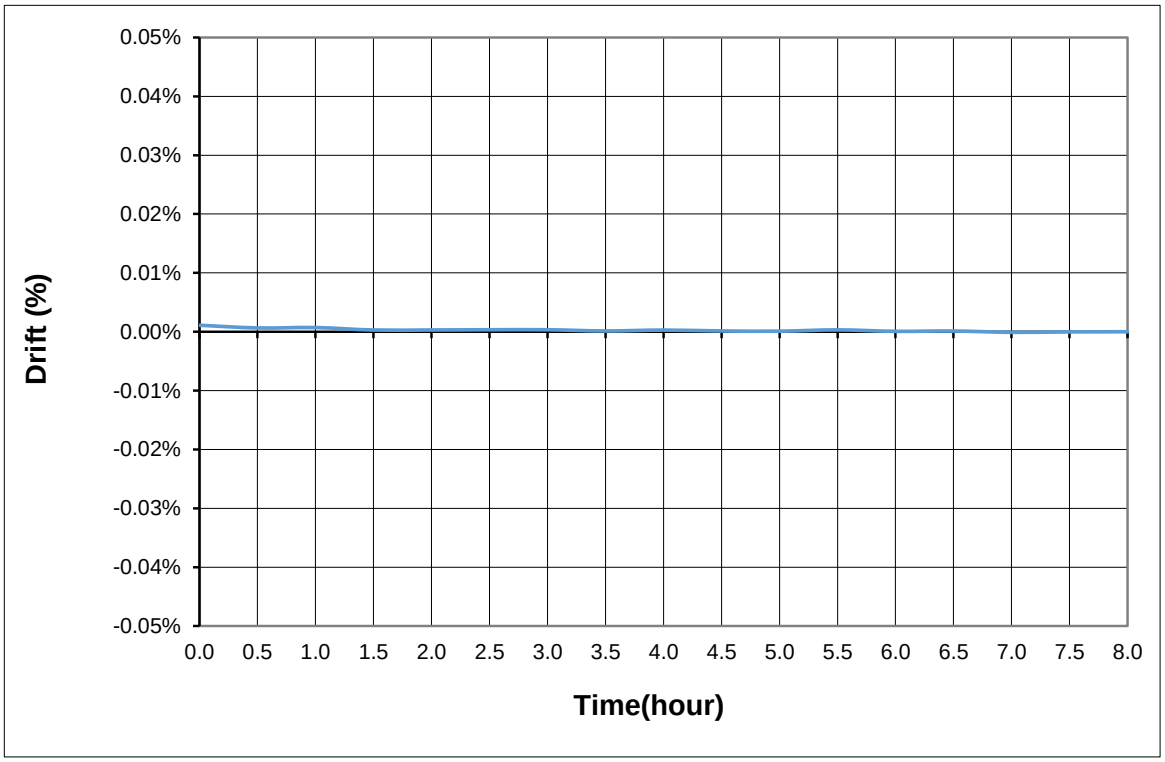
G150-7 C.C mode



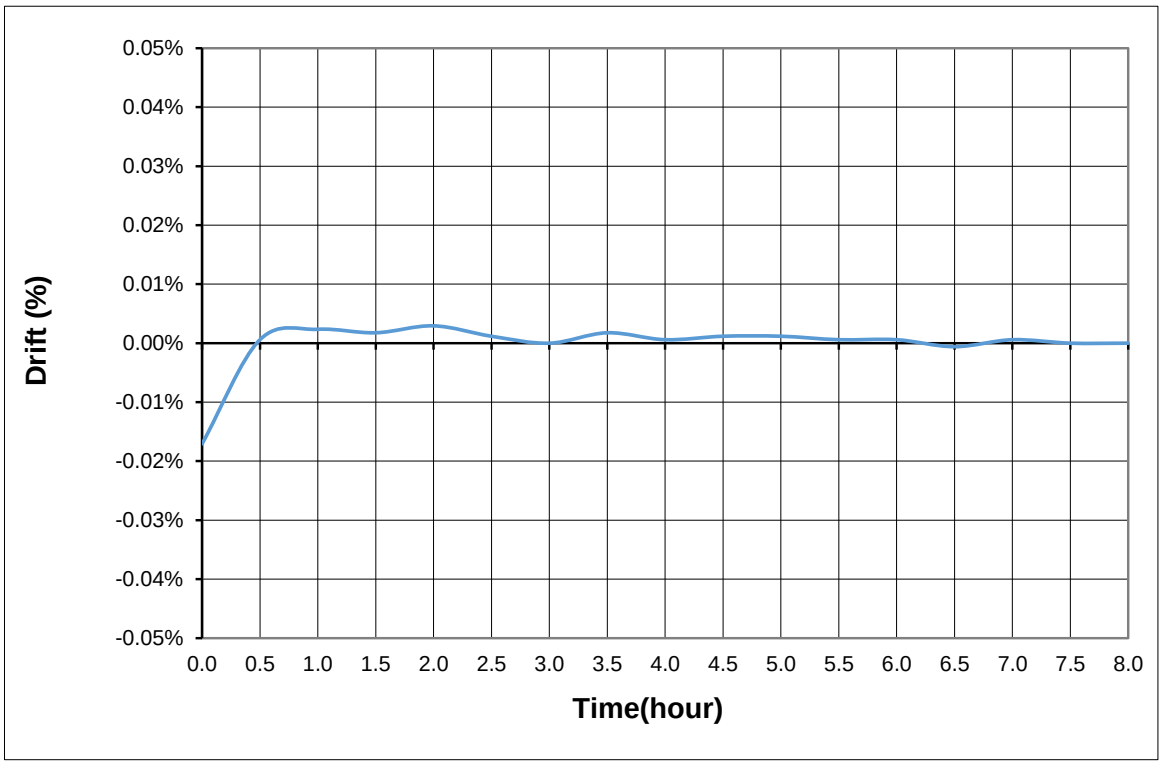
2.2 Warm up drift & stability

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

G600-1.7 C.V mode



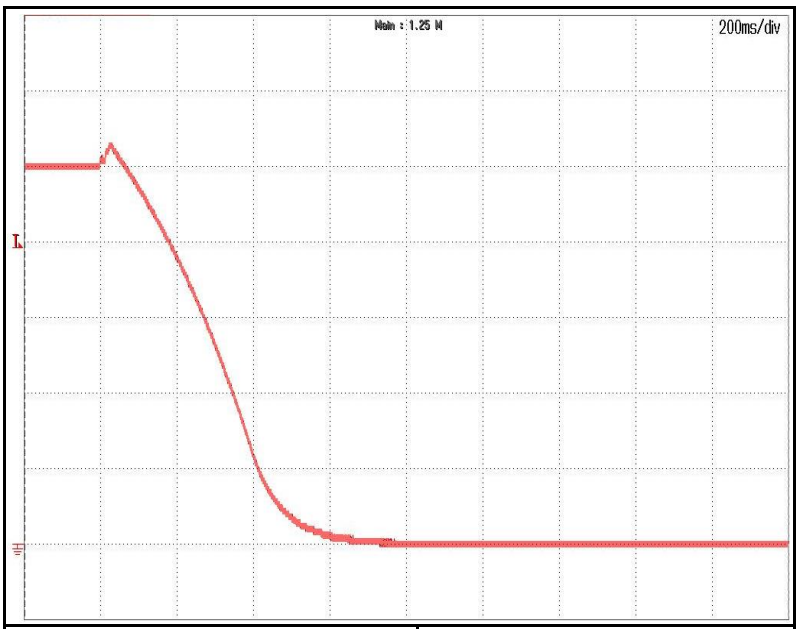
G600-1.7 C.C mode



2.3 Over voltage protection (OVP) characteristic

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

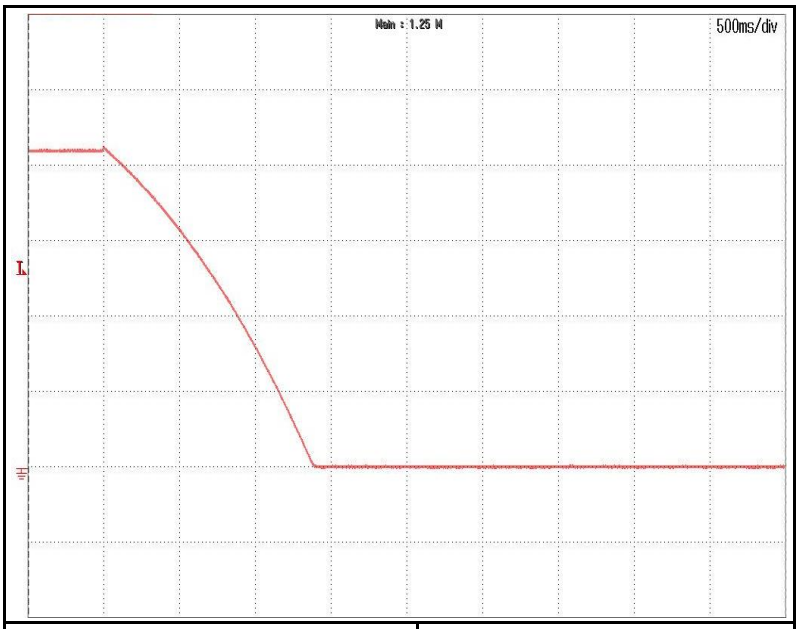
G10-100



$2^{V}/_{DIV}$	$200^{ms}/_{DIV}$

OVP setting:10.5V

G60-17



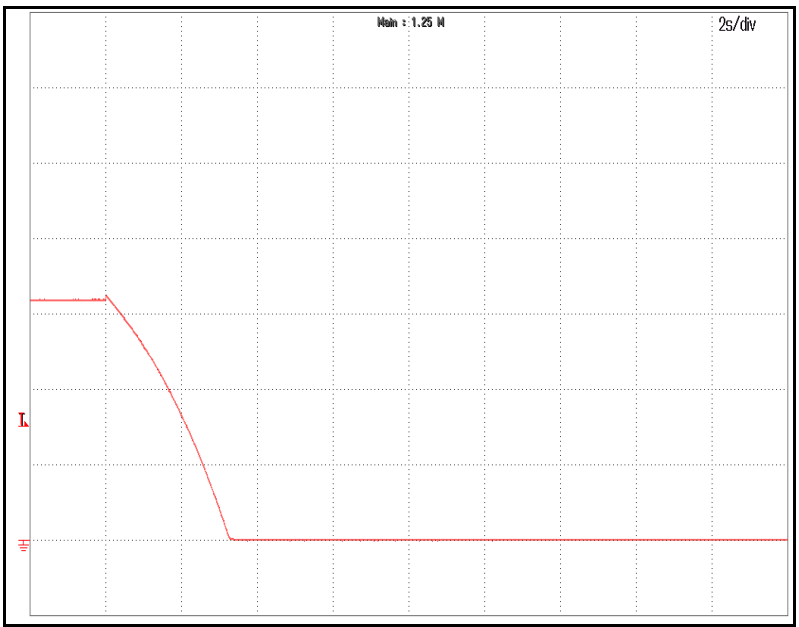
$15^{V}/_{DIV}$	$500^{ms}/_{DIV}$

OVP setting:63V

2.3 Over voltage protection (OVP) characteristic

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

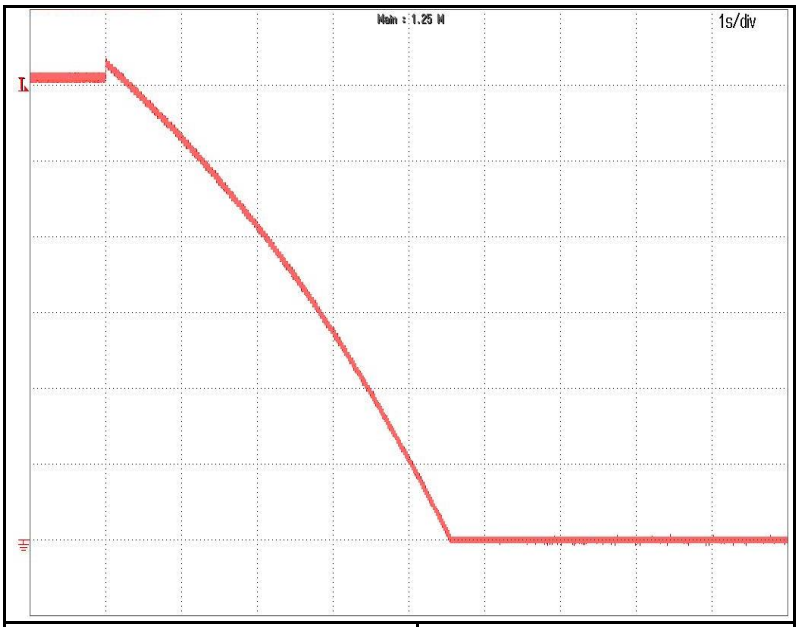
G150-7



$50^{V}/_{DIV}$	$2^{S}/_{DIV}$

OVP setting:157.5V

G600-1.7



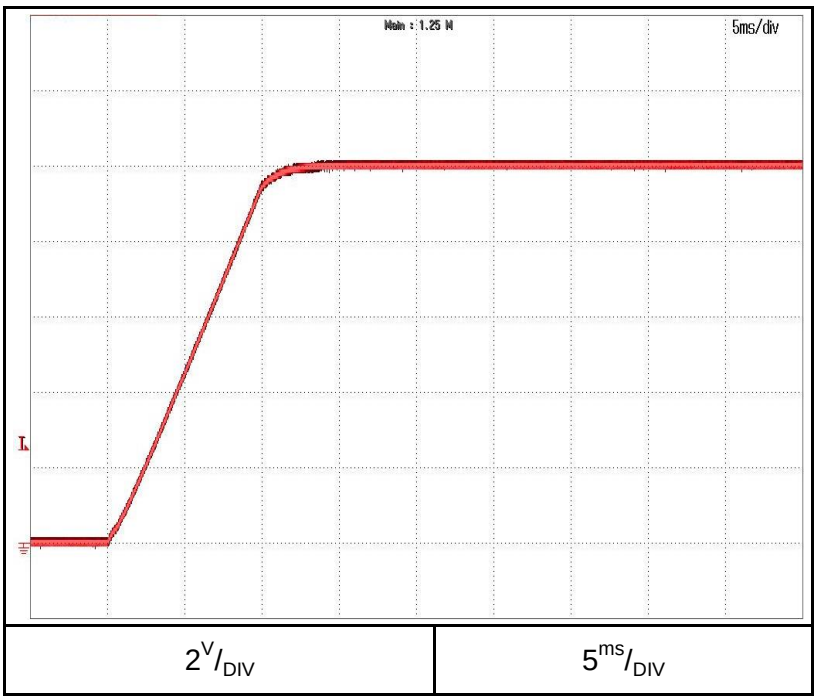
$100^{V}/_{DIV}$	$1^{S}/_{DIV}$

OVP setting:630V

2.4 ON/OFF Output rise characteristics
C.V mode

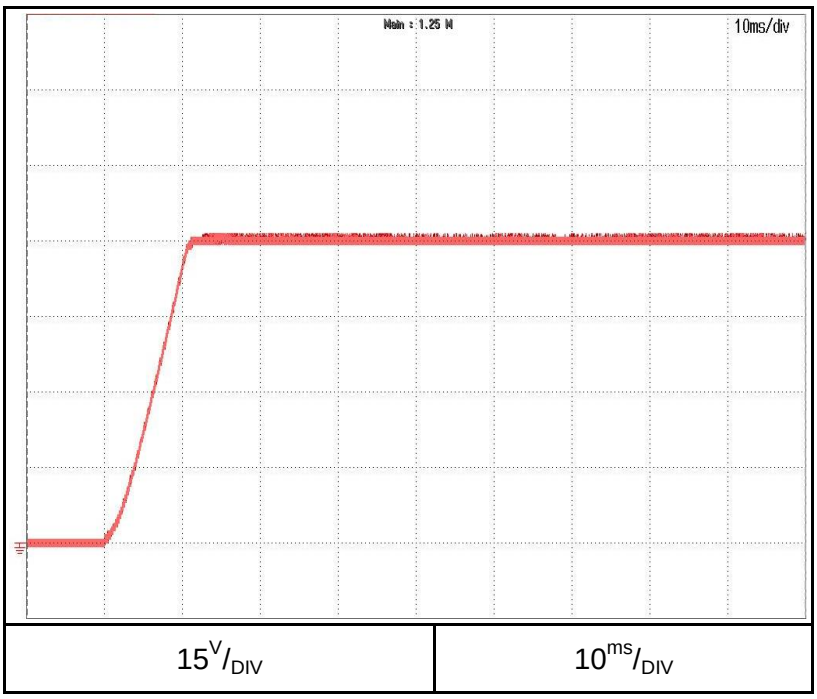
Conditions: Vin: 100VAC
Vout: 100%
Iout: 0%
Iset=105%
Ta = 25°C

G10-100



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

G60-17

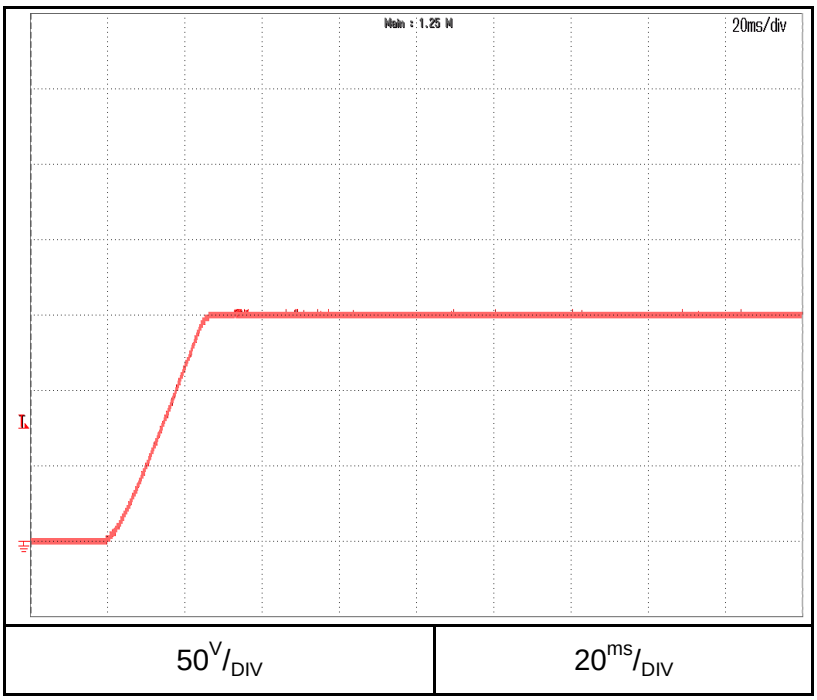


$15^{V}/_{DIV}$	$10^{ms}/_{DIV}$

2.4 ON/OFF Output rise characteristics
C.V mode

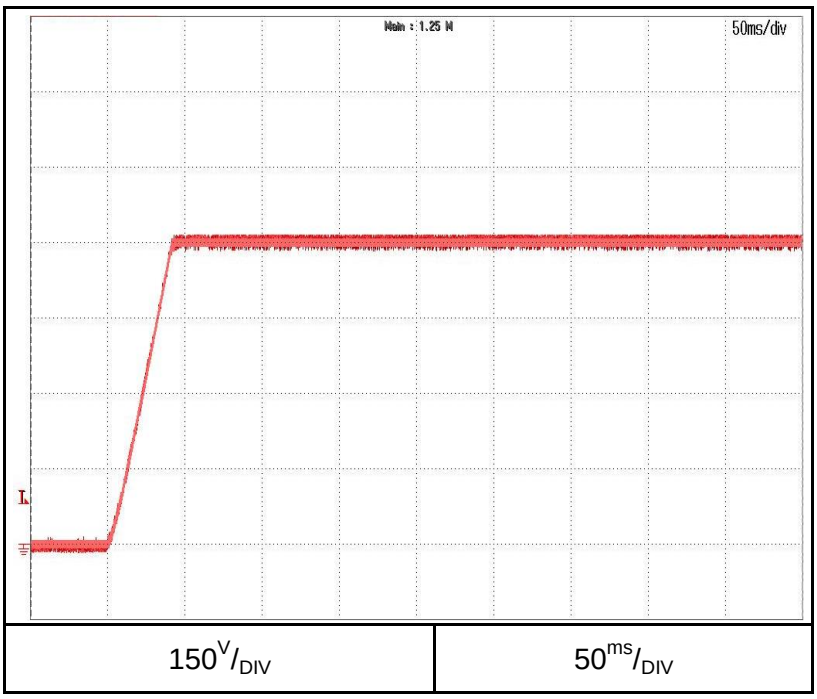
Conditions: Vin: 100VAC
Vout: 100%
Iout: 0%
Iset=105%
Ta = 25°C

G150-7



$50^{V}/_{DIV}$	$20^{ms}/_{DIV}$

G600-1.7



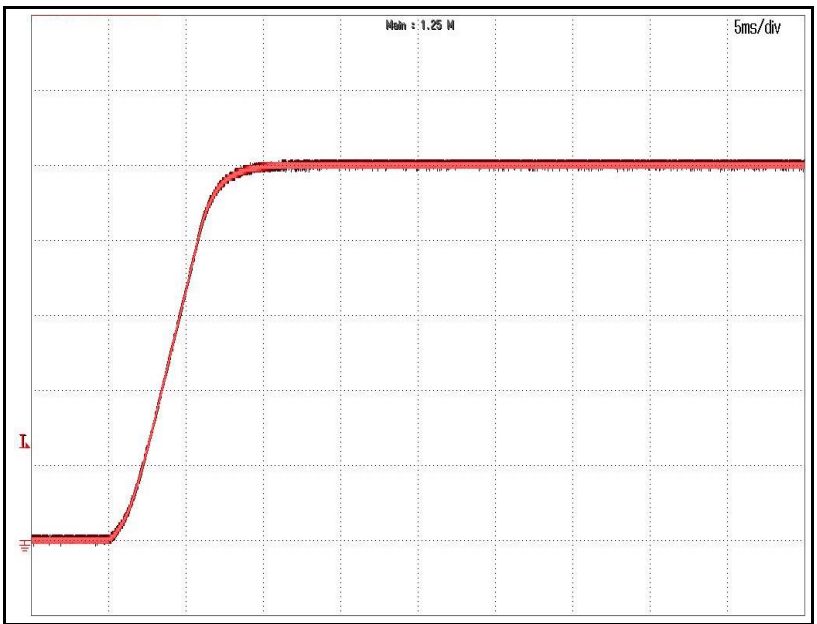
$150^{V}/_{DIV}$	$50^{ms}/_{DIV}$

2.4 ON/OFF Output rise characteristics

C.V mode

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

G10-100



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

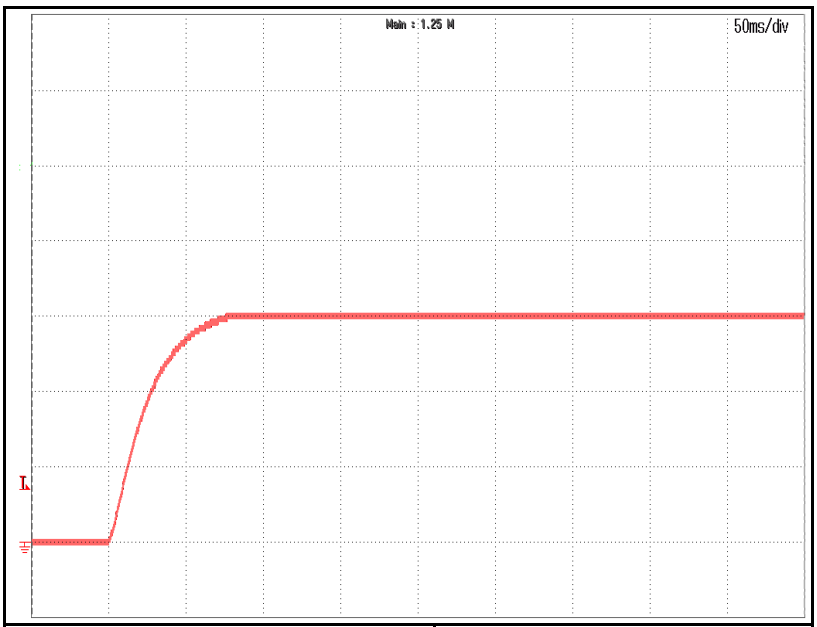
G60-17

$15^{V}/_{DIV}$	$20^{ms}/_{DIV}$

2.4 ON/OFF Output rise characteristics
C.V mode

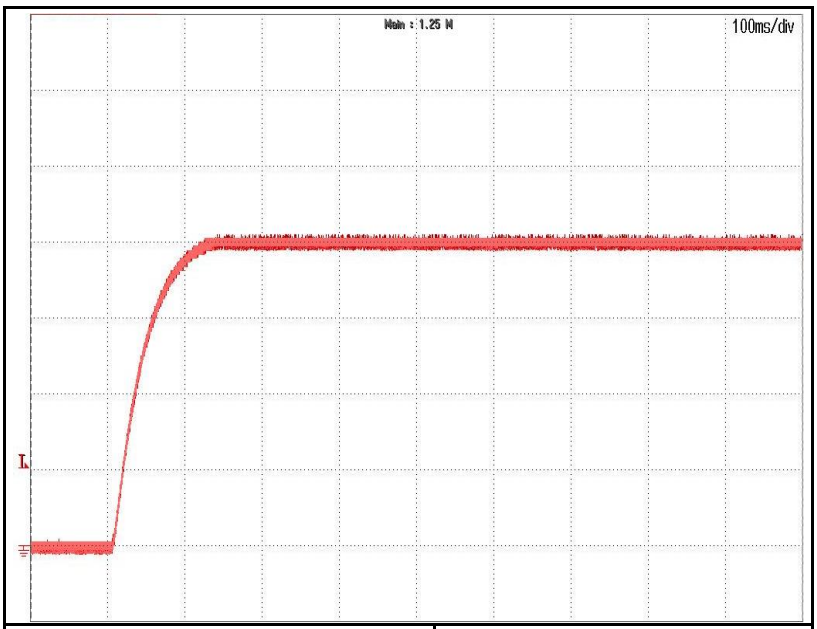
Conditions: Vin: 100VAC
Vout: 100%
Iout: 100%
Iset=105%
Load: CR
Ta = 25°C

G150-7



$50^{V}/_{DIV}$	$50^{ms}/_{DIV}$

G600-1.7

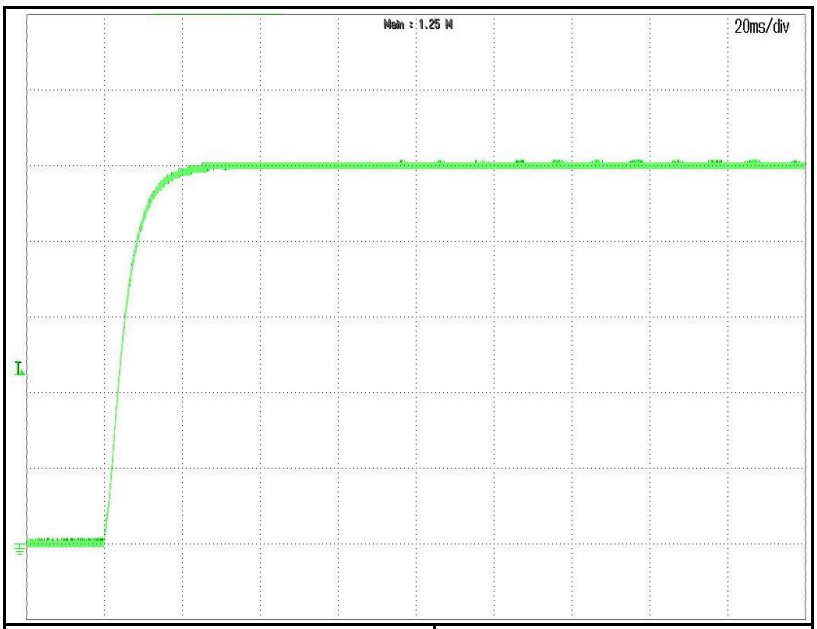


$150^{V}/_{DIV}$	$100^{ms}/_{DIV}$

2.4 ON/OFF Output rise characteristics
C.C mode

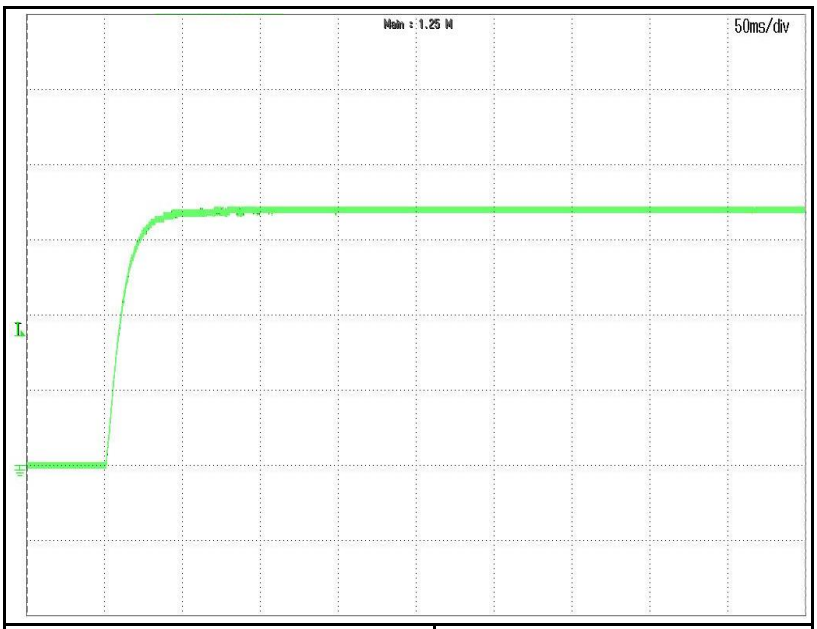
Conditions: Vin: 100VAC
Vout: 100%
Iout: 100%
Vset=105%
Load: CR
Ta = 25°C

G10-100



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

G60-17

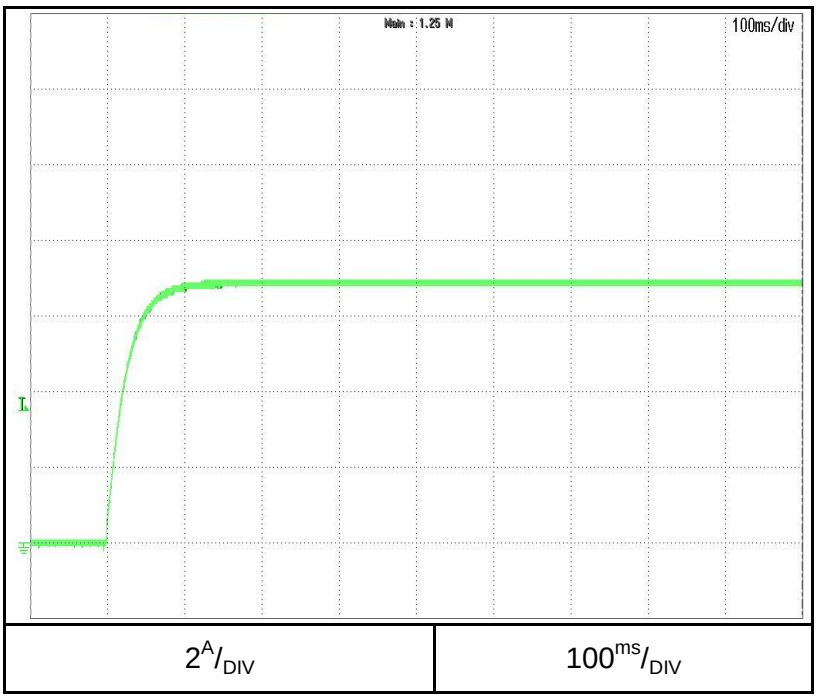


$5^{A}/_{DIV}$	$50^{ms}/_{DIV}$

2.4 ON/OFF Output rise characteristics
C.C mode

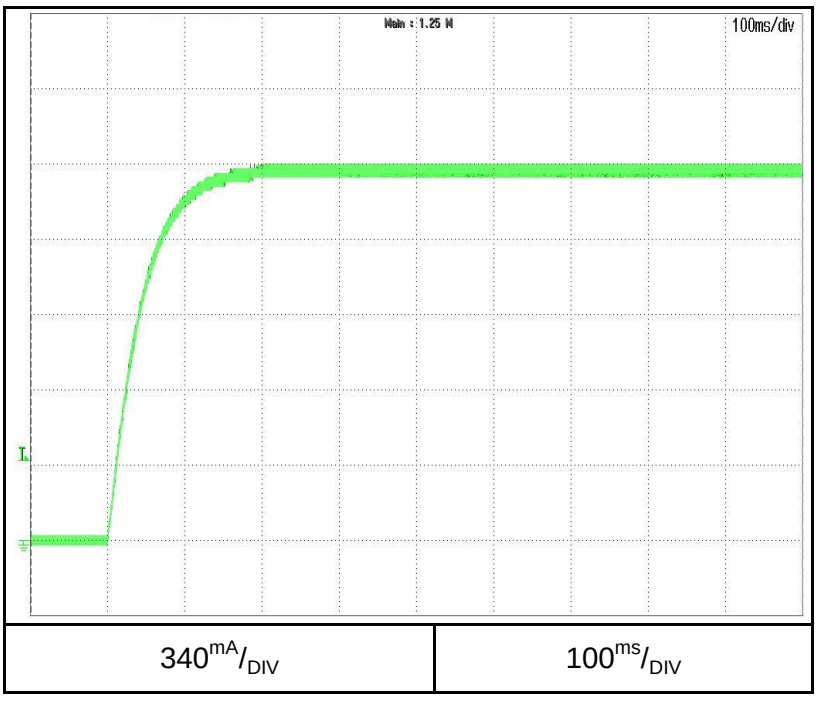
Conditions: Vin: 100VAC
Vout: 100%
Iout: 100%
Vset=105%
Load: CR
Ta = 25°C

G150-7



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

G600-1.7

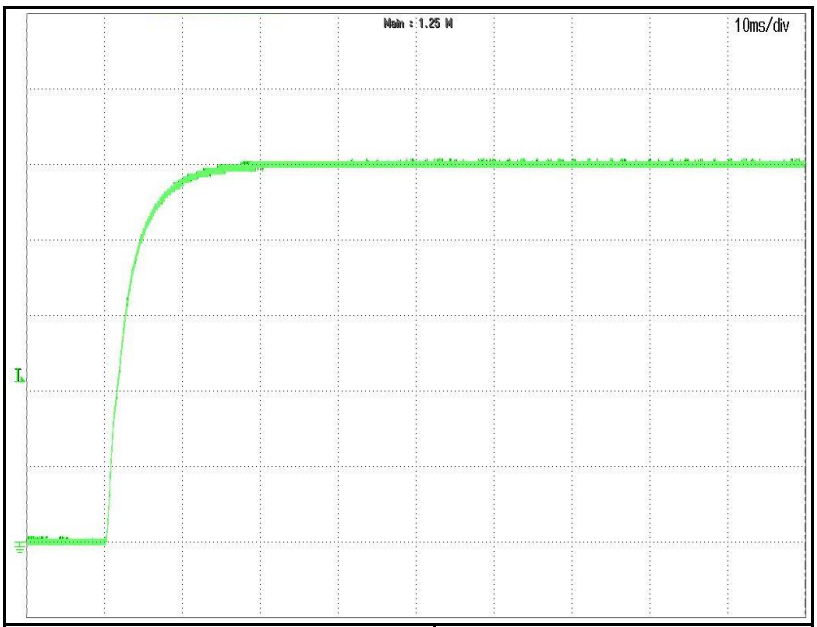


$340^{mA}/_{DIV}$	$100^{ms}/_{DIV}$

2.4 ON/OFF Output rise characteristics
C.C mode

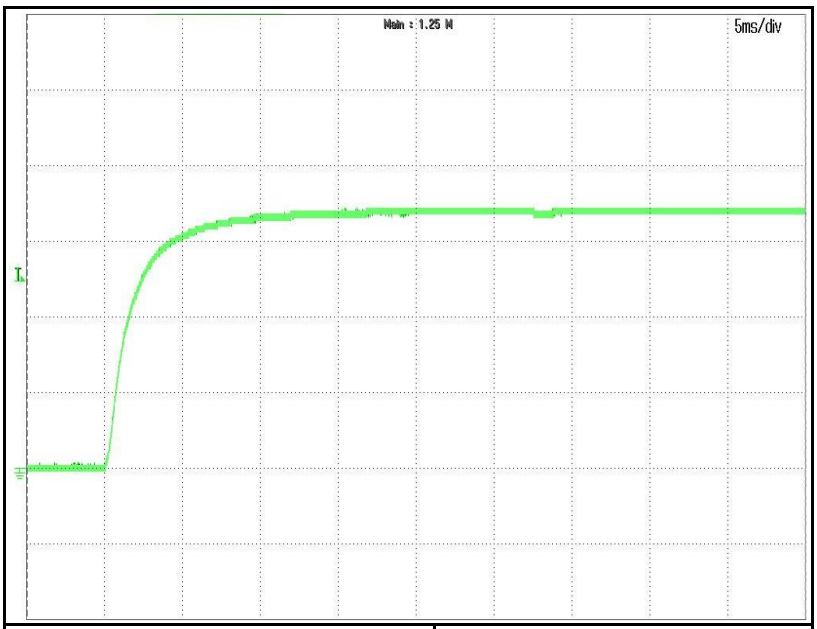
Conditions: Vin: 100VAC
Iout: 100%
Vset=105%
shorted output
Ta = 25°C

G10-100



$20^{A}/_{DIV}$	$10^{ms}/_{DIV}$

G60-17

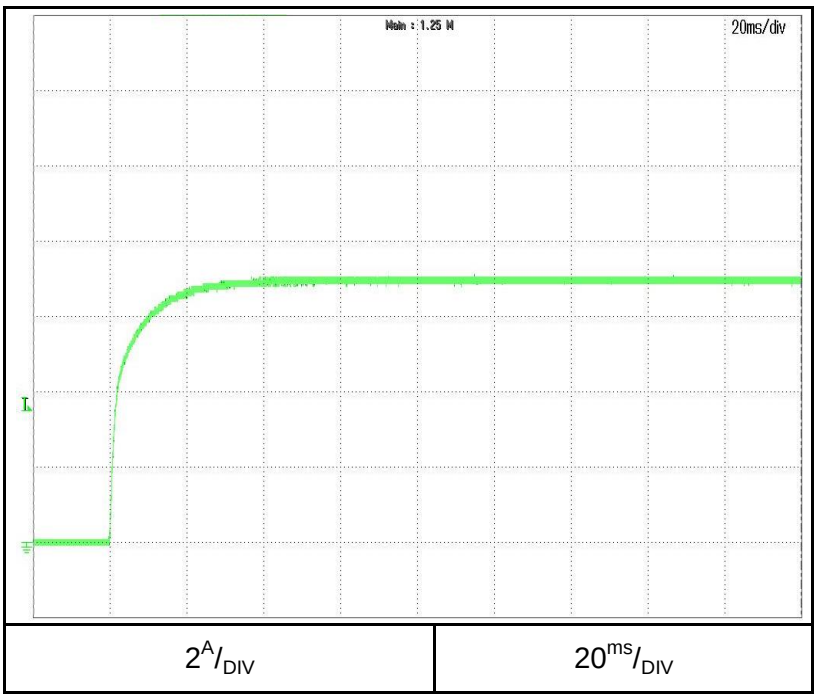


$5^{A}/_{DIV}$	$5^{ms}/_{DIV}$

2.4 ON/OFF Output rise characteristics
C.C mode

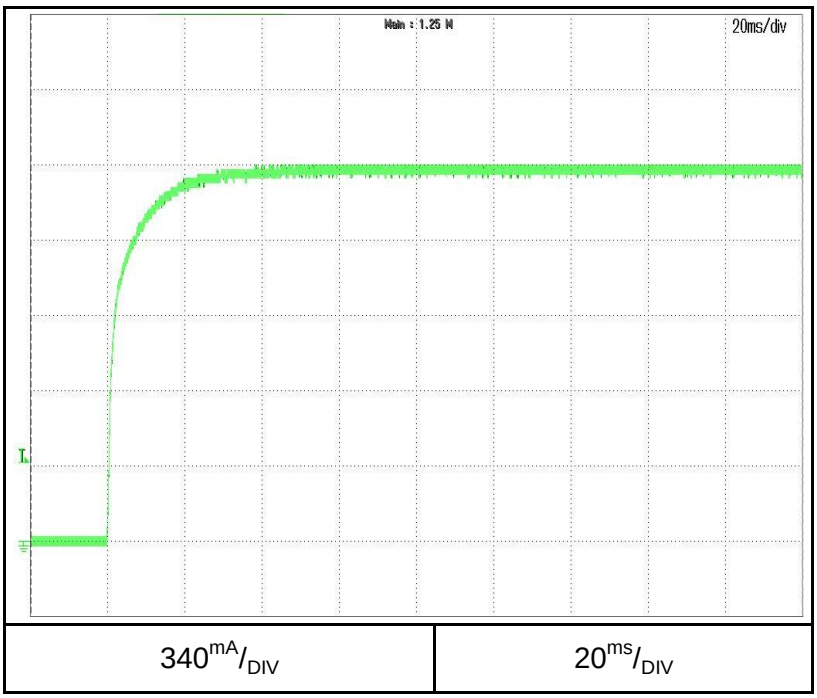
Conditions: Vin: 100VAC
Iout: 100%
Vset=105%
shorted output
Ta = 25°C

G150-7



$2^{A}/_{DIV}$	$20^{ms}/_{DIV}$

G600-1.7

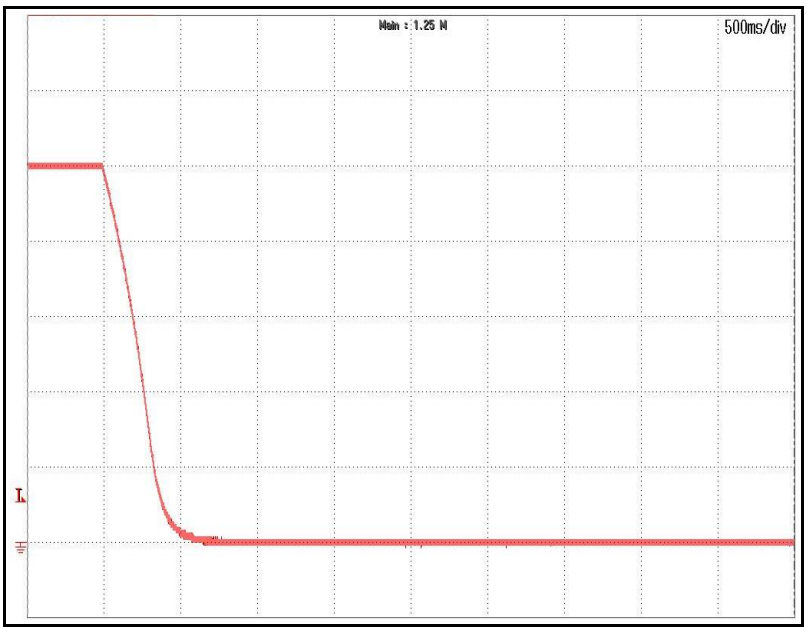


$340^{mA}/_{DIV}$	$20^{ms}/_{DIV}$

2.5 ON/OFF Output fall characteristics
C.V mode

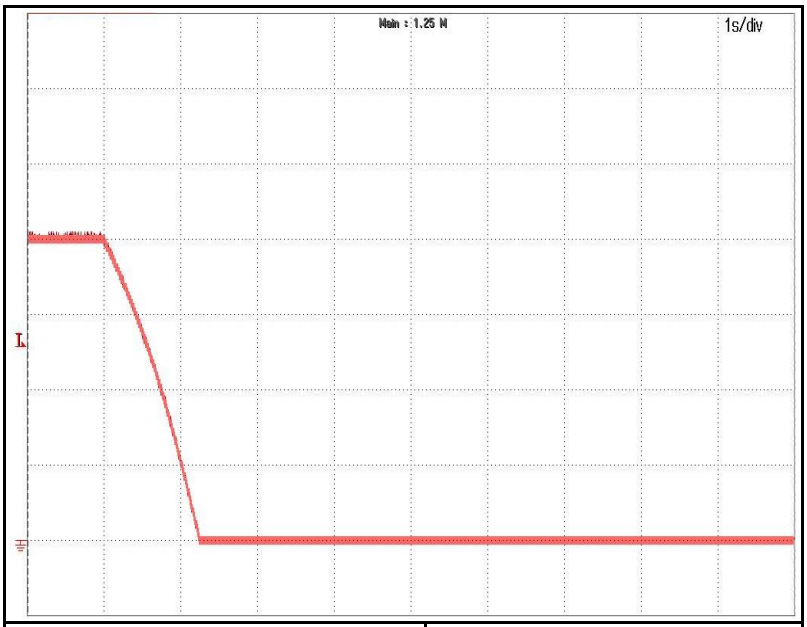
Conditions: Vin: 100VAC
Vout: 100%
Iout: 0%
Ta = 25°C

G10-100



$2^{V}/_{DIV}$	$500^{ms}/_{DIV}$

G60-17

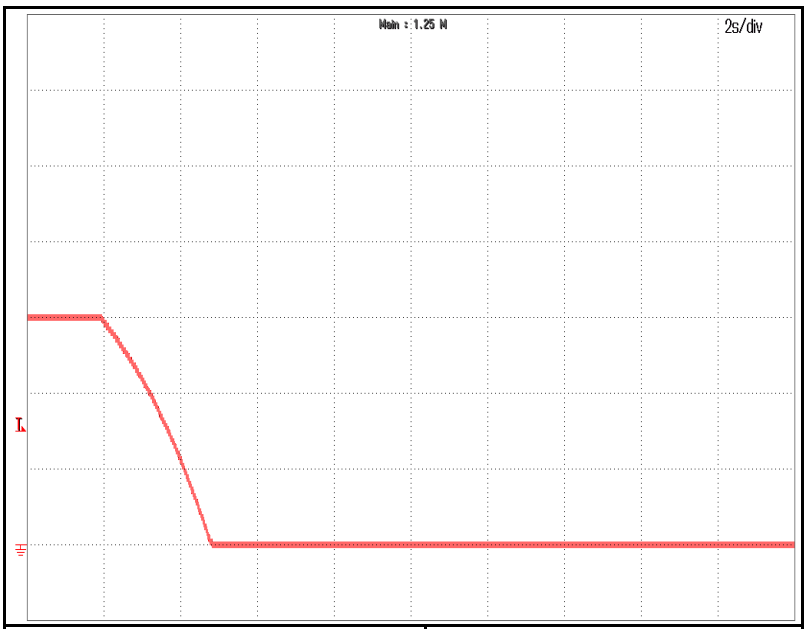


$15^{V}/_{DIV}$	$1^{s}/_{DIV}$

2.5 ON/OFF Output fall characteristics
C.V mode

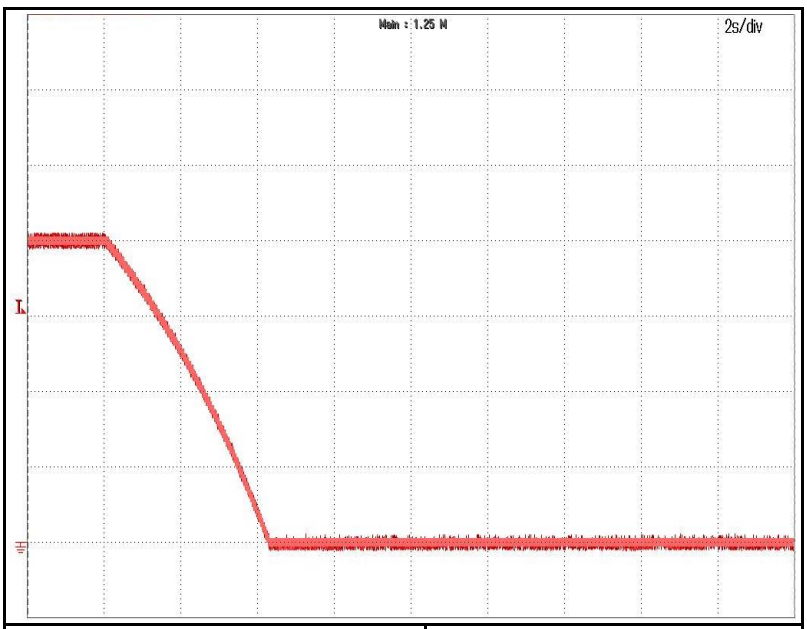
Conditions: Vin: 100VAC
Vout: 100%
Iout: 0%
Ta = 25°C

G150-7



$50^{V}/_{DIV}$	$2^{s}/_{DIV}$

G600-1.7

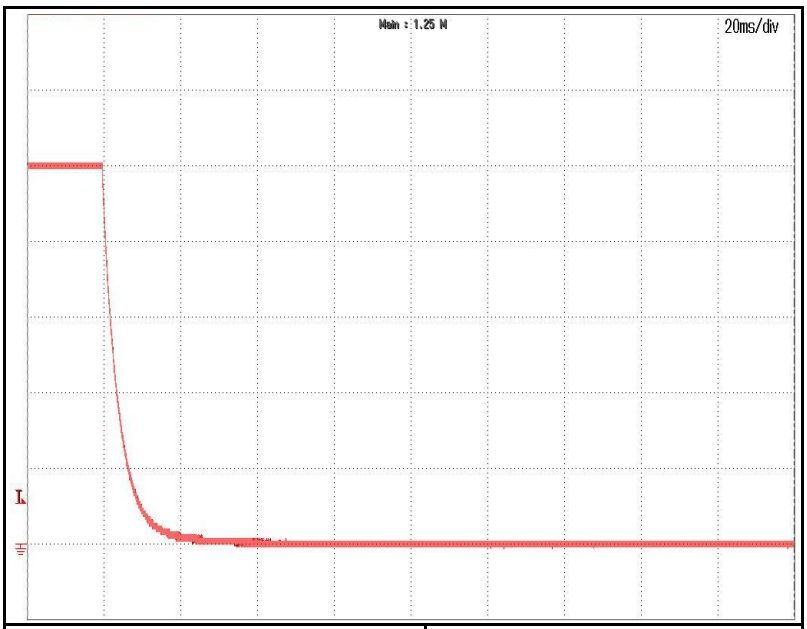


$150^{V}/_{DIV}$	$2^{s}/_{DIV}$

2.5 ON/OFF Output fall characteristics
C.V mode

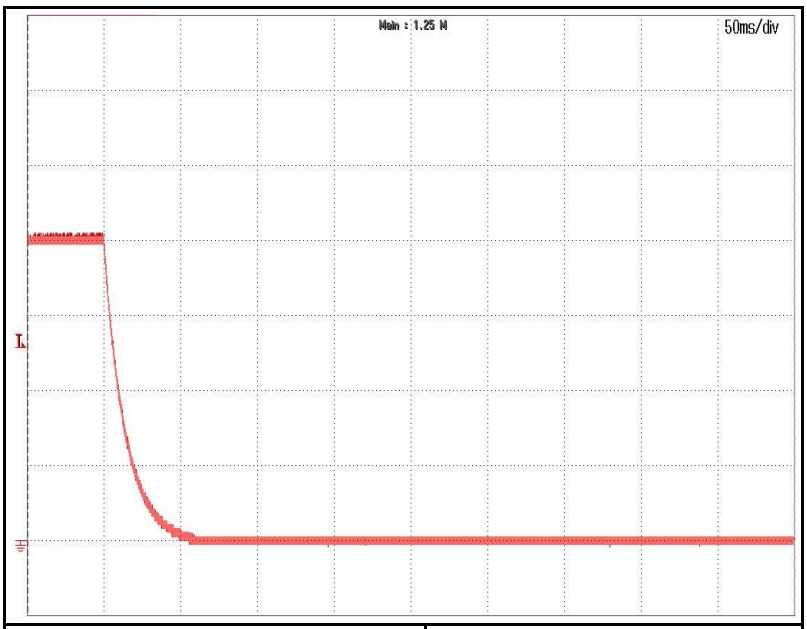
Conditions: Vin: 100VAC
Vout: 100%
Iout: 100%
Load: CR
Ta = 25°C

G10-100



$2^{V}/_{DIV}$	$20^{ms}/_{DIV}$

G60-17

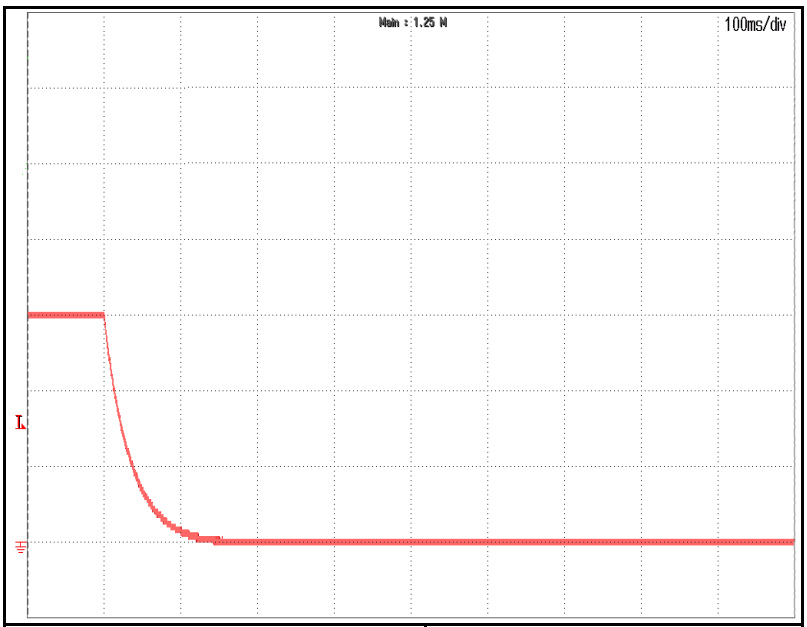


$15^{V}/_{DIV}$	$50^{ms}/_{DIV}$

2.5 ON/OFF Output fall characteristics
C.V mode

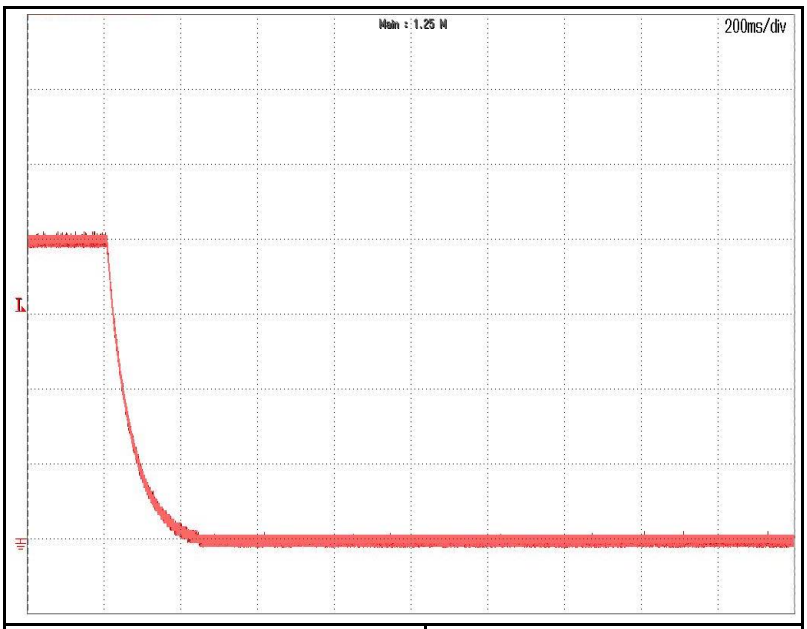
Conditions: Vin: 100VAC
Vout: 100%
Iout: 100%
Load: CR
Ta = 25°C

G150-7



$50^{V}/_{DIV}$	$100^{ms}/_{DIV}$

G600-1.7

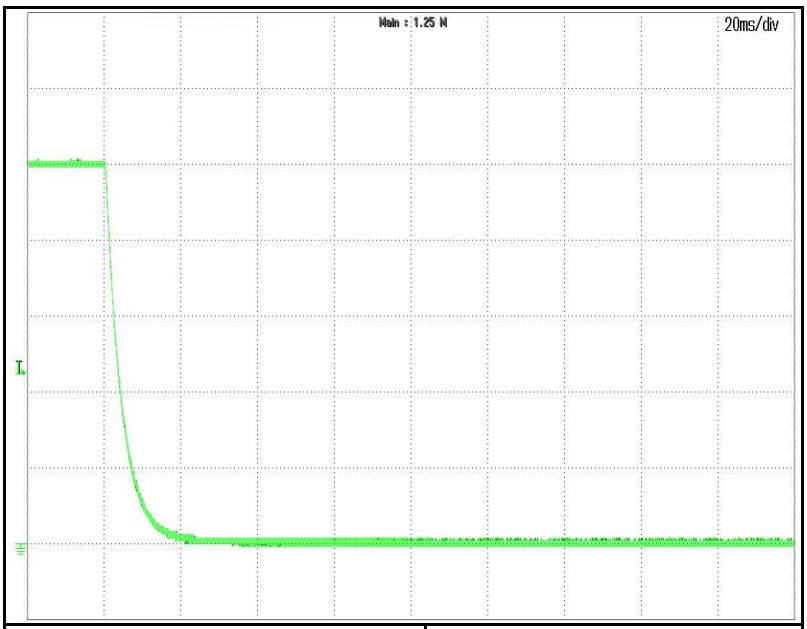


$150^{V}/_{DIV}$	$200^{ms}/_{DIV}$

2.5 ON/OFF Output fall characteristics
C.C mode

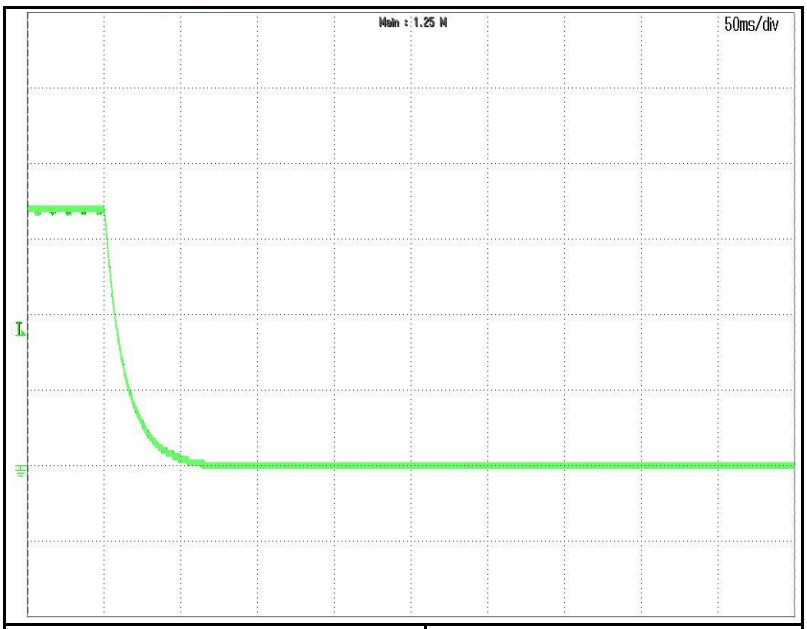
Conditions: Vin: 100VAC
Vout: 100%
Iout: 100%
Load: CR
Ta = 25°C

G10-100



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

G60-17

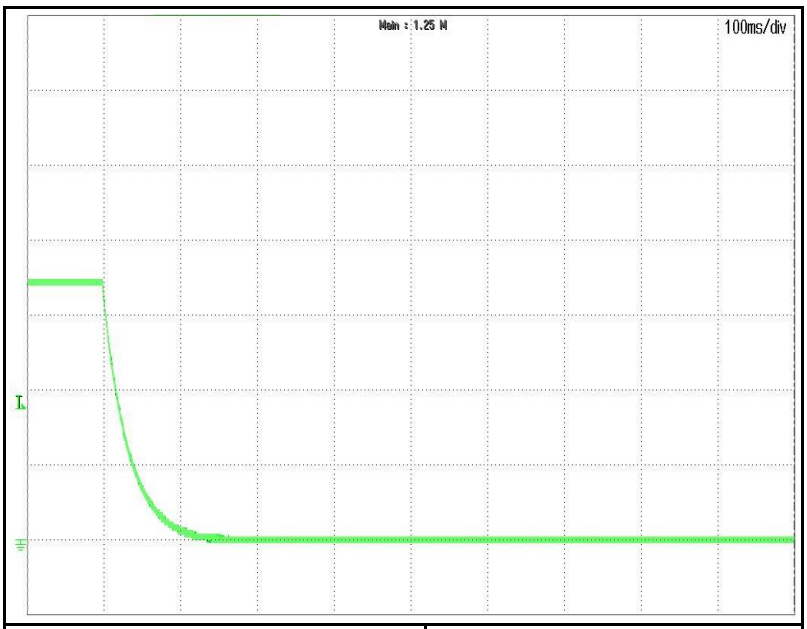


$5^{A}/_{DIV}$	$50^{ms}/_{DIV}$

2.5 ON/OFF Output fall characteristics
C.C mode

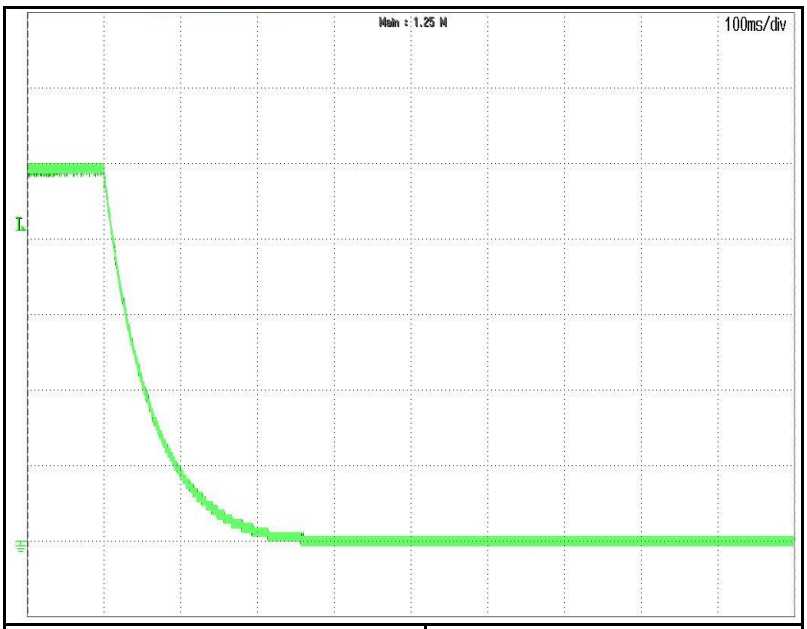
Conditions: Vin: 100VAC
Vout: 100%
Iout: 100%
Load: CR
Ta = 25°C

G150-7



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

G600-1.7

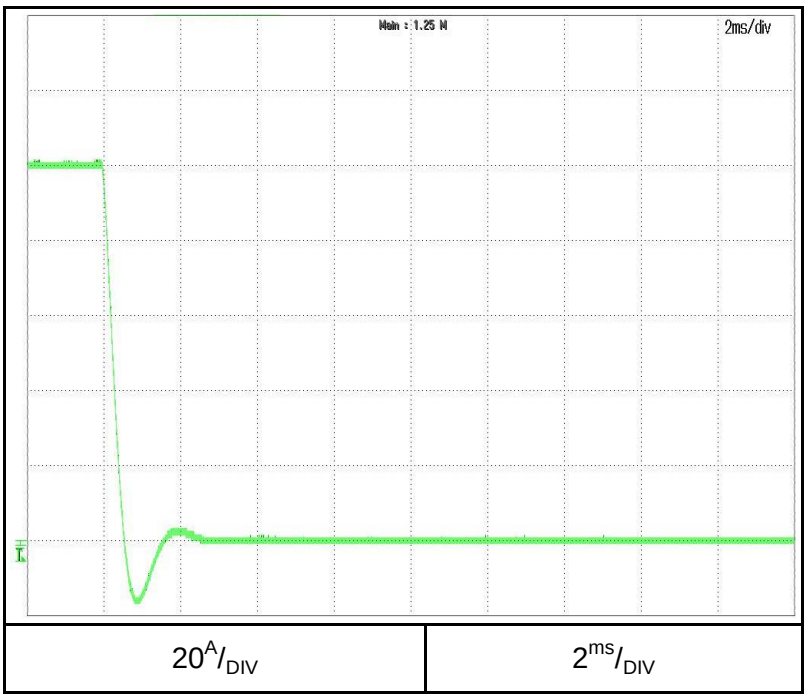


$340^{mA}/_{DIV}$	$100^{ms}/_{DIV}$

2.5 ON/OFF Output fall characteristics
C.C mode

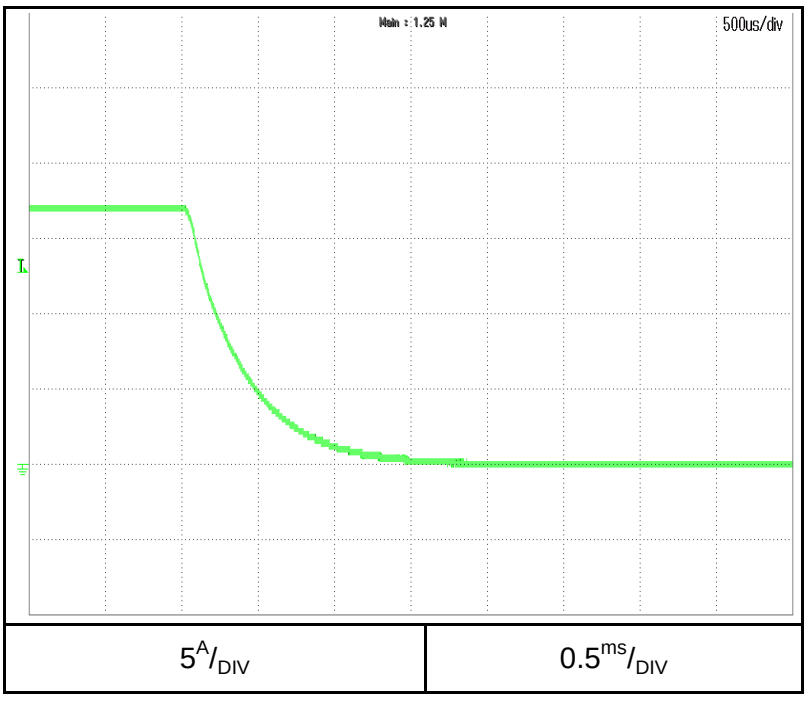
Conditions: Vin: 100VAC
Iout: 100%
shorted output
Ta = 25°C

G10-100



$20^{A}/_{DIV}$	$2^{ms}/_{DIV}$

G60-17

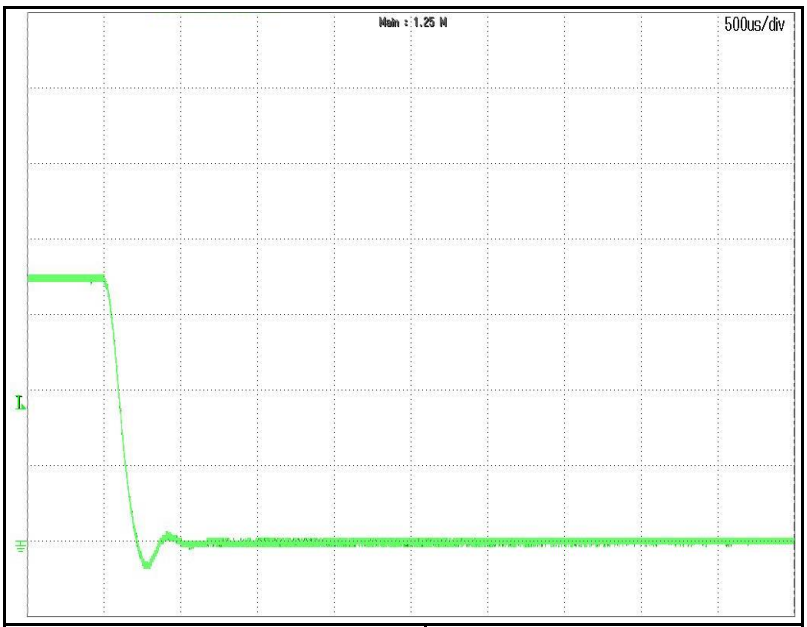


$5^{A}/_{DIV}$	$0.5^{ms}/_{DIV}$

2.5 ON/OFF Output fall characteristics
C.C mode

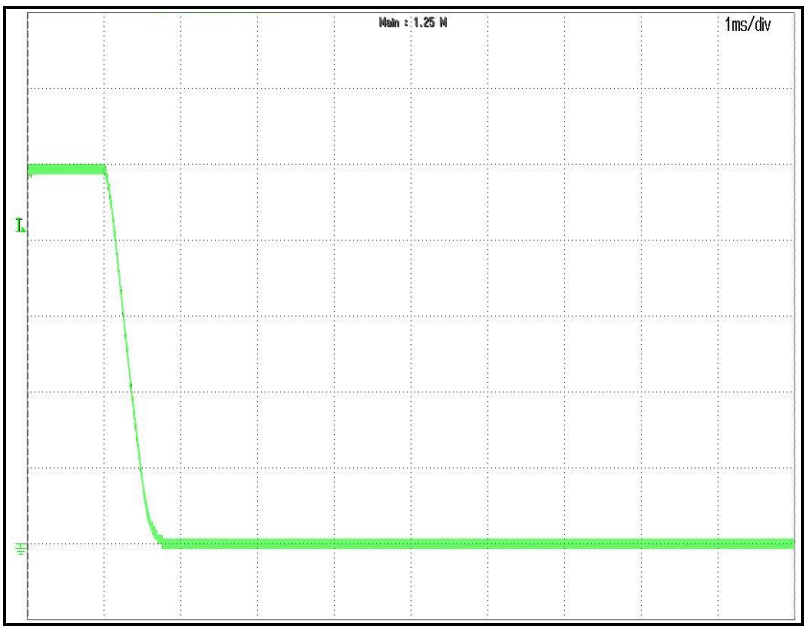
Conditions: Vin: 100VAC
Iout: 100%
shorted output
Ta = 25°C

G150-7



$2^{A}/_{DIV}$	$0.5^{ms}/_{DIV}$

G600-1.7



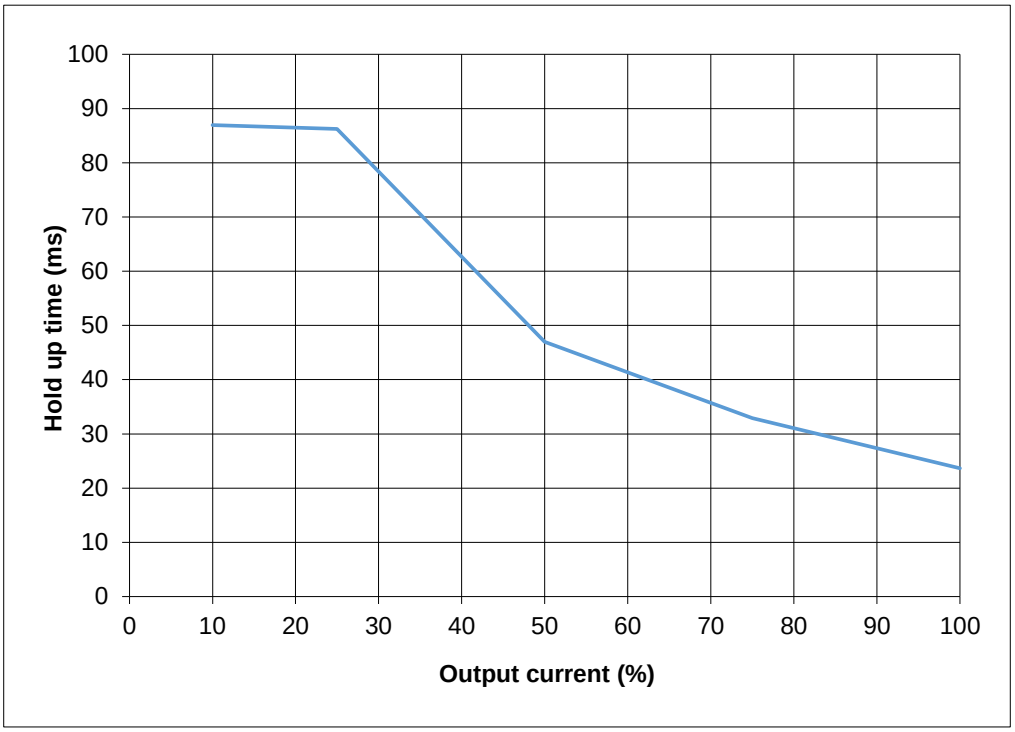
$340^{mA}/_{DIV}$	$1^{ms}/_{DIV}$

2.6 Holdup time characteristics

Conditions: Ta = 25°C
Vout:100%

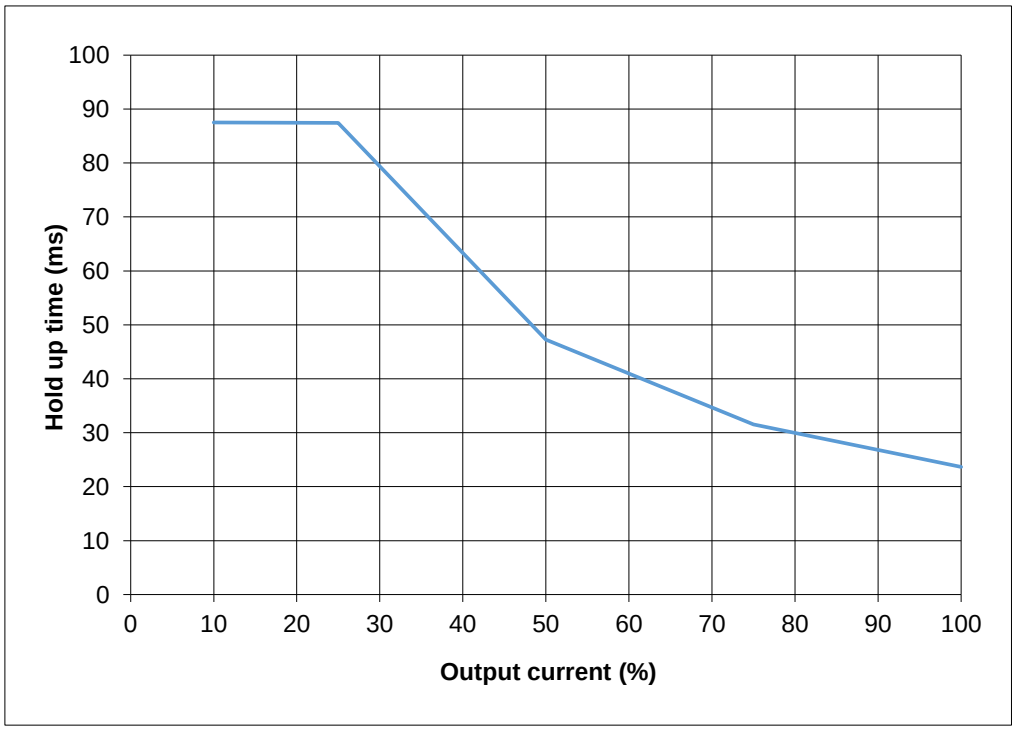
G10-100

Vin:100VAC



G10-100

Vin:200VAC

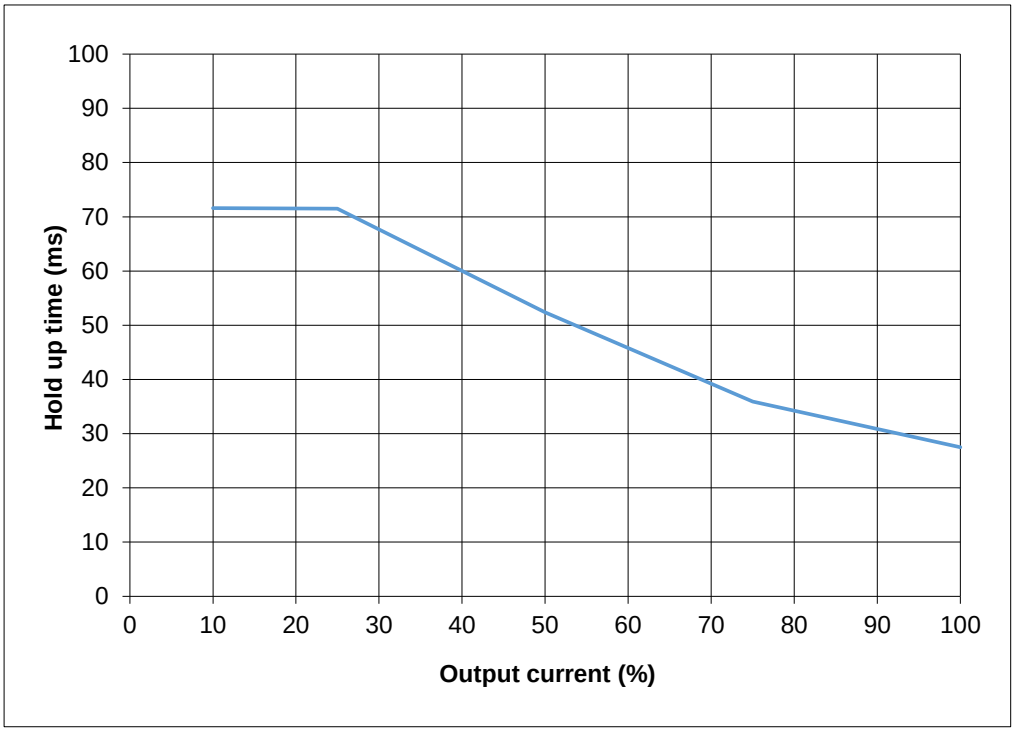


2.6 Holdup time characteristics

Conditions: Ta = 25°C
Vout:100%

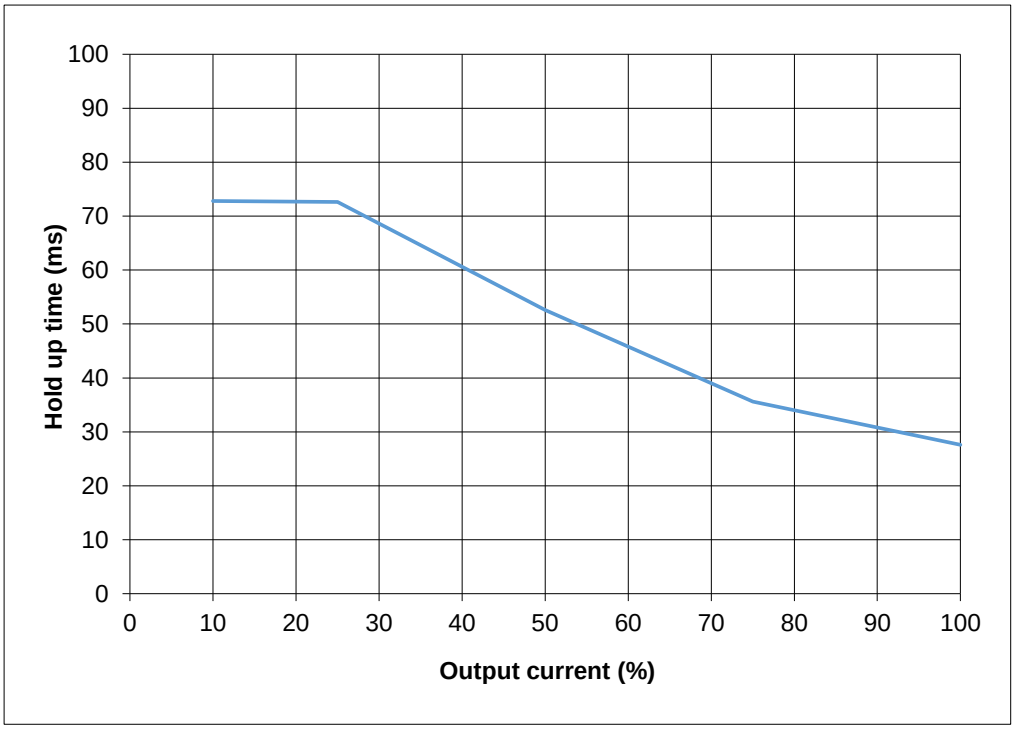
G60-17

Vin:100VAC



G60-17

Vin:200VAC

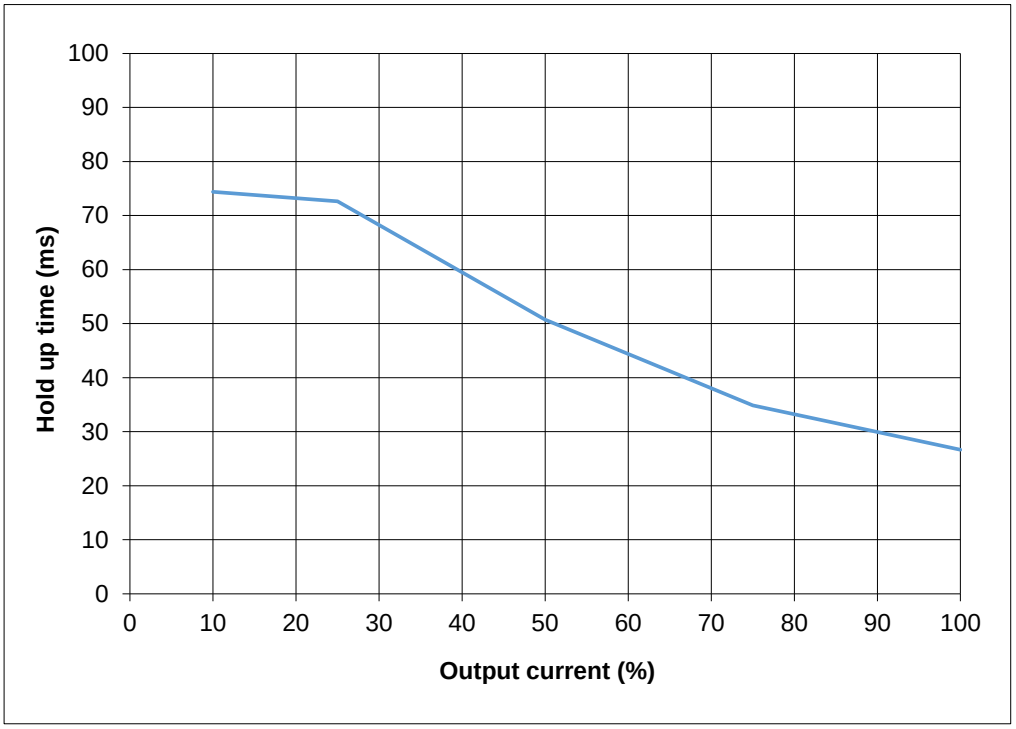


2.6 Holdup time characteristics

Conditions: Ta = 25°C
Vout:100%

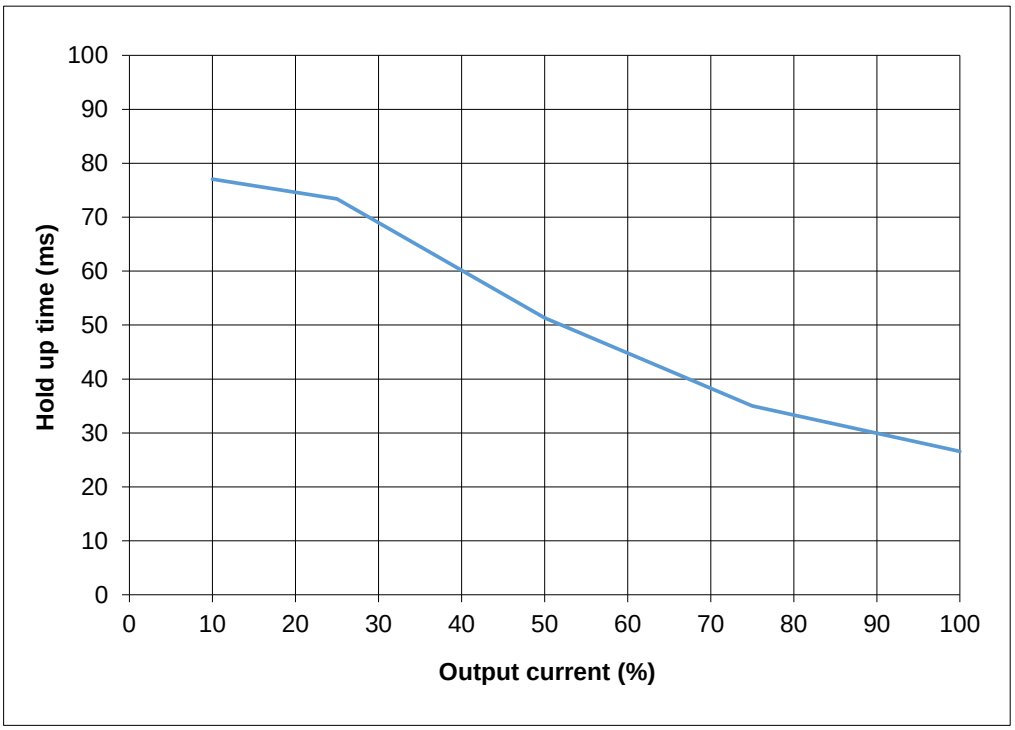
G150-7

Vin:100VAC



G150-7

Vin:200VAC

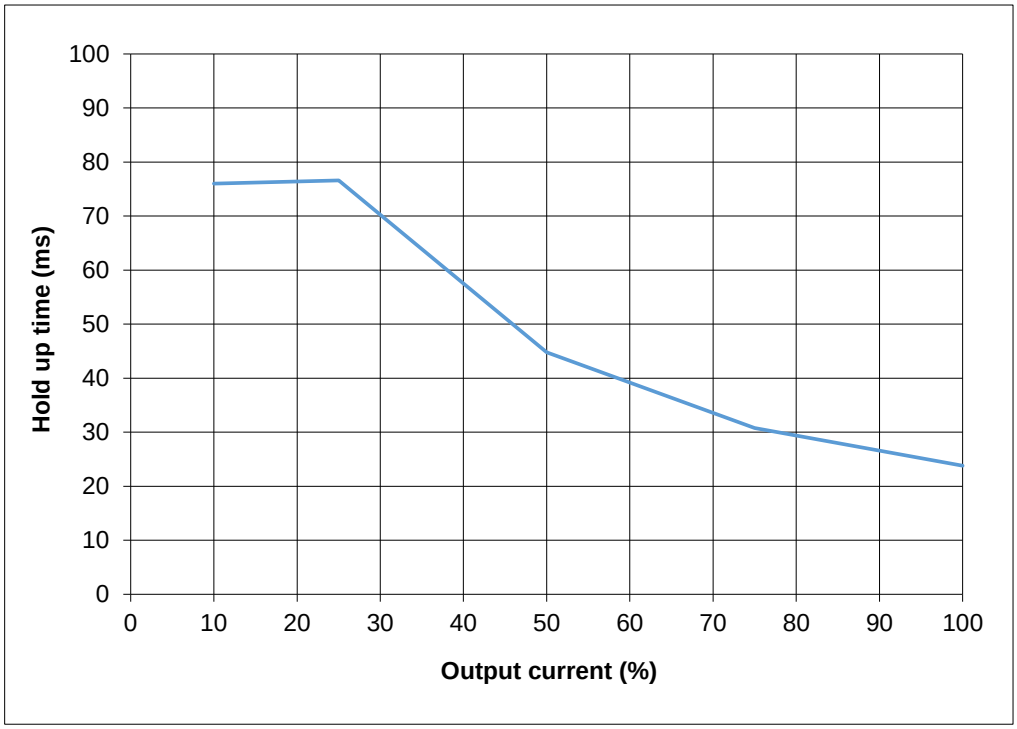


2.6 Holdup time characteristics

Conditions: Ta = 25°C
Vout:100%

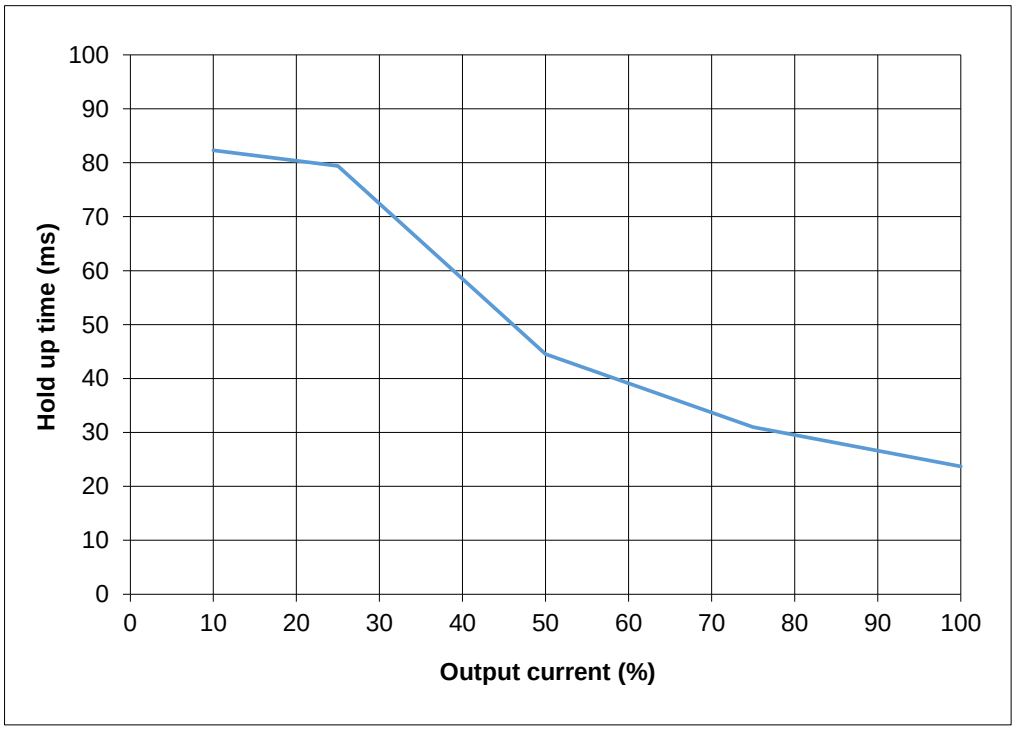
G600-1.7

Vin:100VAC



G600-1.7

Vin:200VAC

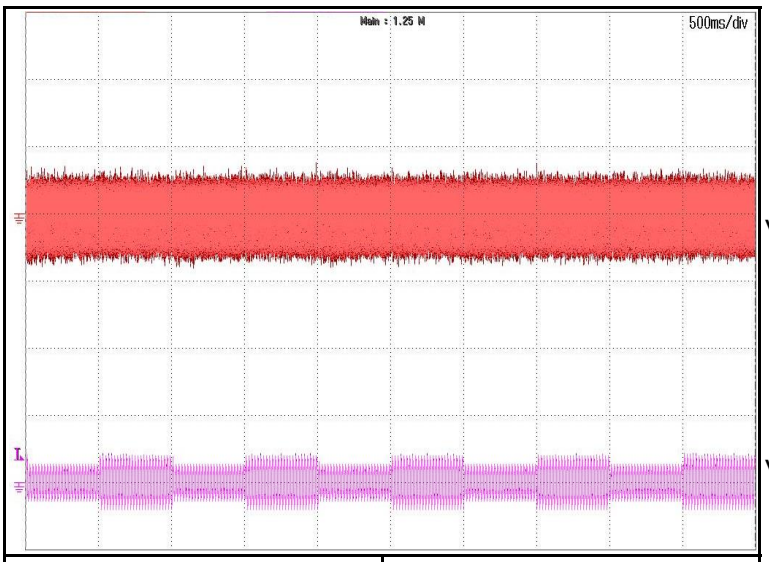


2.7 Dynamic line response characteristics Ta = 25°C

C.V mode

G10-100

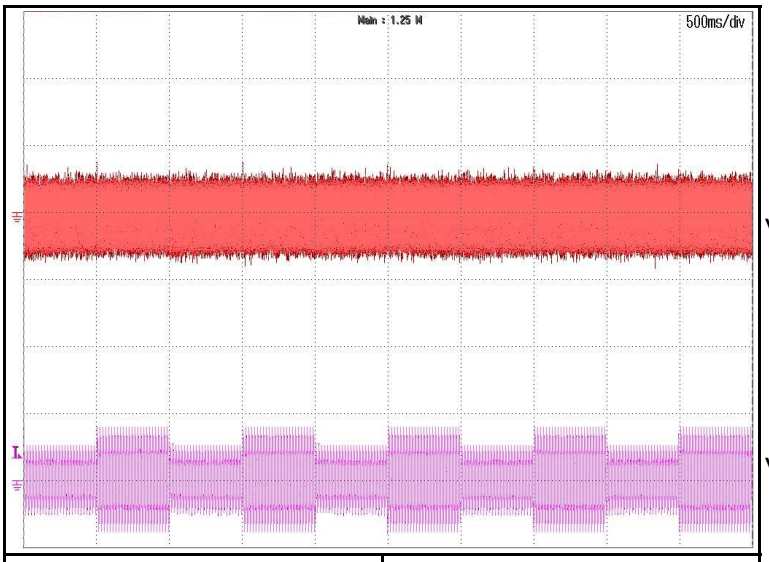
Conditions: Vout: 100%
Iout: 100%
Vin:85↔132V



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

G10-100

Conditions: Vout: 100%
Iout: 100%
Vin:170↔265V



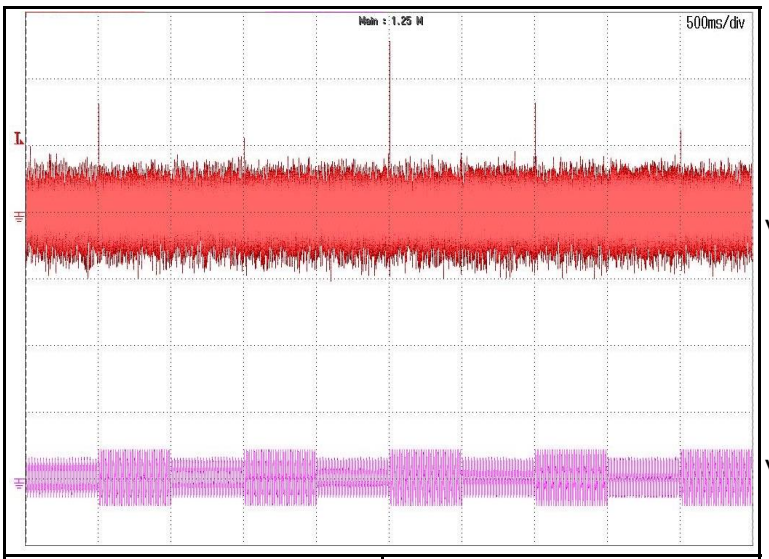
Vout: $10^{mv}/_{DIV}$	$500^{ms}/_{DIV}$
Vin: $500^{v}/_{DIV}$	

2.7 Dynamic line response characteristics Ta = 25°C

C.V mode

G60-17

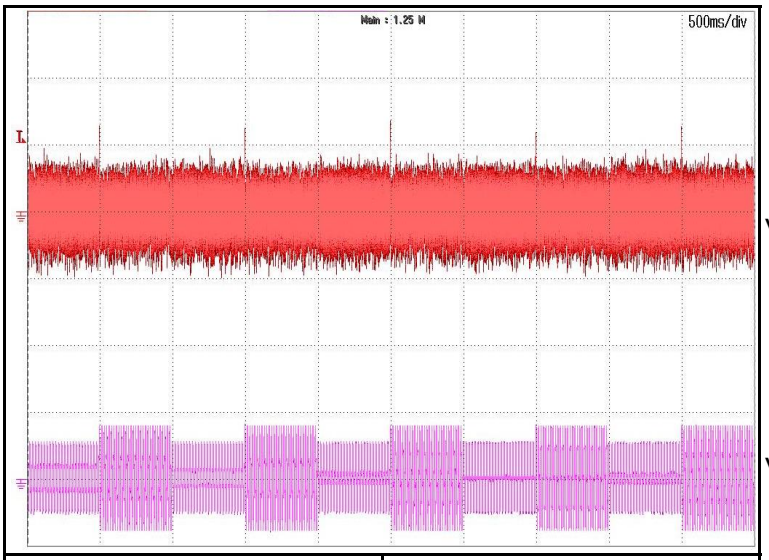
Conditions: Vout: 100%
Iout: 100%
Vin:85↔132V



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

G60-17

Conditions: Vout: 100%
Iout: 100%
Vin:170↔265V



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

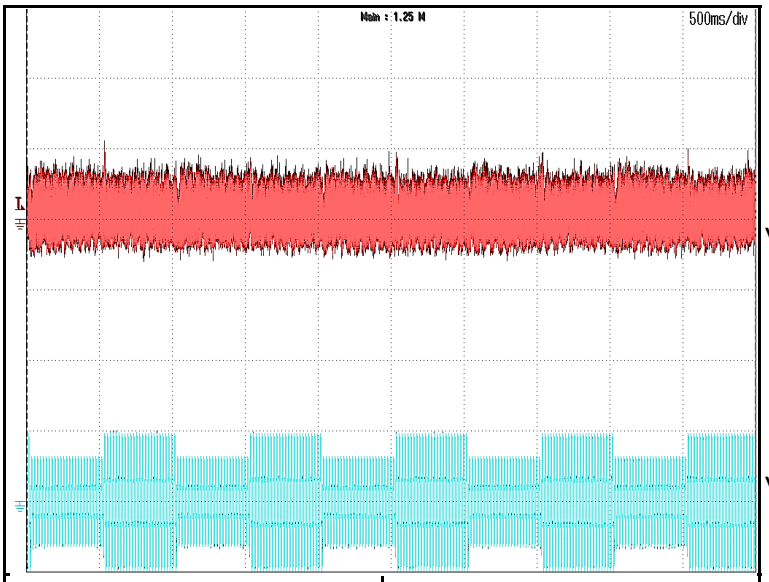
2.7 Dynamic line response characteristics

Ta = 25°C

C.V mode

G150-7

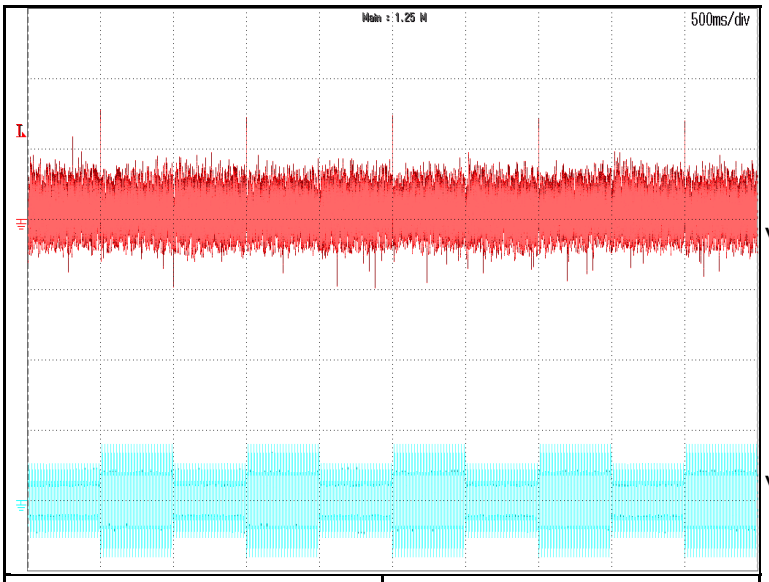
Conditions: Vout: 100%
Iout: 100%
Vin:85↔132V



Vout: 20$^{mv}/_{DIV}$	500$^{ms}/_{DIV}$
Vin: 200$^{V}/_{DIV}$	

G150-7

Conditions: Vout: 100%
Iout: 100%
Vin:170↔265V



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

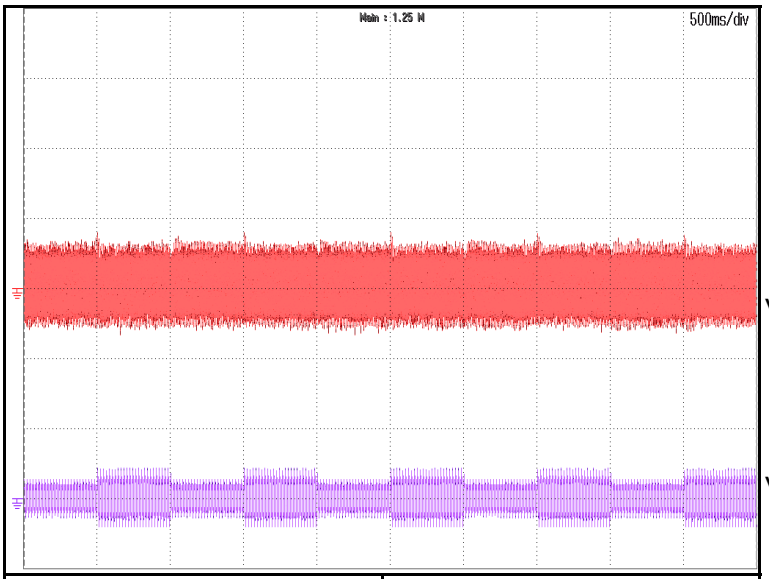
2.7 Dynamic line response characteristics

Ta = 25°C

C.V mode

G600-1.7

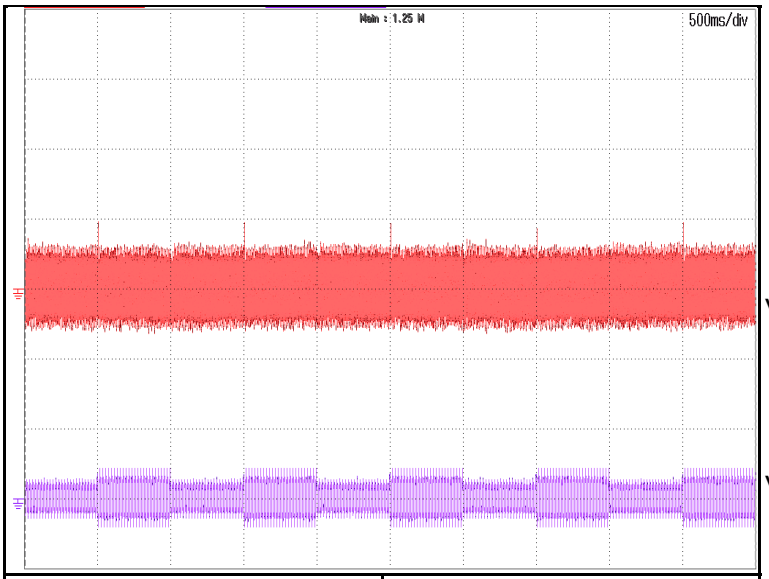
Conditions: Vout: 100%
Iout: 100%
Vin:85↔132V



Vout: 200$^{mv}/_{DIV}$	500$^{ms}/_{DIV}$
Vin: 500$^{V}/_{DIV}$	

G600-1.7

Conditions: Vout: 100%
Iout: 100%
Vin:170↔265V



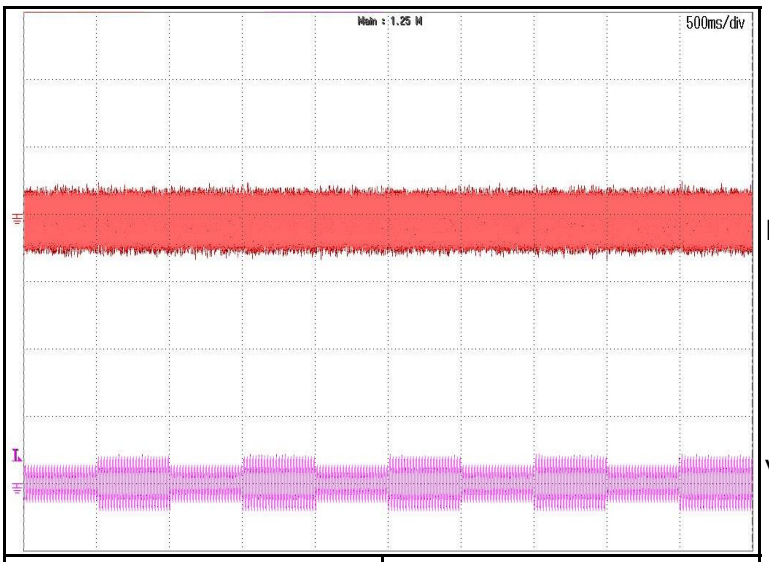
Vout: 200$^{mv}/_{DIV}$	500$^{ms}/_{DIV}$
Vin: 1000$^{V}/_{DIV}$	

2.7 Dynamic line response characteristics Ta = 25°C

C.C mode

G10-100

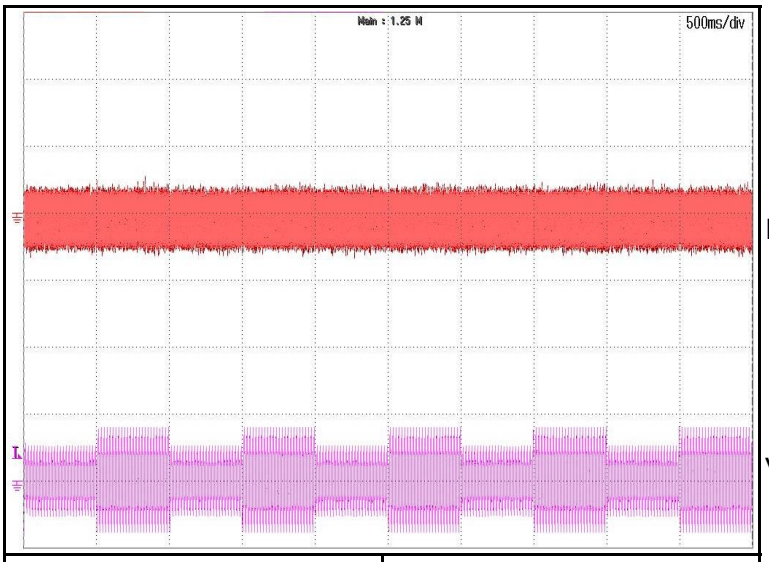
Conditions: Vout: 100%
Iout: 100%
Vin:85↔132V



Iout: 0.1$^{A}/_{DIV}$	500$^{ms}/_{DIV}$
Vin: 500v/$_{DIV}$	

G10-100

Conditions: Vout: 100%
Iout: 100%
Vin:170↔265V



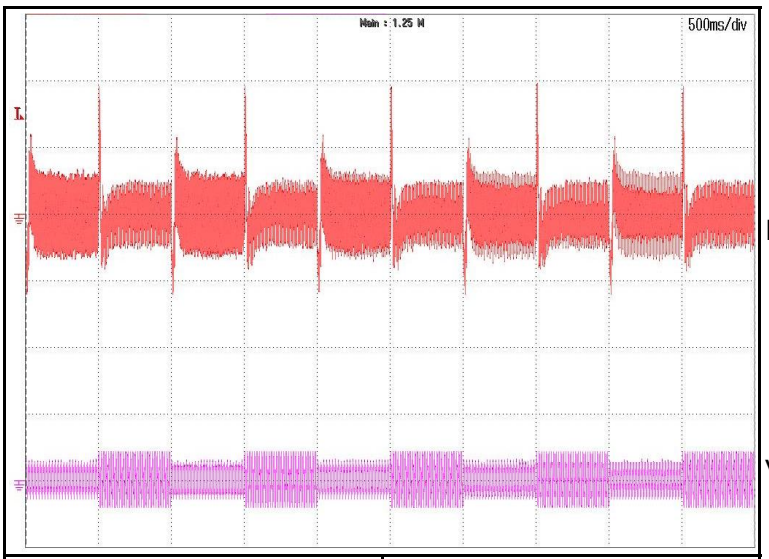
Iout: 0.1$^{A}/_{DIV}$	500$^{ms}/_{DIV}$
Vin: 500$^{v}/_{DIV}$	

2.7 Dynamic line response characteristics Ta = 25°C

C.C mode

G60-17

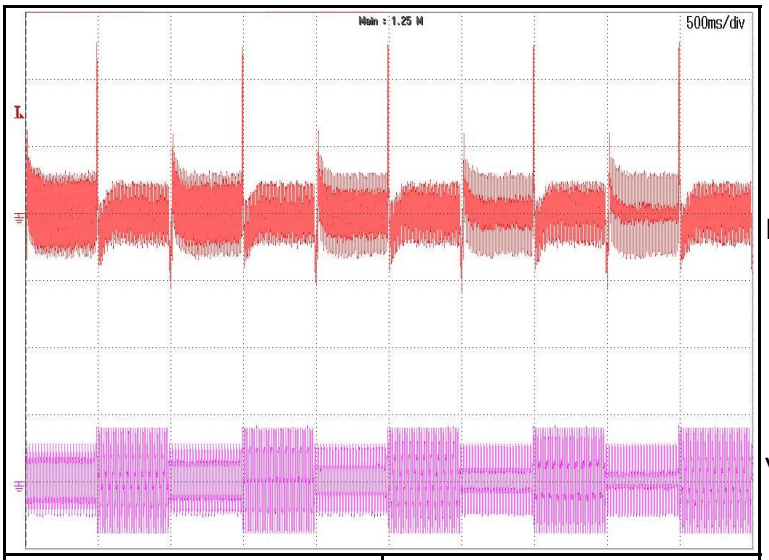
Conditions: Vout: 100%
Iout: 100%
Vin:85↔132V



Iout: 28.4$^{mA}/_{DIV}$	500$^{ms}/_{DIV}$
Vin: 500v/$_{DIV}$	

G60-17

Conditions: Vout: 100%
Iout: 100%
Vin:170↔265V



Iout: 28.4$^{mA}/_{DIV}$	500$^{ms}/_{DIV}$
Vin: 500$^{v}/_{DIV}$	

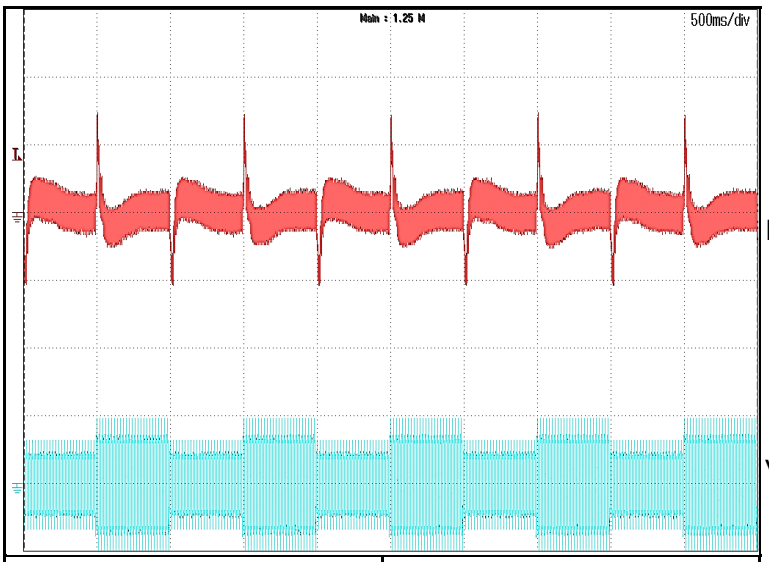
2.7 Dynamic line response characteristics

Ta = 25°C

C.C mode

G150-7

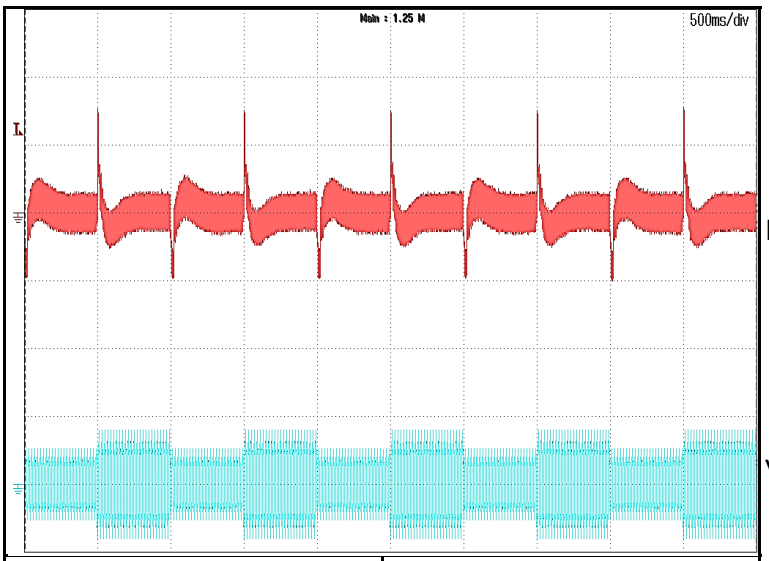
Conditions: Vout: 100%
Iout: 100%
Vin:85↔132V



Iout: 9.3$^{mA}/_{DIV}$	500$^{ms}/_{DIV}$
Vin: 200$^{V}/_{DIV}$	

G150-7

Conditions: Vout: 100%
Iout: 100%
Vin:170↔265V



Iout: 9.3$^{mA}/_{DIV}$	500$^{ms}/_{DIV}$
Vin: 500$^{V}/_{DIV}$	

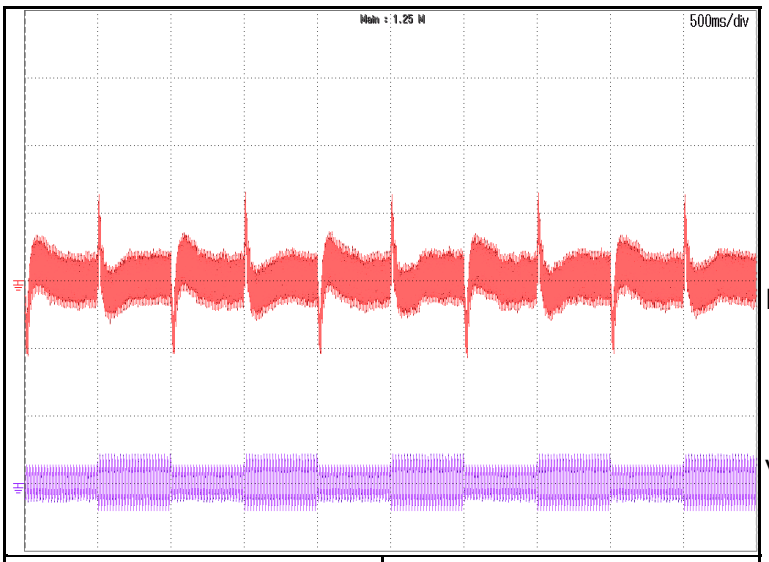
2.7 Dynamic line response characteristics

Ta = 25°C

C.C mode

G600-1.7

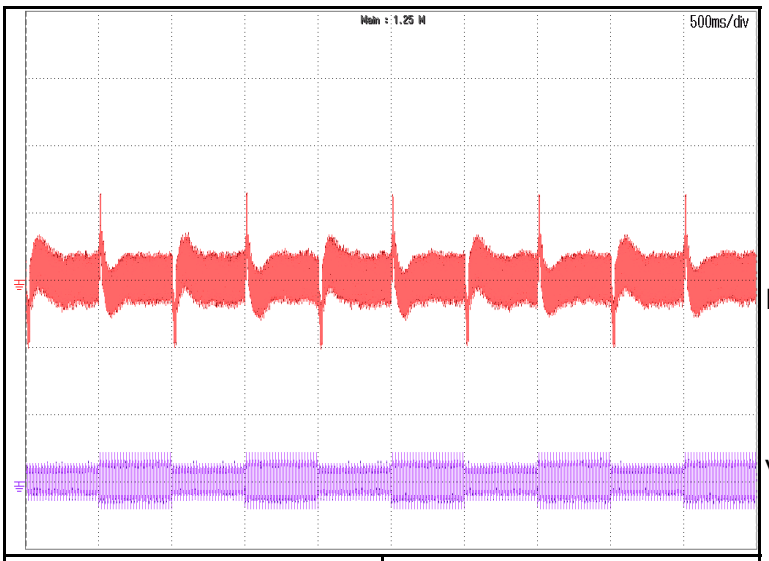
Conditions: Vout: 100%
Iout: 100%
Vin:85↔132V



Iout: 1.4$^{mA}/_{DIV}$	500$^{ms}/_{DIV}$
Vin: 500$^{V}/_{DIV}$	

G600-1.7

Conditions: Vout: 100%
Iout: 100%
Vin:170↔265V



Iout: 1.4$^{mA}/_{DIV}$	500$^{ms}/_{DIV}$
Vin: 1000$^{V}/_{DIV}$	

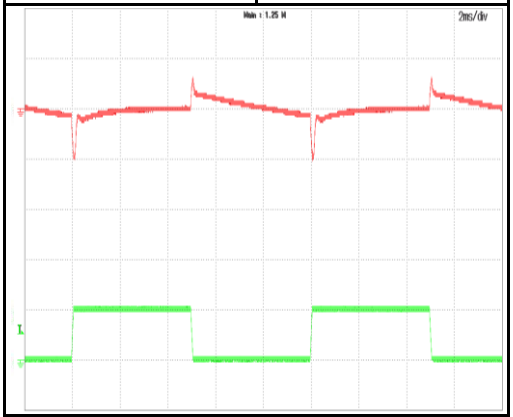
2.8 Dynamic load response characteristics

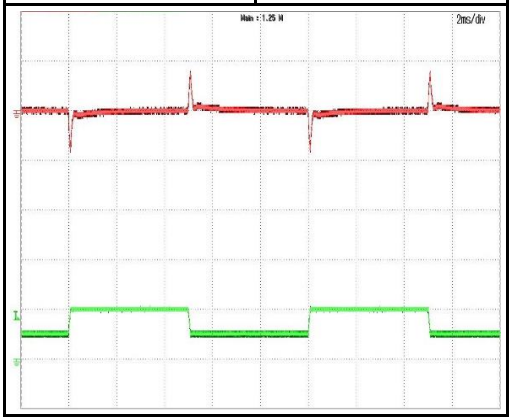
C.V mode

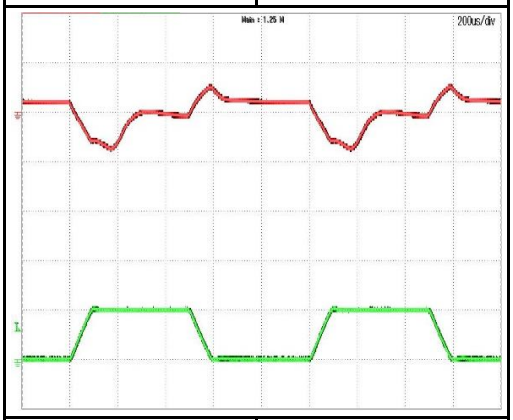
Conditions: Vin: Nominal
Vout: 100%
Ta = 25°C

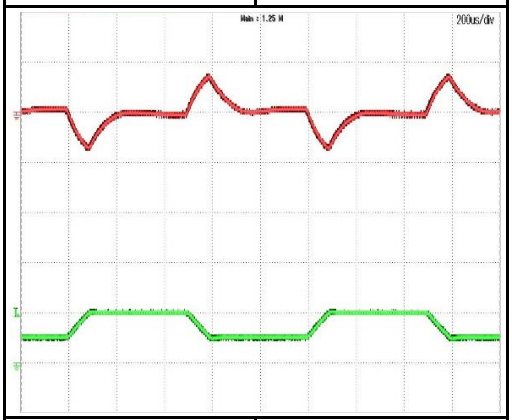
Load current: tr=tf=100us

G10-100

Iout:0%↔100%	f:100Hz
	
500mV/DIV	2ms/DIV
3.20%	-5.20%

Iout:50%↔100%	f:100Hz
	
200mV/DIV	2ms/DIV
1.60%	-1.68%

Iout:0%↔100%	f:1KHz
	
500mV/DIV	200us/DIV
2.80%	-4.00%

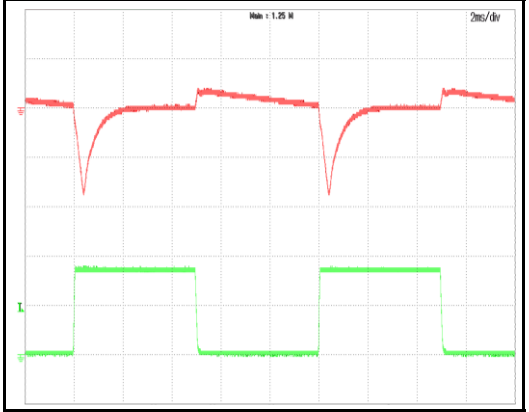
Iout:50%↔100%	f:1KHz
	
200mV/DIV	200us/DIV
1.52%	-1.52%

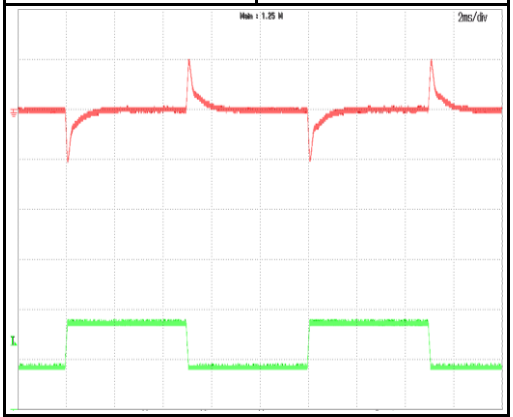
2.8 Dynamic load response characteristics
C.V mode

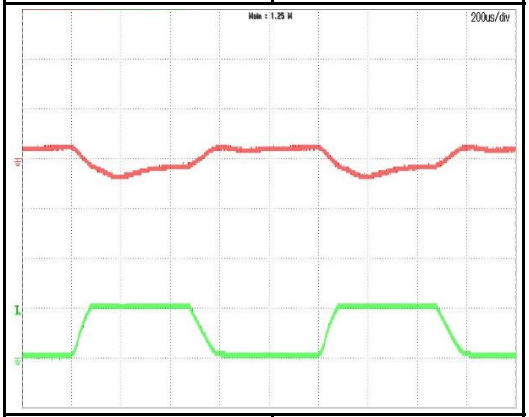
Conditions: Vin: Nominal
Vout: 100%
Ta = 25°C

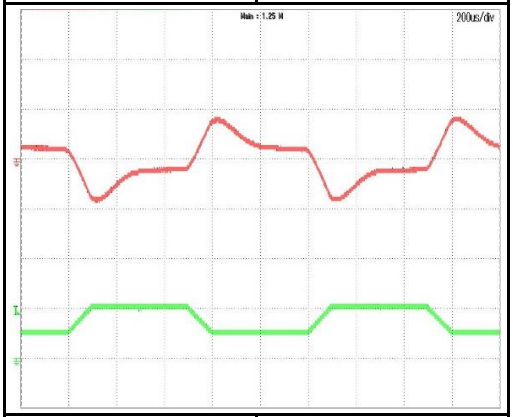
Load current: tr=tf=100us

G60-17

Iout:0%↔100%	f:100Hz
	
$1^{V}/_{DIV}$	$2^{ms}/_{DIV}$
0.67%	-2.83%

Iout:50%↔100%	f:100Hz
	
$200^{mV}/_{DIV}$	$2^{ms}/_{DIV}$
0.36%	-0.36%

Iout:0%↔100%	f:1KHz
	
$1^{V}/_{DIV}$	$200^{us}/_{DIV}$
0.47%	-0.67%

Iout:50%↔100%	f:1KHz
	
$200^{mV}/_{DIV}$	$200^{us}/_{DIV}$
0.28%	-0.29%

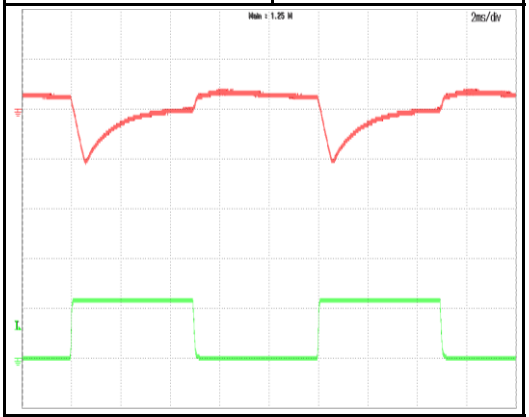
2.8 Dynamic load response characteristics

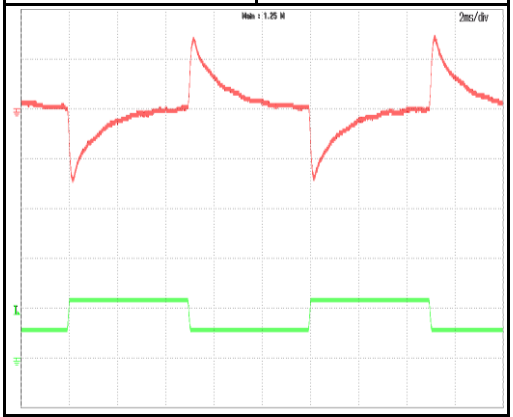
C.V mode

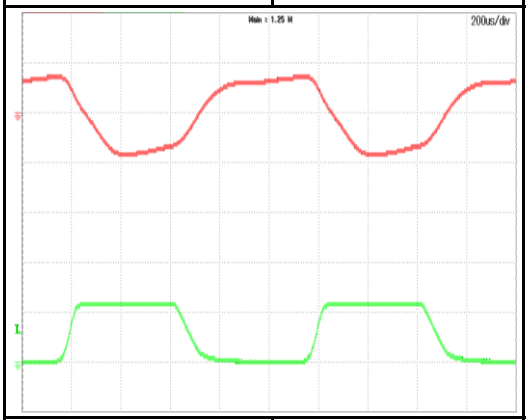
Conditions: Vin: Nominal
Vout: 100%
Ta = 25°C

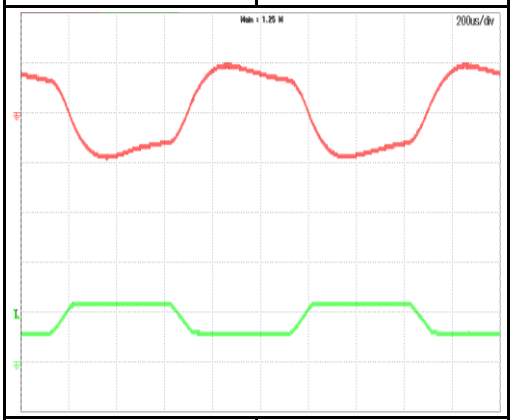
Load current: tr=tf=100us

G150-7

Iout:0%↔100%	f:100Hz
	
$2^{V}/_{DIV}$	$2^{ms}/_{DIV}$
0.53%	-1.44%

Iout:50%↔100%	f:100Hz
	
$0.2^{V}/_{DIV}$	$2^{ms}/_{DIV}$
0.20%	-0.19%

Iout:0%↔100%	f:1KHz
	
$500^{mV}/_{DIV}$	$200^{us}/_{DIV}$
0.25%	-0.29%

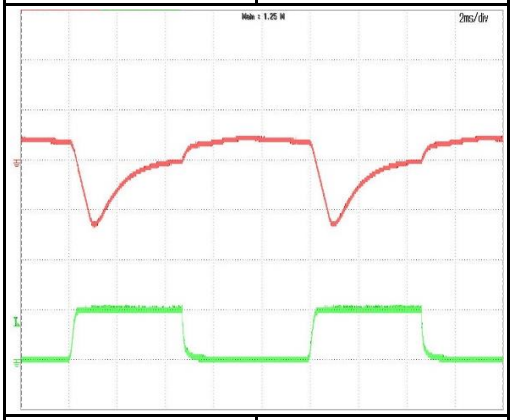
Iout:50%↔100%	f:1KHz
	
$200^{mV}/_{DIV}$	$200^{us}/_{DIV}$
0.13%	-0.13%

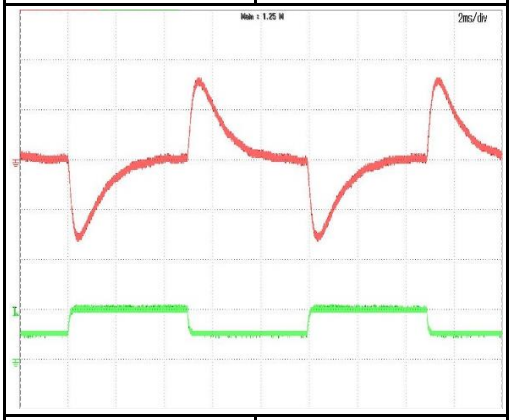
2.8 Dynamic load response characteristics
C.V mode

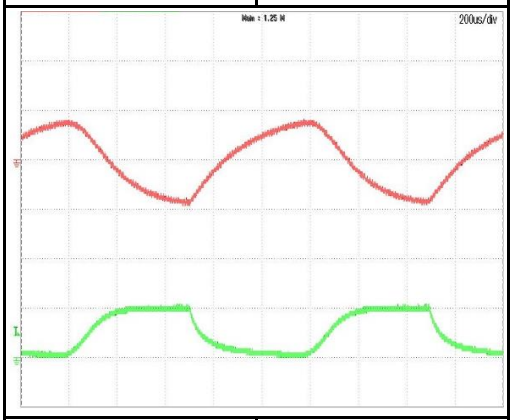
Conditions: Vin: Nominal
Vout: 100%
Ta = 25°C

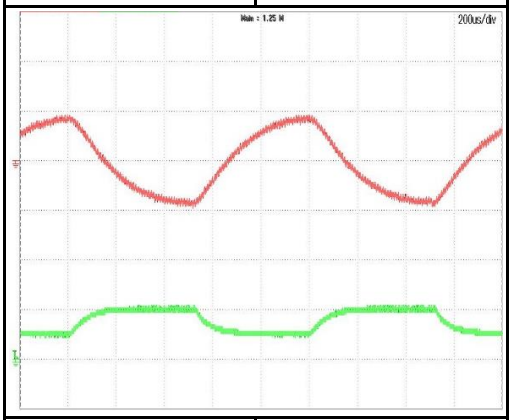
Load current: tr=tf=100us

G600-1.7

Iout:0%↔100%	f:100Hz
	
$5^{V}/_{DIV}$	$2^{ms}/_{DIV}$
0.40%	-1.13%

Iout:50%↔100%	f:100Hz
	
$0.5^{V}/_{DIV}$	$2^{ms}/_{DIV}$
0.13%	-0.14%

Iout:0%↔100%	f:1KHz
	
$1^{V}/_{DIV}$	$200^{us}/_{DIV}$
0.14%	-0.15%

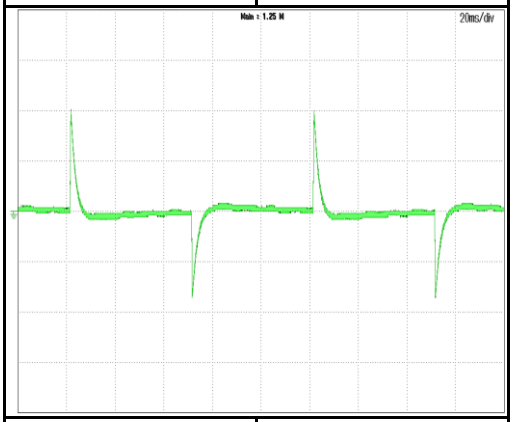
Iout:50%↔100%	f:1KHz
	
$0.5^{V}/_{DIV}$	$200^{us}/_{DIV}$
0.08%	-0.08%

2.8 Dynamic load response characteristics
C.C mode

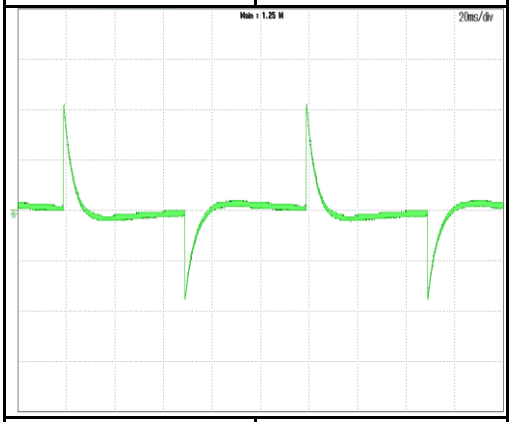
Conditions: Vin: Nominal
Ta = 25°C

G10-100

Io=100A

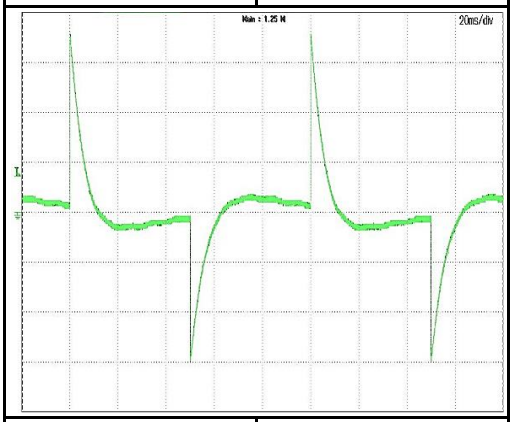
Vout:9↔7.5V	f:10Hz
	
$10^{A}/_{DIV}$	$20^{ms}/_{DIV}$
-17.20%	

Io=50A

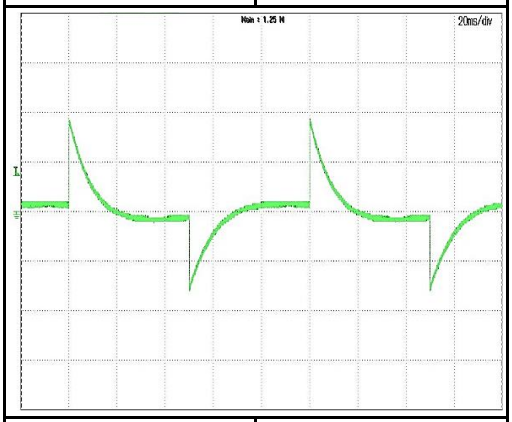
Vout:9↔7.5V	f:10Hz
	
$5^{A}/_{DIV}$	$20^{ms}/_{DIV}$
-8.80%	

G60-17

Io=17A

Vout:54↔45V	f:10Hz
	
$1^{A}/_{DIV}$	$20^{ms}/_{DIV}$
-17.65%	

Io=8.5A

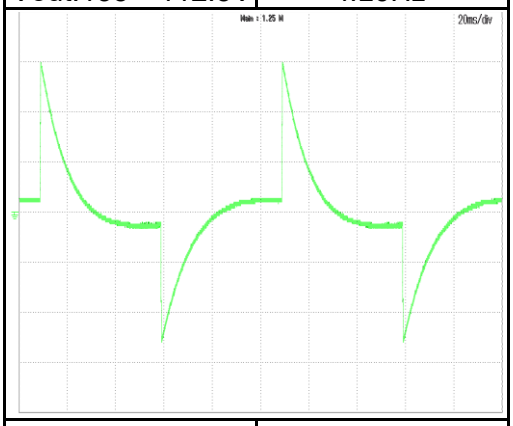
Vout:54↔45V	f:10Hz
	
$1^{A}/_{DIV}$	$20^{ms}/_{DIV}$
-9.41%	

2.8 Dynamic load response characteristics
C.C mode

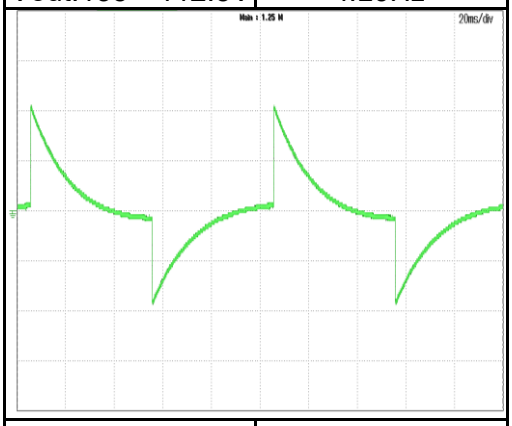
Conditions: Vin: Nominal
Ta = 25°C

G150-7

Io=7A

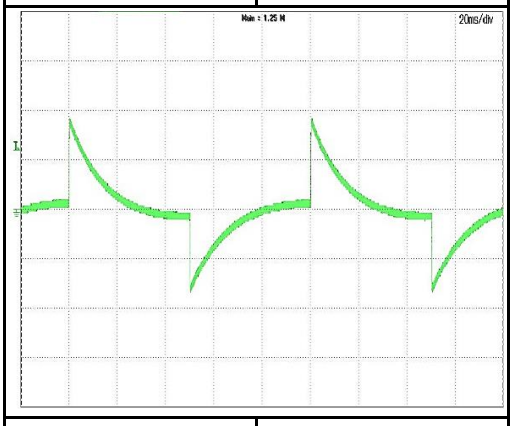
Vout:135↔112.5V	f:10Hz
	
500mA/DIV	20ms/DIV
-18.57%	

Io=3.5A

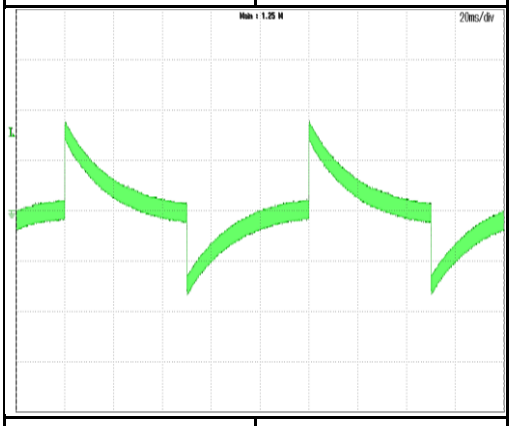
Vout:135↔112.5V	f:10Hz
	
500mA/DIV	20ms/DIV
-13.43%	

G600-1.7

Io=1.7A

Vout:540↔450V	f:10Hz
	
200mA/DIV	20ms/DIV
-19.77%	

Io=0.85A

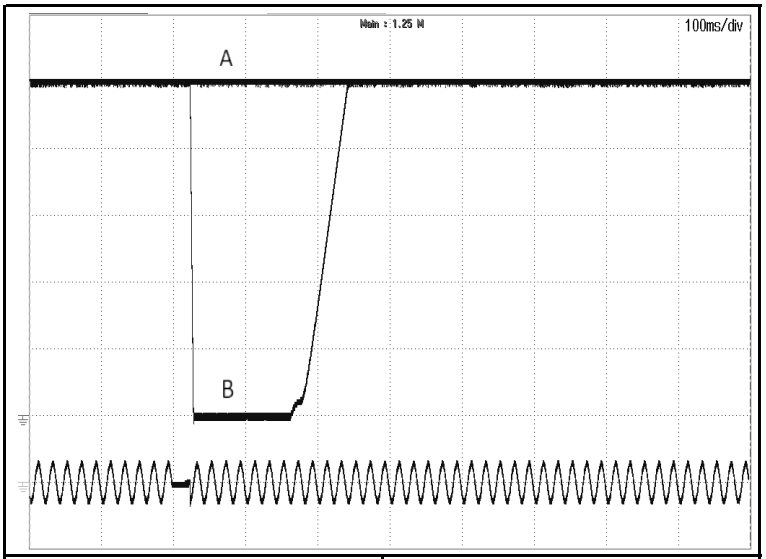
Vout:540↔450V	f:10Hz
	
100mA/DIV	20ms/DIV
-9.88%	

2.9 Response to brown-out characteristics
C.V mode

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

G10-100

Vin:100VAC

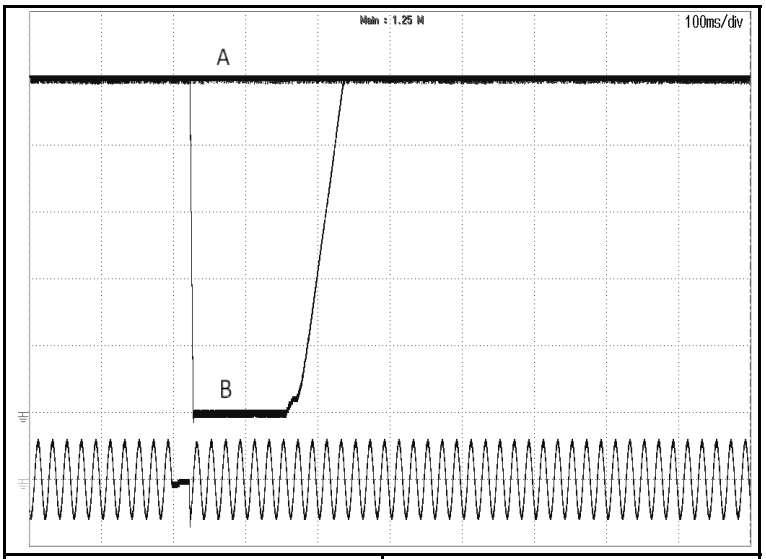


Vout: $2^{V}/_{DIV}$	$100^{ms}/_{DIV}$
Vin:500V/div	

Brown-out time
A: 23mS
B: 24mS

G10-100

Vin:200VAC



Vout: $2^{V}/_{DIV}$	$100^{ms}/_{DIV}$
Vin:500V/div	

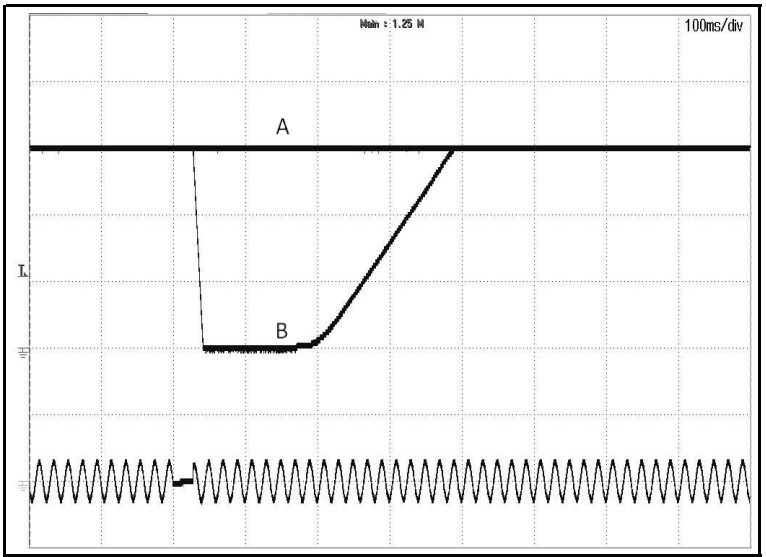
Brown-out time
A: 23mS
B: 24mS

2.9 Response to brown-out characteristics
C.V mode

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

G60-17

Vin:100VAC

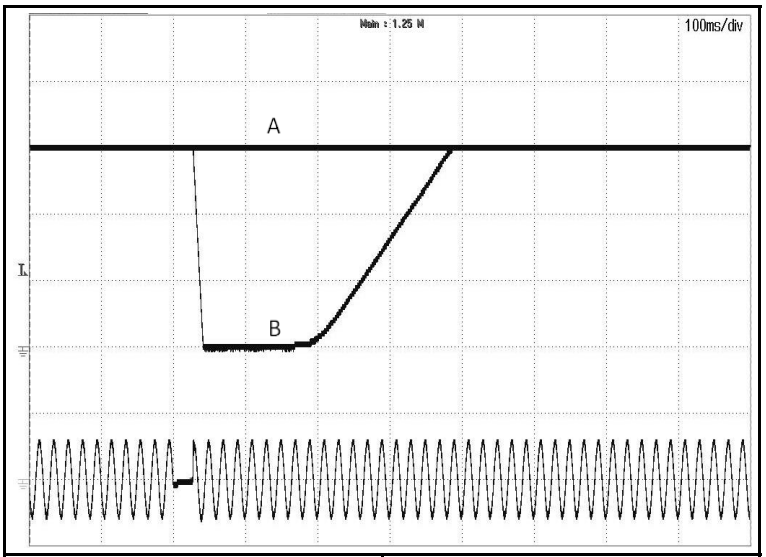


Vout: $20^{V}/_{DIV}$	$100^{ms}/_{DIV}$
Vin: $500^{V}/_{DIV}$	

Brown-out time
A: 26mS
B: 27mS

G60-17

Vin:200VAC



Vout: $20^{V}/_{DIV}$	$100^{ms}/_{DIV}$
Vin: $500^{V}/_{DIV}$	

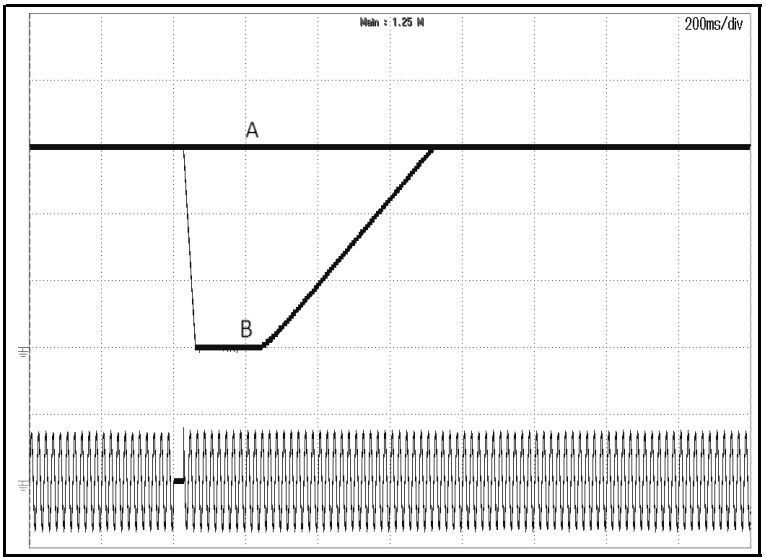
Brown-out time
B: 27mS
B: 28mS

2.9 Response to brown-out characteristics
C.V mode

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

G150-7

Vin:100VAC

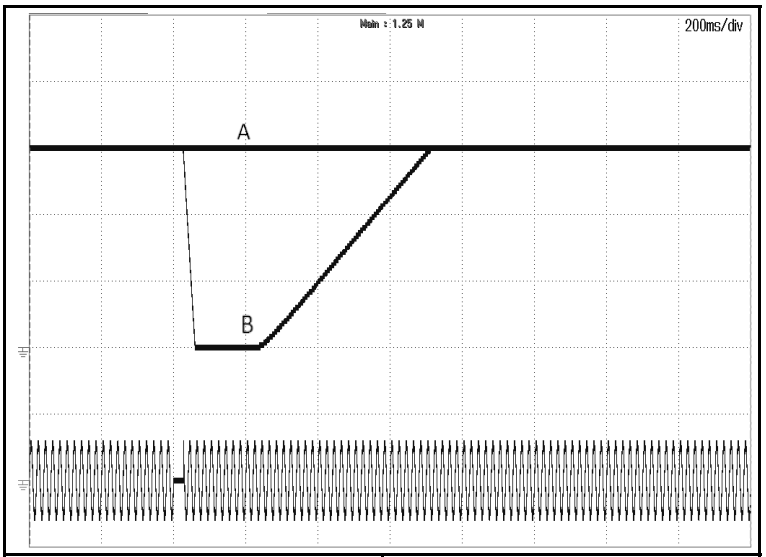


Vout: 50V/DIV	200ms/DIV
Vin: 200V/DIV	

Brown-out time
A: 25mS
B: 26mS

G150-7

Vin:200VAC



Vout: 50V/DIV	200ms/DIV
Vin: 500V/DIV	

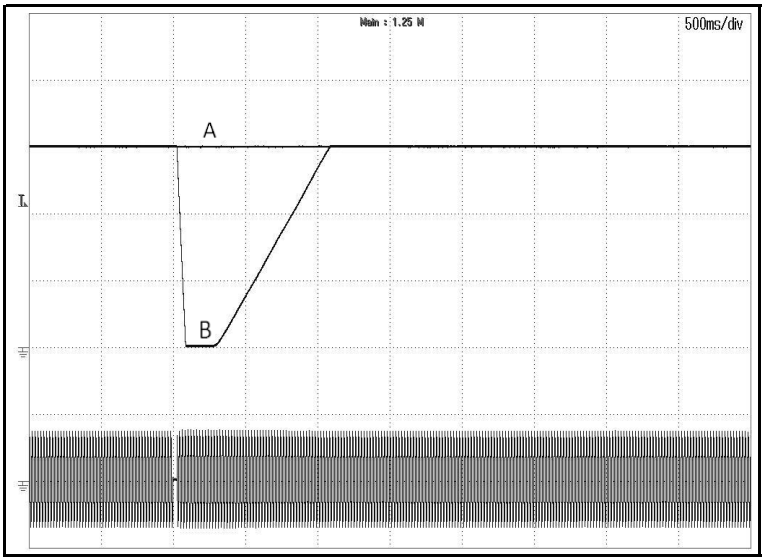
Brown-out time
A: 26mS
B: 27mS

2.9 Response to brown-out characteristics
C.V mode

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

G600-1.7

Vin:100VAC

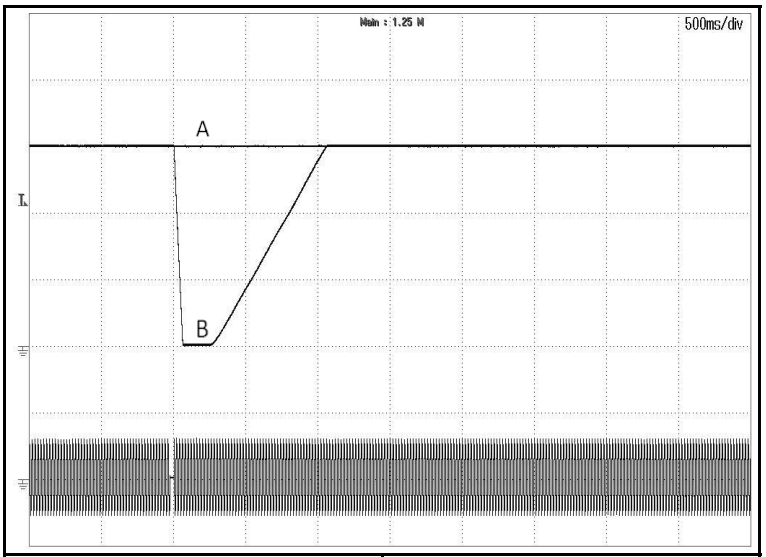


Vout: 200V/DIV	500ms/DIV
Vin: 200V/DIV	

Brown-out time
A:26mS
B:27mS

G600-1.7

Vin:200VAC



Vout: 200V/DIV	500ms/DIV
Vin: 500V/DIV	

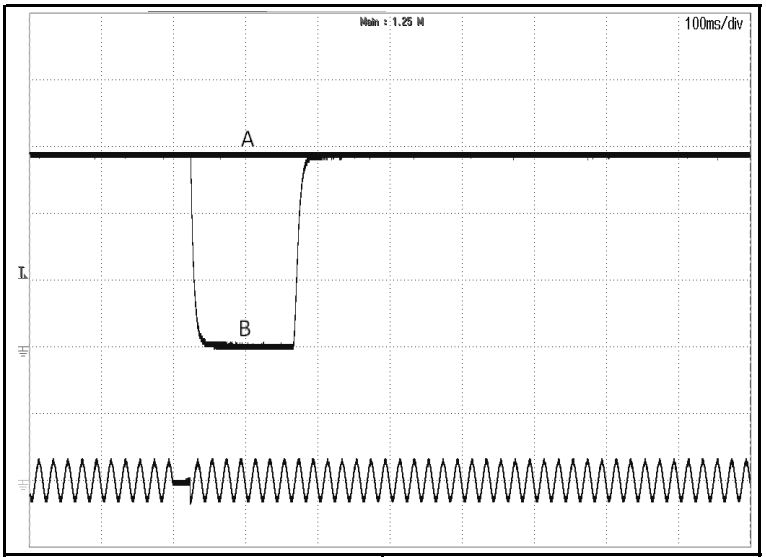
Brown-out time
A:26mS
B:27mS

2.9 Response to brown-out characteristics
C.C mode

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

G10-100

Vin:100VAC

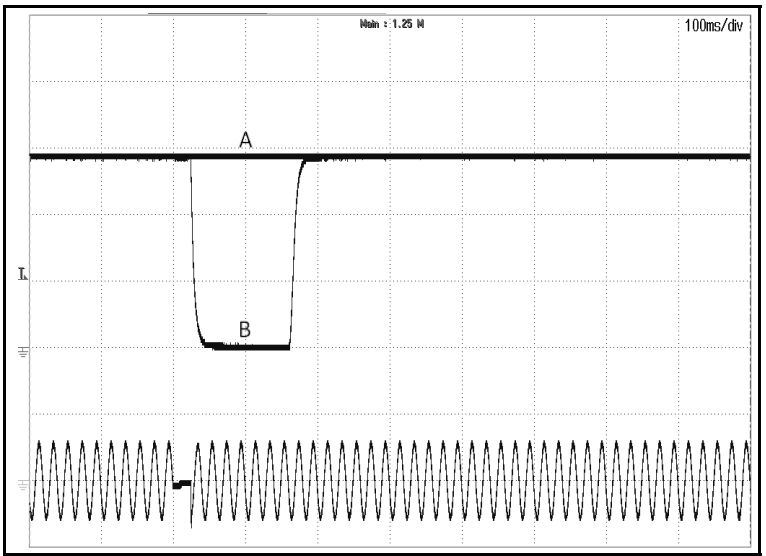


Iout: $35^{A}/_{DIV}$	$100^{ms}/_{DIV}$
Vin: $500^{V}/_{DIV}$	

Brown-out time
A: 23mS
B: 24mS

G10-100

Vin:200VAC



Iout: $35^{A}/_{DIV}$	$100^{ms}/_{DIV}$
Vin: $500^{V}/_{DIV}$	

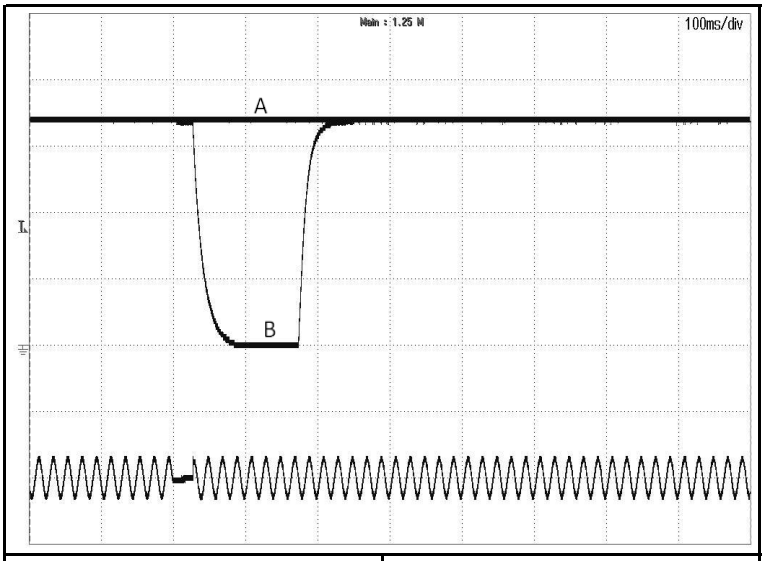
Brown-out time
A: 23mS
B: 24mS

2.9 Response to brown-out characteristics
C.C mode

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

G60-17

Vin:100VAC

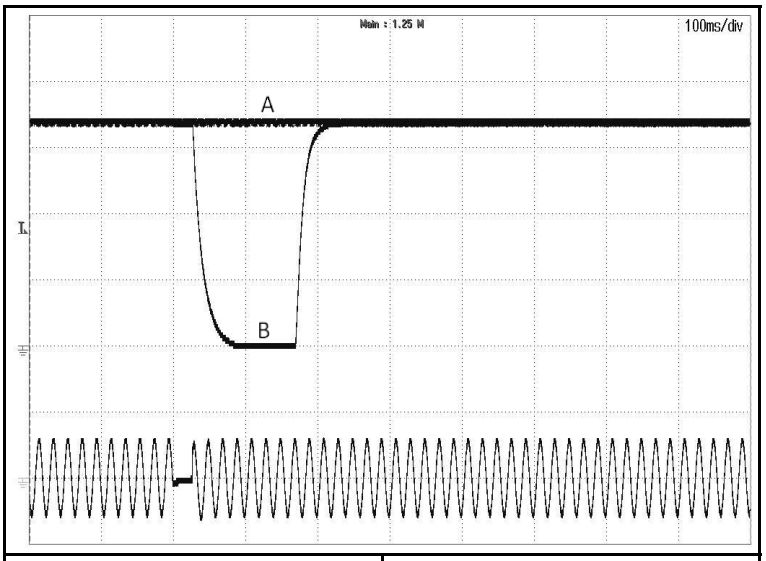


Iout:$5^{A}/_{DIV}$	$100^{ms}/_{DIV}$
Vin: $500^{V}/_{DIV}$	

Brown-out time
A: 26mS
B: 27mS

G60-17

Vin:200VAC



Iout:$5^{A}/_{DIV}$	$100^{ms}/_{DIV}$
Vin: $500^{V}/_{DIV}$	

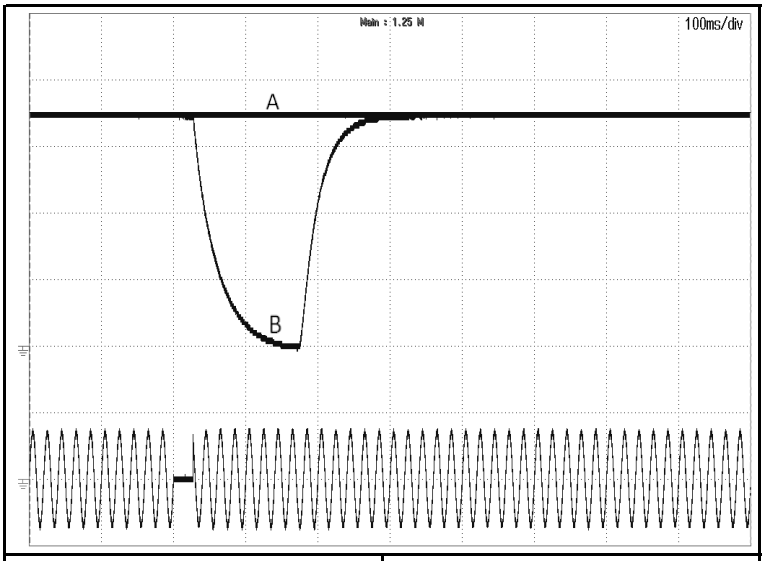
Brown-out time
A: 26mS
B: 27mS

2.9 Response to brown-out characteristics
C.C mode

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

G150-7

Vin:100VAC

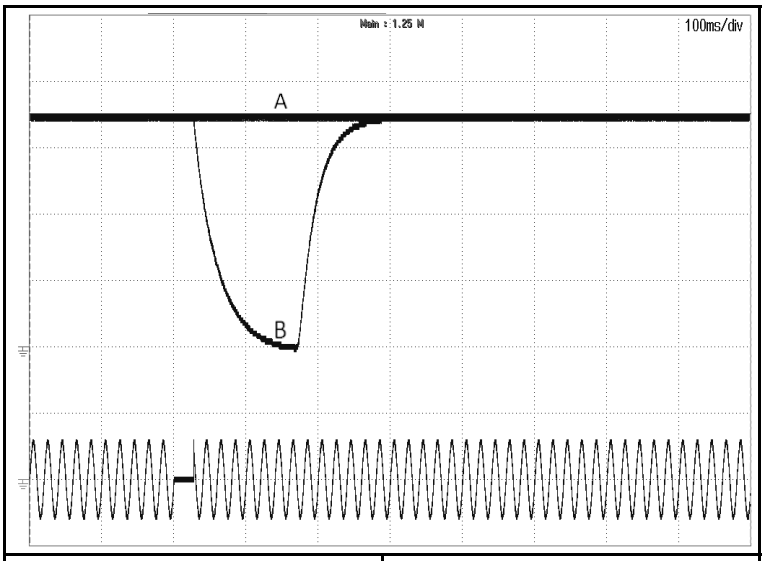


Iout: $2^{A}/_{DIV}$	$100^{ms}/_{DIV}$
Vin: $200^{V}/_{DIV}$	

Brown-out time
A: 26mS
B: 27mS

G150-7

Vin:200VAC



Iout: $2^{A}/_{DIV}$	$100^{ms}/_{DIV}$
Vin: $500^{V}/_{DIV}$	

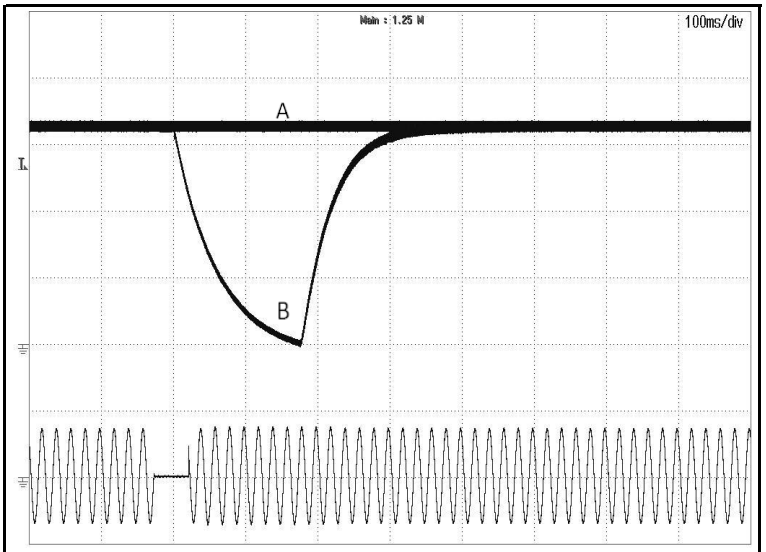
Brown-out time
A: 26mS
B: 27mS

2.9 Response to brown-out characteristics
C.C mode

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

G600-1.7

Vin:100VAC

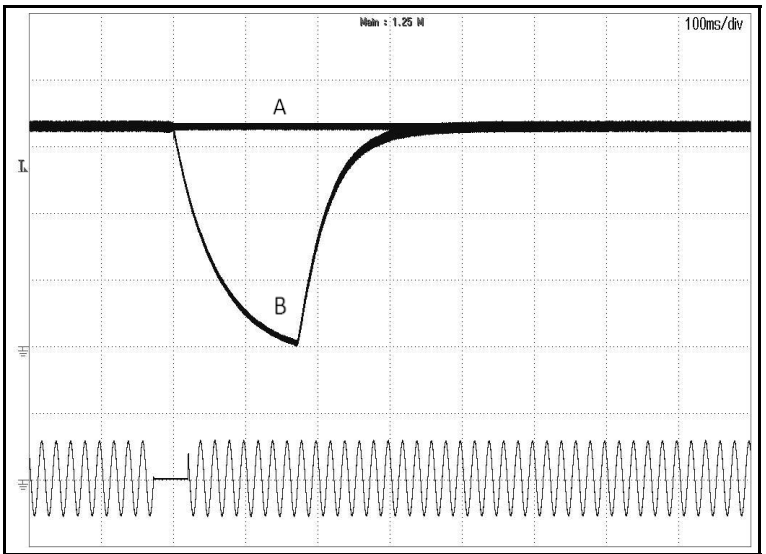


Iout: $0.5^{A}/_{DIV}$	$100^{ms}/_{DIV}$
Vin: $600^{V}/_{DIV}$	

Brown-out time
A: 27mS
B: 48mS

G600-1.7

Vin:200VAC

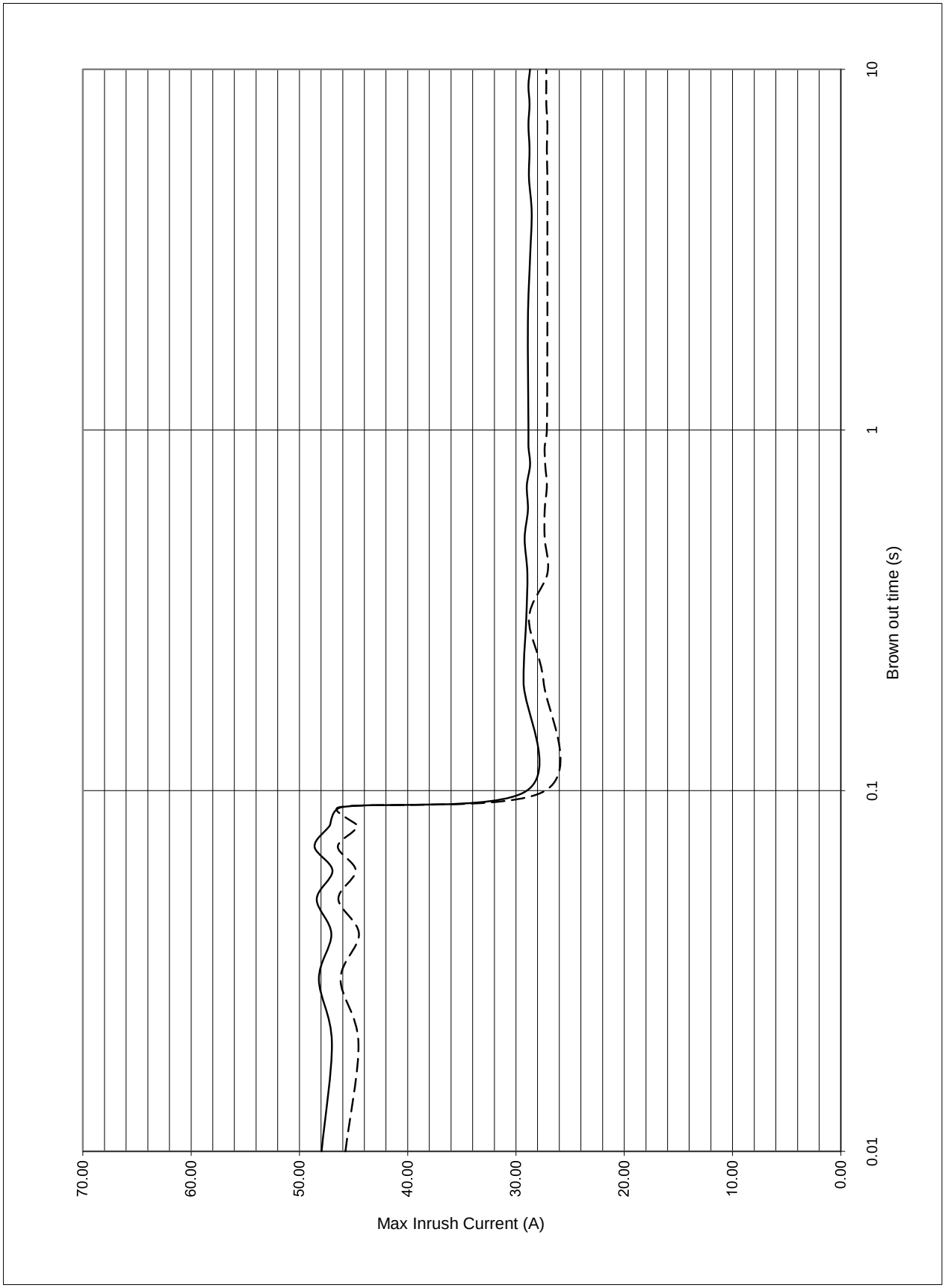


Iout: $0.5^{A}/_{DIV}$	$100^{ms}/_{DIV}$
Vin: $500^{V}/_{DIV}$	

Brown-out time
A: 27mS
B: 48mS

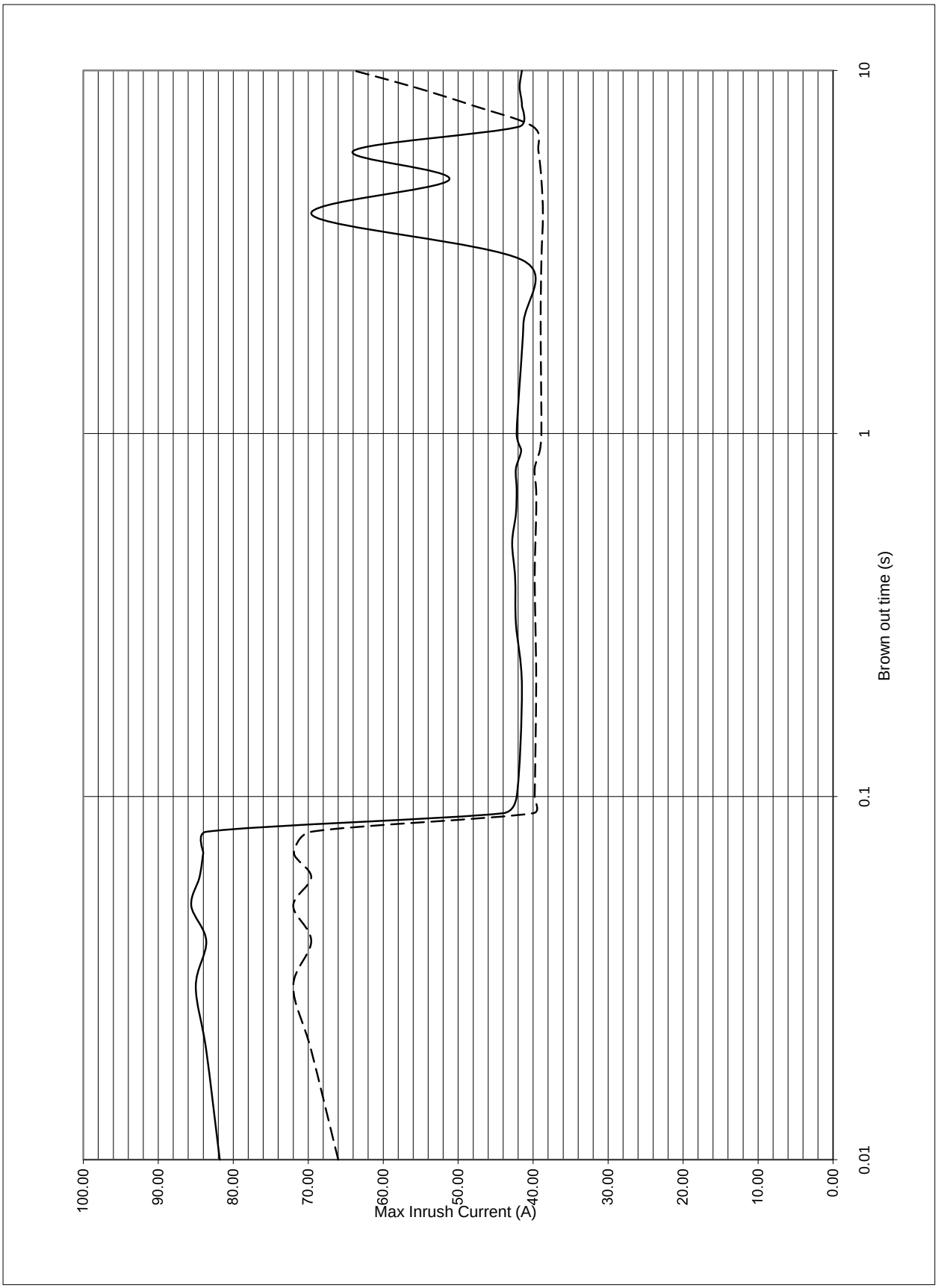
2.10 Inrush Current Characteristics

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



2.10 Inrush Current Characteristics

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

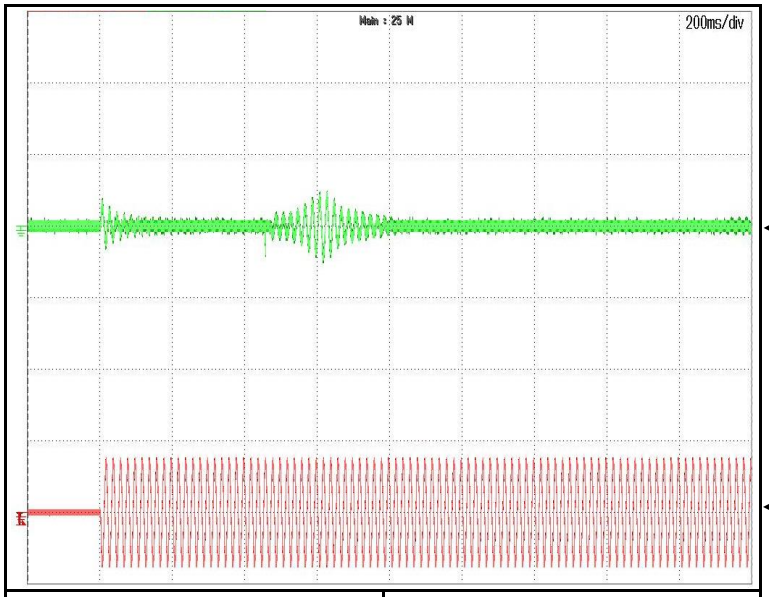


2.11 Inrush current waveform

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

Switch on phase angle of input AC voltage

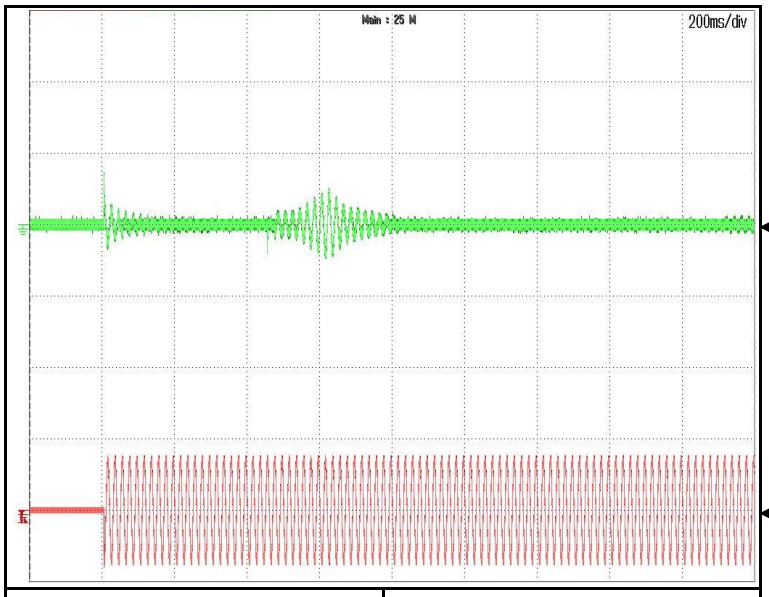
Φ=0˚



$20^{A}/_{DIV}$	$200^{ms}/_{DIV}$
$Vin:200v/_{DIV}$	

Switch on phase angle of input AC voltage

Φ=90˚



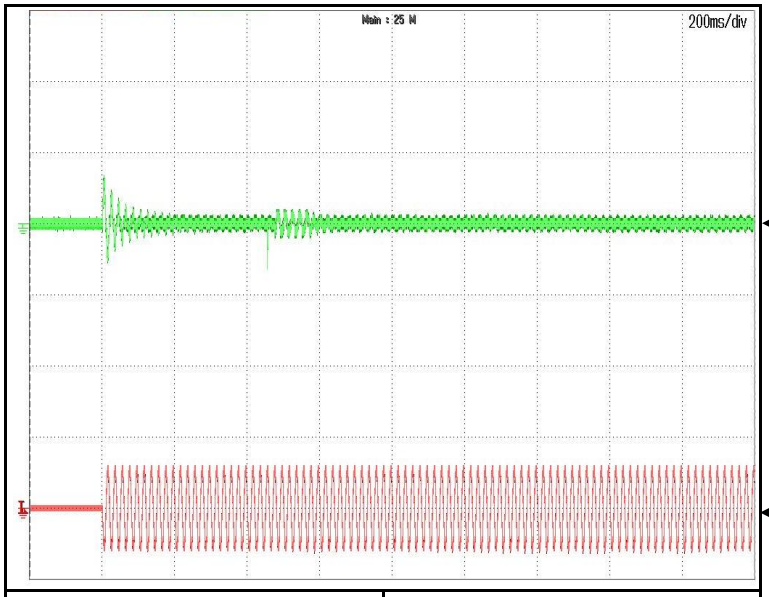
$20^{A}/_{DIV}$	$200^{ms}/_{DIV}$
$Vin:200v/_{DIV}$	

2.11 Inrush current waveform

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

Switch on phase angle of input AC voltage

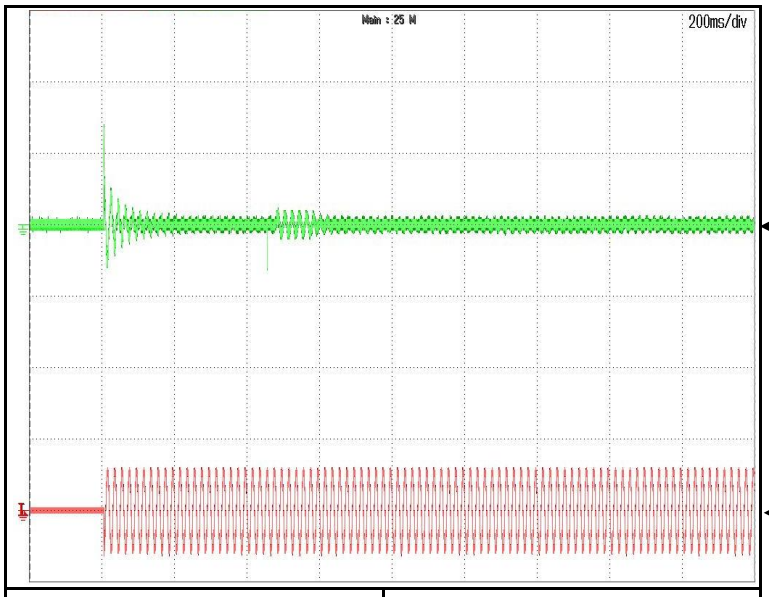
Φ=0°



$20^{A}/_{DIV}$	$200^{ms}/_{DIV}$
$Vin:500v/_{DIV}$	

Switch on phase angle of input AC voltage

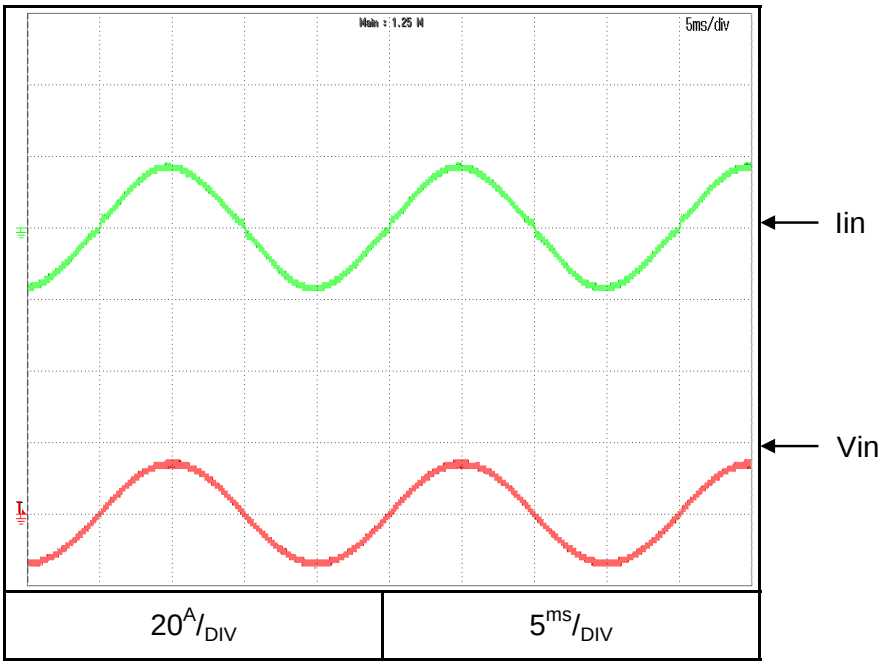
Φ=90°



$20^{A}/_{DIV}$	$200^{ms}/_{DIV}$
$Vin:500v/_{DIV}$	

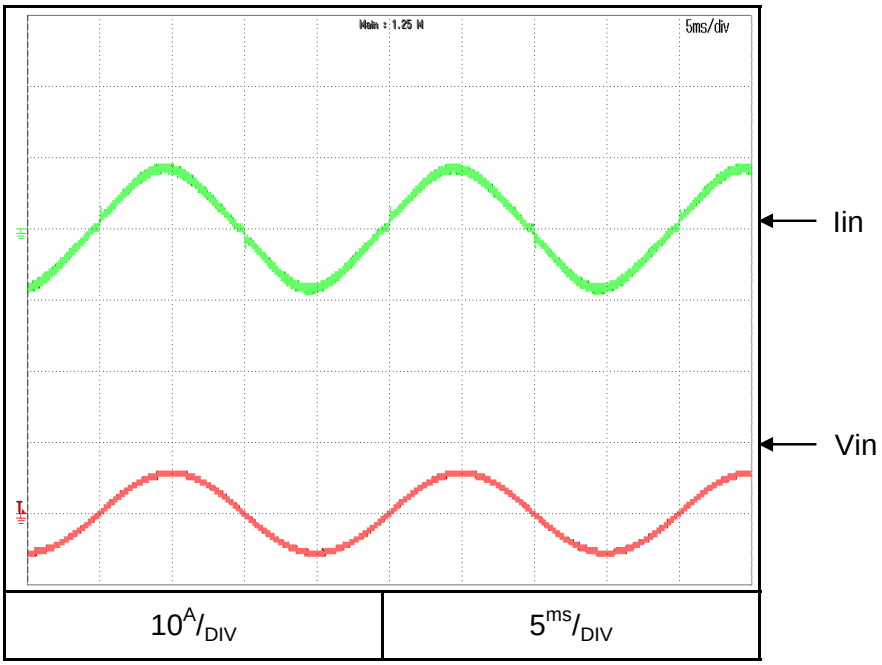
2.12 Input current waveform

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



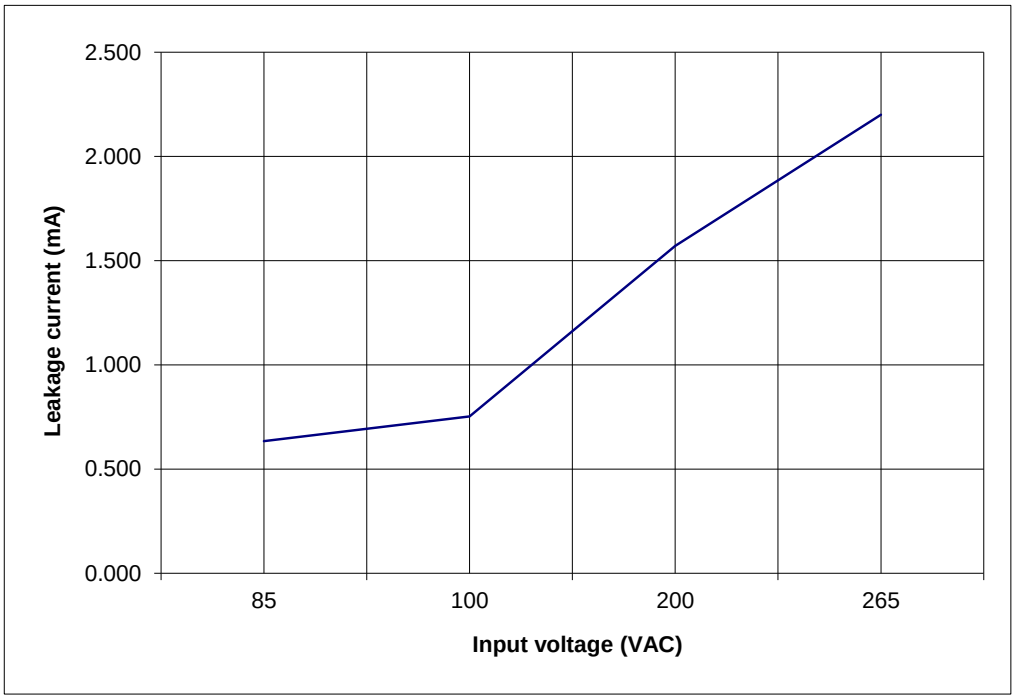
2.12 Input current waveform

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



2.13 Leakage current characteristics

Conditions: Ta = 25°C
f=60Hz

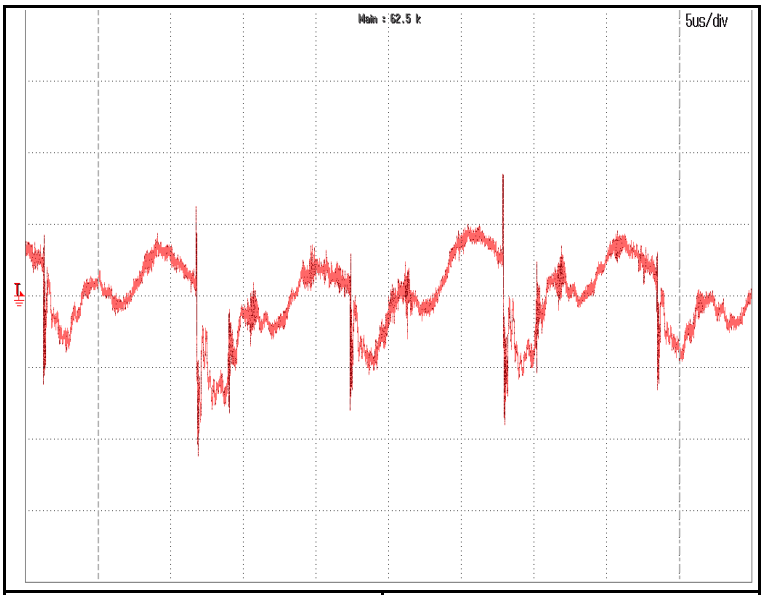


(*) TN & TT power system

2.14 Output ripple & noise waveform
C.V mode

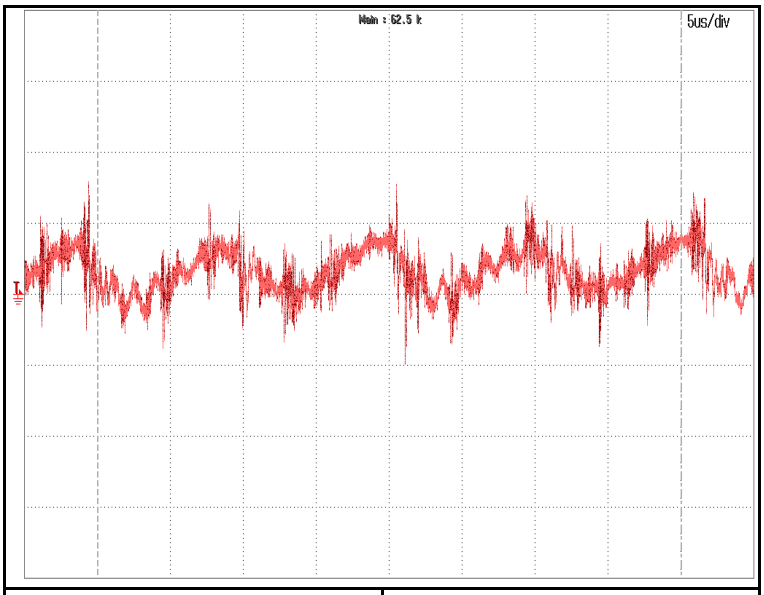
Conditions: Vout: 100%
Iout: 100%
Ta = 25°C

G10-100



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

G60-17

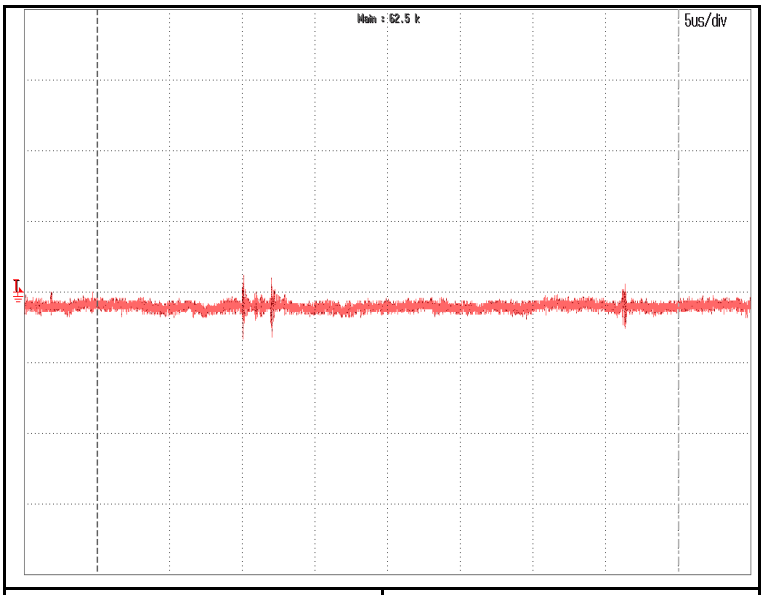


$5^{mV}/_{DIV}$	$5^{uS}/_{DIV}$

2.14 Output ripple & noise waveform
C.V mode

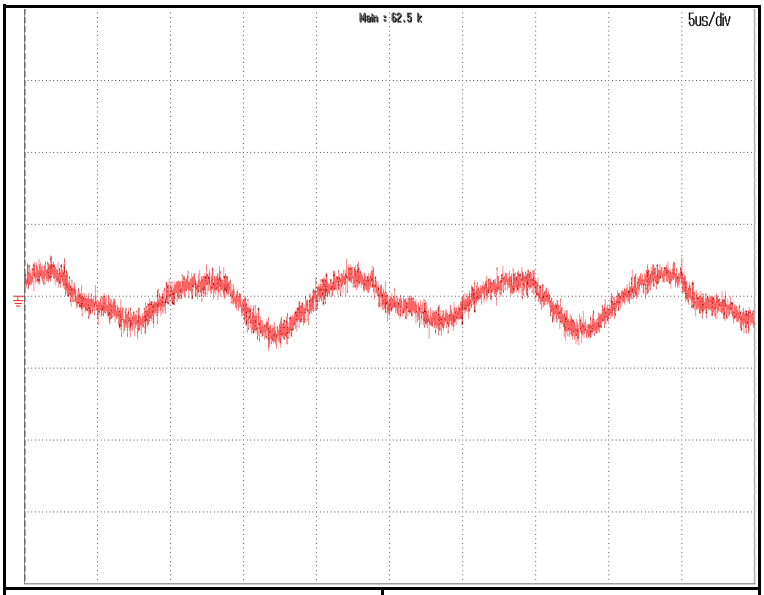
Conditions: Vout: 100%
Iout: 100%
Ta = 25°C

G150-7



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

G600-1.7



$200^{mV}/_{DIV}$	$5^{uS}/_{DIV}$