

G⁺ENESYS™ 3.4kW

EVALUATION

DATA

APPD	CHK	DWG
<i>Gam</i>	<i>ASAF.A</i>	<i>PAVEL G.</i>
<i>22/08/19</i>	<i>22/08/19</i>	<i>22/08/19</i>

TDK-LAMBDA

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TERMINOLOGY USED

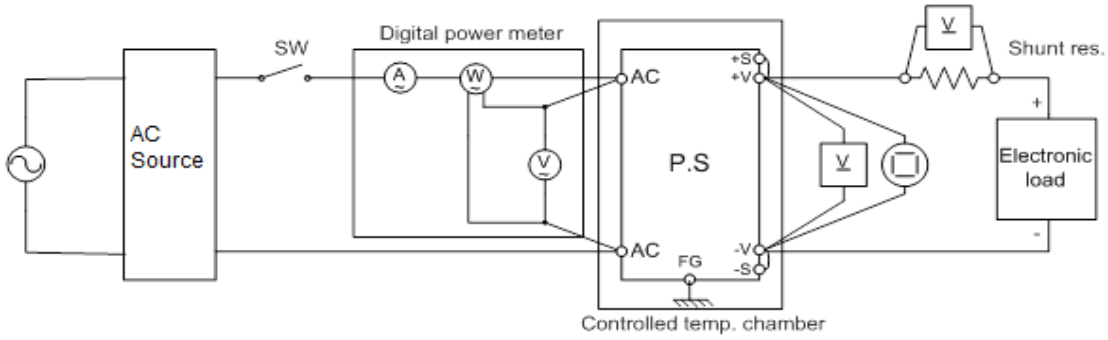
Definition

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

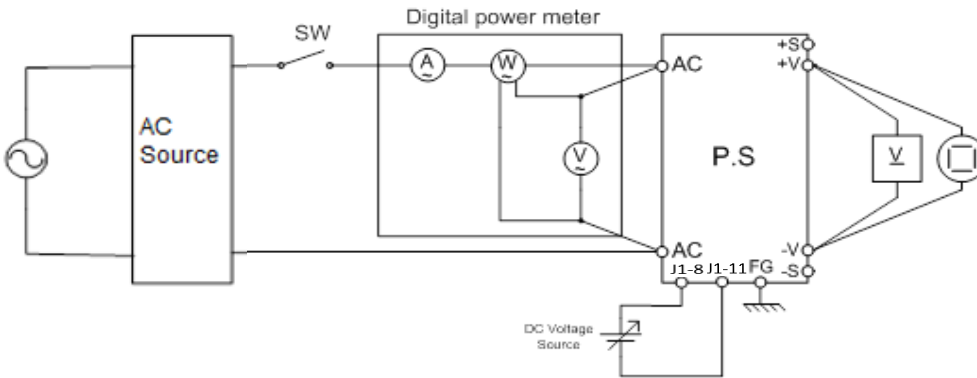
1. EVALUATION METHOD

1.1 Circuit used for determination

(1) Steady state data

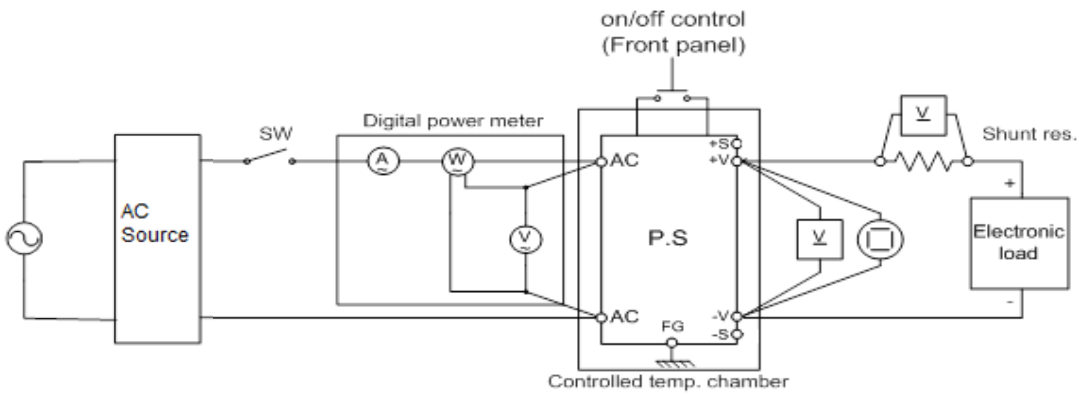


(2) Over voltage protection (OVP) characteristics

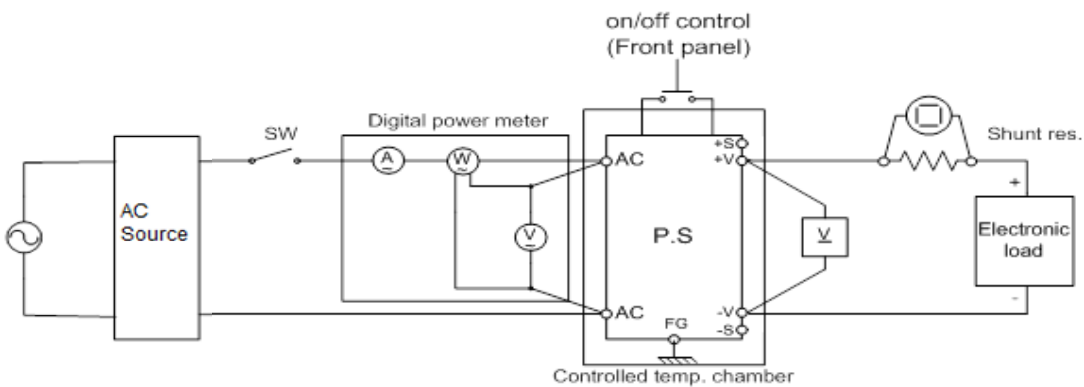


(3) Output rise/fall characteristics

Constant Voltage mode

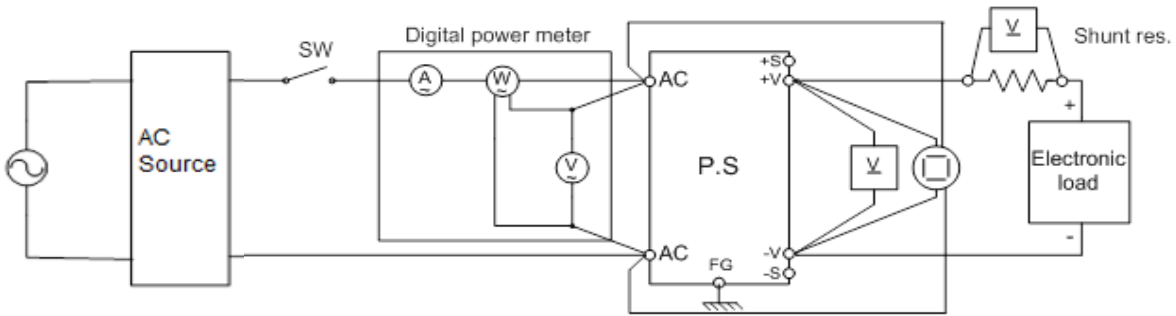


Constant Current mode

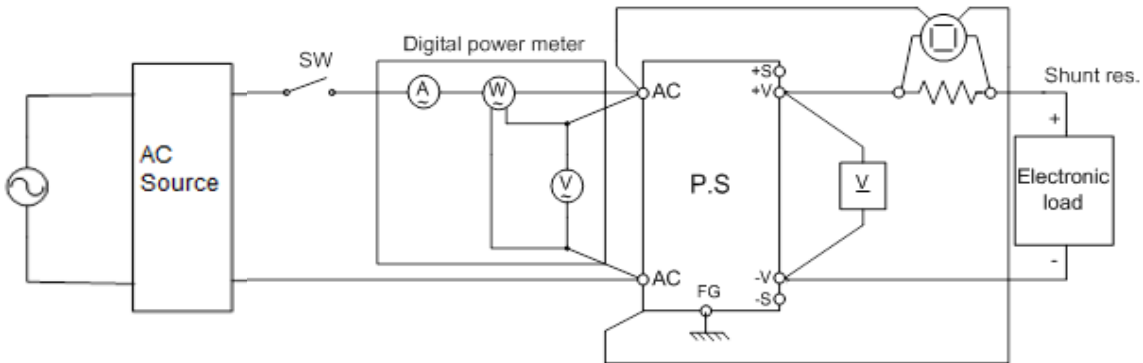


(4) Dynamic line response characteristics

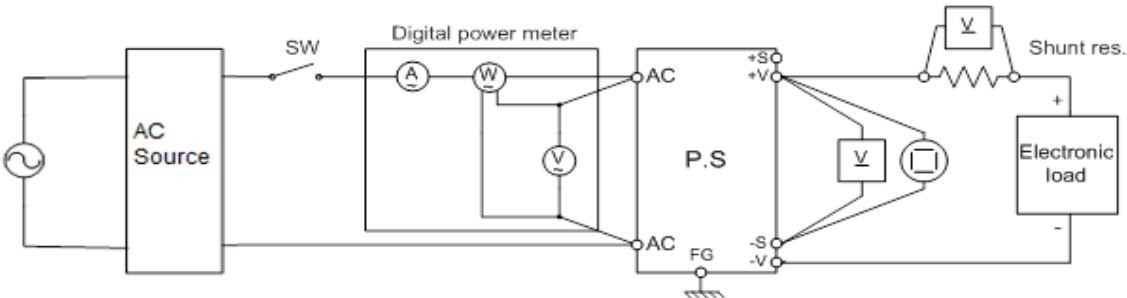
Constant Voltage mode



Constant Current mode

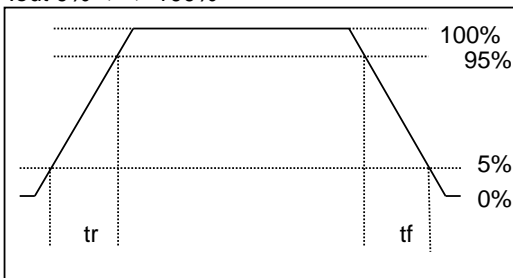


(5) Dynamic load response characteristics



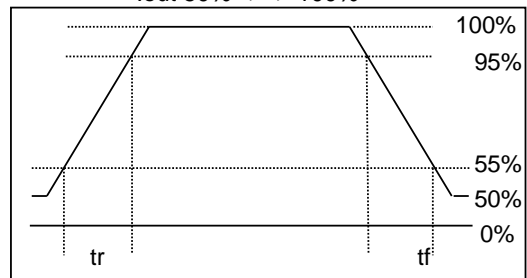
Output current waveform

load 0% <---> 100%



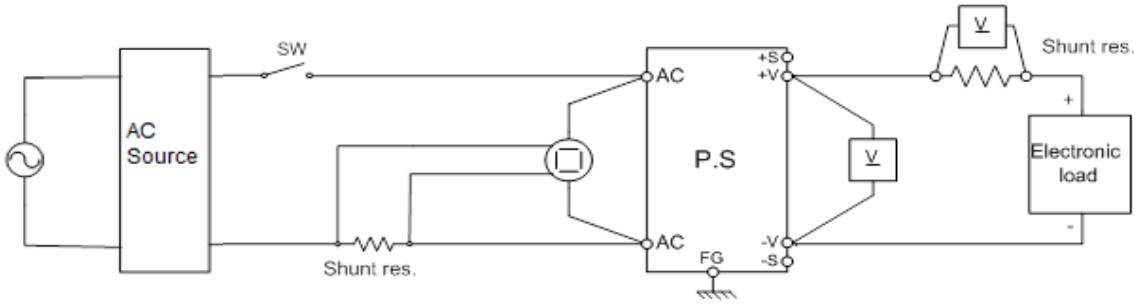
Output current waveform

load 50% <---> 100%

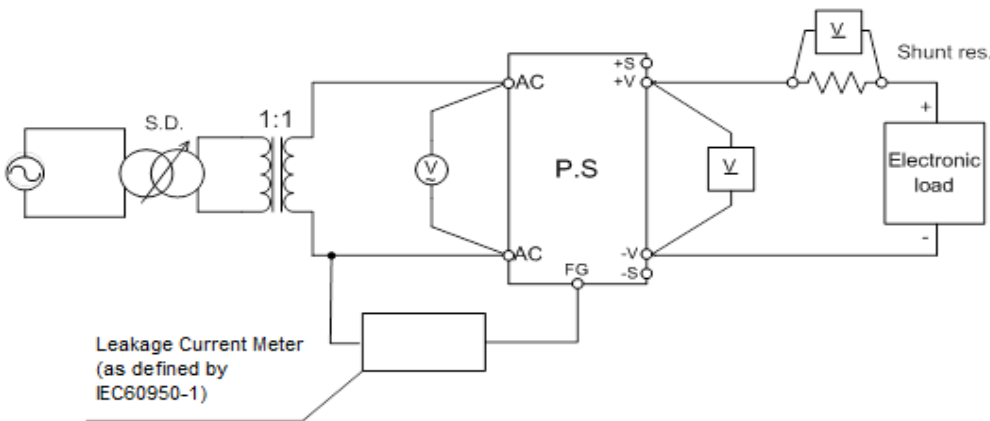


(6) Inrush current characteristics

Constant Voltage mode



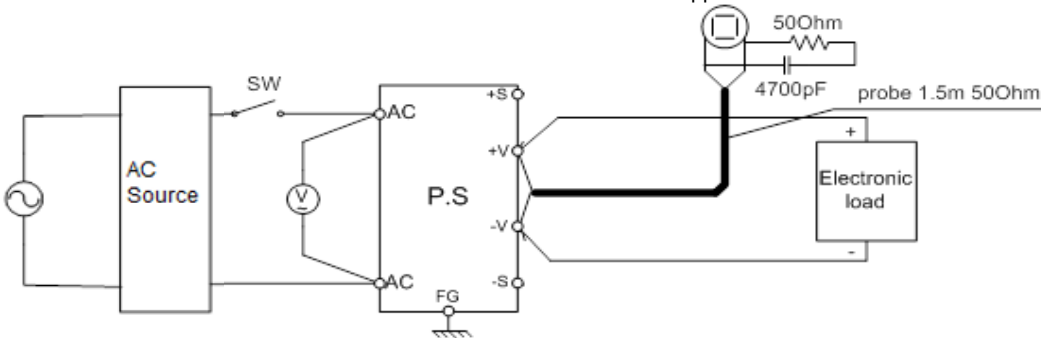
(7) Leakage current characteristics



(8) Output ripple & noise waveform (10V to 300V models)

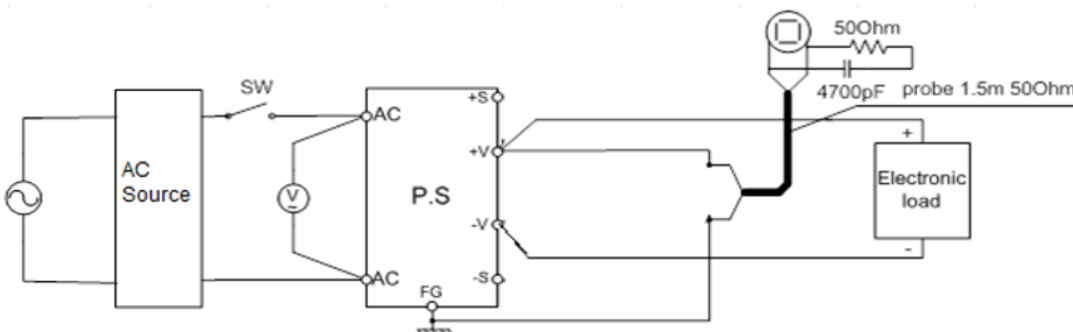
(a) Normal mode (JEITA Standard RC-9131A)

Oscilloscope
Noise: 20MHz
Ripple: 1MHz



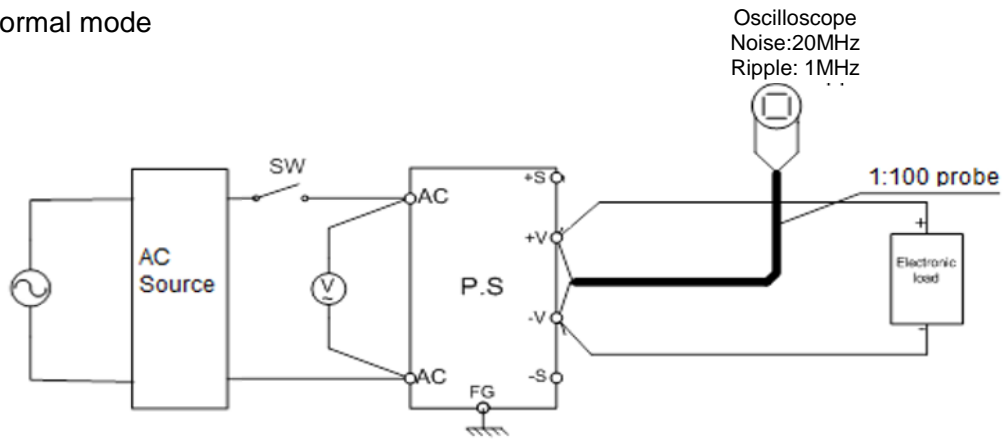
(b) Normal + Common mode

Oscilloscope
Noise: 20MHz
Ripple: 1MHz

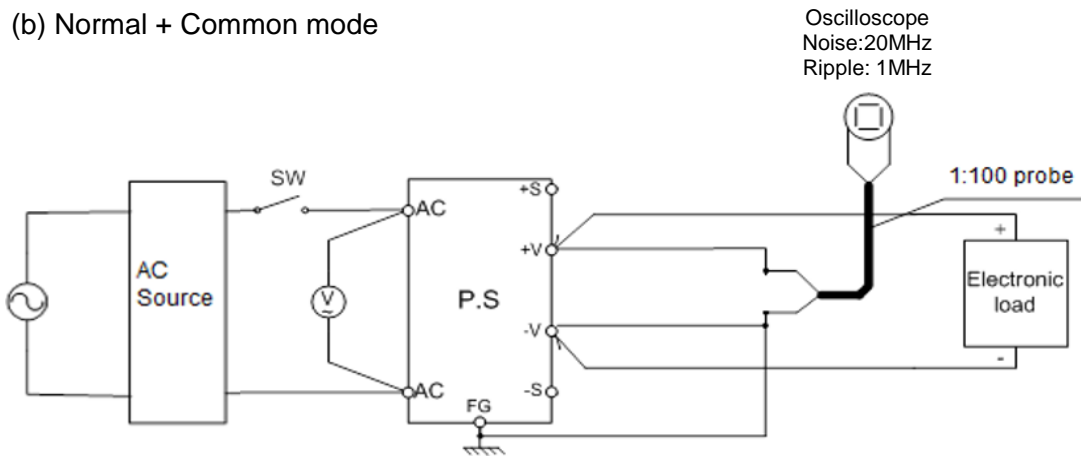


(9) Output ripple & noise waveform (600V models)

(a) Normal mode



(b) Normal + Common mode



1.2 List of equipment used

	EQUIPMENT USED	MANUFACTURER	MODEL No.
1	Storage oscilloscope	YOKOGAWA	DLM2034
2	Storage oscilloscope	YOKOGAWA	DLM4038
3	Digital multimeter	KEYSIGHT	2001
3	Digital multimeter	AGILENT	34401A
4	Digital power meter	YOKOGAWA	WT230
5	Digital power meter	YOKOGAWA	WT110
6	Digital power meter	YOKOGAWA	WT330
7	Digital power meter	YOKOGAWA	WT333E
8	Digital power meter	CHROMA	66203
9	AC Source	CHROMA	6560
10	AC Source	CHROMA	6590
11	Electronic load	H&H	ZS4260
12	Electronic load	H&H	ZS1880
13	Electronic load	H&H	ZS7060
15	Electronic load	CHROMA	63203
17	Electronic load	CHROMA	63206A
18	Controlled temp. chamber	THERMOTRON	SM-16-3800
19	Controlled temp. chamber	THERMOTRON	SE-600-5-5
20	Controlled temp. chamber	THERMOTRON	SE-600-6-6
21	Leakage current tester	KIKUSUI	TOS3200
22	Current probe	YOKOGAWA	701939
23	Current probe	AGILENT	N2782B
24	Transducer	LEM	IT700-SB
25	Transducer	LEM	IN 200-S
26	Transducer	LEM	IT60-S
27	Differential Voltage Probe	YOKOGAWA	700924

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

G10-340

Conditions: Ta = 25°C

1. Regulation - Line & Load, C.V mode 1Φ200

Io	Vin				Line Regulation	
	170VAC	200VAC	230VAC	265VAC		
0%	9.9998	9.9998	9.9998	9.9998	0.0	0.000%
25%	9.9985	9.9985	9.9985	9.9985	0.0	0.000%
50%	9.9977	9.9977	9.9977	9.9977	0.0	0.000%
75%	9.9969	9.9968	9.9968	9.9968	0.1	0.001%
100%	9.9959	9.9959	9.9959	9.9959	0.0	0.000%
Load	3.9	3.9	3.9	3.9	ΔV(mV)	
Regulation	0.039%	0.039%	0.039%	0.039%		

2. Regulation - Line & Load, C.V mode 3Φ200

Io	Vin					Line Regulation	
	170VAC	200VAC	208VAC	230VAC	265VAC		
0%	10.0001	10.0001	10.0001	10.0001	10.0001	0.0	0.000%
25%	9.9992	9.9992	9.9992	9.9992	9.9992	0.0	0.000%
50%	9.9984	9.9984	9.9984	9.9984	9.9984	0.0	0.000%
75%	9.9976	9.9976	9.9976	9.9976	9.9976	0.0	0.000%
100%	9.9968	9.9968	9.9968	9.9968	9.9968	0.0	0.000%
Load	3.3	3.3	3.3	3.3	3.3	ΔV(mV)	
Regulation	0.033%	0.033%	0.033%	0.033%	0.033%		

3. Regulation - Line & Load, C.V mode 3Φ400

Io	Vin						Line Regulation	
	342VAC	380VAC	400VAC	415VAC	432VAC	460VAC		
0%	9.9995	9.9995	9.9996	9.9995	9.9996	9.9995	0.1	0.001%
25%	9.9986	9.9986	9.9986	9.9986	9.9986	9.9986	0.0	0.000%
50%	9.9978	9.9978	9.9978	9.9978	9.9978	9.9978	0.0	0.000%
75%	9.9969	9.9970	9.9970	9.9970	9.9970	9.9970	0.1	0.001%
100%	9.9961	9.9961	9.9961	9.9961	9.9961	9.9961	0.0	0.000%
Load	3.4	3.4	3.5	3.4	3.5	3.4	ΔV(mV)	
Regulation	0.034%	0.034%	0.035%	0.034%	0.035%	0.034%		

4. Regulation - Line & Load, C.V mode 3Φ480

Io	Vin						Line Regulation	
	342VAC	380VAC	400VAC	415VAC	480VAC	520VAC		
0%	9.9999	9.9999	9.9999	9.9999	9.9999	9.9999	0.0	0.000%
25%	9.9990	9.9990	9.9990	9.9990	9.9990	9.9990	0.0	0.000%
50%	9.9982	9.9982	9.9982	9.9982	9.9982	9.9982	0.0	0.000%
75%	9.9974	9.9974	9.9974	9.9974	9.9974	9.9974	0.0	0.000%
100%	9.9966	9.9966	9.9966	9.9966	9.9966	9.9966	0.0	0.000%
Load	3.3	3.3	3.3	3.3	3.3	3.3	ΔV(mV)	
Regulation	0.033%	0.033%	0.033%	0.033%	0.033%	0.033%		

5. Temperature drift, C.V mode

Conditions Vin:230V 1Φ
Iout:100%

Ta	0°C	25°C	50°C	Temp. Coefficient (0°C~50°C)		
Vout	9.99692	9.99689	9.99604	0.88	mV	1.8 ppm/°C

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

G60-56

Conditions: Ta = 25°C

1. Regulation - Line & Load, C.V mode 1Φ200

Io	Vin				Line Regulation	
	170VAC	200VAC	230VAC	265VAC		
0%	60.0028	60.0028	60.0028	60.0028	0.0	0.000%
25%	60.0026	60.0027	60.0027	60.0025	0.2	0.000%
50%	60.0024	60.0024	60.0023	60.0023	0.1	0.000%
75%	60.0022	60.0022	60.0021	60.0022	0.1	0.000%
100%	60.0019	60.0020	60.0019	60.0019	0.1	0.000%
Load	0.9	0.8	0.9	0.9	ΔV(mV)	
Regulation	0.002%	0.001%	0.002%	0.002%		

2. Regulation - Line & Load, C.V mode 3Φ200

Io	Vin					Line Regulation	
	170VAC	200VAC	208VAC	230VAC	265VAC		
0%	60.0037	60.0038	60.0038	60.0038	60.0037	0.1	0.001%
25%	60.0034	60.0033	60.0034	60.0033	60.0033	0.1	0.001%
50%	60.0031	60.0032	60.0032	60.0032	60.0032	0.1	0.001%
75%	60.0029	60.0029	60.0029	60.0029	60.0029	0.0	0.000%
100%	60.0027	60.0027	60.0026	60.0027	60.0026	0.1	0.001%
Load	1.0	1.1	1.2	1.1	1.1	ΔV(mV)	
Regulation	0.002%	0.002%	0.002%	0.002%	0.002%		

3. Regulation - Line & Load, C.V mode 3Φ400

Io	Vin						Line Regulation	
	342VAC	380VAC	400VAC	415VAC	432VAC	460VAC		
0%	60.0022	60.0023	60.0023	60.0024	60.0023	60.0024	0.2	0.000%
25%	60.0020	60.0019	60.0019	60.0020	60.0020	60.0019	0.1	0.000%
50%	60.0018	60.0018	60.0018	60.0018	60.0018	60.0018	0.0	0.000%
75%	60.0015	60.0016	60.0016	60.0016	60.0016	60.0015	0.1	0.000%
100%	60.0013	60.0012	60.0013	60.0013	60.0012	60.0012	0.1	0.000%
Load	0.9	1.1	1.0	1.1	1.1	1.2	ΔV(mV)	
Regulation	0.002%	0.002%	0.002%	0.002%	0.002%	0.002%		

4. Regulation - Line & Load, C.V mode 3Φ480

Io	Vin						Line Regulation	
	342VAC	380VAC	400VAC	415VAC	480VAC	520VAC		
0%	60.0045	60.0046	60.0046	60.0046	60.0046	60.0046	0.1	0.000%
25%	60.0043	60.0043	60.0042	60.0043	60.0042	60.0042	0.1	0.000%
50%	60.0041	60.0039	60.0041	60.0042	60.0042	60.0041	0.3	0.000%
75%	60.0039	60.0039	60.0038	60.0039	60.0038	60.0039	0.1	0.000%
100%	60.0036	60.0035	60.0035	60.0036	60.0036	60.0036	0.1	0.000%
Load	0.9	1.1	1.1	1.0	1.0	1.0	ΔV(mV)	
Regulation	0.002%	0.002%	0.002%	0.002%	0.002%	0.002%		

5. Temperature drift, C.V mode

Conditions Vin:230V 1Φ
Iout:100%

Ta	0°C	25°C	50°C	Temp. Coefficient (0°C~50°C)		
Vout	59.9997	60.0063	60.0100	10.27	mV	3.4 ppm/°C

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

G150-22.5

Conditions: Ta = 25°C

1. Regulation - Line & Load, C.V mode 1Φ200

Io	Vin				Line Regulation	
	170VAC	200VAC	230VAC	265VAC		
0%	150.0049	150.0052	150.0049	150.0046	0.6	0.000%
25%	150.0046	150.0044	150.0047	150.0046	0.3	0.000%
50%	150.0044	150.0048	150.0049	150.0050	0.6	0.000%
75%	150.0045	150.0047	150.0043	150.0045	0.4	0.000%
100%	150.0037	150.0040	150.0039	150.0038	0.3	0.000%
Load	1.2	1.2	1.0	1.2	ΔV(mV)	
Regulation	0.001%	0.001%	0.001%	0.001%		

2. Regulation - Line & Load, C.V mode 3Φ200

Io	Vin					Line Regulation	
	170VAC	200VAC	208VAC	230VAC	265VAC		
0%	150.0144	150.0143	150.0144	150.0144	150.0145	0.2	0.000%
25%	150.0139	150.0141	150.0139	150.0144	150.0141	0.5	0.000%
50%	150.0140	150.0143	150.0142	150.0141	150.0141	0.3	0.000%
75%	150.0140	150.0142	150.0142	150.0141	150.0142	0.2	0.000%
100%	150.0137	150.0135	150.0138	150.0137	150.0137	0.3	0.000%
Load	0.7	0.8	0.6	0.7	0.8	ΔV(mV)	
Regulation	0.000%	0.001%	0.000%	0.000%	0.001%		

3. Regulation - Line & Load, C.V mode 3Φ400

Io	Vin						Line Regulation	
	342VAC	380VAC	400VAC	415VAC	432VAC	460VAC		
0%	150.0086	150.0088	150.0087	150.0086	150.0087	150.0085	0.3	0.000%
25%	150.0084	150.0083	150.0085	150.0082	150.0085	150.0082	0.3	0.000%
50%	150.0084	150.0082	150.0085	150.0085	150.0086	150.0084	0.4	0.000%
75%	150.0083	150.0086	150.0084	150.0085	150.0084	150.0084	0.3	0.000%
100%	150.0082	150.0082	150.0082	150.0082	150.0081	150.0080	0.2	0.000%
Load	0.4	0.6	0.5	0.4	0.6	0.5	ΔV(mV)	
Regulation	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%		

4. Regulation - Line & Load, C.V mode 3Φ480

Io	Vin						Line Regulation	
	342VAC	380VAC	400VAC	415VAC	480VAC	520VAC		
0%	150.0129	150.0131	150.0132	150.0132	150.0133	150.0131	0.4	0.000%
25%	150.0131	150.0129	150.0131	150.0129	150.0127	150.0129	0.4	0.000%
50%	150.0128	150.0129	150.0126	150.0129	150.0130	150.0132	0.6	0.000%
75%	150.0128	150.0126	150.0128	150.0130	150.0128	150.0127	0.4	0.000%
100%	150.0125	150.0124	150.0128	150.0126	150.0127	150.0128	0.4	0.000%
Load	0.6	0.7	0.6	0.6	0.6	0.5	ΔV(mV)	
Regulation	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%		

5. Temperature drift, C.V mode

Conditions Vin:230V 1Φ
Iout:100%

Ta	0°C	25°C	50°C	Temp. Coefficient (0°C~50°C)		
Vout	149.9962	149.9912	149.9658	30.39	mV	4.1 ppm/°C

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

G600-5.6

Conditions: Ta = 25°C

1. Regulation - Line & Load, C.V mode 1Φ200

Io	Vin				Line Regulation	
	170VAC	200VAC	230VAC	265VAC		
0%	599.9751	599.9747	599.9745	599.9749	0.6	0.000%
25%	599.9720	599.9716	599.9714	599.9713	0.7	0.000%
50%	599.9708	599.9710	599.9708	599.9708	0.2	0.000%
75%	599.9689	599.9694	599.9694	599.9693	0.5	0.000%
100%	599.9682	599.9675	599.9680	599.9677	0.7	0.000%
Load	6.9	7.2	6.5	7.2	ΔV(mV)	
Regulation	0.001%	0.001%	0.001%	0.001%		

2. Regulation - Line & Load, C.V mode 3Φ200

Io	Vin					Line Regulation	
	170VAC	200VAC	208VAC	230VAC	265VAC		
0%	600.0001	600.0016	600.0014	600.0019	600.0018	1.8	0.000%
25%	599.9986	599.9991	599.9993	599.9994	599.9983	1.1	0.000%
50%	599.9976	599.9976	599.9980	599.9981	599.9975	0.6	0.000%
75%	599.9967	599.9967	599.9971	599.9970	599.9956	1.5	0.000%
100%	599.9942	599.9947	599.9944	599.9944	599.9938	0.9	0.000%
Load	5.9	6.9	7.0	7.5	8.0	ΔV(mV)	
Regulation	0.001%	0.001%	0.001%	0.001%	0.001%		

3. Regulation - Line & Load, C.V mode 3Φ400

Io	Vin						Line Regulation	
	342VAC	380VAC	400VAC	415VAC	432VAC	460VAC		
0%	599.9864	599.9869	599.9861	599.9861	599.9859	599.9868	1.0	0.000%
25%	599.9825	599.9835	599.9834	599.9832	599.9829	599.9827	1.0	0.000%
50%	599.9818	599.9817	599.9817	599.9816	599.9814	599.9811	0.7	0.000%
75%	599.9799	599.9794	599.9809	599.9806	599.9808	599.9814	2.0	0.000%
100%	599.9802	599.9788	599.9798	599.9790	599.9797	599.9793	1.4	0.000%
Load	6.5	8.1	6.3	7.1	6.2	7.5	ΔV(mV)	
Regulation	0.001%	0.001%	0.001%	0.001%	0.001%	0.001%		

4. Regulation - Line & Load, C.V mode 3Φ480

Io	Vin						Line Regulation	
	342VAC	380VAC	400VAC	415VAC	480VAC	520VAC		
0%	599.9740	599.9743	599.9728	599.9729	599.9727	599.9726	1.7	0.000%
25%	599.9697	599.9692	599.9686	599.9687	599.9685	599.9685	1.2	0.000%
50%	599.9675	599.9673	599.9673	599.9668	599.9679	599.9671	1.1	0.000%
75%	599.9657	599.9667	599.9663	599.9663	599.9659	599.9664	1.0	0.000%
100%	599.9654	599.9651	599.9647	599.9647	599.9649	599.9654	0.7	0.000%
Load	8.6	9.2	8.1	8.2	7.8	7.2	ΔV(mV)	
Regulation	0.001%	0.002%	0.001%	0.001%	0.001%	0.001%		

5. Temperature drift, C.V mode

Conditions Vin:230V 1Φ
Iout:100%

Ta	0°C	25°C	50°C	Temp. Coefficient (0°C~50°C)		
Vout	599.9675	599.9883	599.9347	53.615	mV	1.8 ppm/°C

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

G10-340

Conditions: Ta = 25°C

1. Regulation - Line & Load, C.C mode 1Φ200 (*)

Vo	Vin				Line Regulation	
	170VAC	200VAC	230VAC	265VAC		
0%	340.0514	340.0514	340.0500	340.0506	1.4	0.000%
25%	340.0497	340.0506	340.0496	340.0492	1.4	0.000%
50%	340.0463	340.0461	340.0478	340.0467	1.7	0.000%
75%	340.0430	340.0430	340.0436	340.0439	0.9	0.000%
100%	340.0340	340.0344	340.0339	340.0335	0.9	0.000%
Load	17.4	17.0	16.1	17.1	ΔI(mA)	
Regulation	0.005%	0.005%	0.005%	0.005%		

2. Regulation - Line & Load, C.C mode 3Φ200 (*)

Io	Vin					Line Regulation	
	170VAC	200VAC	208VAC	230VAC	265VAC		
0%	339.9725	339.9718	339.9719	339.9721	339.9738	2.0	0.001%
25%	339.9696	339.9658	339.9660	339.9656	339.9685	4.0	0.001%
50%	339.9647	339.9622	339.9608	339.9606	339.9668	6.2	0.002%
75%	339.9614	339.9605	339.9604	339.9612	339.9637	3.3	0.001%
100%	339.9530	339.9515	339.9526	339.9519	339.9531	1.6	0.000%
Load	19.5	20.3	19.3	20.2	20.7	ΔI(mA)	
Regulation	0.006%	0.006%	0.006%	0.006%	0.006%		

3. Regulation - Line & Load, C.C mode 3Φ400 (*)

Io	Vin						Line Regulation	
	342VAC	380VAC	400VAC	415VAC	432VAC	460VAC		
0%	339.6765	339.6767	339.6752	339.6760	339.6752	339.6763	1.5	0.000%
25%	339.6720	339.6722	339.6723	339.6726	339.6730	339.6728	1.0	0.000%
50%	339.6606	339.6612	339.6620	339.6612	339.6609	339.6614	1.4	0.000%
75%	339.6583	339.6575	339.6575	339.6584	339.6572	339.6575	1.2	0.000%
100%	339.6530	339.6539	339.6530	339.6531	339.6533	339.6532	0.9	0.000%
Load	23.5	22.8	22.2	22.9	21.9	23.1	ΔI(mA)	
Regulation	0.007%	0.007%	0.007%	0.007%	0.006%	0.007%		

4 Regulation - Line & Load, C.C mode 3Φ480 (*)

Io	Vin						Line Regulation	
	342VAC	380VAC	400VAC	415VAC	480VAC	520VAC		
0%	339.7358	339.7377	339.7389	339.7384	339.7381	339.7373	3.1	0.001%
25%	339.7325	339.7332	339.7337	339.7342	339.7339	339.7337	1.7	0.000%
50%	339.7214	339.7214	339.7208	339.7208	339.7206	339.7212	0.8	0.000%
75%	339.7159	339.7163	339.7160	339.7172	339.7163	339.7172	1.3	0.000%
100%	339.7120	339.7112	339.7117	339.7126	339.7118	339.7111	1.5	0.000%
Load	23.8	26.5	27.2	25.8	26.3	26.2	ΔI(mA)	
Regulation	0.007%	0.008%	0.008%	0.008%	0.008%	0.008%		

5. Temperature drift, C.C mode

Conditions: Vin:230V 1Φ
Iout:100%

Ta	0°C	25°C	50°C	Temp. Coefficient (0°C~50°C)	
Iout	339.7079	339.6304	339.5618	146 mA	8.6 ppm/°C

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

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

G60-56

Conditions: Ta = 25°C

1. Regulation - Line & Load, C.C mode 1Φ200 (*)

Vo	Vin				Line Regulation	
	170VAC	200VAC	230VAC	265VAC		
0%	55.9945	55.9946	55.9945	55.9948	0.3	0.001%
25%	55.9948	55.9948	55.9950	55.9950	0.2	0.000%
50%	55.9985	55.9984	55.9983	55.9980	0.5	0.001%
75%	56.0004	56.0001	56.0001	55.9999	0.5	0.001%
100%	56.0000	55.9996	55.9996	55.9994	0.6	0.001%
Load	5.9	5.5	5.6	5.1	ΔI(mA)	
Regulation	0.011%	0.010%	0.010%	0.009%		

2. Regulation - Line & Load, C.C mode 3Φ200 (*)

Io	Vin					Line Regulation	
	170VAC	200VAC	208VAC	230VAC	265VAC		
0%	56.0167	56.0166	56.0165	56.0165	56.0154	1.3	0.002%
25%	56.0160	56.0166	56.0166	56.0167	56.0161	0.7	0.001%
50%	56.0175	56.0181	56.0182	56.0183	56.0176	0.8	0.001%
75%	56.0192	56.0198	56.0200	56.0200	56.0193	0.8	0.001%
100%	56.0193	56.0200	56.0201	56.0202	56.0193	0.9	0.002%
Load	3.3	3.4	3.6	3.7	3.9	ΔI(mA)	
Regulation	0.006%	0.006%	0.006%	0.007%	0.007%		

3. Regulation - Line & Load, C.C mode 3Φ400 (*)

Io	Vin						Line Regulation	
	342VAC	380VAC	400VAC	415VAC	432VAC	460VAC		
0%	56.0125	56.0128	56.0131	56.0129	56.0133	56.0134	0.9	0.002%
25%	56.0136	56.0137	56.0137	56.0135	56.0135	56.0135	0.2	0.000%
50%	56.0150	56.0152	56.0150	56.0148	56.0148	56.0149	0.4	0.001%
75%	56.0167	56.0168	56.0167	56.0167	56.0166	56.0167	0.2	0.000%
100%	56.0164	56.0163	56.0164	56.0165	56.0165	56.0164	0.2	0.000%
Load	4.2	4.0	3.6	3.8	3.3	3.3	ΔI(mA)	
Regulation	0.007%	0.007%	0.006%	0.007%	0.006%	0.006%		

4. Regulation - Line & Load, C.C mode 3Φ480 (*)

Io	Vin						Line Regulation	
	342VAC	380VAC	400VAC	415VAC	480VAC	520VAC		
0%	56.0172	56.0172	56.0173	56.0171	56.0172	56.0170	0.3	0.001%
25%	56.0177	56.0176	56.0176	56.0176	56.0175	56.0176	0.2	0.000%
50%	56.0193	56.0193	56.0192	56.0192	56.0192	56.0193	0.1	0.000%
75%	56.0209	56.0210	56.0211	56.0210	56.0210	56.0211	0.2	0.000%
100%	56.0210	56.0210	56.0209	56.0210	56.0211	56.0209	0.2	0.000%
Load	3.8	3.8	3.8	3.9	3.9	4.1	ΔI(mA)	
Regulation	0.007%	0.007%	0.007%	0.007%	0.007%	0.007%		

5. Temperature drift, C.C mode

Conditions: Vin:230V 1Φ
Iout:100%

Ta	0°C	25°C	50°C	Temp. Coefficient (0°C~50°C)	
Iout	56.0003	56.0240	56.1103	110.04 mA	39.3 ppm/°C

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

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

G150-22.5

Conditions: Ta = 25°C

1. Regulation - Line & Load, C.C mode 1Φ200 (*)

Vo	Vin				Line Regulation	
	170VAC	200VAC	230VAC	265VAC		
0%	22.4675	22.4674	22.4674	22.4674	0.1	0.000%
25%	22.4670	22.4672	22.4671	22.4672	0.2	0.001%
50%	22.4681	22.4680	22.4680	22.4679	0.2	0.001%
75%	22.4679	22.4679	22.4680	22.4680	0.1	0.000%
100%	22.4679	22.4677	22.4676	22.4675	0.4	0.002%
Load	1.1	0.8	0.9	0.8	ΔI(mA)	
Regulation	0.005%	0.004%	0.004%	0.004%		

2. Regulation - Line & Load, C.C mode 3Φ200 (*)

Io	Vin					Line Regulation	
	170VAC	200VAC	208VAC	230VAC	265VAC		
0%	22.4670	22.4672	22.4671	22.4671	22.4668	0.4	0.002%
25%	22.4663	22.4668	22.4668	22.4668	22.4664	0.5	0.002%
50%	22.4673	22.4677	22.4678	22.4678	22.4670	0.8	0.004%
75%	22.4669	22.4672	22.4674	22.4674	22.4668	0.6	0.003%
100%	22.4666	22.4672	22.4671	22.4672	22.4668	0.6	0.003%
Load	1.0	0.9	1.0	1.0	0.6	ΔI(mA)	
Regulation	0.004%	0.004%	0.004%	0.004%	0.003%		

3. Regulation - Line & Load, C.C mode 3Φ400 (*)

Io	Vin						Line Regulation	
	342VAC	380VAC	400VAC	415VAC	432VAC	460VAC		
0%	22.4906	22.4896	22.4896	22.4896	22.4896	22.4896	1.0	0.004%
25%	22.4896	22.4896	22.4896	22.4896	22.4896	22.4896	0.0	0.000%
50%	22.4906	22.4906	22.4906	22.4916	22.4916	22.4916	1.0	0.004%
75%	22.4916	22.4916	22.4916	22.4916	22.4916	22.4916	0.0	0.000%
100%	22.4916	22.4916	22.4916	22.4916	22.4916	22.4926	1.0	0.004%
Load	2.0	2.0	2.0	2.0	2.0	3.0	ΔI(mA)	
Regulation	0.009%	0.009%	0.009%	0.009%	0.009%	0.013%		

3. Regulation - Line & Load, C.C mode 3Φ480 (*)

Io	Vin						Line Regulation	
	342VAC	380VAC	400VAC	415VAC	480VAC	520VAC		
0%	22.4896	22.4896	22.4896	22.4896	22.4896	22.4896	0.0	0.000%
25%	22.4906	22.4906	22.4896	22.4896	22.4896	22.4896	1.0	0.004%
50%	22.4916	22.4916	22.4916	22.4916	22.4916	22.4916	0.0	0.000%
75%	22.4916	22.4916	22.4916	22.4916	22.4916	22.4916	0.0	0.000%
100%	22.4916	22.4916	22.4916	22.4916	22.4926	22.4926	1.0	0.004%
Load	2.0	2.0	2.0	2.0	3.0	3.0	ΔI(mA)	
Regulation	0.009%	0.009%	0.009%	0.009%	0.013%	0.013%		

4. Temperature drift, C.C mode

Conditions: Vin:230V 1Φ
Iout:100%

Ta	0°C	25°C	50°C	Temp. Coefficient (0°C~50°C)	
Iout	22.4919	22.4959	22.5236	31.70 mA	28.2 ppm/°C

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

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

G600-5.6

Conditions: Ta = 25°C

1. Regulation - Line & Load, C.C mode 1Φ200 (*)

Vo	Vin				Line Regulation	
	170VAC	200VAC	230VAC	265VAC		
0%	5.5967	5.5967	5.5967	5.5967	0.0	0.000%
25%	5.5967	5.5967	5.5967	5.5966	0.1	0.002%
50%	5.5971	5.5971	5.5971	5.5971	0.0	0.000%
75%	5.5971	5.5971	5.5971	5.5971	0.0	0.000%
100%	5.5971	5.5971	5.5971	5.5971	0.0	0.000%
Load	0.4	0.4	0.4	0.5	ΔI(mA)	
Regulation	0.007%	0.007%	0.007%	0.009%		

2. Regulation - Line & Load, C.C mode 3Φ200 (*)

Io	Vin					Line Regulation	
	170VAC	200VAC	208VAC	230VAC	265VAC		
0%	5.5966	5.5966	5.5965	5.5966	5.5966	0.1	0.002%
25%	5.5966	5.5966	5.5966	5.5966	5.5966	0.0	0.000%
50%	5.5971	5.5970	5.5971	5.5970	5.5970	0.1	0.002%
75%	5.5971	5.5971	5.5971	5.5971	5.5971	0.0	0.000%
100%	5.5969	5.5969	5.5969	5.5969	5.5970	0.1	0.002%
Load	0.5	0.5	0.6	0.5	0.5	ΔI(mA)	
Regulation	0.009%	0.009%	0.011%	0.009%	0.009%		

3. Regulation - Line & Load, C.C mode 3Φ400 (*)

Io	Vin						Line Regulation	
	342VAC	380VAC	400VAC	415VAC	432VAC	460VAC		
0%	5.5959	5.5959	5.5959	5.5959	5.5959	5.5959	0.0	0.000%
25%	5.5959	5.5959	5.5959	5.5959	5.5959	5.5959	0.0	0.000%
50%	5.5963	5.5963	5.5963	5.5963	5.5963	5.5963	0.0	0.000%
75%	5.5963	5.5963	5.5963	5.5963	5.5963	5.5963	0.0	0.000%
100%	5.5963	5.5963	5.5963	5.5963	5.5963	5.5963	0.0	0.000%
Load	0.4	0.4	0.4	0.4	0.4	0.4	ΔI(mA)	
Regulation	0.007%	0.007%	0.007%	0.007%	0.007%	0.007%		

3. Regulation - Line & Load, C.C mode 3Φ480 (*)

Io	Vin						Line Regulation	
	342VAC	380VAC	400VAC	415VAC	480VAC	520VAC		
0%	5.5961	5.5961	5.5962	5.5961	5.5961	5.5961	0.1	0.002%
25%	5.5961	5.5961	5.5961	5.5961	5.5961	5.5961	0.0	0.000%
50%	5.5965	5.5965	5.5965	5.5965	5.5965	5.5965	0.0	0.000%
75%	5.5965	5.5965	5.5965	5.5965	5.5965	5.5965	0.0	0.000%
100%	5.5965	5.5965	5.5965	5.5965	5.5965	5.5966	0.1	0.002%
Load	0.4	0.4	0.4	0.4	0.4	0.5	ΔI(mA)	
Regulation	0.007%	0.007%	0.007%	0.007%	0.007%	0.009%		

4. Temperature drift, C.C mode

Conditions: Vin:230V 1Φ
Iout:100%

Ta	0°C	25°C	50°C	Temp. Coefficient (0°C~50°C)	
Iout	5.5997	5.6002	5.6034	3.66 mA	13.1 ppm/°C

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

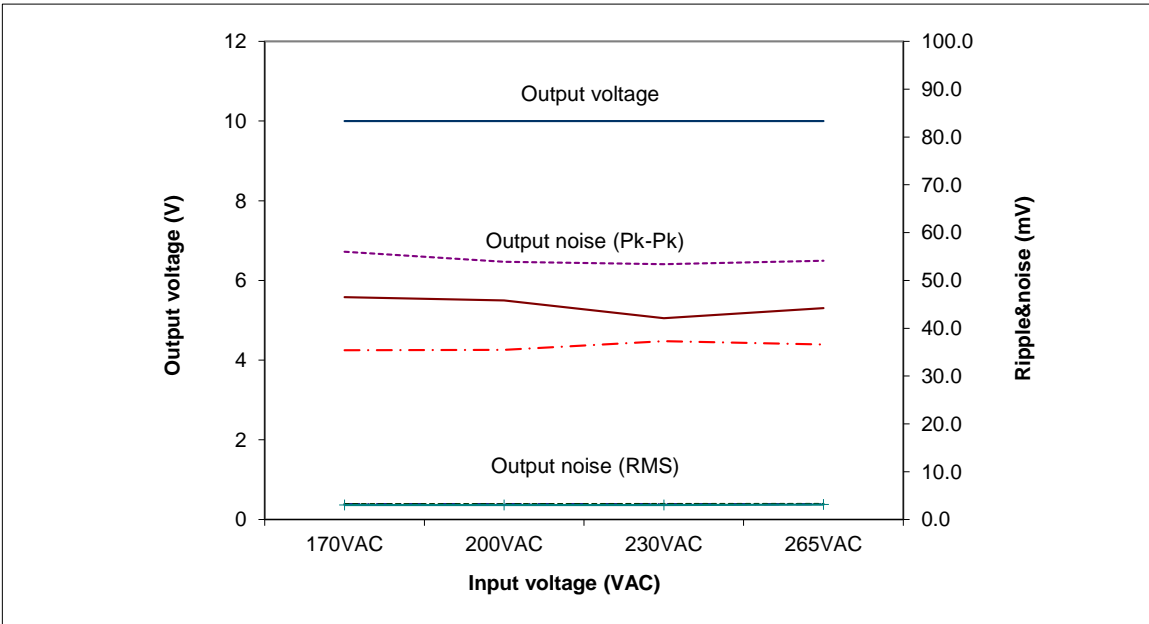
(2). Output voltage and ripple voltage vs. input voltage

C.V mode

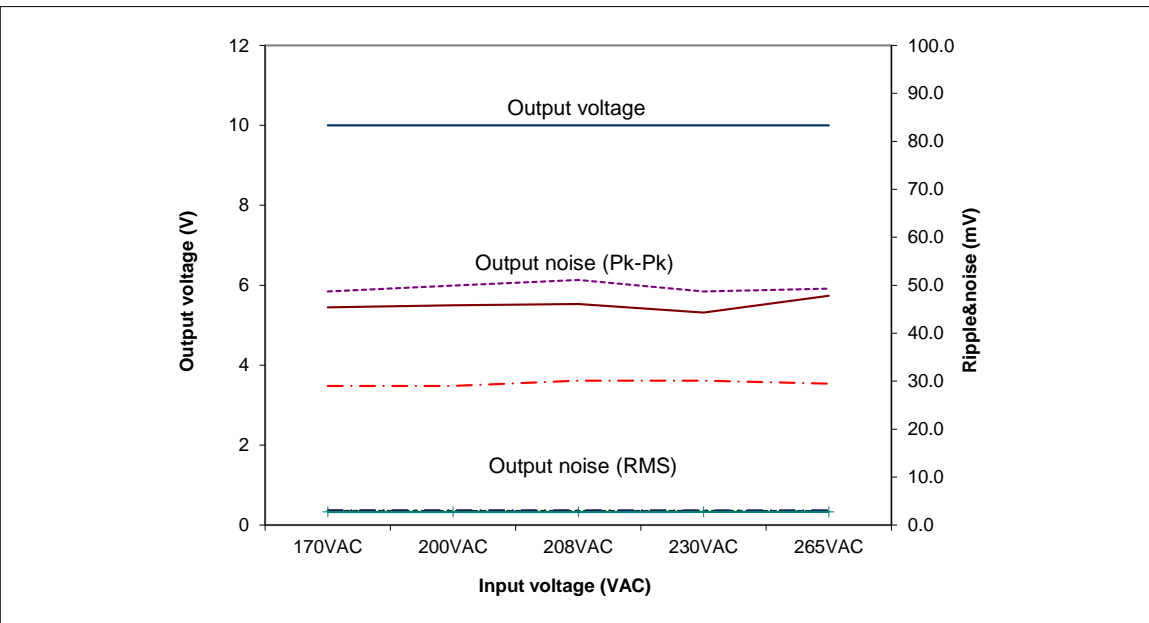
Conditions: Iout:100%

Ta: 0°C -----
 25°C -.-.-.-.-
 50°C _____

G10-340 1Φ200



G10-340 3Φ200



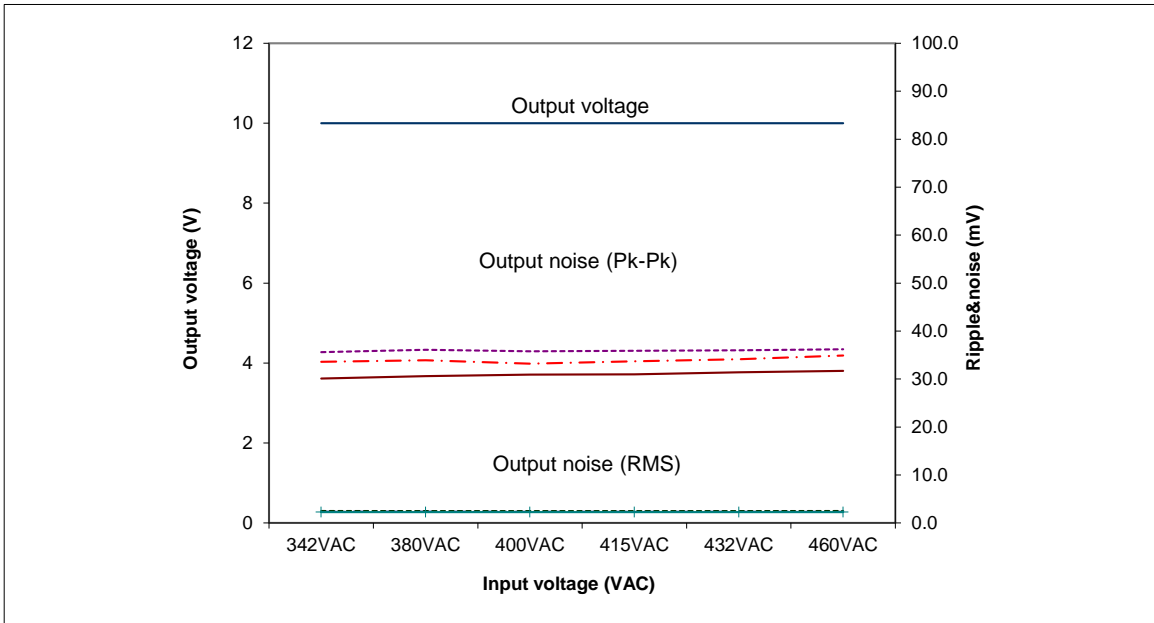
(2). Output voltage and ripple voltage vs. input voltage

C.V mode

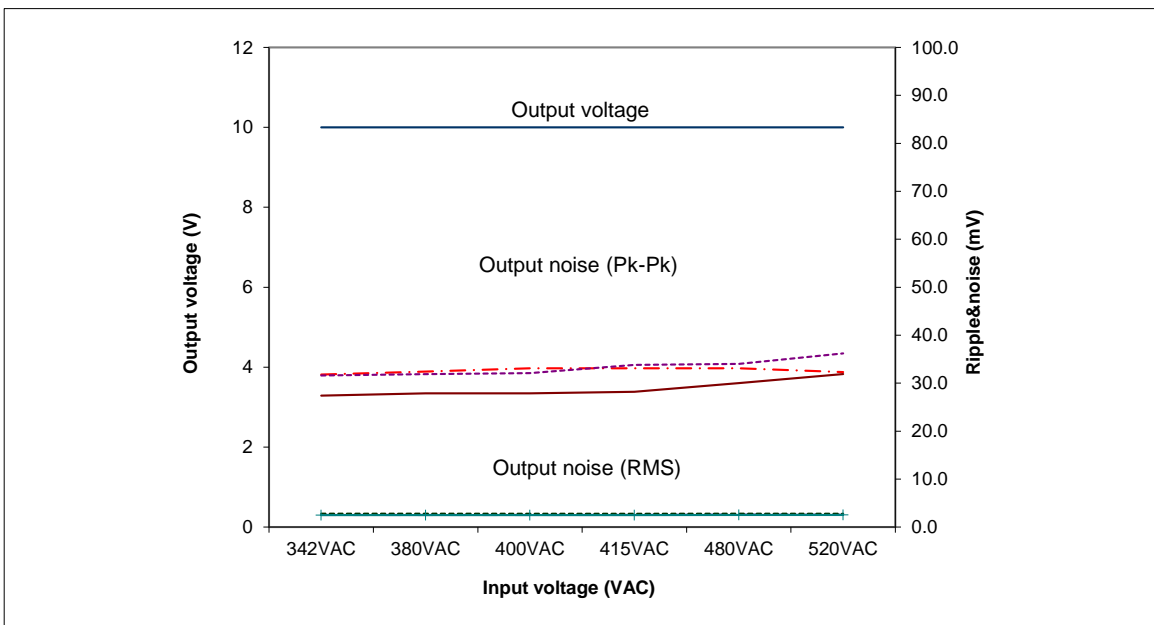
Conditions: Iout:100%

Ta: 0°C -----
 25°C - - - - -
 50°C _____

G10-340 3Φ400



G10-340 3Φ480



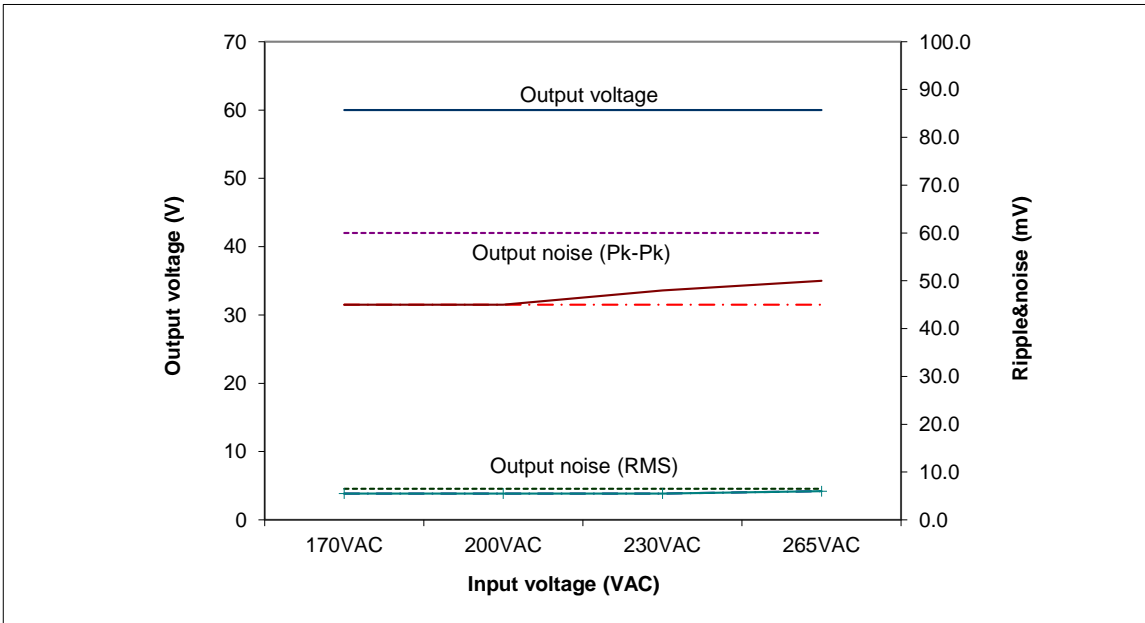
(2). Output voltage and ripple voltage vs. input voltage

C.V mode

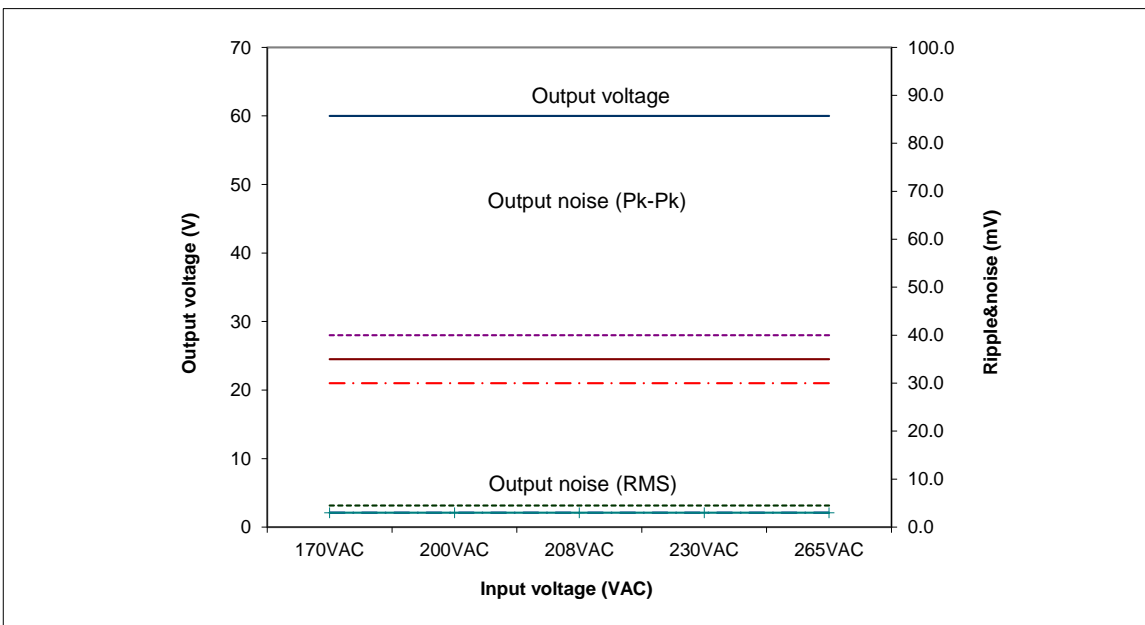
Conditions: Iout:100%

Ta: 0°C -----
 25°C - - - - -
 50°C _____

G60-56 1Φ200



G60-56 3Φ200



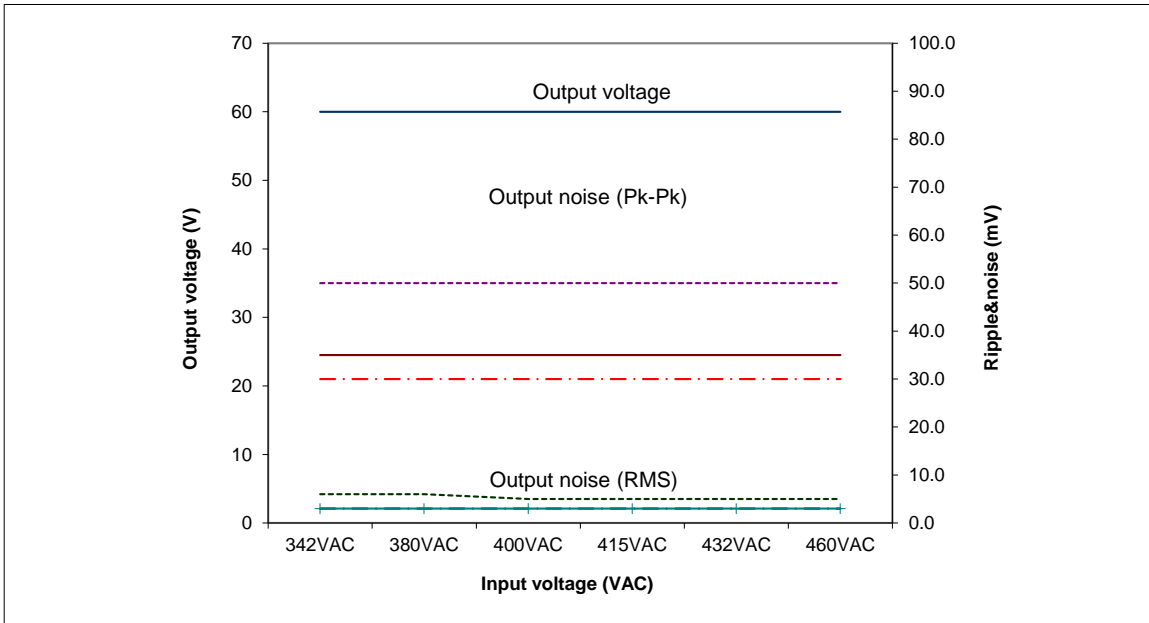
(2). Output voltage and ripple voltage vs. input voltage

C.V mode

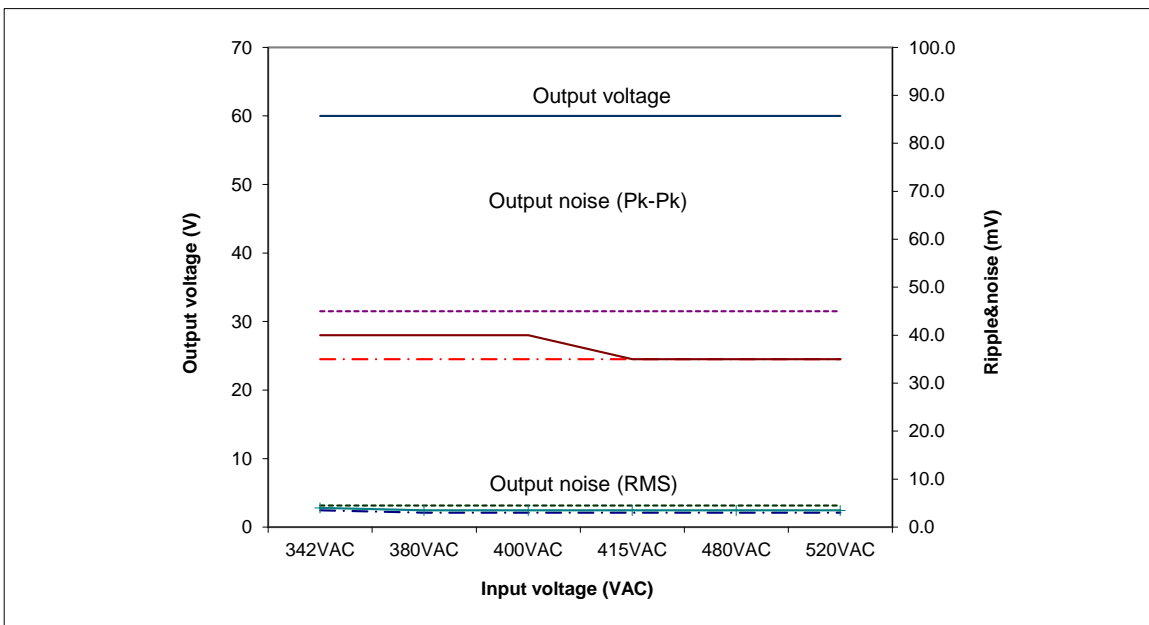
Conditions: Iout:100%

Ta: 0°C -----
 25°C - - - - -
 50°C _____

G60-56 3Φ400



G60-56 3Φ480



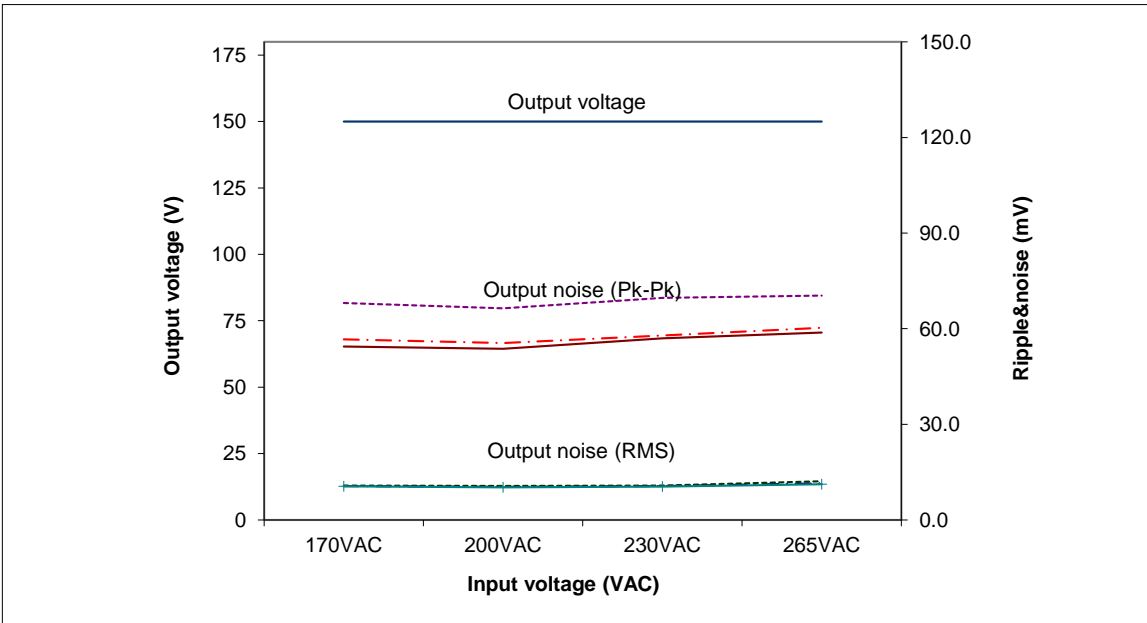
(2). Output voltage and ripple voltage vs. input voltage

C.V mode

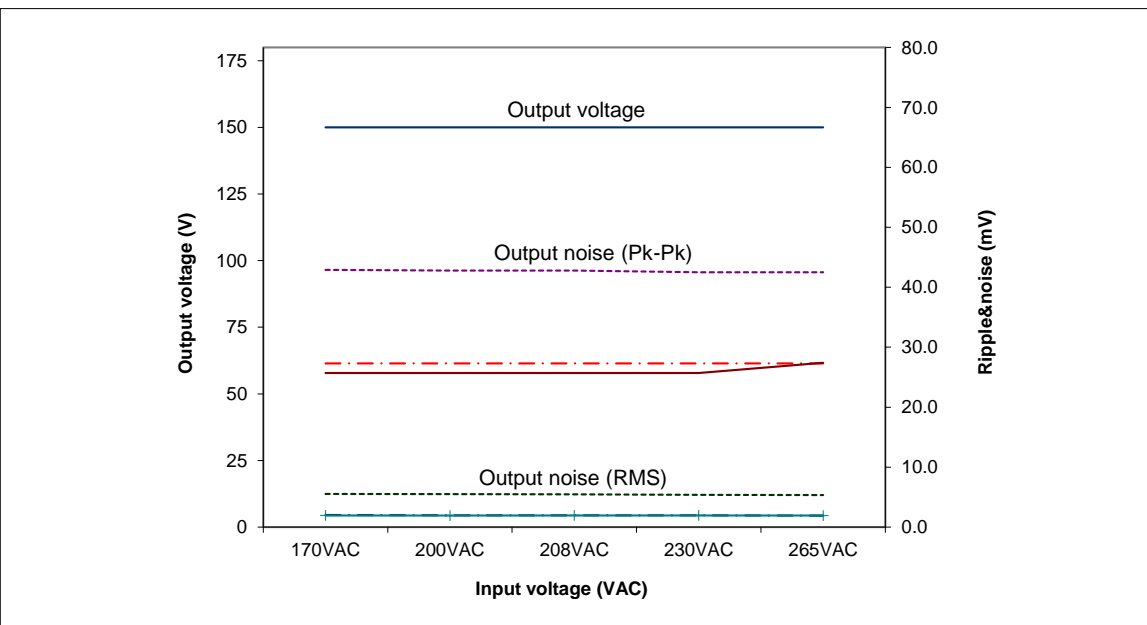
Conditions: Iout:100%

Ta: 0°C -----
 25°C - - - - -
 50°C _____

G150-22.5 1Φ200



G150-22.5 3Φ200

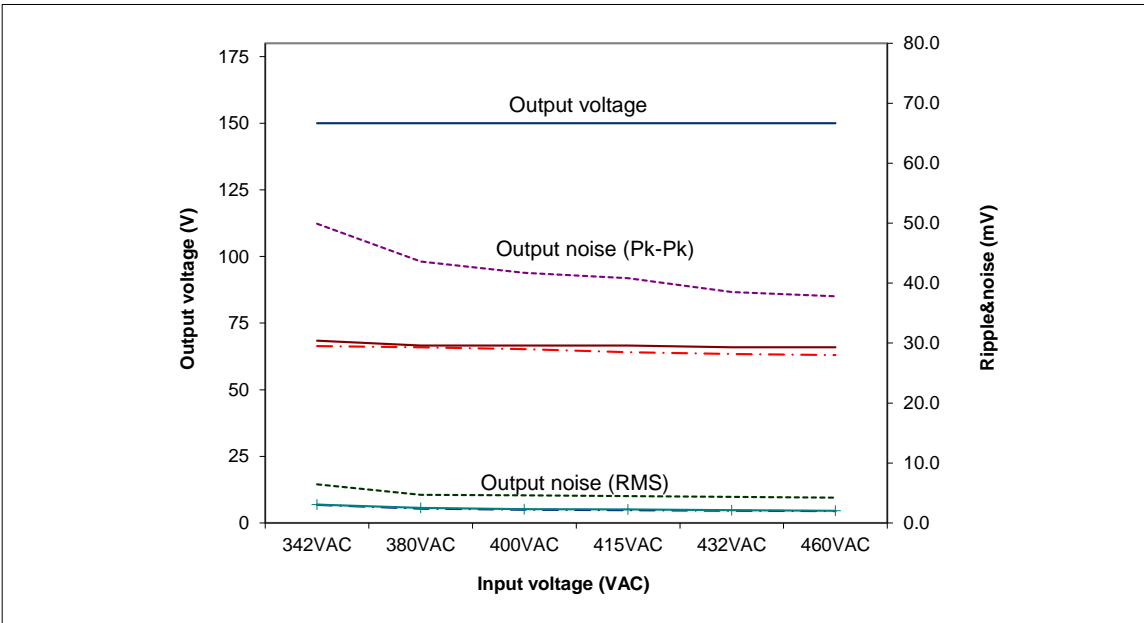


(2). Output voltage and ripple voltage vs. input voltage
C.V mode

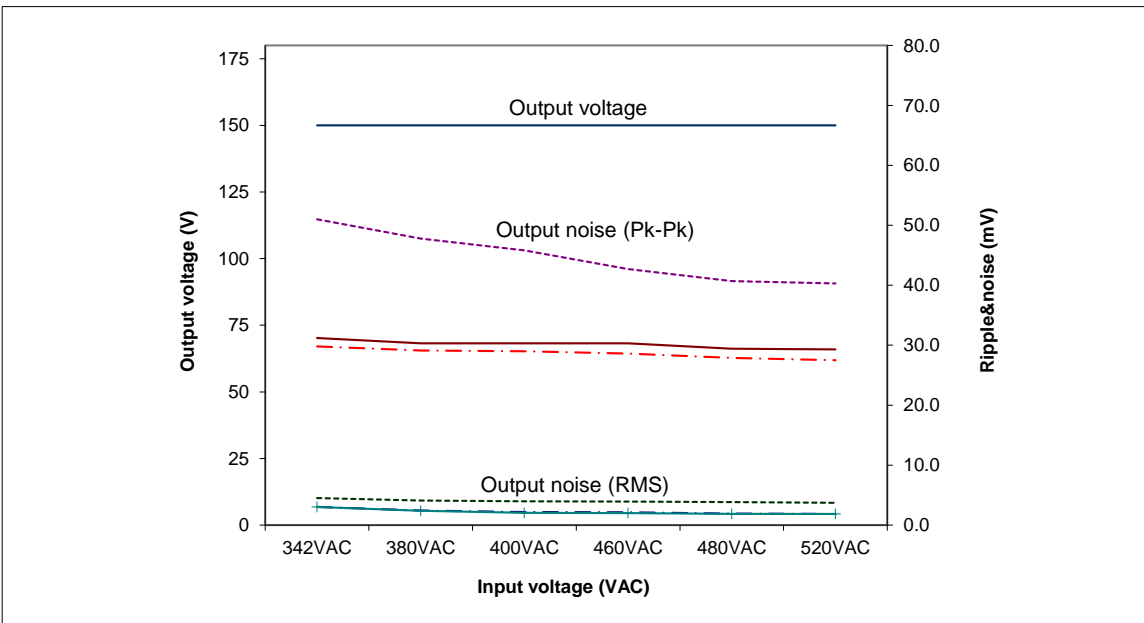
Conditions: Iout:100%

Ta: 0°C -----
25°C - - - - -
50°C _____

G150-22.5 3Φ400



G150-22.5 3Φ480



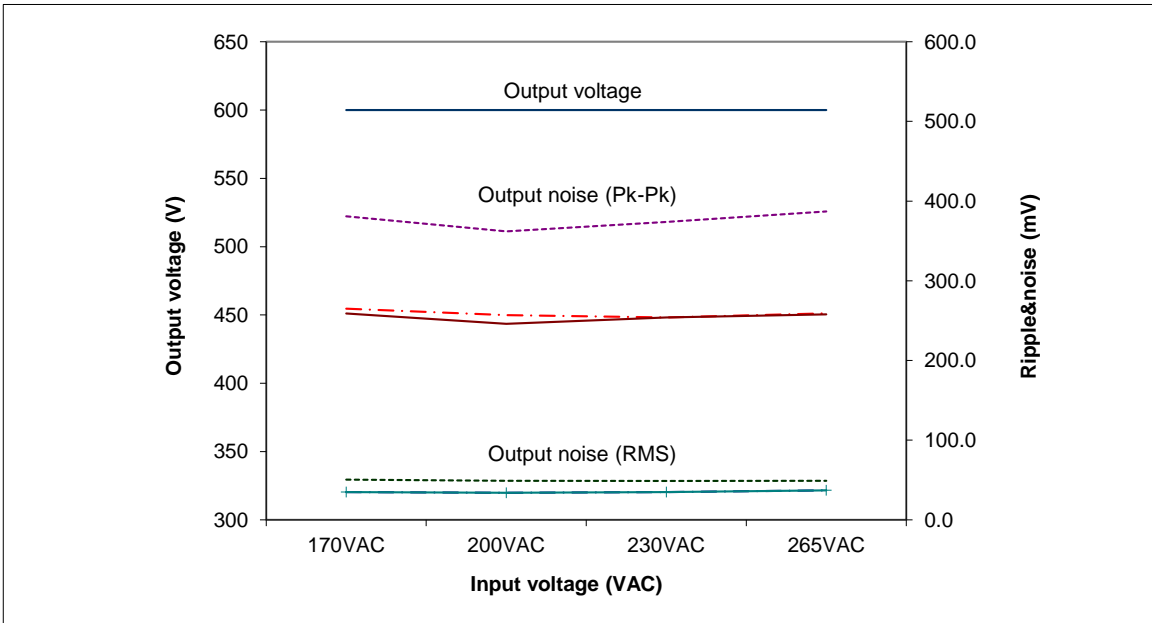
(2). Output voltage and ripple voltage vs. input voltage

C.V mode

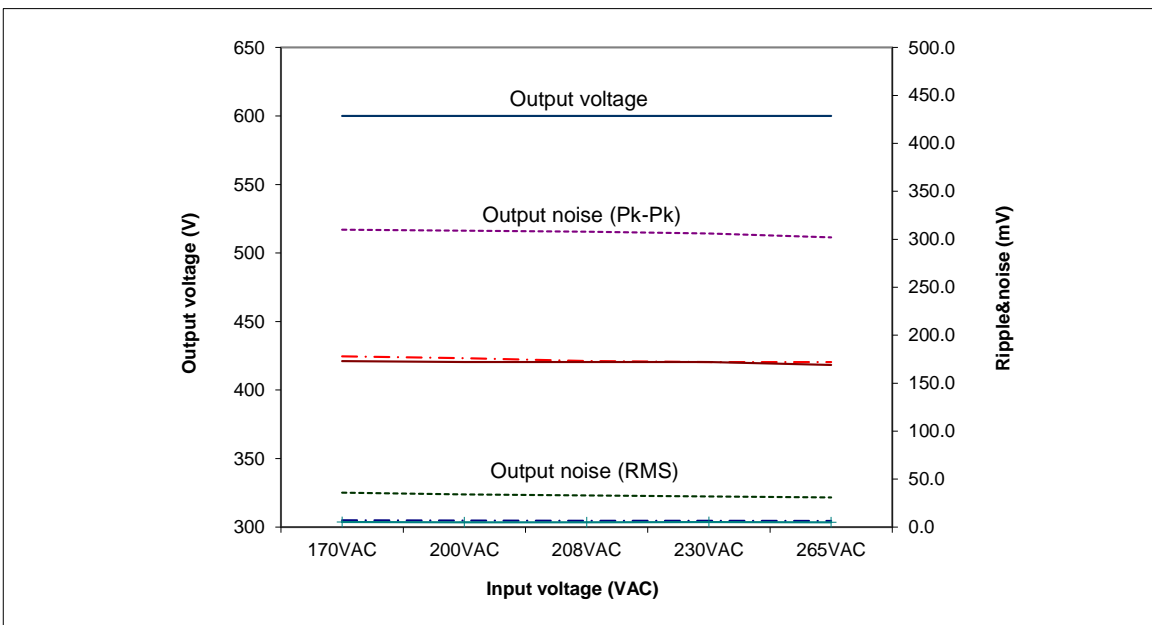
Conditions: Iout:100%

Ta: 0°C -----
 25°C - - - - -
 50°C _____

G600-5.6 1Φ200



G600-5.6 3Φ200



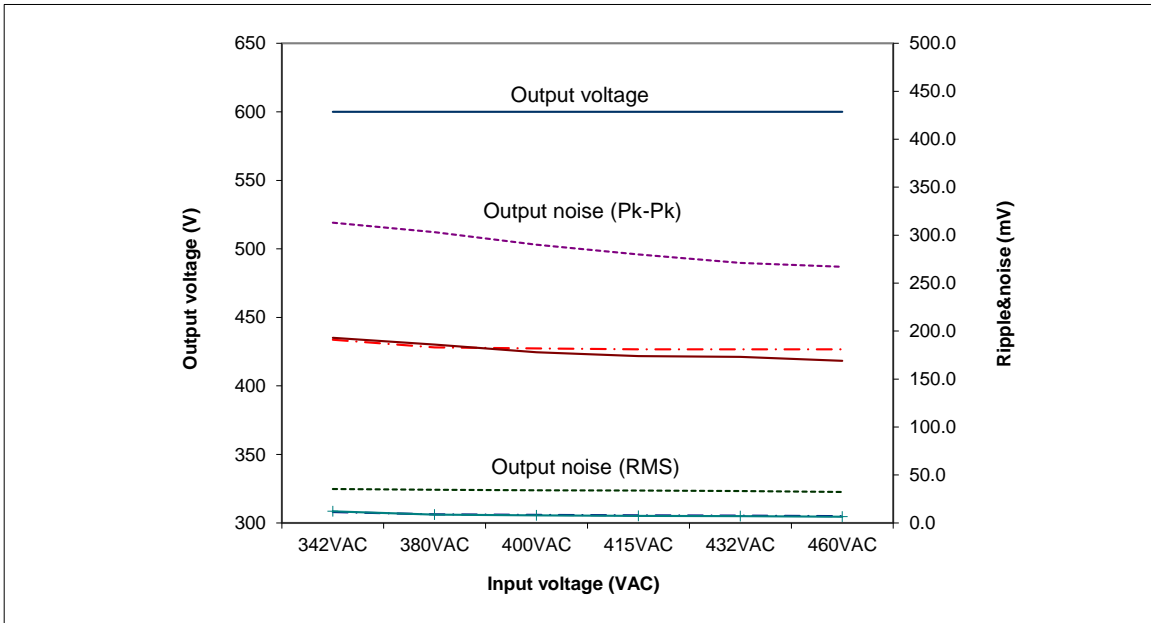
(2). Output voltage and ripple voltage vs. input voltage

C.V mode

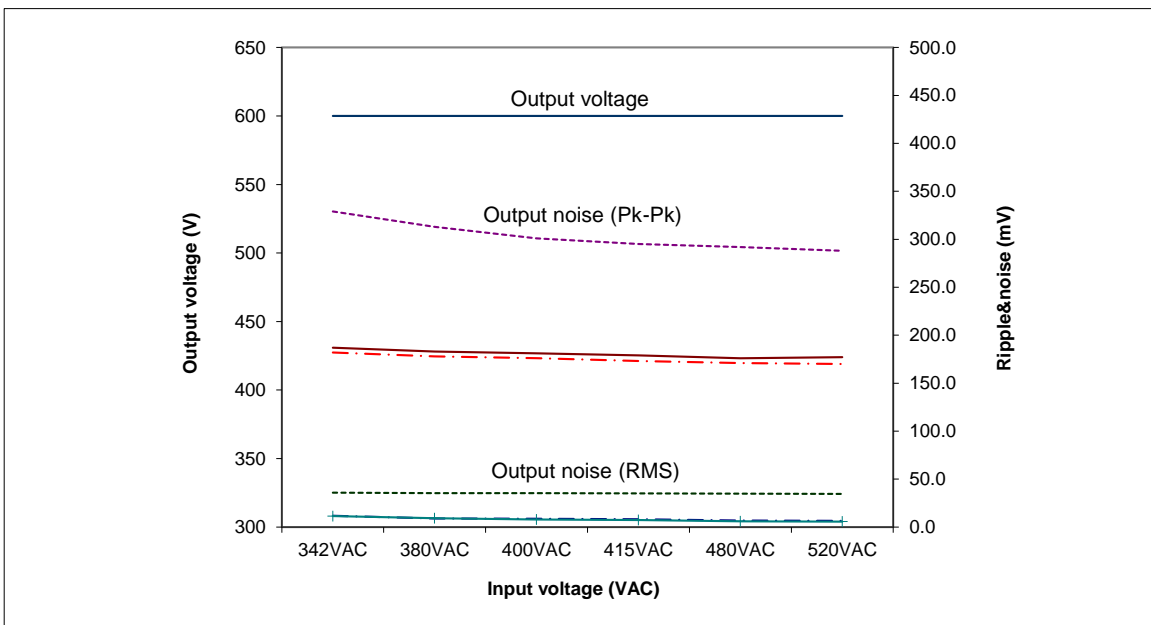
Conditions: Iout:100%

Ta: 0°C -----
 25°C - - - - -
 50°C _____

G600-5.6 3Φ400



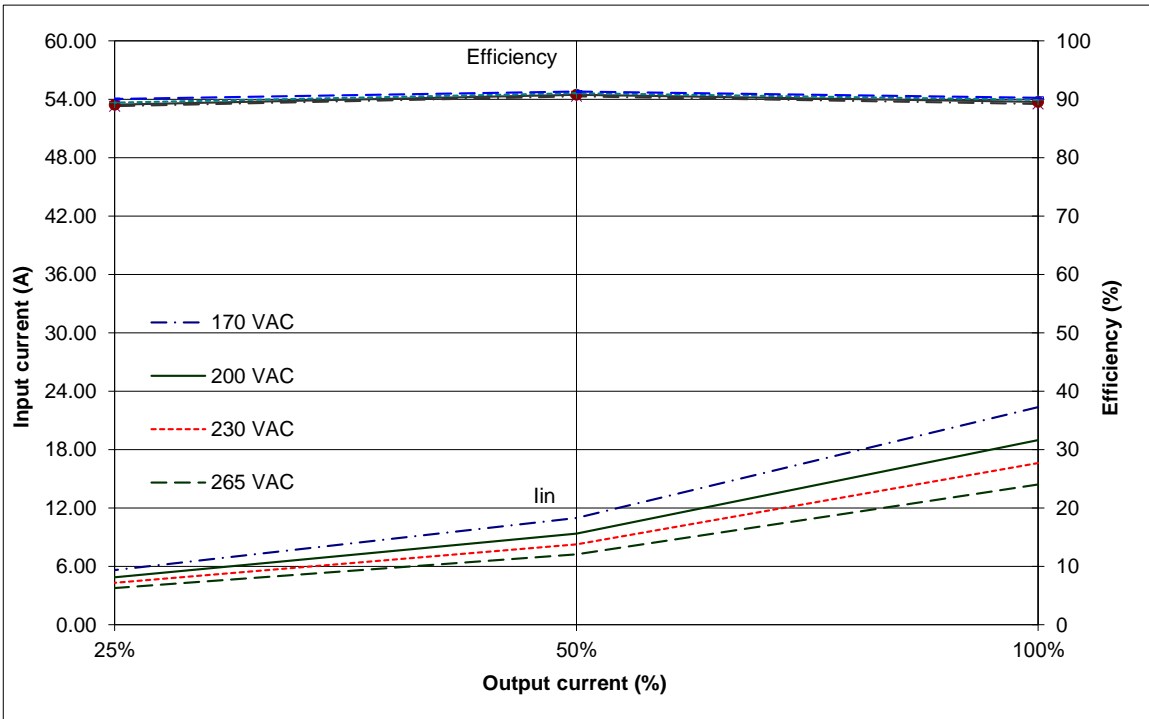
G600-5.6 3Φ480



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

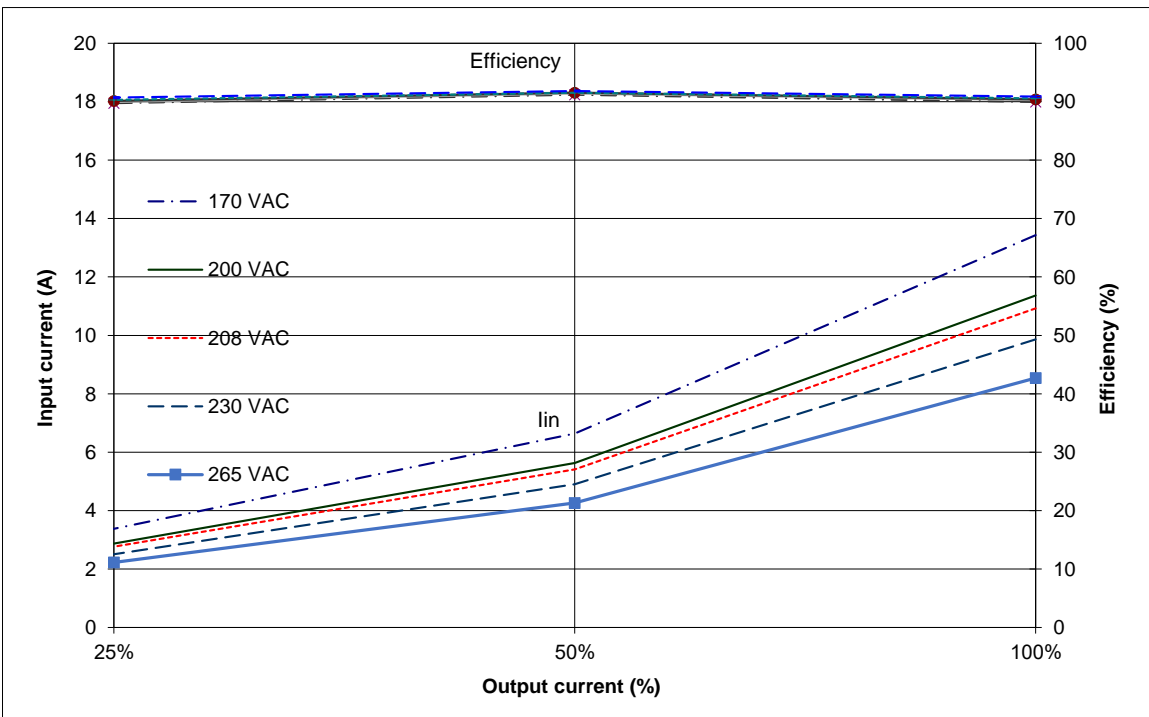
G10-340 1Φ200

Conditions:
 Vin: 170~265 VAC
 Vout: 100%
 Ta: 25°C



G10-340 3Φ200

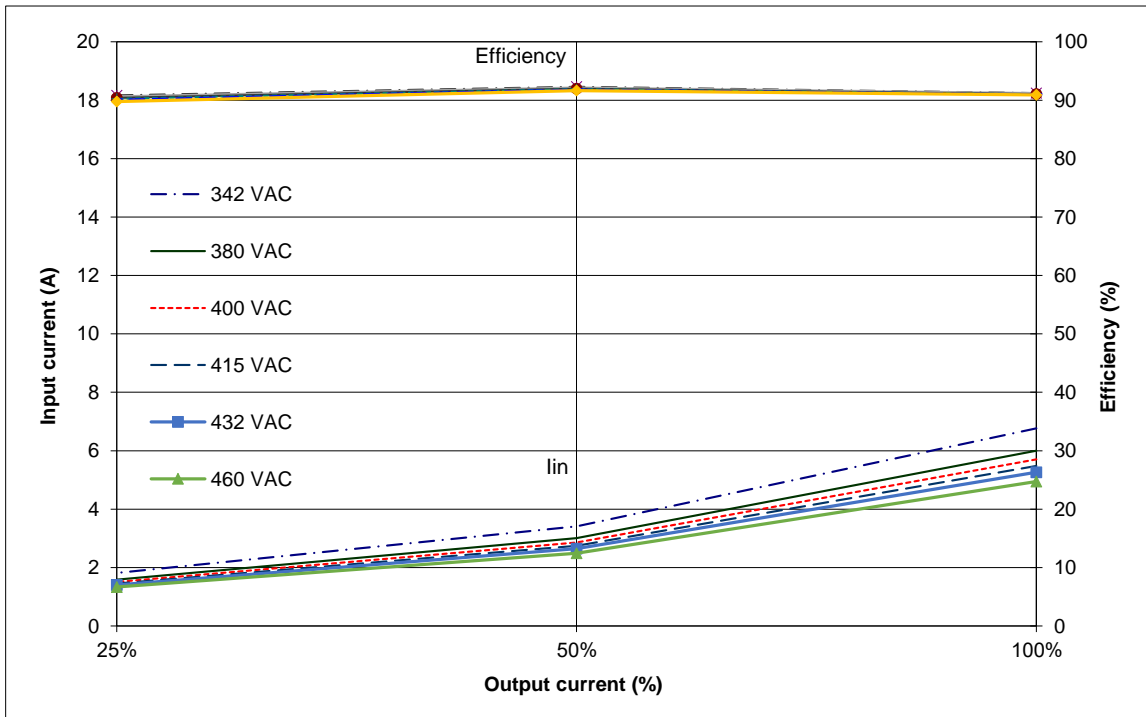
Conditions:
 Vin: 170~265 VAC
 Vout: 100%
 Ta: 25°C



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

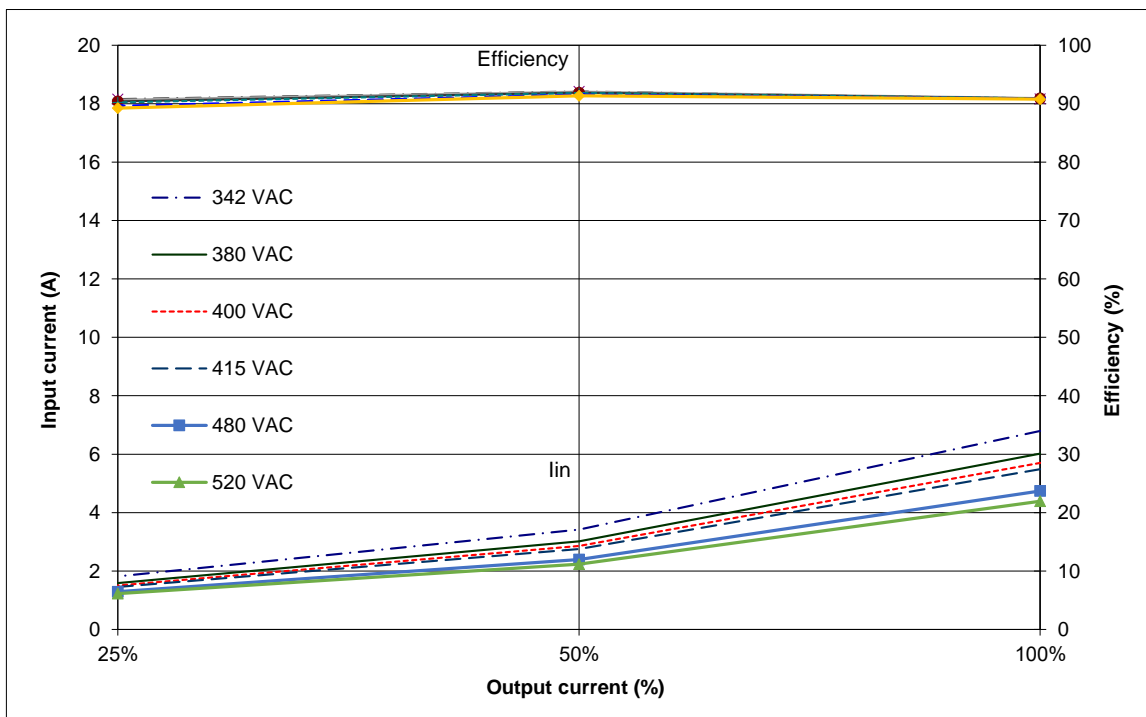
G10-340 3Φ400

Conditions:
 Vin: 342-460 VAC
 Vout: 100%
 Ta: 25°C



G10-340 3Φ480

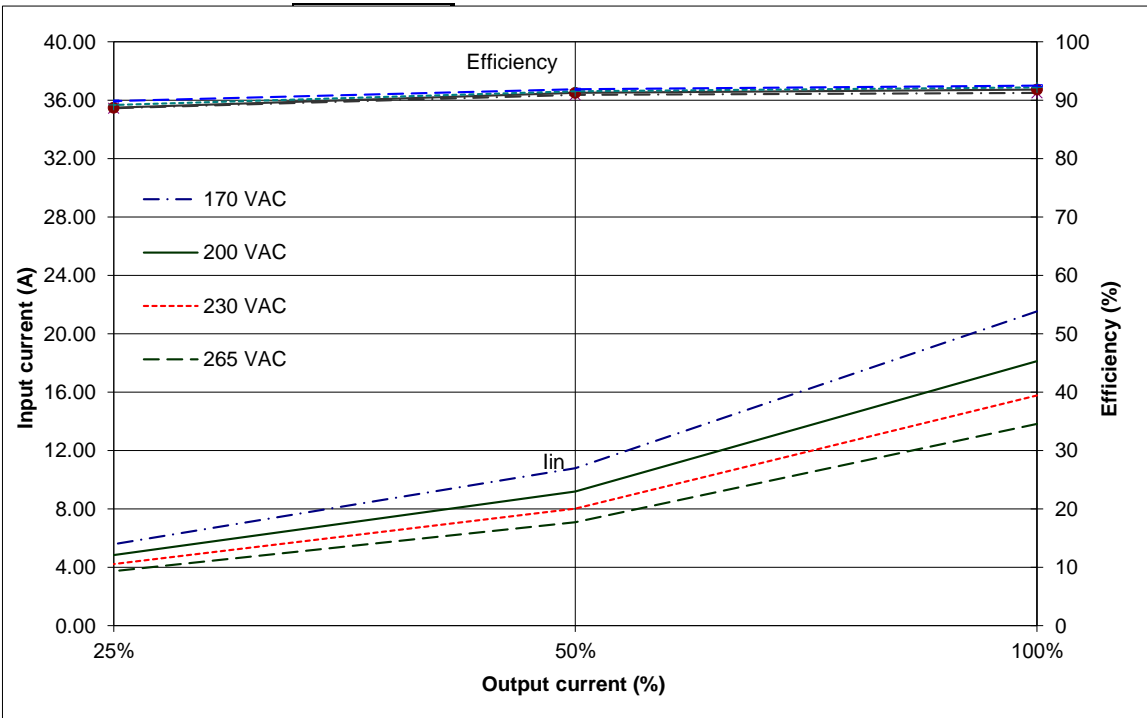
Conditions:
 Vin: 342-520 VAC
 Vout: 100%
 Ta: 25°C



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

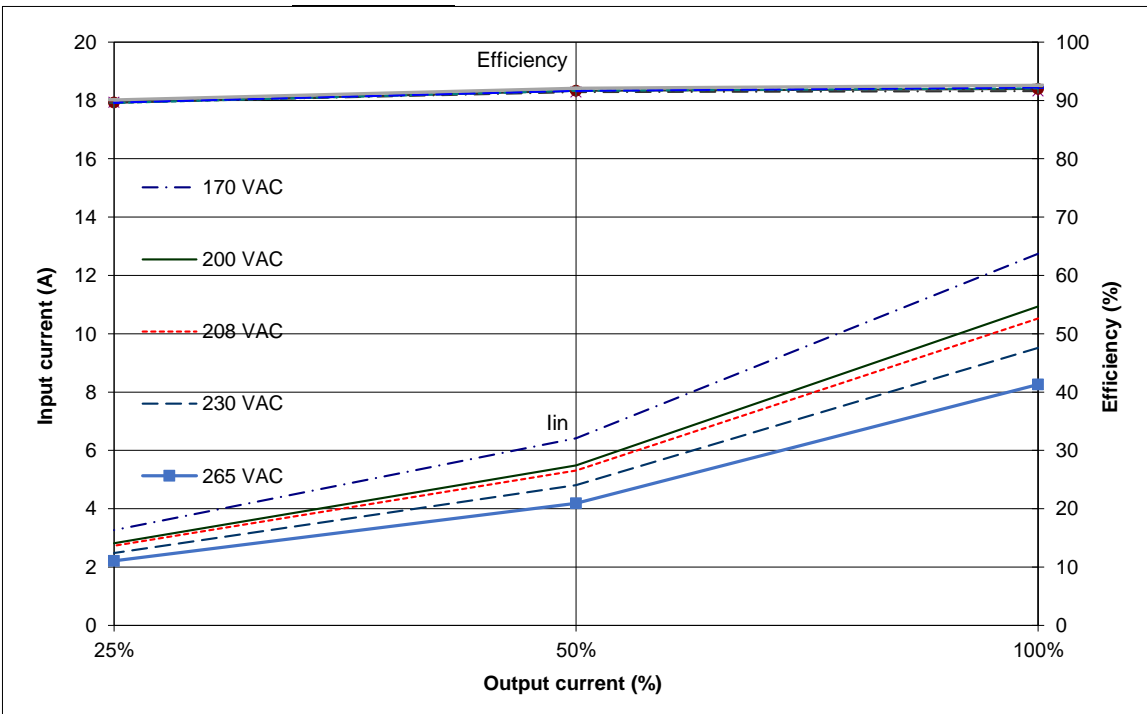
G60-56 1Φ200

Conditions:
 Vin: 170~265 VAC
 Vout: 100%
 Ta: 25°C



G60-56 3Φ200

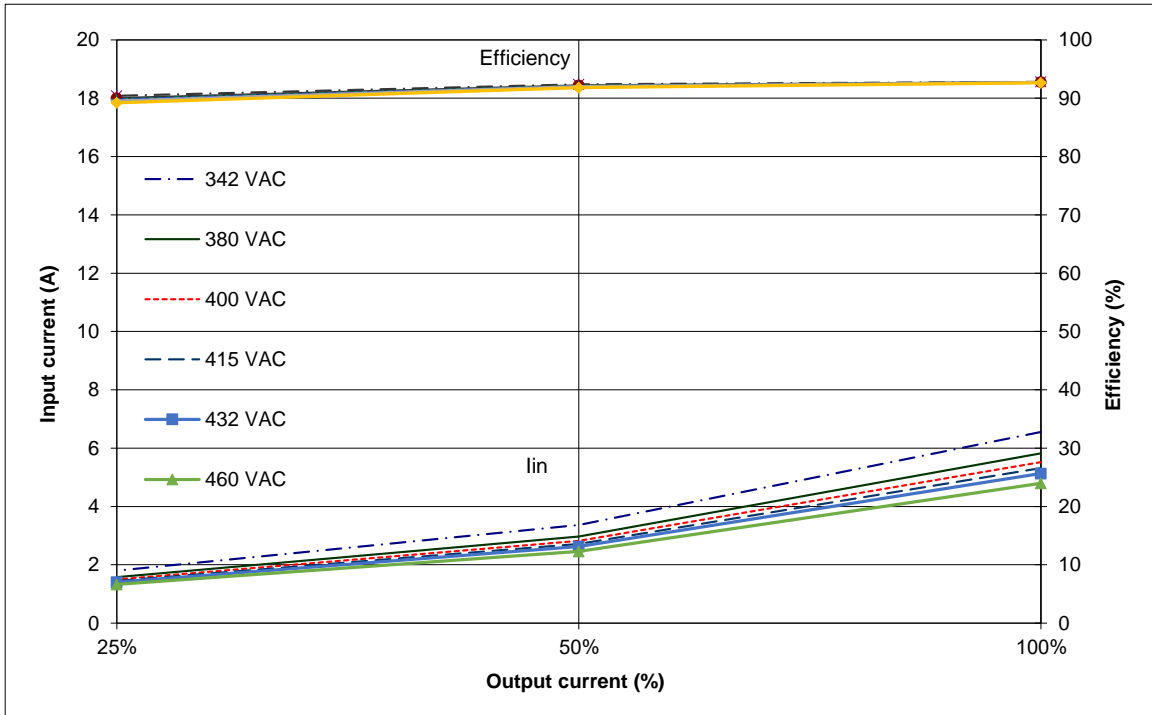
Conditions:
 Vin: 170~265 VAC
 Vout: 100%
 Ta: 25°C



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

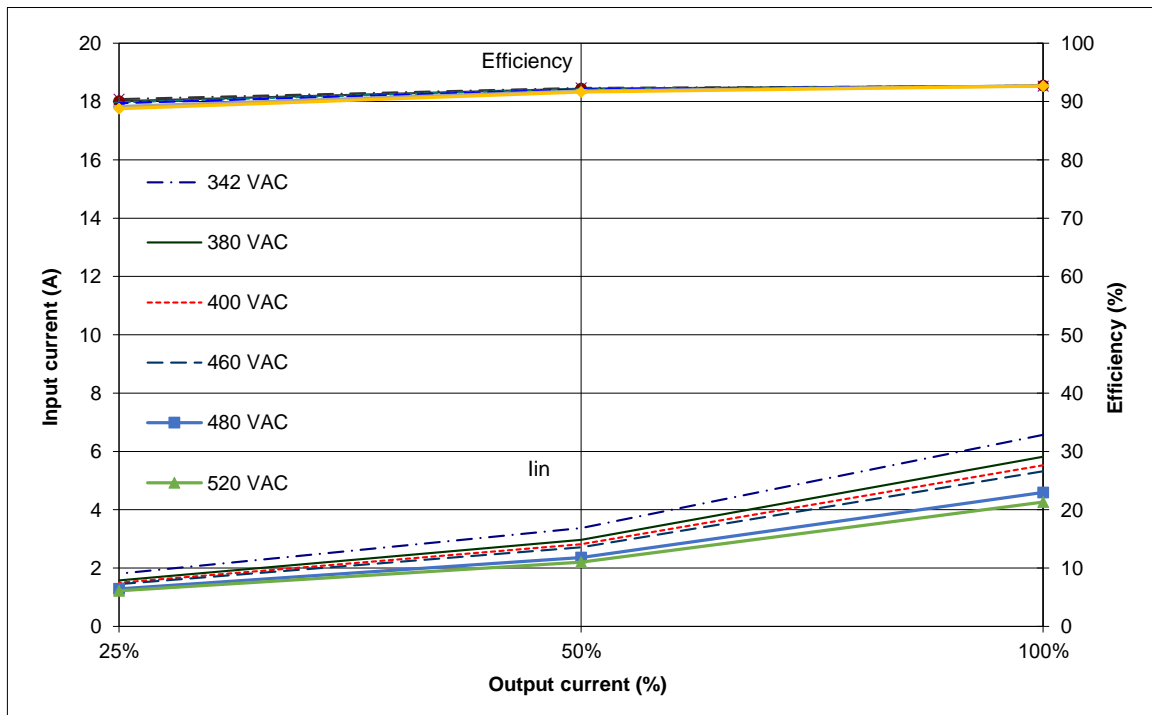
G60-56 3Φ400

Conditions:
 Vin: 342~460 VAC
 Vout: 100%
 Ta: 25°C



G60-56 3Φ480

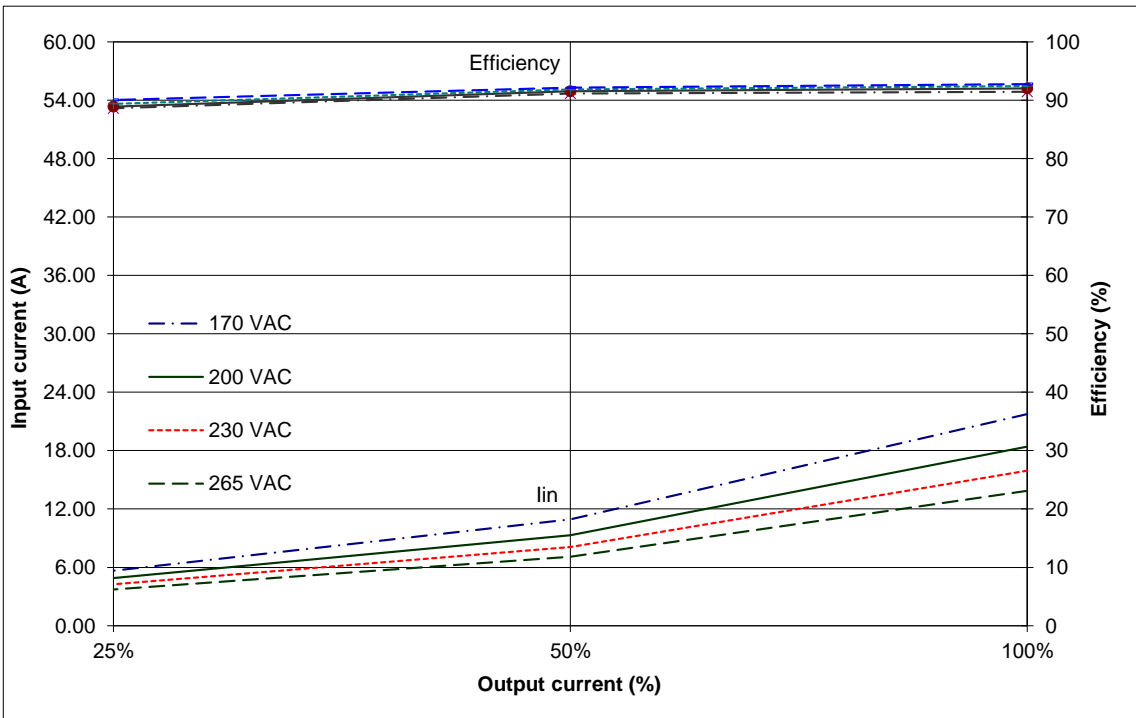
Conditions:
 Vin: 342~520 VAC
 Vout: 100%
 Ta: 25°C



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

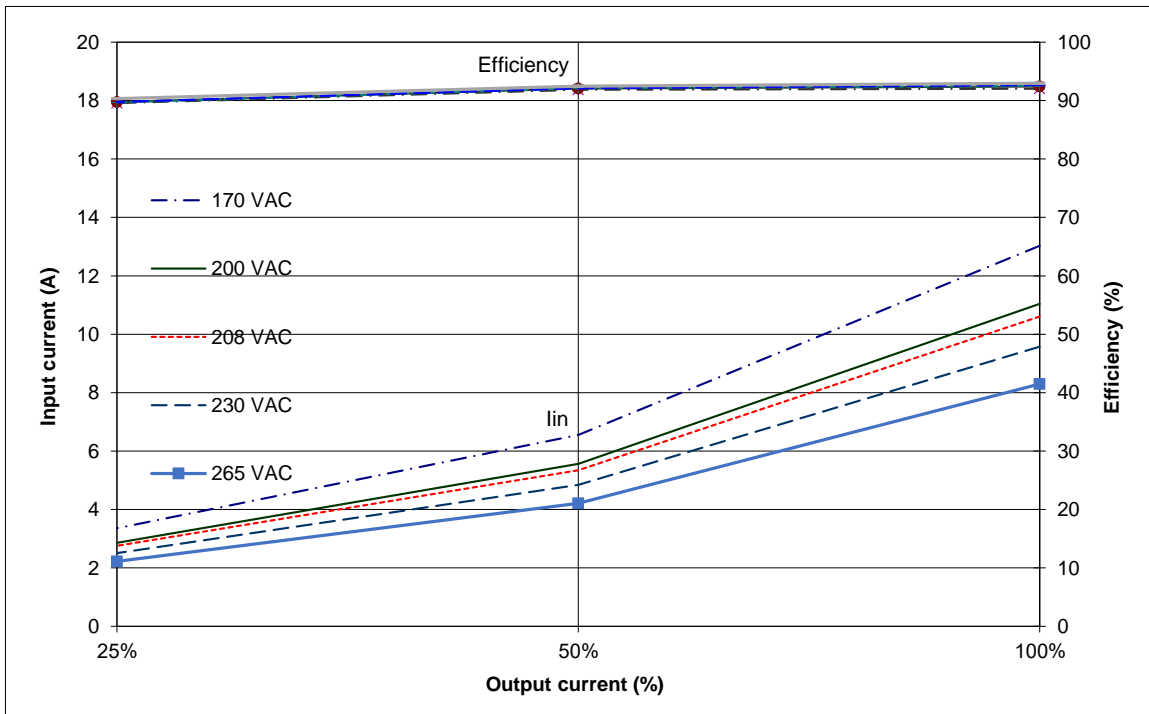
G150-22.5 1Φ200

Conditions:
 Vin: 170-265 VAC
 Vout: 100%
 Ta: 25°C



G150-22.5 3Φ200

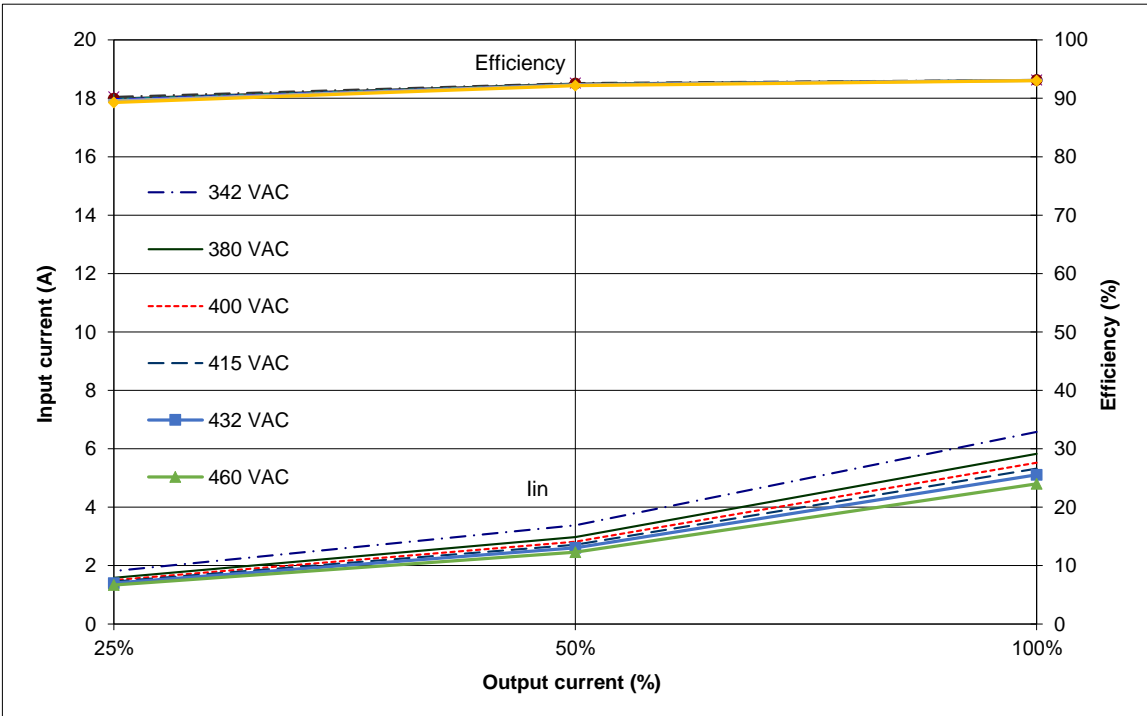
Conditions:
 Vin: 170-265 VAC
 Vout: 100%
 Ta: 25°C



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

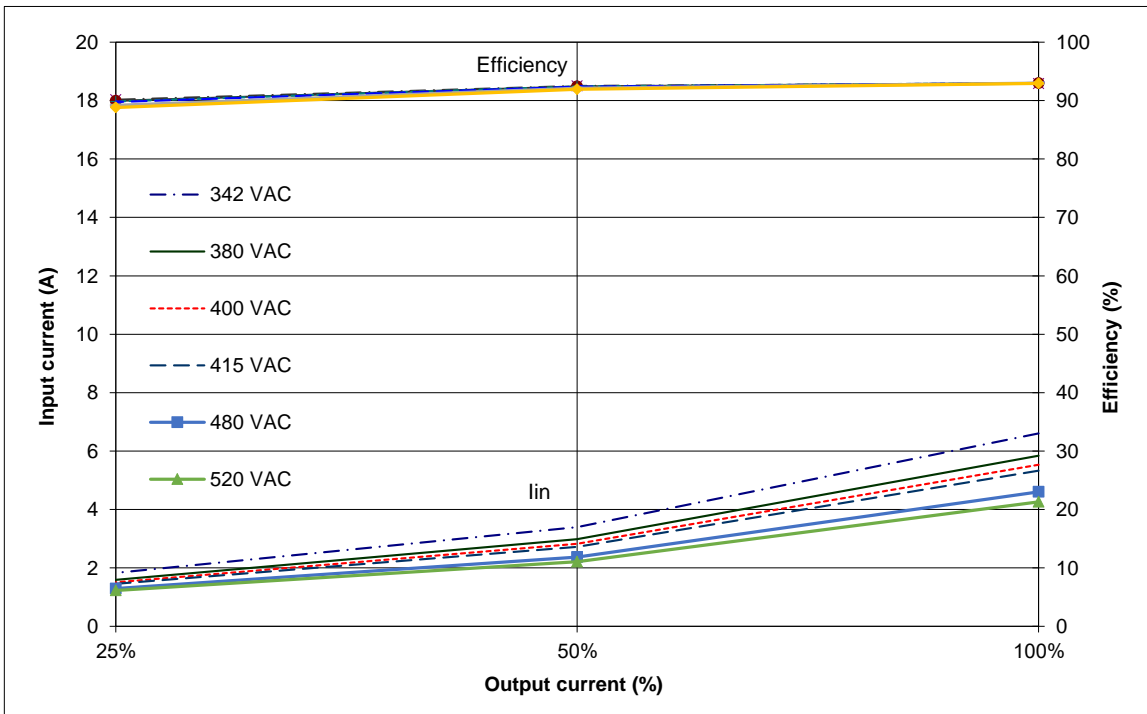
G150-22.5 3Φ400

Conditions:
 Vin: 342-460 VAC
 Vout: 100%
 Ta: 25°C



G150-22.5 3Φ480

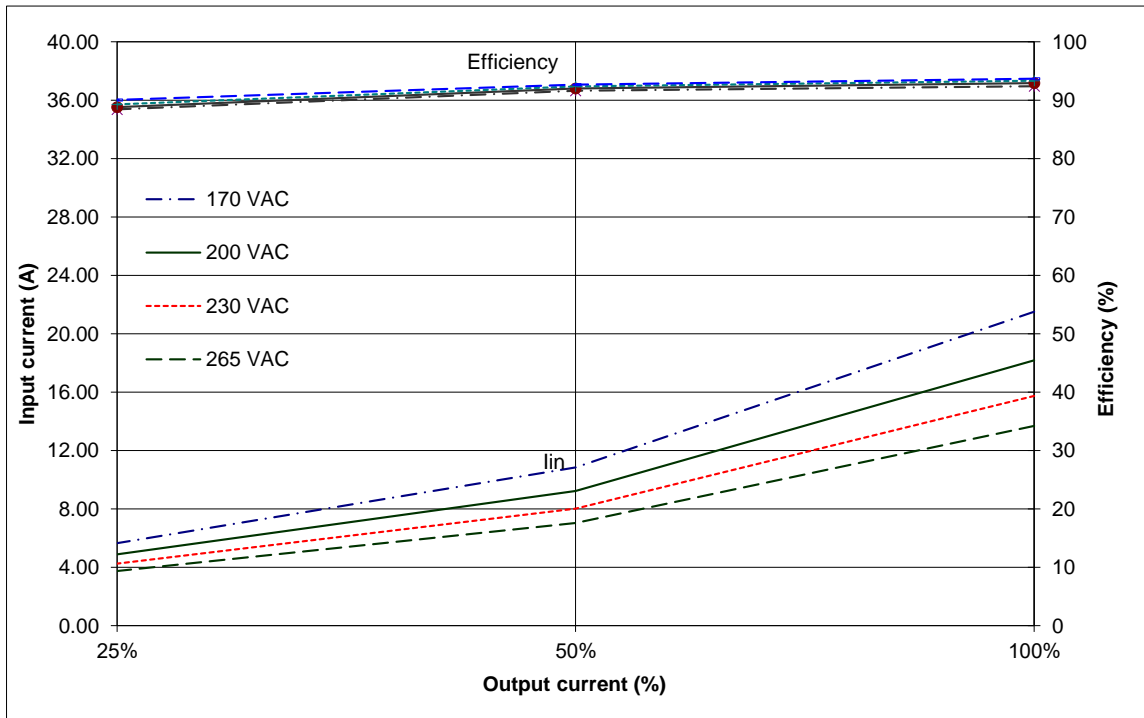
Conditions:
 Vin: 342-520 VAC
 Vout: 100%
 Ta: 25°C



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

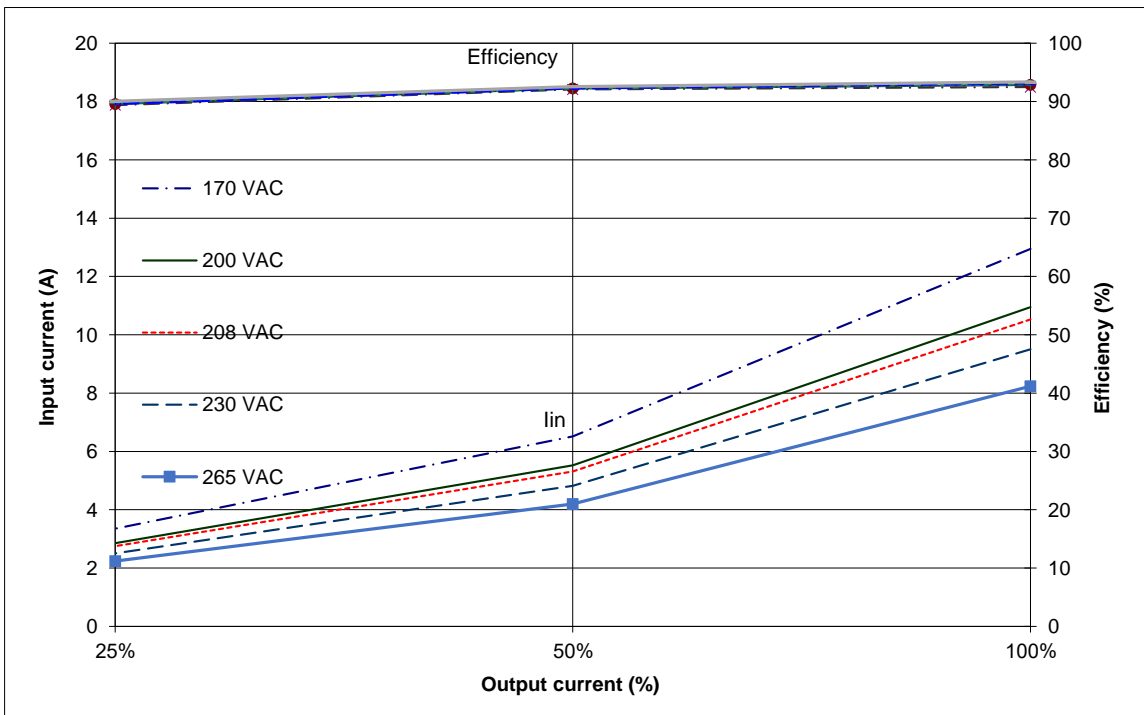
G600-5.6 1Φ200

Conditions:
 Vin: 170~265 VAC
 Vout: 100%
 Ta: 25°C



G600-5.6 3Φ200

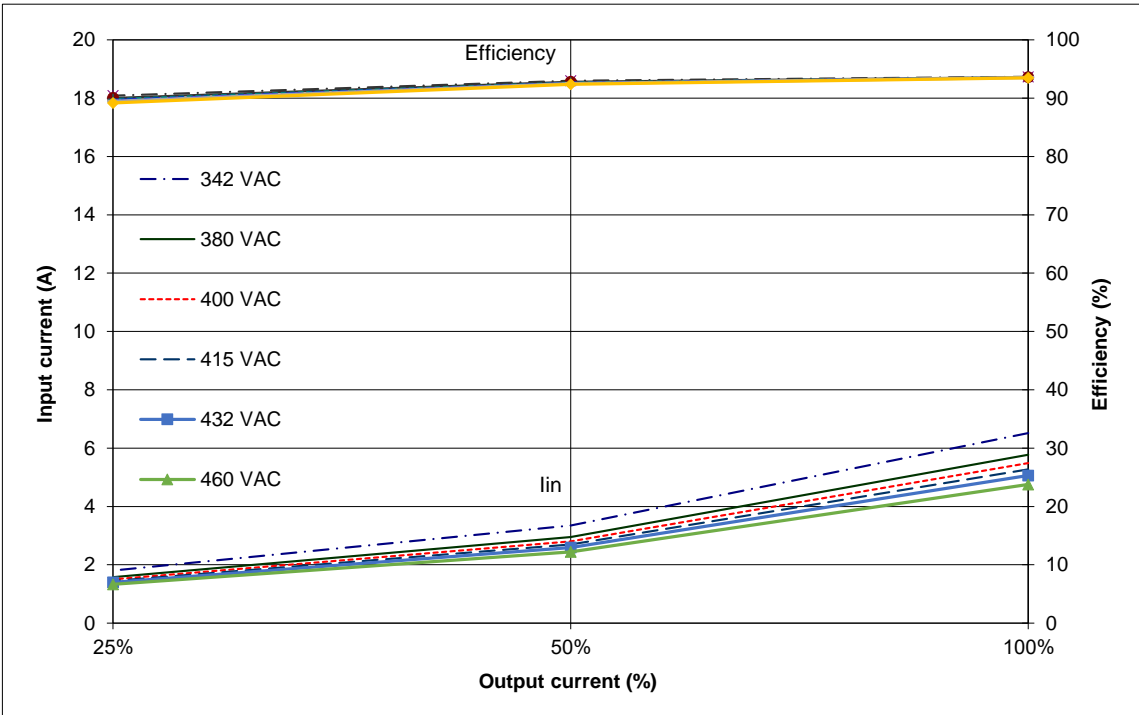
Conditions:
 Vin: 170~265 VAC
 Vout: 100%
 Ta: 25°C



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

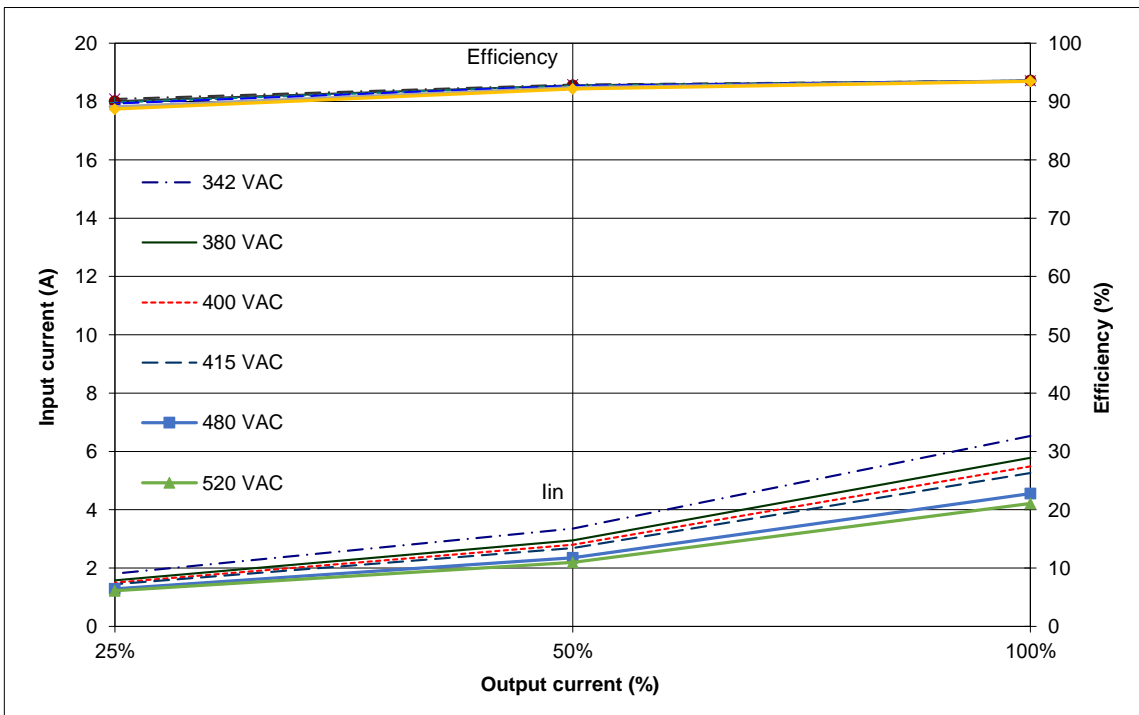
G600-5.6 3Φ400

Conditions:
 Vin: 342-460 VAC
 Vout: 100%
 Ta: 25°C



G600-5.6 3Φ480

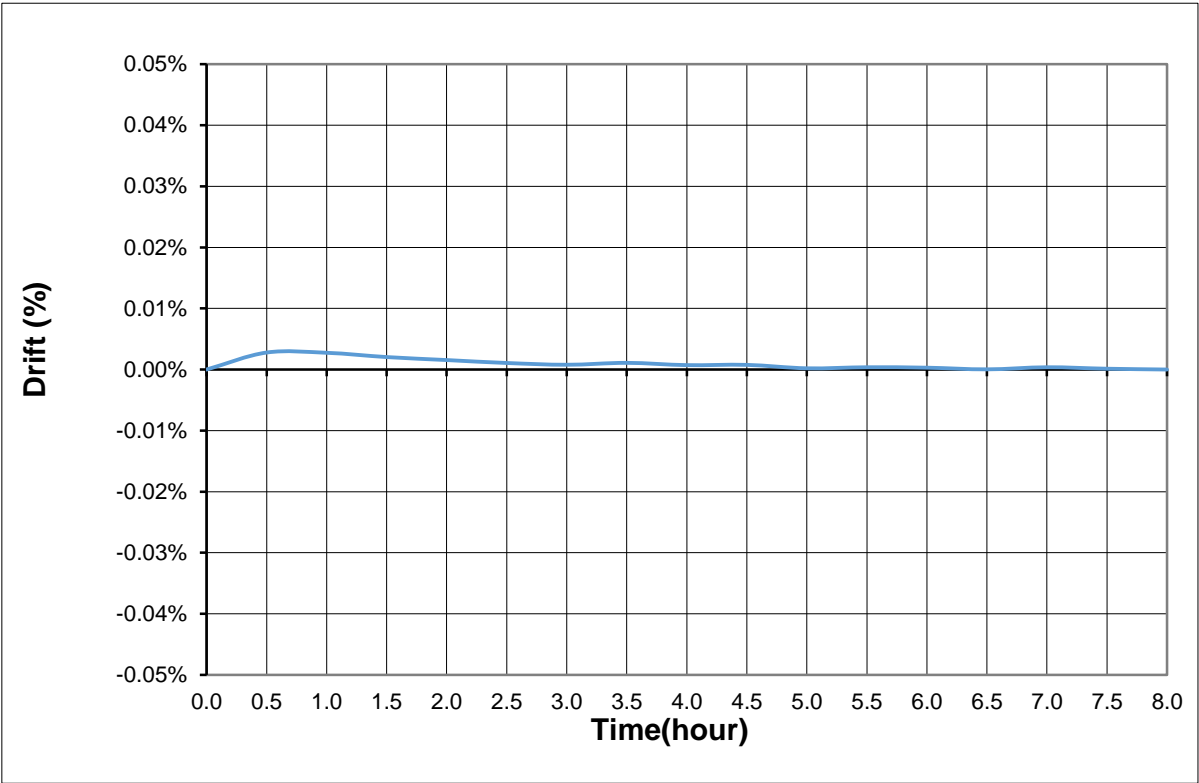
Conditions:
 Vin: 342-520 VAC
 Vout: 100%
 Ta: 25°C



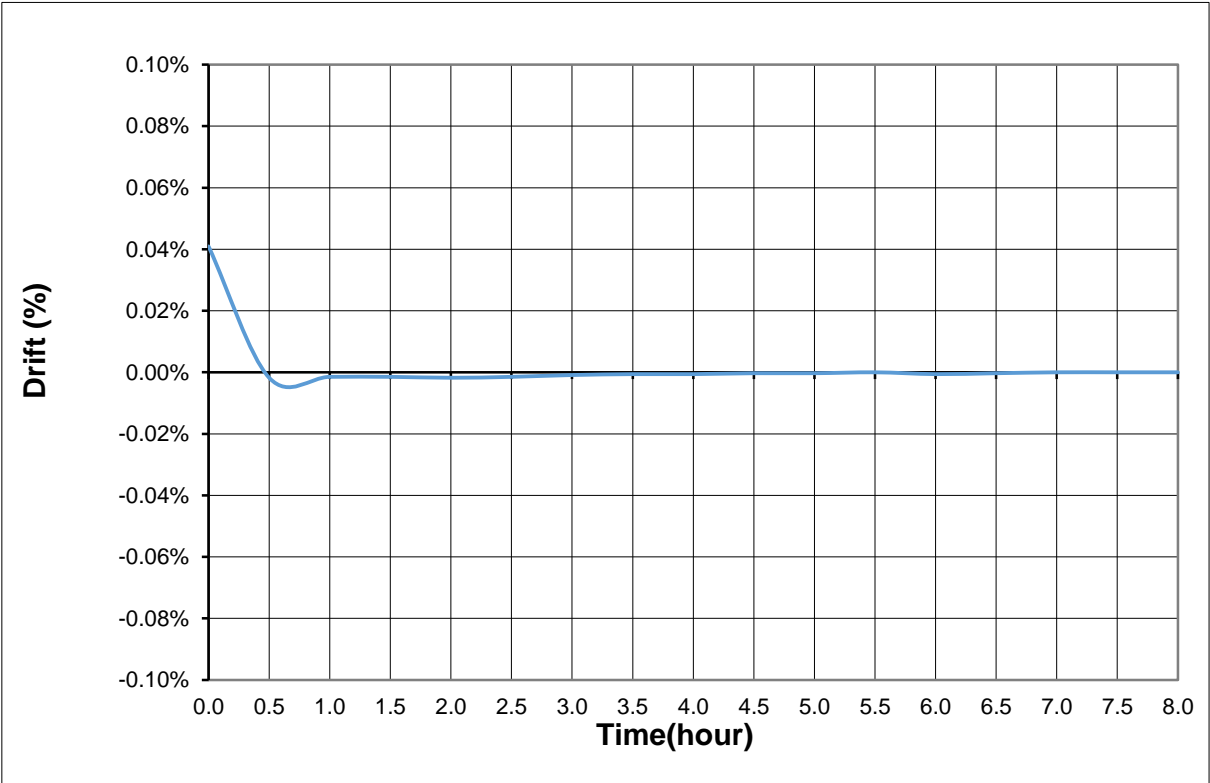
2.2 Warm up drift & stability

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

G10-340 C.V mode



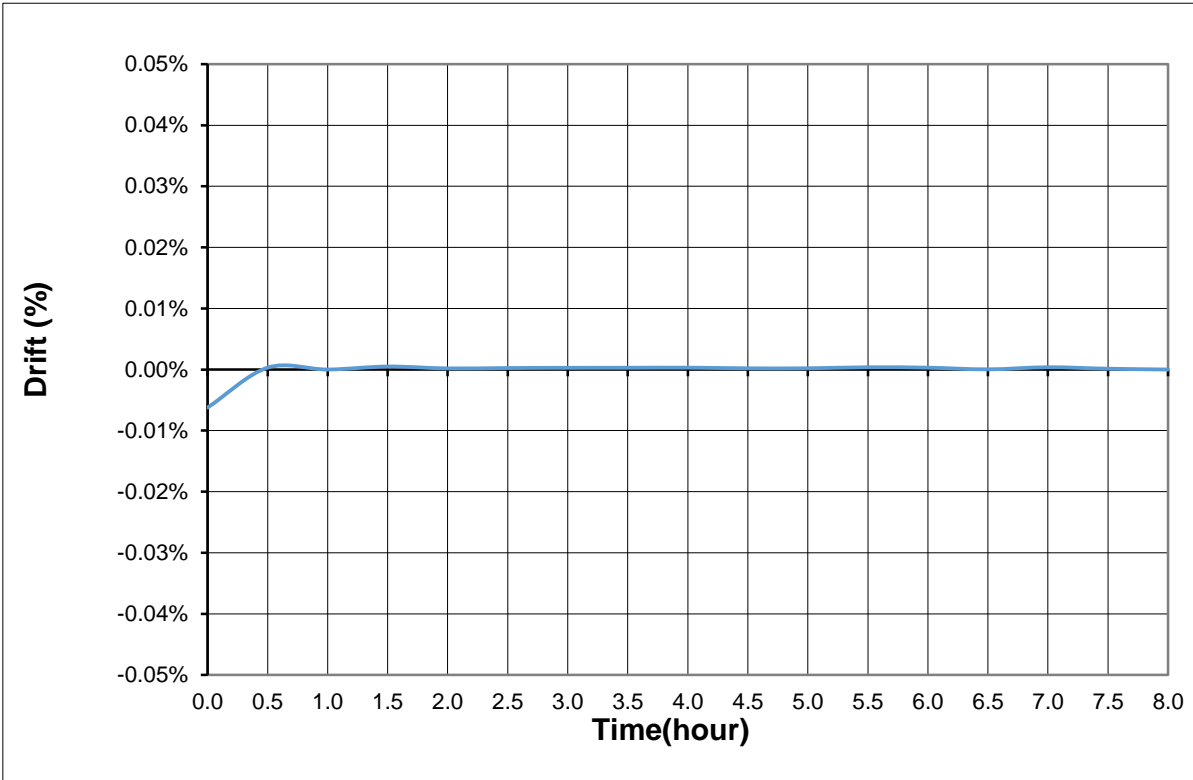
G10-340 C.C mode



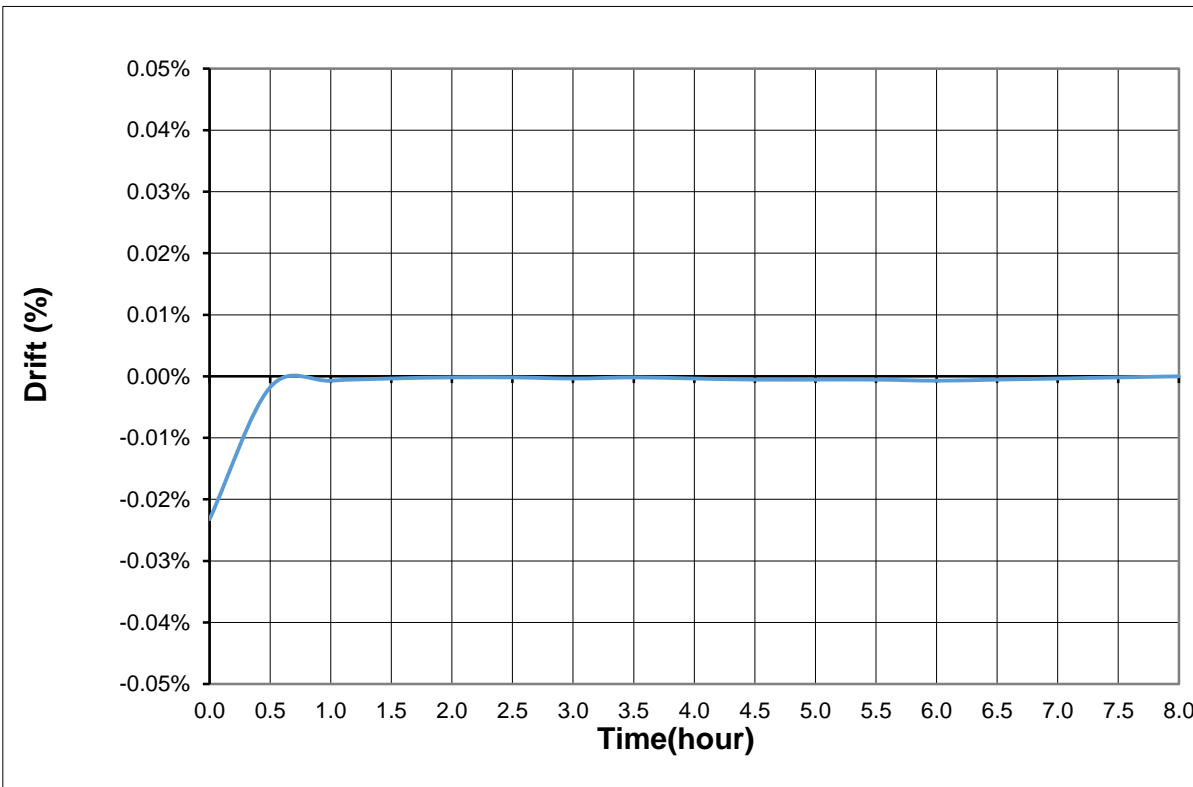
2.2 Warm up drift & stability

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

G60-56 C.V mode



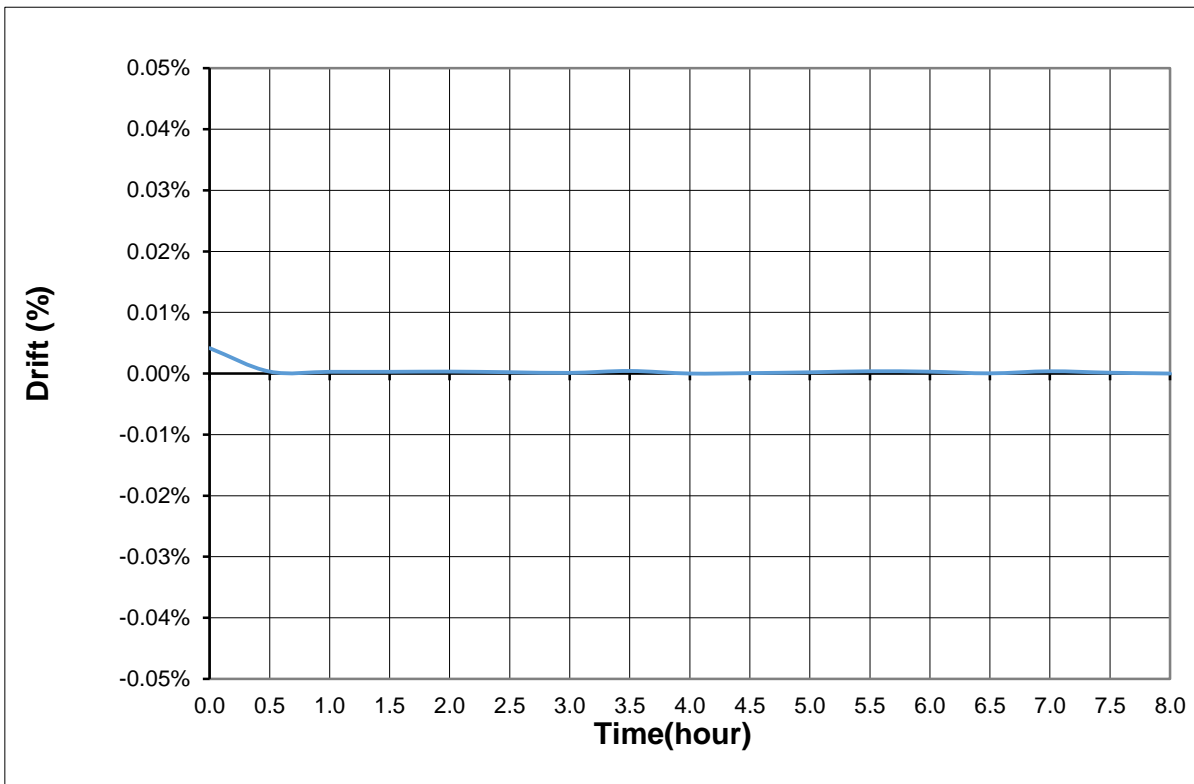
G60-56 C.C mode



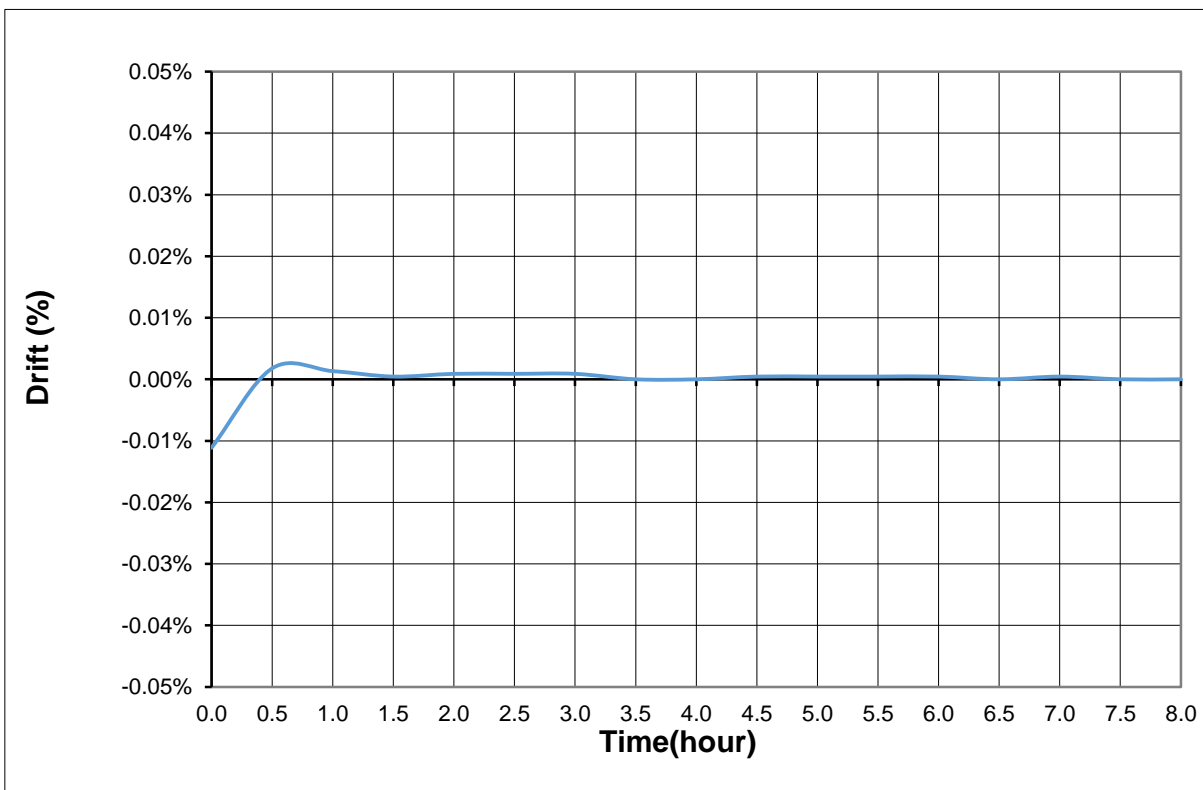
2.2 Warm up drift & stability

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

G150-22.5 C.V mode



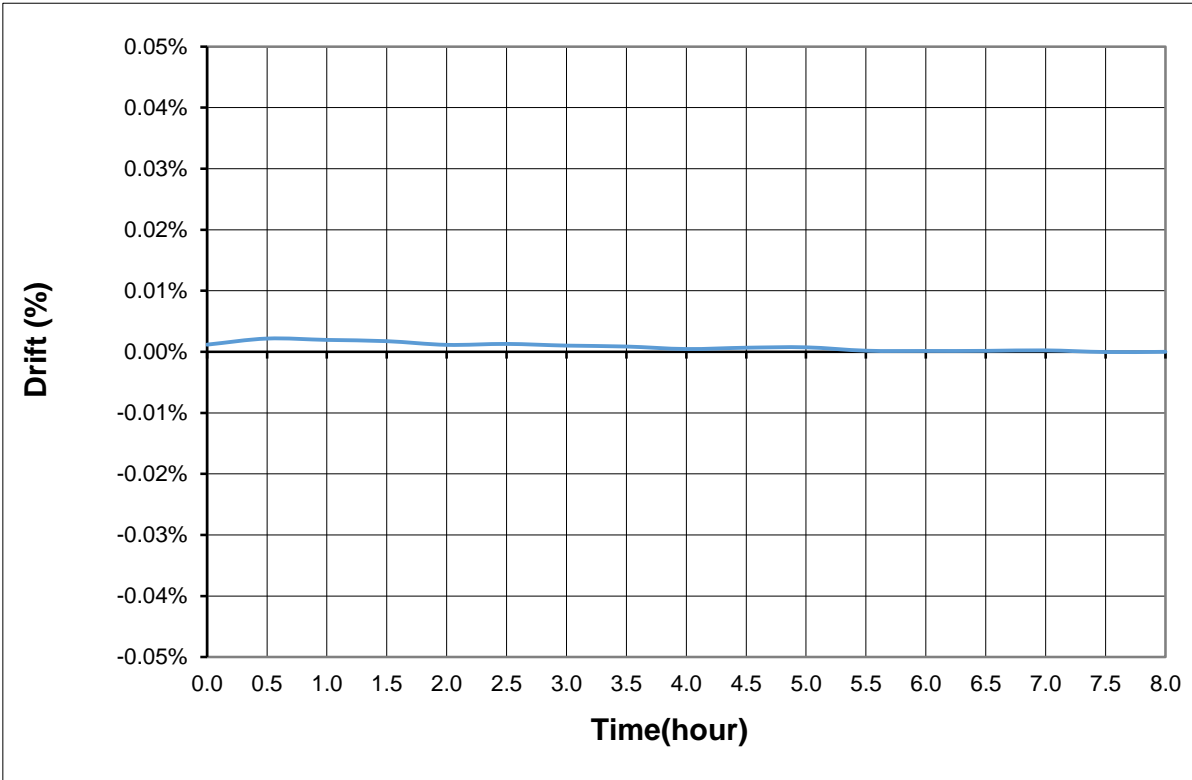
G150-22.5 C.C mode



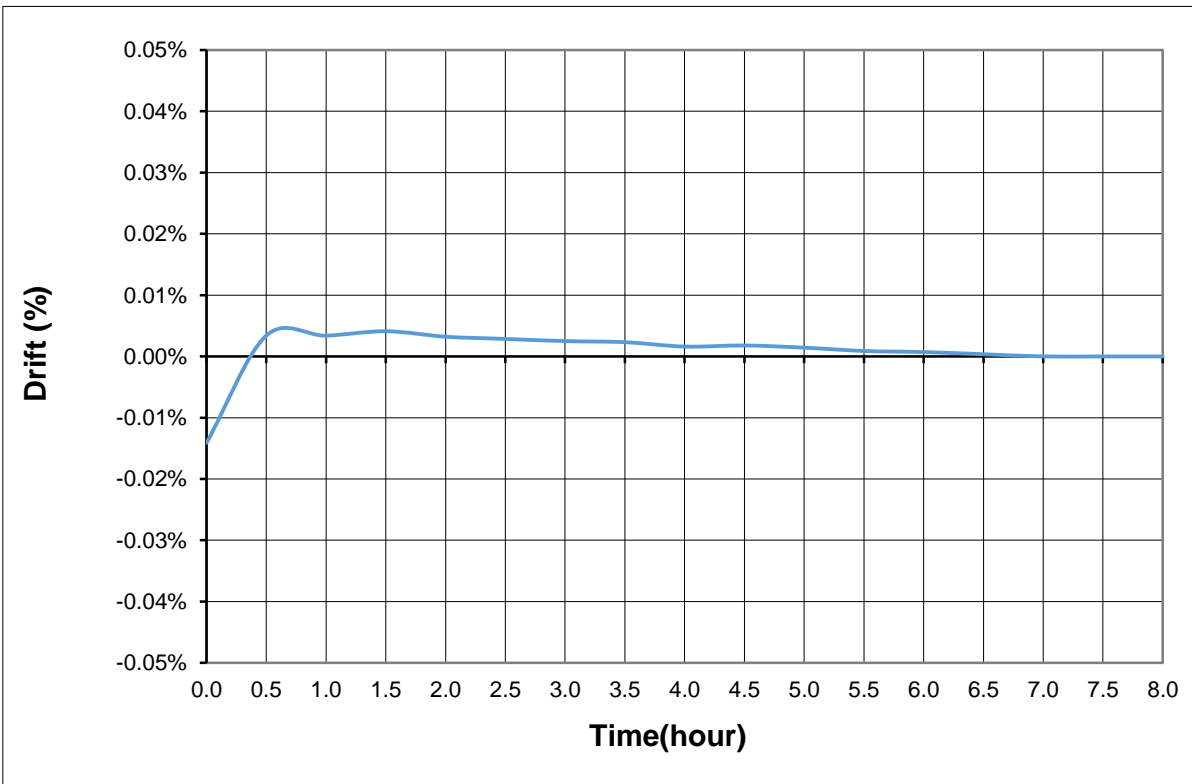
2.2 Warm up drift & stability

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

G600-5.6 C.V mode



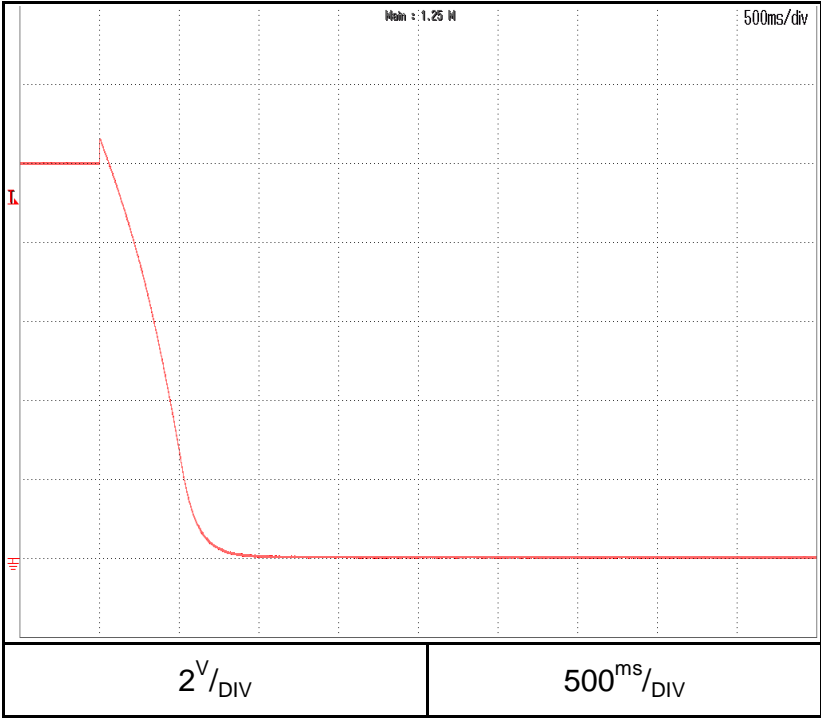
G600-5.6 C.C mode



2.3 Over voltage protection (OVP) characteristic

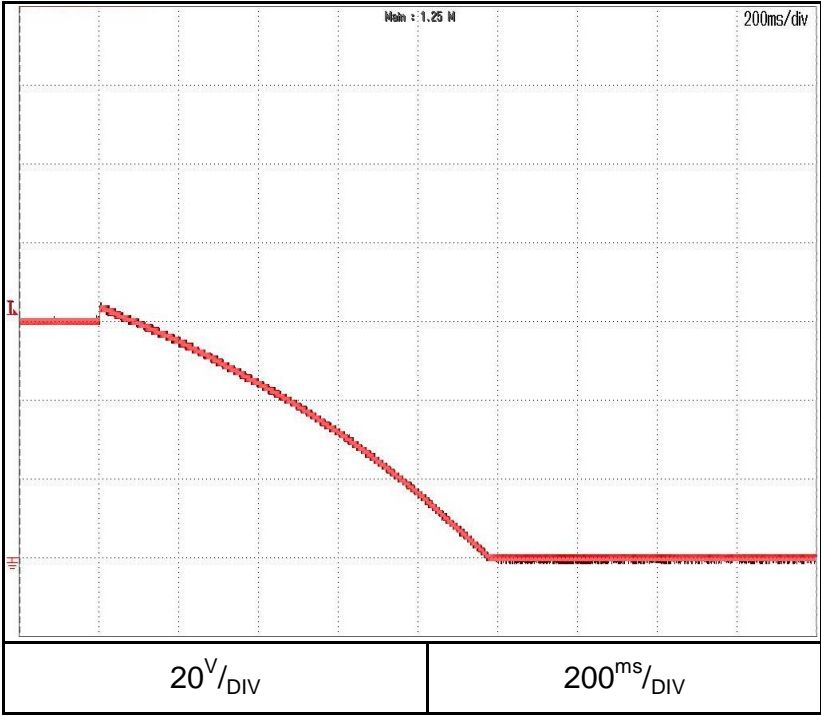
Conditions: Vset: 100%
Iout: 0%
Ta = 25°C

G10-340



OVP setting:10.5V

G60-56

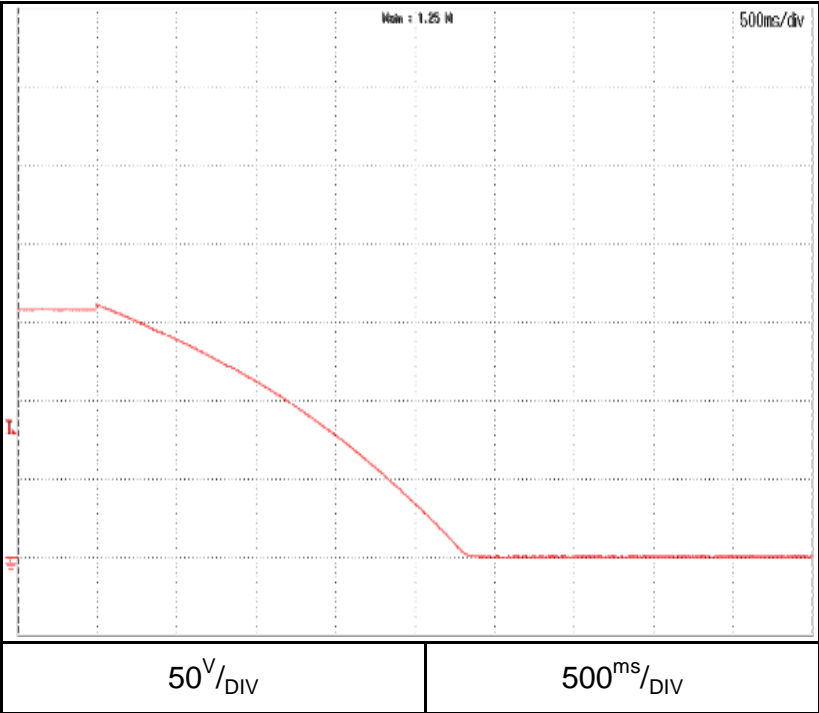


OVP setting:63V

2.3 Over voltage protection (OVP) characteristic

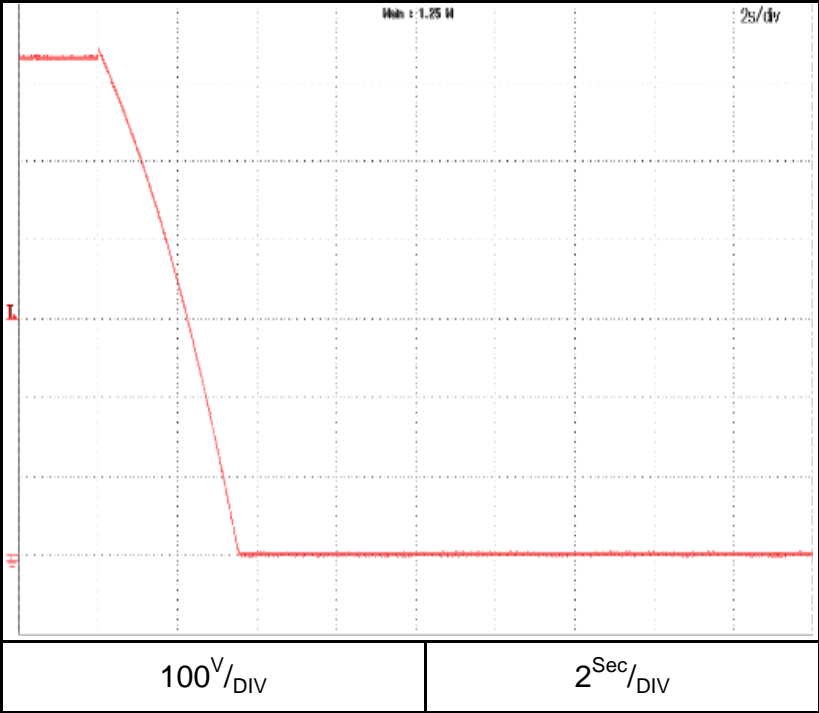
Conditions: Vset: 100%
Iout: 0%
Ta = 25°C

G150-22.5



OVP setting:157.5V

G600-5.6

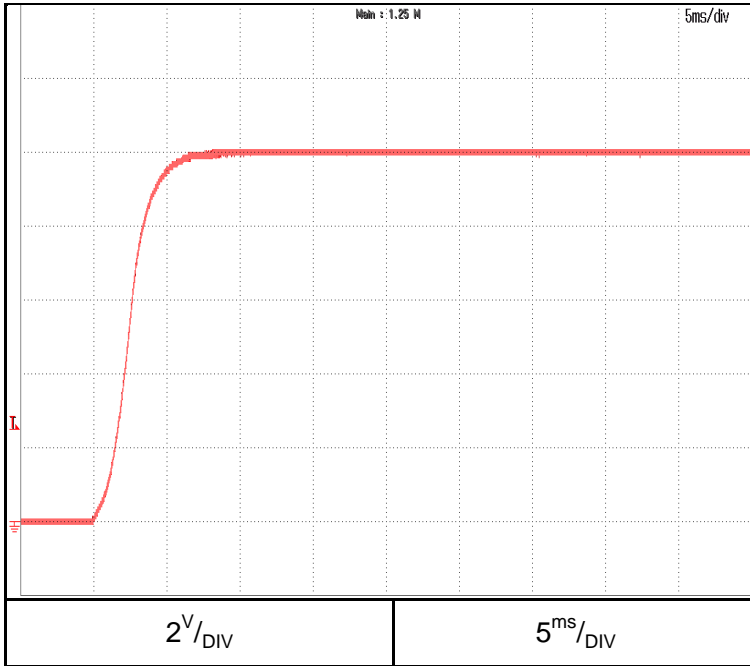


OVP setting:630V

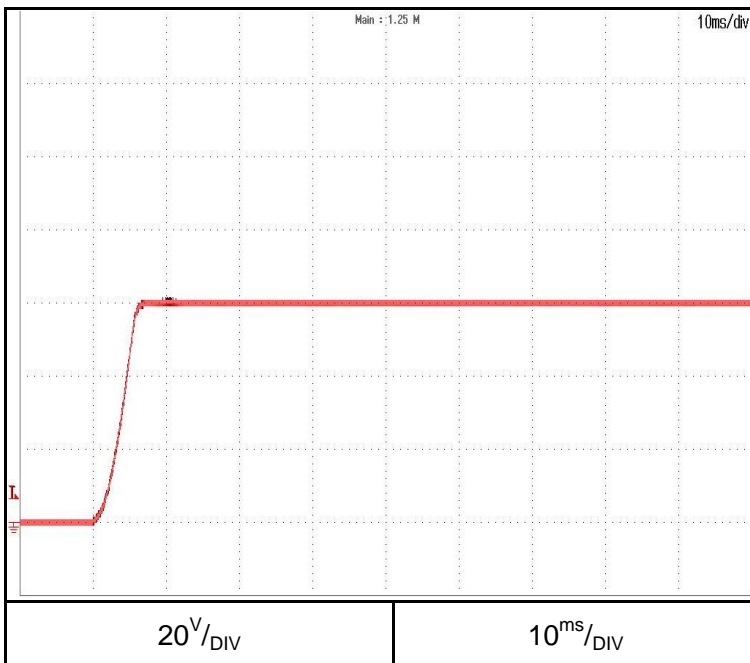
2.4 ON/OFF Output rise characteristics
C.V mode

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

G10-340



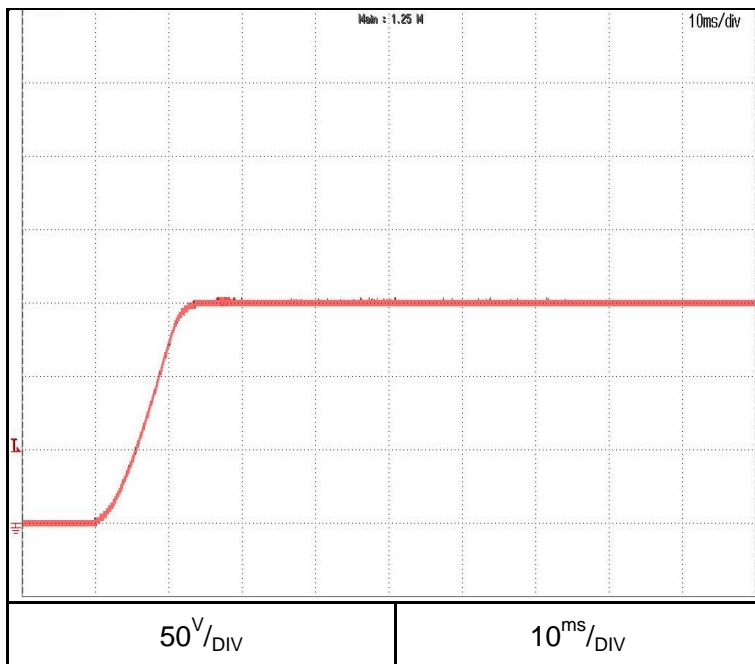
G60-56



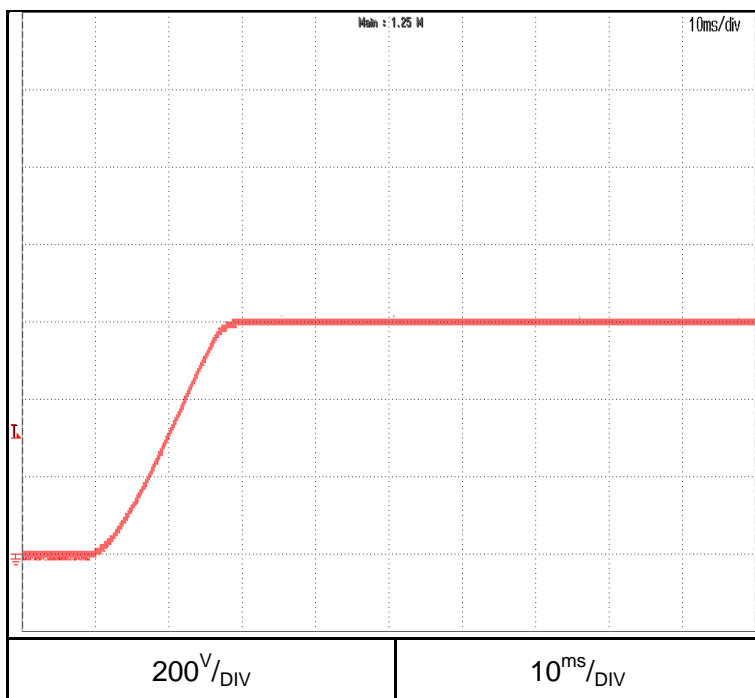
2.4 ON/OFF Output rise characteristics
C.V mode

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

G150-22.5



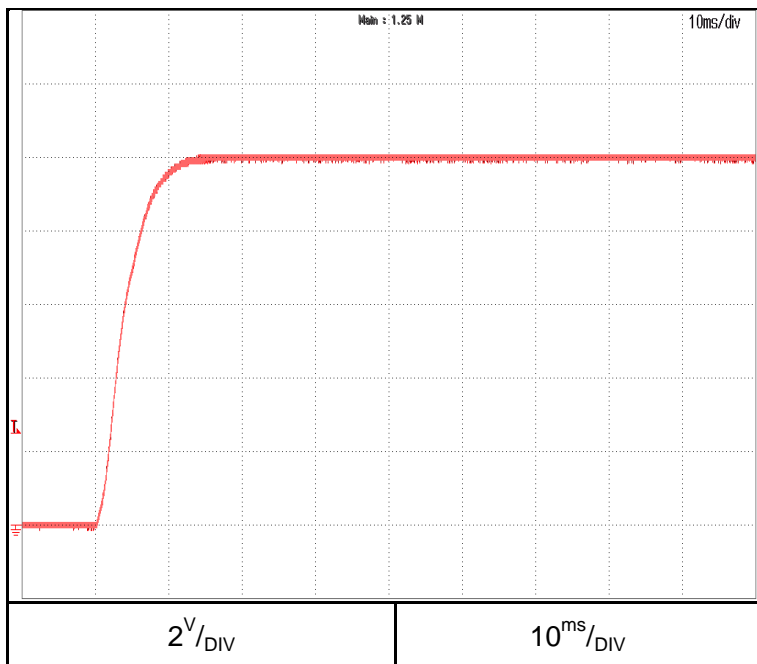
G600-5.6



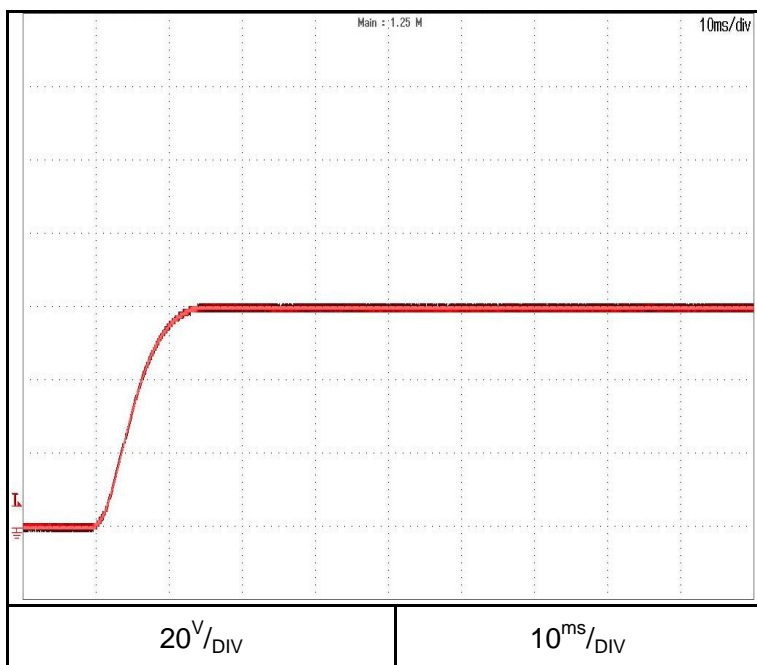
2.4 ON/OFF Output rise characteristics
C.V mode

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

G10-340



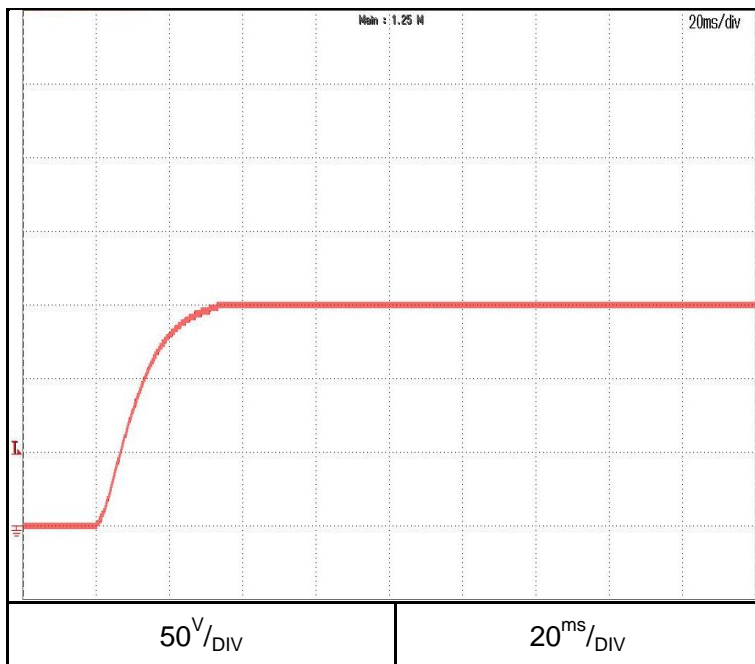
G60-56



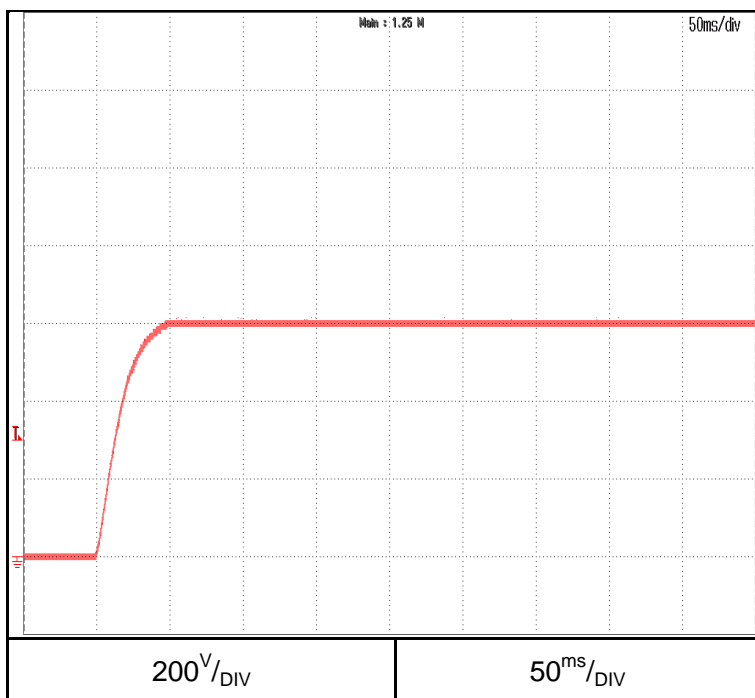
2.4 ON/OFF Output rise characteristics
C.V mode

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

G150-22.5



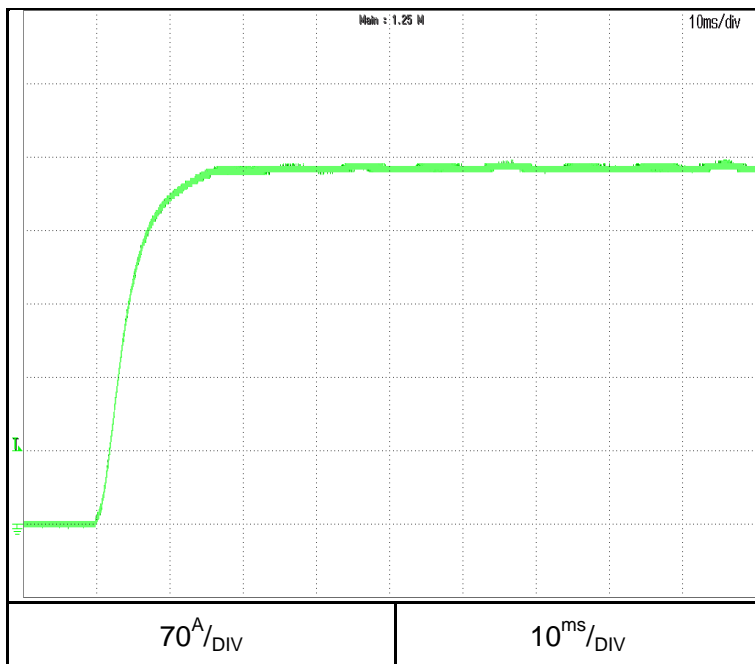
G600-5.6



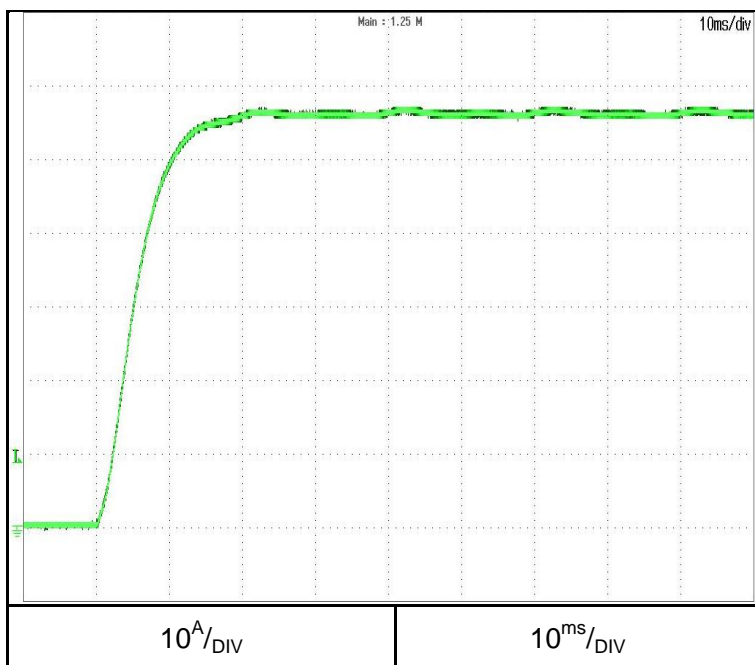
2.4 ON/OFF Output rise characteristics
C.C mode

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

G10-340



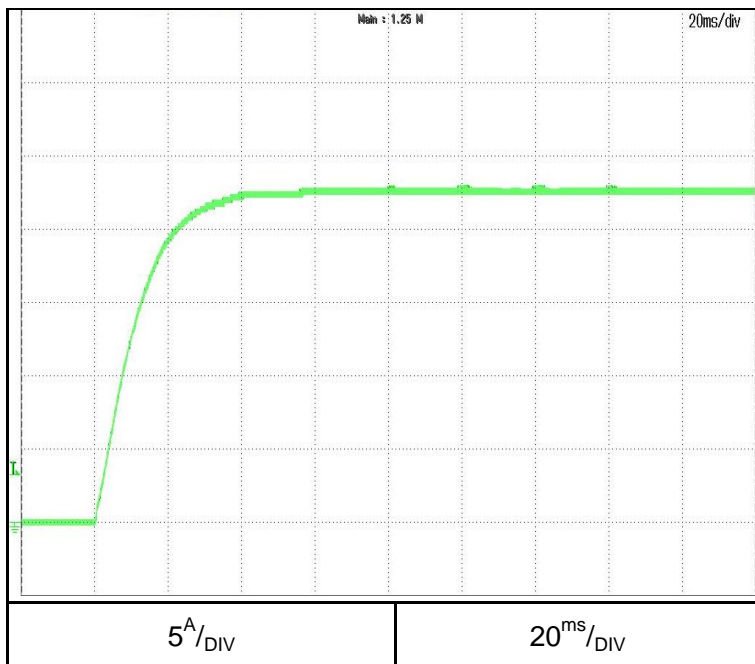
G60-56



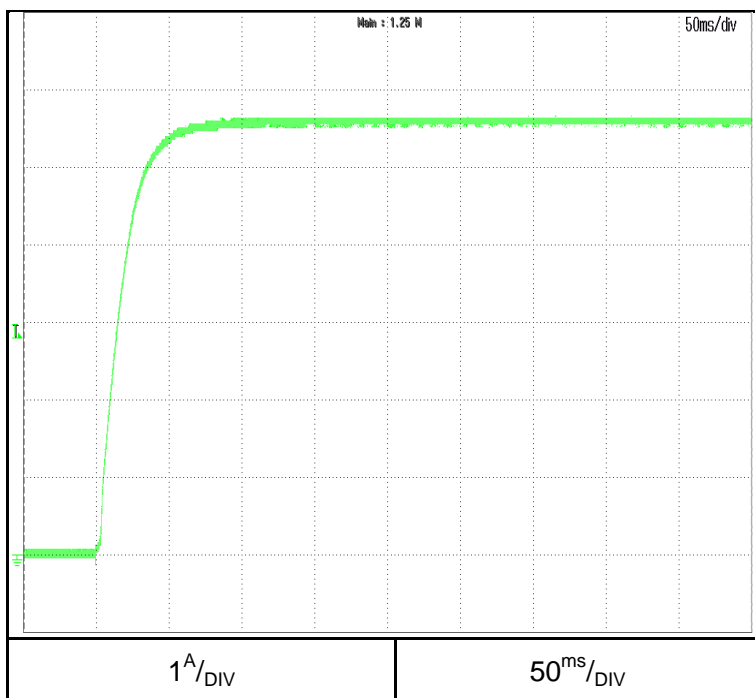
2.4 ON/OFF Output rise characteristics
C.C mode

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

G150-22.5



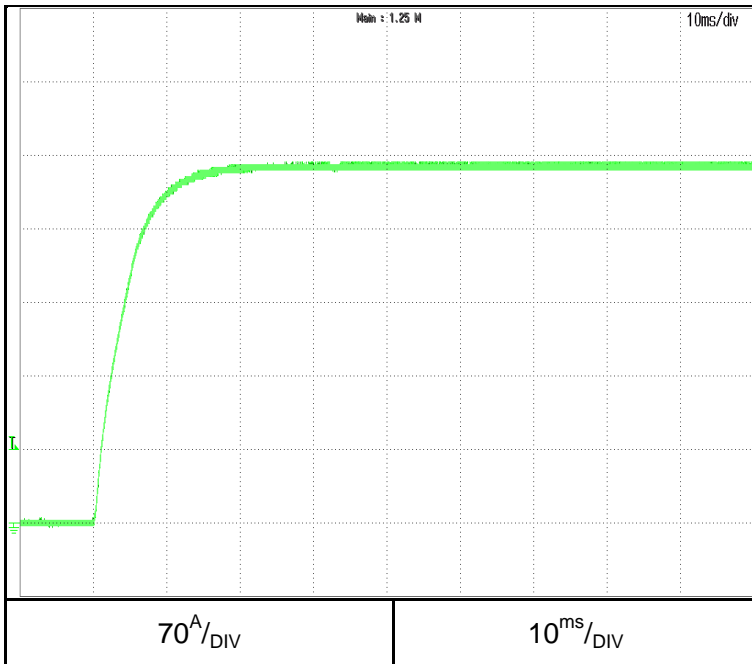
G600-5.6



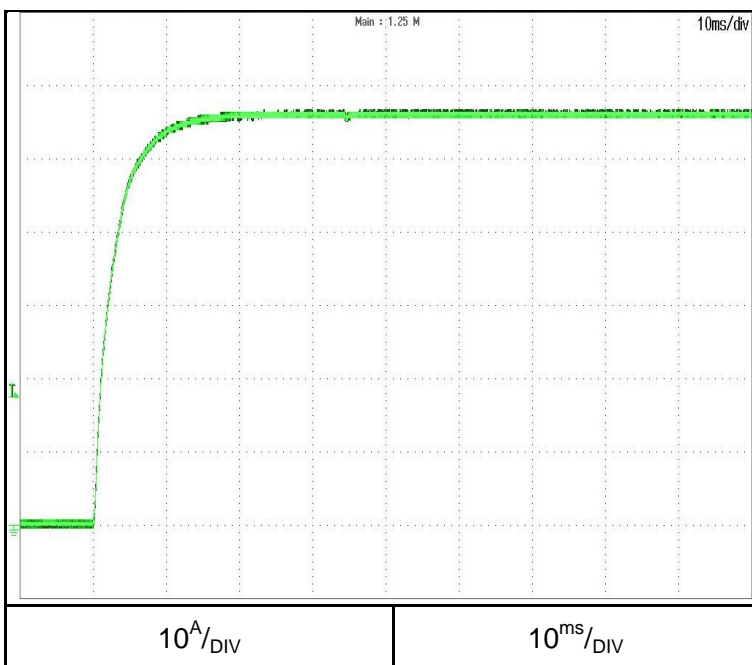
2.4 ON/OFF Output rise characteristics
C.C mode

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

G10-340



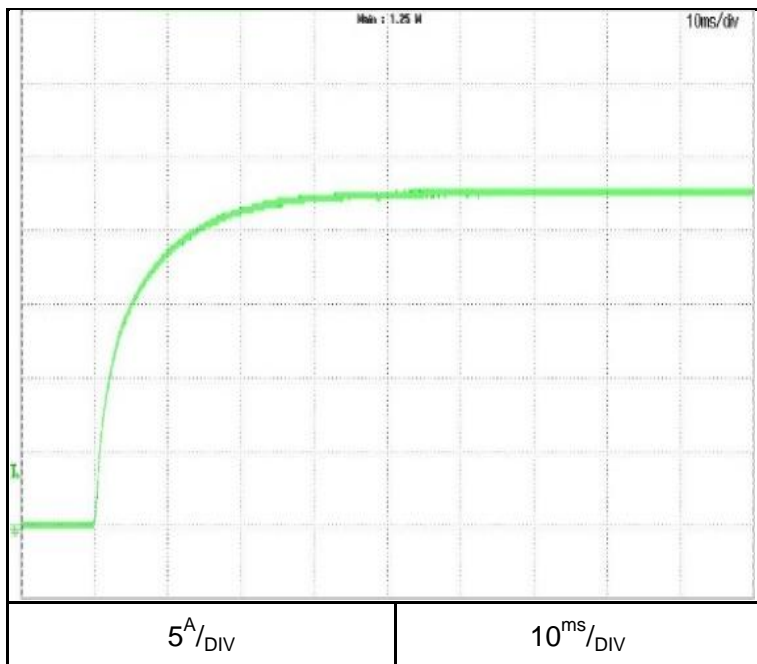
G60-56



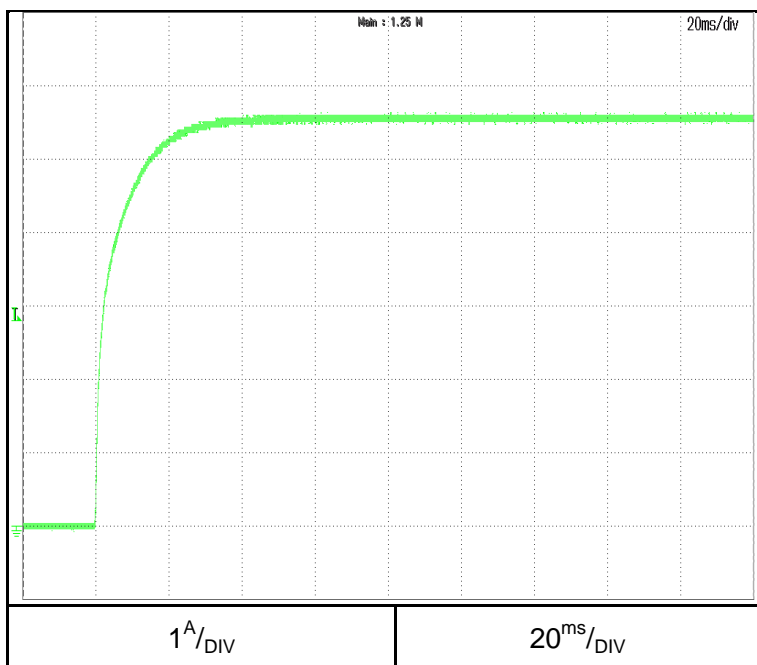
2.4 ON/OFF Output rise characteristics
C.C mode

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

G150-22.5



G600-5.6



2.5 ON/OFF Output fall characteristics

C.V mode

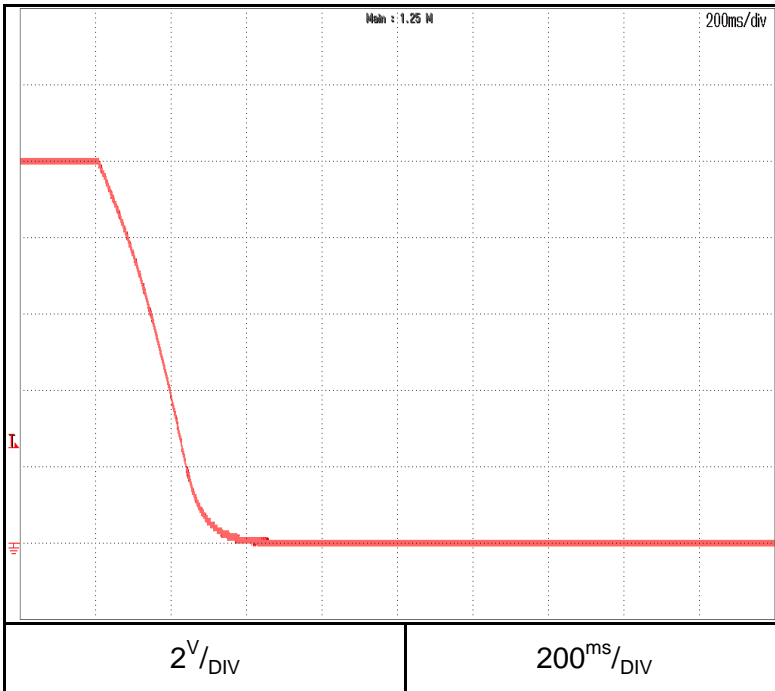
Conditions: Vin:Nominal

Vout: 100%

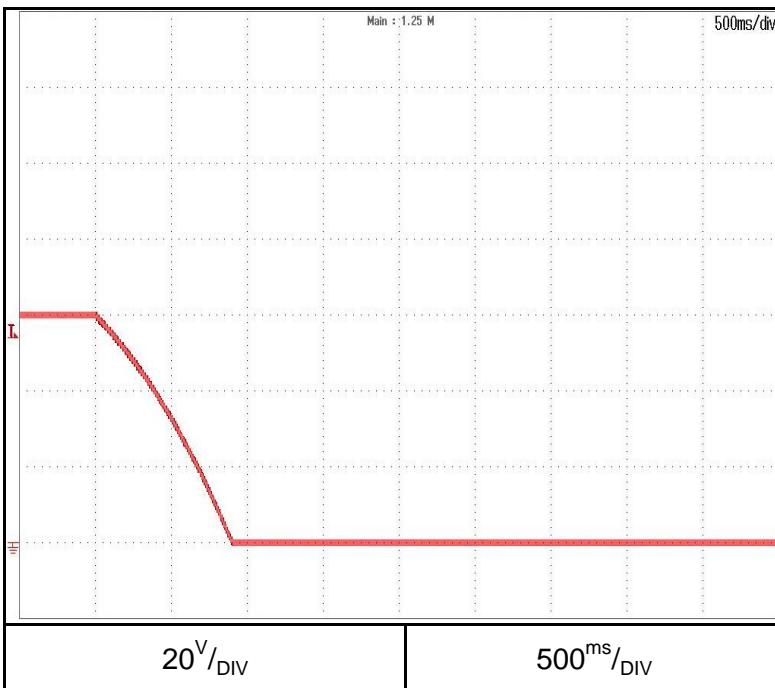
Iout: 0%

Ta = 25°C

G10-340



G60-56



2.5 ON/OFF Output fall characteristics

C.V mode

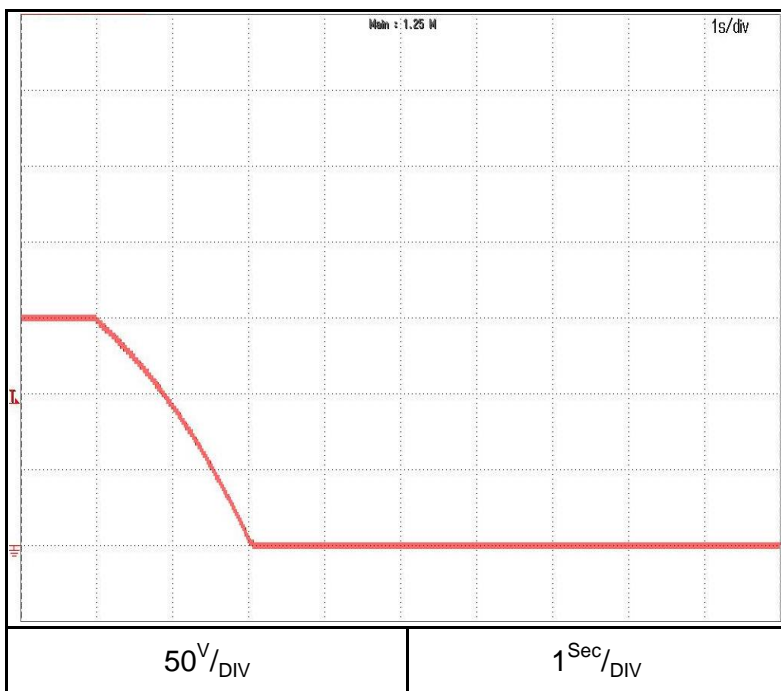
Conditions: Vin:Nominal

Vout: 100%

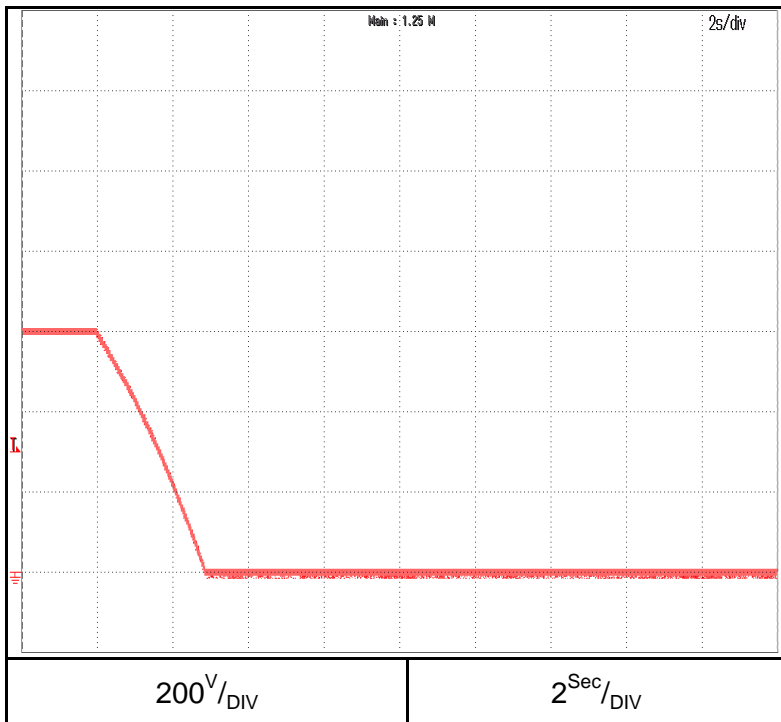
Iout: 0%

Ta = 25°C

G150-22.5



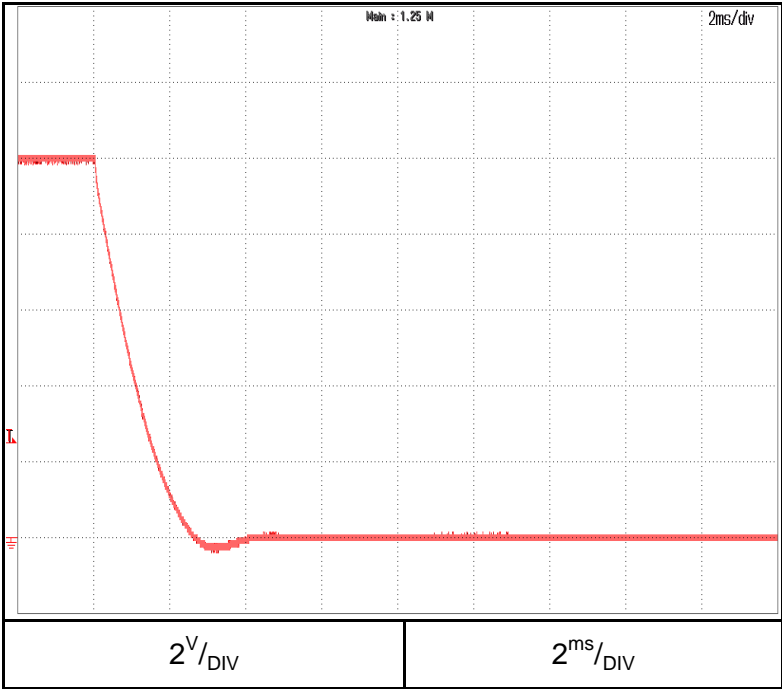
G600-5.6



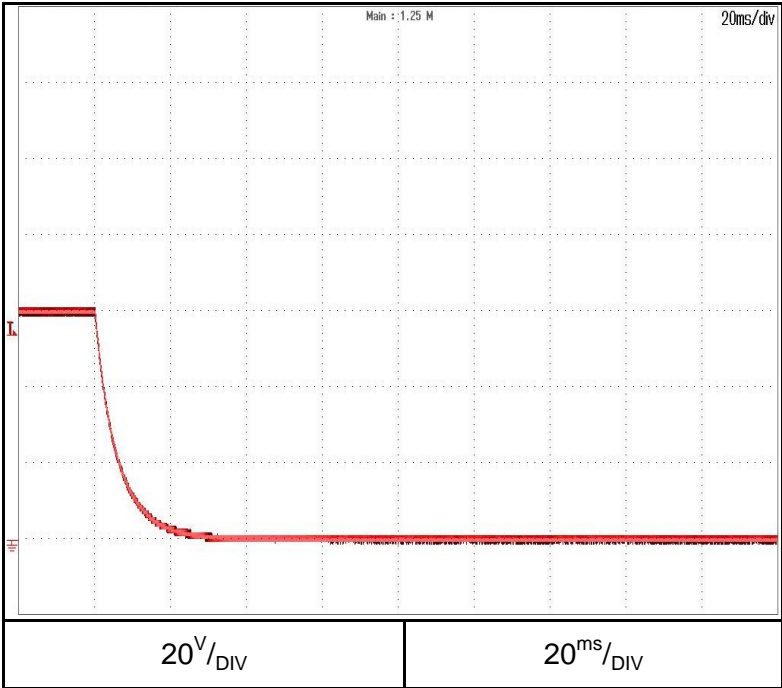
2.5 ON/OFF Output fall characteristics
C.V mode

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

G10-340



G60-56



2.5 ON/OFF Output fall characteristics

C.V mode

Conditions: Vin:Nominal

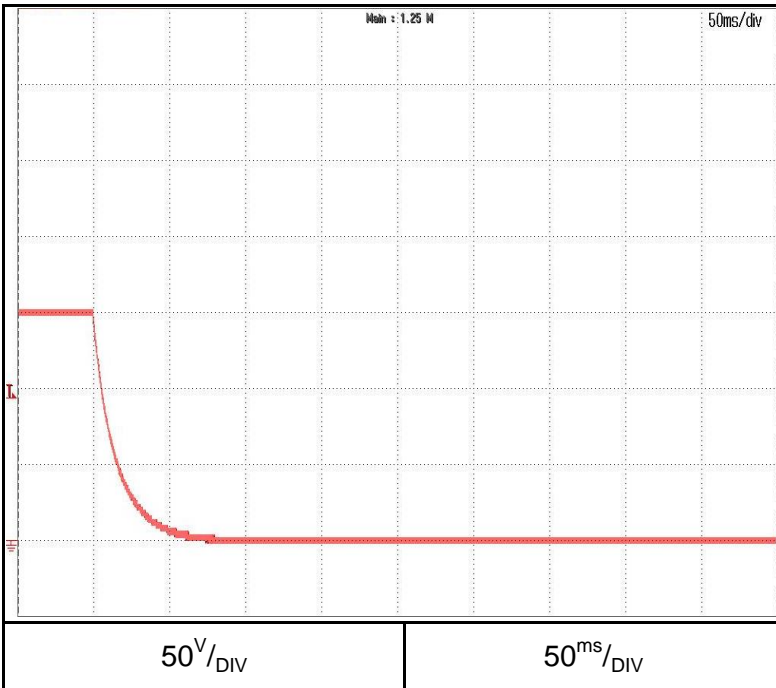
Vout: 100%

Iout: 100%

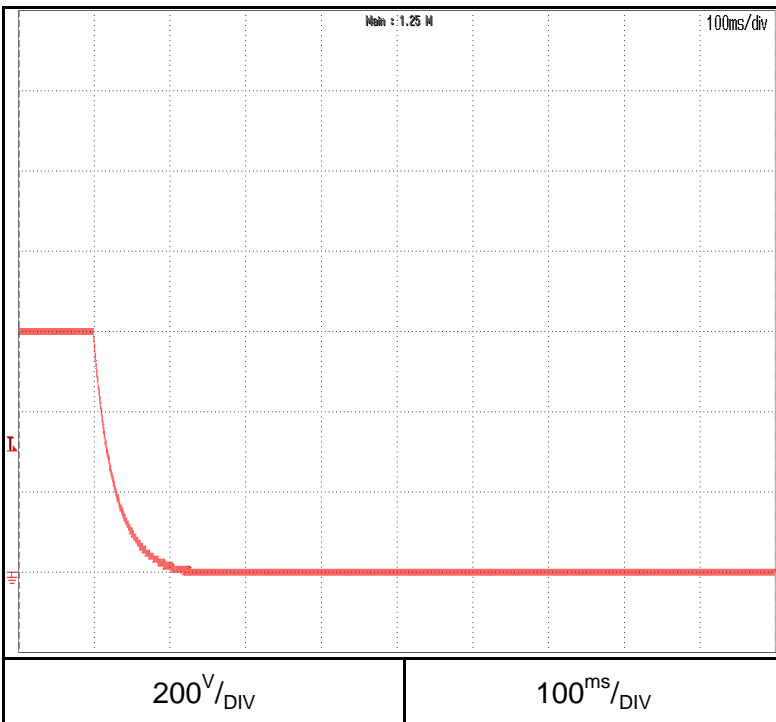
Load: CR

Ta = 25°C

G150-22.5



G600-5.6



2.5 ON/OFF Output fall characteristics

C.C mode

Conditions: Vin:Nominal

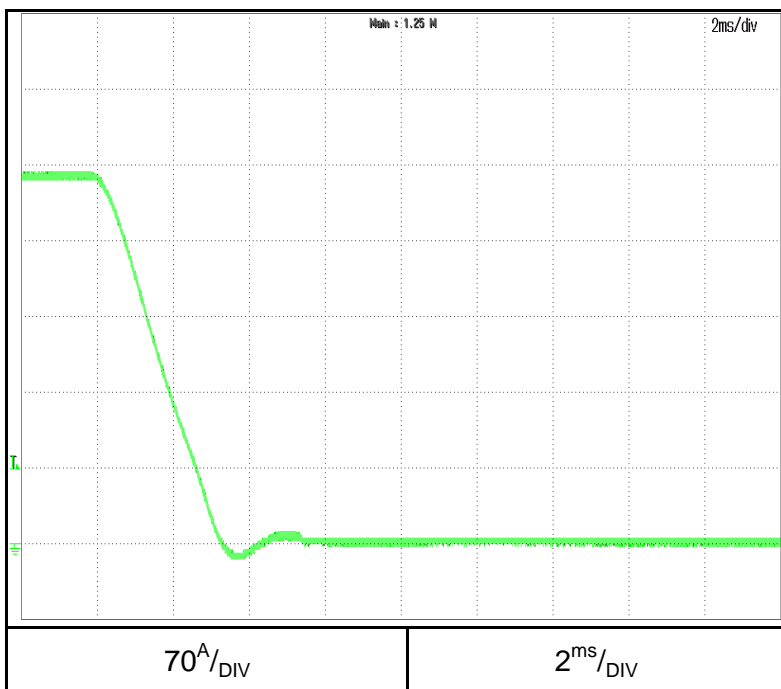
Vout: 100%

Iout: 100%

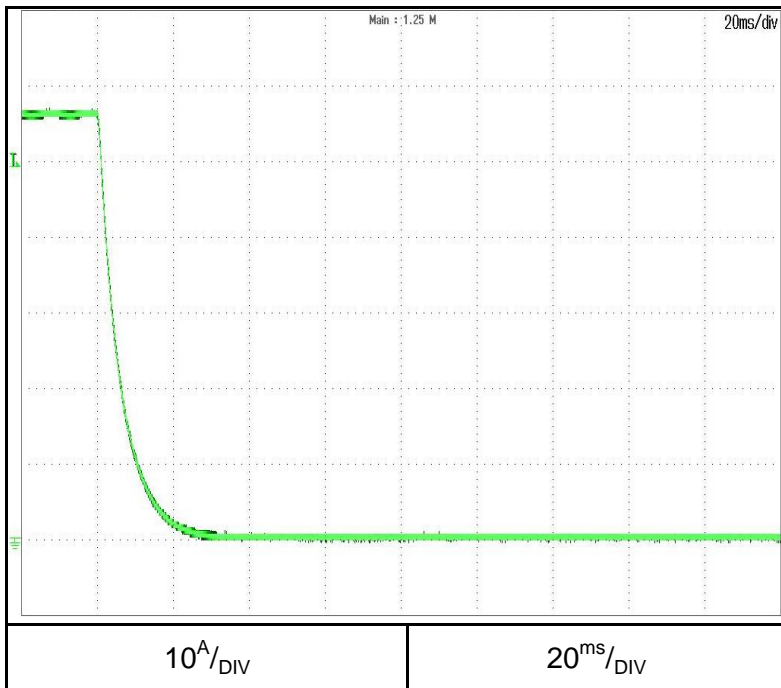
Load: CR

Ta = 25°C

G10-340



G60-56



2.5 ON/OFF Output fall characteristics

C.C mode

Conditions: Vin:Nominal

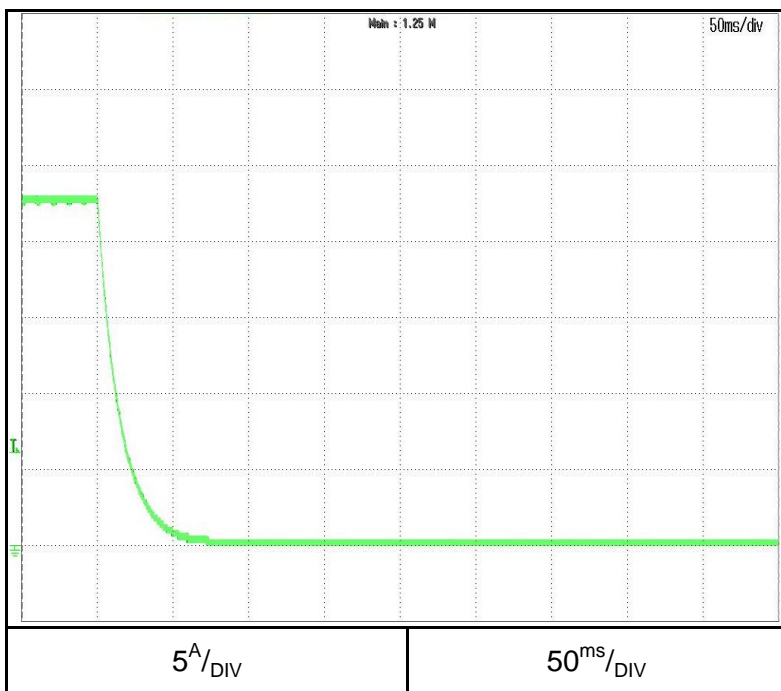
Vout: 100%

Iout: 100%

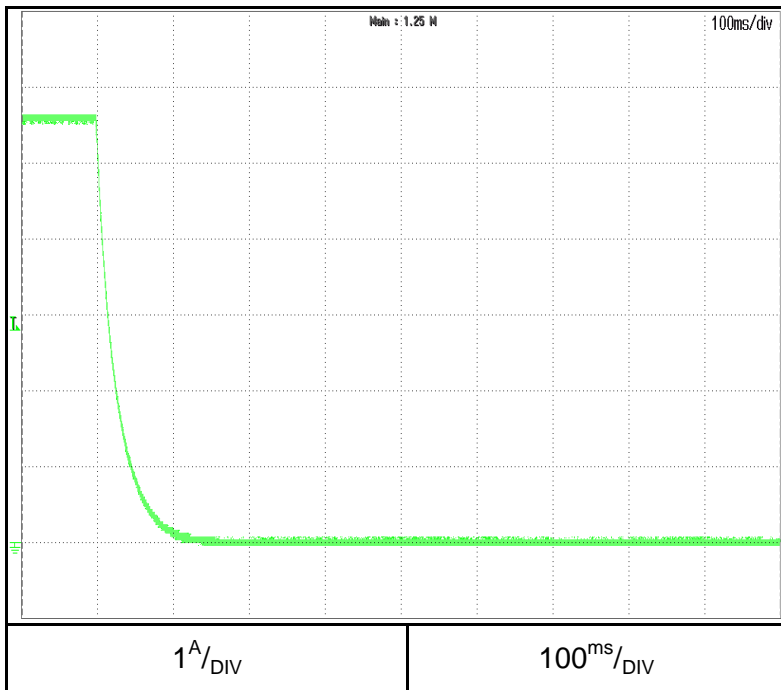
Load: CR

Ta = 25°C

G150-22.5



G600-5.6

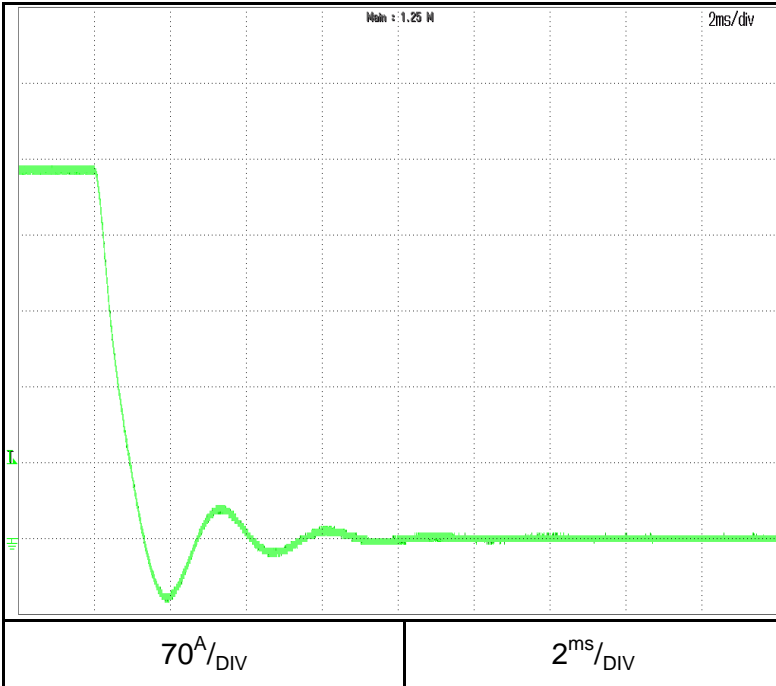


2.5 ON/OFF Output fall characteristics

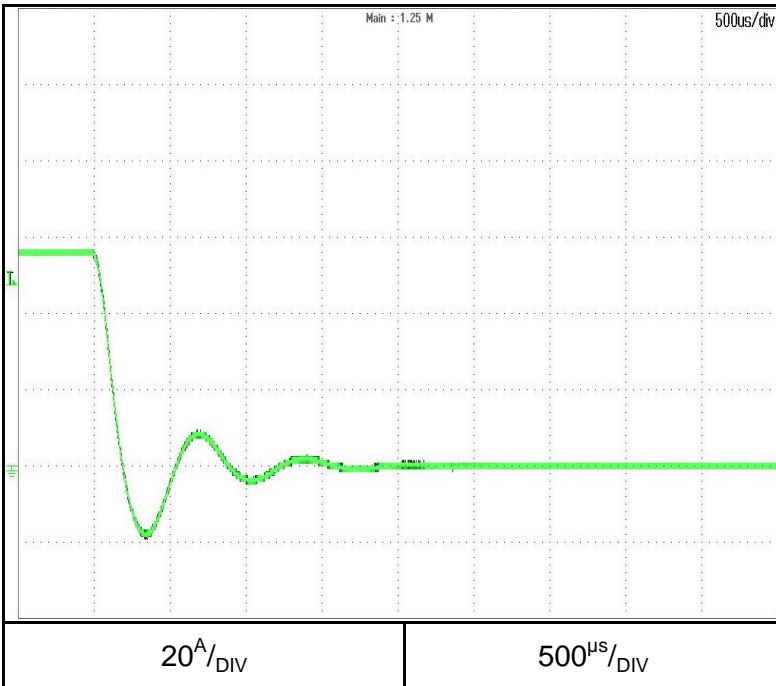
C.C mode

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

G10-340



G60-56

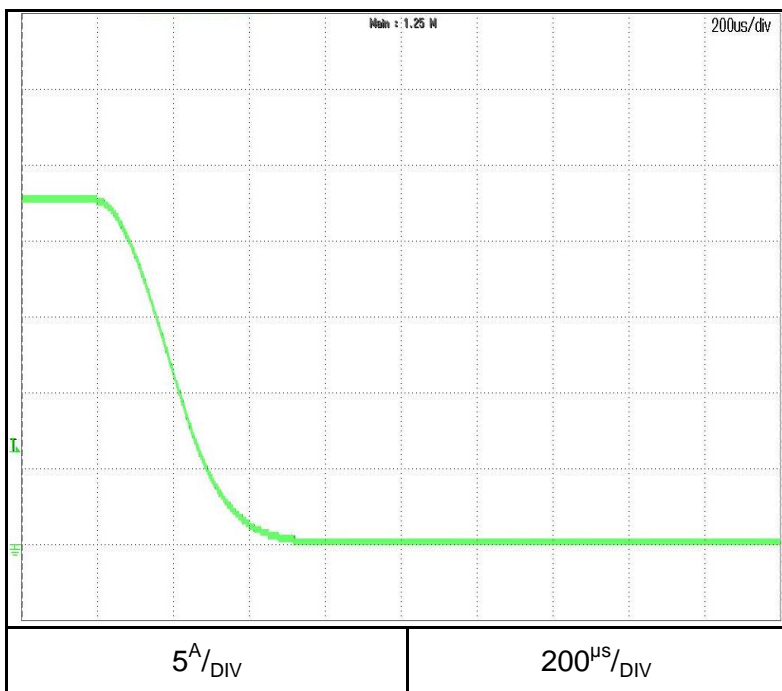


2.5 ON/OFF Output fall characteristics

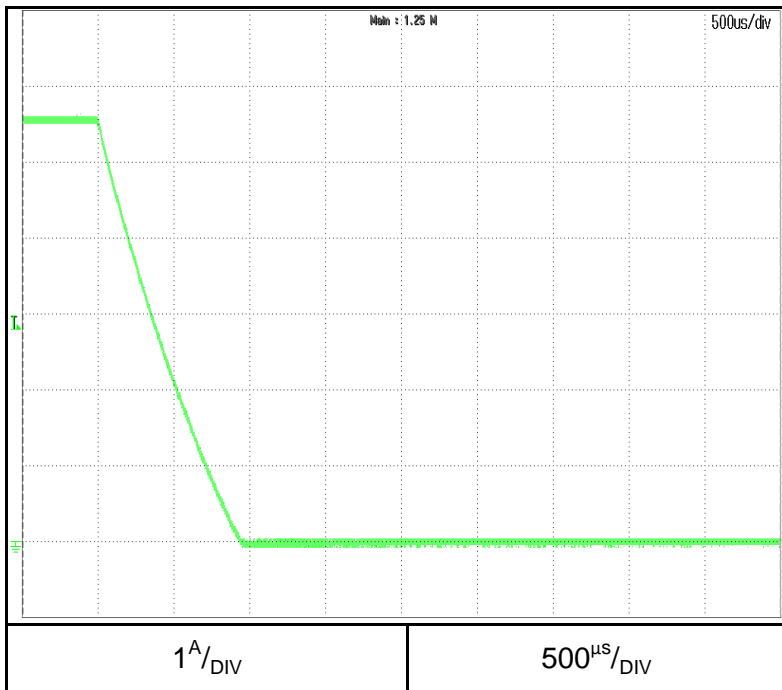
C.C mode

Conditions: V_{in} :Nominal
 I_{out} : 100%
shorted output
 $T_a = 25^{\circ}C$

G150-22.5



G600-5.6

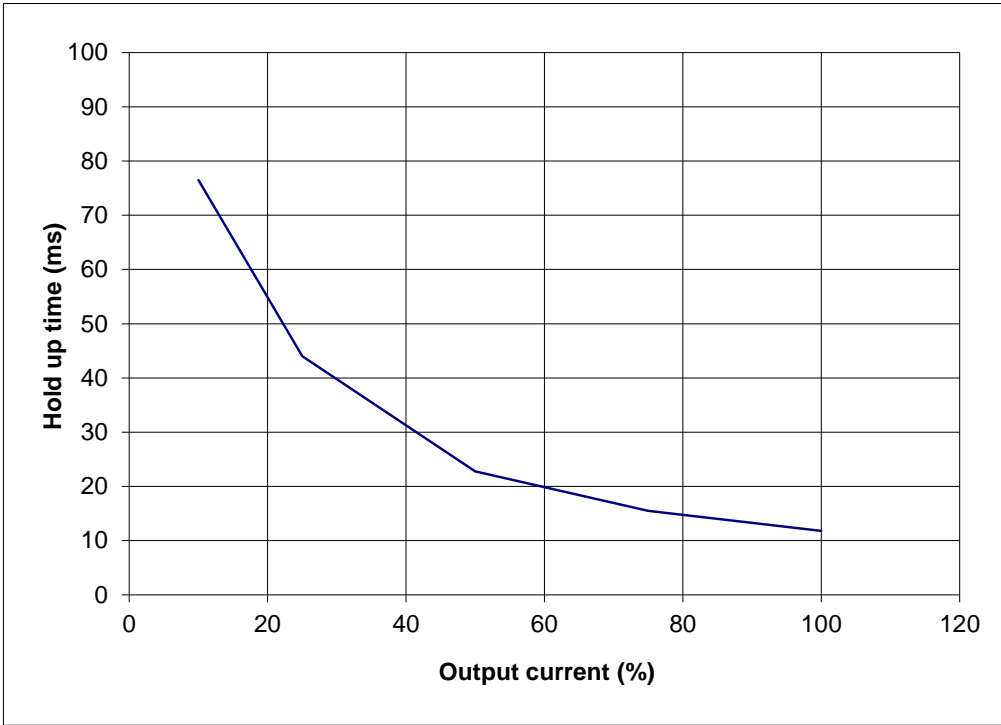


2.6 Holdup time characteristics

Conditions: Ta = 25°C
Vout:100%

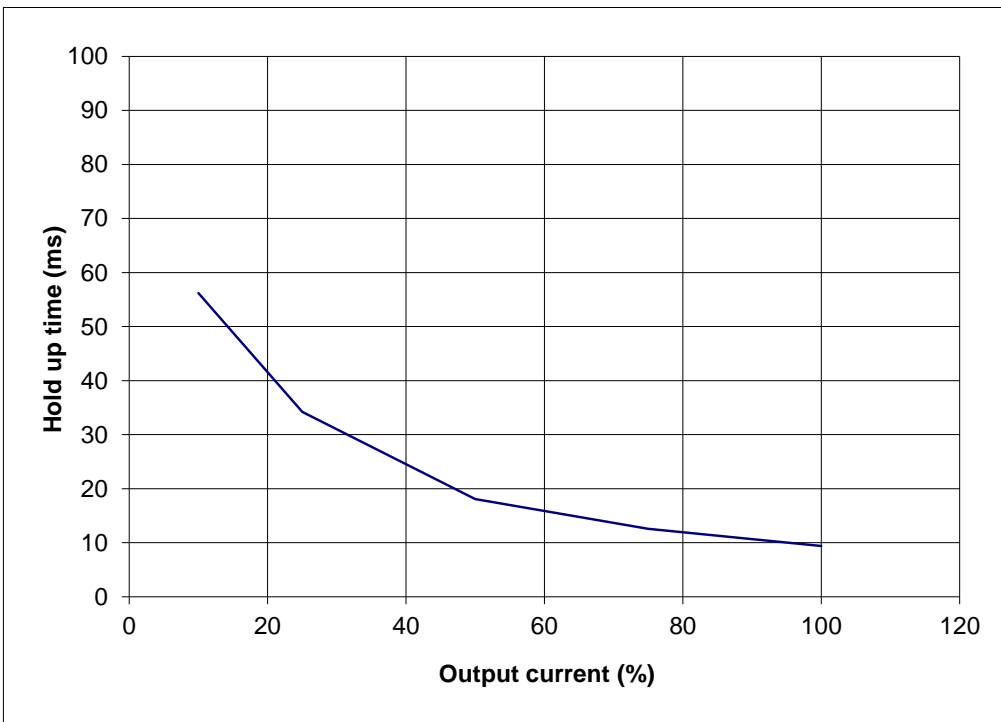
G10-340 1Φ200

Vin:230VAC



G10-340 3Φ200

Vin:200VAC

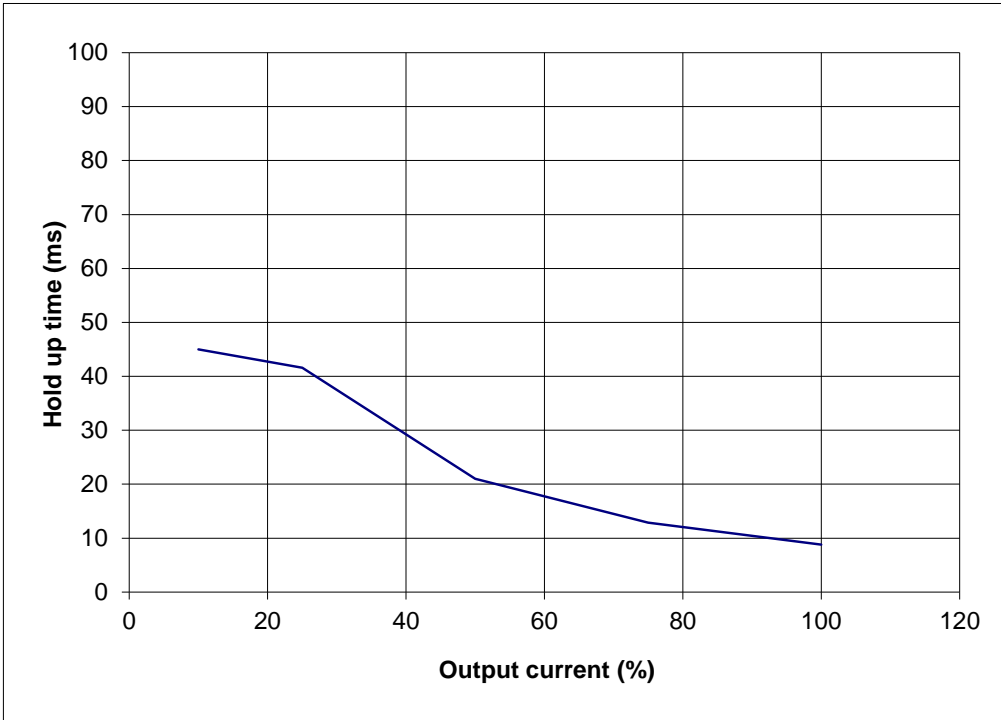


2.6 Holdup time characteristics

Conditions: Ta = 25°C
Vout:100%

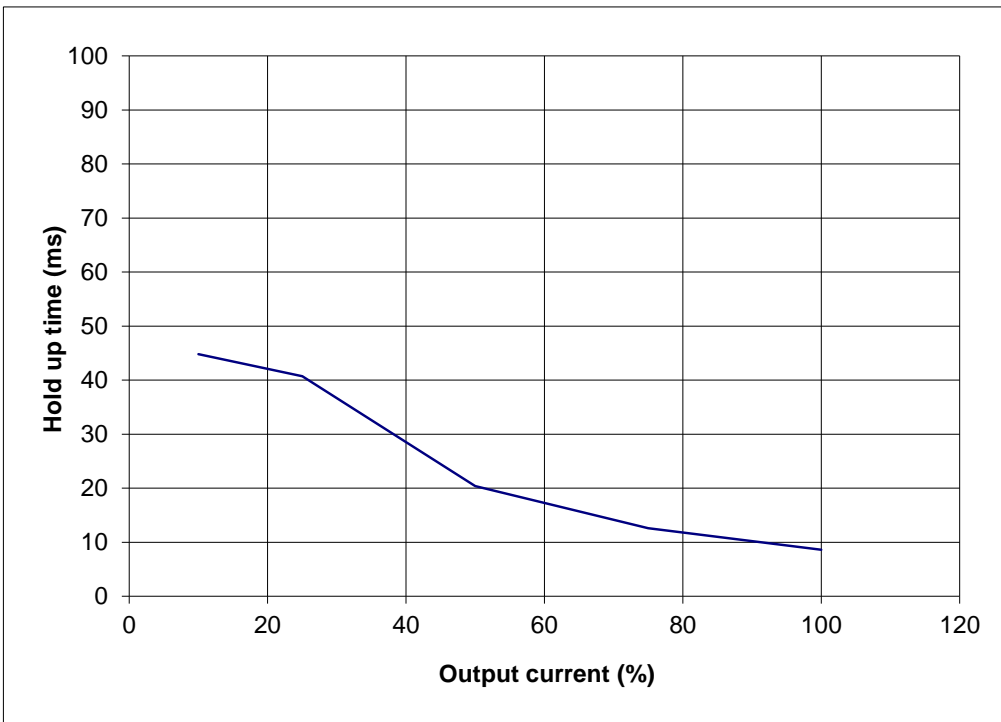
G10-340 3Φ400

Vin:400VAC



G10-340 3Φ480

Vin:480VAC



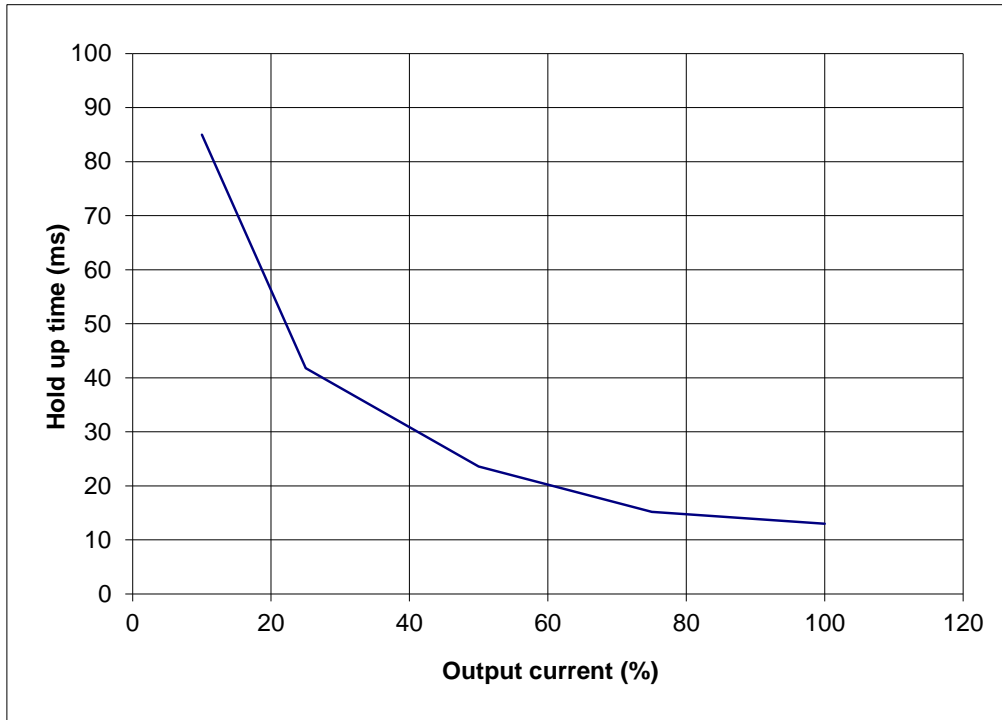
2.6 Holdup time characteristics

Conditions: Ta = 25°C

Vout:100%

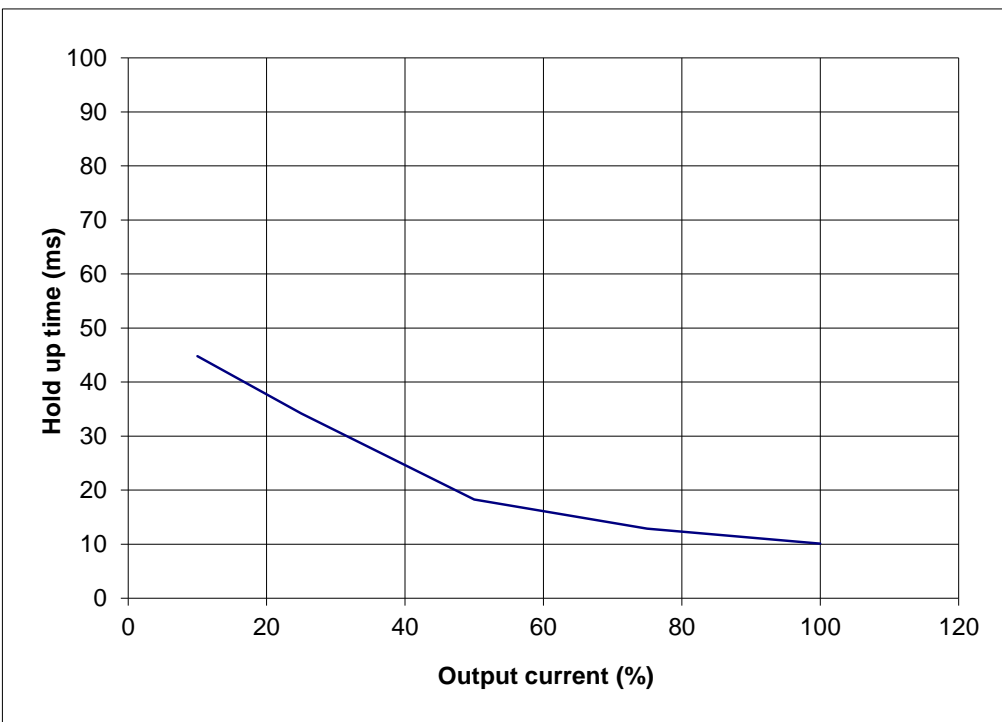
G60-56 1Φ200

Vin:230VAC



G60-56 3Φ200

Vin:200VAC

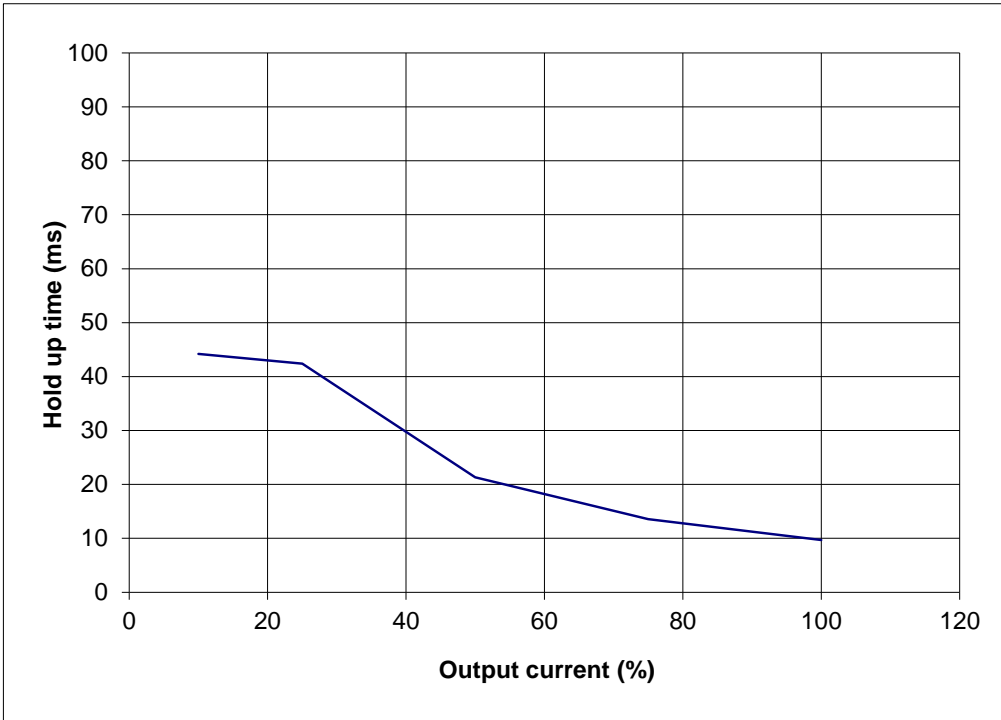


2.6 Holdup time characteristics

Conditions: Ta = 25°C
Vout:100%

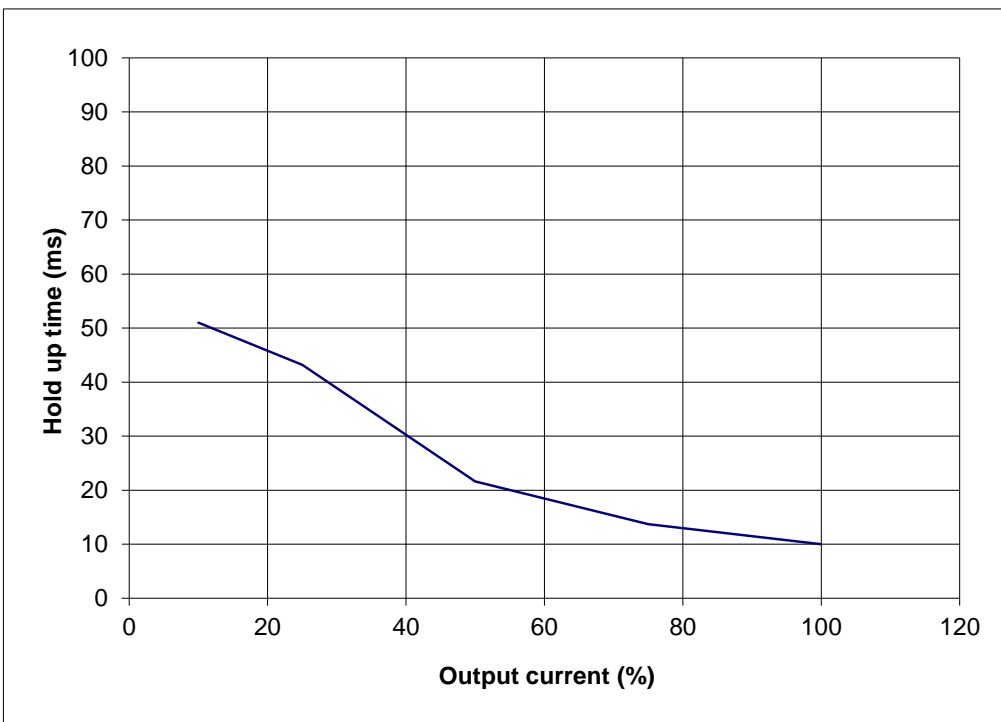
G60-56 3Φ400

Vin:400VAC



G60-56 3Φ480

Vin:480VAC

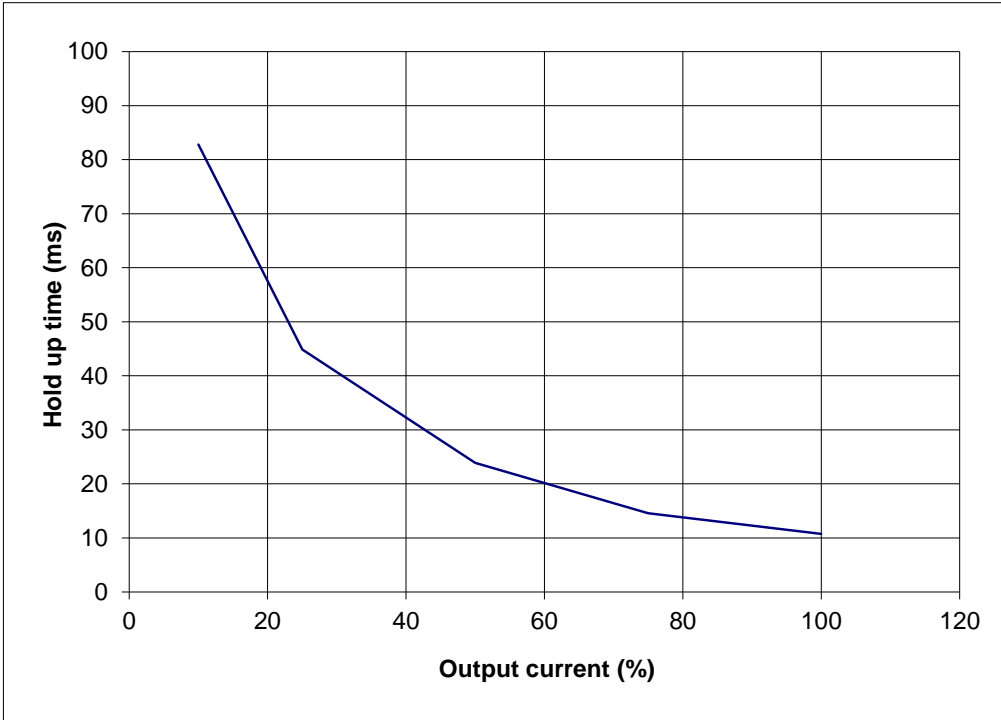


2.6 Holdup time characteristics

Conditions: Ta = 25°C
Vout:100%

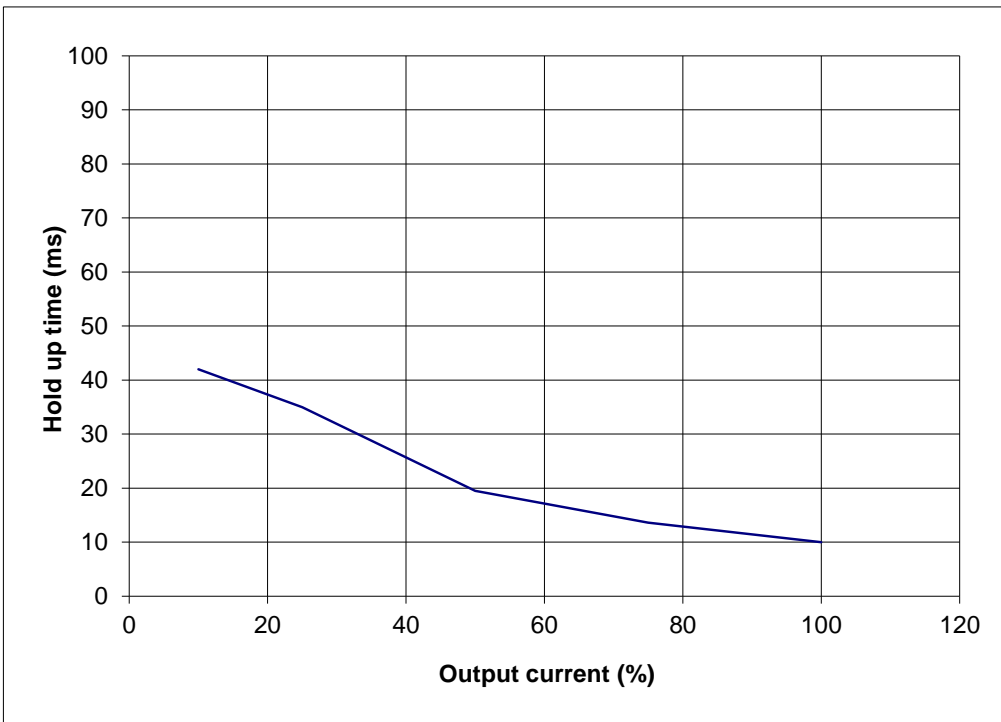
G150-22.5 1Φ200

Vin:230VAC



G150-22.5 3Φ200

Vin:200VAC

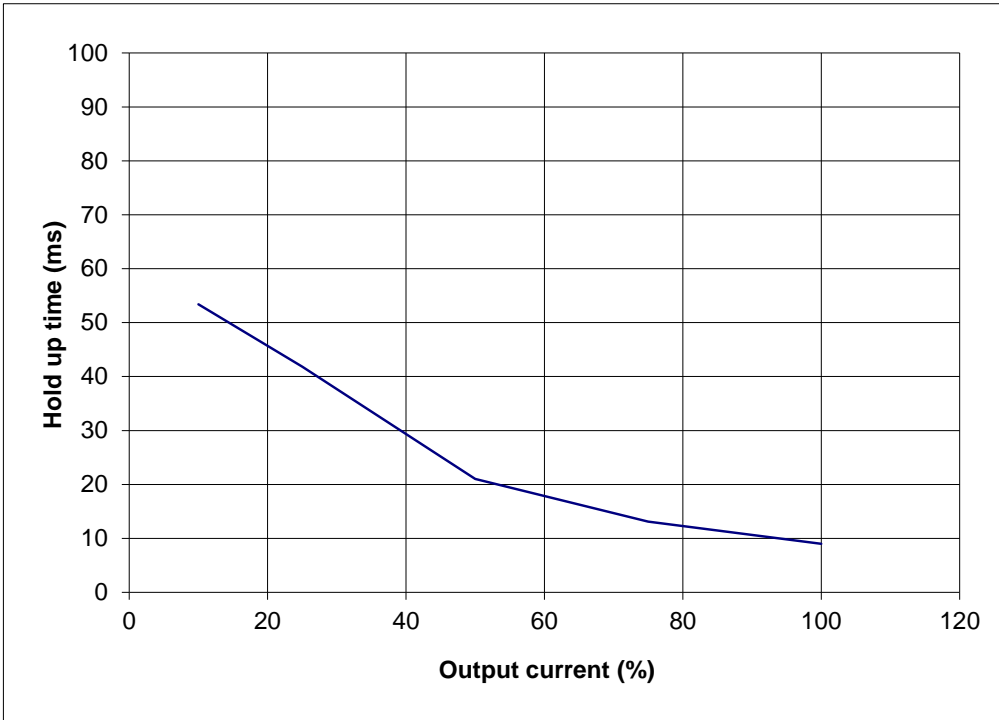


2.6 Holdup time characteristics

Conditions: Ta = 25°C
Vout:100%

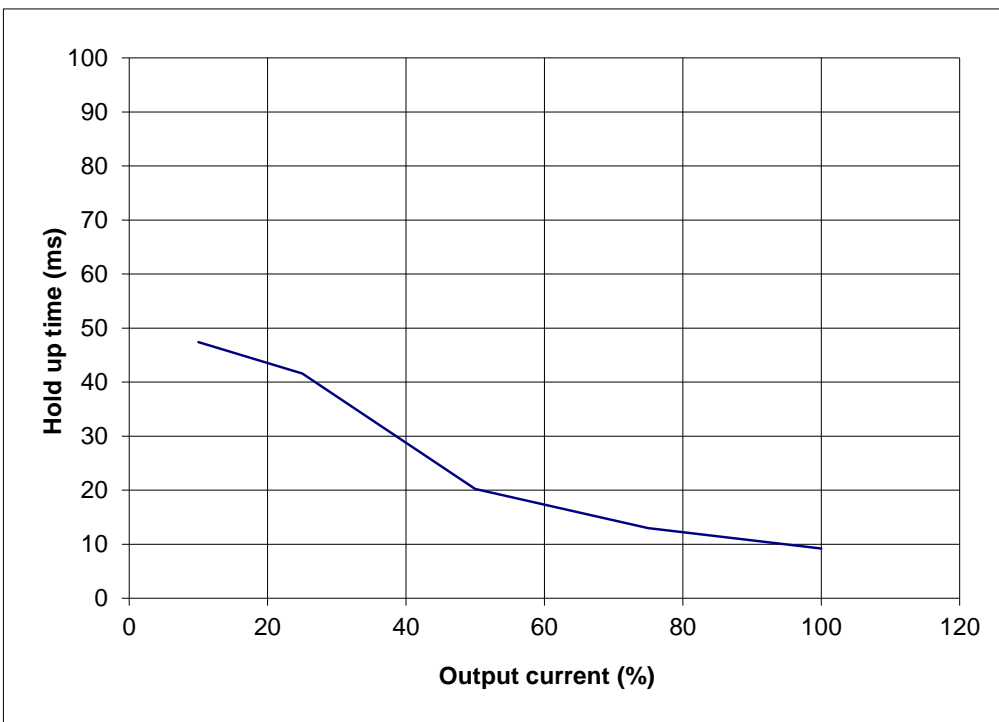
G150-22.5 3Φ400

Vin:400VAC



G150-22.5 3Φ480

Vin:480VAC

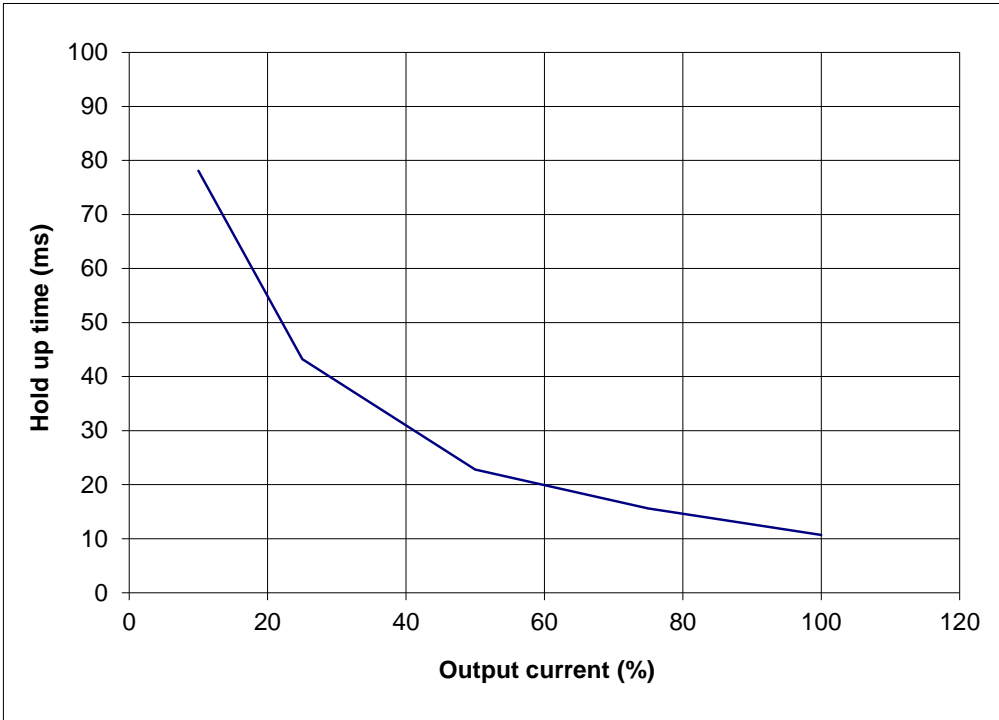


2.6 Holdup time characteristics

Conditions: Ta = 25°C
Vout:100%

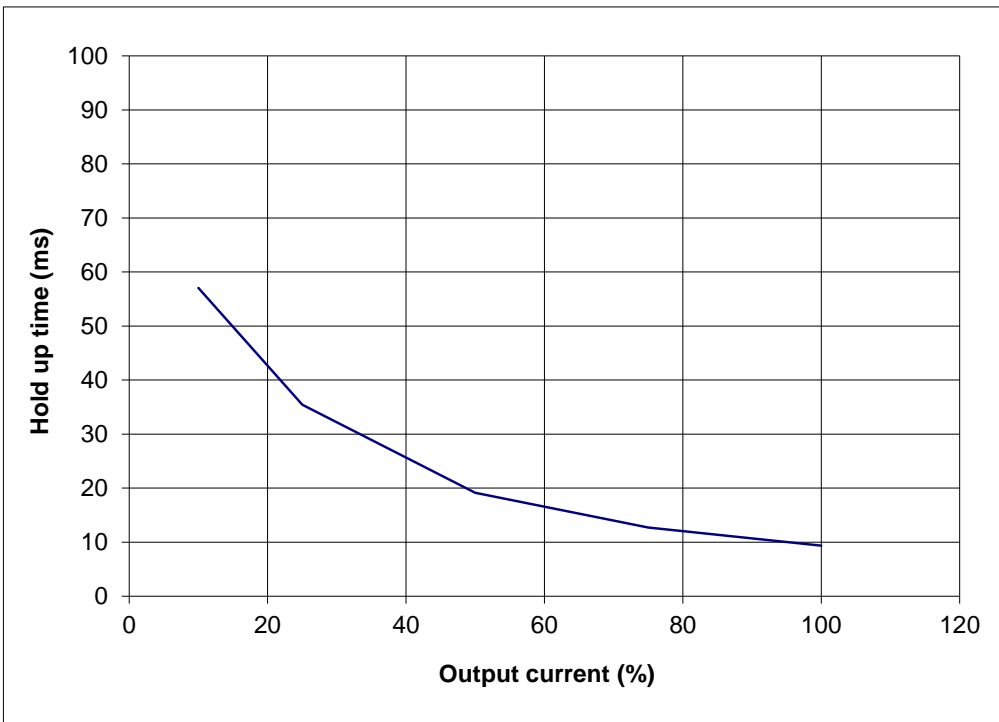
G600-5.6 1Φ200

Vin:230VAC



G600-5.6 3Φ200

Vin:200VAC

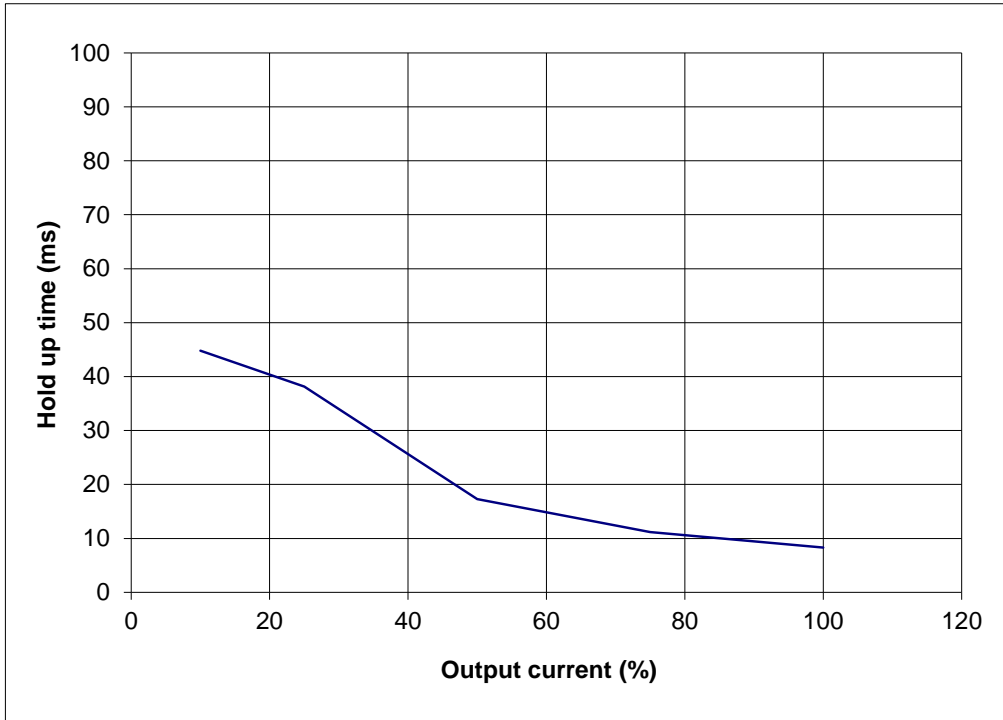


2.6 Holdup time characteristics

Conditions: Ta = 25°C
Vout:100%

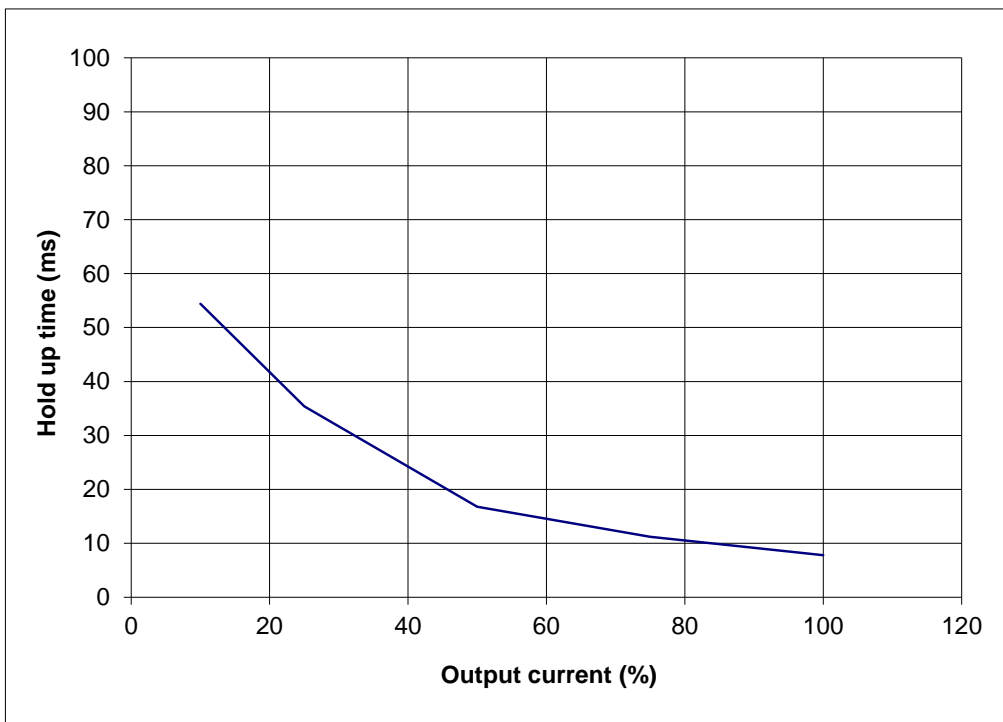
G600-5.6 3Φ400

Vin:400VAC



G600-5.6 3Φ480

Vin:480VAC

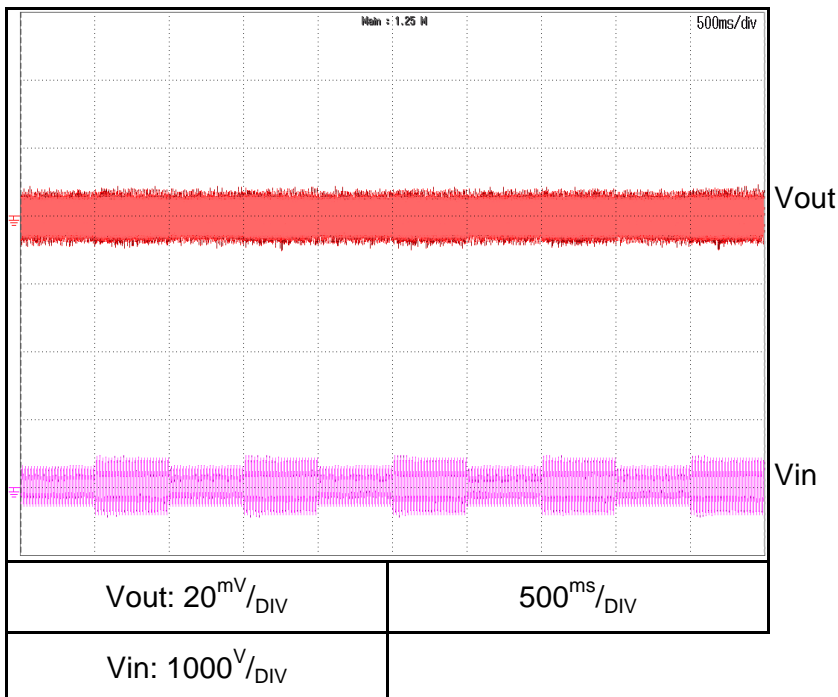


2.7 Dynamic line response characteristics

C.V mode

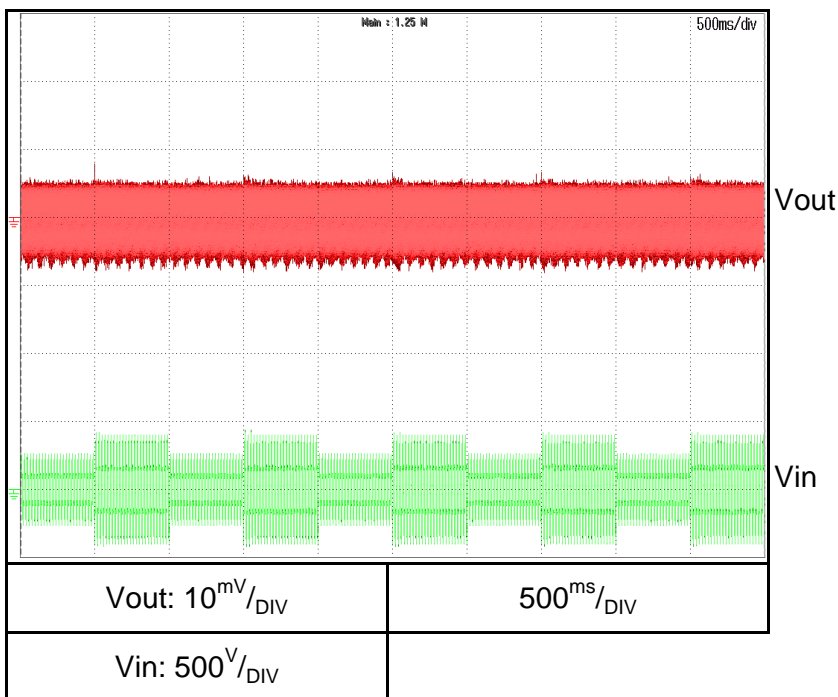
G10-340 1Φ200

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



G10-340 3Φ200

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

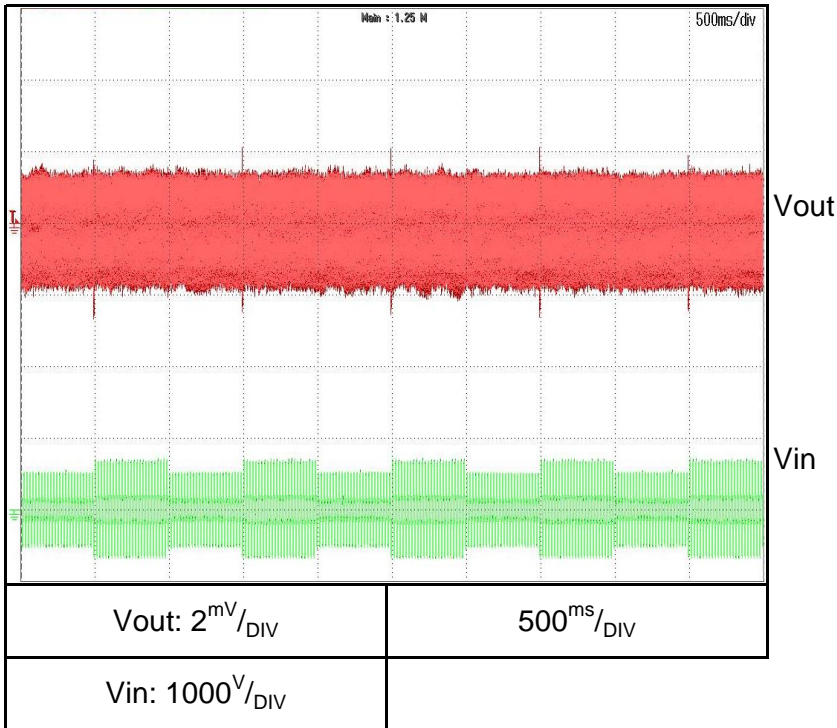


2.7 Dynamic line response characteristics

C.V mode

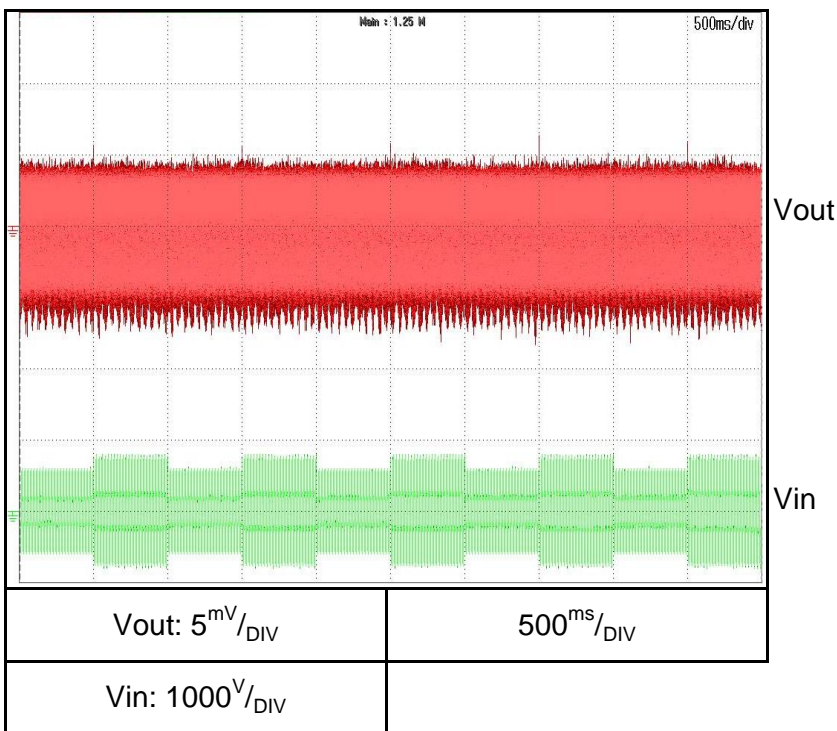
G10-340 3Φ400

Conditions: Vout: 100%
Iout: 100%
Vin: 342↔460V



G10-340 3Φ480

Conditions: Vout: 100%
Iout: 100%
Vin: 342↔520V

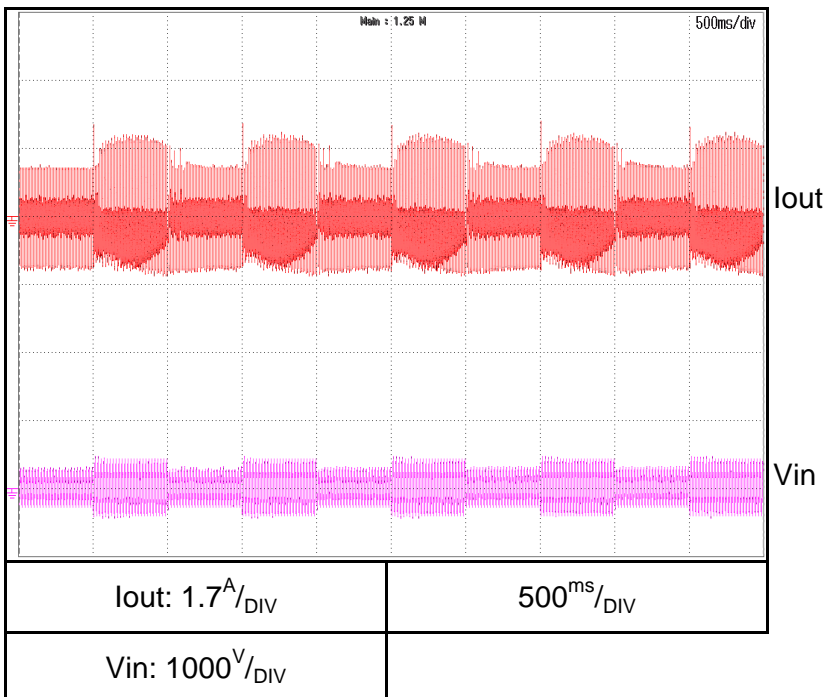


2.7 Dynamic line response characteristics

C.C mode

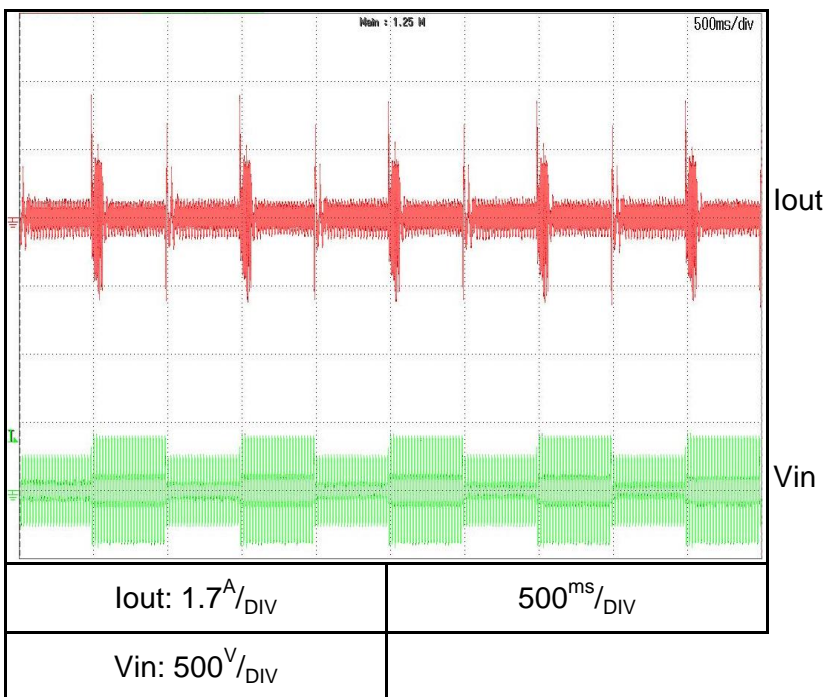
G10-340 1Φ200

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



G10-340 3Φ200

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

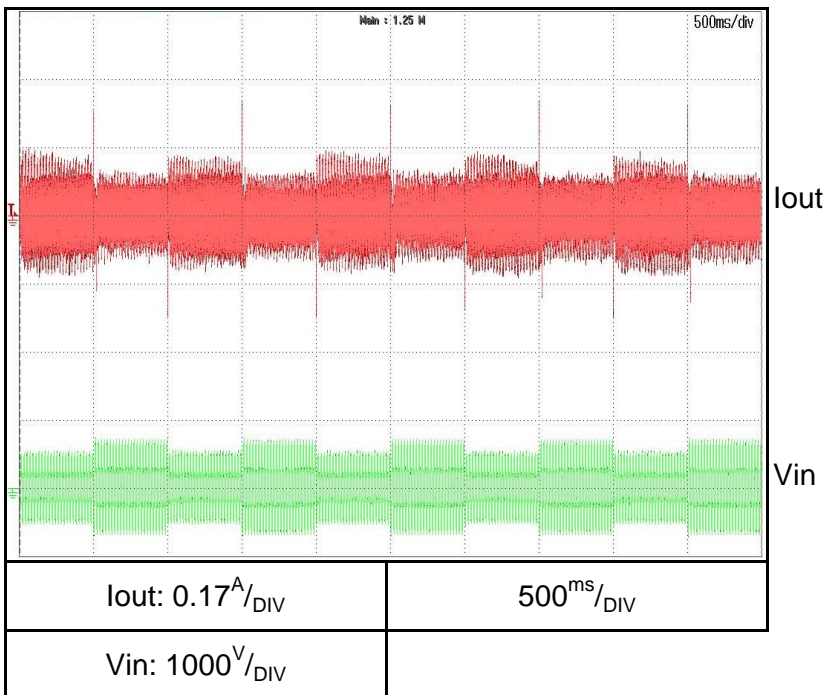


2.7 Dynamic line response characteristics

C.C mode

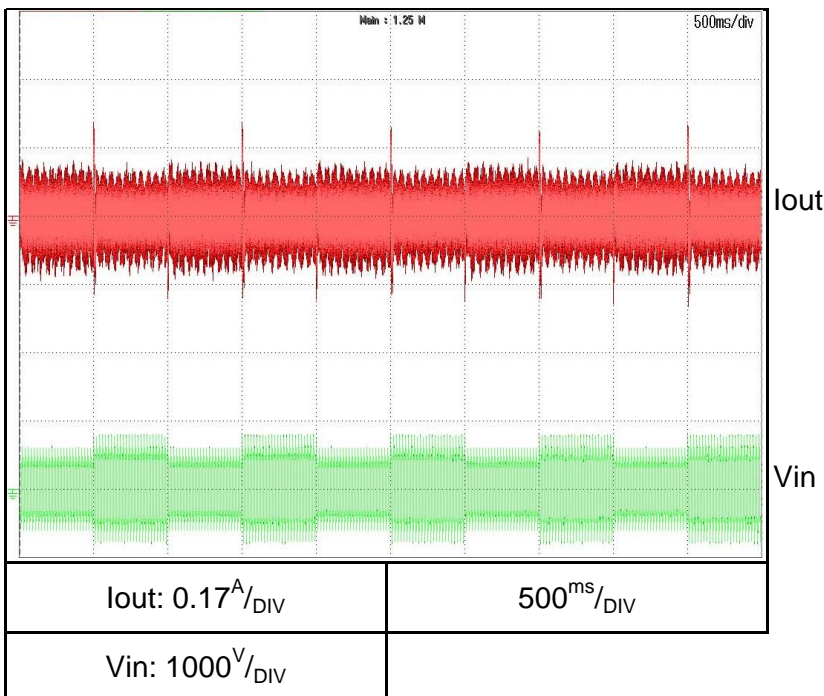
G10-340 3Φ400

Conditions: Vout: 100%
Iout: 100%
Vin: 342↔460V



G10-340 3Φ480

Conditions: Vout: 100%
Iout: 100%
Vin: 342↔520V

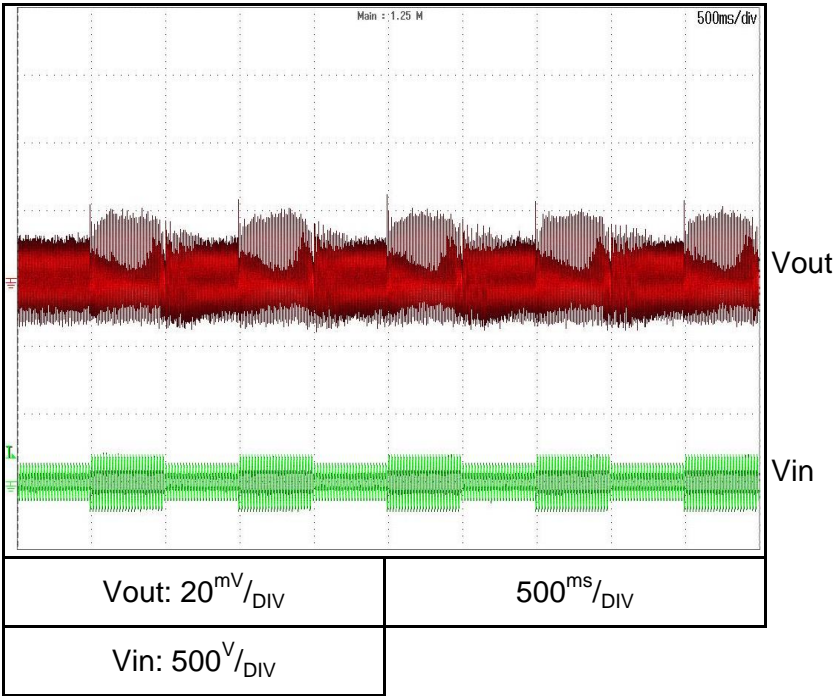


2.7 Dynamic line response characteristics

C.V mode

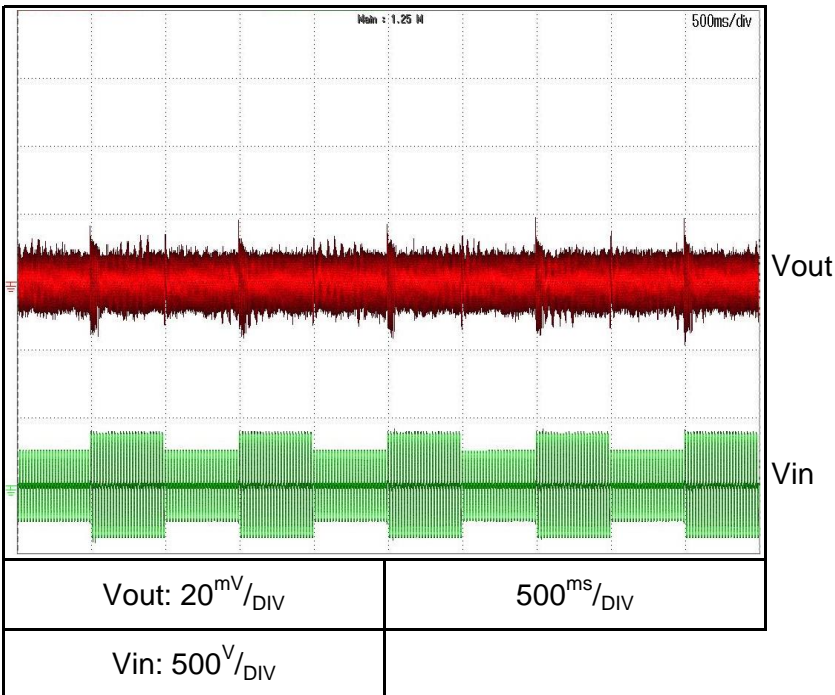
G60-56 1Φ200

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



G60-56 3Φ200

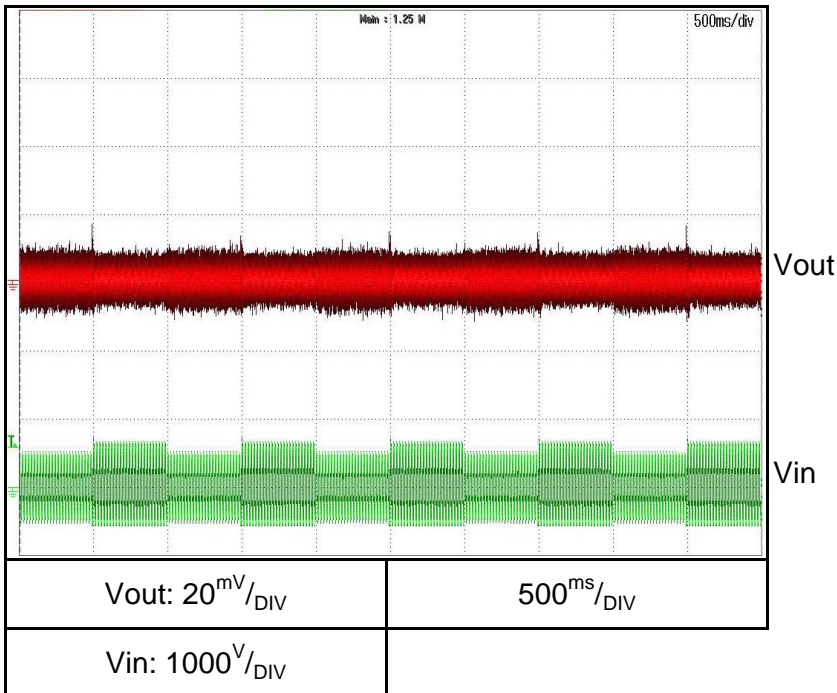
Conditions: Vout: 100%
Iout: 100%
Vin: 170↔265V



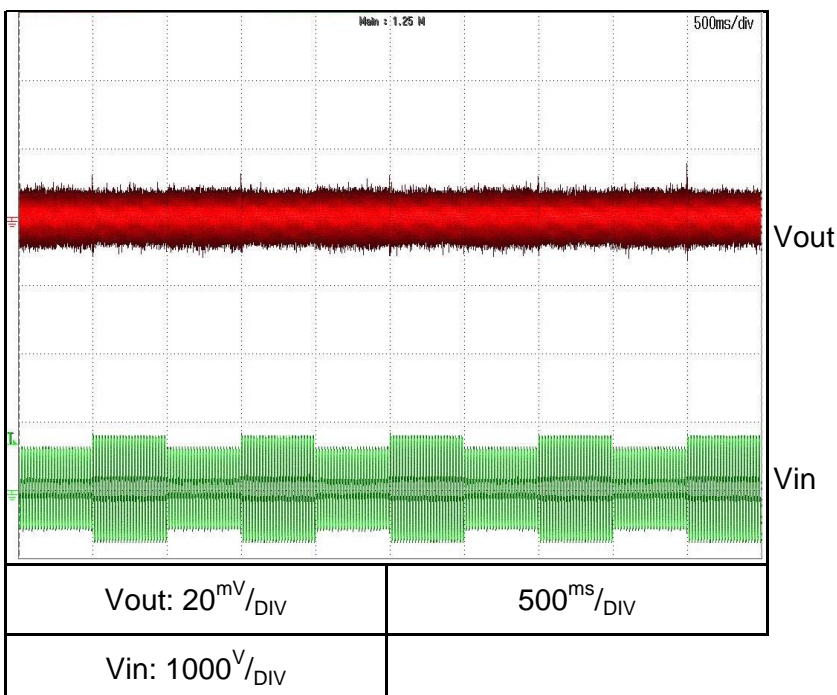
2.7 Dynamic line response characteristics

C.V mode

G60-56 3Φ400

Conditions: Vout: 100%
Iout: 100%
Vin: 342↔460V

G60-56 3Φ480

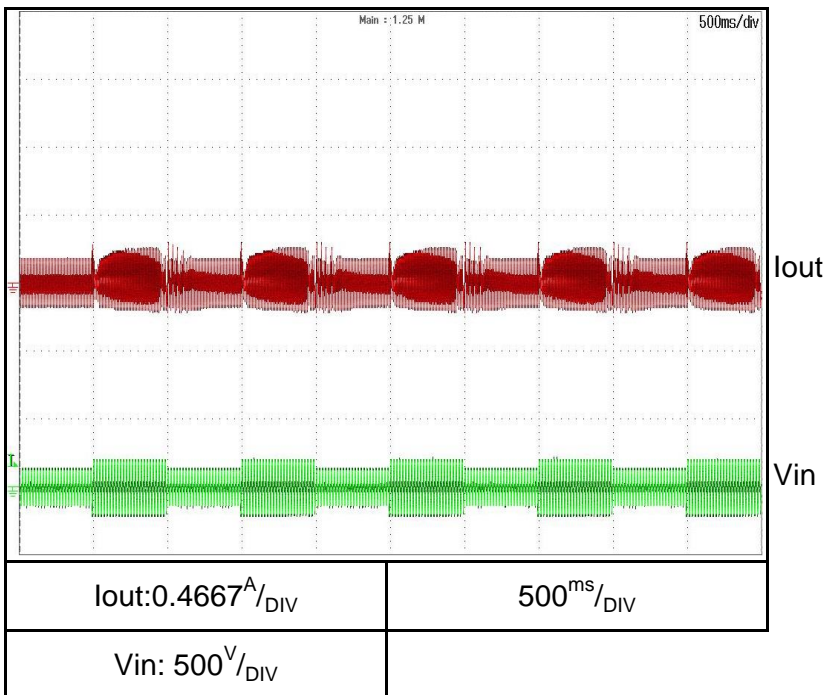
Conditions: Vout: 100%
Iout: 100%
Vin: 396↔520V

2.7 Dynamic line response characteristics

C.C mode

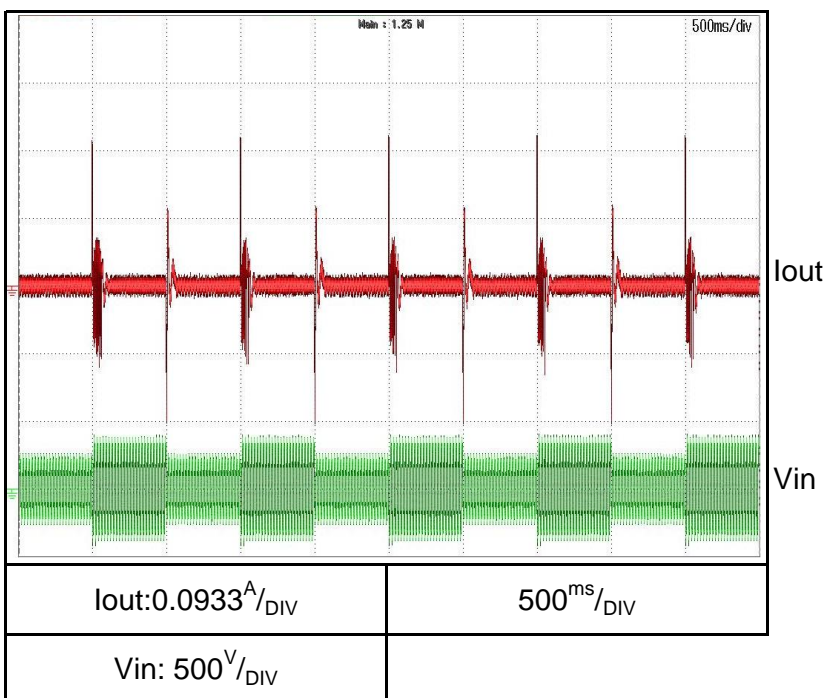
G60-56 1Φ200

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



G60-56 3Φ200

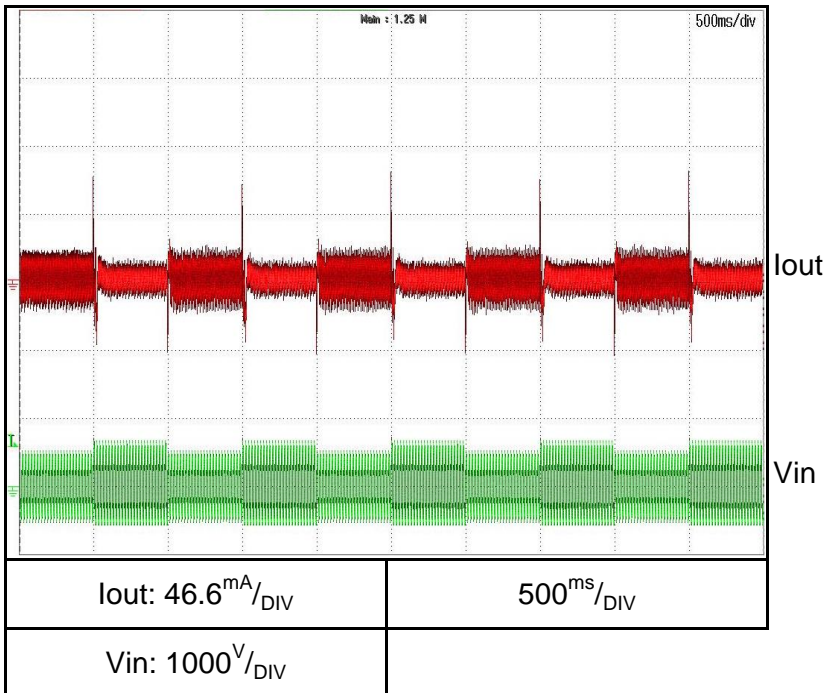
Conditions: Vout: 100%
Iout: 100%
Vin: 170↔265V



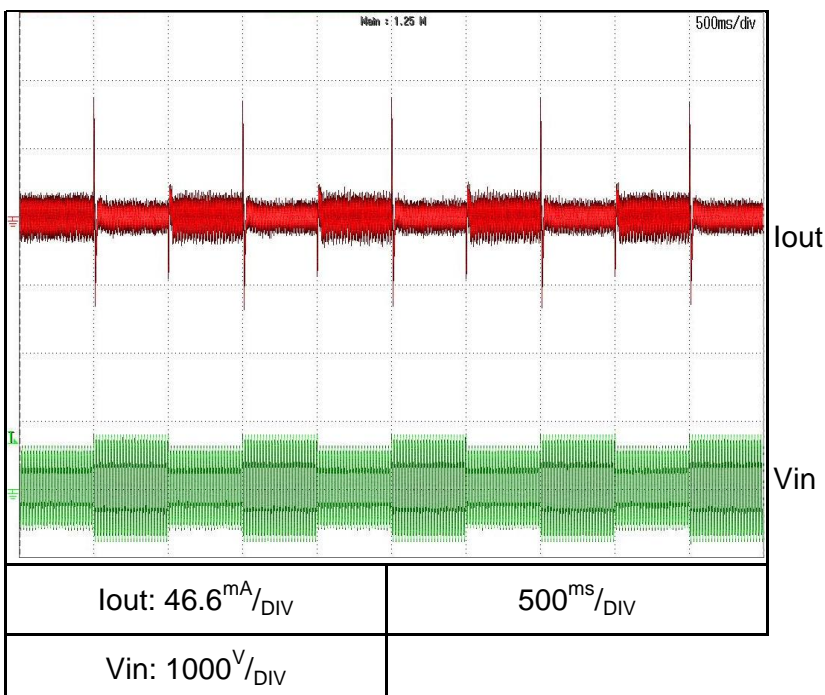
2.7 Dynamic line response characteristics

C.C mode

G60-56 3Φ400

Conditions: Vout: 100%
Iout: 100%
Vin: 342↔460V

G60-56 3Φ480

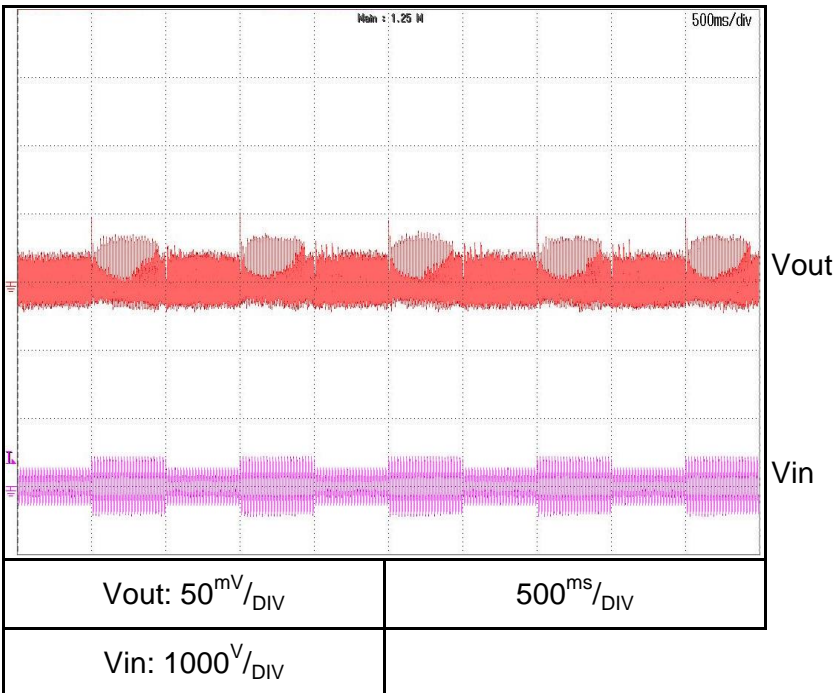
Conditions: Vout: 100%
Iout: 100%
Vin: 396↔520V

2.7 Dynamic line response characteristics

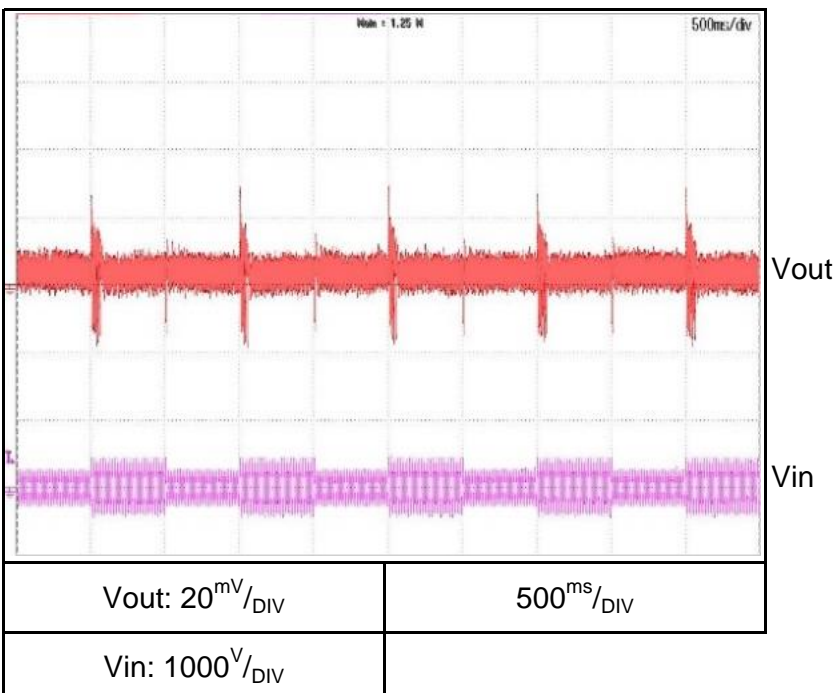
C.V mode

G150-22.5 1Φ200

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

**G150-22.5 3Φ200**

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

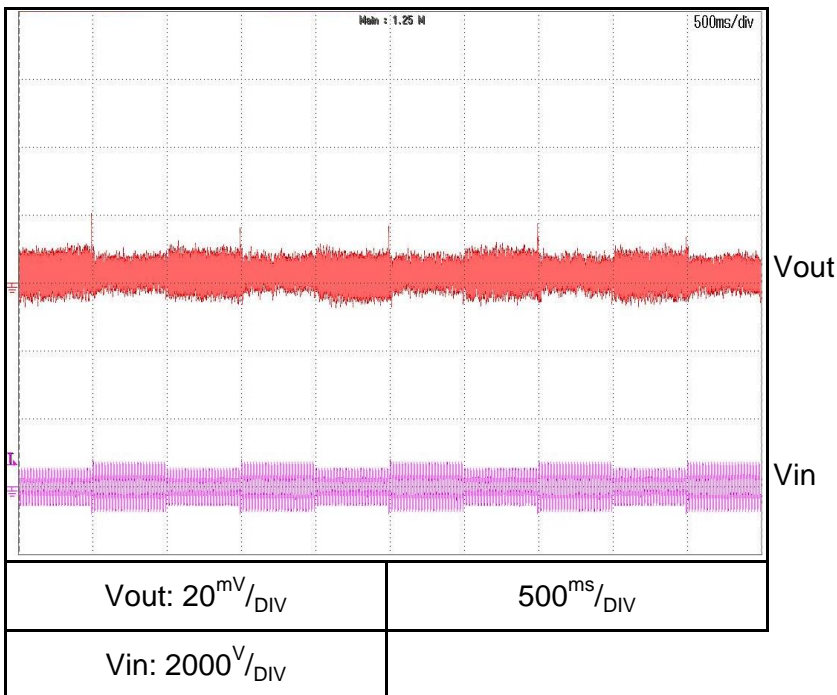


2.7 Dynamic line response characteristics

C.V mode

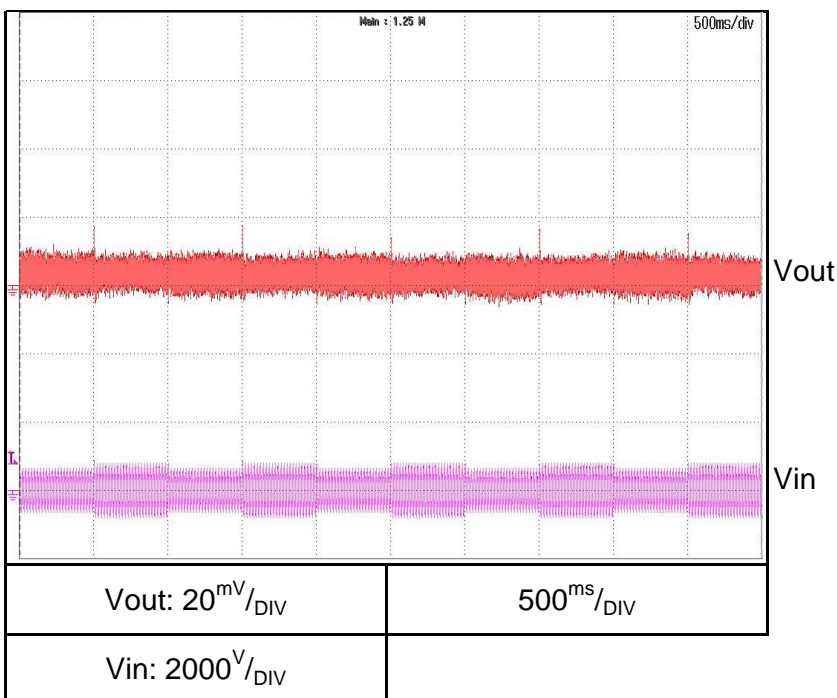
G150-22.5 3Φ400

Conditions: Vout: 100%
Iout: 100%
Vin: 342↔460V



G150-22.5 3Φ480

Conditions: Vout: 100%
Iout: 100%
Vin: 396↔520V

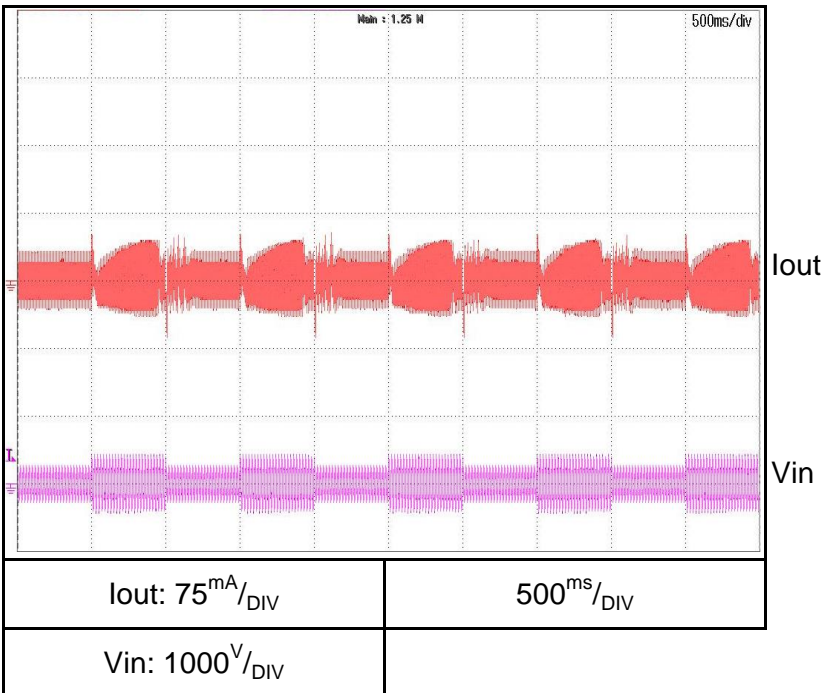


2.7 Dynamic line response characteristics

C.C mode

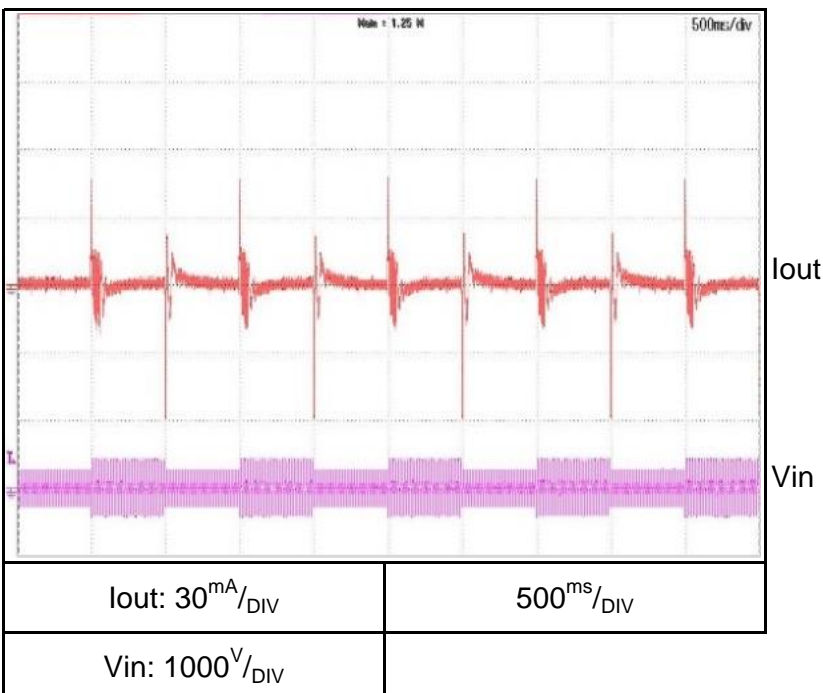
G150-22.5 1Φ200

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



G150-22.5 3Φ200

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

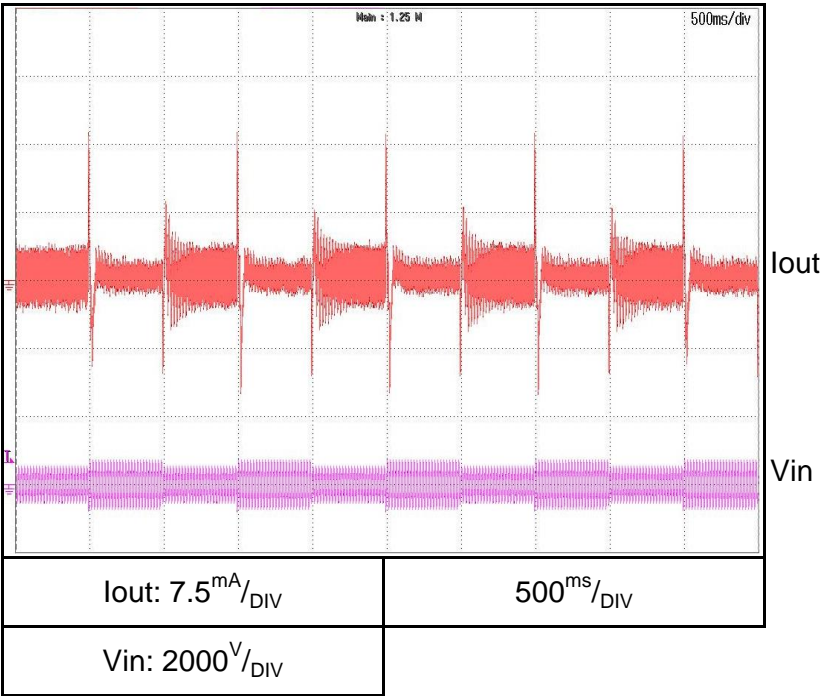


2.7 Dynamic line response characteristics

C.C mode

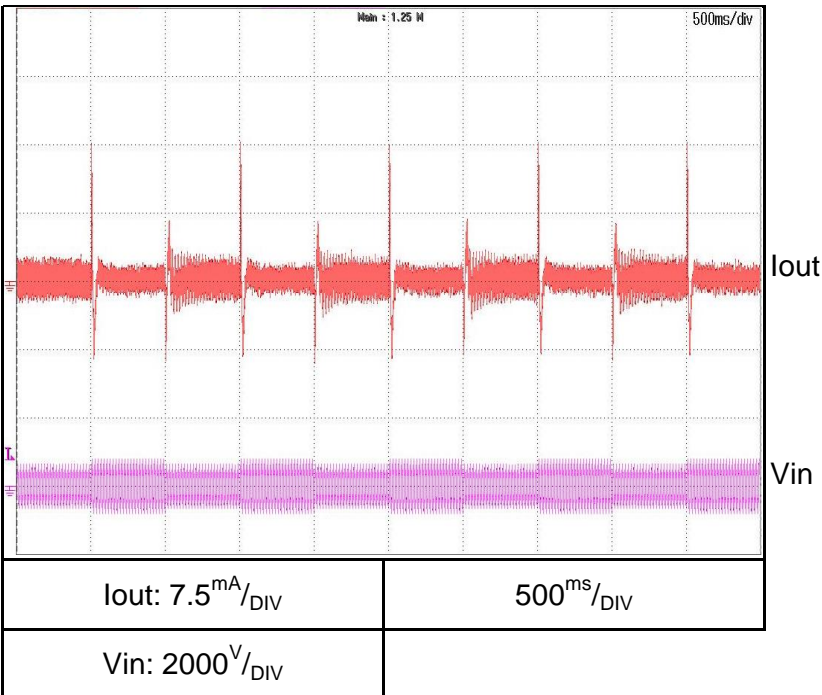
G150-22.5 3Φ400

Conditions: Vout: 100%
Iout: 100%
Vin: 342↔460V



G150-22.5 3Φ480

Conditions: Vout: 100%
Iout: 100%
Vin: 396↔520V

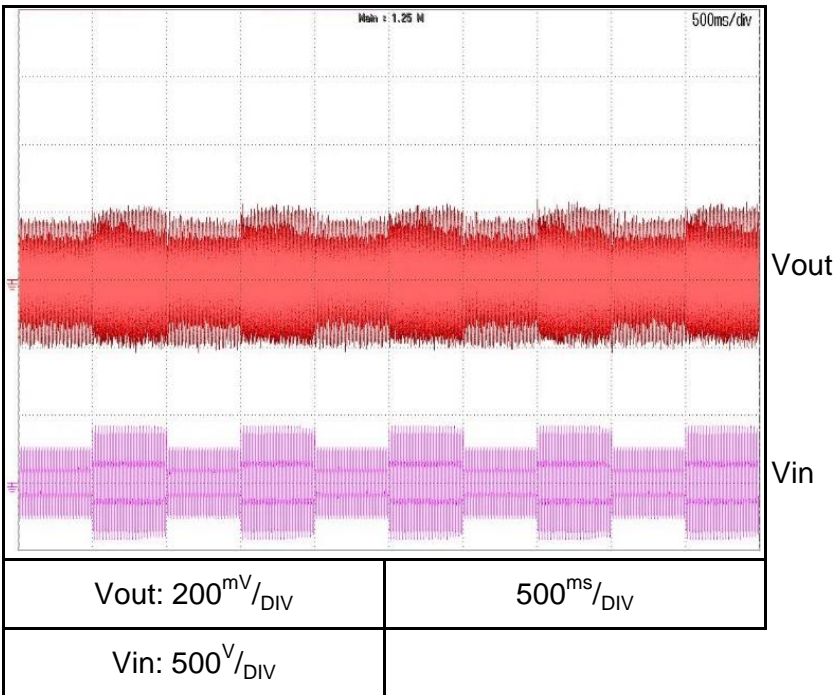


2.7 Dynamic line response characteristics

C.V mode

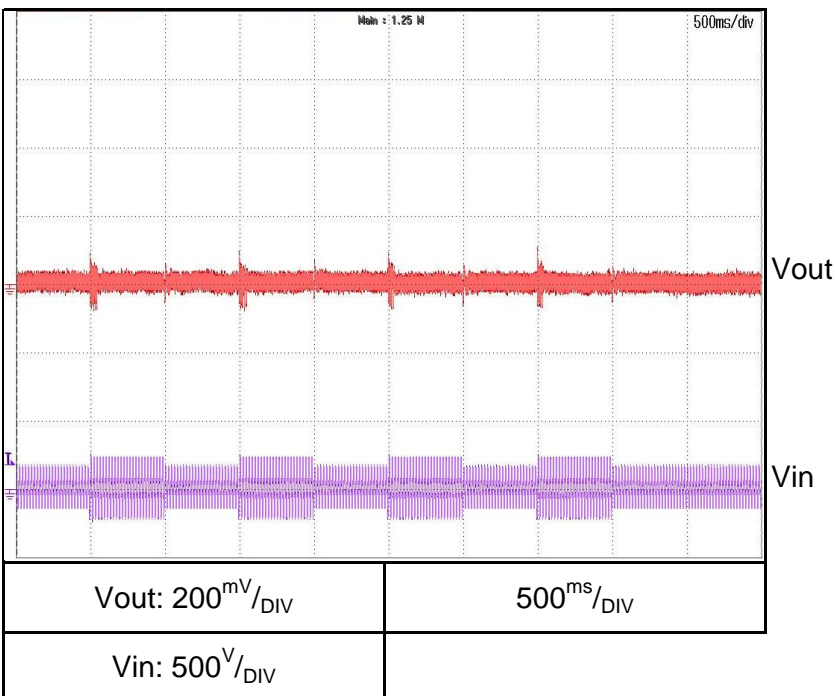
G600-5.6 1Φ200

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



G600-5.6 3Φ200

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

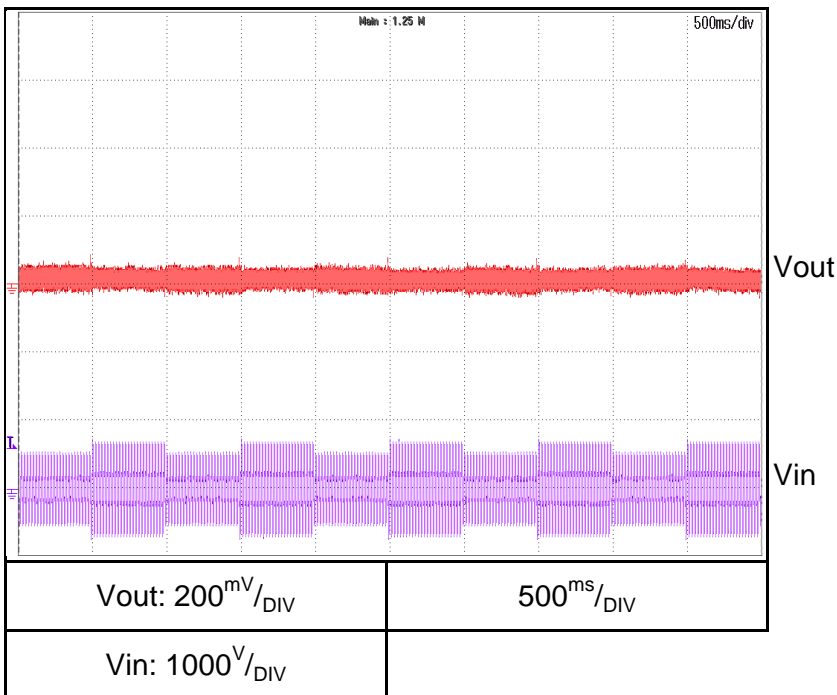


2.7 Dynamic line response characteristics

C.V mode

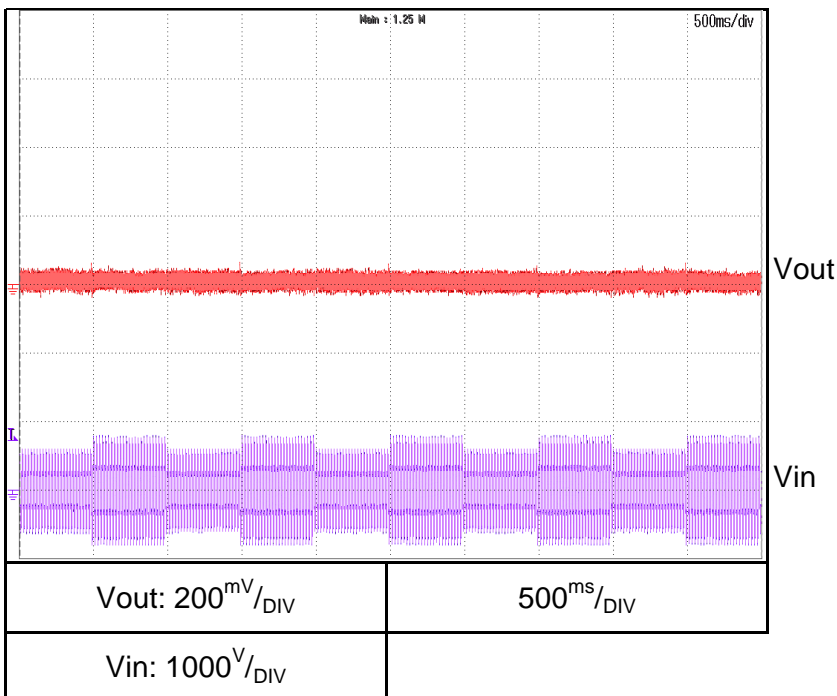
G600-5.6 3Φ400

Conditions: Vout: 100%
Iout: 100%
Vin: 342↔460V



G600-5.6 3Φ480

Conditions: Vout: 100%
Iout: 100%
Vin: 342↔520V

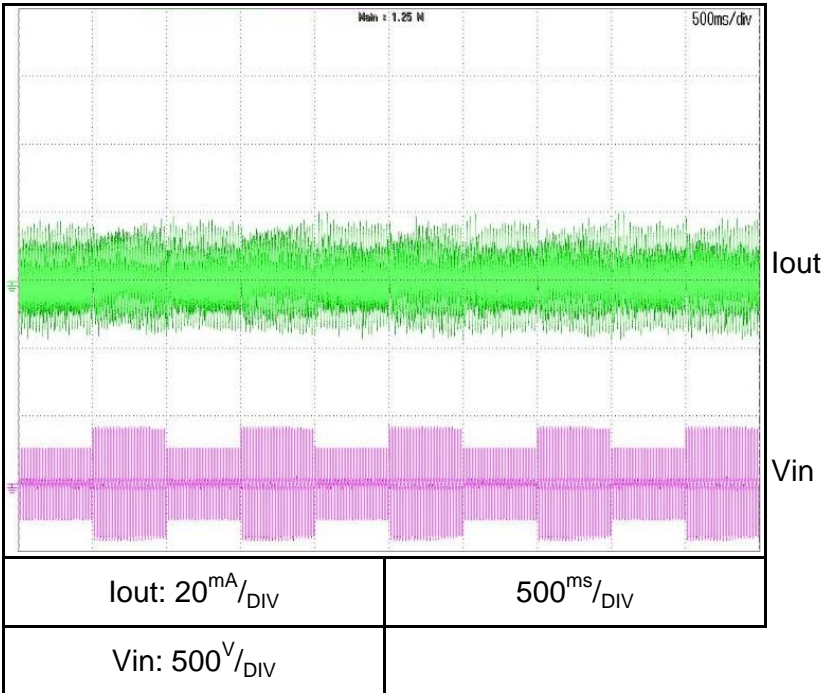


2.7 Dynamic line response characteristics

C.C mode

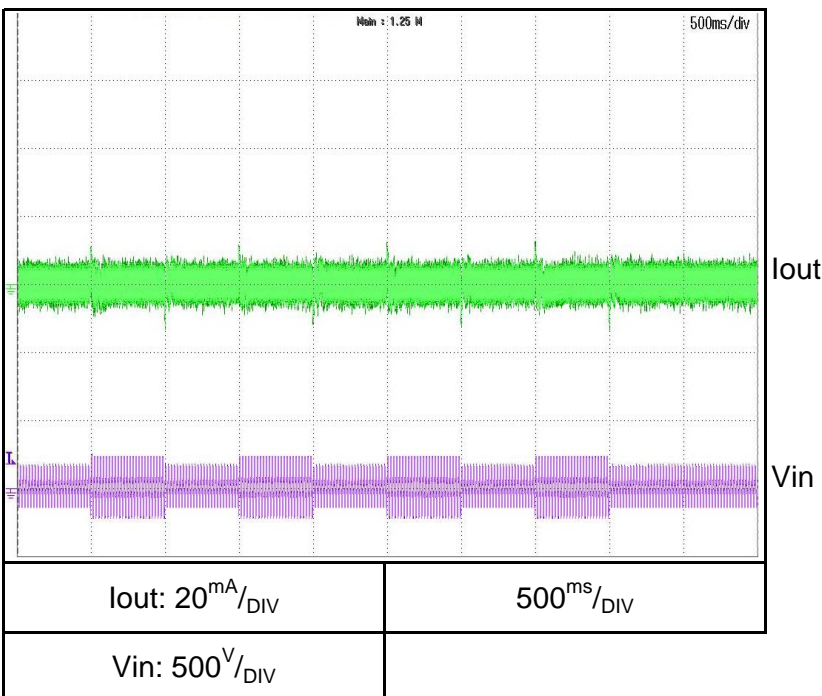
G600-5.6 1Φ200

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



G600-5.6 3Φ200

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

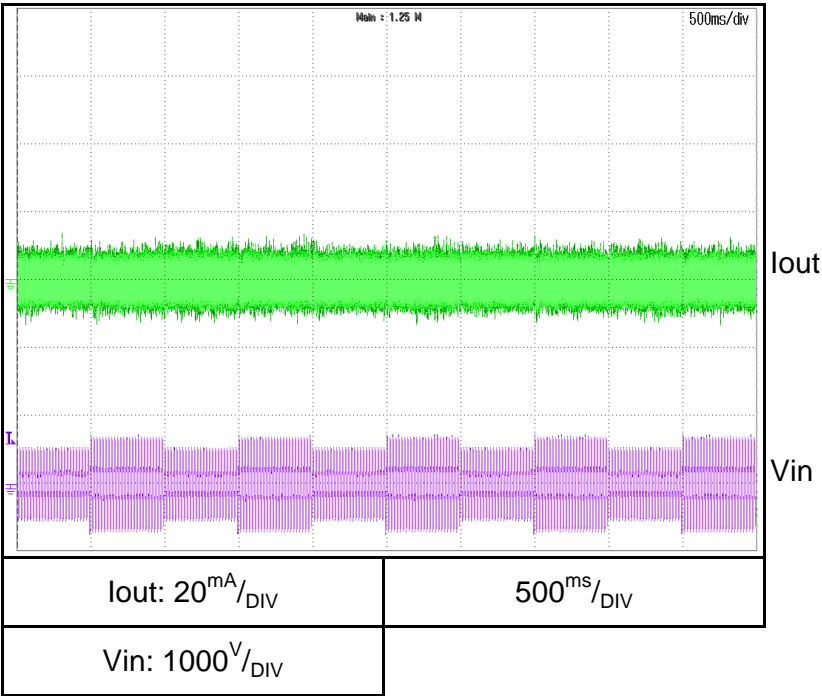


2.7 Dynamic line response characteristics

C.C mode

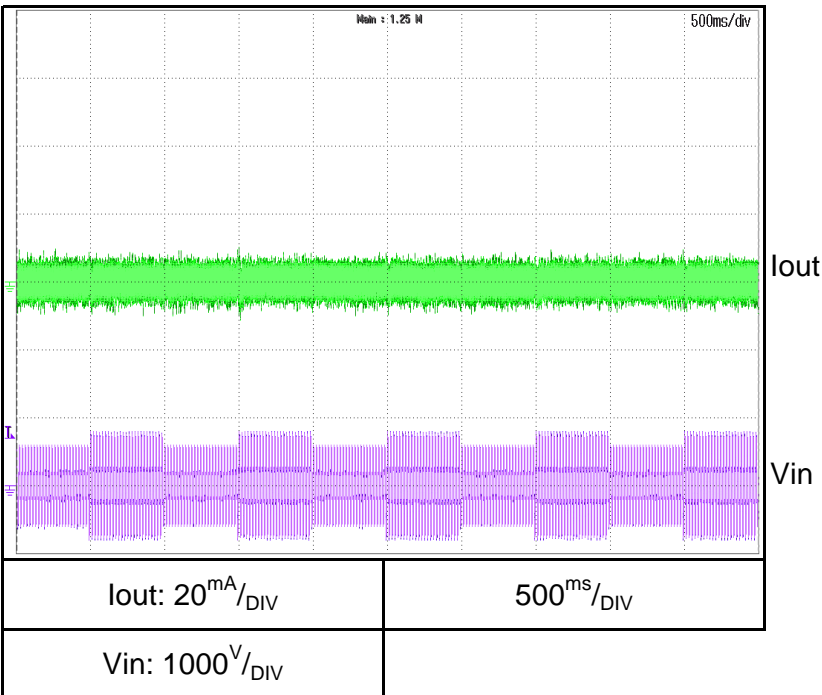
G600-5.6 3Φ400

Conditions: Vout: 100%
Iout: 100%
Vin: 342↔460V



G600-5.6 3Φ480

Conditions: Vout: 100%
Iout: 100%
Vin: 342↔520V

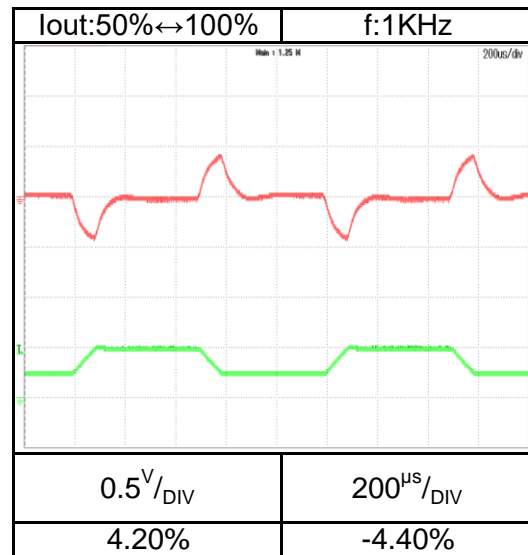
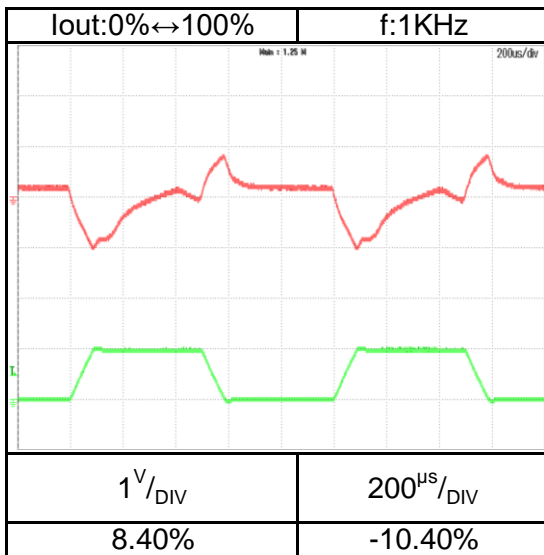
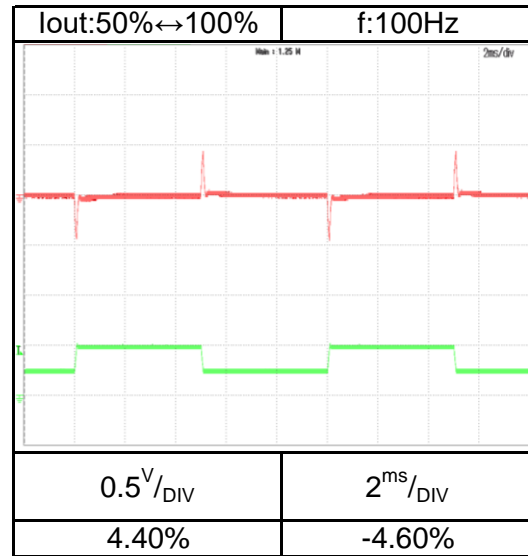
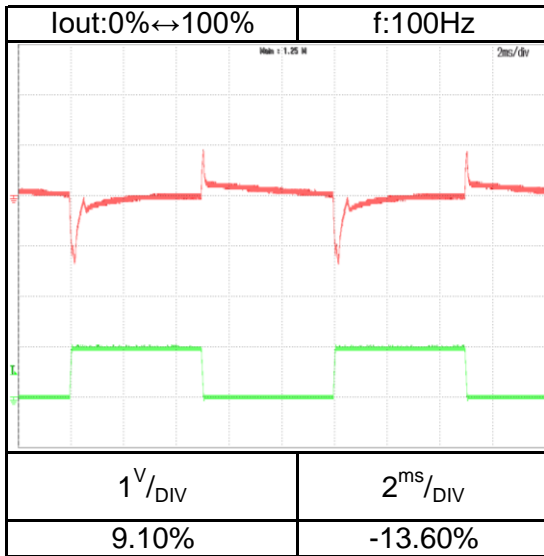


2.8 Dynamic load response characteristics
C.V mode

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

Load current: tr=tf=100us

G10-340

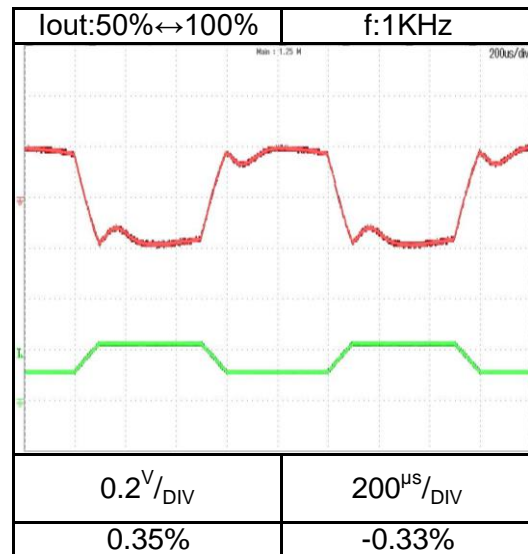
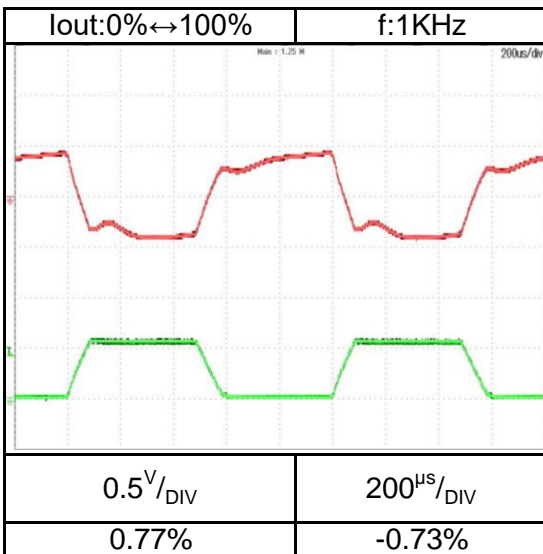
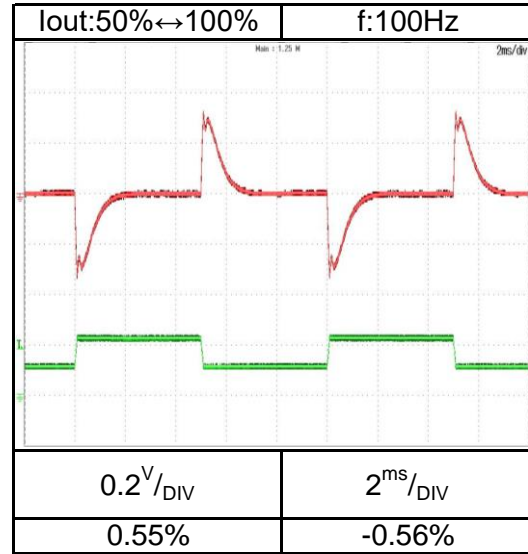
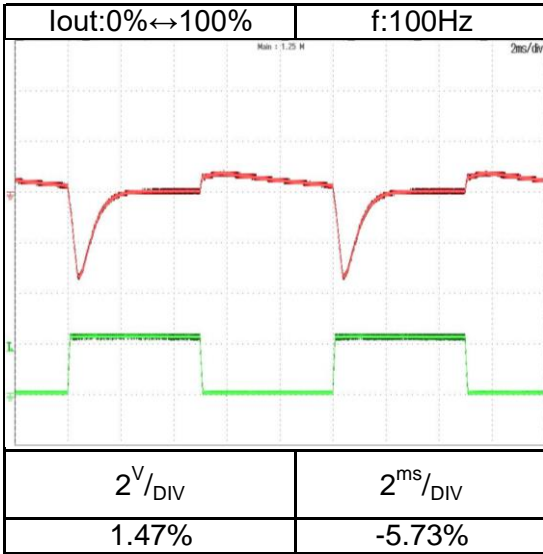


2.8 Dynamic load response characteristics
C.V mode

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

Load current: tr=tf=100us

G60-56

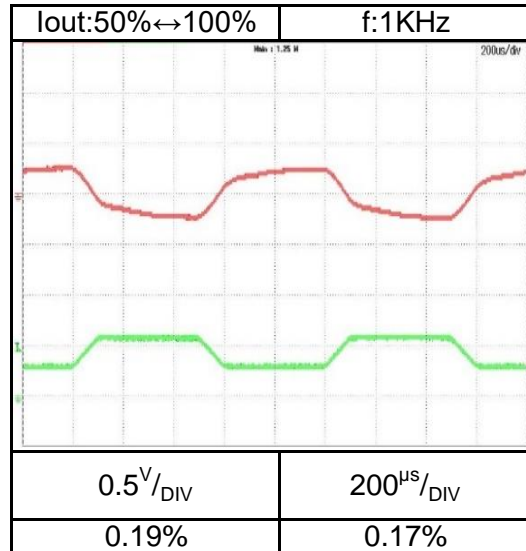
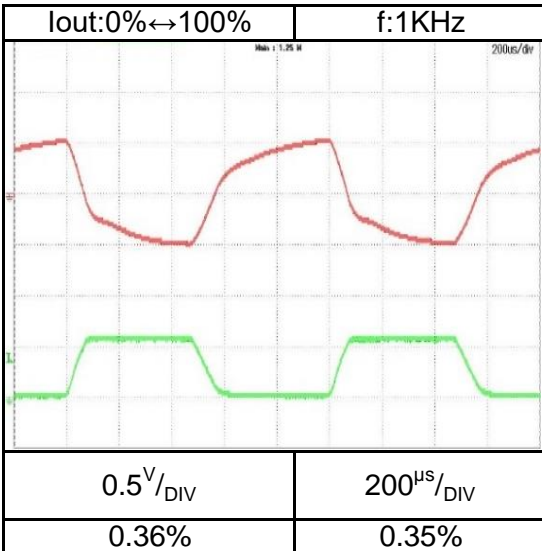
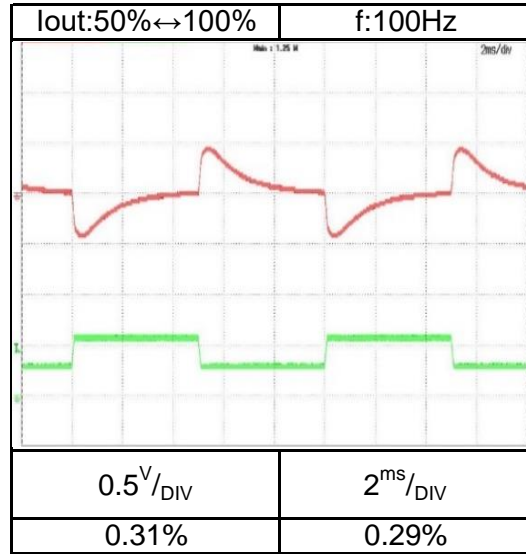
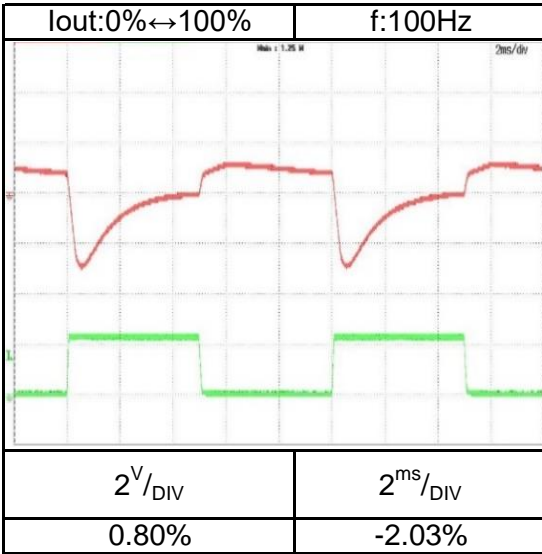


2.8 Dynamic load response characteristics
C.V mode

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

Load current: tr=tf=100us

G150-22.5

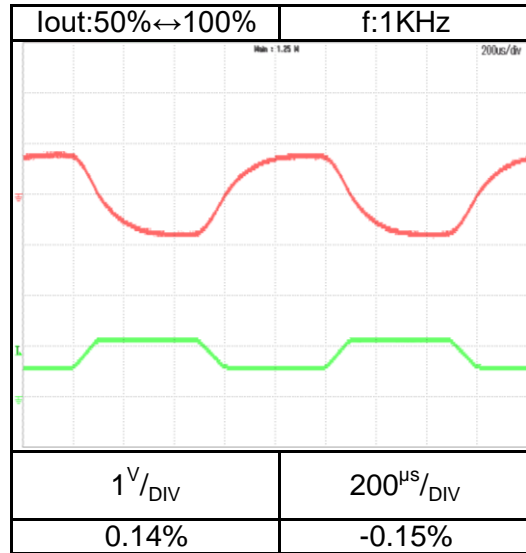
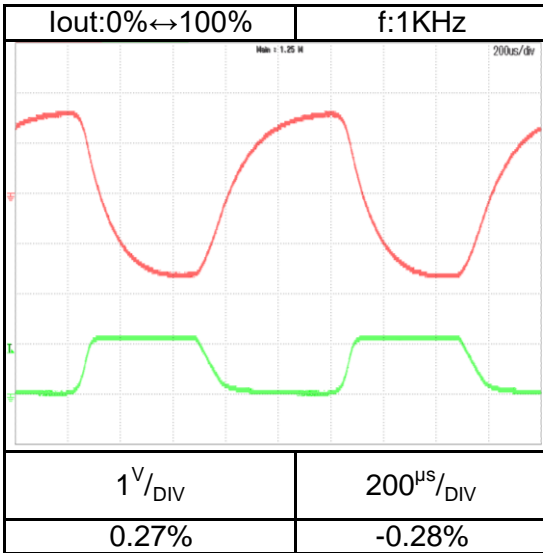
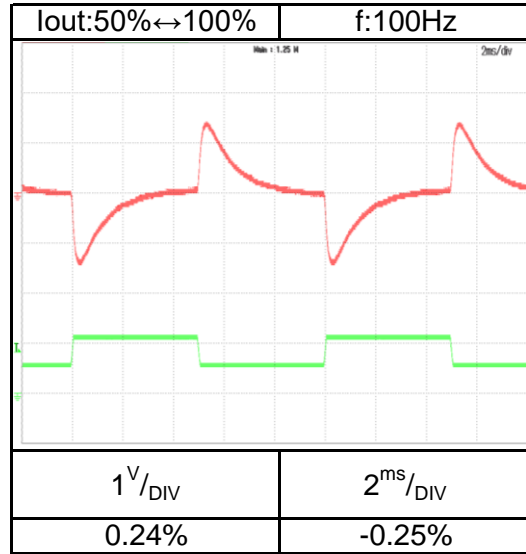
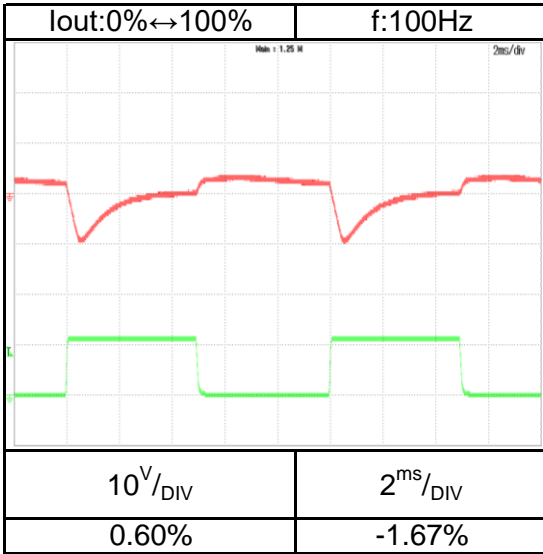


2.8 Dynamic load response characteristics
C.V mode

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

Load current: tr=tf=100us

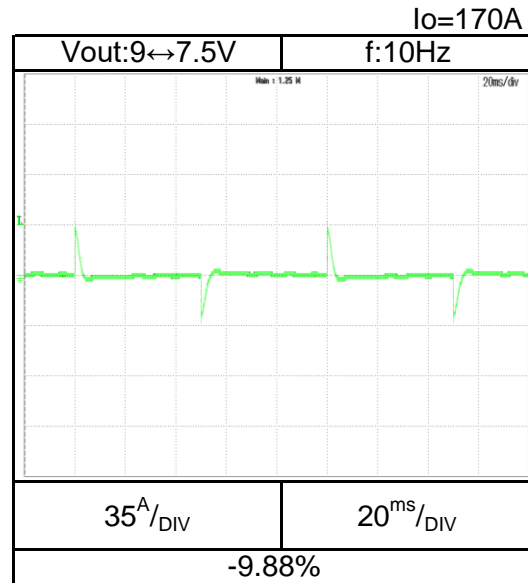
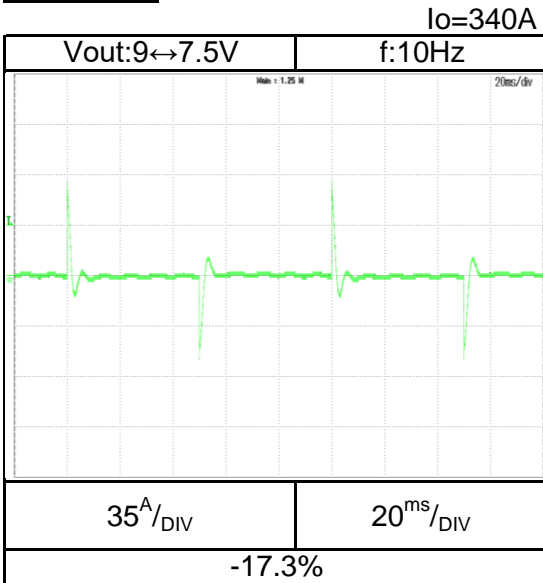
G600-5.6



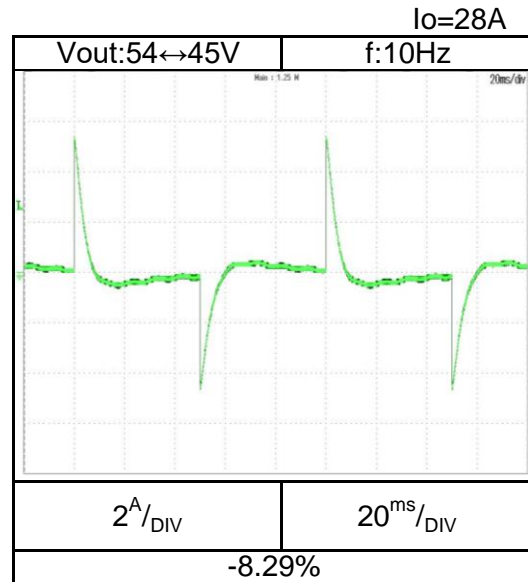
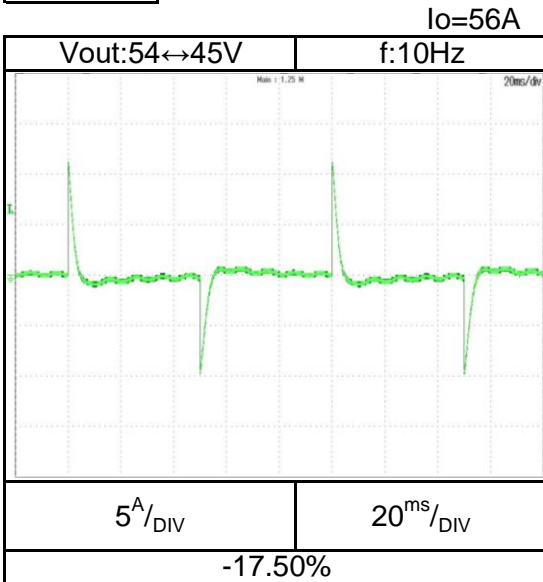
2.8 Dynamic load response characteristics
C.C mode

Conditions: Vin: Nominal
Ta = 25°C

G10-340



G60-56

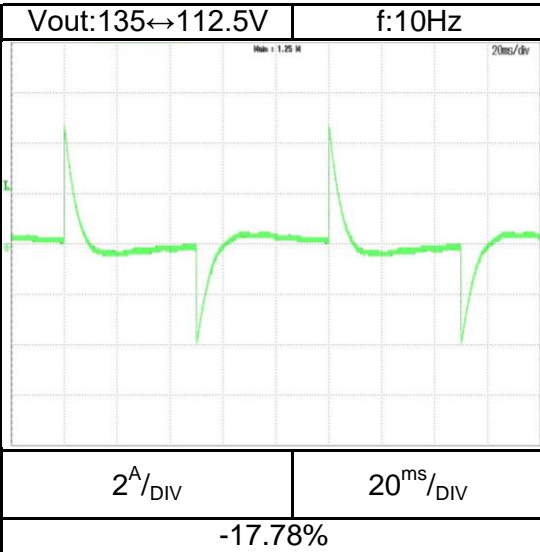


2.8 Dynamic load response characteristics
C.C mode

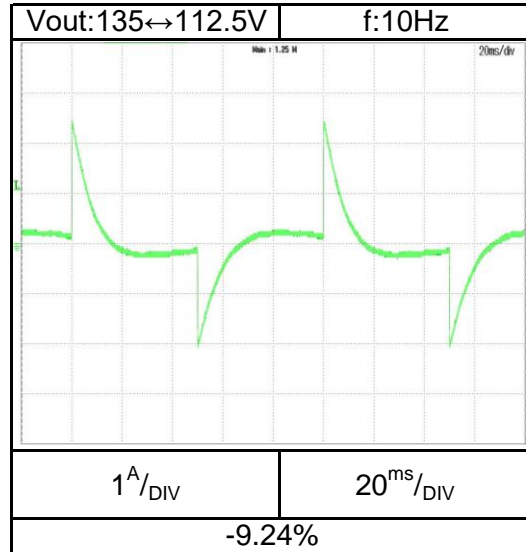
Conditions: Vin: Nominal
Ta = 25°C

G150-22.5

Io=22.5A

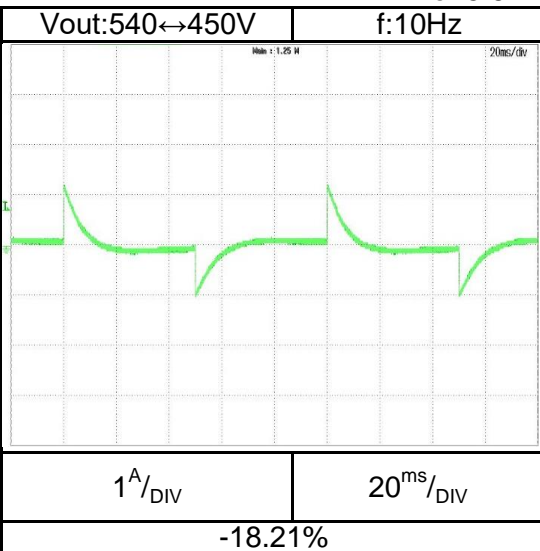


Io=11.25A

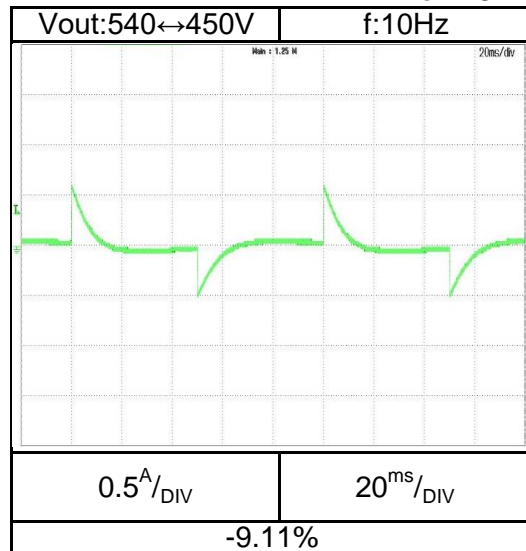


G600-5.6

Io=5.6A



Io=2.8A

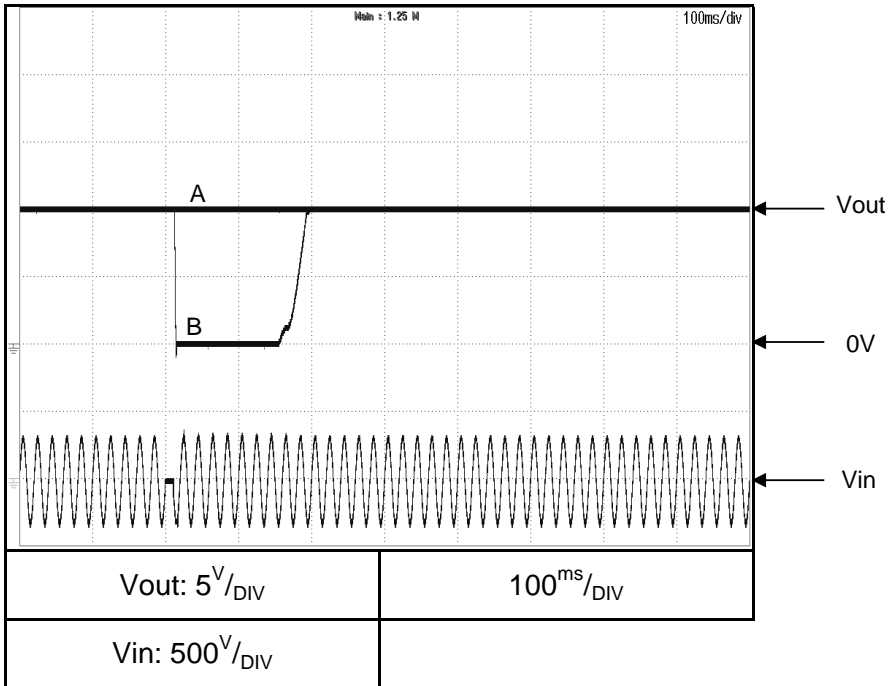


2.9 Response to brown-out characteristics
C.V mode

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

G10-340 1Φ200

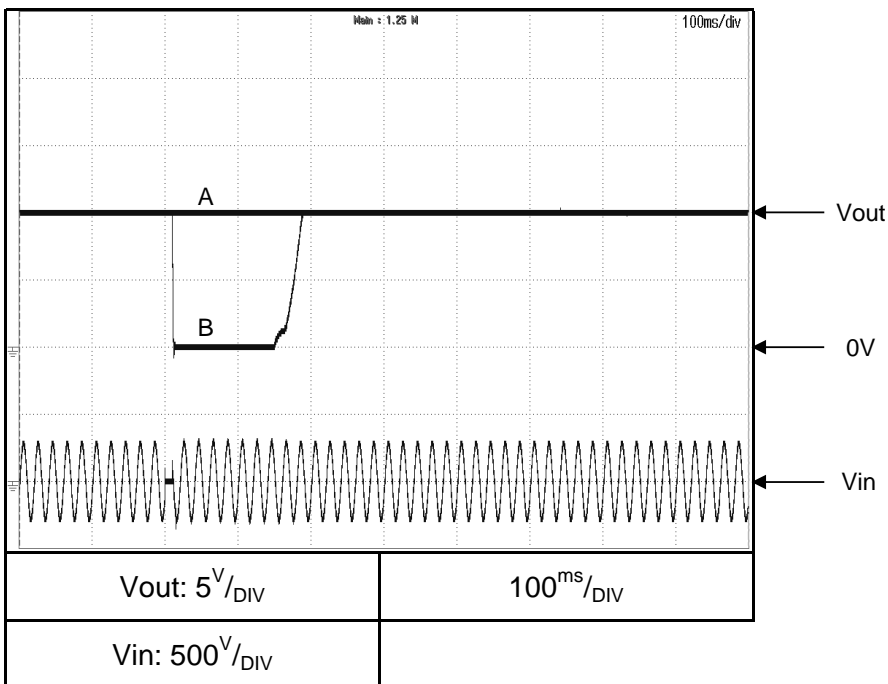
Vin:230VAC



Brown-out time
A - 10.5ms
B - 11ms

G10-340 3Φ200

Vin:200VAC



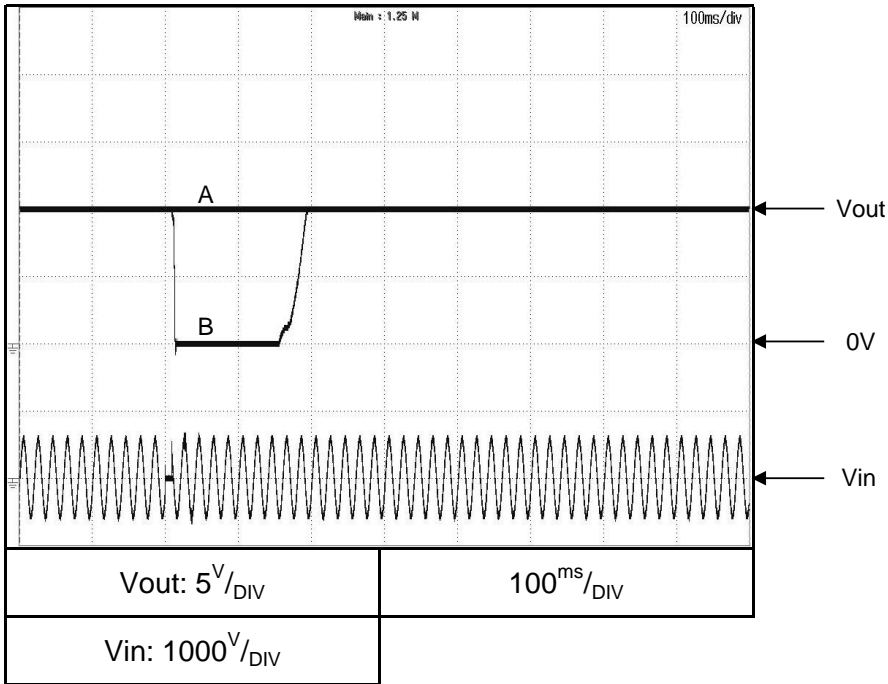
Brown-out time
A - 9ms
B - 10ms

2.9 Response to brown-out characteristics
C.V mode

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

G10-340 3Φ400

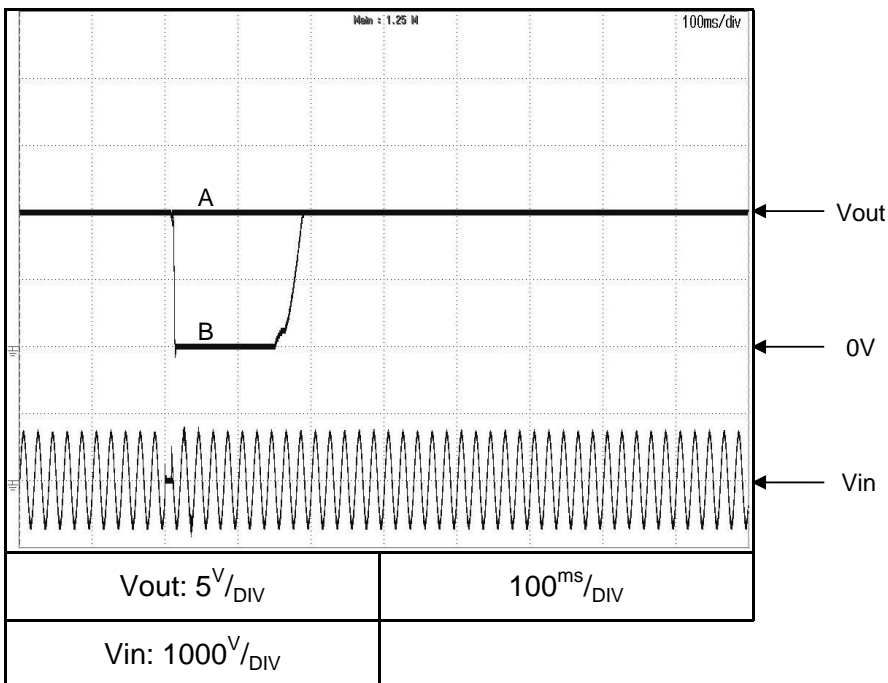
Vin:400VAC



Brown-out time
A - 9ms
B - 11ms

G10-340 3Φ480

Vin:480VAC



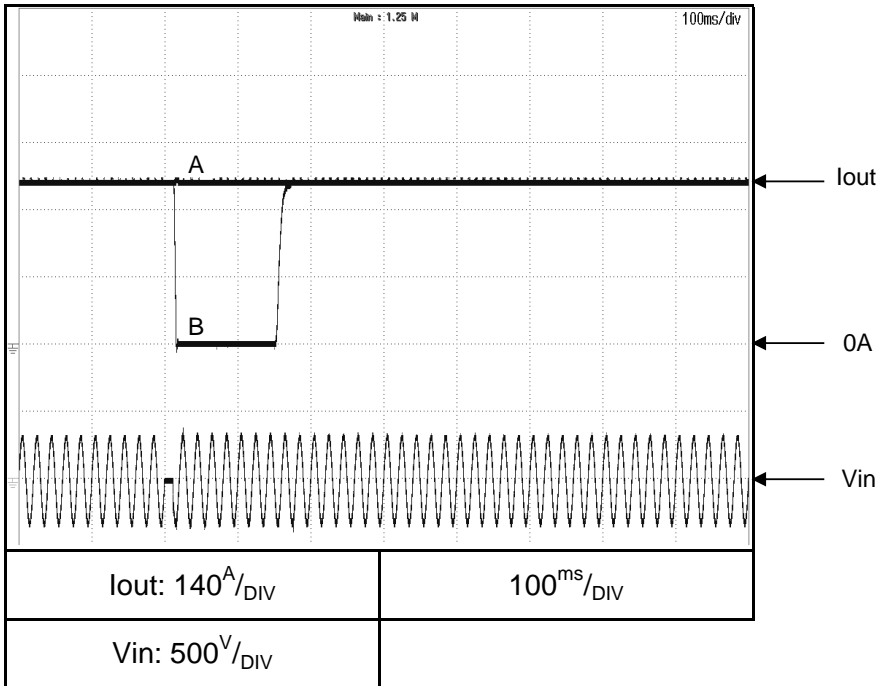
Brown-out time
A - 10ms
B - 11ms

2.9 Response to brown-out characteristics
C.C mode

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

G10-340 1Φ200

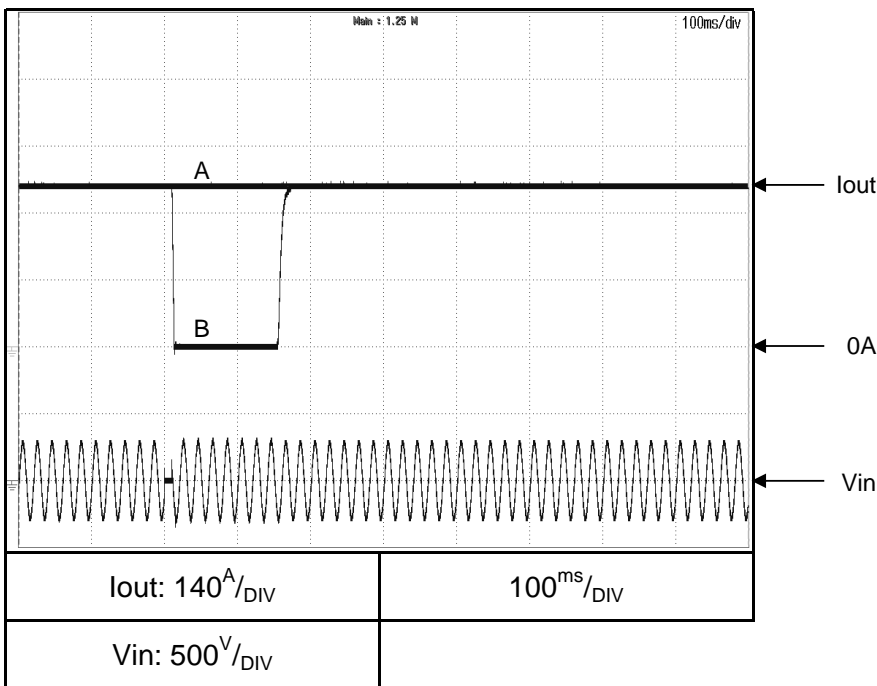
Vin:230VAC



Brown-out time
A - 11ms
B - 12ms

G10-340 3Φ200

Vin:200VAC



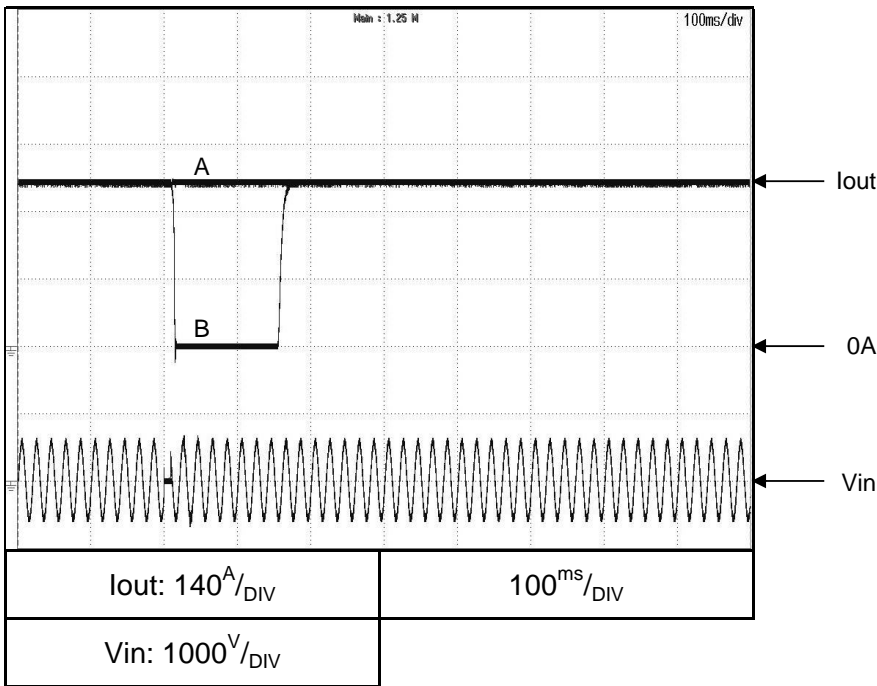
Brown-out time
A - 9ms
B - 10ms

2.9 Response to brown-out characteristics
C.C mode

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

G10-340 3Φ400

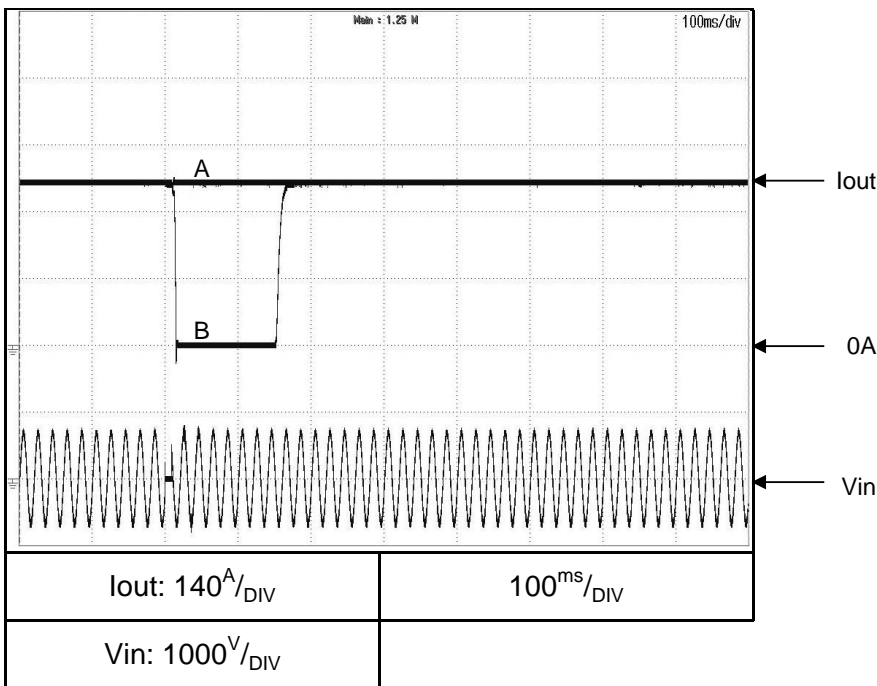
Vin:400VAC



Brown-out time
A - 9ms
B - 11ms

G10-340 3Φ480

Vin:480VAC



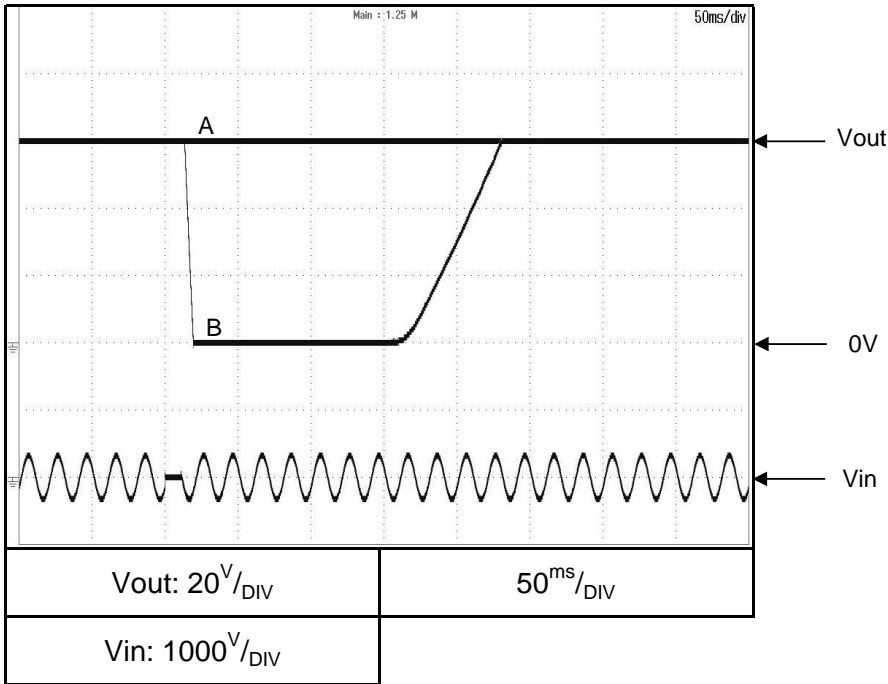
Brown-out time
A - 10ms
B - 11ms

2.9 Response to brown-out characteristics
C.V mode

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

G60-56 1Φ200

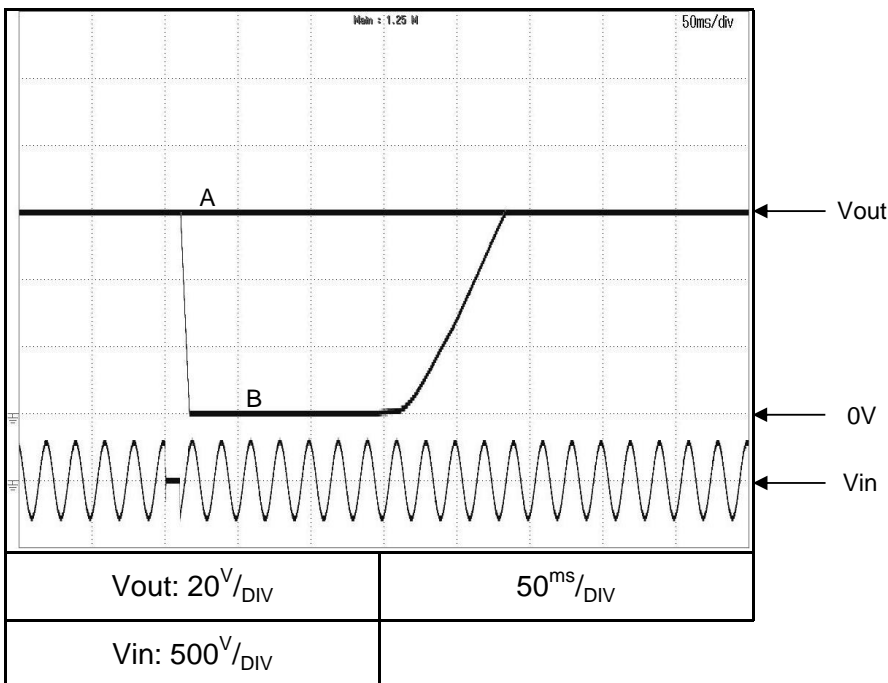
Vin:230VAC



Brown-out time
A - 10ms
B - 11ms

G60-56 3Φ200

Vin:200VAC



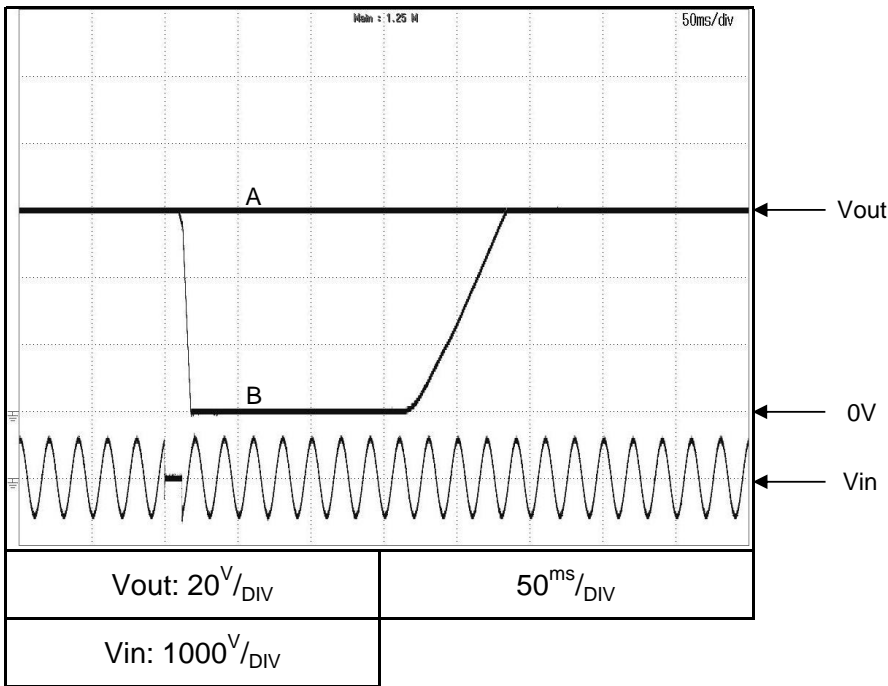
Brown-out time
A - 9ms
B - 10ms

2.9 Response to brown-out characteristics
C.V mode

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

G60-56 3Φ400

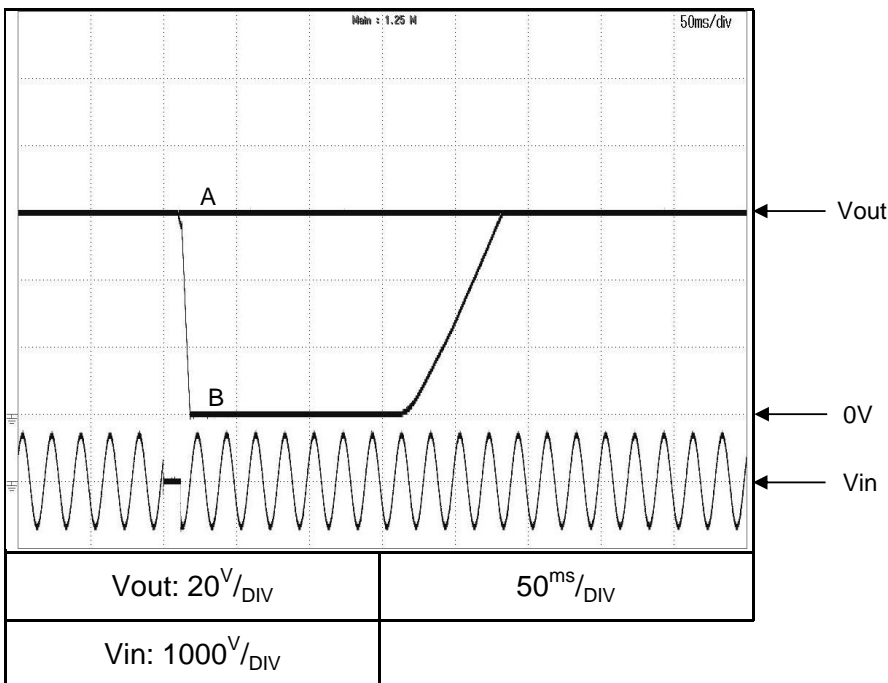
Vin:400VAC



Brown-out time
A - 11ms
B - 12ms

G60-56 3Φ480

Vin:480VAC



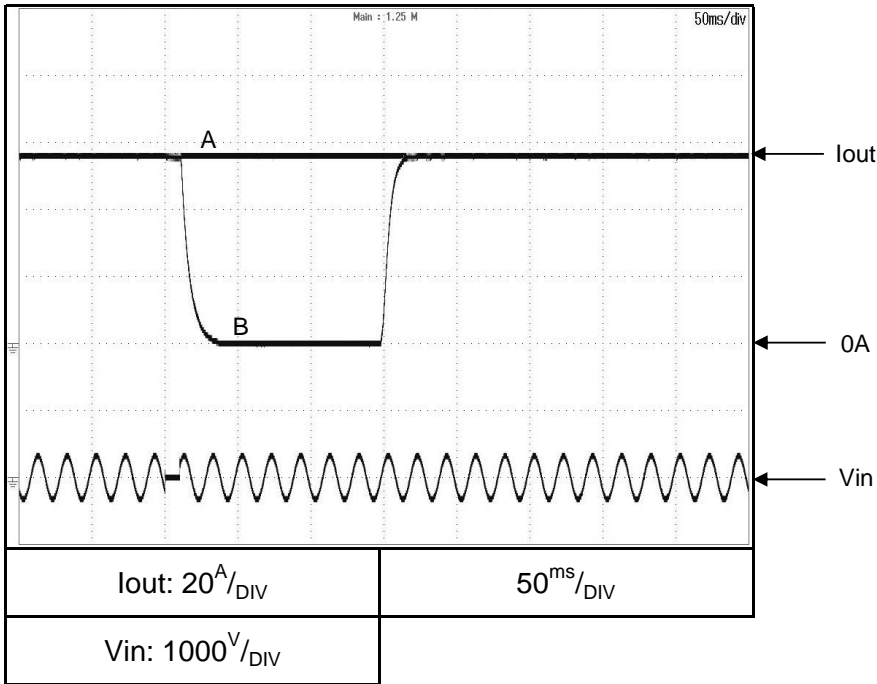
Brown-out time
A - 11ms
B - 12ms

2.9 Response to brown-out characteristics
C.C mode

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

G60-56 1Φ200

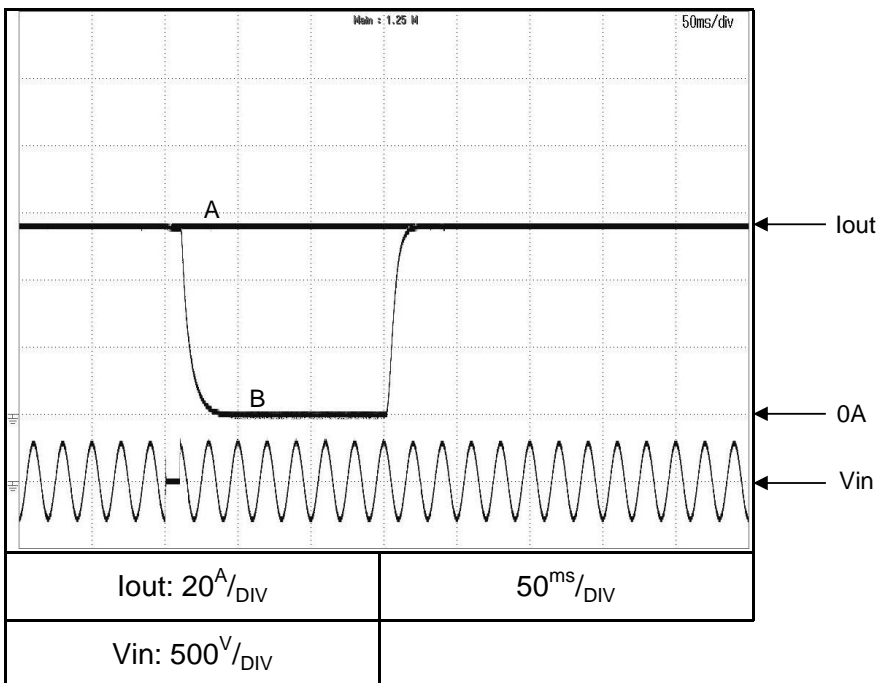
Vin:230VAC



Brown-out time
A - 9ms
B - 10ms

G60-56 3Φ200

Vin:200VAC



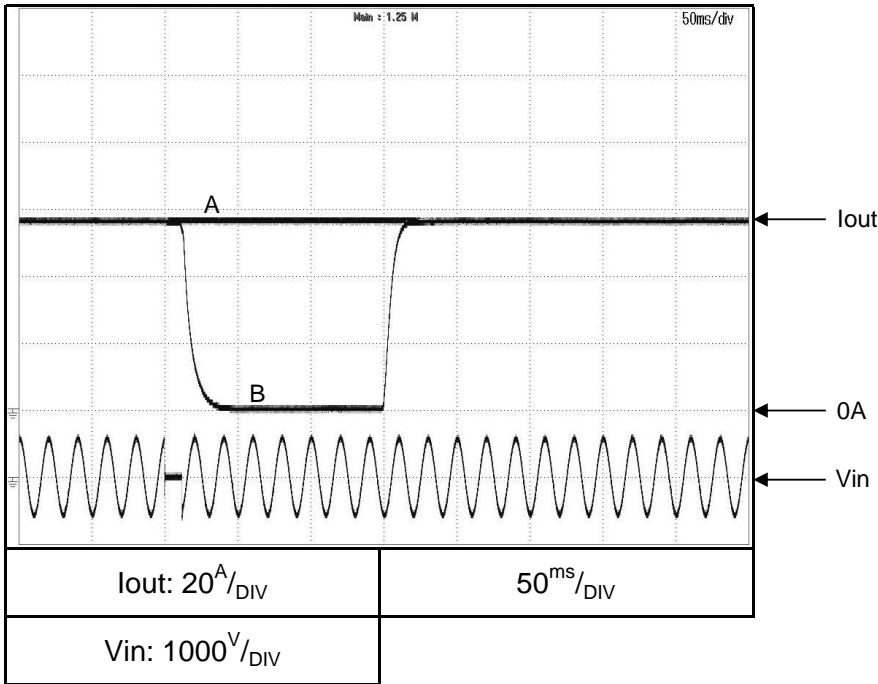
Brown-out time
A - 9ms
B - 10ms

2.9 Response to brown-out characteristics
C.C mode

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

G60-56 3Φ400

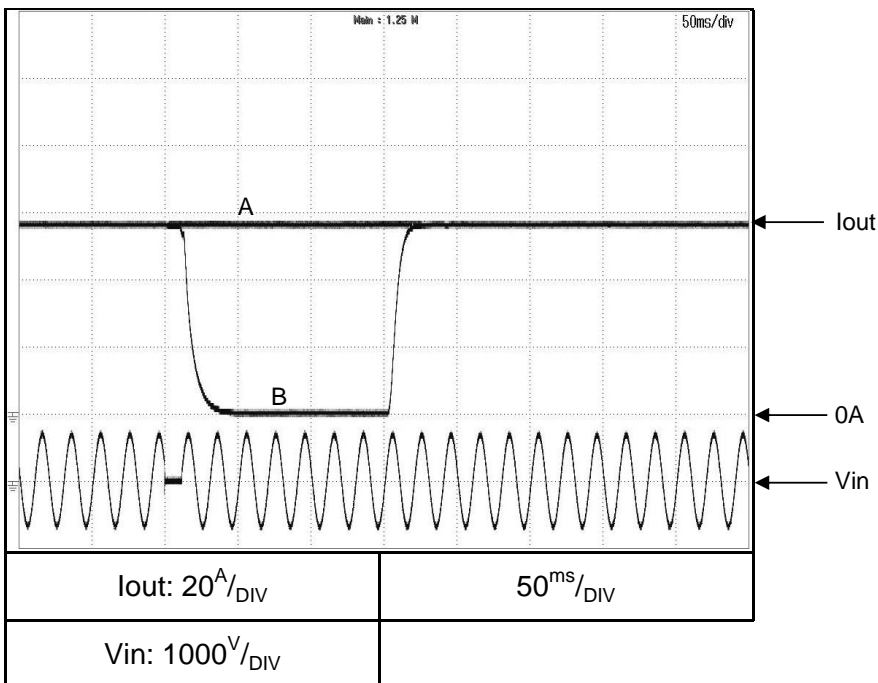
Vin:400VAC



Brown-out time
A - 11ms
B - 12ms

G60-56 3Φ480

Vin:480VAC



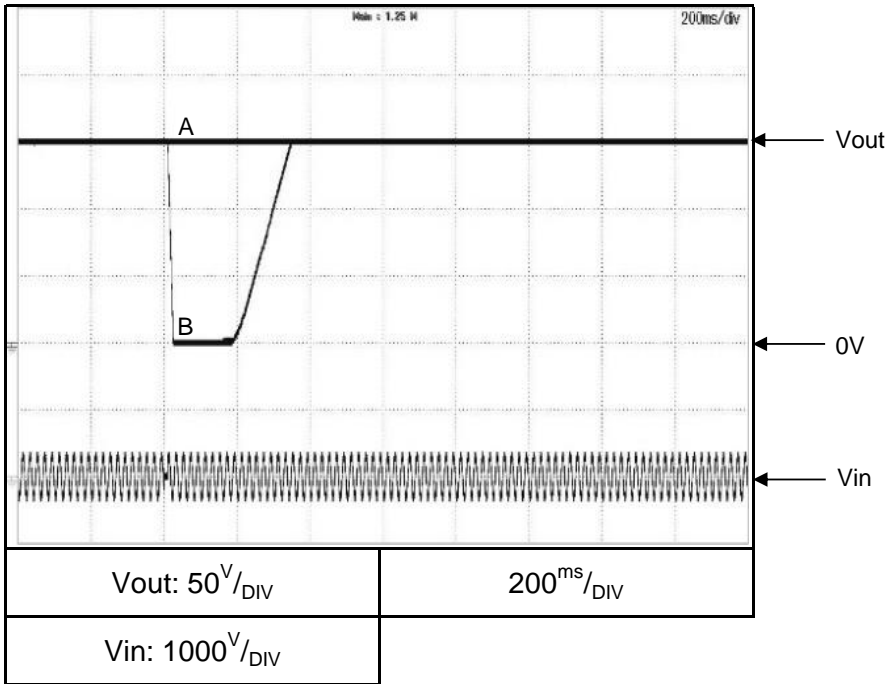
Brown-out time
A - 11ms
B - 12ms

2.9 Response to brown-out characteristics
C.V mode

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

G150-22.5 1Φ200

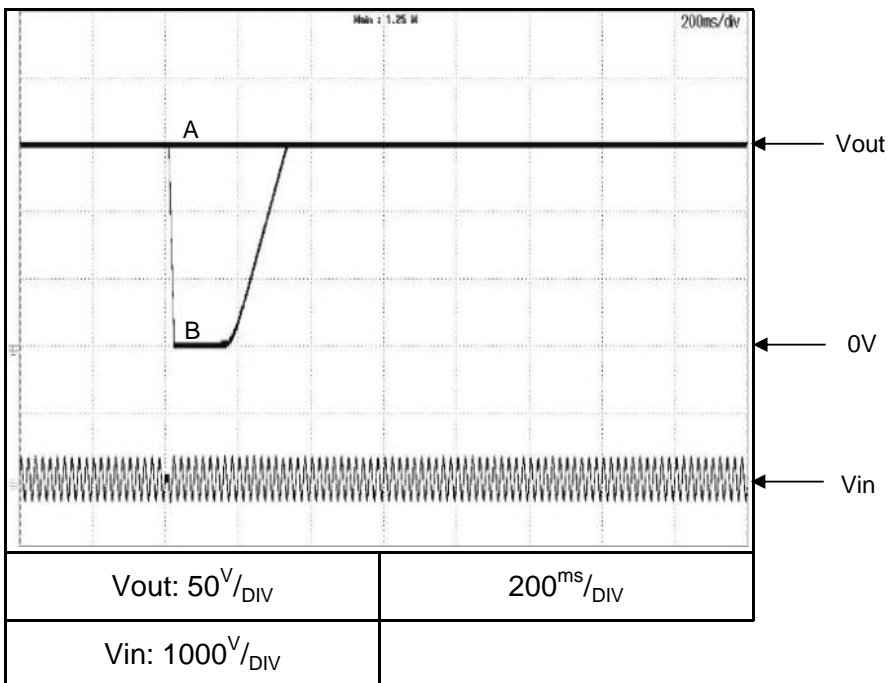
Vin:230VAC



Brown-out time
A - 10.5ms
B - 11ms

G150-22.5 3Φ200

Vin:200VAC



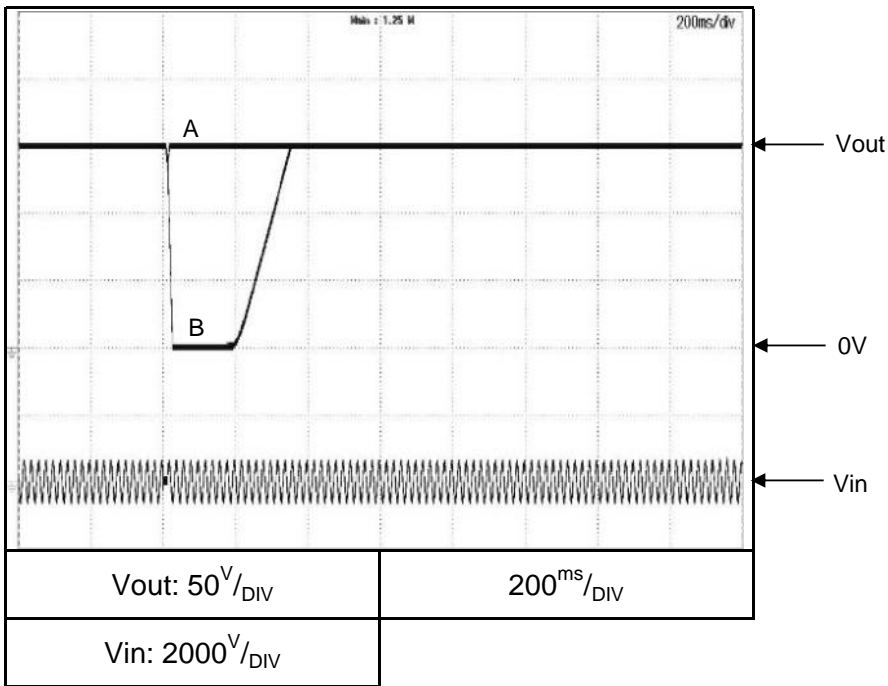
Brown-out time
A - 9.5ms
B - 10ms

2.9 Response to brown-out characteristics
C.V mode

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

G150-22.5 3Φ400

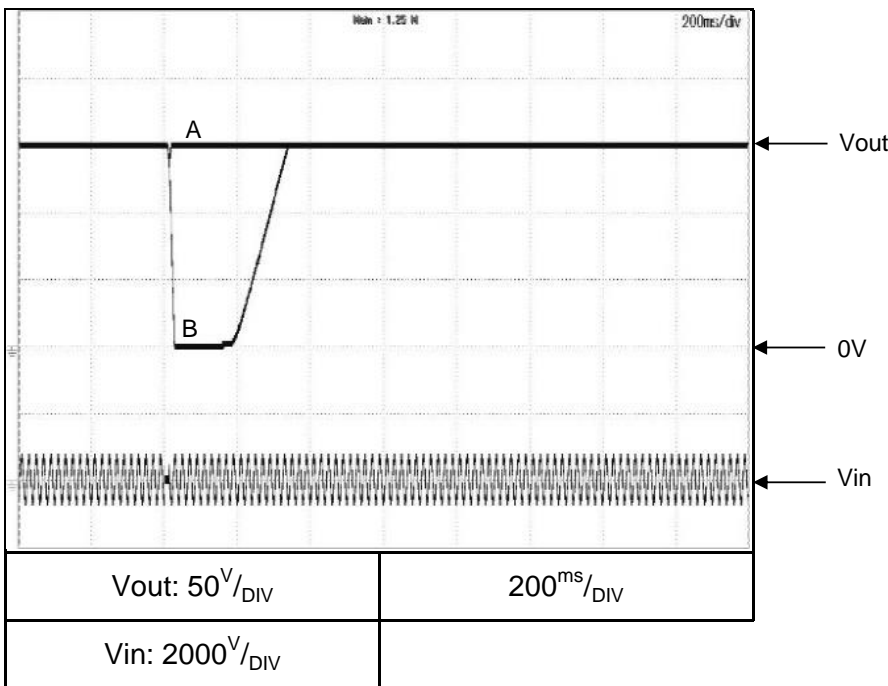
Vin:400VAC



Brown-out time
A - 12ms
B - 12.5ms

G150-22.5 3Φ480

Vin:480VAC



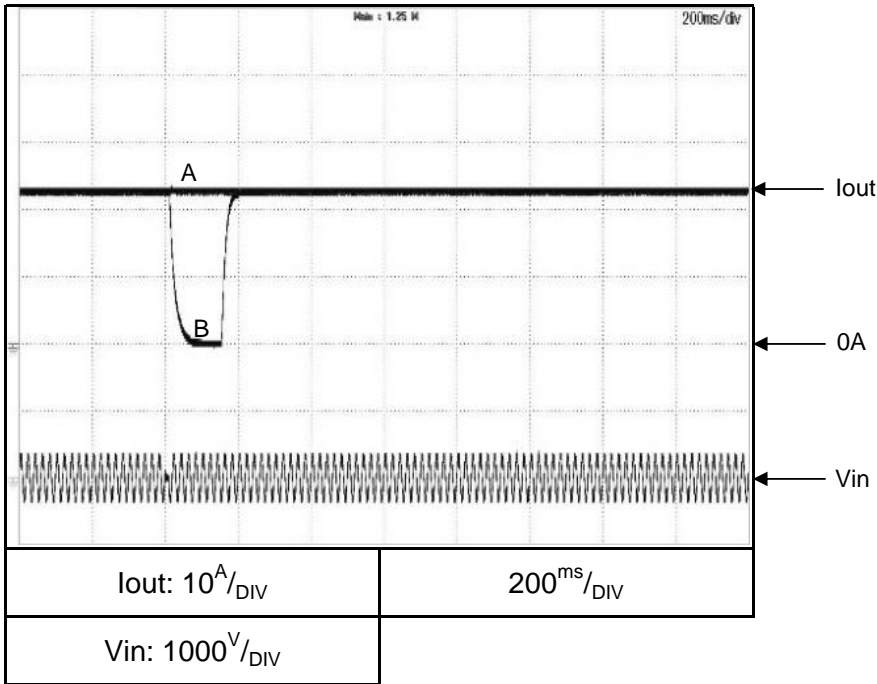
Brown-out time
A - 12.5ms
B - 13ms

2.9 Response to brown-out characteristics
C.C mode

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

G150-22.5 1Φ200

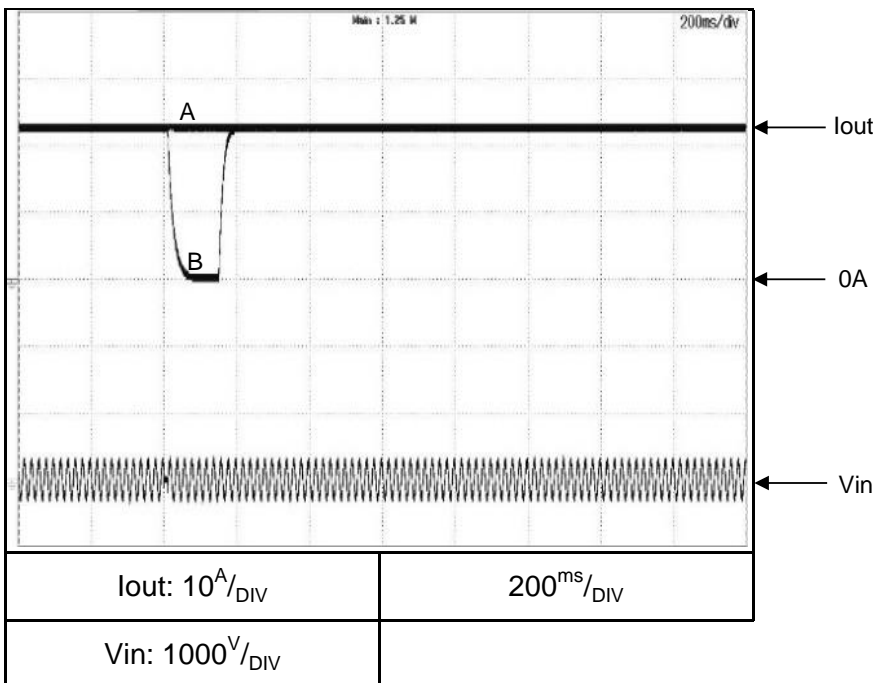
Vin:230VAC



Brown-out time
A - 10.5ms
B - 11ms

G150-22.5 3Φ200

Vin:200VAC



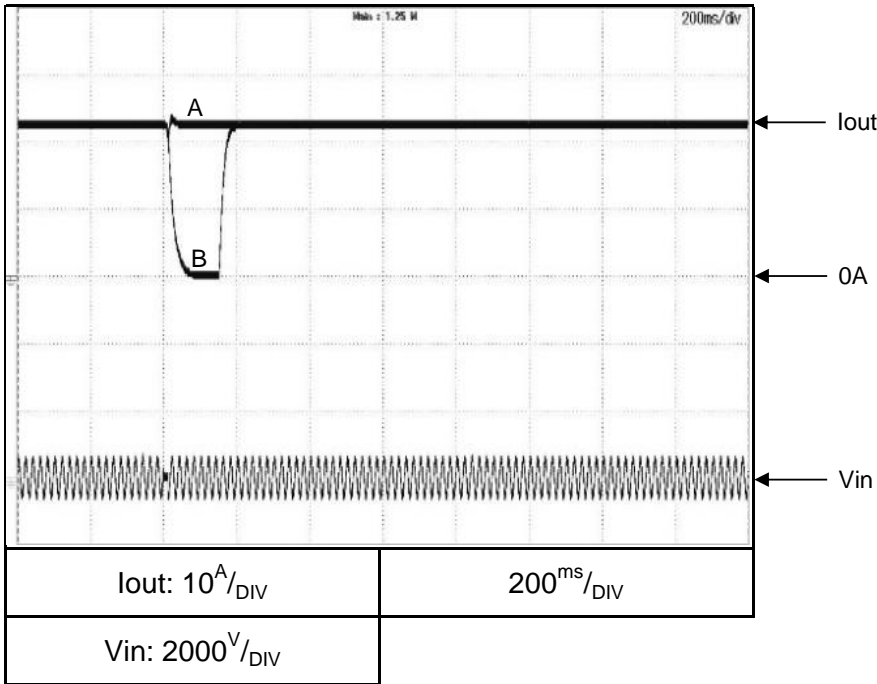
Brown-out time
A - 9.5ms
B - 10ms

2.9 Response to brown-out characteristics
C.C mode

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

G150-22.5 3Φ400

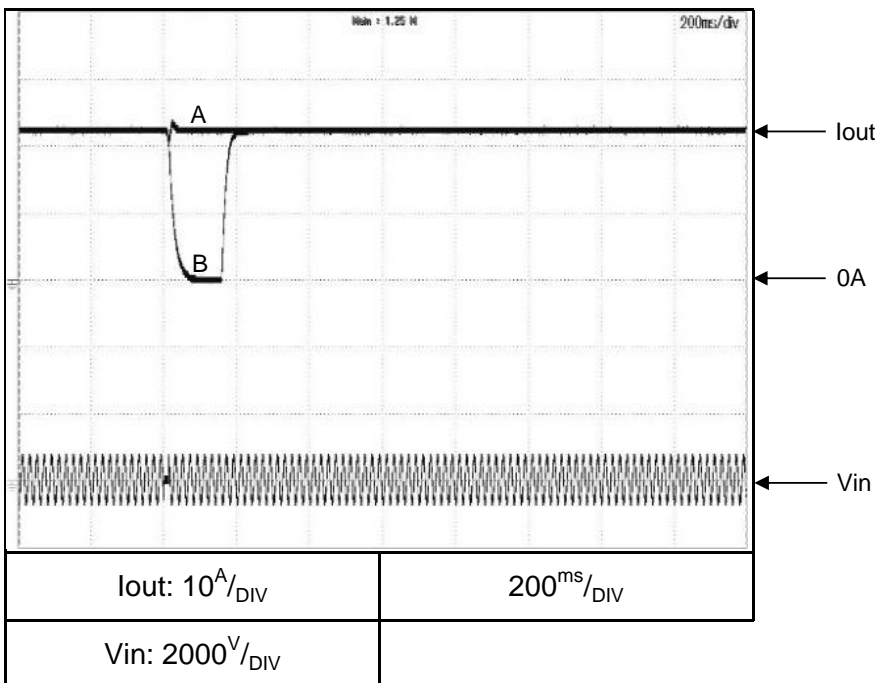
Vin:400VAC



Brown-out time
A - 12ms
B - 12.5ms

G150-22.5 3Φ480

Vin:480VAC



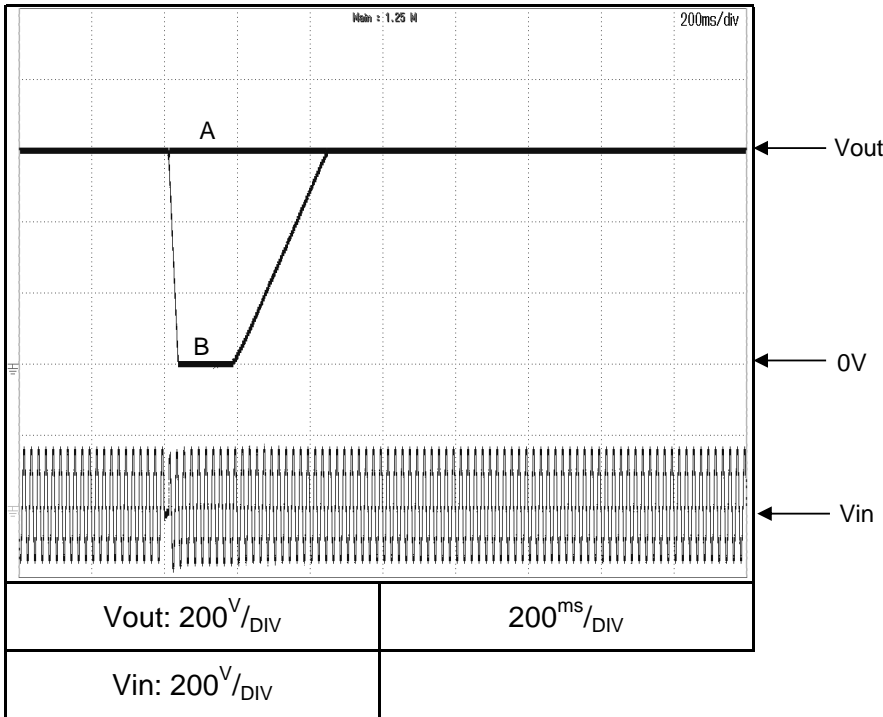
Brown-out time
A - 12.5ms
B - 13ms

2.9 Response to brown-out characteristics
C.V mode

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

G600-5.6 1Φ200

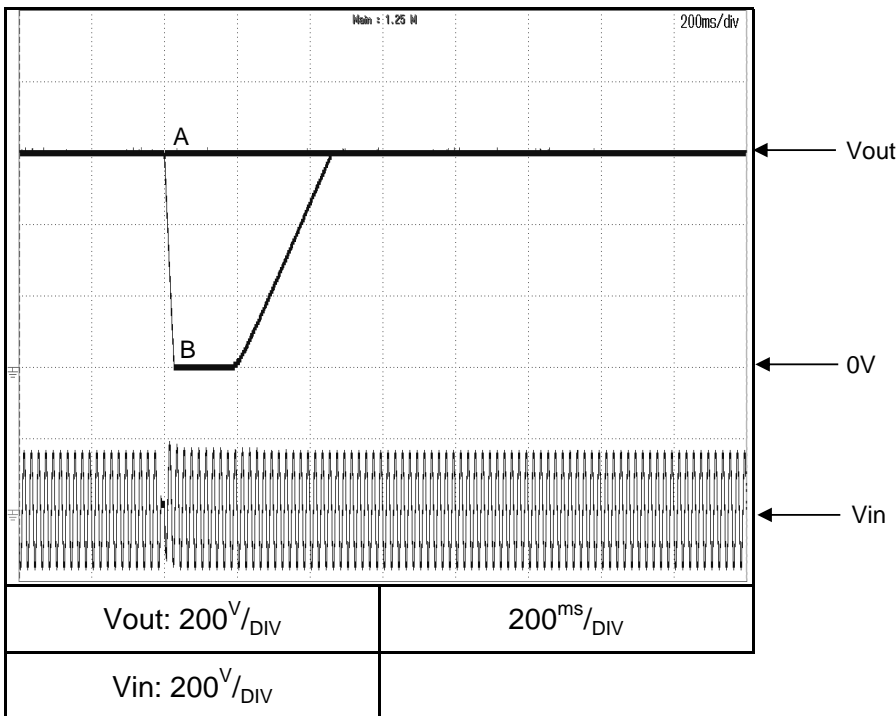
Vin:230VAC



Brown-out time
A - 11ms
B - 12ms

G600-5.6 3Φ200

Vin:200VAC



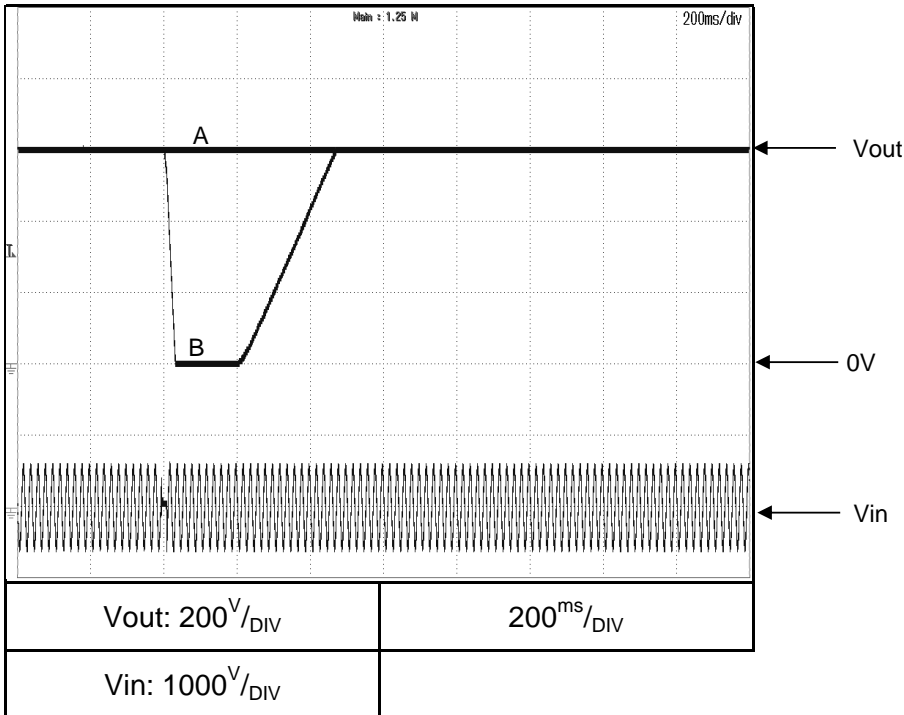
Brown-out time
A - 10ms
B - 11ms

2.9 Response to brown-out characteristics
C.V mode

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

G600-5.6 3Φ400

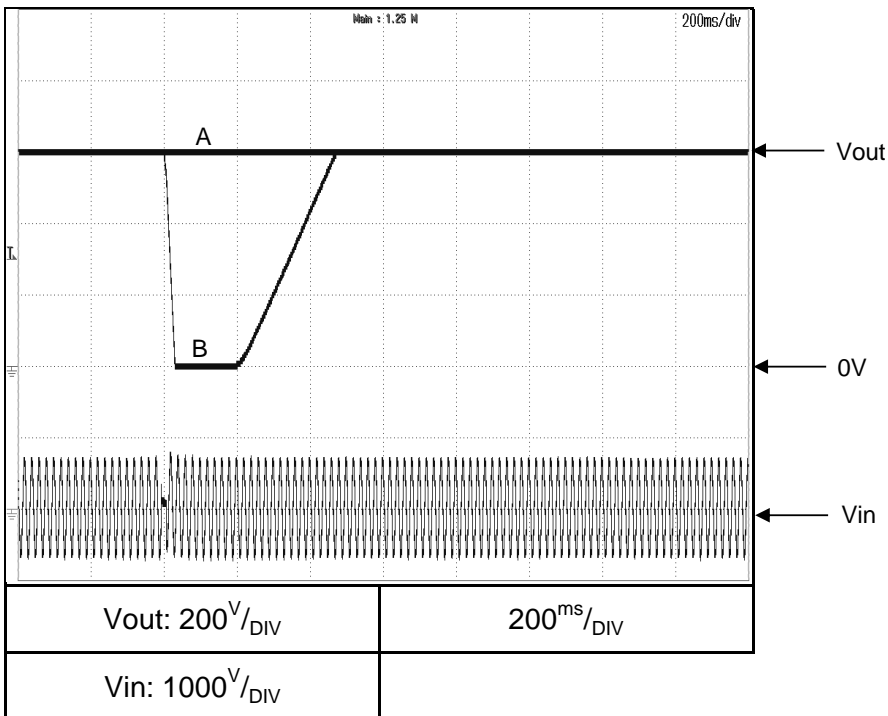
Vin:400VAC



Brown-out time
A - 13ms
B - 14ms

G600-5.6 3Φ480

Vin:480VAC



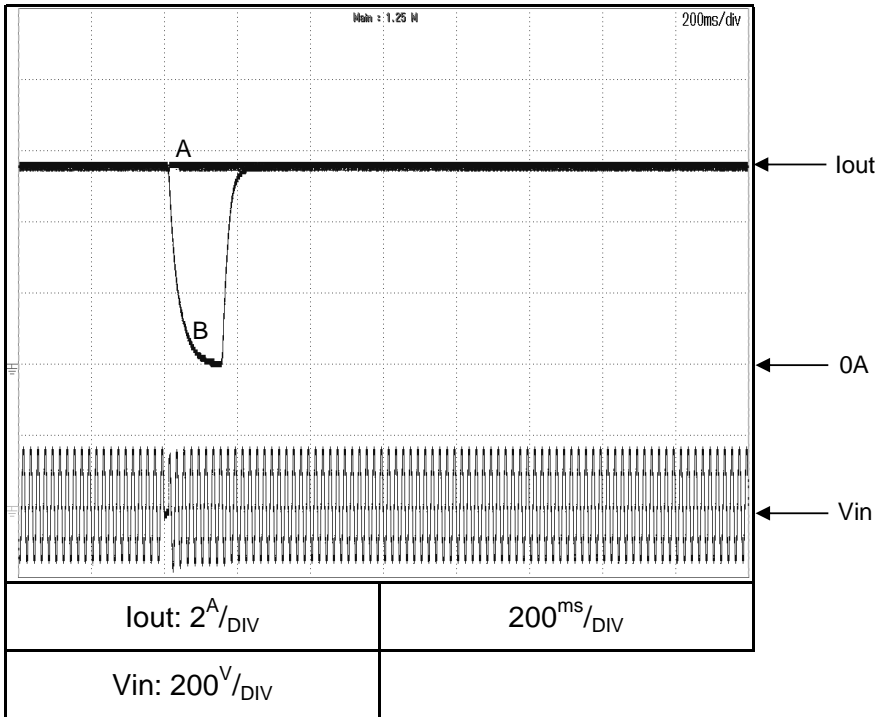
Brown-out time
A - 13ms
B - 14ms

2.9 Response to brown-out characteristics
C.C mode

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

G600-5.6 1Φ200

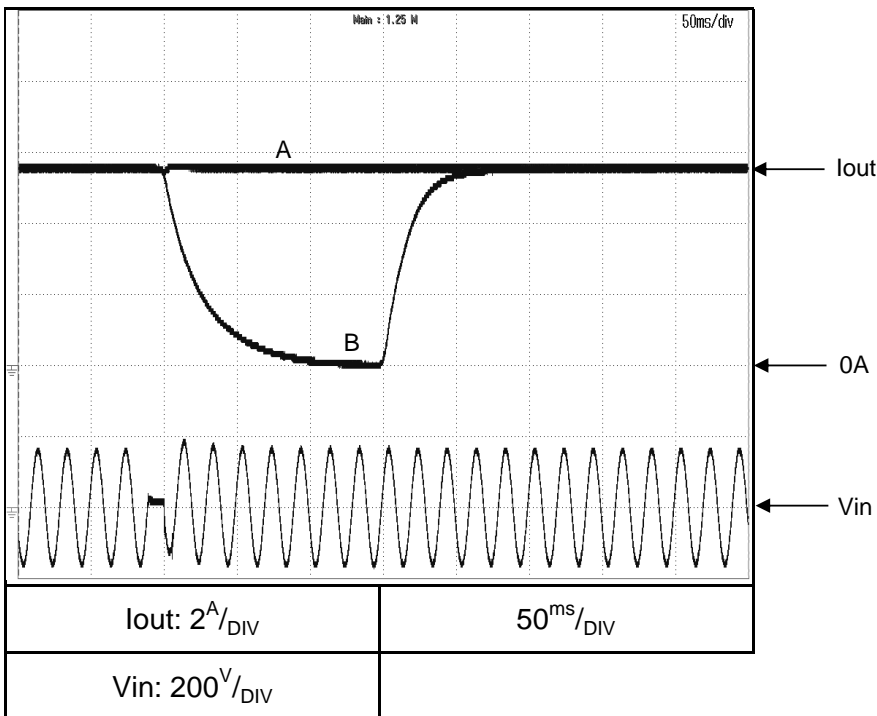
Vin:230VAC



Brown-out time
A - 11ms
B - 12ms

G600-5.6 3Φ200

Vin:200VAC



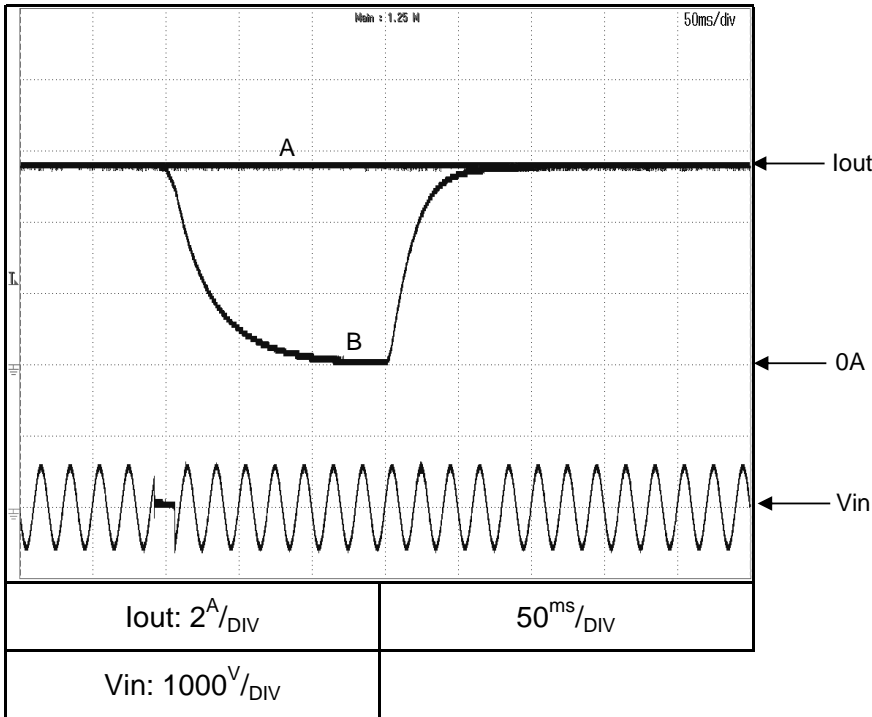
Brown-out time
A - 10ms
B - 11ms

2.9 Response to brown-out characteristics
C.C mode

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

G600-5.6 3Φ400

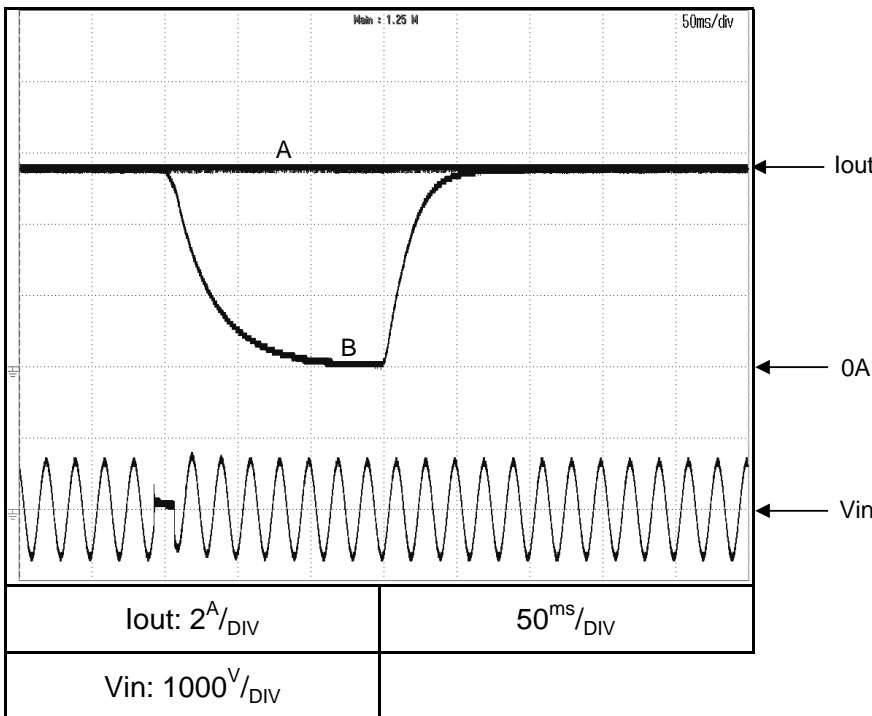
Vin:400VAC



Brown-out time
A - 13ms
B - 14ms

G600-5.6 3Φ480

Vin:480VAC

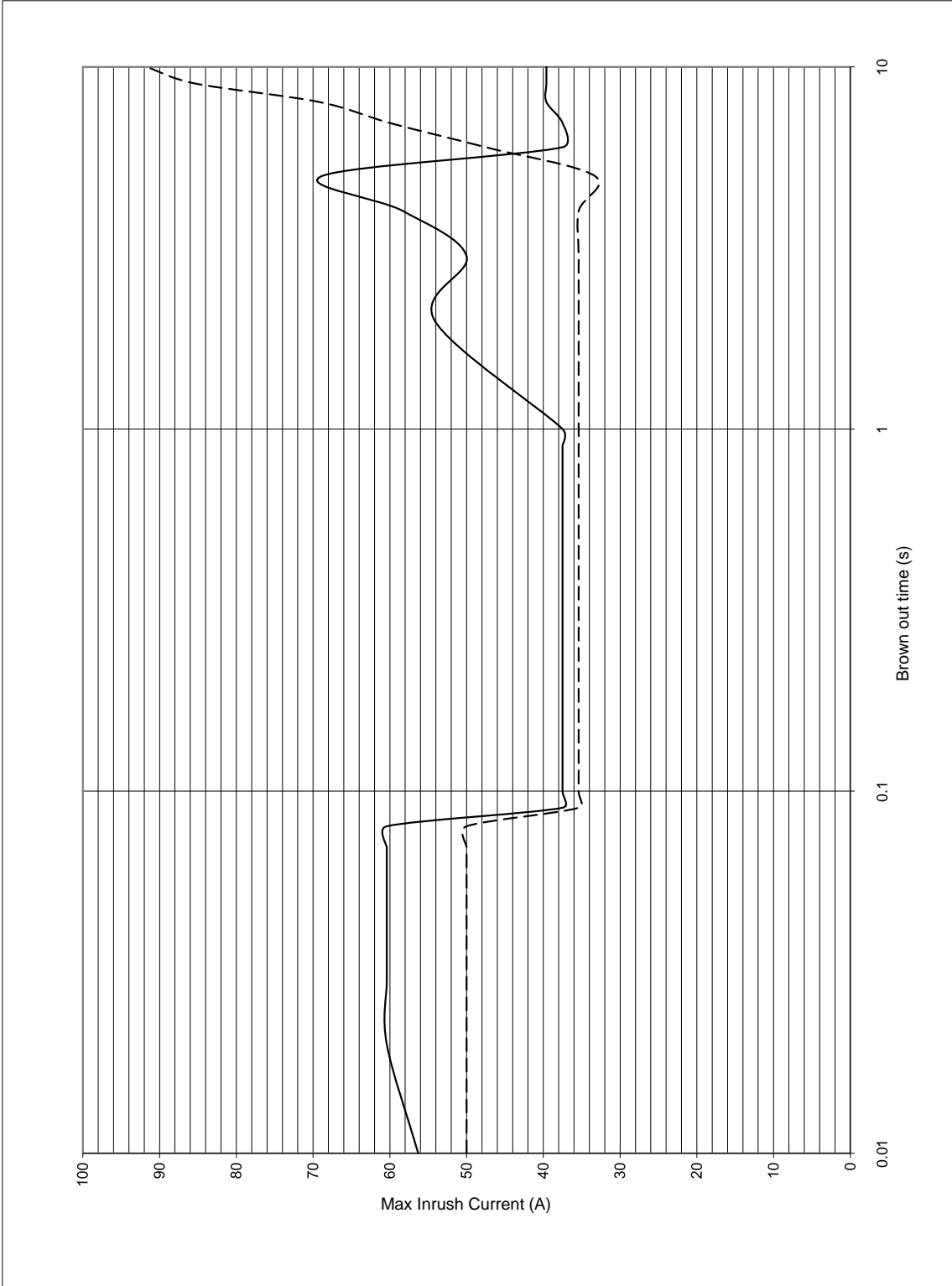


Brown-out time
A - 13ms
B - 14ms

2.10 Inrush Current Characteristics

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

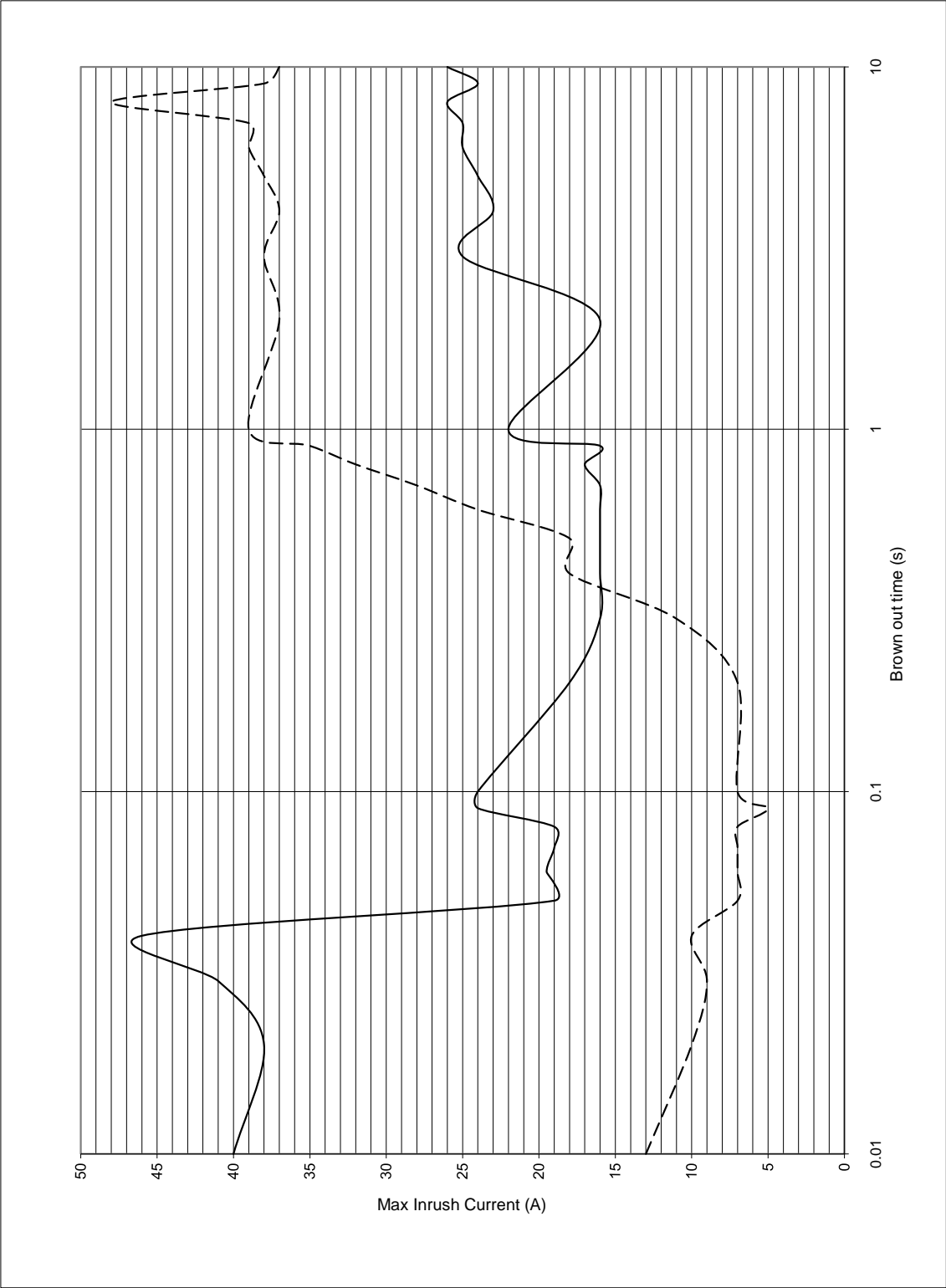
1Φ200 Input



2.10 Inrush Current Characteristics

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

3Φ200 Input

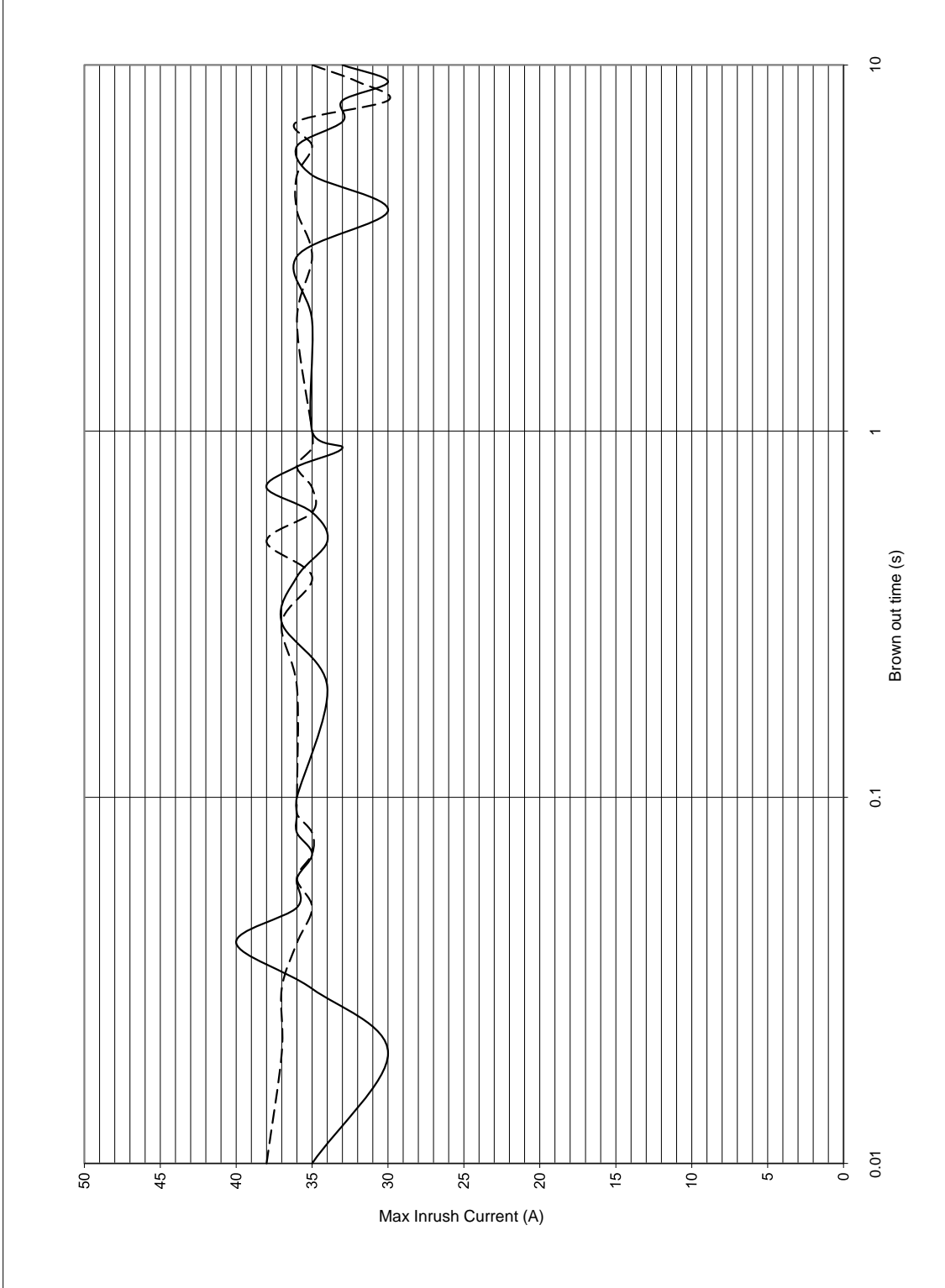


2.10 Inrush Current Characteristics

Conditions: Vout: 100%
Iout: 0%
Iout: 100%
Vin: 400VAC
Ta = 25°C

3Φ400 Input

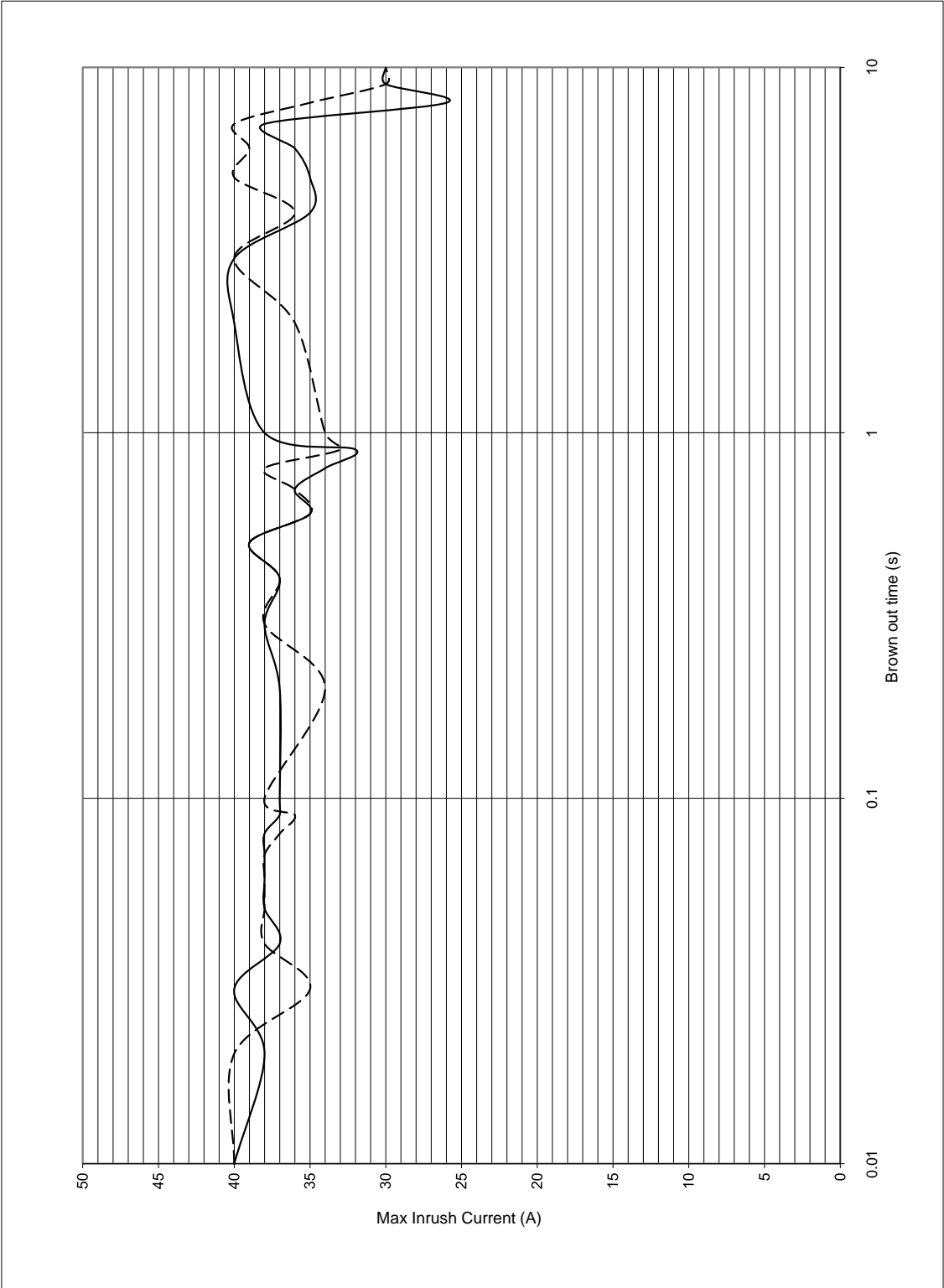
—————



2.10 Inrush Current Characteristics

Conditions: Vout: 100%
Iout: 0% -----
Iout: 100% _____
Vin: 480VAC
Ta = 25°C

3Φ480 Input

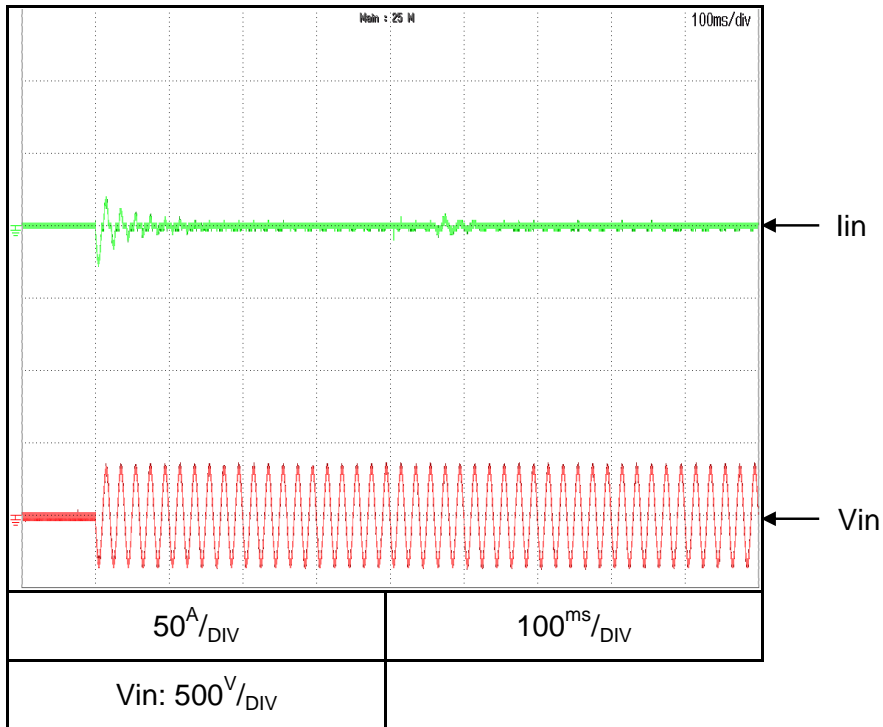


2.11 Inrush current waveform

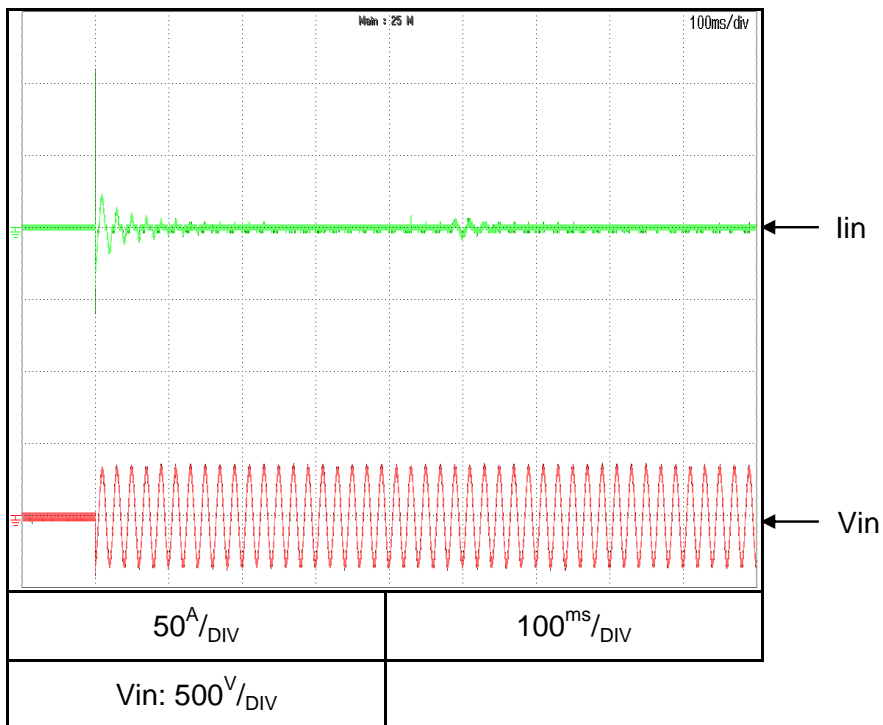
Conditions: Vin: 230V
 Vout: 100%
 Iout: 100%
 Ta = 25°C

1Φ200 Input

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



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

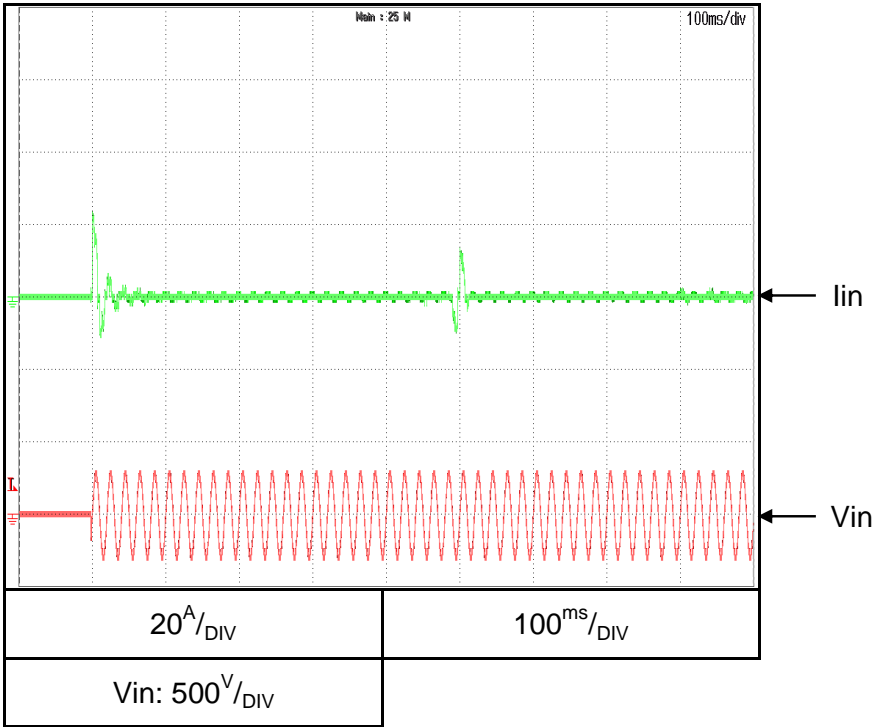


2.11 Inrush current waveform

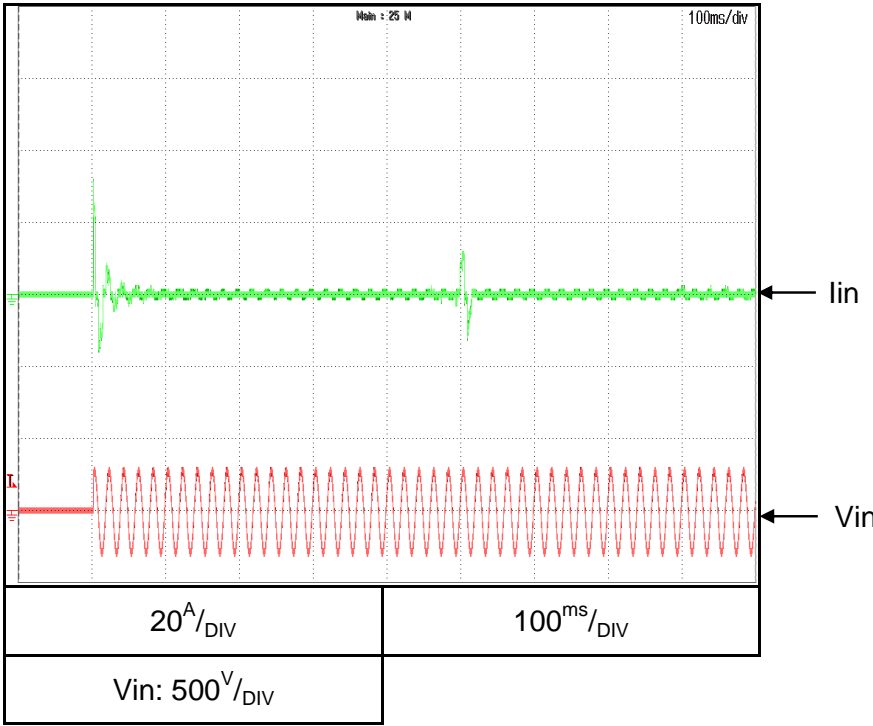
Conditions: Vin: 200V
Vout: 100%
Iout: 100%
Ta = 25°C

3Φ200 Input

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



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

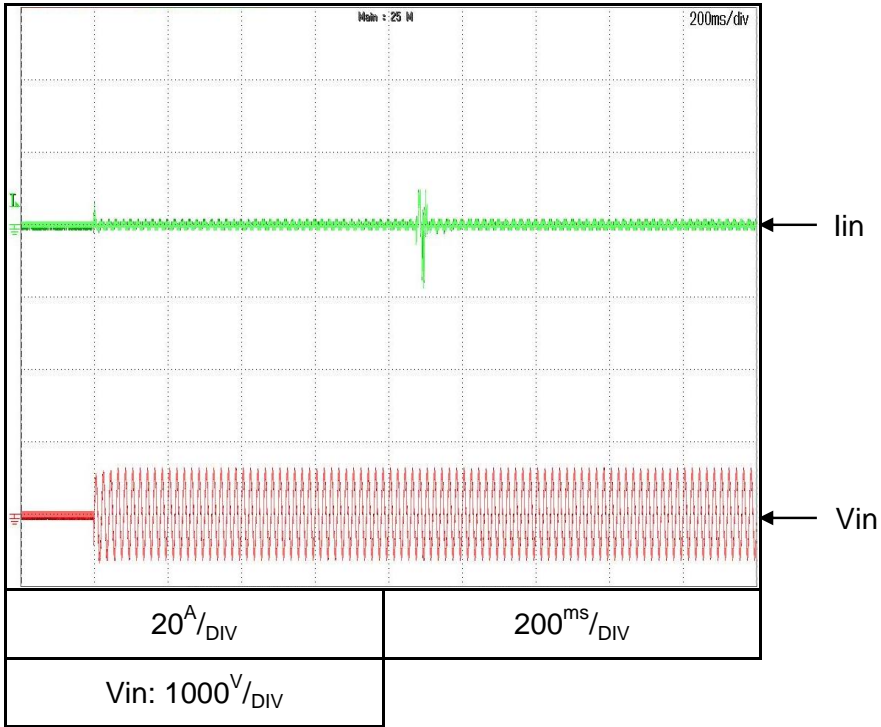


2.11 Inrush current waveform

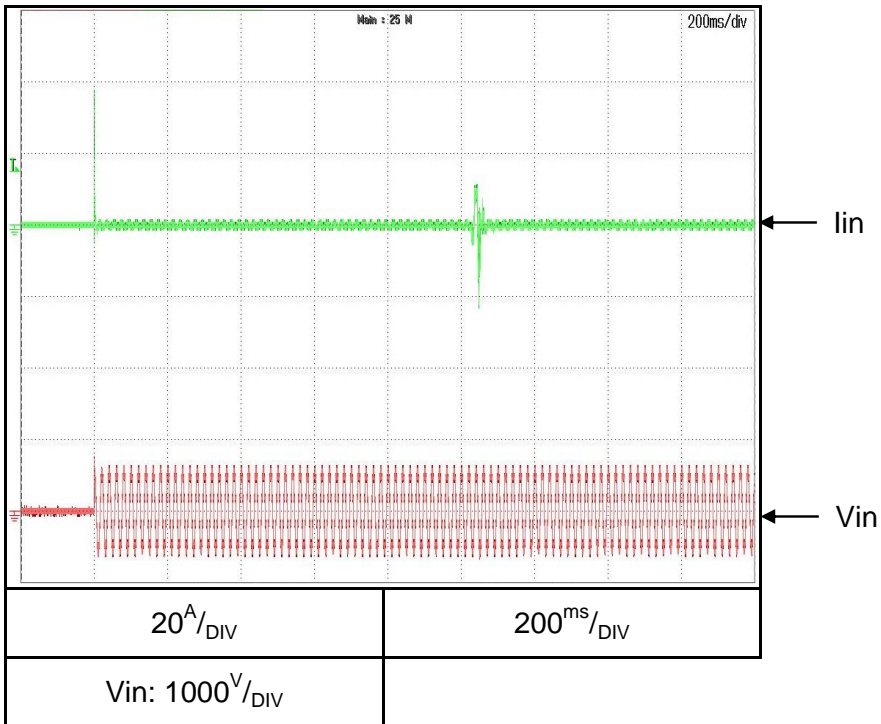
Conditions: Vin: 400V
Vout: 100%
Iout: 100%
Ta = 25°C

3Φ400 Input

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



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

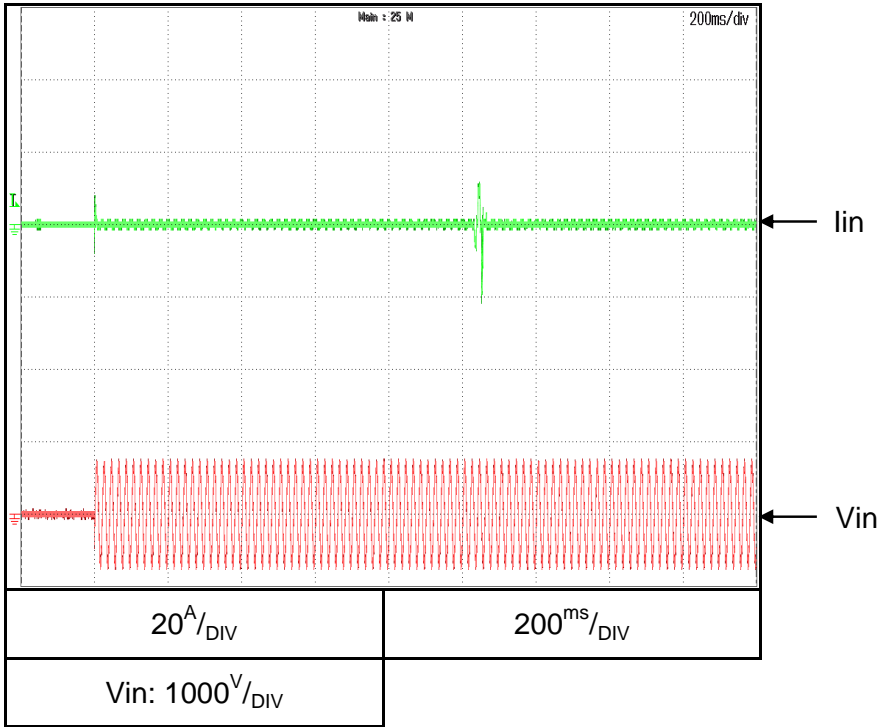


2.11 Inrush current waveform

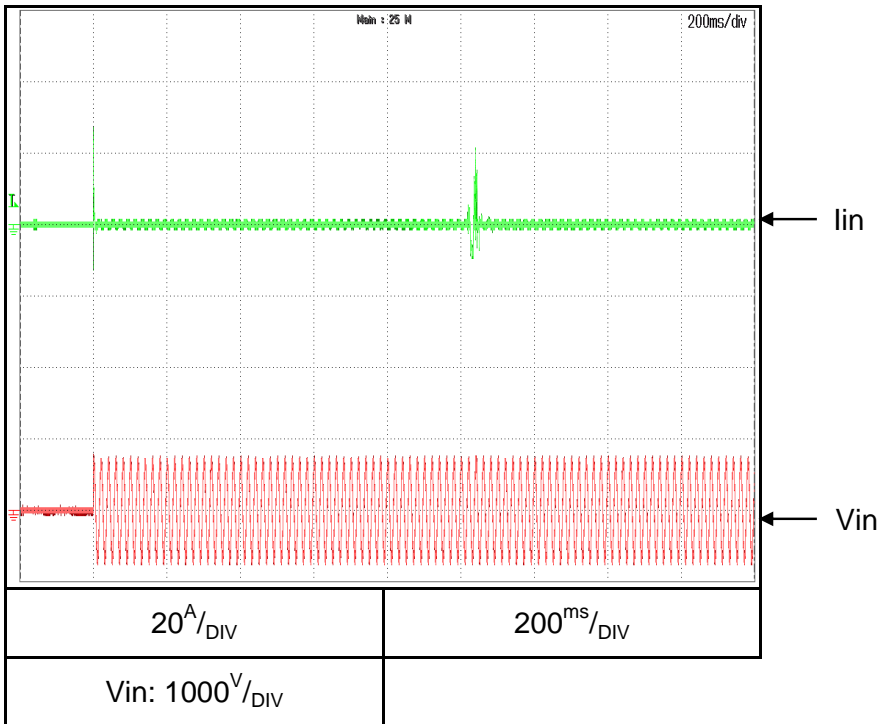
Conditions: Vin: 480V
Vout: 100%
Iout: 100%
Ta = 25°C

3Φ480 Input

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



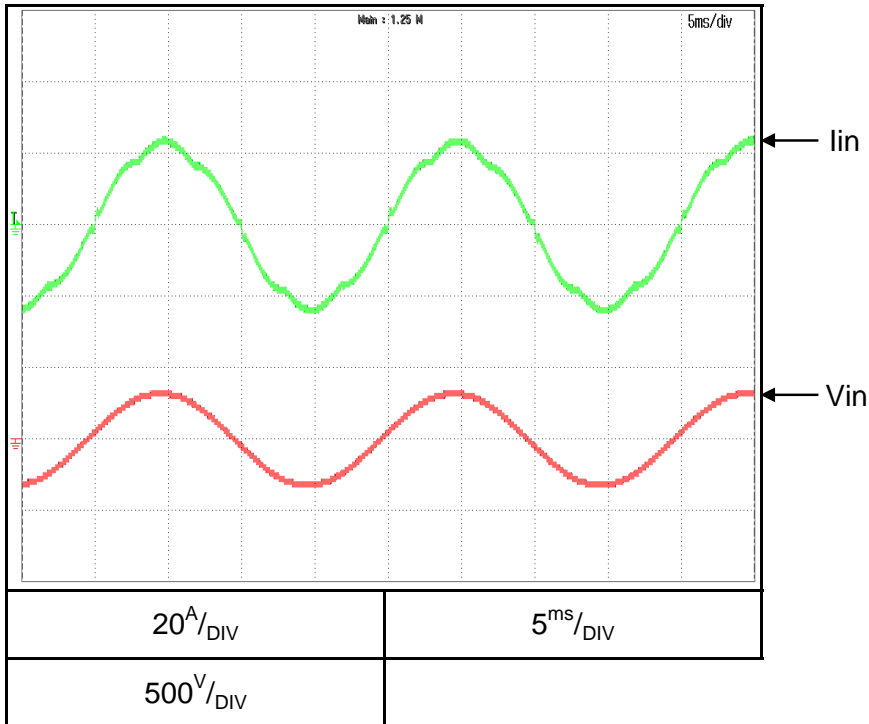
Switch on phase angle
of input AC voltage
 $\Phi=90^\circ$



2.12 Input current waveform

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

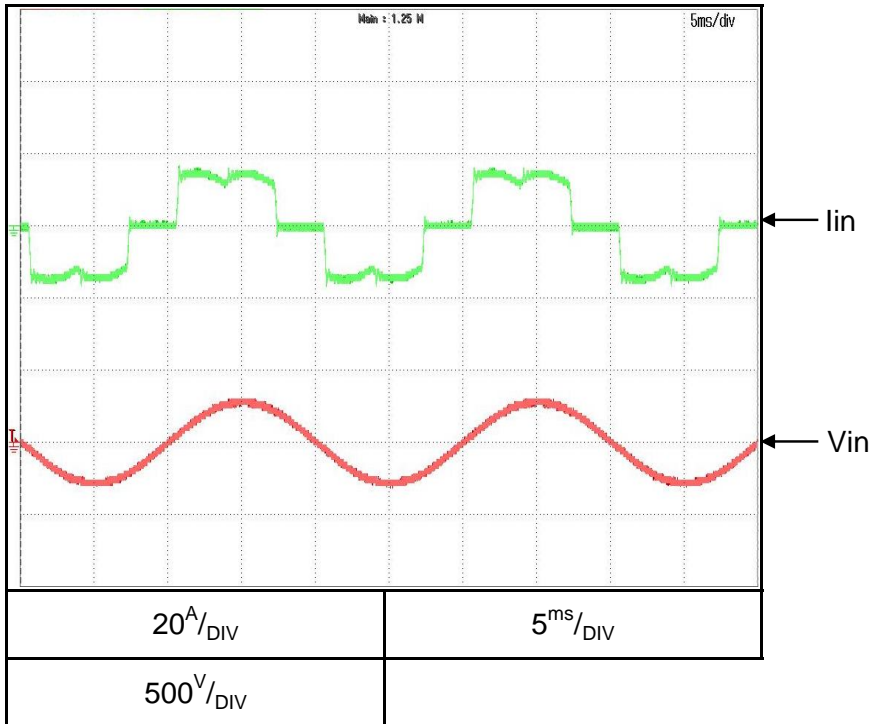
1Φ200 Input



2.12 Input current waveform

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

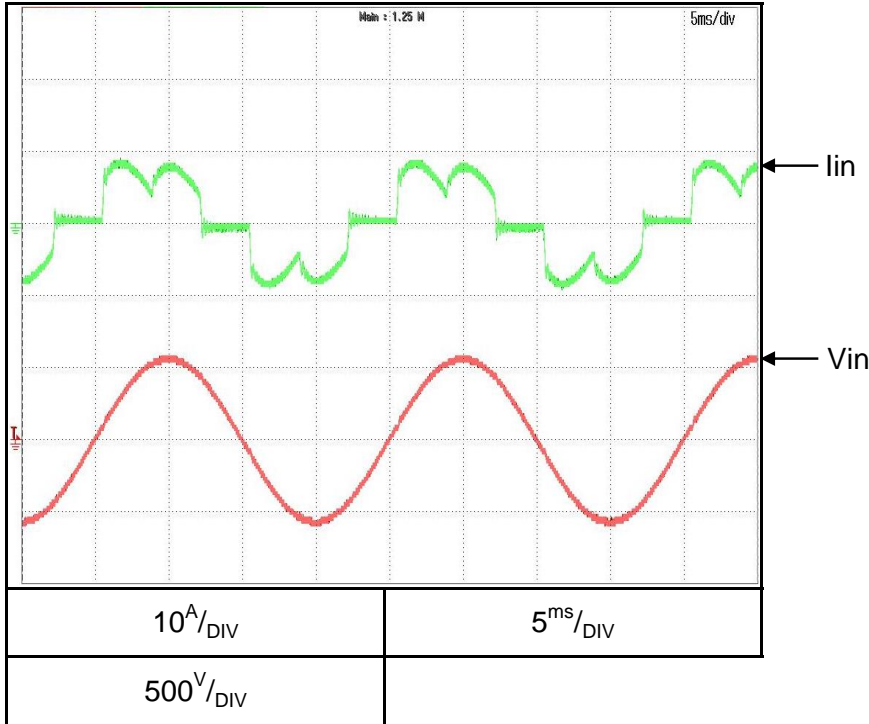
3Φ200 Input



2.12 Input current waveform

Conditions: Vin: 400VAC
Vout: 100%
Iout: 100%
Ta = 25°C

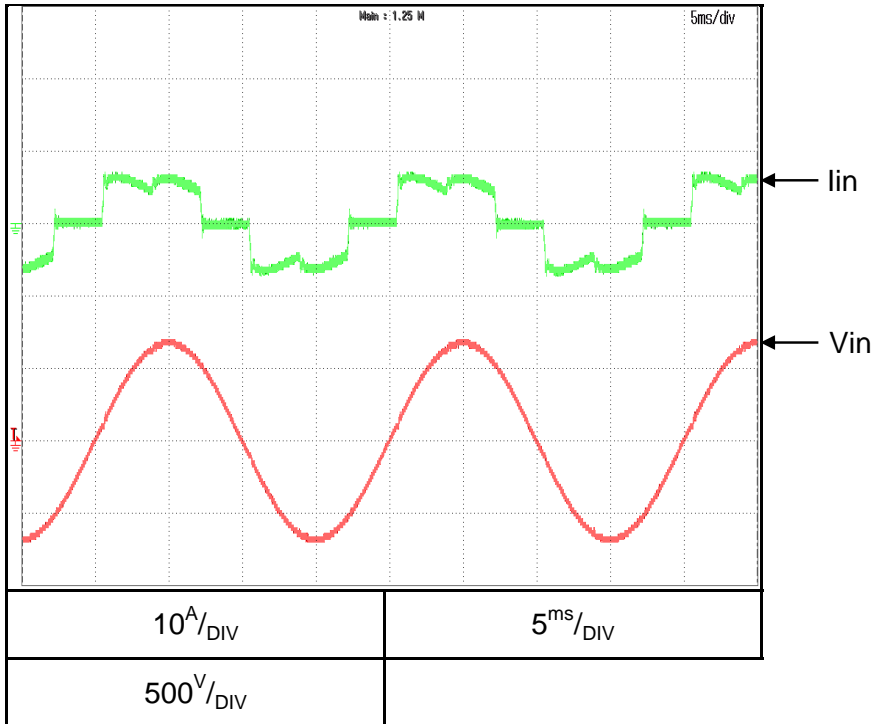
3Φ400 Input



2.12 Input current waveform

Conditions: Vin: 480VAC
Vout: 100%
Iout: 100%
Ta = 25°C

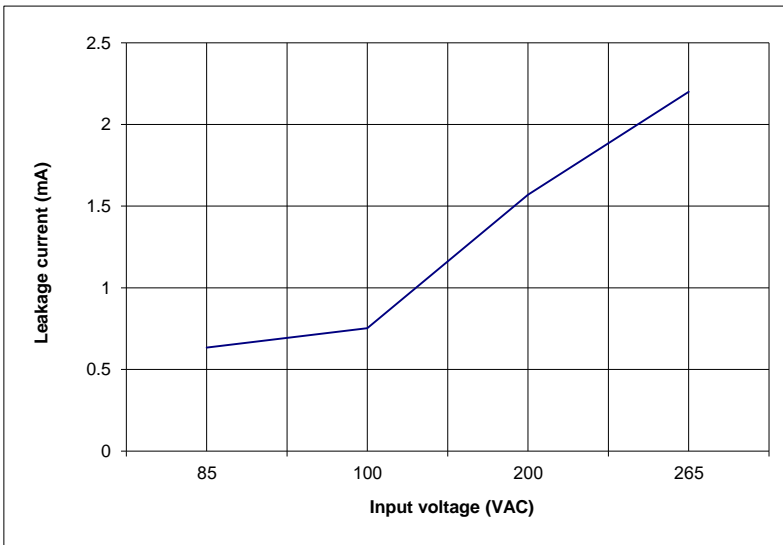
3Φ480 Input



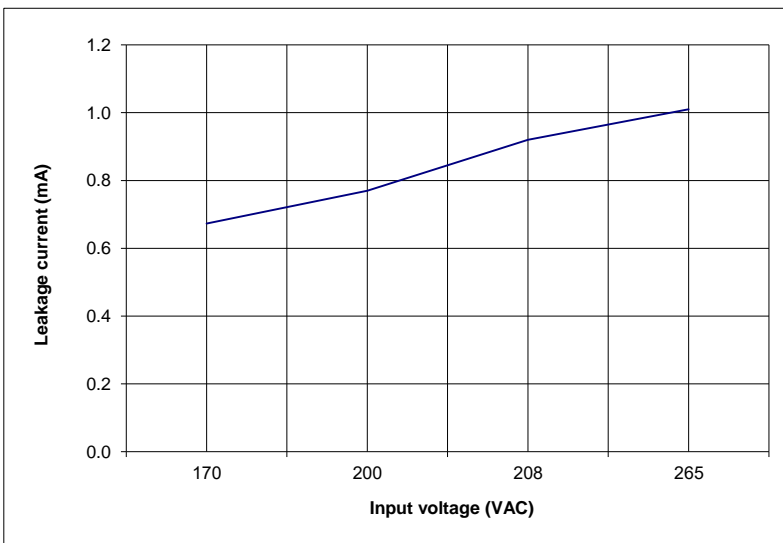
2.13 Leakage current characteristics

Conditions: Ta = 25°C
f=60Hz

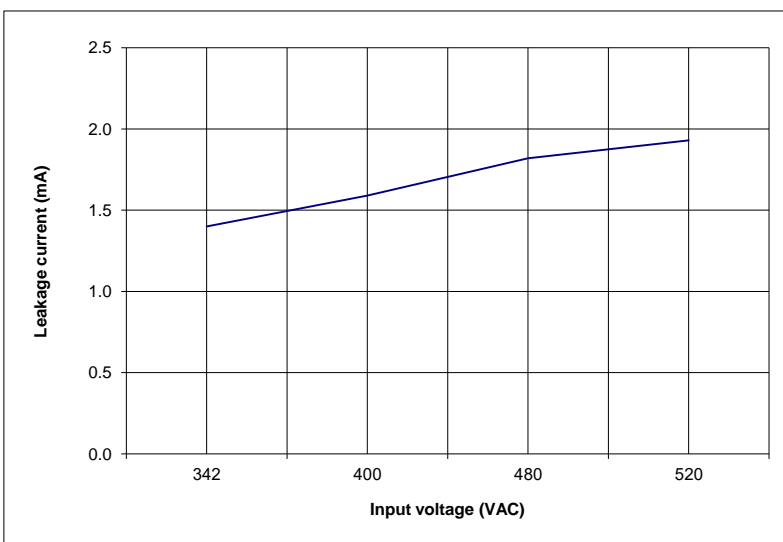
1Φ 170-265V (*)



3Φ 170-265V (*)



3Φ 342-520V (*)



(*) TN & TT power system

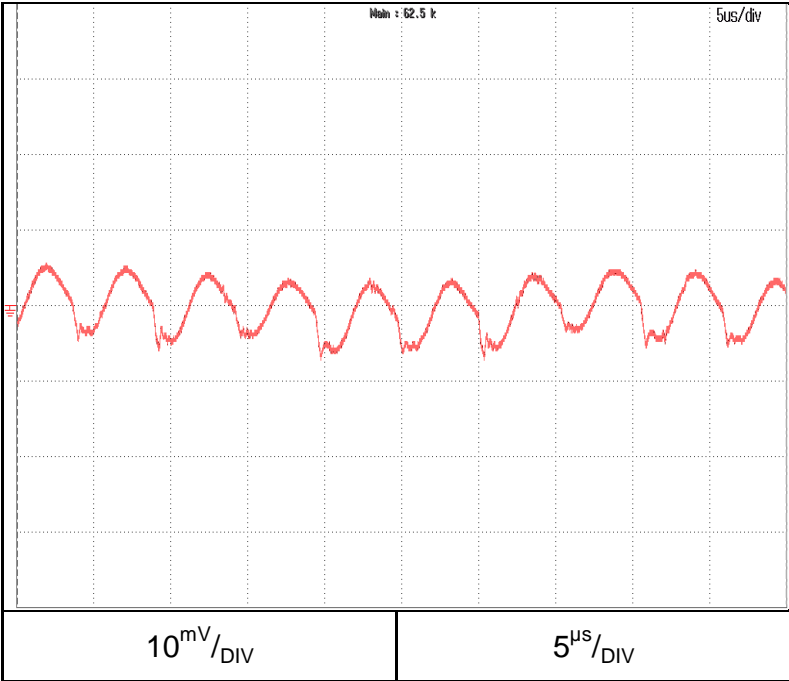
2.14 Output ripple & noise waveform

C.V mode

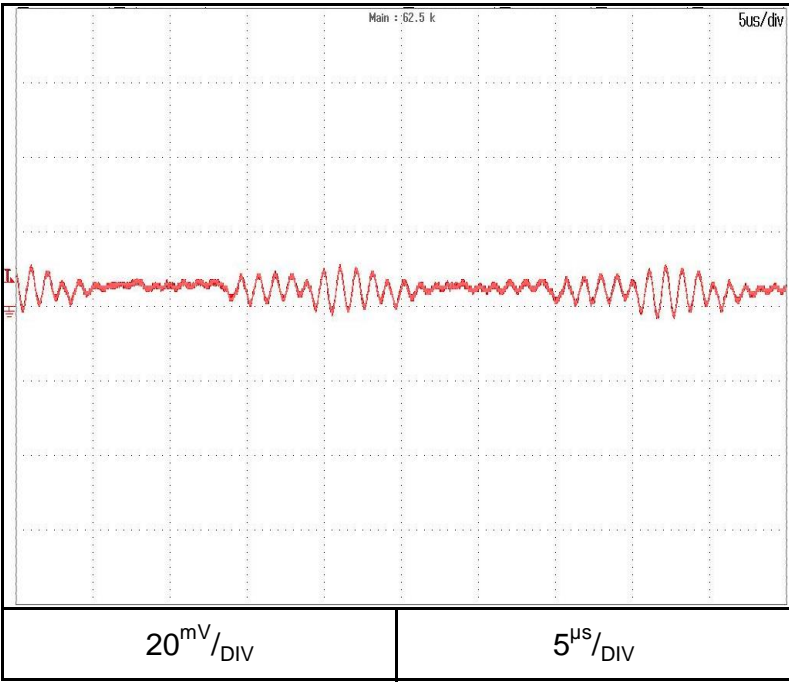
Conditions: Vout: 100%
Iout: 100%
Ta = 25°C

Normal Mode

G10-340



G60-56

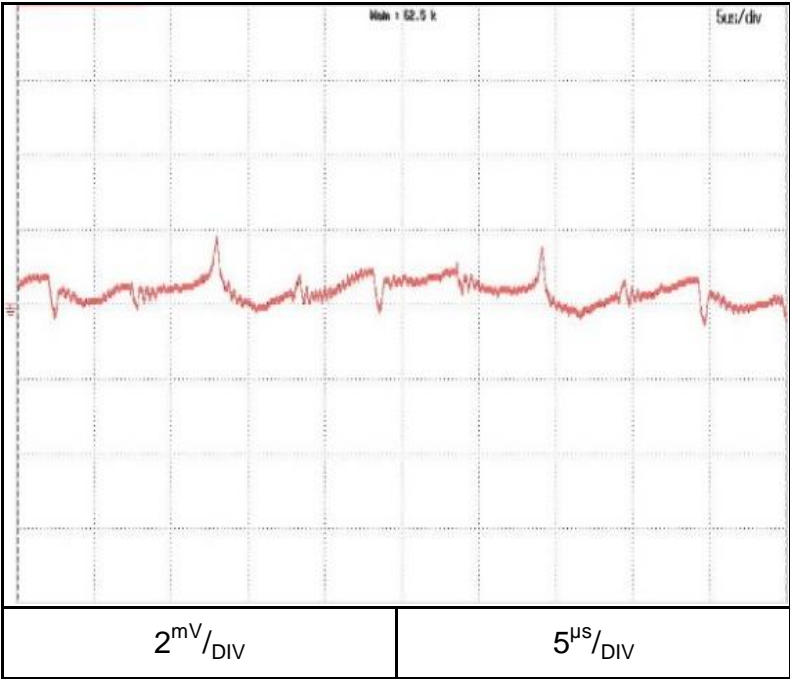


2.14 Output ripple & noise waveform
C.V mode

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

Normal Mode

G150-22.5



G600-5.6

