参考資料

COSEL

TEST DATA OF PBA100F-15

Regulated DC Power Supply
Apr.5. 2004

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COSEL CO.,LTD.

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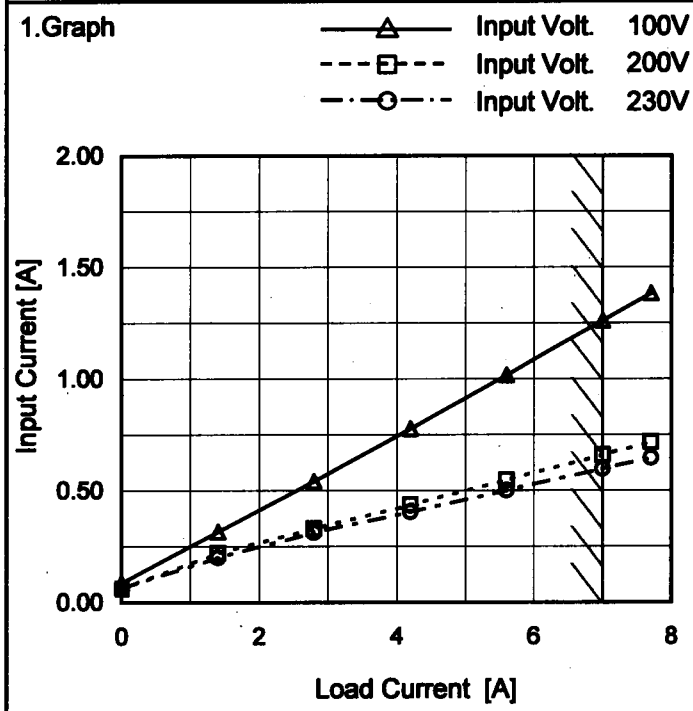
Model	PBA100F-15
Item	Input Current (by Load Current)
Object	————————

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]
0.0	0.087	0.062	0.064
1.4	0.316	0.222	0.202
2.8	0.542	0.330	0.314
4.2	0.778	0.437	0.405
5.6	1.017	0.547	0.501
7.0	1.261	0.660	0.597
7.7	1.384	0.717	0.647
—	-	-	-
—	-	-	-
—	-	-	-
—	-	-	-

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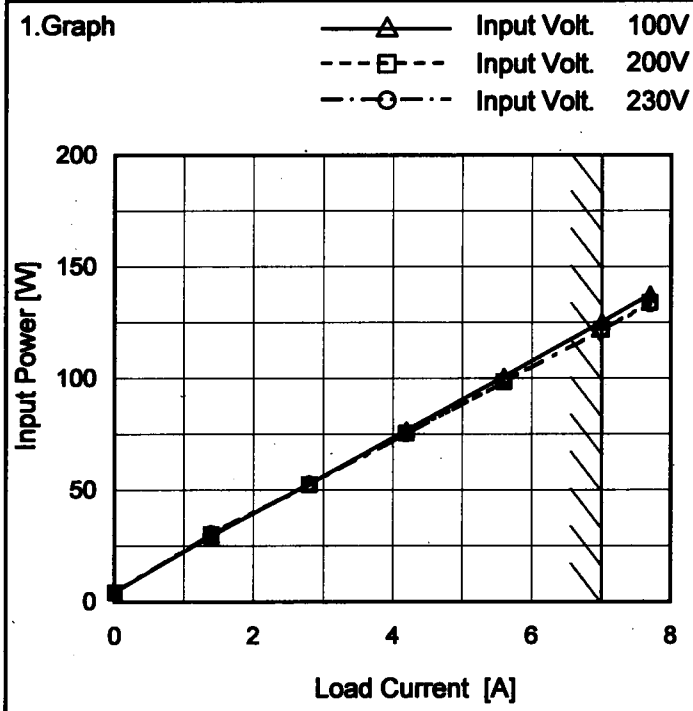
Model	PBA100F-15
Item	Input Power (by Load Current)
Object	———————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

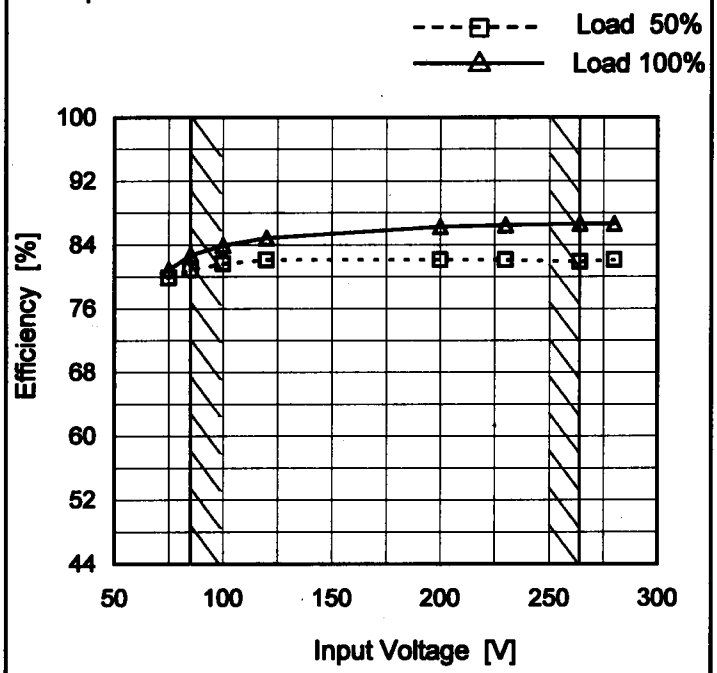
Load Current [A]	Input Power [W]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	4.3	4.2	4.3
1.4	29.6	30.2	30.6
2.8	52.9	52.4	52.7
4.2	76.8	75.4	75.2
5.6	100.9	98.4	98.4
7.0	125.3	121.8	121.6
7.7	137.6	133.9	133.2
—	-	-	-
—	-	-	-
—	-	-	-
—	-	-	-

COSEL

Model	PBA100F-15
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	79.9	80.9
85	80.9	82.7
100	81.7	83.9
120	82.1	84.9
200	82.1	86.3
230	82.1	86.5
264	81.9	86.6
280	82.1	86.6
—	-	-

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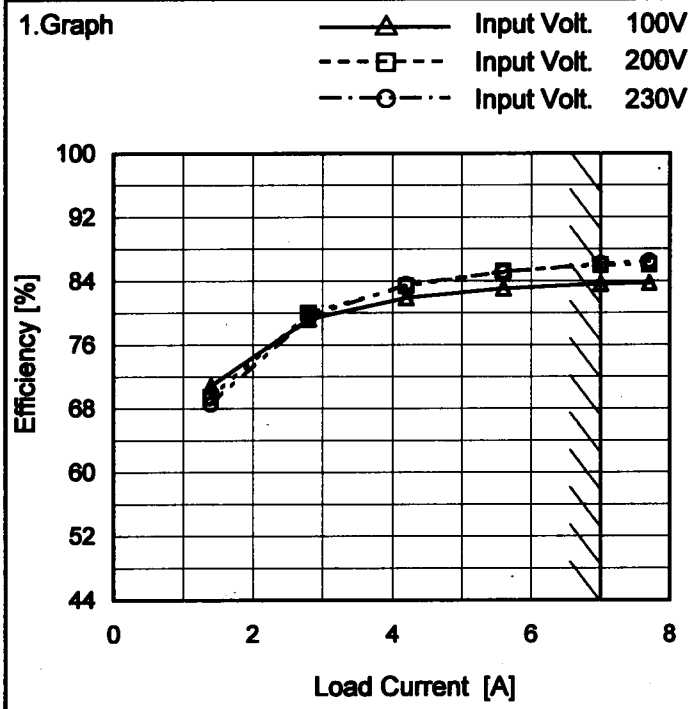
Model	PBA100F-15
Item	Efficiency (by Load Current)
Object	———————

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]
0.0	-	-	-
1.4	70.9	69.5	68.6
2.8	79.3	80.0	79.6
4.2	81.9	83.4	83.6
5.6	83.1	85.2	85.2
7.0	83.6	86.0	86.1
7.7	83.7	86.0	86.5
—	-	-	-
—	-	-	-
—	-	-	-
—	-	-	-

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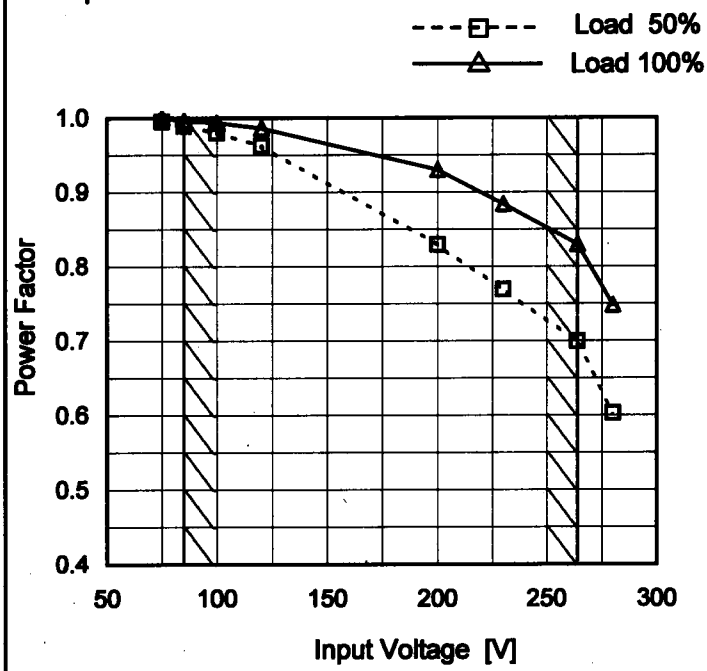
Model	PBA100F-15
Item	Power Factor (by Input Voltage)
Object	———————

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	0.996
100	0.980	0.994
120	0.962	0.986
200	0.830	0.930
230	0.770	0.884
264	0.699	0.830
280	0.603	0.748
–	-	-

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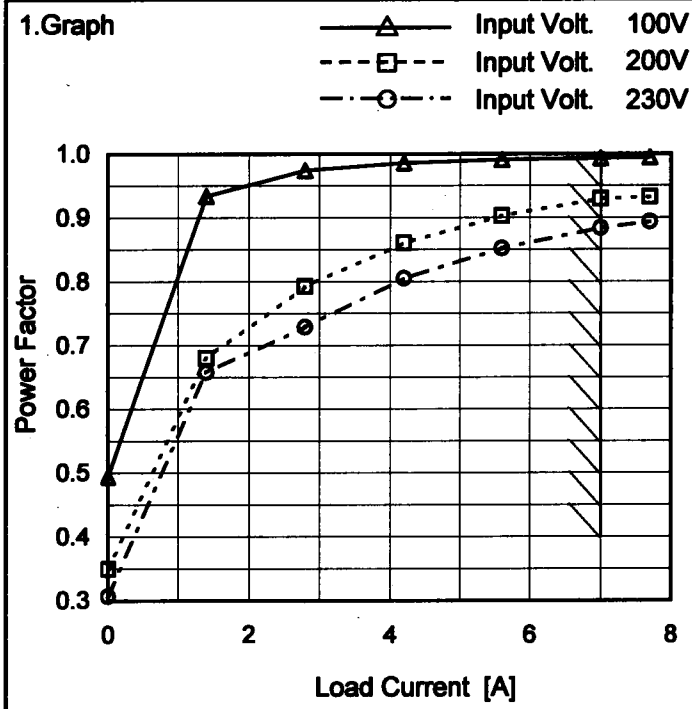
Model	PBA100F-15
Item	Power Factor (by Load Current)
Object	————————

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]
0.0	0.494	0.350	0.307
1.4	0.934	0.680	0.658
2.8	0.974	0.793	0.729
4.2	0.986	0.861	0.805
5.6	0.991	0.903	0.852
7.0	0.993	0.930	0.884
7.7	0.994	0.932	0.894
—	-	-	-
—	-	-	-
—	-	-	-
—	-	-	-

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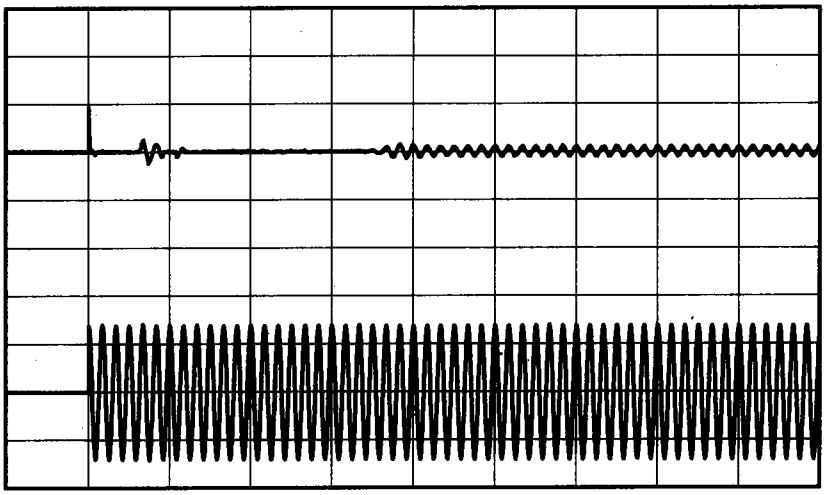
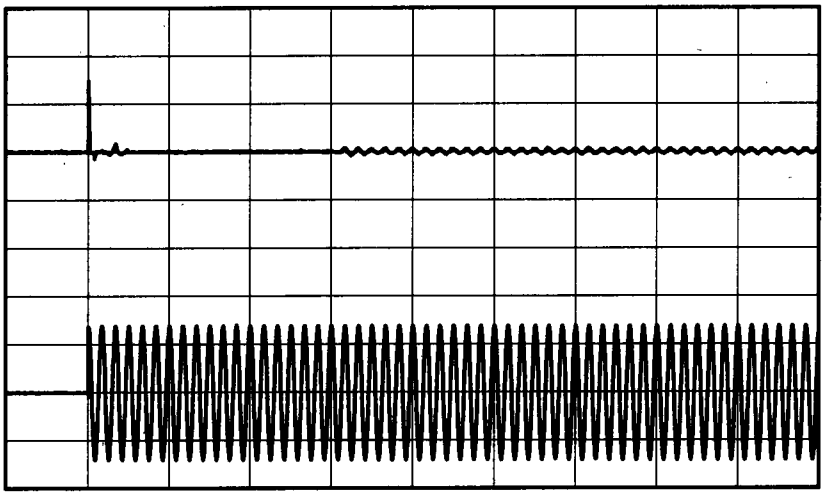
Model	PBA100F-15
Item	Inrush Current
Object	———————

Temperature 25°C
Testing Circuitry Figure A



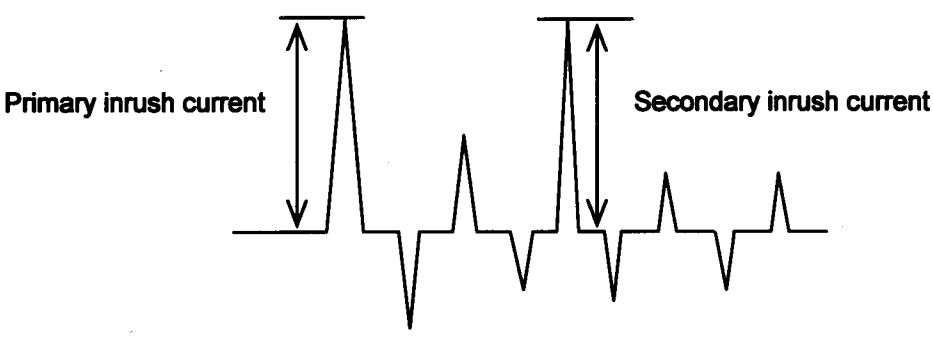
Input Voltage 100 V
Frequency 60 Hz
Load 100 %

Primary inrush current :
18.8 A
Secondary inrush current :
5.2 A



Input Voltage 200 V
Frequency 60 Hz
Load 100 %

Primary inrush current :
29.5 A
Secondary inrush current :
1.7 A



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Model	PBA100F-15	
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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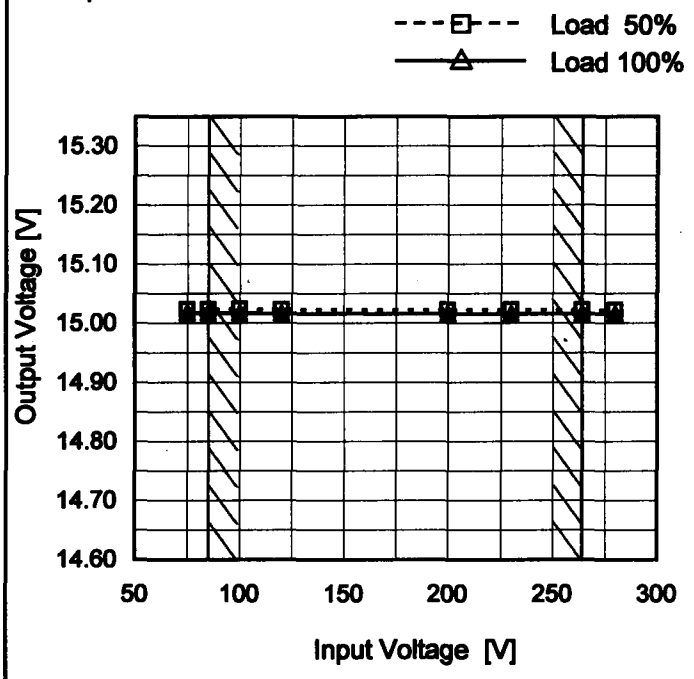
Model	PBA100F-15
Item	Line Regulation
Object	+15V7A

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	15.024	15.018
85	15.024	15.017
100	15.024	15.017
120	15.024	15.017
200	15.023	15.016
230	15.023	15.016
264	15.023	15.016
280	15.023	15.016
–	-	-

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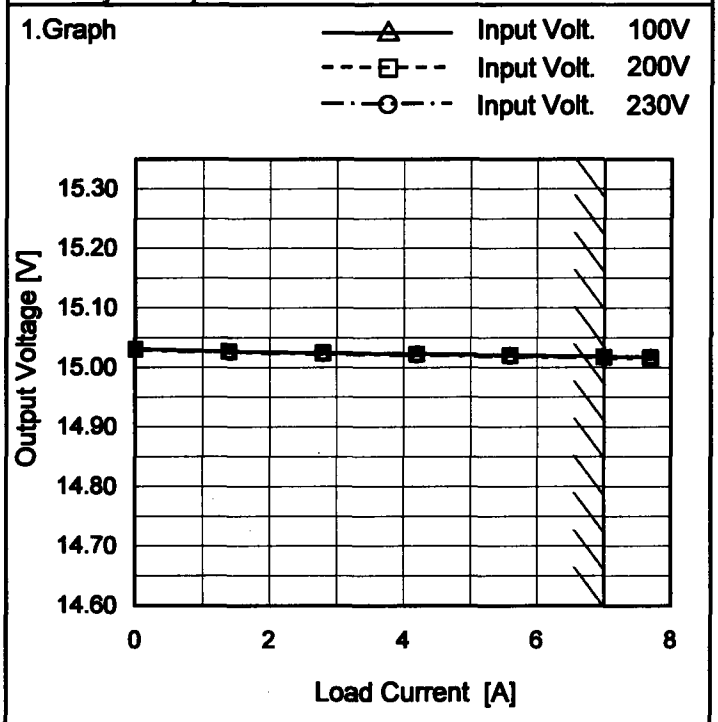
Model	PBA100F-15
Item	Load Regulation
Object	+15V7A

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]
0.0	15.031	15.031	15.030
1.4	15.027	15.027	15.026
2.8	15.025	15.024	15.023
4.2	15.023	15.022	15.021
5.6	15.021	15.020	15.019
7.0	15.019	15.018	15.016
7.7	15.018	15.016	15.015
—	-	-	-
—	-	-	-
—	-	-	-
—	-	-	-

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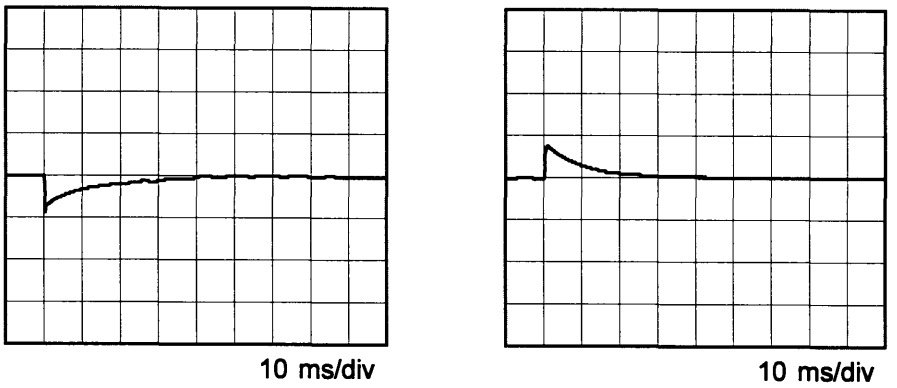
Model	PBA100F-15		
Item	Dynamic Load Response	Temperature	25°C
Object	+15V7A	Testing Circuitry	Figure A

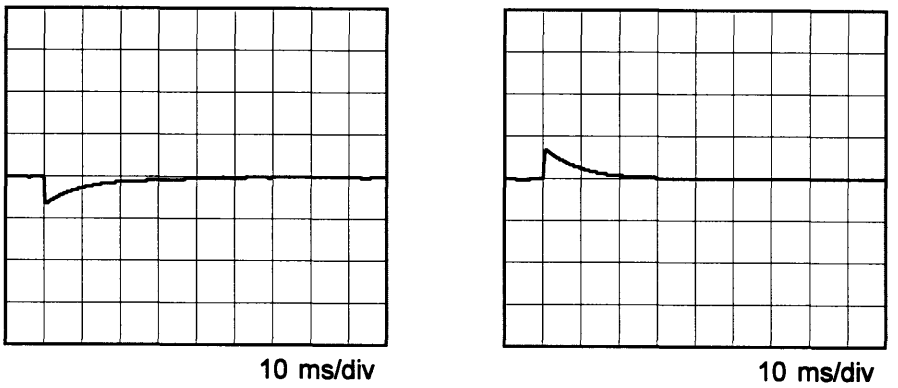
Input Volt. 100 V
Cycle 1000 ms

Load Current

Min. Load (0A) ⟷
Load 100% (7A)



Min. Load (0A) ⟷
Load 50% (3.5A)



* The characteristic of AC200V is equal.

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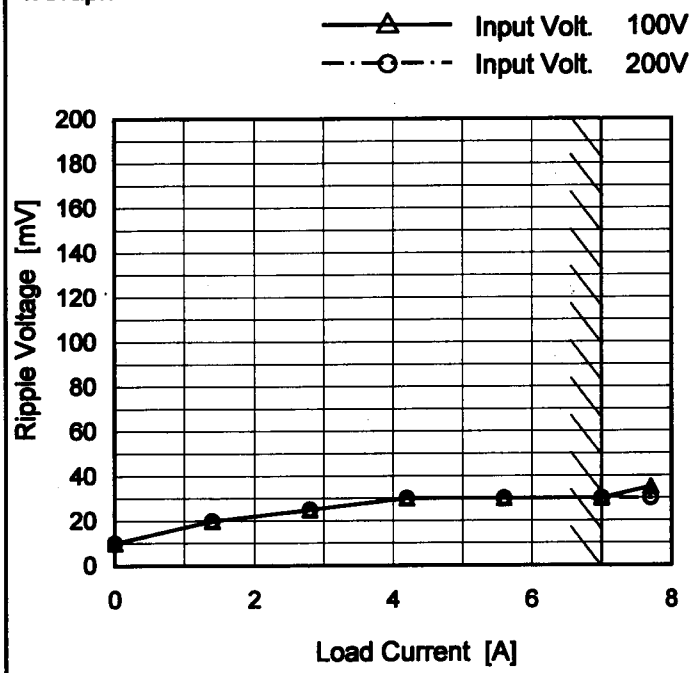
Model	PBA100F-15
Item	Ripple Voltage (by Load Current)
Object	+15V7A

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

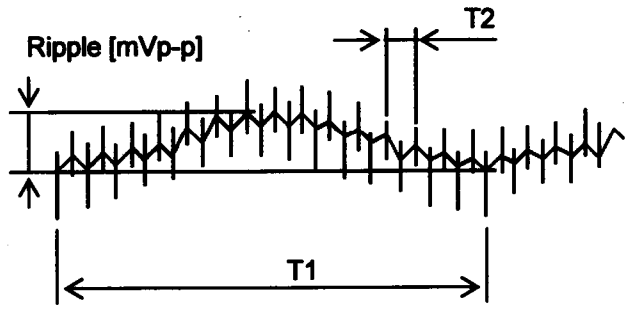


Fig. Complex Ripple Wave Form

2.Values

Load Current [A]	Ripple Voltage [mV] Input Volt. 100 [V]	Ripple Voltage [mV] Input Volt. 200 [V]
0.0	10	10
1.4	20	20
2.8	25	25
4.2	30	30
5.6	30	30
7.0	30	30
7.7	35	30
–	-	-
–	-	-
–	-	-
–	-	-

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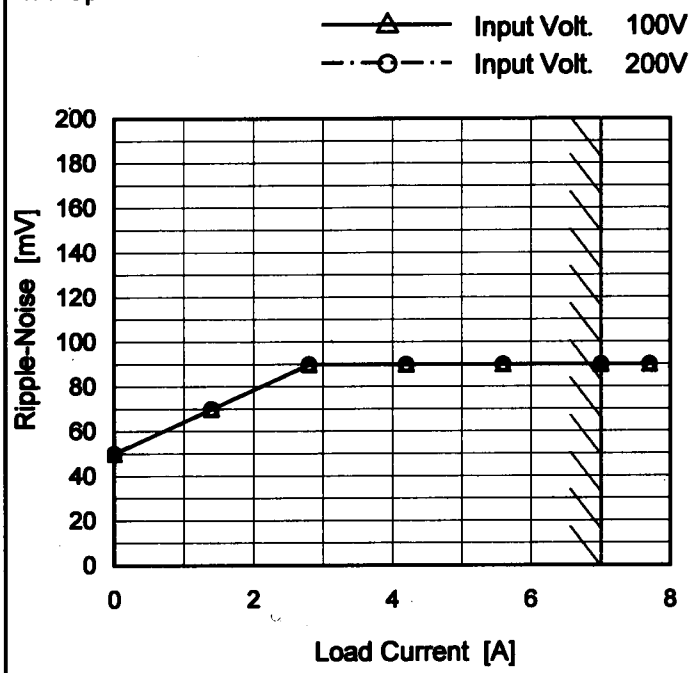
Model	PBA100F-15
Item	Ripple-Noise
Object	+15V7A

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]
0.0	50	50
1.4	70	70
2.8	90	90
4.2	90	90
5.6	90	90
7.0	90	90
7.7	90	90
–	-	-
–	-	-
–	-	-
–	-	-

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

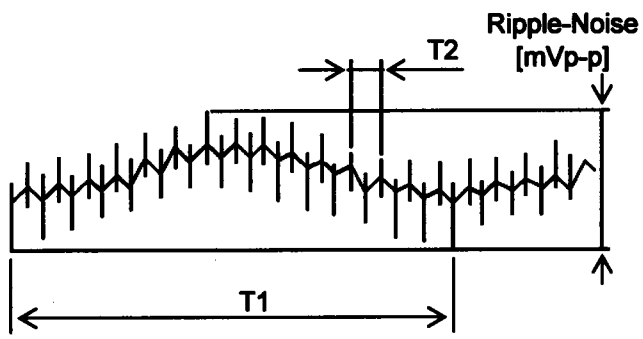


Fig. Complex Ripple Wave Form

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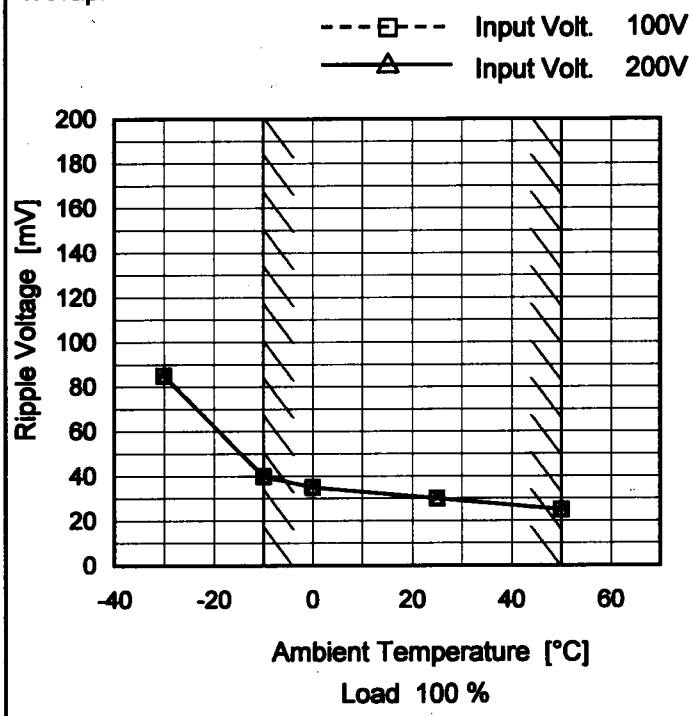
Model	PBA100F-15
Item	Ripple Voltage (by Ambient Temp.)
Object	+15V7A

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	40	40
0	35	35
25	30	30
50	25	25
–	-	-
–	-	-
–	-	-
–	-	-
–	-	-
–	-	-

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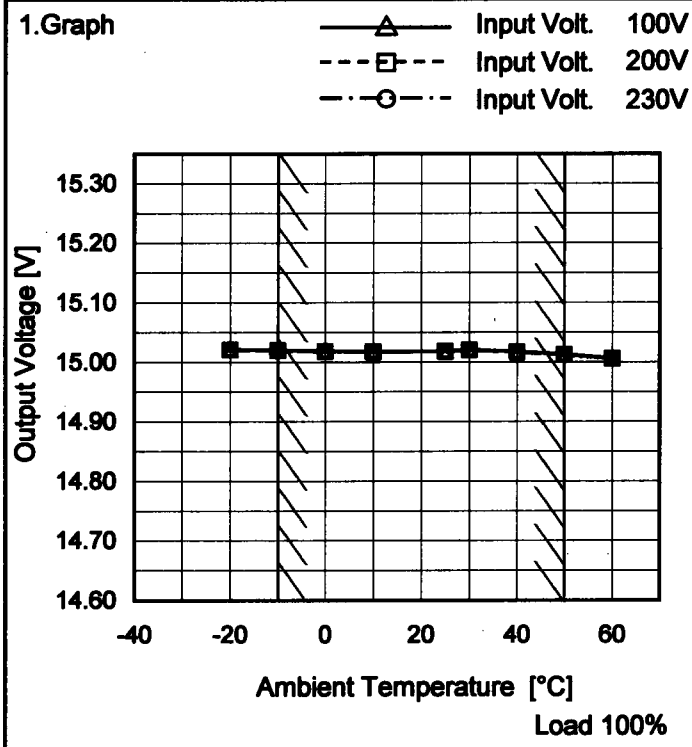
Model	PBA100F-15
Item	Ambient Temperature Drift
Object	+15V7A

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	15.021	15.021	15.021
-10	15.020	15.020	15.020
0	15.019	15.018	15.018
10	15.018	15.017	15.018
25	15.018	15.018	15.018
30	15.021	15.020	15.020
40	15.018	15.017	15.017
50	15.013	15.012	15.012
60	15.006	15.006	15.006
—	-	-	-
—	-	-	-

COSEL

Model	PBA100F-15	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+15V7A	

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 - 7A

* 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	25	264	0	15.032	±11	±0.1
Minimum Voltage	50	264	7	15.010		

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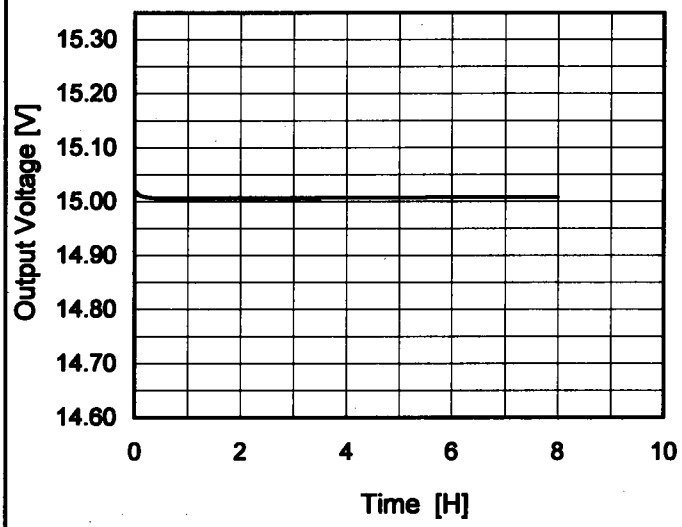
Model	PBA100F-15
Item	Time Lapse Drift
Object	+15V7A

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	15.021
0.5	15.006
1.0	15.007
2.0	15.007
3.0	15.007
4.0	15.008
5.0	15.008
6.0	15.008
7.0	15.008
8.0	15.008

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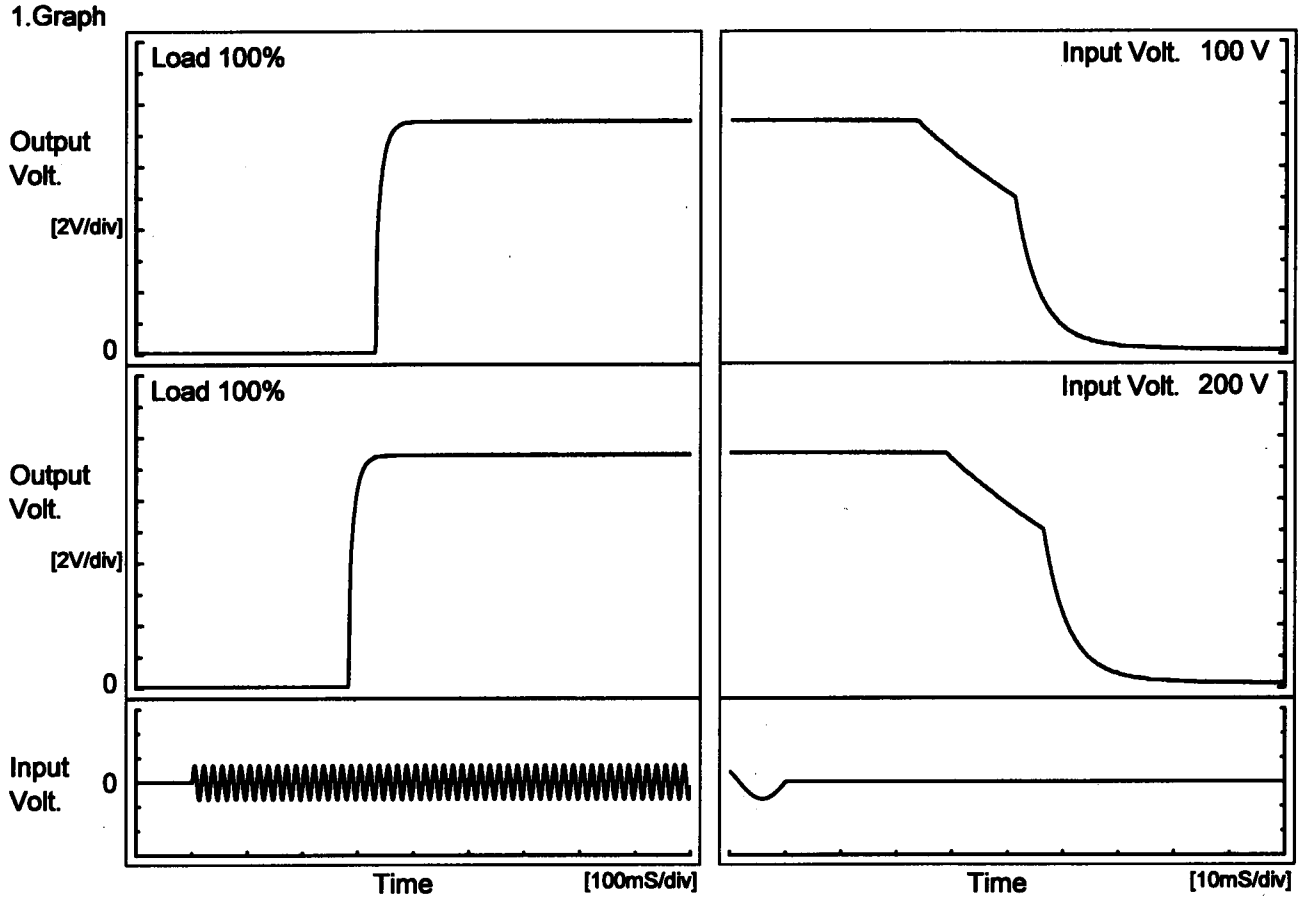
Model	PBA100F-15
Item	Rise and Fall Time
Object	+15V7A

Temperature 25°C
Testing Circuitry Figure A

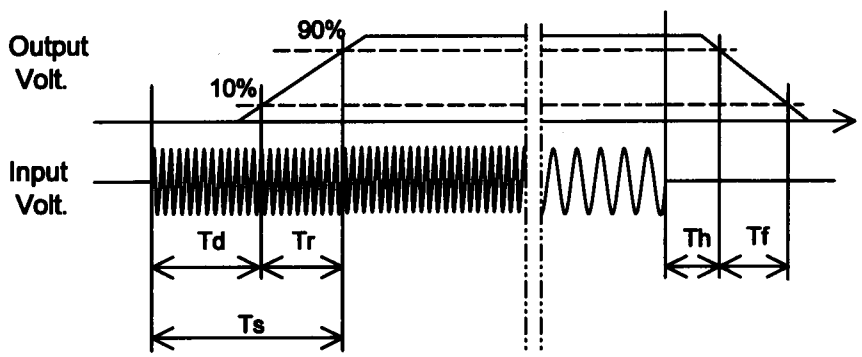
1.Graph



2.Values

[mS]

Input Volt. \ Time	Td	Tr	Ts	Th	Tf
100 V	332.0	21.5	353.5	27.6	22.8
200 V	283.5	22.0	305.5	33.1	22.9

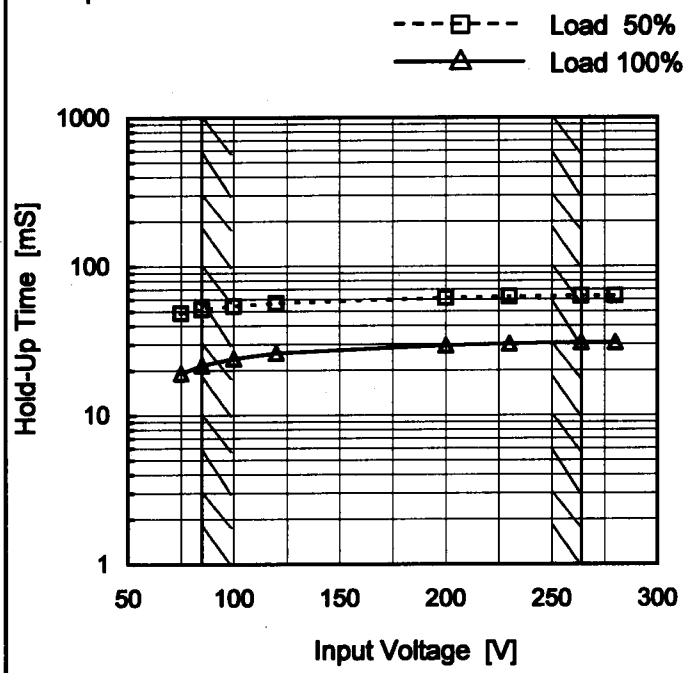


COSEL

Model	PBA100F-15
Item	Hold-Up Time
Object	+15V7A

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

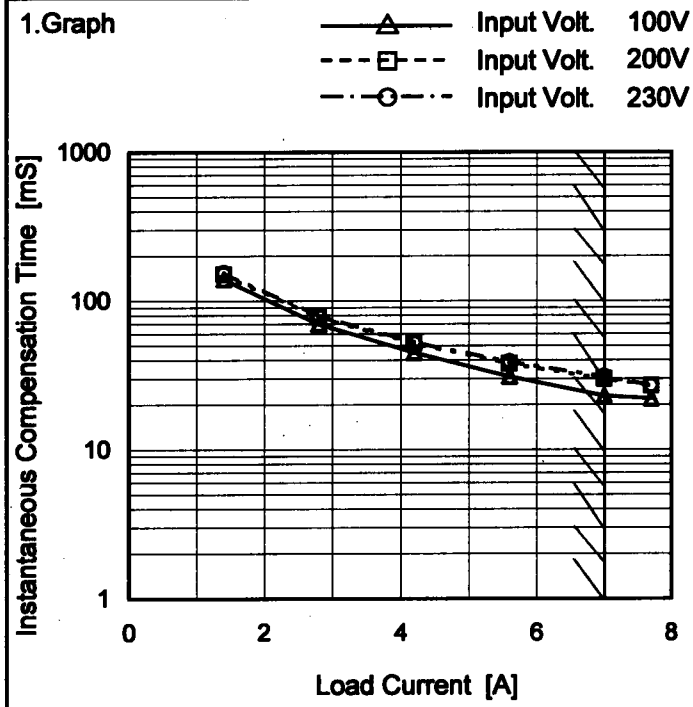
Input Voltage [V]	Hold-Up Time [mS]	
	Load 50%	Load 100%
75	49	19
85	52	22
100	54	24
120	57	26
200	62	30
230	63	30
264	64	31
280	63	31
–	-	-

COSEL

Model	PBA100F-15
Item	Instantaneous Interruption Compensation
Object	+15V7A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

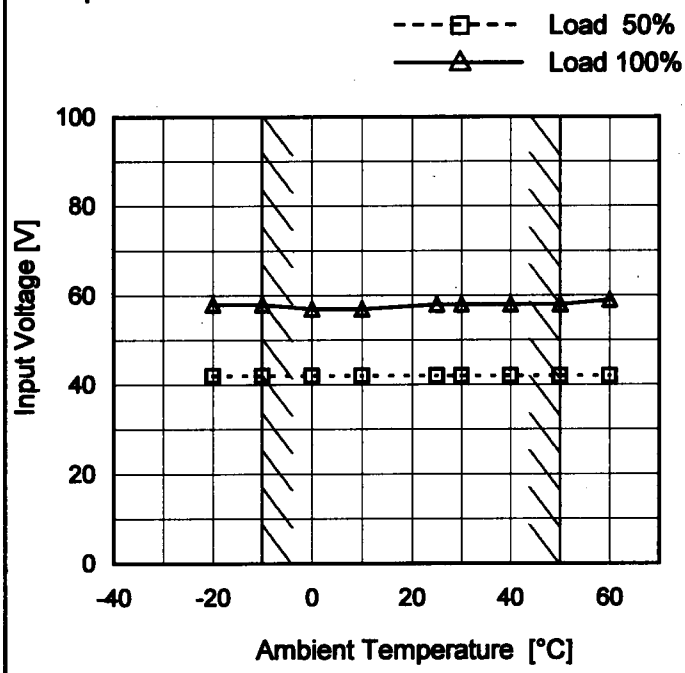
Load Current [A]	Time [mS] Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	-	-	-
1.4	140	152	155
2.8	70	78	80
4.2	45	52	53
5.6	31	38	39
7.0	23	30	31
7.7	22	27	27
—	-	-	-
—	-	-	-
—	-	-	-
—	-	-	-

COSEL

Model	PBA100F-15
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+15V7A

Testing Circuitry Figure A

1.Graph



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

2.Values

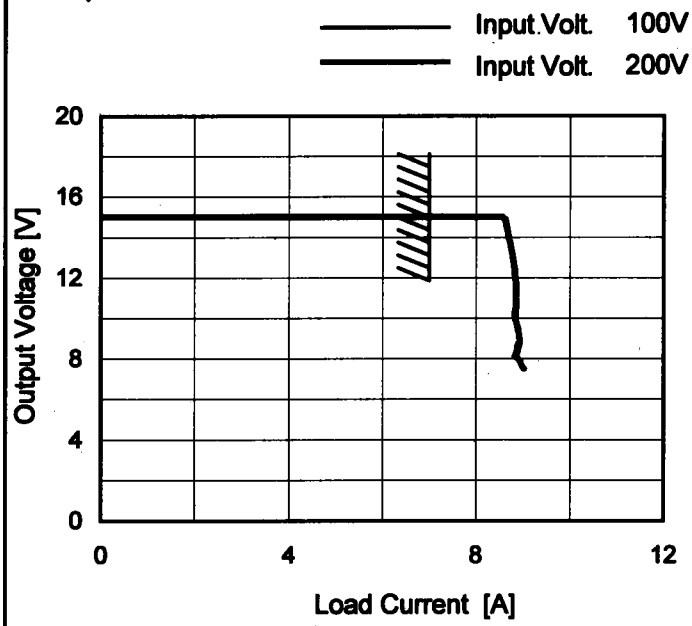
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-20	42	58
-10	42	58
0	42	57
10	42	57
25	42	58
30	42	58
40	42	58
50	42	58
60	42	59
—	-	-
—	-	-

COSEL

Model	PBA100F-15
Item	Overcurrent Protection
Object	+15V7A

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 7.5V to 0V.

2.Values

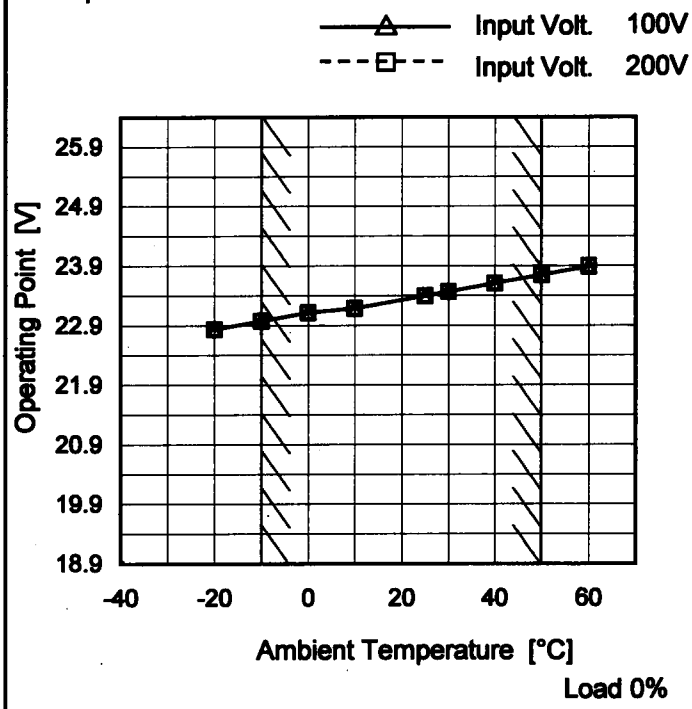
Output Voltage [V]	Load Current [A]	
	Input Volt. 100[V]	Input Volt. 200[V]
15.00	7.20	7.20
14.25	8.72	8.67
13.50	8.77	8.75
12.00	8.87	8.84
10.50	8.89	8.83
9.00	8.96	8.93
7.50	9.01	9.03
–	-	-
–	-	-
–	-	-
–	-	-
–	-	-

COSEL

Model	PBA100F-15
Item	Overvoltage Protection
Object	+15V7A

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	22.88	22.88
-10	23.02	23.02
0	23.16	23.16
10	23.23	23.23
25	23.44	23.44
30	23.51	23.51
40	23.65	23.65
50	23.79	23.79
60	23.93	23.94
--	-	-
--	-	-

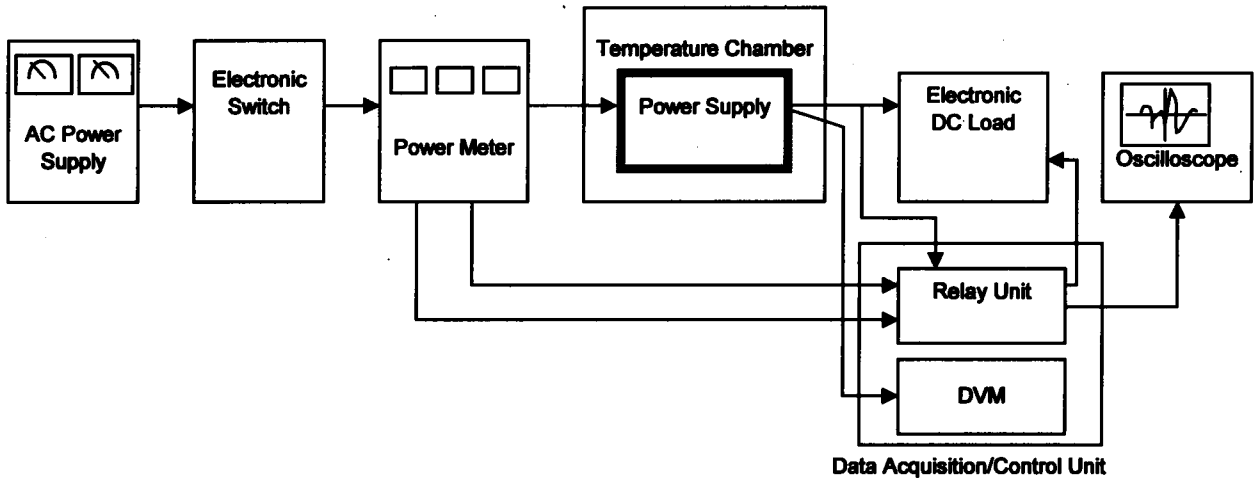


Figure A

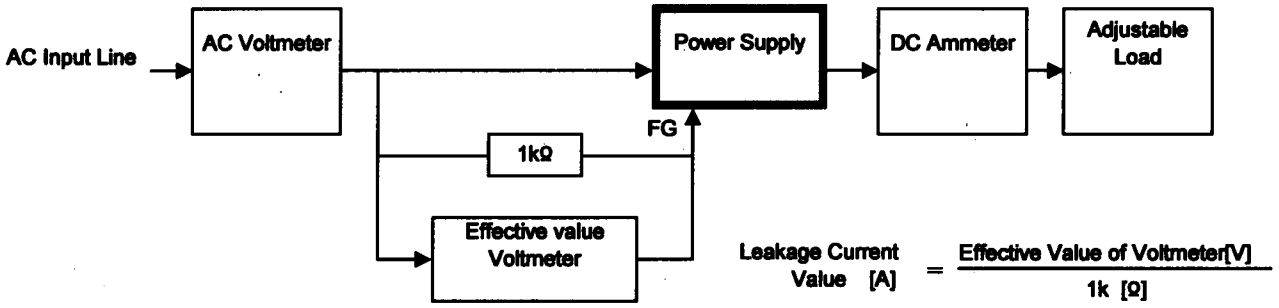


Figure B (DEN-AN)

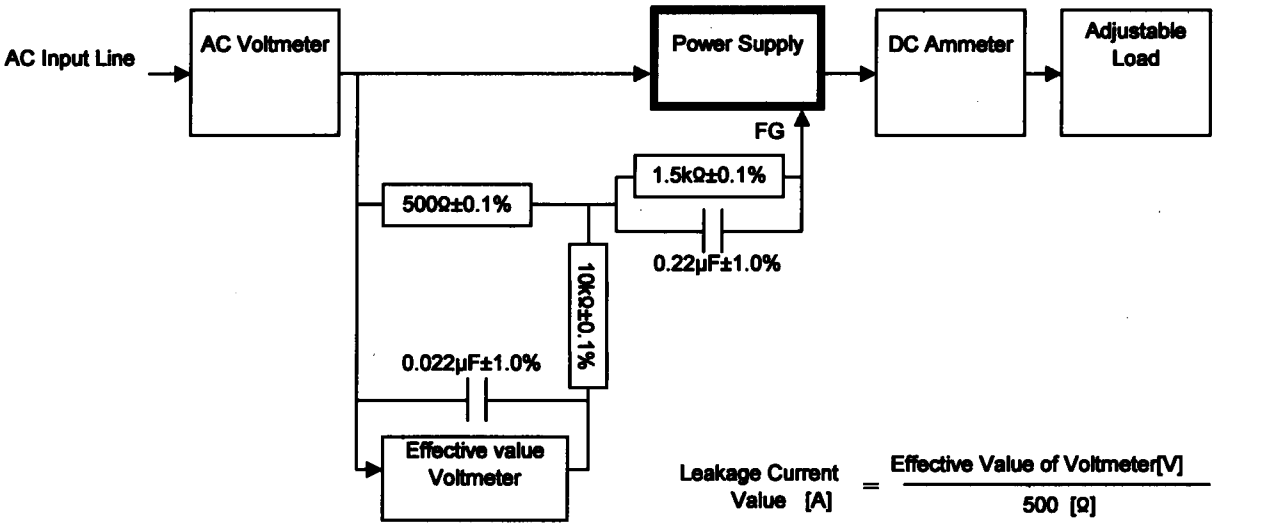


Figure B (IEC60950)