



TEST DATA OF PBA100F-12

Regulated DC Power Supply
Mar.30. 2004

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Kuniaki Nagahara Design Manager

Prepared by : Katsumi Ishikawa
Katsumi Ishikawa Design Engineer

COSEL CO.,LTD.



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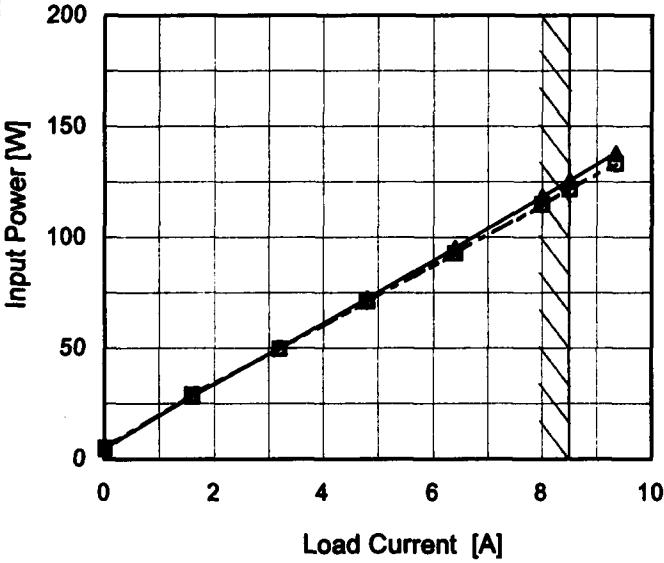
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Model	PBA100F-12	Temperature	25°C																																																			
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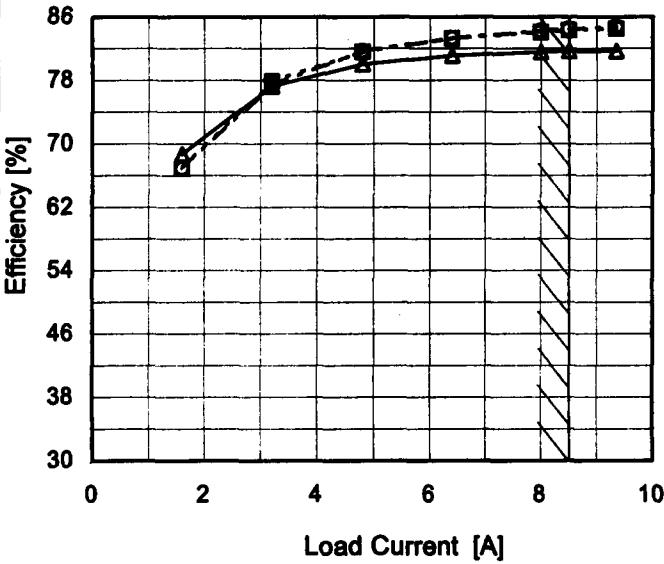
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 <p>The graph plots Input Power [W] on the Y-axis (0 to 200) against Load Current [A] on the X-axis (0 to 10). Three curves are shown for different input voltages: 100V (solid line with solid squares), 200V (dashed line with open squares), and 230V (dash-dot line with open circles). A slanted line is drawn through the data points, representing the rated load current range.</p>																																																						
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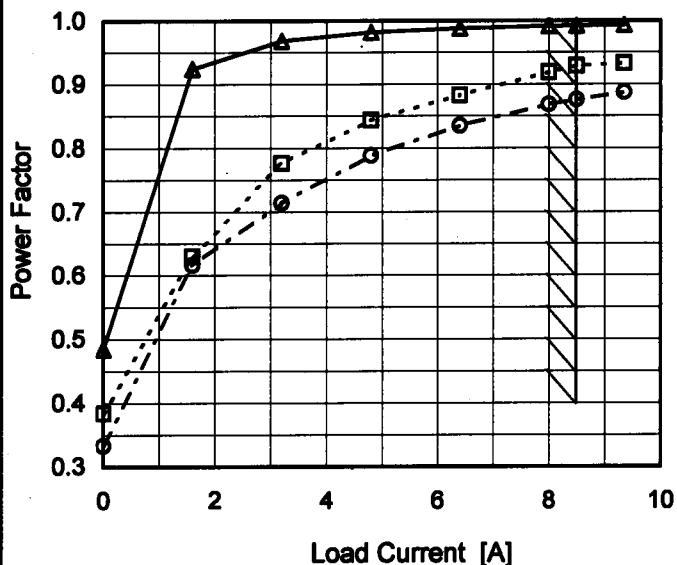
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Model	PBA100F-12
Item	Power Factor (by Load Current)
Object	_____

Temperature 25°C
 Testing Circuitry Figure A

1.Graph

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



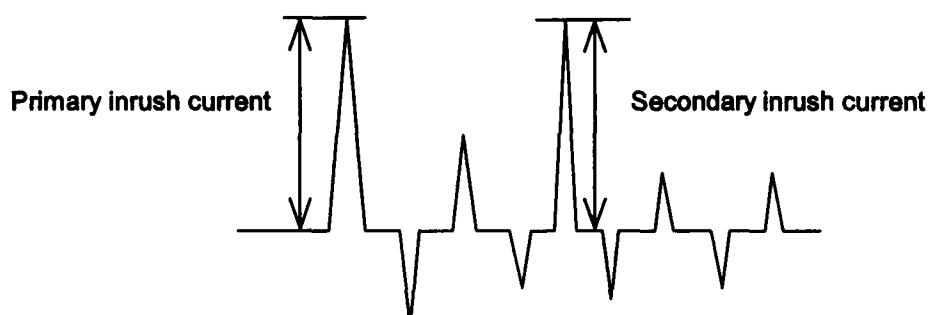
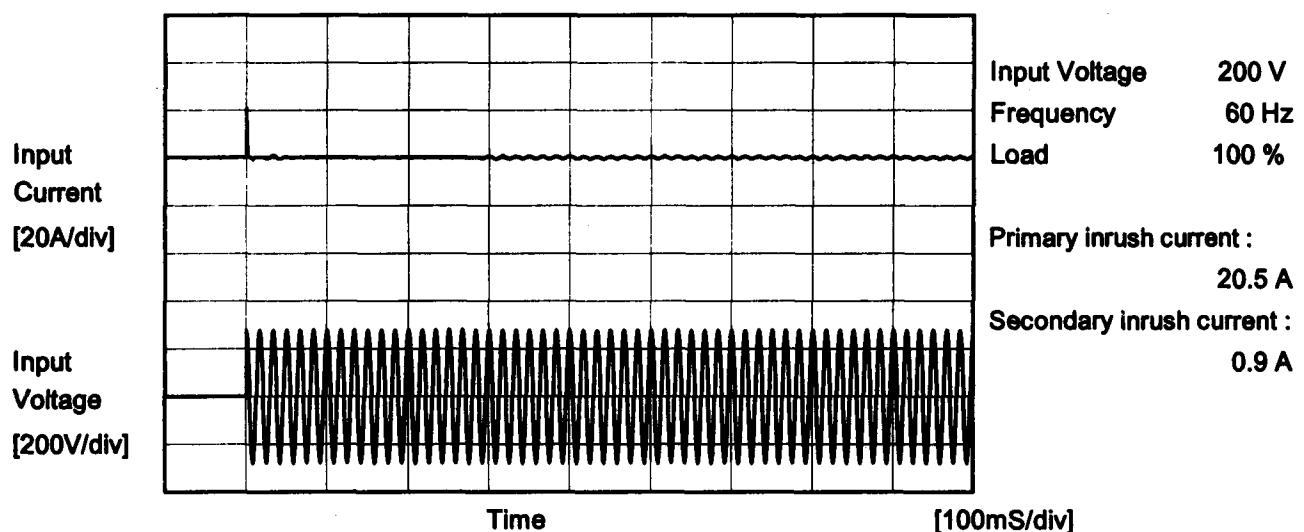
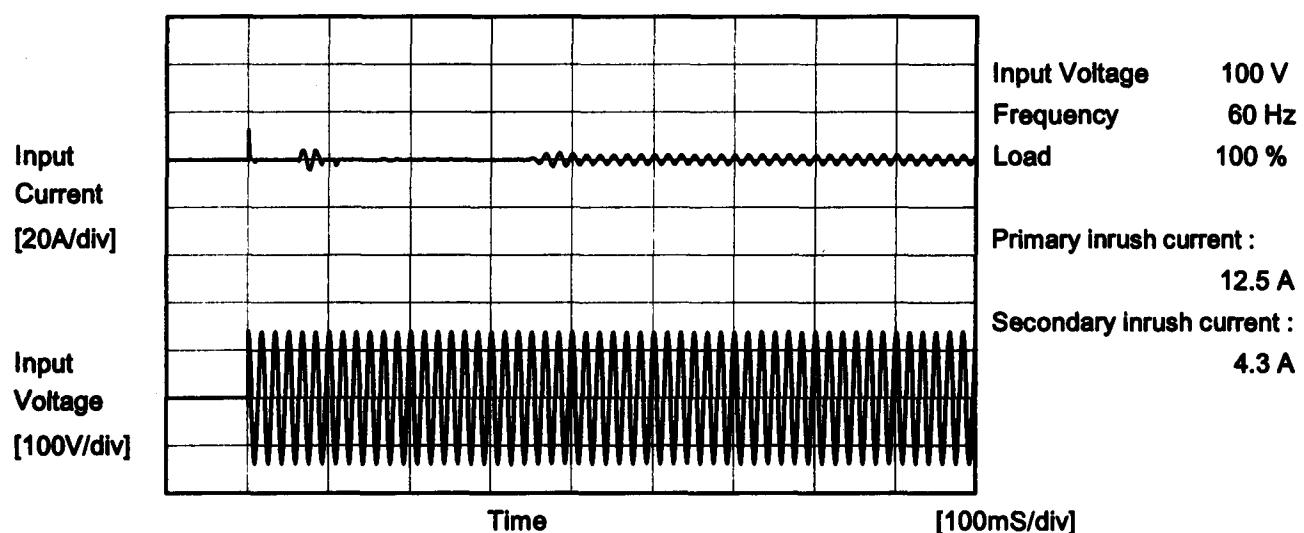
Note: Slanted line shows the range of the rated load current.

2.Values

Load Current [A]	Power Factor		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.00	0.485	0.385	0.333
1.60	0.925	0.630	0.617
3.20	0.968	0.777	0.714
4.80	0.982	0.843	0.789
6.40	0.988	0.883	0.835
8.00	0.991	0.919	0.868
8.50	0.992	0.929	0.876
9.35	0.993	0.933	0.887
-	-	-	-
-	-	-	-
-	-	-	-

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





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

1. Results

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

COSEL

Model	PBA100F-12
Item	Dynamic Load Response
Object	+12V8.5A

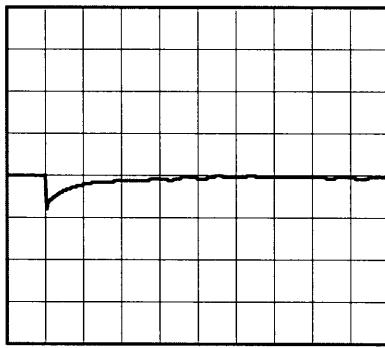
Temperature 25°C
Testing Circuitry Figure AInput Volt. 100 V
Cycle 1000 ms

Min. Load (0A) ↔

Load 100% (8.5A)

200 mV/div

10 ms/div

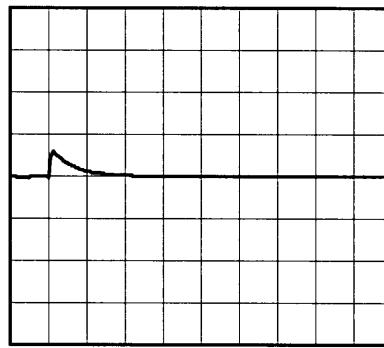
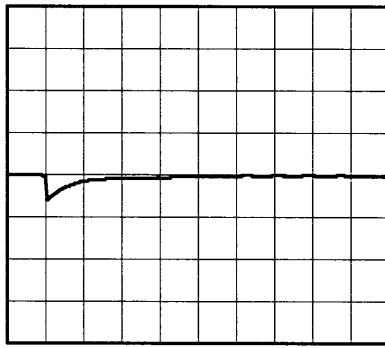


Min. Load (0A) ↔

Load 50% (4.25A)

200 mV/div

10 ms/div



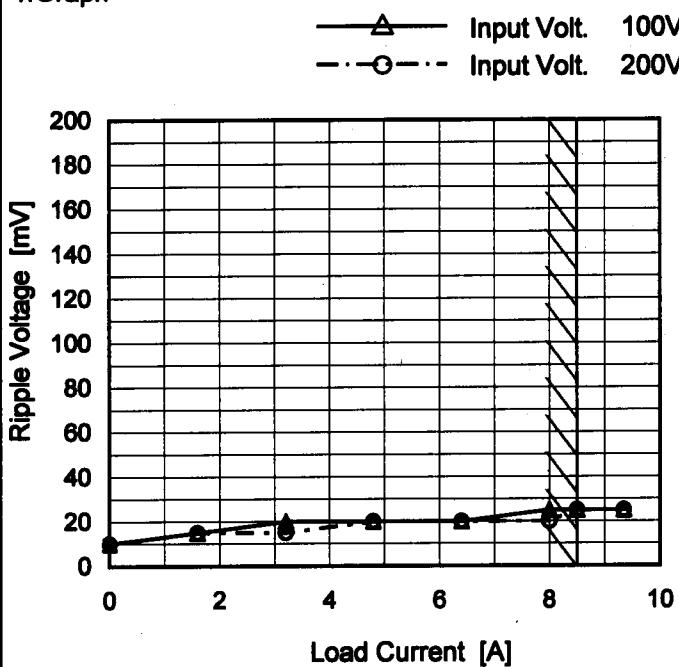
* The characteristic of AC200V is equal.

COSEL

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

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]
0.00	10	10
1.60	15	15
3.20	20	15
4.80	20	20
6.40	20	20
8.00	25	20
8.50	25	25
9.35	25	25
—	—	—
—	—	—
—	—	—

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.

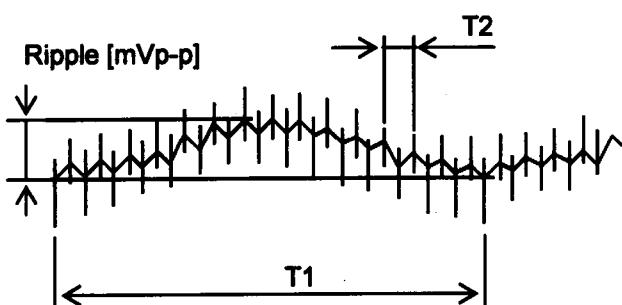
T1: Due to AC Input Line
T2: Due to Switching

Fig. Complex Ripple Wave Form

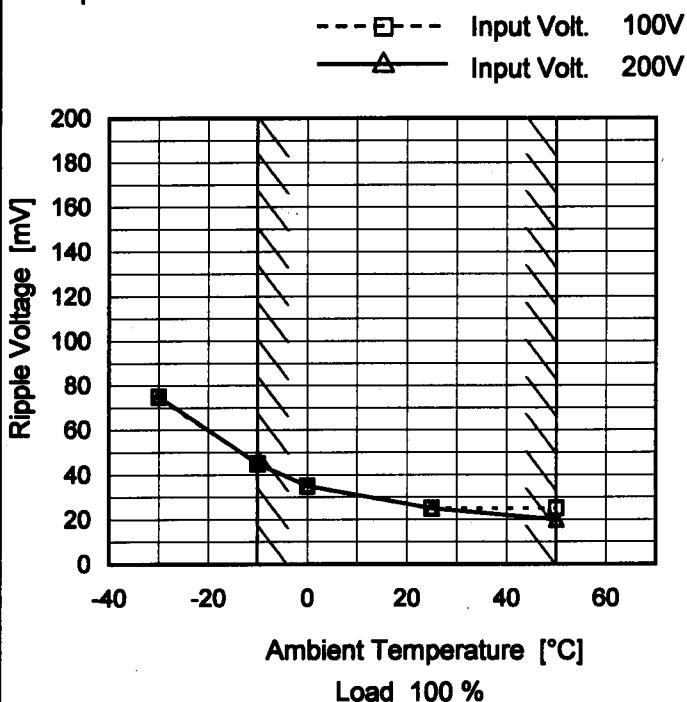
COSEL

Model	PBA100F-12	Temperature	25°C																																						
Item	Ripple-Noise	Testing Circuitry	Figure A																																						
Object	+12V8.5A																																								
1. Graph			2. Values																																						
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<p>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.</p>																																									
<p>Fig. Complex Ripple Wave Form</p>																																									

COSEL

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
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-

COSEL

Model	PBA100F-12	Testing Circuitry Figure A																																																					
Item	Ambient Temperature Drift																																																						
Object	+12V8.5A																																																						
1.Graph	<p>Output Voltage [V]</p> <p>Ambient Temperature [°C]</p> <p>Load 100%</p>	2.Values																																																					
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Note: Slanted line shows the range of the rated ambient temperature.



Model	PBA100F-12	Testing Circuitry Figure A
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 = $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

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

2. Values

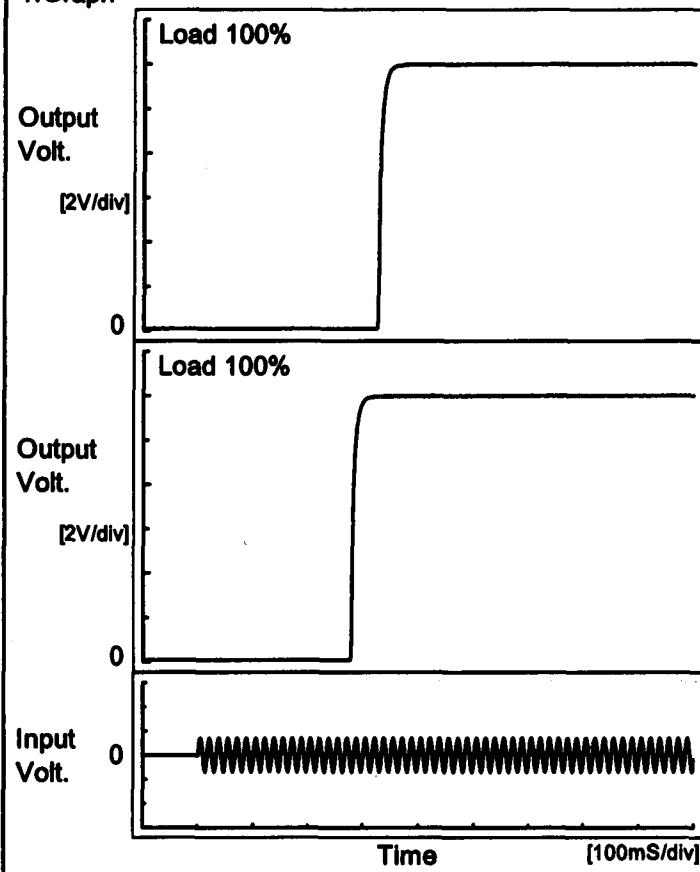
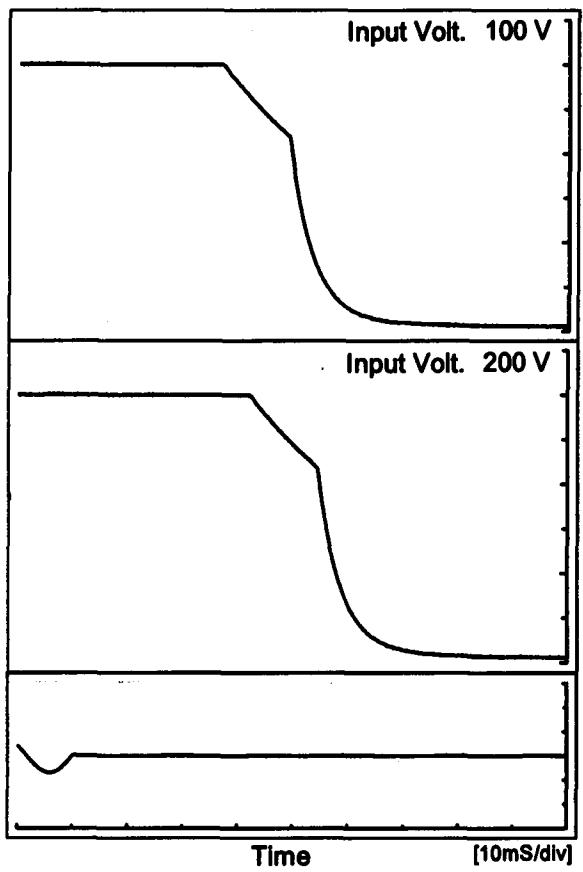
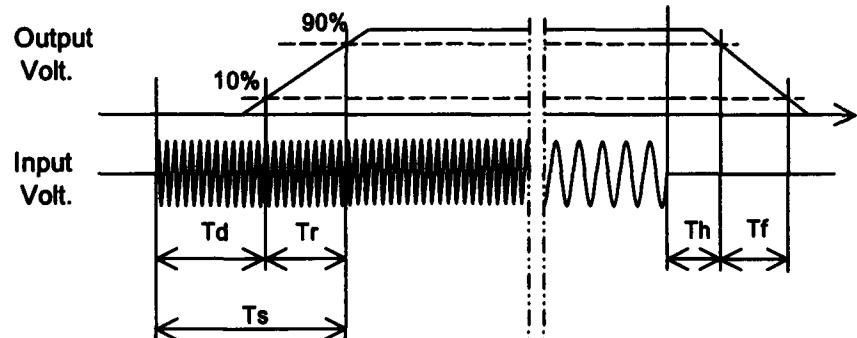
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	50	264	0	12.053	± 25	± 0.2
Minimum Voltage	-10	85	8.5	12.004		

COSEL

Model	PBA100F-12	Temperature	25°C																						
Item	Time Lapse Drift	Testing Circuitry	Figure A																						
Object	+12V8.5A																								
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>12.020</td></tr> <tr><td>0.5</td><td>12.032</td></tr> <tr><td>1.0</td><td>12.031</td></tr> <tr><td>2.0</td><td>12.031</td></tr> <tr><td>3.0</td><td>12.031</td></tr> <tr><td>4.0</td><td>12.031</td></tr> <tr><td>5.0</td><td>12.031</td></tr> <tr><td>6.0</td><td>12.031</td></tr> <tr><td>7.0</td><td>12.031</td></tr> <tr><td>8.0</td><td>12.031</td></tr> </tbody> </table>	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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8.0	12.031																								

* The characteristic of AC200V is equal.

COSEL

Model	PBA100F-12	Temperature Testing Circuitry	25°C Figure A																								
Item	Rise and Fall Time																										
Object	+12V8.5A																										
1.Graph																											
 <p>Output Volt. [2V/div]</p> <p>Load 100%</p> <p>Input Volt.</p> <p>Time [100mS/div]</p>			 <p>Input Volt. 100 V</p> <p>Input Volt. 200 V</p> <p>Time [10mS/div]</p>																								
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<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>325.5</td> <td>12.5</td> <td>338.0</td> <td>30.7</td> <td>17.8</td> <td></td> </tr> <tr> <td>200 V</td> <td></td> <td>278.5</td> <td>12.0</td> <td>290.5</td> <td>36.0</td> <td>17.7</td> <td></td> </tr> </tbody> </table>				Input Volt.	Time	Td	Tr	Ts	Th	Tf	[mS]	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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COSEL

<p>Model PBA100F-12</p> <p>Item Hold-Up Time</p> <p>Object +12V8.5A</p>	<p>Temperature 25°C Testing Circuitry Figure A</p>																																
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100	62	28																															
120	64	30																															
200	69	33																															
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264	71	34																															
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<p>1. Graph</p> <p>Hold-Up Time [mS]</p> <p>Input Voltage [V]</p>																																	
<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>																																	

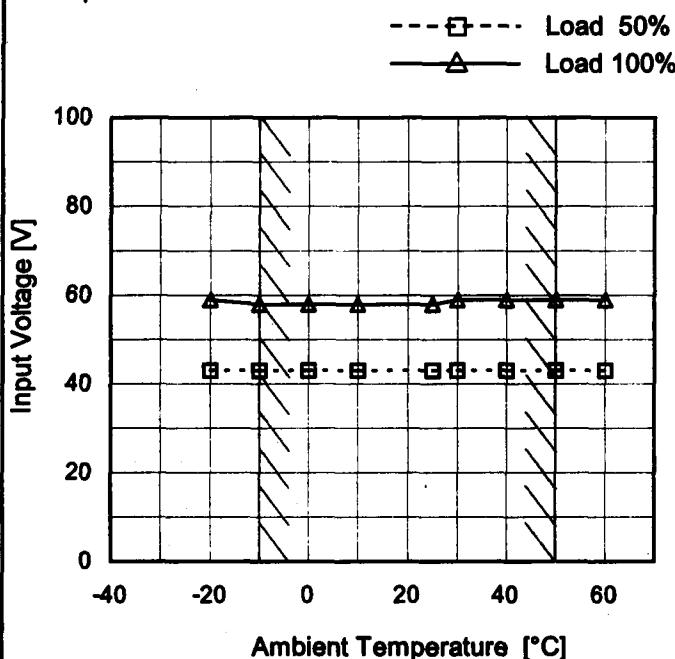
COSEL

Model	PBA100F-12	Temperature	25°C																																																			
Item	Instantaneous Interruption Compensation	Testing Circuitry	Figure A																																																			
Object	+12V8.5A																																																					
1.Graph	<p>—△— Input Volt. 100V - - -□- - Input Volt. 200V - - ○ - - Input Volt. 230V</p>																																																					
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Note:	Slanted line shows the range of the rated load current.																																																					

COSEL

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

1. Graph



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

Testing Circuitry Figure A

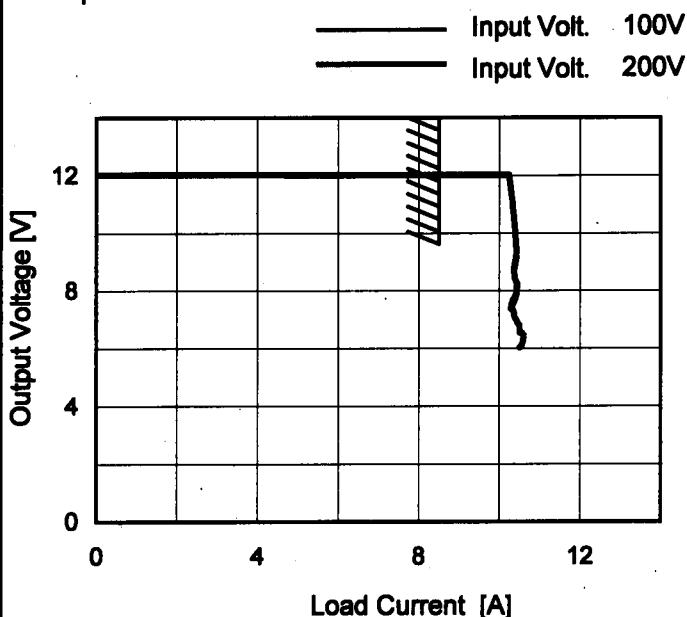
2. Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-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
--	-	-
--	-	-

COSEL

Model	PBA100F-12
Item	Overcurrent Protection
Object	+12V8.5A

1. Graph



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

Intermittent operation occurs when the output voltage is from 6V to 0V.

Temperature 25°C
Testing Circuitry Figure A

2. Values

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
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

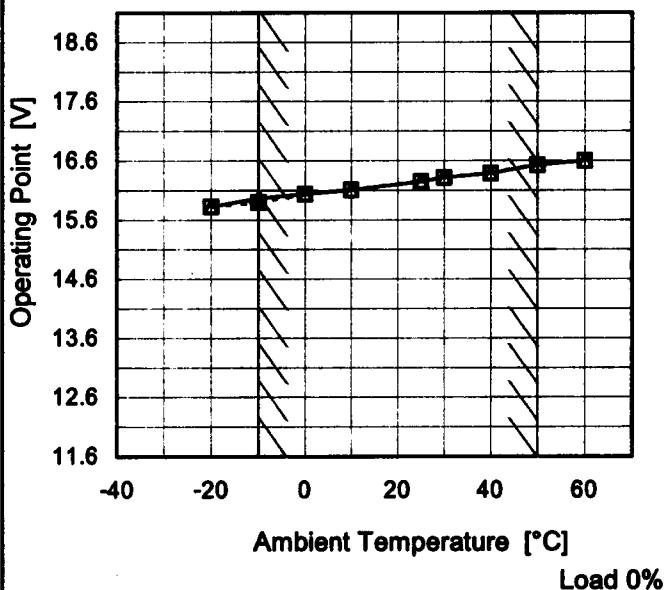
Model PBA100F-12

Item Overvoltage Protection

Object +12V8.5A

1. Graph

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



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]
-20	15.84	15.84
-10	15.98	15.91
0	16.05	16.05
10	16.12	16.12
25	16.26	16.26
30	16.33	16.33
40	16.40	16.40
50	16.54	16.54
60	16.61	16.61
--	-	-
--	-	-

COSEL

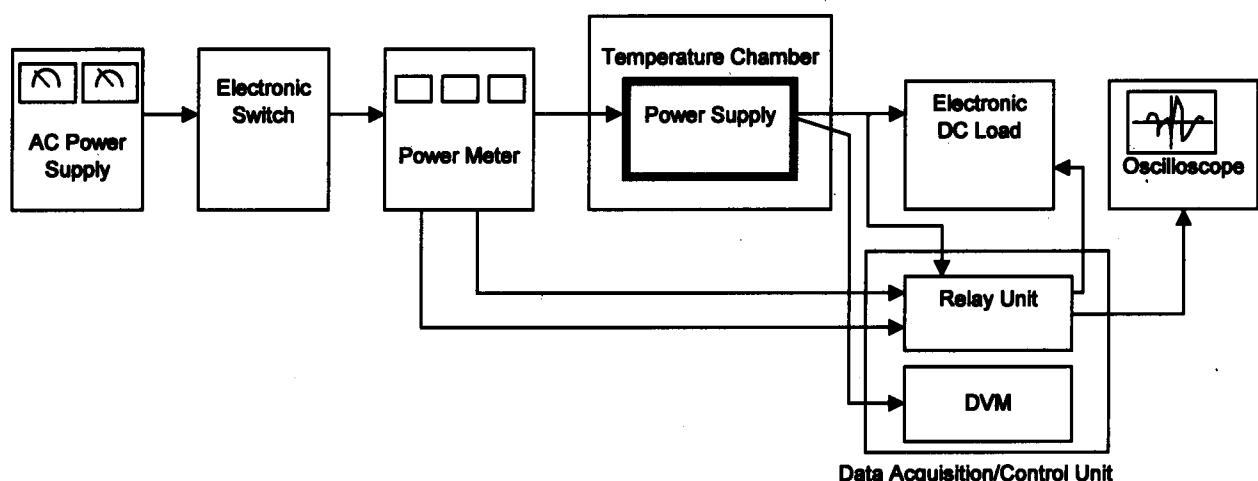


Figure A

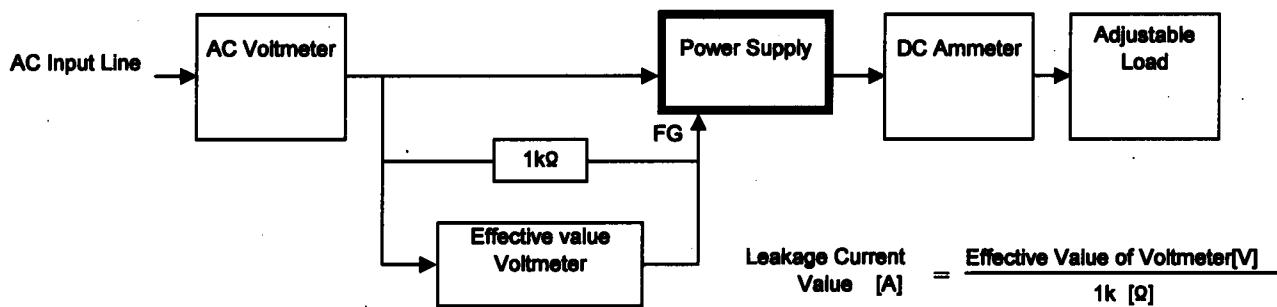


Figure B (DEN-AN)

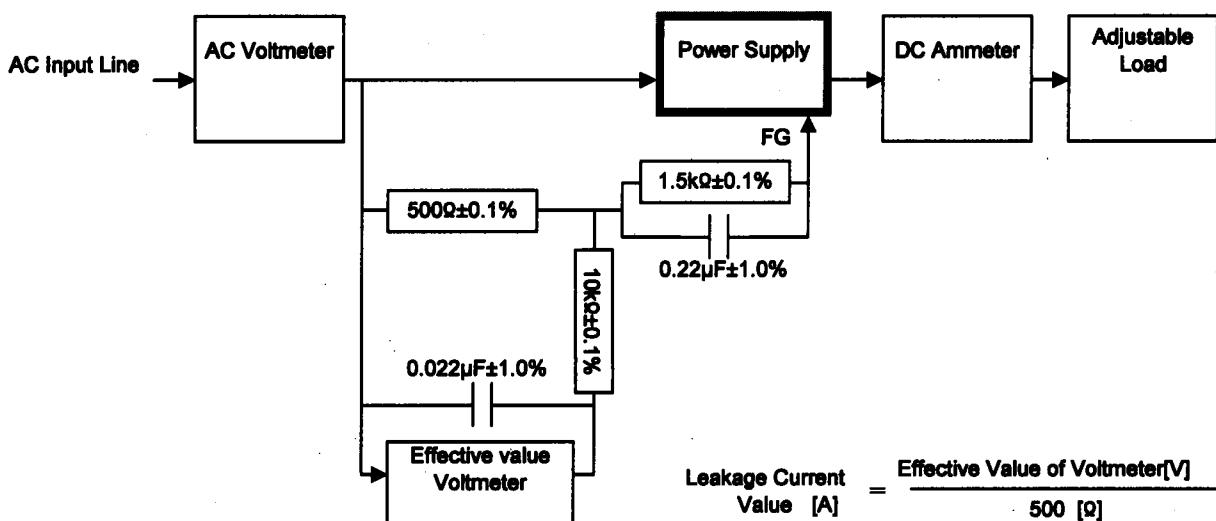


Figure B (IEC60950)