



TEST DATA OF PBA100F-12

Regulated DC Power Supply
Mar.30. 2004

Approved by : Kuniaki Nagahara
Kuniaki Nagahara Design Manager

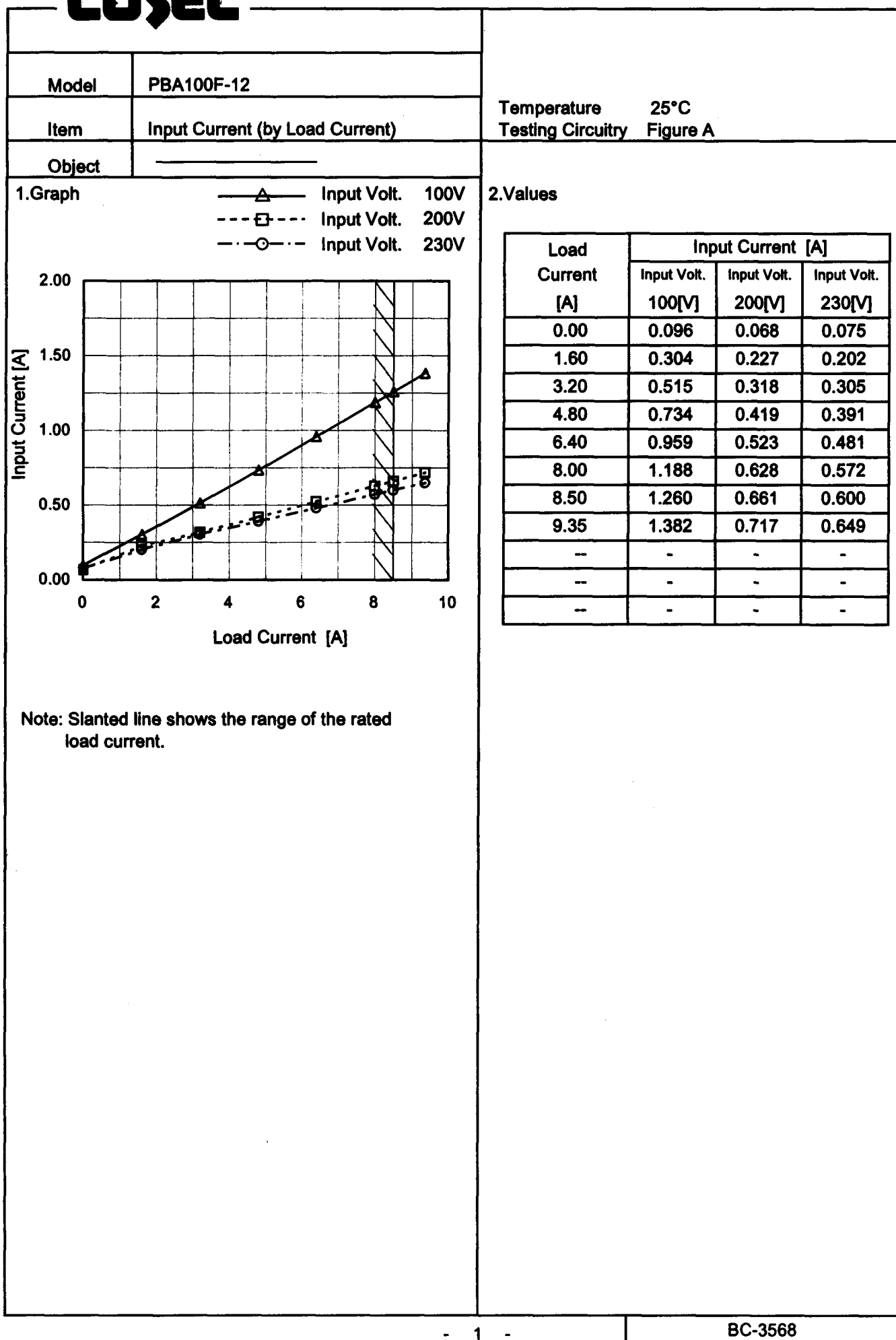
Prepared by : Katsumi Ishikawa
Katsumi Ishikawa Design Engineer

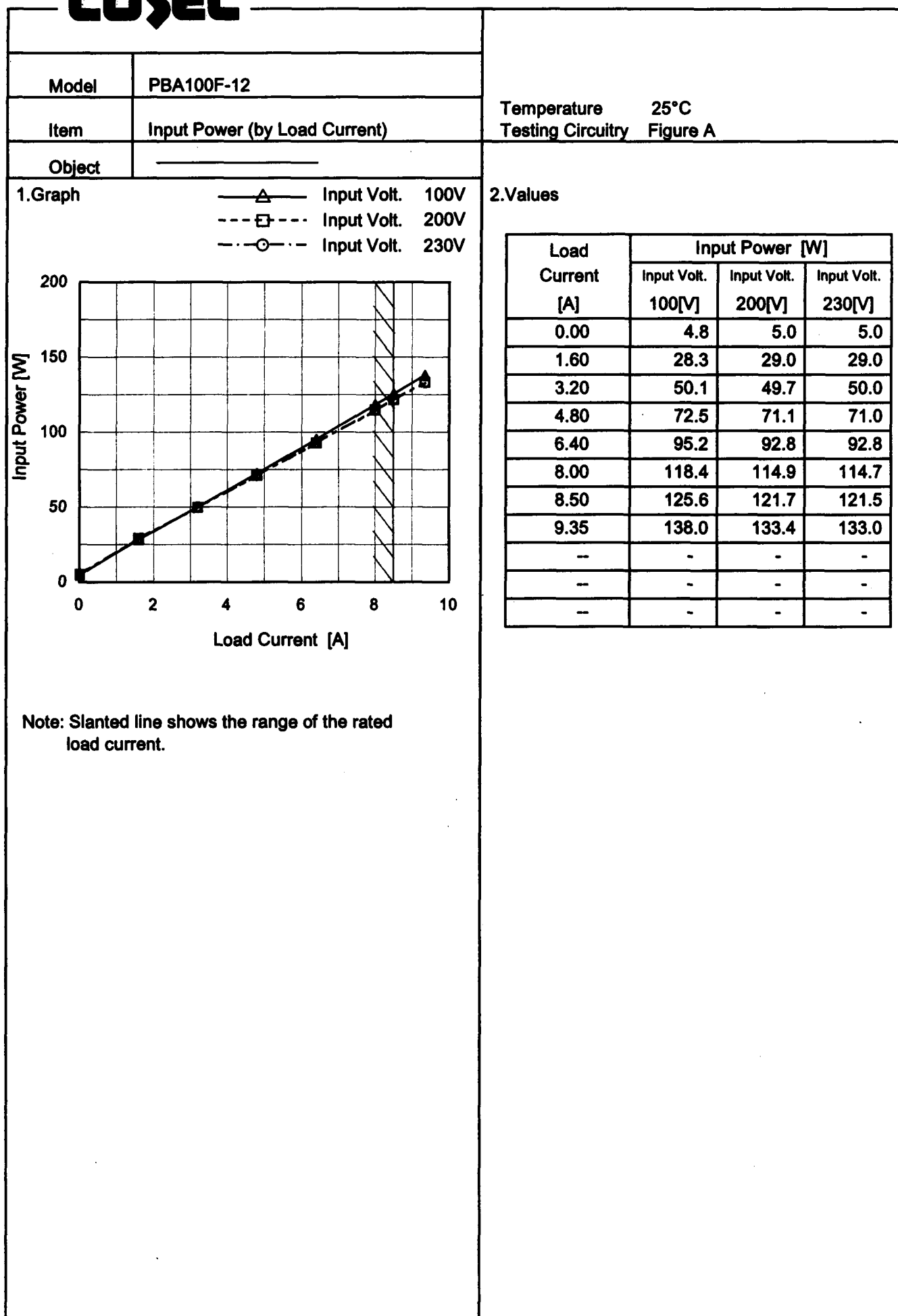
COSEL CO.,LTD.

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Model		PBA100F-12	
Item		Efficiency (by Input Voltage)	
Object			

1.Graph

Load 50%

Load 100%

Efficiency [%]

86

78

70

62

54

46

38

30

50

100

150

200

250

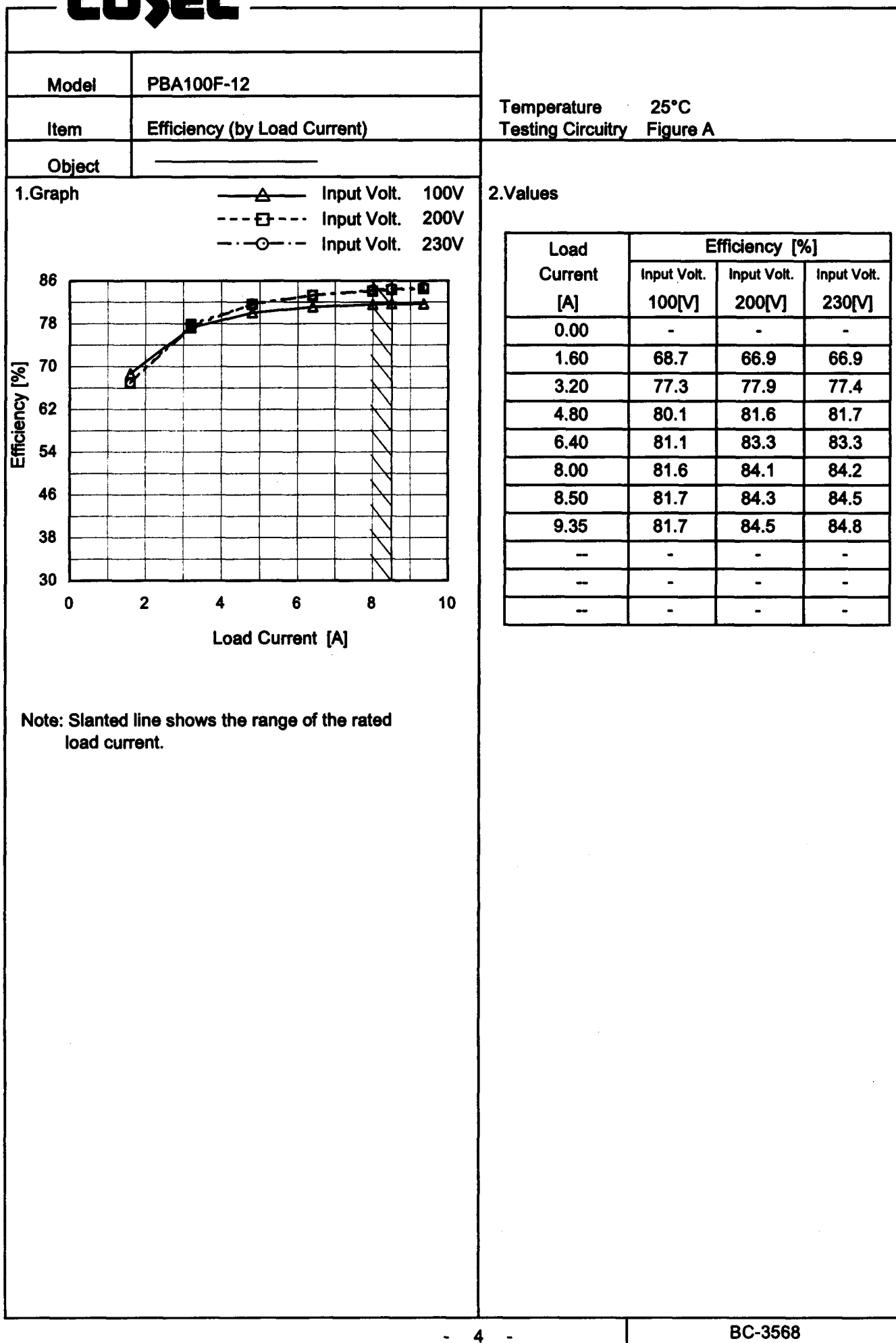
300

Input Voltage [V]

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

2.Values

Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
75	78.0	79.3
85	78.8	80.5
100	79.5	81.7
120	80.1	82.7
200	80.6	84.4
230	80.2	84.6
264	80.2	84.6
280	80.2	84.6
--	-	-

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Model

PBA100F-12

Item

Power Factor (by Input Voltage)

Object

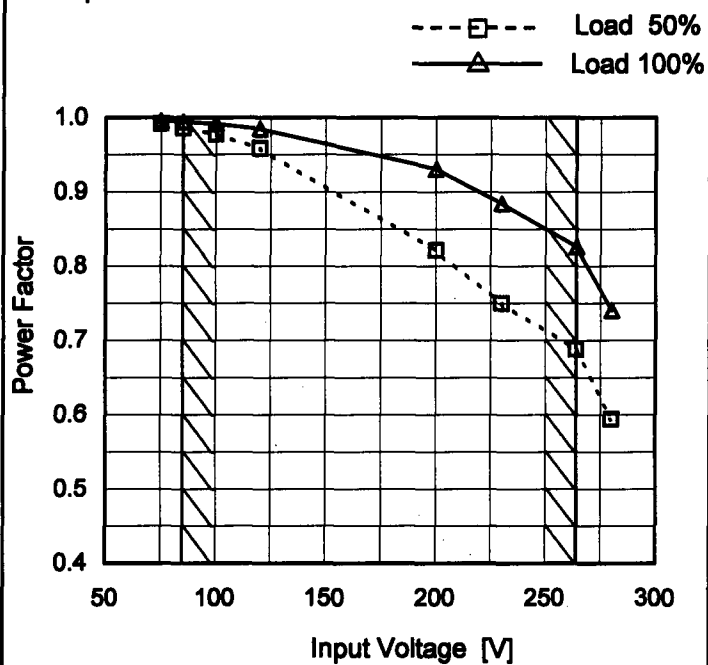
Temperature

25°C

Testing Circuitry

Figure A

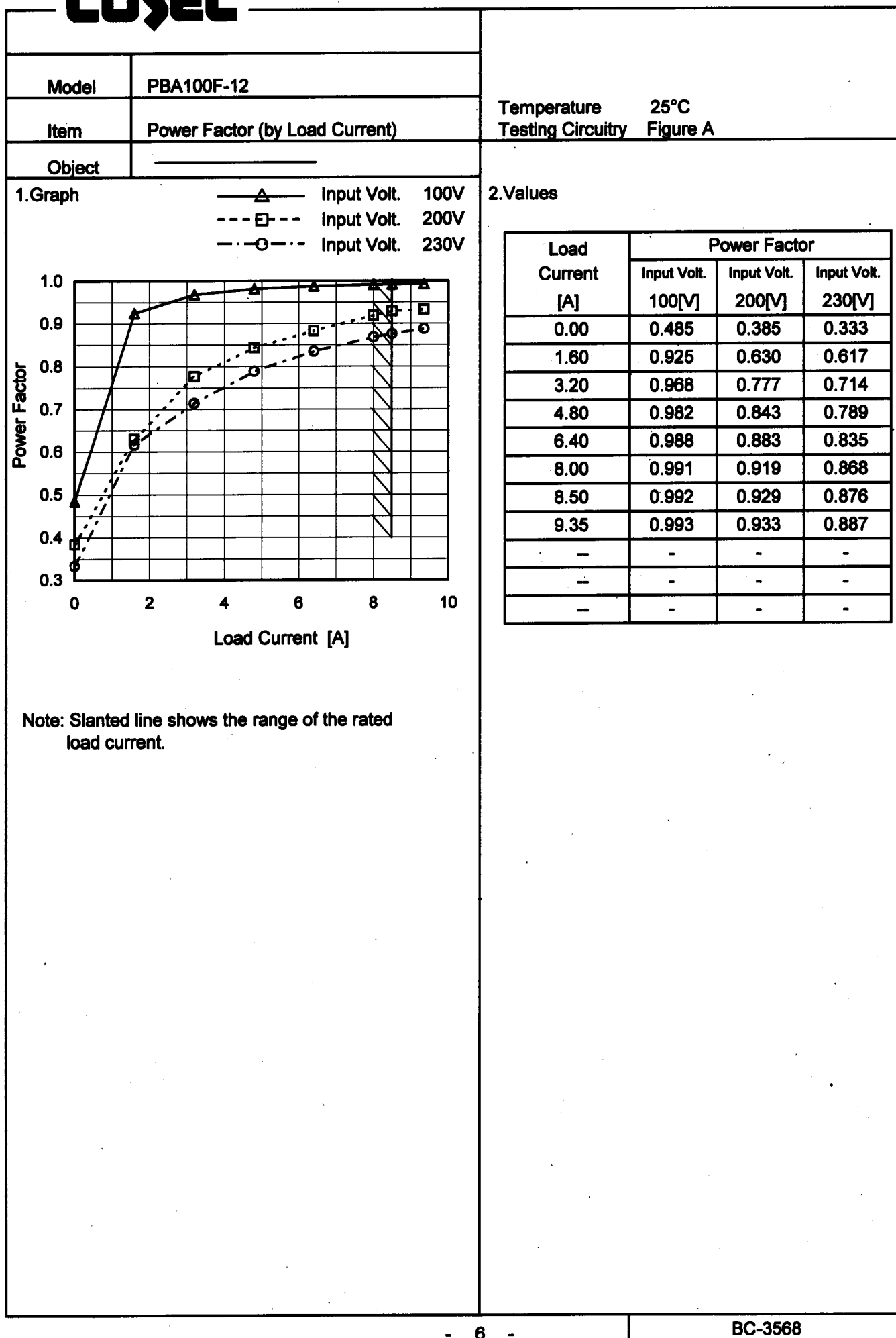
1. Graph



2. Values

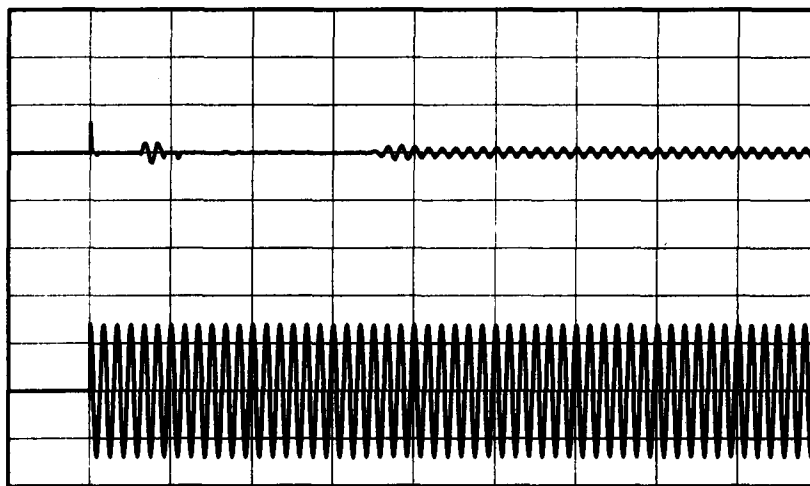
Input Voltage [V]	Power Factor	
	Load 50%	Load 100%
75	0.992	0.995
85	0.986	0.994
100	0.978	0.991
120	0.958	0.984
200	0.822	0.931
230	0.750	0.885
264	0.688	0.826
280	0.594	0.740
—	—	—

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Model	PBA100F-12	Temperature	25°C
Item	Inrush Current	Testing Circuitry	Figure A
Object	_____		

Input
Current
[20A/div]Input
Voltage
[100V/div]

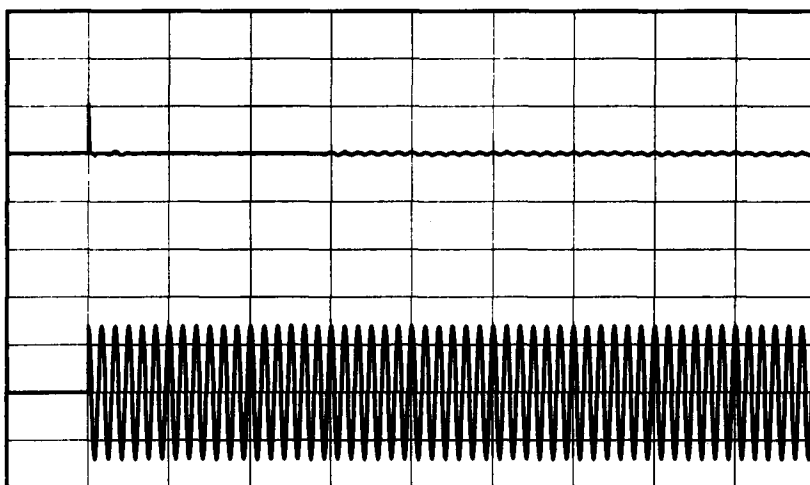
Time

[100mS/div]

Input Voltage 100 V

Frequency 60 Hz

Load 100 %

Primary inrush current :
12.5 ASecondary inrush current :
4.3 AInput
Current
[20A/div]Input
Voltage
[200V/div]

Time

[100mS/div]

Input Voltage 200 V

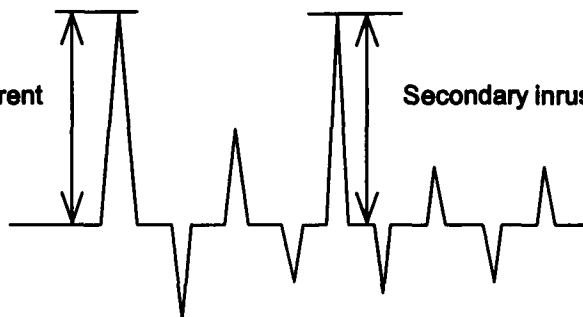
Frequency 60 Hz

Load 100 %

Primary inrush current :
20.5 ASecondary inrush current :
0.9 A

Primary inrush current

Secondary inrush current



		Temperature 25°C Testing Circuitry Figure B
Model	PBA100F-12	
Item	Leakage Current	
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

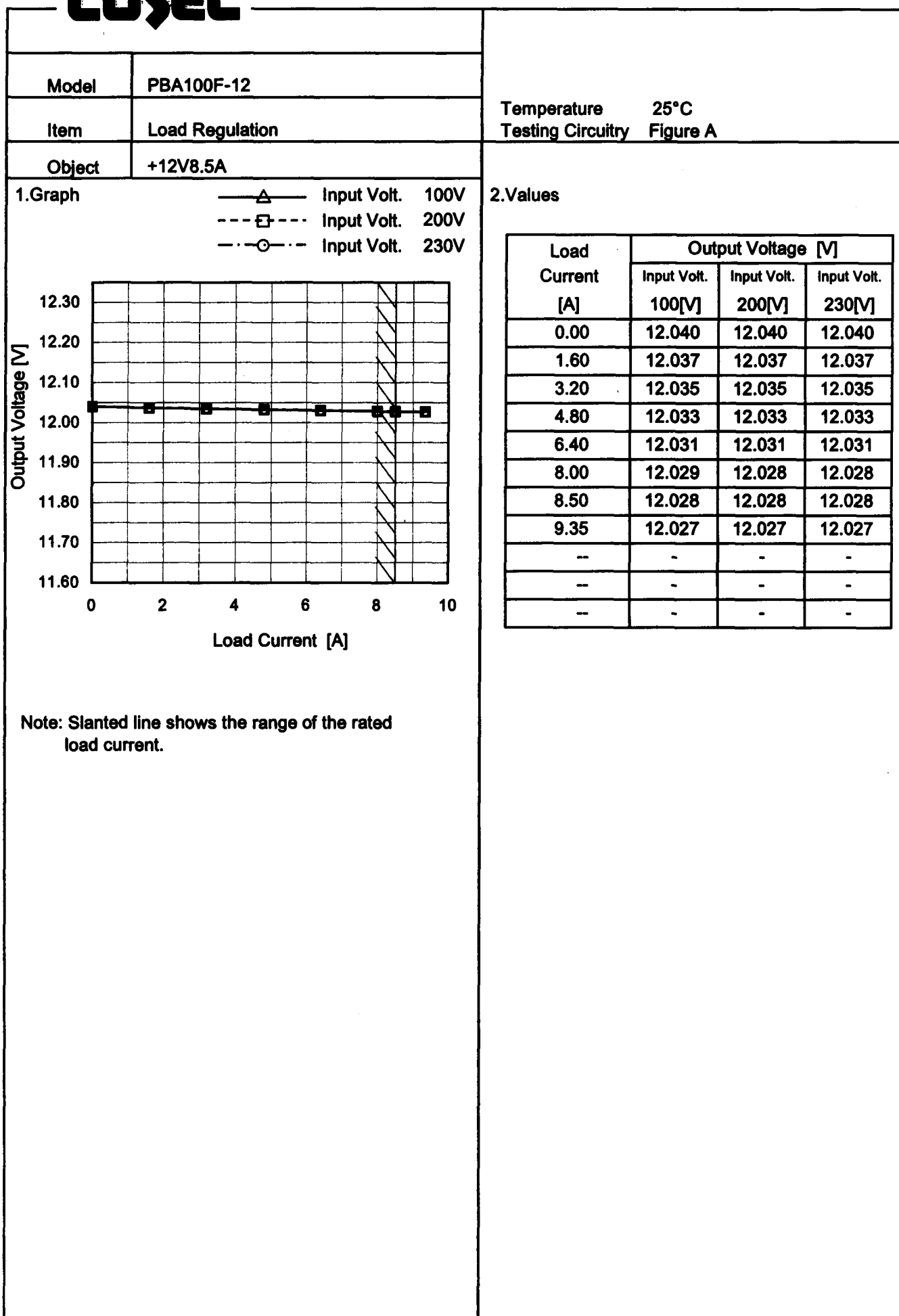
The value for "One phase" is the reference value only.

2.Condition

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

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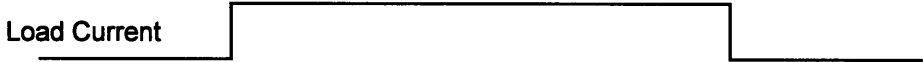
Model	PBA100F-12	Temperature 25°C Testing Circuitry Figure A																																	
Item	Line Regulation																																		
Object	+12V8.5A																																		
1.Graph		2.Values																																	
<div><div><div>---□---</div><div>Load 50%</div></div><div><div>—△—</div><div>Load 100%</div></div></div> <p>Note: Slanted line shows the range of the rated input voltage.</p>		<table><tr><th rowspan="2">Input Voltage [V]</th><th colspan="2">Output Voltage [V]</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr><tr><td>75</td><td>12.035</td><td>12.029</td></tr><tr><td>85</td><td>12.035</td><td>12.029</td></tr><tr><td>100</td><td>12.035</td><td>12.029</td></tr><tr><td>120</td><td>12.035</td><td>12.029</td></tr><tr><td>200</td><td>12.035</td><td>12.029</td></tr><tr><td>230</td><td>12.035</td><td>12.029</td></tr><tr><td>264</td><td>12.035</td><td>12.029</td></tr><tr><td>280</td><td>12.035</td><td>12.029</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></table>		Input Voltage [V]	Output Voltage [V]		Load 50%	Load 100%	75	12.035	12.029	85	12.035	12.029	100	12.035	12.029	120	12.035	12.029	200	12.035	12.029	230	12.035	12.029	264	12.035	12.029	280	12.035	12.029	--	-	-
Input Voltage [V]	Output Voltage [V]																																		
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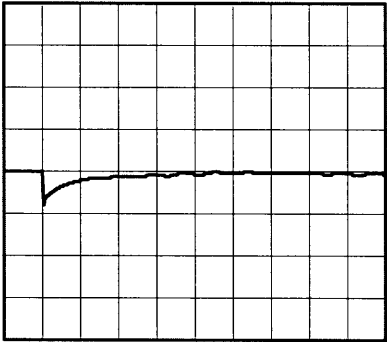
Model	PBA100F-12		
Item	Dynamic Load Response	Temperature	25°C
Object	+12V8.5A	Testing Circuitry	Figure A

Input Volt. 100 V
Cycle 1000 ms

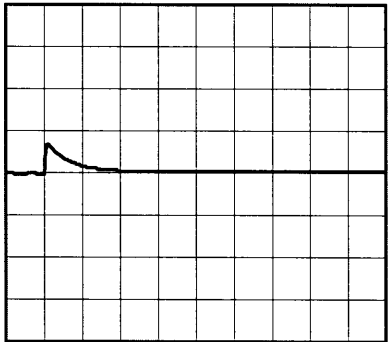


Min. Load (0A) ←→
Load 100% (8.5A)

200 mV/div



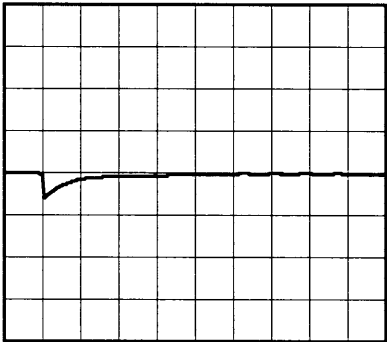
10 ms/div



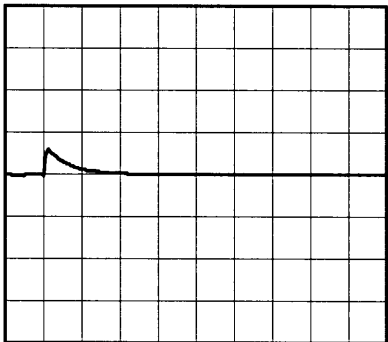
10 ms/div

Min. Load (0A) ←→
Load 50% (4.25A)

200 mV/div



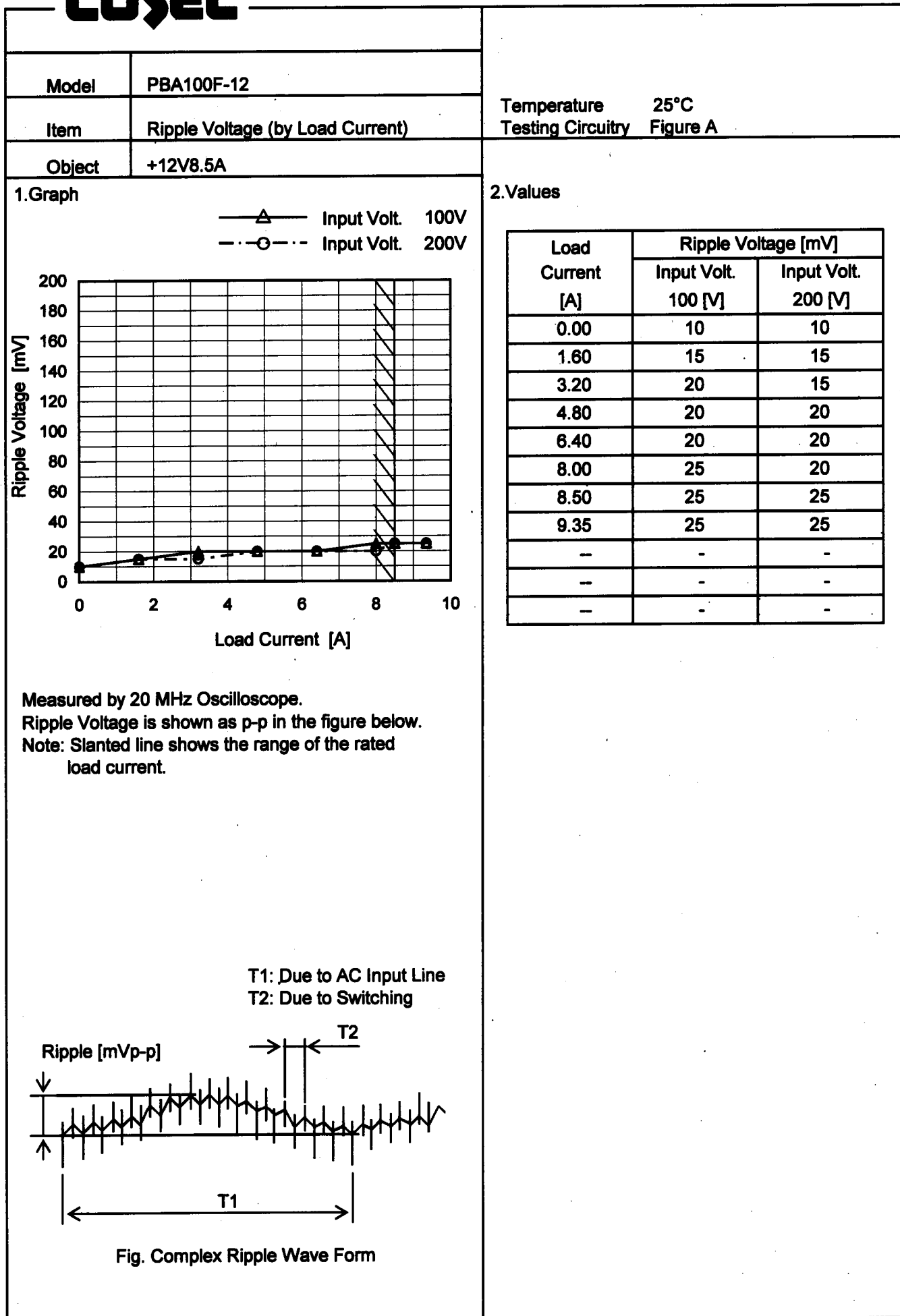
10 ms/div



10 ms/div

* The characteristic of AC200V is equal.

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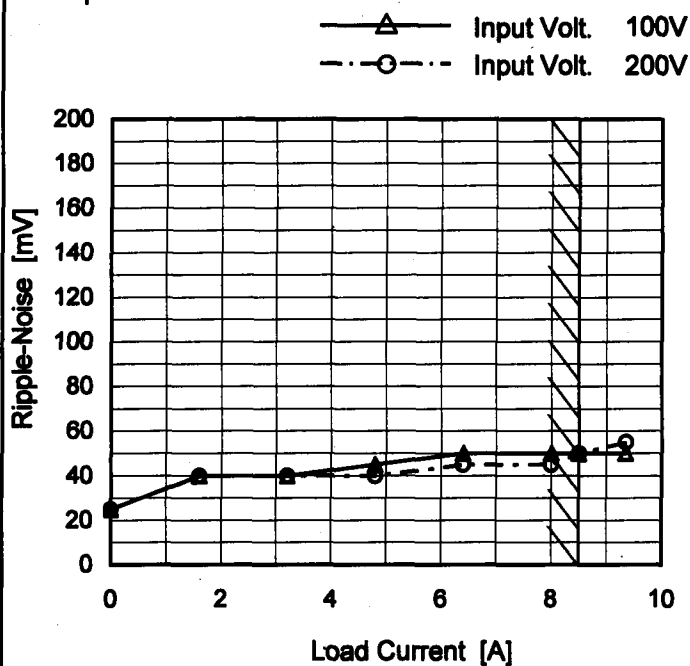


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Model	PBA100F-12
Item	Ripple-Noise
Object	+12V8.5A

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]
0.00	25	25
1.60	40	40
3.20	40	40
4.80	45	40
6.40	50	45
8.00	50	45
8.50	50	50
9.35	50	55
—	—	—
—	—	—
—	—	—

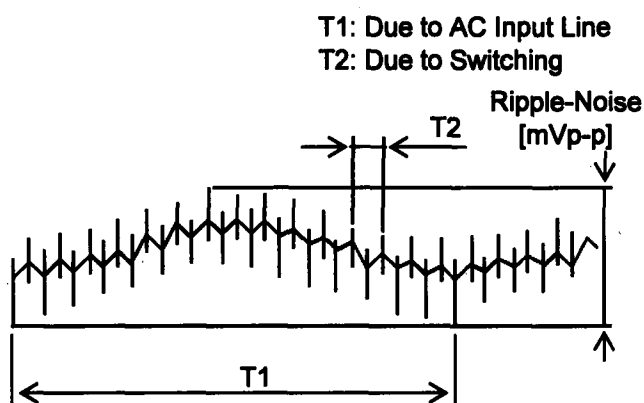
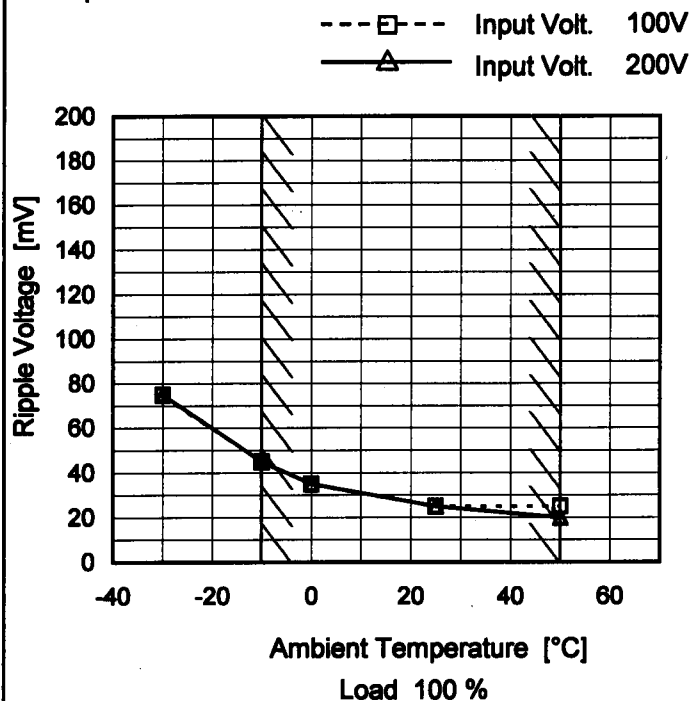


Fig. Complex Ripple Wave Form

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Model	PBA100F-12
Item	Ripple Voltage (by Ambient Temp.)
Object	+12V8.5A

1. Graph



Measured by 20 MHz Oscilloscope.

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

Testing Circuitry Figure A

2. Values.

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Input Volt. 100 [V]	Input Volt. 200 [V]
-30	75	75
-10	45	45
0	35	35
25	25	25
50	25	20
—	—	—
—	—	—
—	—	—
—	—	—
—	—	—
—	—	—

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		Testing Circuitry Figure A
Model	PBA100F-12	
Item	Output Voltage Accuracy	
Object	+12V8.5A	

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 - 8.5A

* 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]	Ratio [%]
Maximum Voltage	50	264	0	12.053	±25	±0.2
Minimum Voltage	-10	85	8.5	12.004		

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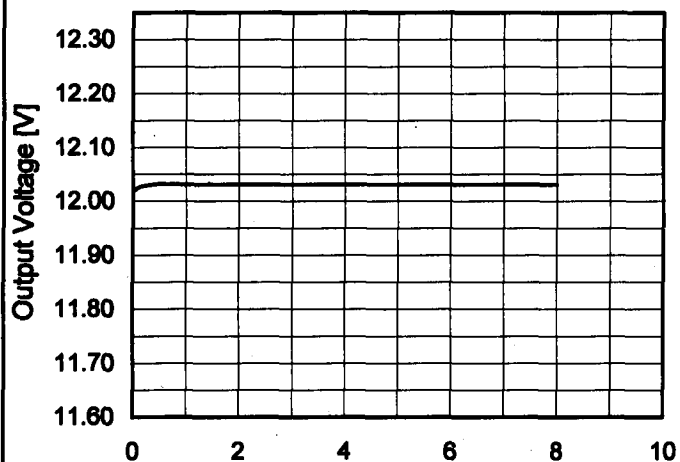
Model PBA100F-12

Item Time Lapse Drift

Object +12V8.5A

Temperature 25°C
Testing Circuitry Figure A

1. Graph



Time [H]

Input Volt. 100V

Load 100%

* The characteristic of AC200V is equal.

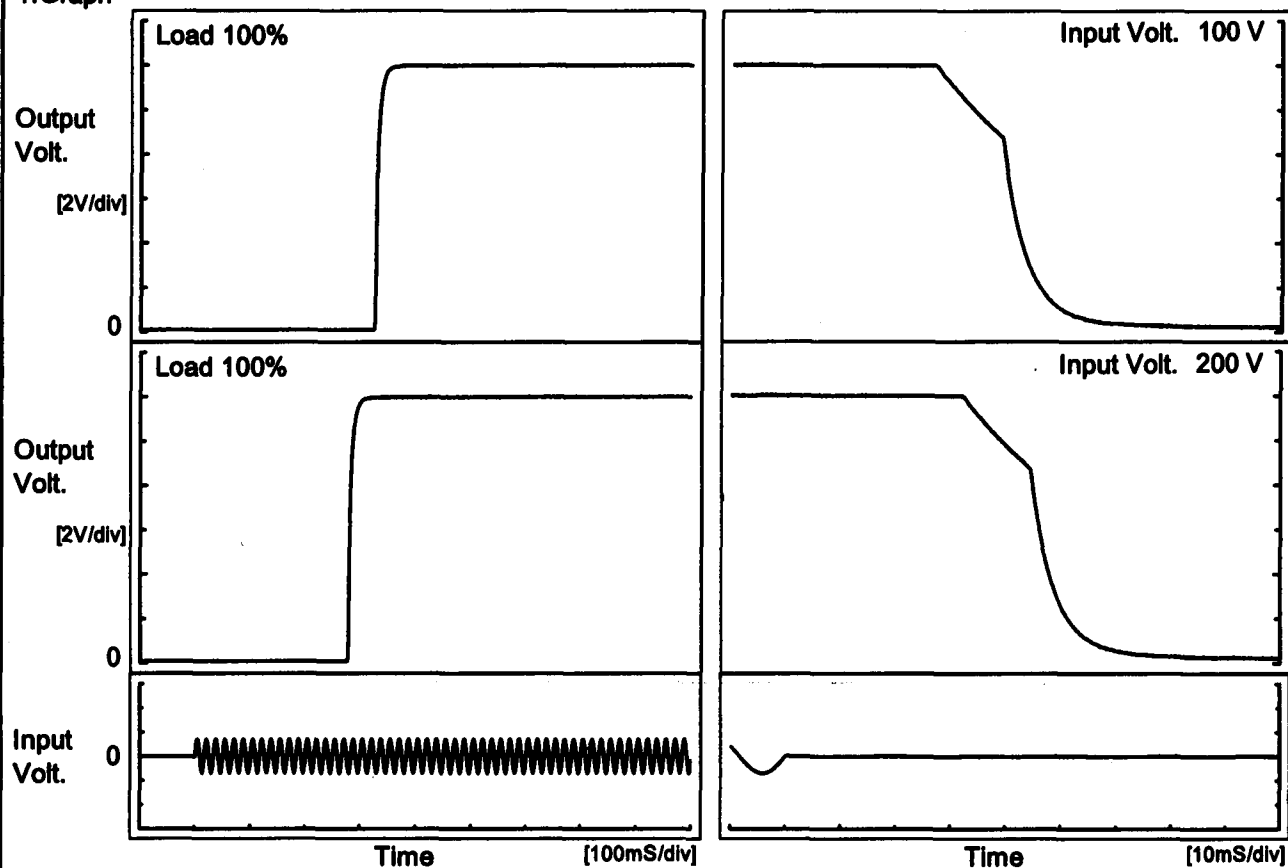
2. Values

Time since start [H]	Output Voltage [V]
0.0	12.020
0.5	12.032
1.0	12.031
2.0	12.031
3.0	12.031
4.0	12.031
5.0	12.031
6.0	12.031
7.0	12.031
8.0	12.031

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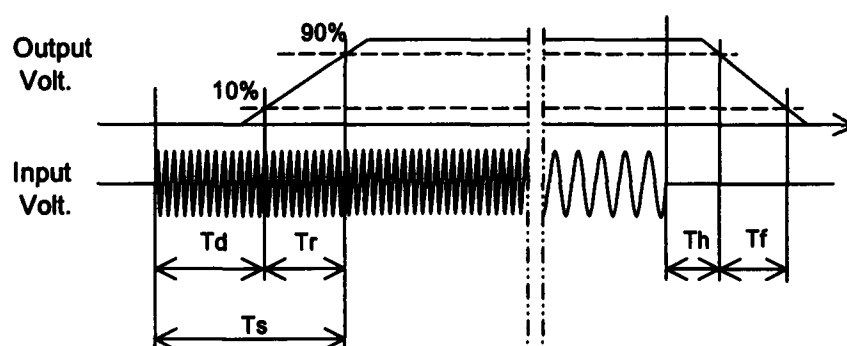
Model	PBA100F-12	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	+12V8.5A		

1. Graph



2. Values

Input Volt. \ Time	Td	Tr	Ts	Th	Tf
100 V	325.5	12.5	338.0	30.7	17.8
200 V	278.5	12.0	290.5	36.0	17.7



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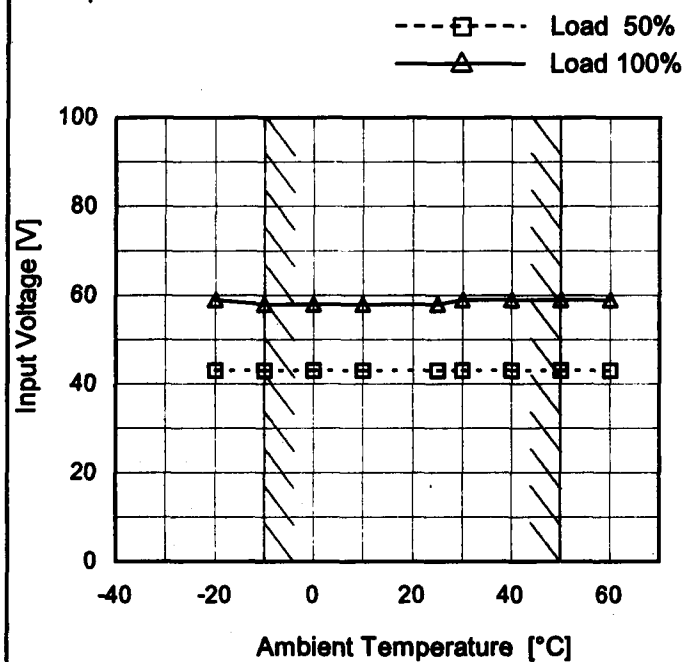
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Model	PBA100F-12																																																					
Item	Instantaneous Interruption Compensation	Temperature	25°C																																																			
Object	+12V8.5A	Testing Circuitry	Figure A																																																			
1.Graph		2.Values																																																				
<div><div><div>—△—</div><div>Input Volt.</div><div>100V</div></div><div><div>---□---</div><div>Input Volt.</div><div>200V</div></div><div><div>-·-○-·-</div><div>Input Volt.</div><div>230V</div></div></div> <div>Instantaneous Compensation Time [mS]</div> <div>Load Current [A]</div>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Time [mS]</th></tr><tr><th>Input Volt. 100[V]</th><th>Input Volt. 200[V]</th><th>Input Volt. 230[V]</th></tr><tr><td>0.00</td><td>-</td><td>-</td><td>-</td></tr><tr><td>1.60</td><td>141</td><td>177</td><td>195</td></tr><tr><td>3.20</td><td>82</td><td>92</td><td>94</td></tr><tr><td>4.80</td><td>54</td><td>61</td><td>62</td></tr><tr><td>6.40</td><td>39</td><td>45</td><td>46</td></tr><tr><td>8.00</td><td>30</td><td>36</td><td>36</td></tr><tr><td>8.50</td><td>27</td><td>32</td><td>32</td></tr><tr><td>9.35</td><td>23</td><td>30</td><td>31</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr></table>		Load Current [A]	Time [mS]			Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]	0.00	-	-	-	1.60	141	177	195	3.20	82	92	94	4.80	54	61	62	6.40	39	45	46	8.00	30	36	36	8.50	27	32	32	9.35	23	30	31	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Time [mS]																																																					
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1.60	141	177	195																																																			
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Note: Slanted line shows the range of the rated load current.																																																						

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Model	PBA100F-12
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+12V8.5A

1. Graph



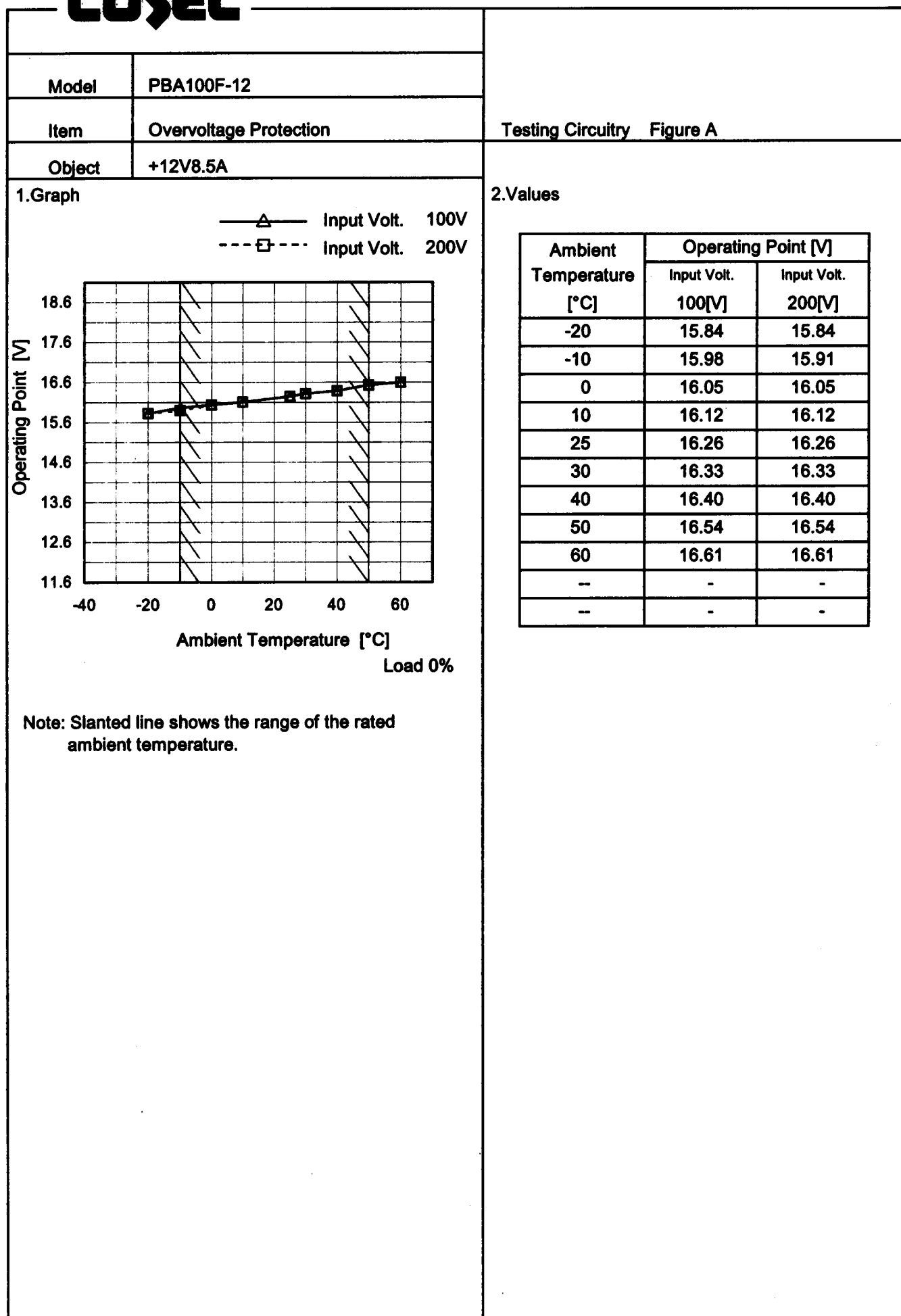
Testing Circuitry Figure A

2. Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-20	43	59
-10	43	58
0	43	58
10	43	58
25	43	58
30	43	59
40	43	59
50	43	59
60	43	59
--	-	-
--	-	-

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Model	PBA100F-12	Temperature 25°C Testing Circuitry Figure A																																										
Item	Overcurrent Protection																																											
Object	+12V8.5A																																											
1.Graph		2.Values																																										
<div><div><div>Output Voltage [V]</div><div>12</div><div>8</div><div>4</div><div>0</div></div><div><div>Load Current [A]</div><div>0</div><div>4</div><div>8</div><div>12</div></div></div> <div><div>— Input Volt. 100V</div><div>— Input Volt. 200V</div></div> <p>Note: Slanted line shows the range of the rated load current.</p> <p>Intermittent operation occurs when the output voltage is from 6V to 0V.</p>		<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>12.0</td><td>10.27</td><td>10.25</td></tr><tr><td>11.4</td><td>10.33</td><td>10.30</td></tr><tr><td>10.8</td><td>10.37</td><td>10.35</td></tr><tr><td>9.6</td><td>10.44</td><td>10.42</td></tr><tr><td>8.4</td><td>10.39</td><td>10.41</td></tr><tr><td>7.2</td><td>10.38</td><td>10.37</td></tr><tr><td>6.0</td><td>10.55</td><td>10.51</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]	12.0	10.27	10.25	11.4	10.33	10.30	10.8	10.37	10.35	9.6	10.44	10.42	8.4	10.39	10.41	7.2	10.38	10.37	6.0	10.55	10.51	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Output Voltage [V]	Load Current [A]																																											
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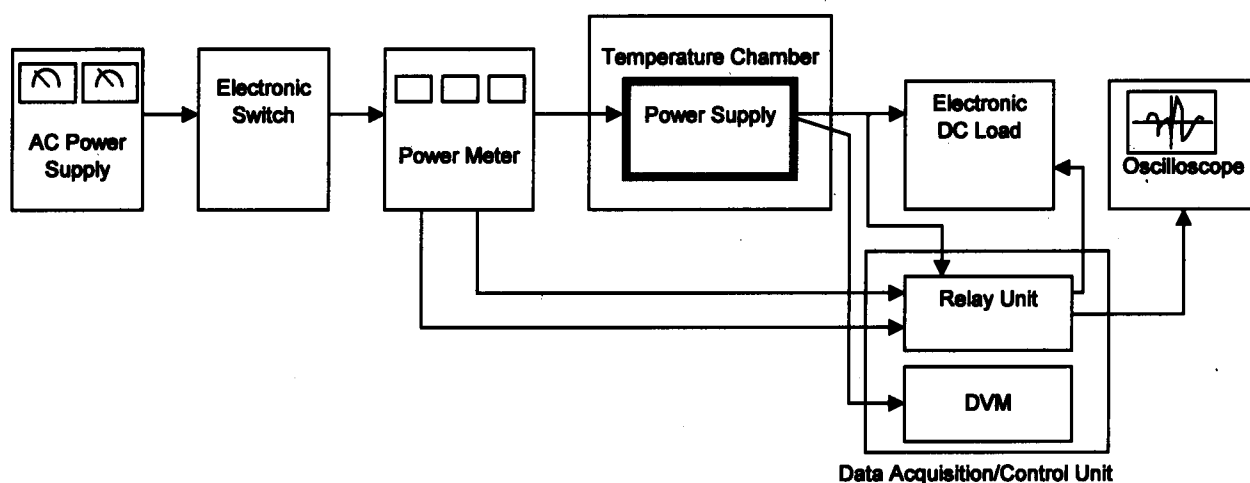


Figure A

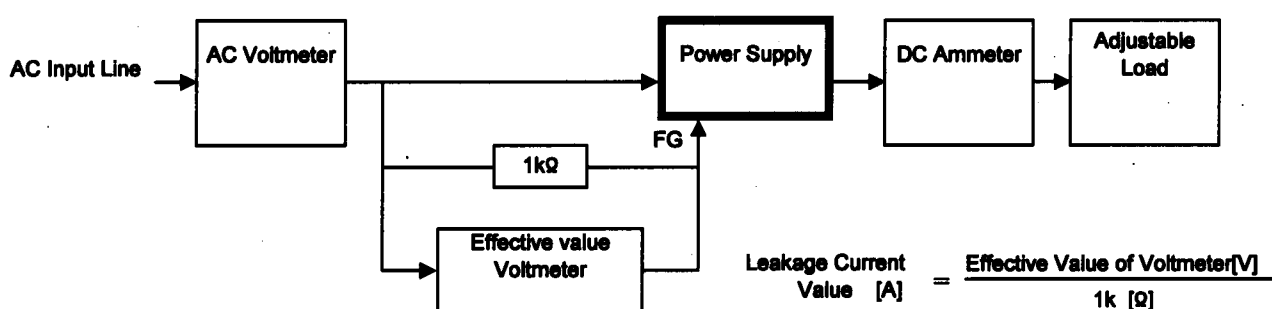


Figure B (DEN-AN)

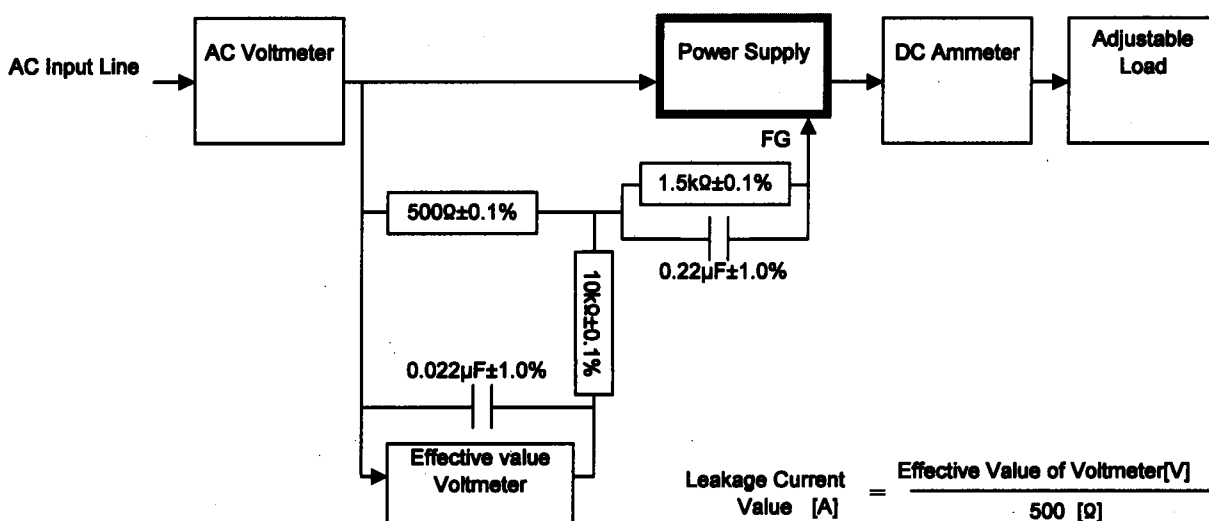


Figure B (IEC60950)