参考資料

COSEL

TEST DATA OF PBA100F-36

Regulated DC Power Supply
Apr.5. 2004

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COSEL CO.,LTD.

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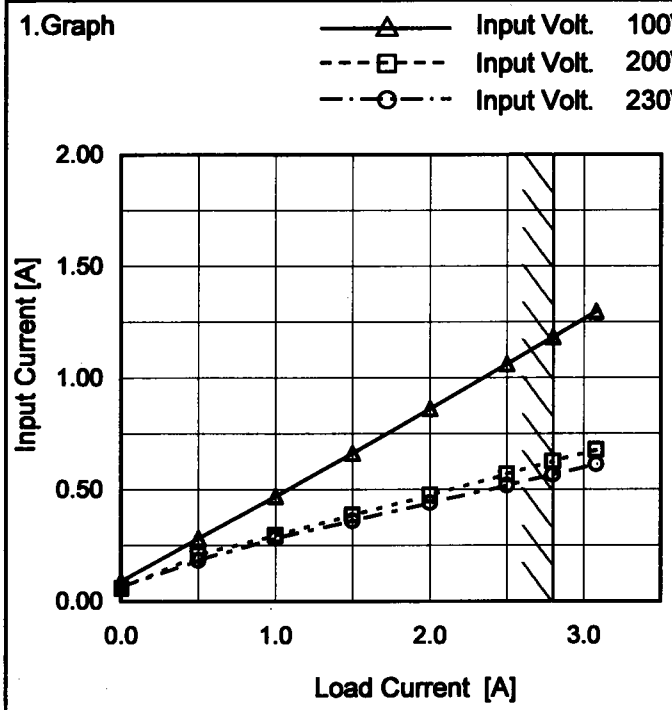
Model	PBA100F-36
Item	Input Current (by Load Current)
Object	———————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

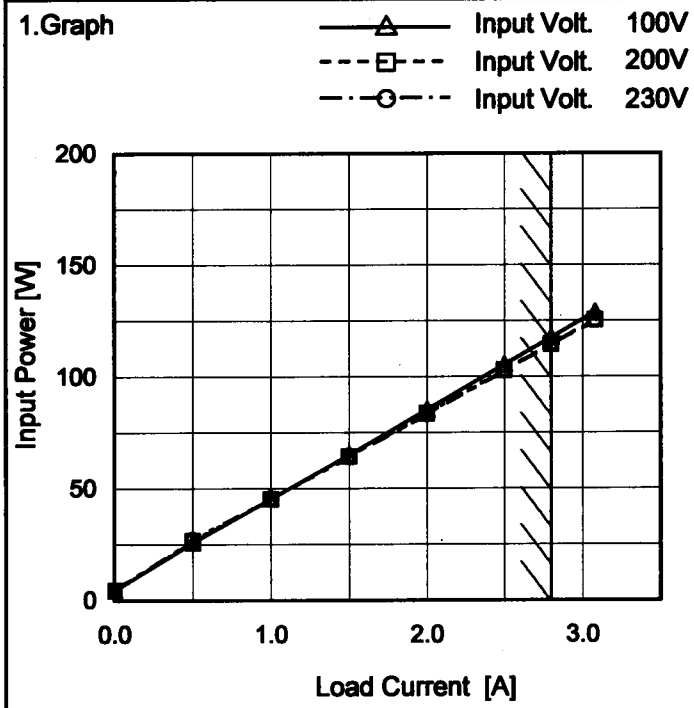
Load Current [A]	Input Current [A]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.00	0.090	0.059	0.065
0.50	0.281	0.209	0.184
1.00	0.470	0.296	0.284
1.50	0.663	0.386	0.361
2.00	0.862	0.476	0.441
2.50	1.062	0.569	0.519
2.80	1.183	0.626	0.568
3.08	1.298	0.678	0.613
—	-	-	-
—	-	-	-
—	-	-	-

COSEL

Model	PBA100F-36
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

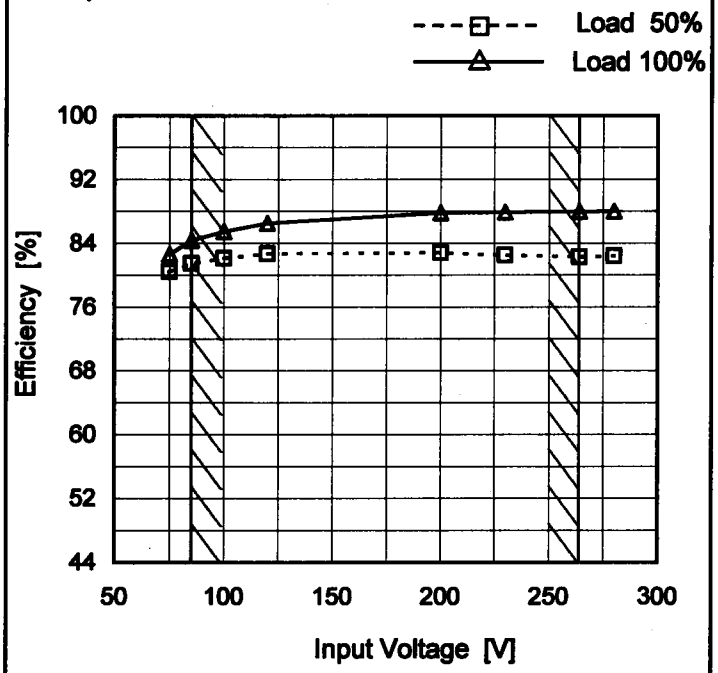
Load Current [A]	Input Power [W]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.00	4.5	4.4	4.5
0.50	25.9	26.6	27.1
1.00	45.4	45.3	45.6
1.50	65.1	64.4	64.3
2.00	85.3	83.6	83.4
2.50	105.5	102.9	102.8
2.80	117.6	114.5	114.4
3.08	129.0	125.5	125.2
—	-	-	-
—	-	-	-
—	-	-	-

COSEL

Model	PBA100F-36
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	80.5	82.6
85	81.5	84.4
100	82.1	85.5
120	82.7	86.5
200	82.8	87.8
230	82.5	87.9
264	82.3	88.0
280	82.4	88.0
–	-	-

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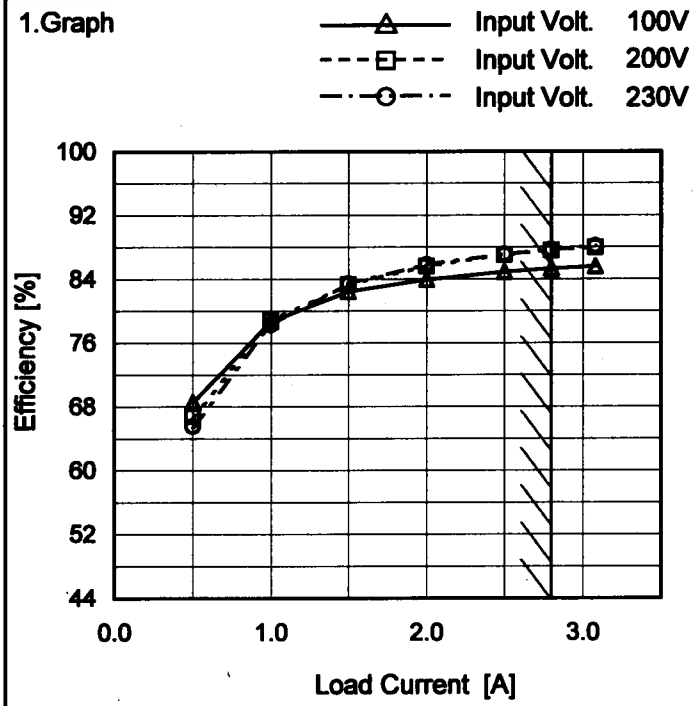
Model	PBA100F-36
Item	Efficiency (by Load Current)
Object	———————

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. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.00	-	-	-
0.50	68.6	66.8	65.6
1.00	78.7	78.9	78.3
1.50	82.5	83.3	83.5
2.00	84.0	85.7	85.9
2.50	84.9	87.0	87.1
2.80	85.3	87.6	87.7
3.08	85.6	88.0	88.2
—	-	-	-
—	-	-	-
—	-	-	-

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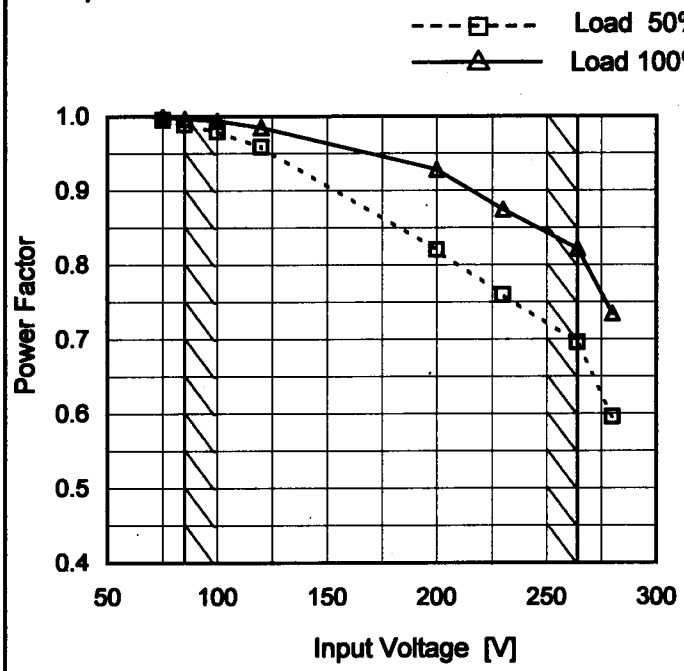
Model	PBA100F-36
Item	Power Factor (by Input Voltage)
Object	———————————

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]	Power Factor	
	Load 50%	Load 100%
75	0.995	0.999
85	0.989	0.997
100	0.979	0.994
120	0.959	0.985
200	0.821	0.929
230	0.760	0.874
264	0.696	0.822
280	0.596	0.735
—	-	-

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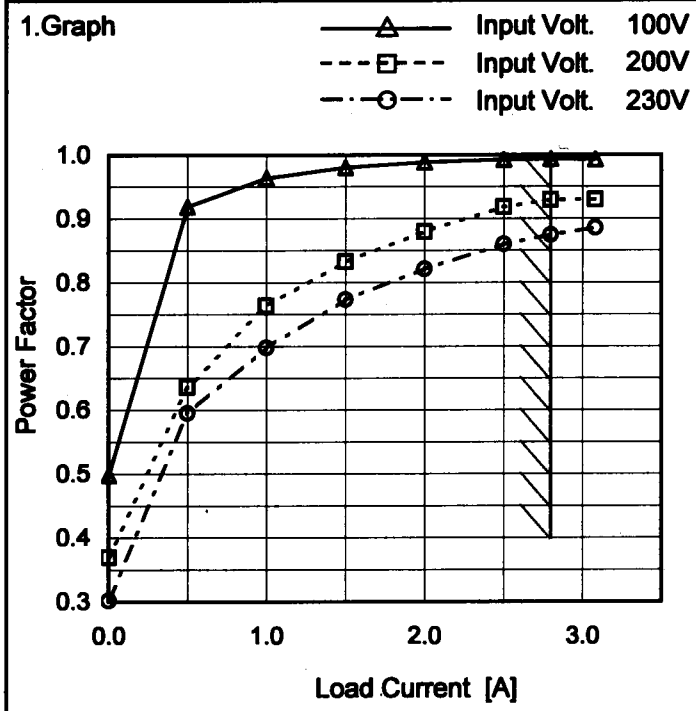
Model	PBA100F-36
Item	Power Factor (by Load Current)
Object	———————

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]	Power Factor		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.00	0.498	0.370	0.302
0.50	0.919	0.636	0.596
1.00	0.964	0.764	0.698
1.50	0.980	0.833	0.774
2.00	0.988	0.880	0.822
2.50	0.992	0.919	0.860
2.80	0.993	0.929	0.875
3.08	0.993	0.930	0.886
—	-	-	-
—	-	-	-
—	-	-	-

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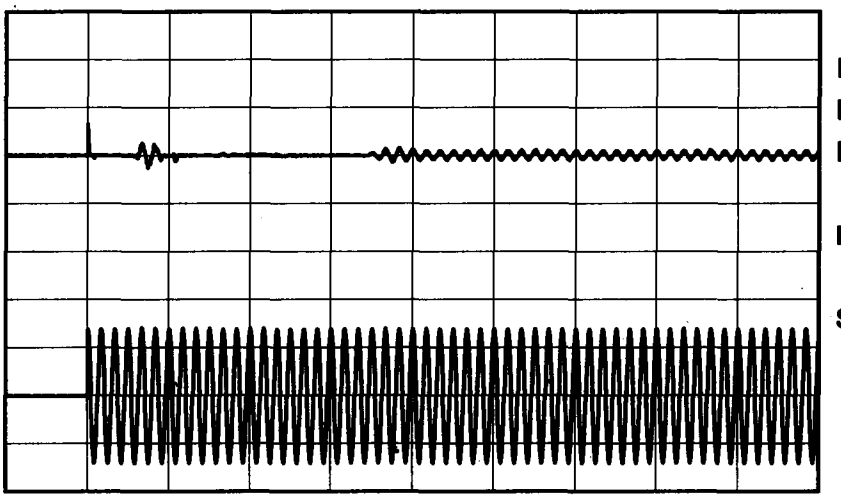
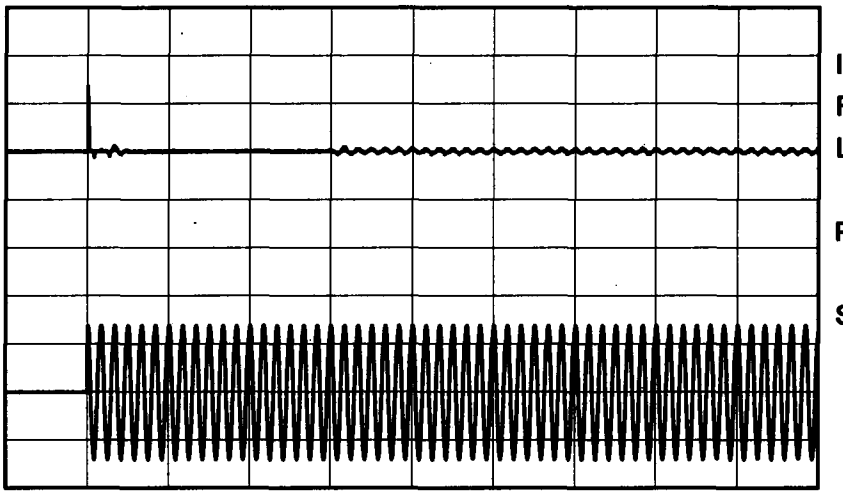
Model	PBA100F-36
Item	Inrush Current
Object	———————

Temperature 25°C
Testing Circuitry Figure A



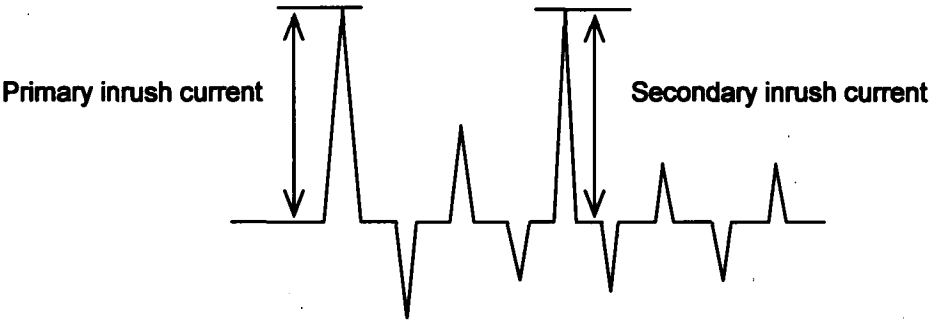
Input Voltage 100 V
Frequency 60 Hz
Load 100 %

Primary inrush current :
13.1 A
Secondary inrush current :
5.3 A



Input Voltage 200 V
Frequency 60 Hz
Load 100 %

Primary inrush current :
27.1 A
Secondary inrush current :
1.9 A



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Model	PBA100F-36	
Item	Leakage Current	Temperature 25°C Testing Circuitry Figure B
Object	———————————	

1.Results

[mA]

Standards		Input Volt.			Note
		100 [V]	200 [V]	230 [V]	
DEN-AN	Both phases	0.15	0.28	0.34	Operation
	One of phase	0.25	0.53	0.62	stand by
IEC60950	Both phases	0.15	0.34	0.38	Operation
	One of phase	0.25	0.58	0.67	stand by

The value for "One phase" is the reference value only.

2.Condition

Leakage current value is concluded after measuring both phases of AC input and by choosing the larger one.

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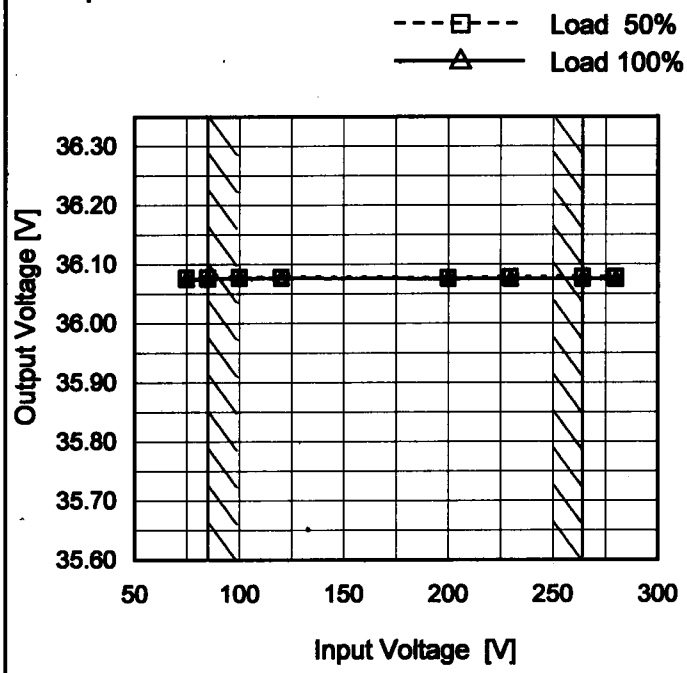
Model	PBA100F-36
Item	Line Regulation
Object	+36V2.8A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

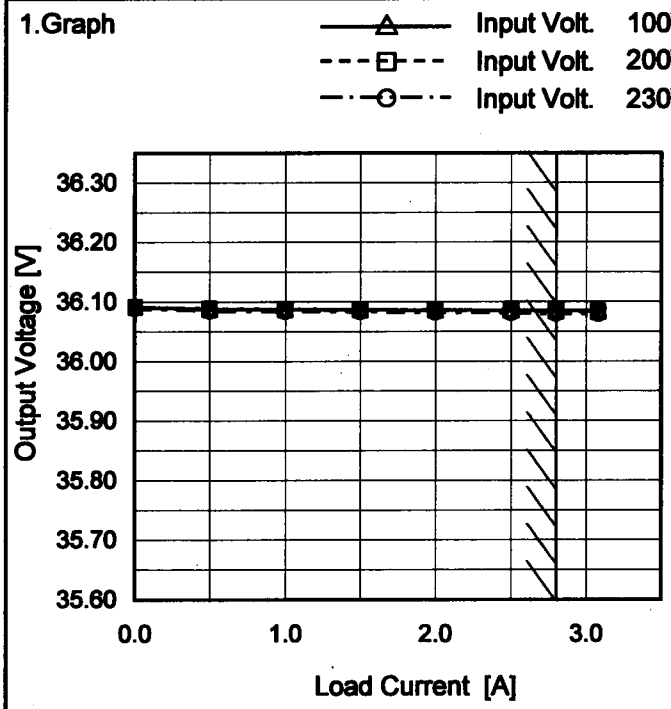
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
75	36.078	36.075
85	36.078	36.076
100	36.079	36.077
120	36.079	36.077
200	36.078	36.076
230	36.079	36.076
264	36.079	36.076
280	36.079	36.075
–	-	-

COSEL

Model	PBA100F-36
Item	Load Regulation
Object	+36V2.8A

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. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.00	36.091	36.092	36.089
0.50	36.088	36.089	36.085
1.00	36.087	36.088	36.084
1.50	36.086	36.087	36.083
2.00	36.086	36.086	36.082
2.50	36.085	36.085	36.081
2.80	36.085	36.084	36.080
3.08	36.085	36.083	36.080
—	-	-	-
—	-	-	-
—	-	-	-

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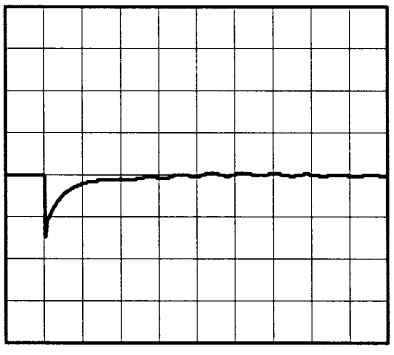
Model	PBA100F-36		
Item	Dynamic Load Response	Temperature Testing Circuitry	25°C Figure A
Object	+36V2.8A		

Input Volt. 100 V
Cycle 1000 ms

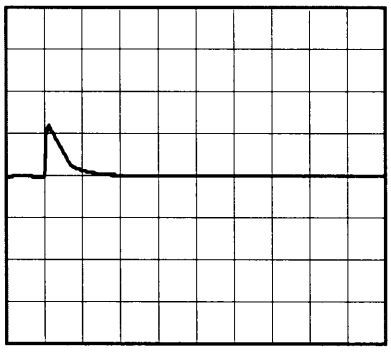
Load Current

Min. Load (0A) ⟷
Load 100% (2.8A)



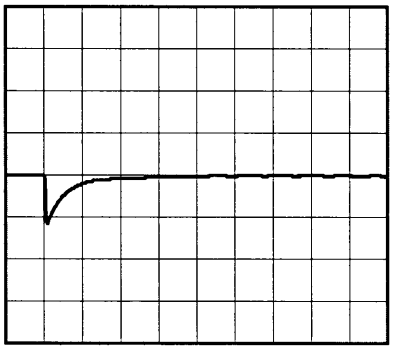
200 mV/div

10 ms/div



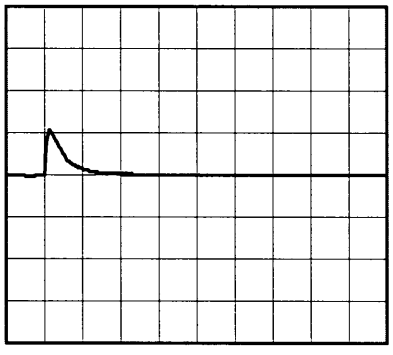
10 ms/div

Min. Load (0A) ⟷
Load 50% (1.4A)



200 mV/div

10 ms/div



10 ms/div

* The characteristic of AC200V is equal.

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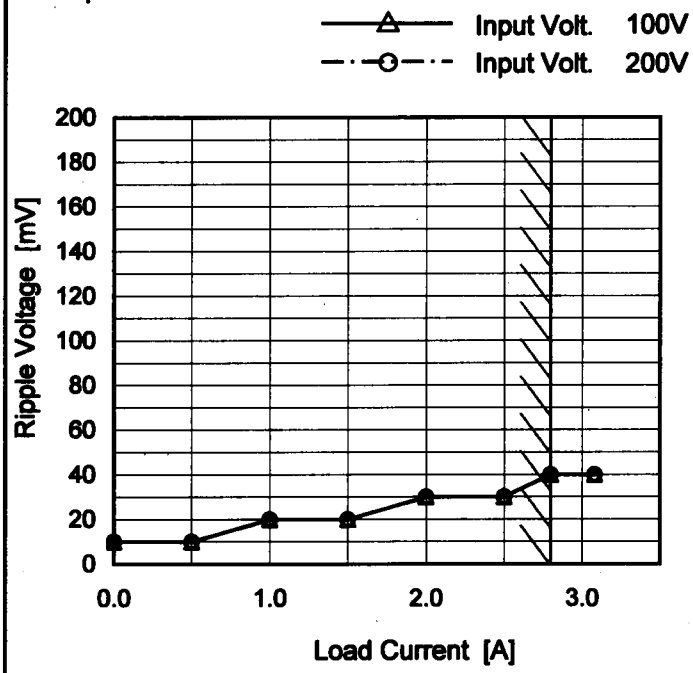
Model	PBA100F-36
Item	Ripple Voltage (by Load Current)
Object	+36V2.8A

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.

2.Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 100 [V]	Input Volt. 200 [V]
0.00	10	10
0.50	10	10
1.00	20	20
1.50	20	20
2.00	30	30
2.50	30	30
2.80	40	40
3.08	40	40
—	-	-
—	-	-
—	-	-

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

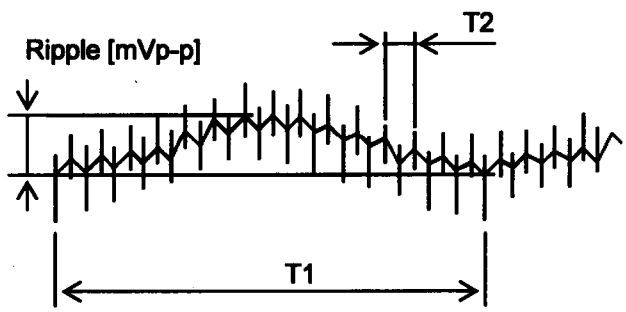


Fig. Complex Ripple Wave Form

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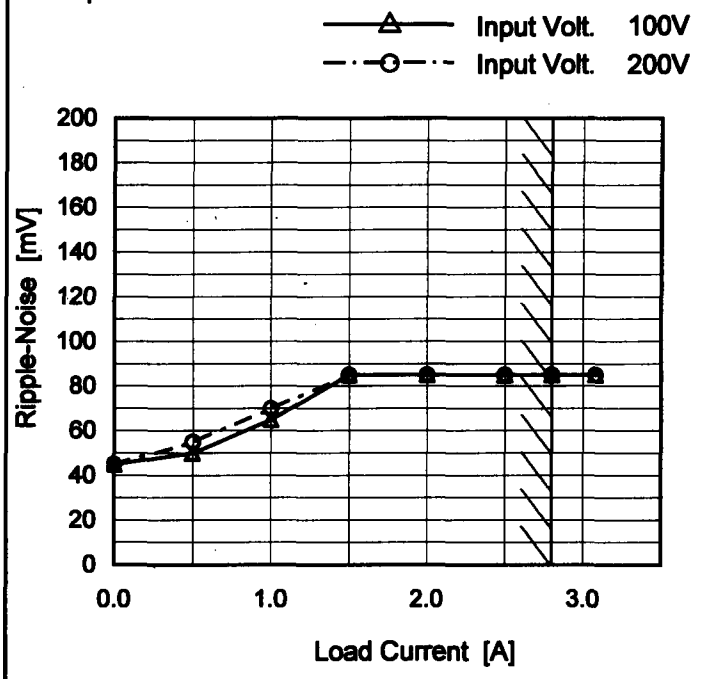
Model	PBA100F-36
Item	Ripple-Noise
Object	+36V2.8A

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. 100 [V]	Input Volt. 200 [V]
0.00	45	45
0.50	50	55
1.00	65	70
1.50	85	85
2.00	85	85
2.50	85	85
2.80	85	85
3.08	85	85
–	-	-
–	-	-
–	-	-

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

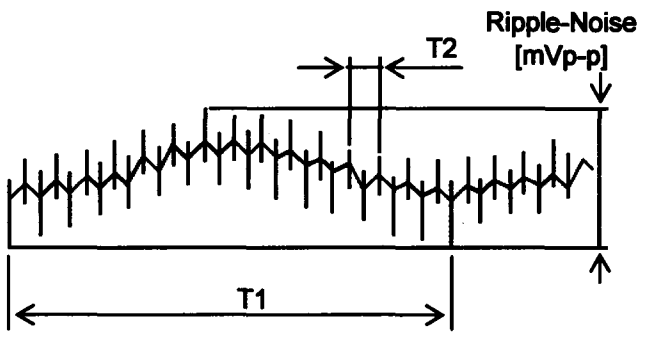


Fig. Complex Ripple Wave Form

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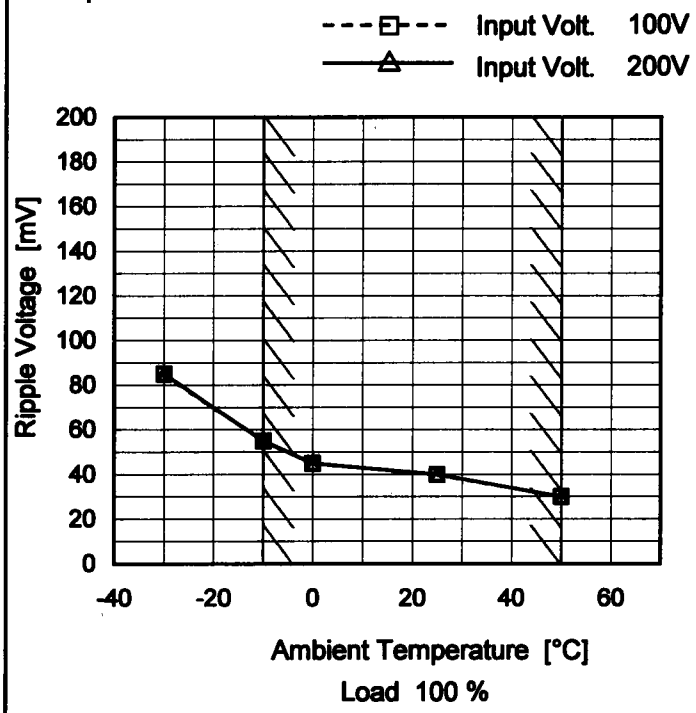
Model	PBA100F-36
Item	Ripple Voltage (by Ambient Temp.)
Object	+36V2.8A

Testing Circuitry Figure A

1.Graph



Measured by 20 MHz Oscilloscope.

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

2.Values

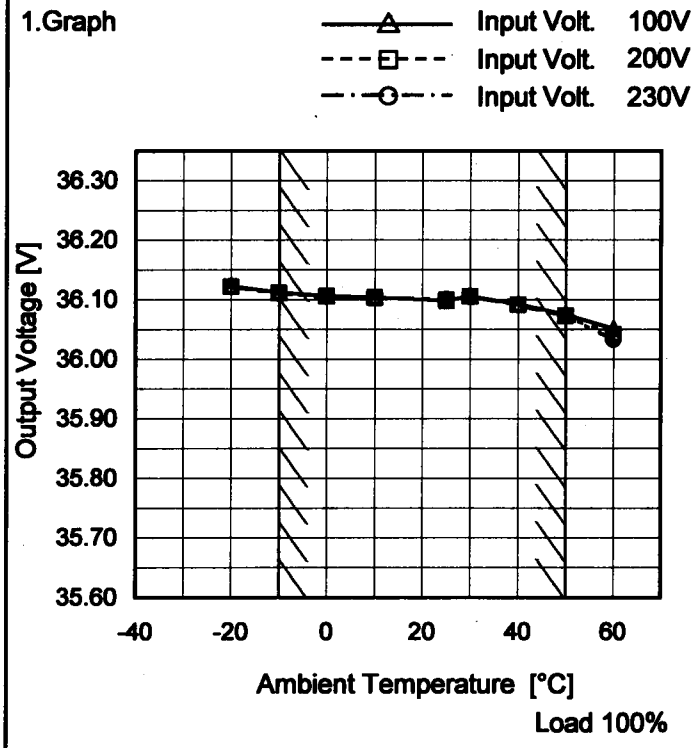
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Input Volt. 100 [V]	Input Volt. 200 [V]
-30	85	85
-10	55	55
0	45	45
25	40	40
50	30	30
–	-	-
–	-	-
–	-	-
–	-	-
–	-	-
–	-	-

COSEL

Model	PBA100F-36
Item	Ambient Temperature Drift
Object	+36V2.8A

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. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
-20	36.123	36.122	36.122
-10	36.112	36.111	36.111
0	36.106	36.106	36.106
10	36.104	36.104	36.103
25	36.098	36.100	36.101
30	36.106	36.105	36.105
40	36.093	36.092	36.092
50	36.075	36.073	36.073
60	36.051	36.042	36.033
—	-	-	-
—	-	-	-

COSEL

Model	PBA100F-36	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+36V2.8A	

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 - 264V
Load Current : 0 - 2.8A

* 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	85	0	36.117	±25	±0.1
Minimum Voltage	50	264	2.8	36.068		

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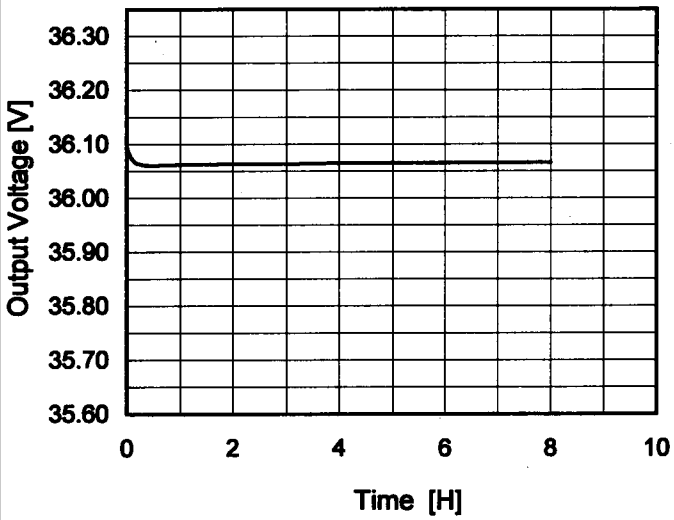
Model	PBA100F-36
Item	Time Lapse Drift
Object	+36V2.8A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Input Volt. 100V
Load 100%

* The characteristic of AC200V is equal.

2.Values

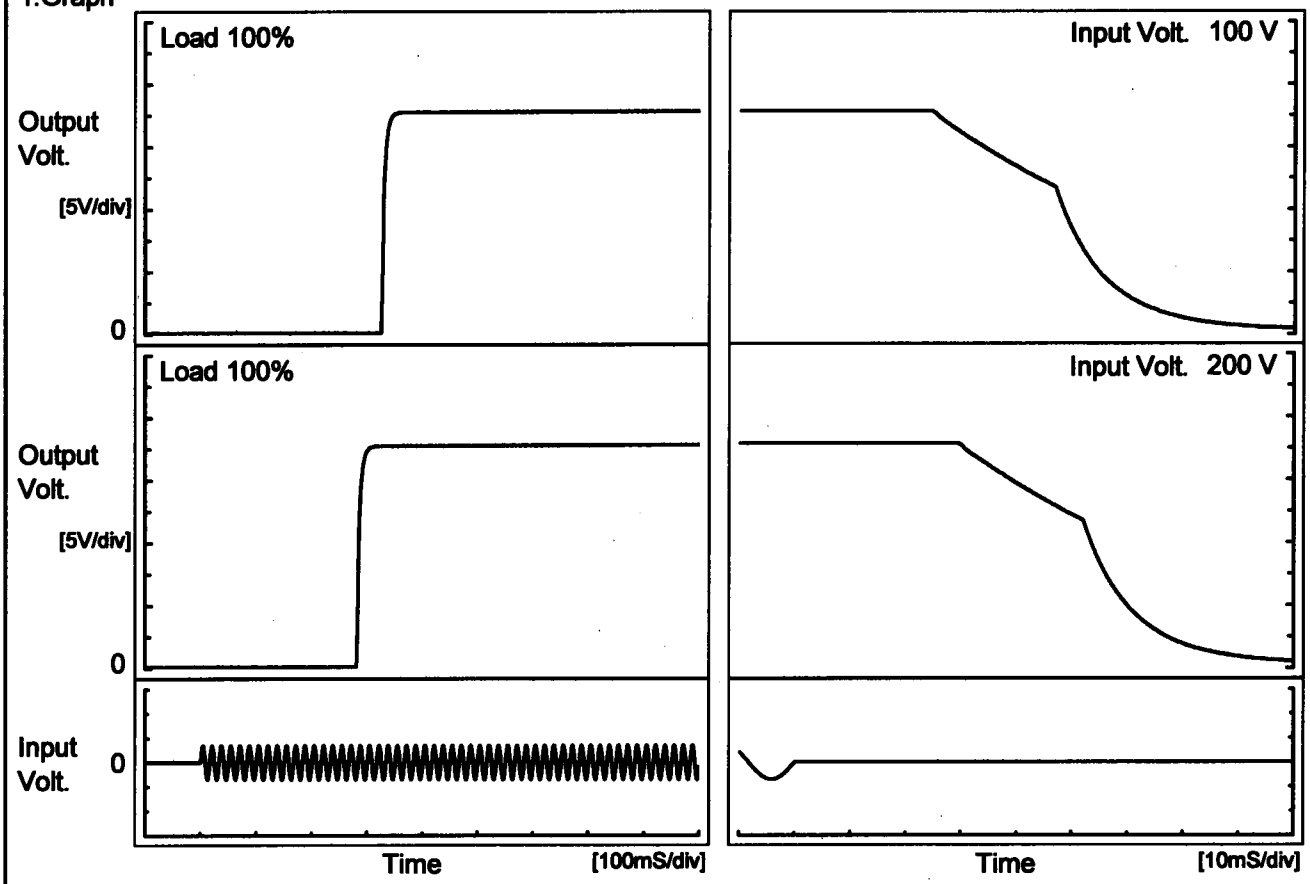
Time since start [H]	Output Voltage [V]
0.0	36.096
0.5	36.061
1.0	36.063
2.0	36.064
3.0	36.064
4.0	36.065
5.0	36.065
6.0	36.065
7.0	36.066
8.0	36.066

COSEL

Model	PBA100F-36
Item	Rise and Fall Time
Object	+36V2.8A

Temperature 25°C
Testing Circuitry Figure A

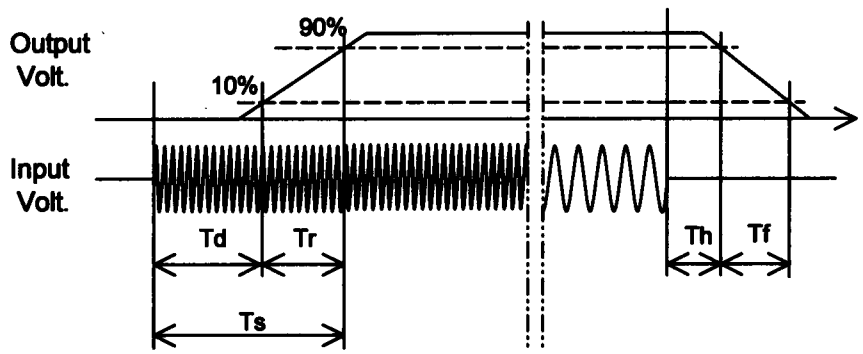
1.Graph



2.Values

[mS]

Input Volt. \ Time	Td	Tr	Ts	Th	Tf
100 V	325.5	11.5	337.0	29.3	36.0
200 V	281.5	11.5	293.0	34.4	35.9

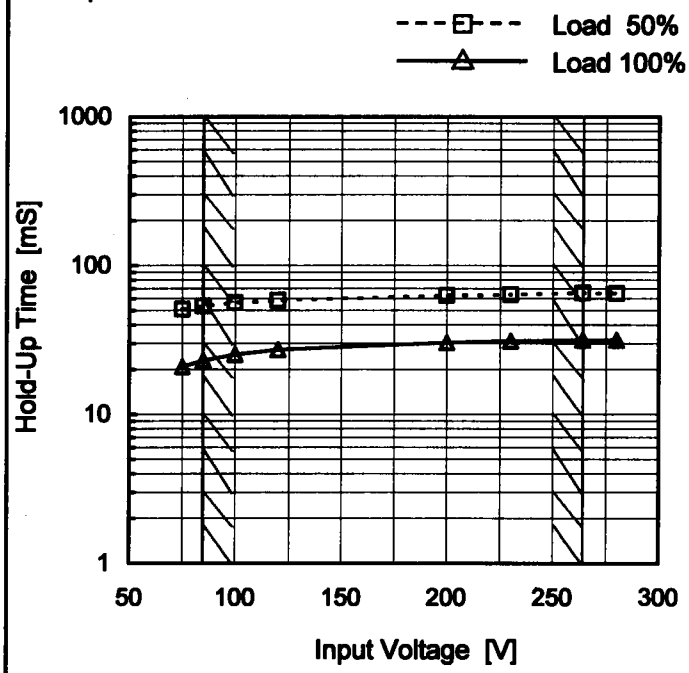


COSEL

Model	PBA100F-36
Item	Hold-Up Time
Object	+36V2.8A

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

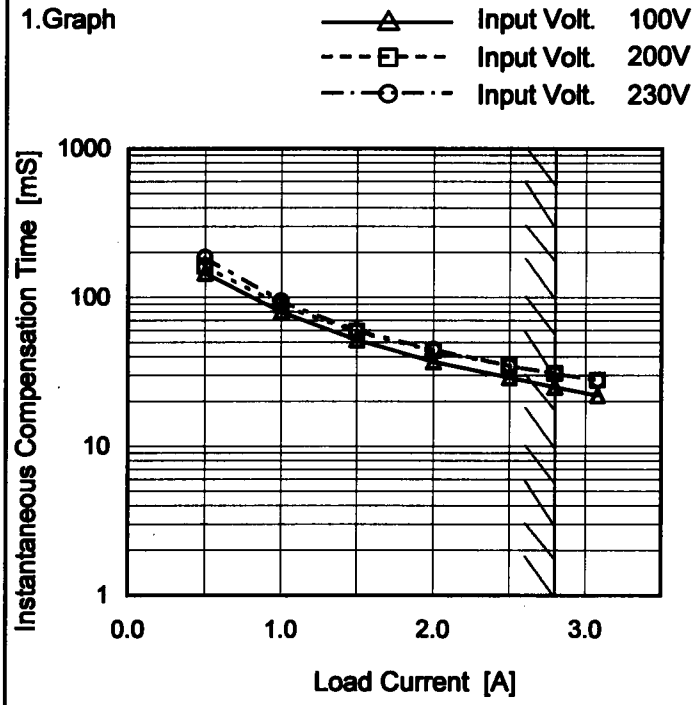
Input Voltage [V]	Hold-Up Time [mS]	
	Load 50%	Load 100%
75	51	21
85	54	23
100	56	25
120	58	27
200	63	30
230	64	31
264	66	32
280	65	32
–	-	-

COSEL

Model	PBA100F-36
Item	Instantaneous Interruption Compensation
Object	+36V2.8A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

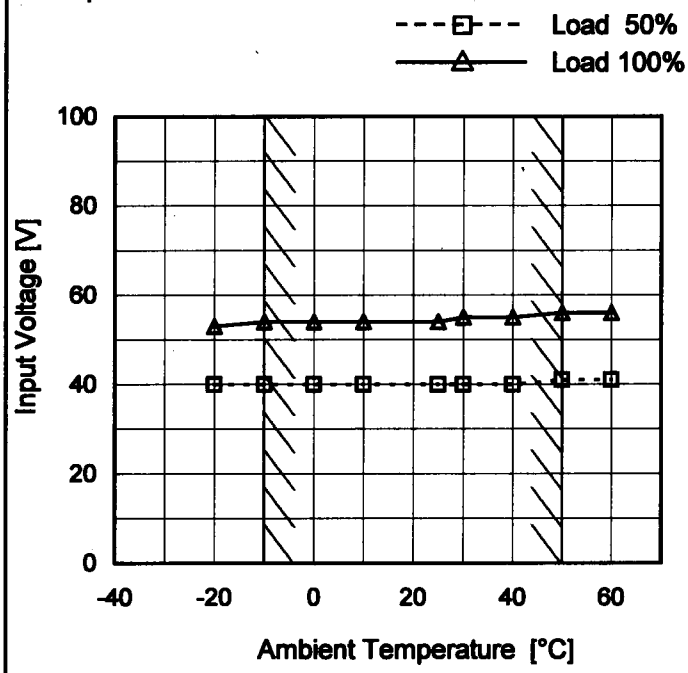
Load Current [A]	Time [mS] Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.00	-	-	-
0.50	146	163	187
1.00	80	89	95
1.50	52	59	60
2.00	37	44	45
2.50	29	35	35
2.80	25	31	31
3.08	22	28	28
—	-	-	-
—	-	-	-
—	-	-	-

COSEL

Model	PBA100F-36
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+36V2.8A

Testing Circuitry Figure A

1.Graph



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

2.Values

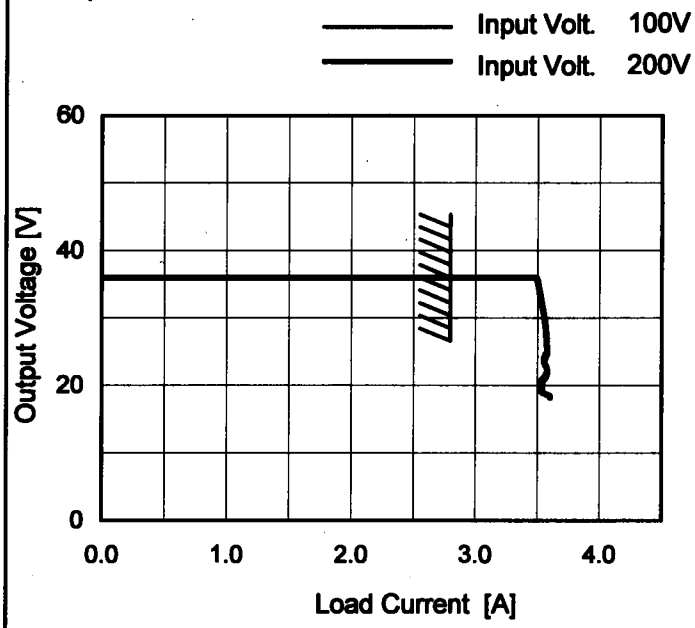
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-20	40	53
-10	40	54
0	40	54
10	40	54
25	40	54
30	40	55
40	40	55
50	41	56
60	41	56
—	-	-
—	-	-

COSEL

Model	PBA100F-36
Item	Overcurrent Protection
Object	+36V2.8A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

Intermittent operation occurs when the output voltage is from 18V to 0V.

2.Values

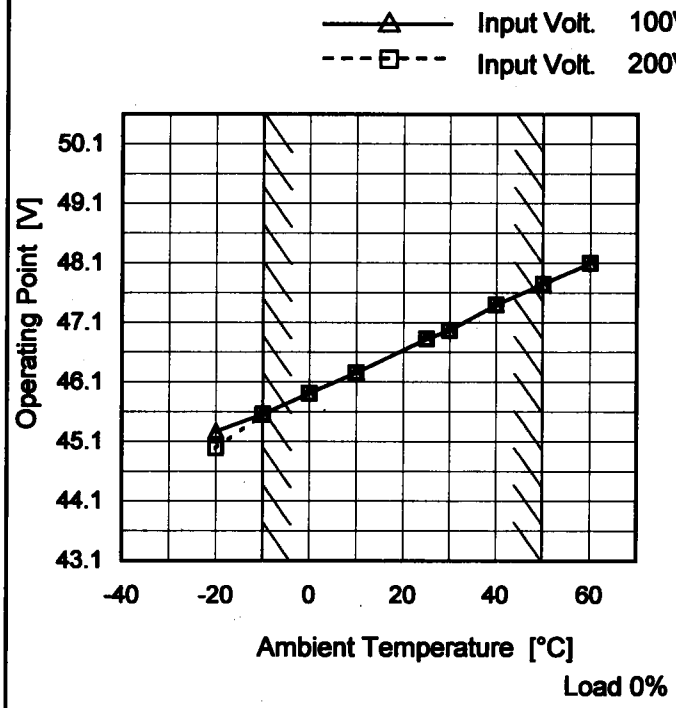
Output Voltage [V]	Load Current [A]	
	Input Volt. 100[V]	Input Volt. 200[V]
36.0	2.87	2.87
34.2	3.53	3.51
32.4	3.54	3.53
28.8	3.58	3.56
25.2	3.59	3.58
21.6	3.59	3.56
18.0	3.61	3.60
–	-	-
–	-	-
–	-	-
–	-	-
–	-	-

COSEL

Model	PBA100F-36
Item	Overvoltage Protection
Object	+36V2.8A

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. 100[V]	Input Volt. 200[V]
-20	45.30	45.02
-10	45.59	45.59
0	45.94	45.94
10	46.29	46.29
25	46.86	46.86
30	47.00	47.00
40	47.43	47.43
50	47.78	47.78
60	48.13	48.13
—	-	-
—	-	-

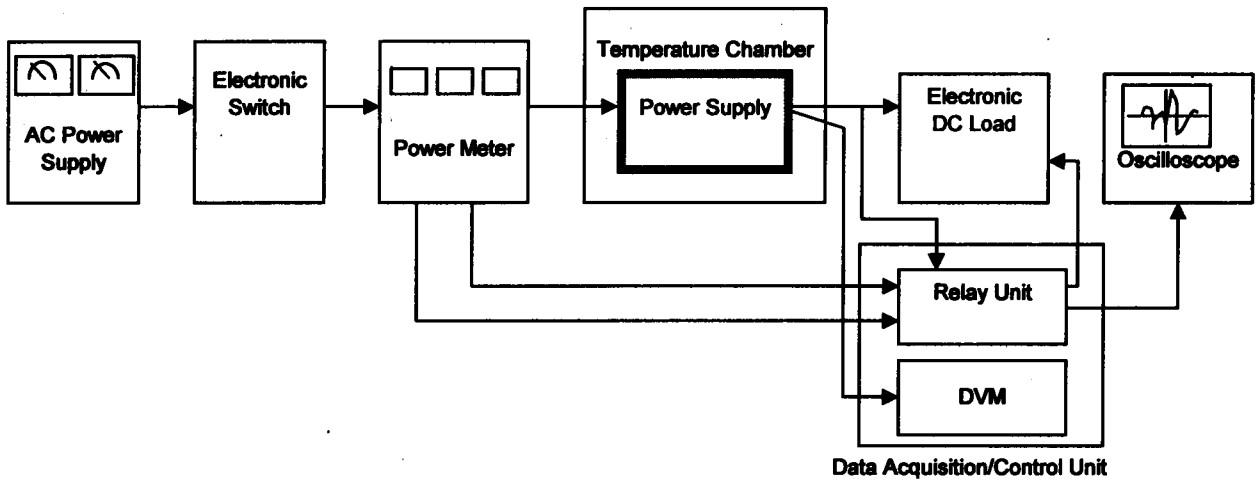


Figure A

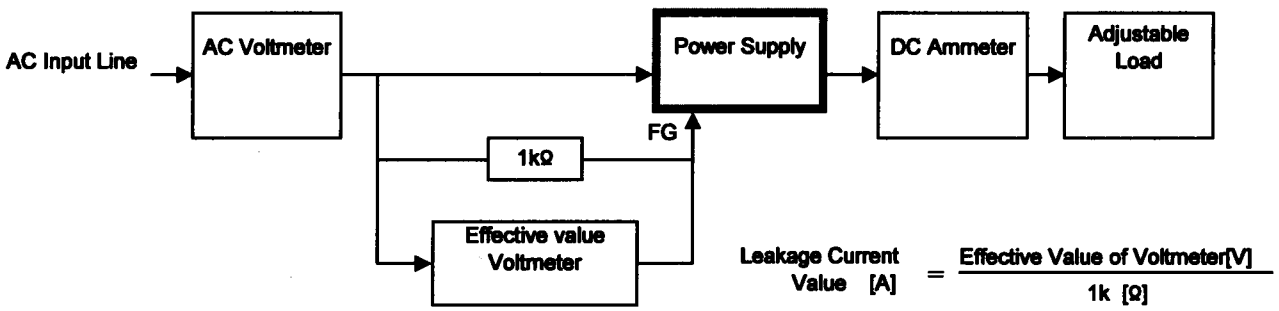


Figure B (DEN-AN)

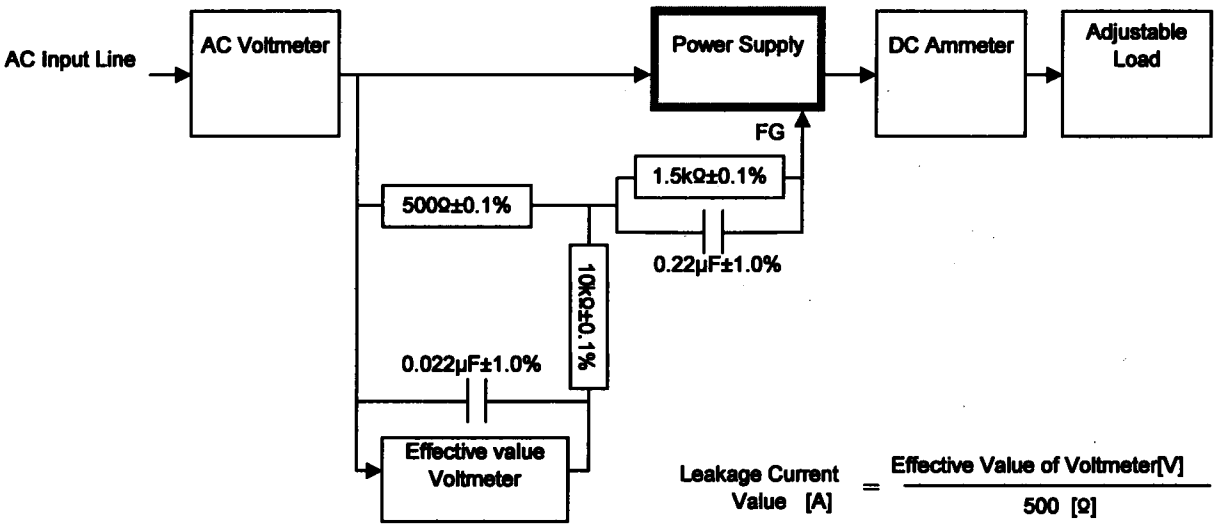


Figure B (IEC60950)