



# TEST DATA OF PBA30F-9

Regulated DC Power Supply  
Sep 29, 2005

Approved by : Kuniaki Nagahara Design Manager

Prepared by : Akito Joboji Design Engineer

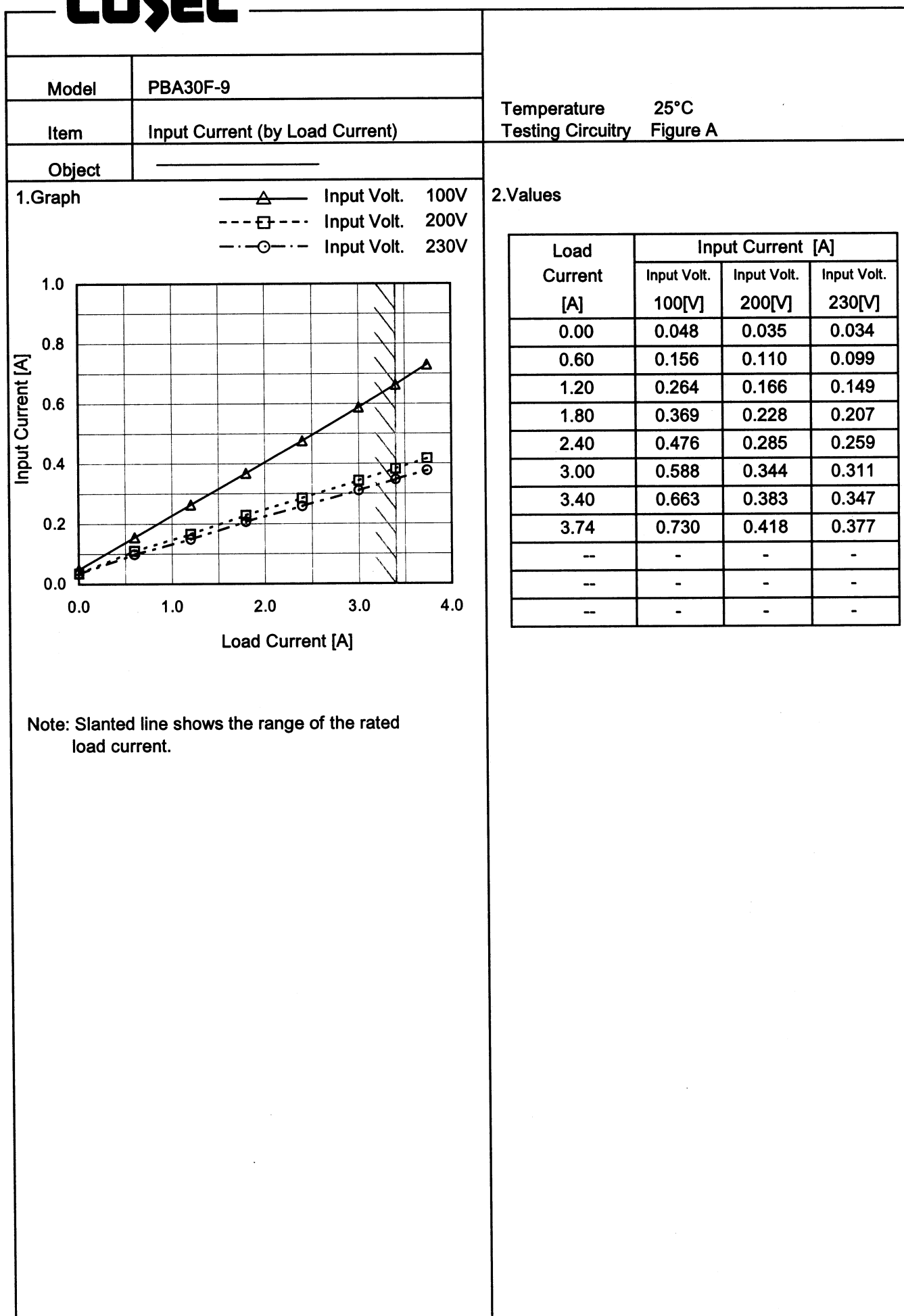
**COSEL CO.,LTD.**

## CONTENTS

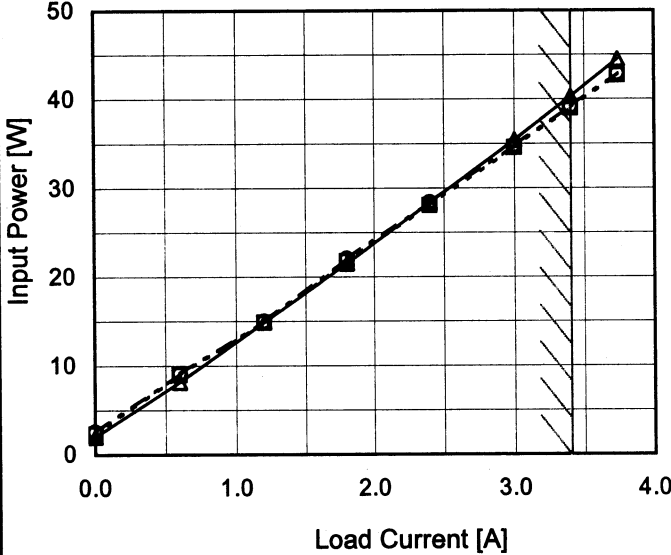
1.Input Current (by Load Current) . . . . .	1
2.Input Power (by Load Current) . . . . .	2
3.Efficiency (by Input Voltage) . . . . .	3
4.Efficiency (by Load Current) . . . . .	4
5.Power Factor (by Input Voltage) . . . . .	5
6.Power Factor (by Load Current) . . . . .	6
7.Inrush Current . . . . .	7
8.Leakage 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.Overvoltage Protection . . . . .	23
24.Figure of Testing Circuitry . . . . .	24

(Final Page 24)

# COSEL



# COSEL

Model		PBA30F-9																																																				
Item		Input Power (by Load Current)																																																				
Object																																																						
1.Graph		2.Values																																																				
<div><div><div><div><div></div><div></div></div><div>—△—</div><div>Input Volt.</div><div>100V</div></div><div><div><div></div><div></div></div><div>---□---</div><div>Input Volt.</div><div>200V</div></div><div><div><div></div><div></div></div><div>---○---</div><div>Input Volt.</div><div>230V</div></div></div><div></div></div>		<table><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><tr><td>0.00</td><td>2.01</td><td>2.36</td><td>2.60</td></tr><tr><td>0.60</td><td>8.16</td><td>9.00</td><td>9.12</td></tr><tr><td>1.20</td><td>14.91</td><td>14.90</td><td>15.00</td></tr><tr><td>1.80</td><td>21.53</td><td>21.80</td><td>22.10</td></tr><tr><td>2.40</td><td>28.38</td><td>28.10</td><td>28.40</td></tr><tr><td>3.00</td><td>35.42</td><td>34.60</td><td>34.80</td></tr><tr><td>3.40</td><td>40.30</td><td>39.00</td><td>39.20</td></tr><tr><td>3.74</td><td>44.50</td><td>42.70</td><td>42.90</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]	Input Power [W]			Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]	0.00	2.01	2.36	2.60	0.60	8.16	9.00	9.12	1.20	14.91	14.90	15.00	1.80	21.53	21.80	22.10	2.40	28.38	28.10	28.40	3.00	35.42	34.60	34.80	3.40	40.30	39.00	39.20	3.74	44.50	42.70	42.90	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Input Power [W]																																																					
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]																																																			
0.00	2.01	2.36	2.60																																																			
0.60	8.16	9.00	9.12																																																			
1.20	14.91	14.90	15.00																																																			
1.80	21.53	21.80	22.10																																																			
2.40	28.38	28.10	28.40																																																			
3.00	35.42	34.60	34.80																																																			
3.40	40.30	39.00	39.20																																																			
3.74	44.50	42.70	42.90																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			
Note: Slanted line shows the range of the rated load current.																																																						

# COSEL

Model		PBA30F-9	
Item		Efficiency (by Input Voltage)	
Object			

1.Graph

---

□

---

Load 50%

—

△

—

Load 100%

86

78

70

62

54

46

38

30

50

100

150

200

250

300

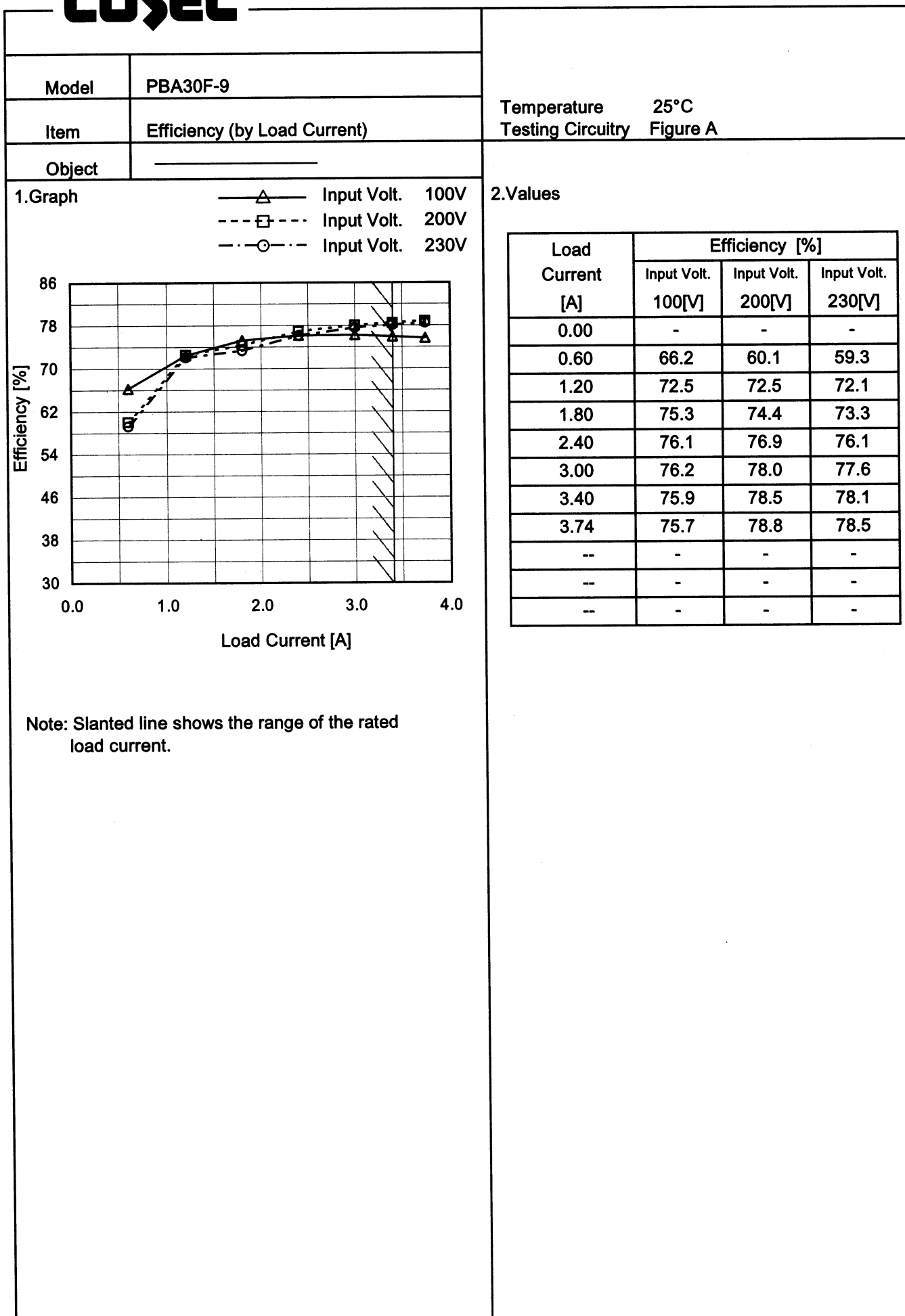
Efficiency [%]

Input Voltage [V]

2.Values

Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
75	73.6	71.6
85	74.3	74.1
100	75.0	75.9
120	75.5	77.5
200	73.9	78.7
230	72.5	78.3
264	71.2	77.5
280	70.5	77.1
--	-	-

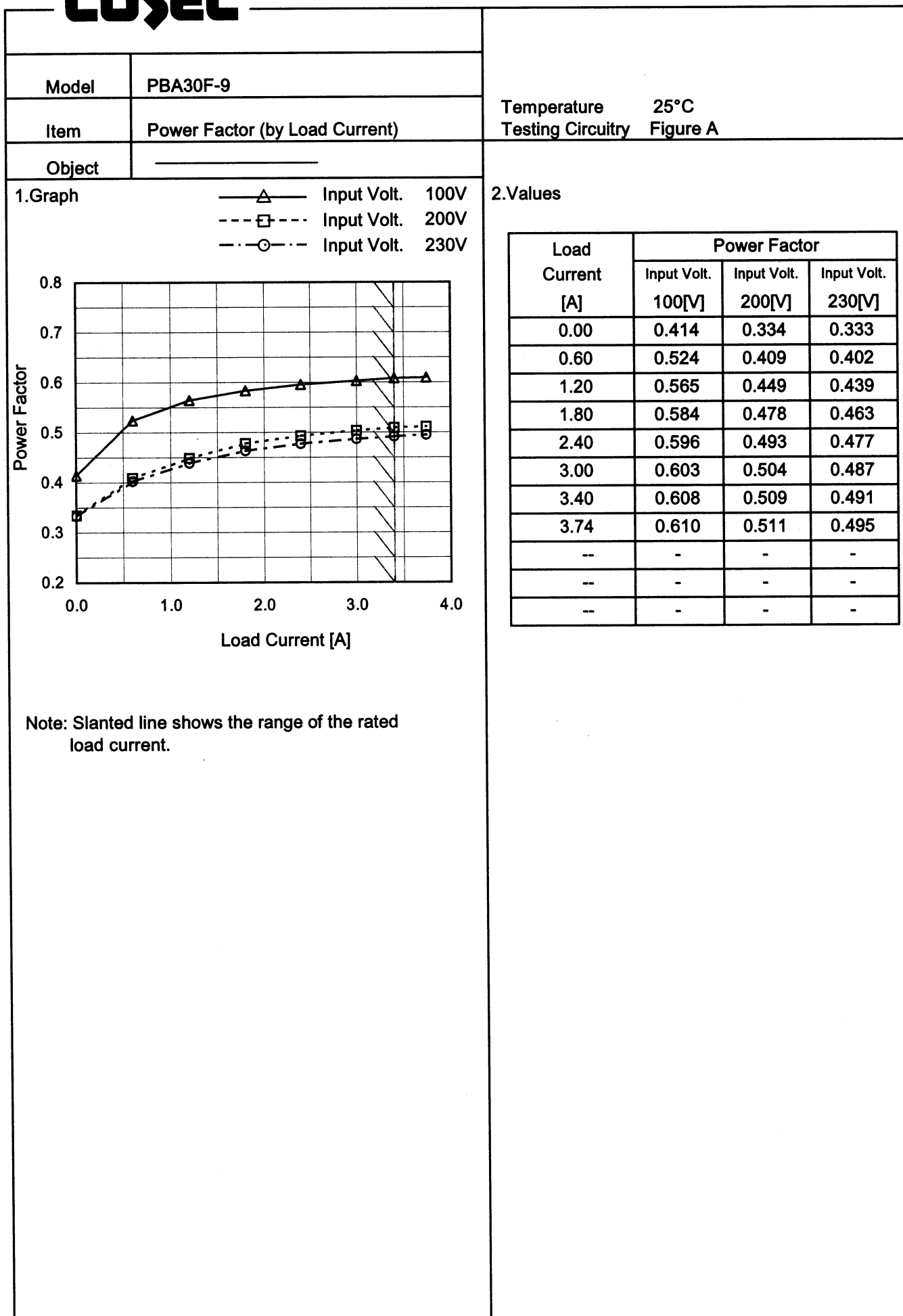
# COSEL



# COSEL

Model		PBA30F-9		Temperature 25°C																																	
Item		Power Factor (by Input Voltage)		Testing Circuitry Figure A																																	
Object																																					
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 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>75</td><td>0.623</td><td>0.654</td></tr><tr><td>85</td><td>0.602</td><td>0.629</td></tr><tr><td>100</td><td>0.576</td><td>0.605</td></tr><tr><td>120</td><td>0.547</td><td>0.575</td></tr><tr><td>200</td><td>0.470</td><td>0.497</td></tr><tr><td>230</td><td>0.457</td><td>0.482</td></tr><tr><td>264</td><td>0.441</td><td>0.465</td></tr><tr><td>280</td><td>0.436</td><td>0.458</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></tbody></table>				Input Voltage [V]	Power Factor		Load 50%	Load 100%	75	0.623	0.654	85	0.602	0.629	100	0.576	0.605	120	0.547	0.575	200	0.470	0.497	230	0.457	0.482	264	0.441	0.465	280	0.436	0.458	--	-	-		
Input Voltage [V]	Power Factor																																				
	Load 50%	Load 100%																																			
75	0.623	0.654																																			
85	0.602	0.629																																			
100	0.576	0.605																																			
120	0.547	0.575																																			
200	0.470	0.497																																			
230	0.457	0.482																																			
264	0.441	0.465																																			
280	0.436	0.458																																			
--	-	-																																			
Note: Slanted line shows the range of the rated input voltage.																																					

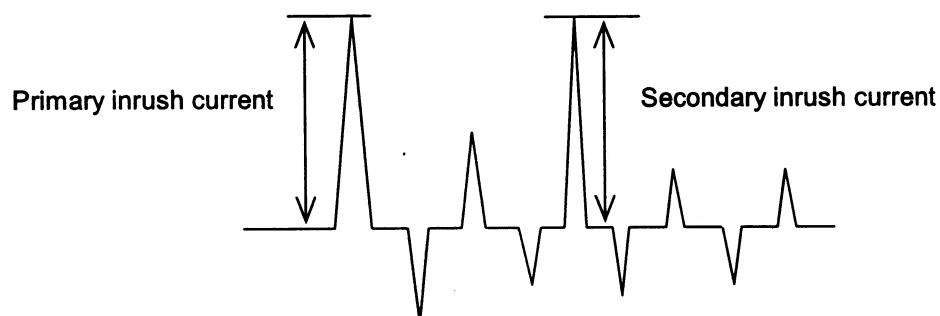
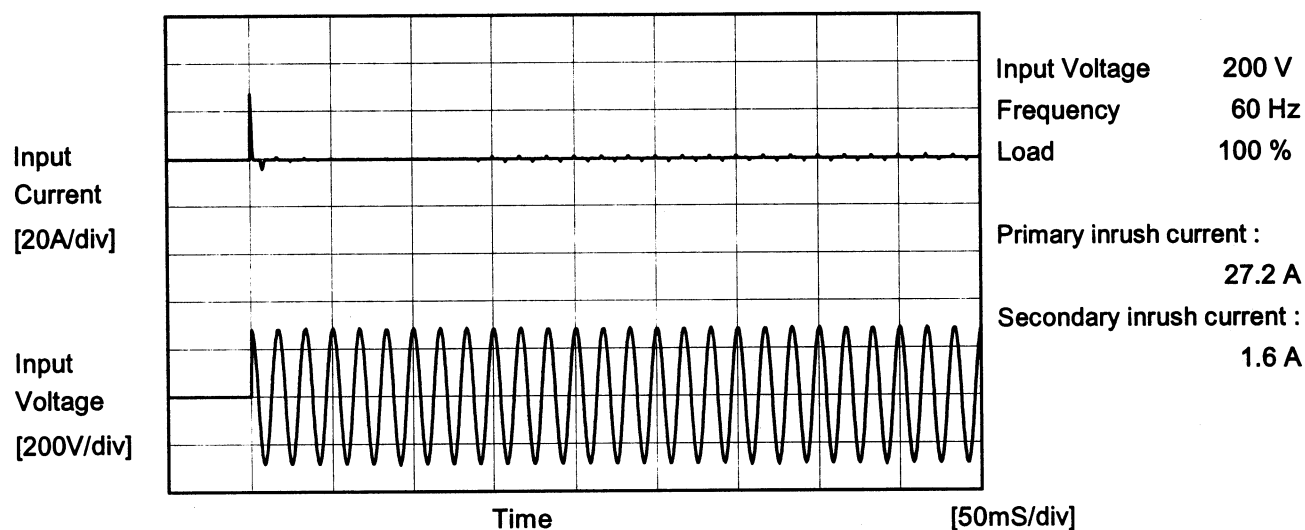
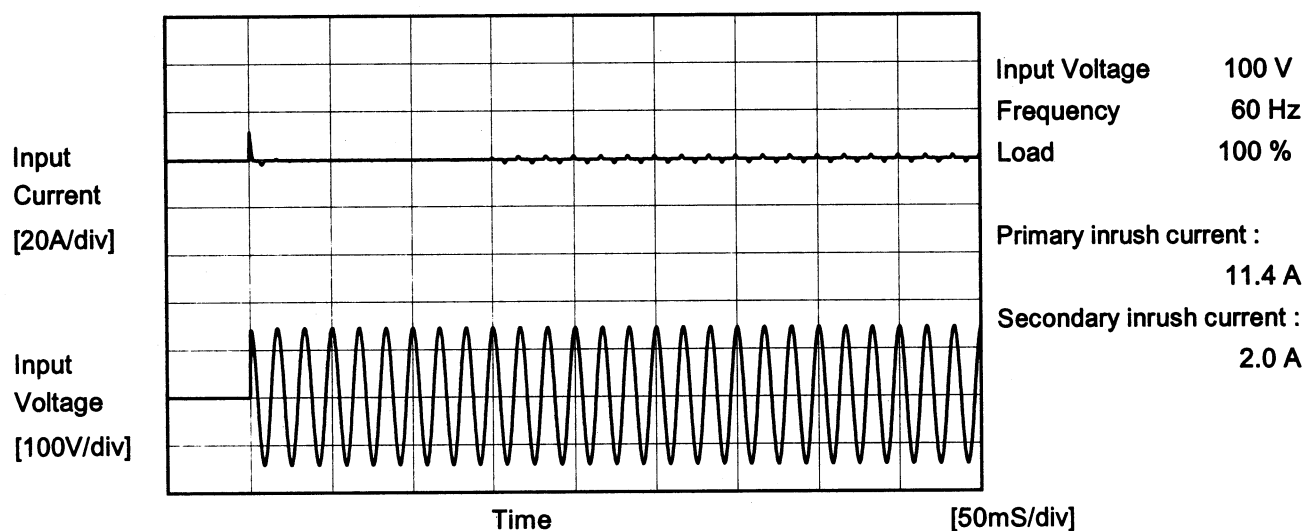
# COSEL





# COSEL

Model	PBA30F-9	Temperature Testing Circuitry	25°C Figure A
Item	Inrush Current		
Object			



**COSEL**

		Temperature 25°C Testing Circuitry Figure B
Model	PBA30F-9	
Item	Leakage Current	
Object	_____	

## 1.Results

[mA]

Standards		Input Volt.			Note
		100 [V]	200 [V]	240 [V]	
DEN-AN	Both phases	0.15	0.32	0.39	Operation
	One of phase	0.30	0.64	0.79	stand by
IEC60950	Both phases	0.19	0.44	0.52	Operation
	One of phase	0.29	0.64	0.79	stand by

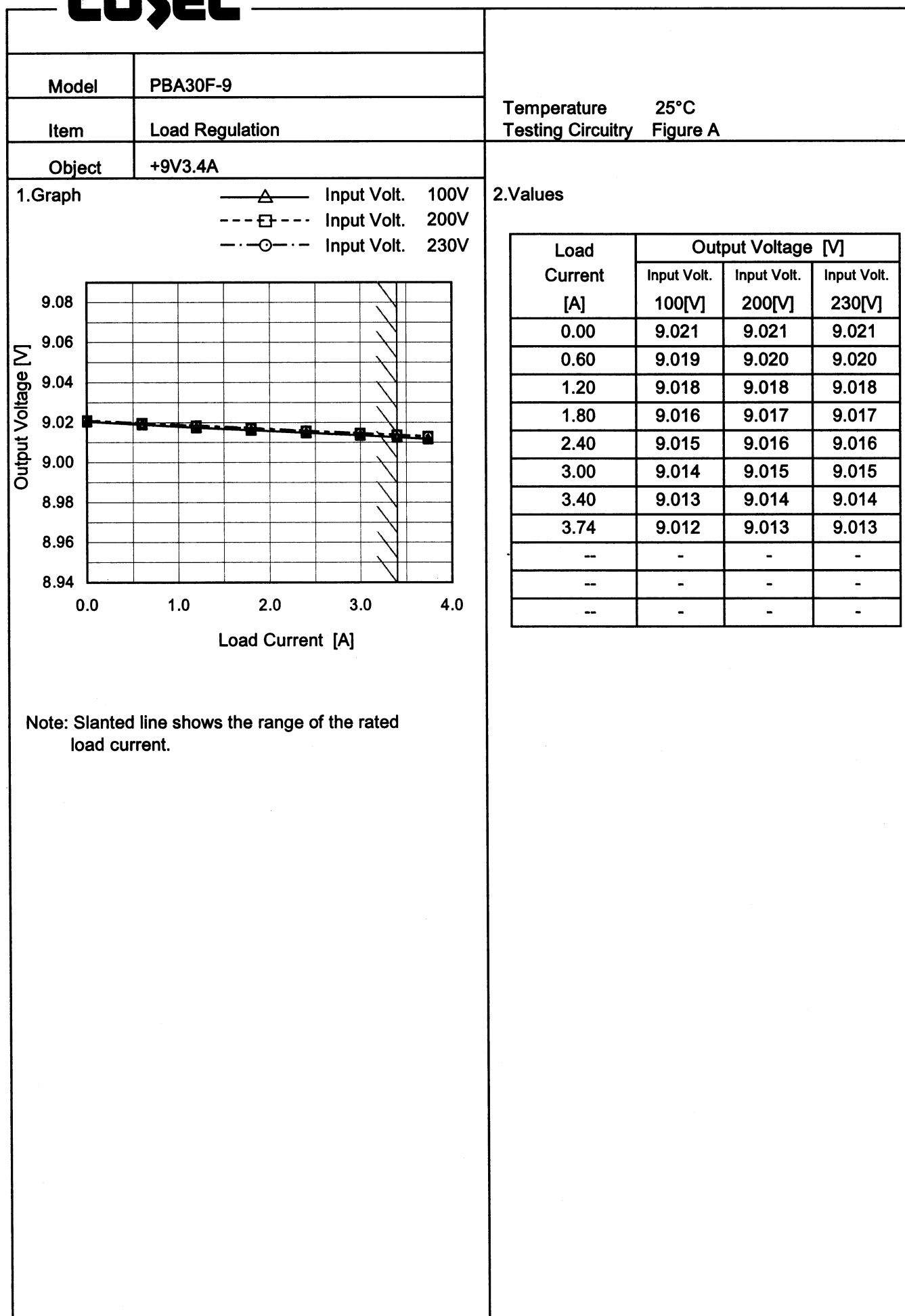
The value for "One of phase" is the reference value only.

## 2.Condition

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

# COSEL

Model	PBA30F-9																																																																																																										
Item	Line Regulation	Temperature	25°C																																																																																																								
Object	+9V3.4A	Testing Circuitry	Figure A																																																																																																								
1.Graph		2.Values																																																																																																									
<div><div><div>---</div><div>□</div><div>---</div></div><div>Load 50%</div></div> <div><div>—</div><div>△</div><div>—</div></div> <div>Load 100%</div> <div><div>Output Voltage [V]</div><div><table><thead><tr><th>Input Voltage [V]</th><th>Output Voltage [V] (50% Load)</th><th>Output Voltage [V] (100% Load)</th></tr></thead><tbody><tr><td>80</td><td>9.015</td><td>9.011</td></tr><tr><td>90</td><td>9.015</td><td>9.011</td></tr><tr><td>100</td><td>9.015</td><td>9.011</td></tr><tr><td>110</td><td>9.015</td><td>9.011</td></tr><tr><td>120</td><td>9.016</td><td>9.012</td></tr><tr><td>130</td><td>9.016</td><td>9.012</td></tr><tr><td>140</td><td>9.016</td><td>9.012</td></tr><tr><td>150</td><td>9.016</td><td>9.012</td></tr><tr><td>160</td><td>9.016</td><td>9.012</td></tr><tr><td>170</td><td>9.016</td><td>9.012</td></tr><tr><td>180</td><td>9.016</td><td>9.012</td></tr><tr><td>190</td><td>9.016</td><td>9.012</td></tr><tr><td>200</td><td>9.016</td><td>9.012</td></tr><tr><td>210</td><td>9.016</td><td>9.012</td></tr><tr><td>220</td><td>9.016</td><td>9.012</td></tr><tr><td>230</td><td>9.016</td><td>9.012</td></tr><tr><td>240</td><td>9.016</td><td>9.012</td></tr><tr><td>250</td><td>9.016</td><td>9.012</td></tr><tr><td>260</td><td>9.016</td><td>9.012</td></tr><tr><td>270</td><td>9.016</td><td>9.012</td></tr><tr><td>280</td><td>9.016</td><td>9.012</td></tr><tr><td>290</td><td>9.016</td><td>9.012</td></tr><tr><td>300</td><td>9.016</td><td>9.012</td></tr></tbody></table><div>Input Voltage [V]</div></div></div> <div><div>Note: Slanted line shows the range of the rated input voltage.</div></div>		Input Voltage [V]	Output Voltage [V] (50% Load)	Output Voltage [V] (100% Load)	80	9.015	9.011	90	9.015	9.011	100	9.015	9.011	110	9.015	9.011	120	9.016	9.012	130	9.016	9.012	140	9.016	9.012	150	9.016	9.012	160	9.016	9.012	170	9.016	9.012	180	9.016	9.012	190	9.016	9.012	200	9.016	9.012	210	9.016	9.012	220	9.016	9.012	230	9.016	9.012	240	9.016	9.012	250	9.016	9.012	260	9.016	9.012	270	9.016	9.012	280	9.016	9.012	290	9.016	9.012	300	9.016	9.012	<table><thead><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></thead><tbody><tr><td>75</td><td>9.015</td><td>9.011</td></tr><tr><td>85</td><td>9.015</td><td>9.011</td></tr><tr><td>100</td><td>9.016</td><td>9.012</td></tr><tr><td>120</td><td>9.016</td><td>9.012</td></tr><tr><td>200</td><td>9.016</td><td>9.013</td></tr><tr><td>230</td><td>9.017</td><td>9.013</td></tr><tr><td>264</td><td>9.017</td><td>9.013</td></tr><tr><td>280</td><td>9.017</td><td>9.013</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></tbody></table>		Input Voltage [V]	Output Voltage [V]		Load 50%	Load 100%	75	9.015	9.011	85	9.015	9.011	100	9.016	9.012	120	9.016	9.012	200	9.016	9.013	230	9.017	9.013	264	9.017	9.013	280	9.017	9.013	--	-	-
Input Voltage [V]	Output Voltage [V] (50% Load)	Output Voltage [V] (100% Load)																																																																																																									
80	9.015	9.011																																																																																																									
90	9.015	9.011																																																																																																									
100	9.015	9.011																																																																																																									
110	9.015	9.011																																																																																																									
120	9.016	9.012																																																																																																									
130	9.016	9.012																																																																																																									
140	9.016	9.012																																																																																																									
150	9.016	9.012																																																																																																									
160	9.016	9.012																																																																																																									
170	9.016	9.012																																																																																																									
180	9.016	9.012																																																																																																									
190	9.016	9.012																																																																																																									
200	9.016	9.012																																																																																																									
210	9.016	9.012																																																																																																									
220	9.016	9.012																																																																																																									
230	9.016	9.012																																																																																																									
240	9.016	9.012																																																																																																									
250	9.016	9.012																																																																																																									
260	9.016	9.012																																																																																																									
270	9.016	9.012																																																																																																									
280	9.016	9.012																																																																																																									
290	9.016	9.012																																																																																																									
300	9.016	9.012																																																																																																									
Input Voltage [V]	Output Voltage [V]																																																																																																										
	Load 50%	Load 100%																																																																																																									
75	9.015	9.011																																																																																																									
85	9.015	9.011																																																																																																									
100	9.016	9.012																																																																																																									
120	9.016	9.012																																																																																																									
200	9.016	9.013																																																																																																									
230	9.017	9.013																																																																																																									
264	9.017	9.013																																																																																																									
280	9.017	9.013																																																																																																									
--	-	-																																																																																																									

**COSEL**

**COSEL**

Model	PBA30F-9	Temperature	25°C
Item	Dynamic Load Response	Testing Circuitry	Figure A
Object	+9V3.4A		

Input Volt. 100 V

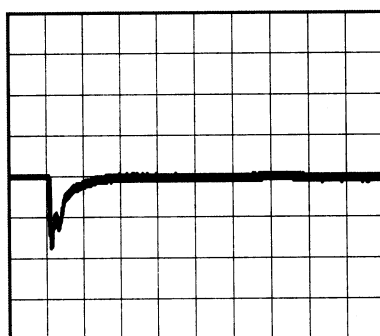
Cycle 1000 ms

Load Current

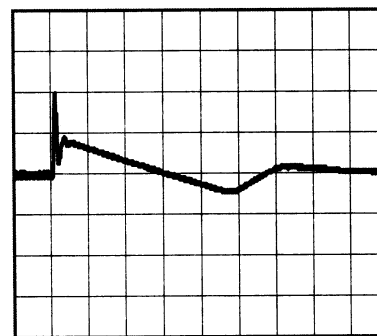
Min. Load (0A) ←→

Load 100% (3.4A)

200 mV/div



1 ms/div

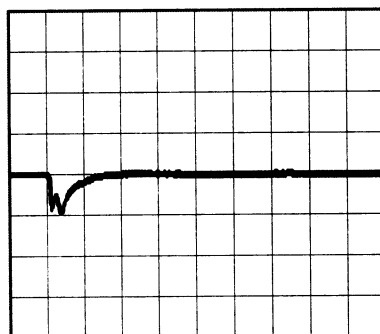


1 ms/div

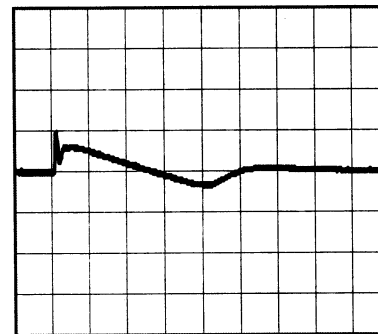
Min. Load (0A) ←→

Load 50% (1.7A)

200 mV/div



1 ms/div



1 ms/div

\* The characteristic of AC200V is equal.

**COSEL**

Model

PBA30F-9

Item

Ripple Voltage (by Load Current)

Object

+9V3.4A

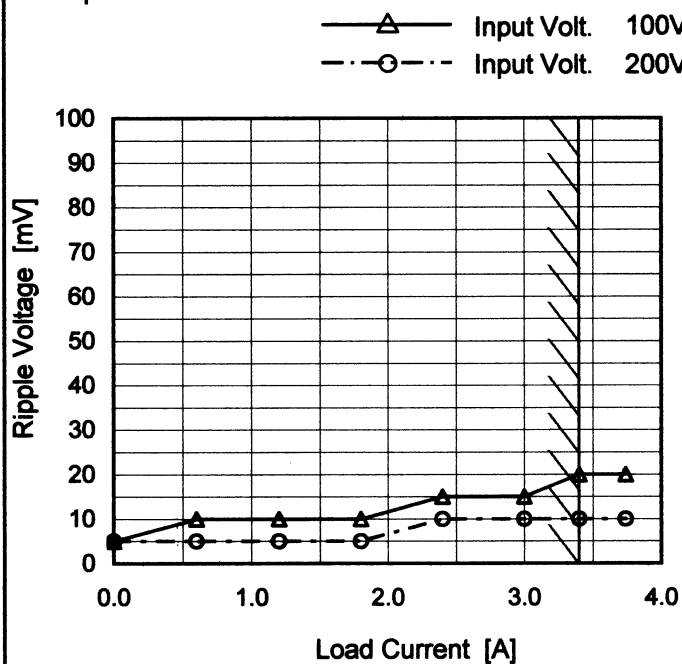
Temperature

25°C

Testing Circuitry

Figure A

## 1. Graph



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.

## 2. Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 100 [V]	Input Volt. 200 [V]
0.00	5	5
0.60	10	5
1.20	10	5
1.80	10	5
2.40	15	10
3.00	15	10
3.40	20	10
3.74	20	10
—	—	—
—	—	—
—	—	—

T1: Due to AC Input Line

T2: Due to Switching

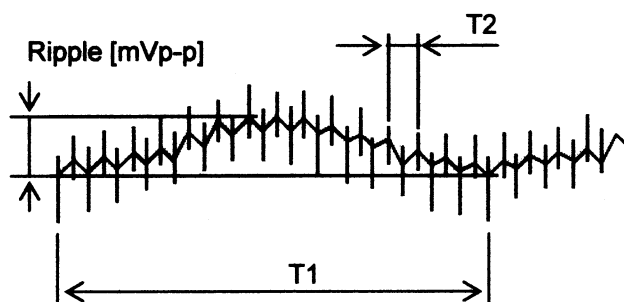
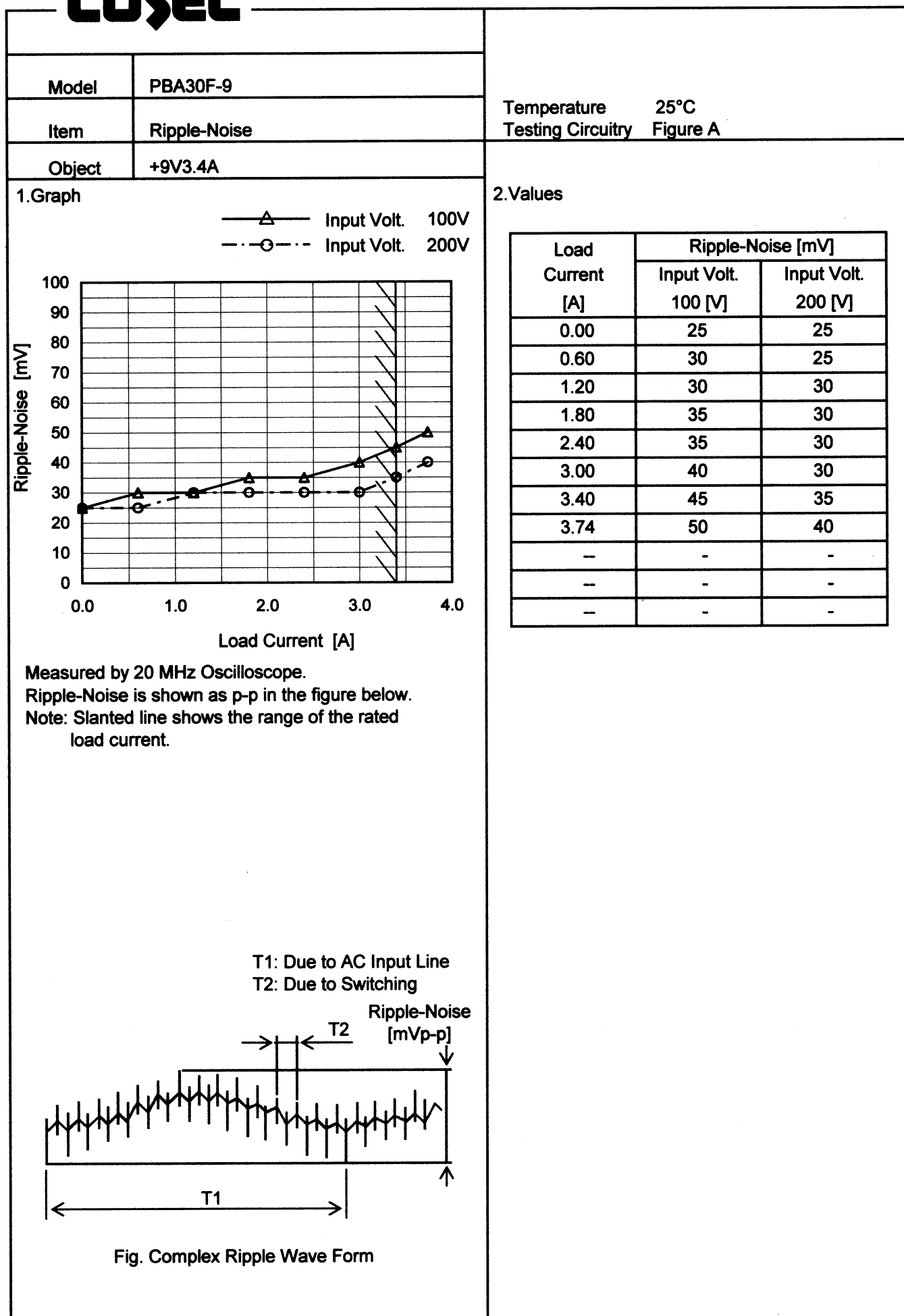


Fig. Complex Ripple Wave Form

**COSEL**

# COSEL

Model		PBA30F-9
Item		Ripple Voltage (by Ambient Temp.)
Object		+9V3.4A

1.Graph

---

□

Input Volt. 100V

—

△

Input Volt. 200V

200

180

160

140

120

100

80

60

40

20

0

40

20

0

−40

−20

0

20

40

60



# COSEL

Model	PBA30F-9																																																					
Item	Ambient Temperature Drift	Testing Circuitry    Figure A																																																				
Object	+9V3.4A																																																					
1.Graph		2.Values																																																				
<div><div><div>—△—</div><div>Input Volt. 100V</div></div><div><div>---□---</div><div>Input Volt. 200V</div></div><div><div>---○---</div><div>Input Volt. 230V</div></div></div> <p>Output Voltage [V]</p> <p>Ambient Temperature [°C]</p> <p>Load 100%</p> <p>Note: Slanted line shows the range of the rated ambient temperature.</p>		<table><tr><th rowspan="2">Ambient Temperature [°C]</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><tr><td>-20</td><td>9.006</td><td>9.011</td><td>9.012</td></tr><tr><td>-10</td><td>9.010</td><td>9.013</td><td>9.013</td></tr><tr><td>0</td><td>9.013</td><td>9.014</td><td>9.015</td></tr><tr><td>10</td><td>9.014</td><td>9.015</td><td>9.016</td></tr><tr><td>20</td><td>9.017</td><td>9.018</td><td>9.019</td></tr><tr><td>25</td><td>9.018</td><td>9.020</td><td>9.020</td></tr><tr><td>30</td><td>9.018</td><td>9.019</td><td>9.019</td></tr><tr><td>40</td><td>9.017</td><td>9.018</td><td>9.019</td></tr><tr><td>50</td><td>9.014</td><td>9.016</td><td>9.016</td></tr><tr><td>60</td><td>9.011</td><td>9.012</td><td>9.013</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr></table>		Ambient Temperature [°C]	Output Voltage [V]			Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]	-20	9.006	9.011	9.012	-10	9.010	9.013	9.013	0	9.013	9.014	9.015	10	9.014	9.015	9.016	20	9.017	9.018	9.019	25	9.018	9.020	9.020	30	9.018	9.019	9.019	40	9.017	9.018	9.019	50	9.014	9.016	9.016	60	9.011	9.012	9.013	--	-	-	-
Ambient Temperature [°C]	Output Voltage [V]																																																					
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]																																																			
-20	9.006	9.011	9.012																																																			
-10	9.010	9.013	9.013																																																			
0	9.013	9.014	9.015																																																			
10	9.014	9.015	9.016																																																			
20	9.017	9.018	9.019																																																			
25	9.018	9.020	9.020																																																			
30	9.018	9.019	9.019																																																			
40	9.017	9.018	9.019																																																			
50	9.014	9.016	9.016																																																			
60	9.011	9.012	9.013																																																			
--	-	-	-																																																			

**COSEL**

		Testing Circuitry Figure A
Model	PBA30F-9	
Item	Output Voltage Accuracy	
Object	+9V3.4A	

### 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 - 3.4A

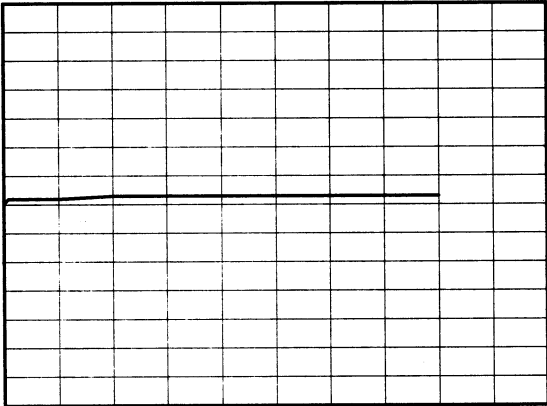
\* Output Voltage Accuracy =  $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

\* 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	264	0	9.027	±9	±0.1
Minimum Voltage	-10	85	3.4	9.010		

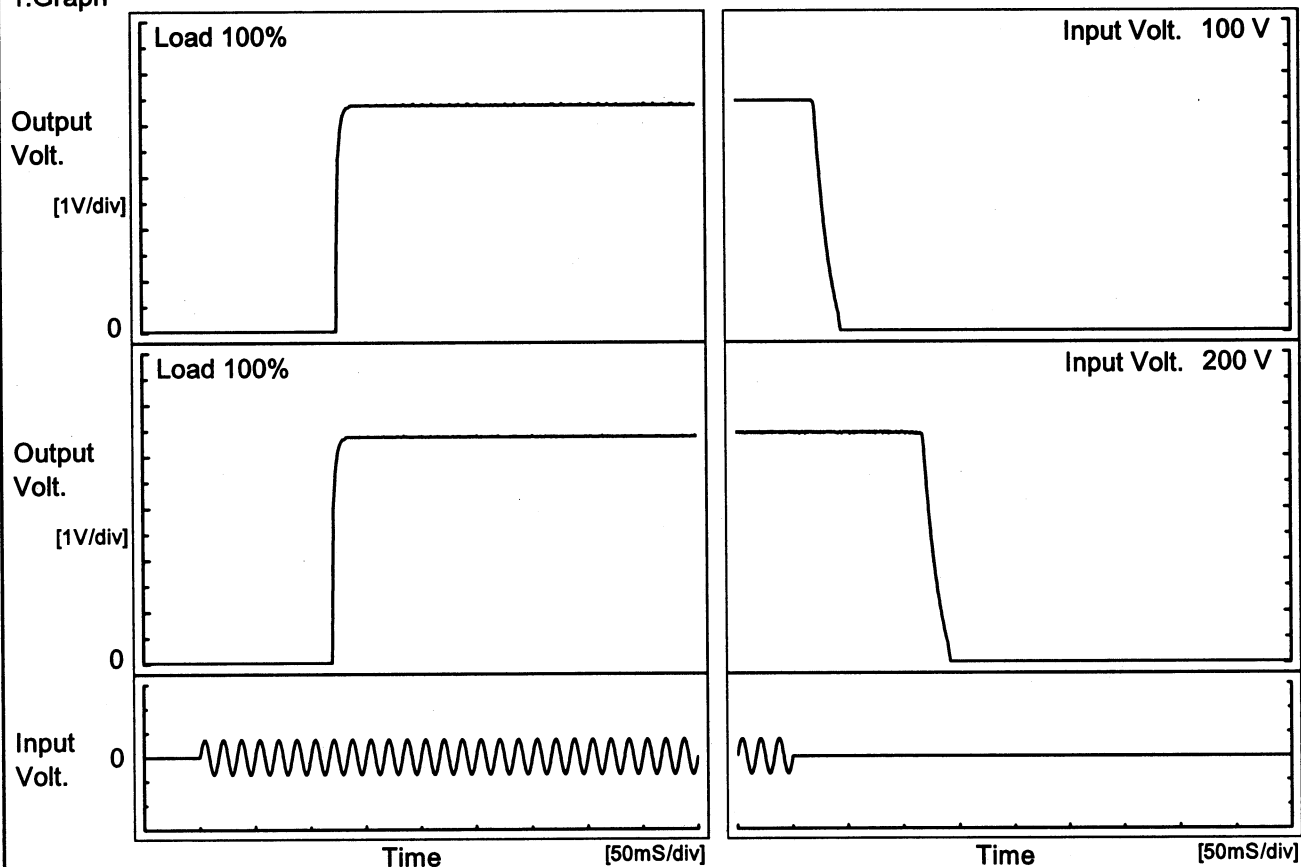
# COSEL

Model	PBA30F-9																								
Item	Time Lapse Drift	Temperature	25°C																						
Object	+9V3.4A	Testing Circuitry	Figure A																						
1.Graph		2.Values																							
<div><div><div>9.08</div><div>9.06</div><div>9.04</div><div>9.02</div><div>9.00</div><div>8.98</div><div>8.96</div><div>8.94</div></div><div></div><div><div>0</div><div>2</div><div>4</div><div>6</div><div>8</div><div>10</div></div></div> <div><div>Time [H]</div><div>Input Volt. 100V</div><div>Load 100%</div></div>		<table><tr><th>Time since start [H]</th><th>Output Voltage [V]</th></tr><tr><td>0.0</td><td>9.011</td></tr><tr><td>0.5</td><td>9.012</td></tr><tr><td>1.0</td><td>9.012</td></tr><tr><td>2.0</td><td>9.013</td></tr><tr><td>3.0</td><td>9.013</td></tr><tr><td>4.0</td><td>9.013</td></tr><tr><td>5.0</td><td>9.013</td></tr><tr><td>6.0</td><td>9.013</td></tr><tr><td>7.0</td><td>9.013</td></tr><tr><td>8.0</td><td>9.013</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	9.011	0.5	9.012	1.0	9.012	2.0	9.013	3.0	9.013	4.0	9.013	5.0	9.013	6.0	9.013	7.0	9.013	8.0	9.013
Time since start [H]	Output Voltage [V]																								
0.0	9.011																								
0.5	9.012																								
1.0	9.012																								
2.0	9.013																								
3.0	9.013																								
4.0	9.013																								
5.0	9.013																								
6.0	9.013																								
7.0	9.013																								
8.0	9.013																								
* The characteristic of AC200V is equal.																									

# COSEL

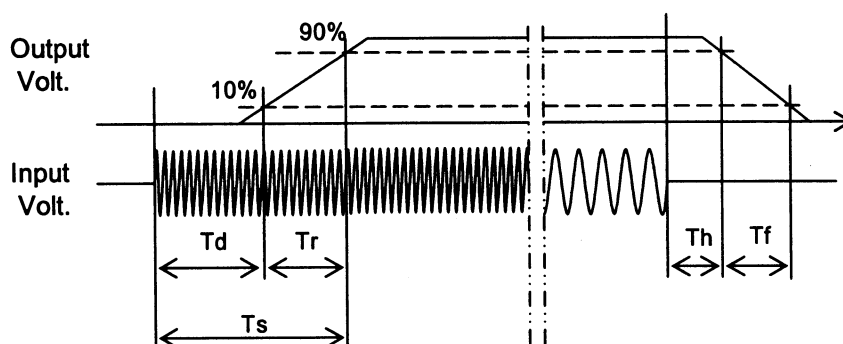
Model	PBA30F-9	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	+9V3.4A		

## 1. Graph



## 2. Values

Input Volt. \ Time	Td	Tr	Ts	Th	Tf
100 V	124.8	5.8	130.6	22.5	19.0
200 V	120.0	5.5	125.5	119.3	19.5



# COSEL

Model	PBA30F-9																																
Item	Hold-Up Time	Temperature	25°C																														
Object	+9V3.4A	Testing Circuitry	Figure A																														
1.Graph		2.Values																															
<div><div><div>---</div><div>□</div><div>---</div></div><div>Load 50%</div></div> <div><div>—</div><div>△</div><div>—</div></div> <div>Load 100%</div> <div><div>Hold-Up Time [ms]</div><div><table><thead><tr><th>Input Voltage [V]</th><th>Load 50% [ms]</th><th>Load 100% [ms]</th></tr></thead><tbody><tr><td>75</td><td>22</td><td>8</td></tr><tr><td>85</td><td>31</td><td>13</td></tr><tr><td>100</td><td>48</td><td>21</td></tr><tr><td>120</td><td>75</td><td>35</td></tr><tr><td>200</td><td>236</td><td>119</td></tr><tr><td>230</td><td>319</td><td>163</td></tr><tr><td>264</td><td>429</td><td>220</td></tr><tr><td>280</td><td>485</td><td>251</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></tbody></table></div><div>Input Voltage [V]</div></div> <div><div>This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.</div><div>Note: Slanted line shows the range of the rated input voltage.</div></div>		Input Voltage [V]	Load 50% [ms]	Load 100% [ms]	75	22	8	85	31	13	100	48	21	120	75	35	200	236	119	230	319	163	264	429	220	280	485	251	--	-	-		
Input Voltage [V]	Load 50% [ms]	Load 100% [ms]																															
75	22	8																															
85	31	13																															
100	48	21																															
120	75	35																															
200	236	119																															
230	319	163																															
264	429	220																															
280	485	251																															
--	-	-																															

# COSEL

Model	PBA30F-9																																																					
Item	Instantaneous Interruption Compensation	Temperature	25°C																																																			
Object	+9V3.4A	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> <p>Note: Slanted line shows the range of the rated load current.</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>136</td><td>594</td><td>791</td></tr><tr><td>1.20</td><td>72</td><td>337</td><td>457</td></tr><tr><td>1.80</td><td>48</td><td>232</td><td>314</td></tr><tr><td>2.40</td><td>36</td><td>177</td><td>240</td></tr><tr><td>3.00</td><td>23</td><td>140</td><td>190</td></tr><tr><td>3.40</td><td>22</td><td>123</td><td>170</td></tr><tr><td>3.74</td><td>20</td><td>112</td><td>154</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	136	594	791	1.20	72	337	457	1.80	48	232	314	2.40	36	177	240	3.00	23	140	190	3.40	22	123	170	3.74	20	112	154	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Time [ms]																																																					
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]																																																			
0.00	-	-	-																																																			
0.60	136	594	791																																																			
1.20	72	337	457																																																			
1.80	48	232	314																																																			
2.40	36	177	240																																																			
3.00	23	140	190																																																			
3.40	22	123	170																																																			
3.74	20	112	154																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			

# COSEL

Model		PBA30F-9
Item		Minimum Input Voltage for Regulated Output Voltage
Object		+9V3.4A

1.Graph

---

□

---

Load 50%

—

△

—

Load 100%

Input Voltage [V]

# COSEL

Model		PBA30F-9	
Item		Overcurrent Protection	
Object		+9V3.4A	

1.Graph

△

Input Volt.

100V

○

Input Volt.

200V

Output Voltage [V]

12

10

8

6

4

2

0

0

4

8

12

Load Current [A]

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

Intermittent operation occurs when the output voltage is less than rated output voltage.

2.Values

Output Voltage [V]	Load Current [A]	
	Input Volt. 100[V]	Input Volt. 200[V]
9.00	6.06	8.06
8.55	-	-
8.10	-	-
7.20	-	-
6.30	-	-
5.40	-	-
4.50	-	-
3.60	-	-
2.70	-	-
1.80	-	-
0.90	-	-
0.00	-	-



# COSEL

Model		PBA30F-9																																						
Item		Overvoltage Protection																																						
Object		+9V3.4A																																						
1.Graph		Testing Circuitry Figure A																																						
<p>—△— Input Volt. 100V          ---□--- Input Volt. 200V</p> <p>Operating Point [V]</p> <p>Ambient Temperature [°C]</p> <p>Load 0%</p>		2.Values																																						
<p>Note: Slanted line shows the range of the rated ambient temperature.</p>		<table> <tr> <th rowspan="2">Ambient Temperature [°C]</th><th colspan="2">Operating Point [V]</th></tr> <tr> <th>Input Volt. 100[V]</th><th>Input Volt. 200[V]</th></tr> <tr><td>-20</td><td>12.40</td><td>12.40</td></tr> <tr><td>-10</td><td>12.46</td><td>12.46</td></tr> <tr><td>0</td><td>12.52</td><td>12.52</td></tr> <tr><td>10</td><td>12.58</td><td>12.58</td></tr> <tr><td>20</td><td>12.64</td><td>12.64</td></tr> <tr><td>25</td><td>12.64</td><td>12.64</td></tr> <tr><td>30</td><td>12.69</td><td>12.69</td></tr> <tr><td>40</td><td>12.75</td><td>12.75</td></tr> <tr><td>50</td><td>12.81</td><td>12.81</td></tr> <tr><td>60</td><td>12.87</td><td>12.81</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> </table>	Ambient Temperature [°C]	Operating Point [V]		Input Volt. 100[V]	Input Volt. 200[V]	-20	12.40	12.40	-10	12.46	12.46	0	12.52	12.52	10	12.58	12.58	20	12.64	12.64	25	12.64	12.64	30	12.69	12.69	40	12.75	12.75	50	12.81	12.81	60	12.87	12.81	--	-	-
Ambient Temperature [°C]	Operating Point [V]																																							
	Input Volt. 100[V]	Input Volt. 200[V]																																						
-20	12.40	12.40																																						
-10	12.46	12.46																																						
0	12.52	12.52																																						
10	12.58	12.58																																						
20	12.64	12.64																																						
25	12.64	12.64																																						
30	12.69	12.69																																						
40	12.75	12.75																																						
50	12.81	12.81																																						
60	12.87	12.81																																						
--	-	-																																						

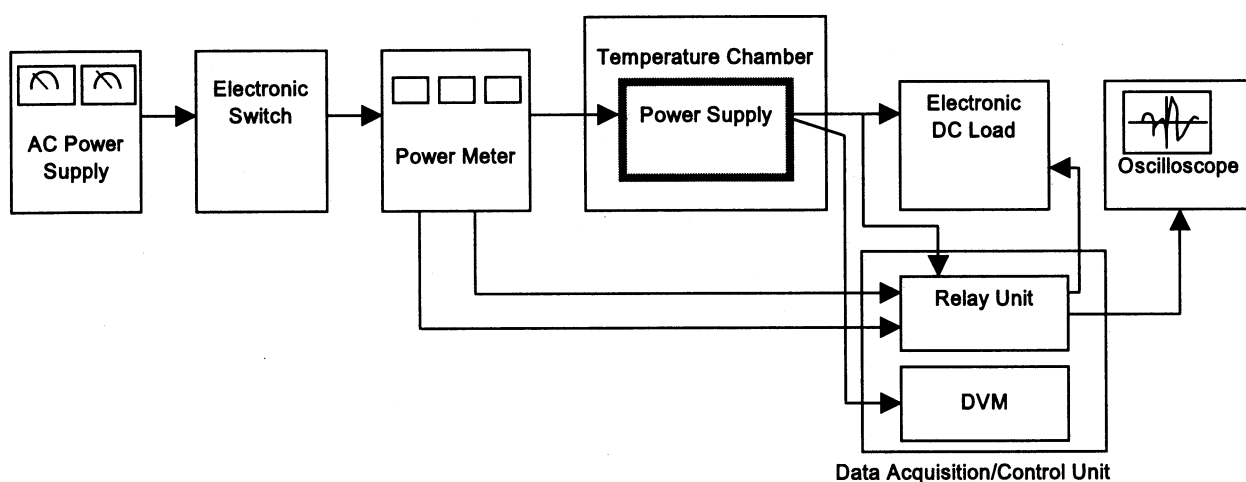


Figure A

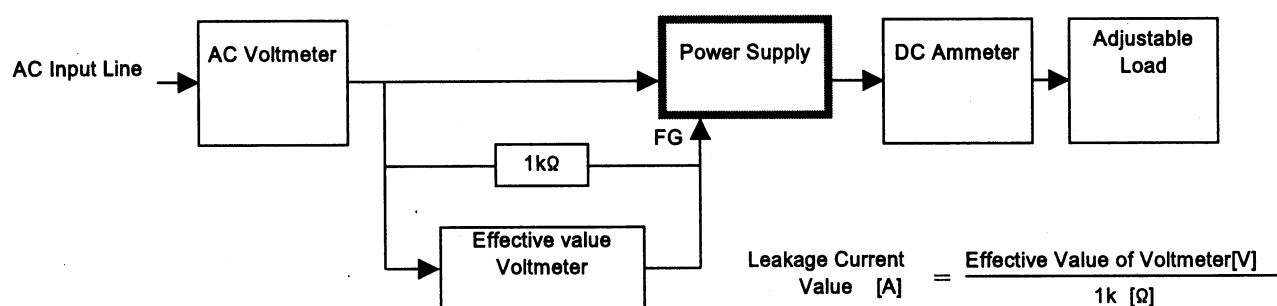


Figure B ( DEN-AN )

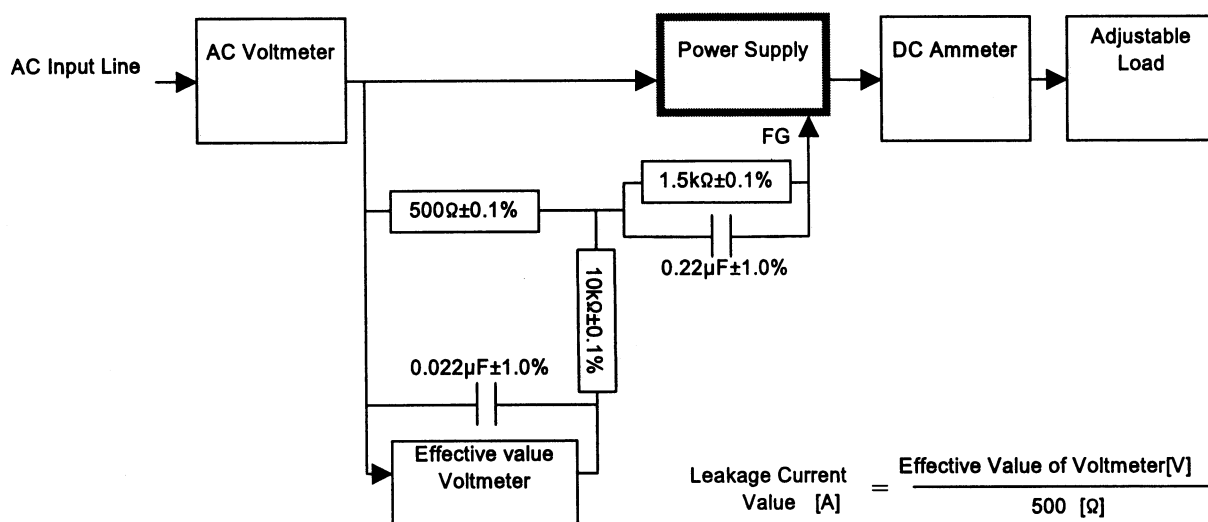


Figure B ( IEC60950 )