



TEST DATA OF PBA75F-24

Regulated DC Power Supply
Apr.5. 2004

Approved by : Kuniaki Nagahara
Kuniaki Nagahara Design Manager

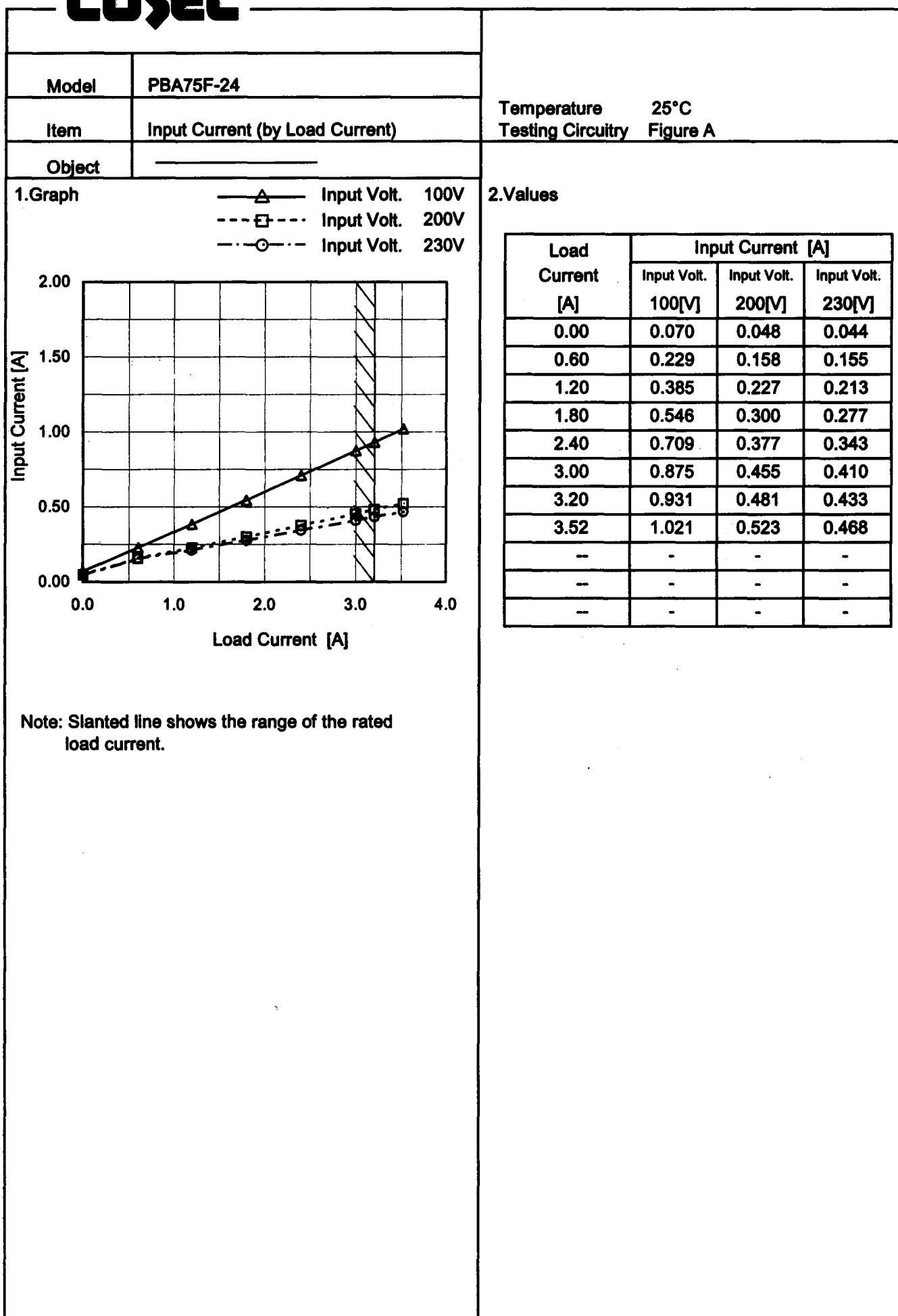
Prepared by : Akito Joboji
Akito Joboji Design Engineer

COSEL CO.,LTD.

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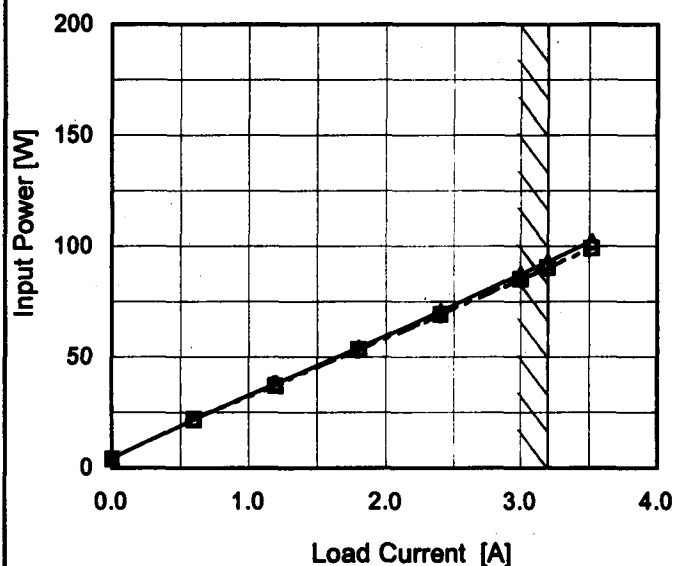
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Model	PBA75F-24
Item	Input Power (by Load Current)
Object	

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 Power [W]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.00	4.3	4.0	4.0
0.60	21.8	22.0	22.0
1.20	37.9	37.0	38.0
1.80	54.2	53.5	53.0
2.40	70.7	69.3	69.0
3.00	87.4	85.2	85.0
3.20	93.0	90.4	90.0
3.52	102.1	99.2	99.1
--	-	-	-
--	-	-	-
--	-	-	-

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Model		PBA75F-24	
Item		Efficiency (by Input Voltage)	
Object			

1.Graph

Load 50%

Load 100%

Efficiency [%]

86

78

70

62

54

46

38

30

50

150

250

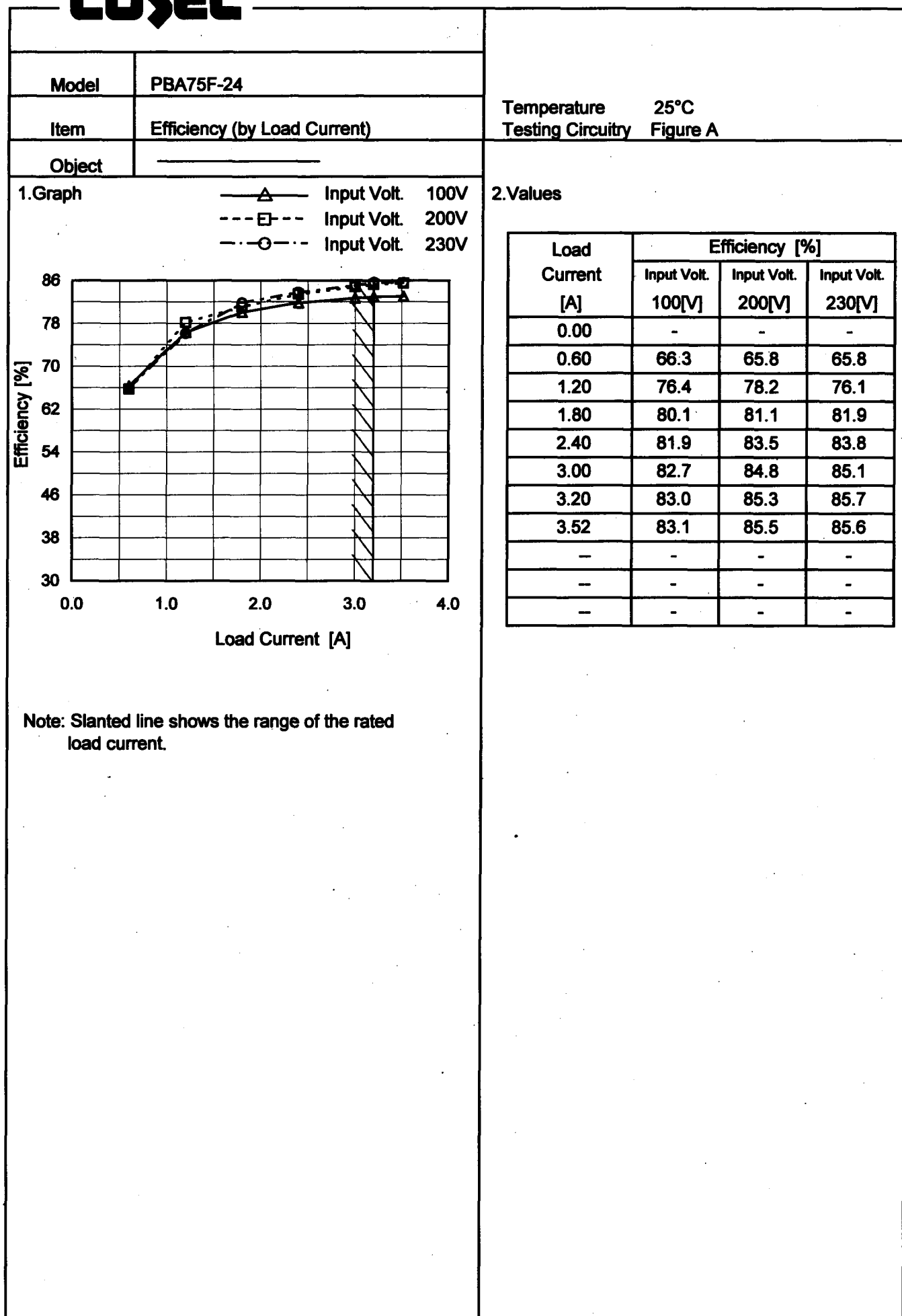
Input Voltage [V]

2.Values

Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
75	78.0	80.7
85	78.7	81.9
100	79.2	83.0
120	80.3	83.9
200	80.3	85.3
230	80.3	85.6
264	80.3	85.6
280	80.3	85.6
—	-	-

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

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Model		PBA75F-24	
Item		Power Factor (by Input Voltage)	
Object			

1.Graph

Load 50%

Load 100%

Power Factor

1.0

0.9

0.8

0.7

0.6

0.5

0.4

50

100

150

200

250

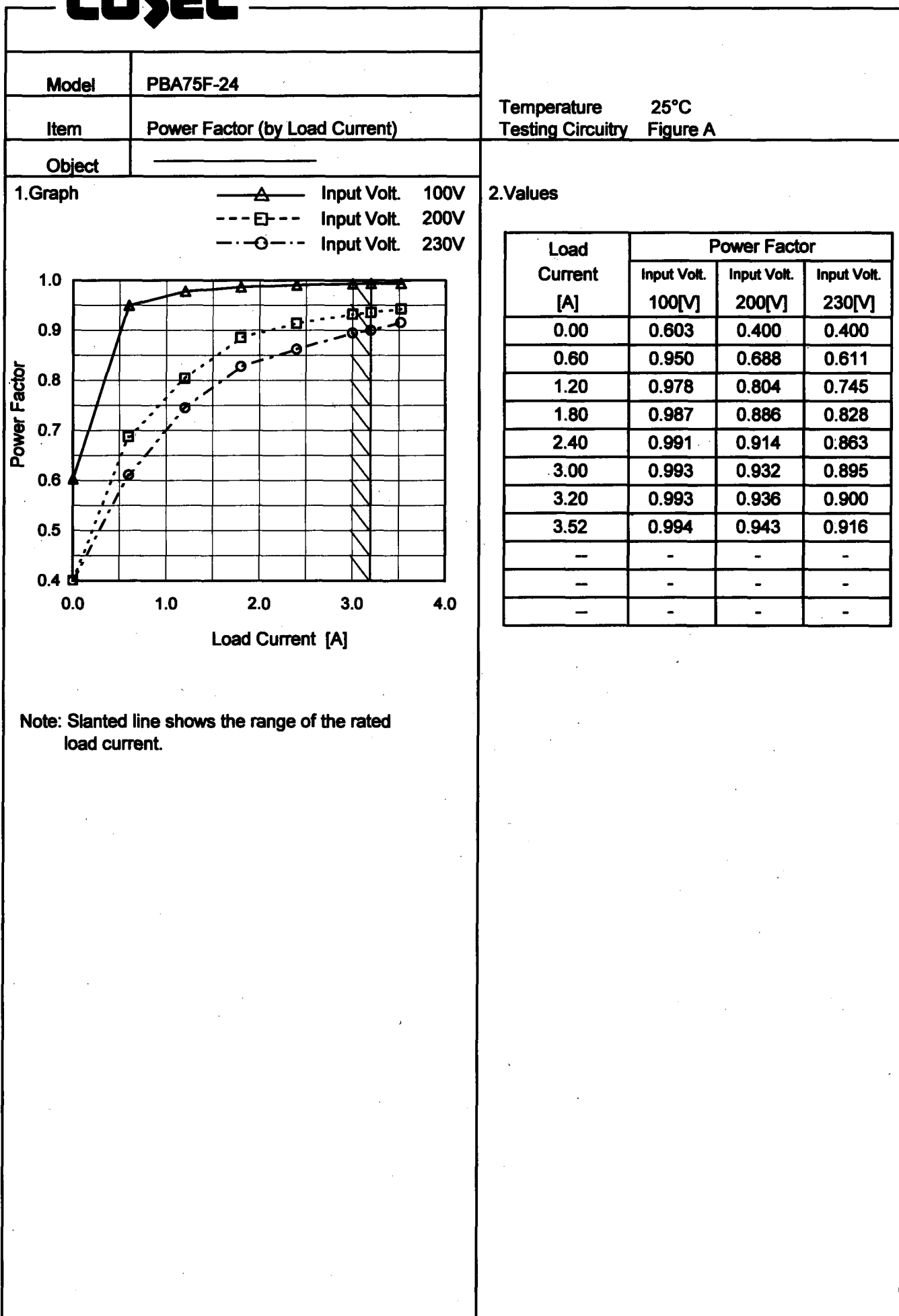
300

Input Voltage [V]

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

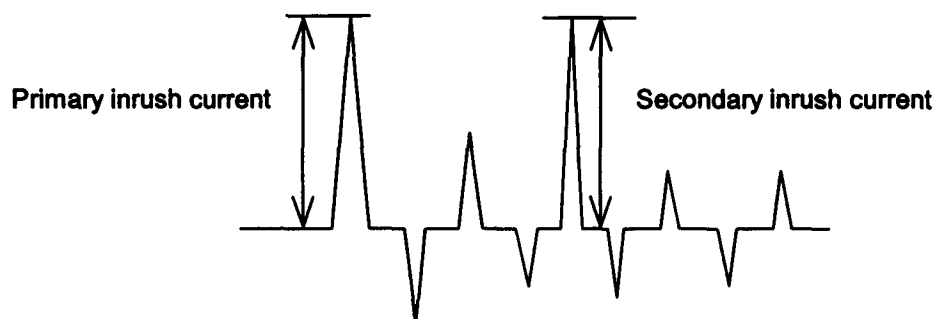
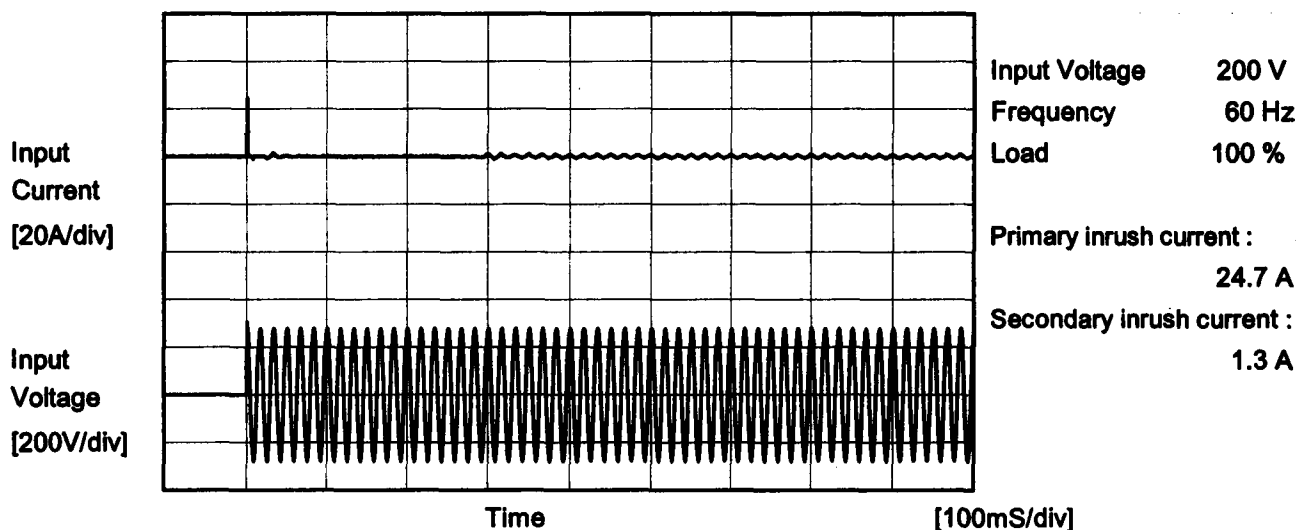
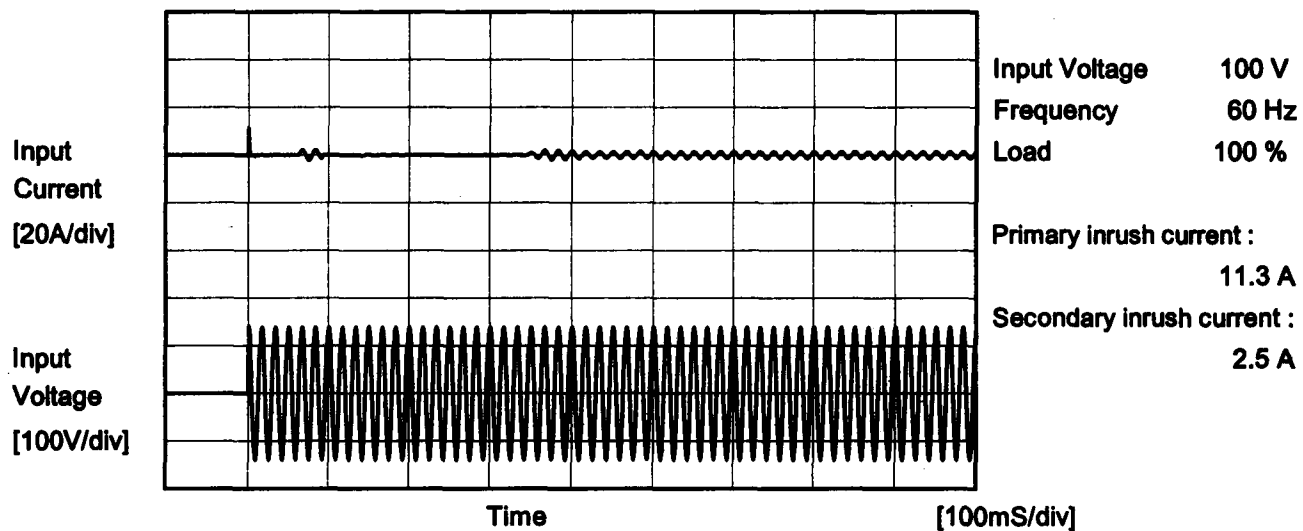
2.Values

Input Voltage [V]	Power Factor	
	Load 50%	Load 100%
75	0.994	0.997
85	0.991	0.996
100	0.985	0.993
120	0.960	0.988
200	0.873	0.938
230	0.814	0.900
264	0.754	0.865
280	0.667	0.796
--	-	-

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Model	PBA75F-24	Temperature 25°C Testing Circuitry Figure A	
Item	Inrush Current		
Object	_____		





		Temperature 25°C Testing Circuitry Figure B
Model	PBA75F-24	
Item	Leakage Current	
Object	_____	

1.Results

[mA]

Standards		Input Volt.			Note
		100 [V]	200 [V]	230 [V]	
DEN-AN	Both phases	0.16	0.26	0.30	Operation
	One of phase	0.24	0.45	0.53	stand by
IEC60950	Both phases	0.16	0.28	0.37	Operation
	One of phase	0.24	0.47	0.57	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.

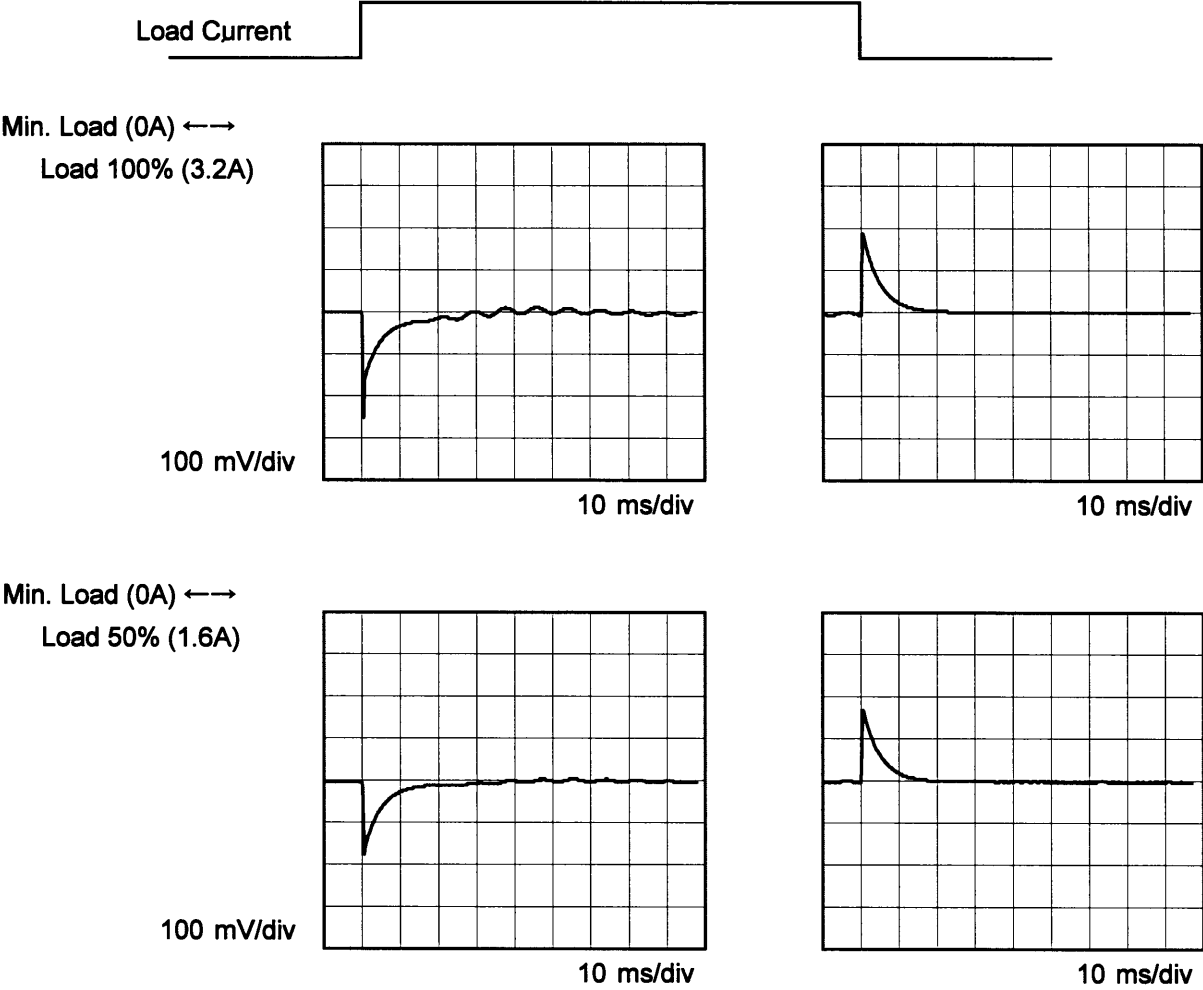
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Model	PBA75F-24																																
Item	Line Regulation	Temperature	25°C																														
Object	+24V3.2A	Testing Circuitry	Figure A																														
1.Graph		2.Values																															
<div><div><div>---□---</div><div>Load 50%</div></div><div><div>—△—</div><div>Load 100%</div></div></div> <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>75</td><td>24.023</td><td>24.022</td></tr><tr><td>85</td><td>24.023</td><td>24.022</td></tr><tr><td>100</td><td>24.024</td><td>24.022</td></tr><tr><td>120</td><td>24.024</td><td>24.022</td></tr><tr><td>200</td><td>24.024</td><td>24.022</td></tr><tr><td>230</td><td>24.025</td><td>24.021</td></tr><tr><td>264</td><td>24.025</td><td>24.021</td></tr><tr><td>280</td><td>24.025</td><td>24.021</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></tbody></table>		Input Voltage [V]	Output Voltage [V] Load 50%	Output Voltage [V] Load 100%	75	24.023	24.022	85	24.023	24.022	100	24.024	24.022	120	24.024	24.022	200	24.024	24.022	230	24.025	24.021	264	24.025	24.021	280	24.025	24.021	--	-	-		
Input Voltage [V]	Output Voltage [V] Load 50%	Output Voltage [V] Load 100%																															
75	24.023	24.022																															
85	24.023	24.022																															
100	24.024	24.022																															
120	24.024	24.022																															
200	24.024	24.022																															
230	24.025	24.021																															
264	24.025	24.021																															
280	24.025	24.021																															
--	-	-																															
Note: Slanted line shows the range of the rated input voltage.																																	

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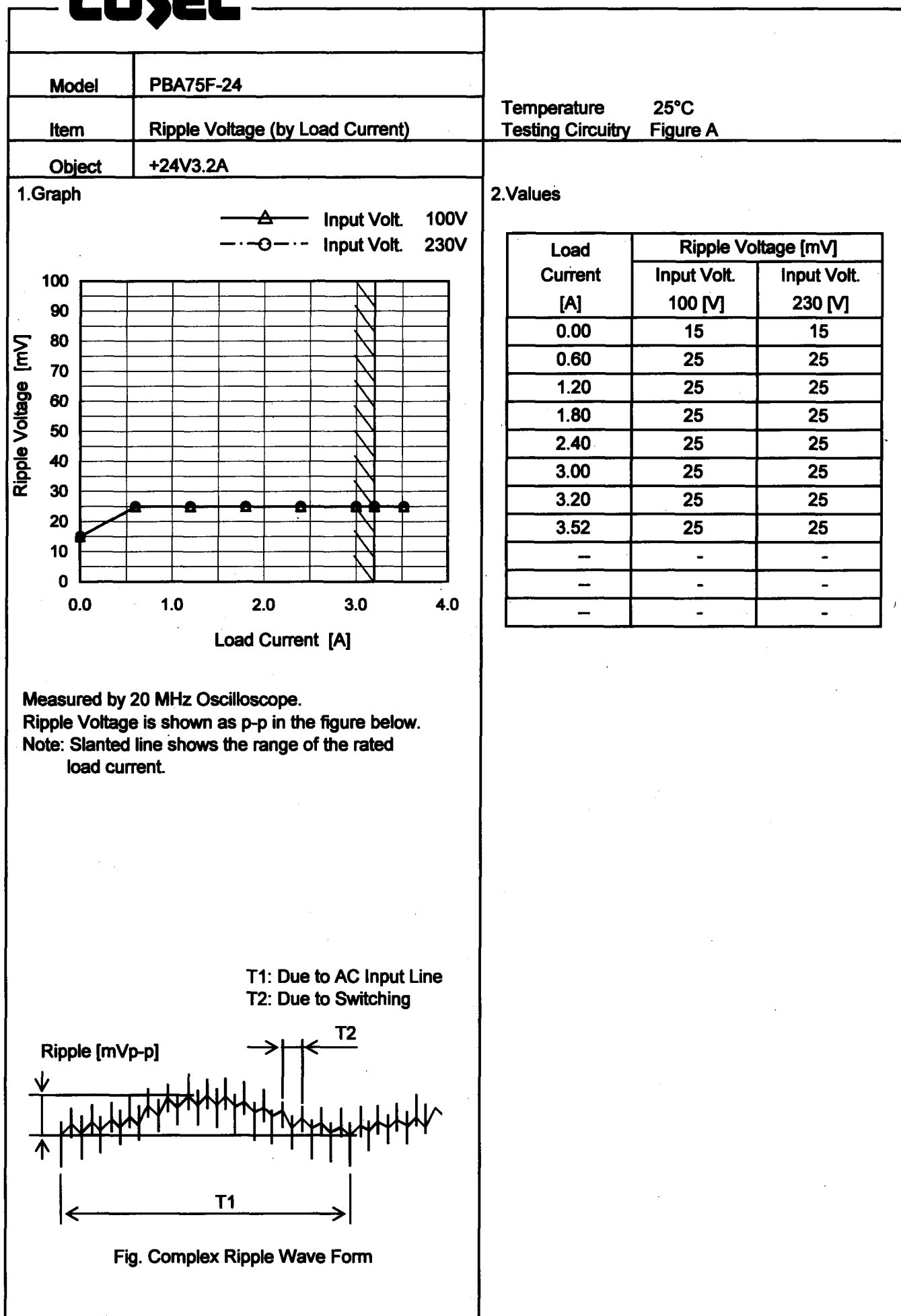
Model	PBA75F-24		
Item	Dynamic Load Response	Temperature	25°C
Object	+24V3.2A	Testing Circuitry	Figure A

Input Volt. 100 V
Cycle 1000 ms



* The characteristic of AC200V is equal.

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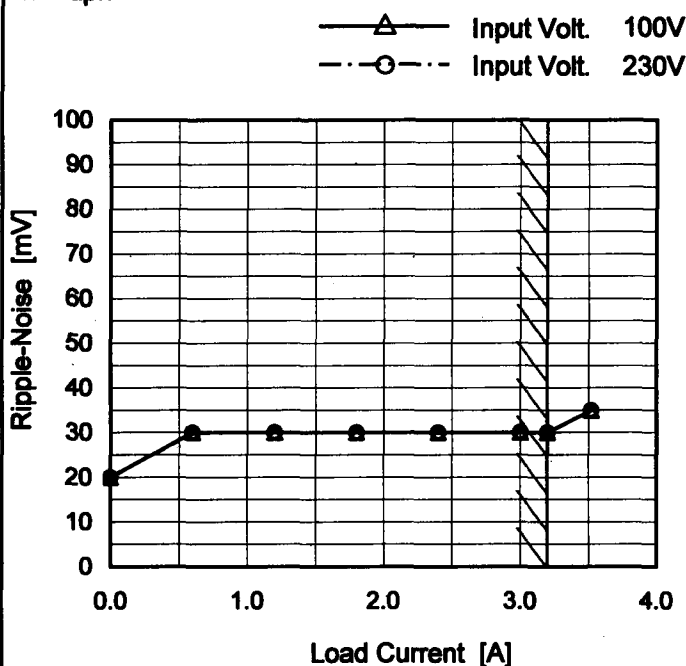
Model PBA75F-24

Item Ripple-Noise

Object +24V3.2A

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. 230 [V]
0.00	20	20
0.60	30	30
1.20	30	30
1.80	30	30
2.40	30	30
3.00	30	30
3.20	30	30
3.52	35	35
—	—	—
—	—	—
—	—	—

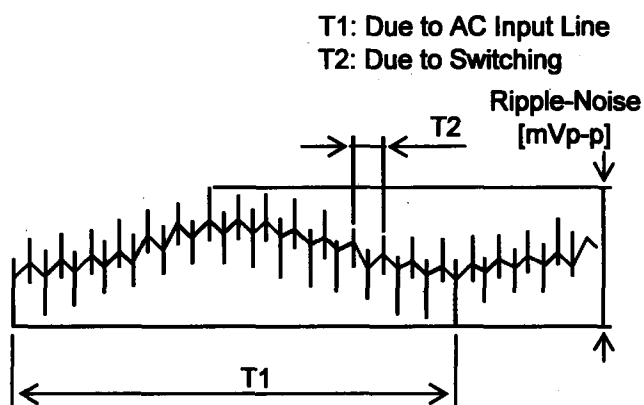


Fig. Complex Ripple Wave Form

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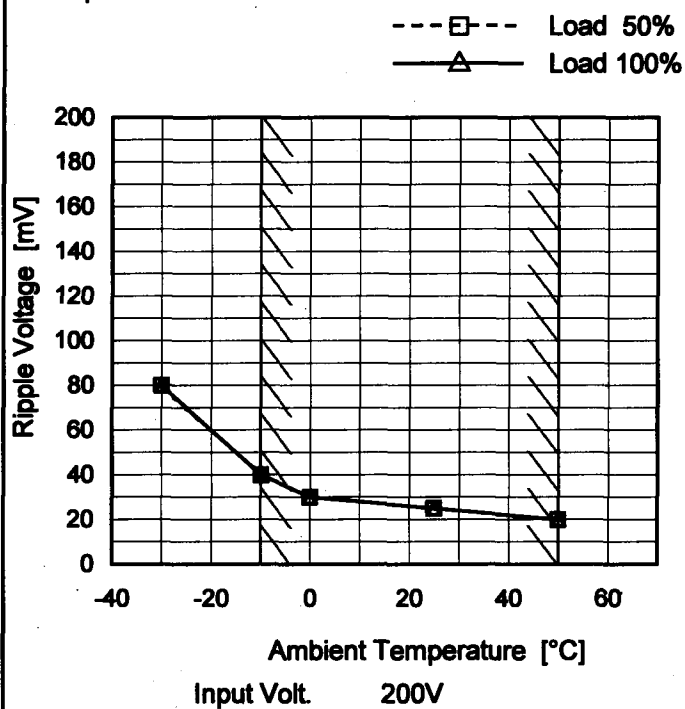
Model PBA75F-24

Item Ripple Voltage (by Ambient Temp.)

Object +24V3.2A

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]	
	Load 50%	Load 100%
-30	80	80
-10	40	40
0	30	30
25	25	25
50	20	20
0	0	0
0	0	0
-	-	-
-	-	-
-	-	-
-	-	-

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Model		PBA75F-24	
Item		Ambient Temperature Drift	
Object		+24V3.2A	

1.Graph

△

—

Input Volt. 100V

□

Input Volt. 200V

○

-.-

Input Volt. 230V

Output Voltage [V]

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		Testing Circuitry Figure A
Model	PBA75F-24	
Item	Output Voltage Accuracy	
Object	+24V3.2A	

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 - 3.2A

* 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	30	85	0	24.041	±14	±0.1
Minimum Voltage	50	200	3.2	24.013		

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Model		PBA75F-24	
Item		Time Lapse Drift	
Object		+24V3.2A	

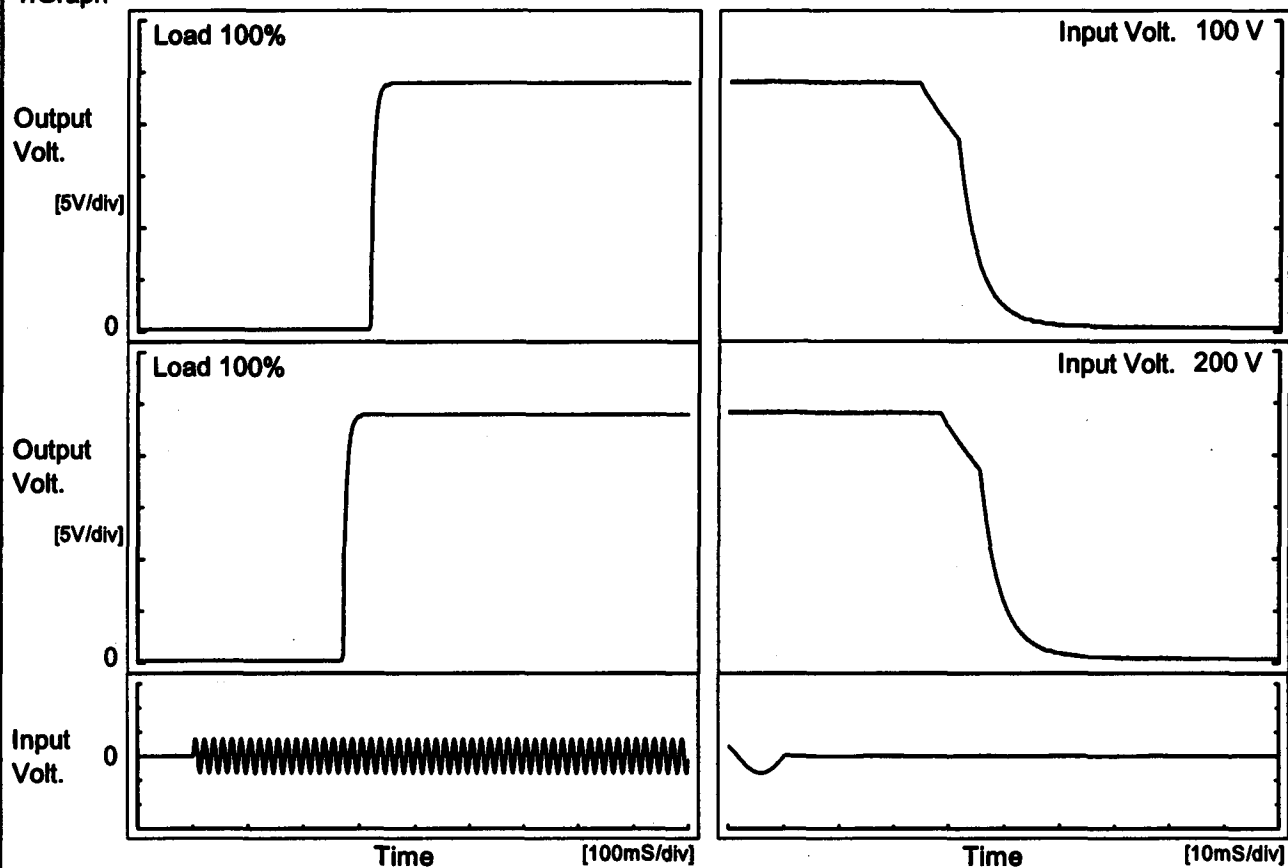
1.Graph

Output Voltage [V]

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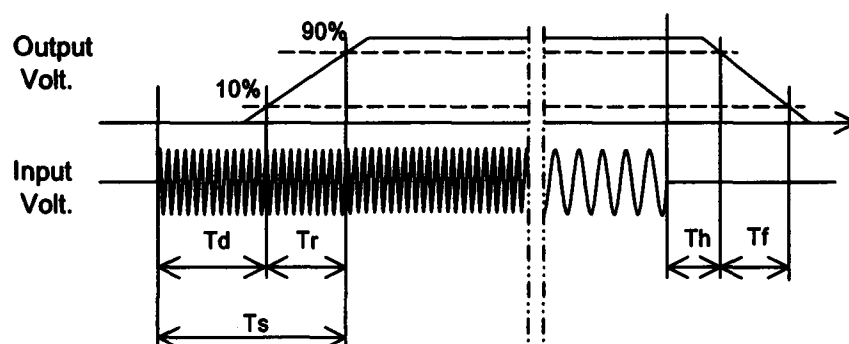
Model	PBA75F-24	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	+24V3.2A		

1. Graph



2. Values

Input Volt.	Time	Td	Tr	Ts	Th	Tf
100 V		319.5	13.0	332.5	26.9	12.5
200 V		271.5	13.0	284.5	31.0	12.5



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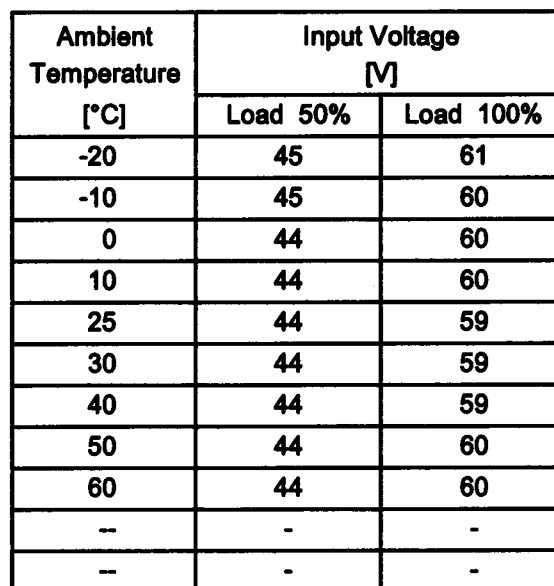
Model	PBA75F-24	Temperature 25°C Testing Circuitry Figure A																																	
Item	Hold-Up Time																																		
Object	+24V3.2A																																		
1.Graph		2.Values																																	
<div><div><div>Hold-Up Time [mS]</div><div><div>1000</div><div>100</div><div>10</div><div>1</div></div><div><div>50</div><div>100</div><div>150</div><div>200</div><div>250</div><div>300</div></div><div>Input Voltage [V]</div></div><div><div>---□---</div><div>Load 50%</div><div>—△—</div><div>Load 100%</div></div></div>		<table><tr><th rowspan="2">Input Voltage [V]</th><th colspan="2">Hold-Up Time [mS]</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr><tr><td>75</td><td>49</td><td>21</td></tr><tr><td>85</td><td>51</td><td>23</td></tr><tr><td>100</td><td>53</td><td>25</td></tr><tr><td>120</td><td>55</td><td>26</td></tr><tr><td>200</td><td>59</td><td>29</td></tr><tr><td>230</td><td>60</td><td>30</td></tr><tr><td>264</td><td>61</td><td>30</td></tr><tr><td>280</td><td>61</td><td>30</td></tr><tr><td>—</td><td>-</td><td>-</td></tr></table>		Input Voltage [V]	Hold-Up Time [mS]		Load 50%	Load 100%	75	49	21	85	51	23	100	53	25	120	55	26	200	59	29	230	60	30	264	61	30	280	61	30	—	-	-
Input Voltage [V]	Hold-Up Time [mS]																																		
	Load 50%	Load 100%																																	
75	49	21																																	
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200	59	29																																	
230	60	30																																	
264	61	30																																	
280	61	30																																	
—	-	-																																	
<p>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.</p>																																			

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Model	PBA75F-24																																																						
Item	Instantaneous Interruption Compensation	Temperature	25°C																																																				
Object	+24V3.2A	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> <p>Instantaneous Compensation Time [mS]</p> <p>Load Current [A]</p>		<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>0.60</td><td>129</td><td>147</td><td>160</td></tr><tr><td>1.20</td><td>72</td><td>79</td><td>80</td></tr><tr><td>1.80</td><td>47</td><td>53</td><td>54</td></tr><tr><td>2.40</td><td>35</td><td>40</td><td>46</td></tr><tr><td>3.00</td><td>27</td><td>30</td><td>32</td></tr><tr><td>3.20</td><td>25</td><td>29</td><td>30</td></tr><tr><td>3.52</td><td>22</td><td>25</td><td>27</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	-	-	-	0.60	129	147	160	1.20	72	79	80	1.80	47	53	54	2.40	35	40	46	3.00	27	30	32	3.20	25	29	30	3.52	22	25	27	--	-	-	-	--	-	-	-	--	-	-	-
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



- 21 -

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Model		PBA75F-24	
Item		Overcurrent Protection	
Object		+24V3.2A	

1.Graph

Input Volt. 100V

Input Volt. 200V

Output Voltage [V]

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Model		PBA75F-24
Item		Overvoltage Protection
Object		+24V3.2A

1.Graph

△

Input Volt. 100V

□

Input Volt. 200V

Operating Point [V]

<

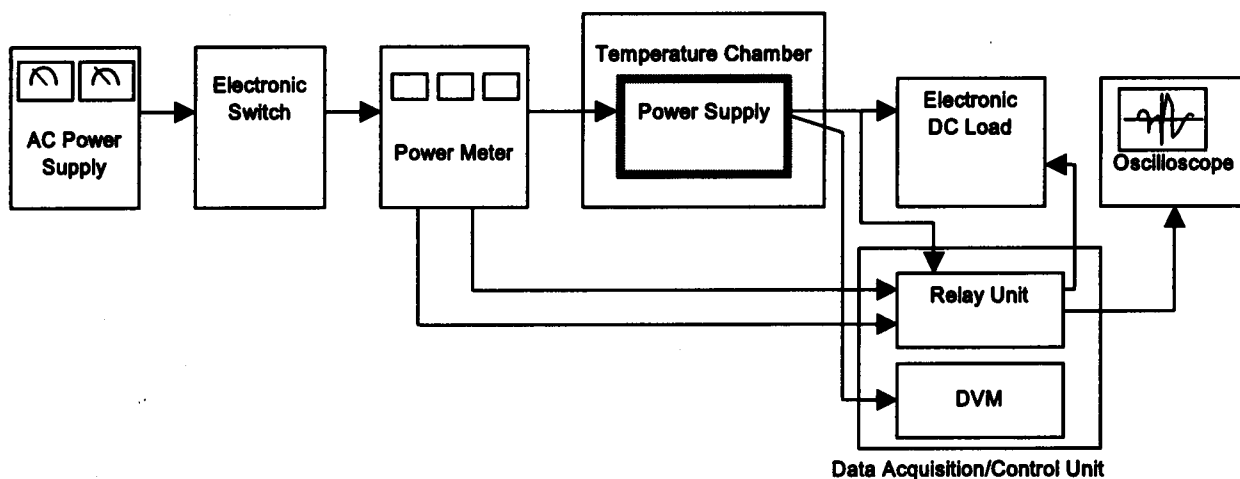


Figure A

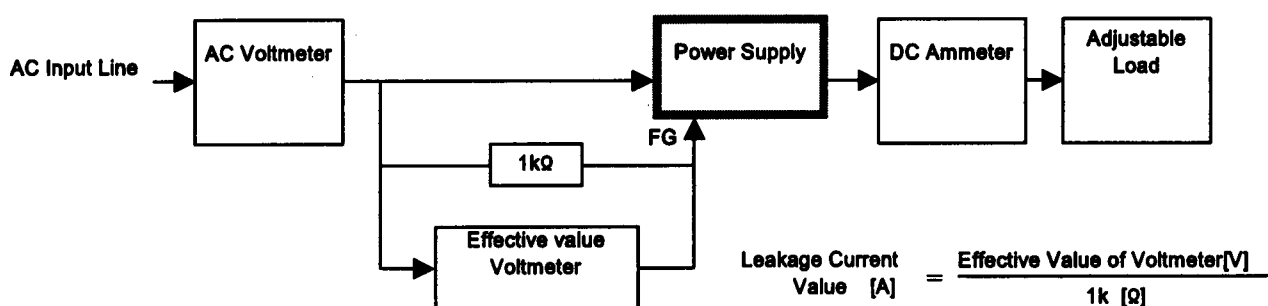


Figure B (DEN-AN)

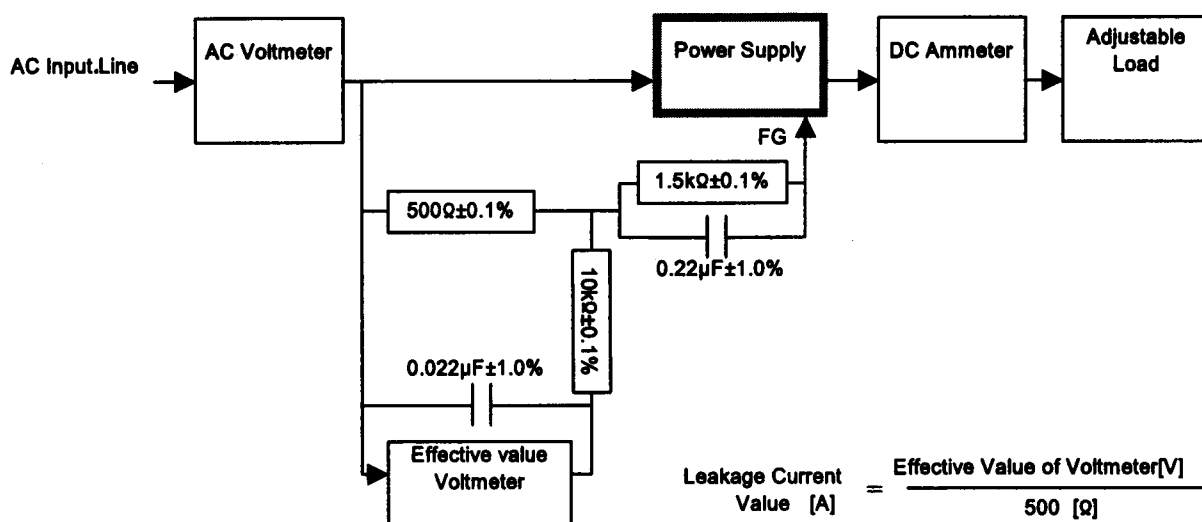


Figure B (IEC60950)