



TEST DATA OF PBA1500F-5

Regulated DC Power Supply
May.30. 2003

Approved by : Takahiro Goneda
Design Manager

Prepared by : Takahiro Sugimoto
Design Engineer

COSEL CO.,LTD.



CONTENTS

1.Input Current (by Load Current)	1
2.Input Power (by Load Current)	2
3.Efficiency (by Input Voltage)	3
4.Efficiency (by Load Current)	4
5.Power Factor (by Input Voltage)	5
6.Power Factor (by Load Current)	6
7.Inrush Current	7
8.Leakage Current	8
9.Line Regulation	9
10.Load Regulation	10
11.Dynamic Load Response	11
12.Ripple Voltage (by Load Current)	12
13.Ripple-Noise	13
14.Ripple Voltage (by Ambient Temperature)	14
15.Ambient Temperature Drift	15
16.Output Voltage Accuracy	16
17.Time Lapse Drift	17
18.Rise and Fall Time	18
19.Hold-Up Time	19
20.Instantaneous Interruption Compensation	20
21.Minimum Input Voltage for Regulated Output Voltage	21
22.Overcurrent Protection	22
23.Oversupply Protection	23
24.Figure of Testing Circuitry	24

(Final Page 24)

COSEL

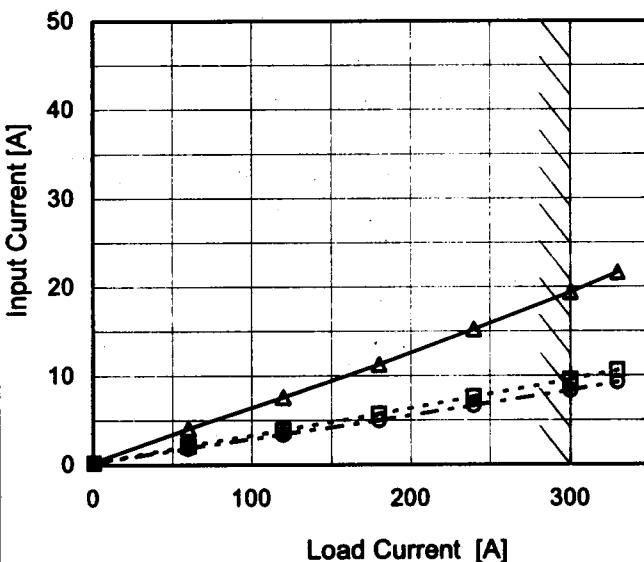
Model PBA1500F-5

Item Input Current (by Load Current)

Object _____

1. Graph

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



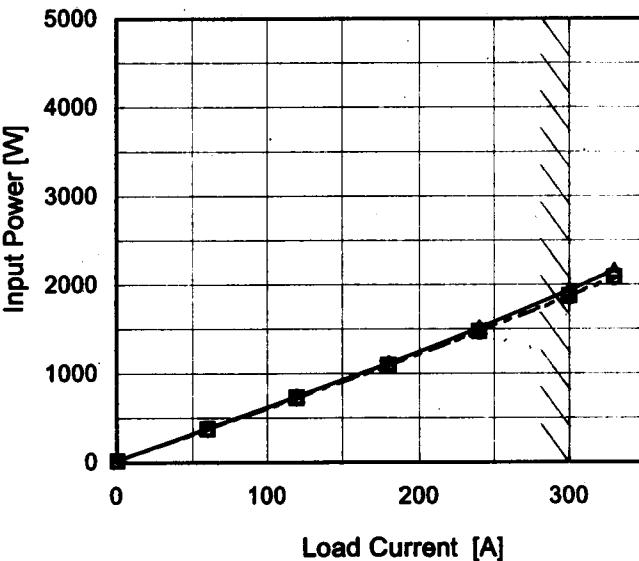
Note: Slanted line shows the range of the rated load current.

 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	0.290	0.222	0.227
60	4.050	2.114	1.874
120	7.580	3.880	3.410
180	11.280	5.700	5.000
240	15.220	7.600	6.640
300	19.400	9.560	8.350
330	21.620	10.610	9.250
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	PBA1500F-5																																																					
Item	Input Power (by Load Current)	Temperature 25°C	Testing Circuitry Figure A																																																			
Object	_____	_____	_____																																																			
1. Graph																																																						
—△— Input Volt. 100V - -□-- Input Volt. 200V - -○-- Input Volt. 230V			2. Values																																																			
 <p>The graph plots Input Power [W] on the Y-axis (0 to 5000) against Load Current [A] on the X-axis (0 to 350). Three curves are shown for different input voltages: 100V (solid line with triangles), 200V (dashed line with squares), and 230V (dash-dot line with circles). All curves show a linear increase in power with load current. A slanted line is drawn across the graph, starting from approximately (0, 21) and ending at (330, 2076), representing the rated load current range.</p>																																																						
<p>Note: Slanted line shows the range of the rated load current.</p>																																																						
<table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="3">Input Power [W]</th> </tr> <tr> <th>Input Volt. 100[V]</th> <th>Input Volt. 200[V]</th> <th>Input Volt. 230[V]</th> </tr> </thead> <tbody> <tr><td>0</td><td>21</td><td>19</td><td>18</td></tr> <tr><td>60</td><td>383</td><td>377</td><td>375</td></tr> <tr><td>120</td><td>739</td><td>728</td><td>723</td></tr> <tr><td>180</td><td>1114</td><td>1094</td><td>1088</td></tr> <tr><td>240</td><td>1514</td><td>1476</td><td>1469</td></tr> <tr><td>300</td><td>1935</td><td>1874</td><td>1866</td></tr> <tr><td>330</td><td>2157</td><td>2086</td><td>2076</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> </tbody> </table>				Load Current [A]	Input Power [W]			Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]	0	21	19	18	60	383	377	375	120	739	728	723	180	1114	1094	1088	240	1514	1476	1469	300	1935	1874	1866	330	2157	2086	2076	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Input Power [W]																																																					
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]																																																			
0	21	19	18																																																			
60	383	377	375																																																			
120	739	728	723																																																			
180	1114	1094	1088																																																			
240	1514	1476	1469																																																			
300	1935	1874	1866																																																			
330	2157	2086	2076																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			

COSEL

Model	PBA1500F-5	Temperature Testing Circuitry	25°C Figure A																					
Item	Efficiency (by Input Voltage)																							
Object	—																							
1. Graph			2. Values																					
<p>The graph plots Efficiency [%] on the y-axis (30 to 86) against Input Voltage [V] on the x-axis (50 to 300). Two data series are shown: Load 50% (dashed line with square markers) and Load 100% (solid line with triangle markers). Both series show efficiency increasing slightly as input voltage increases. A slanted line indicates the rated input voltage range.</p> <table border="1"> <thead> <tr> <th>Input Voltage [V]</th> <th>Efficiency Load 50% [%]</th> <th>Efficiency Load 100% [%]</th> </tr> </thead> <tbody> <tr><td>85</td><td>81.3</td><td>77.1</td></tr> <tr><td>100</td><td>81.7</td><td>78.1</td></tr> <tr><td>120</td><td>82.2</td><td>79.1</td></tr> <tr><td>200</td><td>83.4</td><td>80.5</td></tr> <tr><td>230</td><td>83.7</td><td>80.8</td></tr> <tr><td>264</td><td>84.1</td><td>81.2</td></tr> </tbody> </table>				Input Voltage [V]	Efficiency Load 50% [%]	Efficiency Load 100% [%]	85	81.3	77.1	100	81.7	78.1	120	82.2	79.1	200	83.4	80.5	230	83.7	80.8	264	84.1	81.2
Input Voltage [V]	Efficiency Load 50% [%]	Efficiency Load 100% [%]																						
85	81.3	77.1																						
100	81.7	78.1																						
120	82.2	79.1																						
200	83.4	80.5																						
230	83.7	80.8																						
264	84.1	81.2																						
<p>Note: Slanted line shows the range of the rated input voltage.</p>																								

COSEL

Model	PBA1500F-5	Temperature Testing Circuitry	25°C Figure A																																																			
Item	Efficiency (by Load Current)																																																					
Object	_____																																																					
1.Graph																																																						
<p>The graph plots Efficiency [%] on the Y-axis (30 to 86) against Load Current [A] on the X-axis (0 to 300). Three data series are shown for different input voltages: 100V (solid line with triangle markers), 200V (dashed line with square markers), and 230V (dash-dot line with circle markers). All series show efficiency starting around 80% at low currents and slightly decreasing as load increases beyond 150A. A diagonal line from approximately (100, 80) to (300, 70) highlights the rated load current range.</p>																																																						
2.Values																																																						
<table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="3">Efficiency [%]</th> </tr> <tr> <th>Input Volt. 100[V]</th> <th>Input Volt. 200[V]</th> <th>Input Volt. 230[V]</th> </tr> </thead> <tbody> <tr><td>0</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>60</td><td>79.0</td><td>80.2</td><td>80.7</td></tr> <tr><td>120</td><td>81.9</td><td>83.1</td><td>83.7</td></tr> <tr><td>180</td><td>81.5</td><td>82.9</td><td>83.4</td></tr> <tr><td>240</td><td>79.9</td><td>81.9</td><td>82.3</td></tr> <tr><td>300</td><td>78.1</td><td>80.7</td><td>81.0</td></tr> <tr><td>330</td><td>77.1</td><td>79.7</td><td>80.1</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> </tbody> </table>				Load Current [A]	Efficiency [%]			Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]	0	-	-	-	60	79.0	80.2	80.7	120	81.9	83.1	83.7	180	81.5	82.9	83.4	240	79.9	81.9	82.3	300	78.1	80.7	81.0	330	77.1	79.7	80.1	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Efficiency [%]																																																					
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]																																																			
0	-	-	-																																																			
60	79.0	80.2	80.7																																																			
120	81.9	83.1	83.7																																																			
180	81.5	82.9	83.4																																																			
240	79.9	81.9	82.3																																																			
300	78.1	80.7	81.0																																																			
330	77.1	79.7	80.1																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			

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

COSEL

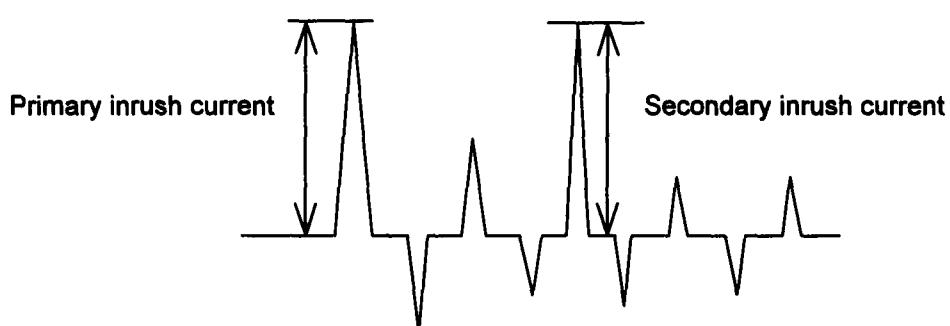
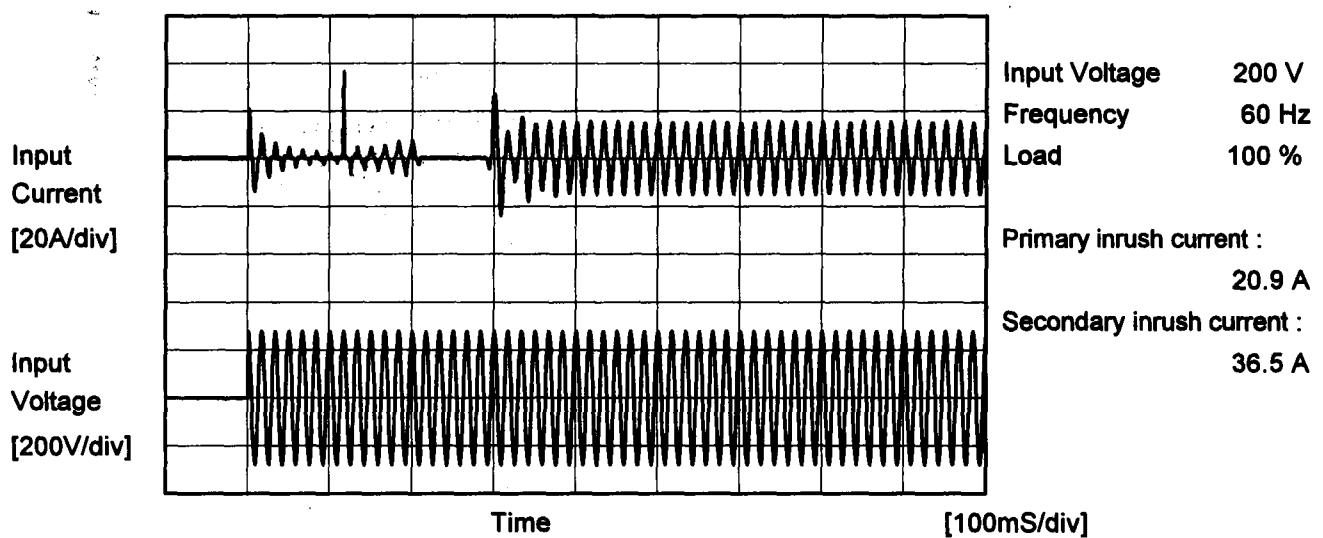
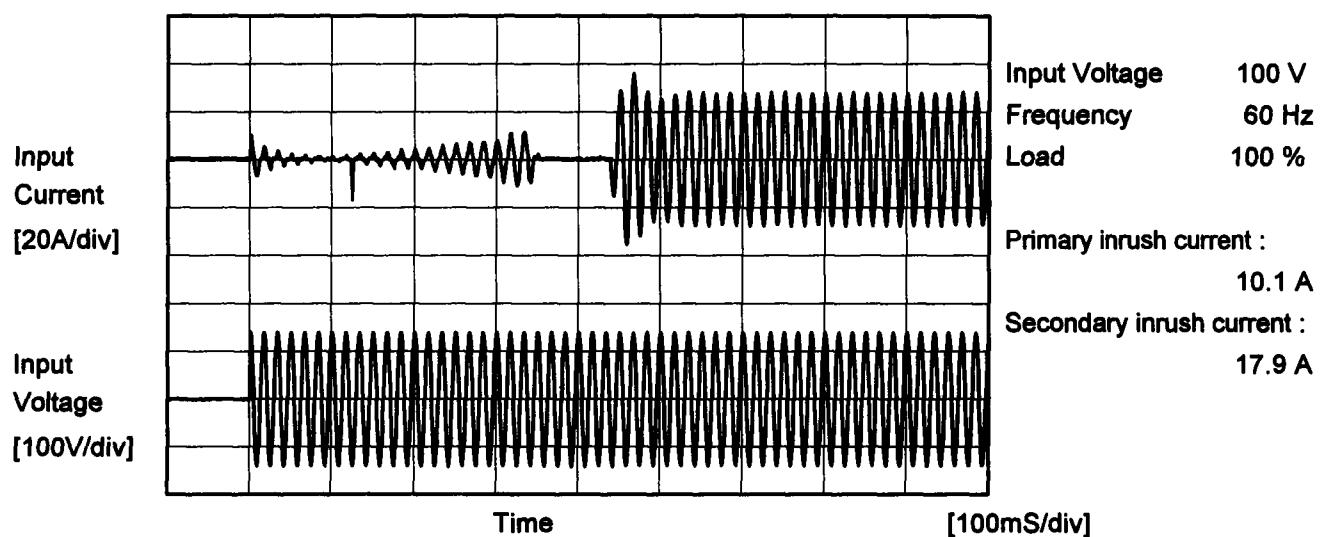
Model	PBA1500F-5	Temperature	25°C																																
Item	Power Factor (by Input Voltage)	Testing Circuitry	Figure A																																
Object	—																																		
1. Graph	<p style="text-align: center;">---□--- Load 50% —△— Load 100%</p>																																		
2. Values	<table border="1"> <thead> <tr> <th rowspan="2">Input Voltage [V]</th> <th colspan="2">Power Factor</th> </tr> <tr> <th>Load 50%</th> <th>Load 100%</th> </tr> </thead> <tbody> <tr> <td>85</td><td>0.987</td><td>0.997</td></tr> <tr> <td>100</td><td>0.984</td><td>0.998</td></tr> <tr> <td>120</td><td>0.979</td><td>0.995</td></tr> <tr> <td>200</td><td>0.949</td><td>0.980</td></tr> <tr> <td>230</td><td>0.936</td><td>0.972</td></tr> <tr> <td>264</td><td>0.922</td><td>0.962</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> </tbody> </table>			Input Voltage [V]	Power Factor		Load 50%	Load 100%	85	0.987	0.997	100	0.984	0.998	120	0.979	0.995	200	0.949	0.980	230	0.936	0.972	264	0.922	0.962	—	-	-	—	-	-	--	-	-
Input Voltage [V]	Power Factor																																		
	Load 50%	Load 100%																																	
85	0.987	0.997																																	
100	0.984	0.998																																	
120	0.979	0.995																																	
200	0.949	0.980																																	
230	0.936	0.972																																	
264	0.922	0.962																																	
—	-	-																																	
—	-	-																																	
--	-	-																																	
<p>Note: Slanted line shows the range of the rated input voltage.</p>																																			

COSEL

Model	PBA1500F-5																																																					
Item	Power Factor (by Load Current)	Temperature	25°C																																																			
Object	Testing Circuitry	Figure A																																																				
1.Graph	<p>—▲— Input Volt. 100V - - □ - - Input Volt. 200V - - ○ - - Input Volt. 230V</p> <table border="1"> <caption>Data points estimated from Graph</caption> <thead> <tr> <th>Load Current [A]</th> <th>Input Volt. 100V</th> <th>Input Volt. 200V</th> <th>Input Volt. 230V</th> </tr> </thead> <tbody> <tr><td>0</td><td>0.724</td><td>0.432</td><td>0.346</td></tr> <tr><td>60</td><td>0.948</td><td>0.891</td><td>0.870</td></tr> <tr><td>120</td><td>0.976</td><td>0.938</td><td>0.921</td></tr> <tr><td>180</td><td>0.988</td><td>0.960</td><td>0.947</td></tr> <tr><td>240</td><td>0.996</td><td>0.971</td><td>0.963</td></tr> <tr><td>300</td><td>0.998</td><td>0.981</td><td>0.972</td></tr> </tbody> </table>			Load Current [A]	Input Volt. 100V	Input Volt. 200V	Input Volt. 230V	0	0.724	0.432	0.346	60	0.948	0.891	0.870	120	0.976	0.938	0.921	180	0.988	0.960	0.947	240	0.996	0.971	0.963	300	0.998	0.981	0.972																							
Load Current [A]	Input Volt. 100V	Input Volt. 200V	Input Volt. 230V																																																			
0	0.724	0.432	0.346																																																			
60	0.948	0.891	0.870																																																			
120	0.976	0.938	0.921																																																			
180	0.988	0.960	0.947																																																			
240	0.996	0.971	0.963																																																			
300	0.998	0.981	0.972																																																			
2.Values	<table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="3">Power Factor</th> </tr> <tr> <th>Input Volt. 100[V]</th> <th>Input Volt. 200[V]</th> <th>Input Volt. 230[V]</th> </tr> </thead> <tbody> <tr><td>0</td><td>0.724</td><td>0.432</td><td>0.346</td></tr> <tr><td>60</td><td>0.948</td><td>0.891</td><td>0.870</td></tr> <tr><td>120</td><td>0.976</td><td>0.938</td><td>0.921</td></tr> <tr><td>180</td><td>0.988</td><td>0.960</td><td>0.947</td></tr> <tr><td>240</td><td>0.996</td><td>0.971</td><td>0.963</td></tr> <tr><td>300</td><td>0.998</td><td>0.981</td><td>0.972</td></tr> <tr><td>330</td><td>0.999</td><td>0.983</td><td>0.976</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> </tbody> </table>			Load Current [A]	Power Factor			Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]	0	0.724	0.432	0.346	60	0.948	0.891	0.870	120	0.976	0.938	0.921	180	0.988	0.960	0.947	240	0.996	0.971	0.963	300	0.998	0.981	0.972	330	0.999	0.983	0.976	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Power Factor																																																					
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]																																																			
0	0.724	0.432	0.346																																																			
60	0.948	0.891	0.870																																																			
120	0.976	0.938	0.921																																																			
180	0.988	0.960	0.947																																																			
240	0.996	0.971	0.963																																																			
300	0.998	0.981	0.972																																																			
330	0.999	0.983	0.976																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			
Note:	Slanted line shows the range of the rated load current.																																																					

COSEL

Model	PBA1500F-5	Temperature Testing Circuitry Figure A	25°C
Item	Inrush Current		
Object	_____		





Model	PBA1500F-5	Temperature 25°C Testing Circuitry Figure B
Item	Leakage Current	
Object	_____	

1. Results

[mA]

Standards		Input Volt.			Note
		100[V]	200[V]	240[V]	
DEN-AN	Both phases	0.31	0.58	0.71	Operation
	One of phase	0.57	1.20	1.36	stand by
IEC60950	Both phases	0.34	0.67	0.81	Operation
	One of phase	0.57	1.15	1.41	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.

COSEL

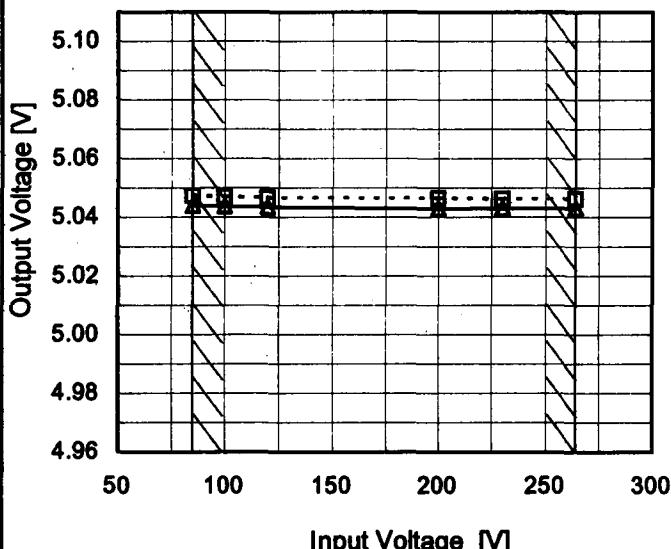
Model	PBA1500F-5
-------	------------

Item	Line Regulation
------	-----------------

Object	+5V300A
--------	---------

1. Graph

---□--- Load 50%
 —△— Load 100%



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

Temperature	25°C
Testing Circuitry	Figure A

2. Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
85	5.047	5.044
100	5.047	5.044
120	5.047	5.044
200	5.047	5.043
230	5.046	5.043
264	5.046	5.043
--	-	-
--	-	-
--	-	-

COSEL

Model	PBA1500F-5	Temperature	25°C																																																			
Item	Load Regulation	Testing Circuitry	Figure A																																																			
Object	+5V300A																																																					
1.Graph																																																						
<p>Output Voltage [V]</p> <p>Load Current [A]</p> <ul style="list-style-type: none"> —▲— Input Volt. 100V - - □ - - Input Volt. 200V - - ○ - - Input Volt. 230V 																																																						
2.Values																																																						
<table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="3">Output Voltage [V]</th> </tr> <tr> <th>Input Volt. 100[V]</th> <th>Input Volt. 200[V]</th> <th>Input Volt. 230[V]</th> </tr> </thead> <tbody> <tr> <td>0</td><td>5.050</td><td>5.051</td><td>5.051</td></tr> <tr> <td>60</td><td>5.049</td><td>5.049</td><td>5.050</td></tr> <tr> <td>120</td><td>5.048</td><td>5.048</td><td>5.049</td></tr> <tr> <td>180</td><td>5.047</td><td>5.049</td><td>5.047</td></tr> <tr> <td>240</td><td>5.046</td><td>5.048</td><td>5.046</td></tr> <tr> <td>300</td><td>5.045</td><td>5.047</td><td>5.044</td></tr> <tr> <td>330</td><td>5.044</td><td>5.046</td><td>5.044</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> </tbody> </table>				Load Current [A]	Output Voltage [V]			Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]	0	5.050	5.051	5.051	60	5.049	5.049	5.050	120	5.048	5.048	5.049	180	5.047	5.049	5.047	240	5.046	5.048	5.046	300	5.045	5.047	5.044	330	5.044	5.046	5.044	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Output Voltage [V]																																																					
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]																																																			
0	5.050	5.051	5.051																																																			
60	5.049	5.049	5.050																																																			
120	5.048	5.048	5.049																																																			
180	5.047	5.049	5.047																																																			
240	5.046	5.048	5.046																																																			
300	5.045	5.047	5.044																																																			
330	5.044	5.046	5.044																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			
<p>Note: Slanted line shows the range of the rated load current.</p>																																																						

COSEL

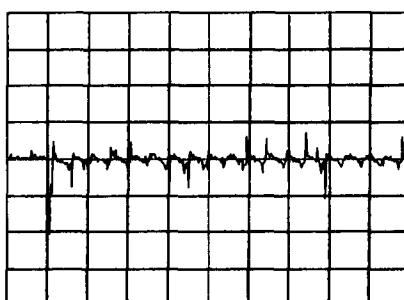
Model	PBA1500F-5	Temperature	25°C
Item	Dynamic Load Response	Testing Circuitry	Figure A
Object	+5V300A		

Input Volt. 100 V
 Cycle 1000 mS

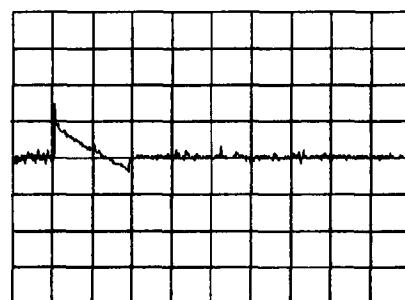
Load Current

Min.Load (0A) ←→
 Load 100% (300A)

100mV/div



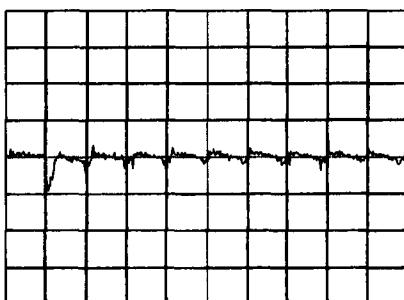
1mS/div



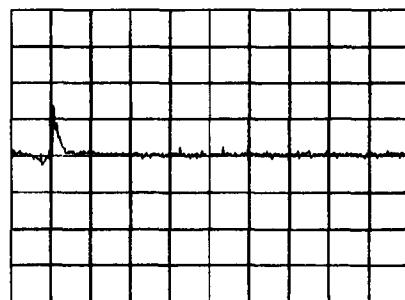
10mS/div

Min.Load (0A) ←→
 Load 50% (150A)

100mV/div



500 μ S/div



500 μ S/div

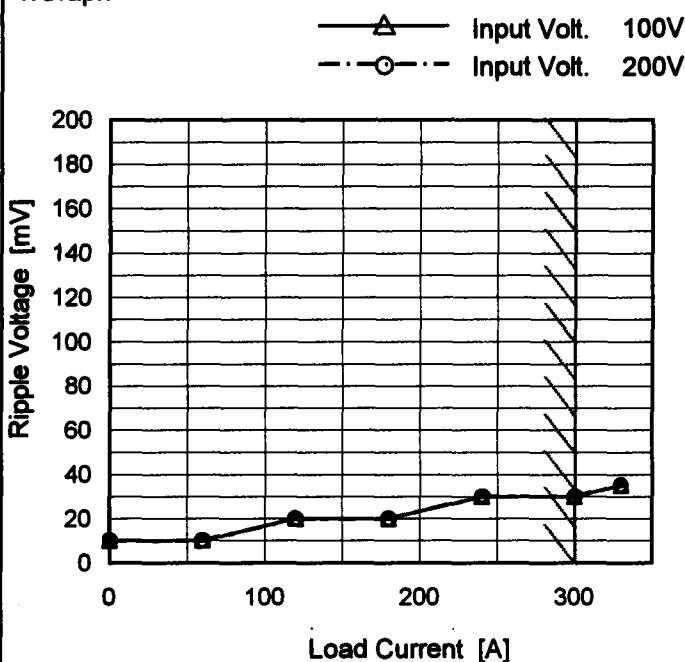
* The characteristic of AC200V is equal.

COSEL

Model	PBA1500F-5
Item	Ripple Voltage (by Load Current)
Object	+5V300A

Temperature 25°C
Testing Circuitry Figure A

1. Graph



2. Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 100 [V]	Input Volt. 200 [V]
0	10	10
60	10	10
120	20	20
180	20	20
240	30	30
300	30	30
330	35	35
-	-	-
-	-	-
-	-	-
-	-	-

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.

T1: Due to AC Input Line
T2: Due to Switching

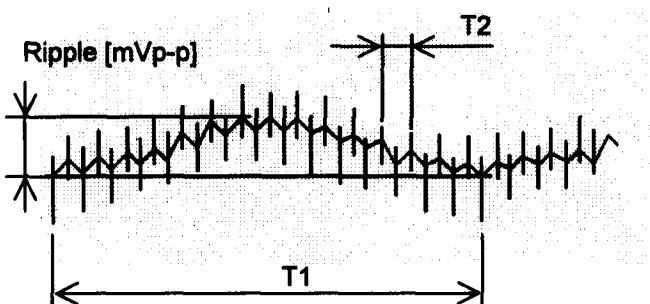


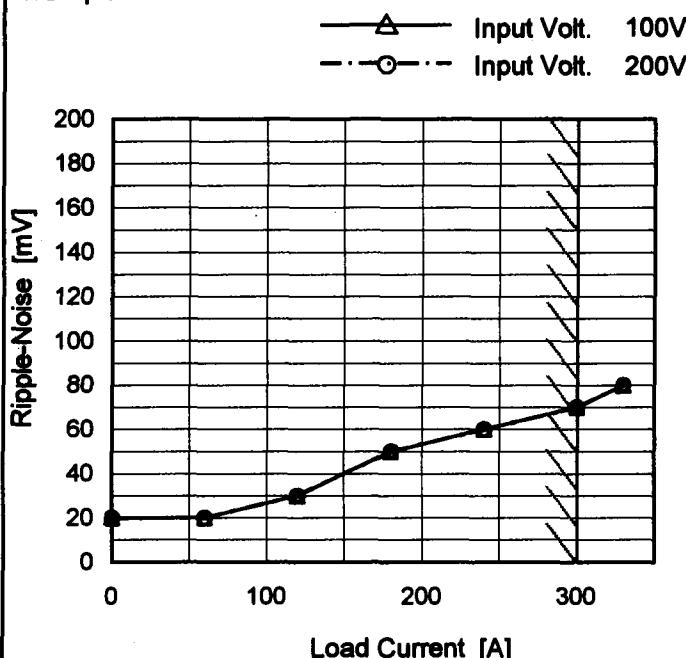
Fig. Complex Ripple Wave Form

COSEL

Model	PBA1500F-5
Item	Ripple-Noise
Object	+5V300A

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	20	20
60	20	20
120	30	30
180	50	50
240	60	60
300	70	70
330	80	80
-	-	-
-	-	-
-	-	-
-	-	-

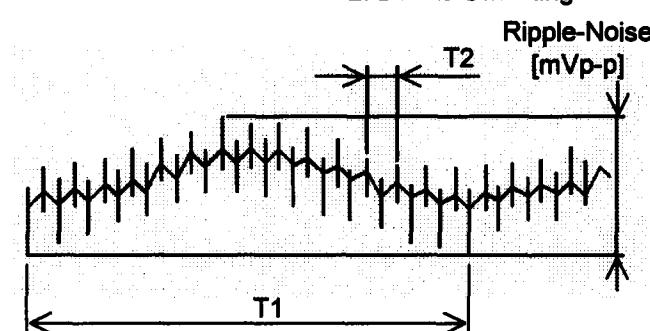
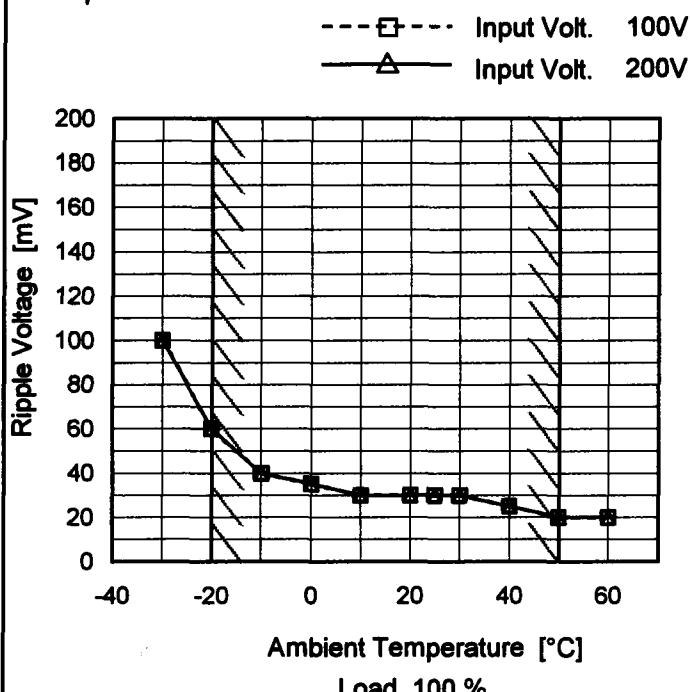
T1: Due to AC Input Line
T2: Due to Switching

Fig. Complex Ripple Wave Form

COSEL

Model	PBA1500F-5
Item	Ripple Voltage (by Ambient Temp.)
Object	+5V300A

1. Graph



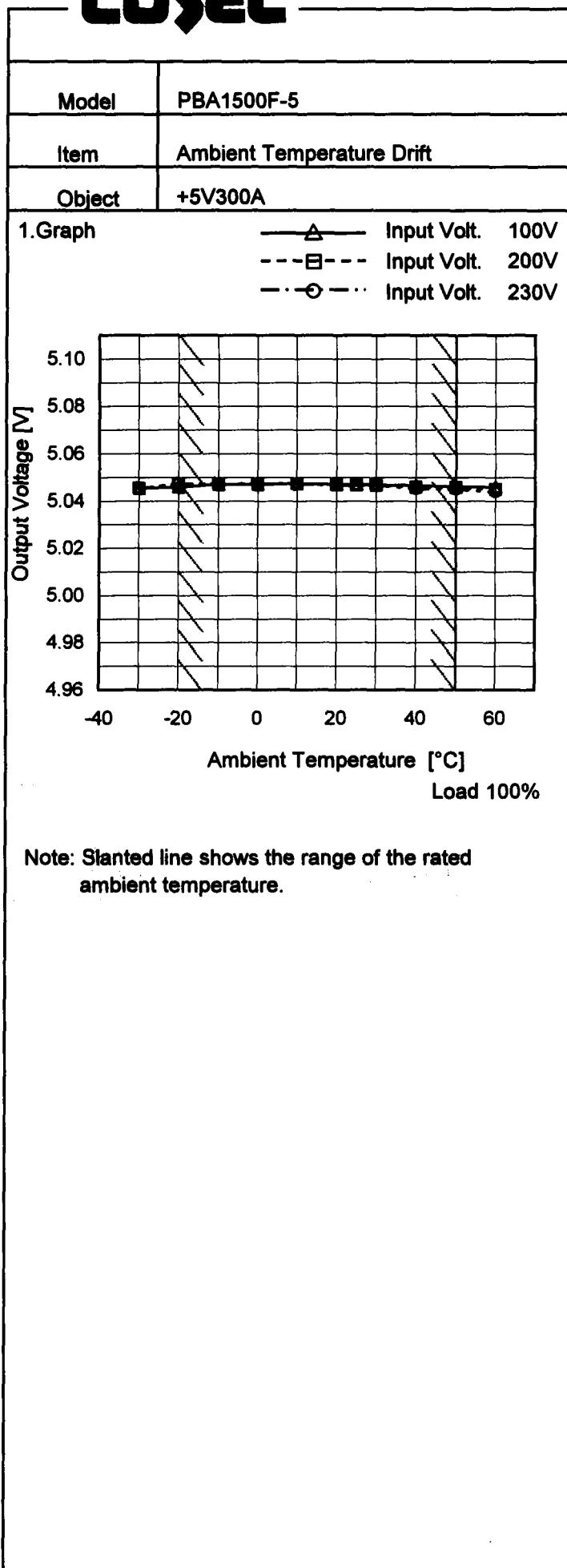
Measured by 20 MHz Oscilloscope.

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	100	100
-20	60	60
-10	40	40
0	35	35
10	30	30
20	30	30
25	30	30
30	30	30
40	25	25
50	20	20
60	20	20

COSEL


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	5.046	5.045	5.045
-20	5.046	5.047	5.047
-10	5.047	5.047	5.047
0	5.047	5.047	5.047
10	5.047	5.047	5.047
20	5.047	5.047	5.047
25	5.047	5.047	5.047
30	5.047	5.047	5.047
40	5.047	5.046	5.045
50	5.046	5.046	5.045
60	5.046	5.045	5.044



Model	PBA1500F-5	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+5V300A	

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 - 300A

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

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

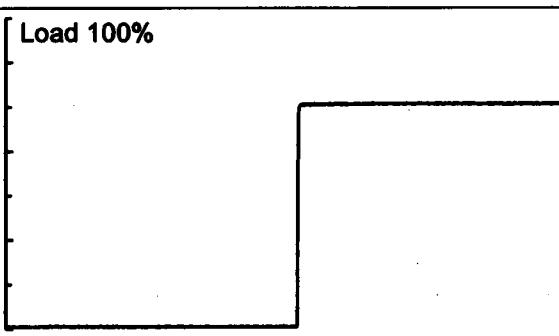
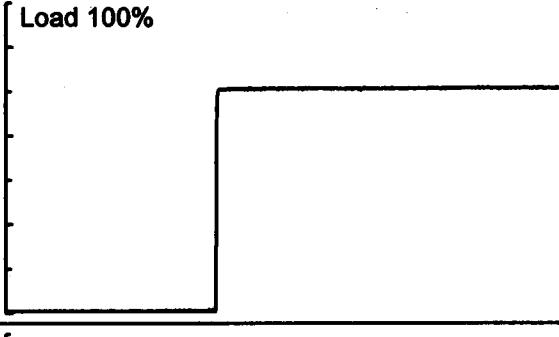
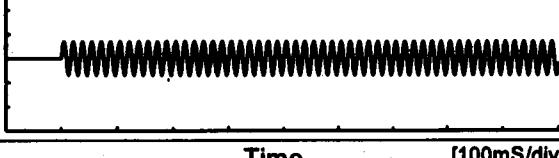
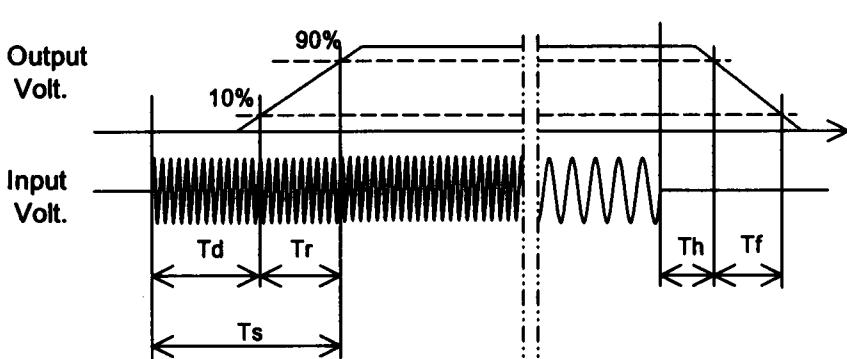
2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	25	85	0	5.051	±8	±0.2
Minimum Voltage	50	264	300	5.036		

COSEL

Model	PBA1500F-5	Temperature	25°C																						
Item	Time Lapse Drift	Testing Circuitry	Figure A																						
Object	+5V300A																								
1.Graph			2.Values																						
<p>Output Voltage [V]</p> <p>Time [H]</p> <p>Input Volt. 100V Load 100%</p>			<table border="1"> <thead> <tr> <th>Time since start [H]</th> <th>Output Voltage [V]</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>5.056</td></tr> <tr><td>0.5</td><td>5.045</td></tr> <tr><td>1.0</td><td>5.045</td></tr> <tr><td>2.0</td><td>5.045</td></tr> <tr><td>3.0</td><td>5.045</td></tr> <tr><td>4.0</td><td>5.045</td></tr> <tr><td>5.0</td><td>5.045</td></tr> <tr><td>6.0</td><td>5.045</td></tr> <tr><td>7.0</td><td>5.045</td></tr> <tr><td>8.0</td><td>5.045</td></tr> </tbody> </table>	Time since start [H]	Output Voltage [V]	0.0	5.056	0.5	5.045	1.0	5.045	2.0	5.045	3.0	5.045	4.0	5.045	5.0	5.045	6.0	5.045	7.0	5.045	8.0	5.045
Time since start [H]	Output Voltage [V]																								
0.0	5.056																								
0.5	5.045																								
1.0	5.045																								
2.0	5.045																								
3.0	5.045																								
4.0	5.045																								
5.0	5.045																								
6.0	5.045																								
7.0	5.045																								
8.0	5.045																								
<p>* The characteristic of AC200V is equal.</p>																									

COSEL

Model	PBA1500F-5	Temperature	25°C																								
Item	Rise and Fall Time	Testing Circuitry	Figure A																								
Object	+5V300A																										
1. Graph																											
<p>Output Volt. [1V/div]</p> 			Input Volt. 100 V																								
<p>Output Volt. [1V/div]</p> 			Input Volt. 200 V																								
<p>Input Volt. [1V/div]</p> 			Time [5mS/div]																								
2. Values																											
<table border="1"> <thead> <tr> <th>Input Volt.</th> <th>Time</th> <th>Td</th> <th>Tr</th> <th>Ts</th> <th>Th</th> <th>Tf</th> <th>[mS]</th> </tr> </thead> <tbody> <tr> <td>100 V</td> <td></td> <td>424.5</td> <td>2.0</td> <td>426.5</td> <td>20.5</td> <td>2.0</td> <td></td> </tr> <tr> <td>200 V</td> <td></td> <td>277.5</td> <td>1.5</td> <td>279.0</td> <td>27.2</td> <td>2.0</td> <td></td> </tr> </tbody> </table>				Input Volt.	Time	Td	Tr	Ts	Th	Tf	[mS]	100 V		424.5	2.0	426.5	20.5	2.0		200 V		277.5	1.5	279.0	27.2	2.0	
Input Volt.	Time	Td	Tr	Ts	Th	Tf	[mS]																				
100 V		424.5	2.0	426.5	20.5	2.0																					
200 V		277.5	1.5	279.0	27.2	2.0																					
																											

COSEL

Model	PBA1500F-5	Temperature	25°C																																
Item	Hold-Up Time	Testing Circuitry	Figure A																																
Object	+5V300A																																		
1. Graph			2. Values																																
			<table border="1"> <thead> <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> </thead> <tbody> <tr> <td>85</td> <td>48</td> <td>18</td> </tr> <tr> <td>100</td> <td>51</td> <td>21</td> </tr> <tr> <td>120</td> <td>54</td> <td>23</td> </tr> <tr> <td>200</td> <td>59</td> <td>27</td> </tr> <tr> <td>230</td> <td>60</td> <td>28</td> </tr> <tr> <td>264</td> <td>60</td> <td>29</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> </tbody> </table>	Input Voltage [V]	Hold-Up Time [mS]		Load 50%	Load 100%	85	48	18	100	51	21	120	54	23	200	59	27	230	60	28	264	60	29	--	-	-	--	-	-	--	-	-
Input Voltage [V]	Hold-Up Time [mS]																																		
	Load 50%	Load 100%																																	
85	48	18																																	
100	51	21																																	
120	54	23																																	
200	59	27																																	
230	60	28																																	
264	60	29																																	
--	-	-																																	
--	-	-																																	
--	-	-																																	
<p>This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.</p> <p>Note: Slanted line shows the range of the rated input voltage.</p>																																			

COSEL

Model	PBA1500F-5	Temperature Testing Circuitry	25°C Figure A																																																			
Item	Instantaneous Interruption Compensation																																																					
Object	+5V300A																																																					
1.Graph	<p>—△— Input Volt. 100V - - -□- - Input Volt. 200V - -○- - Input Volt. 230V</p>																																																					
2.Values	<table border="1"> <thead> <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> </thead> <tbody> <tr><td>0</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>60</td><td>30</td><td>145</td><td>146</td></tr> <tr><td>120</td><td>30</td><td>44</td><td>69</td></tr> <tr><td>180</td><td>30</td><td>36</td><td>40</td></tr> <tr><td>240</td><td>28</td><td>34</td><td>36</td></tr> <tr><td>300</td><td>20</td><td>26</td><td>27</td></tr> <tr><td>330</td><td>15</td><td>23</td><td>23</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> </tbody> </table>			Load Current [A]	Time [mS]			Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]	0	-	-	-	60	30	145	146	120	30	44	69	180	30	36	40	240	28	34	36	300	20	26	27	330	15	23	23	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Time [mS]																																																					
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]																																																			
0	-	-	-																																																			
60	30	145	146																																																			
120	30	44	69																																																			
180	30	36	40																																																			
240	28	34	36																																																			
300	20	26	27																																																			
330	15	23	23																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			
Note:	Slanted line shows the range of the rated load current.																																																					

COSEL

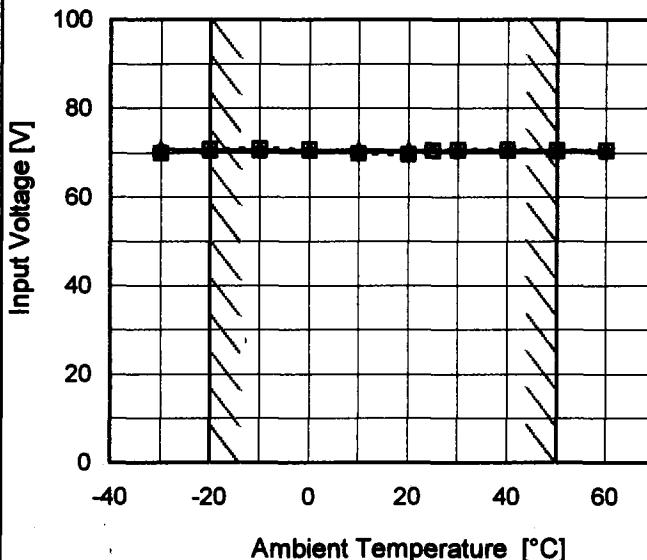
Model PBA1500F-5

Item Minimum Input Voltage
for Regulated Output Voltage

Object +5V300A

1. Graph

---□--- Load 50%
—△— Load 100%



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

Testing Circuitry Figure A

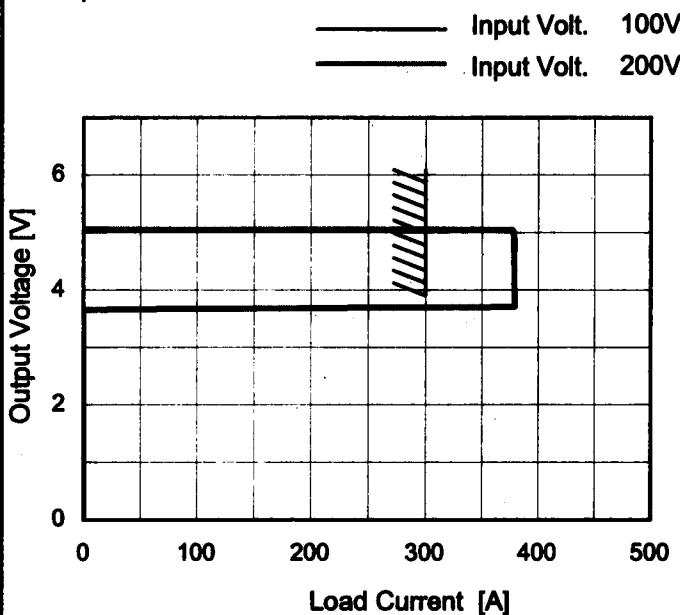
2. Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-30	70	71
-20	71	71
-10	71	71
0	71	71
10	70	71
20	70	71
25	71	71
30	71	71
40	71	71
50	71	71
60	71	71

COSEL

Model	PBA1500F-5
Item	Overcurrent Protection
Object	+5V300A

1. Graph



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

Temperature 25°C
Testing Circuitry Figure A

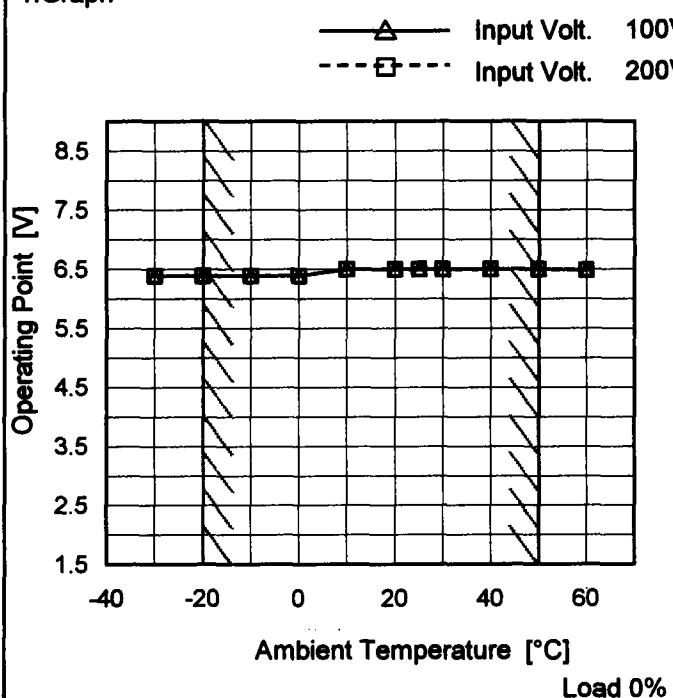
2. Values

Output Voltage [V]	Load Current [A]	
	Input Volt. 100[V]	Input Volt. 200[V]
5.00	364.08	364.40
4.75	380.14	378.50
4.50	379.60	378.82
4.00	379.71	379.15
3.50	0.00	0.00
3.00	0.00	0.00
2.50	0.00	0.00
2.00	0.00	0.00
1.50	0.00	0.00
1.00	0.00	0.00
0.50	0.00	0.00
0.00	0.00	0.00

COSEL

Model	PBA1500F-5
Item	Oversupply Protection
Object	+5V300A

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	6.38	6.38
-20	6.38	6.38
-10	6.38	6.38
0	6.38	6.38
10	6.49	6.49
20	6.49	6.49
25	6.49	6.49
30	6.49	6.49
40	6.49	6.49
50	6.49	6.49
60	6.48	6.48

COSEL

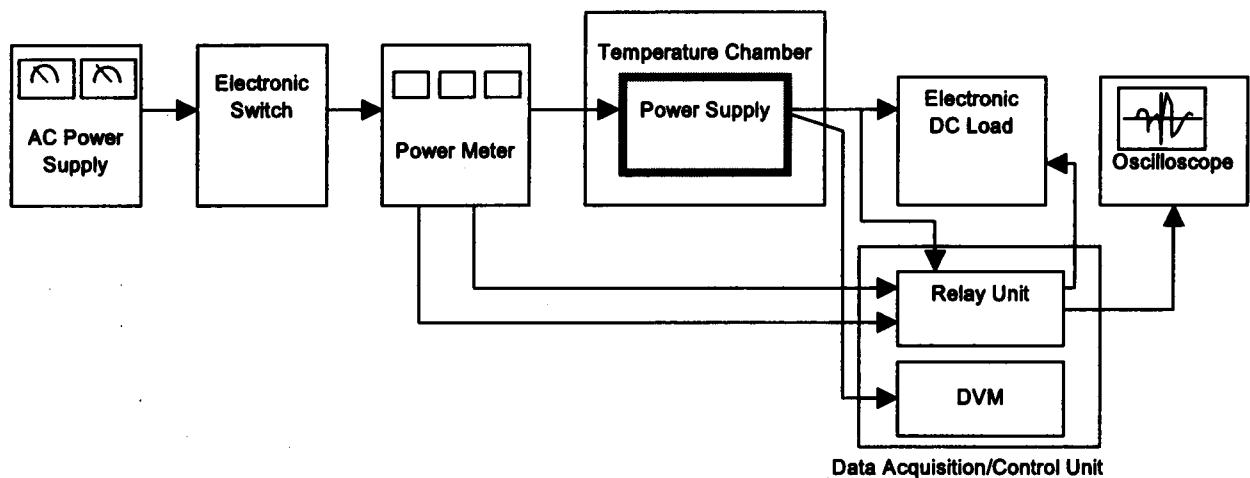


Figure A

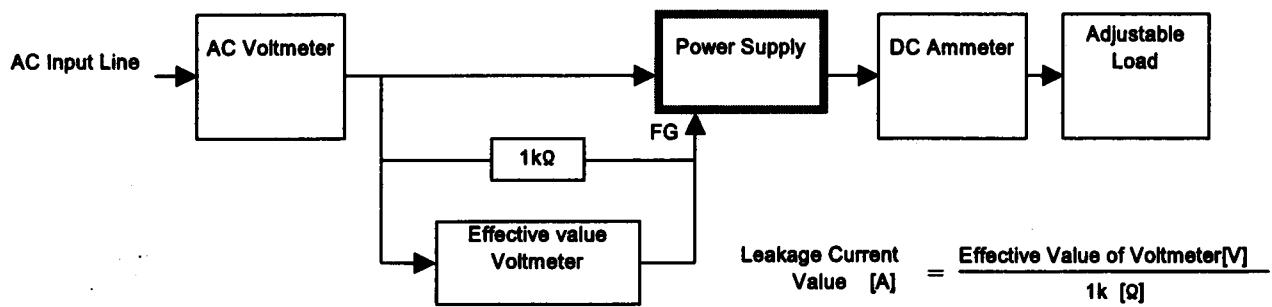


Figure B (DEN-AN)

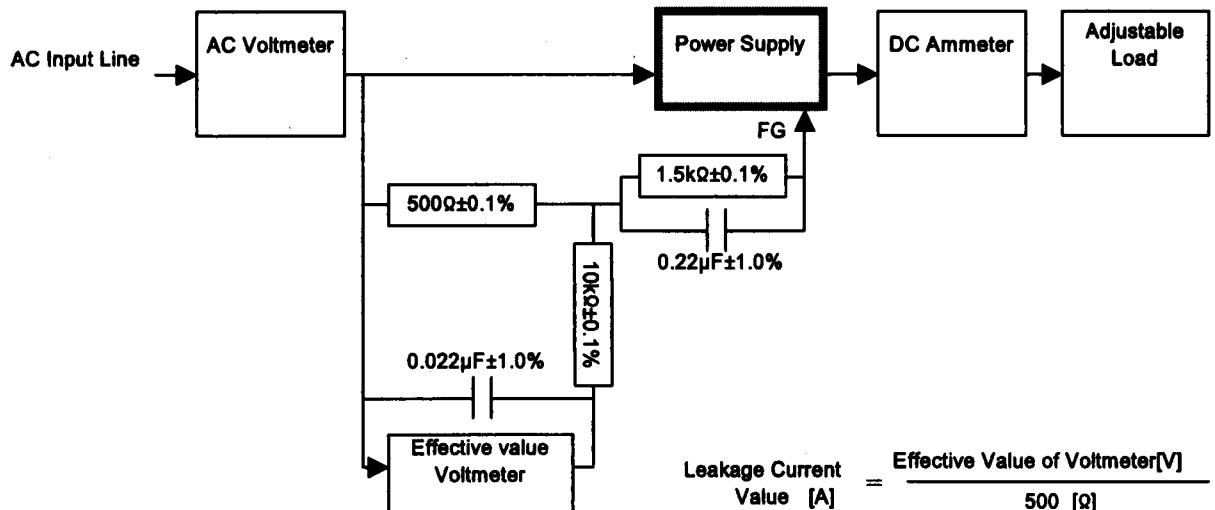


Figure B (IEC60950)