参考資料

COSEL

TEST DATA OF PBA75F-12

Regulated DC Power Supply
Apr.8. 2004

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COSEL CO.,LTD.

参考資料

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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

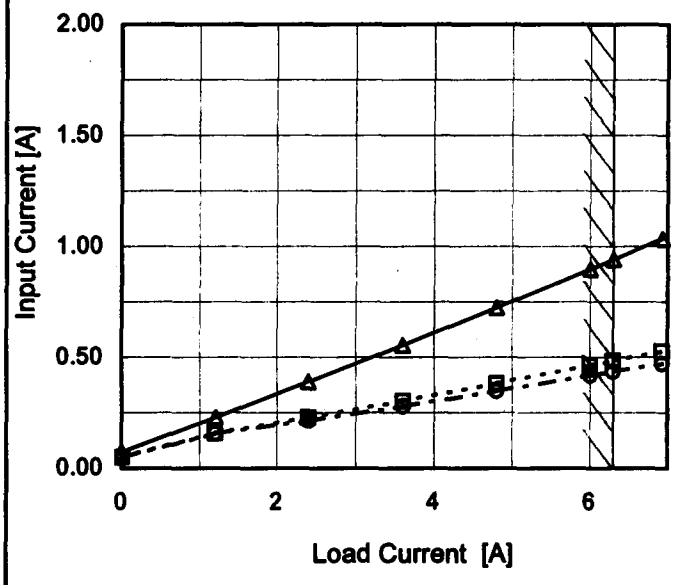
(Final Page 24)

COSEL

Model	PBA75F-12
Item	Input Current (by Load Current)
Object	――――――

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

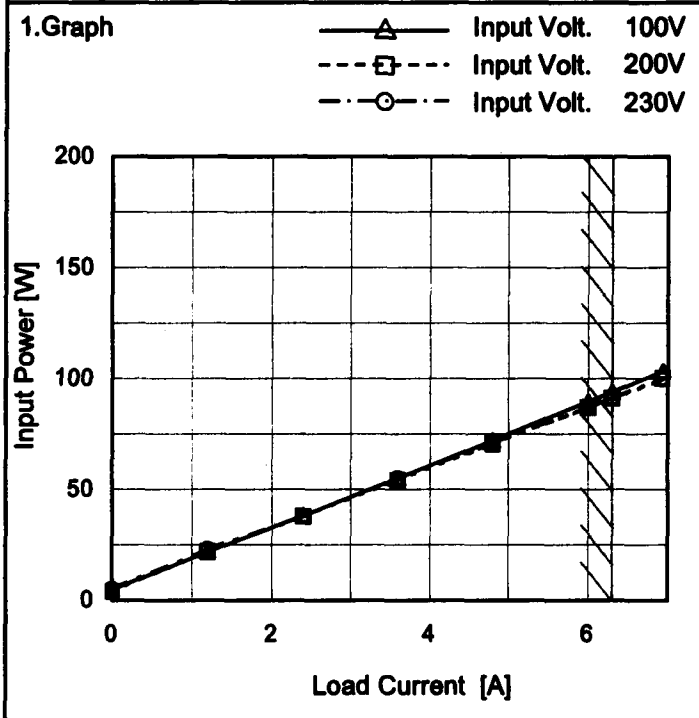
Load Current [A]	Input Current [A]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.00	0.073	0.051	0.048
1.20	0.229	0.158	0.156
2.40	0.389	0.228	0.214
3.60	0.554	0.303	0.279
4.80	0.724	0.383	0.347
6.00	0.897	0.464	0.418
6.30	0.941	0.484	0.436
6.93	1.034	0.528	0.472
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	PBA75F-12
Item	Input Power (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

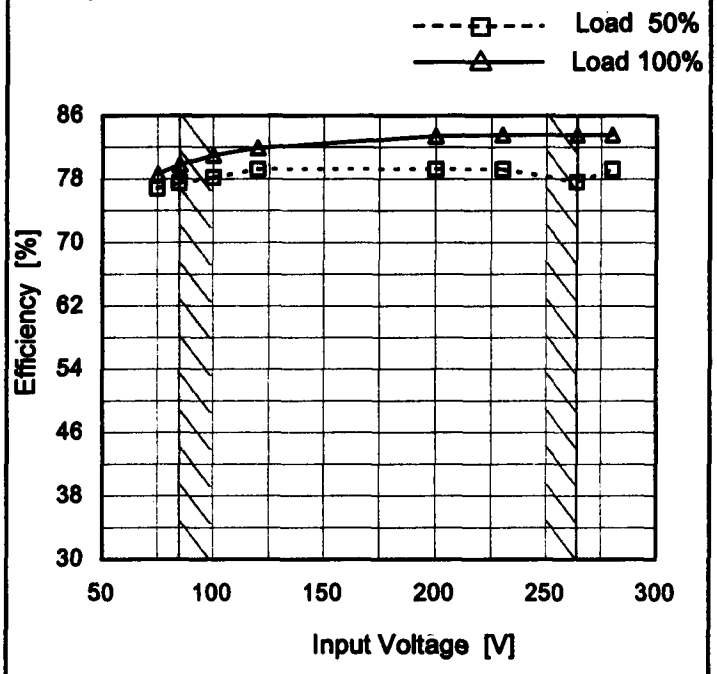
Load Current [A]	Input Power [W]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.00	4.8	4.0	5.0
1.20	21.9	22.0	23.0
2.40	38.3	38.0	38.0
3.60	55.0	54.1	55.0
4.80	72.2	70.5	71.0
6.00	89.6	87.1	87.0
6.30	94.0	91.2	91.0
6.93	103.4	100.2	99.9
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	PBA75F-12
Item	Efficiency (by Input Voltage)
Object	――――――――

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

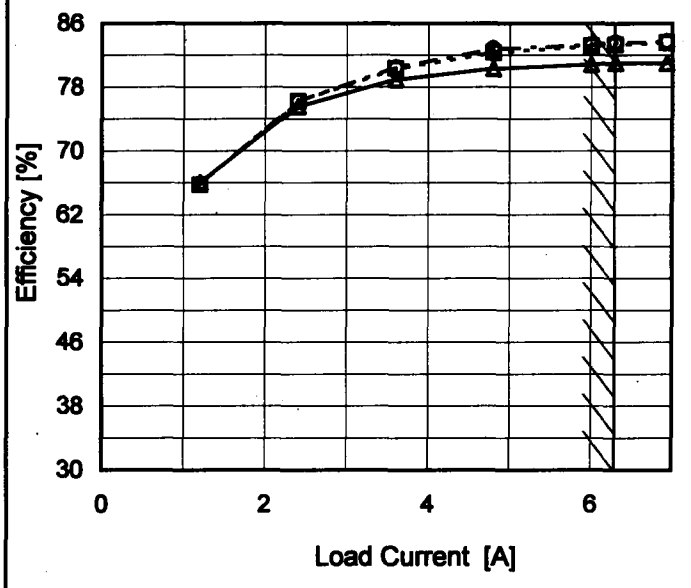
Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
75	76.8	78.6
85	77.5	79.8
100	78.2	81.0
120	79.2	81.9
200	79.2	83.4
230	79.2	83.6
264	77.6	83.6
280	79.2	83.6
--	-	-

COSEL

Model	PBA75F-12
Item	Efficiency (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

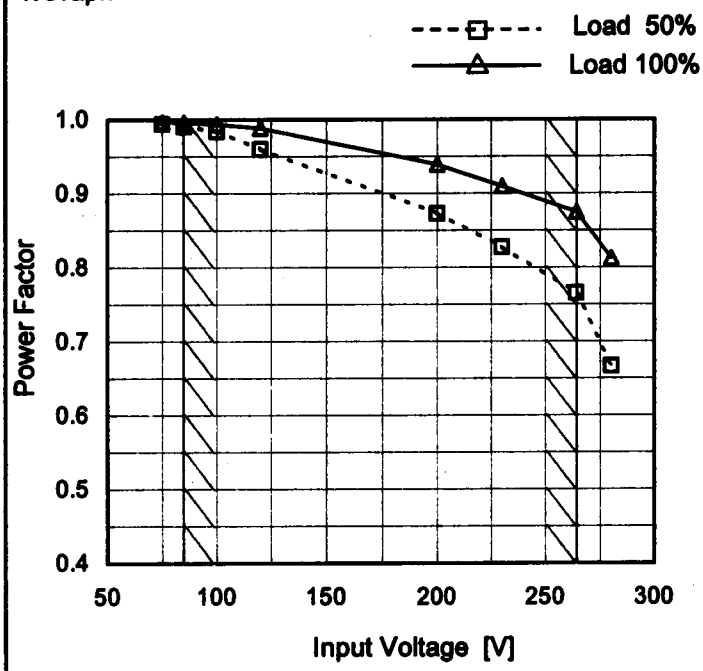
Load Current [A]	Efficiency [%]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.00	-	-	-
1.20	66.1	65.8	65.8
2.40	75.6	76.2	76.3
3.60	79.0	80.3	80.5
4.80	80.3	82.3	82.8
6.00	80.8	83.2	83.3
6.30	81.0	83.3	83.6
6.93	81.0	83.6	83.8
–	-	-	-
–	-	-	-
–	-	-	-

COSEL

Model	PBA75F-12
Item	Power Factor (by Input Voltage)
Object	――――――――

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

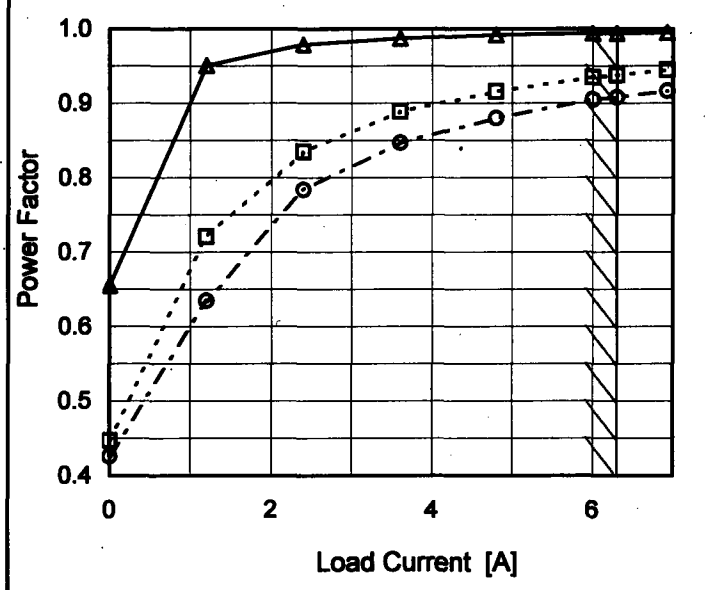
Input Voltage [V]	Power Factor	
	Load 50%	Load 100%
75	0.994	0.997
85	0.991	0.996
100	0.984	0.993
120	0.960	0.989
200	0.873	0.939
230	0.828	0.910
264	0.766	0.875
280	0.667	0.813
--	-	-

COSEL

Model	PBA75F-12
Item	Power Factor (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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	0.655	0.447	0.426
1.20	0.951	0.721	0.635
2.40	0.979	0.835	0.784
3.60	0.987	0.889	0.847
4.80	0.992	0.916	0.880
6.00	0.994	0.935	0.905
6.30	0.994	0.938	0.908
6.93	0.995	0.945	0.917
—	-	-	-
—	-	-	-
—	-	-	-

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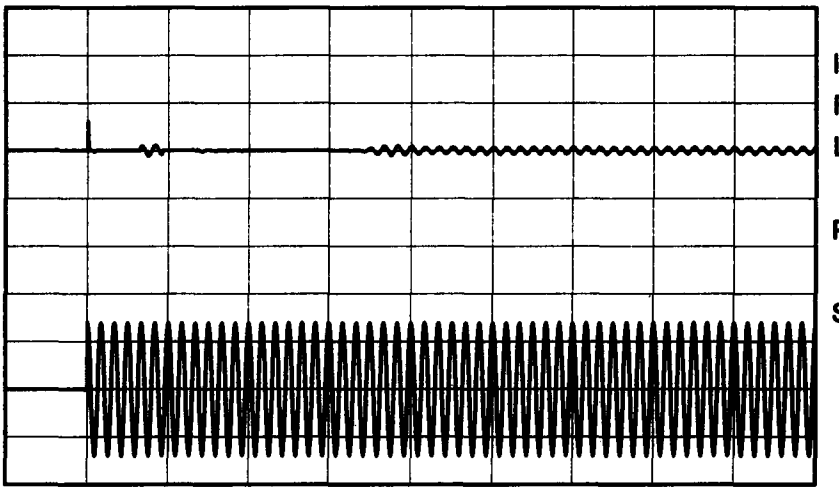
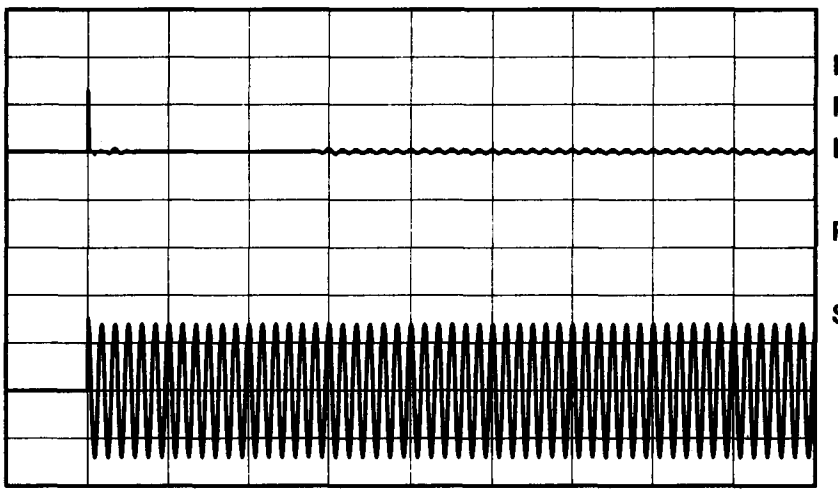
Model	PBA75F-12	Temperature 25°C
Item	Inrush Current	Testing Circuitry Figure A
Object	————————	



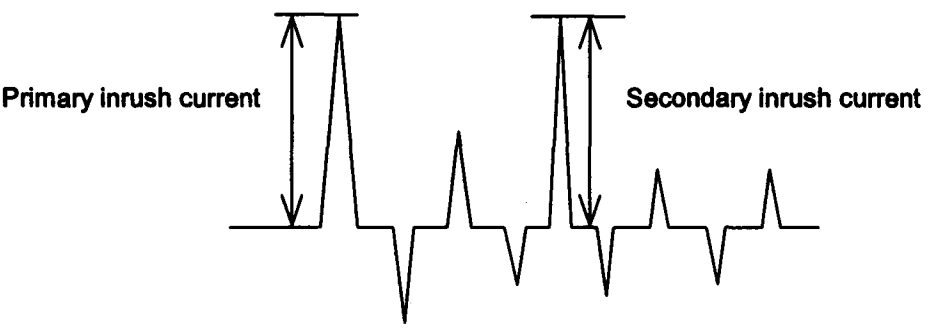
Input Voltage 100 V
Frequency 60 Hz
Load 100 %

Primary inrush current : 12.1 A
Secondary inrush current : 2.4 A



Input Voltage 200 V
Frequency 60 Hz
Load 100 %

Primary inrush current : 25.6 A
Secondary inrush current : 1.2 A



COSEL

Model	PBA75F-12	
Item	Leakage Current	Temperature 25°C Testing Circuitry Figure B
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

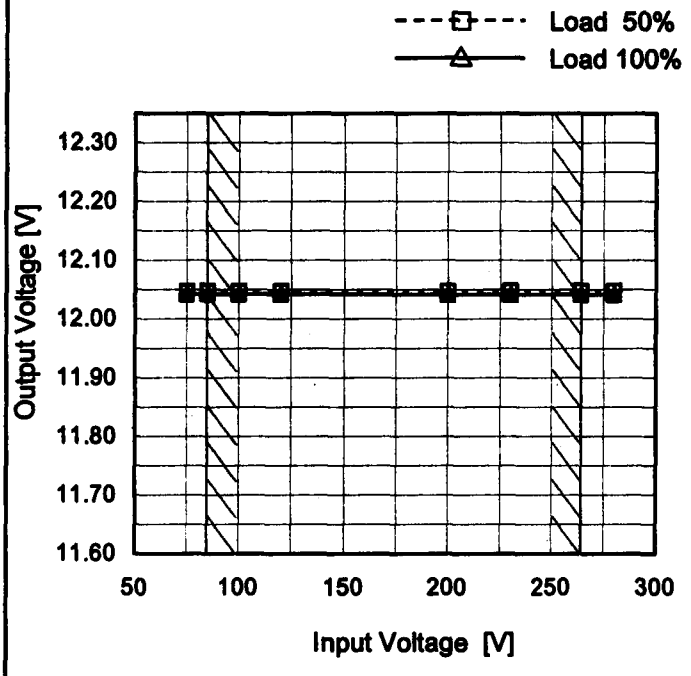
Leakage current value is concluded after measuring both phases of AC input and by choosing the larger one.

COSEL

Model	PBA75F-12
Item	Line Regulation
Object	+12V6.3A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

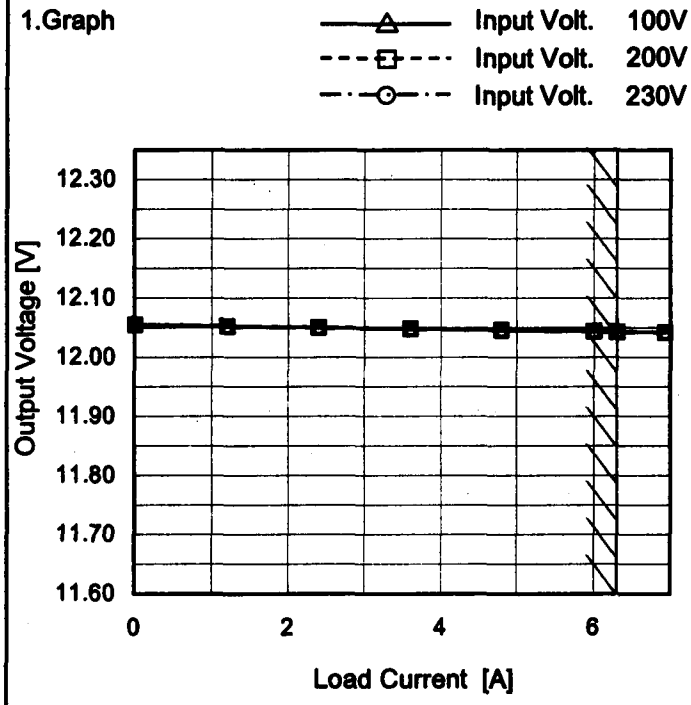
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
75	12.047	12.043
85	12.048	12.042
100	12.048	12.042
120	12.048	12.042
200	12.048	12.042
230	12.048	12.042
264	12.048	12.042
280	12.048	12.042
--	-	-

COSEL

Model	PBA75F-12
Item	Load Regulation
Object	+12V6.3A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

Load Current [A]	Output Voltage [V]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.00	12.055	12.055	12.055
1.20	12.053	12.053	12.052
2.40	12.050	12.050	12.050
3.60	12.048	12.048	12.048
4.80	12.046	12.046	12.046
6.00	12.044	12.044	12.043
6.30	12.044	12.043	12.043
6.93	12.042	12.042	12.042
--	-	-	-
--	-	-	-
--	-	-	-

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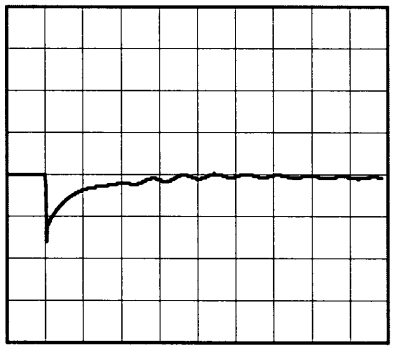
Model	PBA75F-12		
Item	Dynamic Load Response	Temperature	25°C
		Testing Circuitry	Figure A
Object	+12V6.3A		

Input Volt. 100 V
Cycle 1000 ms

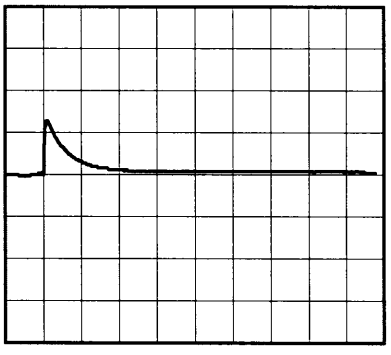
Load Current

Min. Load (0A) ←→
Load 100% (6.3A)



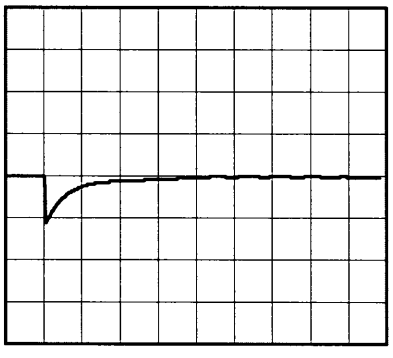
100 mV/div

10 ms/div



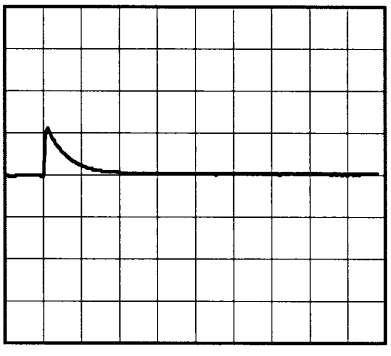
10 ms/div

Min. Load (0A) ←→
Load 50% (3.15A)



100 mV/div

10 ms/div



10 ms/div

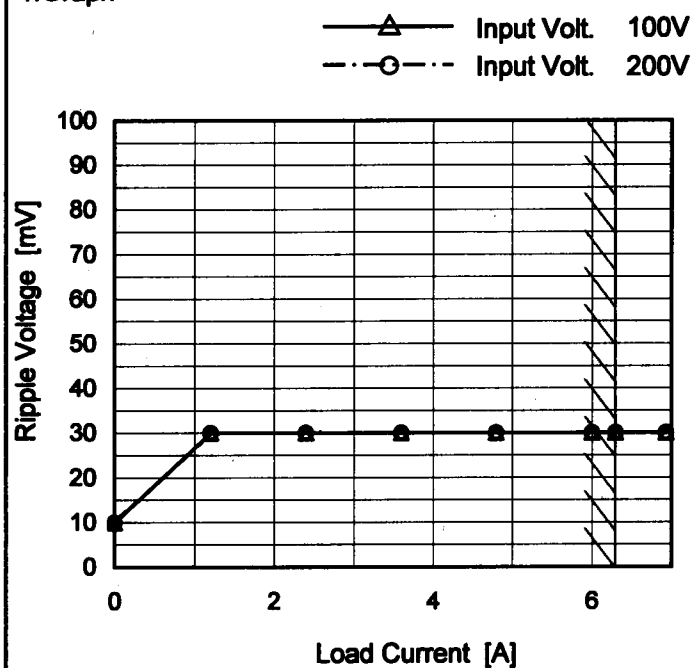
* The characteristic of AC200V is equal.

COSEL

Model	PBA75F-12
Item	Ripple Voltage (by Load Current)
Object	+12V6.3A

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.

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

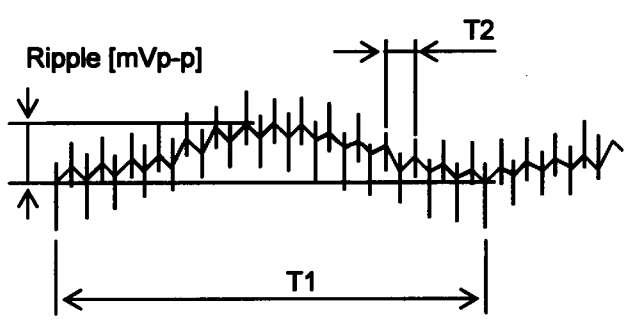


Fig. Complex Ripple Wave Form

2.Values

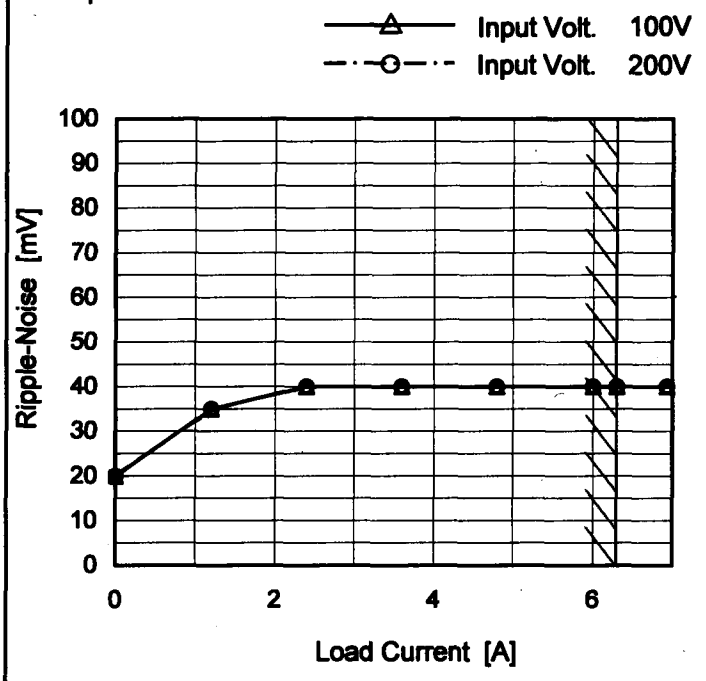
Load Current [A]	Ripple Voltage [mV] Input Volt. 100 [V]	Input Volt. 200 [V]
0.00	10	10
1.20	30	30
2.40	30	30
3.60	30	30
4.80	30	30
6.00	30	30
6.30	30	30
6.93	30	30
–	-	-
–	-	-
–	-	-

COSEL

Model	PBA75F-12
Item	Ripple-Noise
Object	+12V6.3A

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.

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

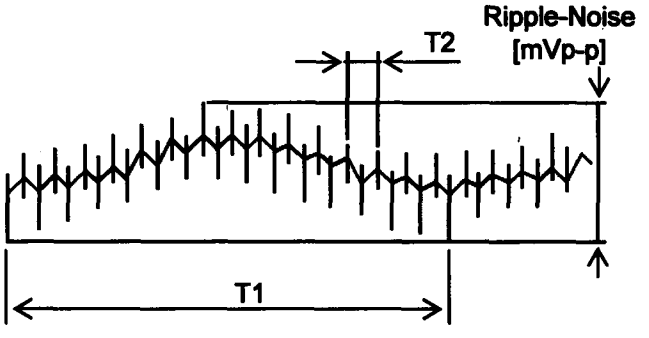


Fig. Complex Ripple Wave Form

2.Values

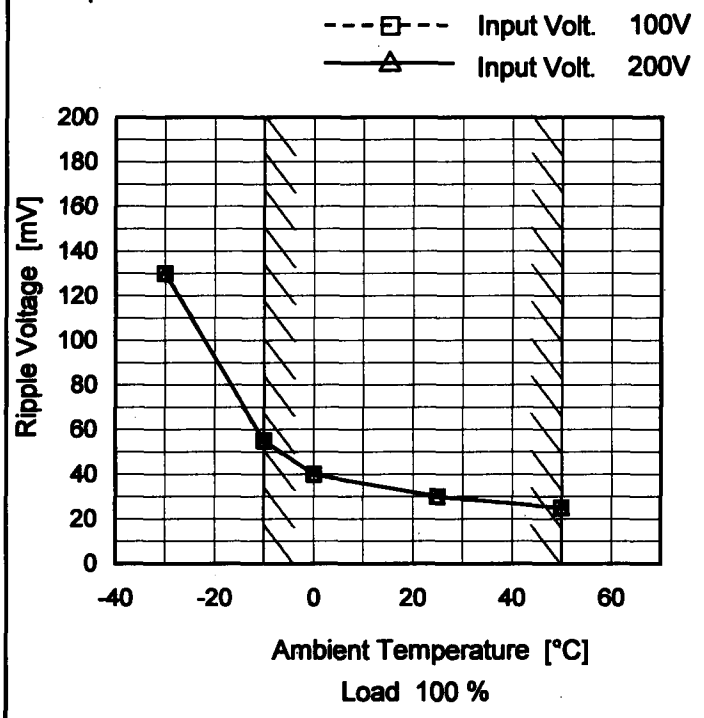
Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 100 [V]	Input Volt. 200 [V]
0.00	20	20
1.20	35	35
2.40	40	40
3.60	40	40
4.80	40	40
6.00	40	40
6.30	40	40
6.93	40	40
–	-	-
–	-	-
–	-	-

COSEL

Model	PBA75F-12
Item	Ripple Voltage (by Ambient Temp.)
Object	+12V6.3A

Testing Circuitry Figure A

1.Graph



Measured by 20 MHz Oscilloscope.
Note: Slanted line shows the range of the rated ambient temperature.

2.Values

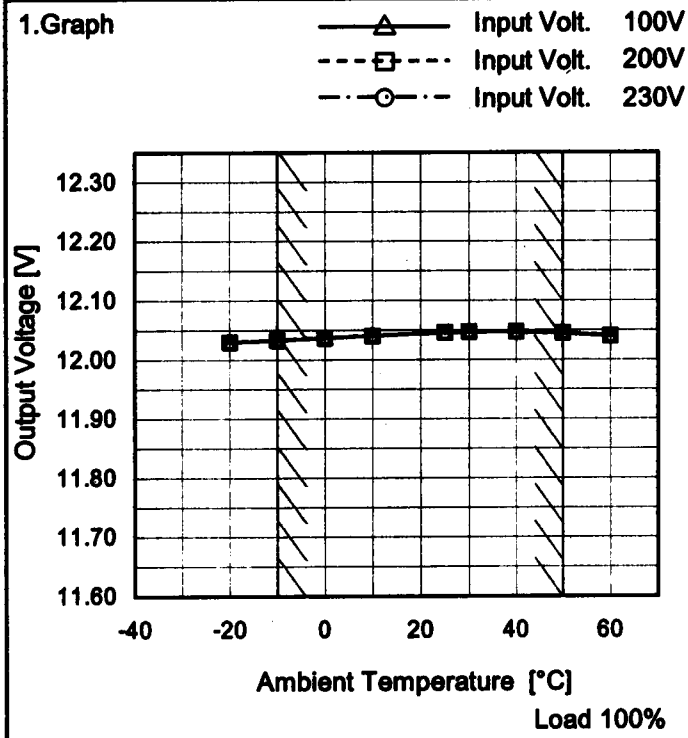
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Input Volt. 100 [V]	Input Volt. 200 [V]
-30	130	130
-10	55	55
0	40	40
25	30	30
50	25	25
–	-	-
–	-	-
–	-	-
–	-	-
–	-	-
–	-	-

COSEL

Model	PBA75F-12
Item	Ambient Temperature Drift
Object	+12V6.3A

Testing Circuitry Figure A

1.Graph



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

2.Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
-20	12.030	12.030	12.030
-10	12.033	12.033	12.033
0	12.037	12.037	12.037
10	12.041	12.040	12.041
25	12.046	12.046	12.045
30	12.047	12.047	12.047
40	12.047	12.047	12.046
50	12.045	12.045	12.044
60	12.040	12.040	12.040
--	-	-	-
--	-	-	-

COSEL

Model	PBA75F-12
Item	Output Voltage Accuracy
Object	+12V6.3A

Testing Circuitry Figure A

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 - 6.3A

* Output Voltage Accuracy = ±(Maximum of Output Voltage - Minimum of Output Voltage) / 2

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

2.Values

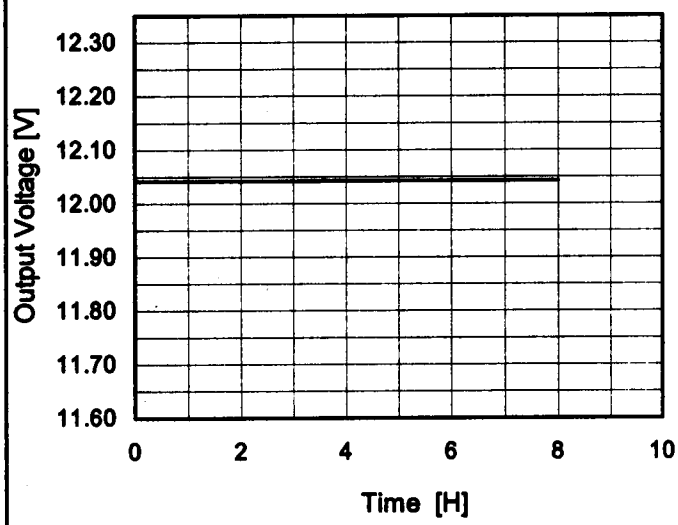
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	40	85	0	12.059	±13	±0.1
Minimum Voltage	-10	200	6.3	12.033		

COSEL

Model	PBA75F-12
Item	Time Lapse Drift
Object	+12V6.3A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Input Volt. 100V
Load 100%

* The characteristic of AC200V is equal.

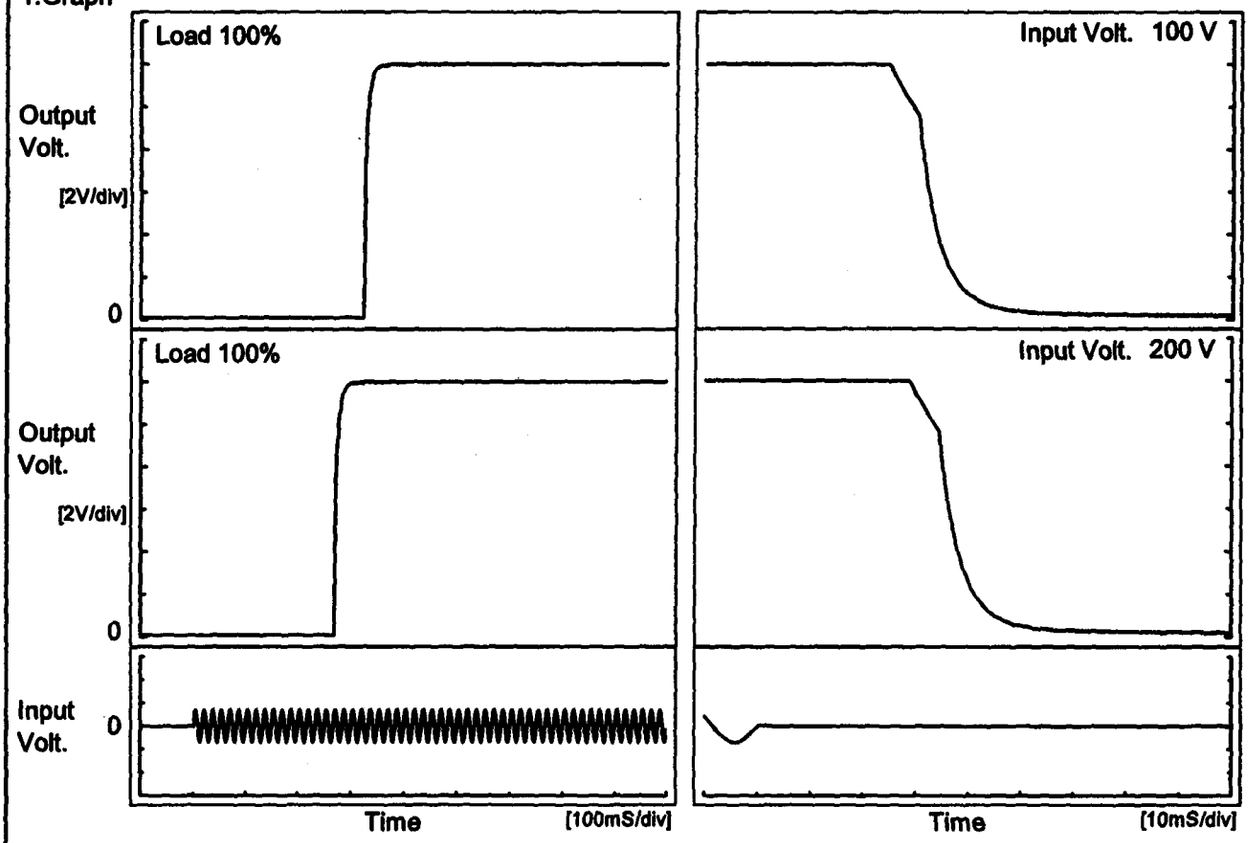
2.Values

Time since start [H]	Output Voltage [V]
0.0	12.044
0.5	12.042
1.0	12.042
2.0	12.042
3.0	12.042
4.0	12.043
5.0	12.043
6.0	12.043
7.0	12.043
8.0	12.043

COSEL

Model	PBA75F-12	Temperature 25°C
Item	Rise and Fall Time	Testing Circuitry Figure A
Object	+12V6.3A	

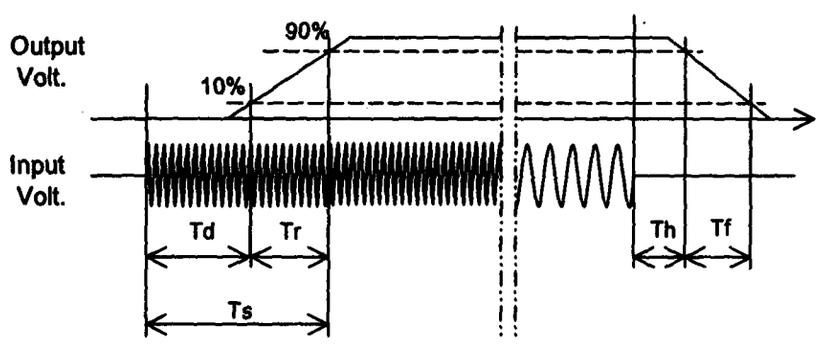
1.Graph



2.Values

[mS]

Input Volt. \ Time	Td	Tr	Ts	Th	Tf
100 V	324.0	11.5	335.5	27.2	12.3
200 V	269.0	12.0	281.0	31.3	12.3

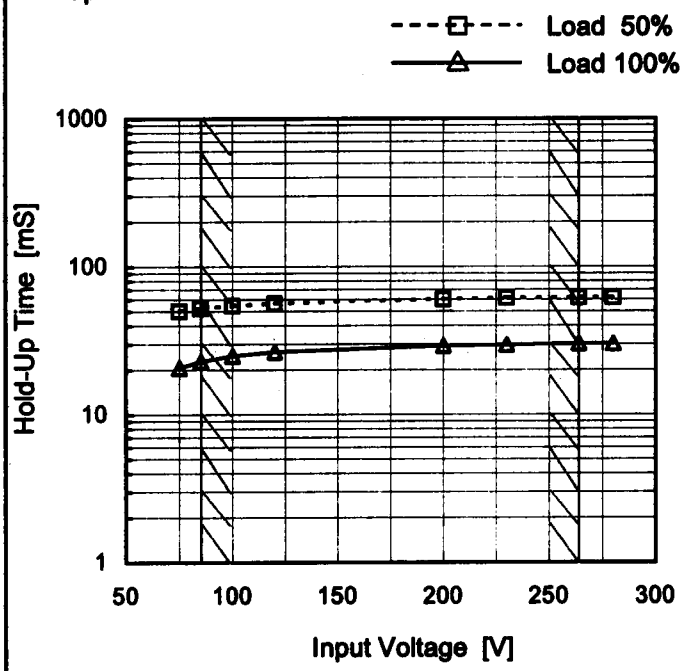


COSEL

Model	PBA75F-12
Item	Hold-Up Time
Object	+12V6.3A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.
Note: Slanted line shows the range of the rated input voltage.

2.Values

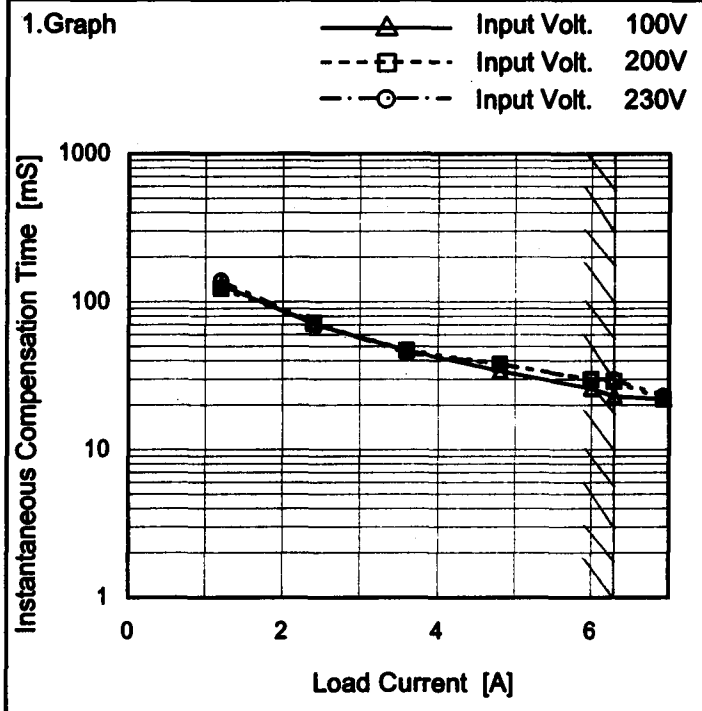
Input Voltage [V]	Hold-Up Time [mS]	
	Load 50%	Load 100%
75	50	21
85	52	23
100	55	25
120	57	27
200	60	29
230	61	30
264	62	30
280	62	30
--	-	-

COSEL

Model	PBA75F-12
Item	Instantaneous Interruption Compensation
Object	+12V6.3A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

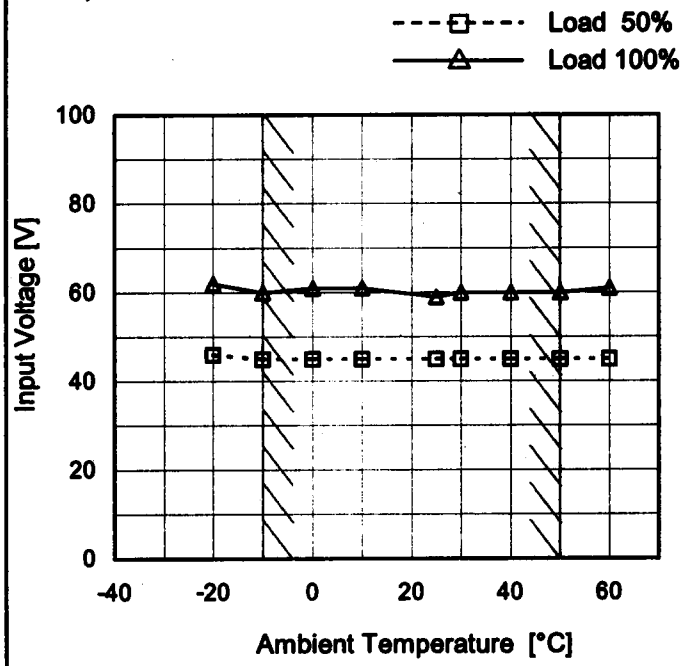
Load Current [A]	Time [mS] Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0.00	-	-	-
1.20	130	123	139
2.40	71	72	72
3.60	47	47	45
4.80	34	38	38
6.00	26	30	30
6.30	23	29	30
6.93	22	22	23
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	PBA75F-12
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+12V6.3A

Testing Circuitry Figure A

1.Graph



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

2.Values

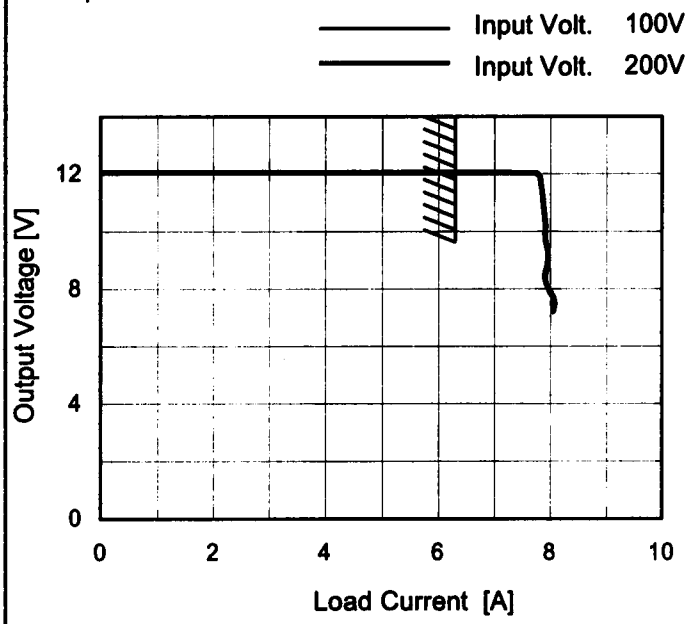
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-20	46	62
-10	45	60
0	45	61
10	45	61
25	45	59
30	45	60
40	45	60
50	45	60
60	45	61
--	-	-
--	-	-

COSEL

Model	PBA75F-12
Item	Overcurrent Protection
Object	+12V6.3A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

Intermittent operation occurs when the output voltage is from 7.2V to 0V.

2.Values

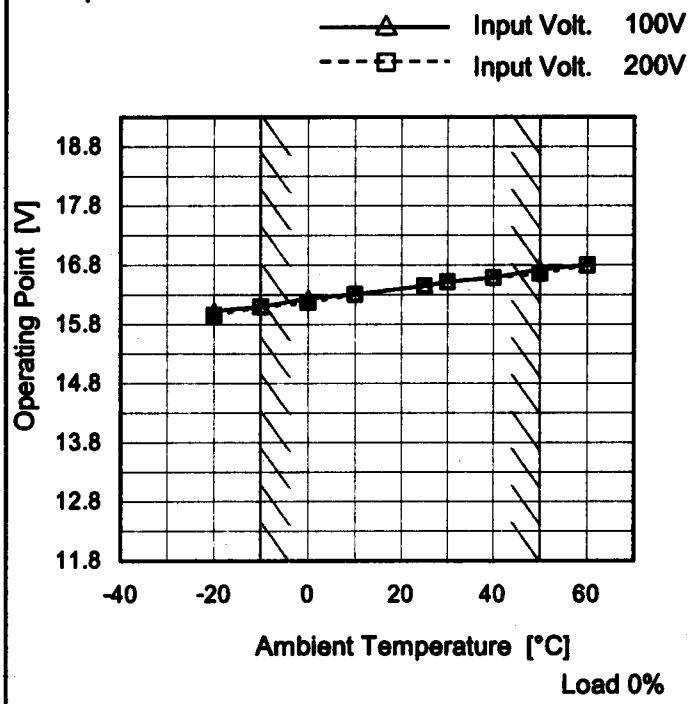
Output Voltage [V]	Load Current [A]	
	Input Volt. 100[V]	Input Volt. 200[V]
12.0	6.71	6.71
11.4	7.85	7.85
10.8	7.89	7.88
9.6	7.92	7.92
8.4	7.92	7.90
7.2	8.07	8.05
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	PBA75F-12
Item	Overvoltage Protection
Object	+12V6.3A

Testing Circuitry Figure A

1.Graph



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

2.Values

Ambient Temperature [°C]	Operating Point [V]	
	Input Volt. 100[V]	Input Volt. 200[V]
-20	15.98	15.91
-10	16.05	16.05
0	16.19	16.12
10	16.26	16.26
25	16.40	16.40
30	16.47	16.47
40	16.54	16.54
50	16.68	16.61
60	16.75	16.75
--	-	-
--	-	-

COSEL

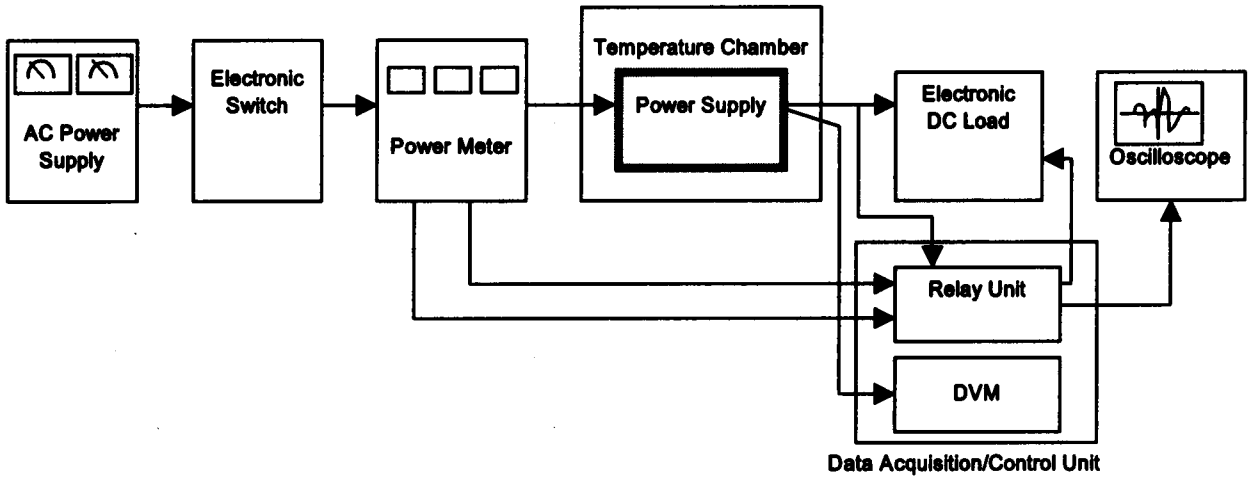


Figure A

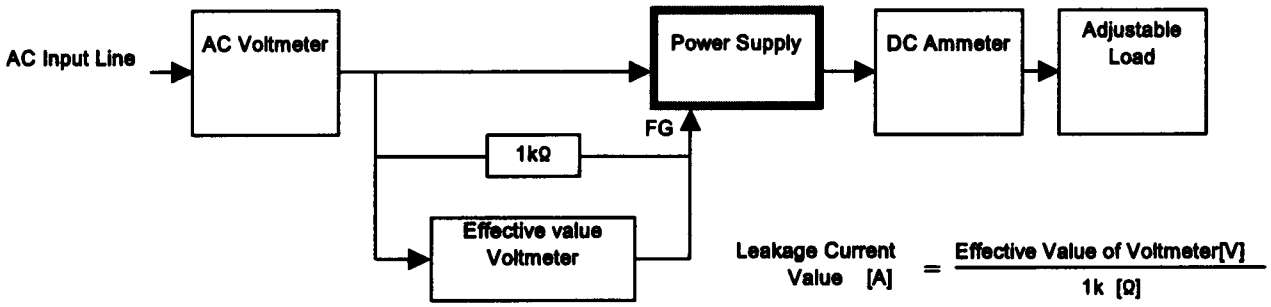


Figure B (DEN-AN)

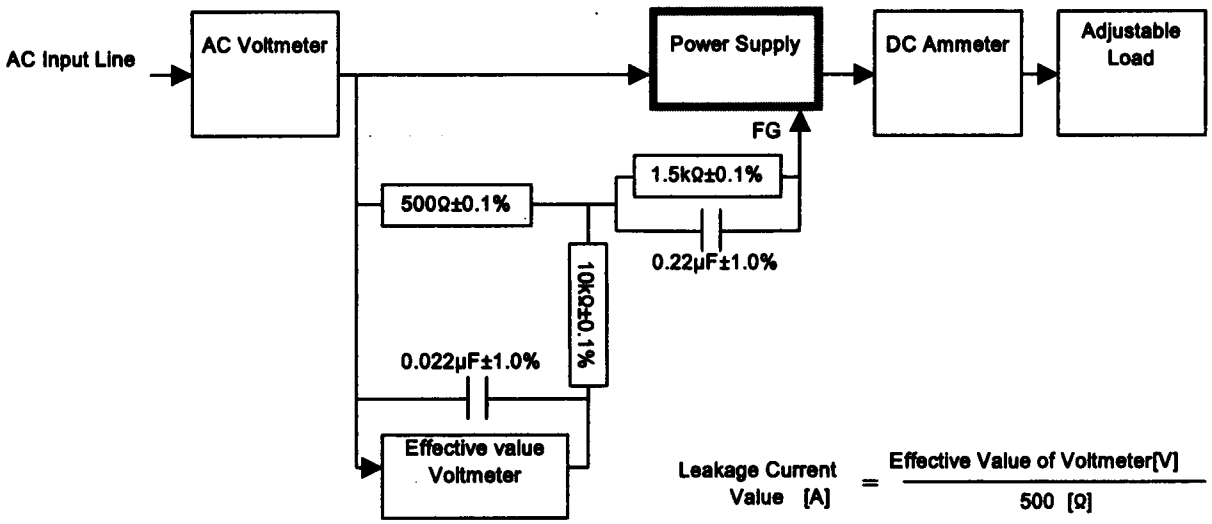


Figure B (IEC60950)