参考資料

COSEL

TEST DATA OF LDA100W-3

(100V INPUT)

Regulated DC Power Supply

Jan.5. 2005

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A.Kawai Design Engineer

COSEL CO.,LTD.

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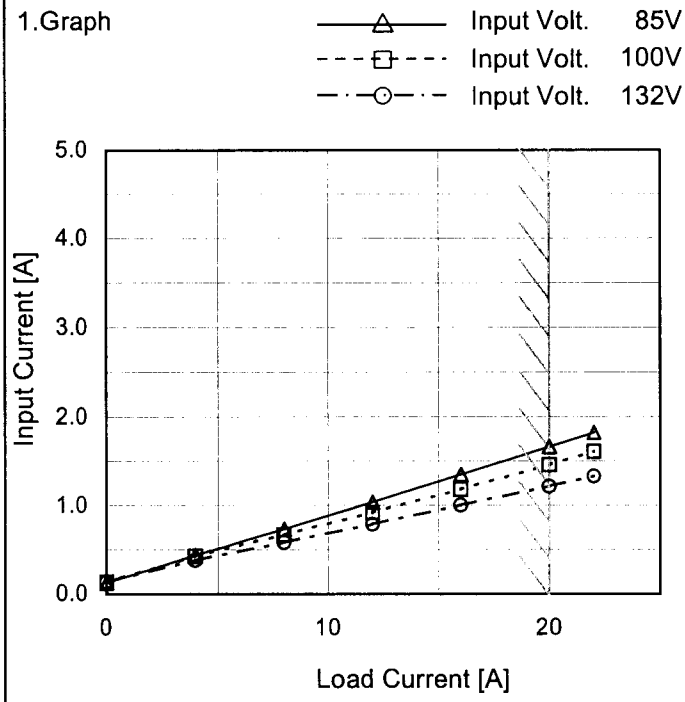
Model	LDA100W-3
Item	Input Current (by Load Current)
Object	———————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated load current.

2.Values

Load Current [A]	Input Current [A]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0	0.126	0.137	0.138
4	0.439	0.426	0.380
8	0.732	0.669	0.582
12	1.039	0.919	0.787
16	1.349	1.183	1.001
20	1.664	1.457	1.215
22	1.823	1.608	1.330
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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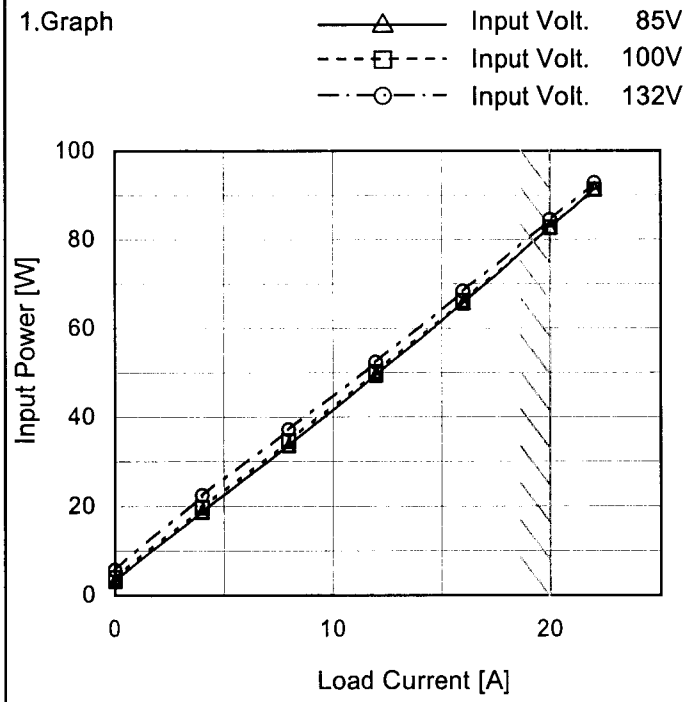
Model	LDA100W-3
Item	Input Power (by Load Current)
Object	———————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated load current.

2.Values

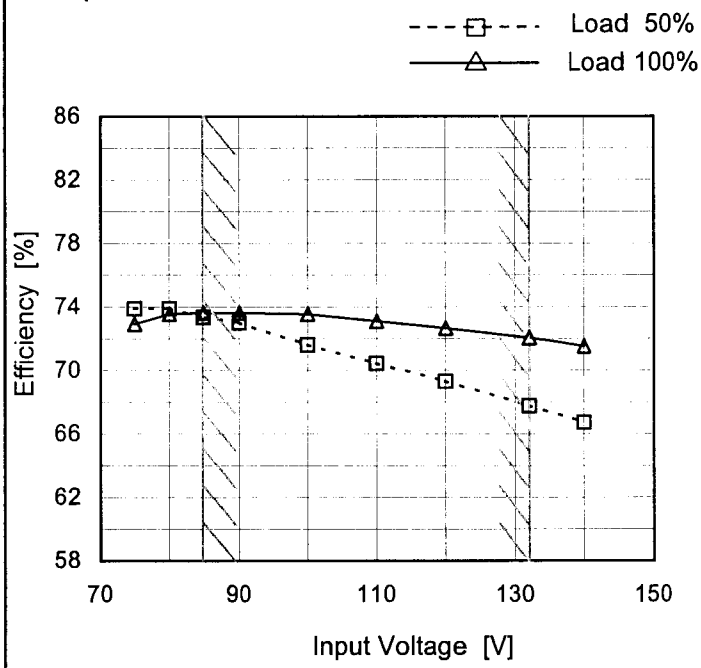
Load Current [A]	Input Power [W]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0	3.27	3.97	5.65
4	18.80	19.70	22.40
8	33.80	34.70	37.20
12	49.60	50.20	52.40
16	65.80	66.20	68.30
20	82.80	82.80	84.50
22	91.50	91.30	92.80
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	LDA100W-3
Item	Efficiency (by Input Voltage)
Object	———————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated input voltage.

2.Values

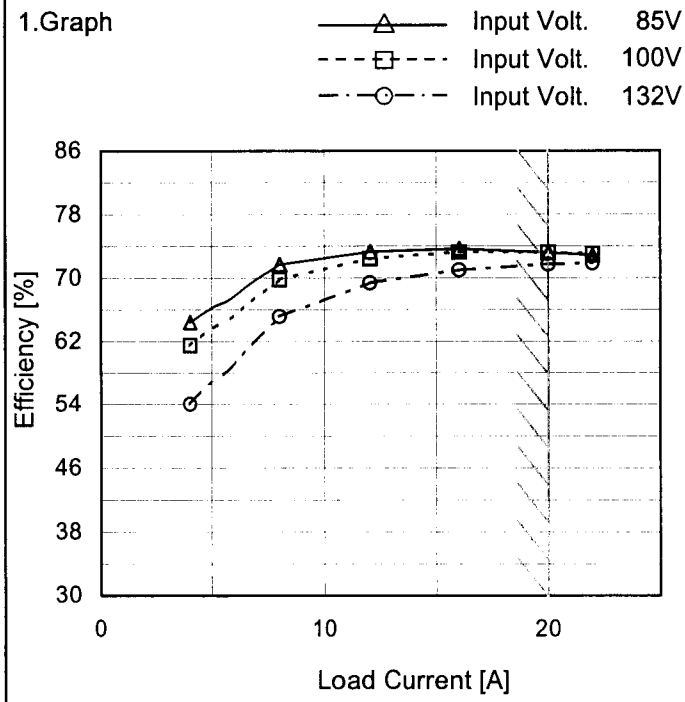
Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
75	73.9	72.9
80	73.9	73.5
85	73.4	73.6
90	73.0	73.6
100	71.6	73.5
110	70.5	73.1
120	69.3	72.7
132	67.8	72.1
140	66.7	71.5

COSEL

Model	LDA100W-3
Item	Efficiency (by Load Current)
Object	———————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated load current.

2.Values

Load Current [A]	Efficiency [%]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0	-	-	-
4	64.4	61.5	54.1
8	71.7	69.8	65.1
12	73.3	72.4	69.4
16	73.7	73.2	71.0
20	73.2	73.2	71.7
22	72.9	73.0	71.9
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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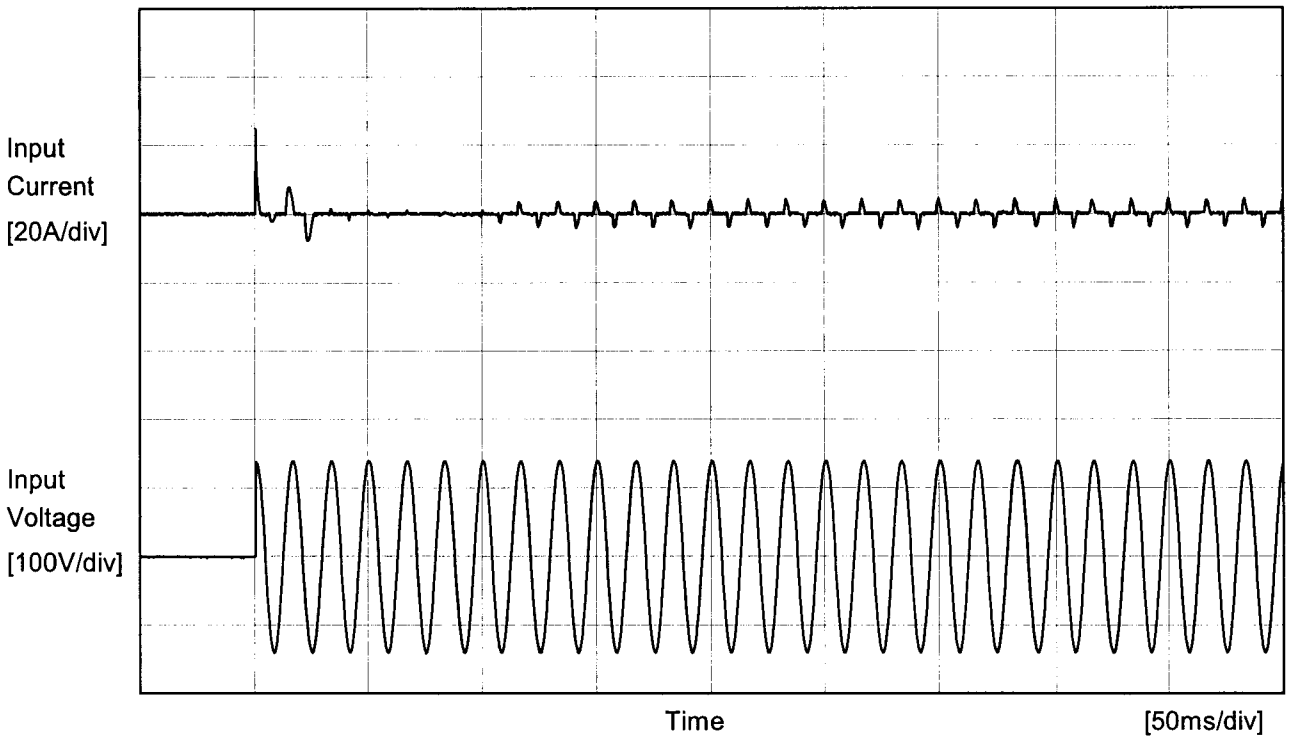
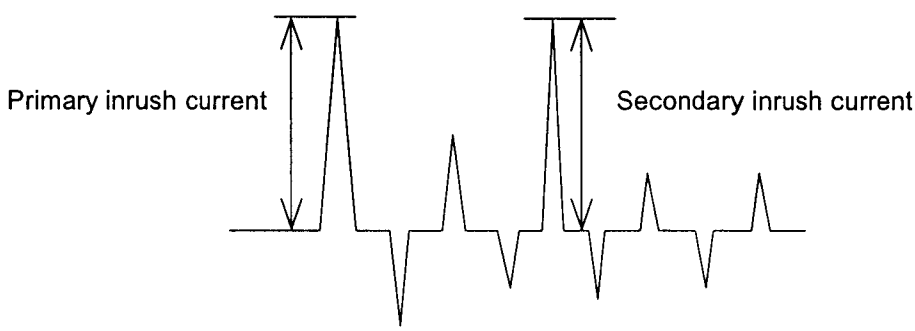
Model	LDA100W-3
Item	Inrush Current
Object	————————

Temperature 25°C
Testing Circuitry Figure A



Input Voltage	100 V
Frequency	60 Hz
Load	100 %
Primary inrush current	24.6 A
Secondary inrush current	4.6 A



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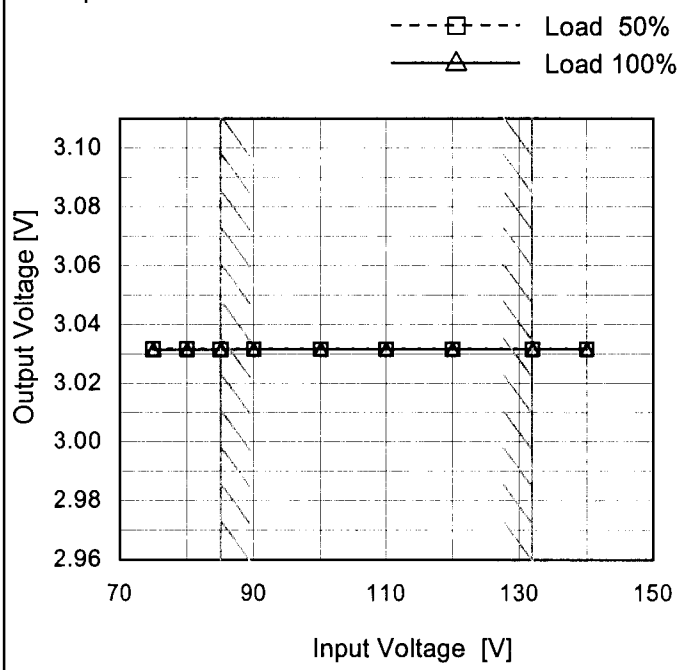
Model	LDA100W-3
Item	Line Regulation
Object	+3V20A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated input voltage.

2.Values

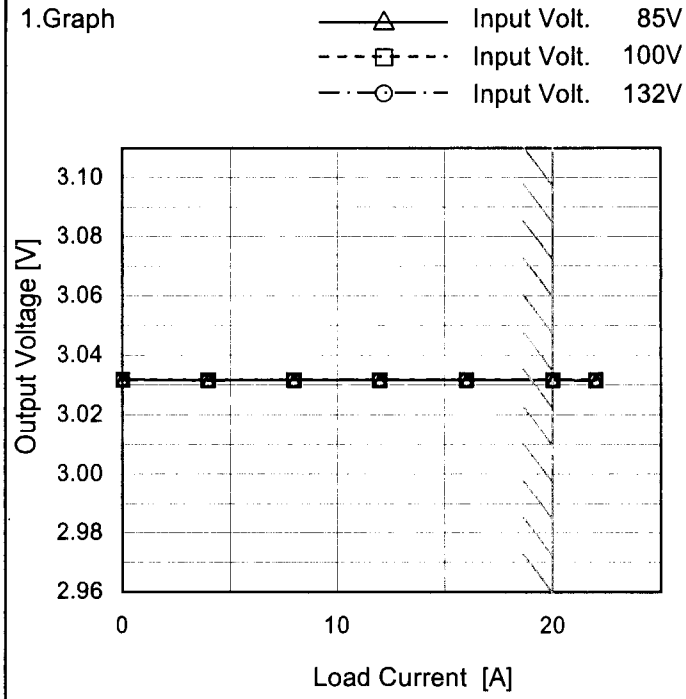
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
75	3.032	3.032
80	3.032	3.032
85	3.032	3.032
90	3.032	3.032
100	3.032	3.032
110	3.032	3.032
120	3.032	3.032
132	3.032	3.032
140	3.032	3.032

COSEL

Model	LDA100W-3
Item	Load Regulation
Object	+3V20A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated load current.

2.Values

Load Current [A]	Output Voltage [V]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0	3.032	3.032	3.032
4	3.032	3.032	3.031
8	3.032	3.032	3.032
12	3.032	3.032	3.032
16	3.032	3.032	3.032
20	3.032	3.032	3.032
22	3.032	3.032	3.032
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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Model	LDA100W-3		
Item	Dynamic Load Response	Temperature	25℃
		Testing Circuitry	Figure A
Object	+3V20A		

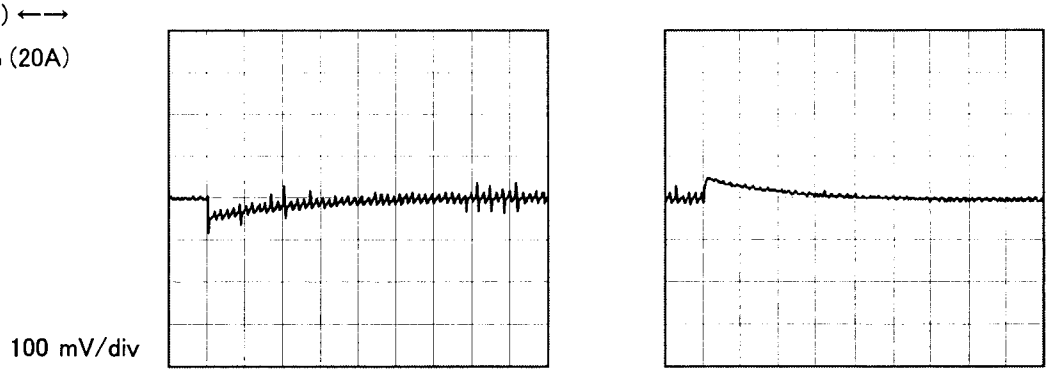
Input Volt. 100 V

Cycle 1000 ms

Load Current

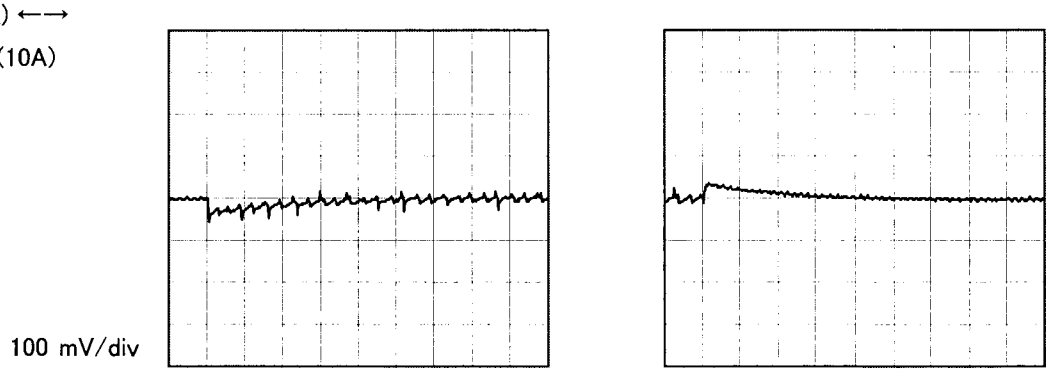
Min. Load (0A) ⟷

Load 100% (20A)



Min. Load (0A) ⟷

Load 50% (10A)



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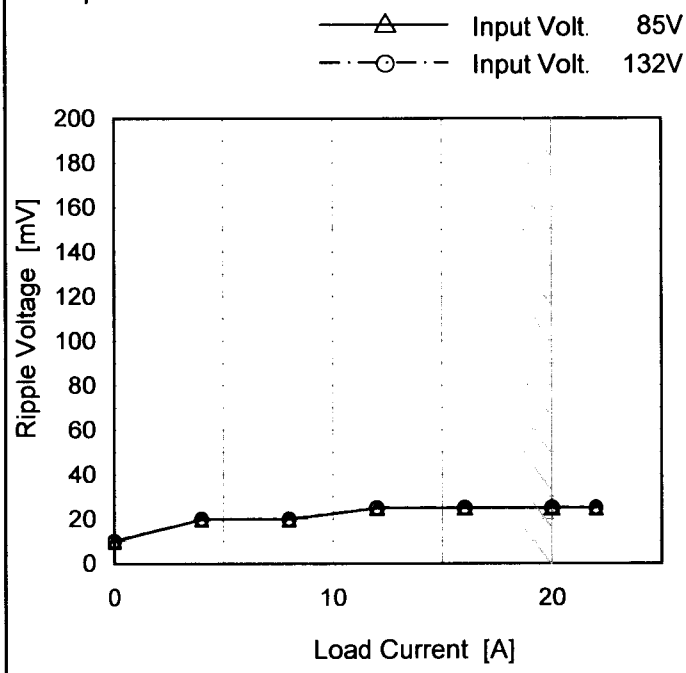
Model	LDA100W-3
Item	Ripple Voltage (by Load Current)
Object	+3V20A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Measured by 20 MHz Oscilloscope.
Ripple Voltage is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated load current.

T1: Due to AC Input Line
T2: Due to Switching

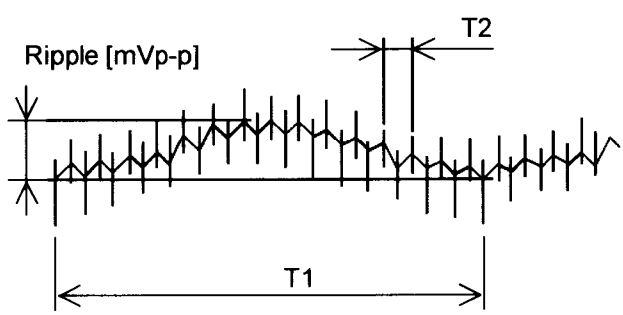


Fig. Complex Ripple Wave Form

2.Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 85 [V]	Input Volt. 132 [V]
0	10	10
4	20	20
8	20	20
12	25	25
16	25	25
20	25	25
22	25	25
--	-	-
--	-	-
--	-	-
--	-	-

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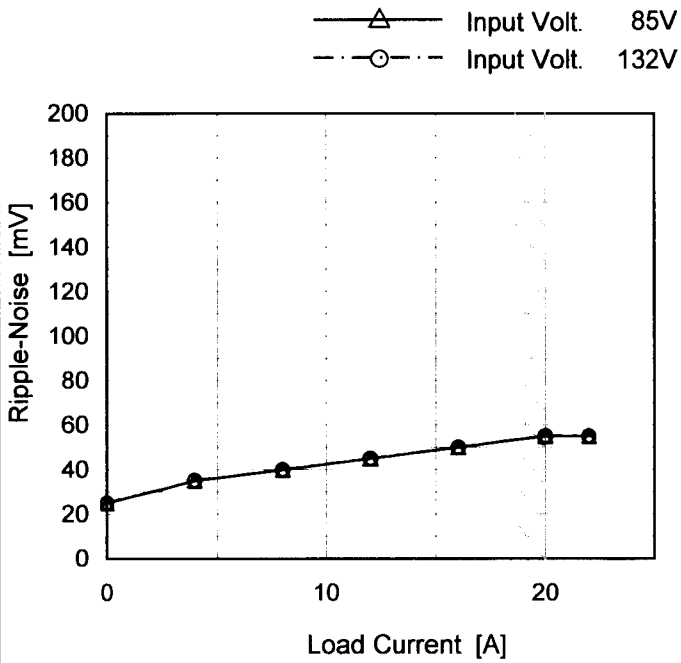
Model	LDA100W-3
Item	Ripple-Noise
Object	+3V20A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Measured by 20 MHz Oscilloscope.
Ripple-Noise is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated load current.

2.Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 85 [V]	Input Volt. 132 [V]
0	25	25
4	35	35
8	40	40
12	45	45
16	50	50
20	55	55
22	55	55
--	-	-
--	-	-
--	-	-
--	-	-

T1: Due to AC Input Line
T2: Due to Switching

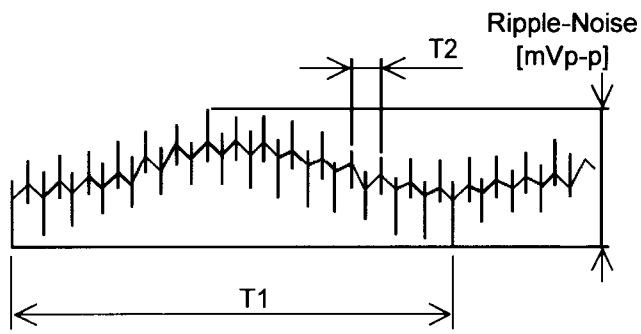


Fig. Complex Ripple Wave Form

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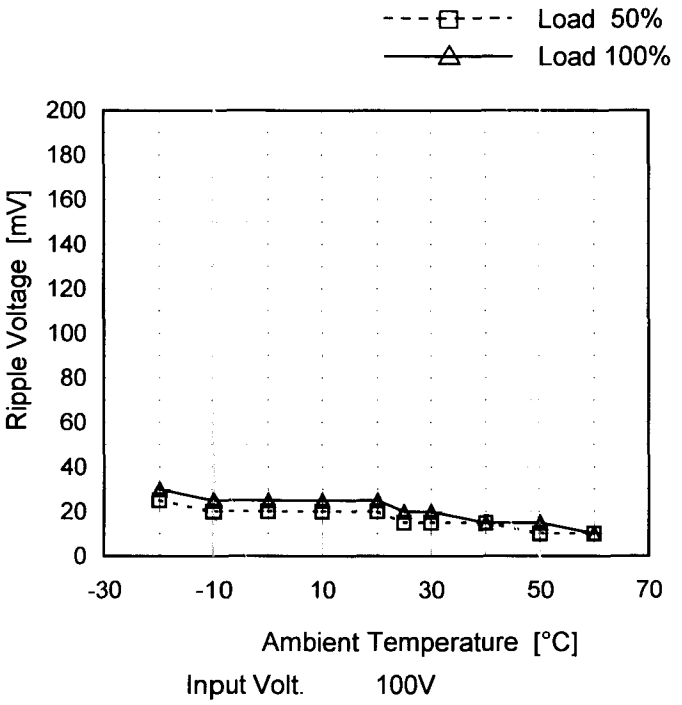
COSEL

Model	LDA100W-3
Item	Ripple Voltage (by Ambient Temp.)
Object	+3V20A

Testing Circuitry Figure A

1.Graph



Input Volt. 100V

Measured by 20 MHz Oscilloscope.

Note: Slanted line shows the range of the rated ambient temperature.

2.Values

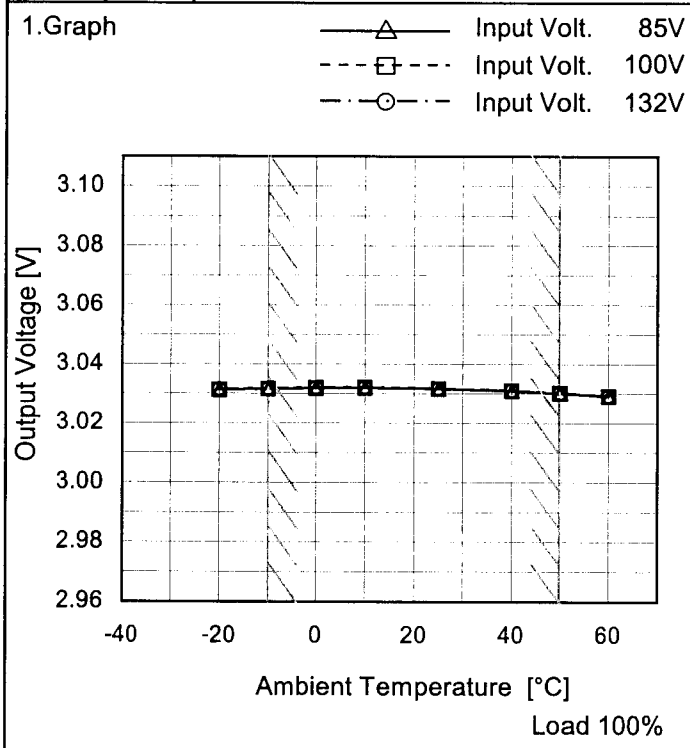
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-20	25	30
-10	20	25
0	20	25
10	20	25
20	20	25
25	15	20
30	15	20
40	15	15
50	10	15
60	10	10
--	-	-

COSEL

Model	LDA100W-3
Item	Ambient Temperature Drift
Object	+3V20A

Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated ambient temperature.

2.Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
-20	3.031	3.031	3.031
-10	3.032	3.032	3.032
0	3.032	3.032	3.032
10	3.032	3.032	3.032
25	3.032	3.032	3.032
40	3.031	3.031	3.031
50	3.030	3.030	3.030
60	3.029	3.029	3.029
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	LDA100W-3	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+3V20A	

1.Output Voltage Accuracy

This is defined as the value of the output voltage, regulation load, ambient temperature and input voltage varied at random in the range as specified below.

Temperature : -10 - 50°C
Input Voltage : 85 - 132V
Load Current : 0 - 20A

* Output Voltage Accuracy = ±(Maximum of Output Voltage - Minimum of Output Voltage) / 2

$$\text{* Output Voltage Accuracy (Ration)} = \frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$$

2.Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	-10	100	0	3.032	±1	±0.1
Minimum Voltage	50	132	0	3.030		

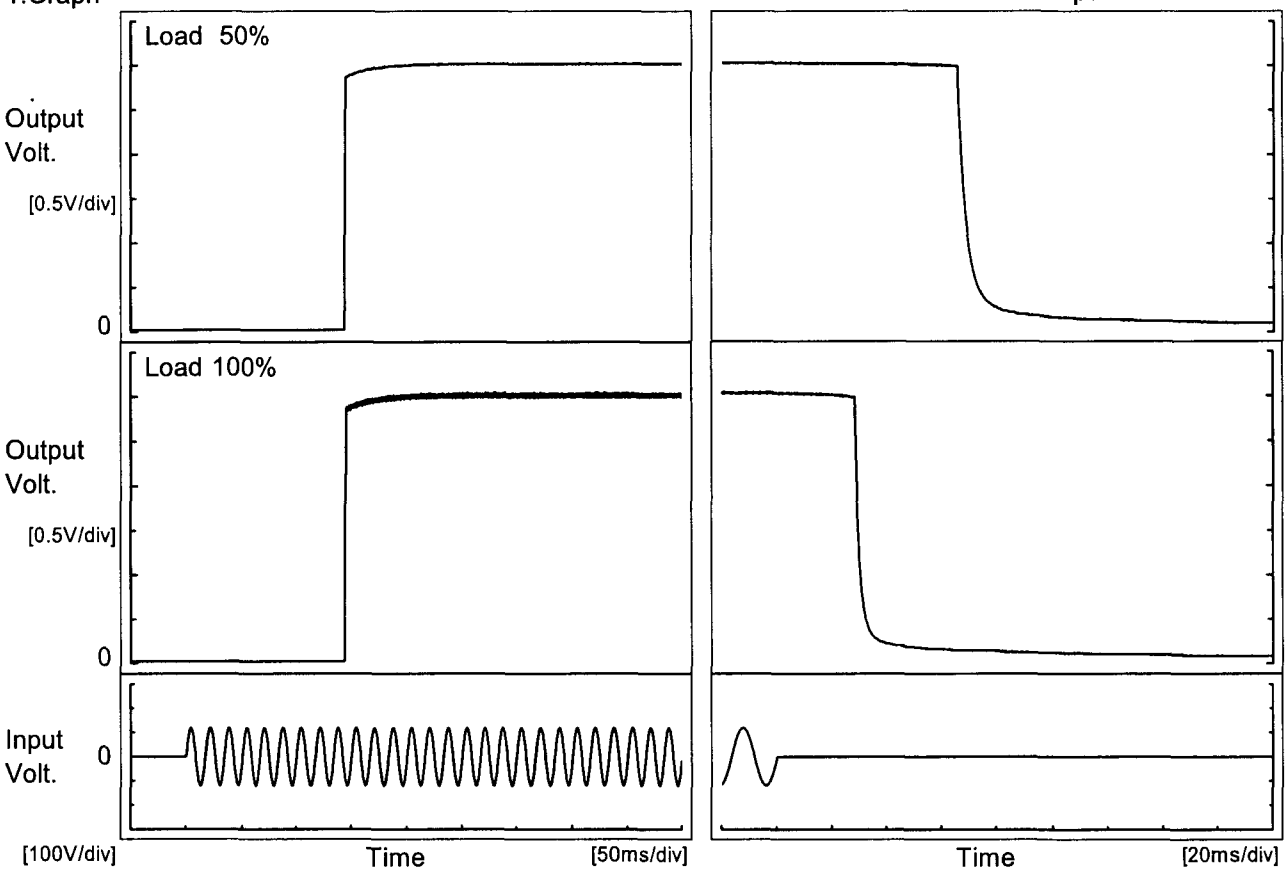
COSEL

Model	LDA100W-3
Item	Rise and Fall Time
Object	+3V20A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

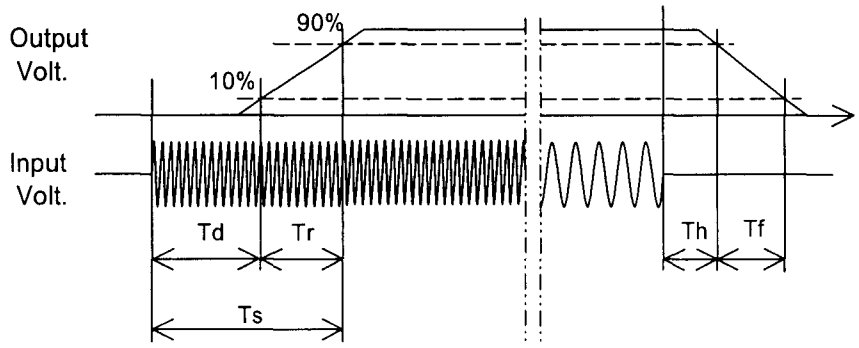
Input Volt. 100 V



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	143.0	2.0	145.0	65.9	12.0
100 %	143.5	2.0	145.5	28.4	6.3

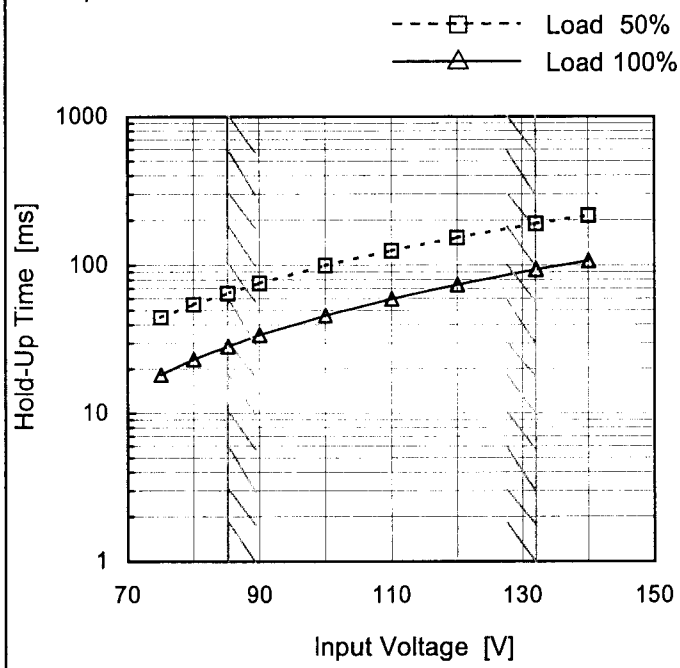


COSEL

Model	LDA100W-3
Item	Hold-Up Time
Object	+3V20A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.
Note: Slanted line shows the range of the rated input voltage.

2.Values

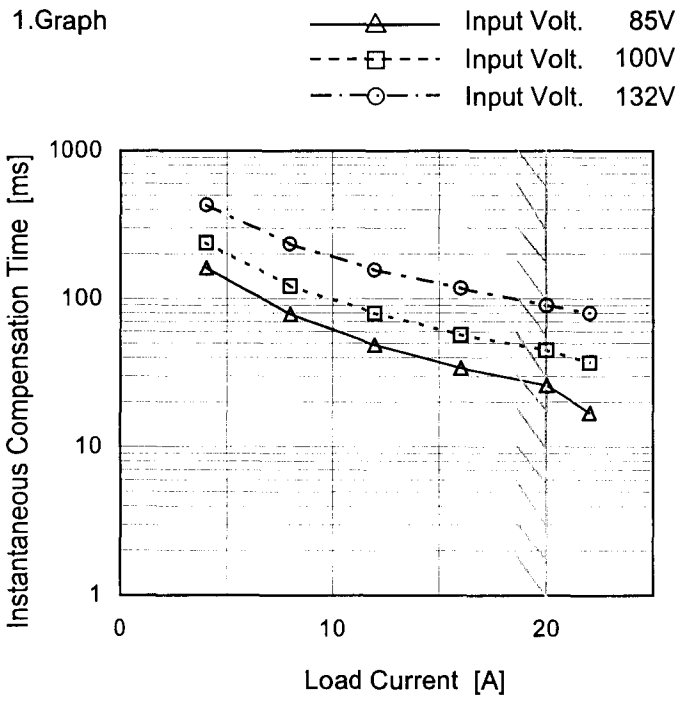
Input Voltage [V]	Hold-Up Time [ms]	
	Load 50%	Load 100%
75	45	18
80	55	23
85	65	29
90	76	34
100	99	46
110	125	60
120	153	74
132	190	94
140	215	107

COSEL

Model	LDA100W-3
Item	Instantaneous Interruption Compensation
Object	+3V20A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated load current.

2.Values

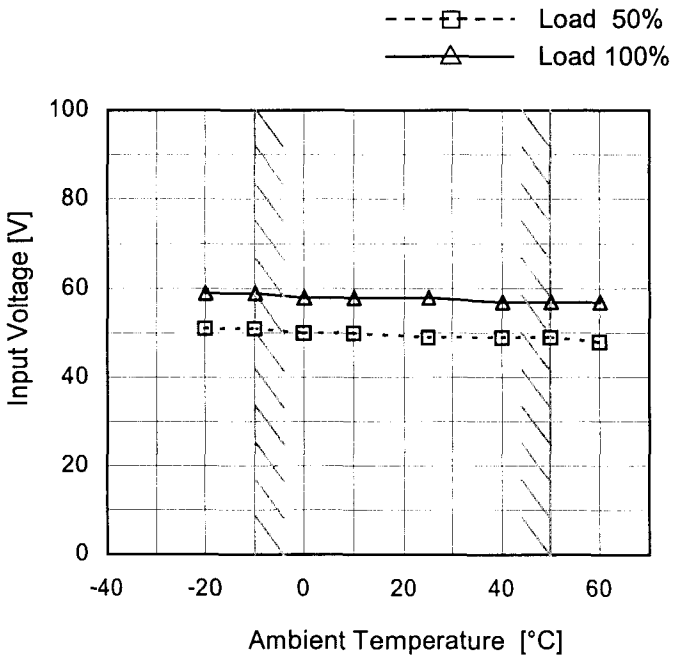
Load Current [A]	Time [ms]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0	-	-	-
4	162	238	430
8	79	122	235
12	49	80	157
16	34	57	118
20	26	45	90
22	17	37	80
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	LDA100W-3
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+3V20A

Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated ambient temperature.

2.Values

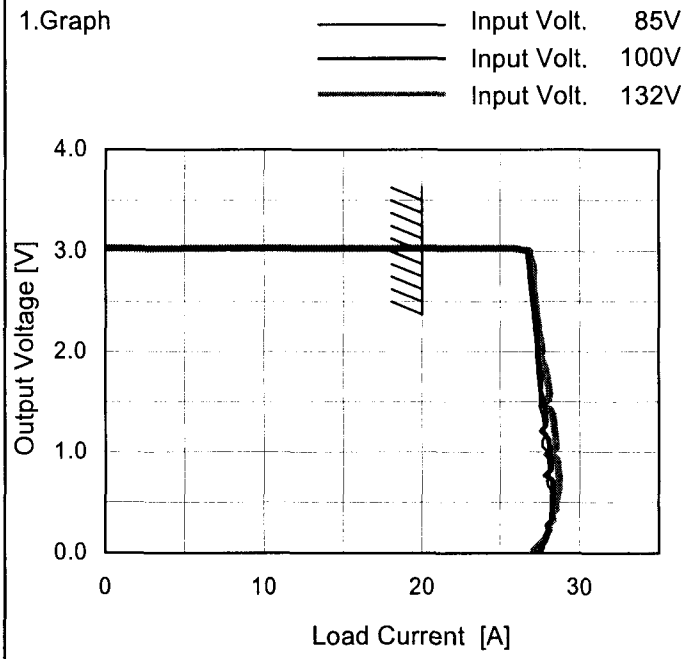
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-20	51	59
-10	51	59
0	50	58
10	50	58
25	49	58
40	49	57
50	49	57
60	48	57
--	-	-
--	-	-
--	-	-

COSEL

Model	LDA100W-3
Item	Overcurrent Protection
Object	+3V20A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated load current.

2.Values

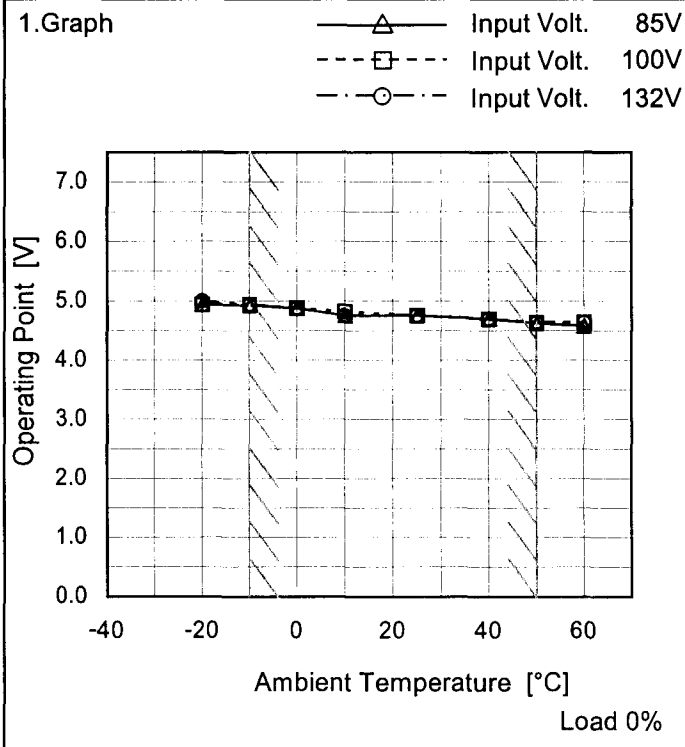
Output Voltage [V]	Load Current [A]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
3.00	24.08	23.72	23.55
2.85	26.72	26.80	27.04
2.70	26.80	26.92	27.05
2.40	27.00	27.18	27.24
2.10	27.25	27.29	27.55
1.80	27.33	27.48	27.86
1.50	27.47	27.72	28.01
1.20	27.76	27.55	28.44
0.90	27.99	28.16	28.61
0.60	28.15	28.33	28.64
0.30	28.16	28.21	28.06
0.00	27.21	27.19	26.62

COSEL

Model	LDA100W-3
Item	Overvoltage Protection
Object	+3V20A

Testing Circuitry Figure A

1.Graph



Note: Slanted line shows the range of the rated ambient temperature.

2.Values

Ambient Temperature [°C]	Operating Point [V] Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
-20	4.95	4.95	5.01
-10	4.94	4.95	4.95
0	4.89	4.89	4.89
10	4.77	4.83	4.77
25	4.77	4.77	4.77
40	4.71	4.71	4.71
50	4.64	4.65	4.65
60	4.59	4.65	4.65
--	-	-	-
--	-	-	-
--	-	-	-

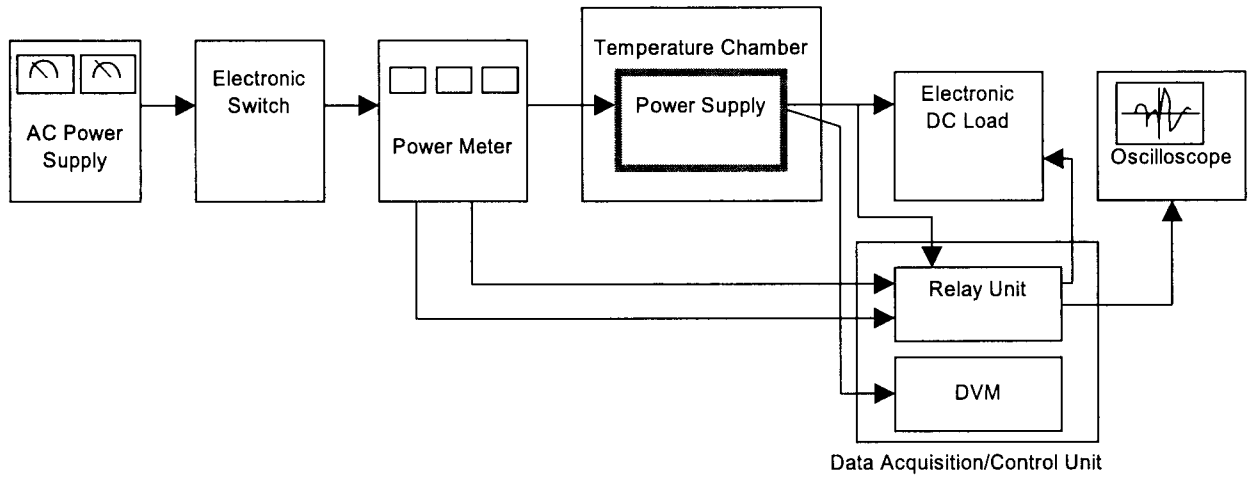


Figure A

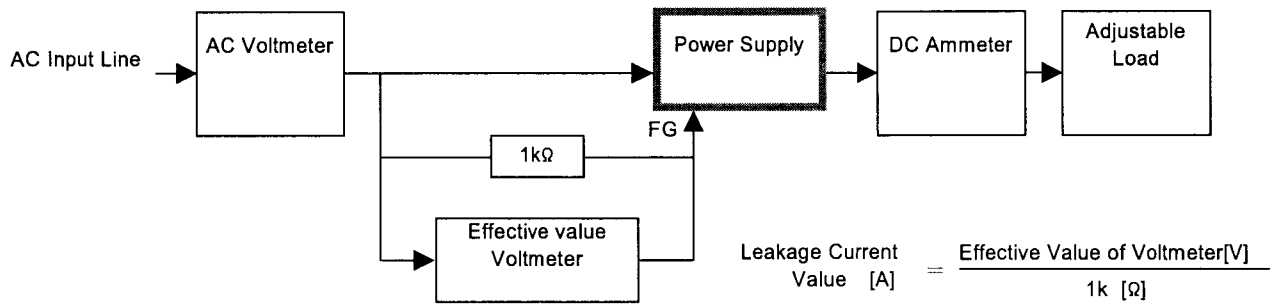


Figure B (DEN-AN)

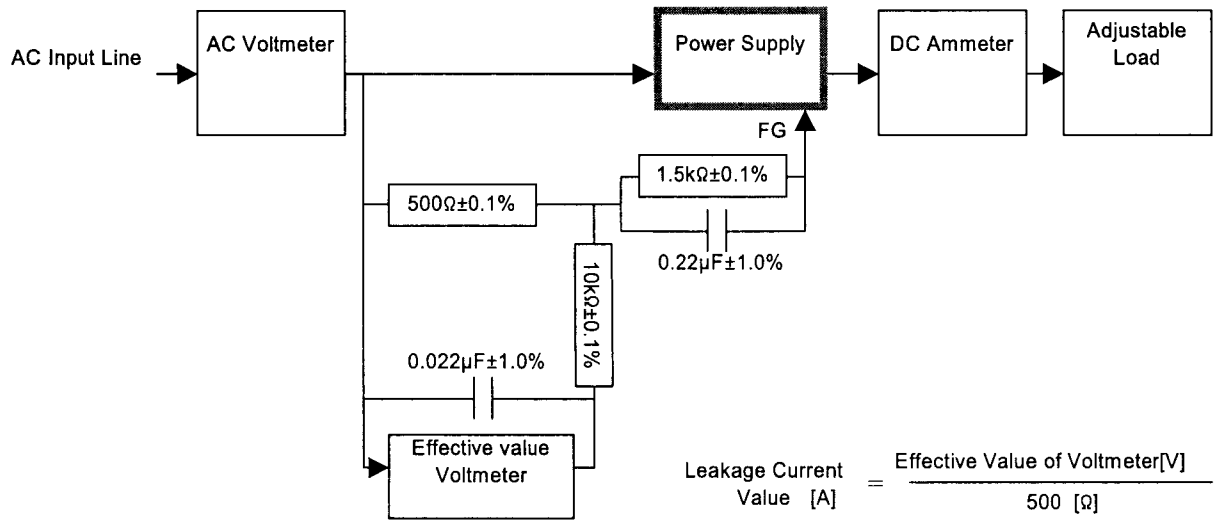


Figure B (IEC60950)