参考資料

COSEL

TEST DATA OF LGA75A-3R3-Y

Regulated DC Power Supply
May 20, 2011

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COSEL CO.,LTD.

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Item	Input Current (by Load Current)
Object	———————

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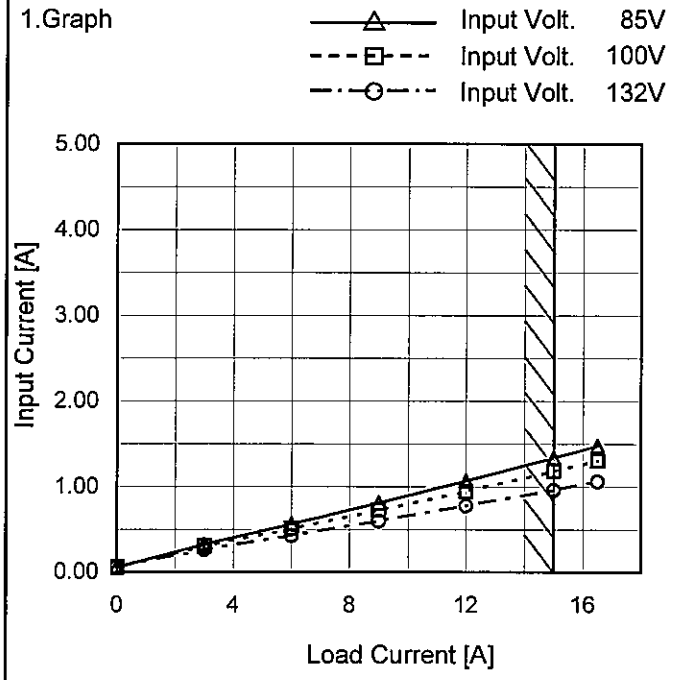
Testing Circuitry Figure A

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	0.054	0.057	0.060
3.0	0.326	0.301	0.262
6.0	0.563	0.507	0.428
9.0	0.811	0.722	0.599
12.0	1.070	0.946	0.778
15.0	1.339	1.180	0.964
16.5	1.479	1.304	1.063
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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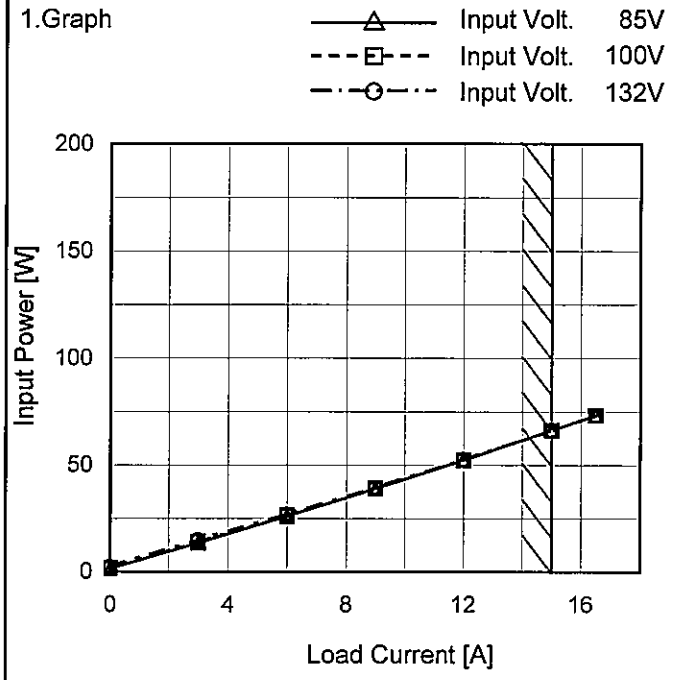
Model	LGA75A-3R3-Y
Item	Input Power (by Load Current)
Object	————————

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	1.62	1.91	2.57
3.0	13.71	14.06	15.06
6.0	26.10	26.30	27.10
9.0	39.10	39.10	39.70
12.0	52.40	52.40	52.70
15.0	66.40	66.10	66.20
16.5	73.40	73.10	73.10
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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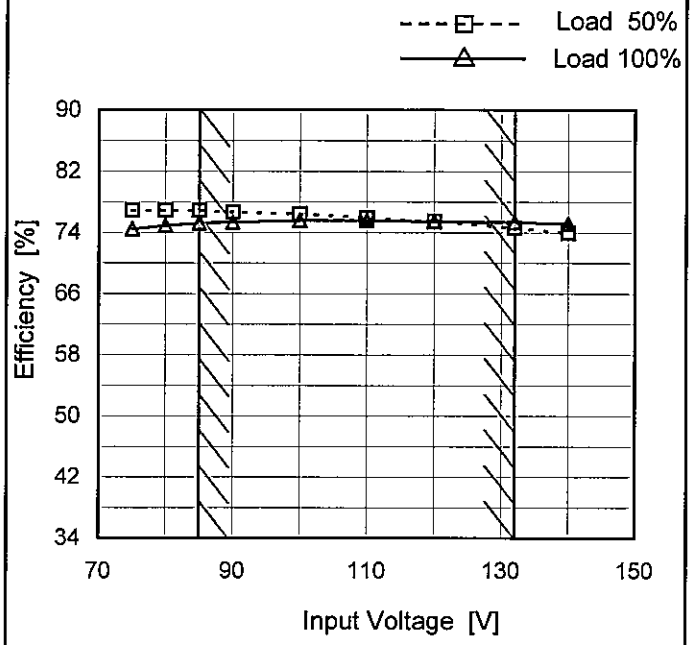
COSEL

Model	LGA75A-3R3-Y
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	76.9	74.5
80	76.9	74.9
85	76.9	75.3
90	76.6	75.4
100	76.4	75.6
110	75.9	75.6
120	75.5	75.5
132	74.6	75.4
140	73.9	75.1

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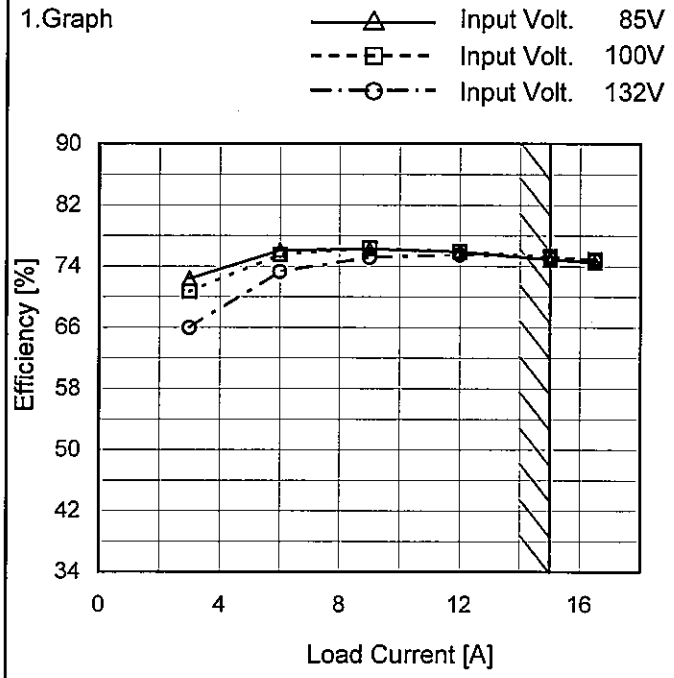
Model	LGA75A-3R3-Y
Item	Efficiency (by Load Current)
Object	———————

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	72.4	70.7	66.0
6.0	76.1	75.5	73.3
9.0	76.3	76.3	75.2
12.0	75.9	75.9	75.5
15.0	74.9	75.3	75.2
16.5	74.6	74.9	74.9
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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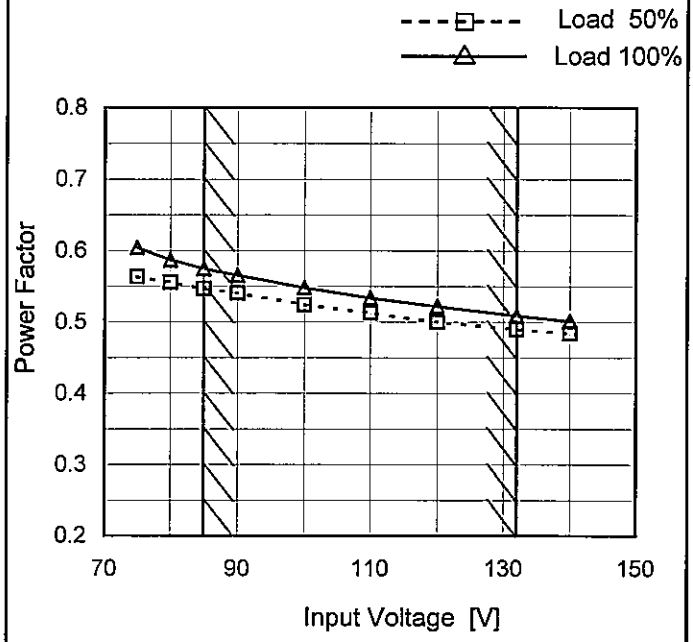
Model	LGA75A-3R3-Y
Item	Power Factor (by Input Voltage)
Object	————————

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	0.563	0.605
80	0.555	0.587
85	0.547	0.575
90	0.540	0.566
100	0.524	0.548
110	0.513	0.534
120	0.500	0.523
132	0.490	0.509
140	0.483	0.502

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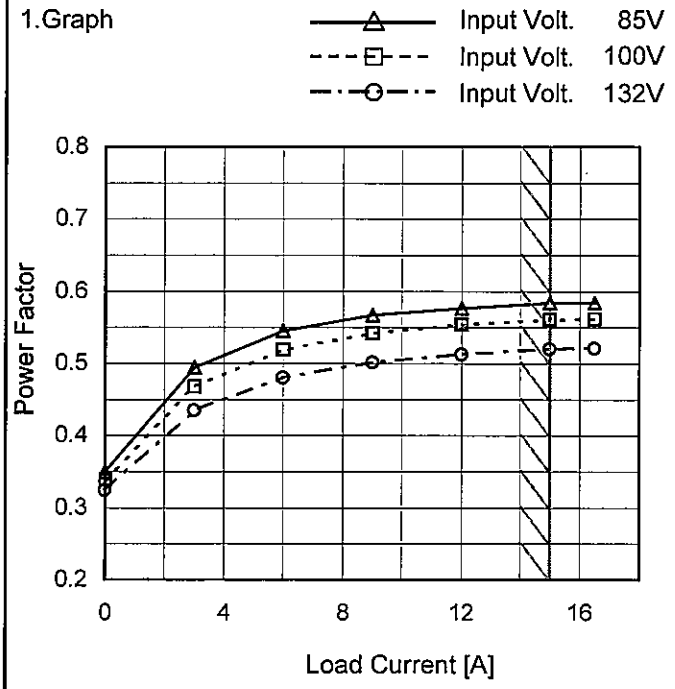
Model	LGA75A-3R3-Y
Item	Power Factor (by Load Current)
Object	———————

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	0.350	0.338	0.324
3.0	0.495	0.468	0.435
6.0	0.545	0.519	0.480
9.0	0.567	0.542	0.502
12.0	0.576	0.554	0.513
15.0	0.584	0.561	0.520
16.5	0.584	0.561	0.521
--	-	-	-
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--	-	-	-
--	-	-	-

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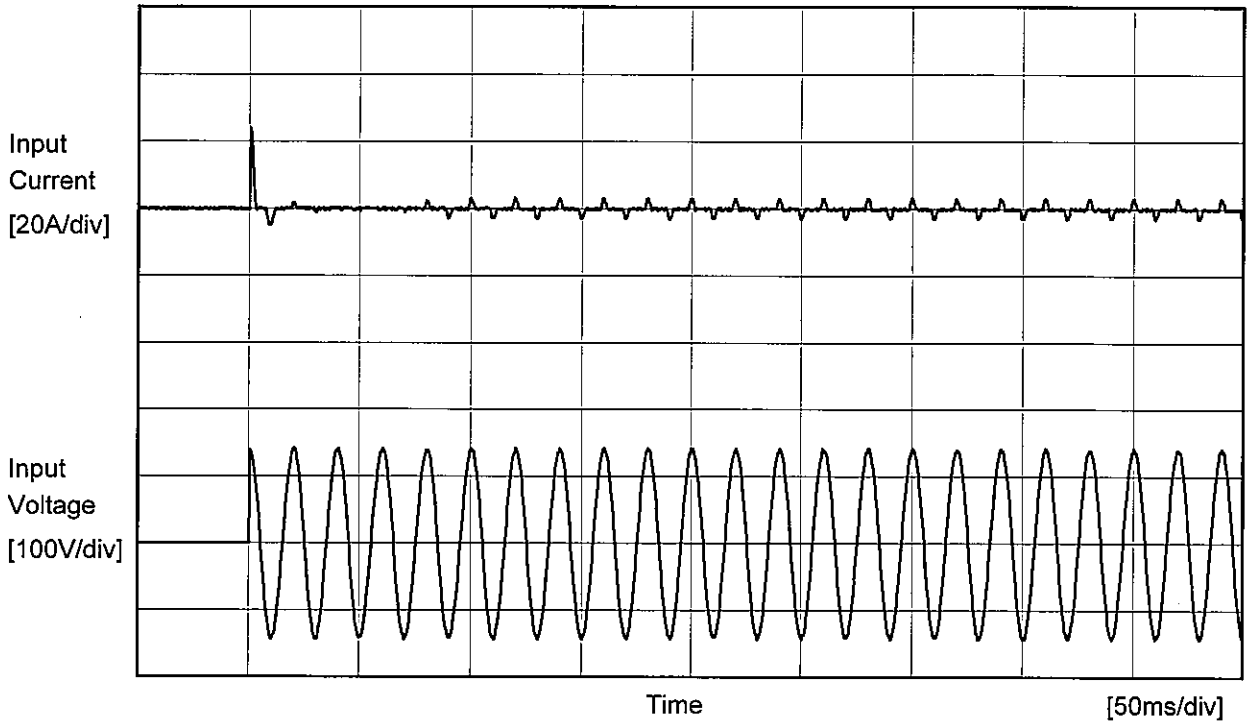
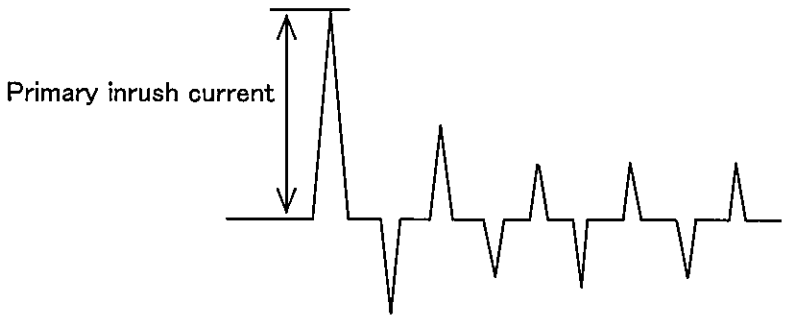
Model	LGA75A-3R3-Y
Item	Inrush Current
Object	———————

Temperature 25°C
Testing Circuitry Figure A



Input Voltage	100 V
Frequency	60 Hz
Load	100 %
Primary inrush current	24.0 A



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Model	LGA75A-3R3-Y		
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	0.08	0.10	0.12
(B)IEC60950-1	0.09	0.11	0.12

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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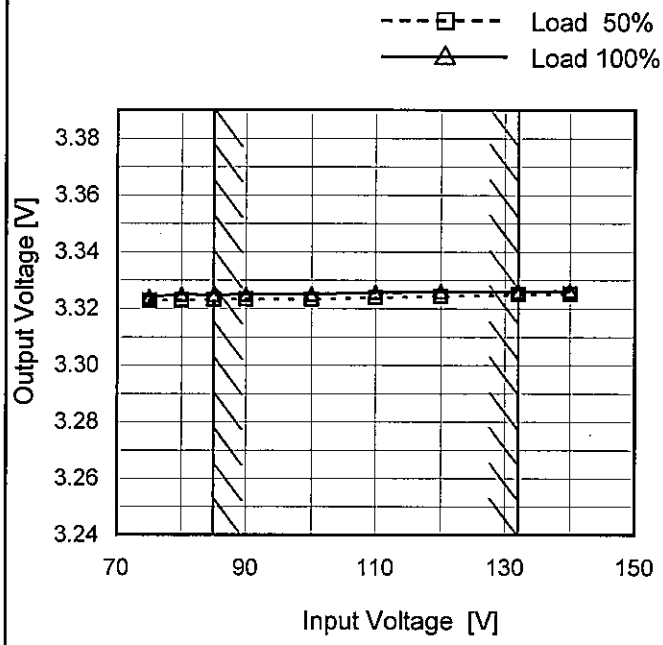
Model	LGA75A-3R3-Y
Item	Line Regulation
Object	+3.3V15A

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	3.323	3.324
80	3.323	3.325
85	3.323	3.325
90	3.323	3.325
100	3.323	3.325
110	3.324	3.326
120	3.324	3.326
132	3.325	3.326
140	3.325	3.326

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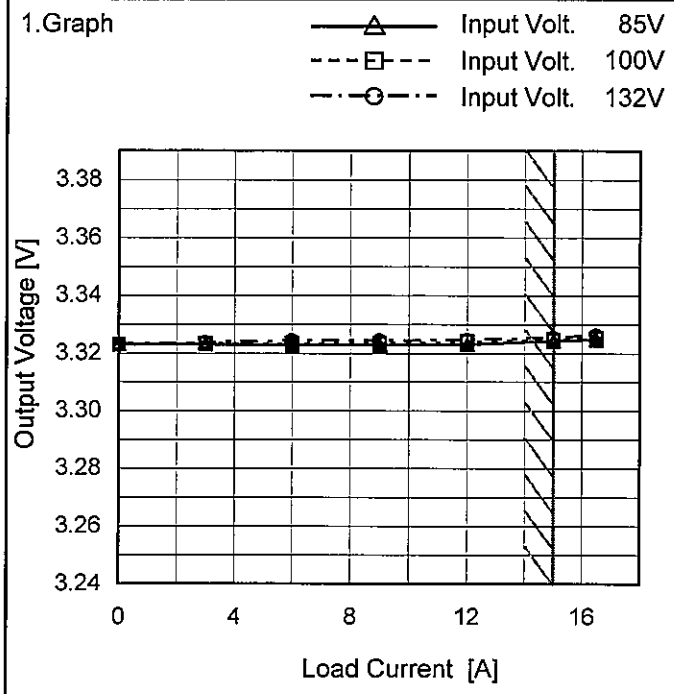
Model	LGA75A-3R3-Y
Item	Load Regulation
Object	+3.3V15A

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	3.323	3.323	3.323
3.0	3.323	3.323	3.324
6.0	3.323	3.323	3.324
9.0	3.323	3.323	3.324
12.0	3.323	3.324	3.325
15.0	3.324	3.325	3.326
16.5	3.325	3.325	3.326
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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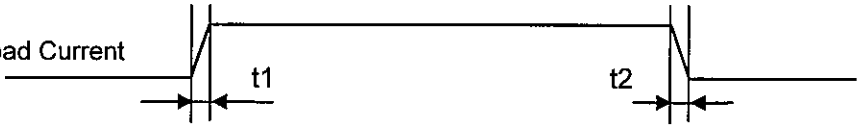
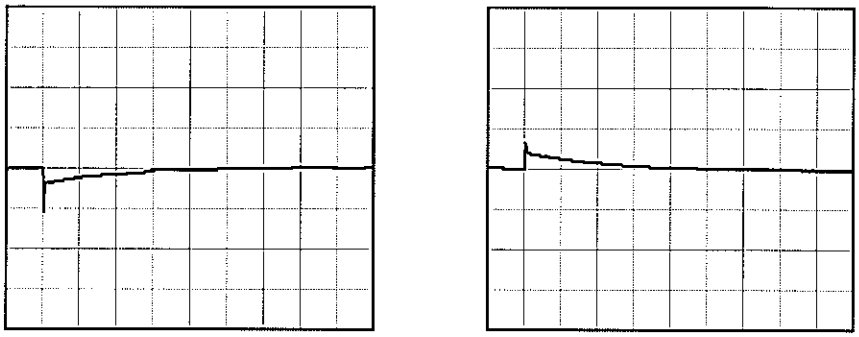
Model	LGA75A-3R3-Y		
Item	Dynamic Load Response	Temperature Testing Circuitry	25°C Figure C
Object	+3.3V15A		

Input Volt. 100 V
Cycle 1000 ms

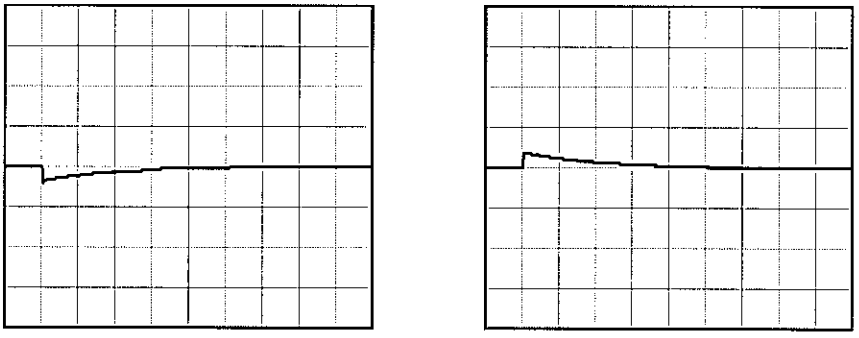
Response. t1=t2=50 μ s. Typ



Min. Load (0A) ⟷
Load 100% (15A)



Min. Load (0A) ⟷
Load 50% (7.5A)



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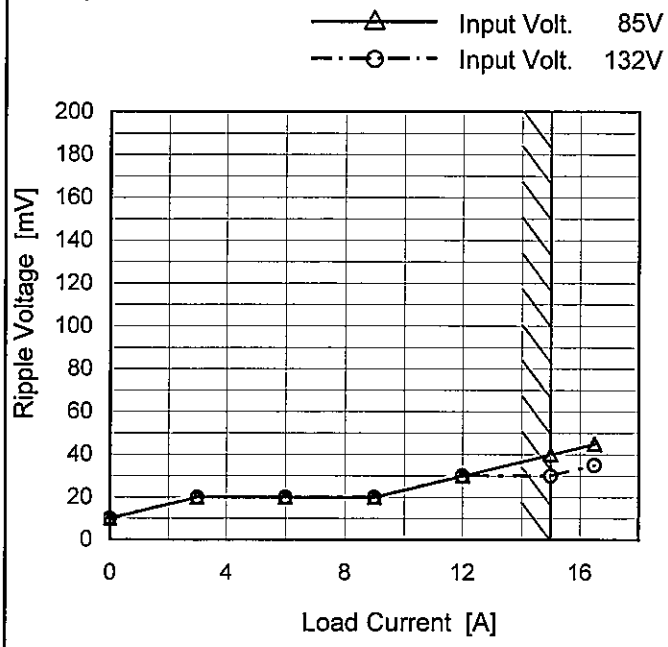
Model	LGA75A-3R3-Y
Item	Ripple Voltage (by Load Current)
Object	+3.3V15A

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

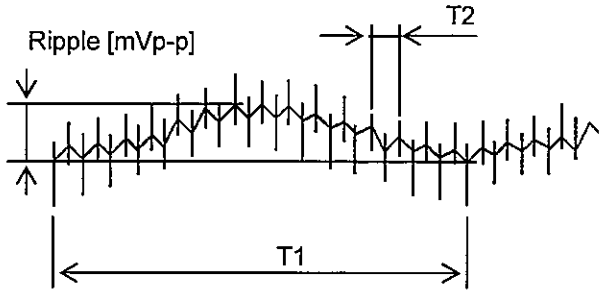


Fig. Complex Ripple Wave Form

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	20	20
9.0	20	20
12.0	30	30
15.0	40	30
16.5	45	35
--	-	-
--	-	-
--	-	-
--	-	-

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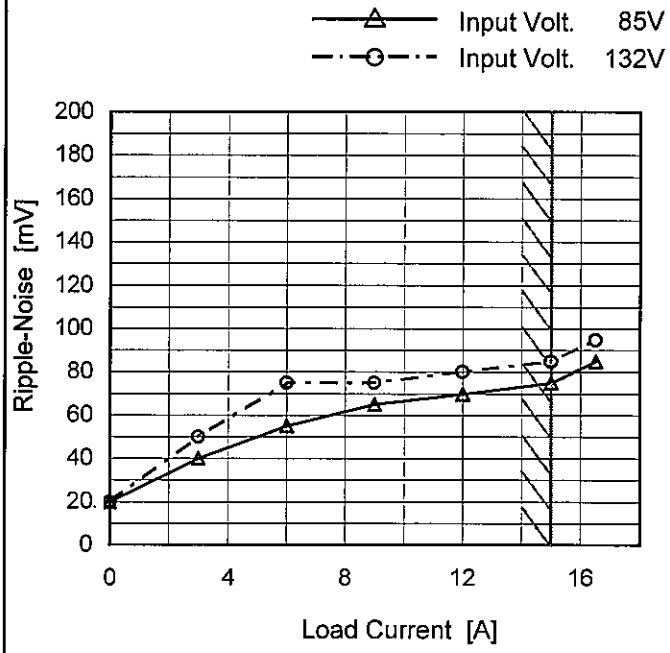
Model	LGA75A-3R3-Y
Item	Ripple-Noise
Object	+3.3V15A

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.

2.Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 85 [V]	Input Volt. 132 [V]
0.0	20	20
3.0	40	50
6.0	55	75
9.0	65	75
12.0	70	80
15.0	75	85
16.5	85	95
--	-	-
--	-	-
--	-	-
--	-	-

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

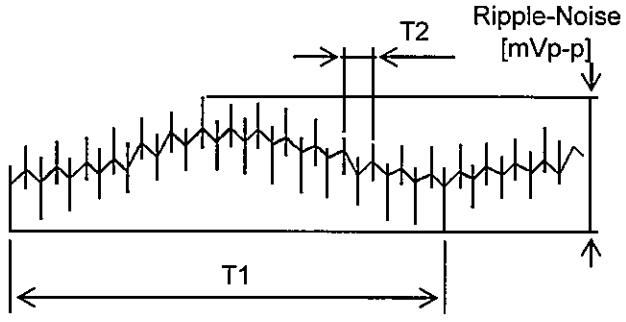


Fig. Complex Ripple Wave Form

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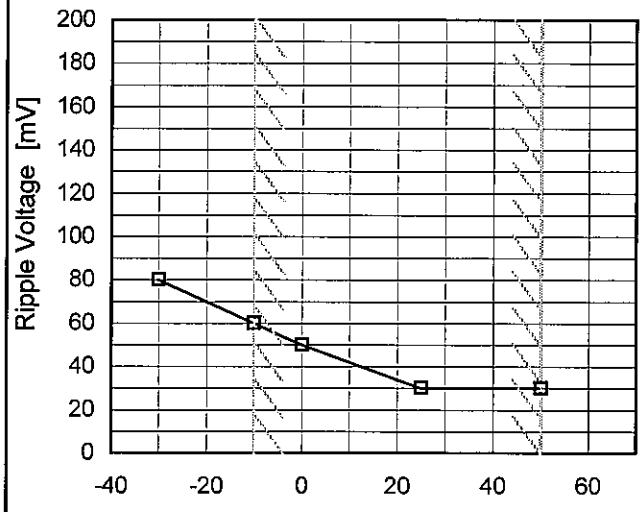
Model	LGA75A-3R3-Y
Item	Ripple Voltage (by Ambient Temp.)
Object	+3.3V15A

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	80
-10	60
0	50
25	30
50	30
--	-
--	-
--	-
--	-
--	-
--	-

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

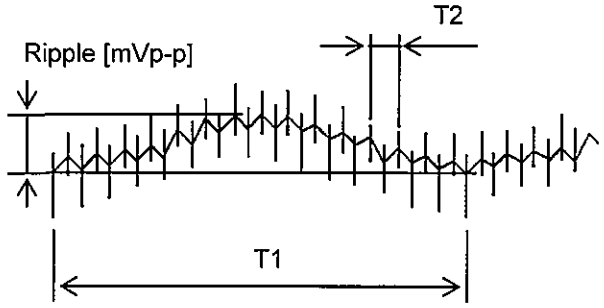


Fig. Complex Ripple Wave Form

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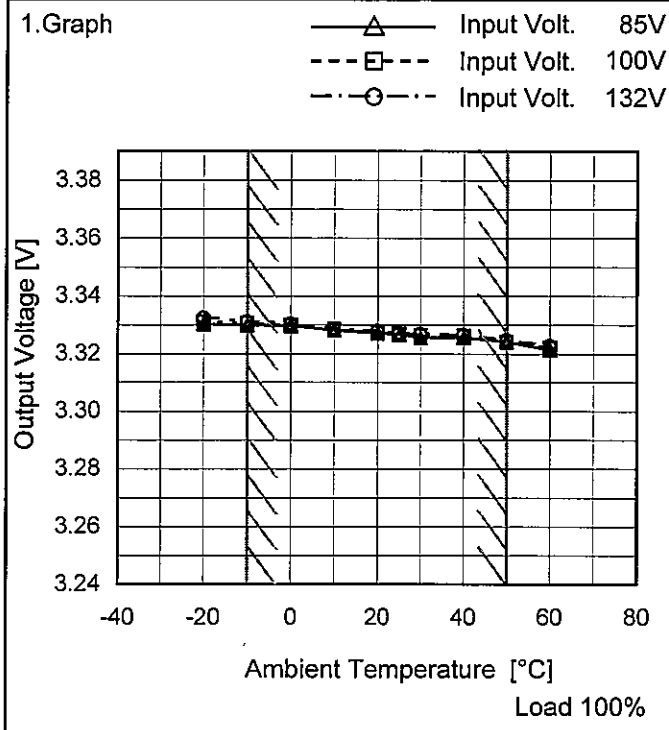
Model	LGA75A-3R3-Y
Item	Ambient Temperature Drift
Object	+3.3V15A

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	3.330	3.331	3.333
-10	3.330	3.331	3.331
0	3.330	3.330	3.330
10	3.328	3.328	3.329
20	3.327	3.327	3.328
25	3.327	3.327	3.327
30	3.326	3.326	3.327
40	3.326	3.326	3.327
50	3.324	3.324	3.325
60	3.321	3.322	3.323
--	-	-	-

COSEL

Model	LGA75A-3R3-Y	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+3.3V15A	

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	-10	132	15	3.331	±4	±0.1
Minimum Voltage	40	85	0	3.324		

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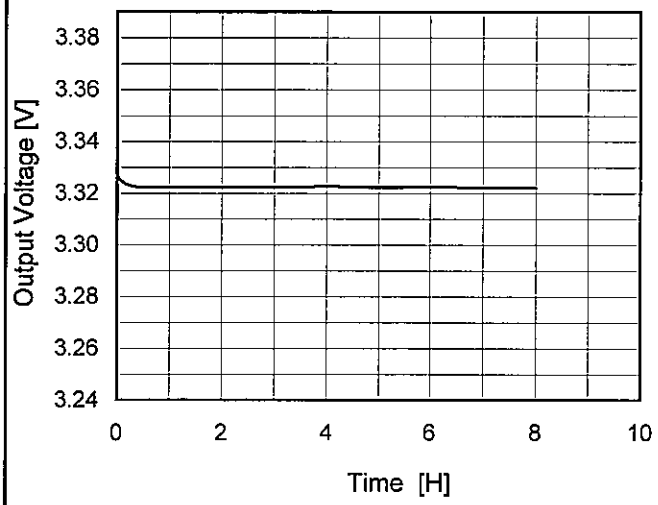
Model	LGA75A-3R3-Y
Item	Time Lapse Drift
Object	+3.3V15A

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	3.328
0.5	3.322
1.0	3.322
2.0	3.322
3.0	3.322
4.0	3.323
5.0	3.322
6.0	3.323
7.0	3.322
8.0	3.322

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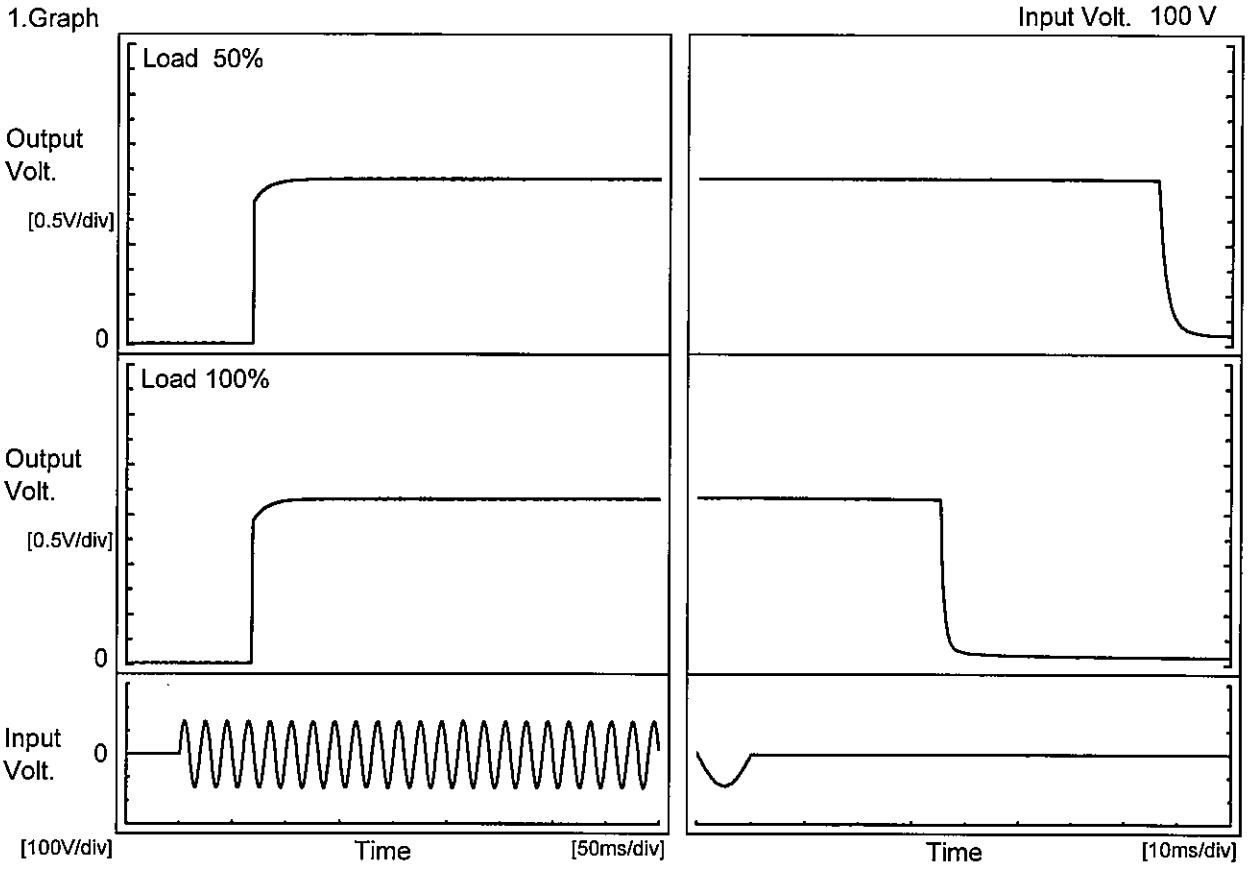
Model	LGA75A-3R3-Y
Item	Rise and Fall Time
Object	+3.3V15A

Temperature 25°C
Testing Circuitry Figure A

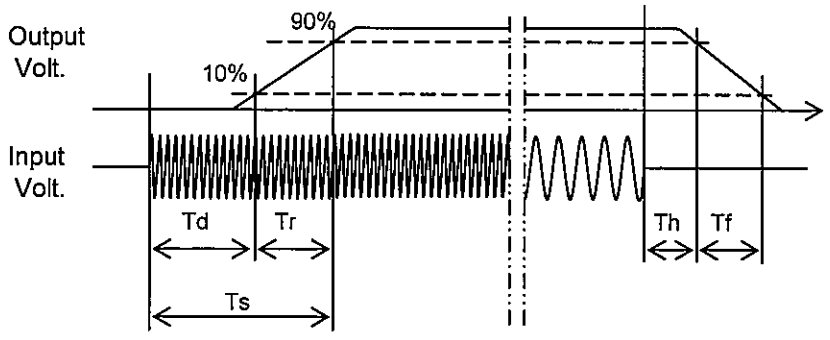
1.Graph



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	68.3	4.8	73.1	76.4	4.5
100 %	68.0	4.8	72.8	35.4	2.4



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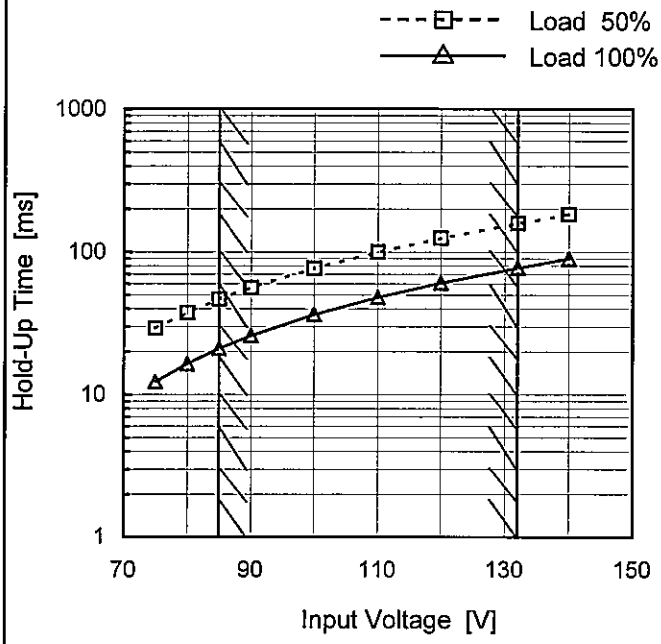
Model	LGA75A-3R3-Y
Item	Hold-Up Time
Object	+3.3V15A

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	29	12
80	38	17
85	47	21
90	56	26
100	77	37
110	99	48
120	125	61
132	158	78
140	183	90

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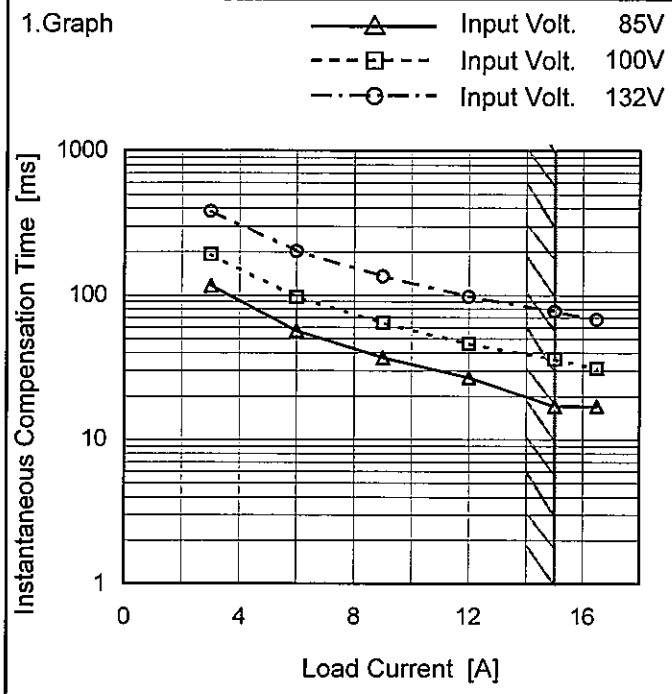
Model	LGA75A-3R3-Y
Item	Instantaneous Interruption Compensation
Object	+3.3V15A

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	117	191	382
6.0	57	97	202
9.0	37	64	135
12.0	27	46	98
15.0	17	36	77
16.5	17	31	68
---	-	-	-
---	-	-	-
---	-	-	-
---	-	-	-

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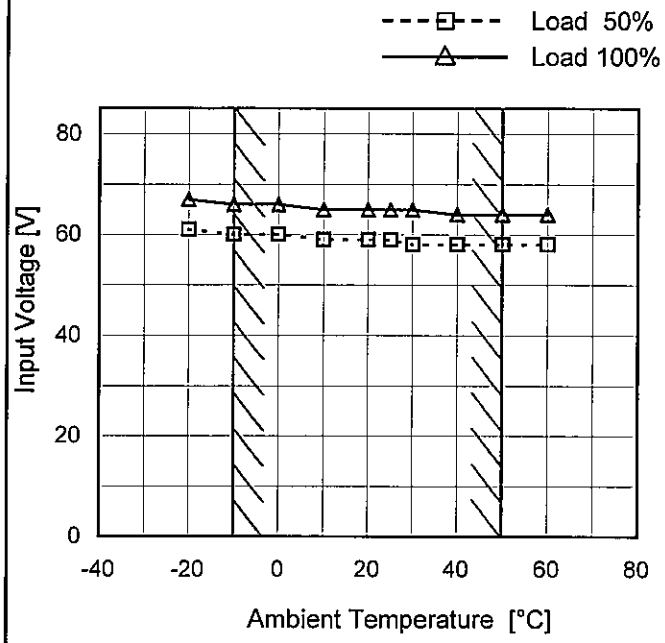
Model	LGA75A-3R3-Y
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+3.3V15A

Testing Circuitry Figure A

1.Graph



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

2.Values

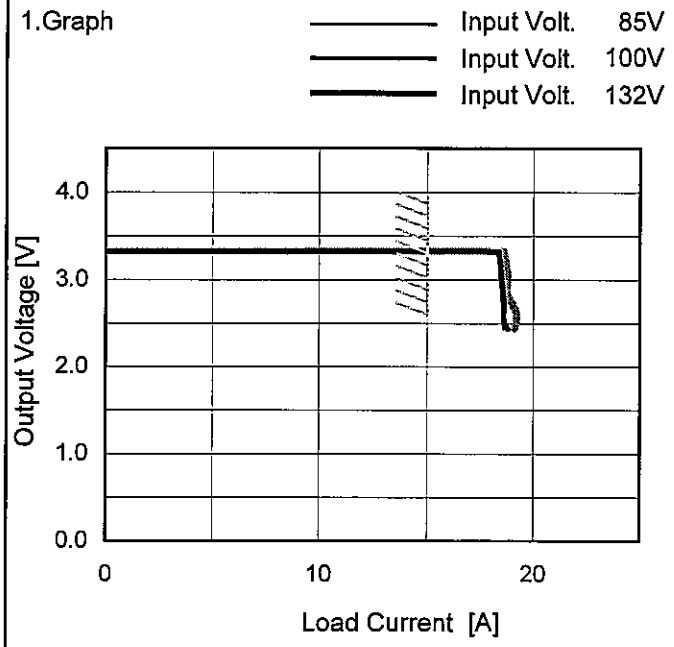
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-20	61	67
-10	60	66
0	60	66
10	59	65
20	59	65
25	59	65
30	58	65
40	58	64
50	58	64
60	58	64
--	-	-

COSEL

Model	LGA75A-3R3-Y
Item	Overcurrent Protection
Object	+3.3V15A

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 2.48V to 0V.

2.Values

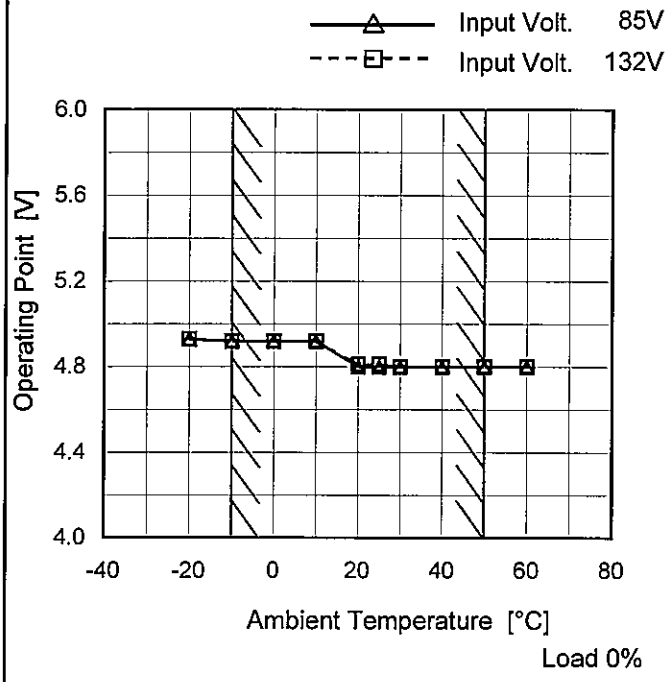
Output Voltage [V]	Load Current [A]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
3.30	15.82	15.85	15.88
3.14	18.39	18.44	18.72
2.97	18.42	18.50	18.78
2.64	18.54	18.61	19.14
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	LGA75A-3R3-Y
Item	Overvoltage Protection
Object	+3.3V15A

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	4.93	4.93
-10	4.92	4.92
0	4.92	4.92
10	4.92	4.92
20	4.80	4.81
25	4.80	4.81
30	4.80	4.80
40	4.80	4.80
50	4.80	4.80
60	4.80	4.80
--	-	-

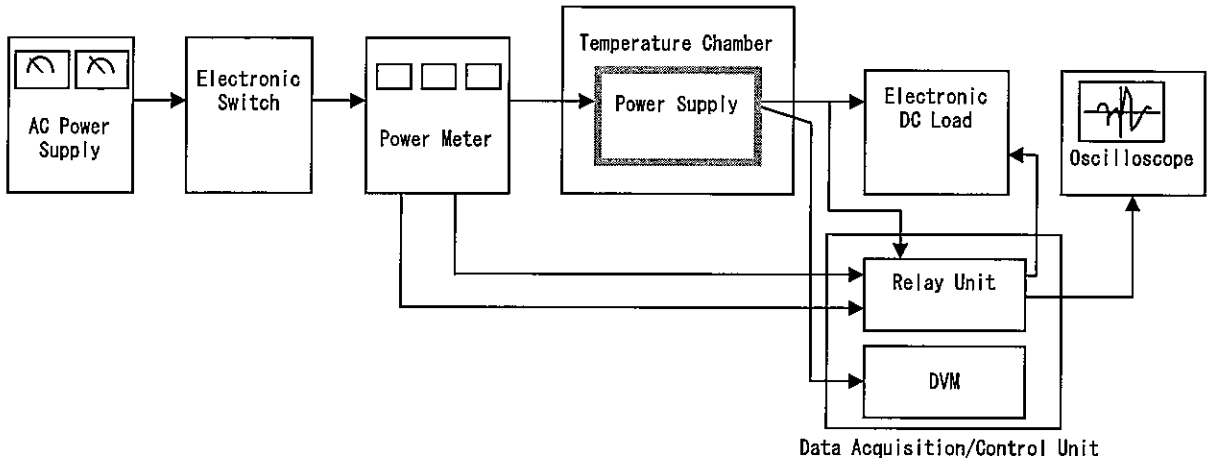


Figure A

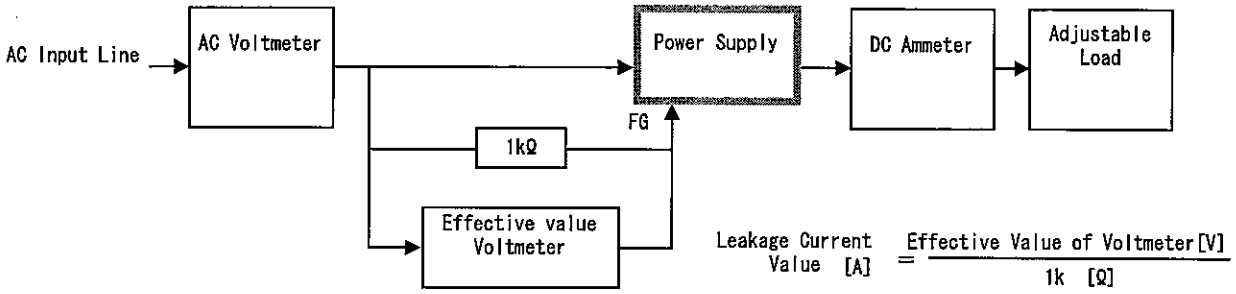


Figure B (DEN-AN)

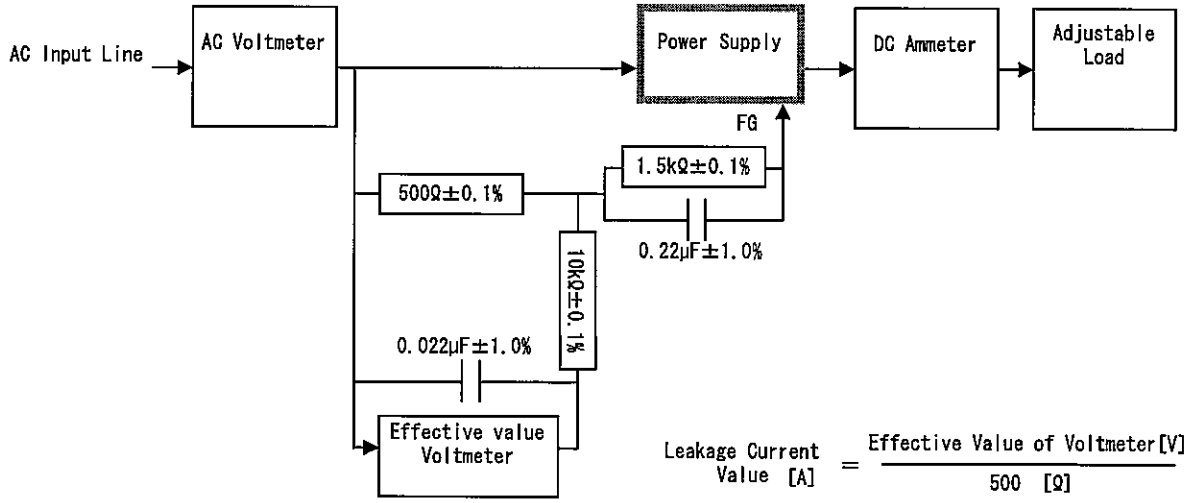


Figure B (IEC60950-1)

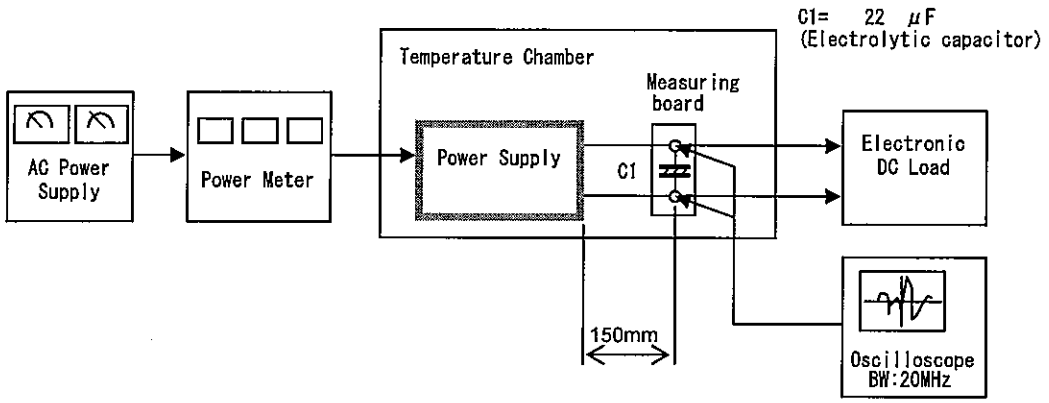

C1= 22 μF
(Electrolytic capacitor)
Temperature Chamber
Measuring board
AC Power Supply
Power Meter
Power Supply
C1
Electronic DC Load
150mm
Oscilloscope BW:20MHz

Figure C