



TEST DATA OF PBA300F-24

Regulated DC Power Supply
May 27, 2004

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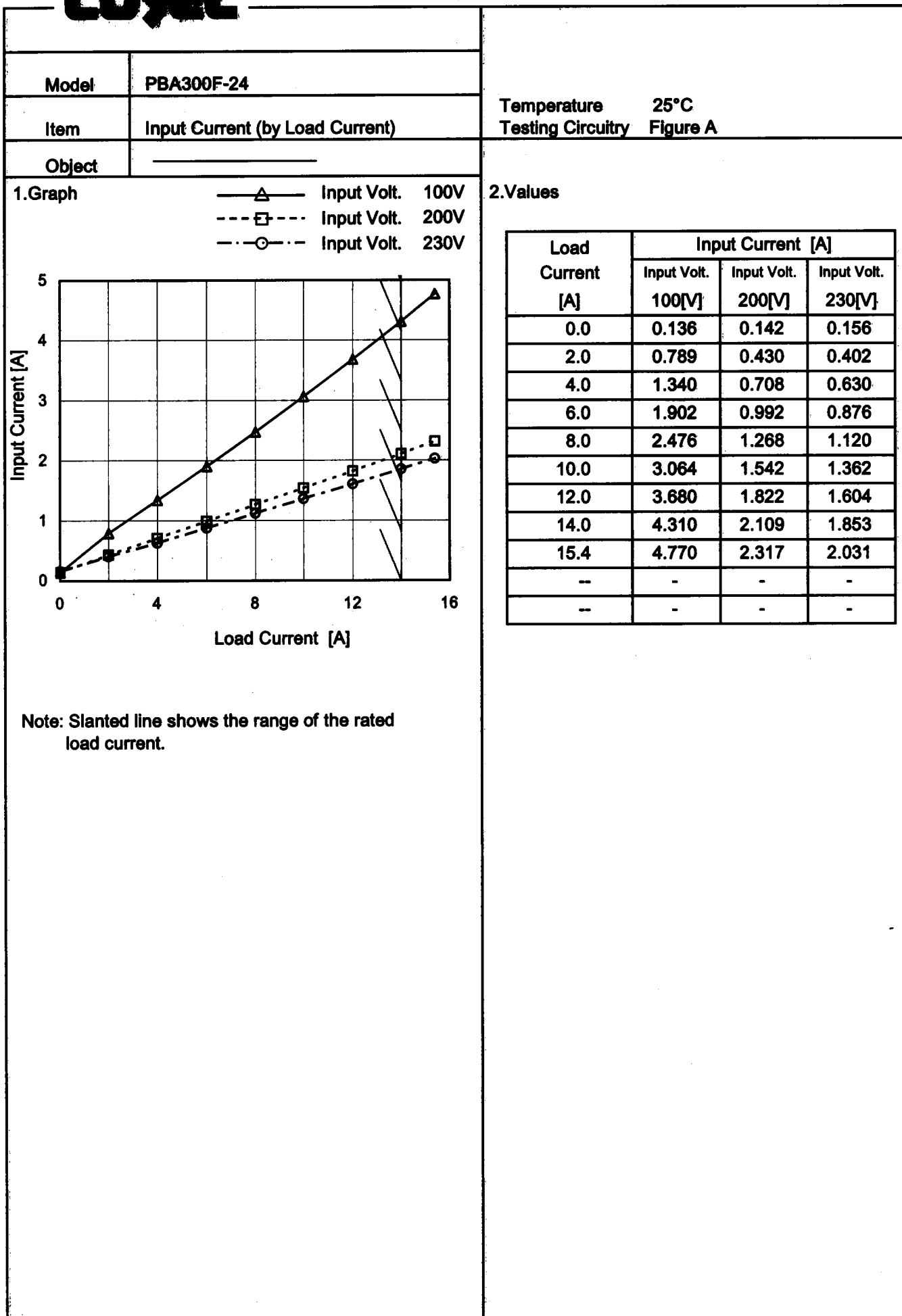
COSEL CO.,LTD.

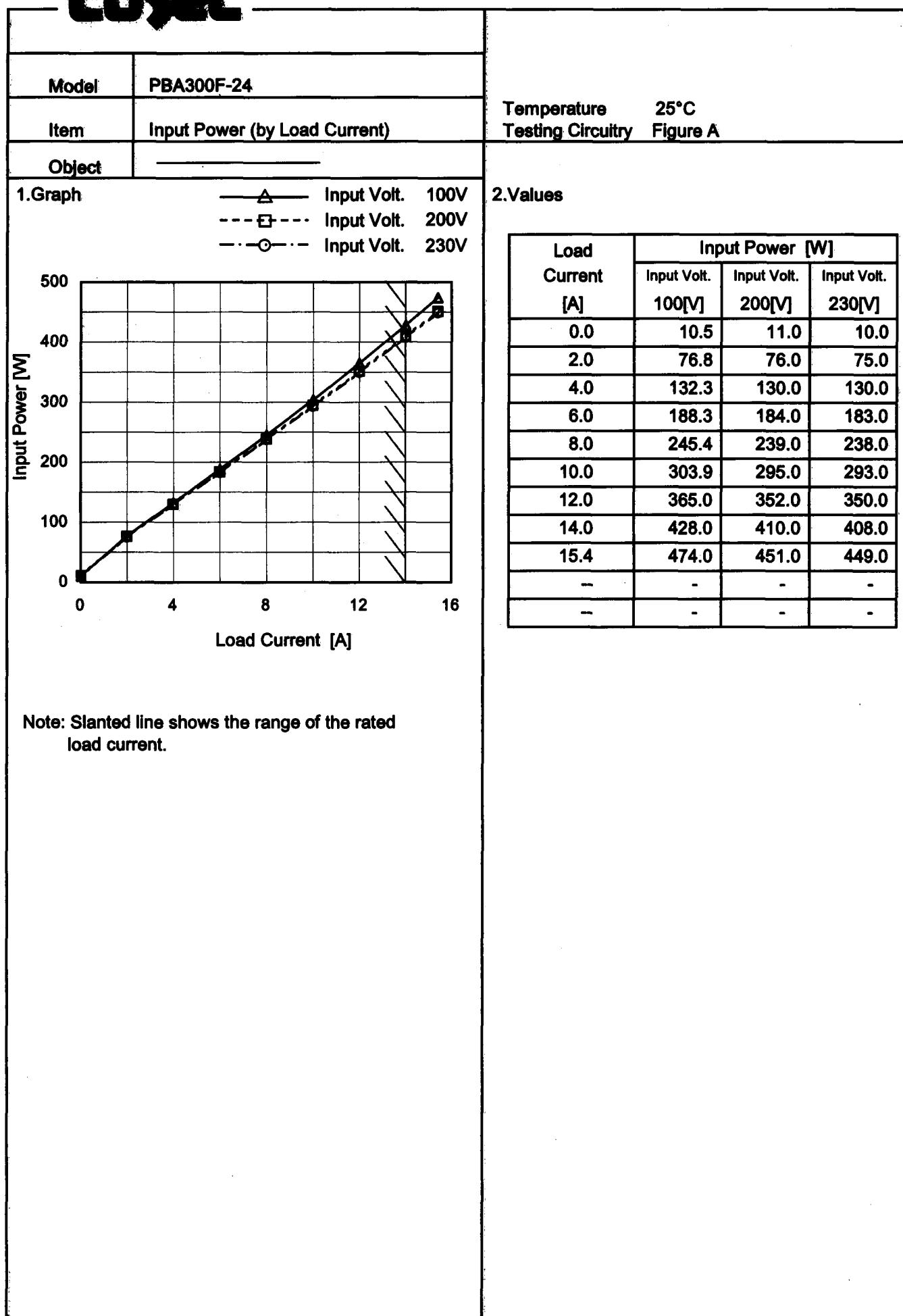


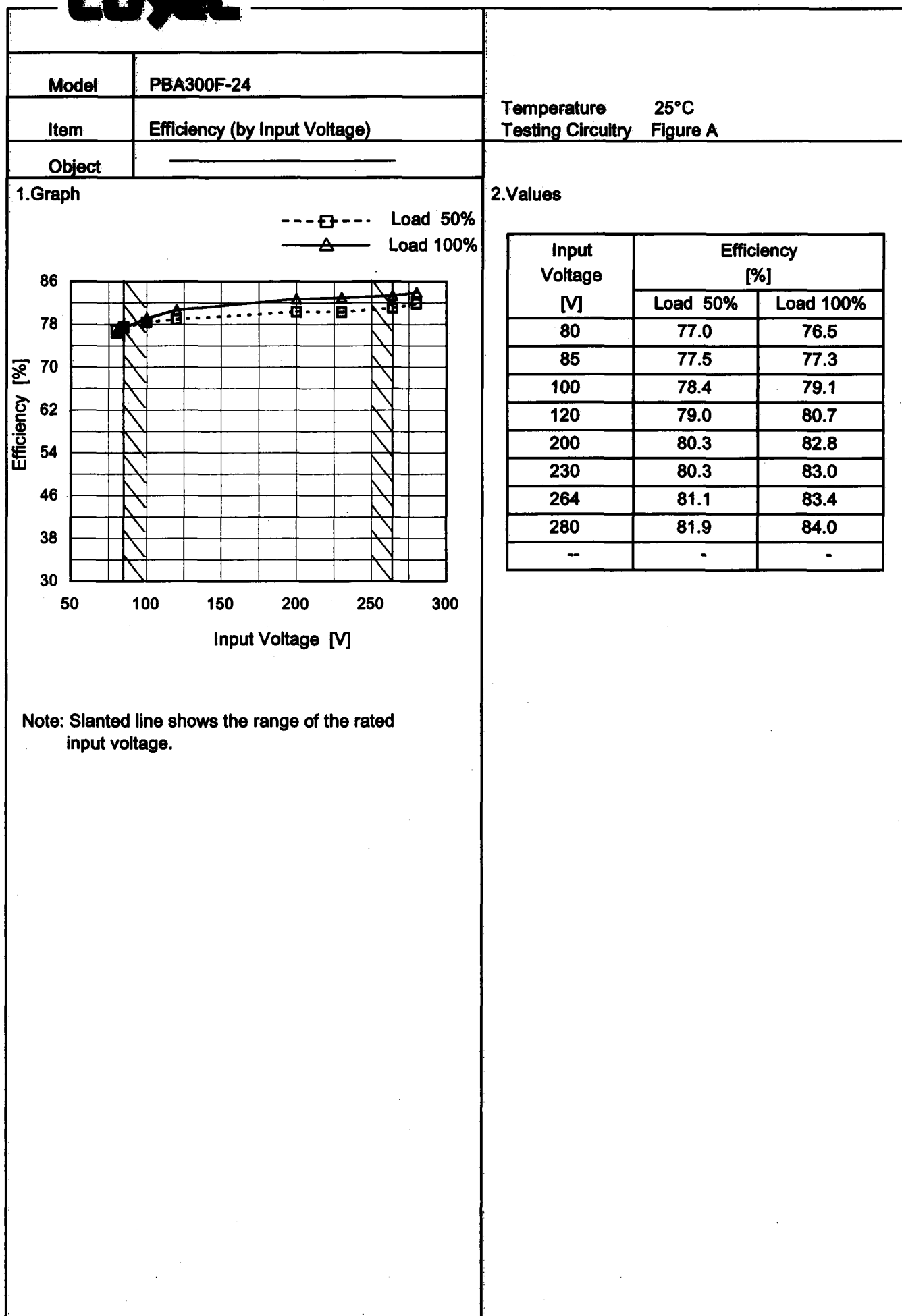
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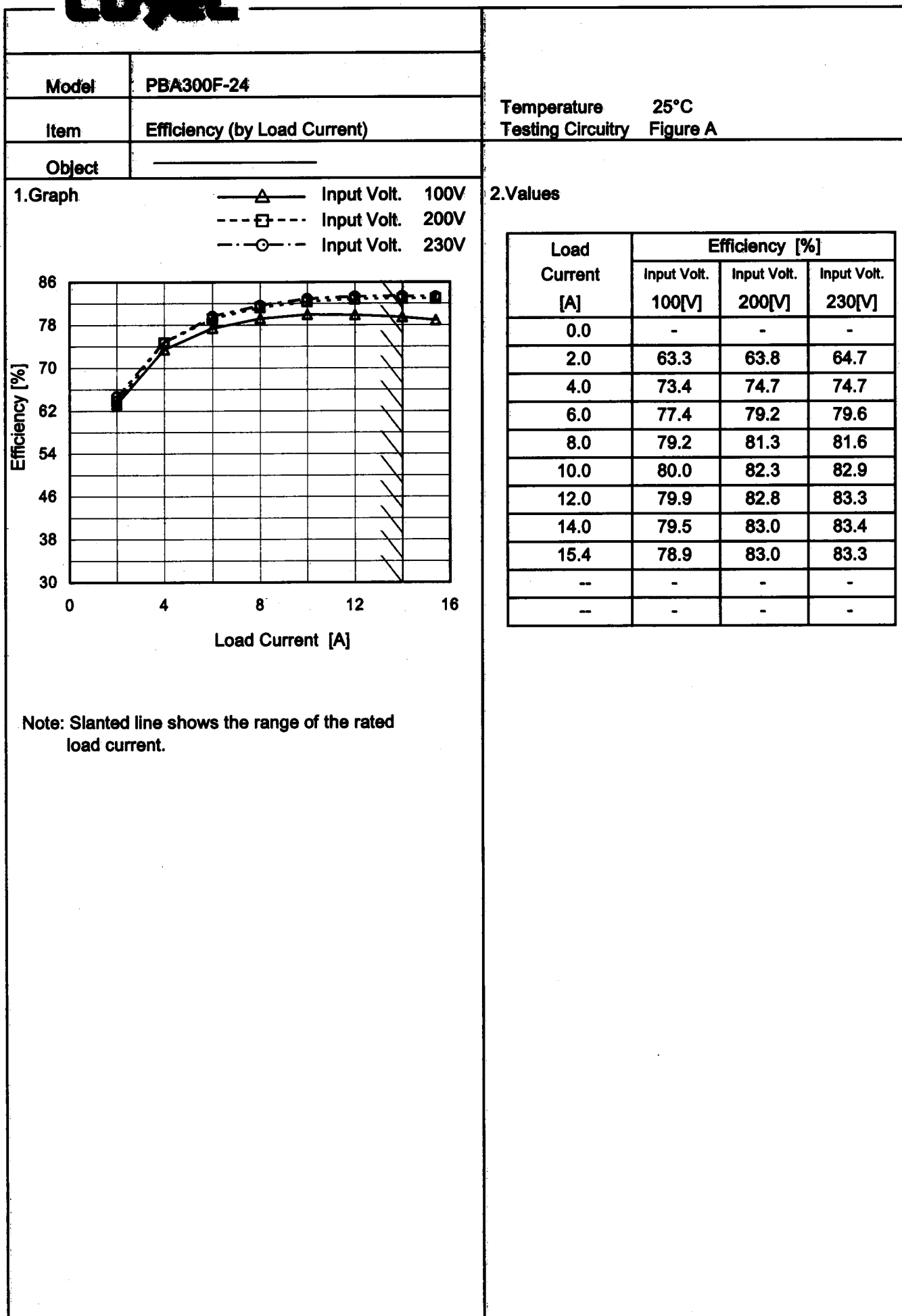
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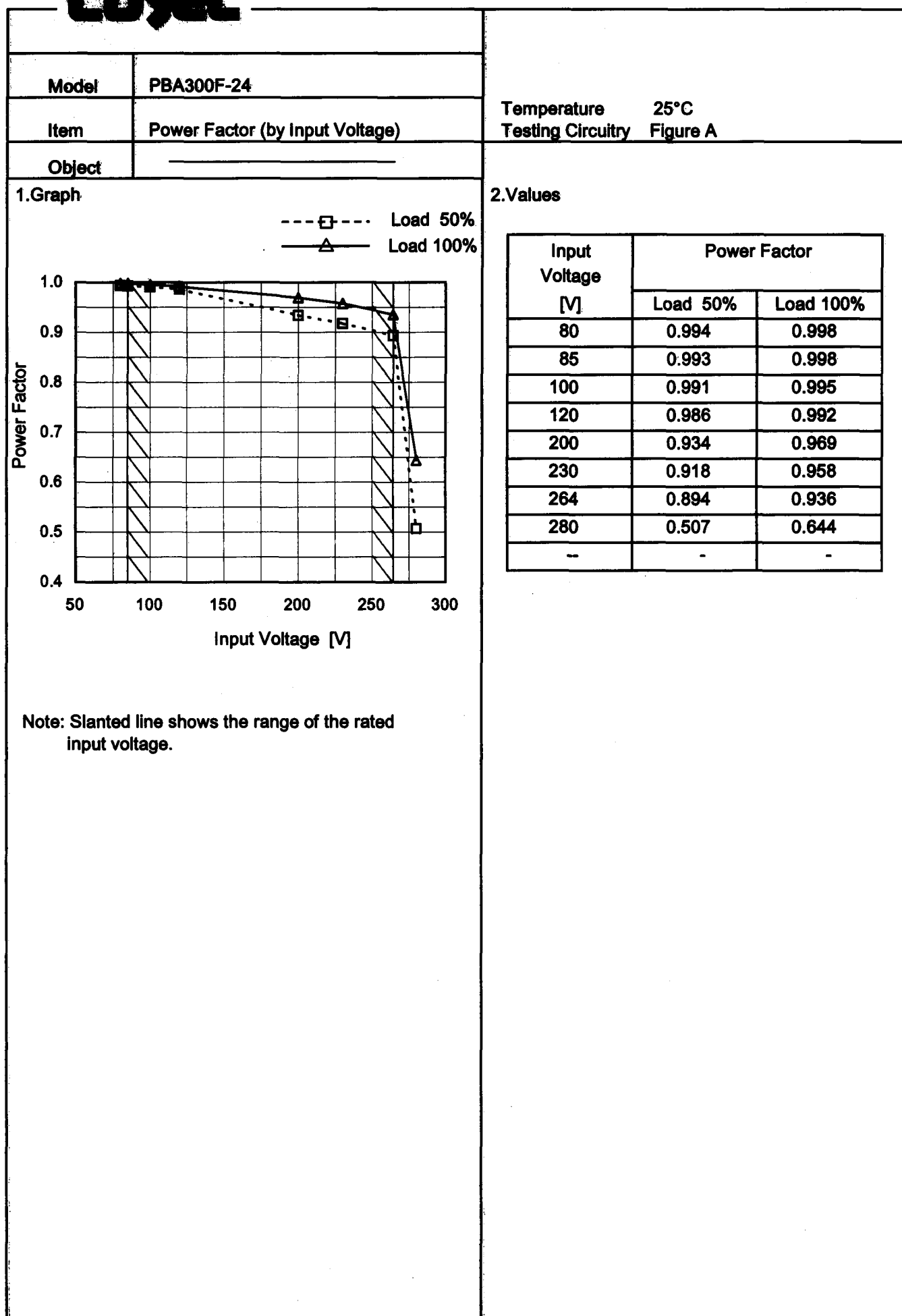
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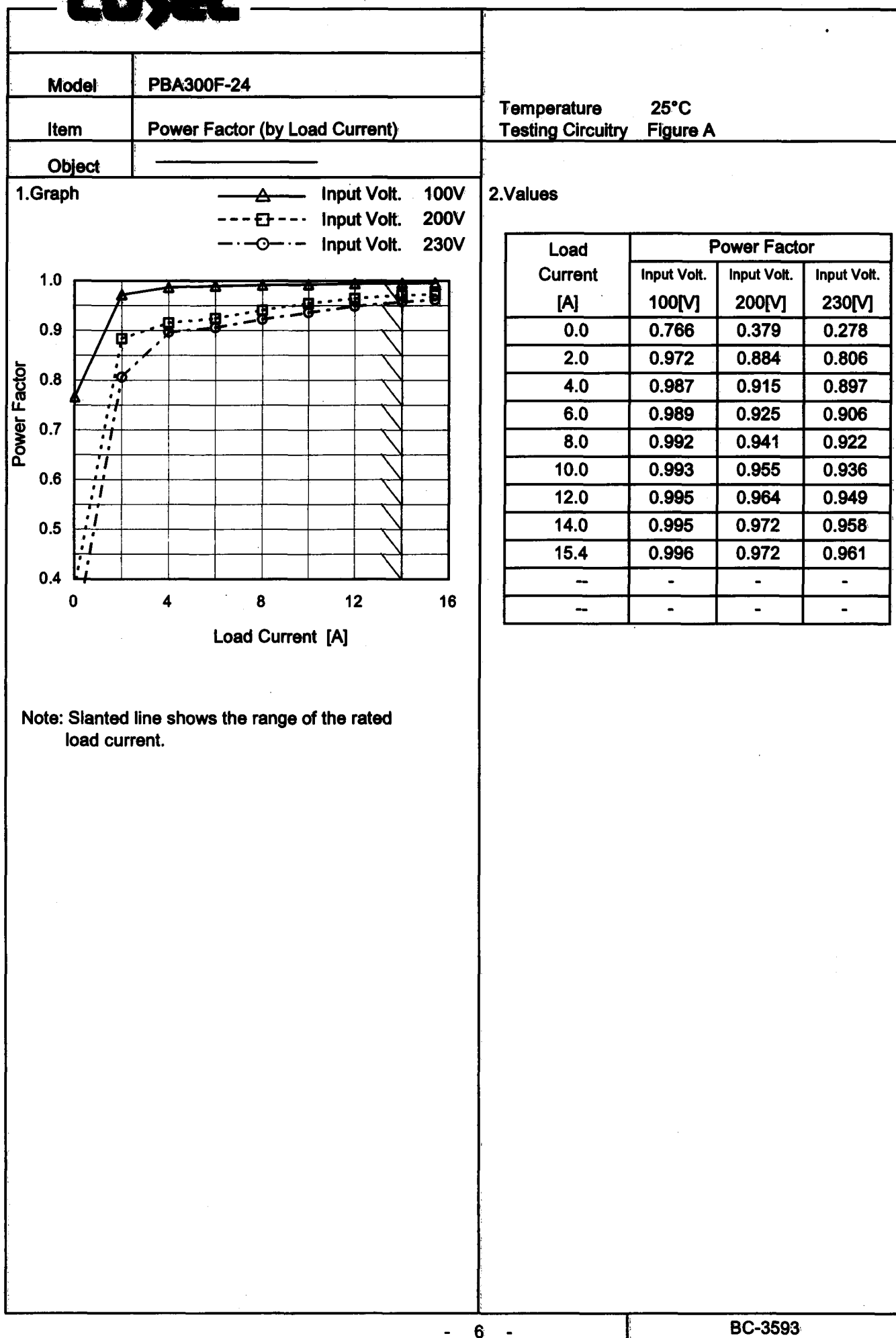
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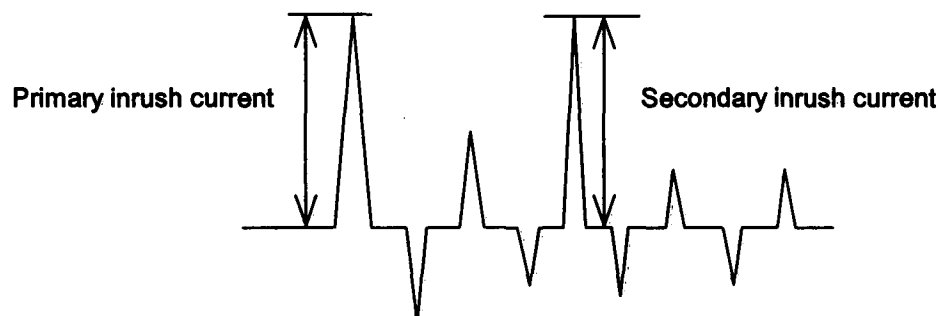
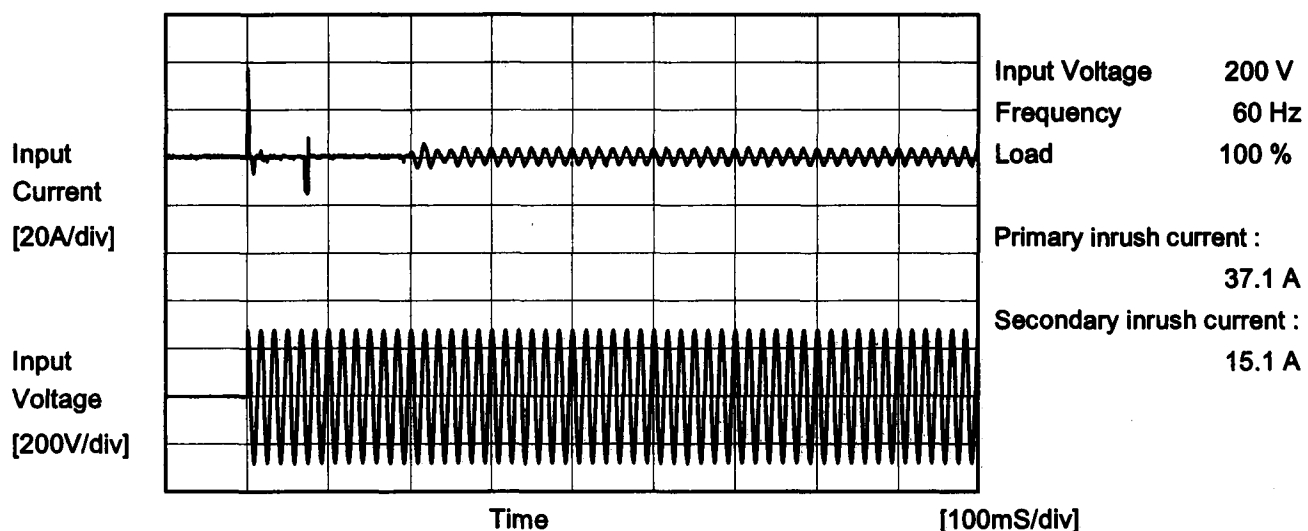
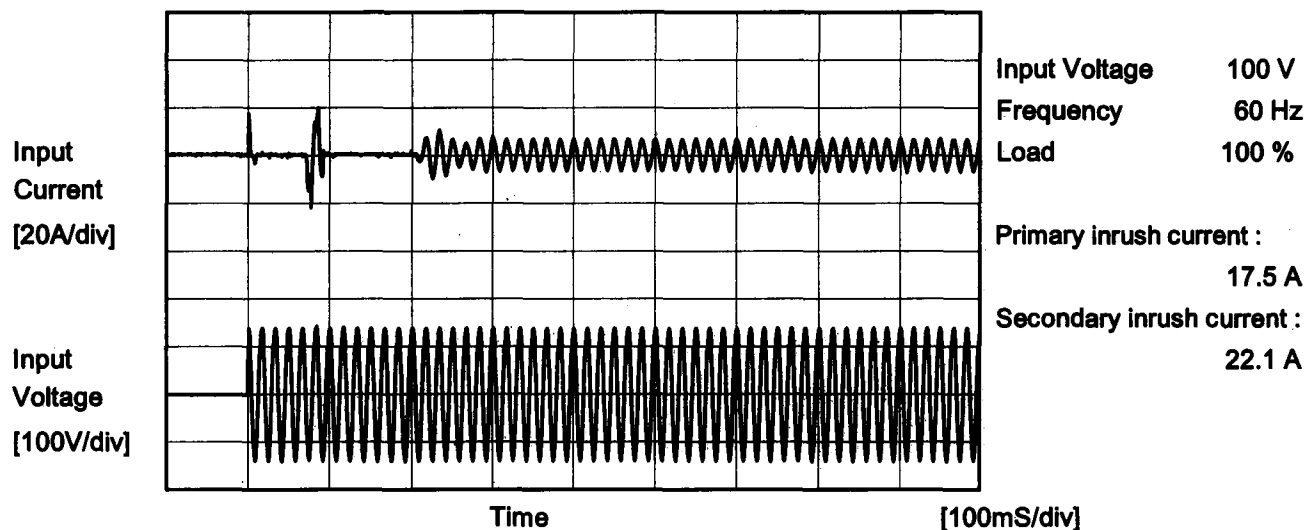
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Model	PBA300F-24	Temperature	25°C
Item	Inrush Current	Testing Circuitry	Figure A
Object	_____		





		Temperature 25°C Testing Circuitry Figure B
Model	PBA300F-24	
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

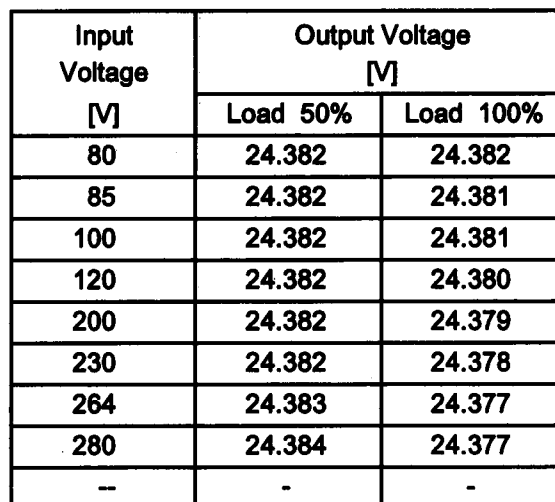
The value for "One phase" is the reference value only.

2.Condition

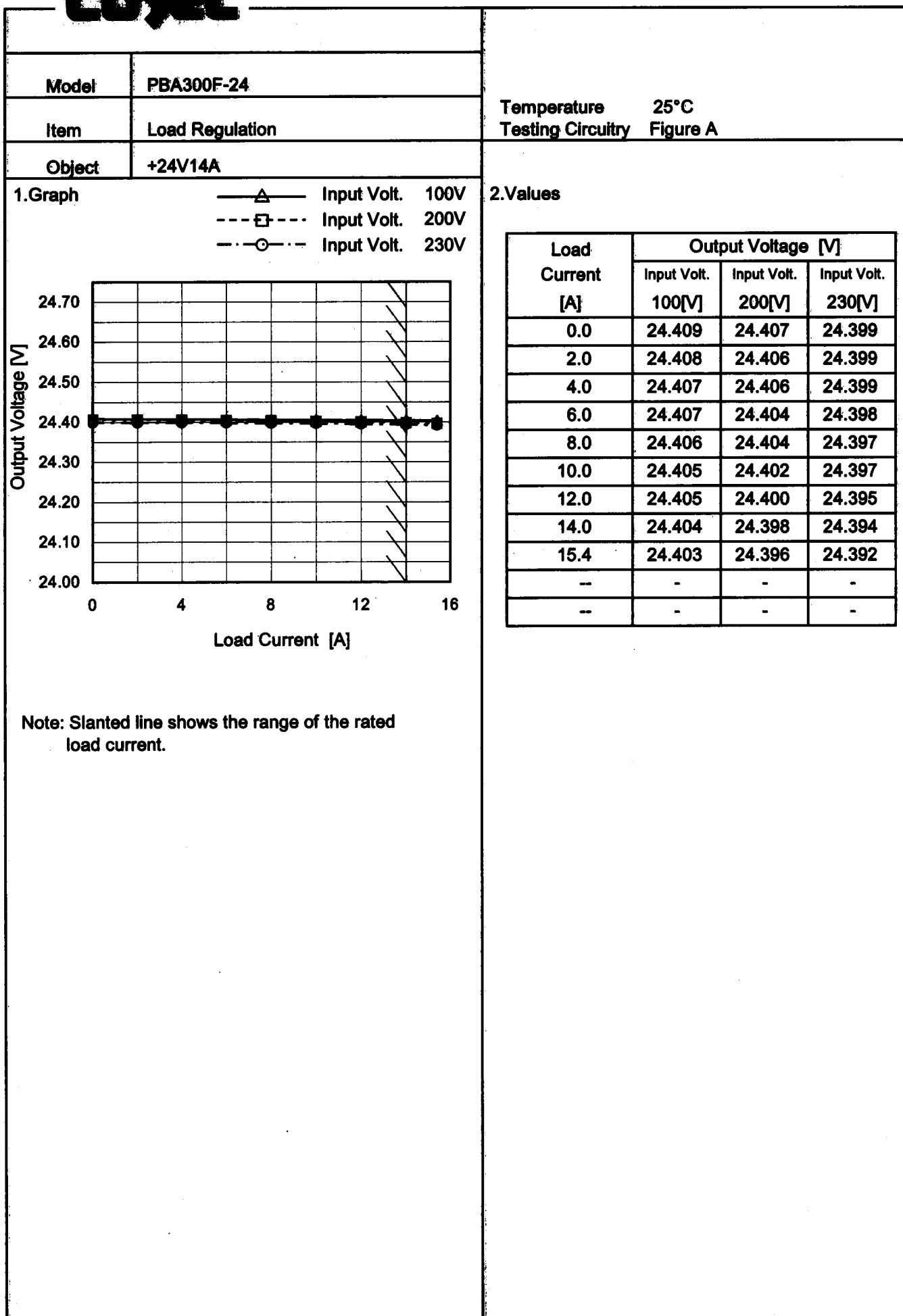
Leakage current value is concluded after measuring both phases of AC input and by choosing the larger one.

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-24	Temperature	25°C
Item	Dynamic Load Response 動的負荷変動	Testing Circuitry	Figure A
Object	+24V14A		

Input Volt. 100 V

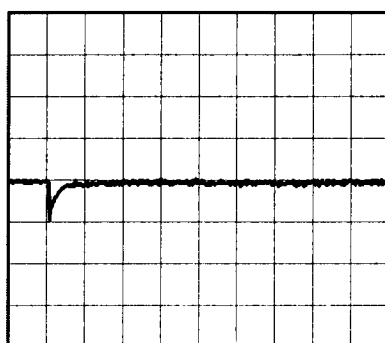
Cycle 1000 ms

Load Current

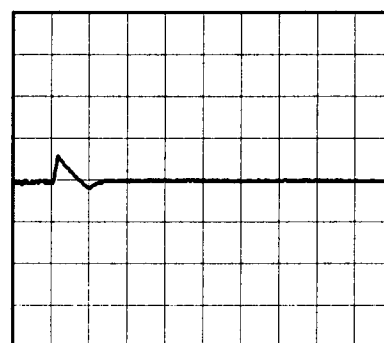
Min. Load (0A) ←→

Load 100% (14A)

100 mV/div



10 ms/div

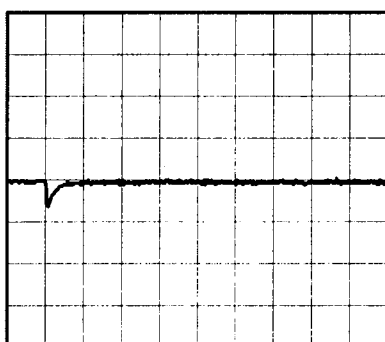


10 ms/div

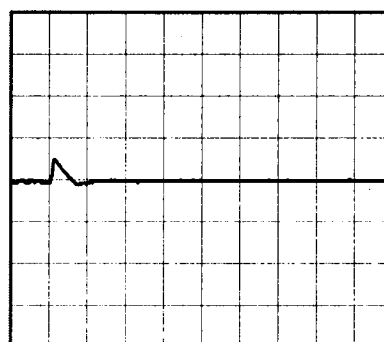
Min. Load (0A) ←→

Load 50% (7A)

100 mV/div



10 ms/div



10 ms/div

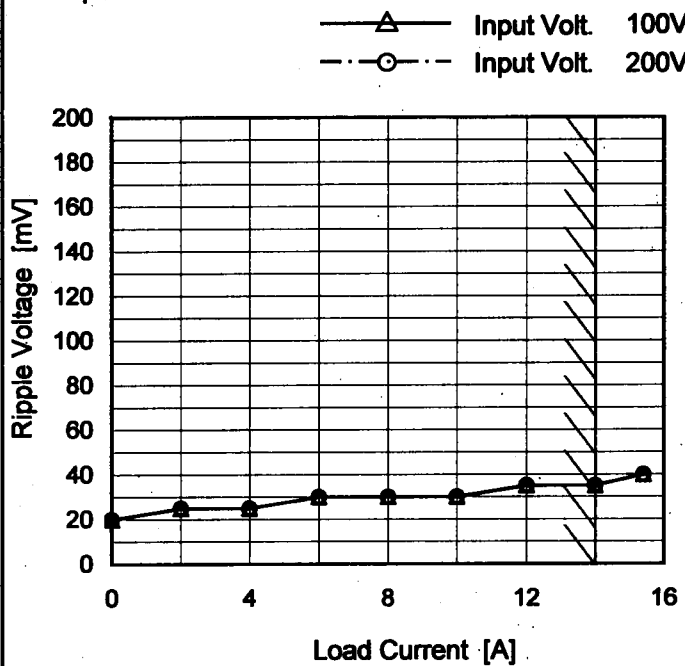
* The characteristic of AC200V is equal.

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Model	PBA300F-24
Item	Ripple Voltage (by Load Current)
Object	+24V14A

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]
0.0	20	20
2.0	25	25
4.0	25	25
6.0	30	30
8.0	30	30
10.0	30	30
12.0	35	35
14.0	35	35
15.4	40	40
—	—	—
—	—	—

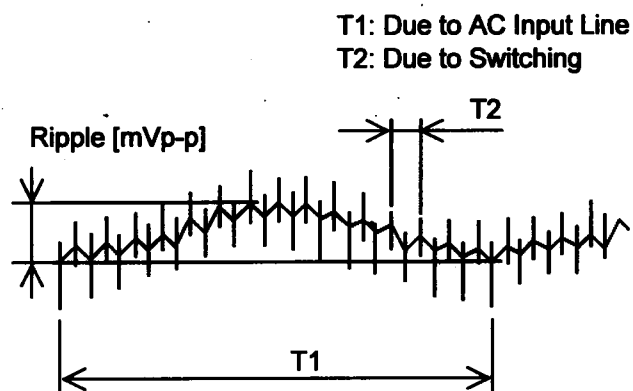


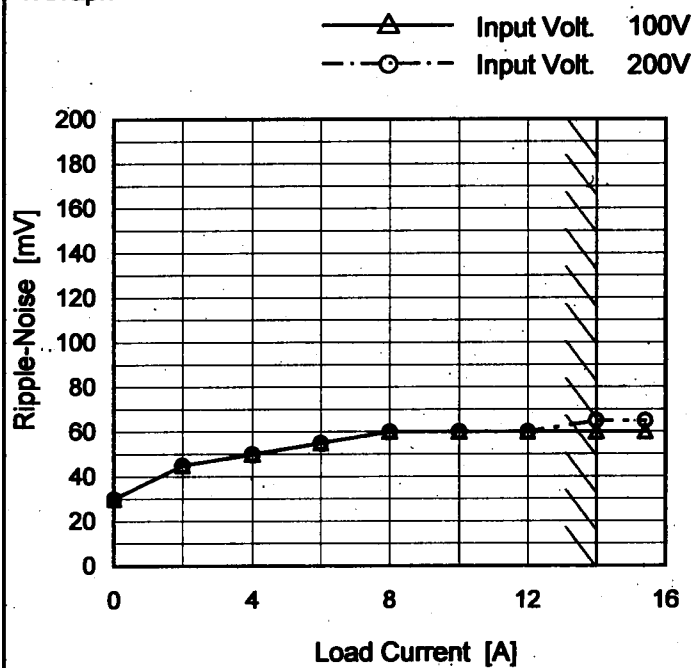
Fig. Complex Ripple Wave Form

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Model	PBA300F-24
Item	Ripple-Noise
Object	+24V14A

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	30	30
2.0	45	45
4.0	50	50
6.0	55	55
8.0	60	60
10.0	60	60
12.0	60	60
14.0	60	65
15.4	60	65
—	—	—
—	—	—

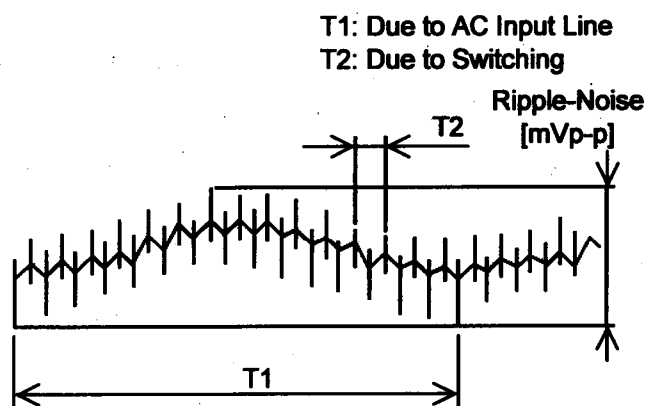


Fig. Complex Ripple Wave Form

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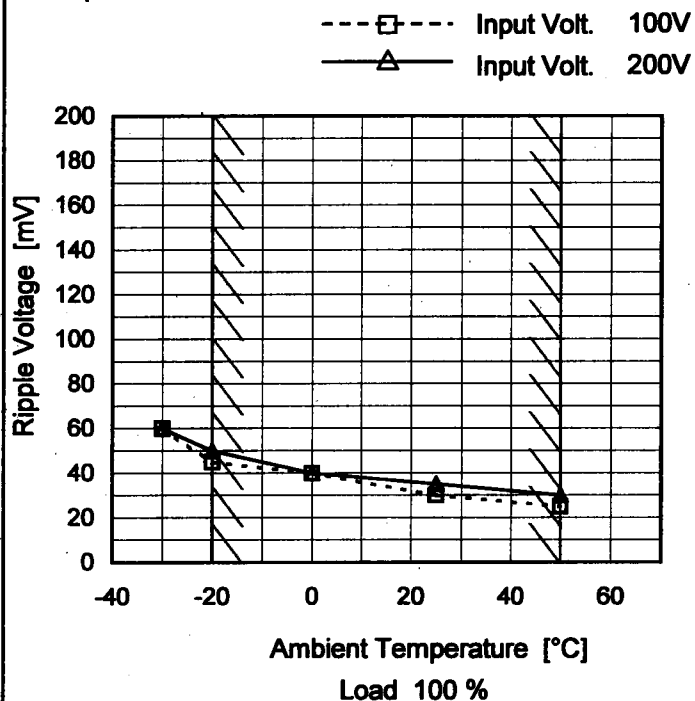
Model PBA300F-24

Item Ripple Voltage (by Ambient Temp.)

Object +24V14A

Testing Circuitry Figure A

1. Graph



Measured by 20 MHz Oscilloscope.

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

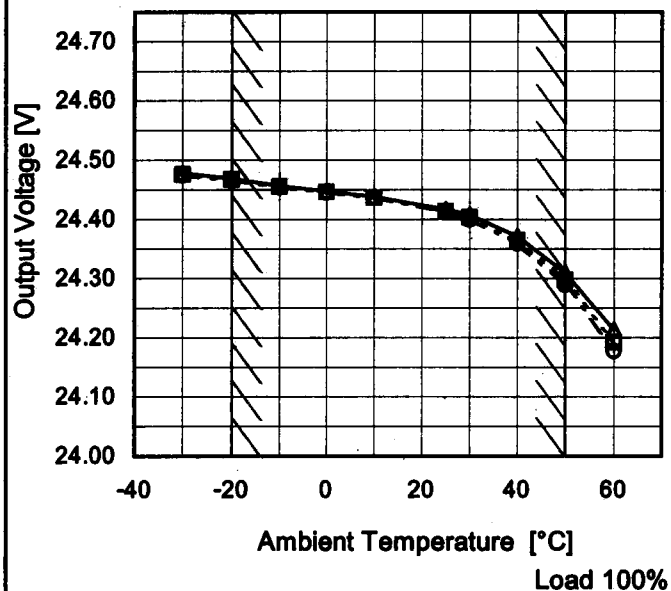
2. Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Input Volt. 100 [V]	Input Volt. 200 [V]
-30	60	60
-20	45	50
0	40	40
25	30	35
50	25	30
—	—	—
—	—	—
—	—	—
—	—	—
—	—	—
—	—	—

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Model	PBA300F-24
Item	Ambient Temperature Drift
Object	+24V14A

- 1.Graph
- △— Input Volt. 100V
 - Input Volt. 200V
 - Input Volt. 230V



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

Testing Circuitry Figure A

2.Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
-30	24.478	24.476	24.475
-20	24.469	24.468	24.466
-10	24.457	24.456	24.455
0	24.448	24.447	24.445
10	24.438	24.437	24.437
25	24.417	24.414	24.412
30	24.408	24.403	24.400
40	24.372	24.365	24.360
50	24.310	24.298	24.289
60	24.213	24.192	24.177
—	-	-	-

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		Testing Circuitry Figure A
Model	PBA300F-24	
Item	Output Voltage Accuracy	
Object	+24V14A	

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 - 14A

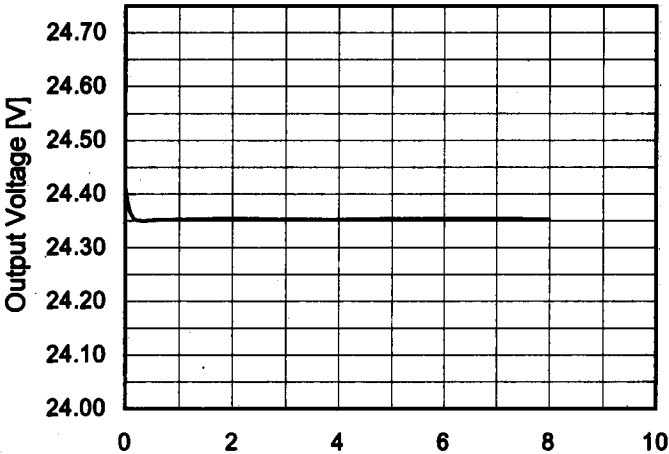
* Output Voltage Accuracy = $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

* 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	-20	264	0	24.469	±107	±0.4
Minimum Voltage	50	264	14	24.256		

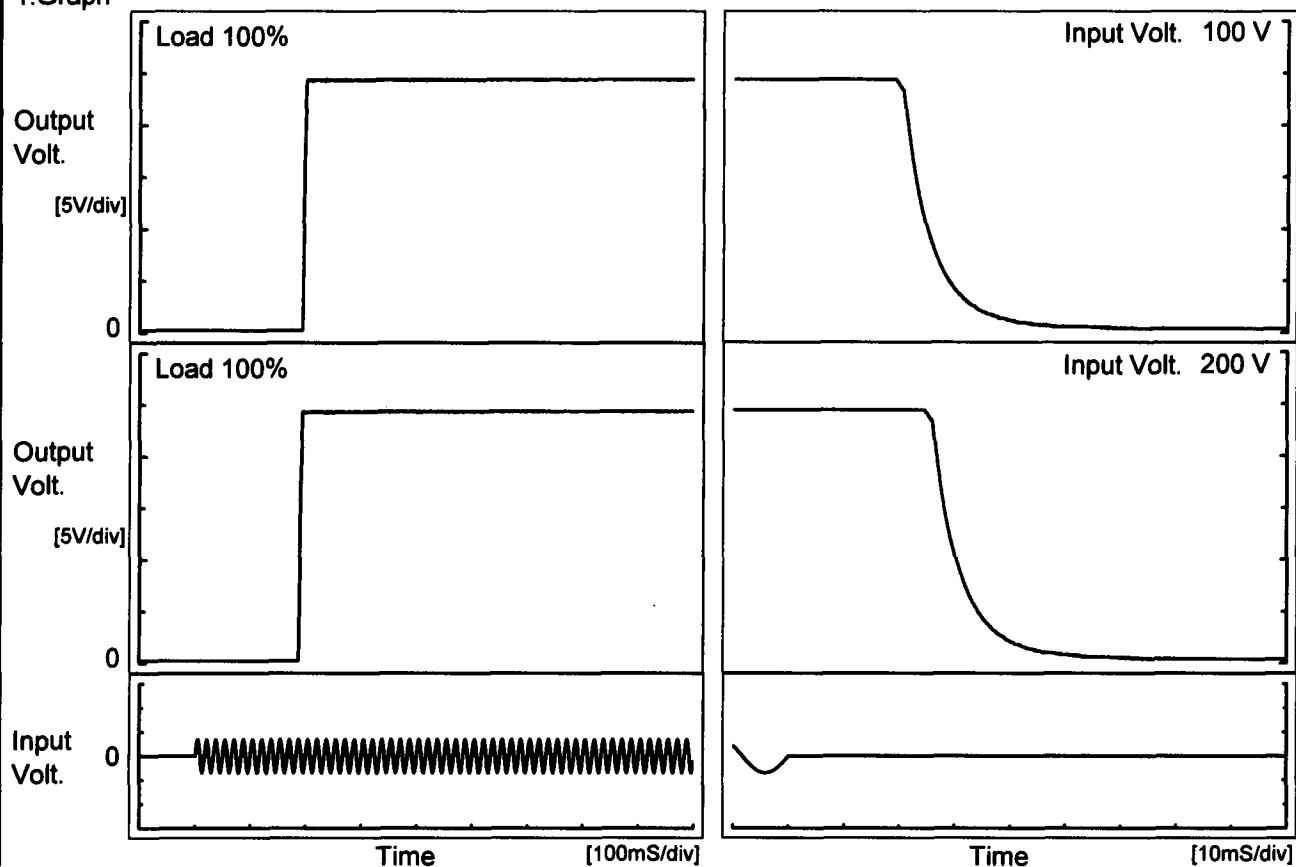
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Model	PBA300F-24																								
Item	Time Lapse Drift	Temperature	25°C																						
Object	+24V14A	Testing Circuitry	Figure A																						
1.Graph		2.Values																							
<div><p>Output Voltage [V]</p><p>Time [H]</p><p>Input Volt. 100V</p><p>Load 100%</p></div>		<table><tr><th>Time since start [H]</th><th>Output Voltage [V]</th></tr><tr><td>0.0</td><td>24.413</td></tr><tr><td>0.5</td><td>24.352</td></tr><tr><td>1.0</td><td>24.353</td></tr><tr><td>2.0</td><td>24.355</td></tr><tr><td>3.0</td><td>24.353</td></tr><tr><td>4.0</td><td>24.353</td></tr><tr><td>5.0</td><td>24.354</td></tr><tr><td>6.0</td><td>24.354</td></tr><tr><td>7.0</td><td>24.354</td></tr><tr><td>8.0</td><td>24.354</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	24.413	0.5	24.352	1.0	24.353	2.0	24.355	3.0	24.353	4.0	24.353	5.0	24.354	6.0	24.354	7.0	24.354	8.0	24.354
Time since start [H]	Output Voltage [V]																								
0.0	24.413																								
0.5	24.352																								
1.0	24.353																								
2.0	24.355																								
3.0	24.353																								
4.0	24.353																								
5.0	24.354																								
6.0	24.354																								
7.0	24.354																								
8.0	24.354																								
* The characteristic of AC200V is equal.																									

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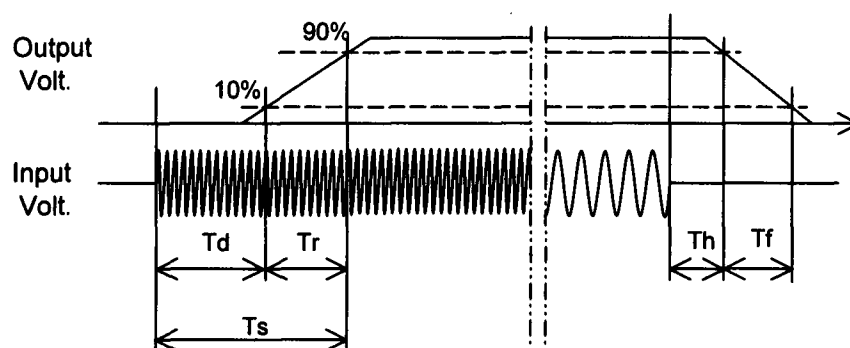
Model	PBA300F-24	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	+24V14A		

1. Graph



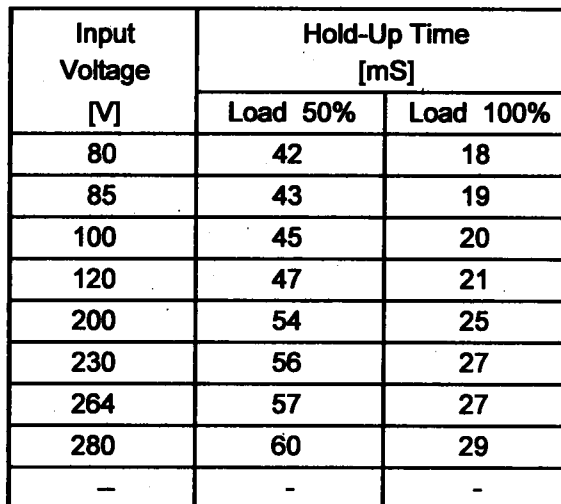
2. Values

Input Volt.	Time	Td	Tr	Ts	Th	Tf
100 V		195.0	5.0	200.0	20.9	12.1
200 V		188.0	5.5	193.5	26.3	12.2



Temperature 25°C
Testing Circuitry Figure A

2.Values



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Model

PBA300F-24

Item

Instantaneous Interruption Compensation

Object

+24V14A

Temperature

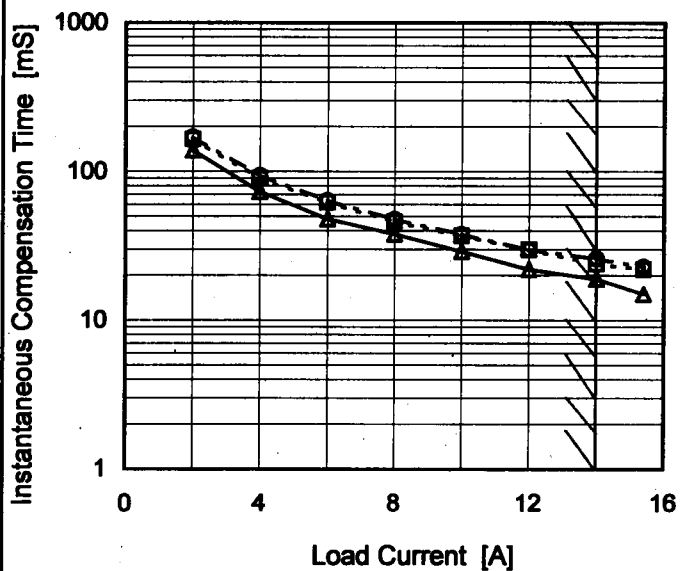
25°C

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.

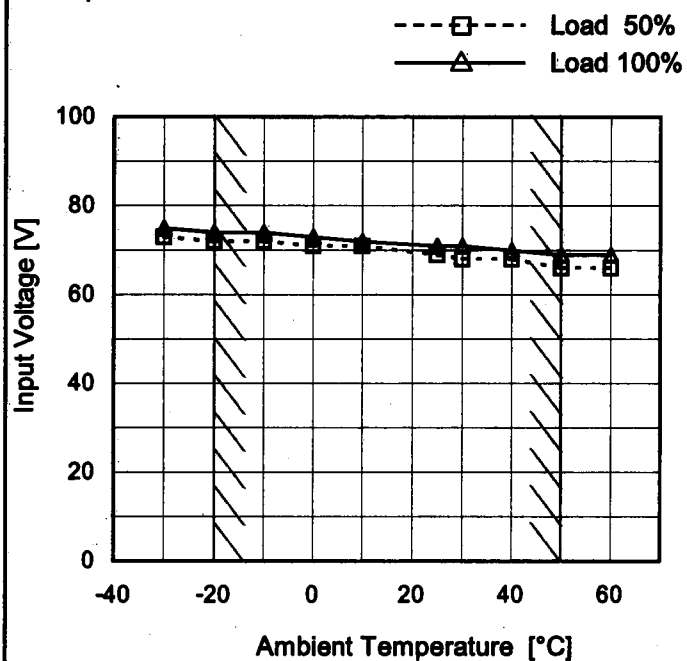
2. Values

Load Current [A]	Time [mS]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.0	-	-	-
2.0	139	165	171
4.0	73	90	94
6.0	48	62	64
8.0	38	46	48
10.0	29	37	38
12.0	22	30	30
14.0	19	24	26
15.4	15	22	23
—	—	—	—
—	—	—	—

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Model	PBA300F-24
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+24V14A

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	73	75
-20	72	74
-10	72	74
0	71	73
10	71	72
25	69	71
30	68	71
40	68	70
50	66	69
60	66	69
--	-	-

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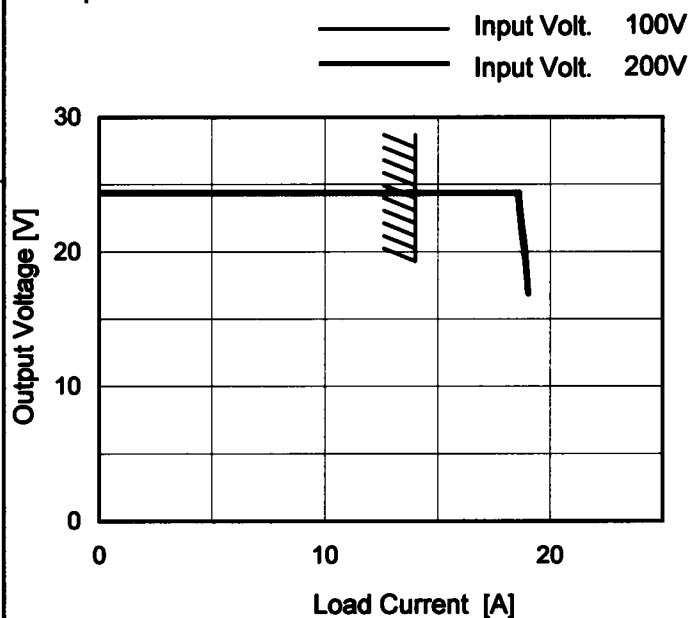
Model PBA300F-24

Item Overcurrent Protection

Object +24V14A

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 16.8V to 0V.

2. Values

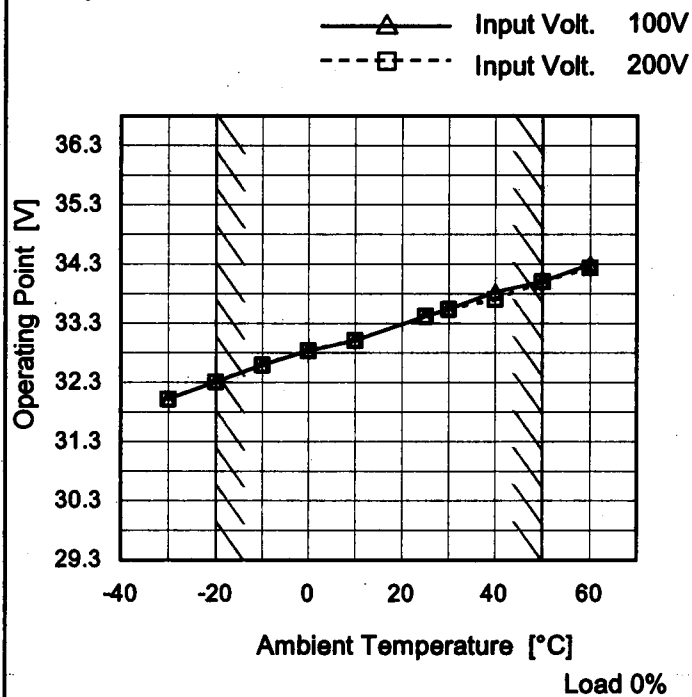
Output Voltage [V]	Load Current [A]	
	Input Volt. 100[V]	Input Volt. 200[V]
24.0	18.57	18.61
22.8	18.61	18.68
21.6	18.68	18.77
19.2	18.87	18.91
16.8	19.01	19.02
—	—	—
—	—	—
—	—	—
—	—	—
—	—	—
—	—	—
—	—	—
—	—	—

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Model	PBA300F-24
Item	Overvoltage Protection
Object	+24V14A

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]
-30	32.05	32.05
-20	32.34	32.34
-10	32.63	32.63
0	32.87	32.87
10	33.04	33.04
25	33.45	33.45
30	33.57	33.57
40	33.86	33.74
50	34.04	34.04
60	34.33	34.27
--	-	-

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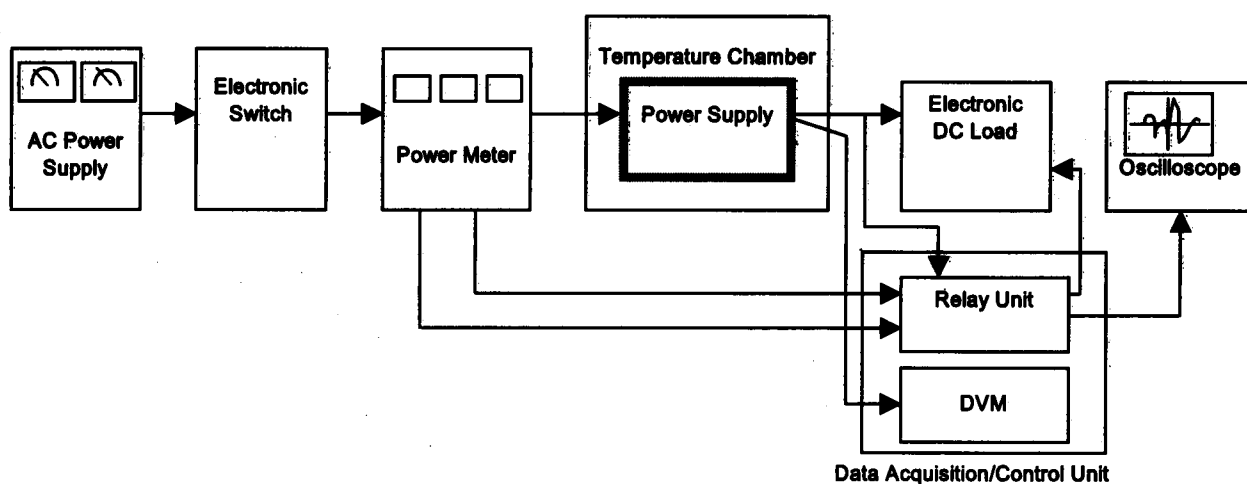


Figure A

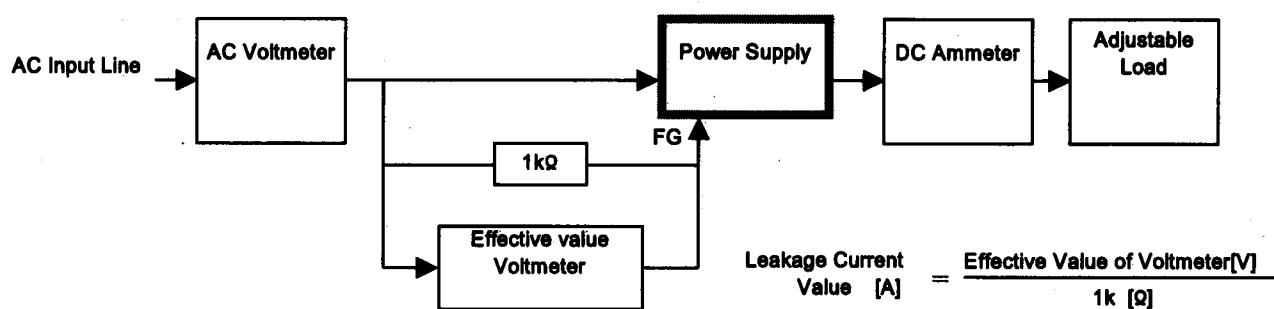


Figure B (DEN-AN)

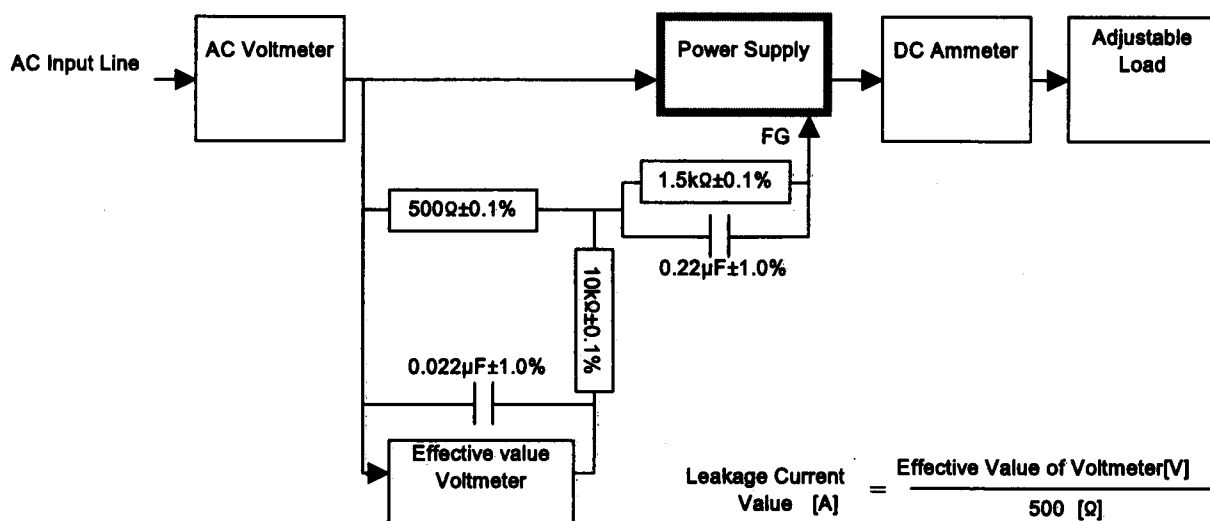


Figure B (IEC60950)