参考資料

COSEL

TEST DATA OF PBA100F-48

Regulated DC Power Supply
Apr.5. 2004

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COSEL CO.,LTD.

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Item	Input Current (by Load Current)
Object	————————

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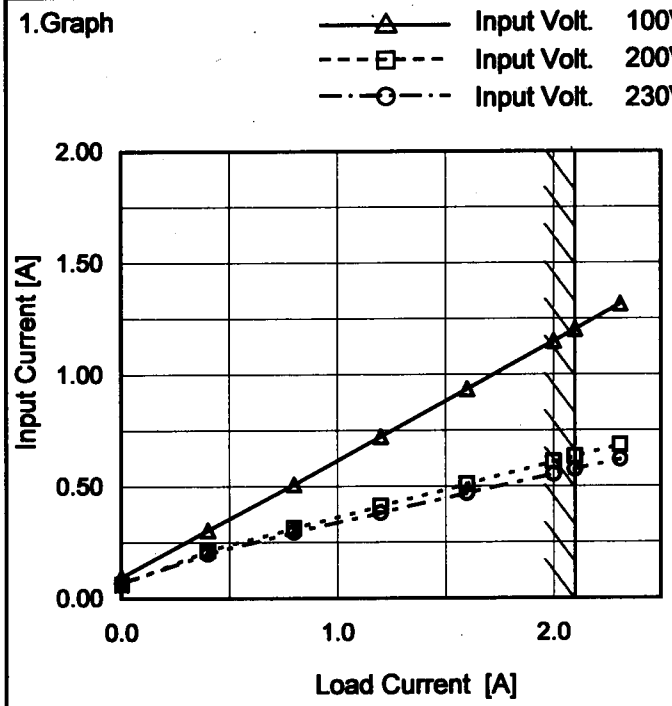

Note: Slanted line shows the range of the rated load current.

2.Values

Load Current [A]	Input Current [A]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.00	0.095	0.063	0.069
0.40	0.304	0.214	0.200
0.80	0.509	0.314	0.296
1.20	0.722	0.412	0.383
1.60	0.936	0.510	0.470
2.00	1.150	0.610	0.554
2.10	1.203	0.634	0.576
2.31	1.316	0.686	0.620
—	-	-	-
—	-	-	-
—	-	-	-

BC-3572

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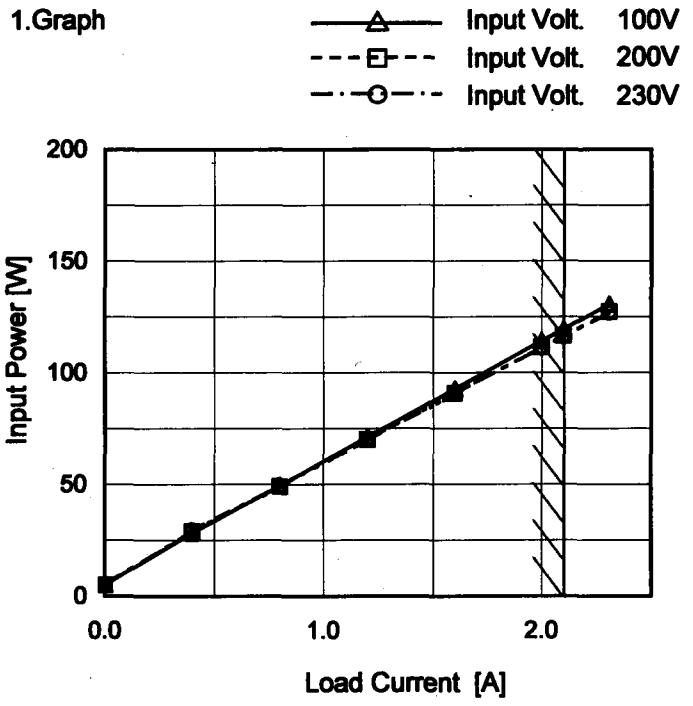
Model	PBA100F-48
Item	Input Power (by Load Current)
Object	———————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

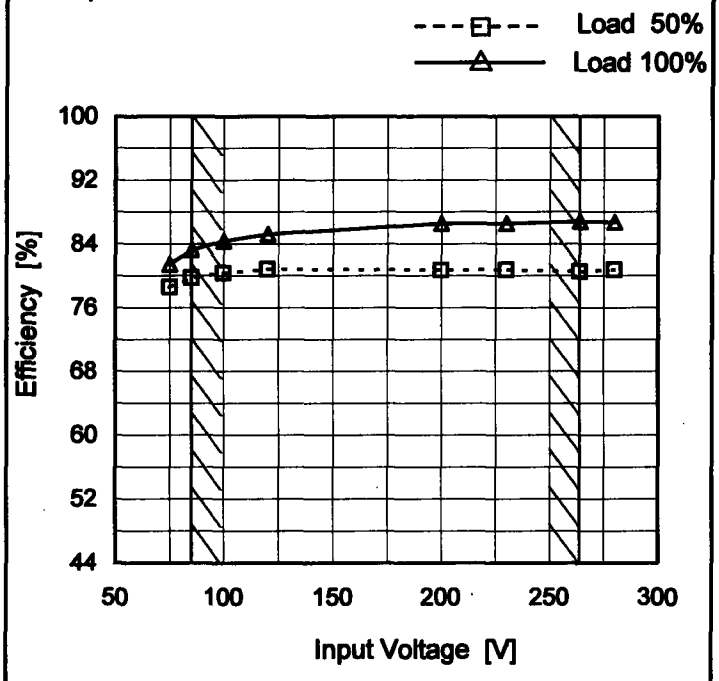
Load Current [A]	Input Power [W]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.00	5.2	5.1	5.2
0.40	28.3	29.0	29.4
0.80	49.4	49.2	49.5
1.20	71.2	70.1	69.9
1.60	92.8	90.8	90.7
2.00	114.2	111.3	111.2
2.10	119.5	116.5	116.3
2.31	130.8	127.3	127.0
—	-	-	-
—	-	-	-
—	-	-	-

COSEL

Model	PBA100F-48
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	78.6	81.4
85	79.8	83.3
100	80.4	84.4
120	80.9	85.2
200	80.7	86.6
230	80.8	86.6
264	80.5	86.8
280	80.8	86.7
—	-	-

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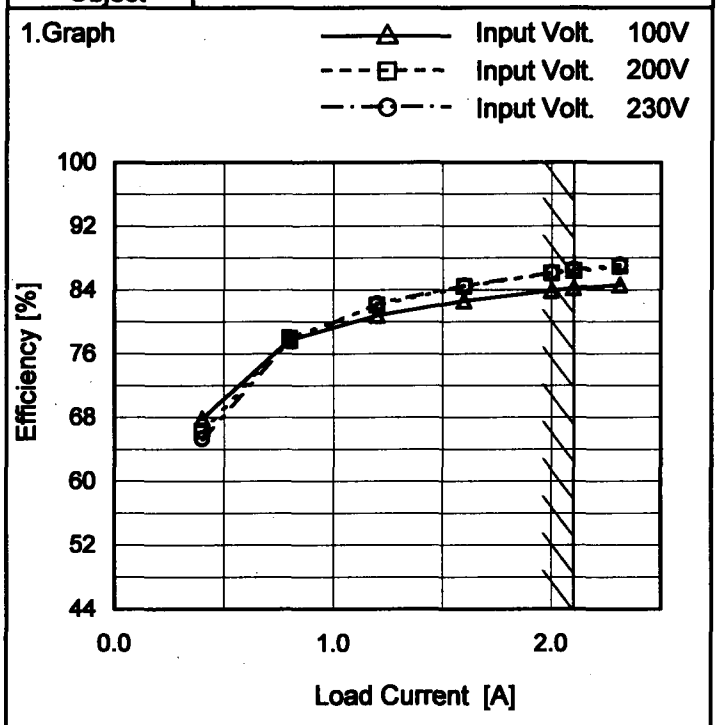
Model	PBA100F-48
Item	Efficiency (by Load Current)
Object	———————

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	67.9	66.3	65.4
0.80	77.7	78.0	77.5
1.20	80.8	82.1	82.3
1.60	82.6	84.4	84.5
2.00	83.9	86.1	86.2
2.10	84.2	86.4	86.6
2.31	84.6	87.0	87.2
—	-	-	-
—	-	-	-
—	-	-	-

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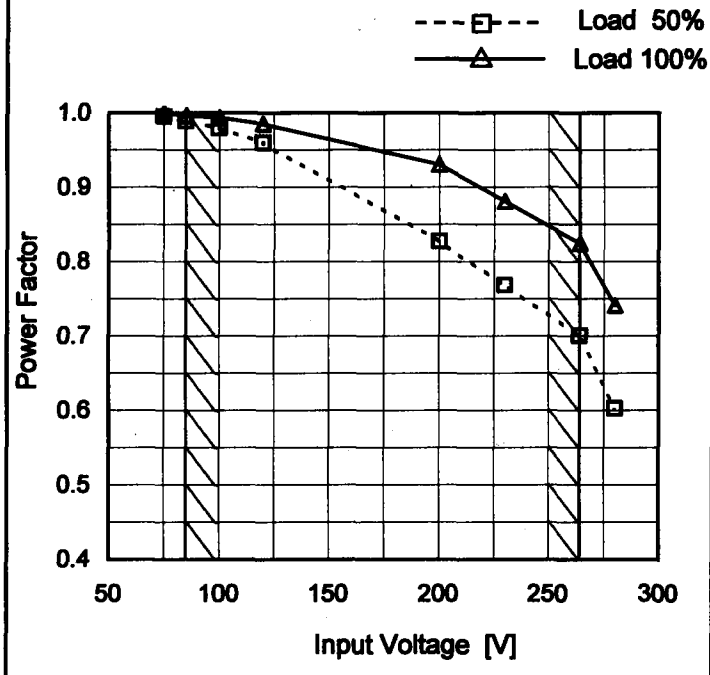
Model	PBA100F-48
Item	Power Factor (by Input Voltage)
Object	———————

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	0.980	0.993
120	0.960	0.985
200	0.828	0.930
230	0.768	0.881
264	0.701	0.824
280	0.603	0.741
–	-	-

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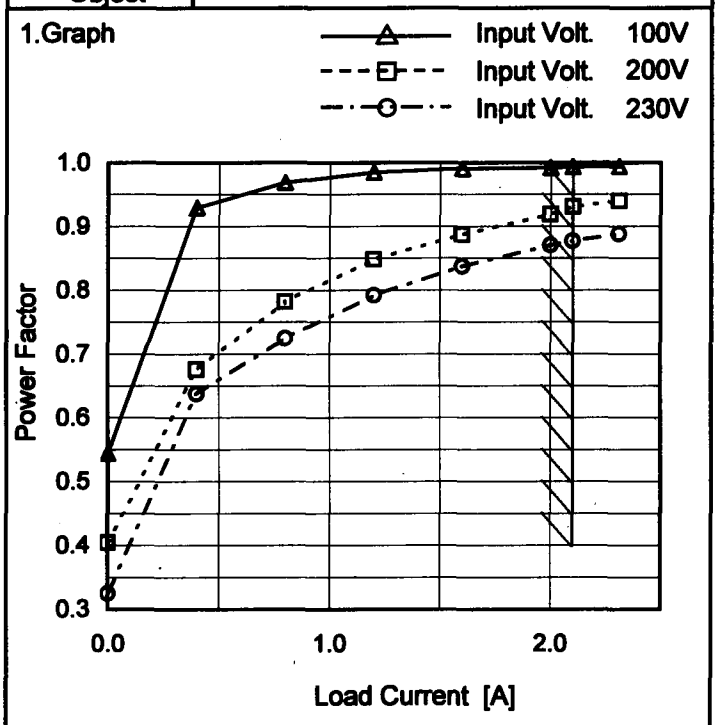
Model	PBA100F-48
Item	Power Factor (by Load Current)
Object	————————

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	0.544	0.405	0.325
0.40	0.930	0.676	0.638
0.80	0.969	0.782	0.725
1.20	0.985	0.849	0.793
1.60	0.990	0.888	0.837
2.00	0.992	0.919	0.871
2.10	0.993	0.931	0.877
2.31	0.994	0.940	0.888
—	-	-	-
—	-	-	-
—	-	-	-

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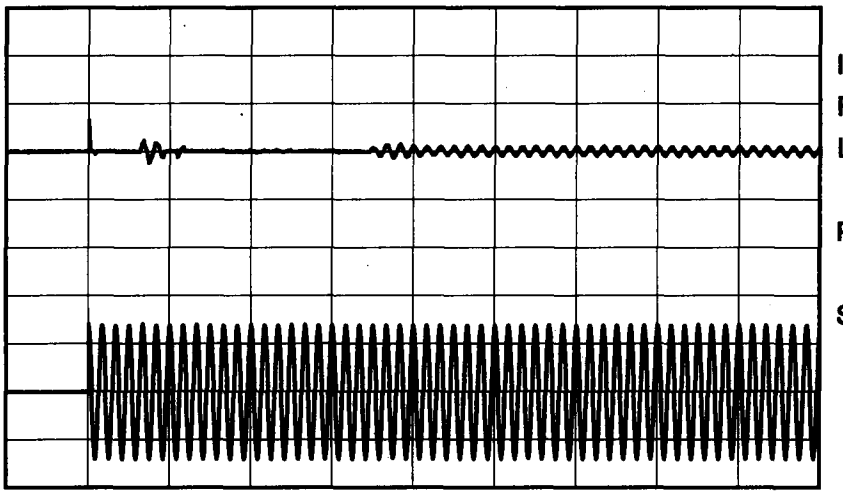
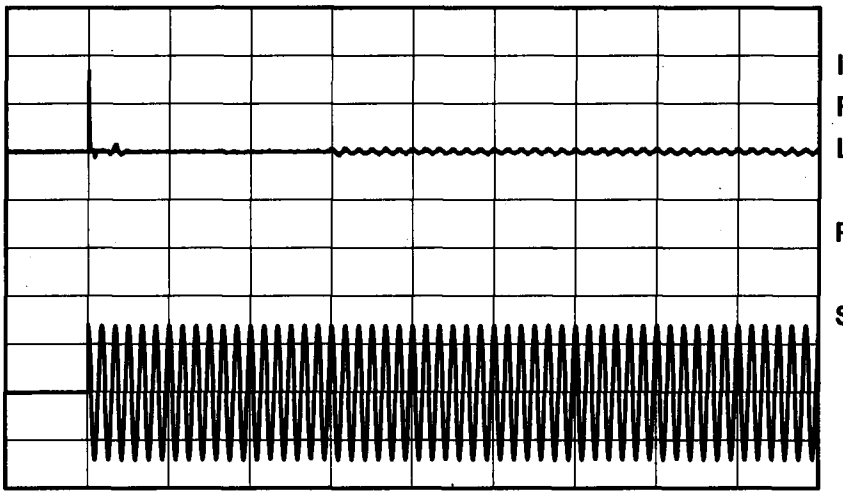
Model	PBA100F-48
Item	Inrush Current
Object	———————

Temperature 25°C
Testing Circuitry Figure A



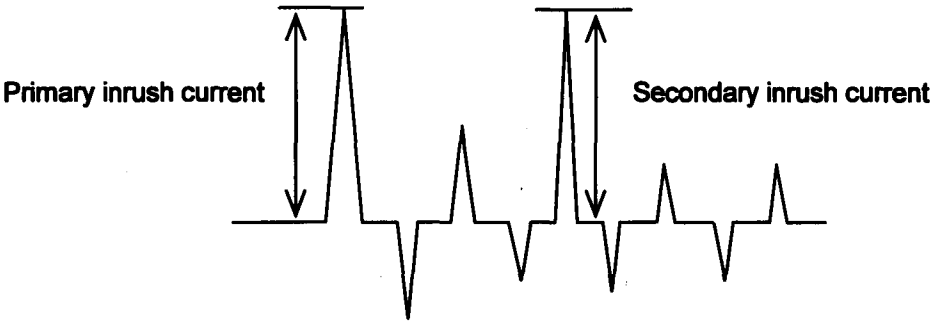
Input Voltage 100 V
Frequency 60 Hz
Load 100 %

Primary inrush current :
13.1 A
Secondary inrush current :
4.9 A



Input Voltage 200 V
Frequency 60 Hz
Load 100 %

Primary inrush current :
33.6 A
Secondary inrush current :
1.6 A



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Model	PBA100F-48	
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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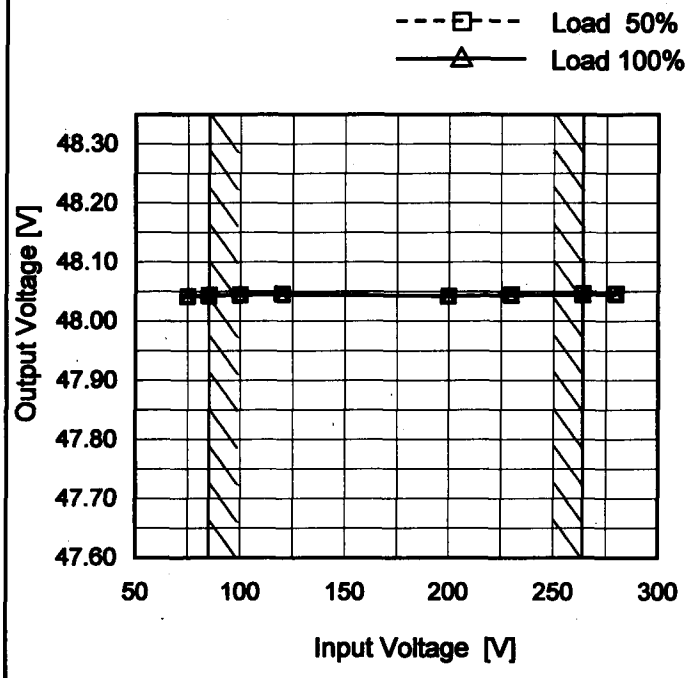
Model	PBA100F-48
Item	Line Regulation
Object	+48V2.1A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

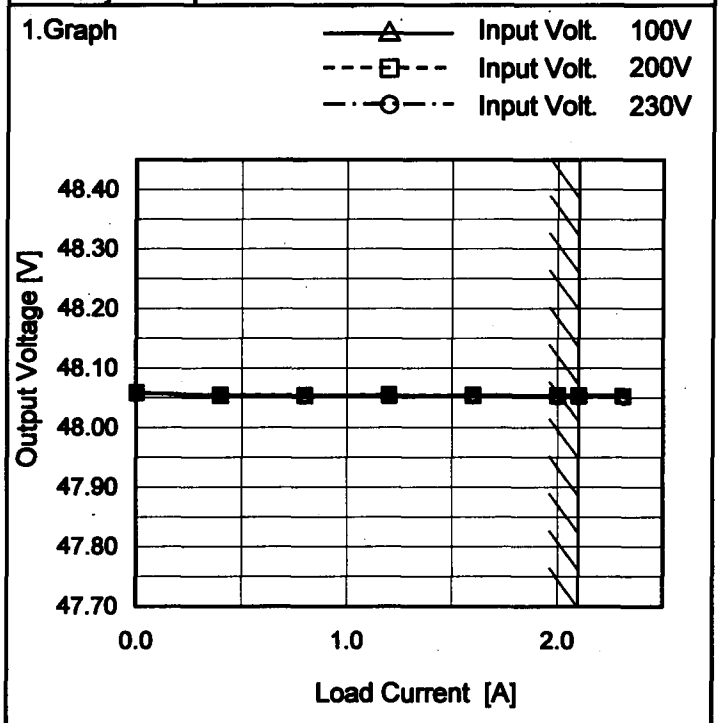
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
75	48.042	48.043
85	48.044	48.044
100	48.045	48.045
120	48.046	48.045
200	48.043	48.042
230	48.045	48.044
264	48.047	48.045
280	48.047	48.046
--	-	-

COSEL

Model	PBA100F-48
Item	Load Regulation
Object	+48V2.1A

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	48.059	48.059	48.059
0.40	48.054	48.055	48.054
0.80	48.054	48.055	48.054
1.20	48.054	48.055	48.053
1.60	48.054	48.055	48.053
2.00	48.054	48.054	48.052
2.10	48.054	48.054	48.052
2.31	48.054	48.053	48.051
–	-	-	-
–	-	-	-
–	-	-	-

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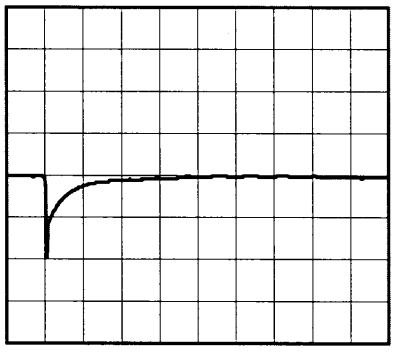
Model	PBA100F-48
Item	Dynamic Load Response
Object	+48V2.1A

Temperature 25°C
Testing Circuitry Figure A

Input Volt. 100 V
Cycle 1000 ms

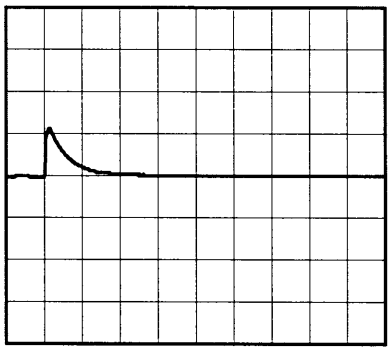
Load Current

Min. Load (0A) ⟷
Load 100% (2.1A)



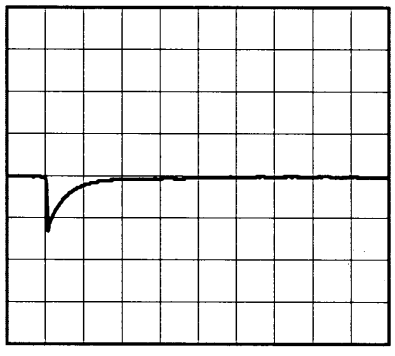
200 mV/div

10 ms/div



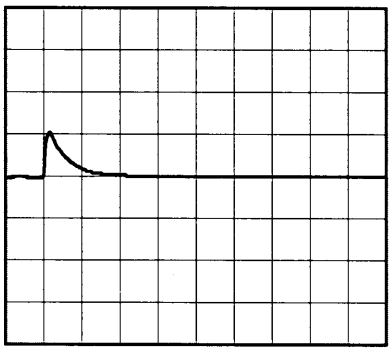
10 ms/div

Min. Load (0A) ⟷
Load 50% (1.05A)



200 mV/div

10 ms/div



10 ms/div

* The characteristic of AC200V is equal.

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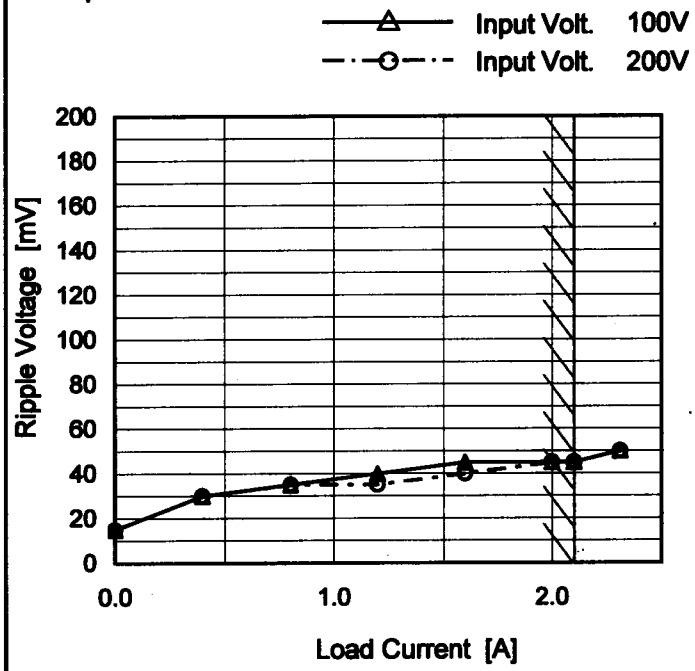
Model	PBA100F-48
Item	Ripple Voltage (by Load Current)
Object	+48V2.1A

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.

2.Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 100 [V]	Input Volt. 200 [V]
0.00	15	15
0.40	30	30
0.80	35	35
1.20	40	35
1.60	45	40
2.00	45	45
2.10	45	45
2.31	50	50
–	-	-
–	-	-
–	-	-

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

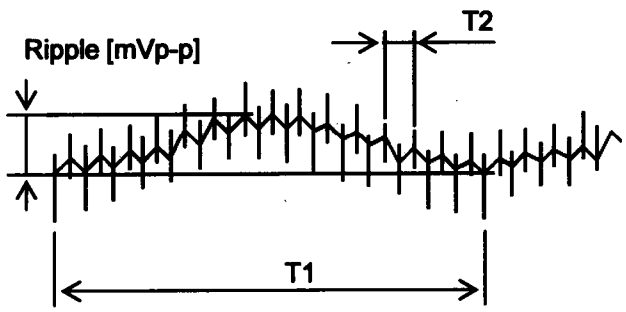


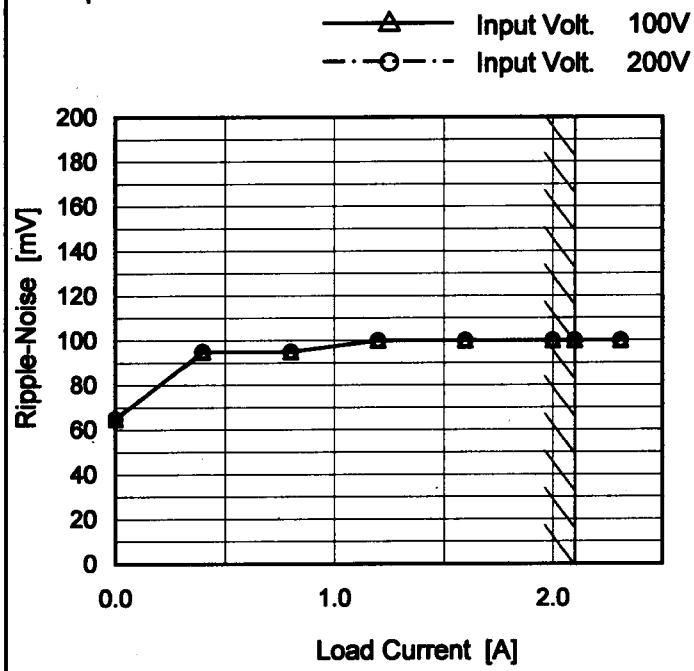
Fig. Complex Ripple Wave Form

COSEL

Model	PBA100F-48
Item	Ripple-Noise
Object	+48V2.1A

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]	Ripple-Noise [mV] Input Volt. 200 [V]
0.00	65	65
0.40	95	95
0.80	95	95
1.20	100	100
1.60	100	100
2.00	100	100
2.10	100	100
2.31	100	100
–	-	-
–	-	-
–	-	-

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

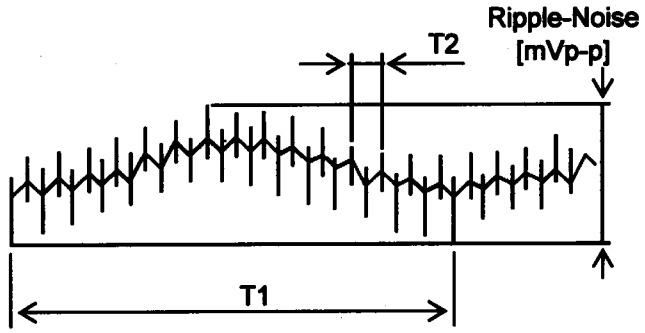


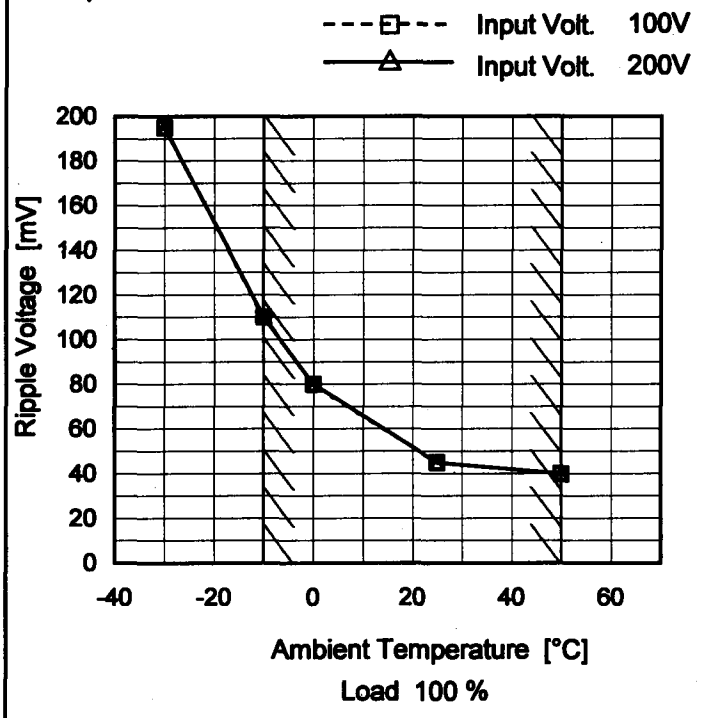
Fig. Complex Ripple Wave Form

COSEL

Model	PBA100F-48
Item	Ripple Voltage (by Ambient Temp.)
Object	+48V2.1A

Testing Circuitry Figure A

1.Graph



Measured by 20 MHz Oscilloscope.

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

2.Values

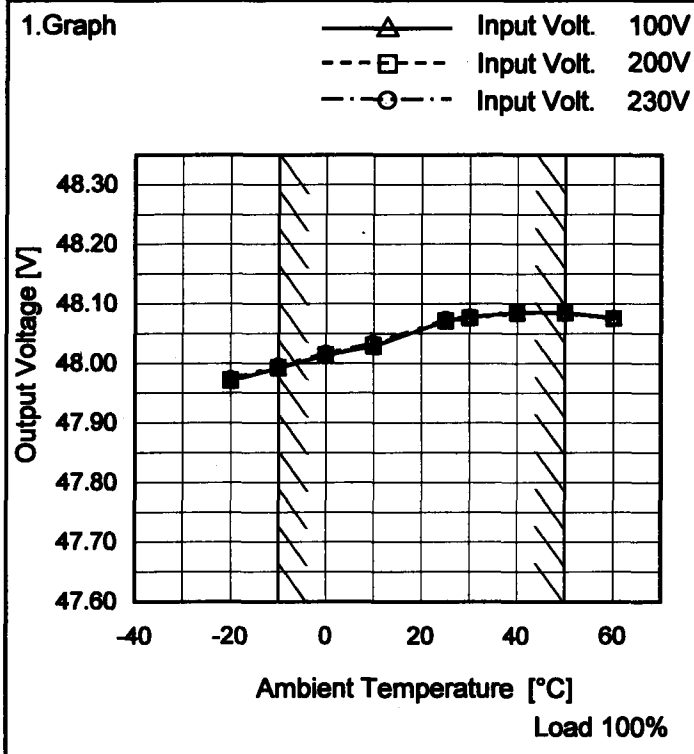
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Input Volt. 100 [V]	Input Volt. 200 [V]
-30	195	195
-10	110	110
0	80	80
25	45	45
50	40	40
—	-	-
—	-	-
—	-	-
—	-	-
—	-	-
—	-	-

COSEL

Model	PBA100F-48
Item	Ambient Temperature Drift
Object	+48V2.1A

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	47.971	47.972	47.974
-10	47.992	47.993	47.996
0	48.014	48.014	48.017
10	48.029	48.030	48.034
25	48.071	48.072	48.074
30	48.078	48.076	48.078
40	48.085	48.085	48.086
50	48.085	48.084	48.085
60	48.076	48.075	48.076
--	-	-	-
--	-	-	-

COSEL

Model	PBA100F-48	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+48V2.1A	

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	50	85	0	48.114	±56	±0.1
Minimum Voltage	-10	200	2.1	48.003		

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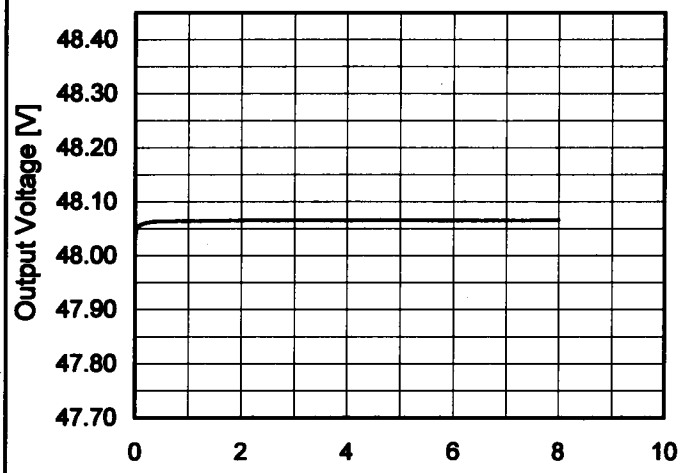
Model	PBA100F-48
Item	Time Lapse Drift
Object	+48V2.1A

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	48.035
0.5	48.064
1.0	48.065
2.0	48.065
3.0	48.065
4.0	48.066
5.0	48.066
6.0	48.066
7.0	48.066
8.0	48.066

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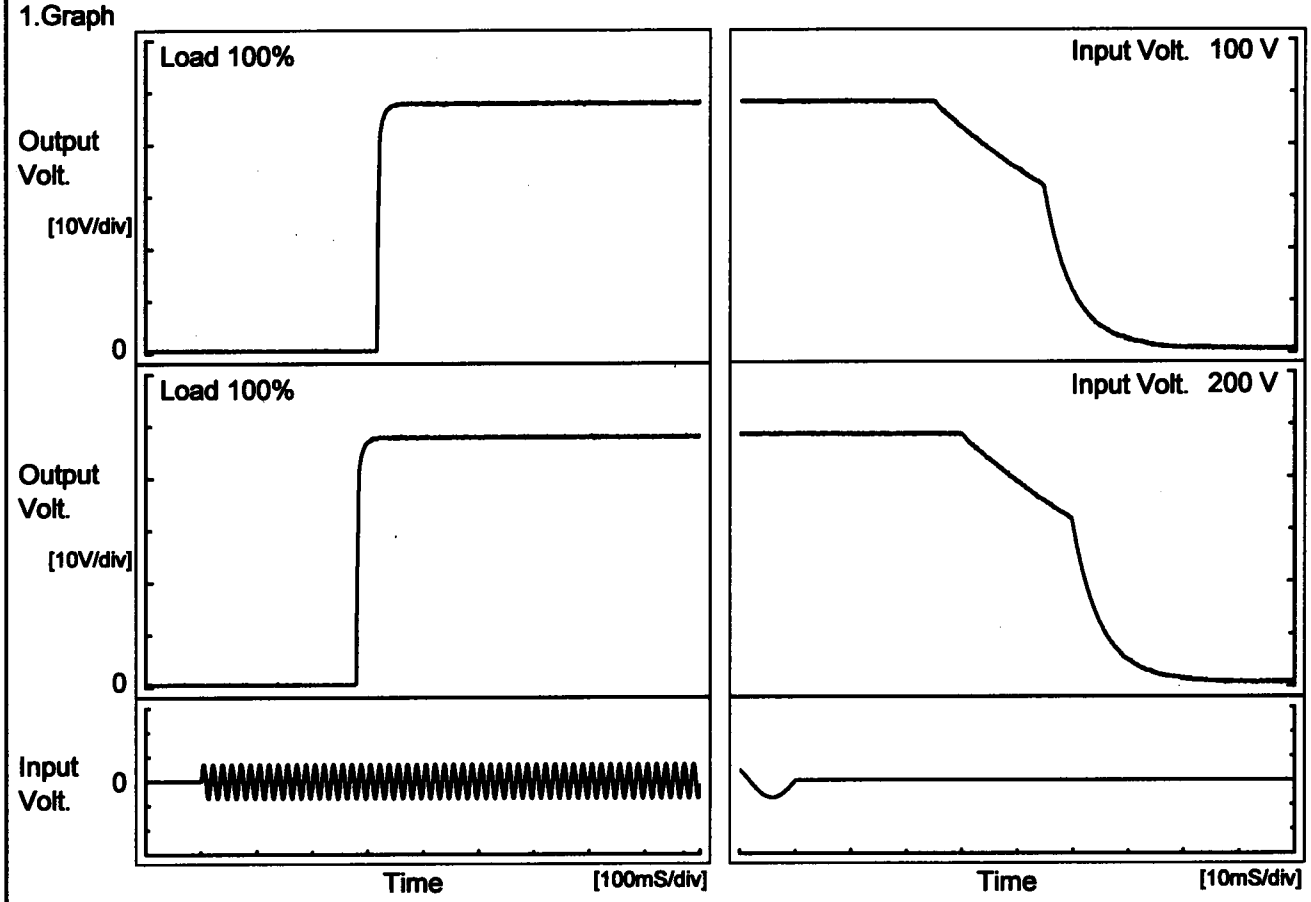
Model	PBA100F-48
Item	Rise and Fall Time
Object	+48V2.1A

Temperature 25°C
Testing Circuitry Figure A

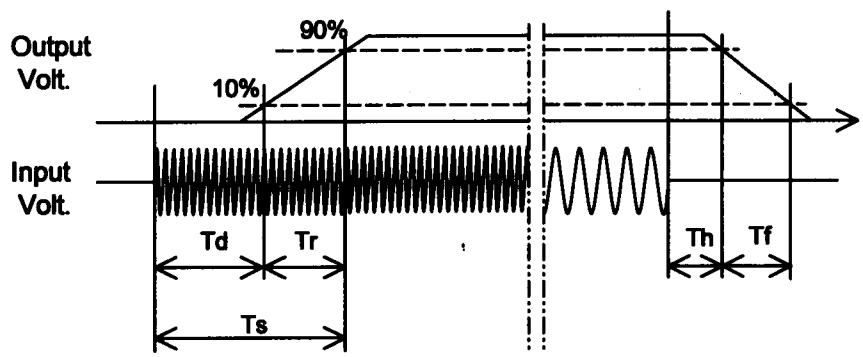
1.Graph



2.Values

[mS]

Input Volt. \ Time	Td	Tr	Ts	Th	Tf
100 V	316.5	8.5	325.0	29.3	25.2
200 V	279.5	8.5	288.0	34.4	25.2



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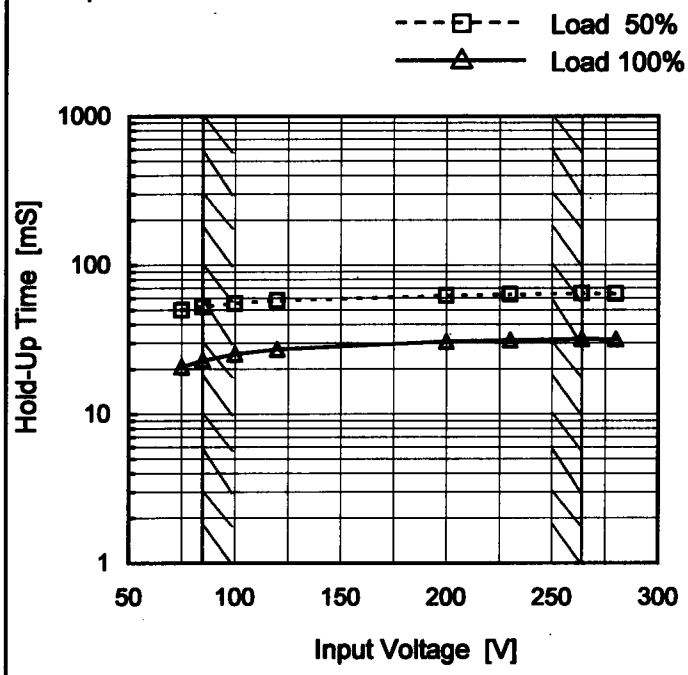
Model	PBA100F-48
Item	Hold-Up Time
Object	+48V2.1A

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

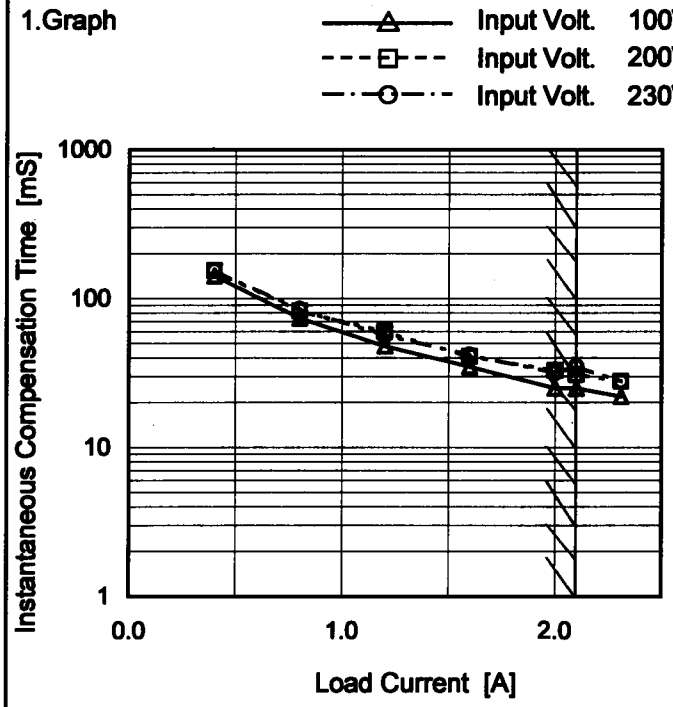
Input Voltage [V]	Hold-Up Time [mS]	
	Load 50%	Load 100%
75	50	21
85	53	23
100	55	25
120	58	27
200	62	31
230	64	31
264	65	32
280	64	32
–	-	-

COSEL

Model	PBA100F-48
Item	Instantaneous Interruption Compensation
Object	+48V2.1A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

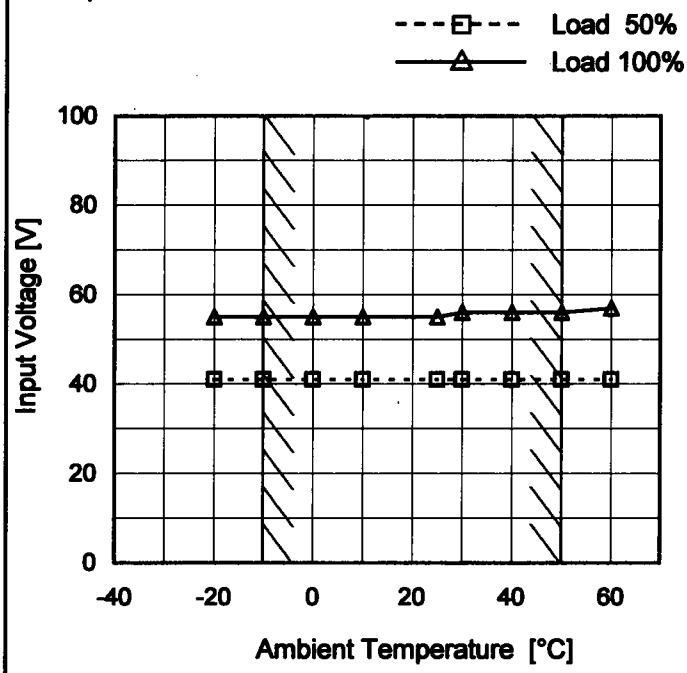
Load Current [A]	Time [mS]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.00	-	-	-
0.40	142	155	155
0.80	74	83	85
1.20	48	60	57
1.60	35	41	42
2.00	25	33	32
2.10	25	31	35
2.31	22	28	28
—	-	-	-
—	-	-	-
—	-	-	-

COSEL

Model	PBA100F-48
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+48V2.1A

Testing Circuitry Figure A

1.Graph



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

2.Values

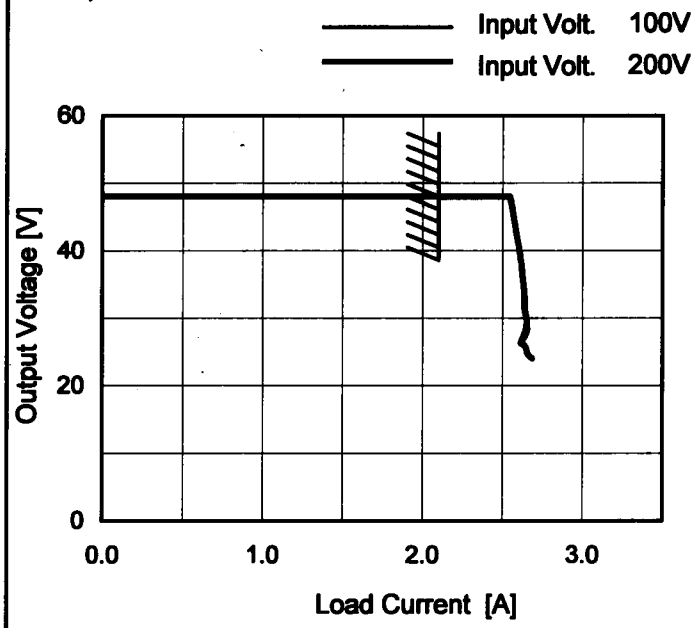
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-20	41	55
-10	41	55
0	41	55
10	41	55
25	41	55
30	41	56
40	41	56
50	41	56
60	41	57
—	-	-
—	-	-

COSEL

Model	PBA100F-48
Item	Overcurrent Protection
Object	+48V2.1A

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 24V to 0V.

2.Values

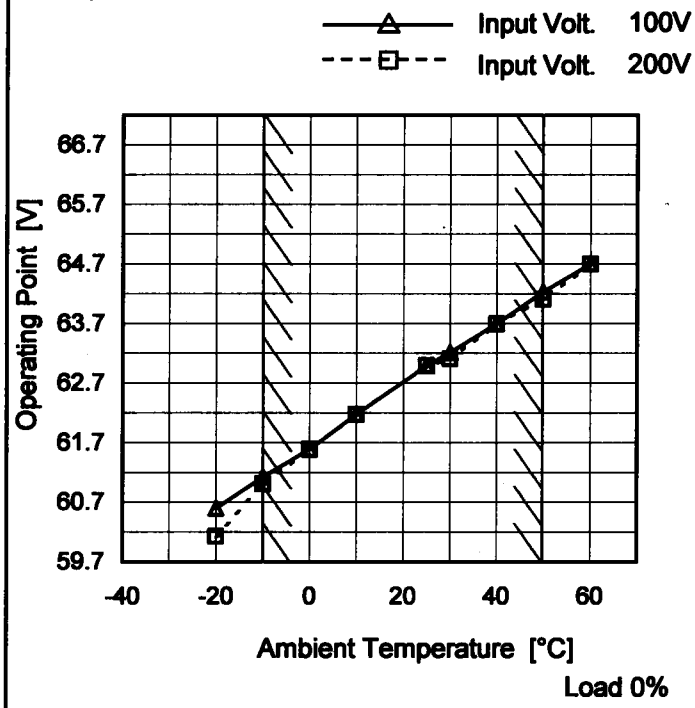
Output Voltage [V]	Load Current [A]	
	Input Volt. 100[V]	Input Volt. 200[V]
48.0	2.13	2.13
45.6	2.57	2.57
43.2	2.59	2.58
38.4	2.62	2.62
33.6	2.64	2.64
28.8	2.66	2.65
24.0	2.68	2.69
–	-	-
–	-	-
–	-	-
–	-	-
–	-	-

COSEL

Model	PBA100F-48
Item	Overvoltage Protection
Object	+48V2.1A

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	60.64	60.17
-10	61.17	61.05
0	61.63	61.63
10	62.22	62.22
25	63.03	63.04
30	63.26	63.15
40	63.74	63.74
50	64.27	64.15
60	64.74	64.74
—	-	-
—	-	-

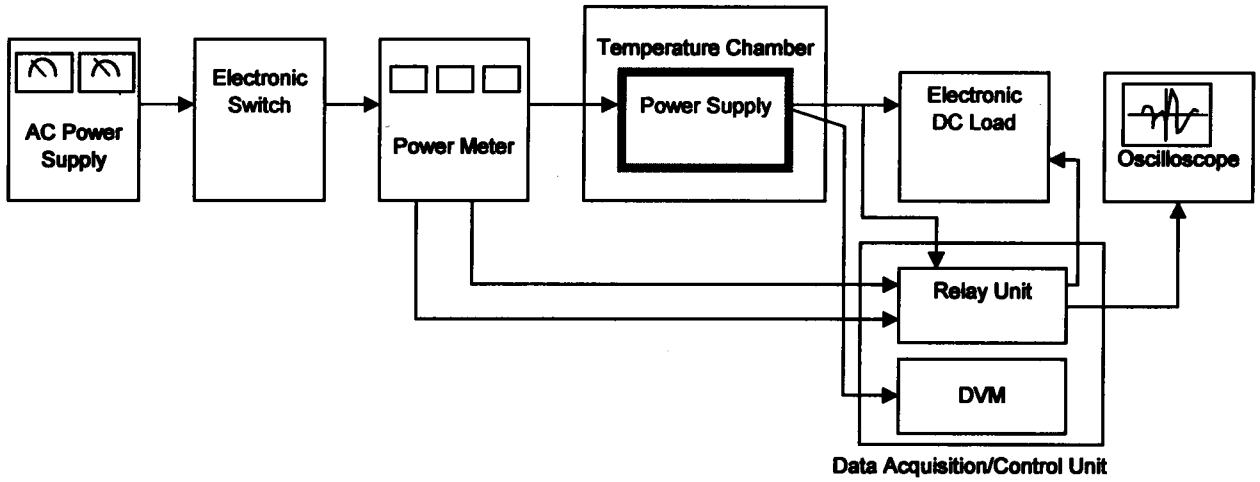


Figure A

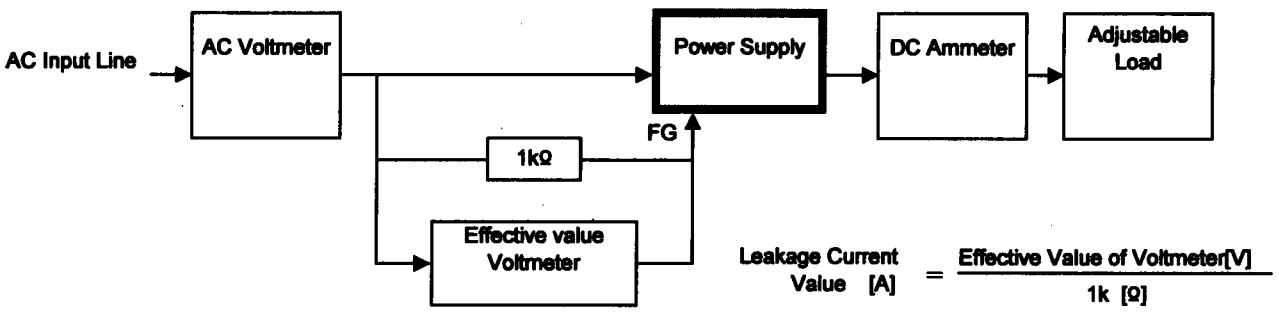


Figure B (DEN-AN)

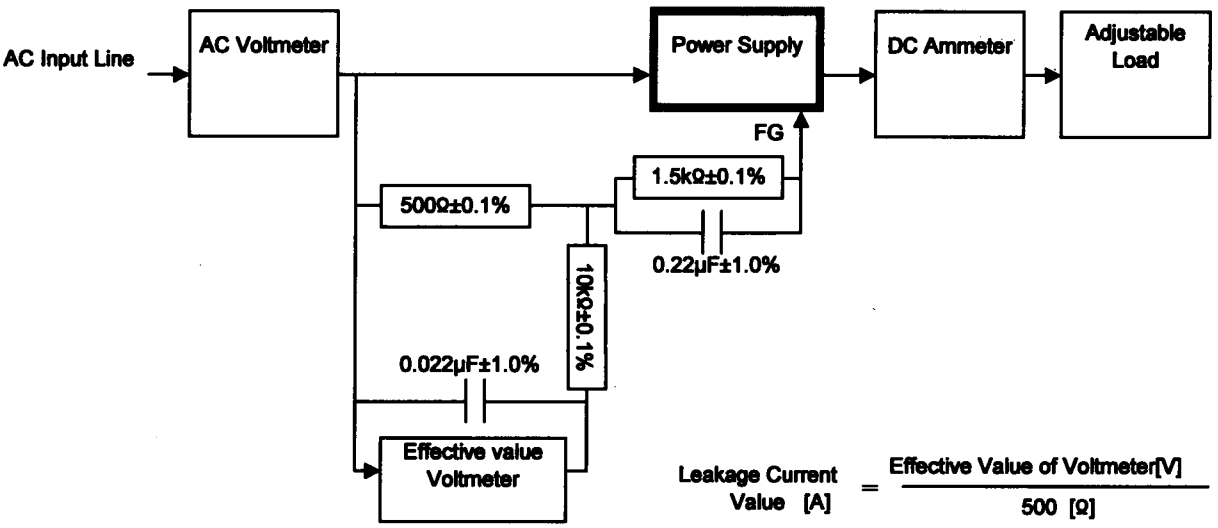


Figure B (IEC60950)