GENESYS™

GH1kW

EVALUATION DATA

DWG: IA882-53-01		
APPD	CHK	DWG
31/05/20	31.05.2020	Michael Goldsberg 31/05/2020

TDK-LAMBDA

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TERMINOLOGY USED

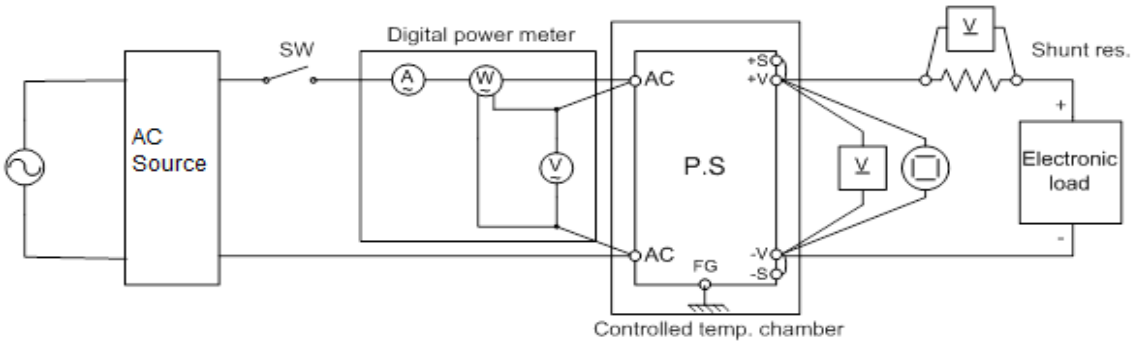
Definition

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

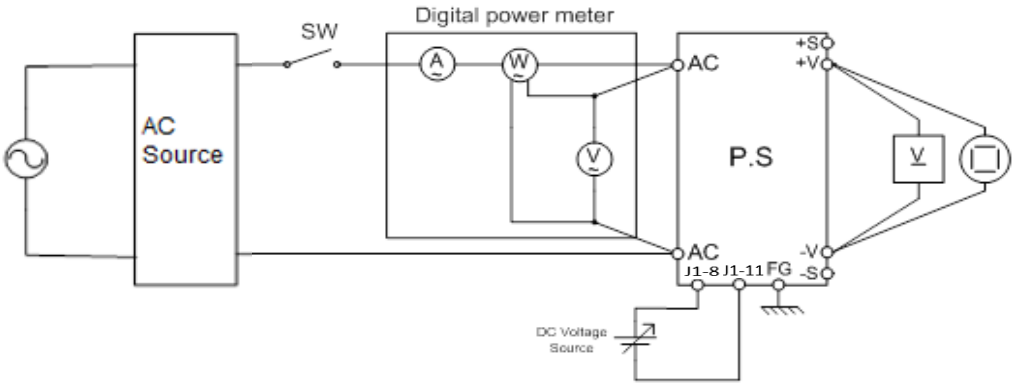
1. EVALUATION METHOD

1.1 Circuit used for determination

(1) Steady state data

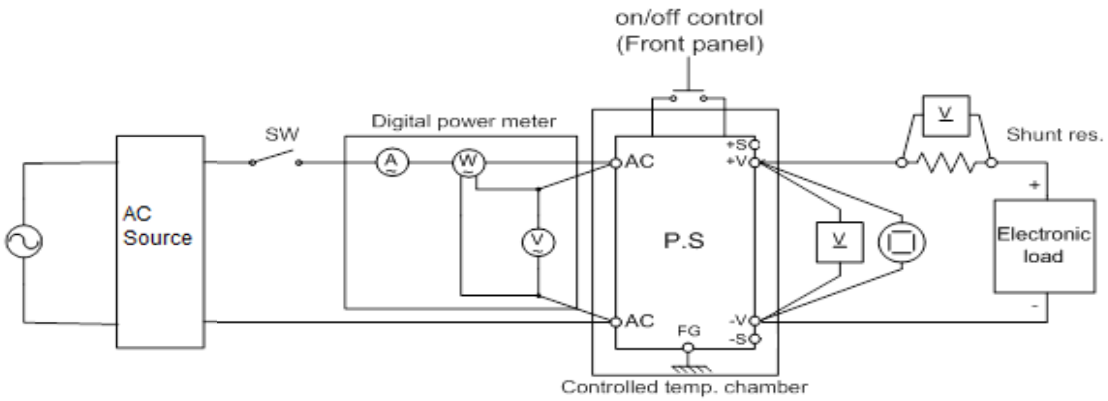


(2) Over voltage protection (OVP) characteristics

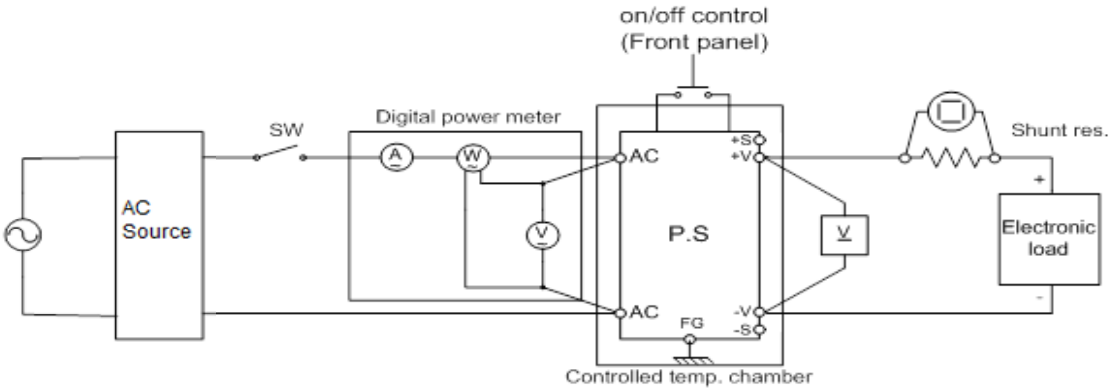


(3) Output rise/fall characteristics

Constant Voltage mode

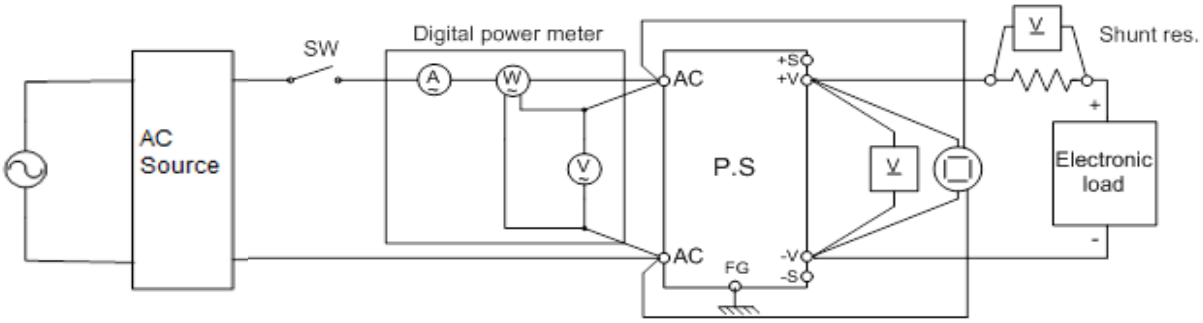


Constant Current mode

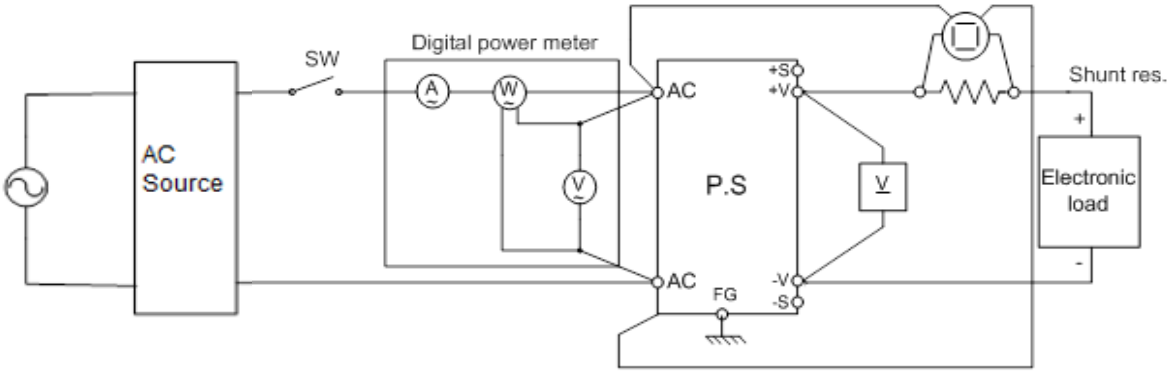


(4) Dynamic line response characteristics

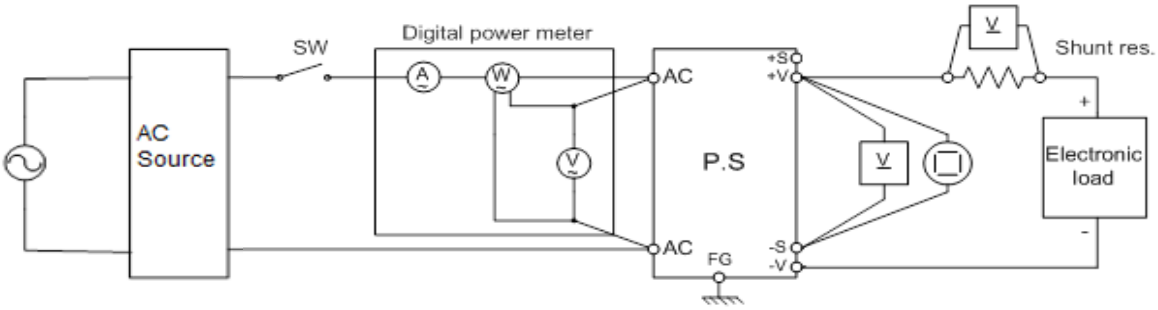
Constant Voltage mode



Constant Current mode

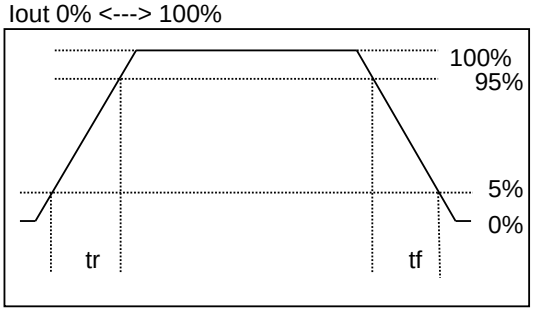


(5) Dynamic load response characteristics



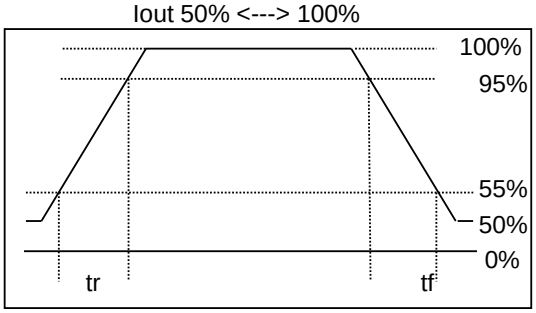
Output current waveform

Iout 0% <---> 100%



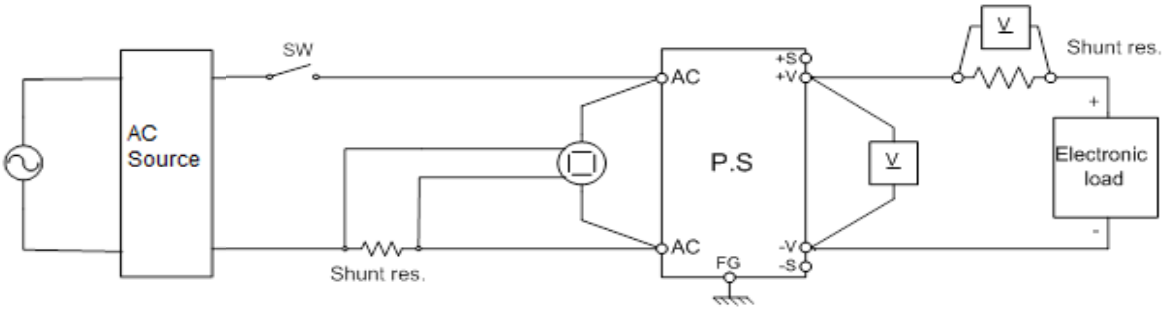
Output current waveform

Iout 50% <---> 100%

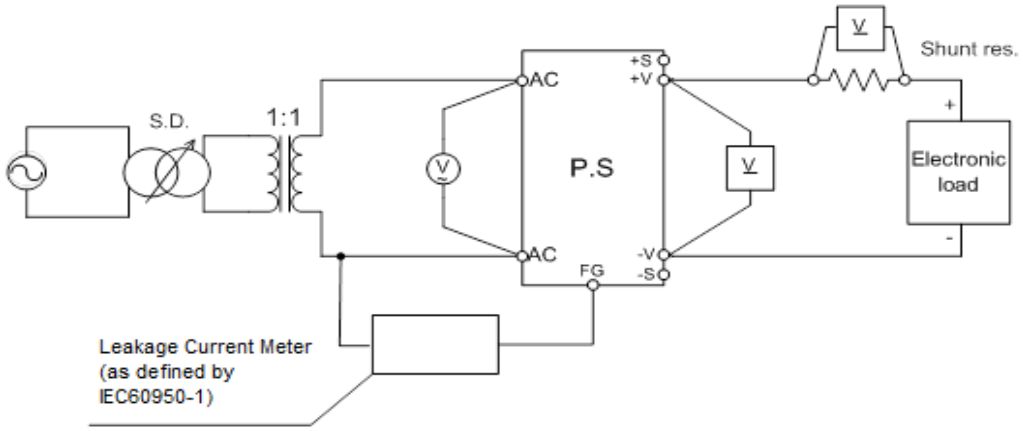


(6) Inrush current characteristics

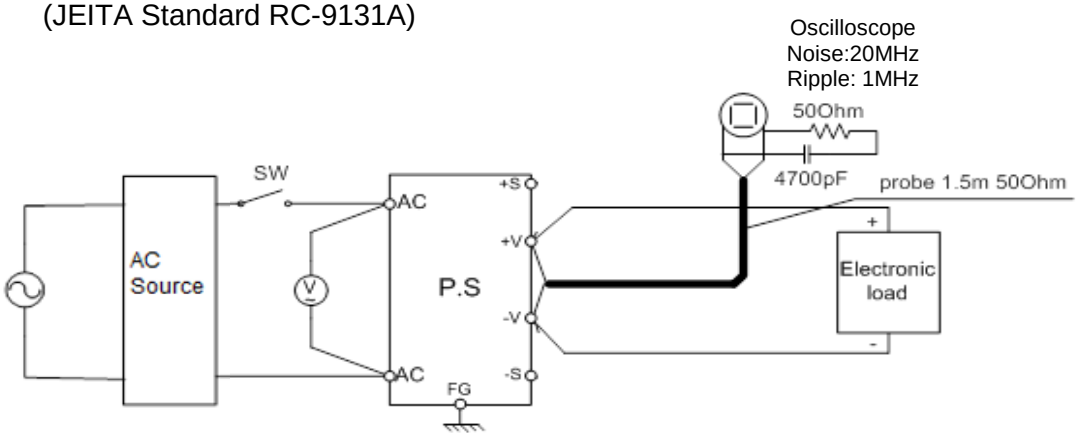
Constant Voltage mode



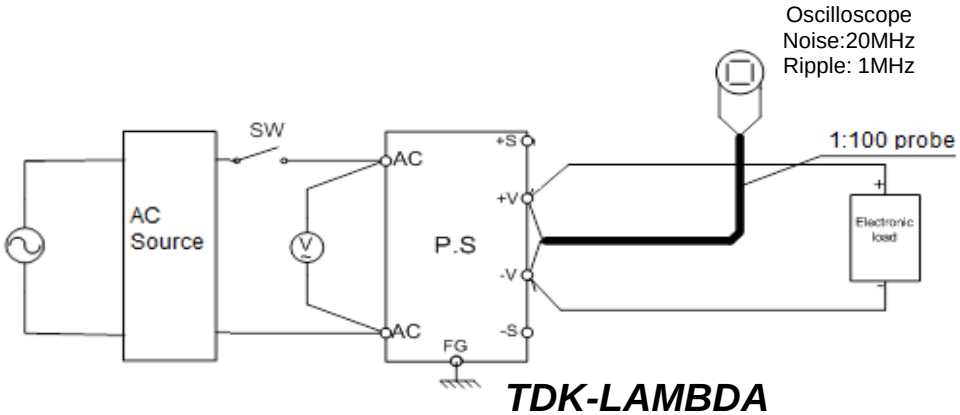
(7) Leakage current characteristics



(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

GH10-100

Conditions: Ta = 25°C

1. Regulation - Line & Load

	Vin							
Io	85VAC	100VAC	115VAC	200VAC	230VAC	265VAC	Line Regulation	
0%	10.0006	10.0006	10.0006	10.0006	10.0006	10.0006	0.0	0.000%
25%	10.0002	10.0002	10.0002	10.0002	10.0002	10.0002	0.0	0.000%
50%	9.9998	9.9998	9.9998	9.9998	9.9998	9.9998	0.0	0.000%
75%	9.9994	9.9994	9.9994	9.9994	9.9994	9.9994	0.0	0.000%
100%	9.9990	9.9990	9.9990	9.9990	9.9990	9.9990	0.0	0.000%
Load	1.6	1.6	1.6	1.6	1.6	1.6	ΔV(mV)	
Regulation	0.016%	0.016%	0.016%	0.016%	0.016%	0.016%		

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	10.0096	10.0064	10.0087	3.2	mV	13	ppm/˚C

GH60-17

Conditions: Ta = 25°C

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

	Vin							
Io	85VAC	100VAC	115VAC	200VAC	230VAC	265VAC	Line Regulation	
0%	59.9963	59.9963	59.9962	59.9964	59.9964	59.9964	0.2	0.000%
25%	59.9956	59.9955	59.9956	59.9955	59.9957	59.9957	0.2	0.000%
50%	59.9954	59.9954	59.9953	59.9954	59.9954	59.9954	0.1	0.000%
75%	59.9953	59.9952	59.9952	59.9953	59.9953	59.9953	0.1	0.000%
100%	59.9951	59.9952	59.9952	59.9952	59.9952	59.9951	0.1	0.000%
Load	1.2	1.1	1.0	1.2	1.2	1.3	ΔV(mV)	
Regulation	0.002%	0.002%	0.002%	0.002%	0.002%	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	59.9991	59.9997	59.9976	2.1	mV	1	ppm/˚C

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

GH150-7

Conditions: Ta = 25°C

1. Regulation - Line & Load

	Vin							
Io	85VAC	100VAC	115VAC	200VAC	230VAC	265VAC	Line Regulation	
0%	149.974	149.975	149.975	149.974	149.975	149.974	0.4	0.000%
25%	149.973	149.972	149.973	149.973	149.974	149.974	1.3	0.001%
50%	149.972	149.972	149.972	149.972	149.972	149.972	0.5	0.000%
75%	149.971	149.971	149.971	149.972	149.972	149.971	0.7	0.000%
100%	149.971	149.972	149.972	149.971	149.971	149.971	0.7	0.000%
Load	3.0	3.2	3.2	3.1	3.3	3.3	ΔV(mV)	
Regulation	0.002%	0.002%	0.002%	0.002%	0.002%	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	149.992	149.980	149.960	32	mV	4	ppm/˚C

GH600-1.7

Conditions: Ta = 25°C

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

	Vin							
Io	85VAC	100VAC	115VAC	200VAC	230VAC	265VAC	Line Regulation	
0%	599.8672	599.8663	599.8645	599.8625	599.8616	599.8613	5.9	0.001%
25%	599.8573	599.8552	599.8540	599.8556	599.8541	599.8531	4.2	0.001%
50%	599.8538	599.8521	599.8518	599.8527	599.8514	599.8521	2.4	0.000%
75%	599.8525	599.8519	599.8508	599.8537	599.8530	599.8526	2.9	0.000%
100%	599.8537	599.8520	599.8525	599.8542	599.8527	599.8520	2.2	0.000%
Load	14.7	14.4	13.7	9.8	10.2	9.3	ΔV(mV)	
Regulation	0.002%	0.002%	0.002%	0.002%	0.002%	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	600.088	599.891	599.699	389	mV	13	ppm/˚C

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

GH10-100

Conditions: Ta = 25°C

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

	Vin							
Vo	85VAC	100VAC	115VAC	200VAC	230VAC	265VAC	Line Regulation	
0%	99.9714	99.9693	99.9694	99.9713	99.9690	99.9691	2.4	0.002%
25%	99.9691	99.9669	99.9678	99.9710	99.9679	99.9689	4.1	0.004%
50%	99.9743	99.9718	99.9723	99.9748	99.9720	99.9717	3.1	0.003%
75%	99.9771	99.9751	99.9748	99.9791	99.9762	99.9758	4.3	0.004%
100%	99.9706	99.9681	99.9679	99.9690	99.9677	99.9675	3.1	0.003%
Load	8.0	8.2	7.0	10.1	8.5	8.3	ΔI(mA)	
Regulation	0.008%	0.008%	0.007%	0.010%	0.009%	0.008%		

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	100.0877	99.9608	99.9528	135	mA	27.0	ppm/˚C

GH60-17

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

	Vin							
Vo	85VAC	100VAC	115VAC	200VAC	230VAC	265VAC	Line Regulation	
0%	17.0109	17.0108	17.0109	17.0107	17.0108	17.0107	0.2	0.001%
25%	17.0109	17.0108	17.0109	17.0109	17.0109	17.0110	0.2	0.001%
50%	17.0113	17.0113	17.0113	17.0115	17.0115	17.0115	0.2	0.001%
75%	17.0119	17.0120	17.0120	17.0122	17.0123	17.0123	0.4	0.002%
100%	17.0111	17.0111	17.0112	17.0113	17.0113	17.0114	0.3	0.002%
Load	1.0	1.2	1.1	1.5	1.5	1.6	ΔI(mA)	
Regulation	0.006%	0.007%	0.006%	0.009%	0.009%	0.009%		

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	17.0193	17.0096	17.0092	10.1	mA	12	ppm/˚C

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

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

GH150-7

Conditions: Ta = 25°C

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

	Vin							
Vo	85VAC	100VAC	115VAC	200VAC	230VAC	265VAC	Line Regulation	
0%	6.982	6.982	6.982	6.982	6.982	6.982	0.1	0.001%
25%	6.982	6.982	6.982	6.982	6.982	6.982	0.1	0.001%
50%	6.982	6.982	6.982	6.982	6.982	6.982	0.1	0.001%
75%	6.982	6.982	6.982	6.982	6.982	6.982	0.1	0.001%
100%	6.982	6.982	6.982	6.982	6.982	6.982	0.1	0.001%
Load	0.4	0.4	0.4	0.4	0.5	0.5	ΔI(mA)	
Regulation	0.006%	0.006%	0.006%	0.006%	0.007%	0.007%		

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	6.995	6.996	7.000	4.7	mA	13	ppm/˚C

GH600-1.7

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

	Vin							
Vo	85VAC	100VAC	115VAC	200VAC	230VAC	265VAC	Line Regulation	
0%	1.7005	1.7005	1.7005	1.7005	1.7005	1.7005	0.0	0.000%
25%	1.6998	1.6999	1.6999	1.6998	1.6999	1.6999	0.1	0.006%
50%	1.6992	1.6992	1.6993	1.6992	1.6992	1.6992	0.1	0.006%
75%	1.6986	1.6986	1.6987	1.6986	1.6987	1.6987	0.1	0.006%
100%	1.6980	1.6981	1.6981	1.6980	1.6981	1.6981	0.1	0.006%
Load	2.5	2.4	2.4	2.5	2.4	2.4	ΔI(mA)	
Regulation	0.147%	0.141%	0.141%	0.147%	0.141%	0.141%		

2. Temperature drift, C.C mode

Conditions: Vin:100VAC
Iout:100%

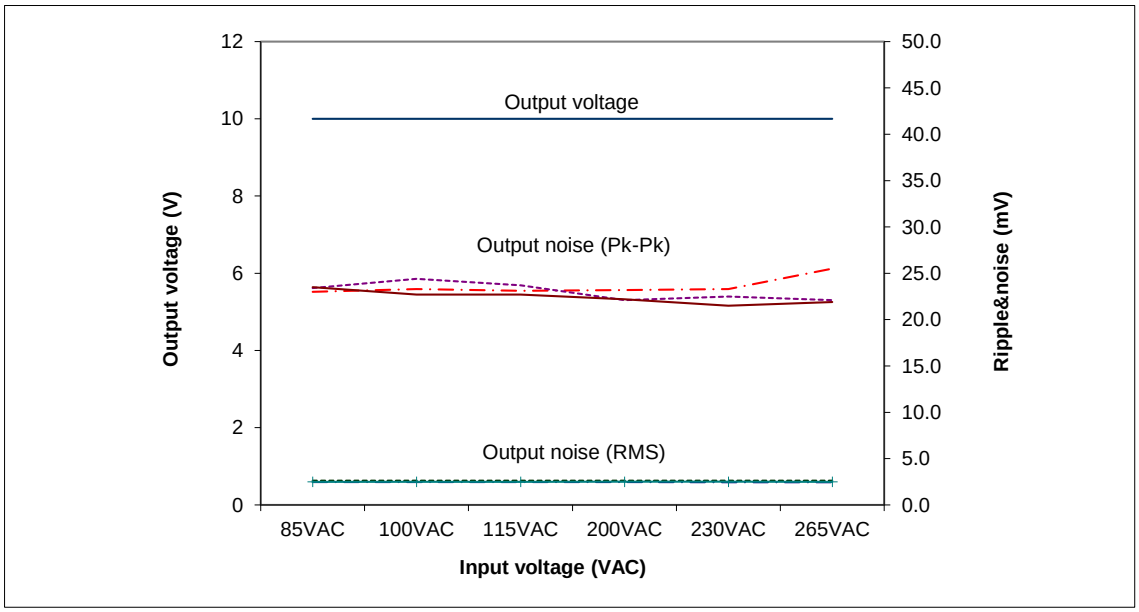
Ta	0°C	25°C	50°C	Temp. Coefficient (0˚C~50˚C)			
Iout	1.6993	1.6985	1.6982	1.1	mA	13	ppm/˚C

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

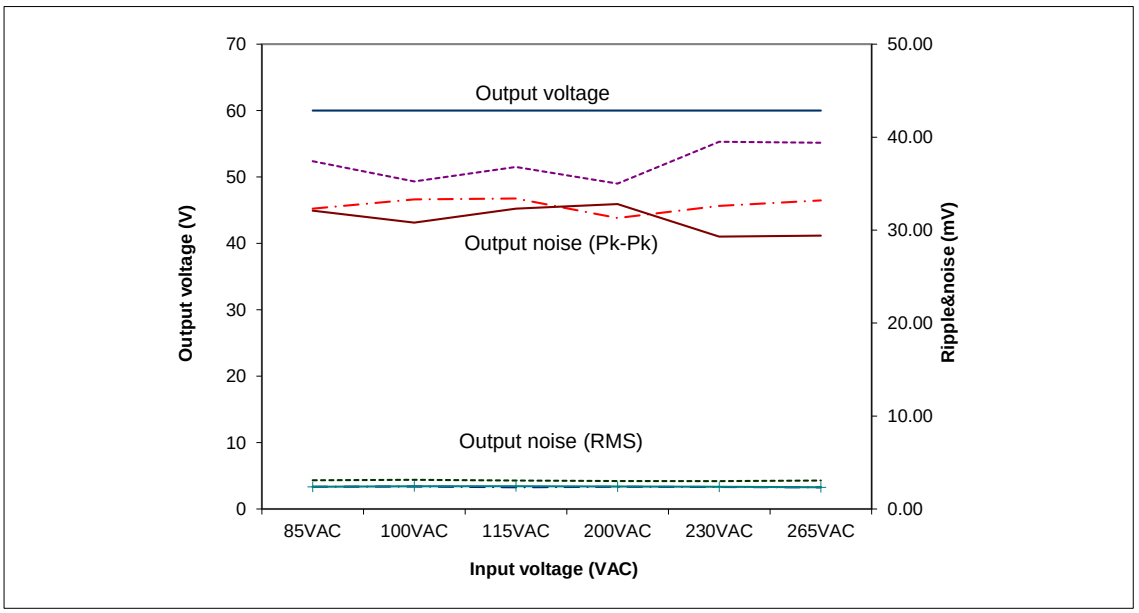
(2). Output voltage and ripple voltage vs. input voltage
C.V mode

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

GH10-100



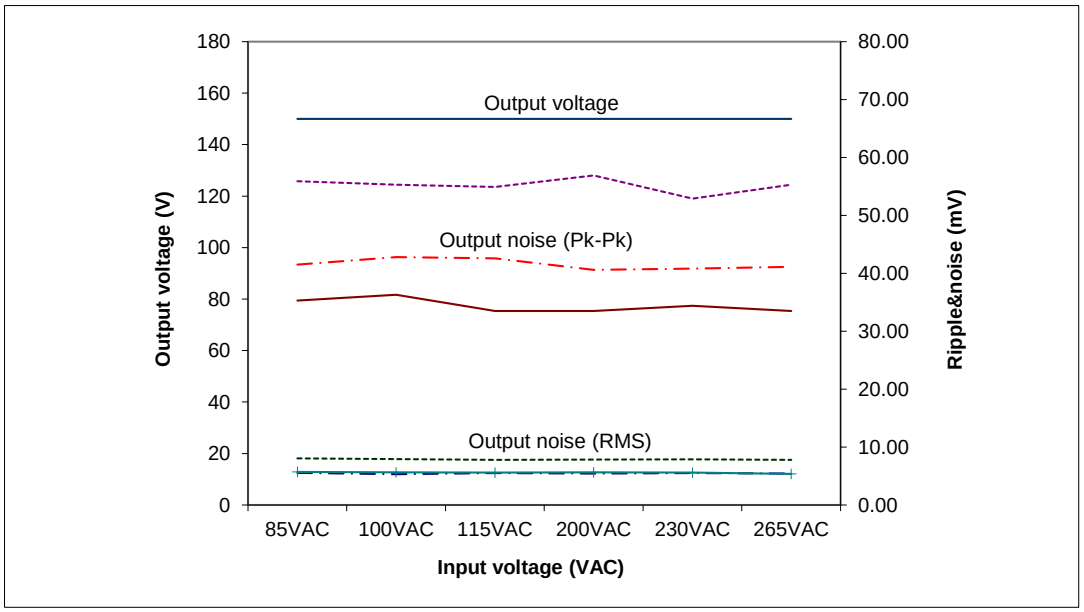
GH60-17



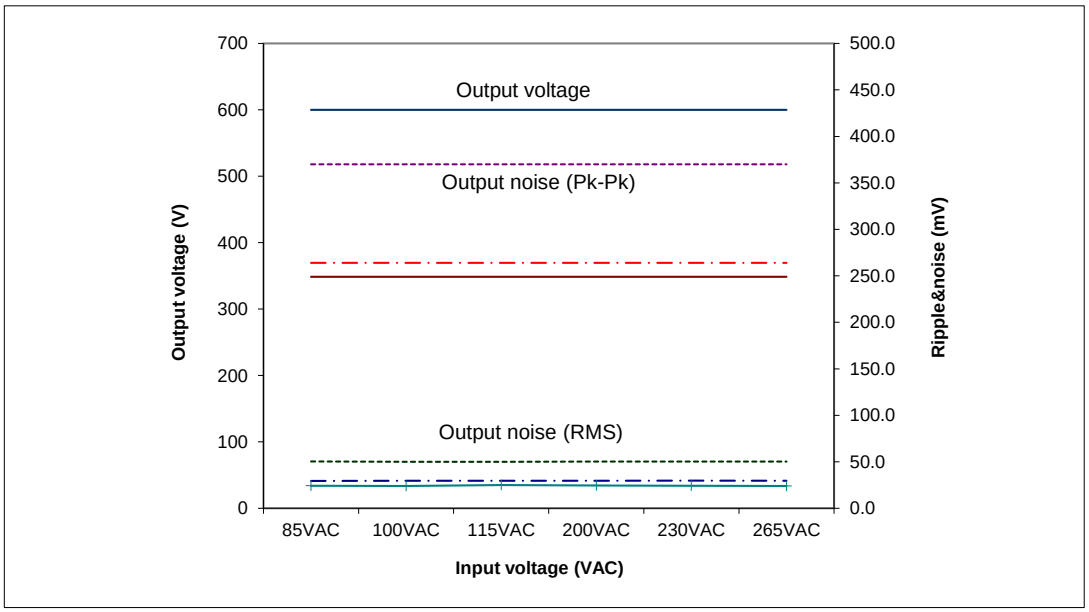
(2). Output voltage and ripple voltage vs. input voltage
C.V mode

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

GH150-7



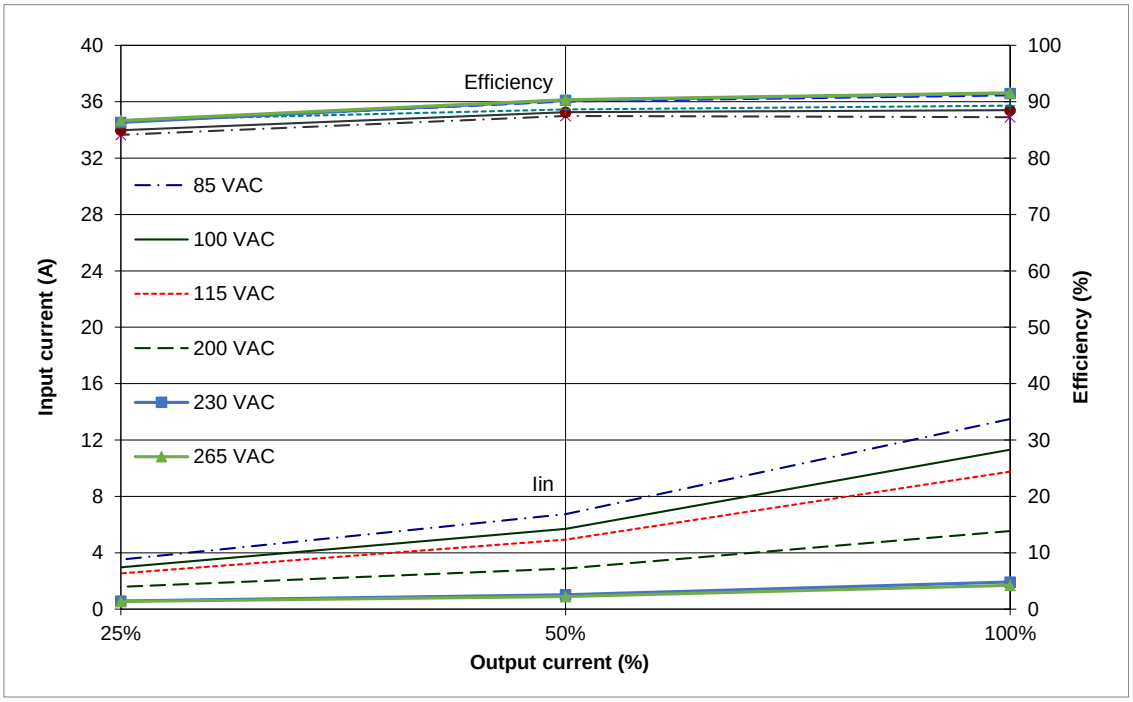
GH600-1.7



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

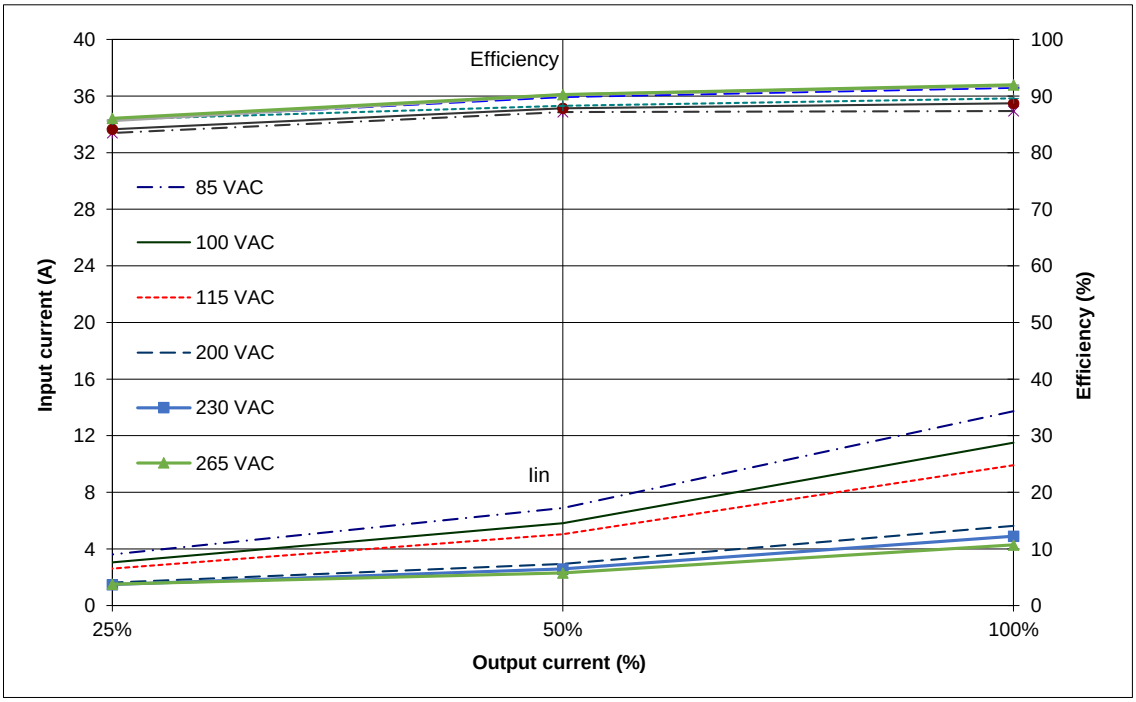
GH10-100

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



GH60-17

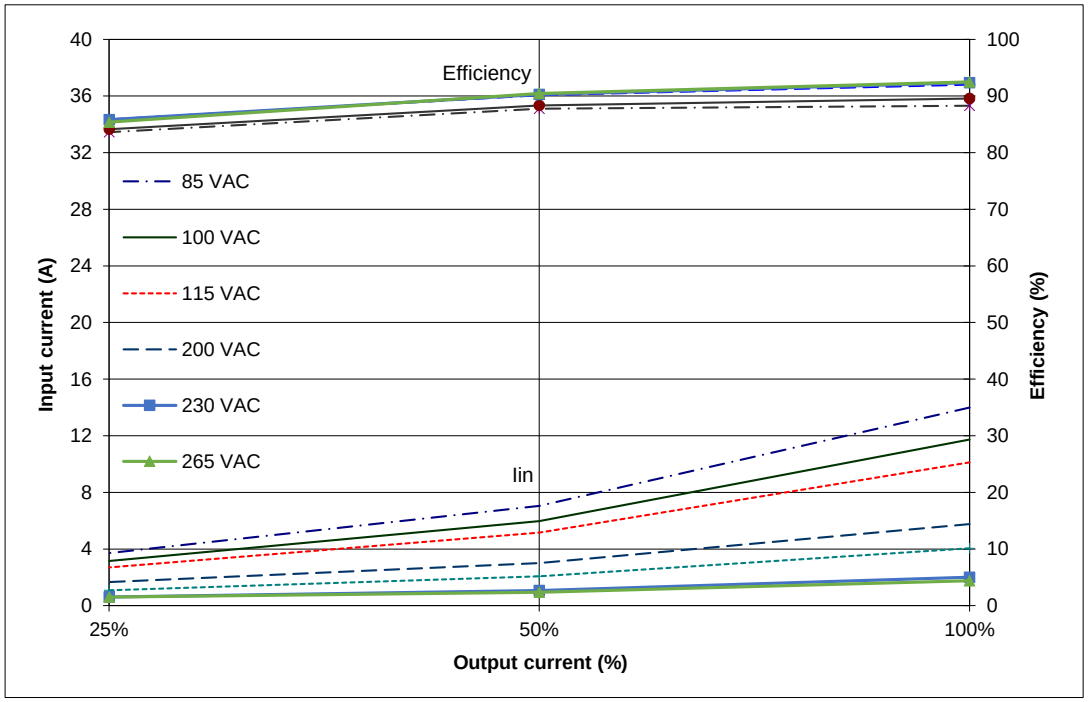
Conditions:
Vin: 85~265 VAC
Vout: 100%
Ta: 25˚C



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

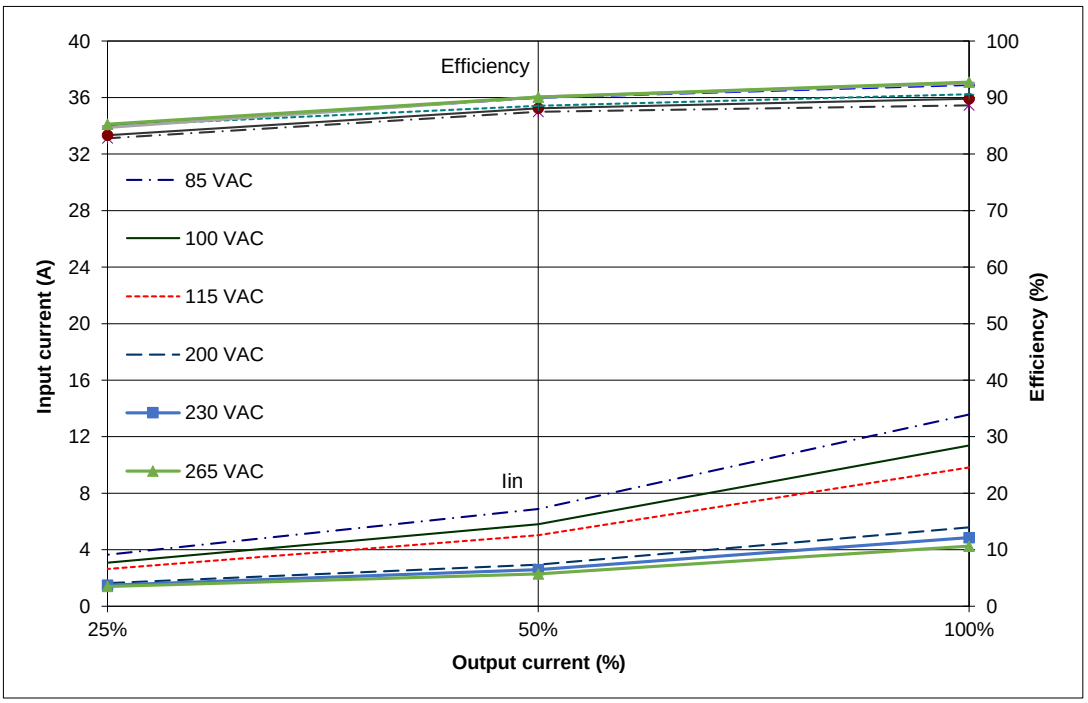
GH150-7

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



GH600-1.7

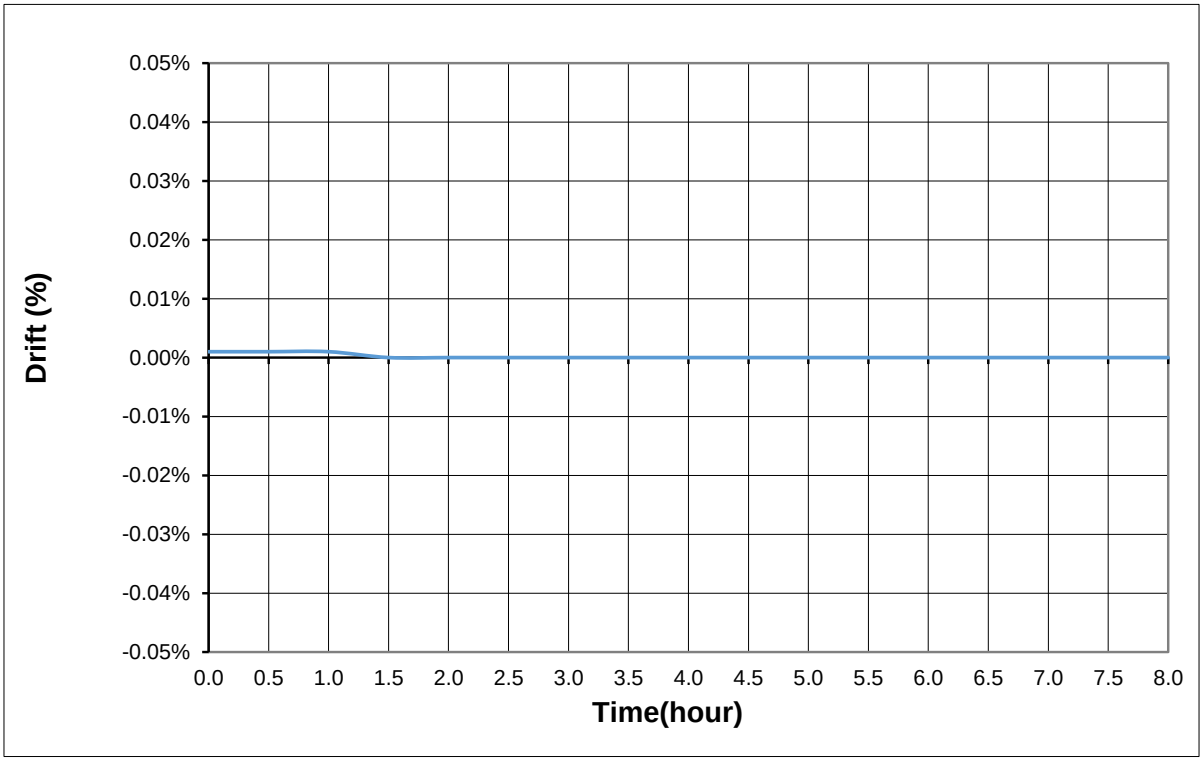
Conditions:
Vin: 85~265 VAC
Vout: 100%
Ta: 25˚C



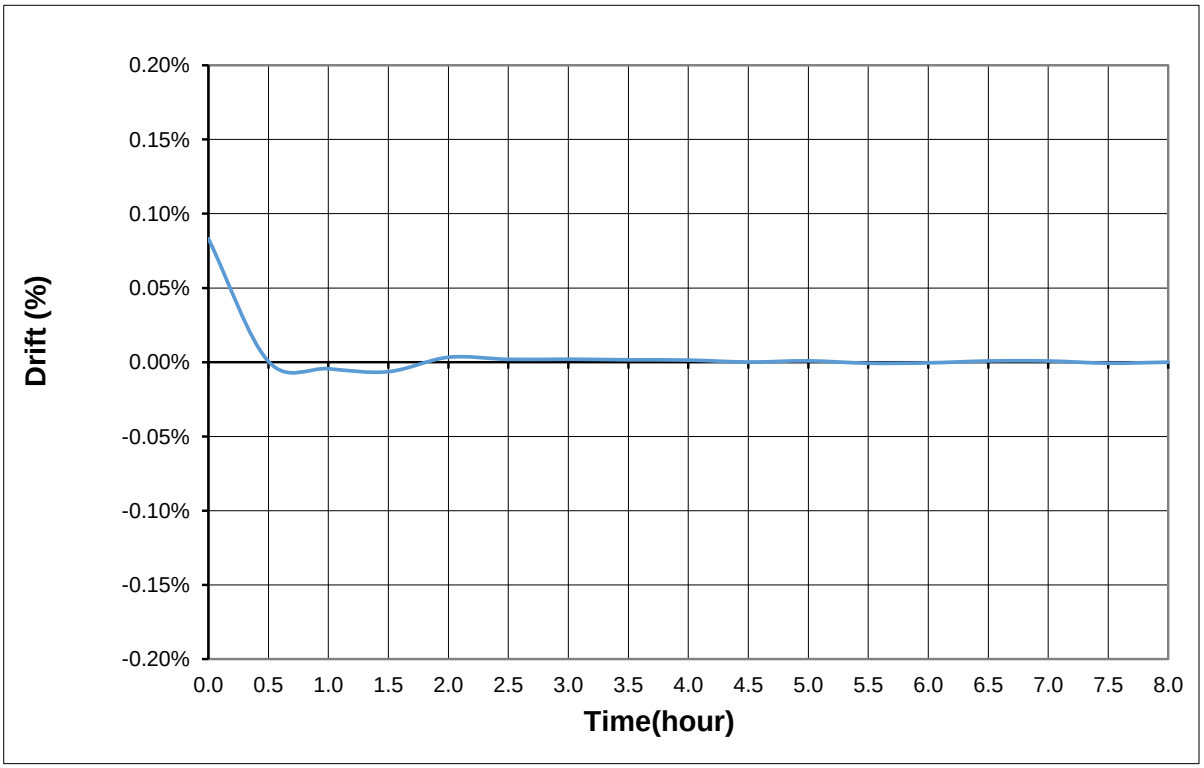
2.2 Warm up drift & stability

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

GH10-100 C.V mode



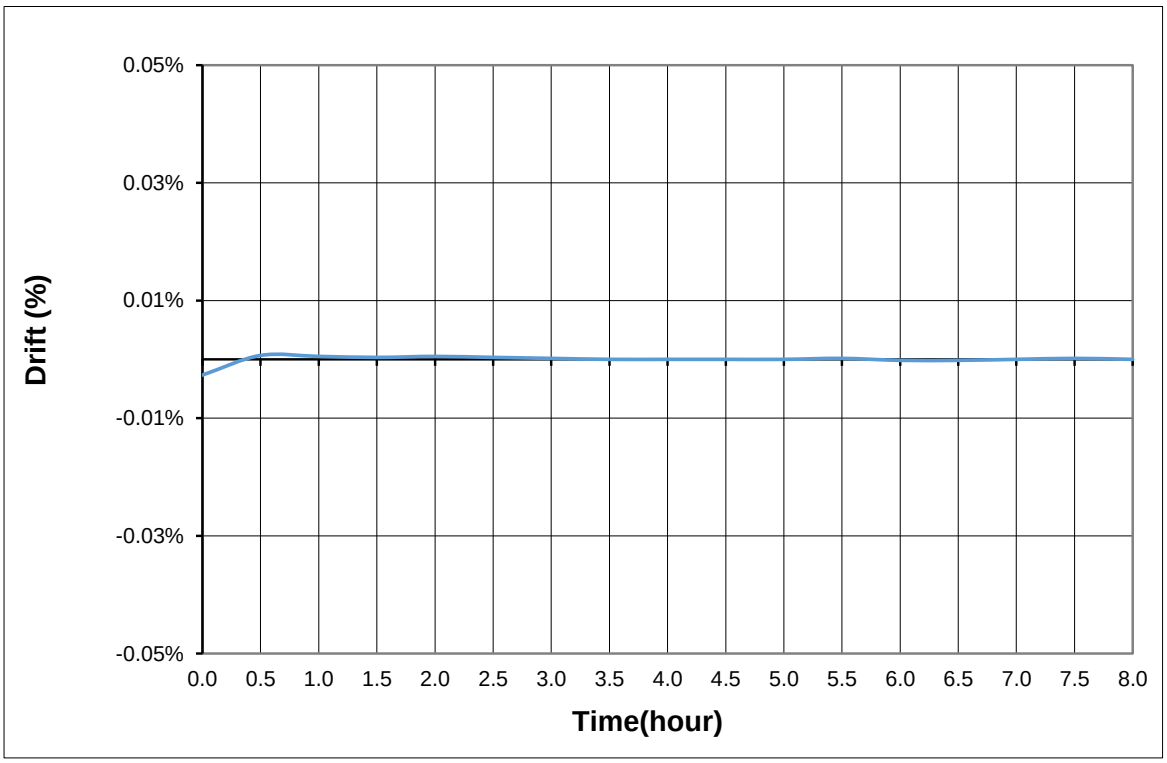
GH10-100 C.C mode



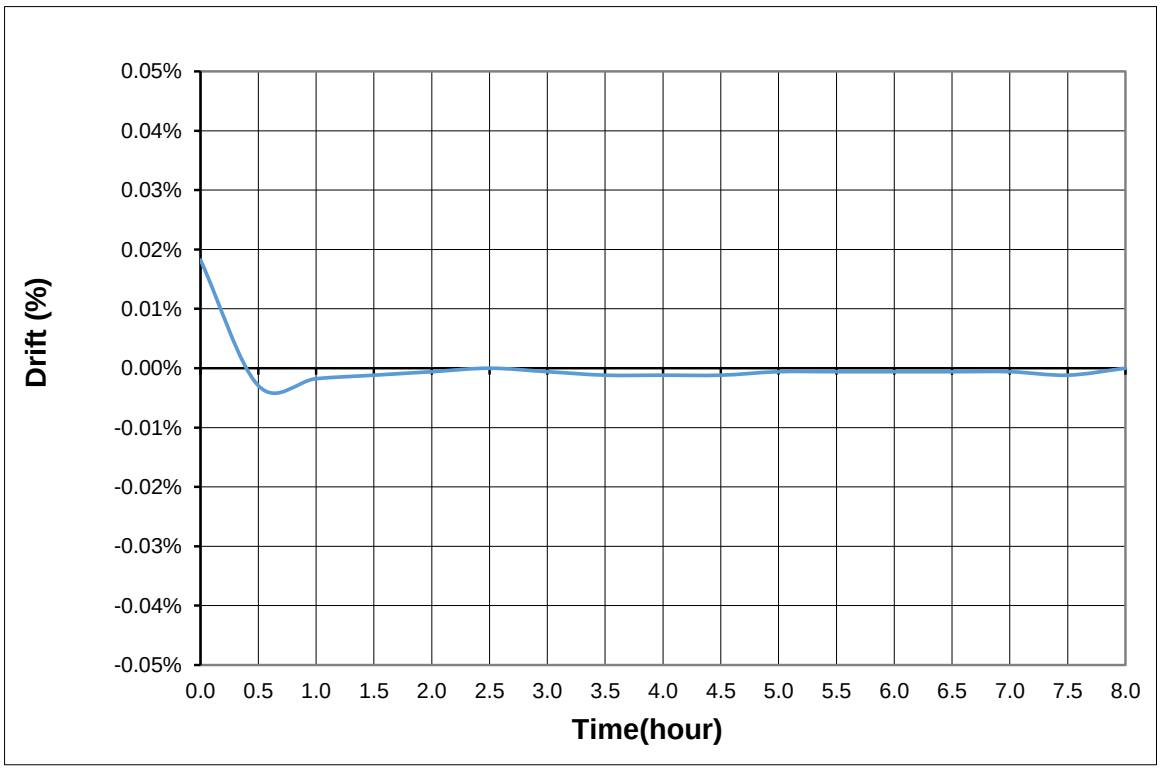
2.2 Warm up drift & stability

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

GH60-17 C.V mode



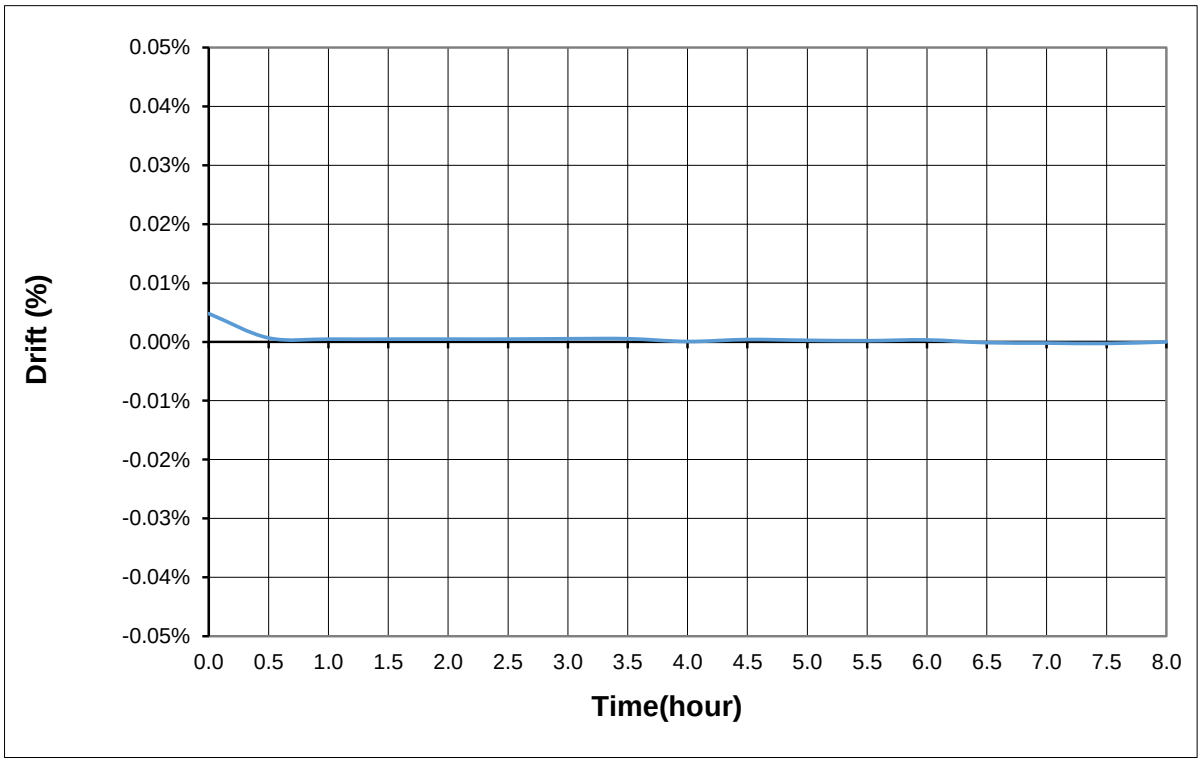
GH60-17 C.C mode



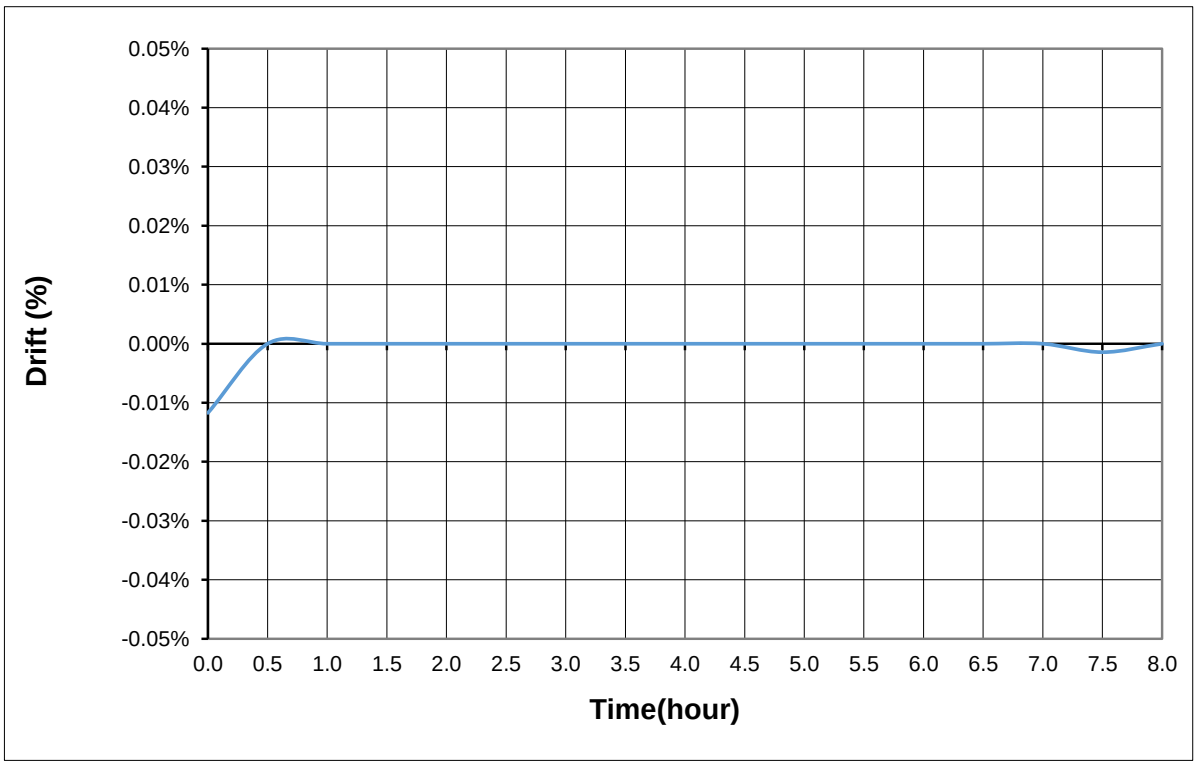
2.2 Warm up drift & stability

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

GH150-7 C.V mode



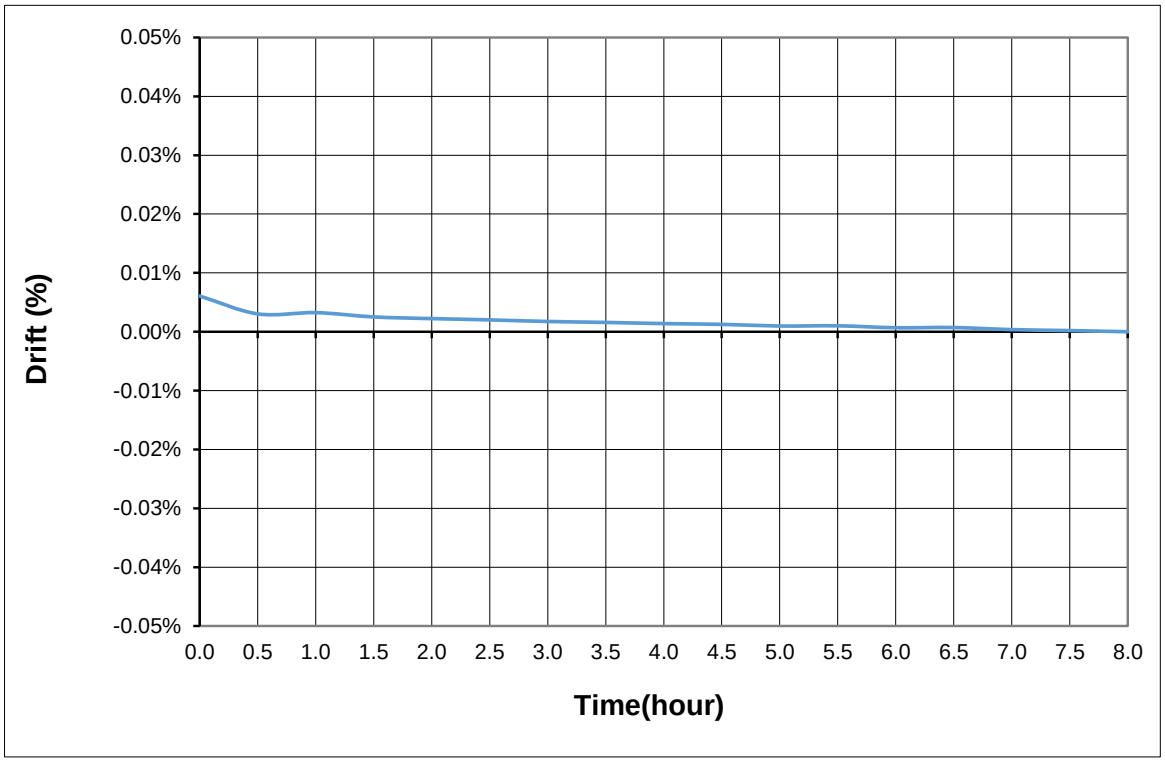
GH150-7 C.C mode



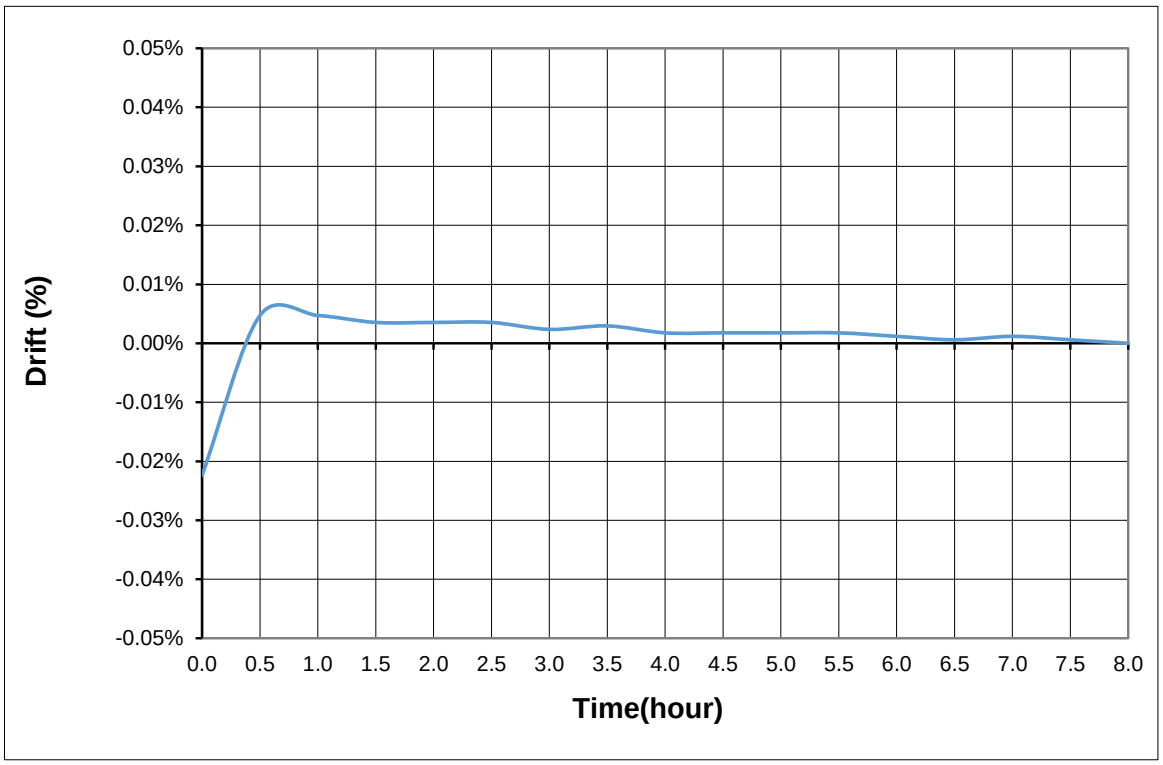
2.2 Warm up drift & stability

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

GH600-1.7 C.V mode



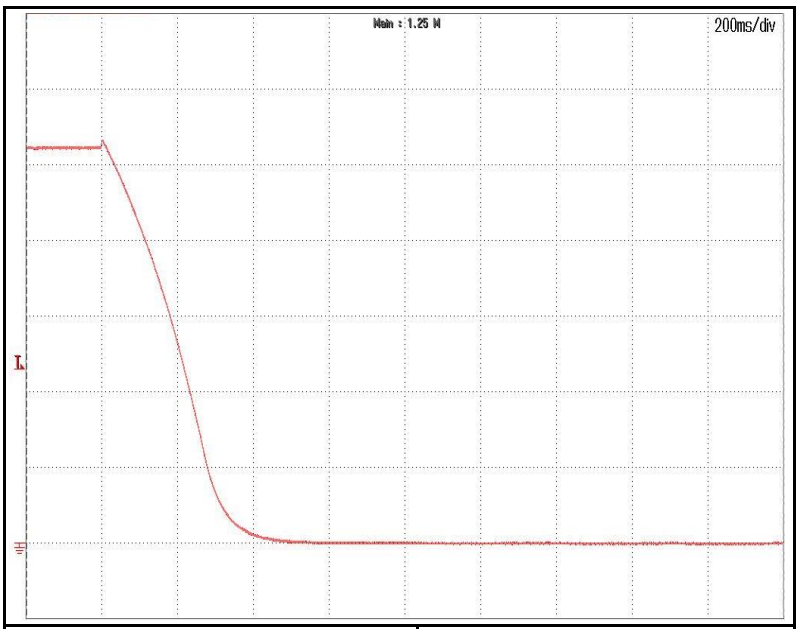
GH600-1.7 C.C mode



2.3 Over voltage protection (OVP) characteristic

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

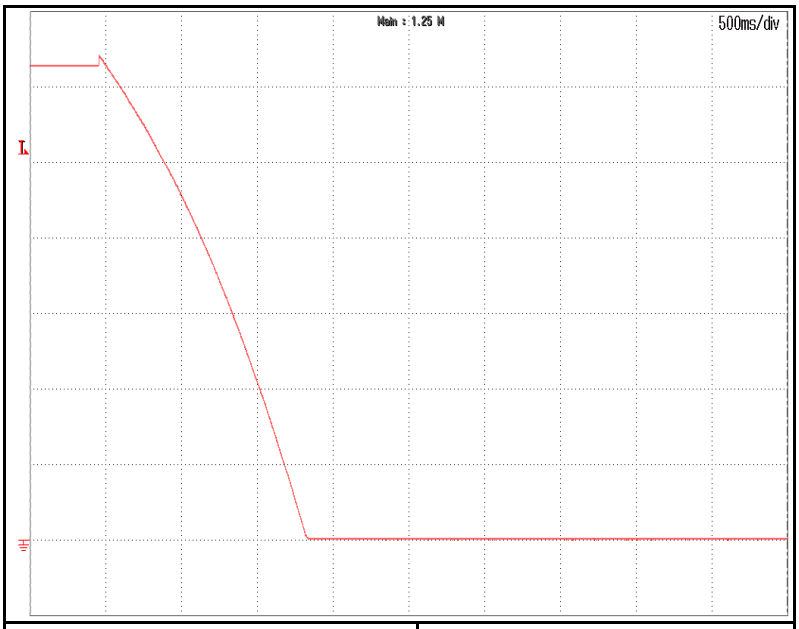
GH10-100



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

OVP setting:10.5V

GH60-17



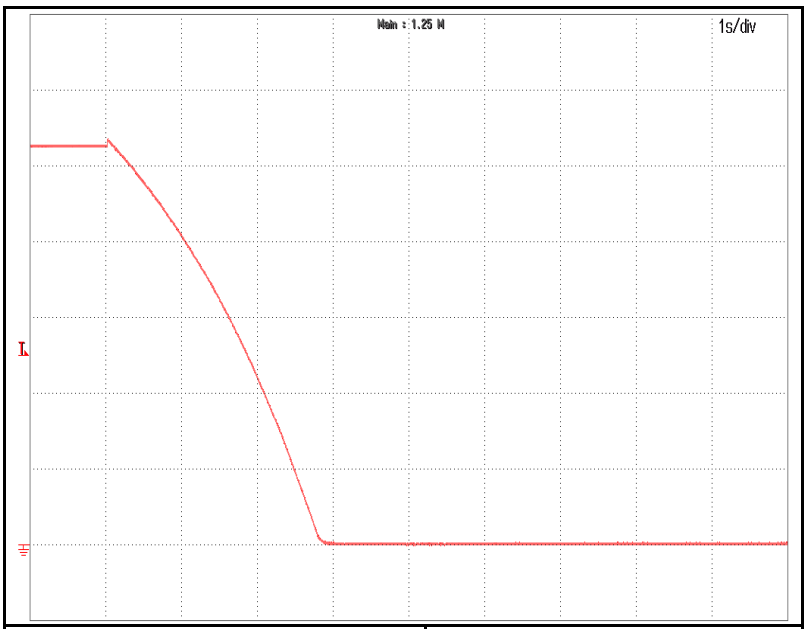
$10^{V}/_{DIV}$	$500^{ms}/_{DIV}$

OVP setting:63V

2.3 Over voltage protection (OVP) characteristic

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

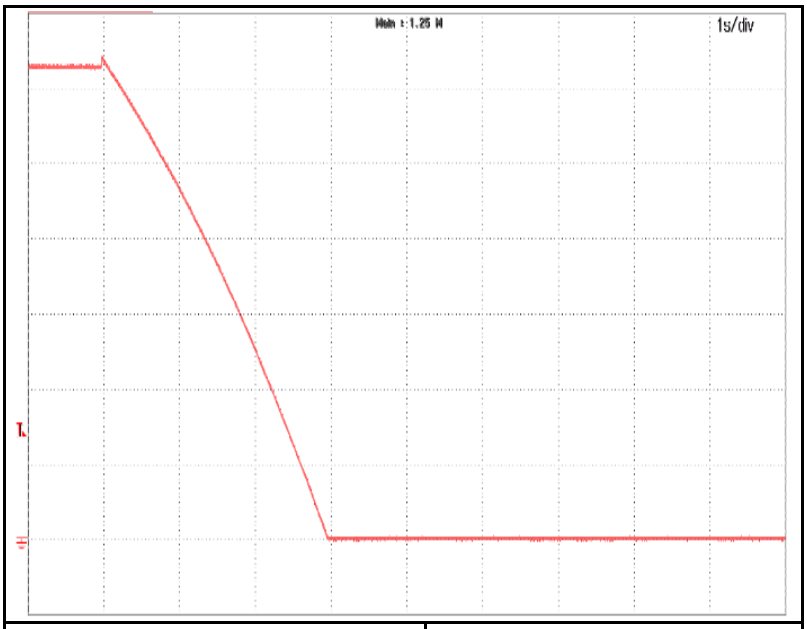
GH150-7



$30^{V}/_{DIV}$	$1^{s}/_{DIV}$

OVP setting:157.5V

GH600-1.7



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

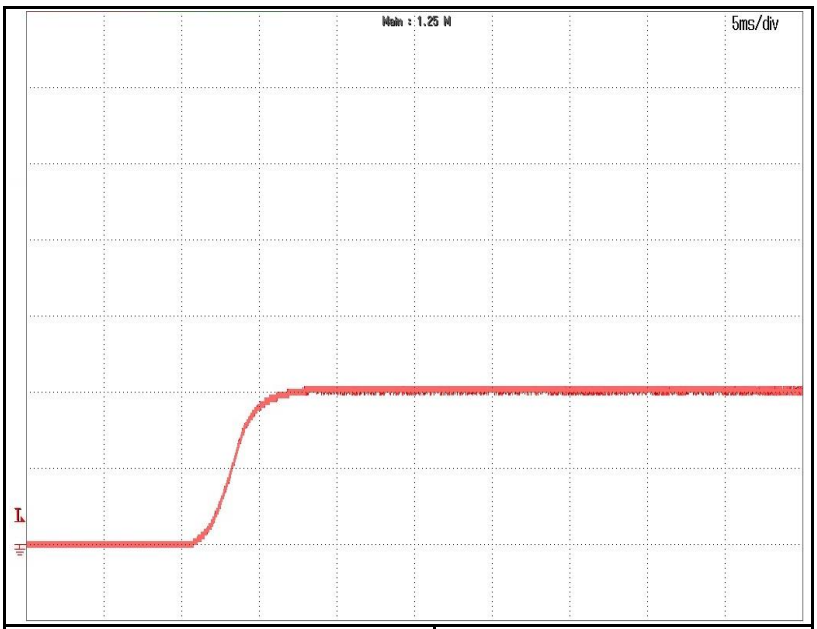
OVP setting:630V

2.4 ON/OFF Output rise characteristics

C.V mode

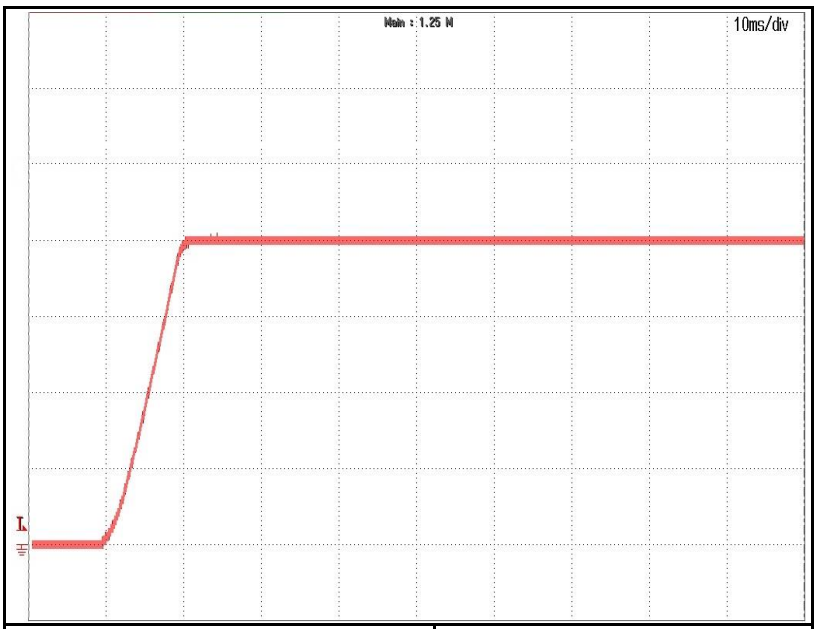
Conditions: Vin: 100VAC
Vout: 100%
Iout: 0%
Iset=105%
Ta = 25°C

GH10-100



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

GH60-17



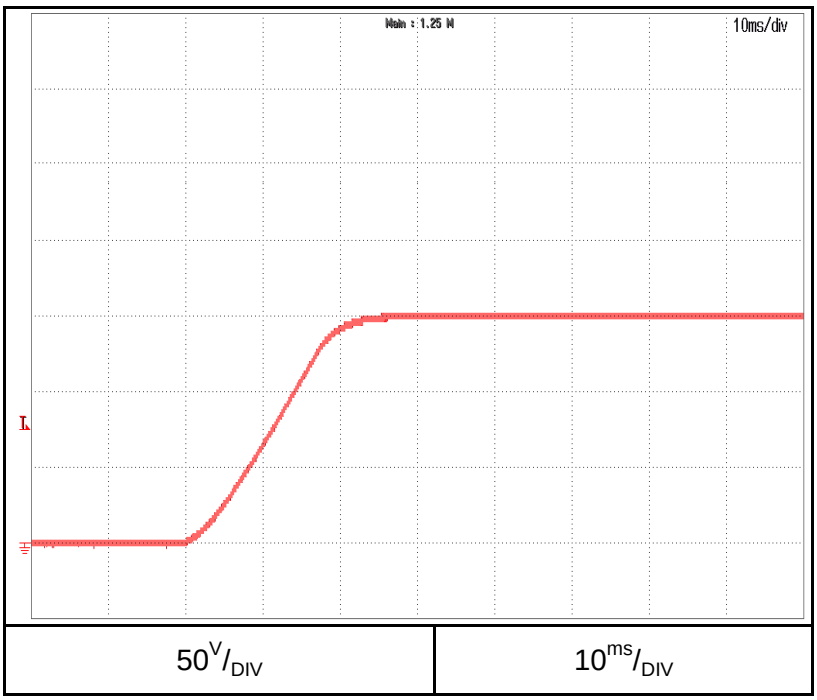
$15^{V}/_{DIV}$	$10^{ms}/_{DIV}$

2.4 ON/OFF Output rise characteristics

C.V mode

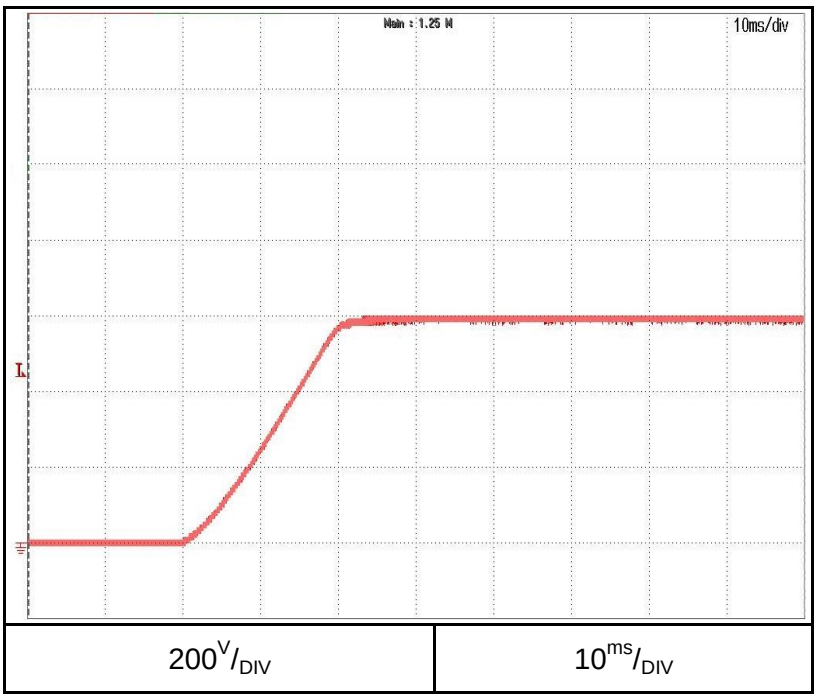
Conditions: Vin: 100VAC
Vout: 100%
Iout: 0%
Iset=105%
Ta = 25°C

GH150-7



$50^{V}/_{DIV}$	$10^{ms}/_{DIV}$

GH600-1.7



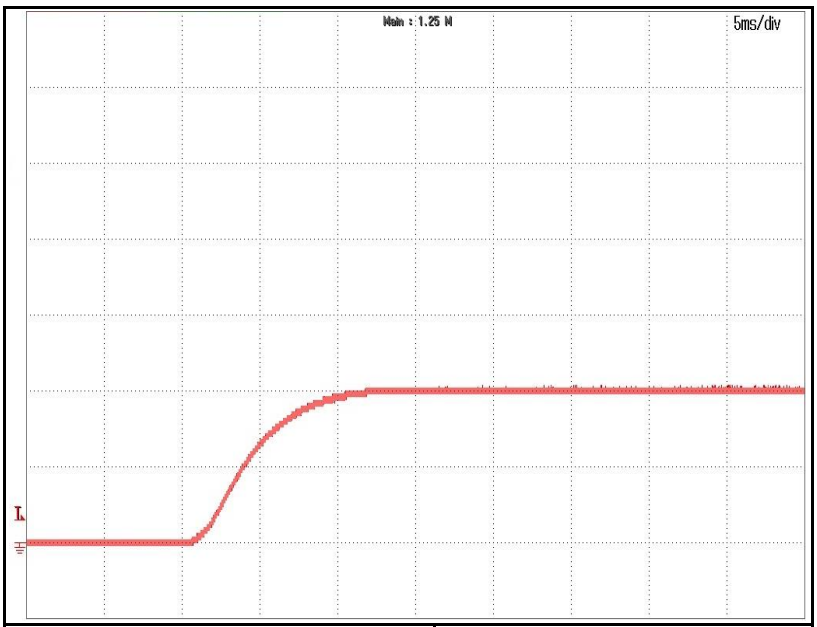
$200^{V}/_{DIV}$	$10^{ms}/_{DIV}$

2.4 ON/OFF Output rise characteristics

C.V mode

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

GH10-100



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

GH60-17

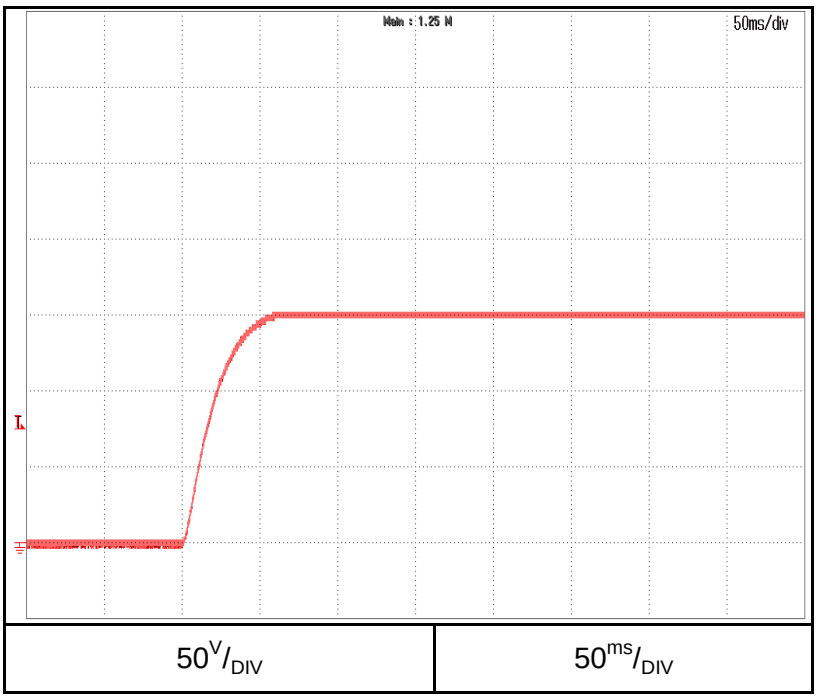
$15^{V}/_{DIV}$	$20^{ms}/_{DIV}$

2.4 ON/OFF Output rise characteristics

C.V mode

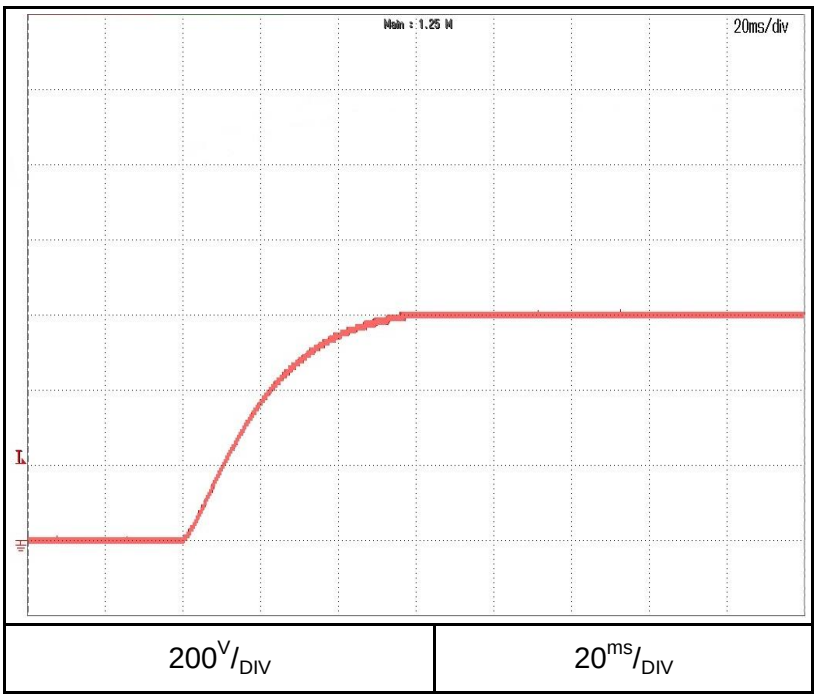
Conditions: Vin: 100VAC
Vout: 100%
Iout: 100%
Iset=105%
Load: CR
Ta = 25°C

GH150-7



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

GH600-1.7



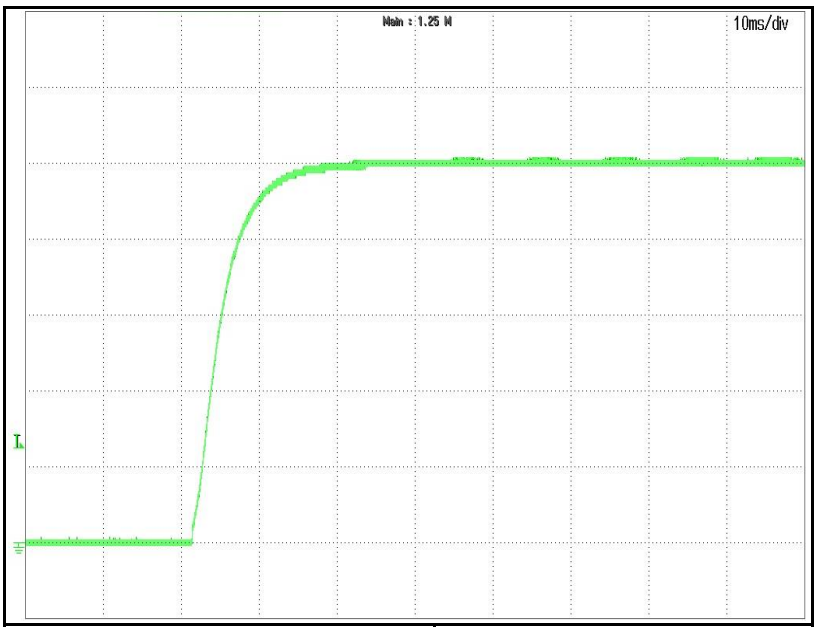
$200^{V}/_{DIV}$	$20^{ms}/_{DIV}$

2.4 ON/OFF Output rise characteristics

C.C mode

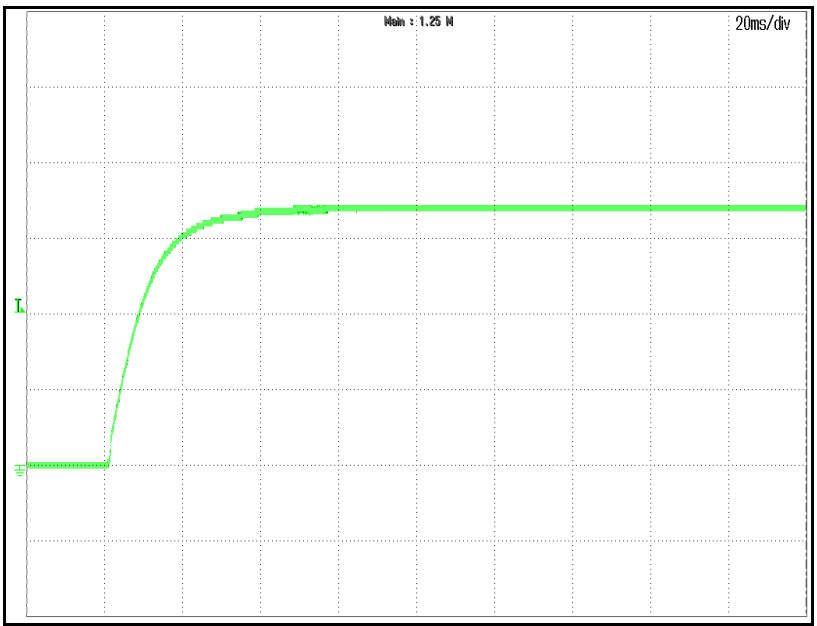
Conditions: Vin: 100VAC
Vout: 100%
Iout: 100%
Vset=105%
Load: CR
Ta = 25°C

GH10-100



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

GH60-17



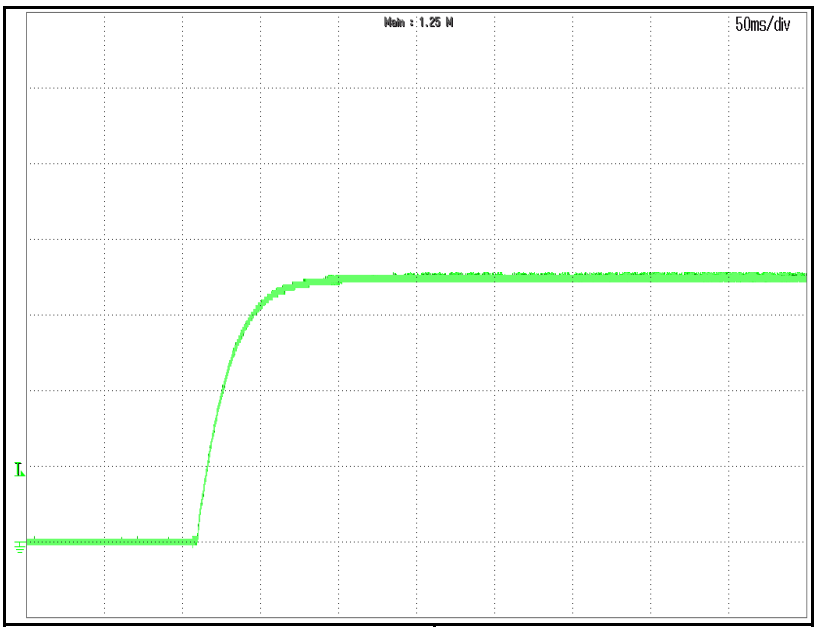
$5^{A}/_{DIV}$	$50^{ms}/_{DIV}$

2.4 ON/OFF Output rise characteristics

C.C mode

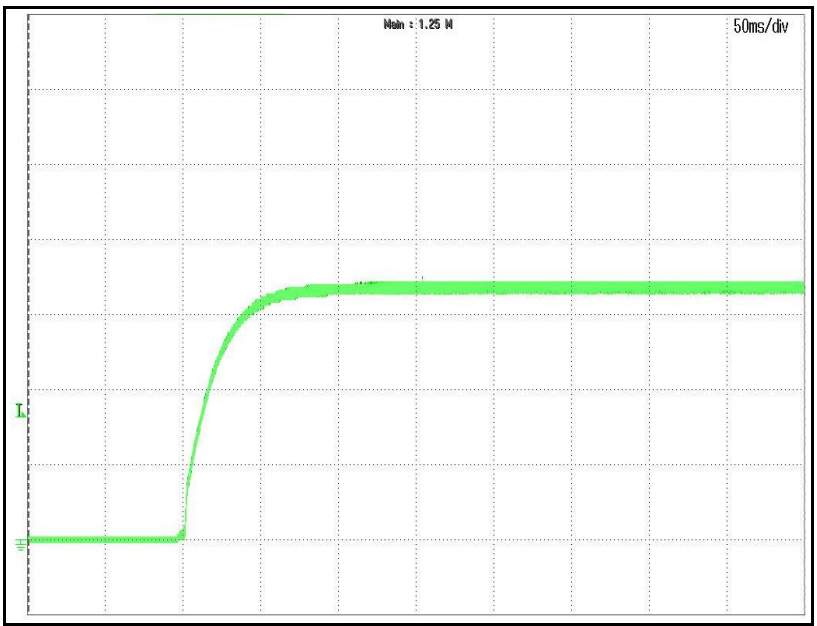
Conditions: Vin: 100VAC
Vout: 100%
Iout: 100%
Vset=105%
Load: CR
Ta = 25°C

GH150-7



$2^{A}/_{DIV}$	$50^{ms}/_{DIV}$

GH600-1.7



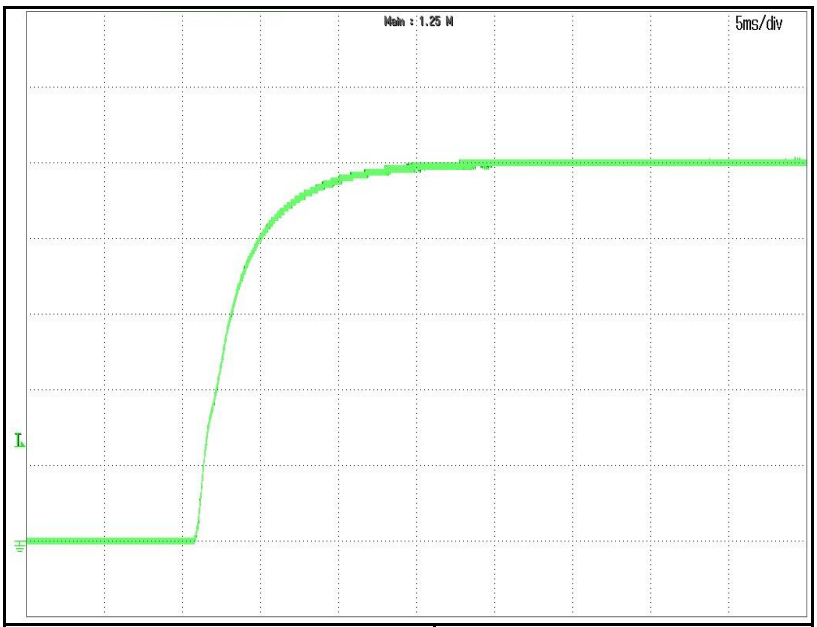
$500^{mA}/_{DIV}$	$100^{ms}/_{DIV}$

2.4 ON/OFF Output rise characteristics

C.C mode

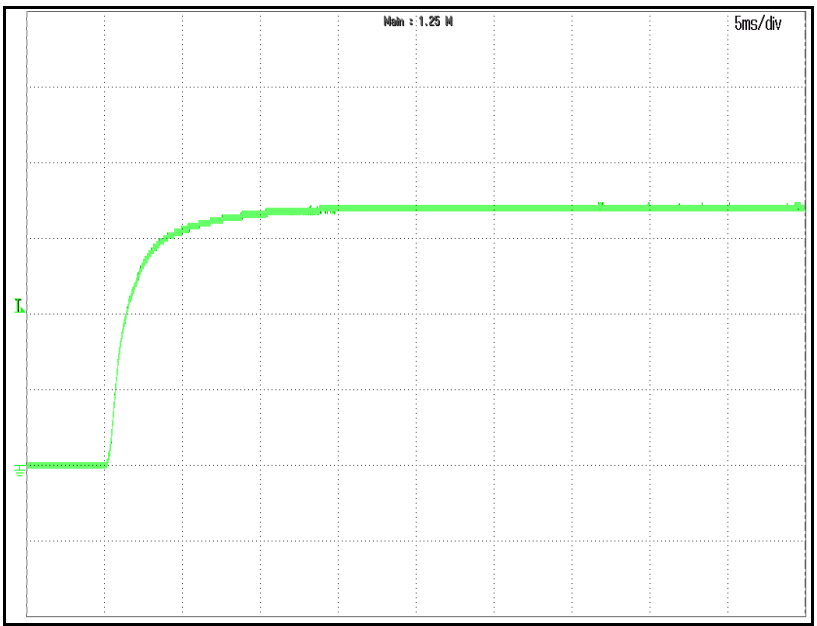
Conditions: Vin: 100VAC
Iout: 100%
Vset=105%
shorted output
Ta = 25°C

GH10-100



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

GH60-17



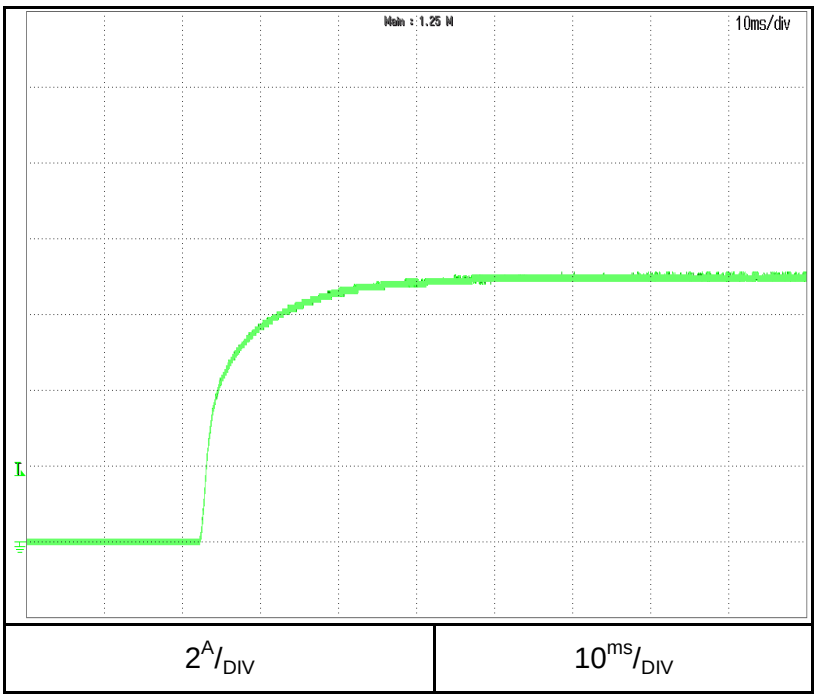
$5^{A}/_{DIV}$	$5^{ms}/_{DIV}$

2.4 ON/OFF Output rise characteristics

C.C mode

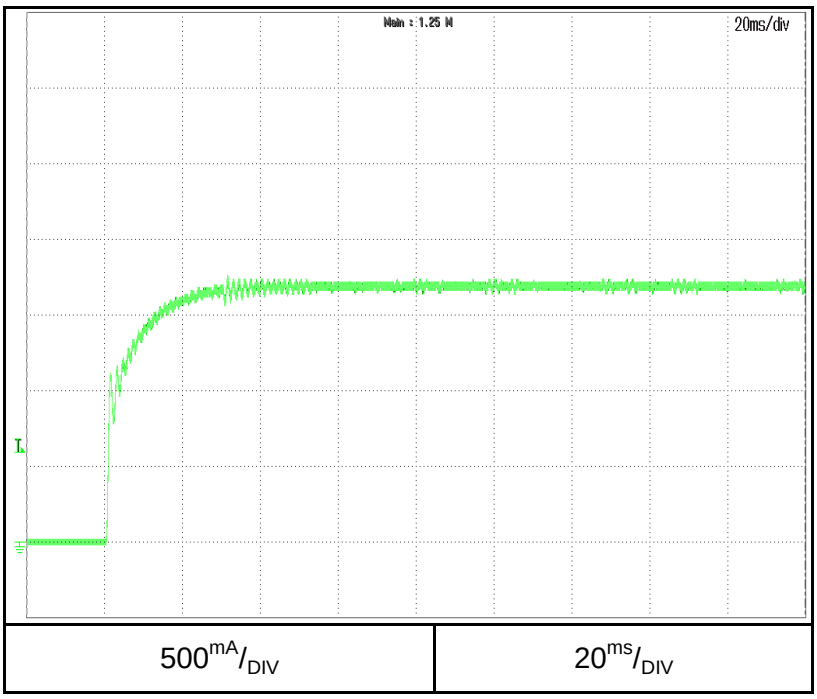
Conditions: Vin: 100VAC
Iout: 100%
Vset=105%
shorted output
Ta = 25°C

GH150-7



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

GH600-1.7

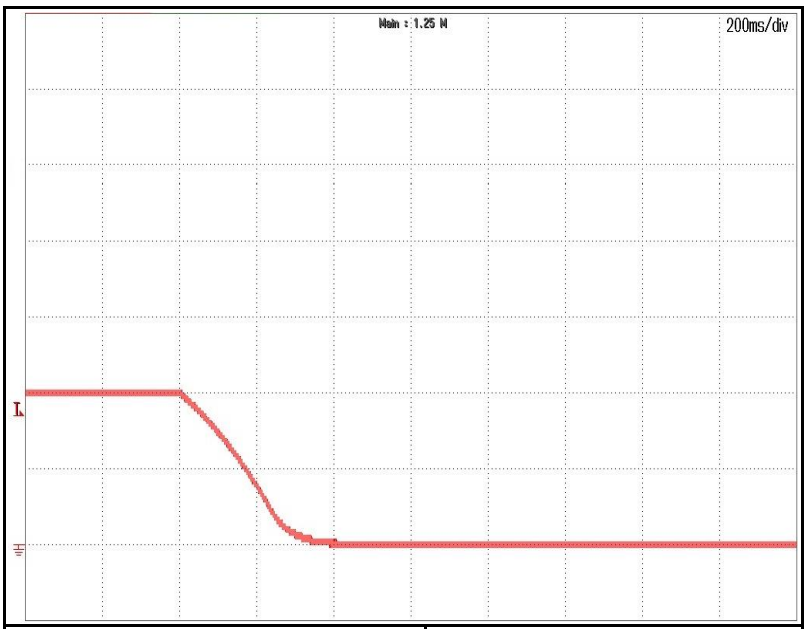


$500^{mA}/_{DIV}$	$20^{ms}/_{DIV}$

2.5 ON/OFF Output fall characteristics
C.V mode

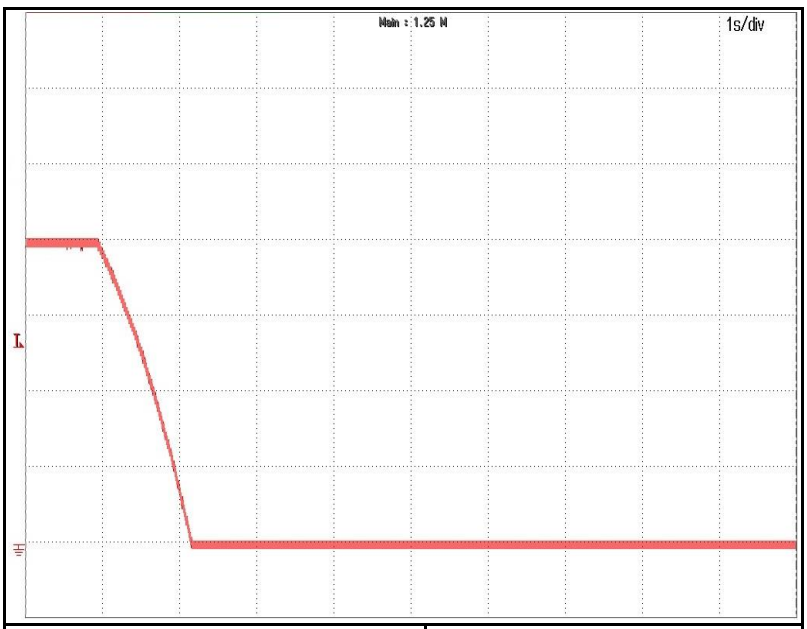
Conditions: Vin: 100VAC
Vout: 100%
Iout: 0%
Ta = 25°C

GH10-100



$5^{V}/_{DIV}$	$200^{ms}/_{DIV}$

GH60-17



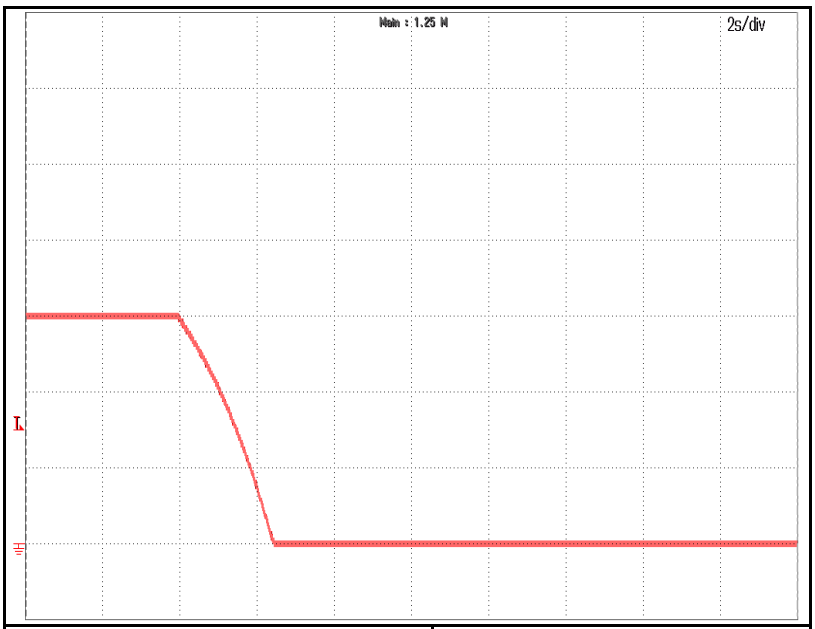
$15^{V}/_{DIV}$	$1^{s}/_{DIV}$

2.5 ON/OFF Output fall characteristics

C.V mode

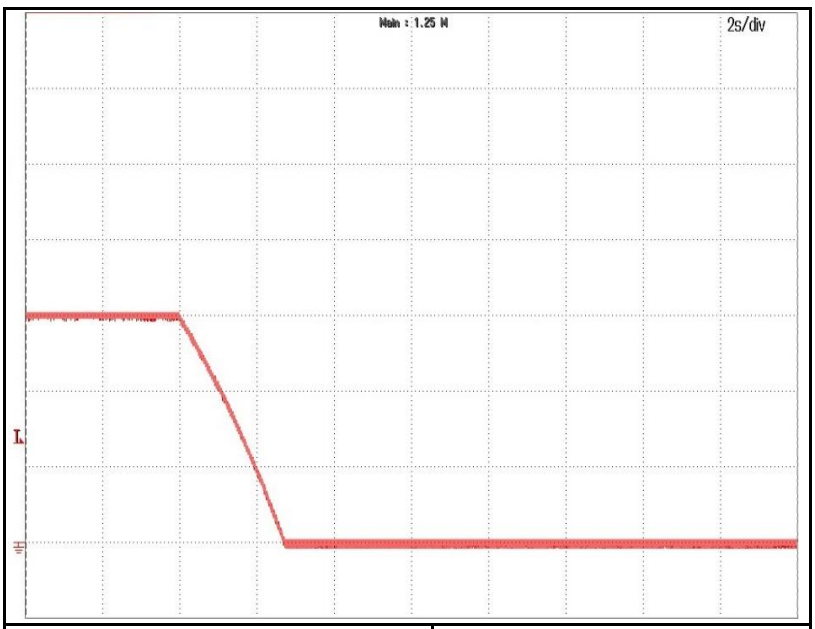
Conditions: Vin: 100VAC
Vout: 100%
Iout: 0%
Ta = 25°C

GH150-7



50 V/DIV	2 S/DIV

GH600-1.7

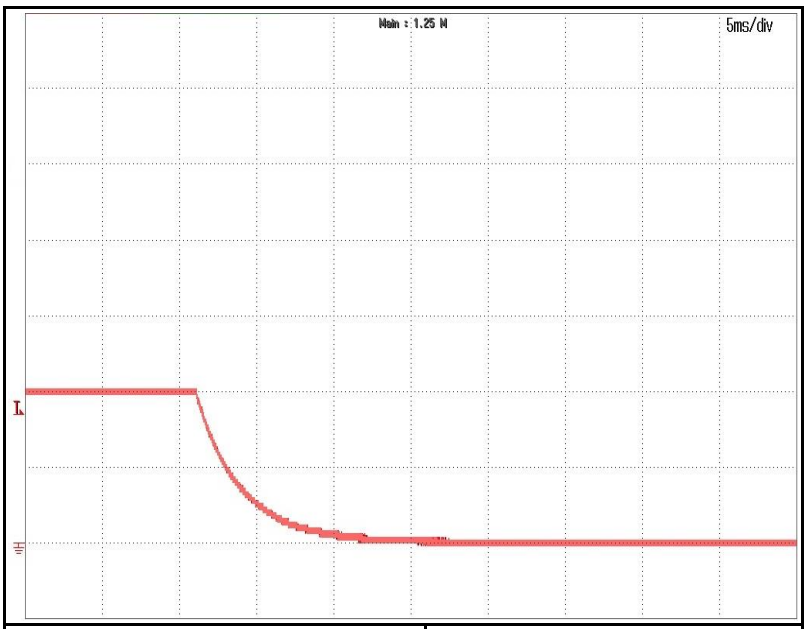


200 V/DIV	2 S/DIV

2.5 ON/OFF Output fall characteristics
C.V mode

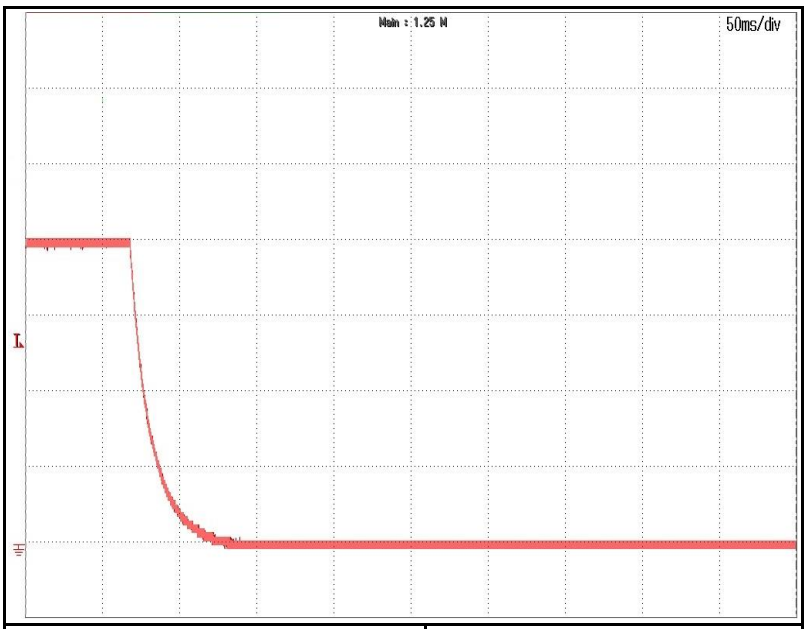
Conditions: Vin: 100VAC
Vout: 100%
Iout: 100%
Load: CR
Ta = 25°C

GH10-100



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

GH60-17



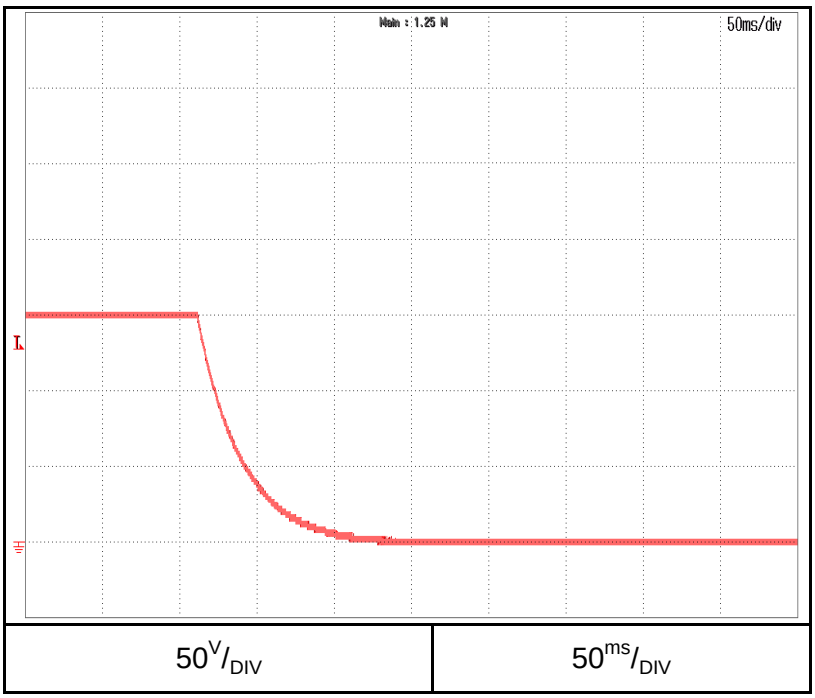
$15^{V}/_{DIV}$	$50^{ms}/_{DIV}$

2.5 ON/OFF Output fall characteristics

C.V mode

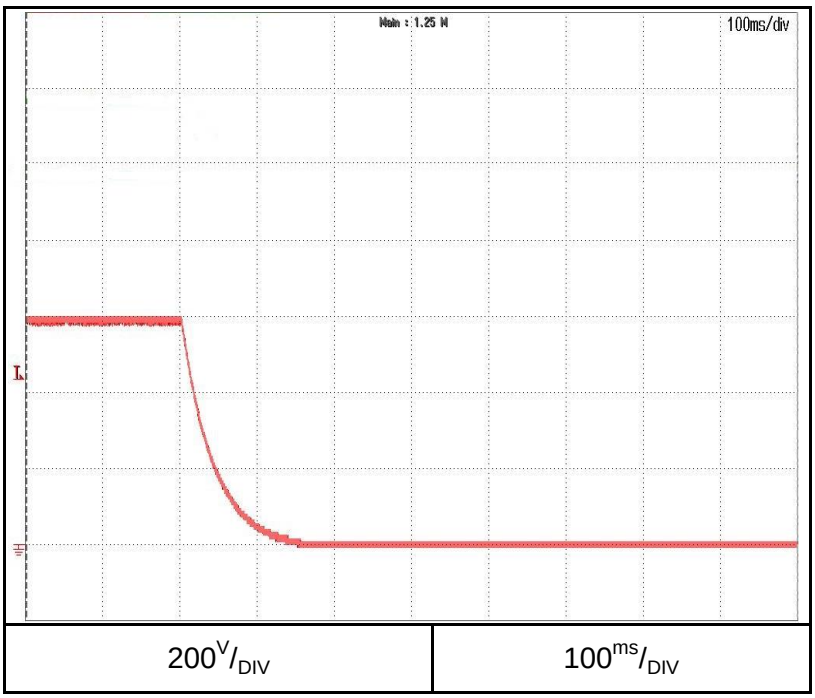
Conditions: Vin: 100VAC
Vout: 100%
Iout: 100%
Load: CR
Ta = 25°C

GH150-7



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

GH600-1.7



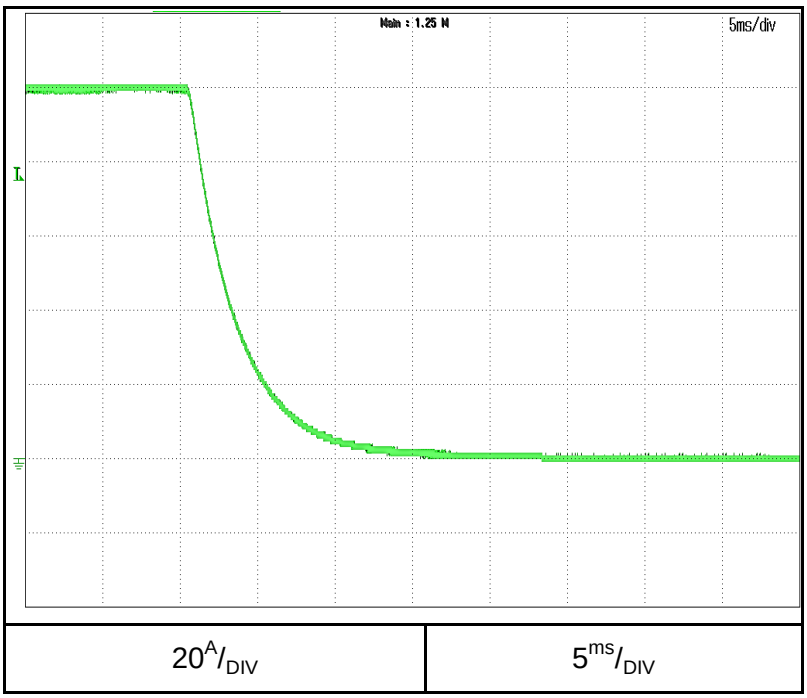
$200^{V}/_{DIV}$	$100^{ms}/_{DIV}$

2.5 ON/OFF Output fall characteristics

C.C mode

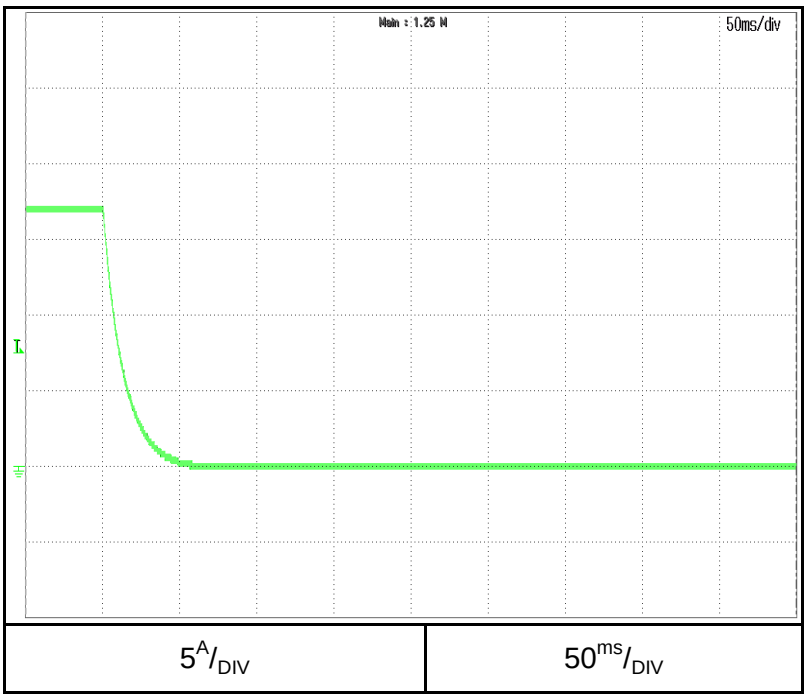
Conditions: Vin: 100VAC
Vout: 100%
Iout: 100%
Load: CR
Ta = 25°C

GH10-100



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

GH60-17



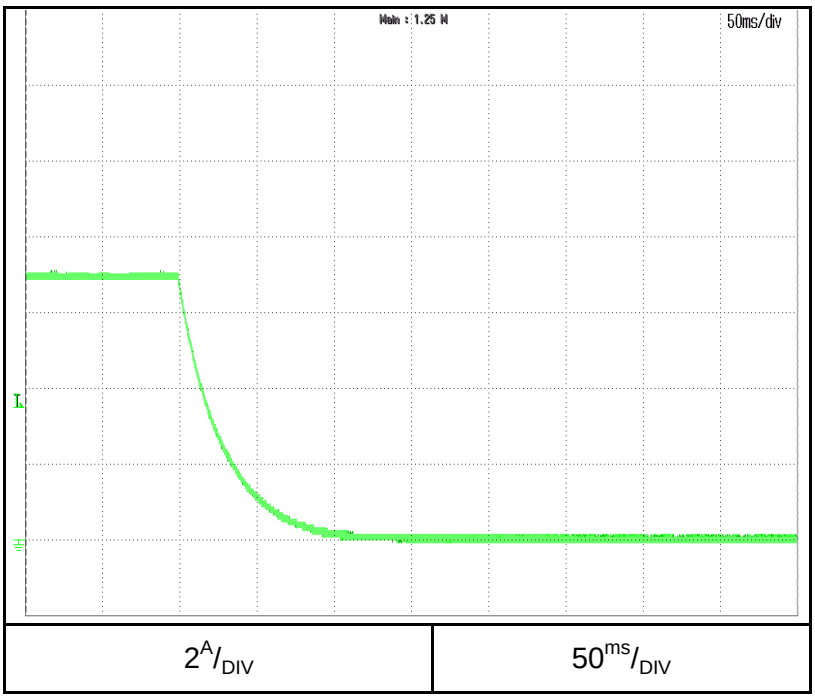
$5^{A}/_{DIV}$	$50^{ms}/_{DIV}$

2.5 ON/OFF Output fall characteristics

C.C mode

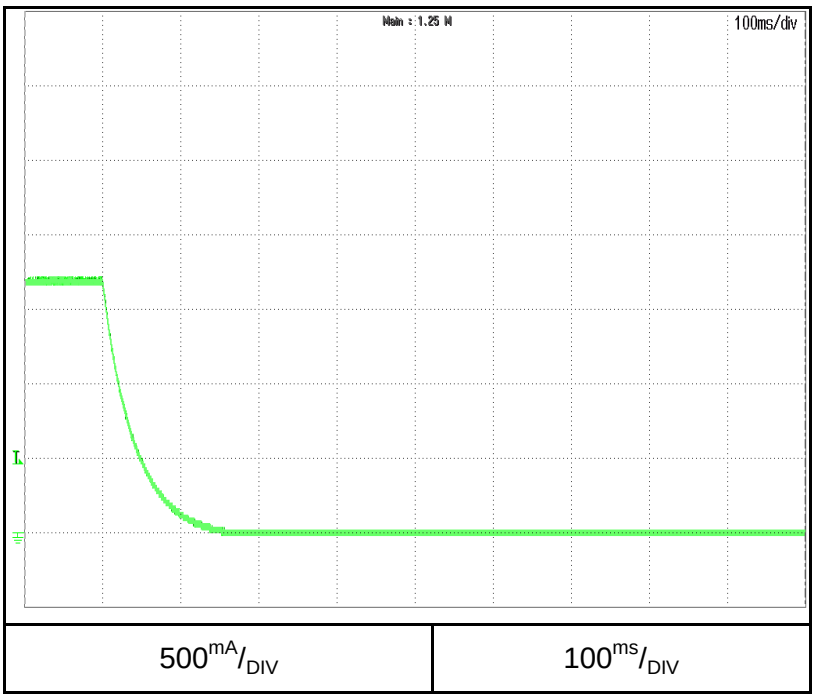
Conditions: Vin: 100VAC
Vout: 100%
Iout: 100%
Load: CR
Ta = 25°C

GH150-7



$2^{A}/_{DIV}$	$50^{ms}/_{DIV}$

GH600-1.7



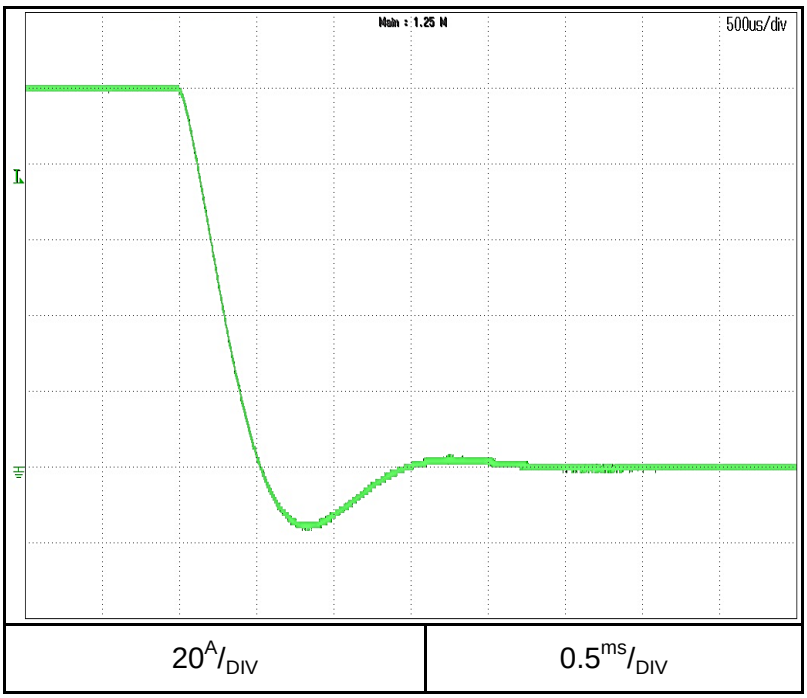
$500^{mA}/_{DIV}$	$100^{ms}/_{DIV}$

2.5 ON/OFF Output fall characteristics

C.C mode

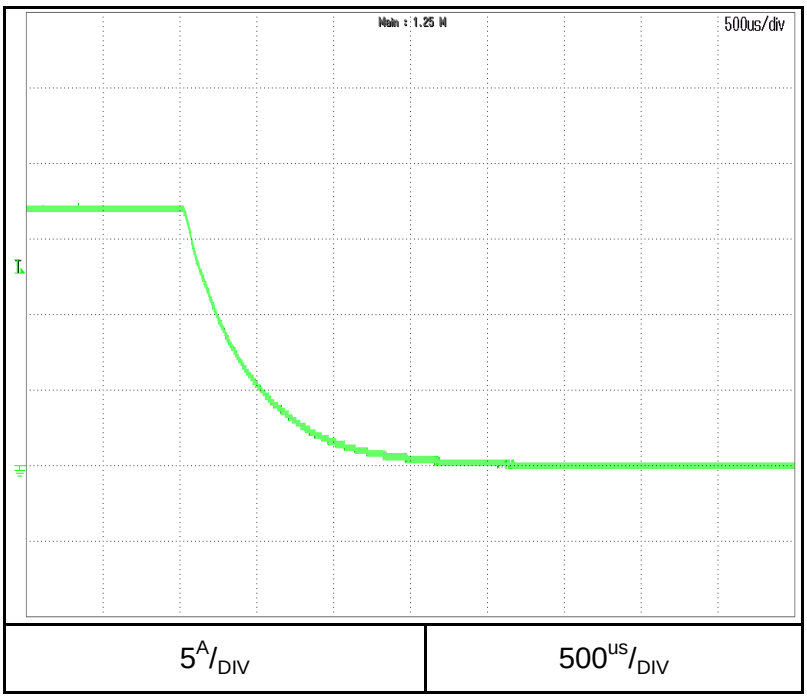
Conditions: Vin: 100VAC
Iout: 100%
shorted output
Ta = 25°C

GH10-100



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

GH60-17

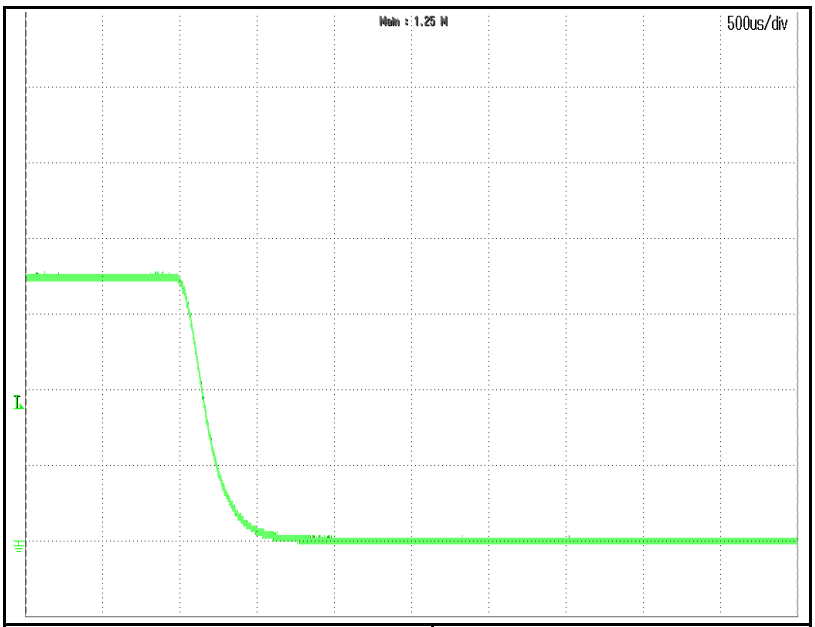


$5^{A}/_{DIV}$	$500^{us}/_{DIV}$

2.5 ON/OFF Output fall characteristics
C.C mode

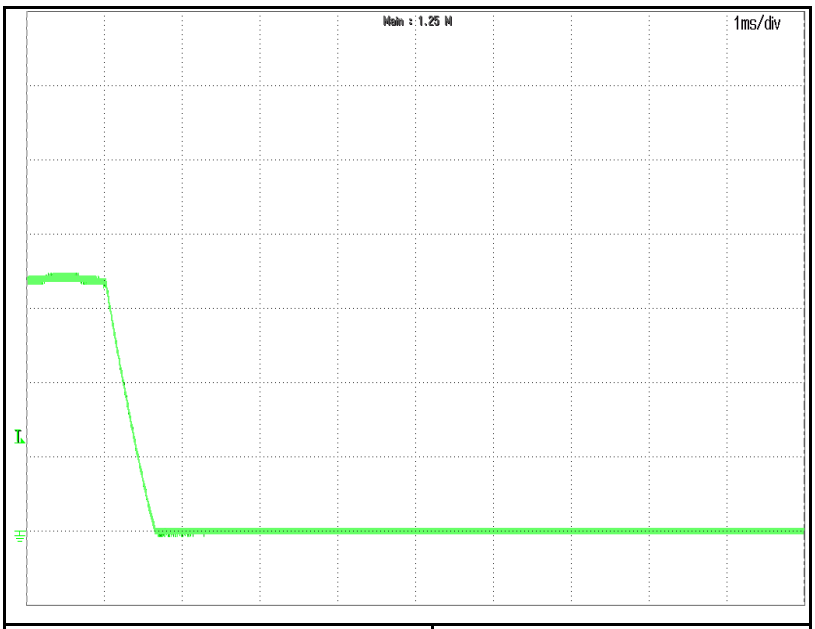
Conditions: Vin: 100VAC
Iout: 100%
shorted output
Ta = 25°C

GH150-7



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

GH600-1.7



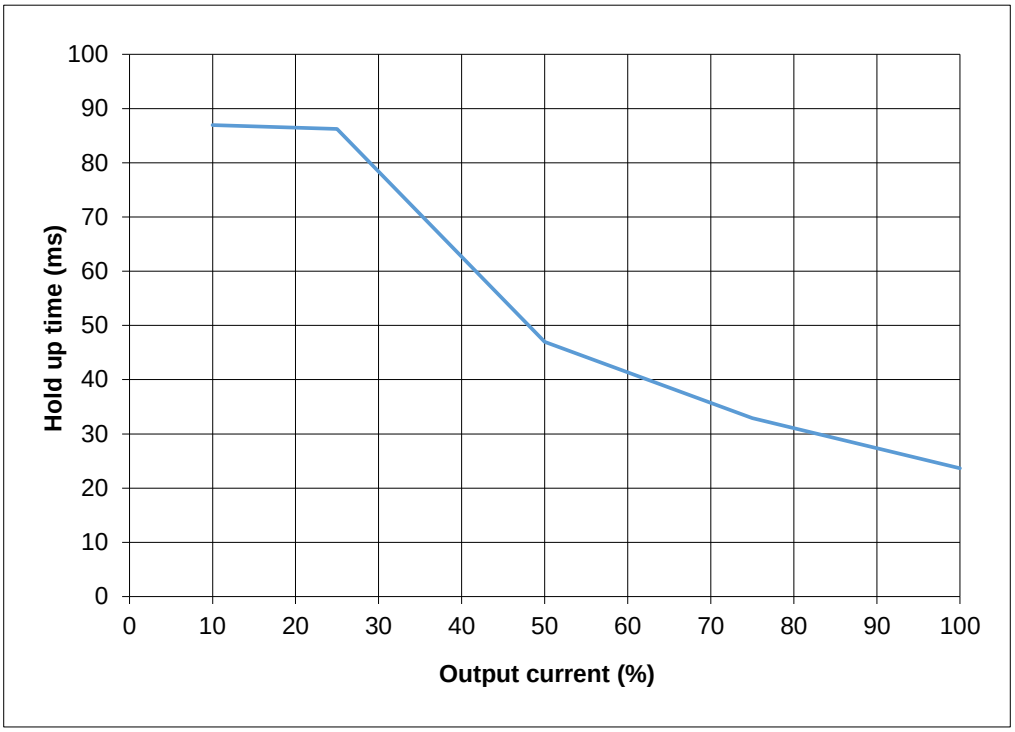
$500^{mA}/_{DIV}$	$1^{ms}/_{DIV}$

2.6 Holdup time characteristics

Conditions: Ta = 25°C
Vout:100%

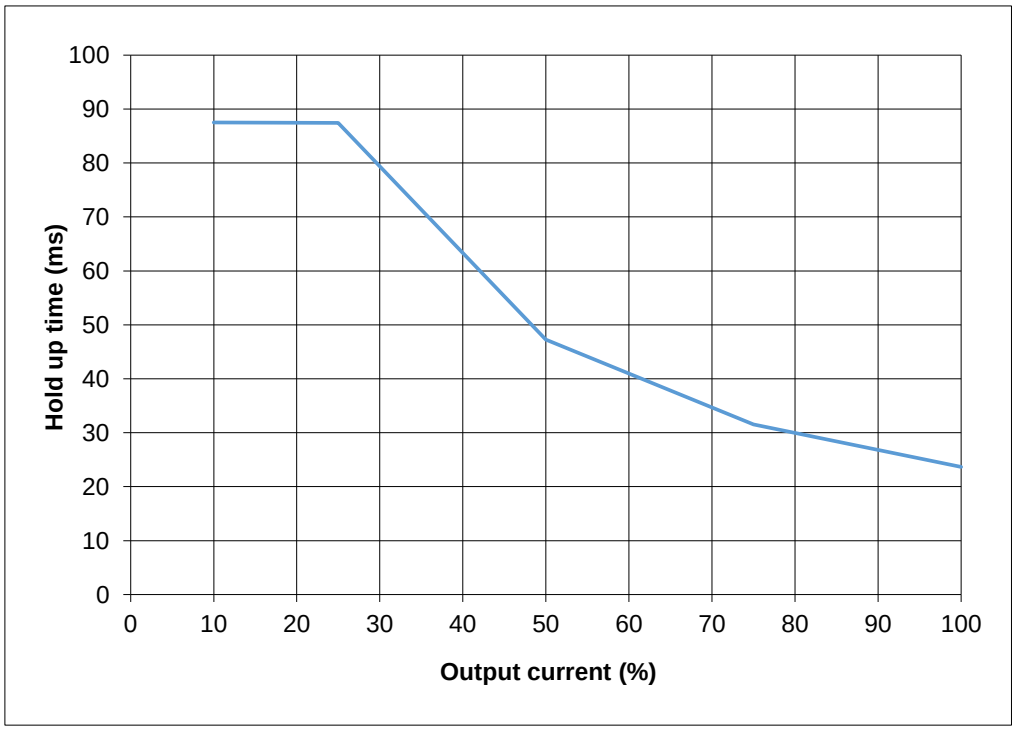
G10-100,GH10-100

Vin:100VAC



G10-100,GH10-100

Vin:200VAC

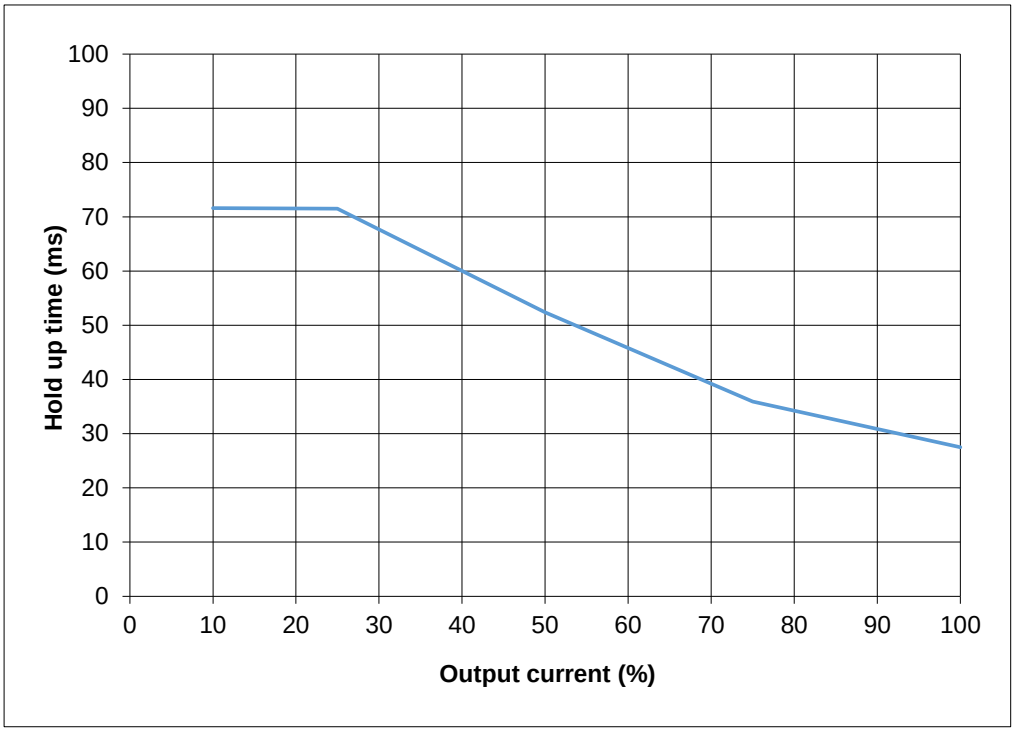


2.6 Holdup time characteristics

Conditions: Ta = 25°C
Vout:100%

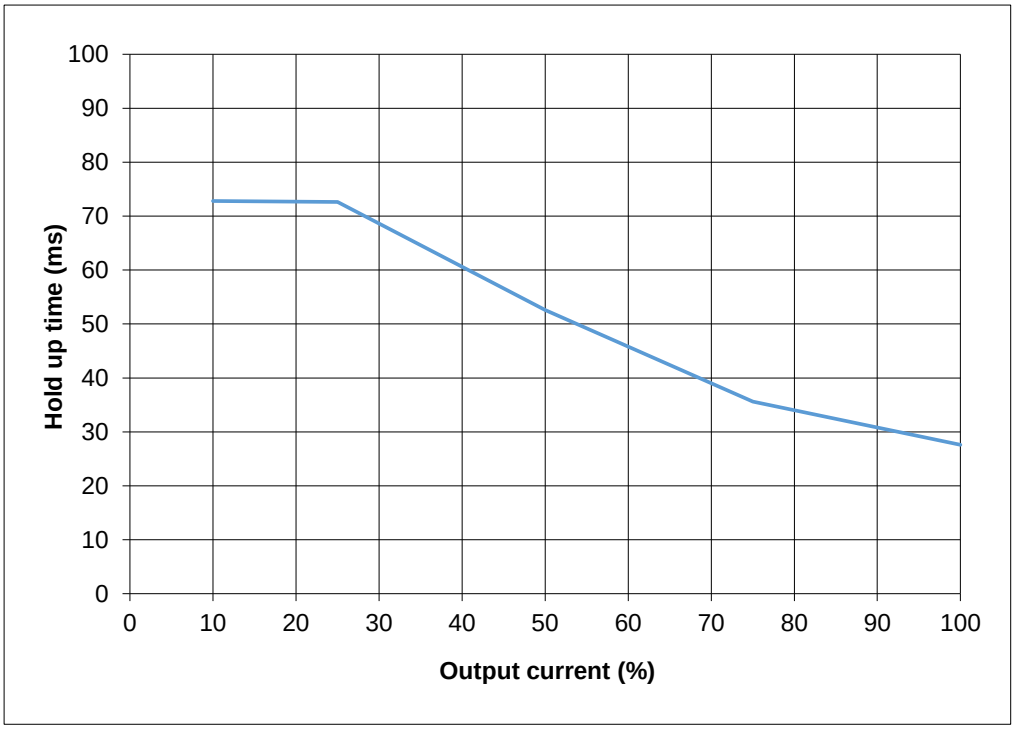
G60-17,GH60-17

Vin:100VAC



G60-17,GH60-17

Vin:200VAC

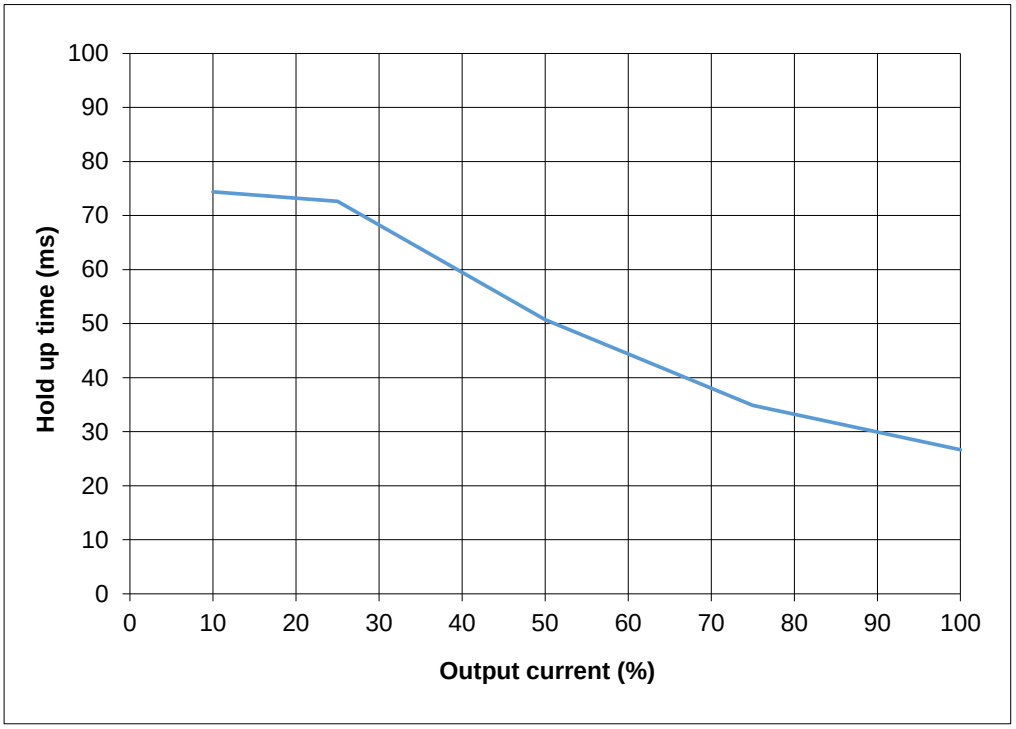


2.6 Holdup time characteristics

Conditions: Ta = 25°C
Vout:100%

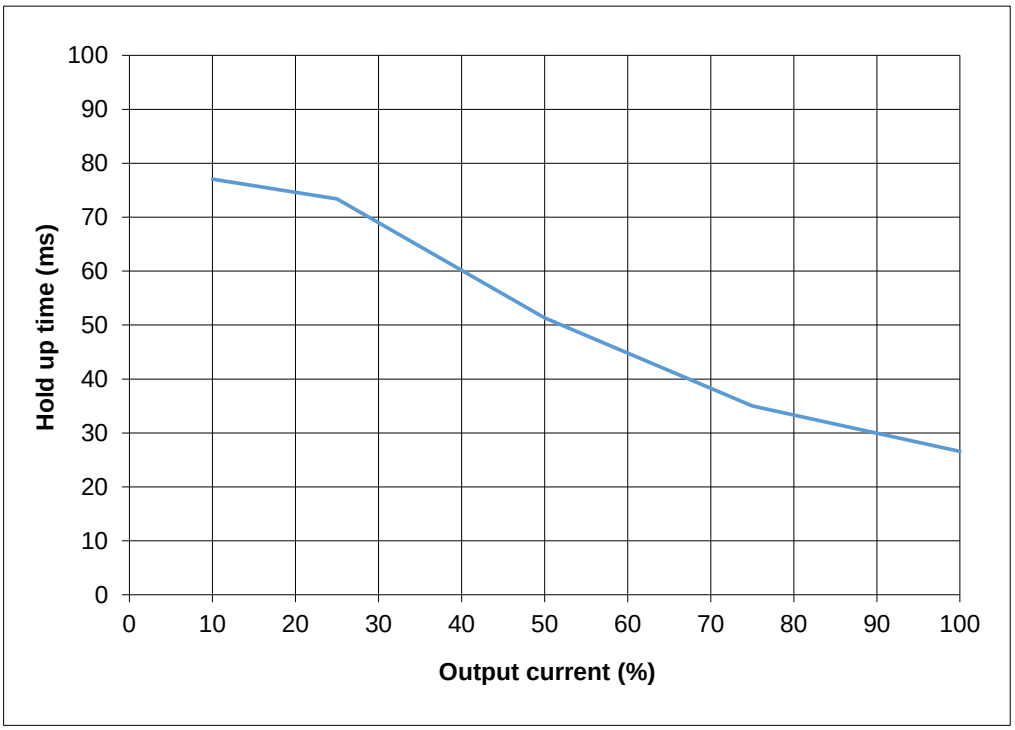
G150-7,GH150-7

Vin:100VAC



G150-7,GH150-7

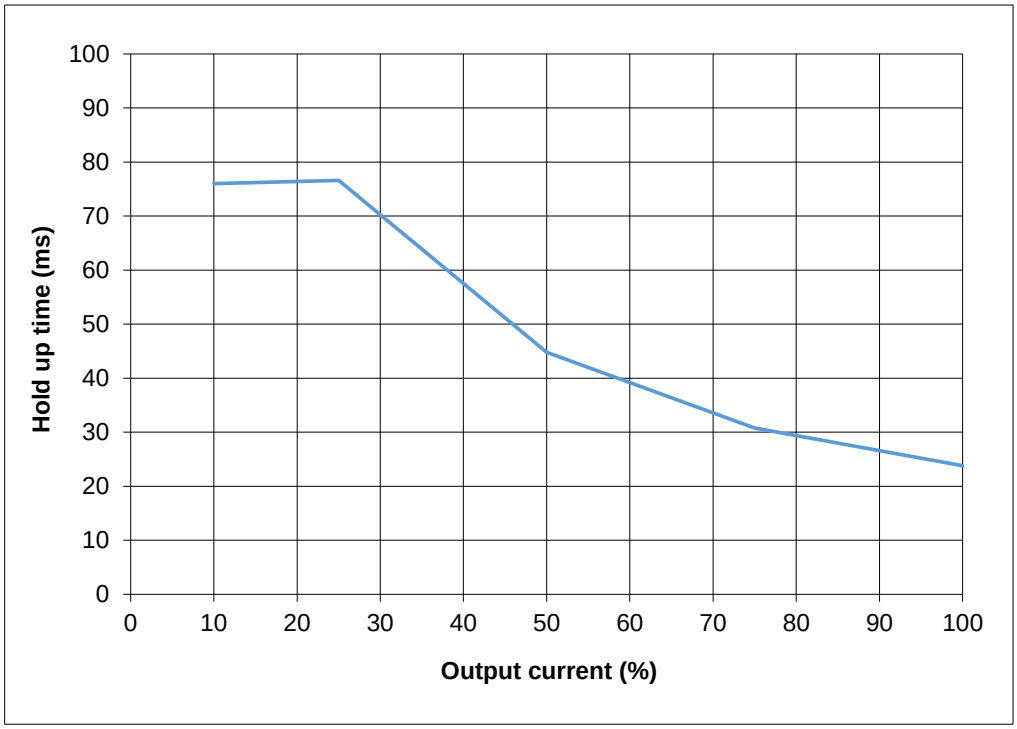
Vin:200VAC



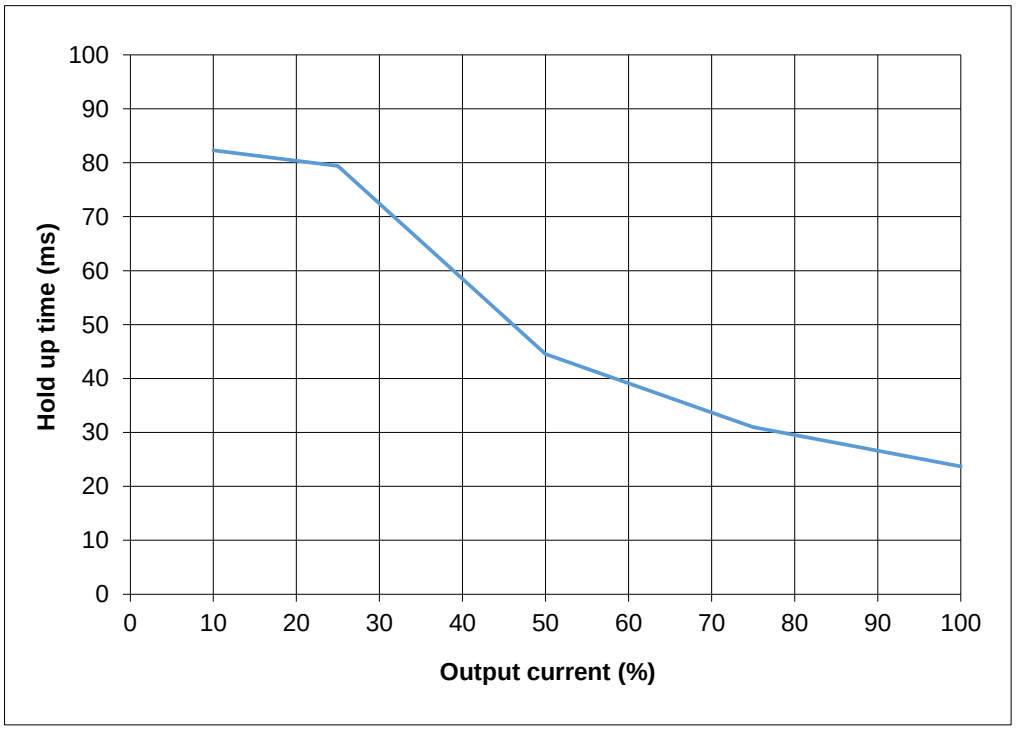
2.6 Holdup time characteristics

Conditions: Ta = 25°C
Vout:100%

G600-1.7,GH600-1.7 Vin:100VAC



G600-1.7,GH600-1.7 Vin:200VAC

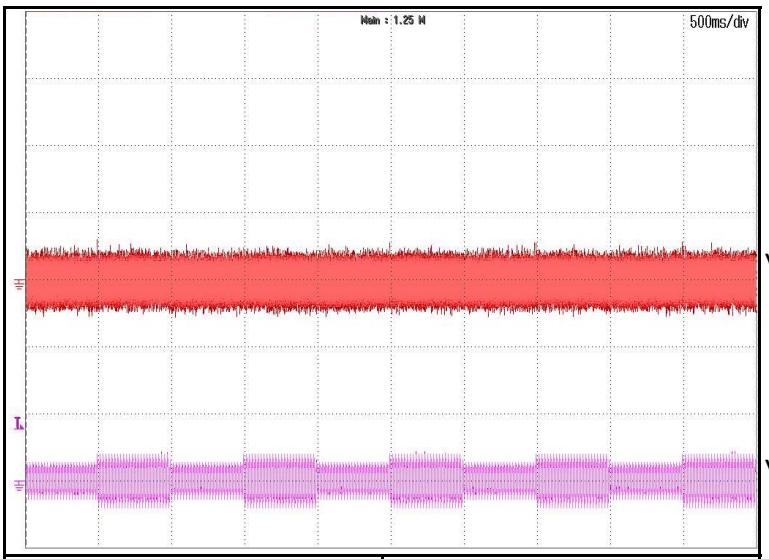


2.7 Dynamic line response characteristics Ta = 25°C

C.V mode

GH10-100

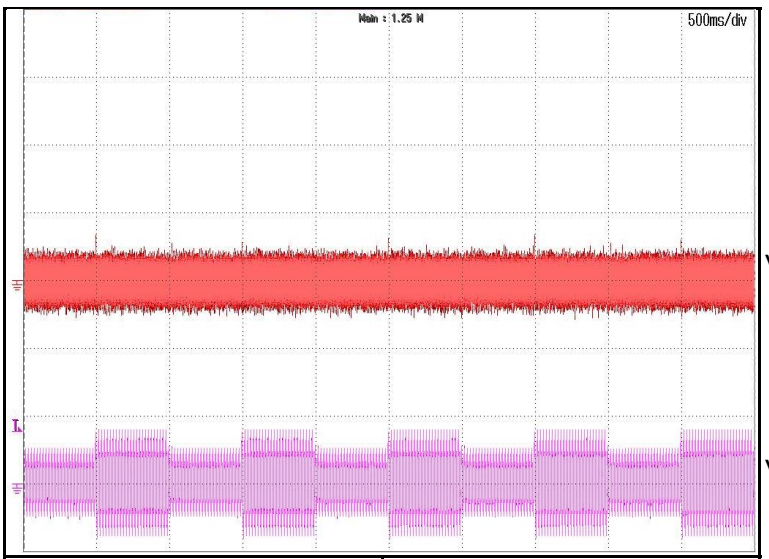
Conditions: Vout: 100%
Iout: 100%
Vin:85↔132V



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

GH10-100

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



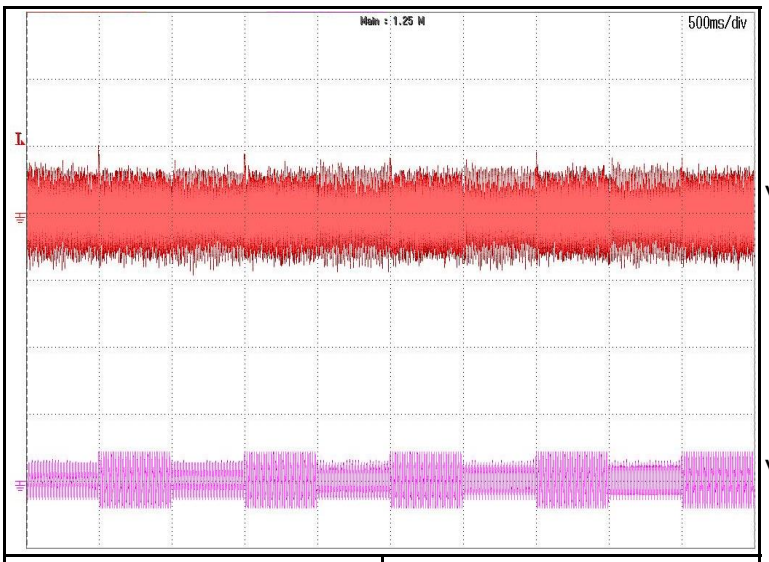
Vout: 20$^{mv}/_{DIV}$	500$^{ms}/_{DIV}$
Vin: 500$^{v}/_{DIV}$	

2.7 Dynamic line response characteristics Ta = 25°C

C.V mode

GH60-17

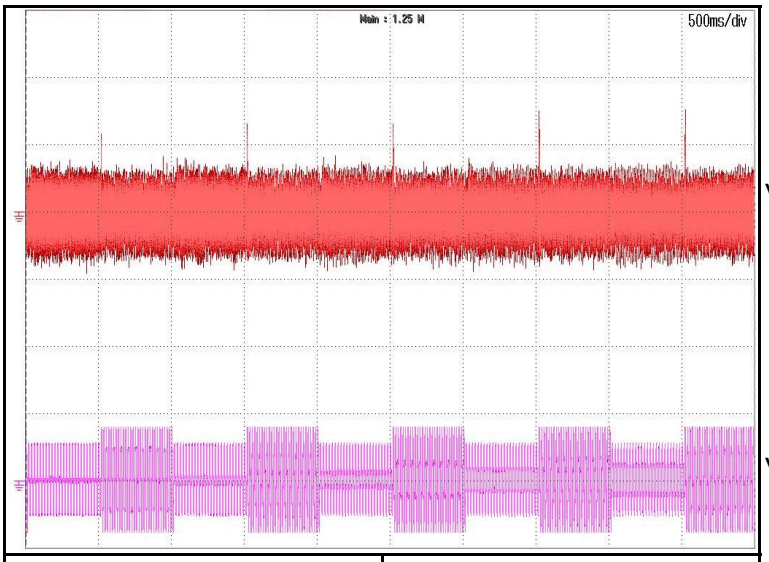
Conditions: Vout: 100%
Iout: 100%
Vin:85↔132V



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

GH60-17

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



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

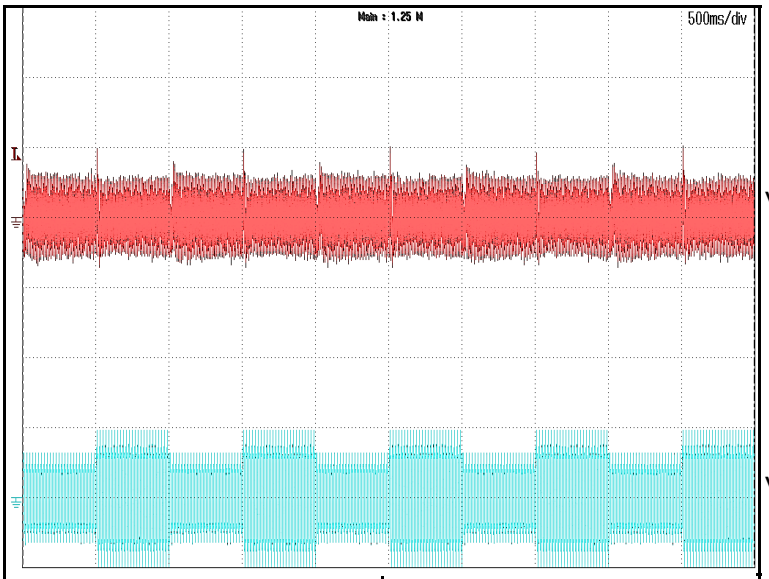
2.7 Dynamic line response characteristics

Ta = 25°C

C.V mode

GH150-7

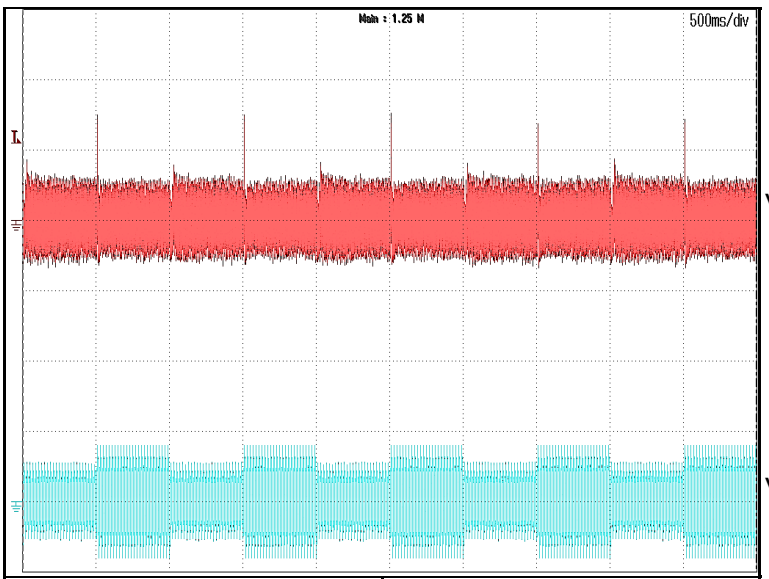
Conditions: Vout: 100%
Iout: 100%
Vin:85↔132V



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

GH150-7

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



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

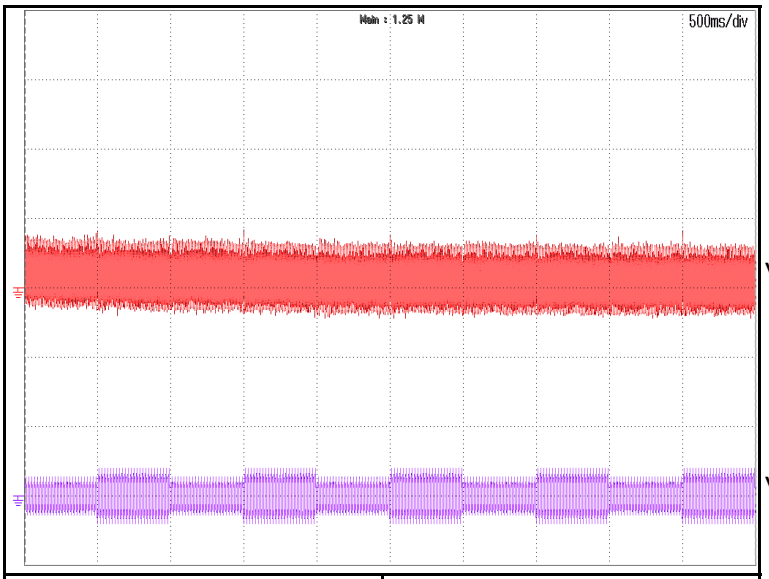
2.7 Dynamic line response characteristics

Ta = 25°C

C.V mode

GH600-1.7

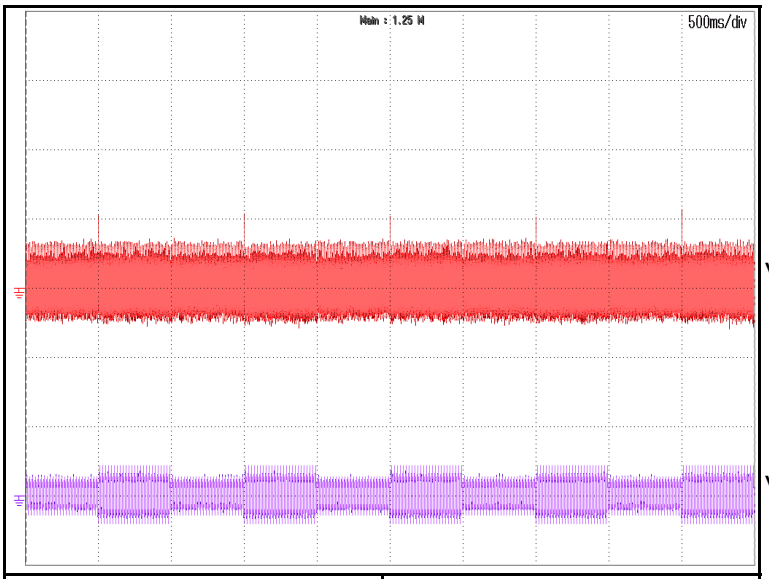
Conditions: Vout: 100%
Iout: 100%
Vin:85↔132V



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

GH600-1.7

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



Vout: 200mv/DIV	500ms/DIV
Vin: 1000V/DIV	

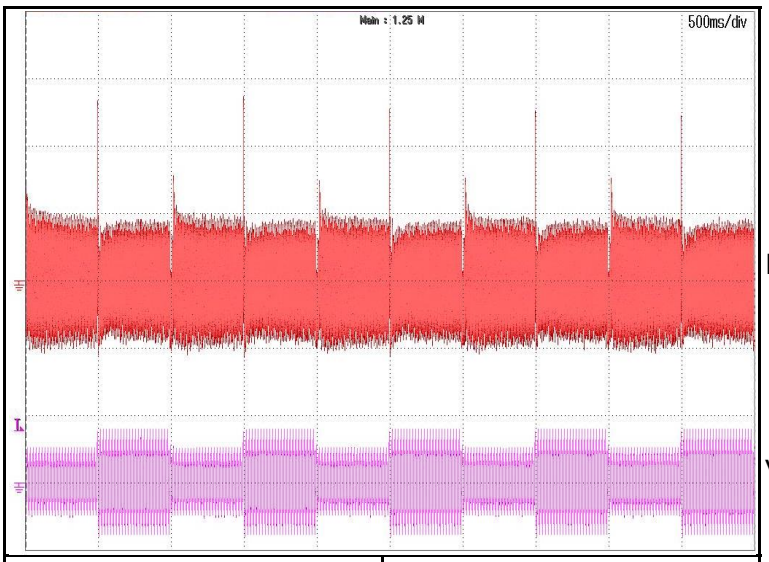
2.7 Dynamic line response characteristics

Ta = 25°C

C.C mode

GH10-100

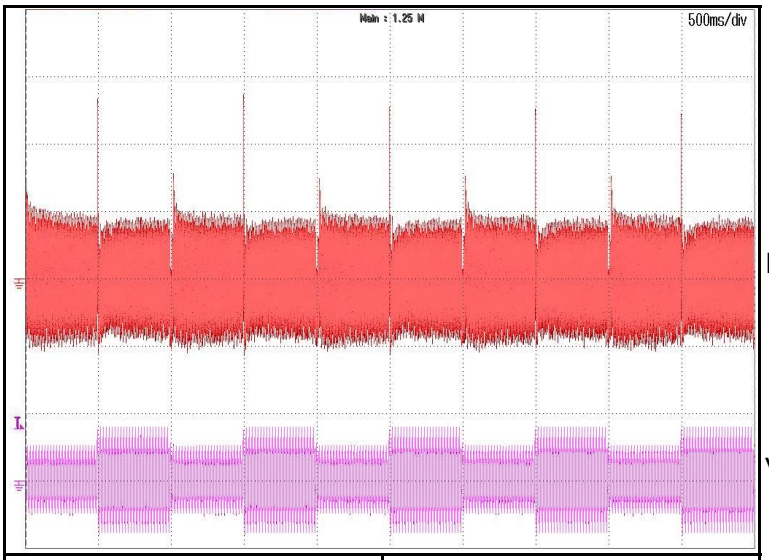
Conditions: Vout: 100%
Iout: 100%
Vin:85↔132V



Iout: 200mA/DIV	500ms/DIV
Vin: 500v/DIV	

GH10-100

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



Iout: 200mA/DIV	500ms/DIV
Vin: 500v/DIV	

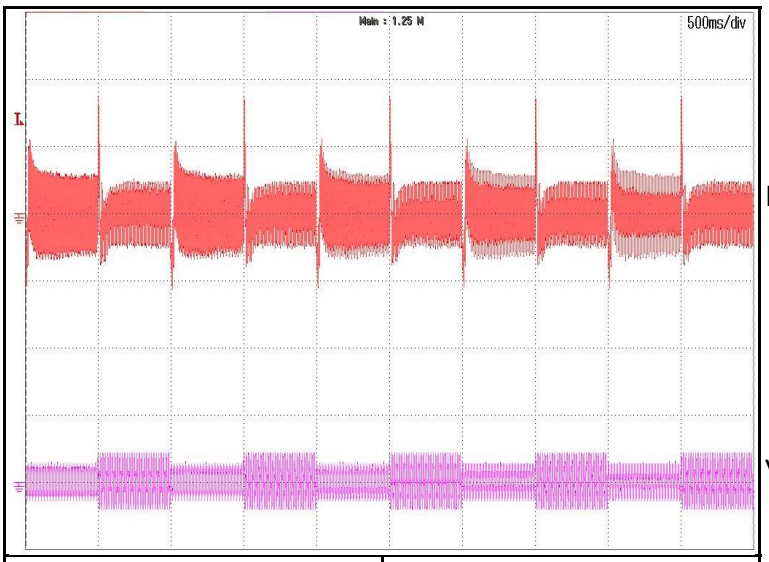
2.7 Dynamic line response characteristics

Ta = 25°C

C.C mode

GH60-17

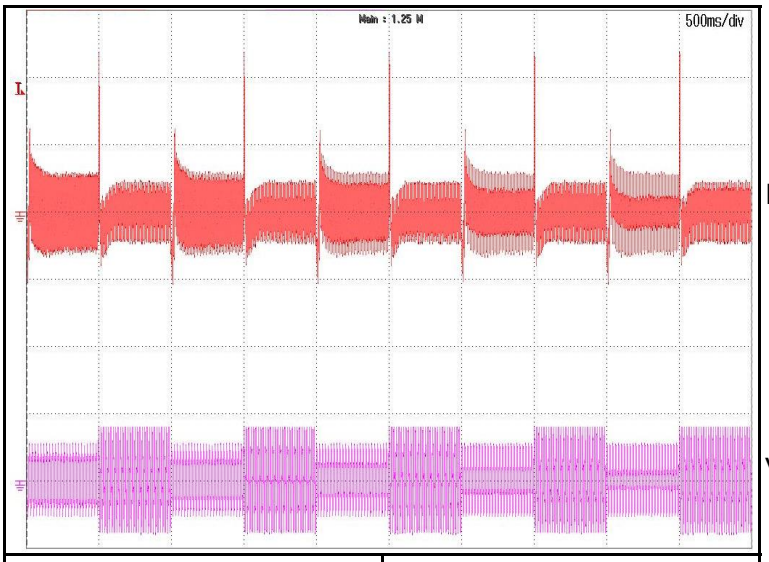
Conditions: Vout: 100%
Iout: 100%
Vin:85↔132V



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

GH60-17

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



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

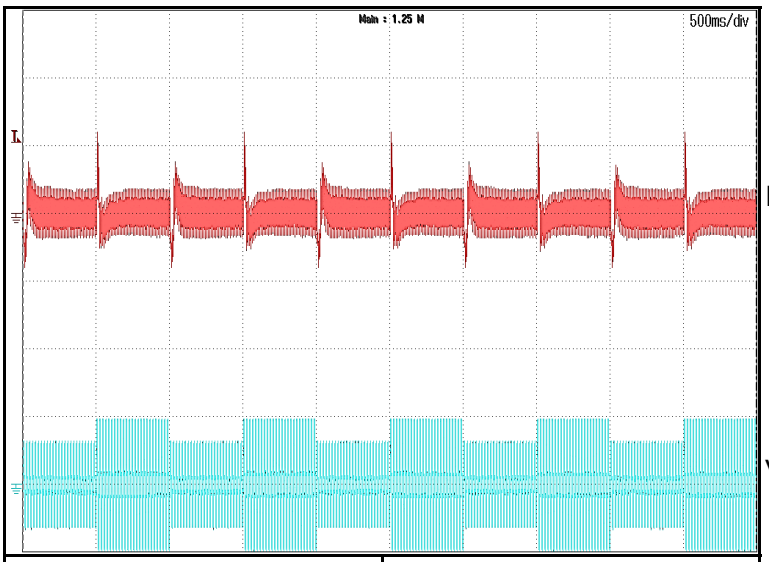
2.7 Dynamic line response characteristics

Ta = 25°C

C.C mode

GH150-7

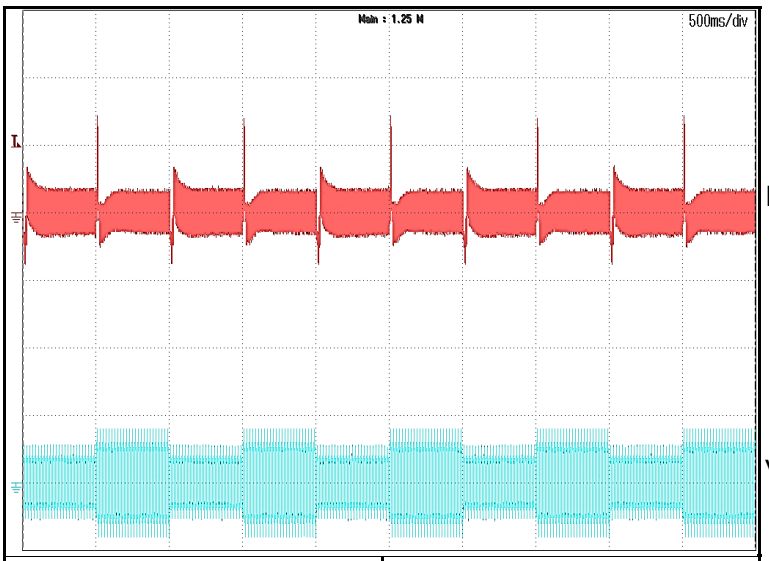
Conditions: Vout: 100%
Iout: 100%
Vin:85↔132V



Iout: 9.3mA/DIV	500ms/DIV
Vin: 200V/DIV	

GH150-7

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



Iout: 9.3mA/DIV	500ms/DIV
Vin: 500V/DIV	

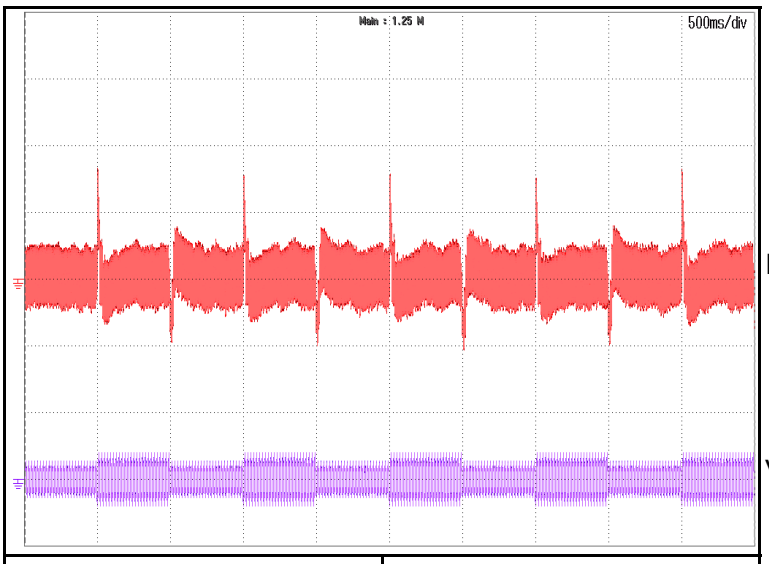
2.7 Dynamic line response characteristics

Ta = 25°C

C.C mode

GH600-1.7

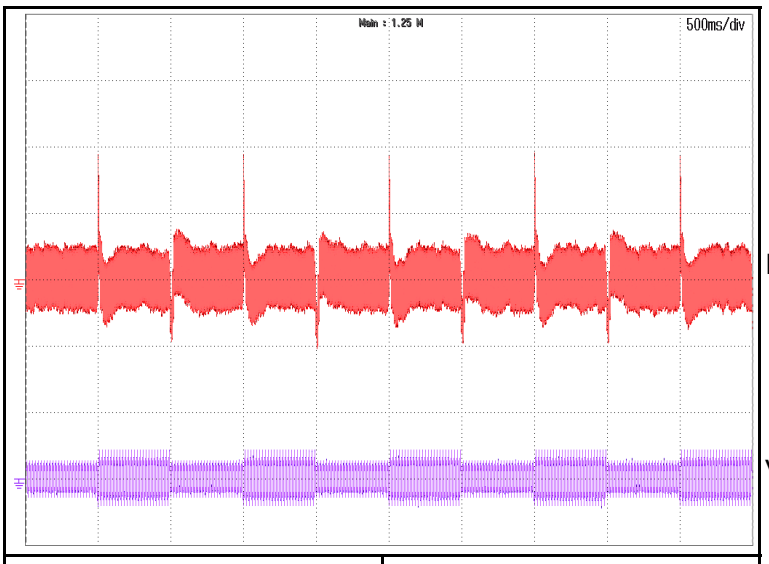
Conditions: Vout: 100%
Iout: 100%
Vin:85↔132V



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

GH600-1.7

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



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

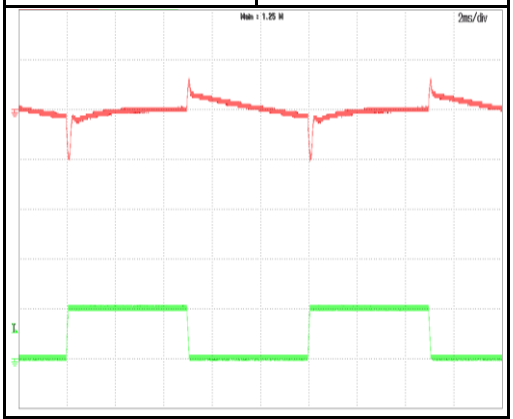
2.8 Dynamic load response characteristics

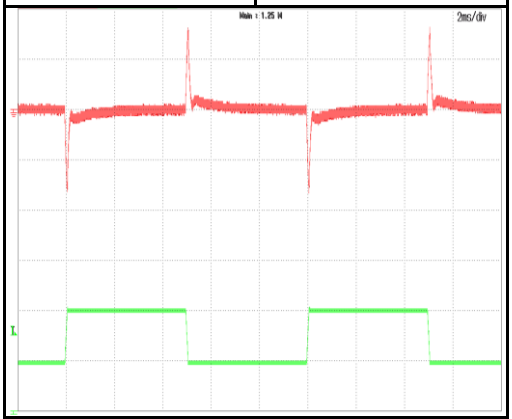
C.V mode

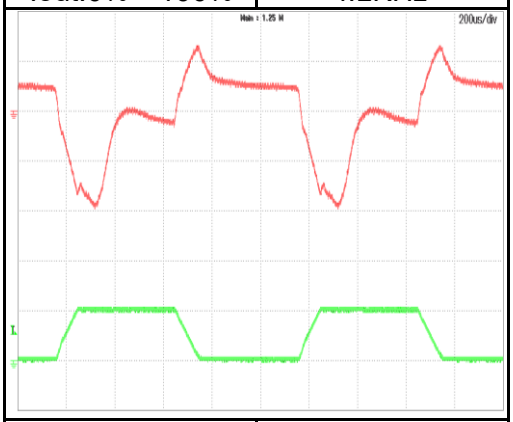
Conditions: Vin: Nominal
Vout: 100%
Ta = 25°C

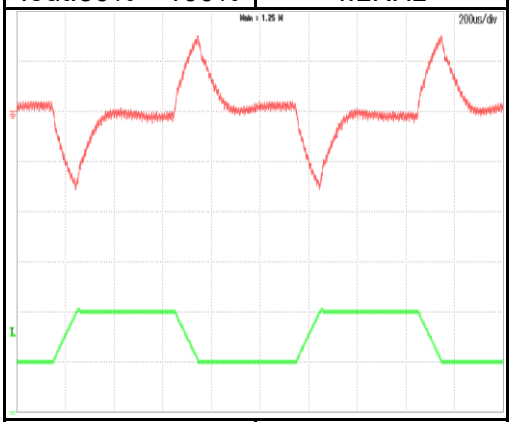
Load current: tr=tf=100us

GH10-100

Iout:0%↔100%	f:100Hz
	
500mV/DIV	2ms/DIV
3.40%	-5.20%

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

Iout:0%↔100%	f:1KHz
	
200mV/DIV	200us/DIV
2.75%	-3.92%

Iout:50%↔100%	f:1KHz
	
100mV/DIV	200us/DIV
1.56%	-1.56%

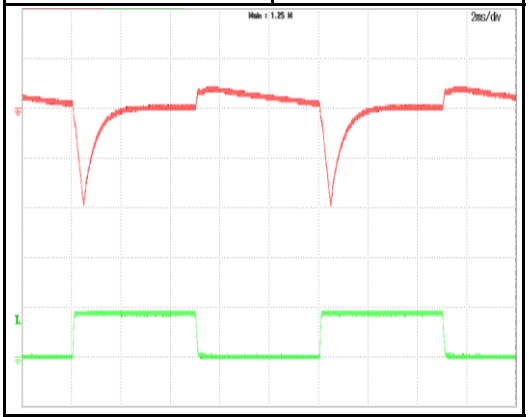
2.8 Dynamic load response characteristics

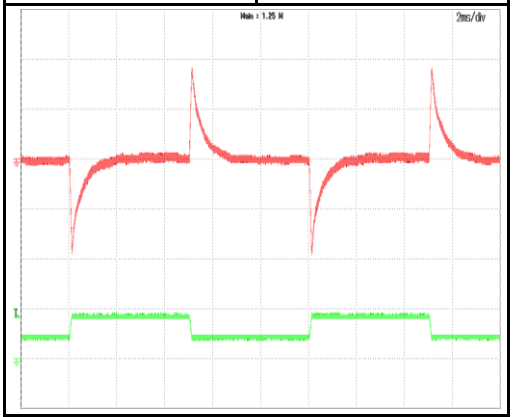
C.V mode

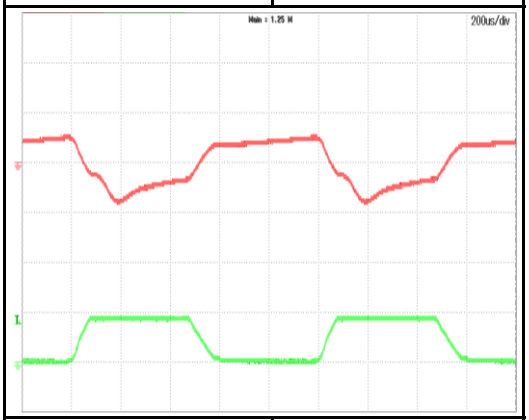
Conditions: Vin: Nominal
Vout: 100%
Ta = 25°C

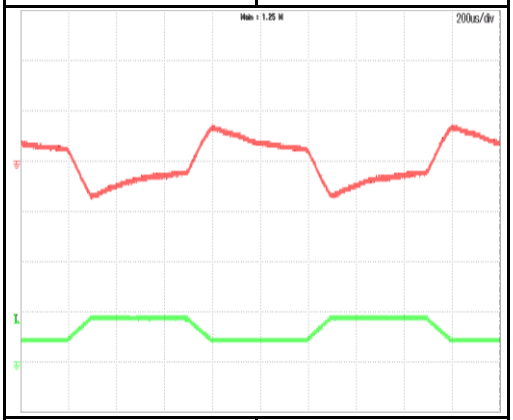
Load current: tr=tf=100us

GH60-17

Iout:0%↔100%	f:100Hz
	
$1^{V}/_{DIV}$	$2^{ms}/_{DIV}$
0.73%	-3.33%

Iout:50%↔100%	f:100Hz
	
$100^{mV}/_{DIV}$	$2^{ms}/_{DIV}$
0.31%	-0.32%

Iout:0%↔100%	f:1KHz
	
$500^{mV}/_{DIV}$	$200^{us}/_{DIV}$
0.47%	-0.70%

Iout:50%↔100%	f:1KHz
	
$200^{mV}/_{DIV}$	$200^{us}/_{DIV}$
0.24%	-0.25%

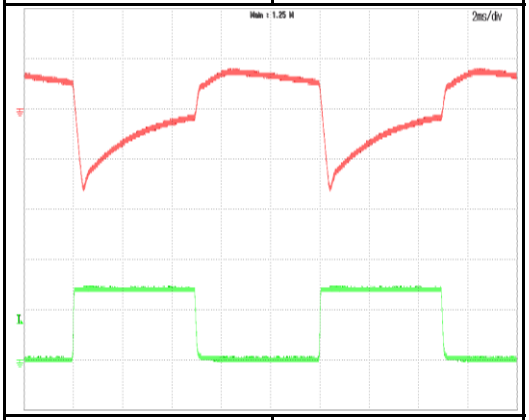
2.8 Dynamic load response characteristics

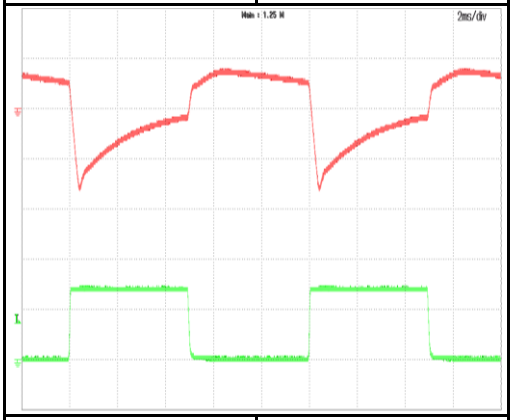
C.V mode

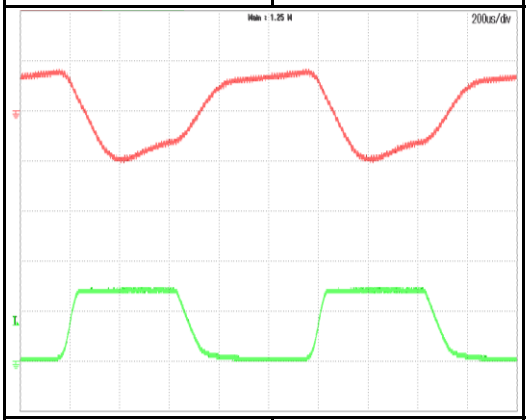
Conditions: Vin: Nominal
Vout: 100%
Ta = 25°C

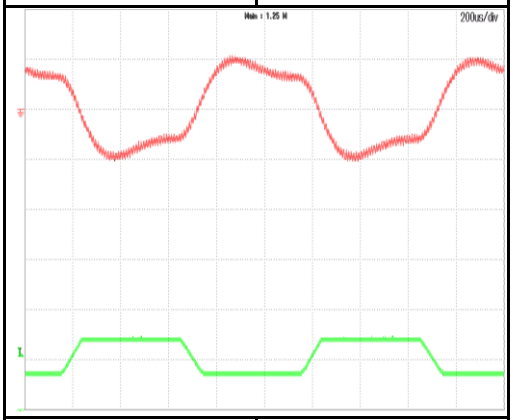
Load current: tr=tf=100us

GH150-7

Iout:0%↔100%	f:100Hz
	
$1^{V}/_{DIV}$	$2^{ms}/_{DIV}$
0.48%	-1.09%

Iout:50%↔100%	f:100Hz
	
$0.5^{V}/_{DIV}$	$2^{ms}/_{DIV}$
0.21%	-0.20%

Iout:0%↔100%	f:1KHz
	
$500^{mV}/_{DIV}$	$200^{us}/_{DIV}$
0.29%	-0.35%

Iout:50%↔100%	f:1KHz
	
$200^{mV}/_{DIV}$	$200^{us}/_{DIV}$
0.14%	-0.14%

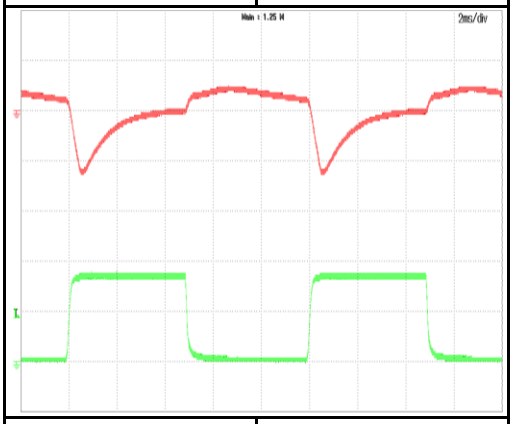
2.8 Dynamic load response characteristics

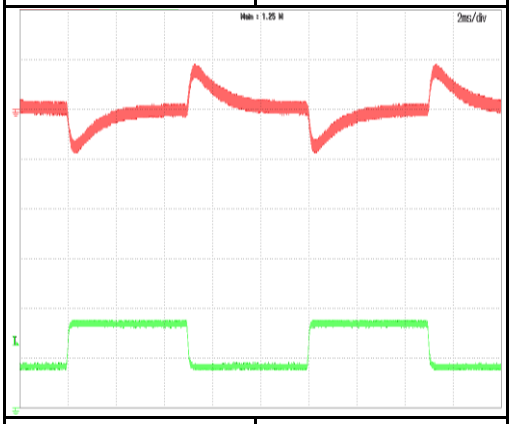
C.V mode

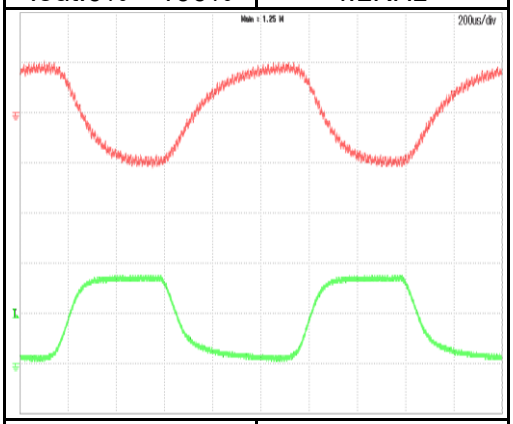
Conditions: Vin: Nominal
Vout: 100%
Ta = 25°C

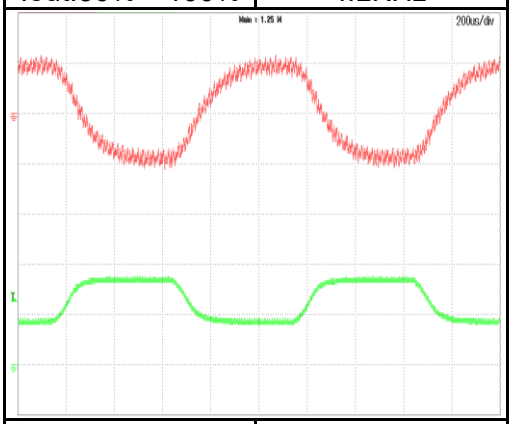
Load current: tr=tf=100us

GH600-1.7

Iout:0%↔100%	f:100Hz
	
$5^{V}/_{DIV}$	$2^{ms}/_{DIV}$
0.42%	-1.07%

Iout:50%↔100%	f:100Hz
	
$1^{V}/_{DIV}$	$2^{ms}/_{DIV}$
0.15%	-0.15%

Iout:0%↔100%	f:1KHz
	
$1^{V}/_{DIV}$	$200^{us}/_{DIV}$
0.17%	-0.19%

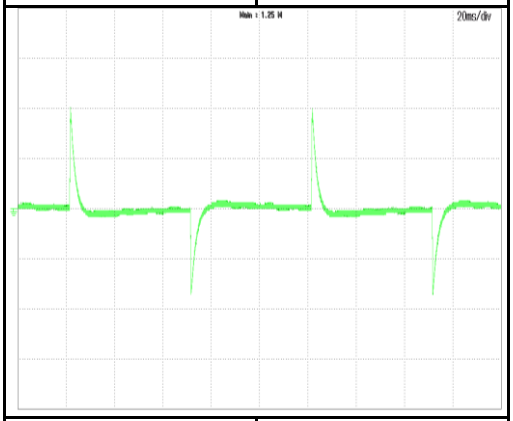
Iout:50%↔100%	f:1KHz
	
$0.5^{V}/_{DIV}$	$200^{us}/_{DIV}$
0.10%	-0.09%

2.8 Dynamic load response characteristics
C.C mode

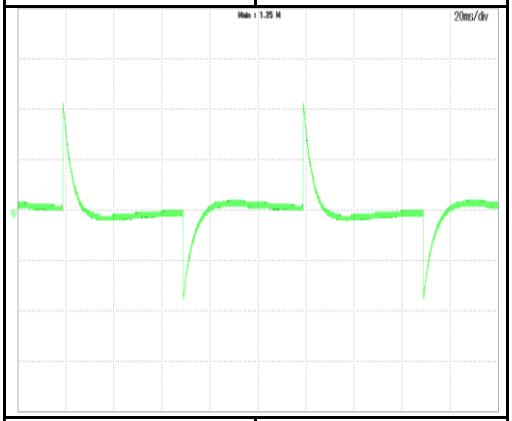
Conditions: Vin: Nominal
Ta = 25°C

GH10-100

Io=100A

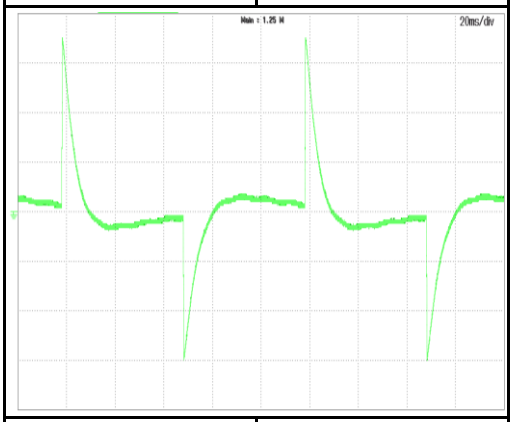
Vout:9↔7.5V	f:10Hz
	
$10^{A}/_{DIV}$	$20^{ms}/_{DIV}$
-17.20%	

Io=50A

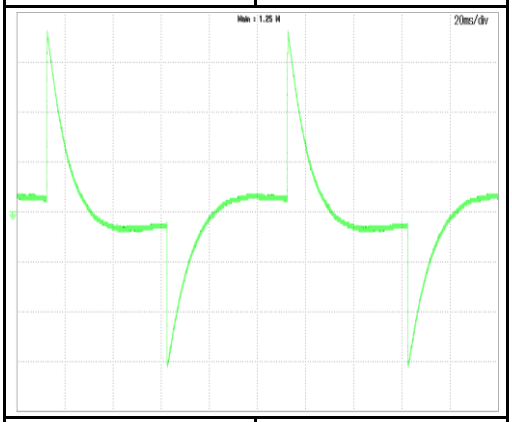
Vout:9↔7.5V	f:10Hz
	
$5^{A}/_{DIV}$	$20^{ms}/_{DIV}$
-8.80%	

GH60-17

Io=17A

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

Io=8.5A

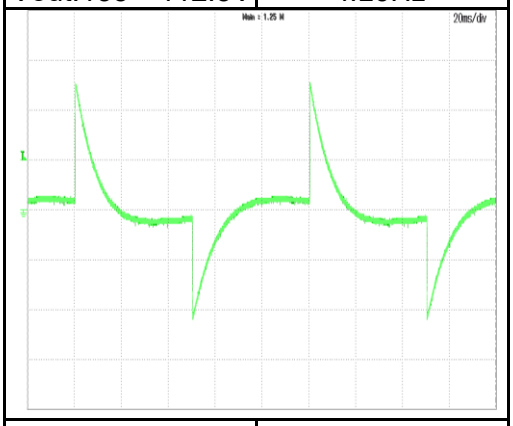
Vout:54↔45V	f:10Hz
	
$500^{mA}/_{DIV}$	$20^{ms}/_{DIV}$
-9.41%	

2.8 Dynamic load response characteristics
C.C mode

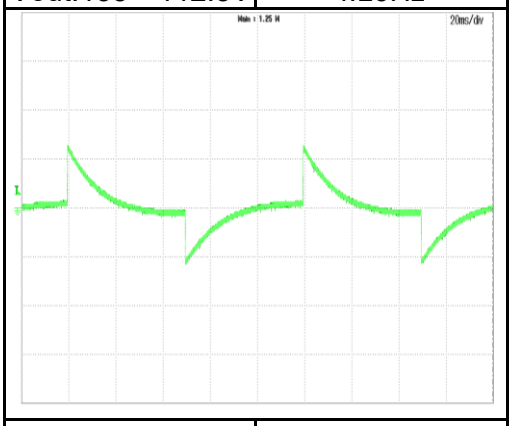
Conditions: Vin: Nominal
Ta = 25°C

GH150-7

Io=7A

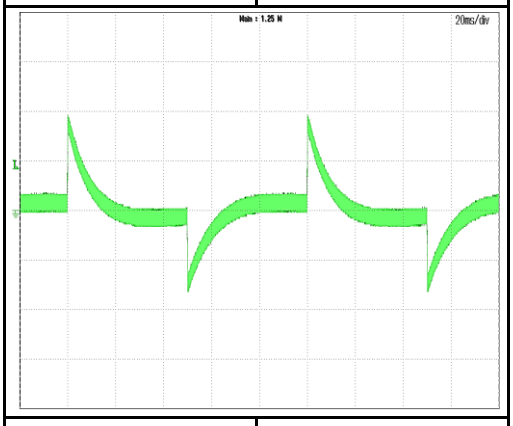
Vout:135↔112.5V	f:10Hz
	
600mA/DIV	20ms/DIV
-18.86%	

Io=3.5A

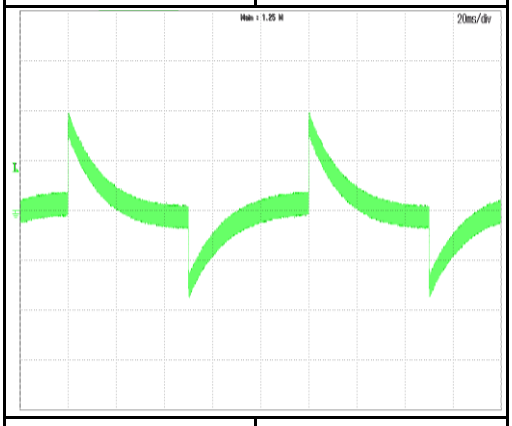
Vout:135↔112.5V	f:10Hz
	
600mA/DIV	20ms/DIV
-9.94%	

GH600-1.7

Io=1.7A

Vout:540↔450V	f:10Hz
	
200mA/DIV	20ms/DIV
-19.29%	

Io=0.85A

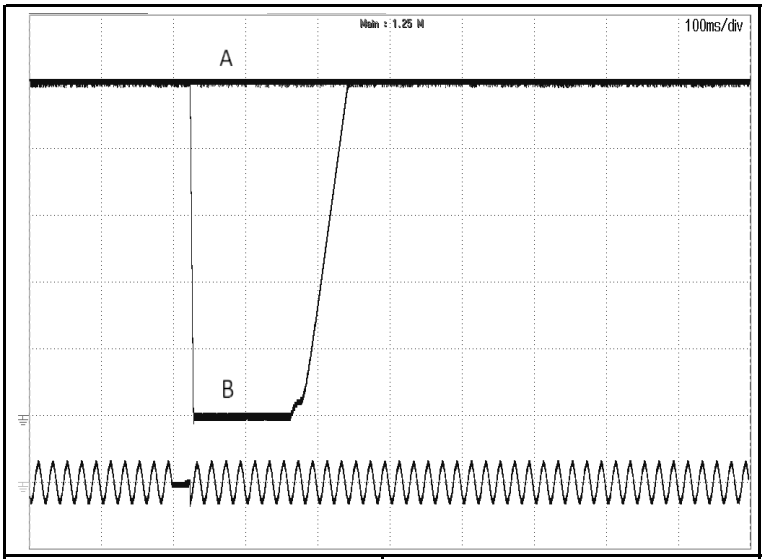
Vout:540↔450V	f:10Hz
	
100mA/DIV	20ms/DIV
-10.29%	

2.9 Response to brown-out characteristics
C.V mode

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

G10-100,GH10-100

Vin:100VAC

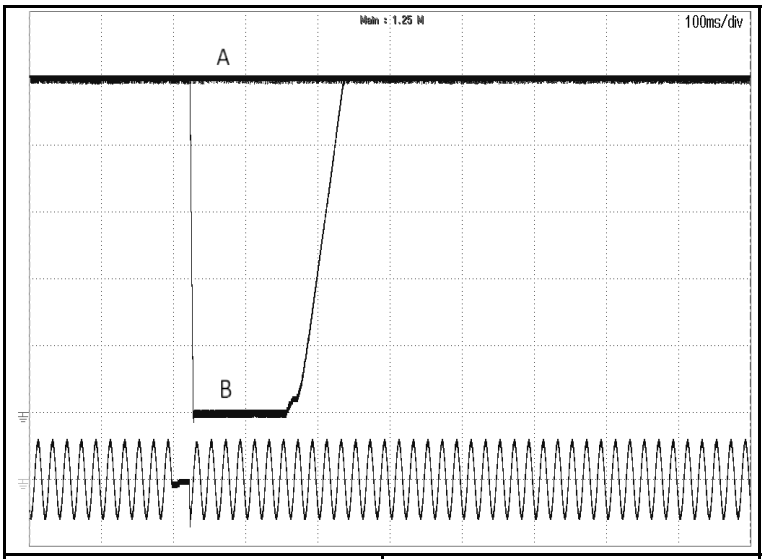


Vout: $2^{V}/_{DIV}$	$100^{ms}/_{DIV}$
Vin:500V/div	

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

G10-100,GH10-100

Vin:200VAC



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

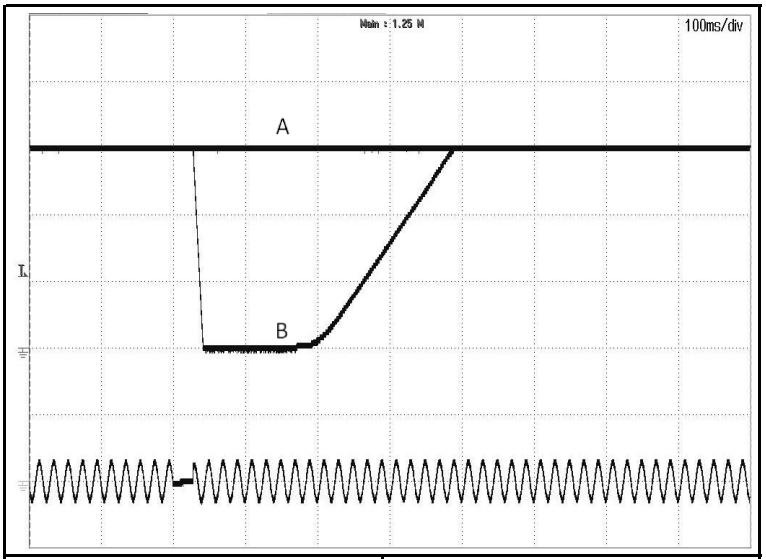
Brown-out time
A: 23mS
B: 24mS

2.9 Response to brown-out characteristics
C.V mode

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

G60-17,GH60-17

Vin:100VAC

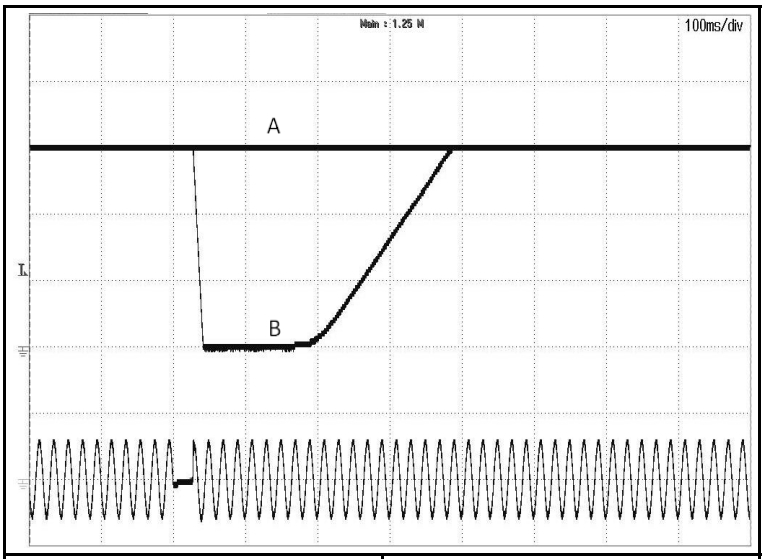


Vout: $20^{V}/_{DIV}$	$100^{ms}/_{DIV}$
Vin: $500^{V}/_{DIV}$	

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

G60-17,GH60-17

Vin:200VAC



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

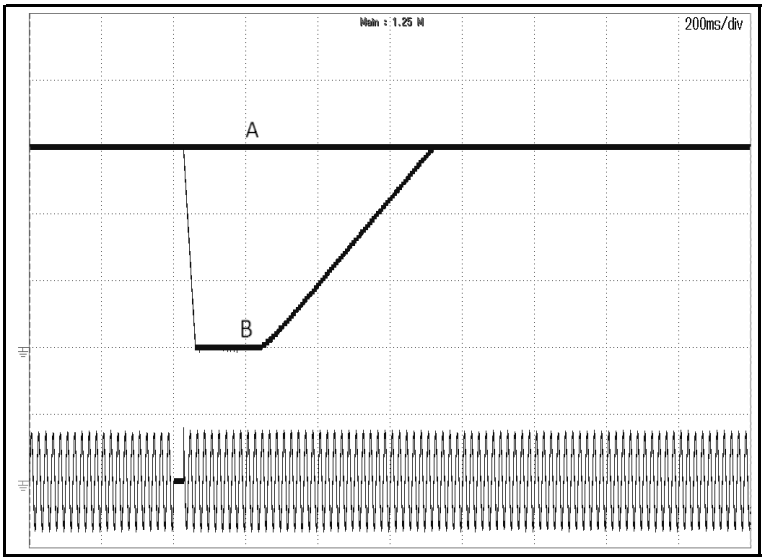
Brown-out time
B: 27mS
B: 28mS

2.9 Response to brown-out characteristics
C.V mode

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

G150-7,GH150-7

Vin:100VAC

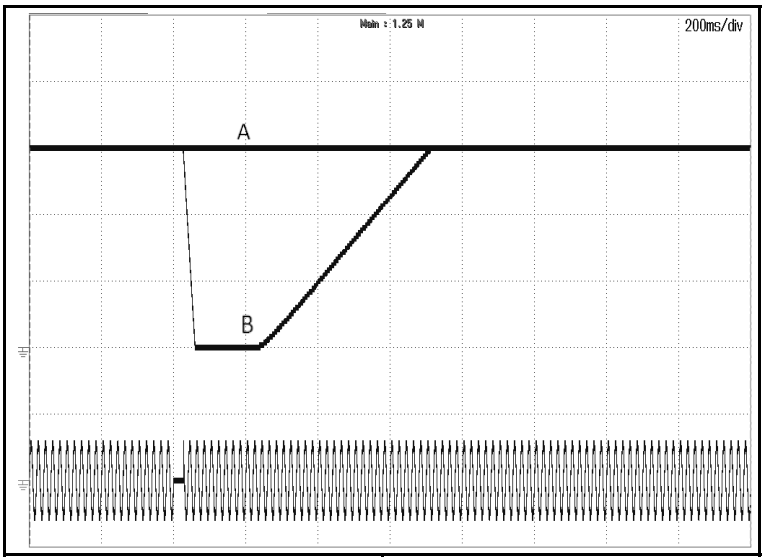


Vout: 50V/DIV	200ms/DIV
Vin: 200V/DIV	

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

G150-7,GH150-7

Vin:200VAC



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

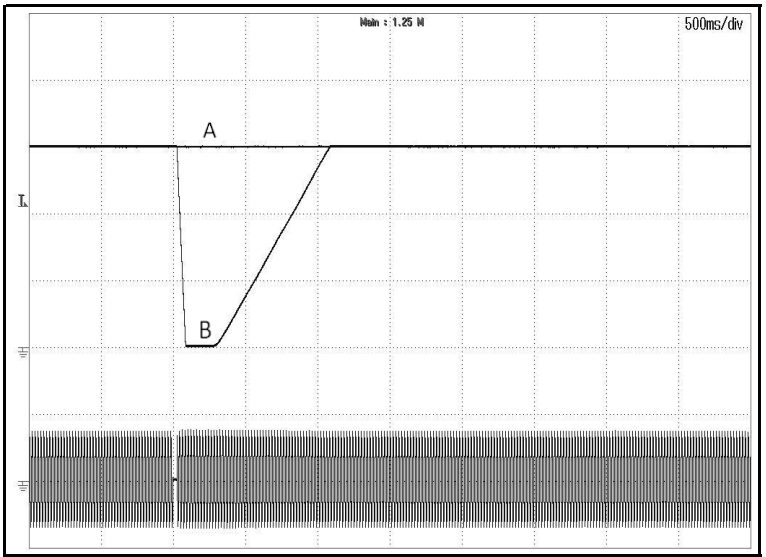
Brown-out time
A: 26mS
B: 27mS

2.9 Response to brown-out characteristics
C.V mode

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

G600-1.7,GH600-1.7

Vin:100VAC

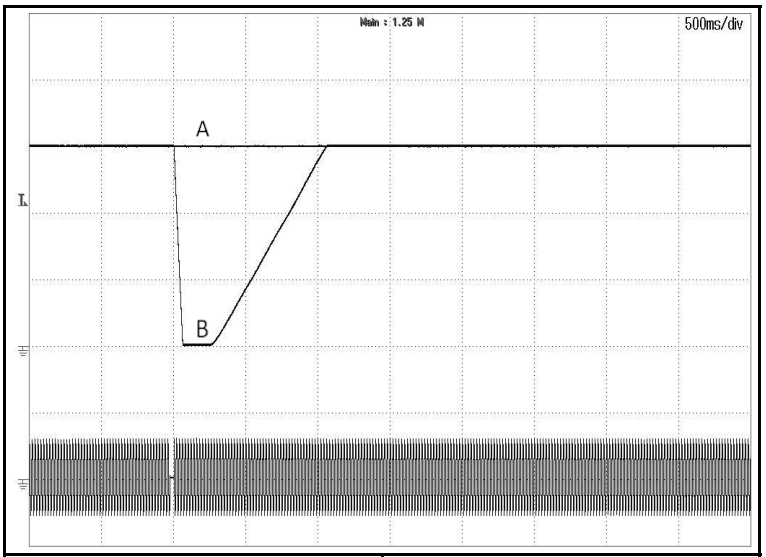


Vout: 200V/DIV	500ms/DIV
Vin: 200V/DIV	

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

G600-1.7,GH600-1.7

Vin:200VAC



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

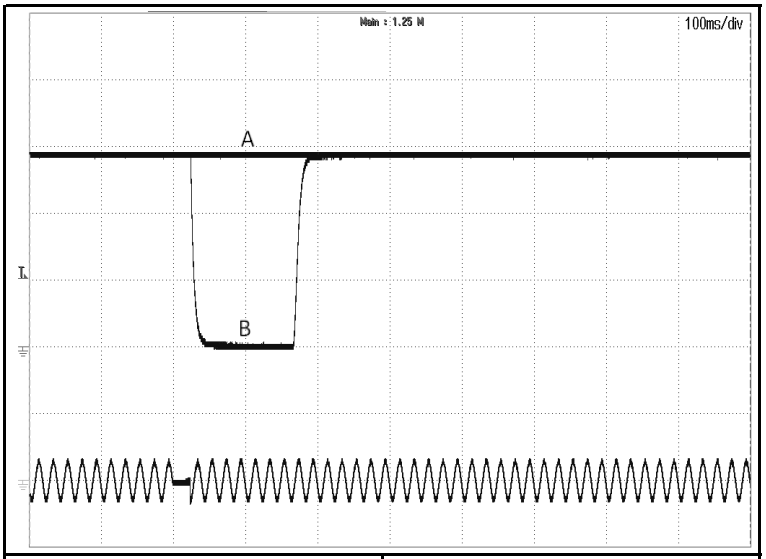
Brown-out time
A:26mS
B:27mS

2.9 Response to brown-out characteristics
C.C mode

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

G10-100,GH10-100

Vin:100VAC

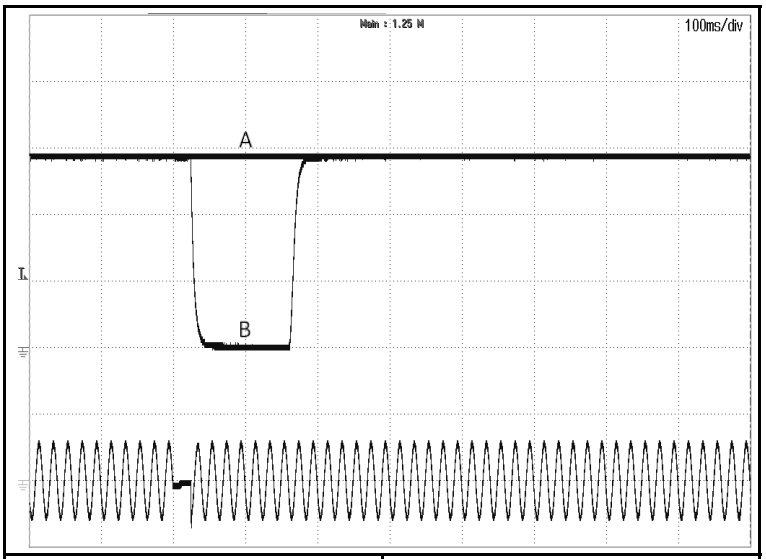


Iout: 35A/DIV	100ms/DIV
Vin: 500V/DIV	

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

G10-100,GH10-100

Vin:200VAC



Iout: 35A/DIV	100ms/DIV
Vin: 500V/DIV	

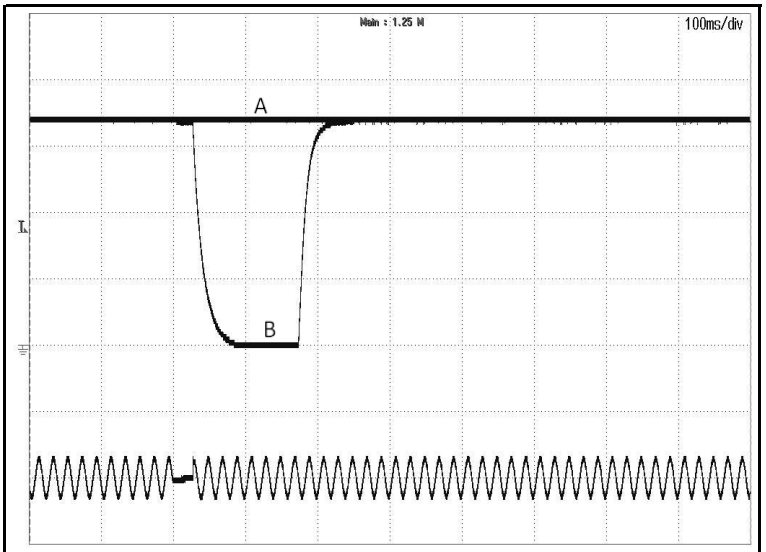
Brown-out time
A: 23mS
B: 24mS

2.9 Response to brown-out characteristics
C.C mode

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

G60-17,GH60-17

Vin:100VAC

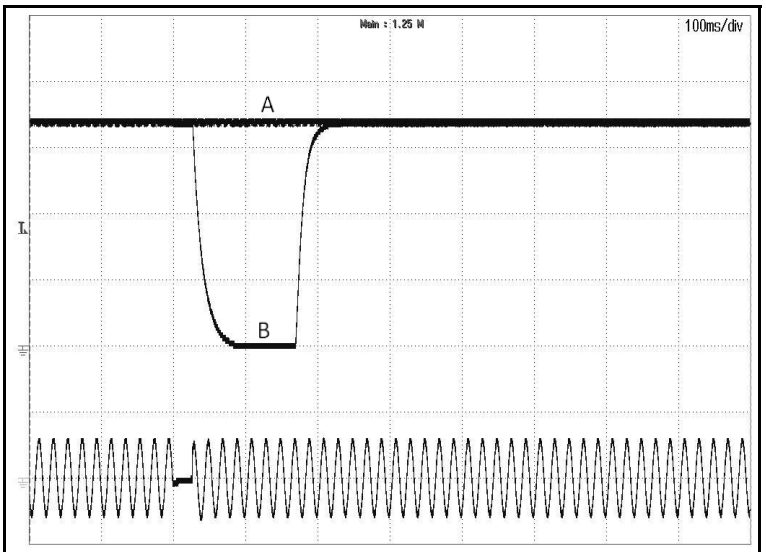


Iout:$5^{A}/_{DIV}$	$100^{ms}/_{DIV}$
Vin: $500^{V}/_{DIV}$	

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

G60-17,GH60-17

Vin:200VAC



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

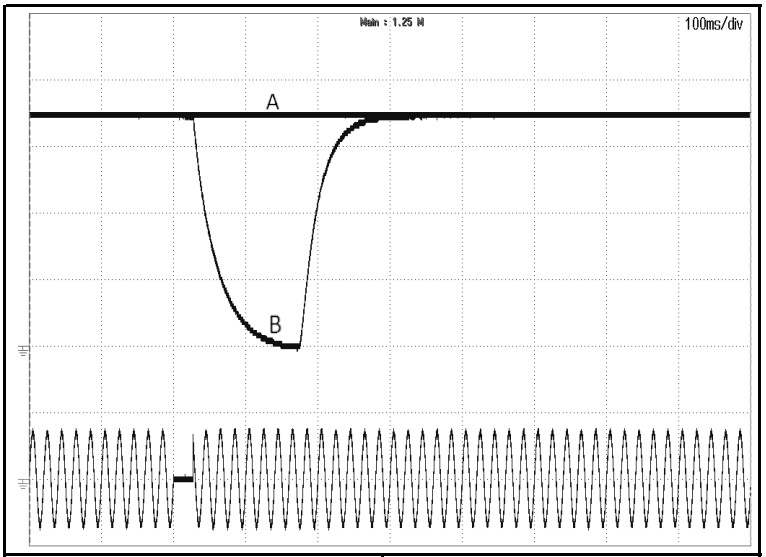
Brown-out time
A: 26mS
B: 27mS

2.9 Response to brown-out characteristics
C.C mode

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

G150-7,GH150-7

Vin:100VAC

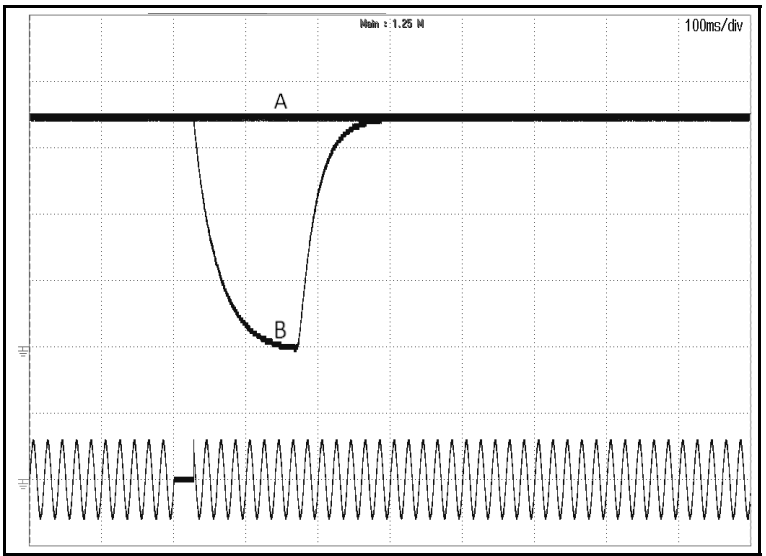


Brown-out time
A: 26mS
B: 27mS

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

G150-7,GH150-7

Vin:200VAC



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

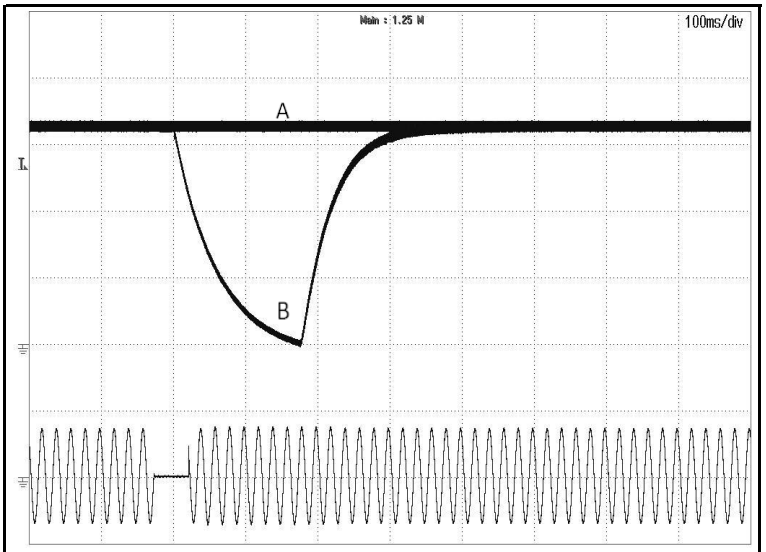
Iout: $2^{A}/_{DIV}$	$100^{ms}/_{DIV}$
Vin: $500^{V}/_{DIV}$	

2.9 Response to brown-out characteristics
C.C mode

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

G600-1.7,GH600-1.7

Vin:100VAC

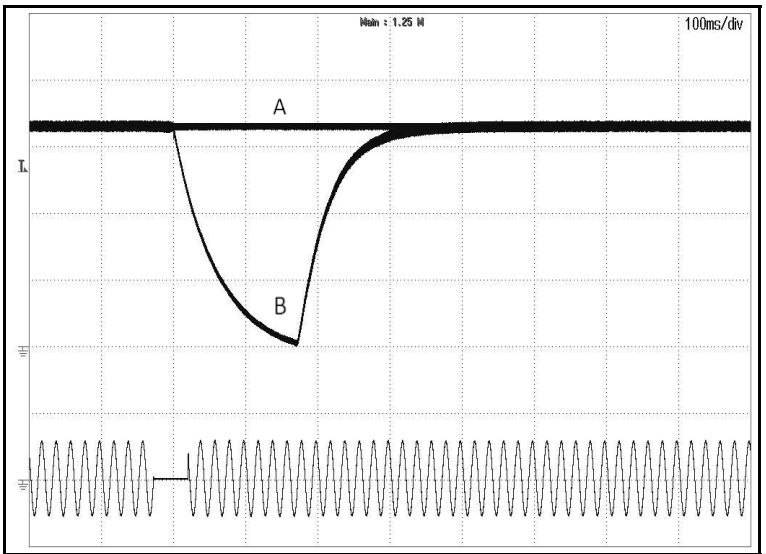


Iout: $1^{A}/_{DIV}$	$100^{ms}/_{DIV}$
Vin: $600^{V}/_{DIV}$	

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

G600-1.7,GH600-1.7

Vin:200VAC

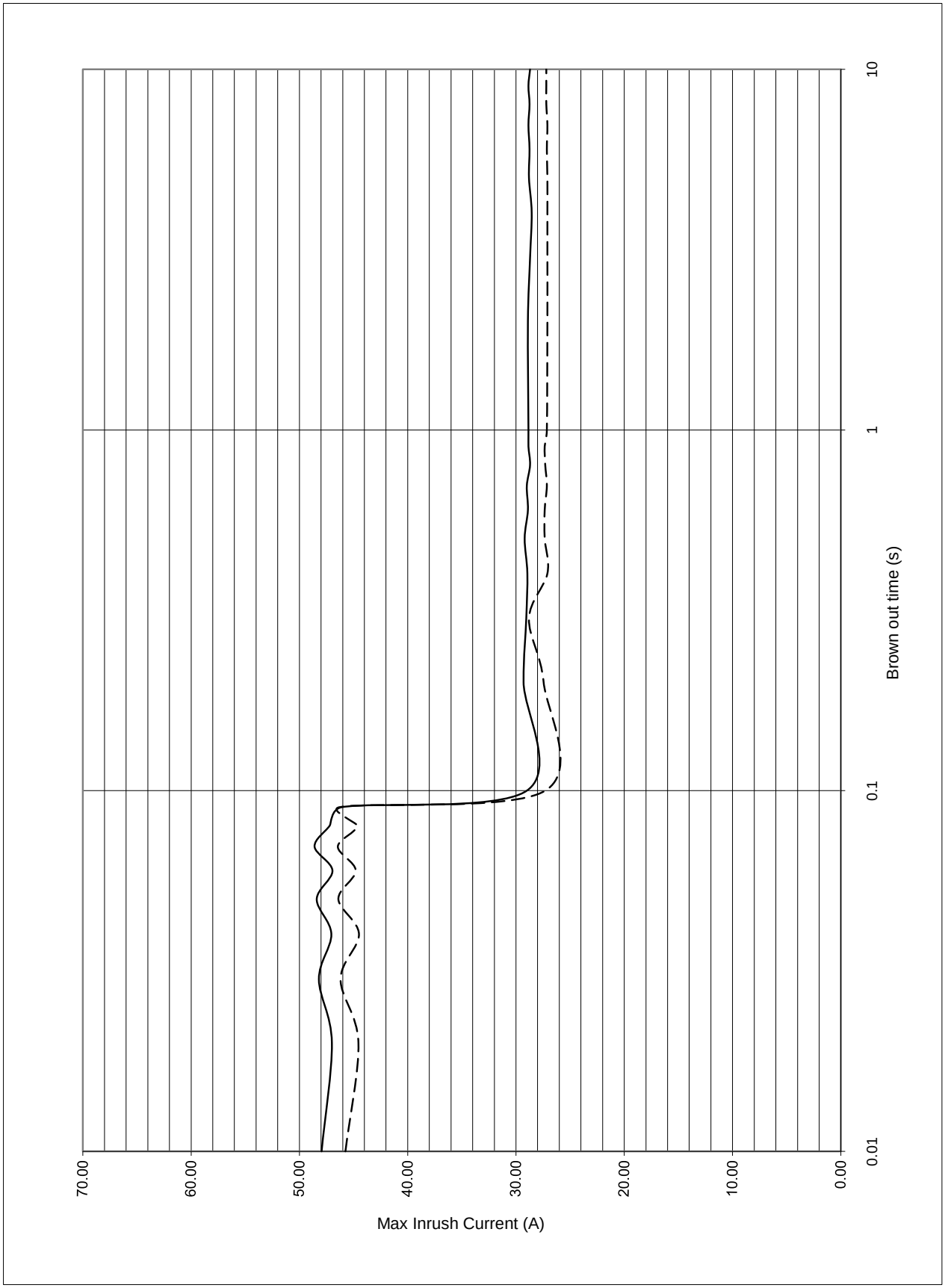


Iout: $0.5^{A}/_{DIV}$	$100^{ms}/_{DIV}$
Vin: $500^{V}/_{DIV}$	

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

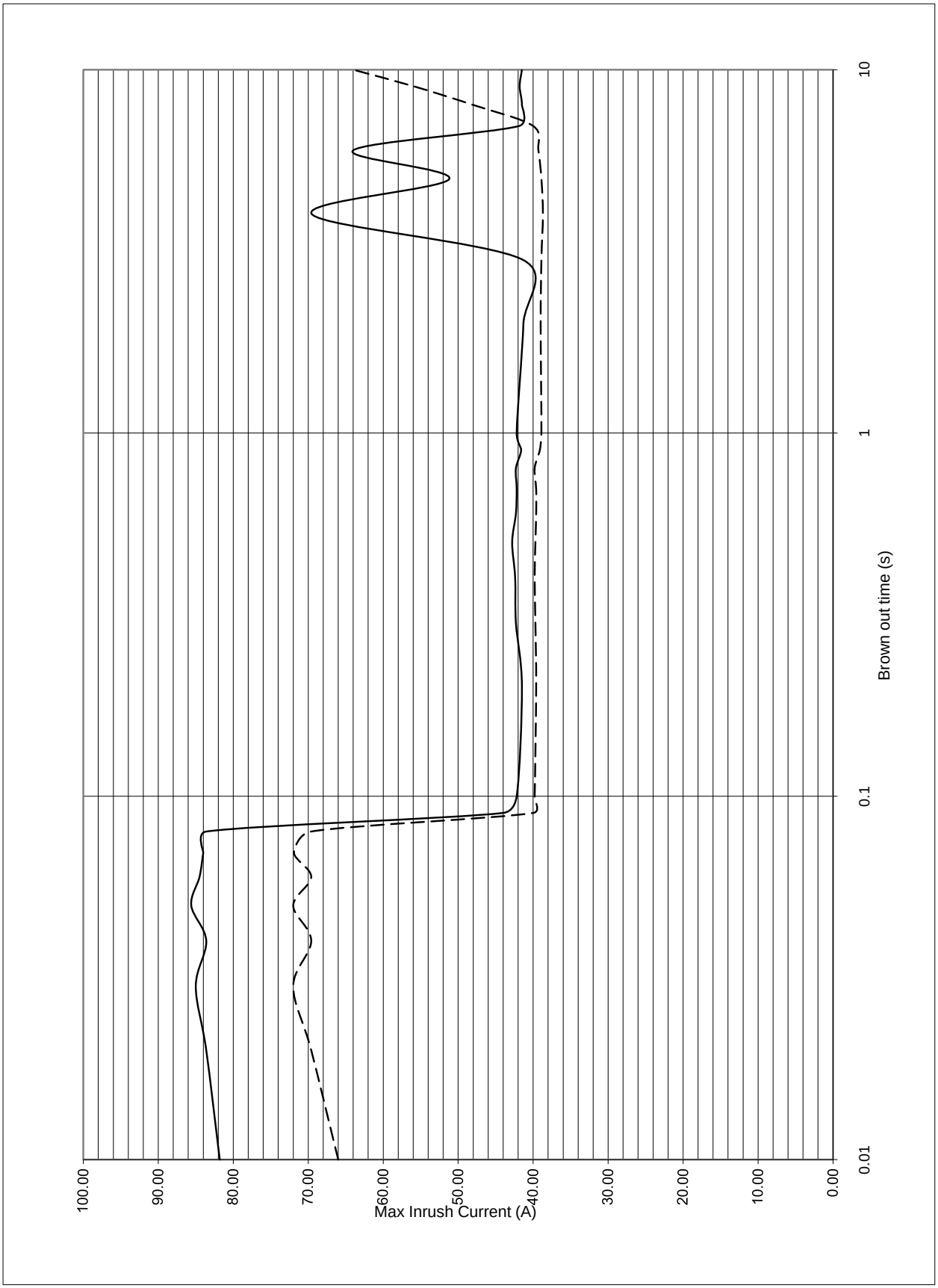
2.10 Inrush Current Characteristics

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

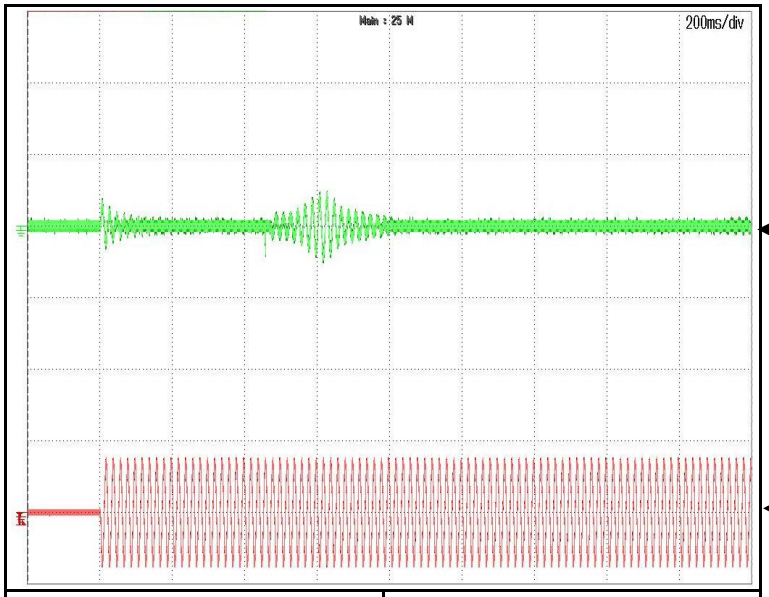


2.11 Inrush current waveform

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

Switch on phase angle of input AC voltage

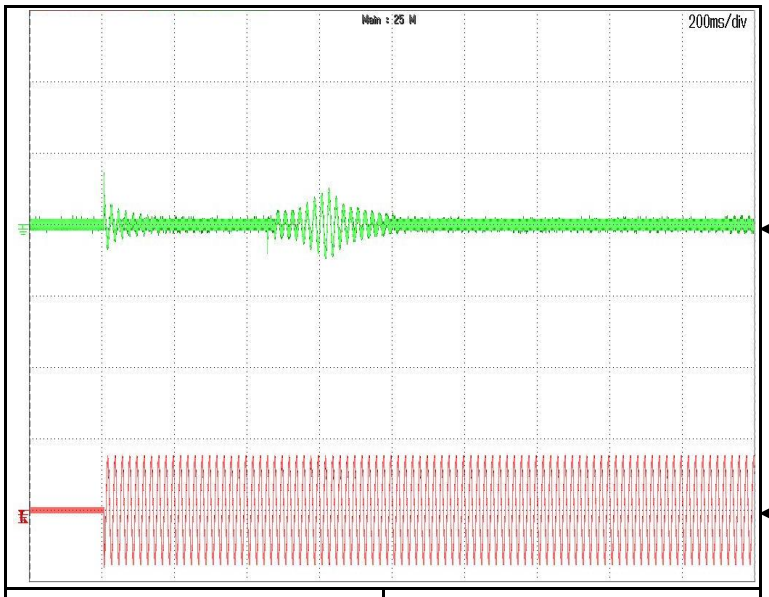
Φ=0˚



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

Switch on phase angle of input AC voltage

Φ=90˚



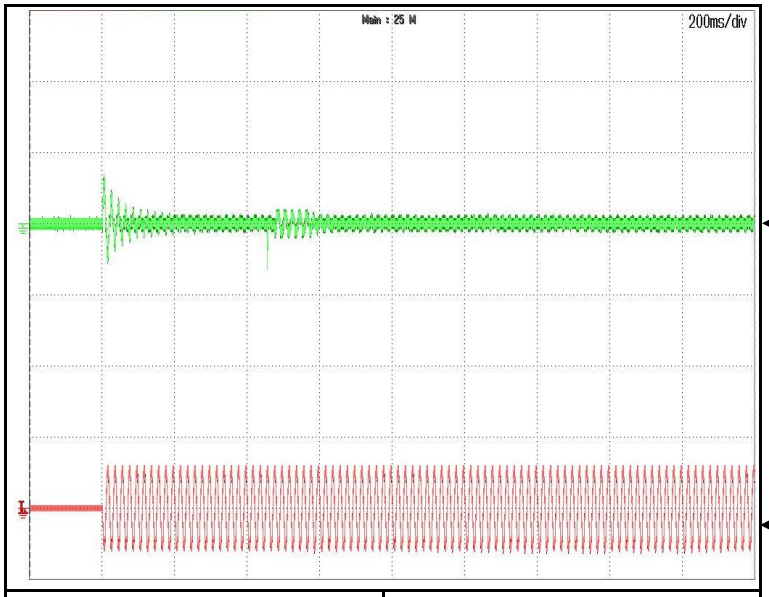
$20^{A}/_{DIV}$	$200^{ms}/_{DIV}$
$Vin:200v/_{DIV}$	

2.11 Inrush current waveform

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

Switch on phase angle of input AC voltage

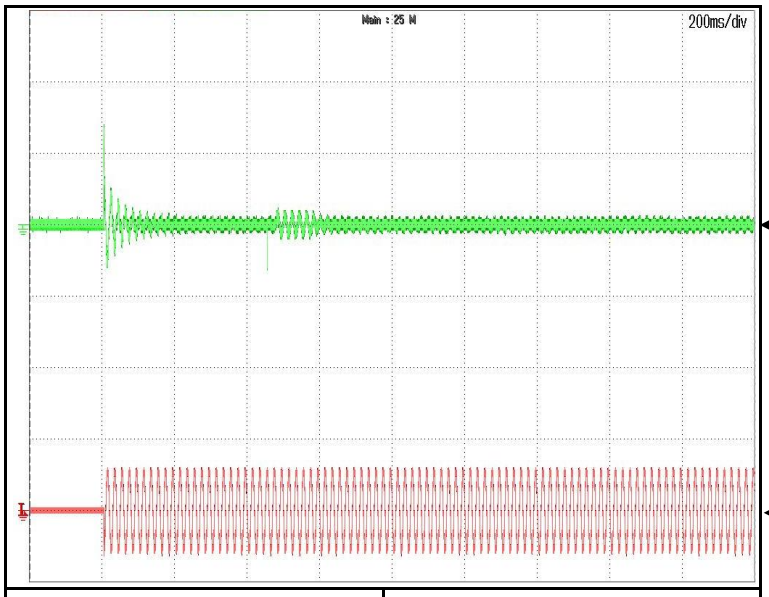
Φ=0˚



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

Switch on phase angle of input AC voltage

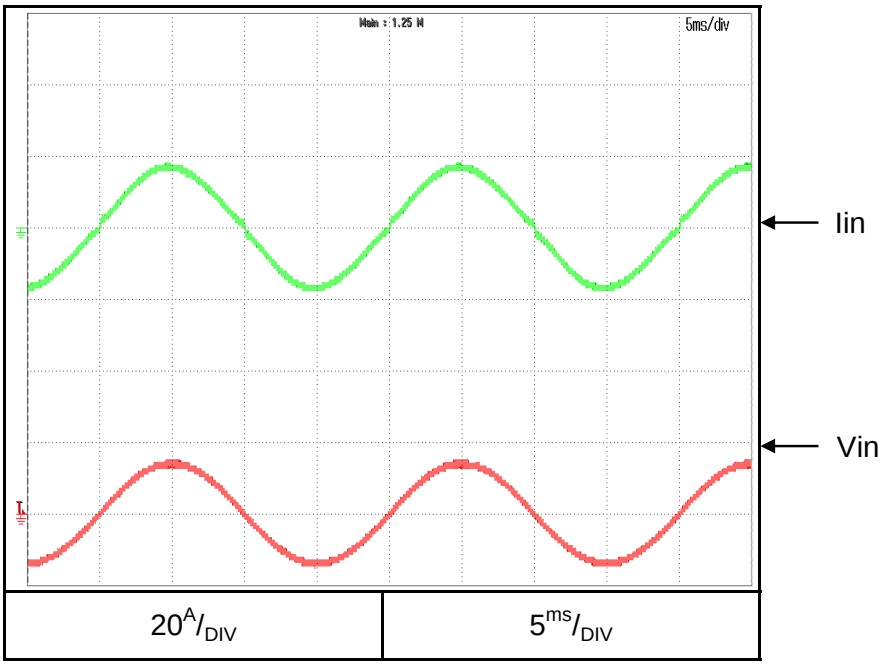
Φ=90˚



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

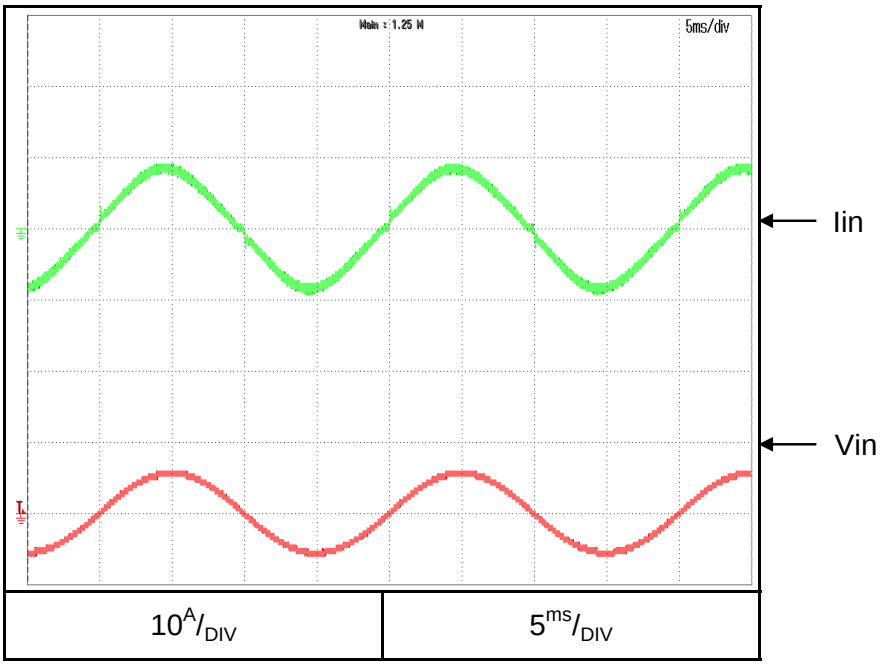
2.12 Input current waveform

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



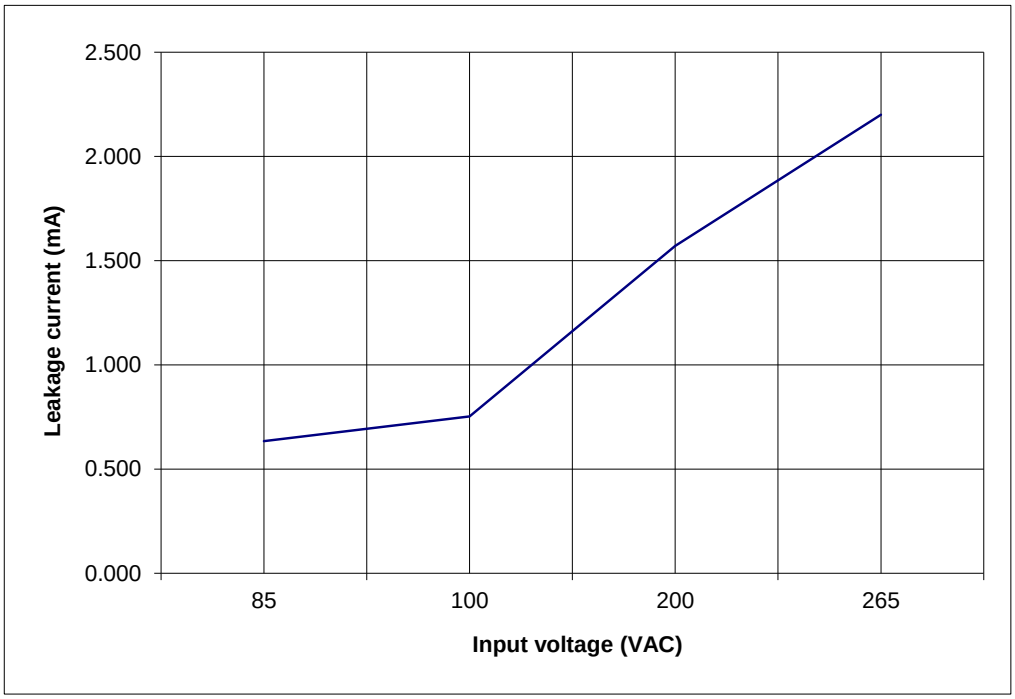
2.12 Input current waveform

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



2.13 Leakage current characteristics

Conditions: Ta = 25°C
f=60Hz

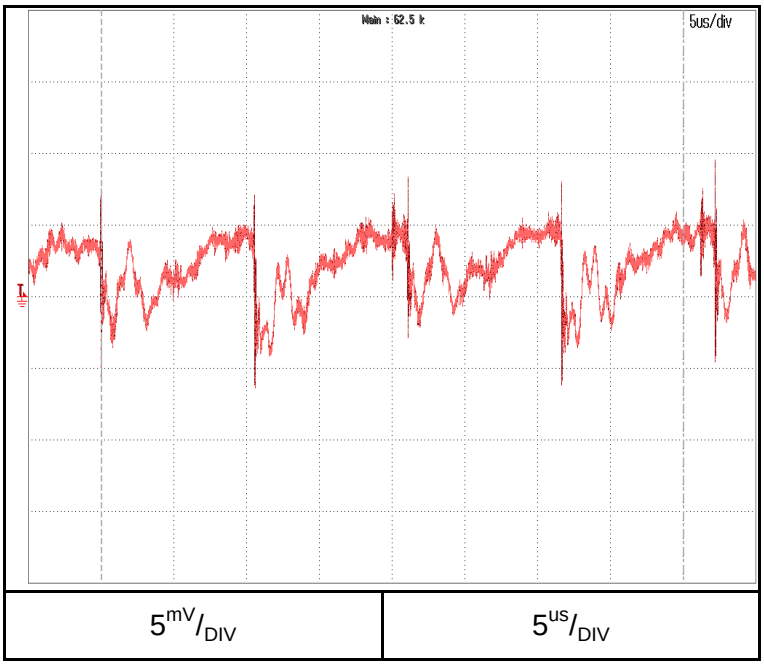


(*) TN & TT power system

2.14 Output ripple & noise waveform
C.V mode

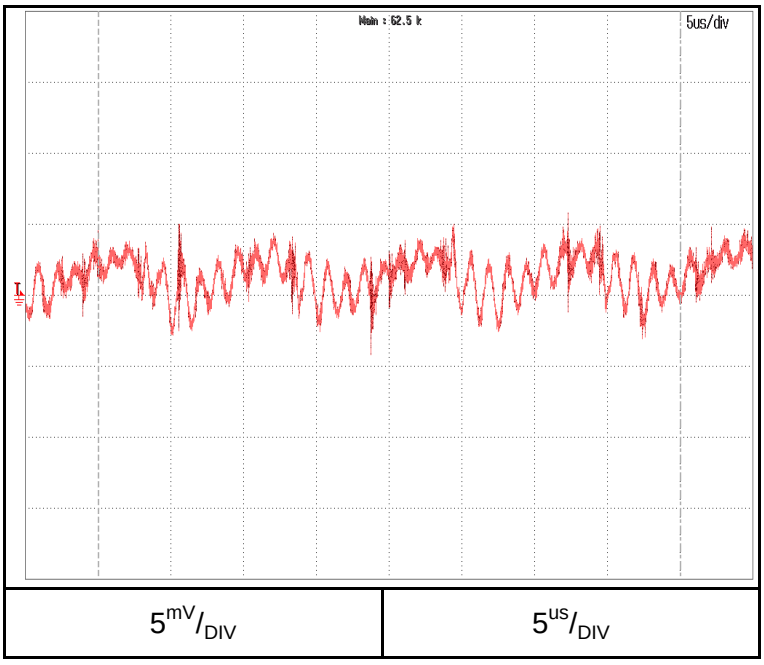
Conditions: Vout: 100%
Iout: 100%
Ta = 25°C

GH10-100



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

GH60-17

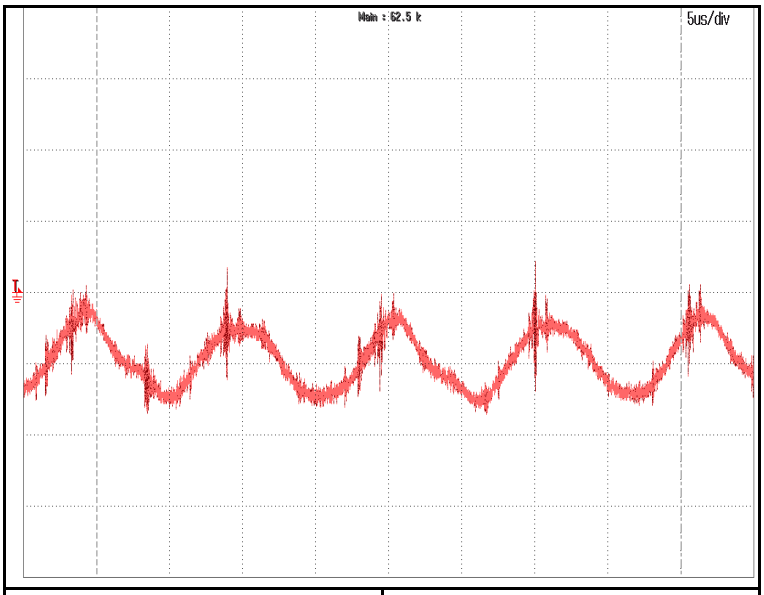


$5^{mV}/_{DIV}$	$5^{us}/_{DIV}$

2.14 Output ripple & noise waveform
C.V mode

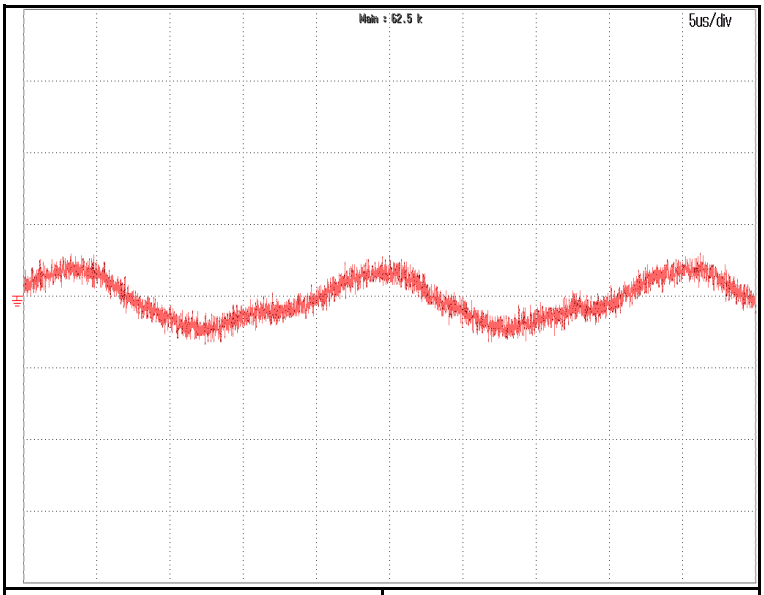
Conditions: Vout: 100%
Iout: 100%
Ta = 25°C

GH150-7



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

GH600-1.7



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