



TEST DATA OF PBA150F-3R3

Regulated DC Power Supply
Apr.8. 2004

Approved by : Kuniaki Nagahara
Kuniaki Nagahara Design Manager

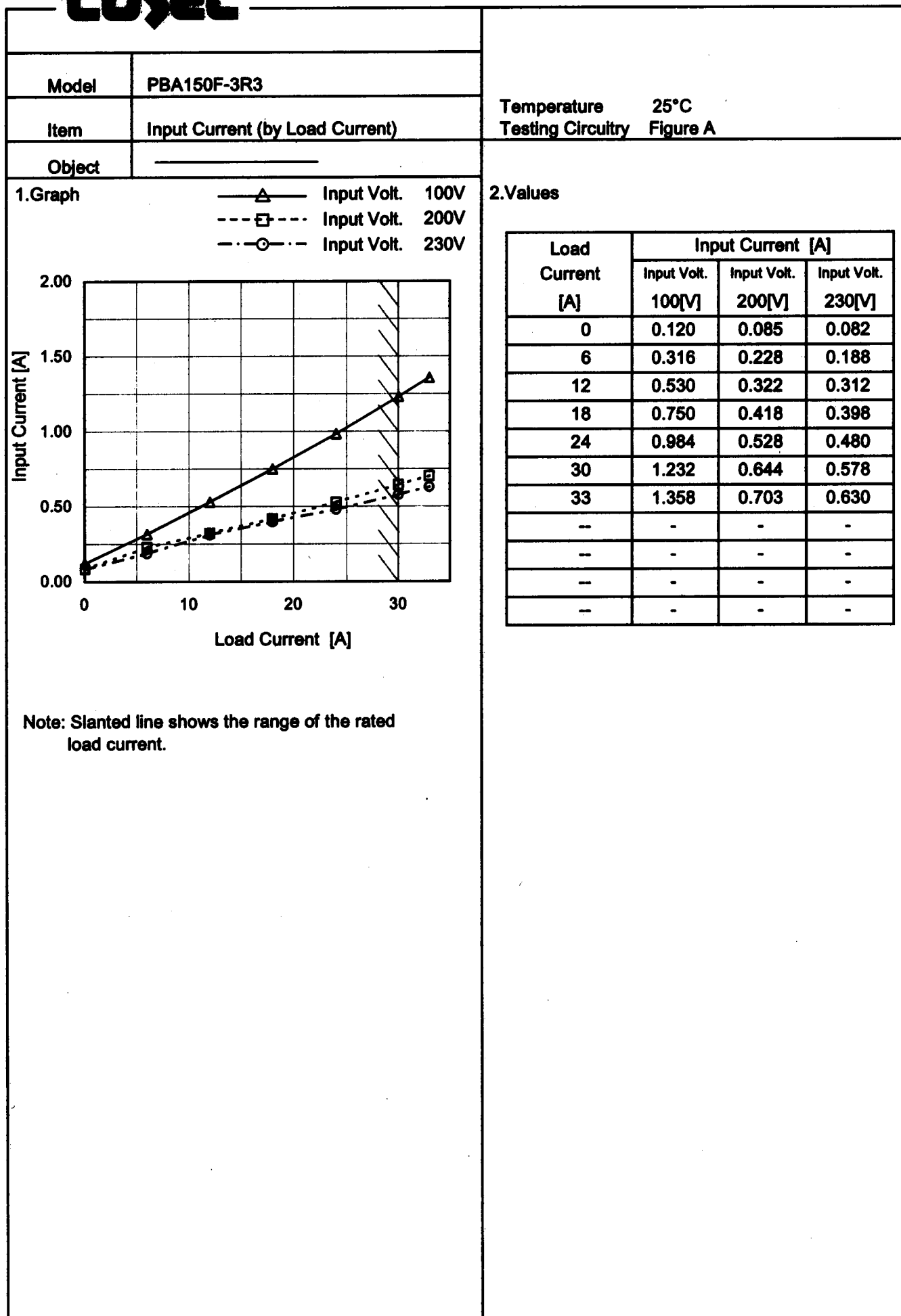
Prepared by : Tetsuo Koide
Tetsuo Koide Design Engineer

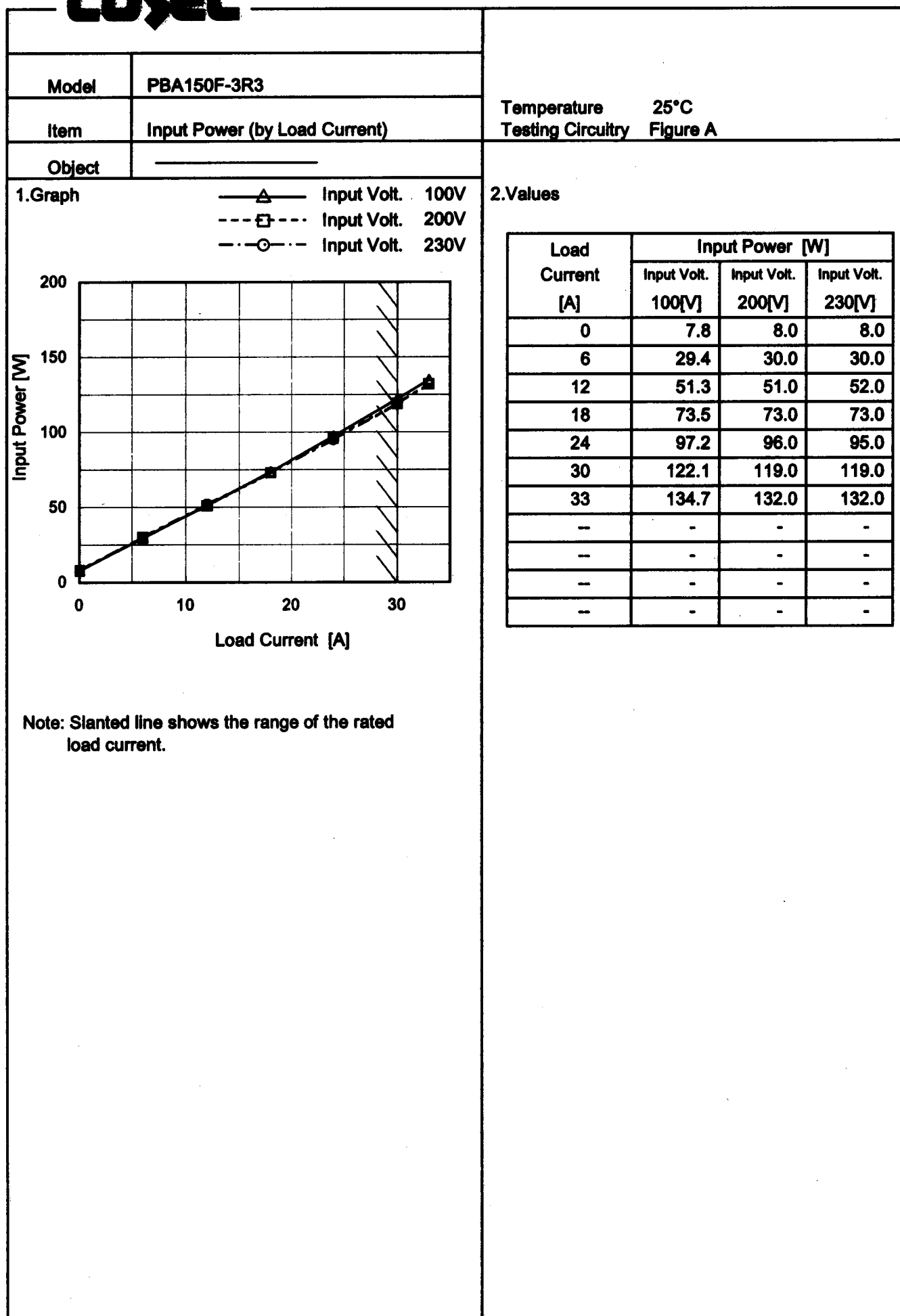
COSEL CO.,LTD.

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Model		PBA150F-3R3	
Item		Efficiency (by Input Voltage)	
Object			

1.Graph

□

Load 50%

△

Load 100%

86

78

70

62

54

46

38

30

Efficiency [%]

50

100

150

200

250

300

Input Voltage [V]

</

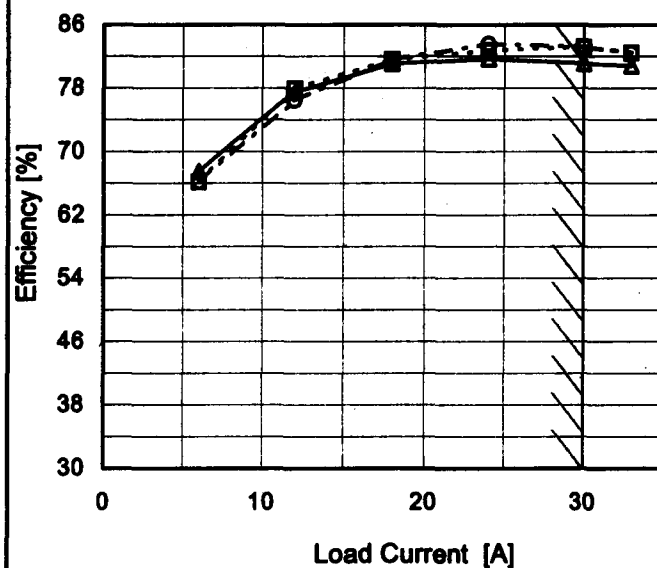
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Model	PBA150F-3R3
Item	Efficiency (by Load Current)
Object	

Temperature 25°C
Testing Circuitry Figure A

1. Graph

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



2. Values

Load Current [A]	Efficiency [%]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0	-	-	-
6	67.5	66.2	66.2
12	77.5	78.0	76.5
18	81.1	81.6	81.6
24	81.7	82.7	83.6
30	81.1	83.2	83.2
33	80.8	82.5	82.5
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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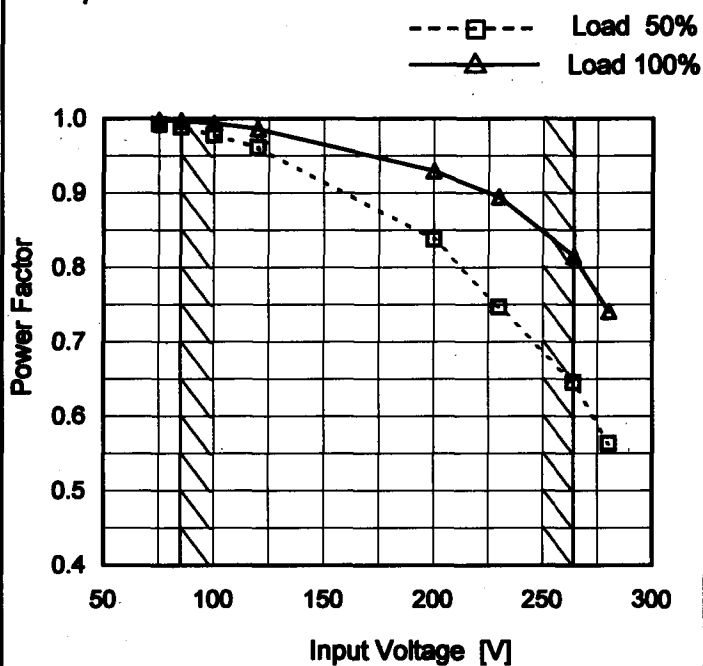
Model PBA150F-3R3

Item Power Factor (by Input Voltage)

Object _____

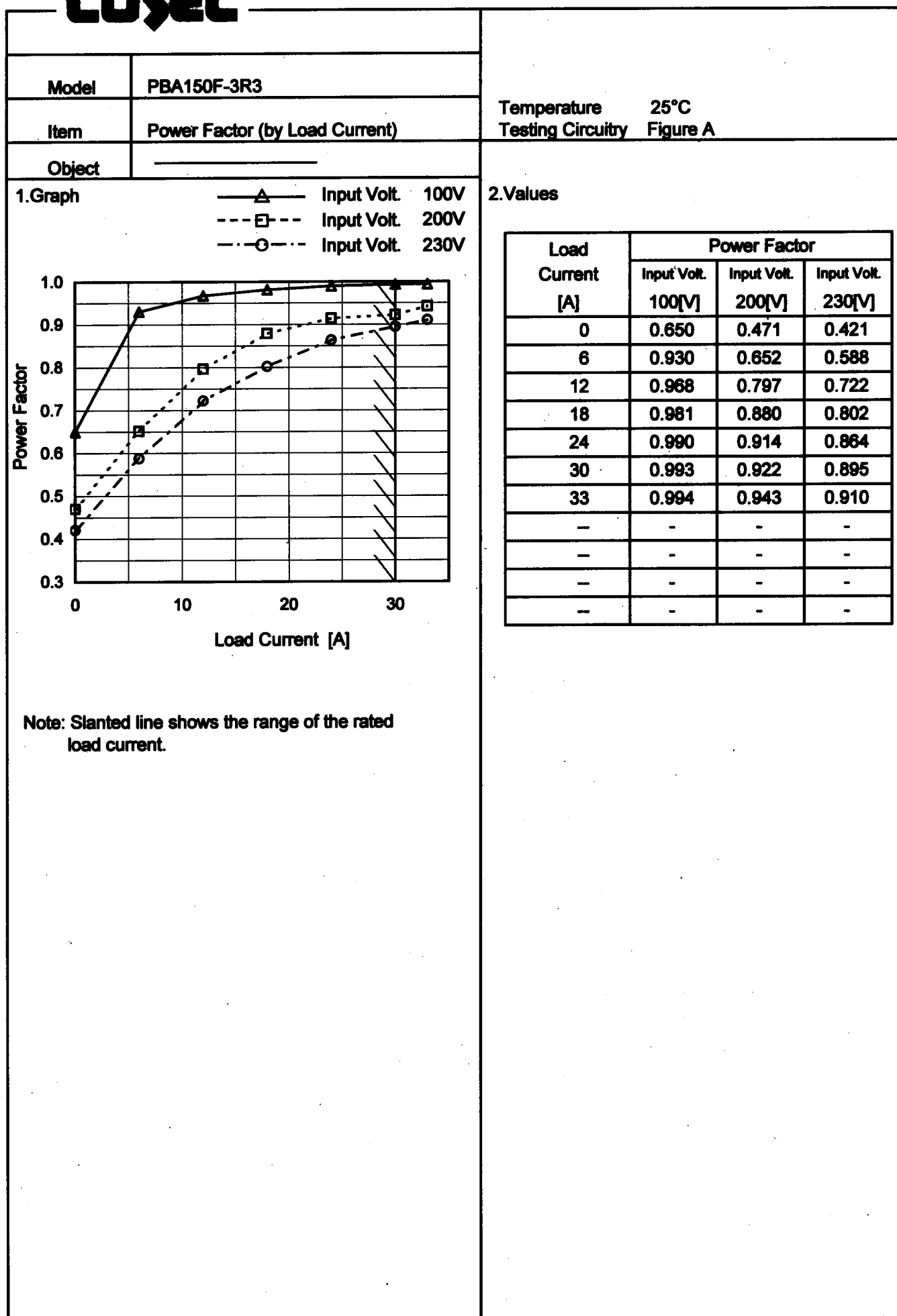
Temperature 25°C
Testing Circuitry Figure A

1. Graph



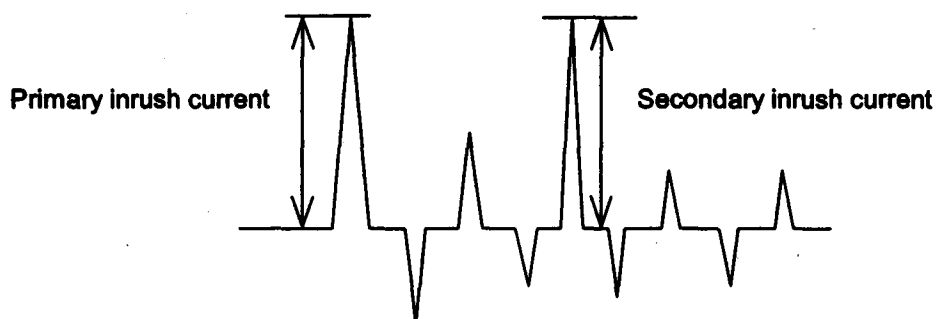
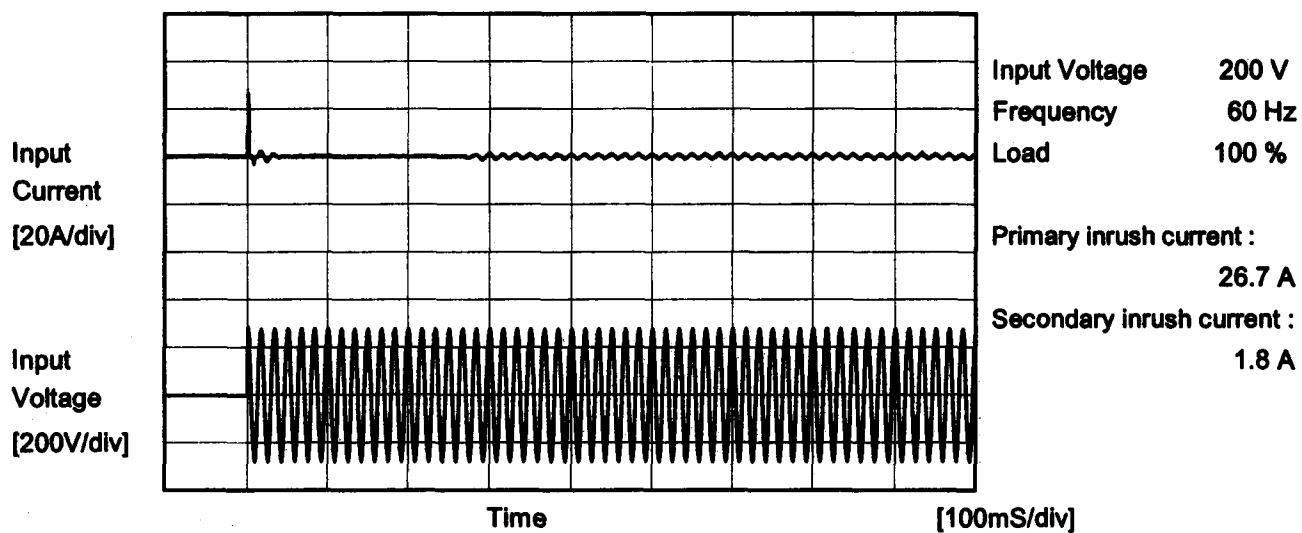
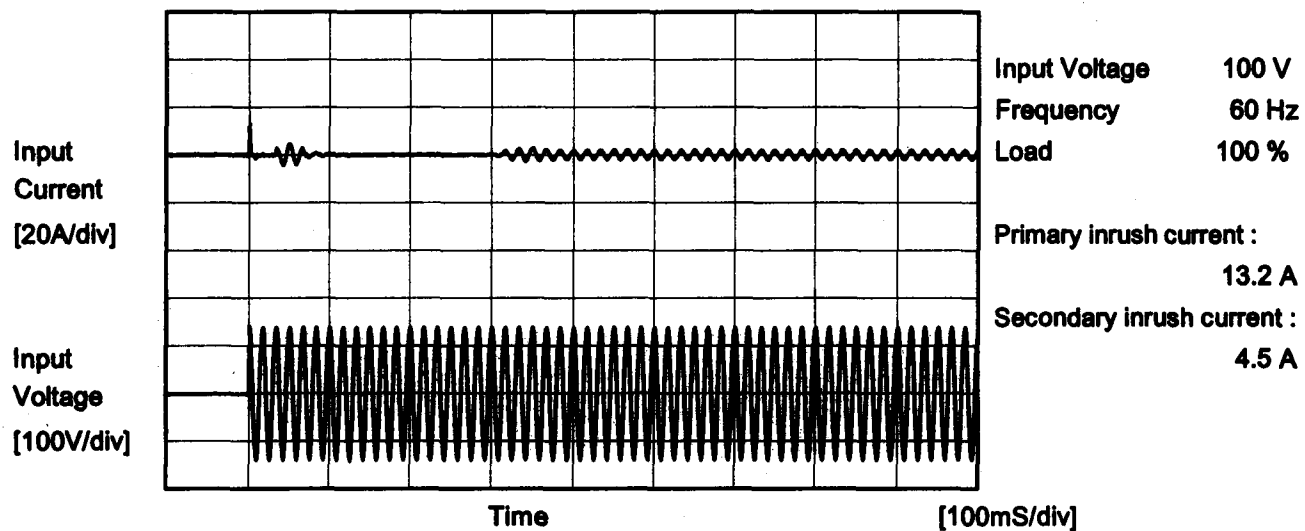
2. Values

Input Voltage [V]	Power Factor	
	Load 50%	Load 100%
75	0.992	0.998
85	0.989	0.998
100	0.978	0.993
120	0.961	0.986
200	0.838	0.930
230	0.747	0.895
264	0.646	0.815
280	0.564	0.741
—	—	—

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Model	PBA150F-3R3	Temperature	25°C
Item	Inrush Current	Testing Circuitry	Figure A
Object	_____		





		Temperature 25°C Testing Circuitry Figure B
Model	PBA150F-3R3	
Item	Leakage Current	
Object	_____	

1.Results

[mA]

Standards		Input Volt.			Note
		100 [V]	200 [V]	230 [V]	
DEN-AN	Both phases	0.19	0.37	0.43	Operation
	One of phase	0.27	0.54	0.62	stand by
IEC60950	Both phases	0.19	0.38	0.48	Operation
	One of phase	0.27	0.58	0.71	stand by

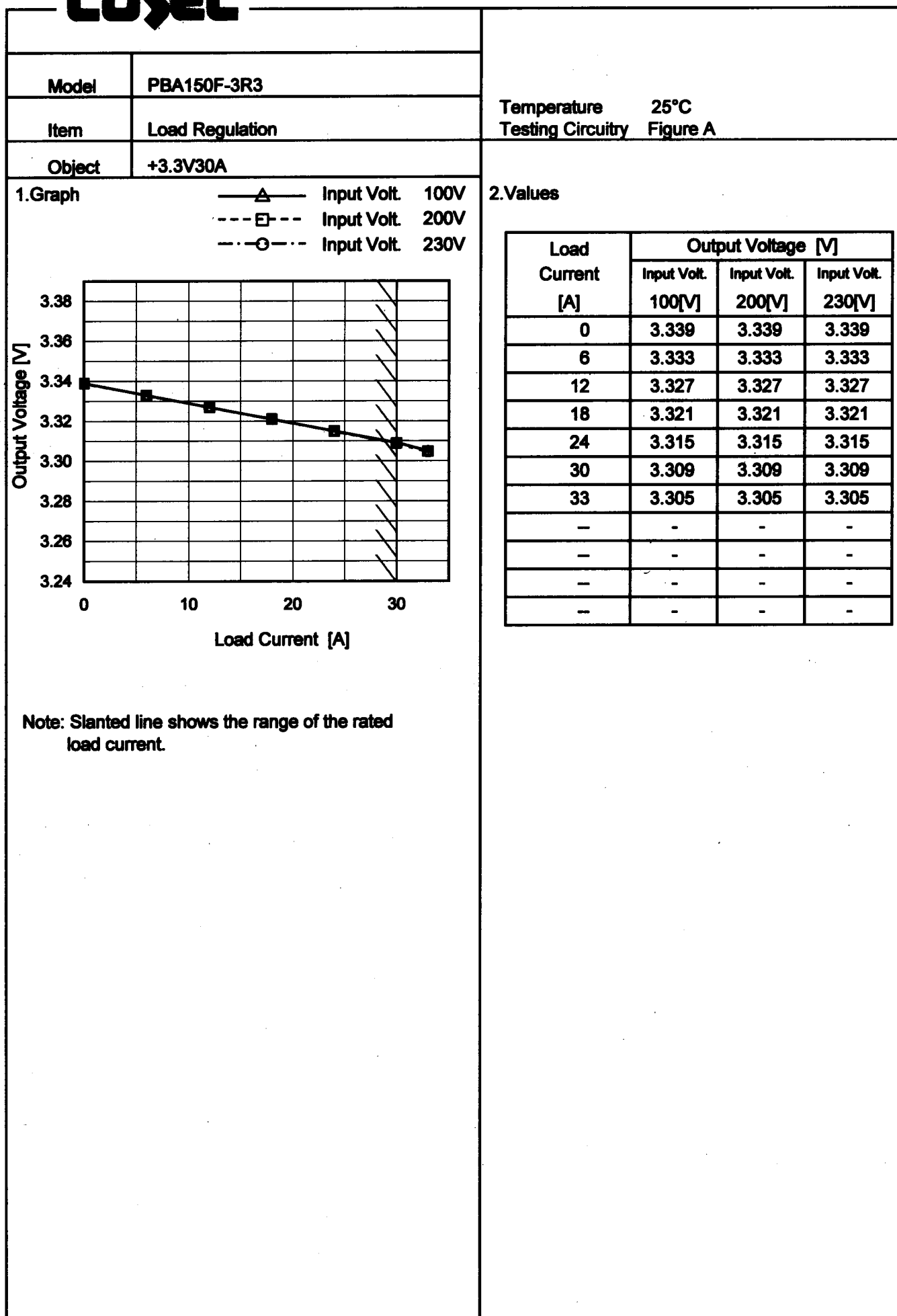
The value for "One phase" is the reference value only.

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	PBA150F-3R3	Temperature 25°C Testing Circuitry Figure A																																	
Item	Line Regulation																																		
Object	+3.3V30A																																		
1.Graph		2.Values																																	
<div><div>---□--- Load 50%</div><div>—△— Load 100%</div></div> <p>Output Voltage [V]</p> <p>Input Voltage [V]</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>3.329</td><td>3.309</td></tr><tr><td>85</td><td>3.329</td><td>3.309</td></tr><tr><td>100</td><td>3.329</td><td>3.309</td></tr><tr><td>120</td><td>3.329</td><td>3.309</td></tr><tr><td>200</td><td>3.329</td><td>3.309</td></tr><tr><td>230</td><td>3.329</td><td>3.309</td></tr><tr><td>264</td><td>3.329</td><td>3.308</td></tr><tr><td>280</td><td>3.329</td><td>3.308</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></table>		Input Voltage [V]	Output Voltage [V]		Load 50%	Load 100%	75	3.329	3.309	85	3.329	3.309	100	3.329	3.309	120	3.329	3.309	200	3.329	3.309	230	3.329	3.309	264	3.329	3.308	280	3.329	3.308	--	-	-
Input Voltage [V]	Output Voltage [V]																																		
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264	3.329	3.308																																	
280	3.329	3.308																																	
--	-	-																																	
Note: Slanted line shows the range of the rated input voltage.																																			

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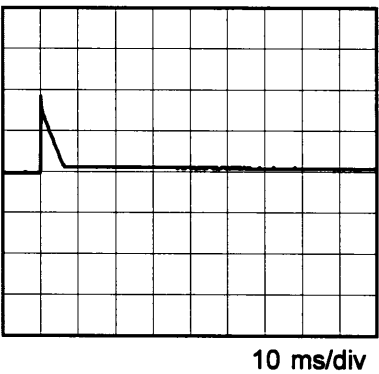
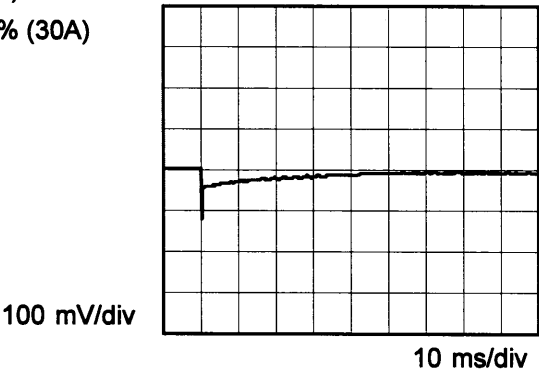


Model	PBA150F-3R3	Temperature Testing Circuitry	25°C Figure A
Item	Dynamic Load Response		
Object	+3.3V30A		

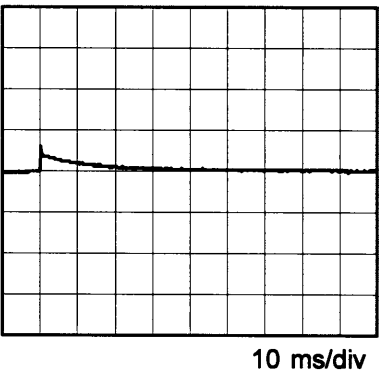
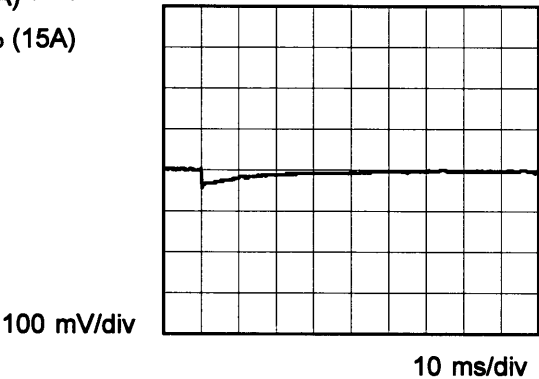
Input Volt. 100 V
Cycle 1000 ms



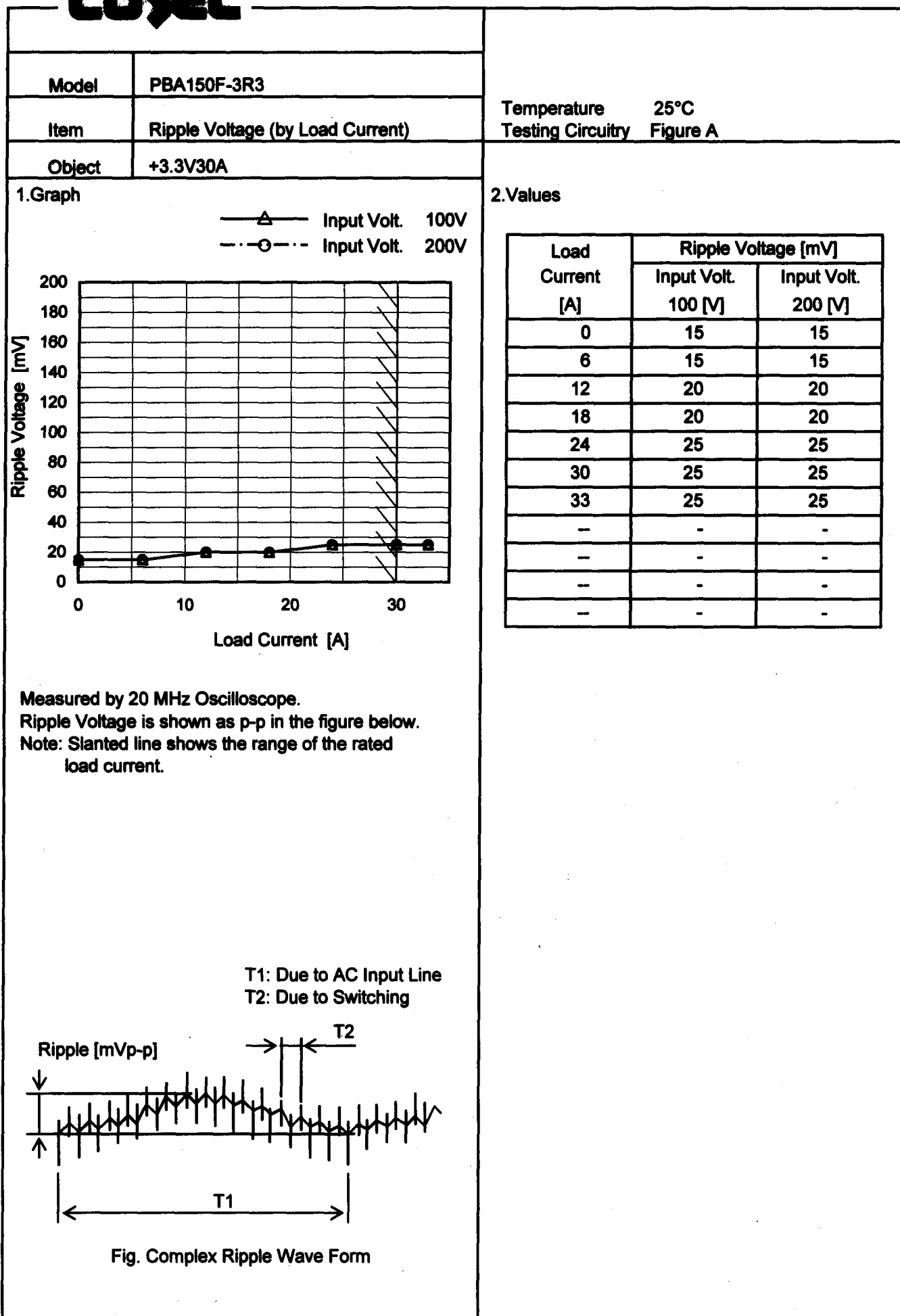
Min. Load (0A) ←→
Load 100% (30A)

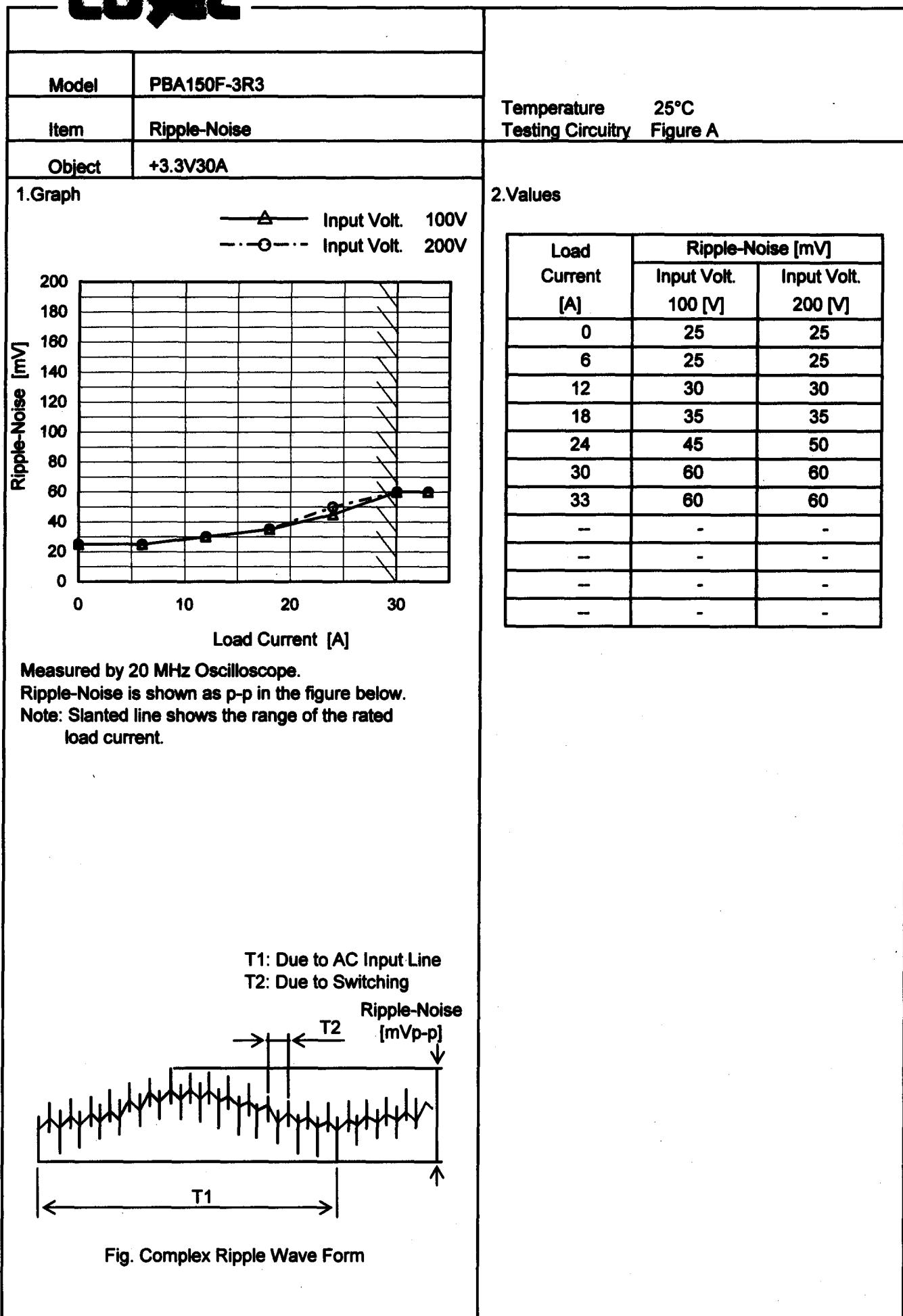


Min. Load (0A) ←→
Load 50% (15A)



* The characteristic of AC200V is equal.

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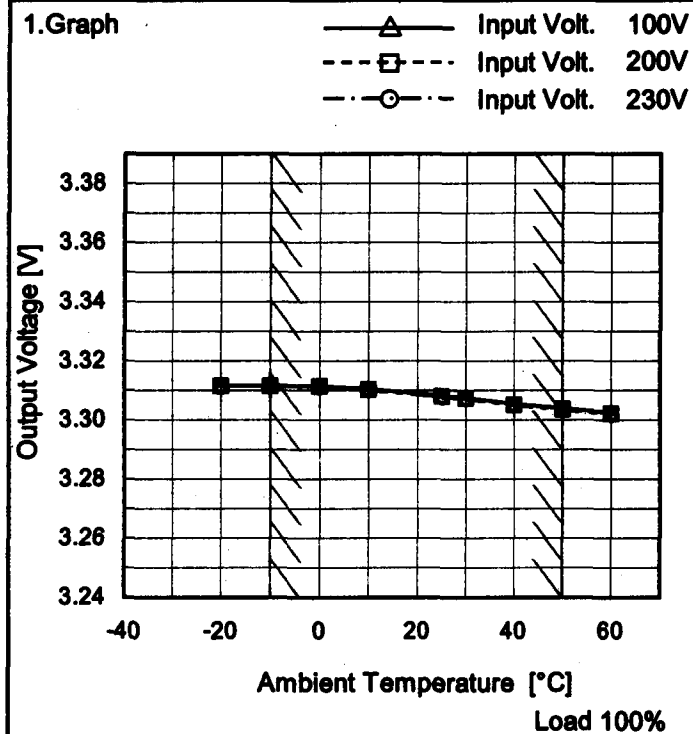
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Model	PBA150F-3R3		
Item	Ripple Voltage (by Ambient Temp.)	Testing Circuitry Figure A	
Object	+3.3V30A		
1. Graph		2. Values	
<div> <div> <div>---</div> <div>□</div> <div>---</div> </div> <div>Input Volt. 100V</div> </div> <div> <div>—</div> <div>△</div> <div>—</div> </div> <div>Input Volt. 200V</div>			

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Model	PBA150F-3R3
Item	Ambient Temperature Drift
Object	+3.3V30A

1. Graph



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]
-20	3.312	3.312	3.312
-10	3.312	3.312	3.312
0	3.312	3.311	3.311
10	3.311	3.310	3.310
25	3.308	3.308	3.308
30	3.308	3.307	3.307
40	3.306	3.305	3.305
50	3.304	3.304	3.304
60	3.303	3.302	3.302
--	-	-	-
--	-	-	-

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		Testing Circuitry Figure A
Model	PBA150F-3R3	
Item	Output Voltage Accuracy	
Object	+3.3V30A	

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 - 30A

* 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	-10	85	0	3.349	±23	±0.7
Minimum Voltage	50	264	30	3.303		

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Model		PBA150F-3R3	
Item		Time Lapse Drift	
Object		+3.3V30A	

1.Graph

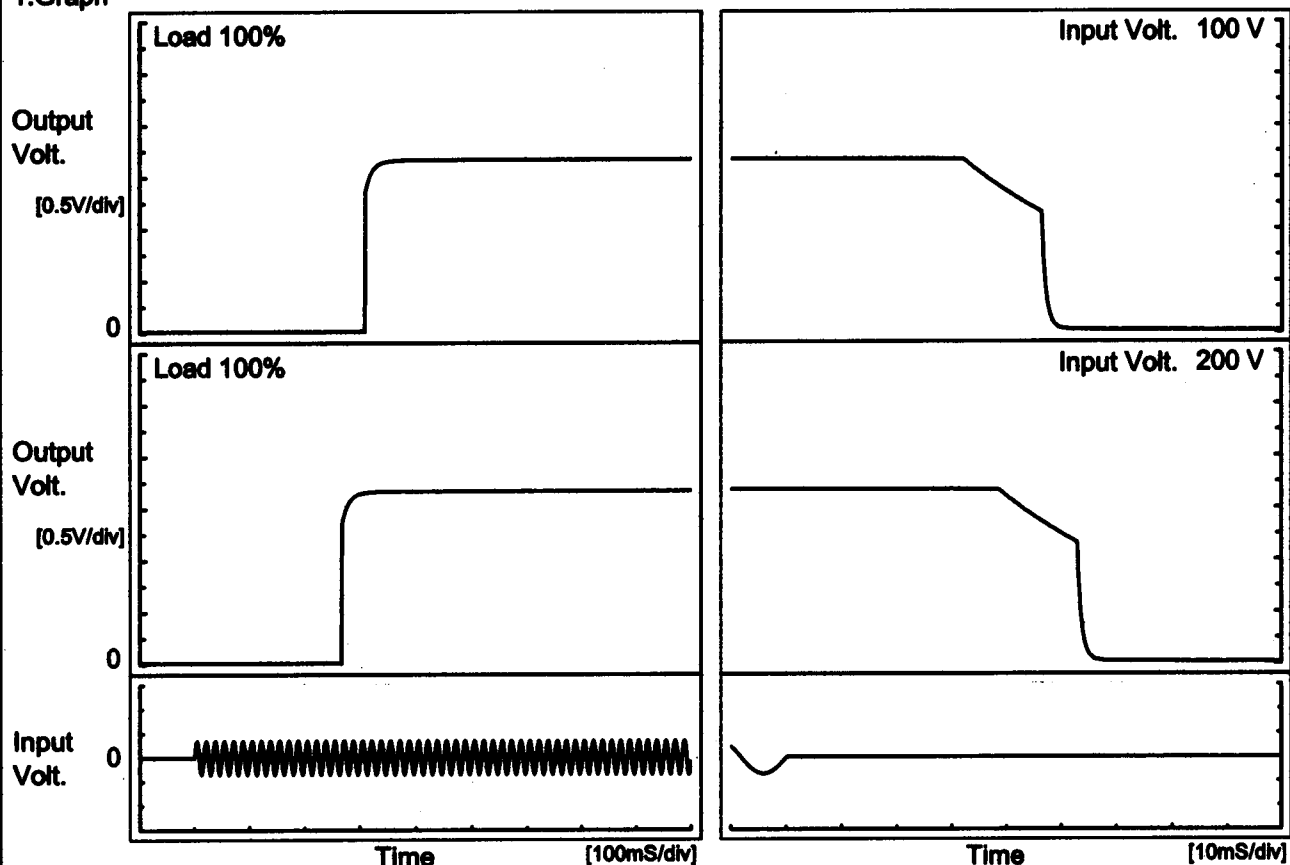
Output Voltage [V]

</

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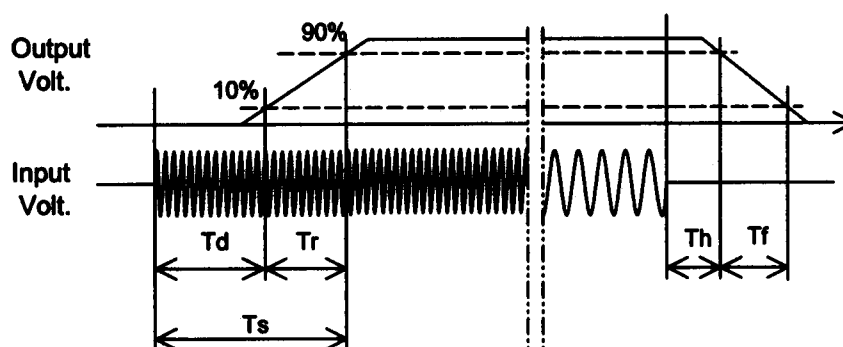
Model	PBA150F-3R3	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	+3.3V30A		

1.Graph



2.Values

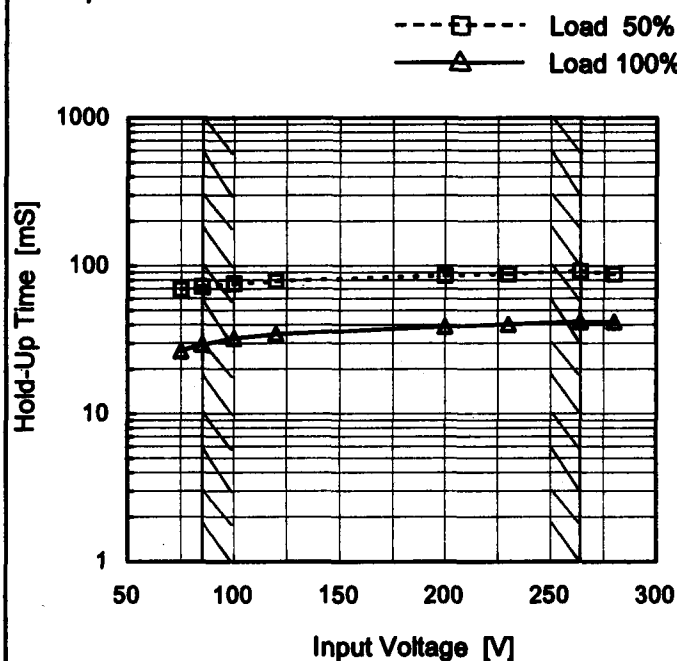
Input Volt.	Time	Td	Tr	Ts	Th	Tf
100 V		309.0	8.5	317.5	36.1	11.8
200 V		267.0	8.5	275.5	42.8	11.7



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Model	PBA150F-3R3
Item	Hold-Up Time
Object	+3.3V30A

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.

Temperature 25°C
 Testing Circuitry Figure A

2.Values

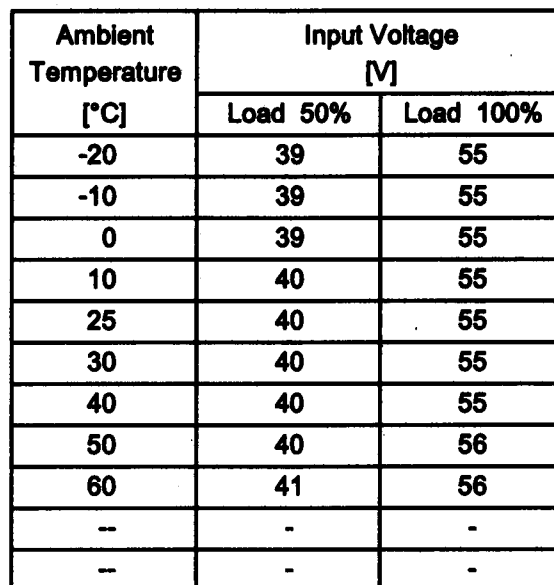
Input Voltage [V]	Hold-Up Time [mS]	
	Load 50%	Load 100%
75	69	27
85	72	30
100	76	32
120	79	35
200	86	39
230	88	40
264	92	42
280	88	42
—	—	—

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Model	PBA150F-3R3																																																						
Item	Instantaneous Interruption Compensation																																																						
Object	+3.3V30A																																																						
1.Graph		2.Values																																																					
<div><div><div>Instantaneous Compensation Time [mS]</div><div>1000</div><div>100</div><div>10</div><div>1</div></div><div><div>0</div><div>10</div><div>20</div><div>30</div></div><div>Load Current [A]</div></div> <div><div>—△—</div><div>Input Volt. 100V</div><div>---□---</div><div>Input Volt. 200V</div><div>---○---</div><div>Input Volt. 230V</div></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</td><td>-</td><td>-</td><td>-</td></tr><tr><td>6</td><td>157</td><td>214</td><td>214</td></tr><tr><td>12</td><td>87</td><td>105</td><td>108</td></tr><tr><td>18</td><td>61</td><td>71</td><td>72</td></tr><tr><td>24</td><td>43</td><td>50</td><td>53</td></tr><tr><td>30</td><td>31</td><td>38</td><td>40</td></tr><tr><td>33</td><td>29</td><td>35</td><td>36</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><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	-	-	-	6	157	214	214	12	87	105	108	18	61	71	72	24	43	50	53	30	31	38	40	33	29	35	36	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Time [mS]																																																						
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--	-	-	-																																																				
Note: Slanted line shows the range of the rated load current.																																																							


Testing Circuitry Figure A

2.Values



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

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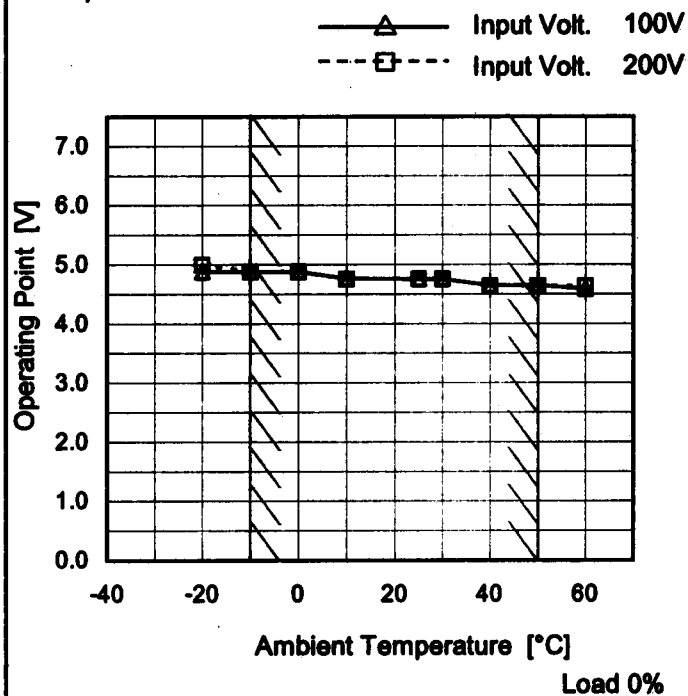
Model	PBA150F-3R3	Temperature	25°C																																									
Item	Overcurrent Protection	Testing Circuitry	Figure A																																									
Object	+3.3V30A																																											
1.Graph		2.Values																																										
<div><div><div></div>Input Volt. 100V</div><div><div></div>Input Volt. 200V</div></div> 																																												
Note: Slanted line shows the range of the rated load current.																																												
Intermittent operation occurs when the output voltage is from 1.65V 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>3.30</td><td>36.89</td><td>36.65</td></tr><tr><td>3.13</td><td>36.92</td><td>36.70</td></tr><tr><td>2.97</td><td>36.96</td><td>36.77</td></tr><tr><td>2.64</td><td>36.92</td><td>36.81</td></tr><tr><td>2.31</td><td>36.80</td><td>36.49</td></tr><tr><td>1.98</td><td>37.22</td><td>37.07</td></tr><tr><td>1.65</td><td>37.22</td><td>37.07</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]	3.30	36.89	36.65	3.13	36.92	36.70	2.97	36.96	36.77	2.64	36.92	36.81	2.31	36.80	36.49	1.98	37.22	37.07	1.65	37.22	37.07	—	-	-	—	-	-	—	-	-	—	-	-	—	-	-
Output Voltage [V]	Load Current [A]																																											
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2.97	36.96	36.77																																										
2.64	36.92	36.81																																										
2.31	36.80	36.49																																										
1.98	37.22	37.07																																										
1.65	37.22	37.07																																										
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Model	PBA150F-3R3
Item	Overvoltage Protection
Object	+3.3V30A

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	4.89	5.01
-10	4.89	4.89
0	4.89	4.89
10	4.78	4.77
25	4.77	4.77
30	4.77	4.77
40	4.66	4.65
50	4.66	4.65
60	4.60	4.65
--	-	-
--	-	-

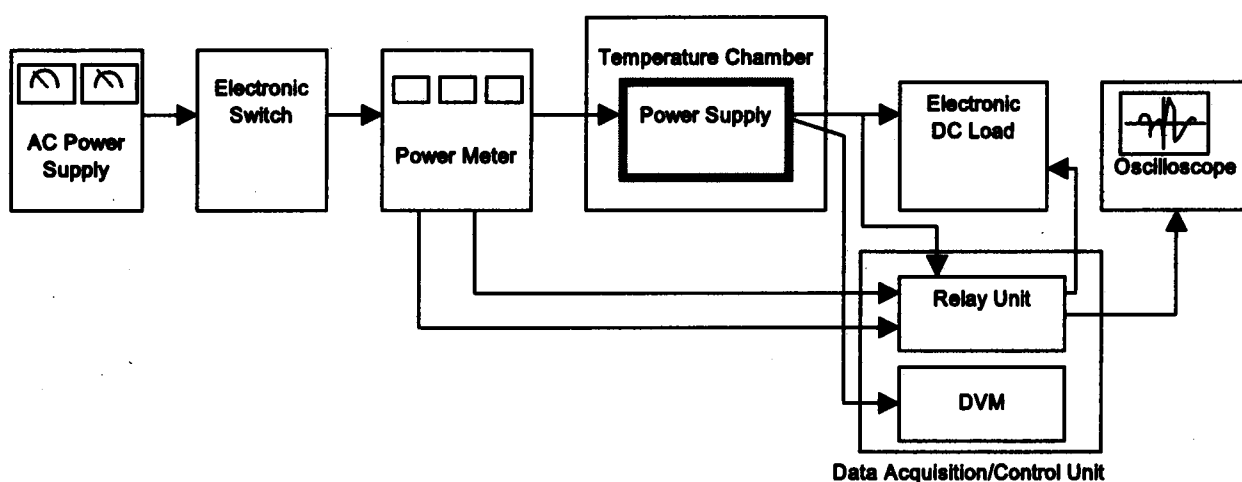


Figure A

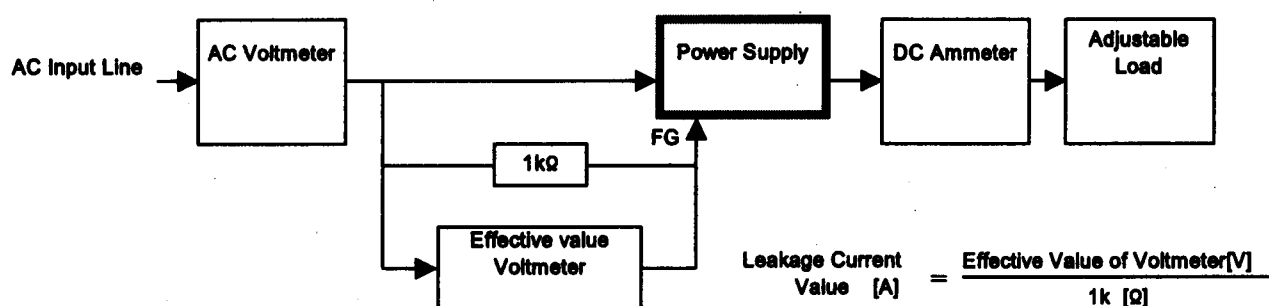


Figure B (DEN-AN)

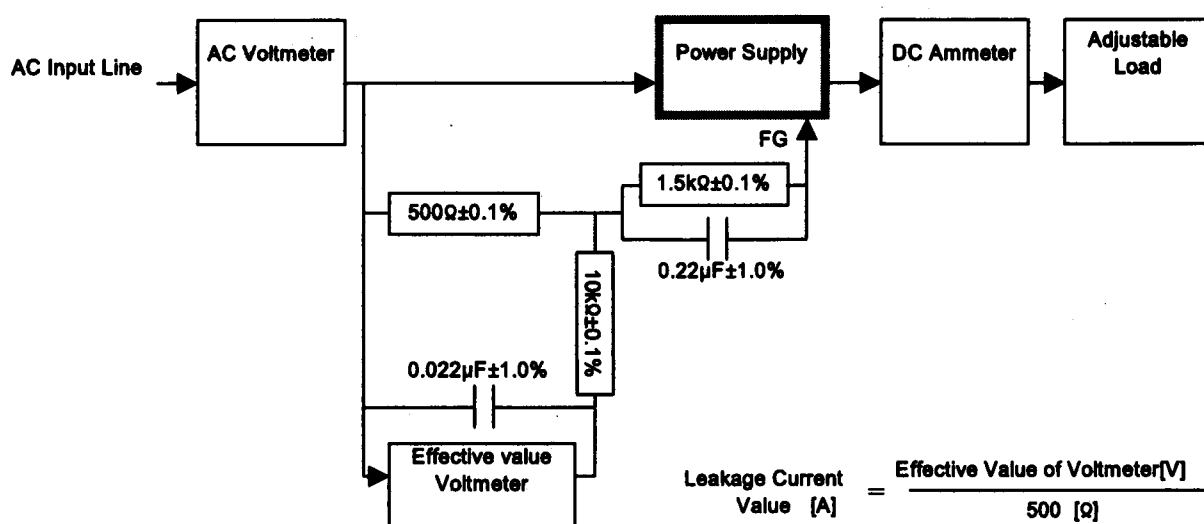


Figure B (IEC60950)