参考資料

COSEL

TEST DATA OF PBA75F-36

Regulated DC Power Supply
Apr.5. 2004

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COSEL CO.,LTD.

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CONTENTS

1.Input Current (by Load Current) 1
2.Input Power (by Load Current) 2
3.Efficiency (by Input Voltage) 3
4.Efficiency (by Load Current) 4
5.Power Factor (by Input Voltage) 5
6.Power Factor (by Load Current) 6
7.Inrush Current 7
8.Leakage Current 8
9.Line Regulation 9
10.Load Regulation 10
11.Dynamic Load Response 11
12.Ripple Voltage (by Load Current) 12
13.Ripple-Noise 13
14.Ripple Voltage (by Ambient Temperature) 14
15.Ambient Temperature Drift 15
16.Output Voltage Accuracy 16
17.Time Lapse Drift 17
18.Rise and Fall Time 18
19.Hold-Up Time 19
20.Instantaneous Interruption Compensation 20
21.Minimum Input Voltage for Regulated Output Voltage 21
22.Overcurrent Protection 22
23.Overvoltage Protection 23
24.Figure of Testing Circuitry 24
(Final Page 24)

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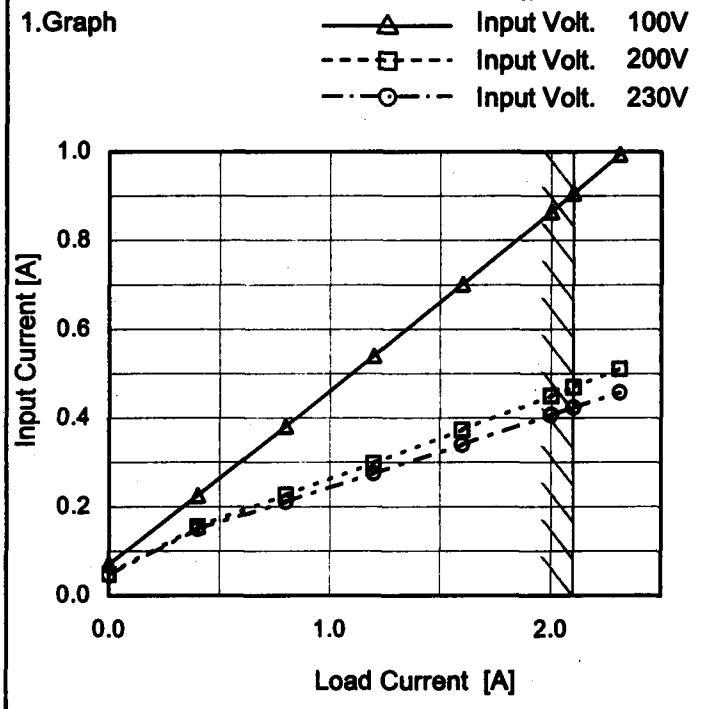
Model	PBA75F-36
Item	Input Current (by Load Current)
Object	———————

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	0.071	0.048	0.046
0.40	0.225	0.155	0.150
0.80	0.381	0.227	0.211
1.20	0.540	0.298	0.275
1.60	0.702	0.374	0.340
2.00	0.865	0.450	0.407
2.10	0.906	0.470	0.424
2.31	0.994	0.511	0.458
--	-	-	-
--	-	-	-
--	-	-	-

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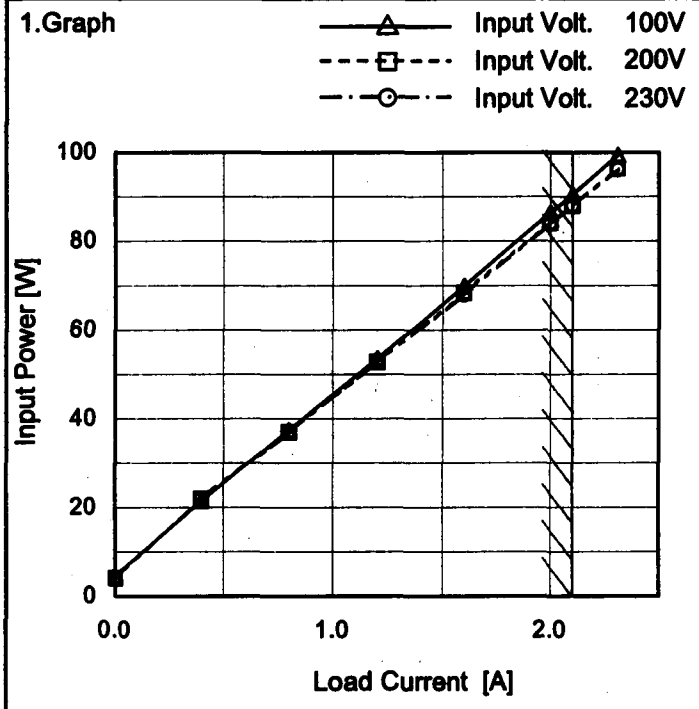
Model	PBA75F-36
Item	Input Power (by Load Current)
Object	———————

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	4.57	4.00	4.00
0.40	21.48	22.00	22.00
0.80	37.46	37.00	37.00
1.20	53.59	52.80	53.00
1.60	69.91	68.40	68.00
2.00	86.41	84.20	84.00
2.10	90.54	88.00	88.00
2.31	99.35	96.40	96.20
--	-	-	-
--	-	-	-
--	-	-	-

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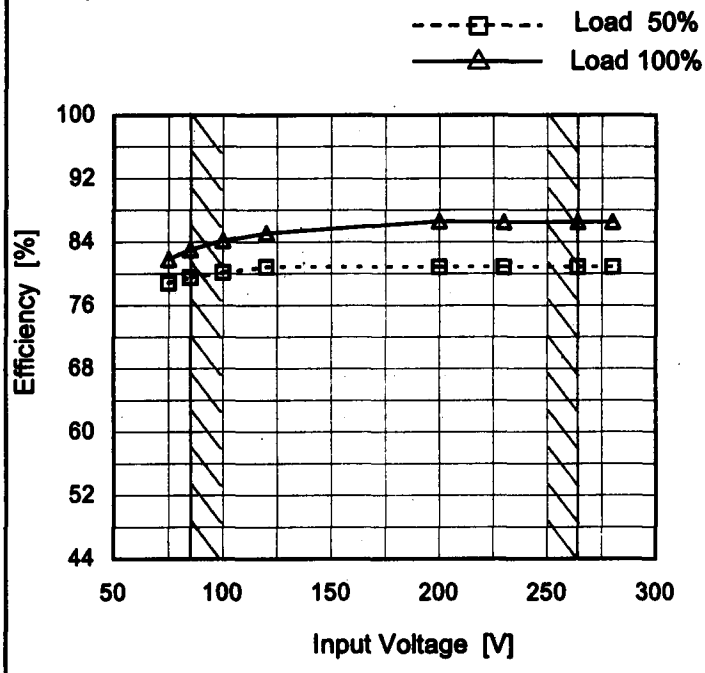
Model	PBA75F-36
Item	Efficiency (by Input Voltage)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

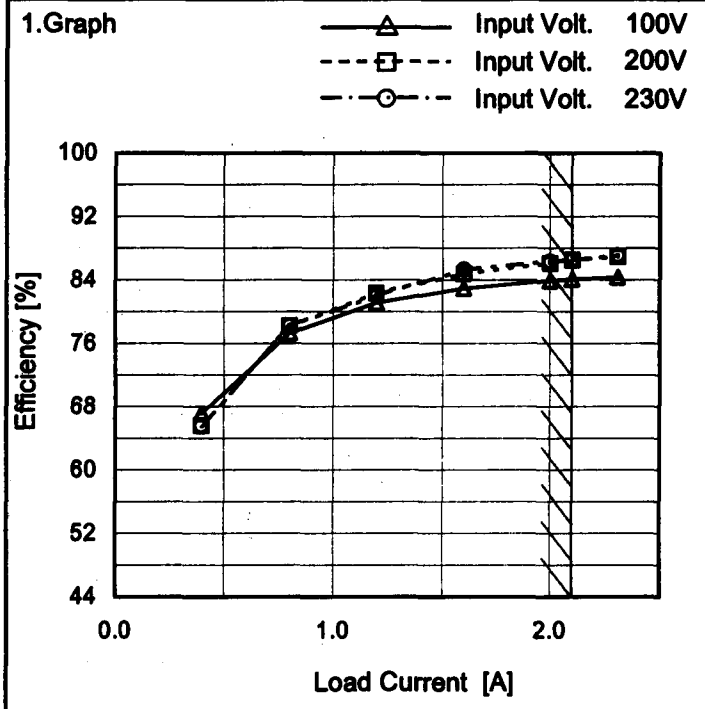
Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
75	78.9	81.8
85	79.5	83.0
100	80.1	84.2
120	80.9	85.1
200	80.8	86.6
230	80.9	86.5
264	80.8	86.5
280	80.8	86.5
--	-	-

COSEL

Model	PBA75F-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	-	-	-
0.40	67.2	65.6	65.6
0.80	77.3	78.2	78.3
1.20	81.1	82.3	82.0
1.60	83.0	84.8	85.3
2.00	83.9	86.1	86.3
2.10	84.1	86.5	86.5
2.31	84.3	86.9	87.1
--	-	-	-
--	-	-	-
--	-	-	-

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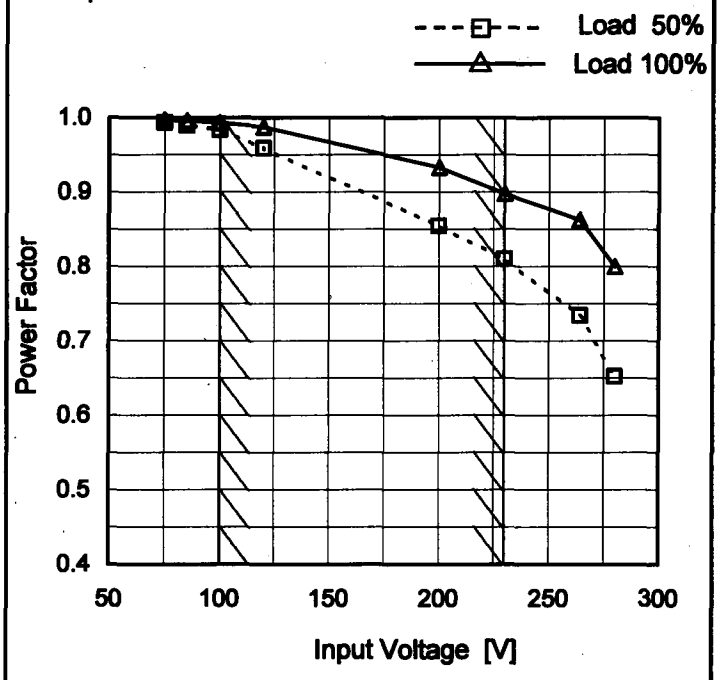
Model	PBA75F-36
Item	Power Factor (by Input Voltage)
Object	————————

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	0.993	0.997
85	0.990	0.996
100	0.984	0.993
120	0.959	0.988
200	0.855	0.933
230	0.810	0.898
264	0.734	0.863
280	0.653	0.800
–	-	-

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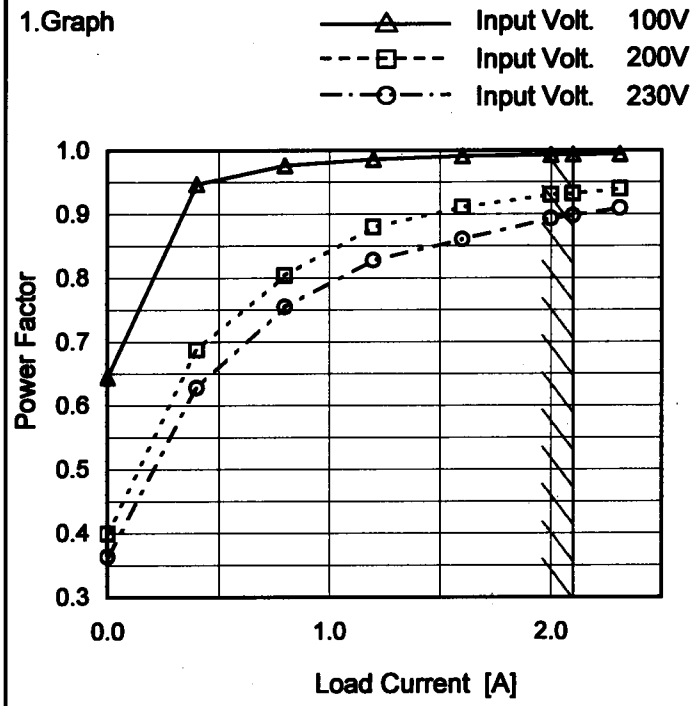
Model	PBA75F-36
Item	Power Factor (by Load Current)
Object	———————

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	0.645	0.400	0.364
0.40	0.947	0.688	0.629
0.80	0.977	0.804	0.755
1.20	0.986	0.880	0.828
1.60	0.991	0.911	0.861
2.00	0.993	0.930	0.894
2.10	0.993	0.932	0.898
2.31	0.994	0.940	0.909
—	-	-	-
—	-	-	-
—	-	-	-

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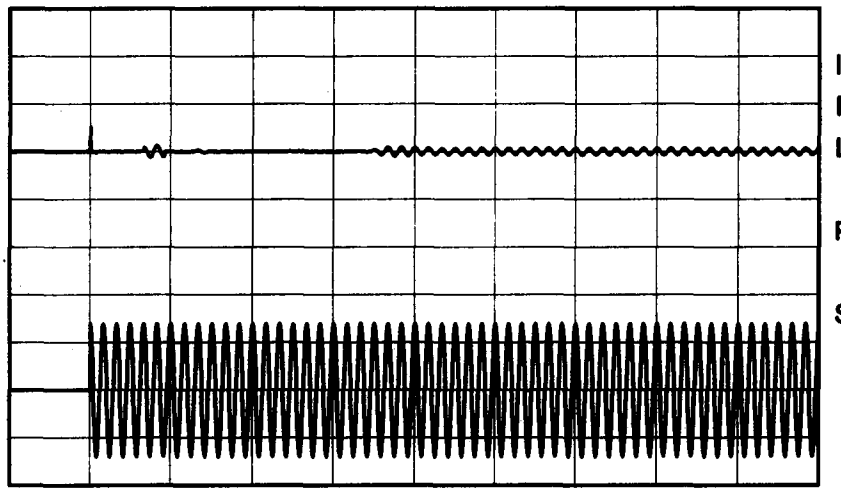
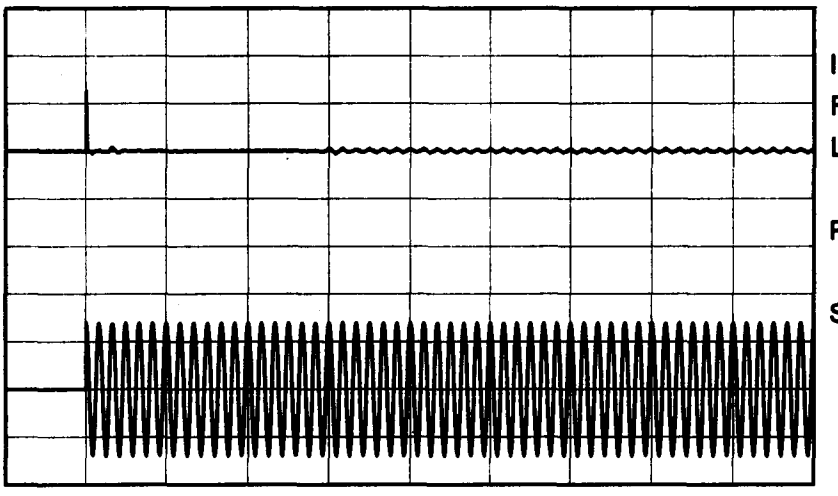
Model	PBA75F-36	
Item	Inrush Current	Temperature 25°C Testing Circuitry Figure A
Object	————————	



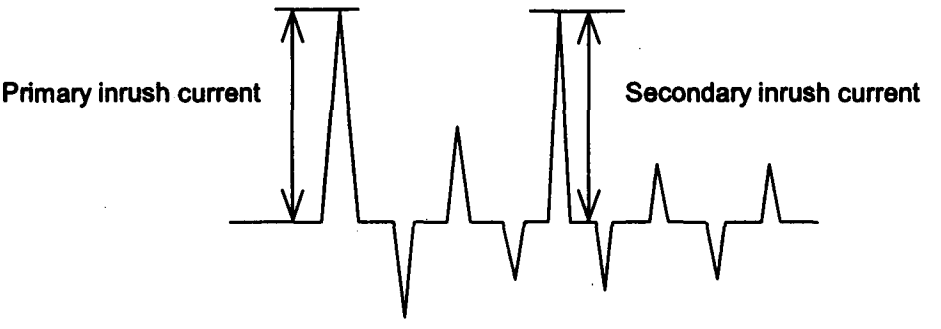
Input Voltage 100 V
Frequency 60 Hz
Load 100 %

Primary inrush current :
10.5 A
Secondary inrush current :
2.5 A



Input Voltage 200 V
Frequency 60 Hz
Load 100 %

Primary inrush current :
25.1 A
Secondary inrush current :
1.3 A



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Model	PBA75F-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	0.16	0.26	0.30	Operation
	One of phase	0.24	0.45	0.53	stand by
IEC60950	Both phases	0.16	0.28	0.37	Operation
	One of phase	0.24	0.47	0.57	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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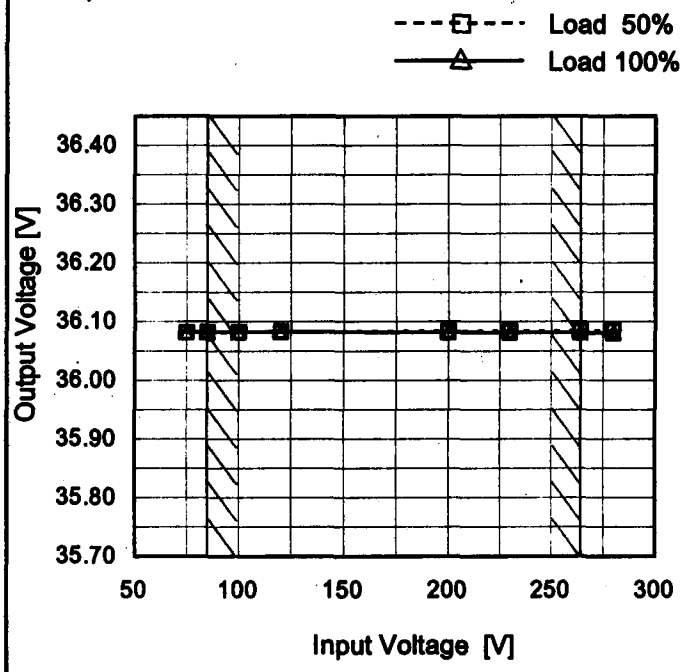
Model	PBA75F-36
Item	Line Regulation
Object	+36V2.1A

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	36.082	36.082
85	36.082	36.083
100	36.083	36.083
120	36.083	36.083
200	36.083	36.082
230	36.084	36.082
264	36.084	36.082
280	36.085	36.081
-	-	-

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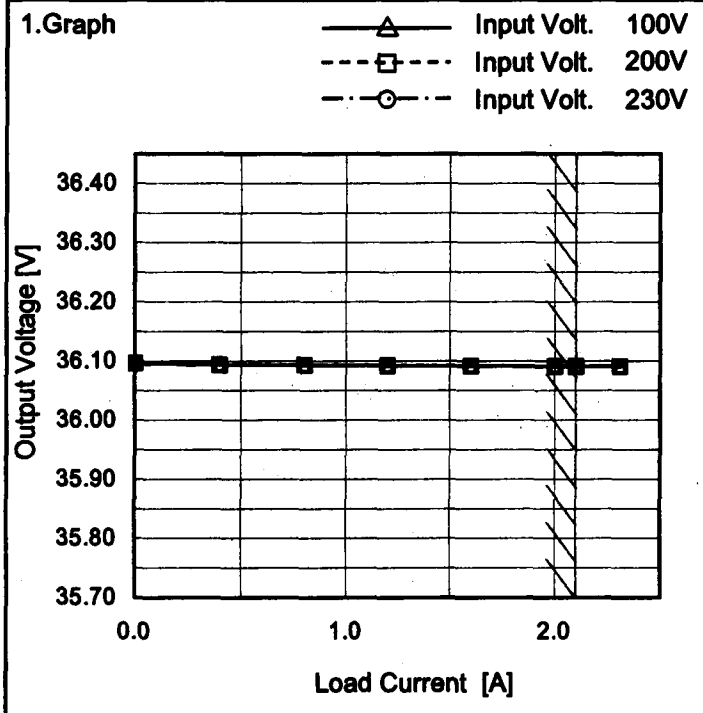
Model	PBA75F-36
Item	Load Regulation
Object	+36V2.1A

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	36.097	36.096	36.096
0.40	36.094	36.094	36.093
0.80	36.093	36.093	36.093
1.20	36.093	36.093	36.092
1.60	36.092	36.092	36.091
2.00	36.091	36.091	36.091
2.10	36.091	36.091	36.091
2.31	36.091	36.091	36.090
--	-	-	-
--	-	-	-
--	-	-	-

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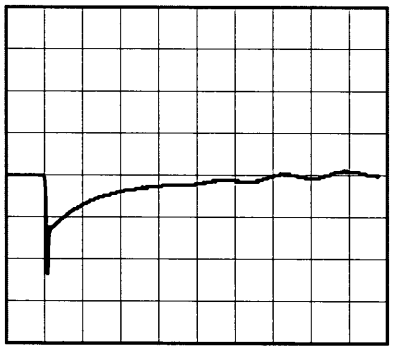
Model	PBA75F-36
Item	Dynamic Load Response
Object	+36V2.1A

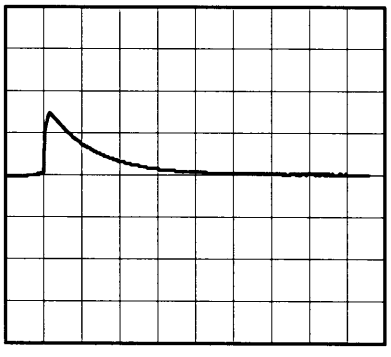
Temperature 25°C
Testing Circuitry Figure A

Input Volt. 100 V
Cycle 1000 ms

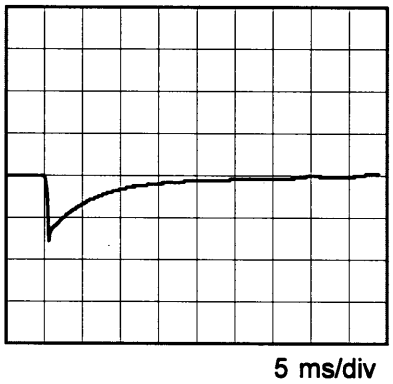
Load Current

Min. Load (0A) ⟷
Load 100% (2.1A)





Min. Load (0A) ⟷
Load 50% (1.05A)



* The characteristic of AC200V is equal.

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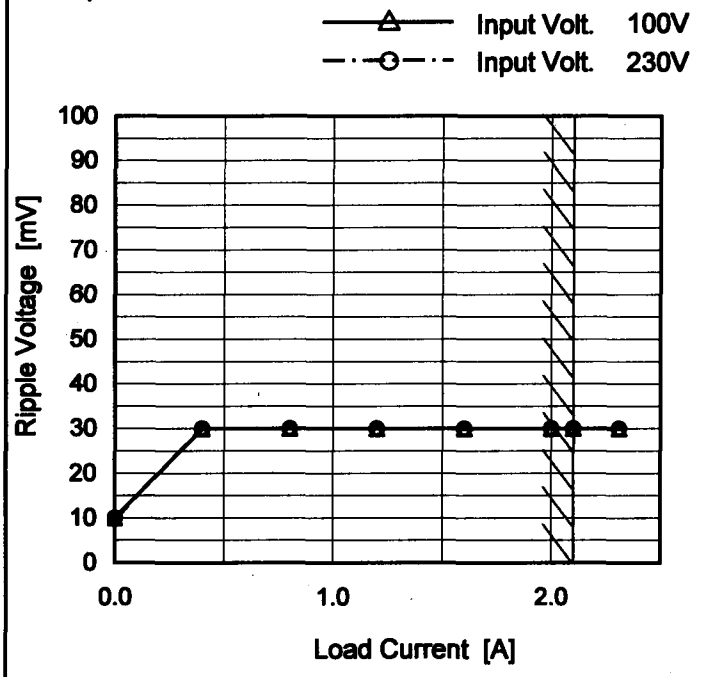
Model	PBA75F-36
Item	Ripple Voltage (by Load Current)
Object	+36V2.1A

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

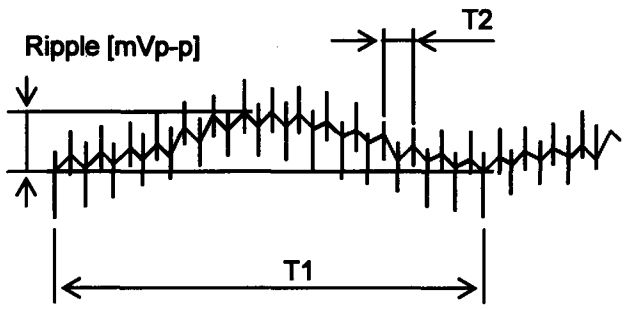


Fig. Complex Ripple Wave Form

2.Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 100 [V]	Input Volt. 230 [V]
0.00	10	10
0.40	30	30
0.80	30	30
1.20	30	30
1.60	30	30
2.00	30	30
2.10	30	30
2.31	30	30
–	-	-
–	-	-
–	-	-

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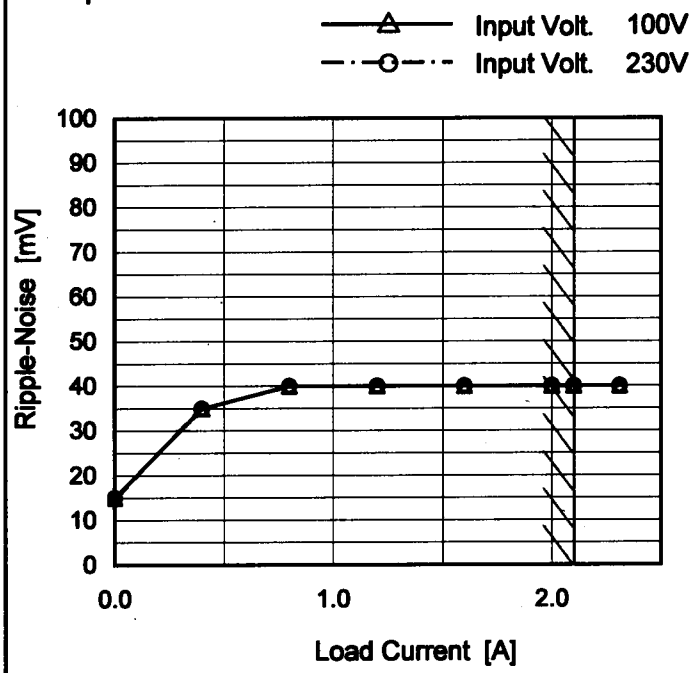
Model	PBA75F-36
Item	Ripple-Noise
Object	+36V2.1A

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. 230 [V]
0.00	15	15
0.40	35	35
0.80	40	40
1.20	40	40
1.60	40	40
2.00	40	40
2.10	40	40
2.31	40	40
–	-	-
–	-	-
–	-	-

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

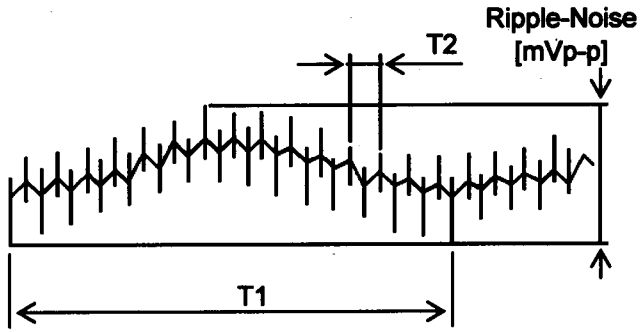


Fig. Complex Ripple Wave Form

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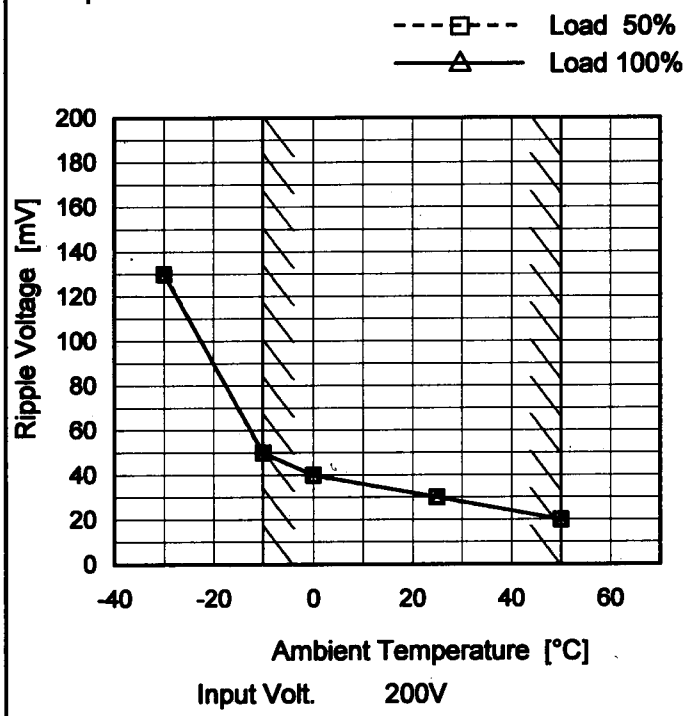
Model	PBA75F-36
Item	Ripple Voltage (by Ambient Temp.)
Object	+36V2.1A

Testing Circuitry Figure A

1.Graph



Input Volt. 200V

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%
-30	130	130
-10	50	50
0	40	40
25	30	30
50	20	20
0	0	0
0	0	0
—	-	-
—	-	-
—	-	-
—	-	-

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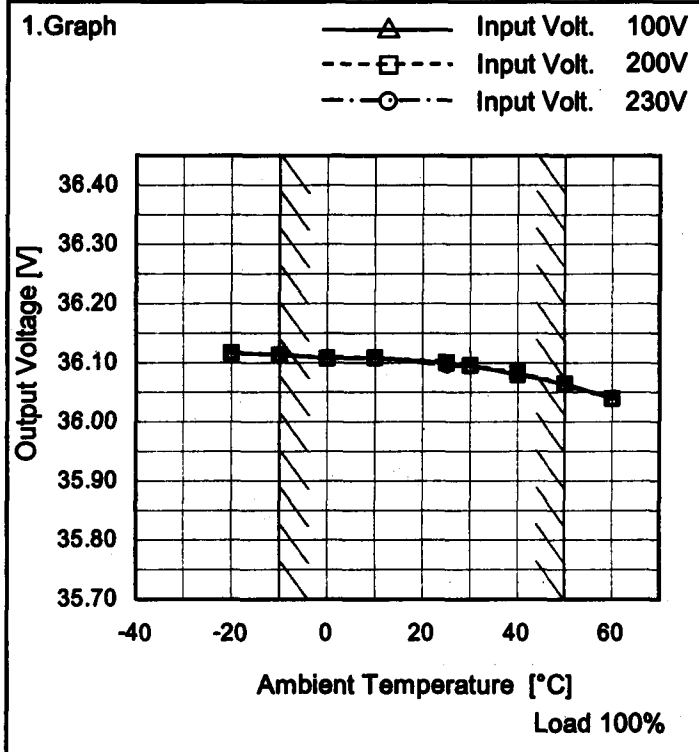
Model	PBA75F-36
Item	Ambient Temperature Drift
Object	+36V2.1A

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	36.117	36.117	36.117
-10	36.114	36.114	36.114
0	36.108	36.108	36.109
10	36.109	36.109	36.109
25	36.100	36.101	36.096
30	36.096	36.096	36.095
40	36.080	36.083	36.082
50	36.065	36.065	36.063
60	36.040	36.040	36.039
--	-	-	-
--	-	-	-

COSEL

Model	PBA75F-36	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+36V2.1A	

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 - 2.1A

* 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	36.121	±29	±0.1
Minimum Voltage	50	264	2.1	36.063		

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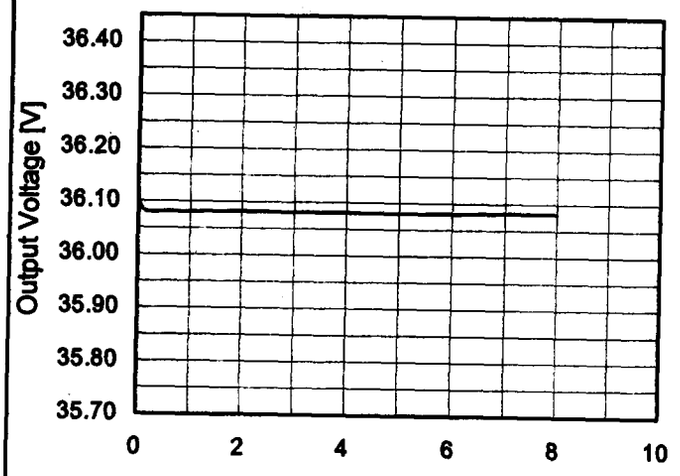
Model	PBA75F-36
Item	Time Lapse Drift
Object	+36V2.1A

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	36.106
0.5	36.081
1.0	36.081
2.0	36.082
3.0	36.082
4.0	36.082
5.0	36.081
6.0	36.081
7.0	36.083
8.0	36.082

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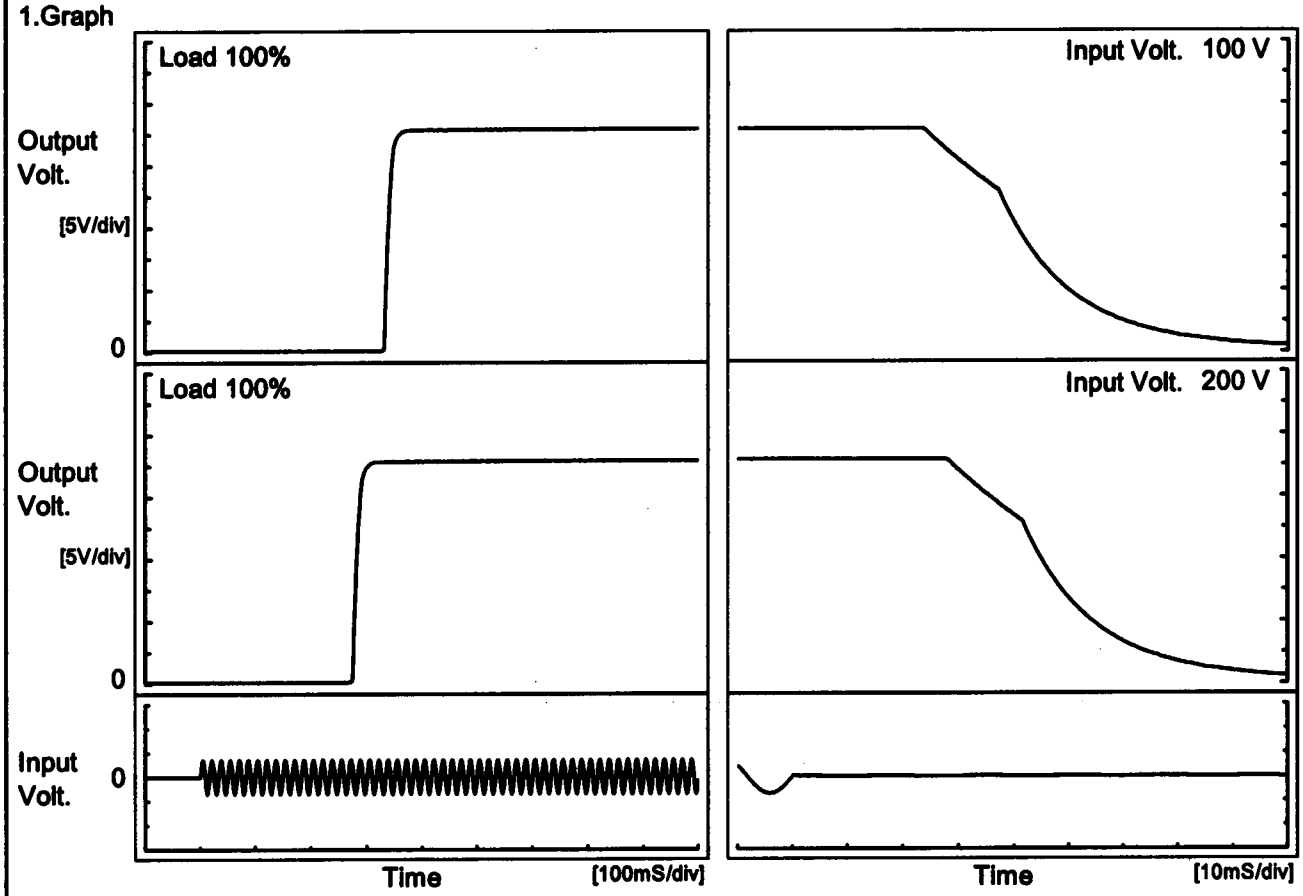
Model	PBA75F-36
Item	Rise and Fall Time
Object	+36V2.1A

Temperature 25°C
Testing Circuitry Figure A

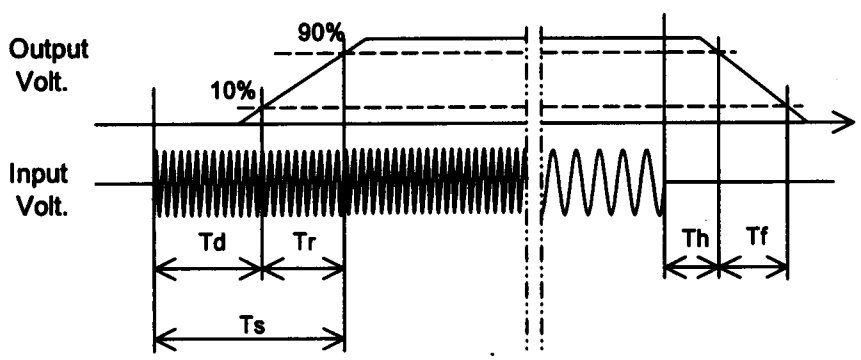
1.Graph



2.Values

[mS]

Input Volt. \ Time	Td	Tr	Ts	Th	Tf
100 V	332.0	16.0	348.0	27.7	36.4
200 V	275.0	16.0	291.0	32.0	36.8



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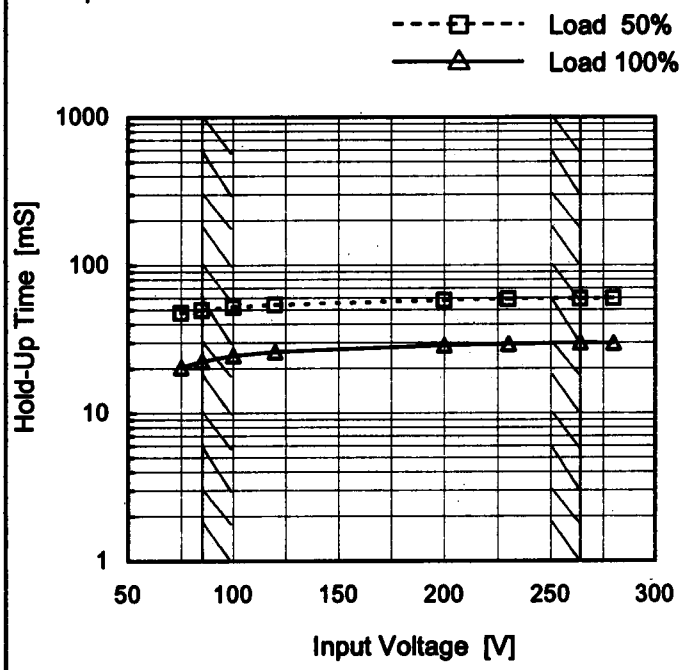
Model	PBA75F-36
Item	Hold-Up Time
Object	+36V2.1A

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

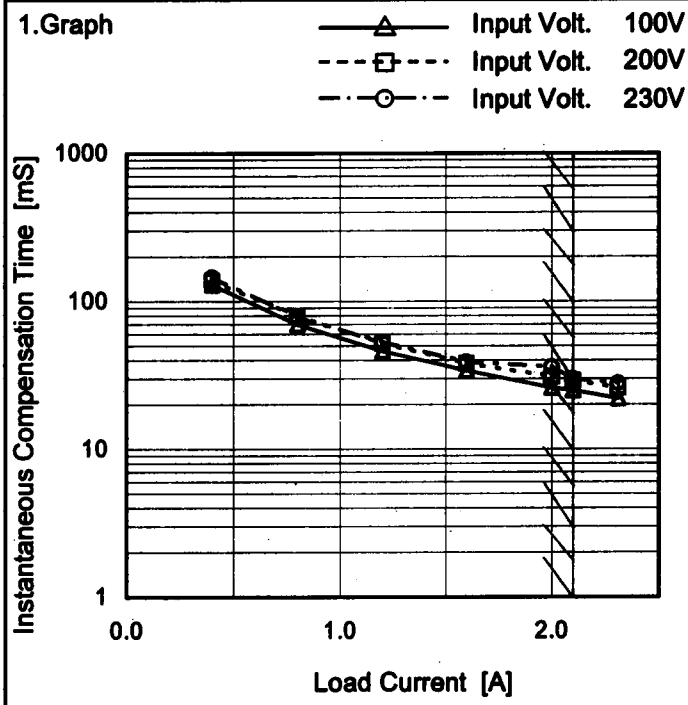
Input Voltage [V]	Hold-Up Time [mS]	
	Load 50%	Load 100%
75	48	20
85	50	23
100	52	25
120	54	26
200	58	29
230	59	29
264	60	30
280	60	30
--	-	-

COSEL

Model	PBA75F-36
Item	Instantaneous Interruption Compensation
Object	+36V2.1A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

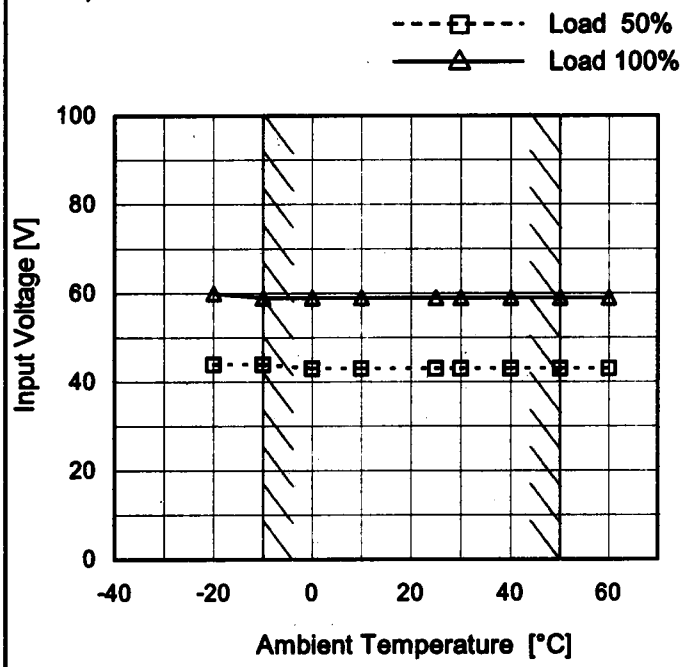
Load Current [A]	Time [mS]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.00	-	-	-
0.40	130	138	146
0.80	70	80	78
1.20	46	52	53
1.60	34	38	39
2.00	26	31	36
2.10	25	29	30
2.31	22	26	28
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	PBA75F-36
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+36V2.1A

Testing Circuitry Figure A

1.Graph



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

2.Values

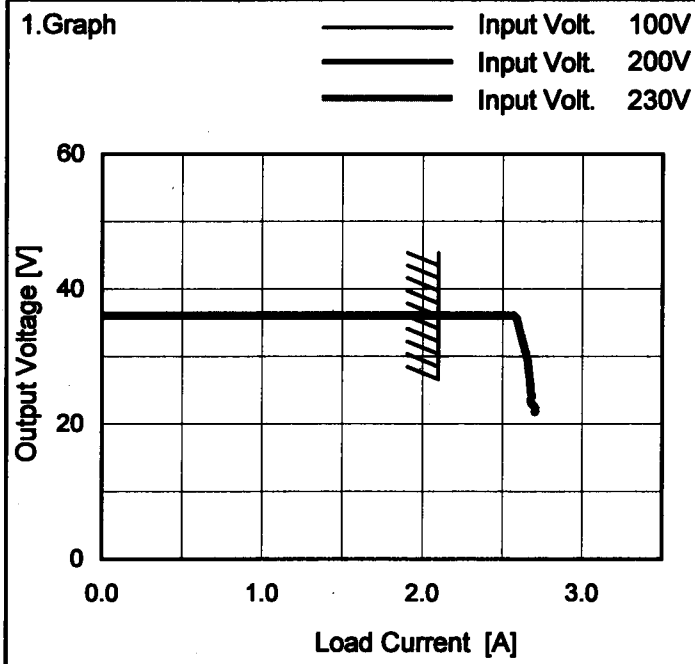
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-20	44	60
-10	44	59
0	43	59
10	43	59
25	43	59
30	43	59
40	43	59
50	43	59
60	43	59
--	-	-
--	-	-

COSEL

Model	PBA75F-36
Item	Overcurrent Protection
Object	+36V2.1A

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 21.6V to 0V.

2.Values

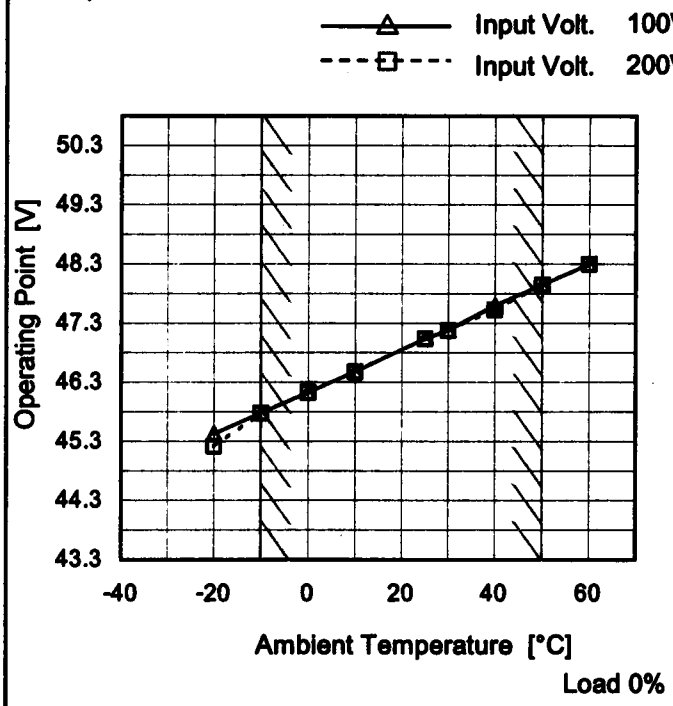
Output Voltage [V]	Load Current [A]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
36.0	2.18	2.18	2.22
34.2	2.61	2.61	2.61
32.4	2.63	2.63	2.63
28.8	2.66	2.66	2.66
25.2	2.68	2.68	2.68
21.6	2.71	2.70	2.70
–	-	-	-
–	-	-	-
–	-	-	-
–	-	-	-
–	-	-	-
–	-	-	-

COSEL

Model	PBA75F-36
Item	Overvoltage Protection
Object	+36V2.1A

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]	Operating Point [V] Input Volt. 200[V]
-20	45.44	45.23
-10	45.79	45.79
0	46.14	46.14
10	46.49	46.49
25	47.05	47.05
30	47.19	47.19
40	47.61	47.54
50	47.96	47.96
60	48.31	48.31
--	-	-
--	-	-

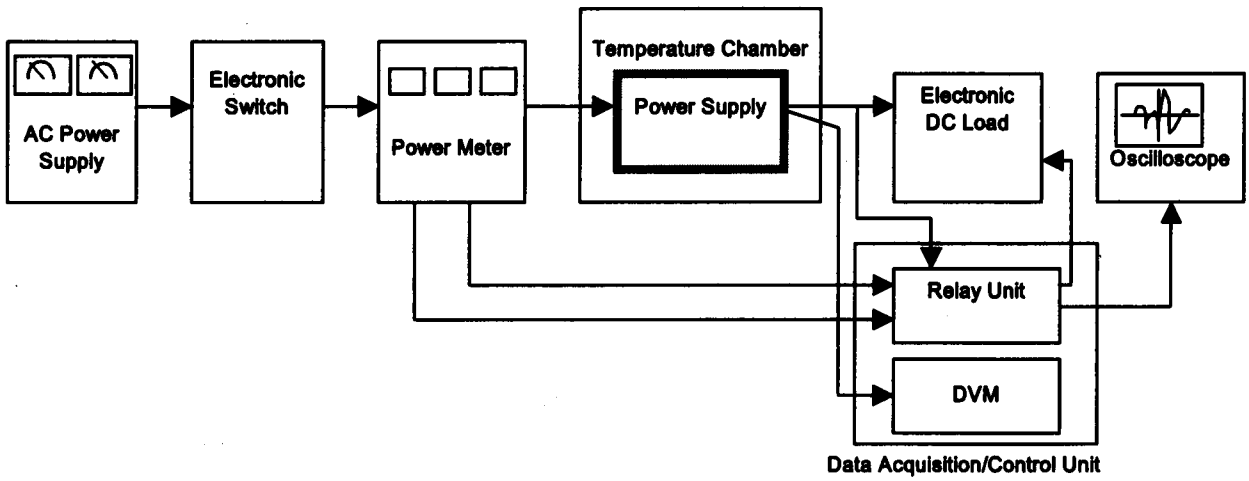


Figure A

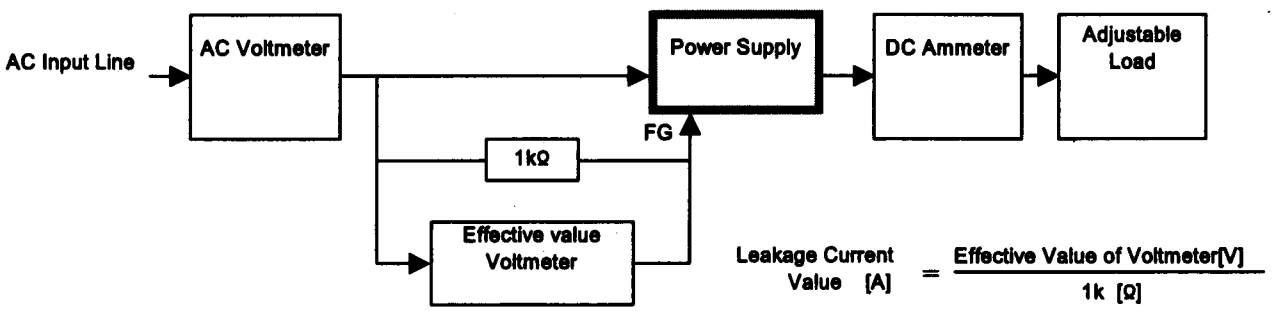


Figure B (DEN-AN)

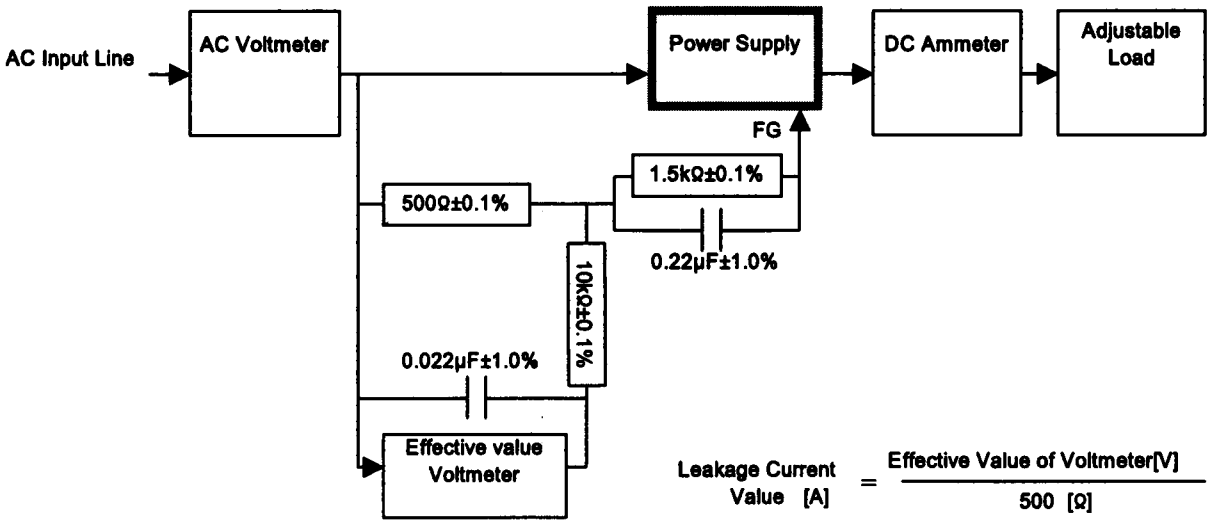


Figure B (IEC60950)