



TEST DATA OF PBA300F-48

Regulated DC Power Supply
May 27, 2004

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COSEL CO.,LTD.



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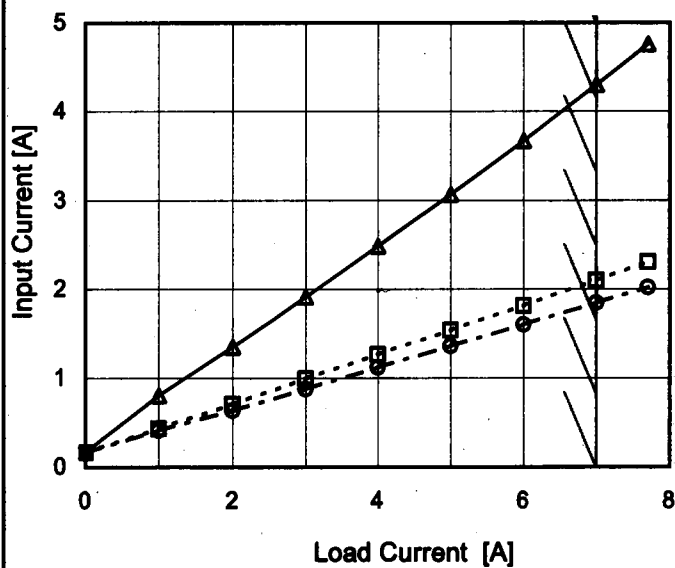
(Final Page 24)

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Model	PBA300F-48
Item	Input Current (by Load Current)
Object	_____

1. Graph

—△— Input Volt. 100V
 ---□--- Input Volt. 200V
 ---○--- Input Volt. 230V



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

Temperature 25°C
Testing Circuitry Figure A

2. Values

Load Current [A]	Input Current [A]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	0.168	0.164	0.160
1.0	0.804	0.436	0.412
2.0	1.352	0.708	0.634
3.0	1.914	0.996	0.876
4.0	2.484	1.268	1.122
5.0	3.068	1.540	1.362
6.0	3.670	1.818	1.602
7.0	4.300	2.102	1.848
7.7	4.760	2.308	2.022
—	—	—	—
—	—	—	—

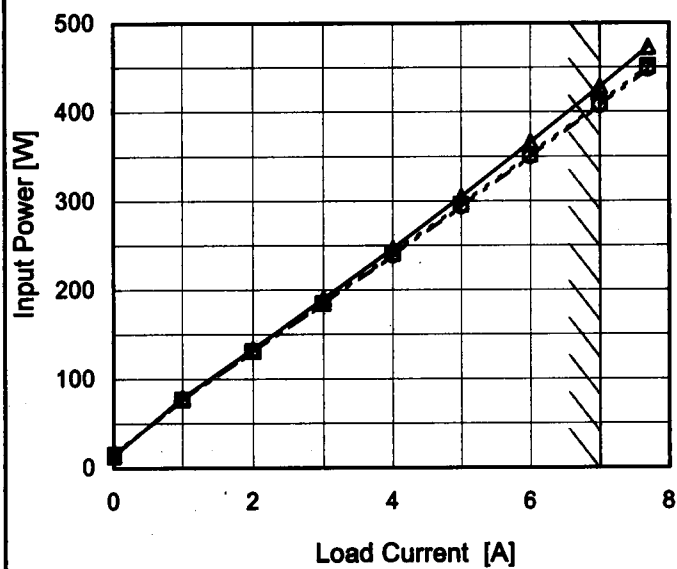
COSEL

Model	PBA300F-48
Item	Input Power (by Load Current)
Object	

Temperature 25°C
Testing Circuitry Figure A

1. Graph

—△— Input Volt. 100V
 ---□--- Input Volt. 200V
 -○- Input Volt. 230V



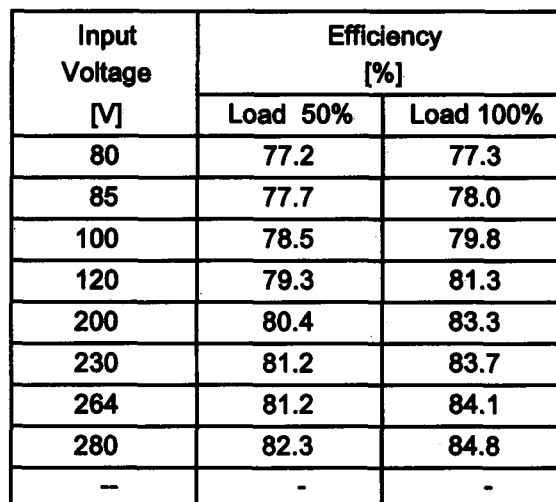
Note: Slanted line shows the range of the rated load current.

2. Values

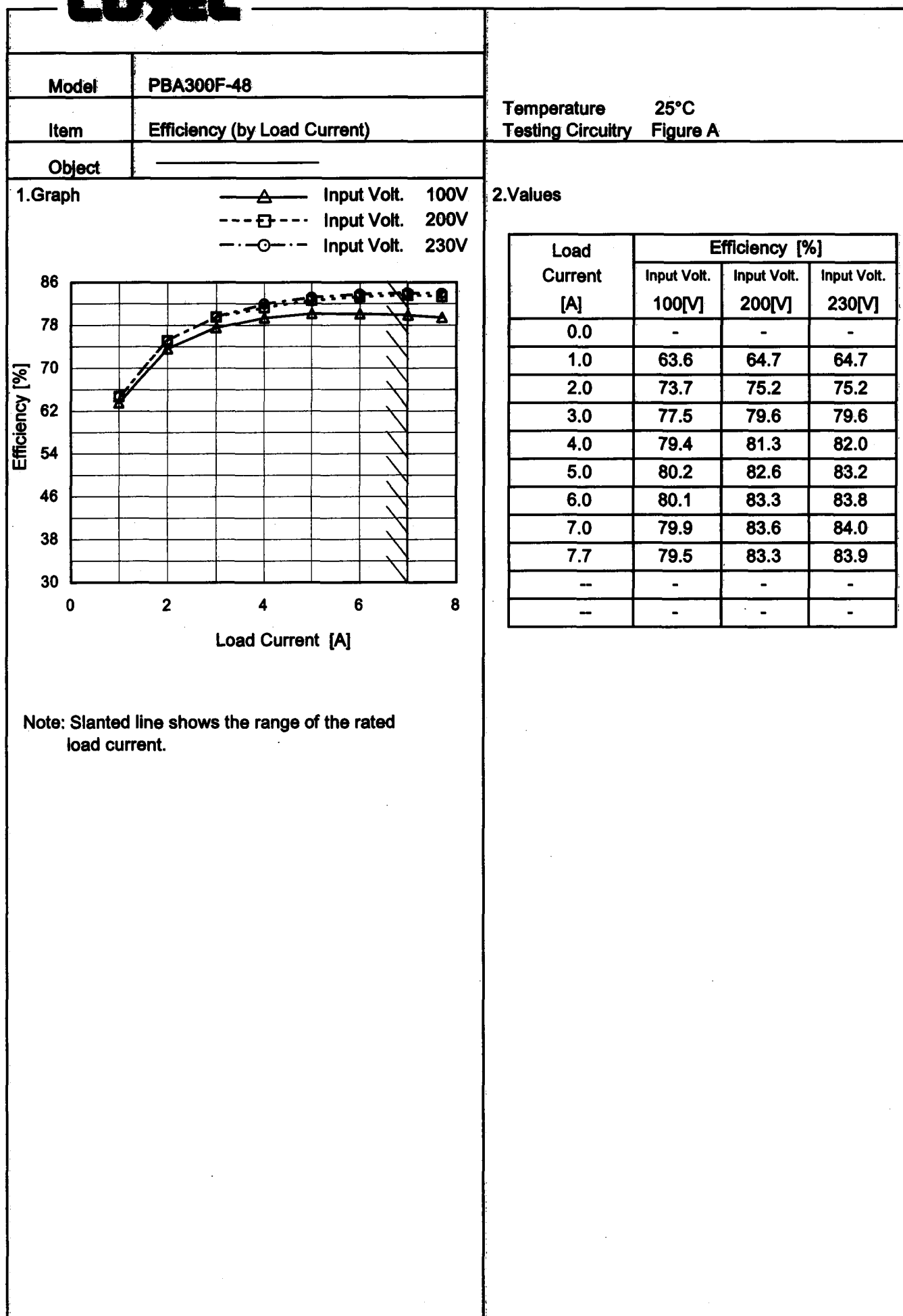
Load Current [A]	Input Power [W]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	13.5	15.0	14.0
1.0	78.6	77.0	77.0
2.0	133.8	131.0	131.0
3.0	189.9	185.0	185.0
4.0	246.9	241.0	239.0
5.0	305.1	296.0	294.0
6.0	366.0	352.0	350.0
7.0	428.0	409.0	407.0
7.7	473.0	451.0	448.0
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--	-	-	-

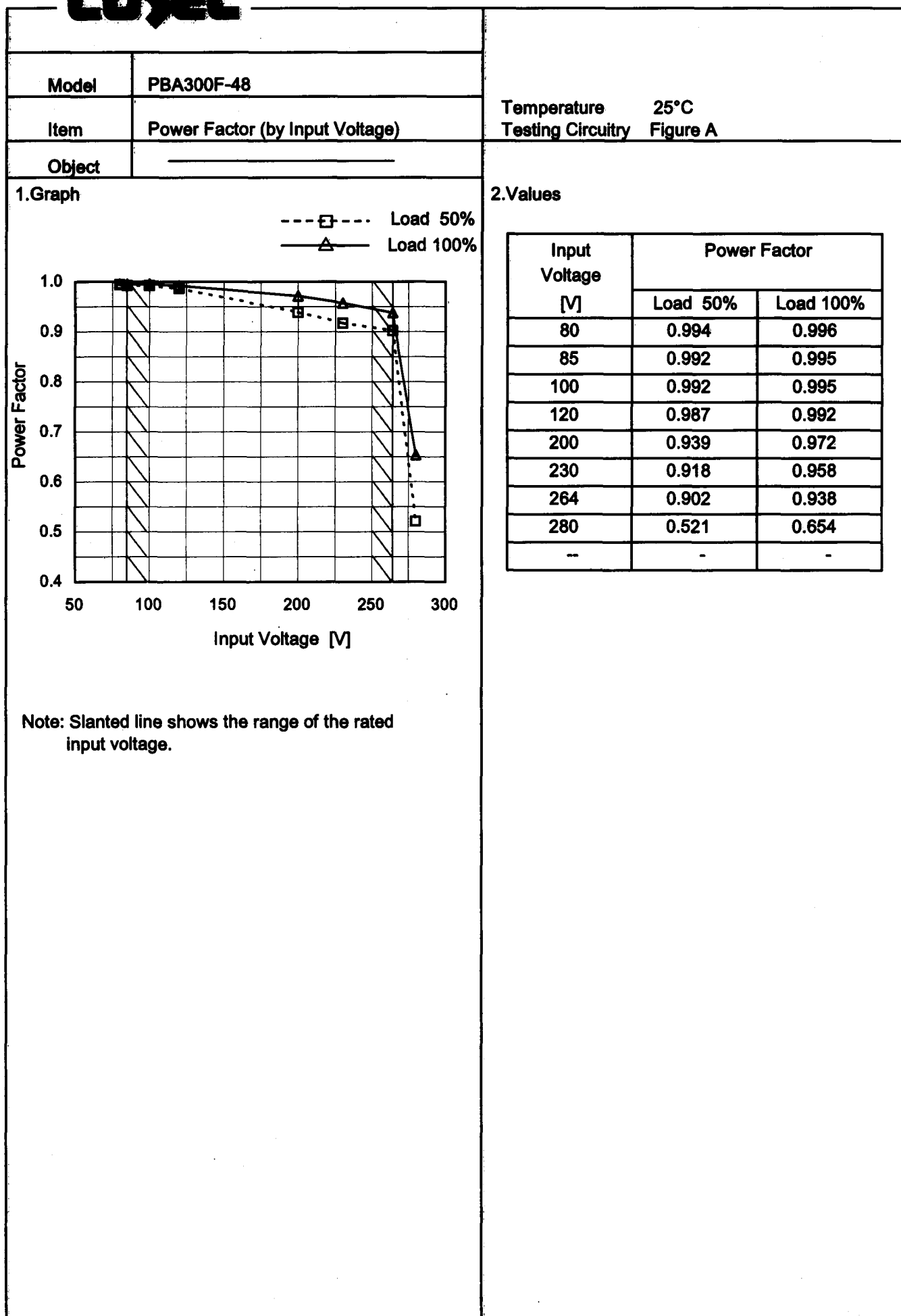
Temperature 25°C
Testing Circuitry Figure A

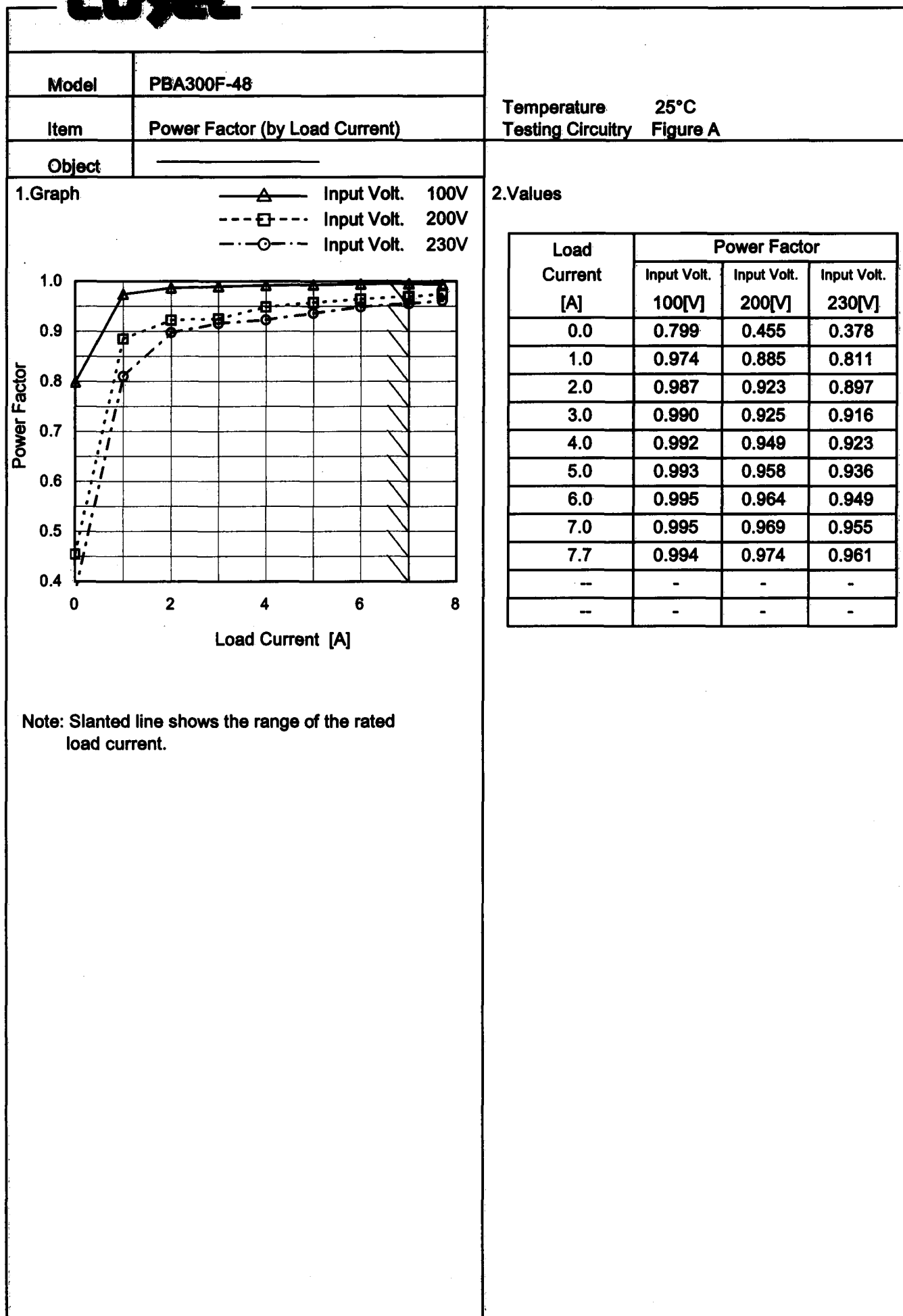
2.Values



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

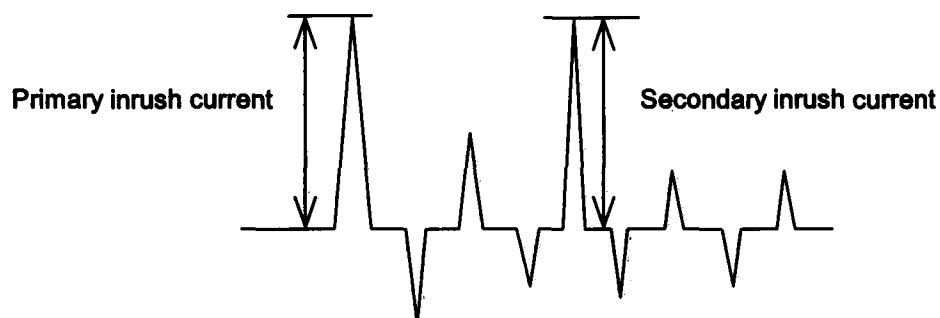
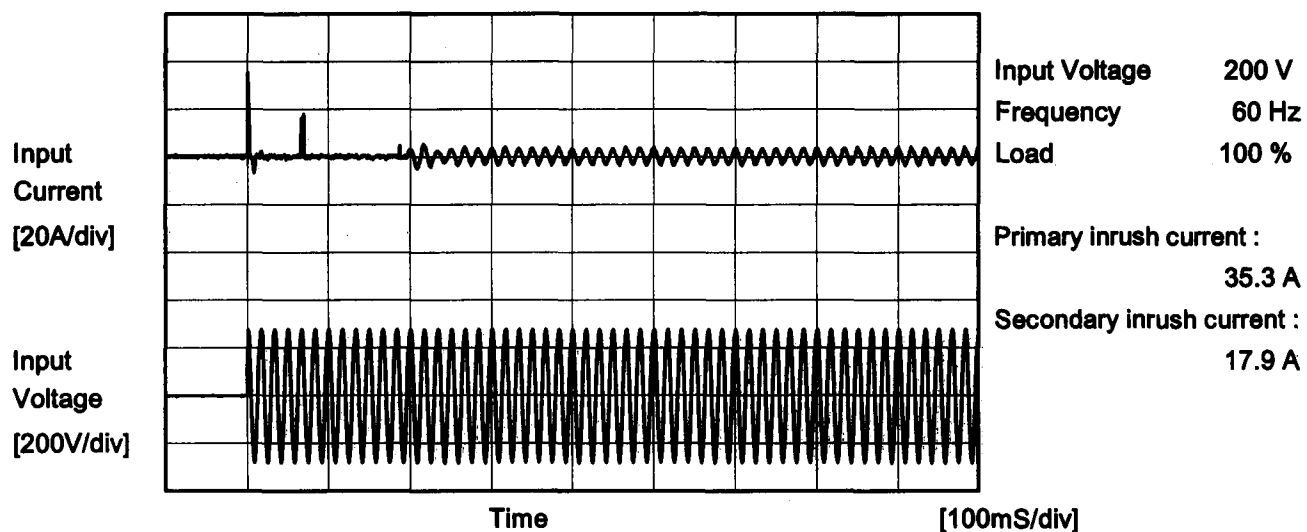
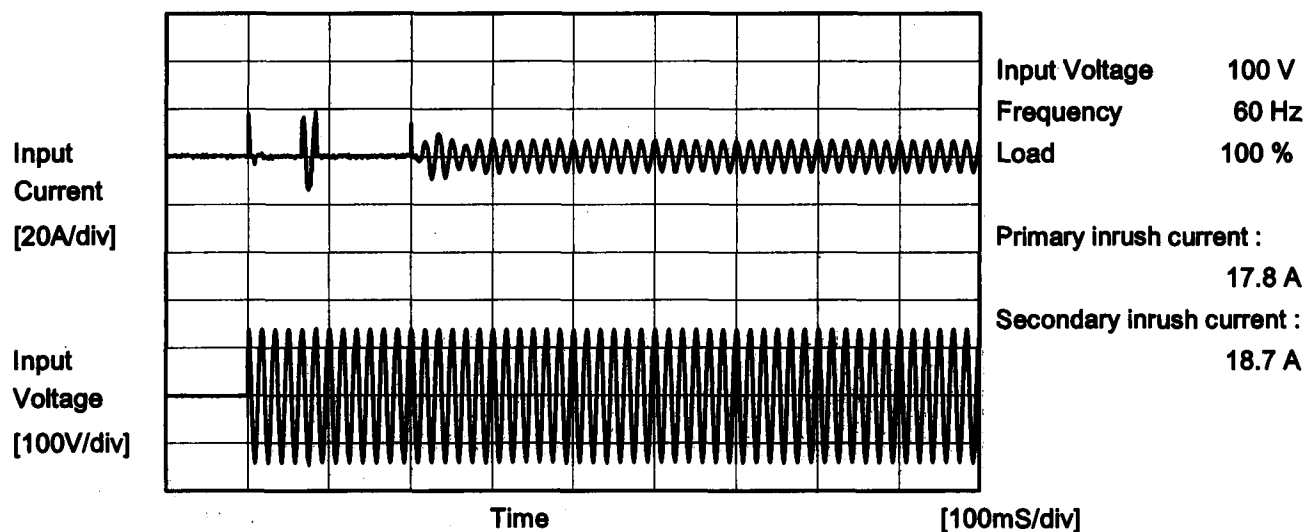
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Model	PBA300F-48	Temperature 25°C Testing Circuitry Figure A	
Item	Inrush Current		
Object	_____		





		Temperature 25°C Testing Circuitry Figure B
Model	PBA300F-48	
Item	Leakage Current	
Object		

1.Results

[mA]

Standards		Input Volt.			Note
		100[V]	200[V]	240[V]	
DEN-AN	Both phases	0.14	0.25	0.29	Operation
	One of phase	0.23	0.45	0.54	stand by
IEC60950	Both phases	0.14	0.25	0.29	Operation
	One of phase	0.23	0.45	0.54	stand by

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

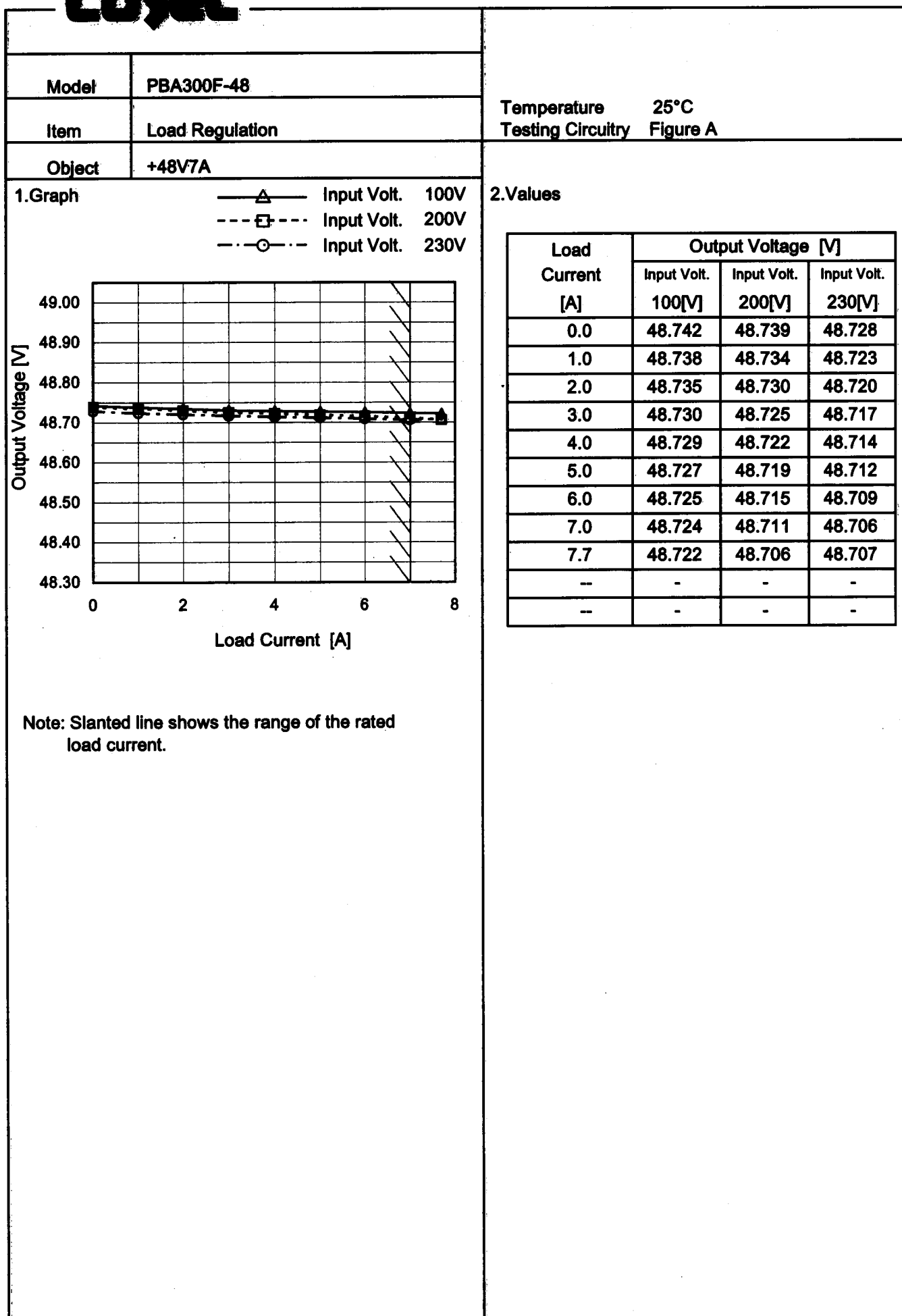
2.Condition

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

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Model	PBA300F-48																																
Item	Line Regulation	Temperature	25°C																														
Object	+48V7A	Testing Circuitry	Figure A																														
1.Graph		2.Values																															
---□--- Load 50% ---△--- Load 100% <table><thead><tr><th>Input Voltage [V]</th><th>Output Voltage [V] Load 50%</th><th>Output Voltage [V] Load 100%</th></tr></thead><tbody><tr><td>80</td><td>48.740</td><td>48.730</td></tr><tr><td>85</td><td>48.742</td><td>48.729</td></tr><tr><td>100</td><td>48.741</td><td>48.728</td></tr><tr><td>120</td><td>48.735</td><td>48.726</td></tr><tr><td>200</td><td>48.732</td><td>48.722</td></tr><tr><td>230</td><td>48.738</td><td>48.719</td></tr><tr><td>264</td><td>48.740</td><td>48.720</td></tr><tr><td>280</td><td>48.737</td><td>48.718</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></tbody></table> Note: Slanted line shows the range of the rated input voltage.		Input Voltage [V]	Output Voltage [V] Load 50%	Output Voltage [V] Load 100%	80	48.740	48.730	85	48.742	48.729	100	48.741	48.728	120	48.735	48.726	200	48.732	48.722	230	48.738	48.719	264	48.740	48.720	280	48.737	48.718	--	-	-		
Input Voltage [V]	Output Voltage [V] Load 50%	Output Voltage [V] Load 100%																															
80	48.740	48.730																															
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280	48.737	48.718																															
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COSMOS



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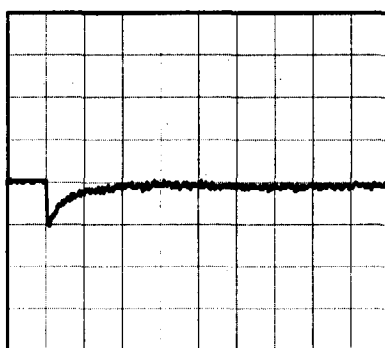
Model	PBA300F-48	Temperature	25°C
Item	Dynamic Load Response 動的負荷変動	Testing Circuitry	Figure A
Object	+48V7A		

Input Volt. 100 V
Cycle 1000 ms

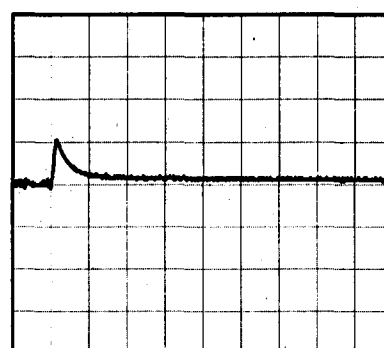
Load Current

Min. Load (0A) ←→
Load 100% (7A)

100 mV/div



10 ms/div



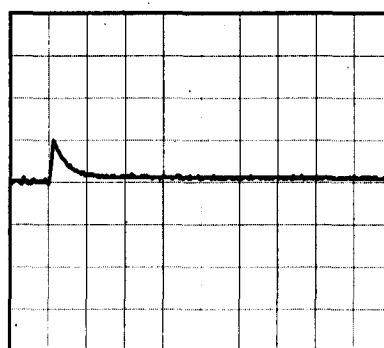
10 ms/div

Min. Load (0A) ←→
Load 50% (3.5A)

100 mV/div



10 ms/div



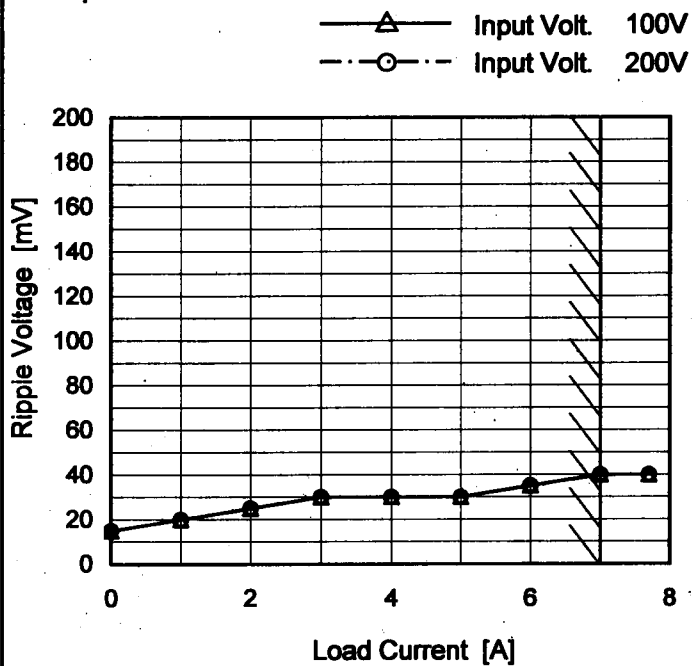
10 ms/div

* The characteristic of AC200V is equal.

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Model	PBA300F-48
Item	Ripple Voltage (by Load Current)
Object	+48V7A

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.

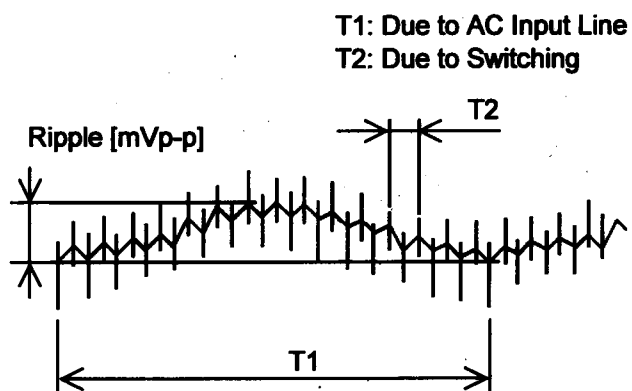


Fig. Complex Ripple Wave Form

2. Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 100 [V]	Input Volt. 200 [V]
0.0	15	15
1.0	20	20
2.0	25	25
3.0	30	30
4.0	30	30
5.0	30	30
6.0	35	35
7.0	40	40
7.7	40	40
—	—	—
—	—	—

COSEL

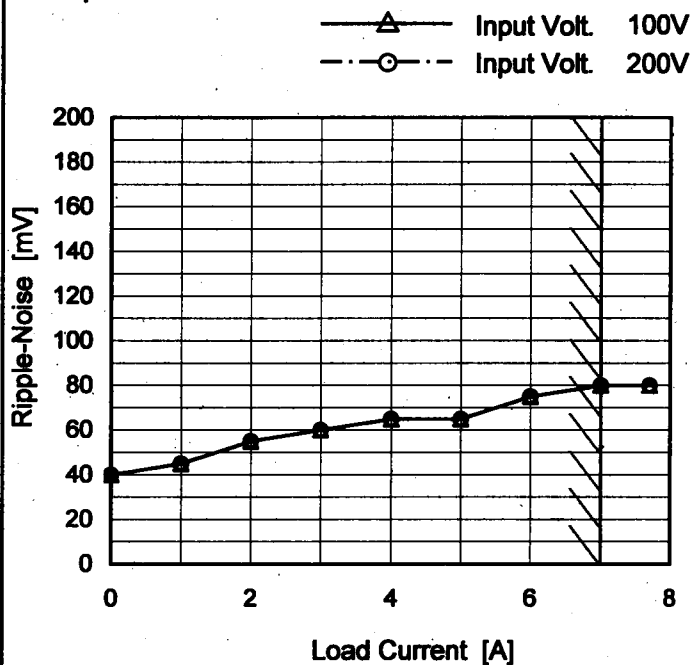
Model PBA300F-48

Item Ripple-Noise

Object +48V7A

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	40	40
1.0	45	45
2.0	55	55
3.0	60	60
4.0	65	65
5.0	65	65
6.0	75	75
7.0	80	80
7.7	80	80
—	—	—
—	—	—

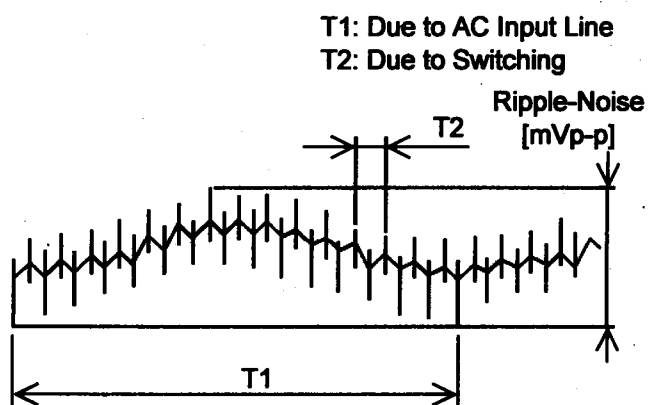


Fig. Complex Ripple Wave Form

COSEL

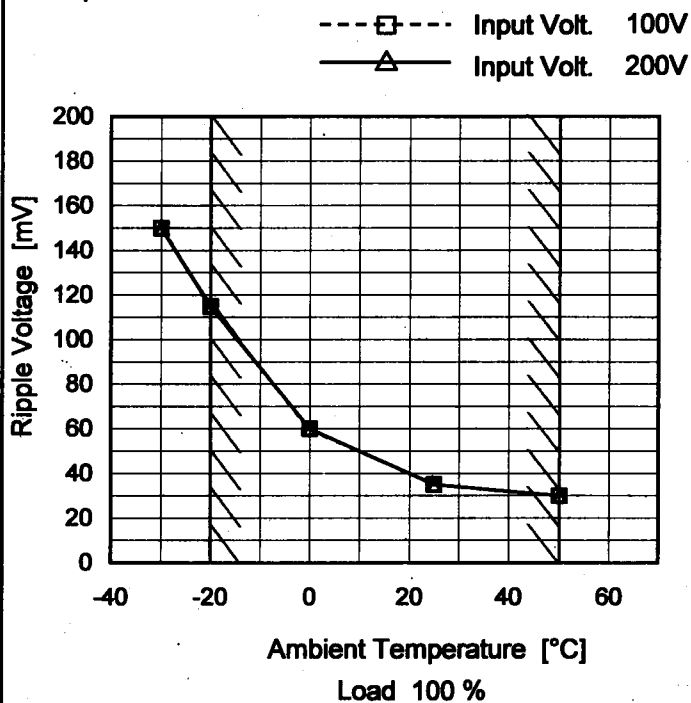
Model PBA300F-48

Item Ripple Voltage (by Ambient Temp.)

Object +48V7A

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	150	150
-20	115	115
0	60	60
25	35	35
50	30	30
—	—	—
—	—	—
—	—	—
—	—	—
—	—	—
—	—	—



Model		PBA300F-48	
Item		Ambient Temperature Drift	
Object		+48V7A	

1.Graph

—△—

Input Volt. 100V

---□---

Input Volt. 200V

---○---

Input Volt. 230V

Output Voltage [V]

Ambient Temperature [°C]

Load 100%

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]
-30	48.812	48.807	48.805
-20	48.806	48.801	48.796
-10	48.785	48.783	48.782
0	48.783	48.784	48.781
10	48.772	48.773	48.772
25	48.788	48.793	48.797
30	48.758	48.759	48.759
40	48.708	48.687	48.671
50	48.668	48.646	48.644
60	48.447	48.421	48.397
--	-	-	-

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		Testing Circuitry Figure A
Model	PBA300F-48	
Item	Output Voltage Accuracy	
Object	+48V7A	

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 : -20 - 50°C

Input Voltage : 85 - 264V

Load Current : 0 - 7A

* Output Voltage Accuracy = $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

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

2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	25	264	0	48.819	±125	±0.3
Minimum Voltage	50	264	7	48.570		

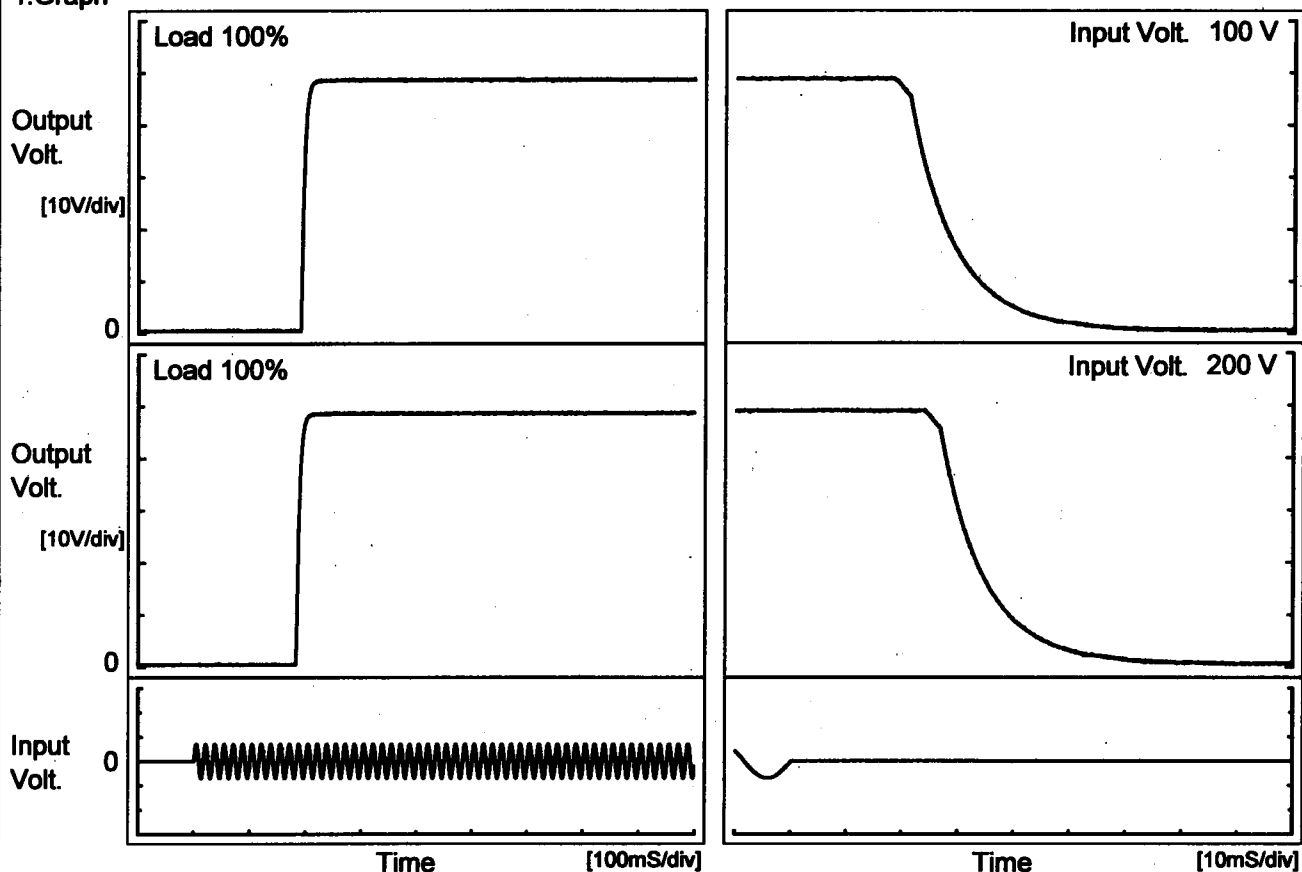
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Model	PBA300F-48		
Item	Time Lapse Drift	Temperature	25°C
Object	+48V7A	Testing Circuitry	Figure A
1.Graph		2.Values	
Output Voltage [V]			

COSEL

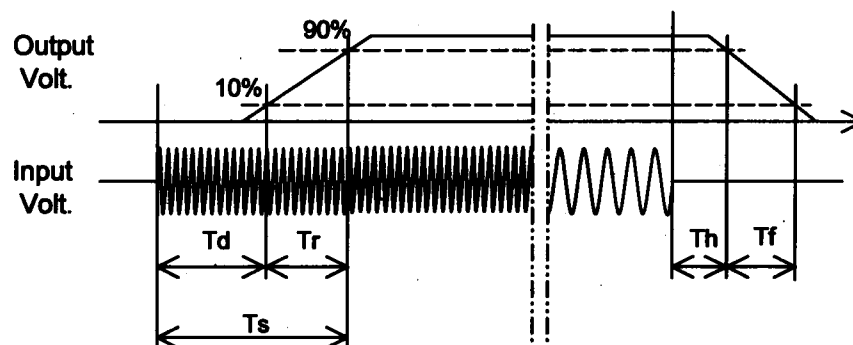
Model	PBA300F-48	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	+48V7A		

1.Graph



2.Values

Input Volt.	Time	Td	Tr	Ts	Th	Tf
100 V		191.5	11.5	203.0	21.6	18.0
200 V		183.5	11.5	195.0	27.2	17.8



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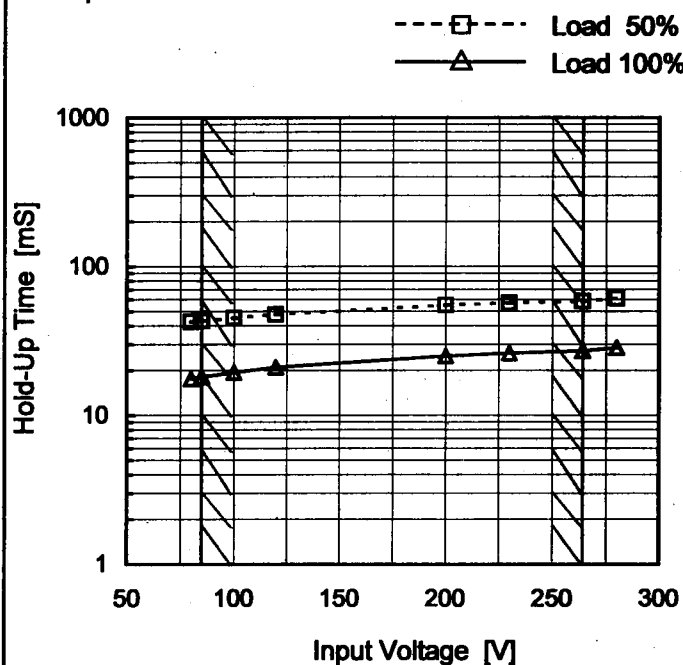
Model PBA300F-48

Item Hold-Up Time

Object +48V7A

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%
80	43	18
85	43	18
100	45	19
120	48	21
200	55	25
230	57	26
264	58	27
280	61	29
—	—	—

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Model

PBA300F-48

Item

Instantaneous Interruption Compensation

Object

+48V7A

Temperature

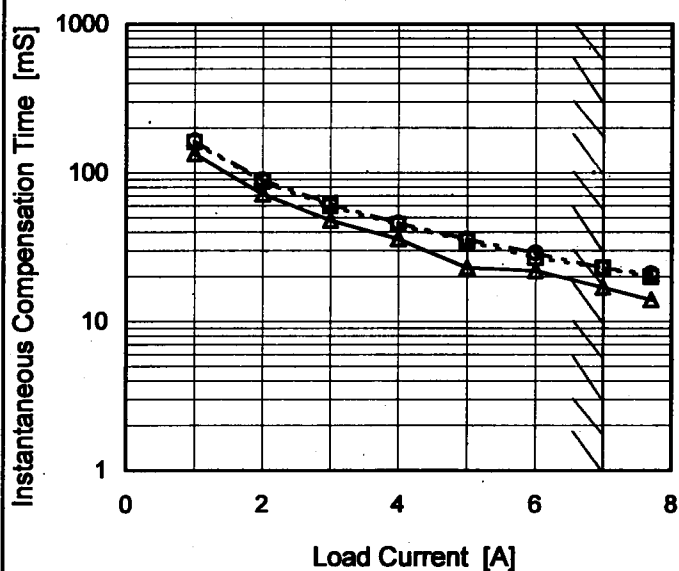
25°C

Testing Circuitry

Figure A

1. Graph

—△— Input Volt. 100V
 ---□--- Input Volt. 200V
 ---○--- Input Volt. 230V



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

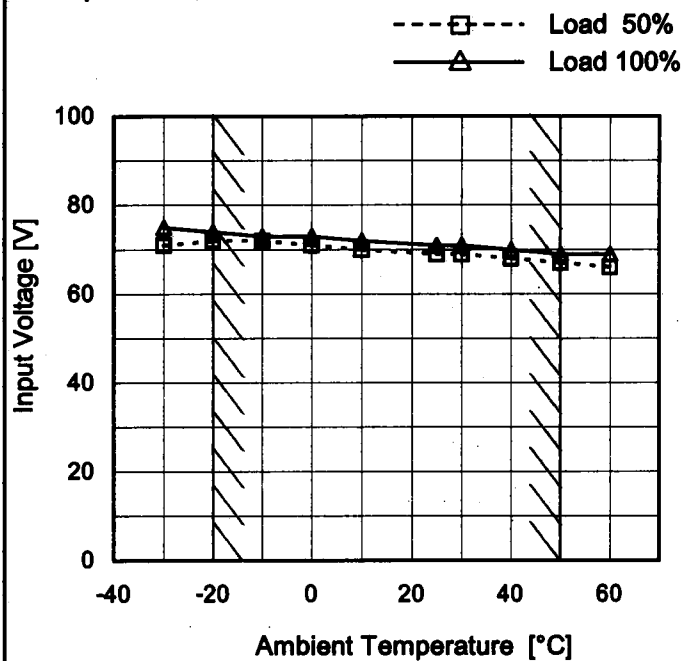
2. Values

Load Current [A]	Time [mS]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	-	-	-
1.0	135	161	165
2.0	72	88	90
3.0	48	60	62
4.0	36	45	46
5.0	23	35	36
6.0	22	27	29
7.0	17	23	23
7.7	14	20	21
—	—	—	—
—	—	—	—

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Model	PBA300F-48
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+48V7A

1. Graph



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

Testing Circuitry Figure A

2. Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-30	71	75
-20	72	74
-10	72	73
0	71	73
10	70	72
25	69	71
30	69	71
40	68	70
50	67	69
60	66	69
--	-	-

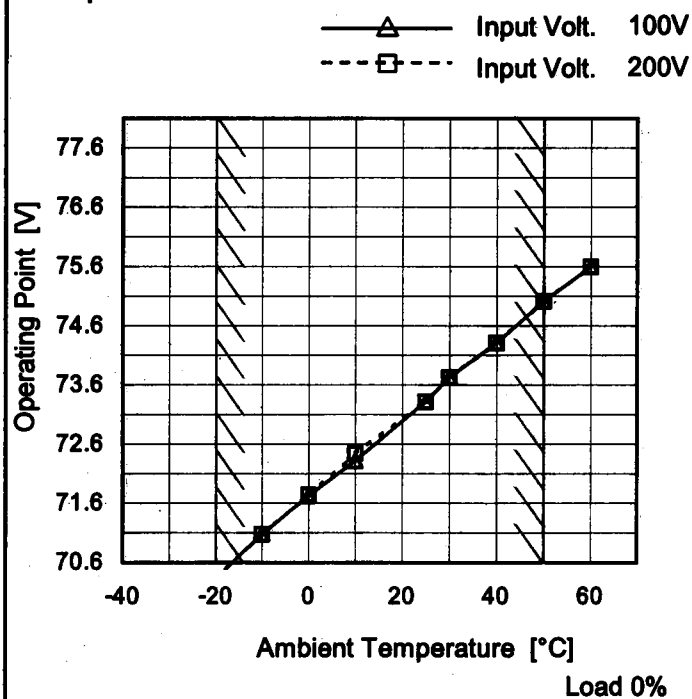
COSEL

Model	PBA300F-48	Temperature 25°C Testing Circuitry Figure A																																													
Item	Overcurrent Protection																																														
Object	+48V7A																																														
1.Graph		2.Values																																													
Input Volt. 100V Input Volt. 200V Output Voltage [V] Load Current [A] Note: Slanted line shows the range of the rated load current. Intermittent operation occurs when the output voltage is from 28.8V to 0V:		<table><tr><th rowspan="2">Output Voltage [V]</th><th colspan="2">Load Current [A]</th></tr><tr><th>Input Volt. 100[V]</th><th>Input Volt. 200[V]</th></tr><tr><td>48.0</td><td>8.89</td><td>8.90</td></tr><tr><td>45.6</td><td>8.89</td><td>8.90</td></tr><tr><td>43.2</td><td>8.91</td><td>8.92</td></tr><tr><td>38.4</td><td>8.96</td><td>8.96</td></tr><tr><td>33.6</td><td>8.99</td><td>8.98</td></tr><tr><td>28.8</td><td>9.08</td><td>9.00</td></tr><tr><td>—</td><td>—</td><td>—</td></tr><tr><td>—</td><td>—</td><td>—</td></tr><tr><td>—</td><td>—</td><td>—</td></tr><tr><td>—</td><td>—</td><td>—</td></tr><tr><td>—</td><td>—</td><td>—</td></tr><tr><td>—</td><td>—</td><td>—</td></tr><tr><td>—</td><td>—</td><td>—</td></tr></table>		Output Voltage [V]	Load Current [A]		Input Volt. 100[V]	Input Volt. 200[V]	48.0	8.89	8.90	45.6	8.89	8.90	43.2	8.91	8.92	38.4	8.96	8.96	33.6	8.99	8.98	28.8	9.08	9.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Output Voltage [V]	Load Current [A]																																														
	Input Volt. 100[V]	Input Volt. 200[V]																																													
48.0	8.89	8.90																																													
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Model	PBA300F-48
Item	Overvoltage Protection
Object	+48V7A

1. Graph



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

Testing Circuitry Figure A

2. Values

Ambient Temperature [°C]	Operating Point [V]	
	Input Volt. 100[V]	Input Volt. 200[V]
-30	69.73	69.73
-20	70.37	70.37
-10	71.12	71.12
0	71.77	71.78
10	72.36	72.48
25	73.36	73.36
30	73.77	73.77
40	74.35	74.35
50	75.06	75.06
60	75.64	75.64
--	-	-

COSEL

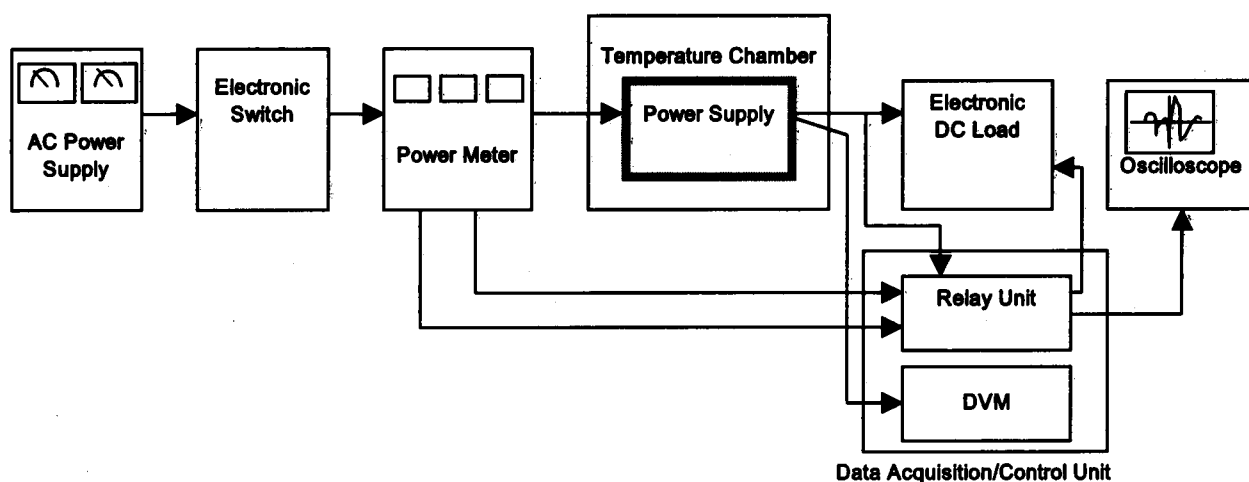


Figure A

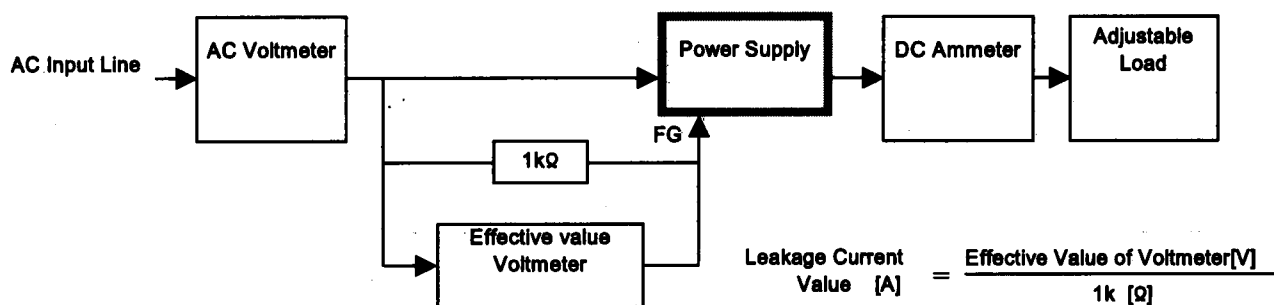


Figure B (DEN-AN)

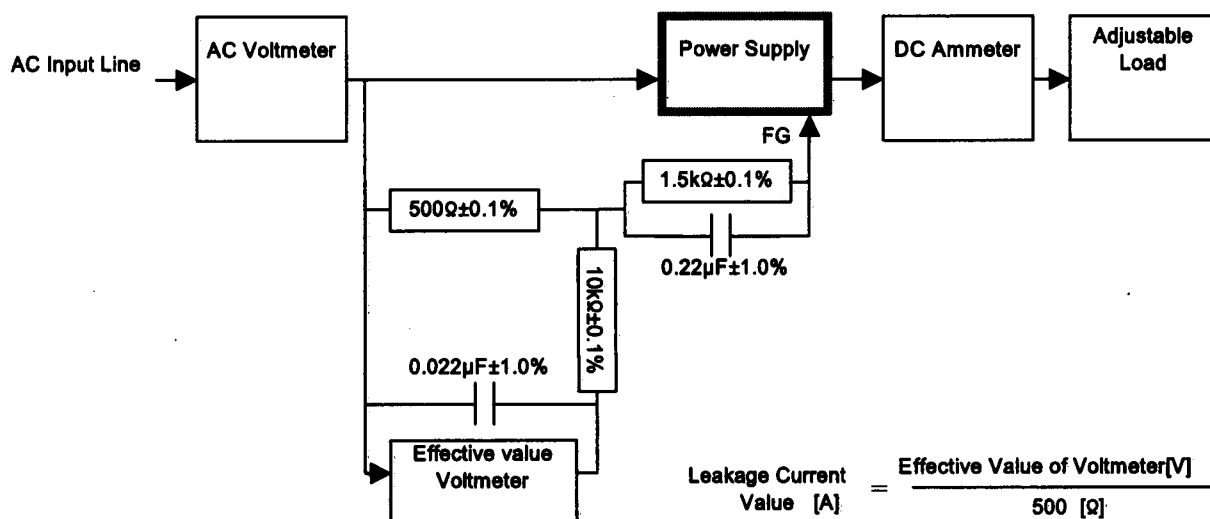


Figure B (IEC60950)