参考資料

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TEST DATA OF LGA75A-5

Regulated DC Power Supply
April 4, 2008

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COSEL CO.,LTD.

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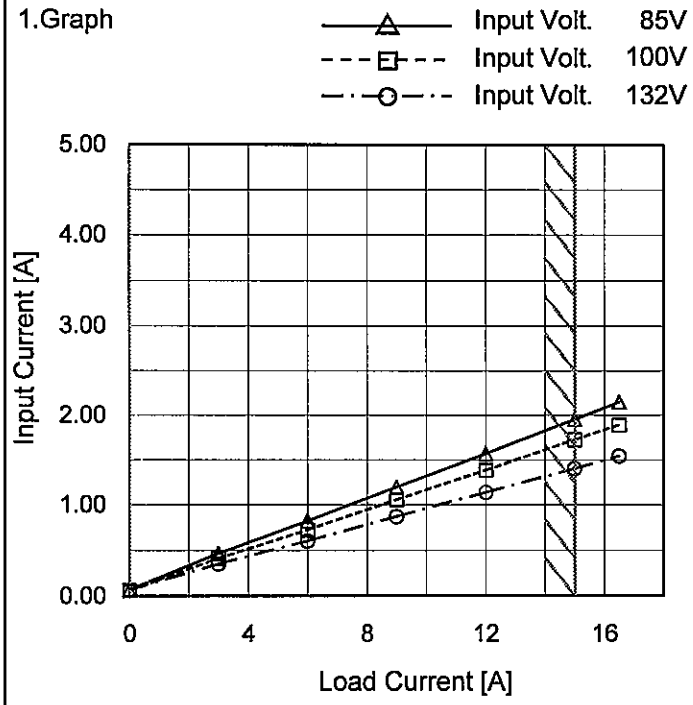
Model	LGA75A-5
Item	Input Current (by Load Current)
Object	――――――

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. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.0	0.063	0.062	0.065
3.0	0.467	0.413	0.351
6.0	0.822	0.727	0.604
9.0	1.193	1.057	0.869
12.0	1.566	1.387	1.137
15.0	1.951	1.723	1.403
16.5	2.144	1.891	1.541
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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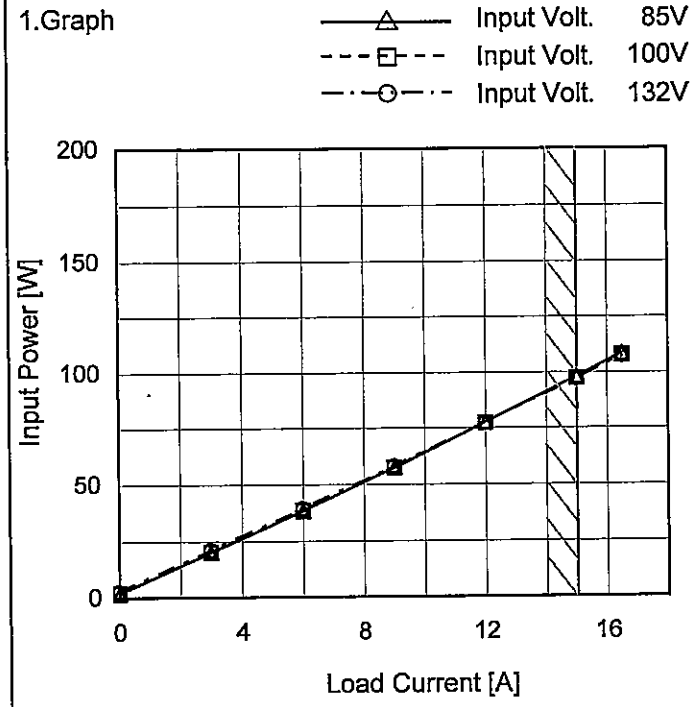
COSEL

Model	LGA75A-5
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. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.0	1.8	2.1	2.8
3.0	20.1	20.3	21.3
6.0	38.3	38.4	39.3
9.0	57.4	57.4	58.0
12.0	77.4	77.2	77.3
15.0	97.9	97.3	97.0
16.5	108.4	107.7	107.3
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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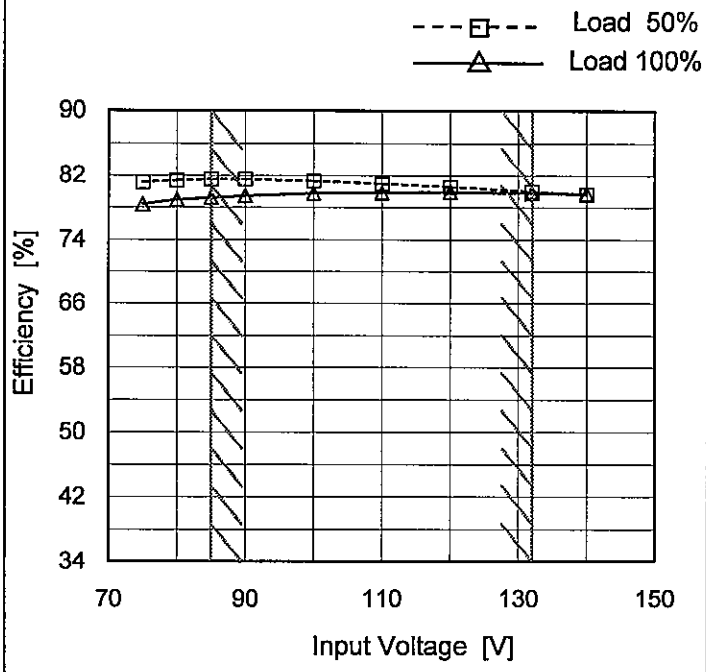
Model	LGA75A-5
Item	Efficiency (by Input Voltage)
Object	――――――――

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	81.1	78.4
80	81.4	78.9
85	81.5	79.2
90	81.5	79.4
100	81.3	79.7
110	81.0	79.8
120	80.6	79.9
132	80.0	79.8
140	79.6	79.7

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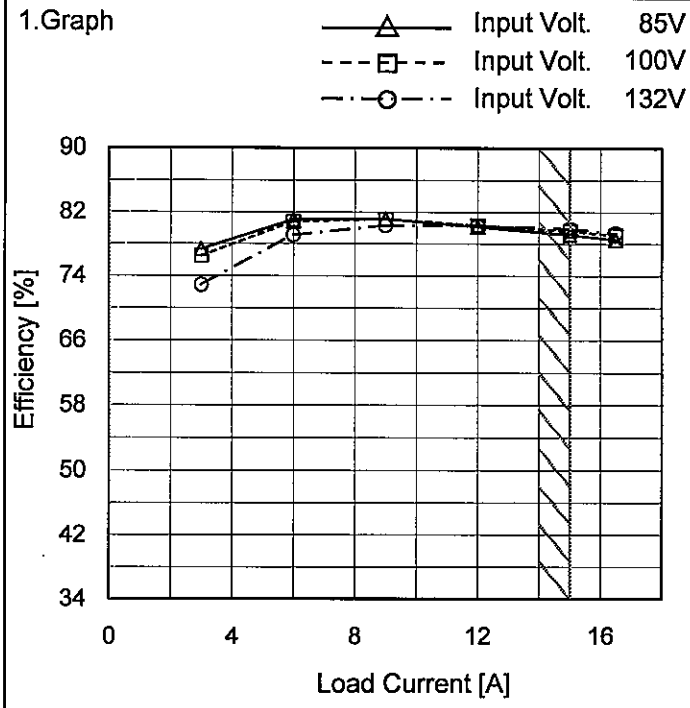
COSEL

Model	LGA75A-5
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. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.0	-	-	-
3.0	77.3	76.5	72.9
6.0	81.0	80.8	79.1
9.0	81.2	81.1	80.3
12.0	80.2	80.4	80.3
15.0	79.2	79.6	79.9
16.5	78.5	79.1	79.4
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

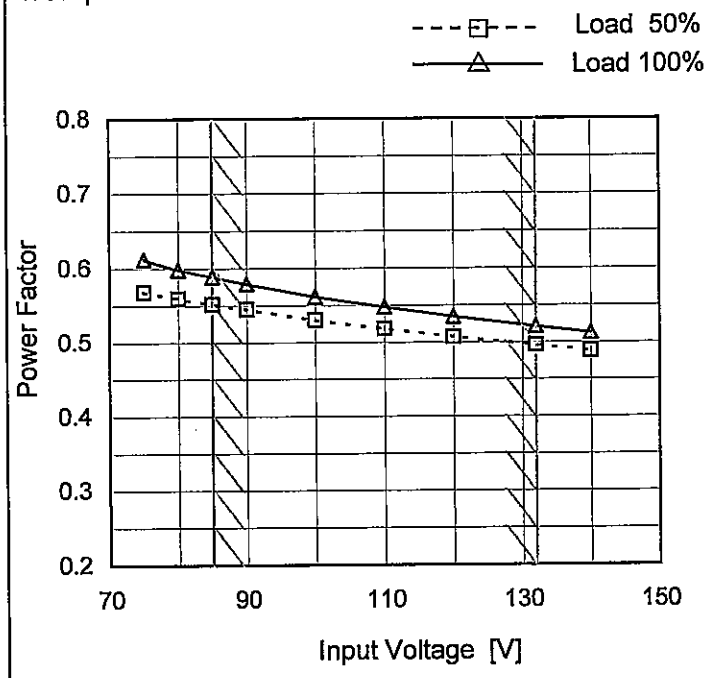
BC-10153

COSEL

Model	LGA75A-5
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	0.568	0.612
80	0.560	0.598
85	0.552	0.589
90	0.545	0.579
100	0.530	0.562
110	0.518	0.548
120	0.508	0.535
132	0.496	0.521
140	0.488	0.513

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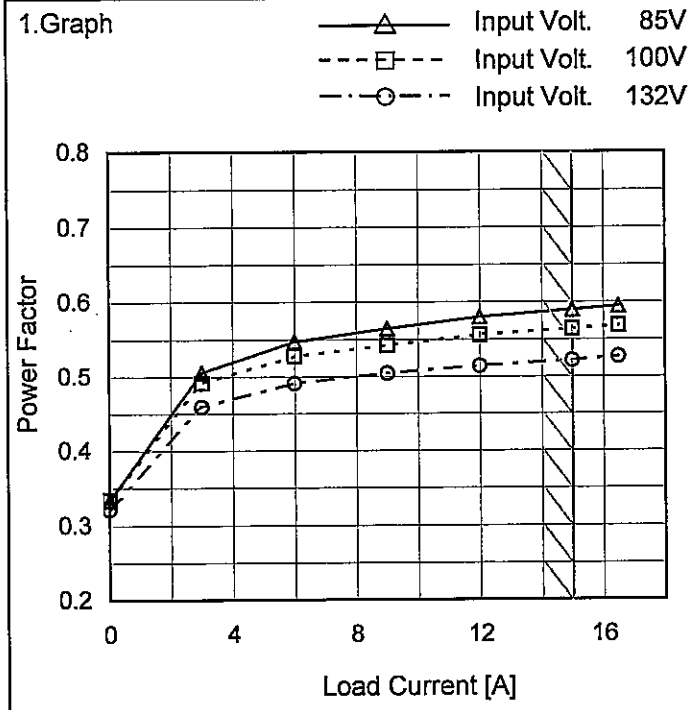
Model	LGA75A-5
Item	Power Factor (by Load Current)
Object	――――――

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. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.0	0.333	0.334	0.322
3.0	0.505	0.492	0.459
6.0	0.547	0.527	0.491
9.0	0.564	0.542	0.504
12.0	0.580	0.555	0.514
15.0	0.589	0.564	0.522
16.5	0.594	0.568	0.527
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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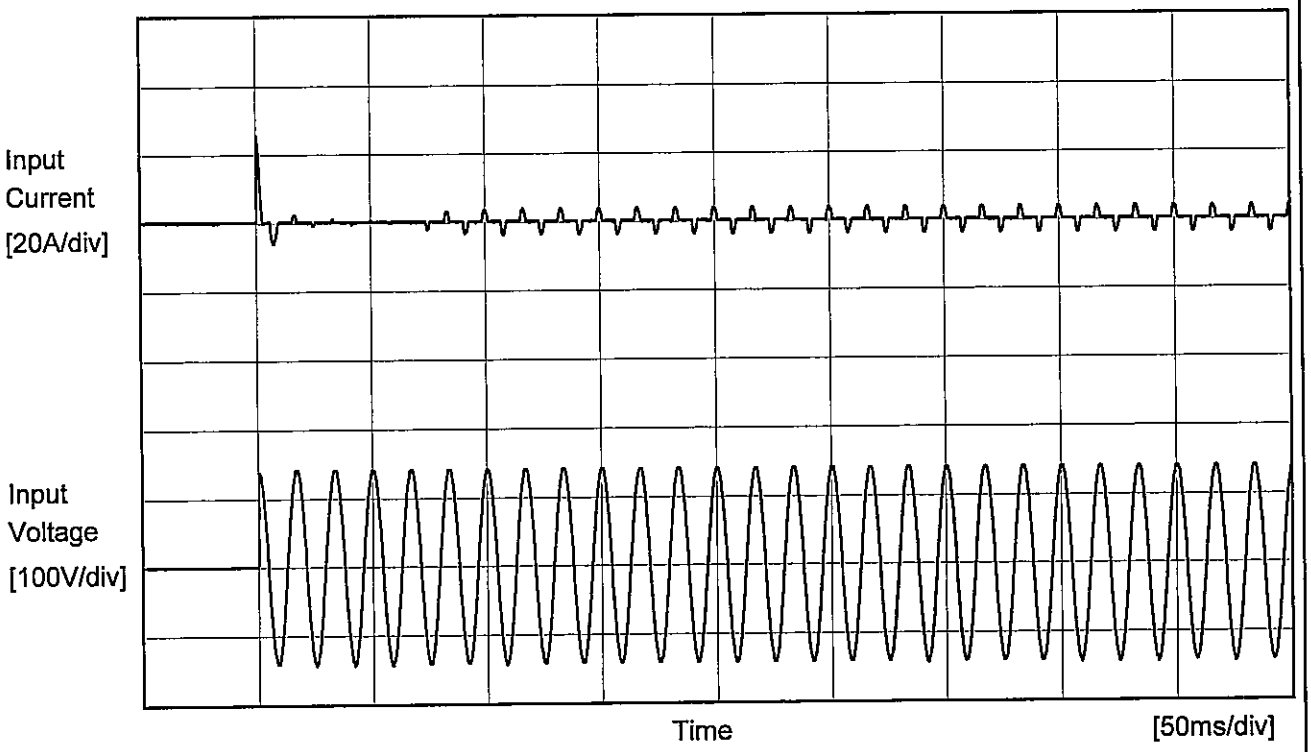
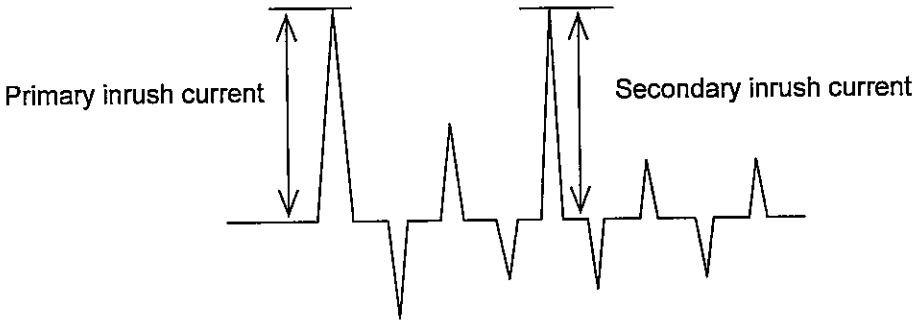
Model	LGA75A-5	Temperature	25°C
Item	Inrush Current	Testing Circuitry	Figure A
Object	————————		



Input Voltage	100 V
Frequency	60 Hz
Load	100 %
Primary inrush current	25.3 A
Secondary inrush current	3.9 A



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Model	LGA75A-5
Item	Leakage Current
Object	――――――――

Temperature 25°C
Testing Circuitry Figure B

1.Results

Standards	Leakage Current [mA]		
	Input Volt. 100 [V]	Input Volt. 120 [V]	Input Volt. 132 [V]
(A)DEN-AN	0.08	0.10	0.12
(B)IEC60950	0.09	0.11	0.12

frequency 60Hz

Standards	Leakage Current [mA]		
	Input Volt. [V]	Input Volt. [V]	Input Volt. [V]
(B)IEC60950	-	-	-

2.Condition

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

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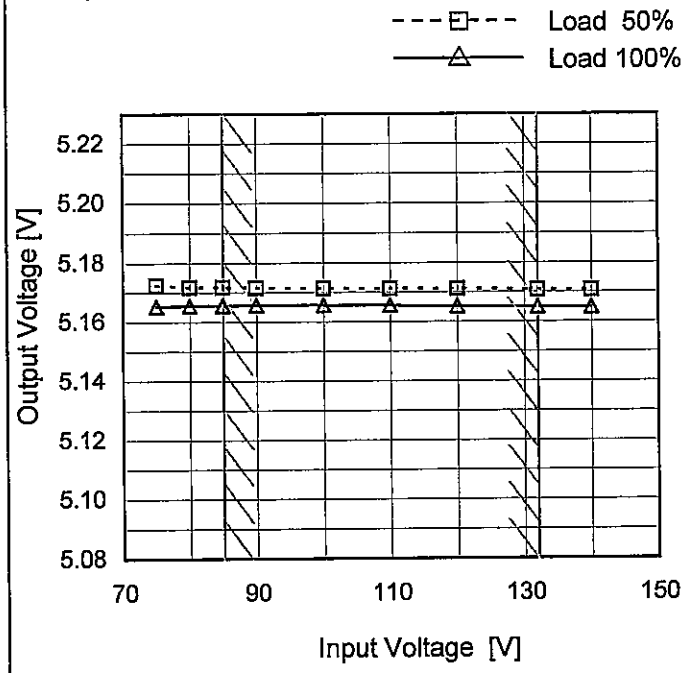
Model	LGA75A-5
Item	Line Regulation
Object	+5V15A

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	5.172	5.165
80	5.172	5.166
85	5.172	5.166
90	5.172	5.166
100	5.171	5.166
110	5.171	5.166
120	5.171	5.165
132	5.171	5.165
140	5.171	5.165

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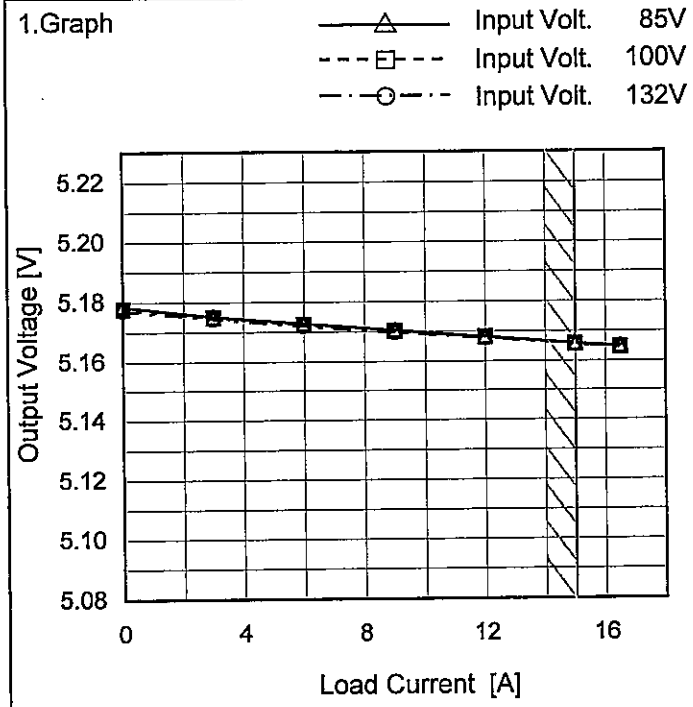
Model	LGA75A-5
Item	Load Regulation
Object	+5V15A

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. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.0	5.179	5.178	5.177
3.0	5.175	5.175	5.174
6.0	5.173	5.172	5.172
9.0	5.171	5.170	5.170
12.0	5.168	5.168	5.168
15.0	5.166	5.166	5.166
16.5	5.165	5.165	5.165
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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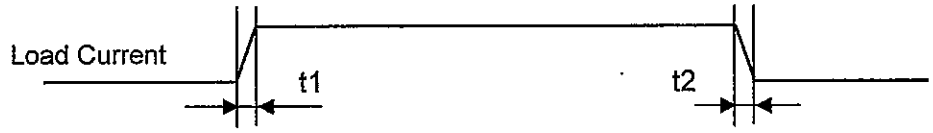
Model	LGA75A-5	Temperature	25°C
Item	Dynamic Load Response	Testing Circuitry	Figure C
Object	+5V15A		

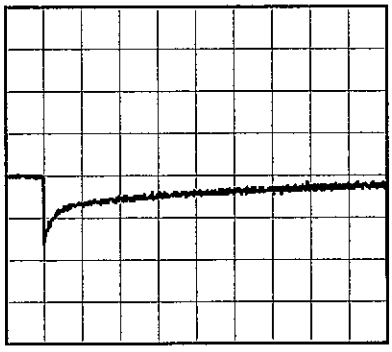
Input Volt. 100 V

Cycle 1000 ms

Response. t1=t2=50 μs. Typ

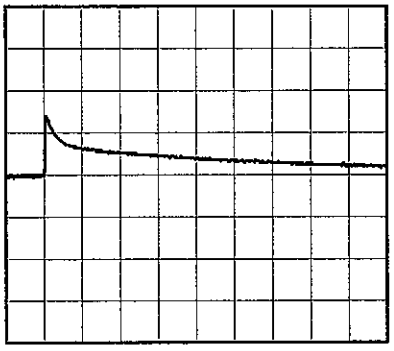


Min. Load (0A) ⟷
Load 100% (15A)



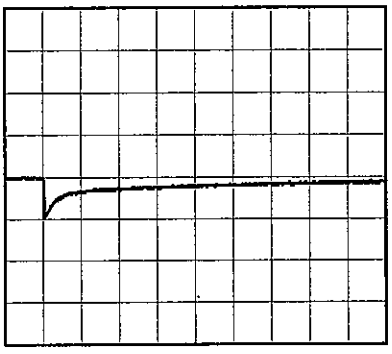
100 mV/div

40 ms/div



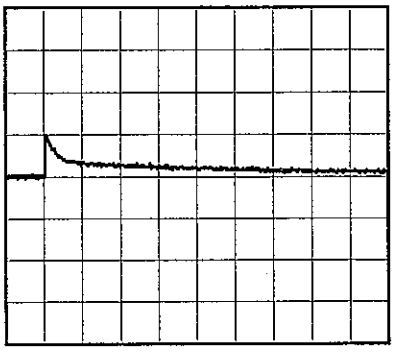
40 ms/div

Min. Load (0A) ⟷
Load 50% (7.5A)



100 mV/div

40 ms/div



40 ms/div

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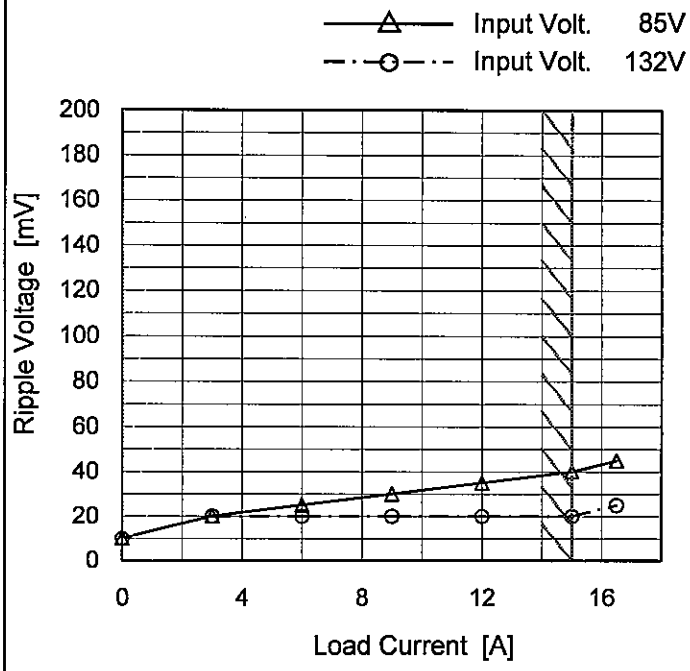
Model	LGA75A-5
Item	Ripple Voltage (by Load Current)
Object	+5V15A

Temperature 25°C
Testing Circuitry Figure C

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

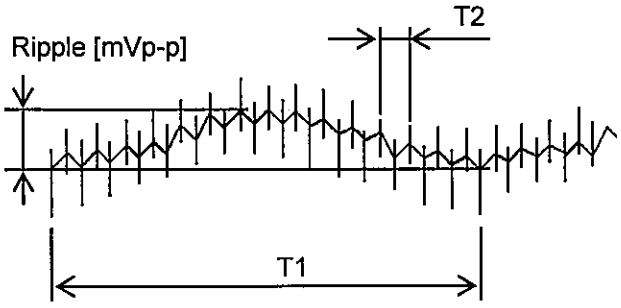


Fig. Complex Ripple Wave Form

2.Values

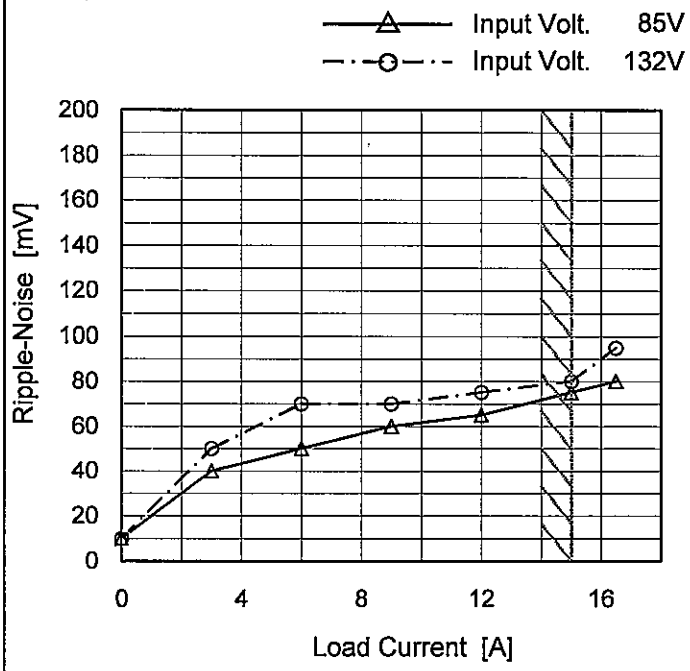
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 85 [V]	Input Volt. 132 [V]
0.0	10	10
3.0	20	20
6.0	25	20
9.0	30	20
12.0	35	20
15.0	40	20
16.5	45	25
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	LGA75A-5
Item	Ripple-Noise
Object	+5V15A

Temperature 25°C
Testing Circuitry Figure C

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

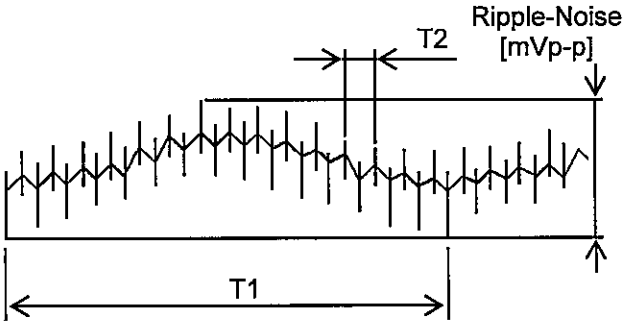


Fig. Complex Ripple Wave Form

2.Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 85 [V]	Input Volt. 132 [V]
0.0	10	10
3.0	40	50
6.0	50	70
9.0	60	70
12.0	65	75
15.0	75	80
16.5	80	95
--	-	-
--	-	-
--	-	-
--	-	-

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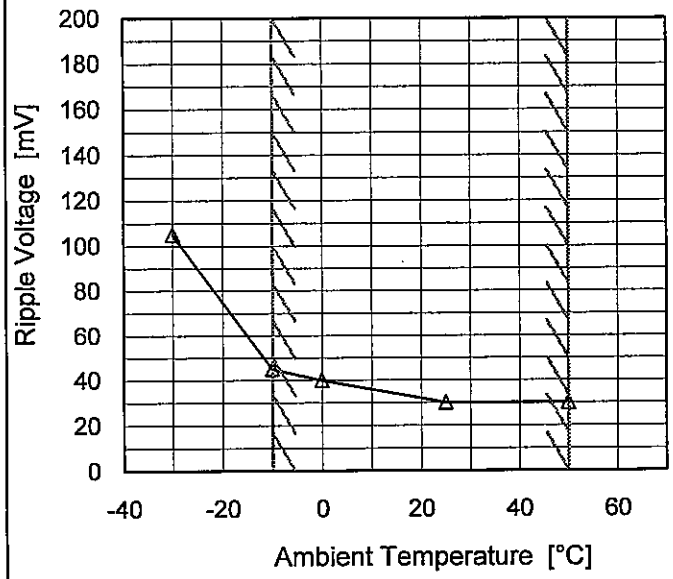
Model	LGA75A-5
Item	Ripple Voltage (by Ambient Temp.)
Object	+5V15A

Testing Circuitry FigureC

1.Graph



Input Volt. 100V

Input Load. 100%

Measured by 20 MHz Oscilloscope.

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

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

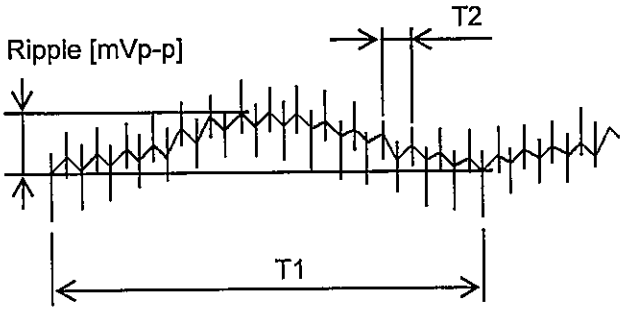


Fig. Complex Ripple Wave Form

2.Values

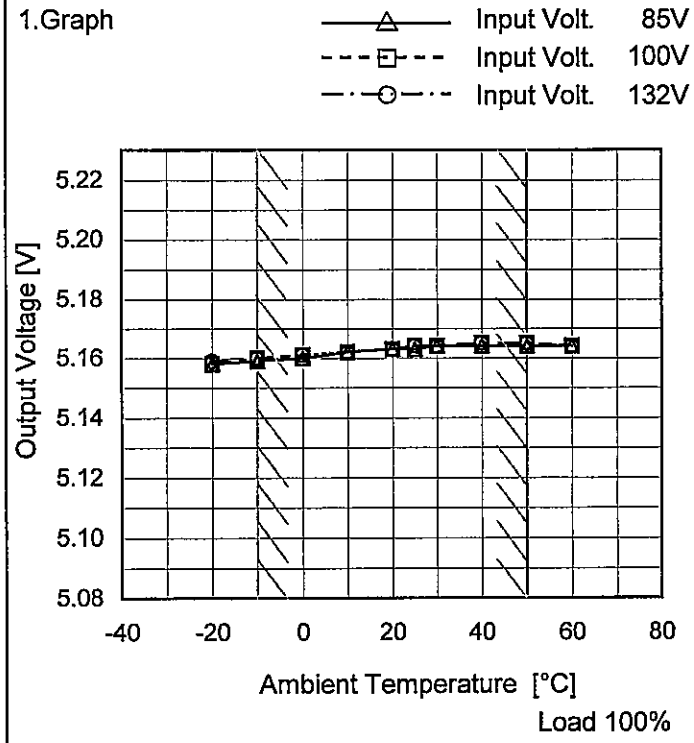
Ambient Temperature [°C]	Ripple Voltage [mV]
-30	105
-10	45
0	40
25	30
50	30
--	-
--	-
--	-
--	-
--	-
--	-

COSEL

Model	LGA75A-5
Item	Ambient Temperature Drift
Object	+5V15A

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. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
-20	5.158	5.158	5.159
-10	5.159	5.160	5.160
0	5.160	5.161	5.161
10	5.162	5.162	5.162
20	5.163	5.163	5.163
25	5.163	5.164	5.164
30	5.164	5.164	5.164
40	5.164	5.165	5.165
50	5.164	5.165	5.165
60	5.164	5.164	5.164
--	-	-	-

COSEL

Model	LGA75A-5	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+5V15A	

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 - 132V
Load Current : 0 - 15A

* Output Voltage Accuracy = ±(Maximum of Output Voltage - 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	40	85	0	5.177	±9	±0.2
Minimum Voltage	-10	85	15	5.159		

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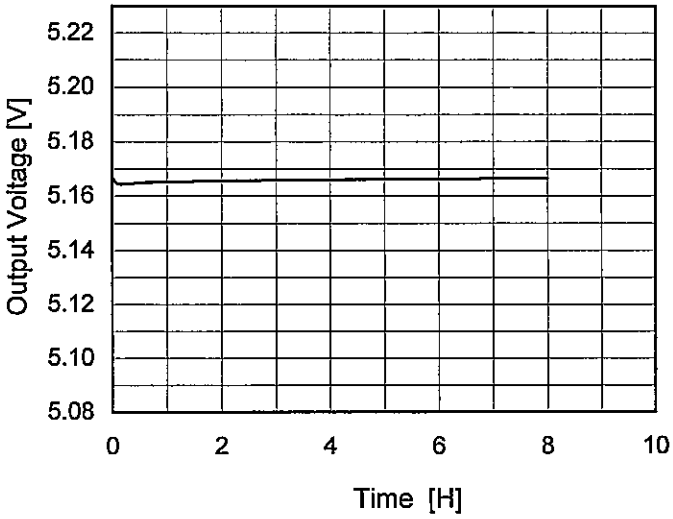
Model	LGA75A-5
Item	Time Lapse Drift
Object	+5V15A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Input Volt. 100V
Load 100%

2.Values

Time since start [H]	Output Voltage [V]
0.0	5.167
0.5	5.165
1.0	5.165
2.0	5.166
3.0	5.166
4.0	5.166
5.0	5.166
6.0	5.166
7.0	5.166
8.0	5.166

BC-10153

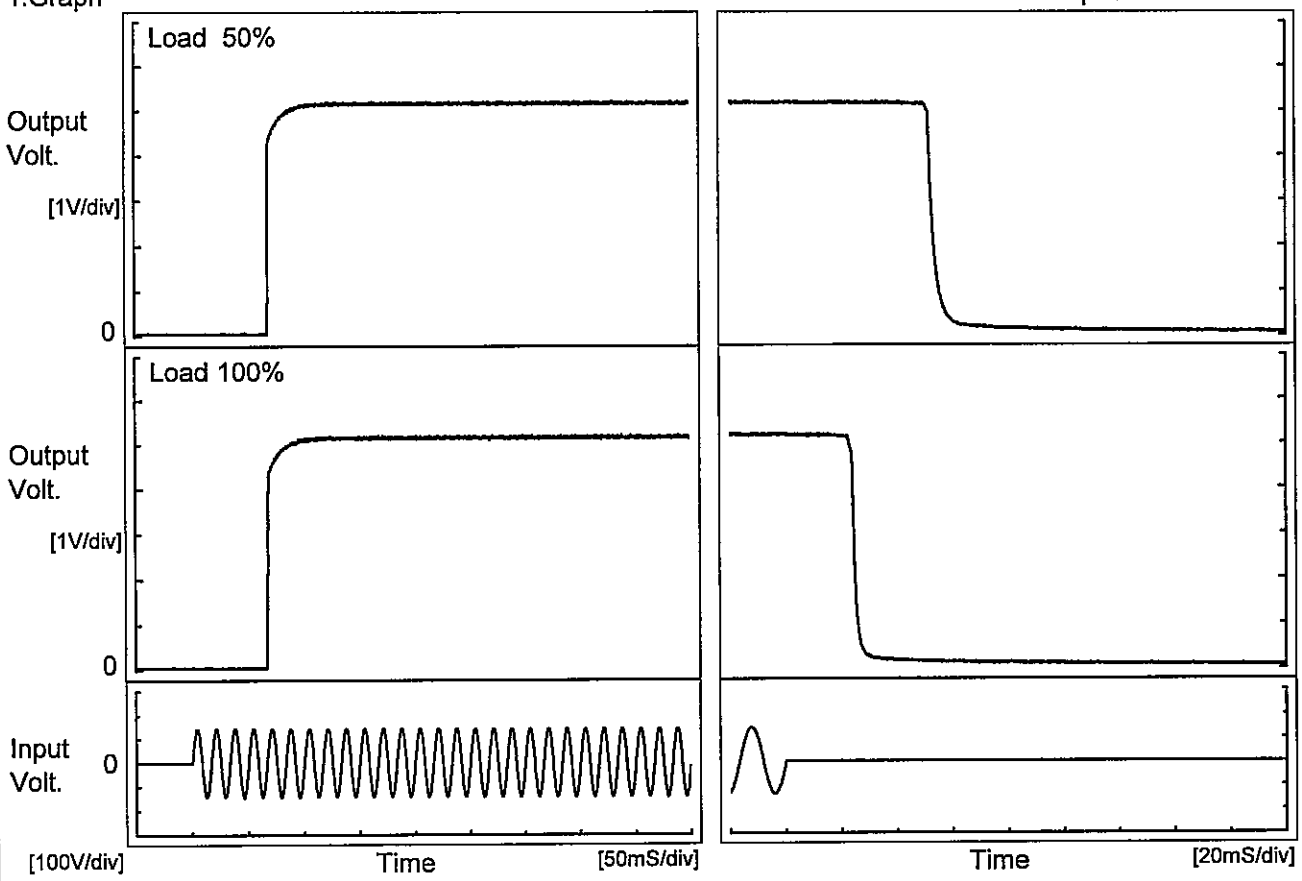
COSEL

Model	LGA75A-5
Item	Rise and Fall Time
Object	+5V15A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

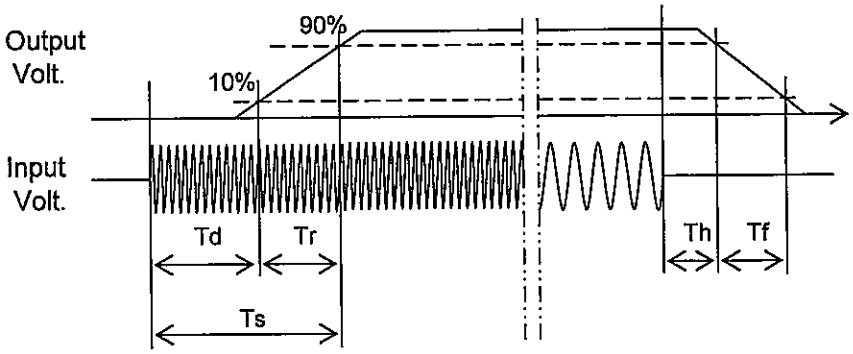
Input Volt. 100 V



2.Values

[mS]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	68.8	3.3	72.1	51.6	5.8
100 %	67.8	4.5	72.3	24.0	3.0



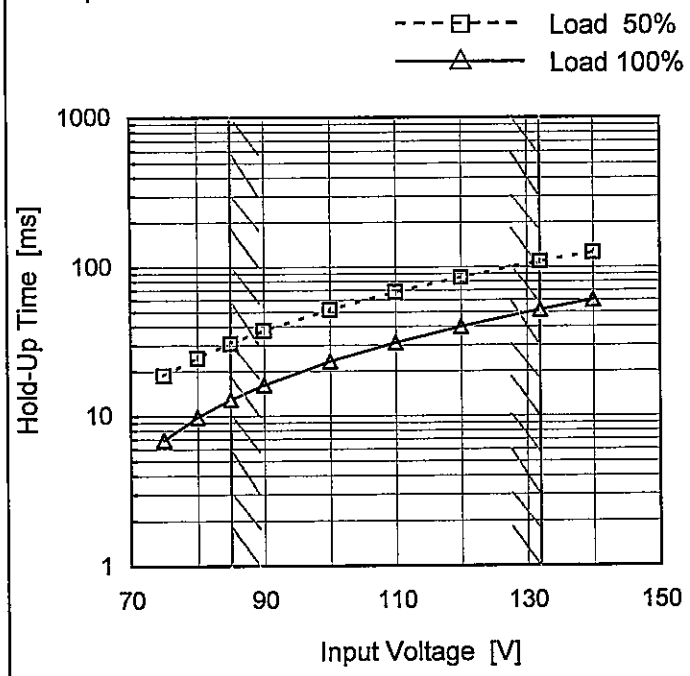
BC-10153

COSEL

Model	LGA75A-5
Item	Hold-Up Time
Object	+5V15A

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	19	7
80	25	10
85	31	13
90	37	16
100	52	23
110	68	31
120	85	40
132	109	51
140	126	60

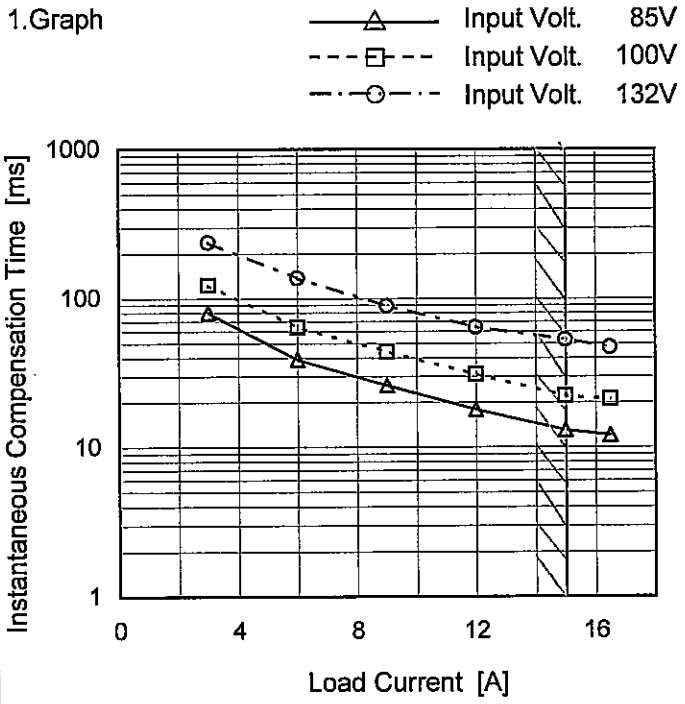
BC-10153

COSEL

Model	LGA75A-5
Item	Instantaneous Interruption Compensation
Object	+5V15A

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. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.0	-	-	-
3.0	80	123	239
6.0	39	64	138
9.0	26	44	89
12.0	18	31	64
15.0	13	22	53
16.5	12	21	47
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

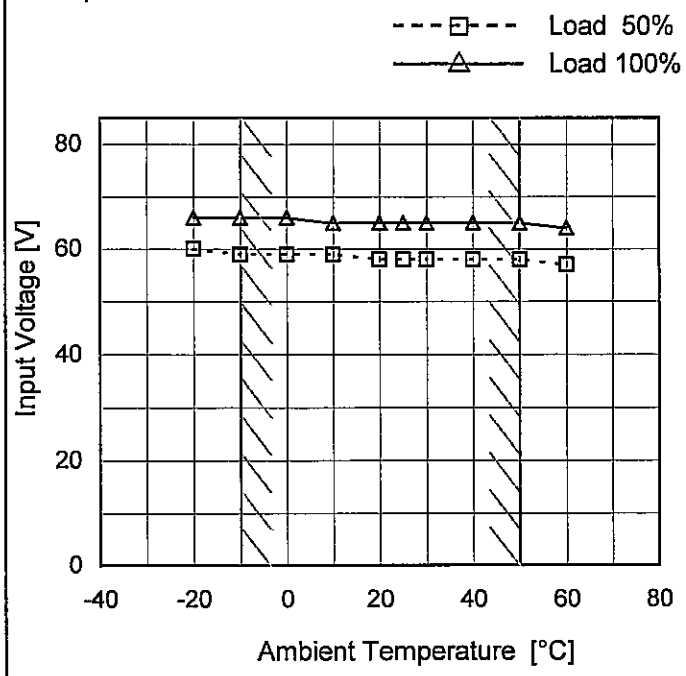
BC-10153

COSEL

Model	LGA75A-5
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+5V15A

Testing Circuitry Figure A

1.Graph



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

2.Values

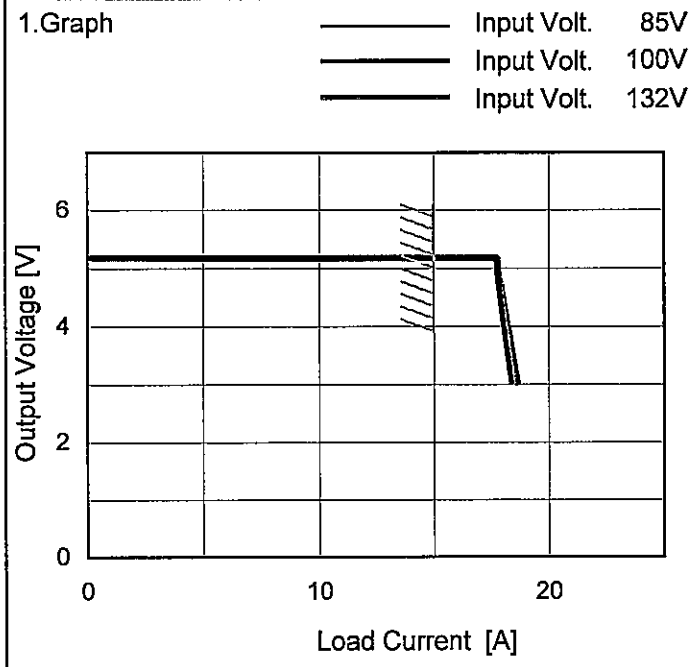
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-20	60	66
-10	59	66
0	59	66
10	59	65
20	58	65
25	58	65
30	58	65
40	58	65
50	58	65
60	57	64
--	-	-

COSEL

Model	LGA75A-5
Item	Overcurrent Protection
Object	+5V15A

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 3V to 0V.

2.Values

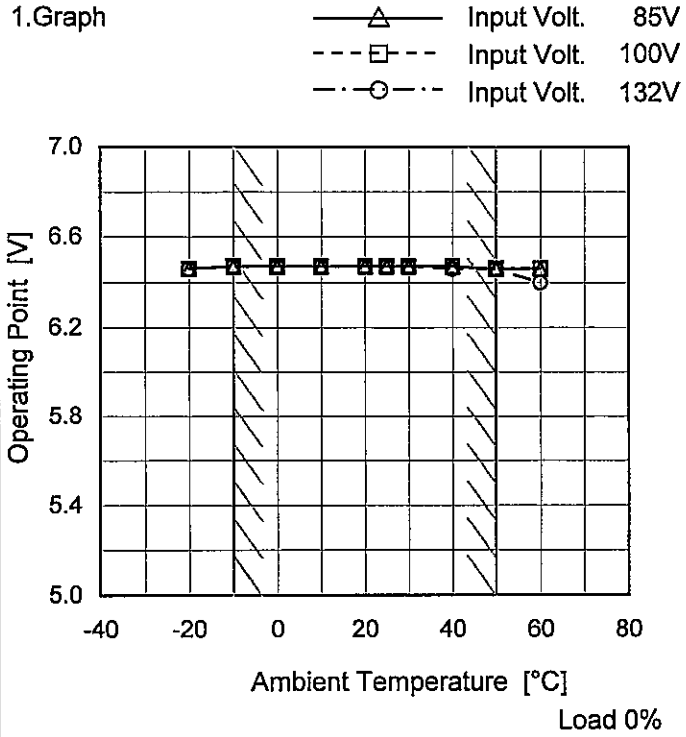
Output Voltage [V]	Load Current [A]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
5.00	17.86	17.72	17.75
4.75	17.90	17.81	17.88
4.50	17.96	17.88	17.97
4.00	18.09	18.04	18.18
3.50	18.23	18.21	18.40
3.00	18.36	18.37	18.63
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	LGA75A-5
Item	Overvoltage Protection
Object	+5V15A

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. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
-20	6.46	6.46	6.46
-10	6.47	6.47	6.47
0	6.47	6.47	6.47
10	6.47	6.47	6.47
20	6.47	6.47	6.47
25	6.47	6.47	6.47
30	6.47	6.47	6.47
40	6.47	6.47	6.46
50	6.46	6.46	6.46
60	6.46	6.46	6.40
--	-	-	-

COSEL

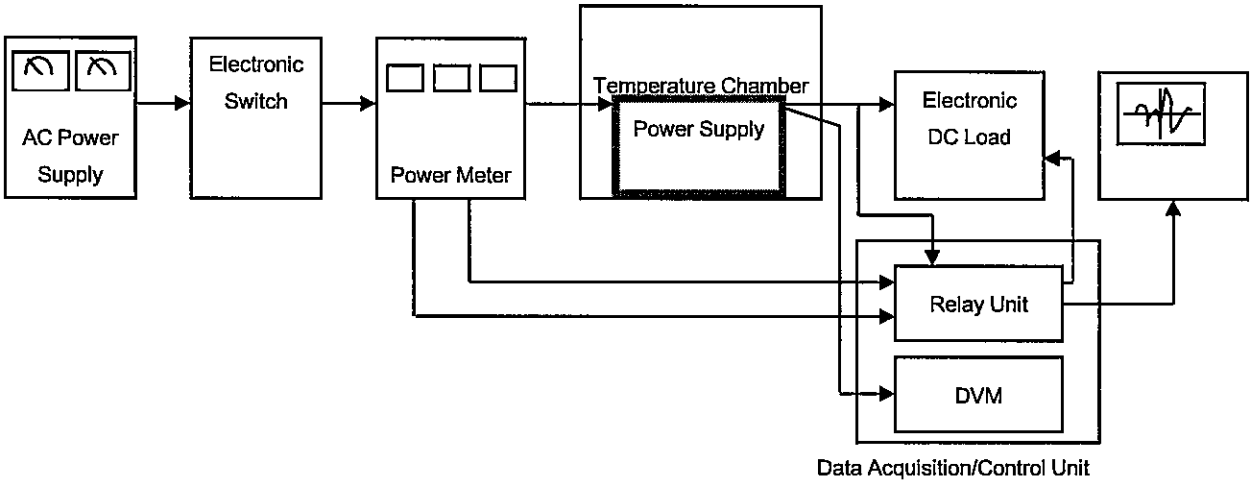


Figure A

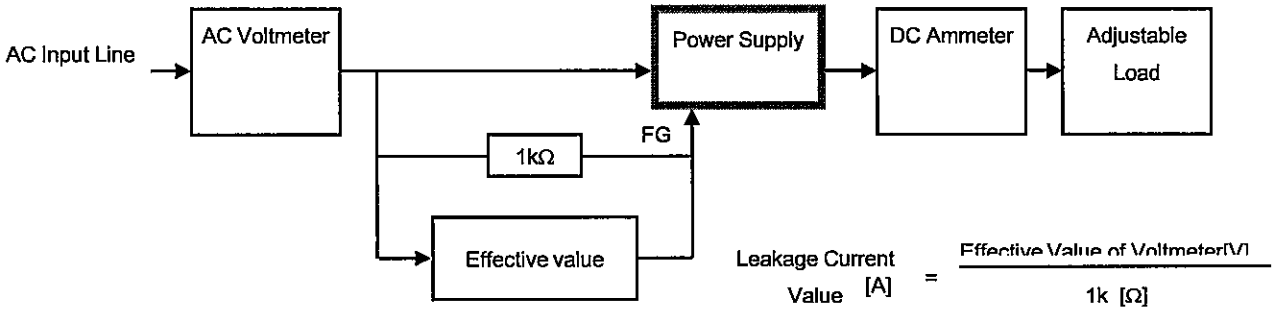


Figure B (DEN-AN)

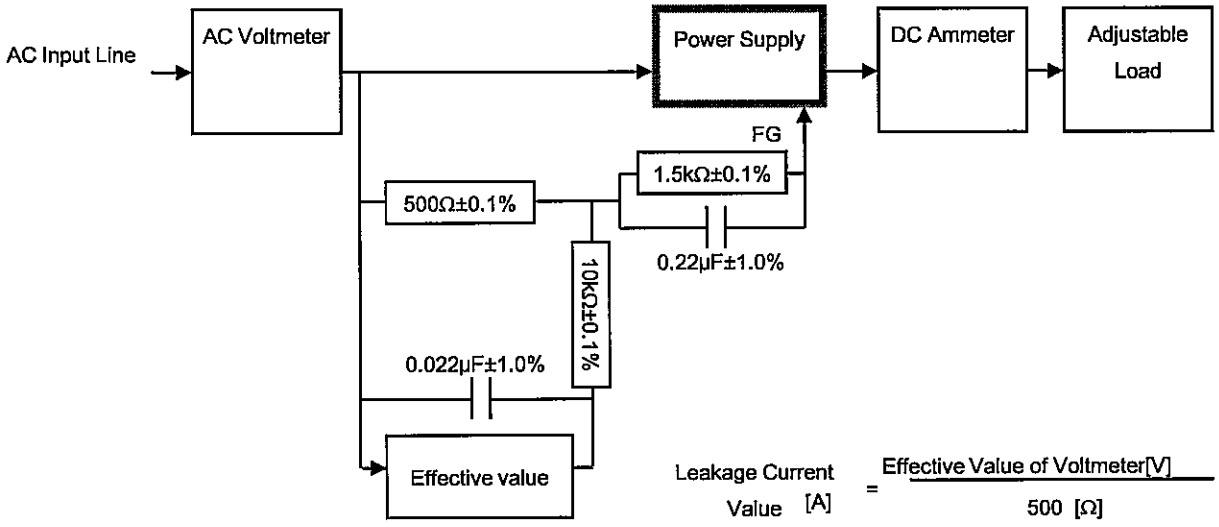


Figure B (IEC60950 -1)

COSEL

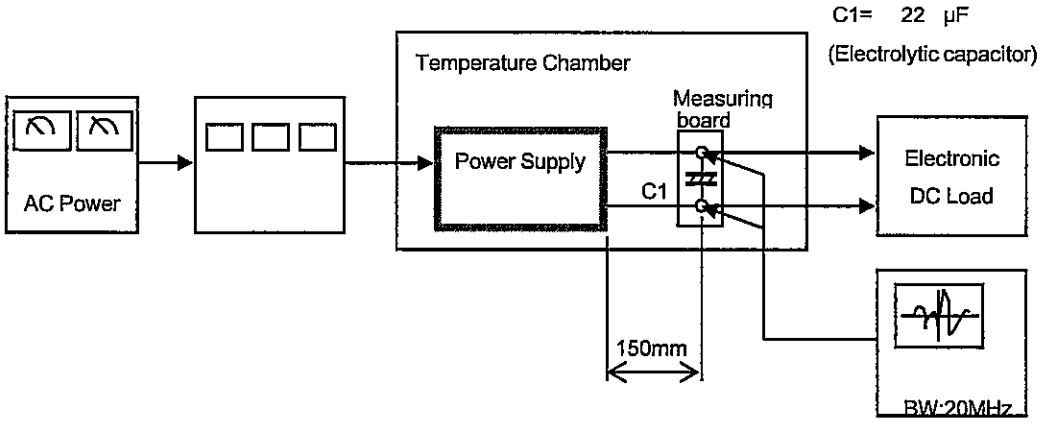


Figure C