参考資料

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TEST DATA OF LGA75A-48

Regulated DC Power Supply
May 20, 2011

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COSEL CO.,LTD.

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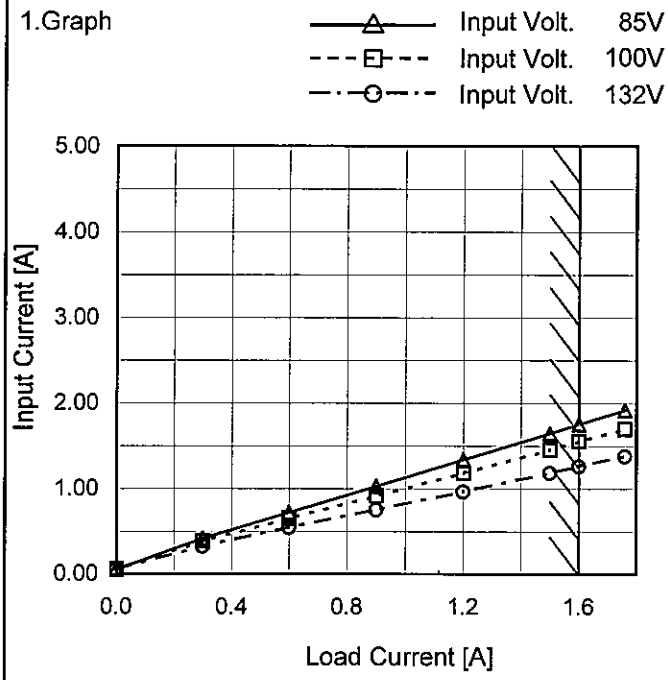
Model	LGA75A-48
Item	Input Current (by Load Current)
Object	———————

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]
0.00	0.055	0.056	0.055
0.30	0.419	0.385	0.328
0.60	0.722	0.650	0.545
0.90	1.030	0.914	0.754
1.20	1.342	1.181	0.967
1.50	1.649	1.456	1.187
1.60	1.758	1.552	1.266
1.76	1.923	1.697	1.384
--	-	-	-
--	-	-	-
--	-	-	-

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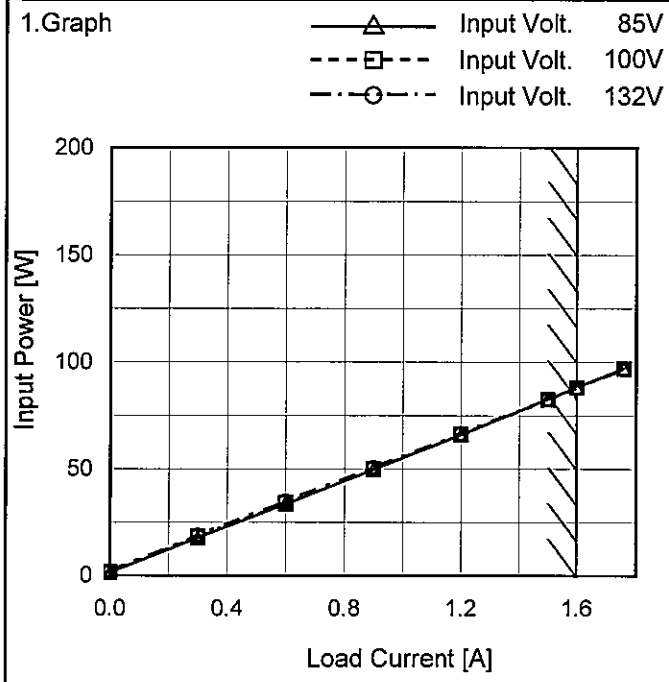
Model	LGA75A-48
Item	Input Power (by Load Current)
Object	———————

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]
0.00	1.59	1.80	2.21
0.30	17.80	18.20	18.96
0.60	33.70	34.00	35.00
0.90	49.90	50.00	50.70
1.20	66.10	66.10	66.70
1.50	82.80	82.30	82.70
1.60	88.40	87.90	88.00
1.76	97.20	96.80	96.60
--	-	-	-
--	-	-	-
--	-	-	-

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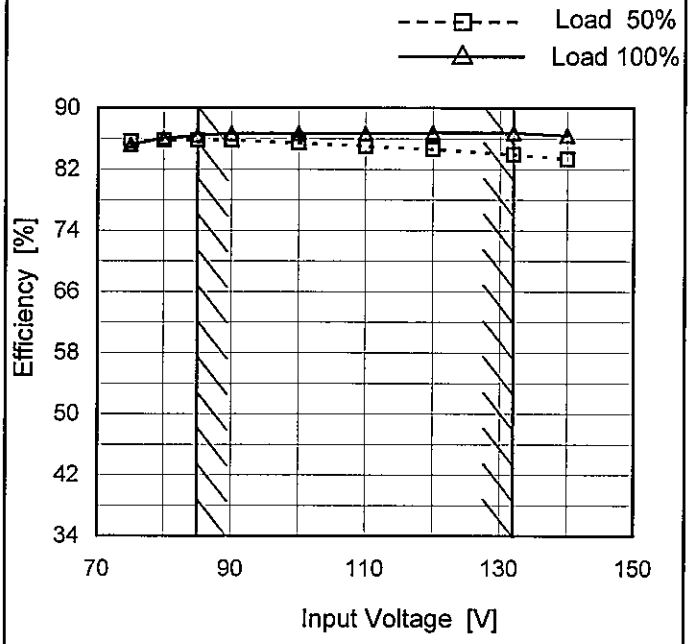
Model	LGA75A-48
Item	Efficiency (by Input Voltage)
Object	———

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	85.6	85.3
80	85.8	86.1
85	85.8	86.4
90	85.8	86.7
100	85.4	86.7
110	85.0	86.7
120	84.6	86.8
132	83.9	86.8
140	83.3	86.4

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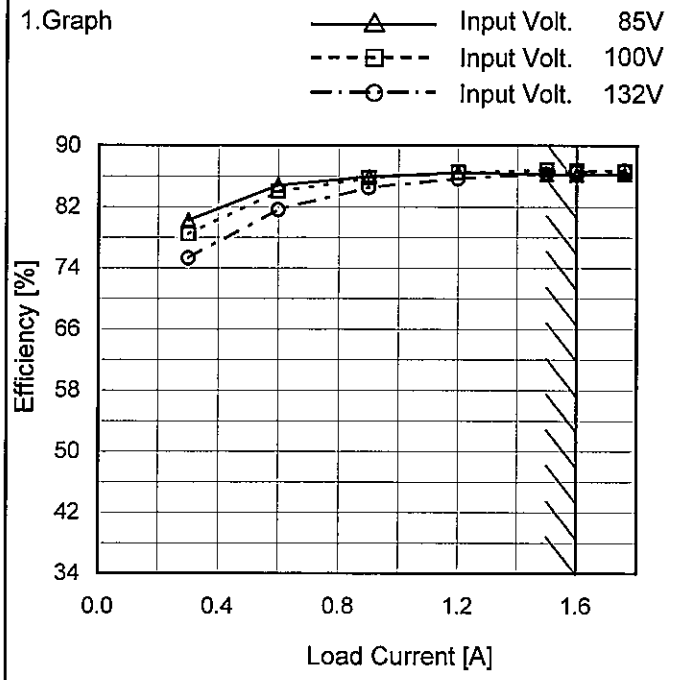
Model	LGA75A-48
Item	Efficiency (by Load Current)
Object	———————

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]
0.00	-	-	-
0.30	80.3	78.4	75.3
0.60	84.9	84.0	81.6
0.90	86.0	85.7	84.5
1.20	86.5	86.5	85.7
1.50	86.3	86.8	86.4
1.60	86.3	86.7	86.6
1.76	86.3	86.6	86.8
--	-	-	-
--	-	-	-
--	-	-	-

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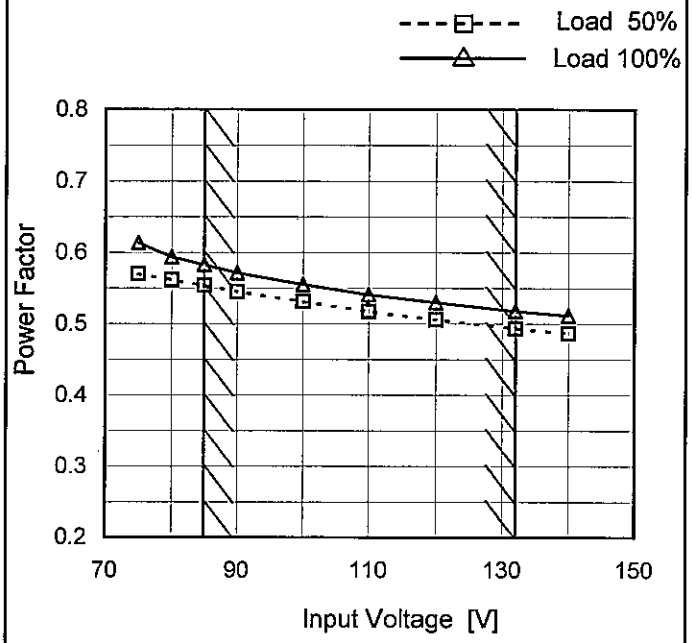
Model	LGA75A-48
Item	Power Factor (by Input Voltage)
Object	———————

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	0.570	0.614
80	0.561	0.594
85	0.554	0.583
90	0.545	0.572
100	0.531	0.555
110	0.517	0.541
120	0.506	0.530
132	0.493	0.518
140	0.487	0.512

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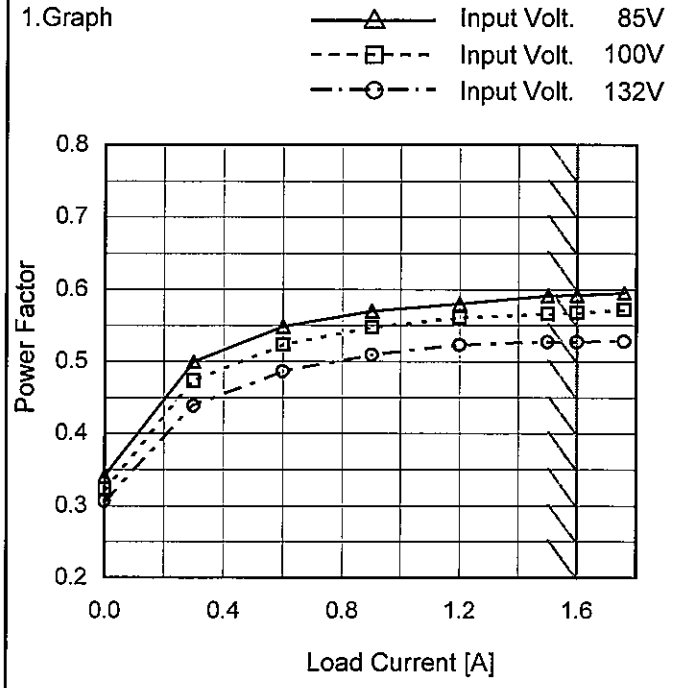
Model	LGA75A-48
Item	Power Factor (by Load Current)
Object	——————→

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]
0.00	0.340	0.323	0.307
0.30	0.500	0.473	0.438
0.60	0.549	0.523	0.487
0.90	0.570	0.547	0.510
1.20	0.580	0.560	0.523
1.50	0.591	0.566	0.527
1.60	0.592	0.567	0.527
1.76	0.595	0.571	0.528
--	-	-	-
--	-	-	-
--	-	-	-

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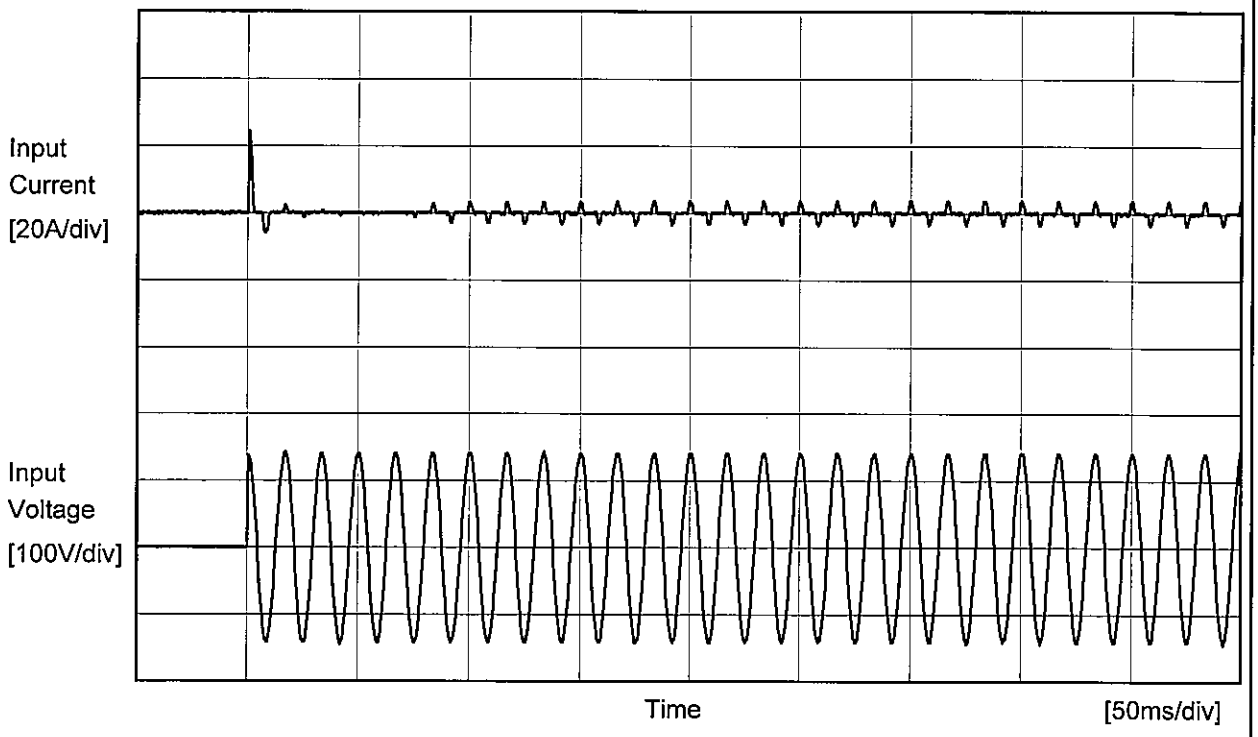
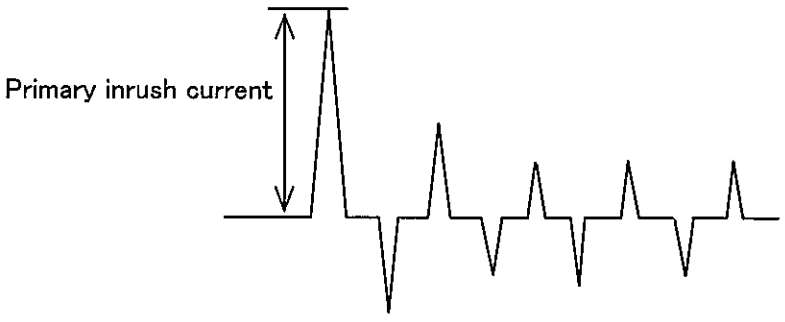
Model	LGA75A-48
Item	Inrush Current
Object	————————

Temperature 25°C
Testing Circuitry Figure A



Input Voltage	100 V
Frequency	60 Hz
Load	100 %
Primary inrush current	24.3 A



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Model	LGA75A-48		
Item	Leakage Current	Temperature	25°C
Object	———————	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	0.17	0.21	0.25
(B)IEC60950-1	0.19	0.24	0.25

frequency 60Hz

2.Condition

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

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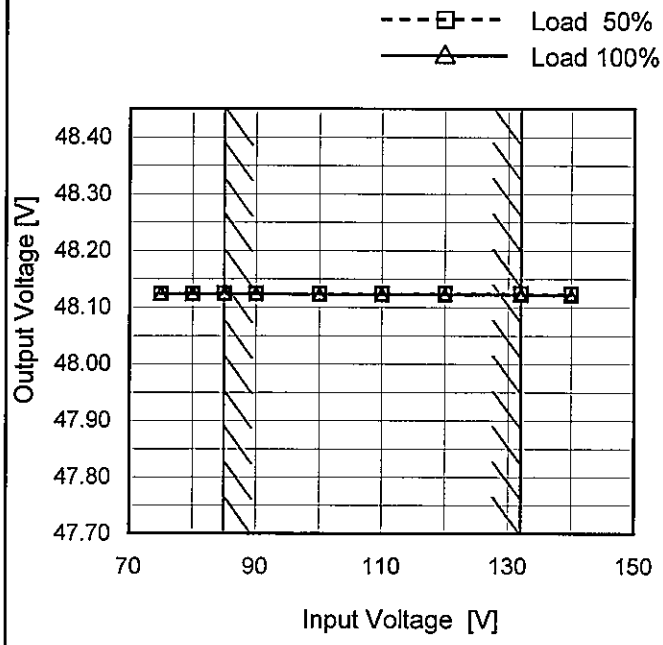
Model	LGA75A-48
Item	Line Regulation
Object	+48V1.6A

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	48.123	48.124
80	48.123	48.124
85	48.124	48.124
90	48.124	48.124
100	48.124	48.123
110	48.124	48.123
120	48.124	48.123
132	48.124	48.122
140	48.124	48.122

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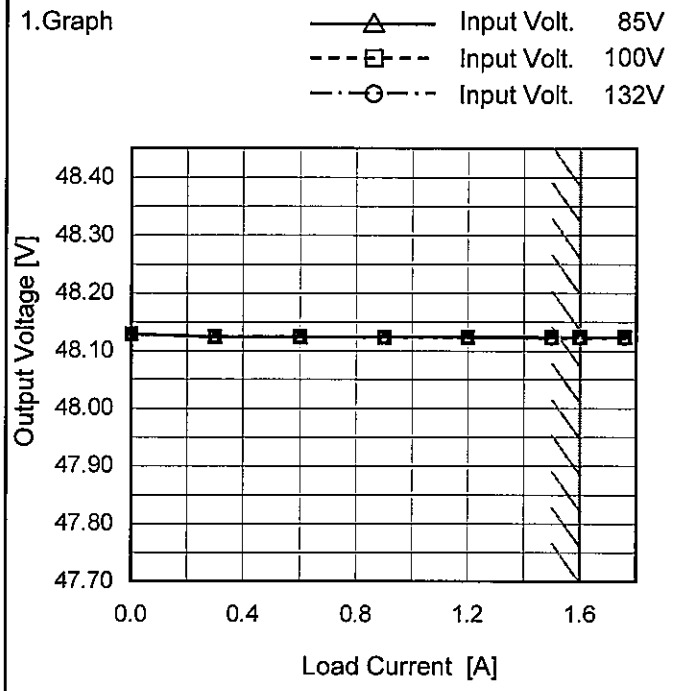
Model	LGA75A-48
Item	Load Regulation
Object	+48V1.6A

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]
0.00	48.129	48.129	48.129
0.30	48.125	48.124	48.125
0.60	48.124	48.124	48.124
0.90	48.124	48.123	48.124
1.20	48.124	48.123	48.123
1.50	48.124	48.123	48.122
1.60	48.124	48.123	48.122
1.76	48.124	48.123	48.122
--	-	-	-
--	-	-	-
--	-	-	-

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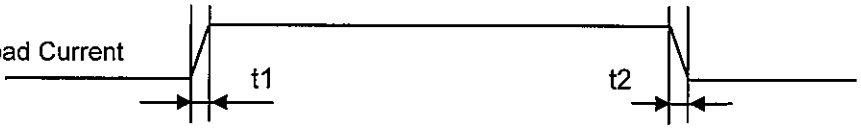
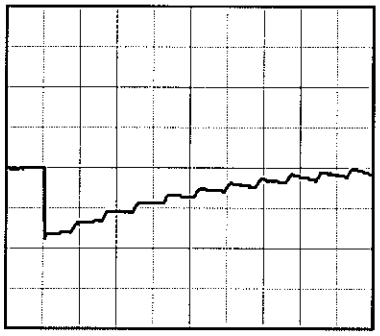
Model	LGA75A-48		
Item	Dynamic Load Response	Temperature Testing Circuitry	25°C Figure C
Object	+48V1.6A		

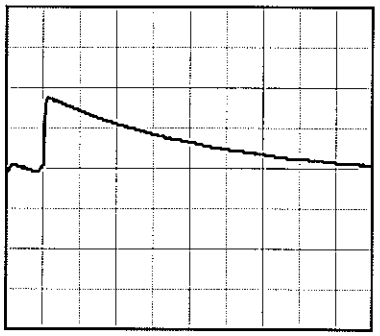
Input Volt. 100 V
Cycle 1000 ms

Response. t1=t2=50 μs. Typ

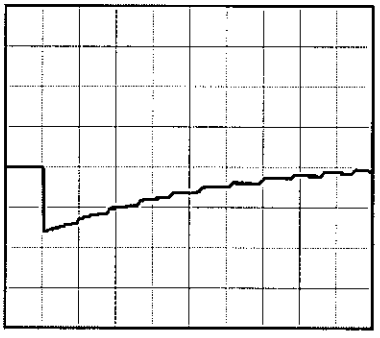


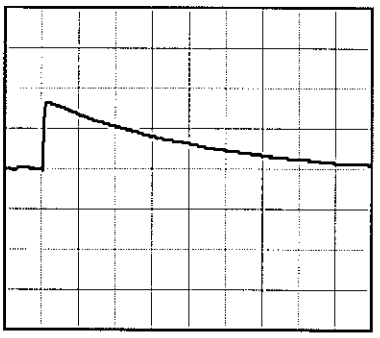
Min. Load (0A) ⟷
Load 100% (1.6A)





Min. Load (0A) ⟷
Load 50% (0.8A)





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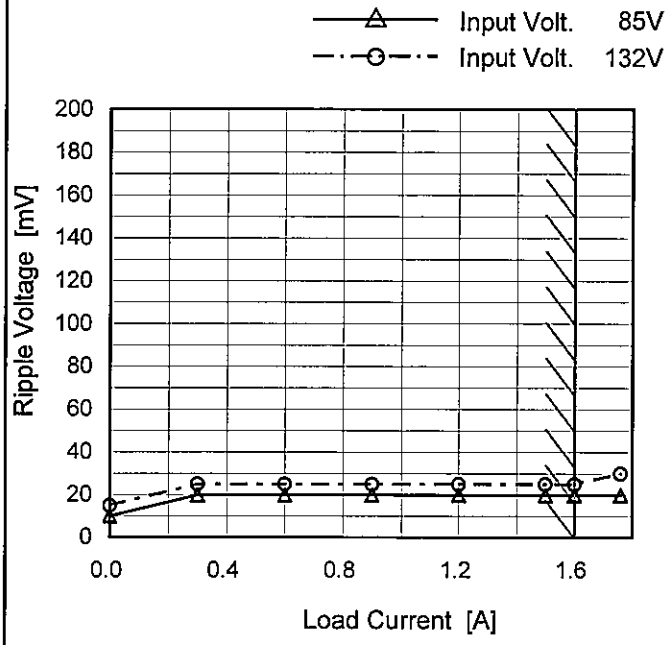
Model	LGA75A-48
Item	Ripple Voltage (by Load Current)
Object	+48V1.6A

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

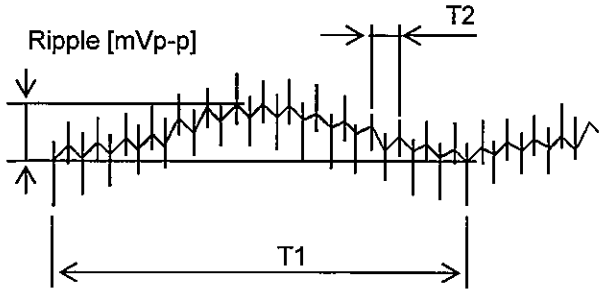


Fig. Complex Ripple Wave Form

2.Values

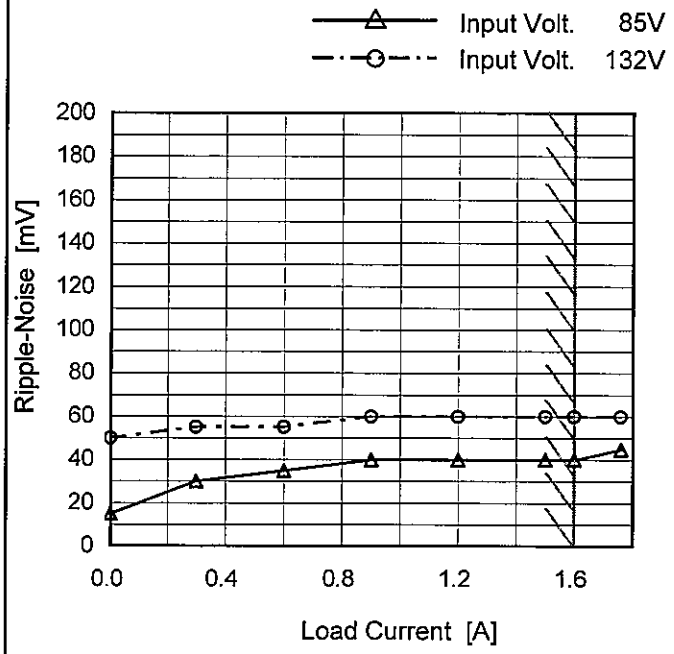
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 85 [V]	Input Volt. 132 [V]
0.00	10	15
0.30	20	25
0.60	20	25
0.90	20	25
1.20	20	25
1.50	20	25
1.60	20	25
1.76	20	30
--	-	-
--	-	-
--	-	-

COSEL

Model	LGA75A-48
Item	Ripple-Noise
Object	+48V1.6A

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

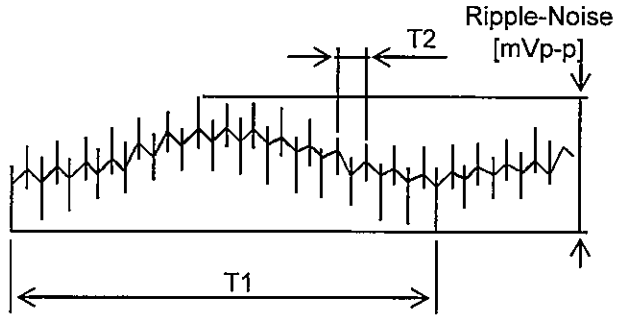


Fig. Complex Ripple Wave Form

2.Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 85 [V]	Input Volt. 132 [V]
0.00	15	50
0.30	30	55
0.60	35	55
0.90	40	60
1.20	40	60
1.50	40	60
1.60	40	60
1.76	45	60
--	-	-
--	-	-
--	-	-

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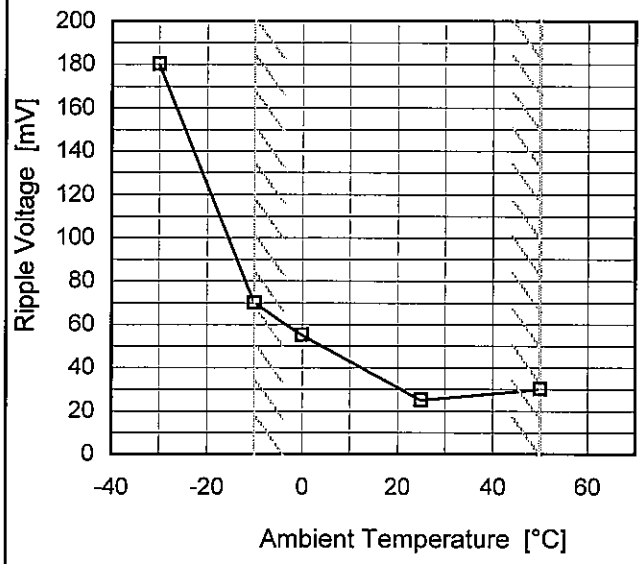
Model	LGA75A-48
Item	Ripple Voltage (by Ambient Temp.)
Object	+48V1.6A

Testing Circuitry Figure C

1.Graph



Input Volt. 100V

Input Load. 100%

Measured by 20 MHz Oscilloscope.

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

2.Values

Ambient Temperature [°C]	Ripple Voltage [mV]
-30	180
-10	70
0	55
25	25
50	30
--	-
--	-
--	-
--	-
--	-
--	-

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

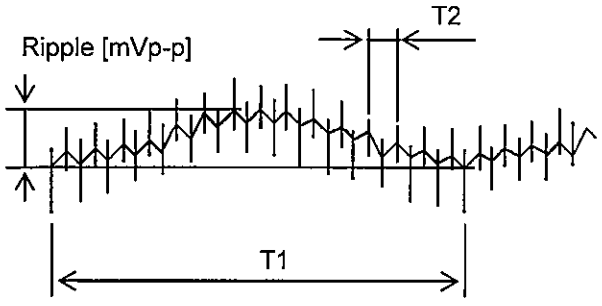


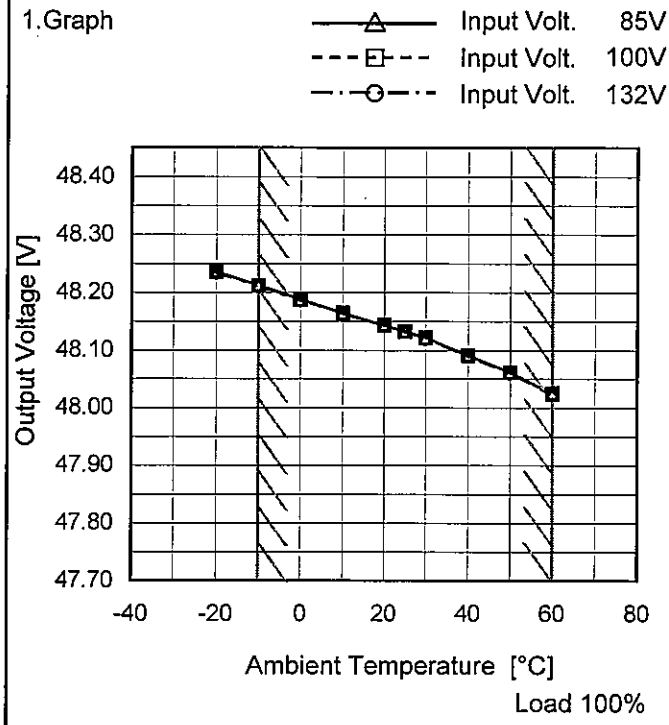
Fig. Complex Ripple Wave Form

COSEL

Model	LGA75A-48
Item	Ambient Temperature Drift
Object	+48V1.6A

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	48.236	48.235	48.234
-10	48.212	48.211	48.210
0	48.188	48.187	48.186
10	48.165	48.164	48.163
20	48.143	48.143	48.142
25	48.132	48.132	48.131
30	48.122	48.121	48.120
40	48.091	48.091	48.090
50	48.062	48.061	48.060
60	48.025	48.025	48.024
--	-	-	-

COSEL

Model	LGA75A-48	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+48V1.6A	

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 - 1.6A

* 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	-10	85	0	48.220	±80	±0.2
Minimum Voltage	50	132	1.6	48.060		

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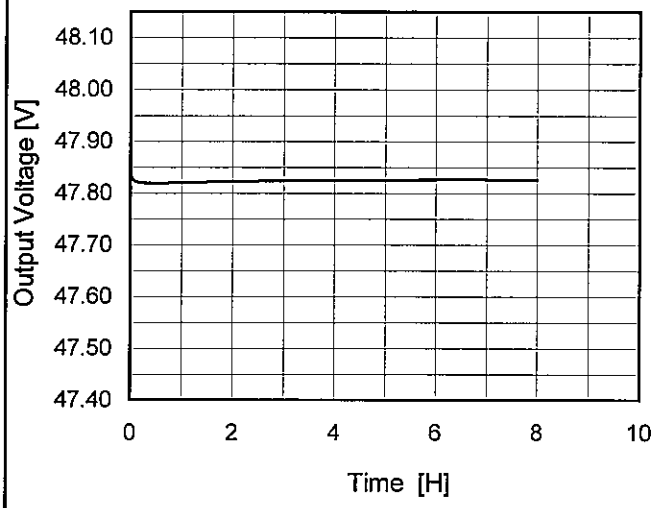
Model	LGA75A-48
Item	Time Lapse Drift
Object	+48V1.6A

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	47.855
0.5	47.820
1.0	47.821
2.0	47.823
3.0	47.825
4.0	47.825
5.0	47.825
6.0	47.827
7.0	47.827
8.0	47.826

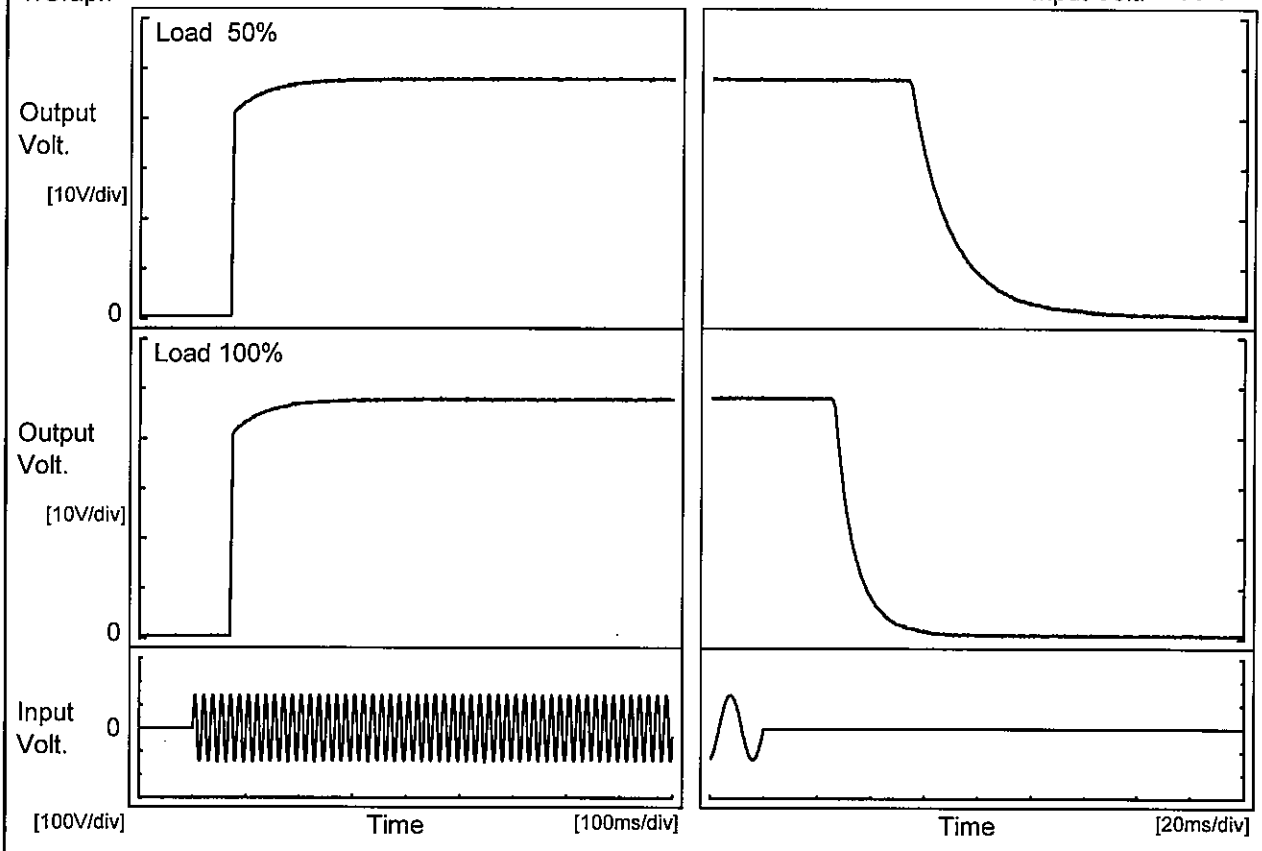
COSEL

Model	LGA75A-48
Item	Rise and Fall Time
Object	+48V1.6A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

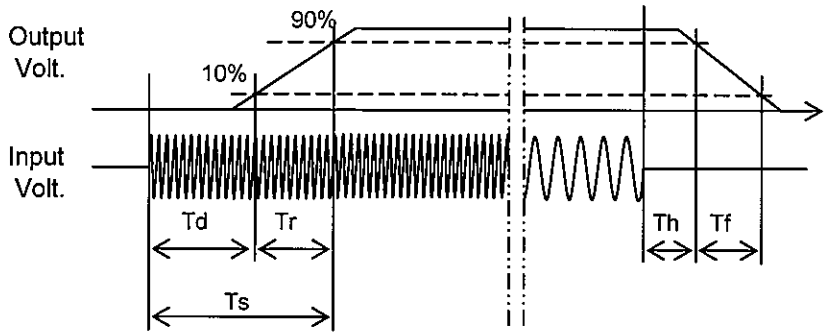
Input Volt. 100 V



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	71.0	30.5	101.5	55.5	34.5
100 %	70.5	31.5	102.0	26.9	17.5



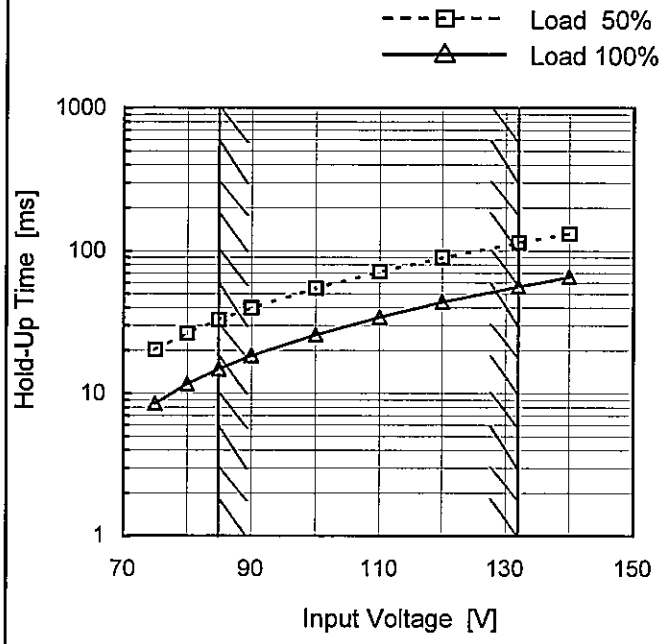
BC-10545

COSEL

Model	LGA75A-48
Item	Hold-Up Time
Object	+48V1.6A

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

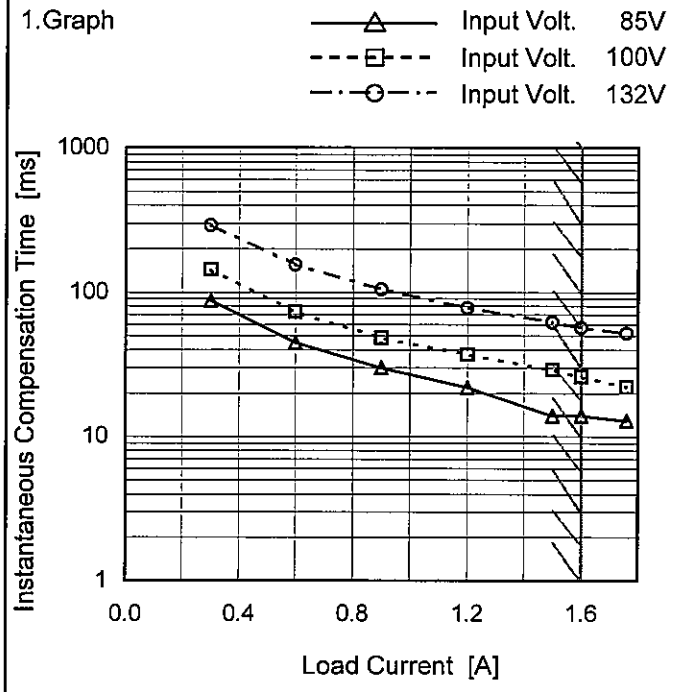
Input Voltage [V]	Hold-Up Time [ms]	
	Load 50%	Load 100%
75	20	9
80	26	12
85	33	15
90	40	18
100	54	26
110	71	34
120	89	44
132	114	56
140	131	66

COSEL

Model	LGA75A-48
Item	Instantaneous Interruption Compensation
Object	+48V1.6A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

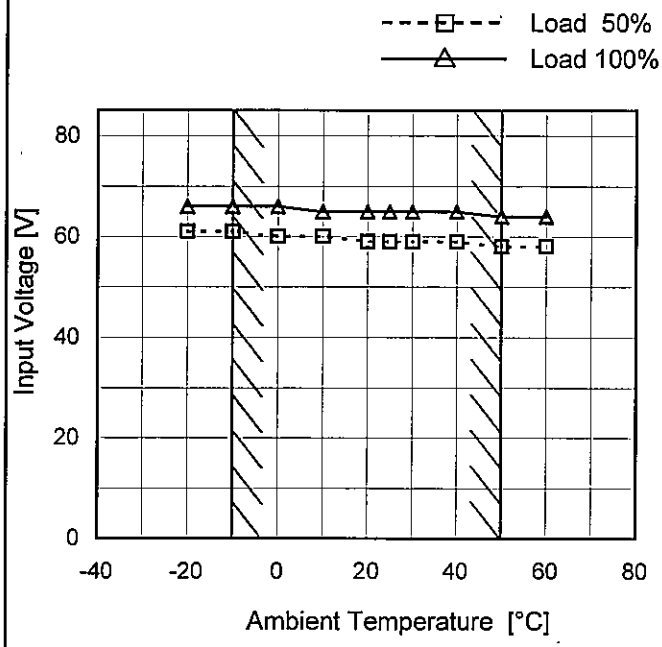
Load Current [A]	Time [ms]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.00	-	-	-
0.30	88	143	290
0.60	45	73	155
0.90	30	48	105
1.20	22	37	78
1.50	14	29	62
1.60	14	26	57
1.76	13	22	52
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	LGA75A-48
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+48V1.6A

Testing Circuitry Figure A

1.Graph



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

2.Values

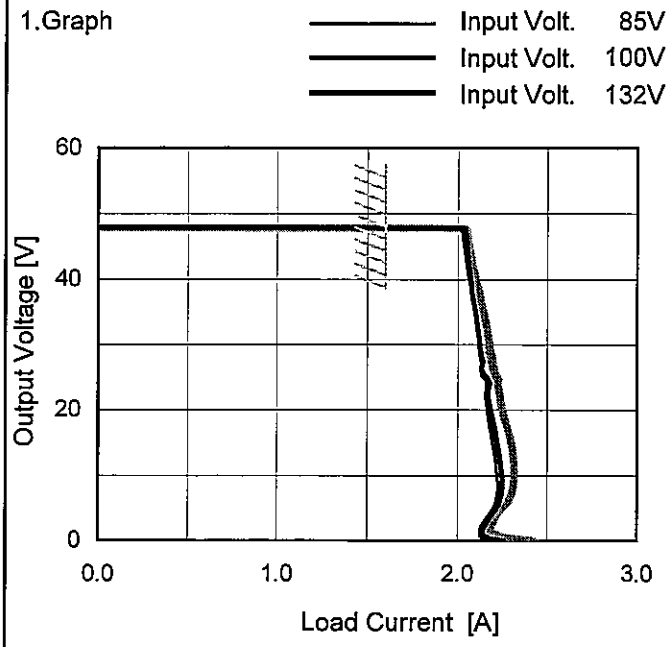
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-20	61	66
-10	61	66
0	60	66
10	60	65
20	59	65
25	59	65
30	59	65
40	59	65
50	58	64
60	58	64
--	-	-

COSEL

Model	LGA75A-48
Item	Overcurrent Protection
Object	+48V1.6A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

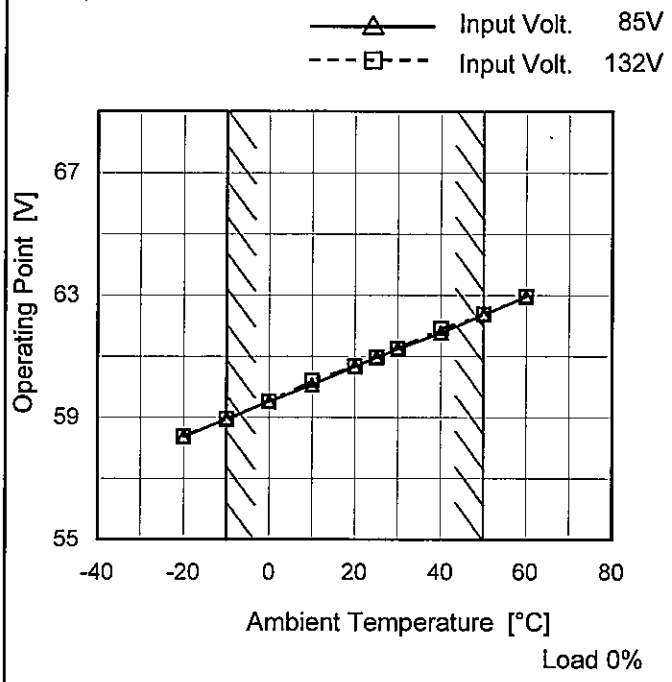
Output Voltage [V]	Load Current [A]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
48.0	1.60	1.60	1.60
45.6	2.06	2.04	2.06
43.2	2.06	2.05	2.08
38.4	2.08	2.08	2.12
33.6	2.11	2.11	2.16
28.8	2.12	2.13	2.18
24.0	2.16	2.18	2.23
19.2	2.17	2.19	2.26
14.4	2.20	2.22	2.30
9.6	2.22	2.25	2.32
4.8	2.19	2.21	2.24
0.0	2.20	2.26	2.43

COSEL

Model	LGA75A-48
Item	Overvoltage Protection
Object	+48V1.6A

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. 132[V]
-20	58.37	58.37
-10	58.95	58.95
0	59.53	59.53
10	60.08	60.20
20	60.67	60.67
25	60.96	60.96
30	61.26	61.26
40	61.78	61.90
50	62.37	62.37
60	62.96	62.96
--	-	-

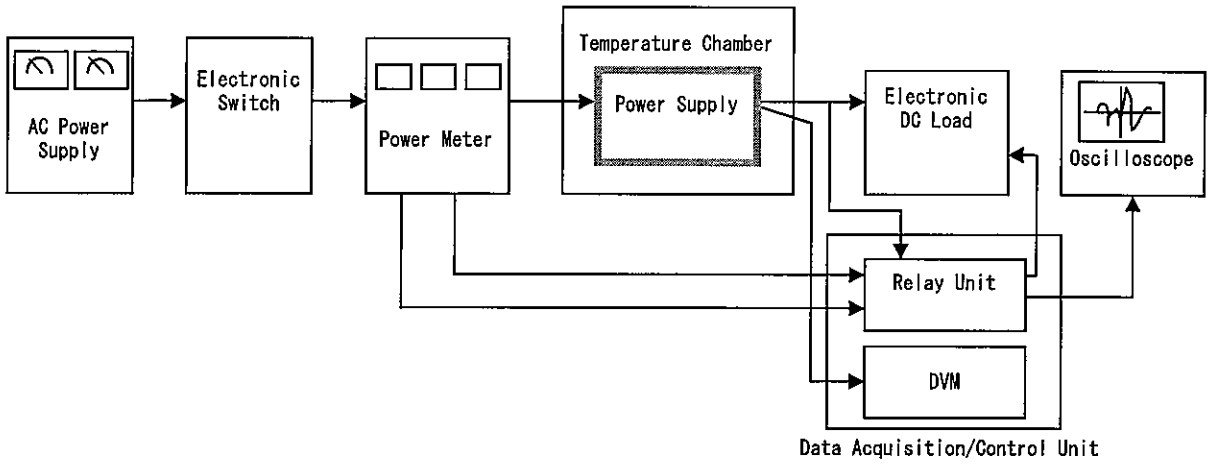


Figure A

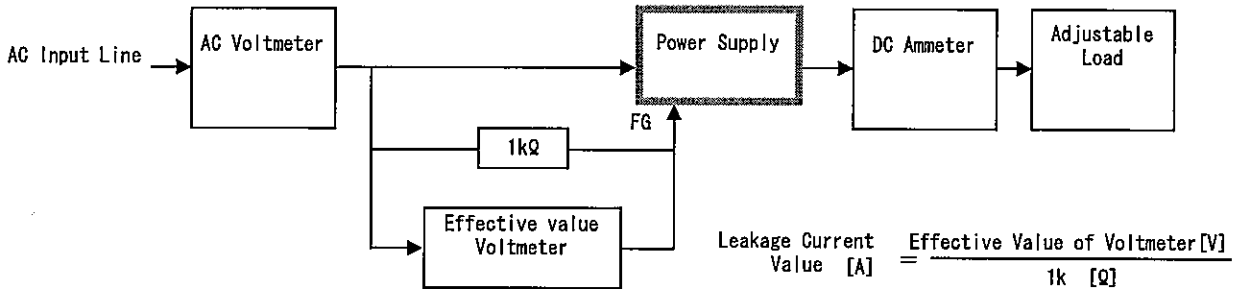


Figure B (DEN-AN)

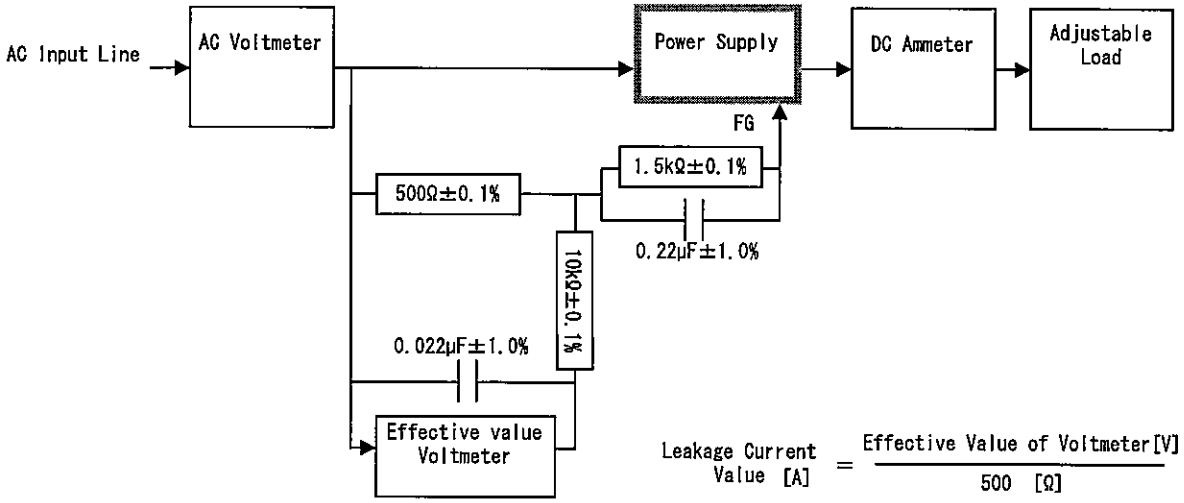


Figure B (IEC60950-1)

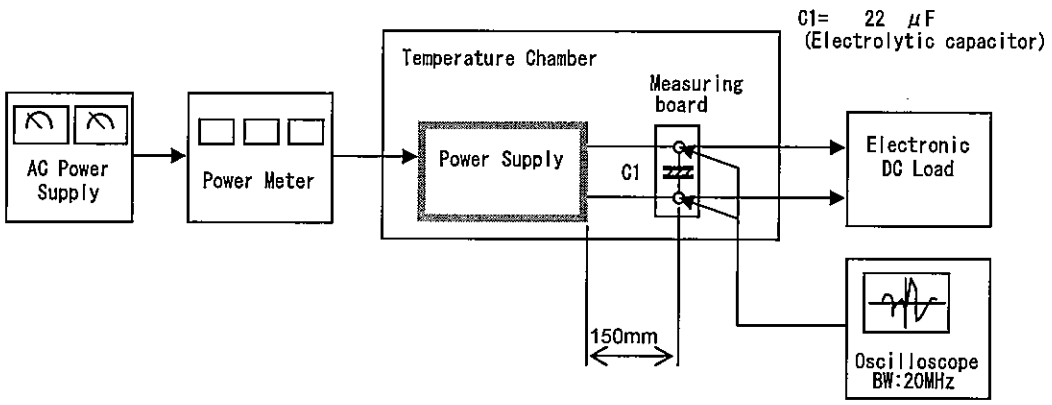

C1= 22 μF
(Electrolytic capacitor)
Temperature Chamber
Measuring board
AC Power Supply
Power Meter
Power Supply
C1
Electronic DC Load
150mm
Oscilloscope BW:20MHz

Figure C