



TEST DATA OF LCA150S-36

Regulated DC Power Supply
Sep.29. 2004

Approved by : *K. Shibutani*
Kenichi Shibutani Design Manager

Prepared by : *Masami Horita*
Masami Horita Design Engineer

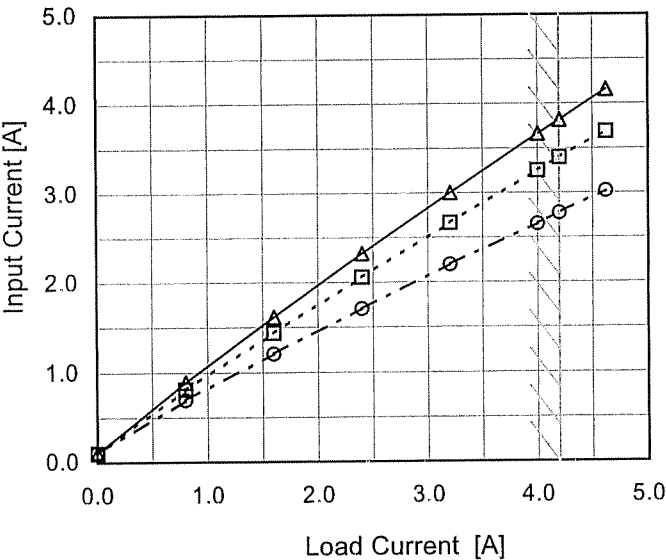
COSEL CO.,LTD.

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Item		Input Current (by Load Current)																																																					
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1.Graph		<div><div>—△—</div>Input Volt. 85V</div> <div><div>- - □ - -</div>Input Volt. 100V</div> <div><div>- - ○ - -</div>Input Volt. 132V</div>  <p>Note: Slanted line shows the range of the rated load current.</p>		2.Values																																																			
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BC-0958

Model

LCA150S-36

Item

Input Power (by Load Current)

Object

1.Graph

—△—

Input Volt.

85V

---□---

Input Volt.

100V

---○---

Input Volt.

132V

Input Power [W]

500

400

300

200

100

0

0.0

1.0

2.0

3.0

4.0

5.0

Load Current [A]

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

2.Values

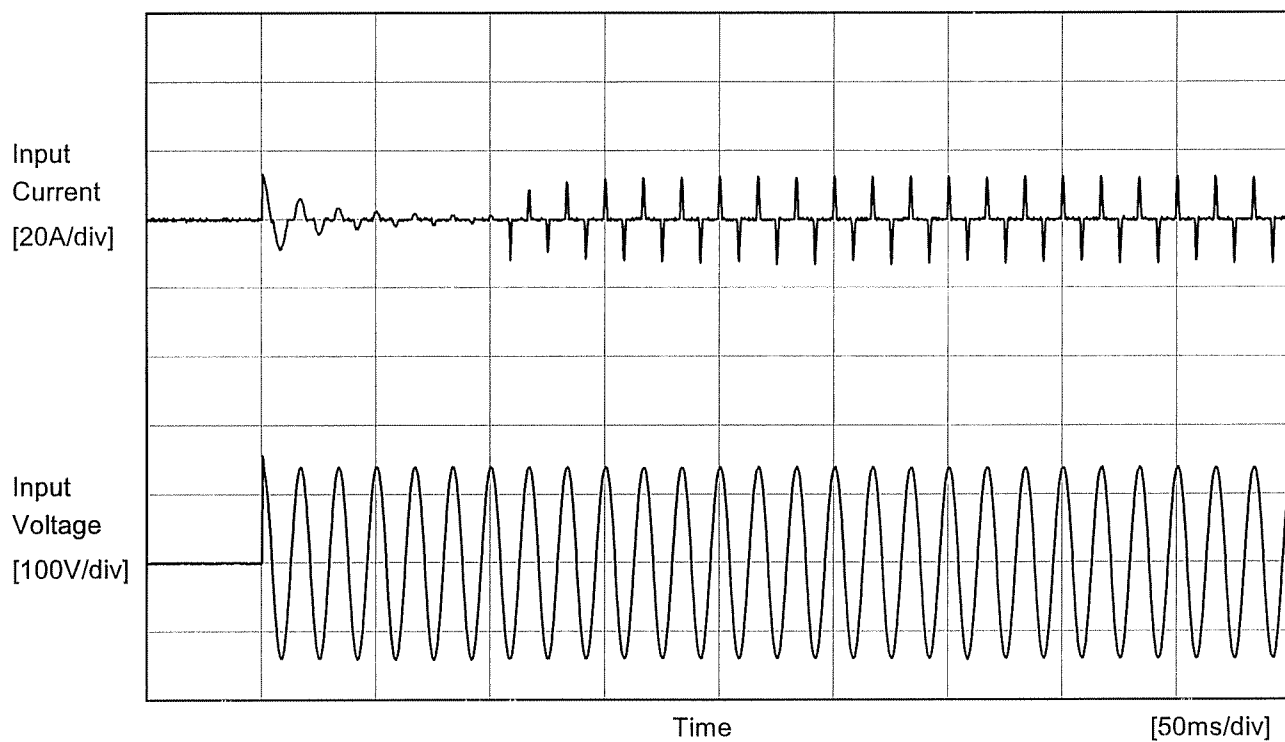
Load Current [A]	Input Power [W]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.00	3.1	3.4	4.4
0.80	35.8	36.6	38.9
1.60	67.5	68.1	69.8
2.40	99.6	99.9	101.4
3.20	132.3	132.0	133.1
4.00	165.6	164.7	165.0
4.20	175.0	173.1	173.2
4.62	193.0	190.5	190.2
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--	-	-	-
--	-	-	-

Model		LCA150S-36	Temperature25°C Testing CircuitryFigure A																																
Item		Efficiency (by Input Voltage)																																	
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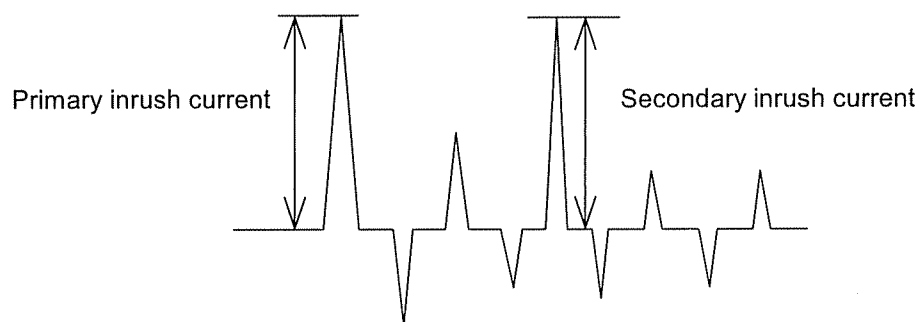
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Model	LCA150S-36	Temperature	25°C
Item	Inrush Current	Testing Circuitry	Figure A
Object	_____		



Input Voltage	100 V
Frequency	60 Hz
Load	100 %

Primary inrush current	13.1 A
Secondary inrush current	13.3 A





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Model	LCA150S-36	Temperature Testing Circuitry	25°C Figure A
Item	Dynamic Load Response 動的負荷変動		
Object	+36V4.2A		

Input Volt. 100 V
Cycle 1000 ms

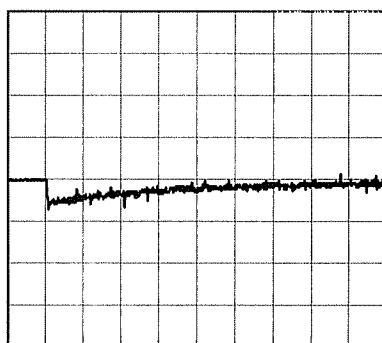
Load Current



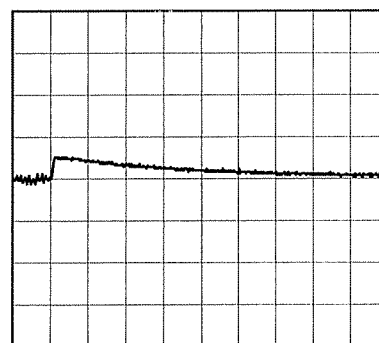
Min. Load (0A) ←→

Load 100% (4.2A)

100 mV/div



10 ms/div

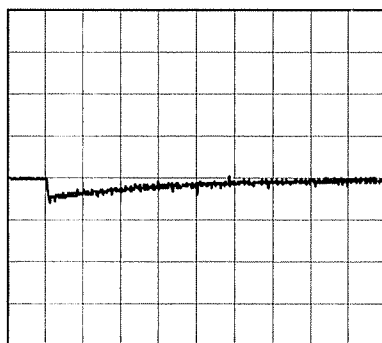


10 ms/div

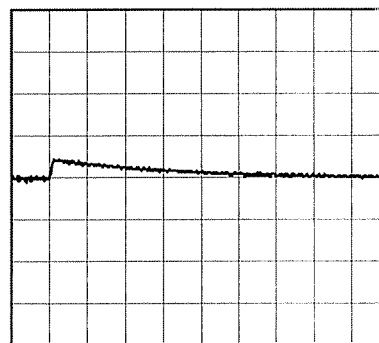
Min. Load (0A) ←→

Load 50% (2.1A)

100 mV/div

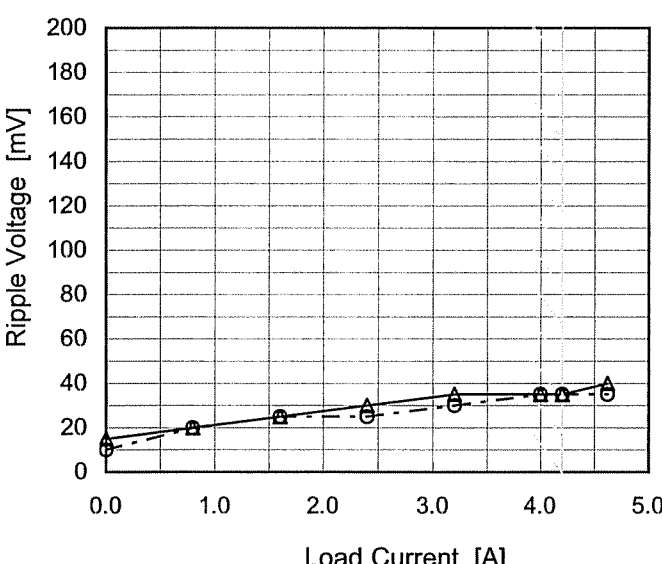
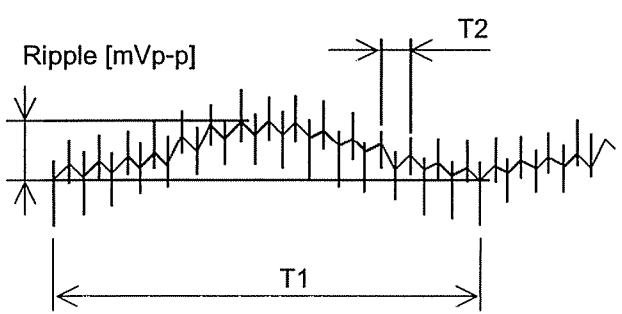


10 ms/div



10 ms/div

COSEL

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<div><div><div>—△—</div><div>Input Volt. 85V</div></div><div><div>---□---</div><div>Input Volt. 100V</div></div><div><div>---○---</div><div>Input Volt. 132V</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. 85[V]</th><th>Input Volt. 100[V]</th><th>Input Volt. 132[V]</th></tr><tr><td>-20</td><td>36.146</td><td>36.145</td><td>36.144</td></tr><tr><td>-10</td><td>36.135</td><td>36.134</td><td>36.132</td></tr><tr><td>0</td><td>36.122</td><td>36.121</td><td>36.120</td></tr><tr><td>10</td><td>36.106</td><td>36.105</td><td>36.103</td></tr><tr><td>25</td><td>36.076</td><td>36.074</td><td>36.073</td></tr><tr><td>40</td><td>36.041</td><td>36.040</td><td>36.038</td></tr><tr><td>50</td><td>36.019</td><td>36.018</td><td>36.016</td></tr><tr><td>60</td><td>35.999</td><td>35.998</td><td>35.995</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>		Ambient Temperature [°C]	Output Voltage [V]			Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]	-20	36.146	36.145	36.144	-10	36.135	36.134	36.132	0	36.122	36.121	36.120	10	36.106	36.105	36.103	25	36.076	36.074	36.073	40	36.041	36.040	36.038	50	36.019	36.018	36.016	60	35.999	35.998	35.995	--	-	-	-	--	-	-	-	--	-	-	-
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Model		LCA150S-36	Testing Circuitry Figure A
Item		Output Voltage Accuracy	
Object		+36V4.2A	

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

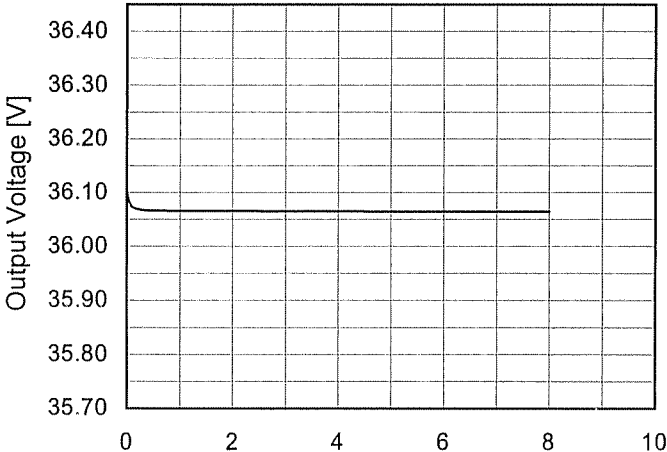
Load Current : 0 - 4.2A

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

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

2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ratio [%]
Maximum Voltage	-10	100	0	36.131	±63	±0.2
Minimum Voltage	50	132	4.2	36.005		

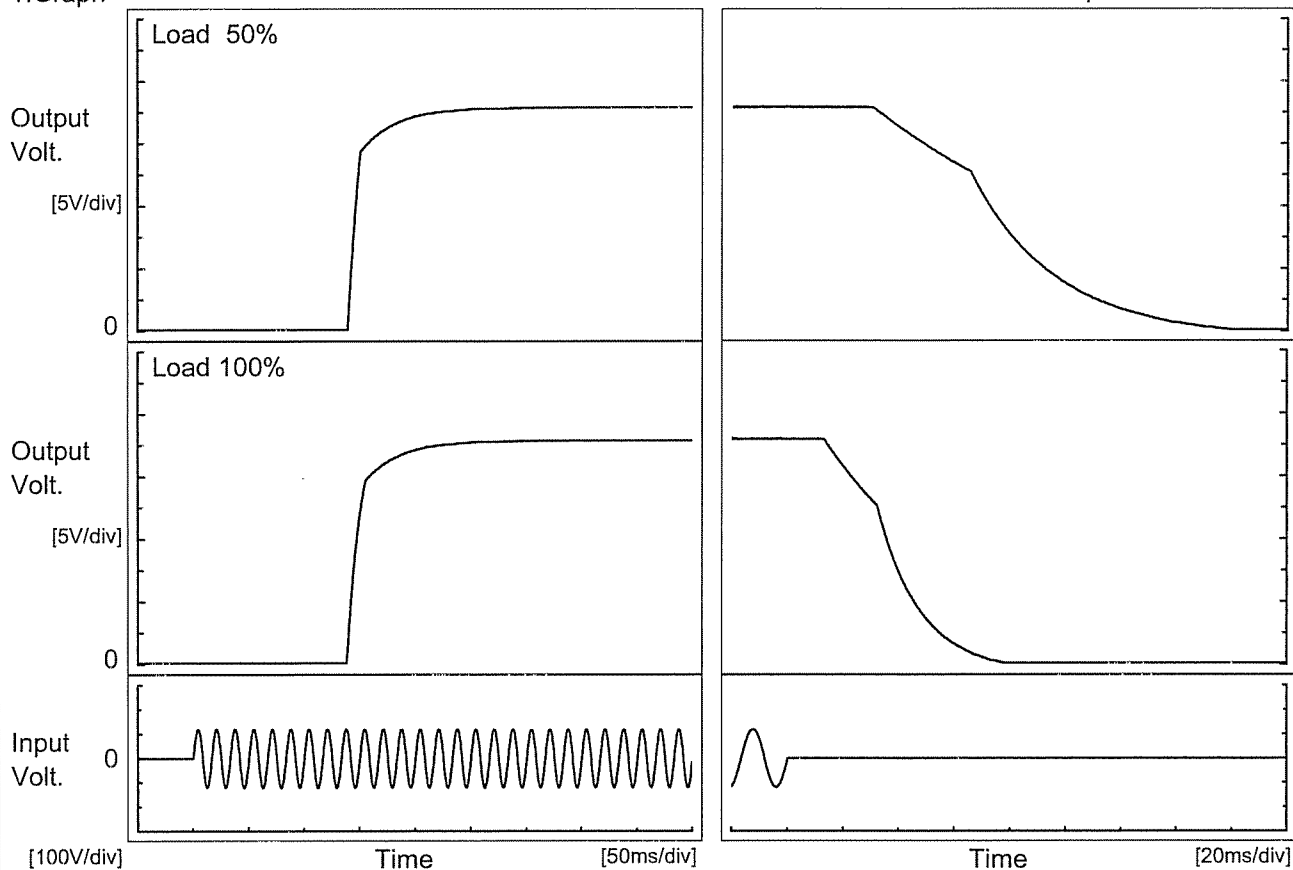
Model	LCA150S-36																								
Item	Time Lapse Drift	Temperature	25°C																						
Object	+36V4.2A	Testing Circuitry	Figure A																						
1.Graph		2.Values																							
<div></div> <div>Input Volt. 100V Load 100%</div>		<table><tr><th>Time since start [H]</th><th>Output Voltage [V]</th></tr><tr><td>0.0</td><td>36.104</td></tr><tr><td>0.5</td><td>36.067</td></tr><tr><td>1.0</td><td>36.066</td></tr><tr><td>2.0</td><td>36.066</td></tr><tr><td>3.0</td><td>36.066</td></tr><tr><td>4.0</td><td>36.065</td></tr><tr><td>5.0</td><td>36.065</td></tr><tr><td>6.0</td><td>36.065</td></tr><tr><td>7.0</td><td>36.065</td></tr><tr><td>8.0</td><td>36.065</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	36.104	0.5	36.067	1.0	36.066	2.0	36.066	3.0	36.066	4.0	36.065	5.0	36.065	6.0	36.065	7.0	36.065	8.0	36.065
Time since start [H]	Output Voltage [V]																								
0.0	36.104																								
0.5	36.067																								
1.0	36.066																								
2.0	36.066																								
3.0	36.066																								
4.0	36.065																								
5.0	36.065																								
6.0	36.065																								
7.0	36.065																								
8.0	36.065																								

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Model	LCA150S-36	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	+36V4.2A		

1.Graph

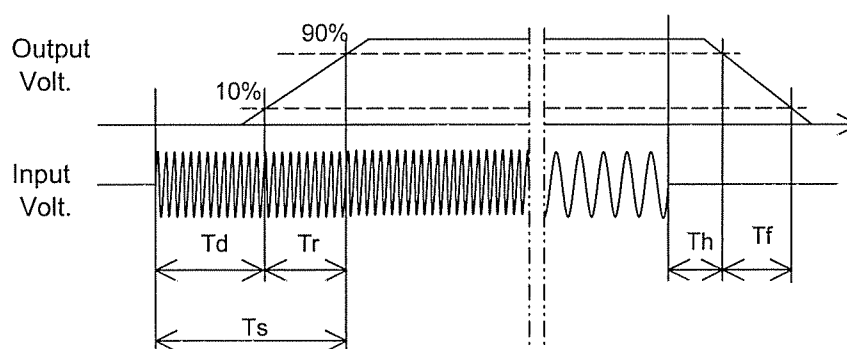
Input Volt. 100 V



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	140.0	35.3	175.3	40.2	78.0
100 %	139.5	36.5	176.0	20.3	40.2



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Model	LCA150S-36																																																					
Item	Instantaneous Interruption Compensation	Temperature	25°C																																																			
Object	+36V4.2A	Testing Circuitry	Figure A																																																			
1.Graph		2.Values																																																				
<div><div>—△—</div><div>Input Volt.</div><div>85V</div></div> <div><div>---□---</div><div>Input Volt.</div><div>100V</div></div> <div><div>---○---</div><div>Input Volt.</div><div>132V</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. 85[V]</th><th>Input Volt. 100[V]</th><th>Input Volt. 132[V]</th></tr><tr><td>0.00</td><td>-</td><td>-</td><td>-</td></tr><tr><td>0.80</td><td>80</td><td>154</td><td>342</td></tr><tr><td>1.60</td><td>40</td><td>81</td><td>184</td></tr><tr><td>2.40</td><td>26</td><td>54</td><td>123</td></tr><tr><td>3.20</td><td>20</td><td>38</td><td>93</td></tr><tr><td>4.00</td><td>13</td><td>30</td><td>73</td></tr><tr><td>4.20</td><td>13</td><td>29</td><td>70</td></tr><tr><td>4.62</td><td>12</td><td>22</td><td>64</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. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]	0.00	-	-	-	0.80	80	154	342	1.60	40	81	184	2.40	26	54	123	3.20	20	38	93	4.00	13	30	73	4.20	13	29	70	4.62	12	22	64	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Time [ms]																																																					
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--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			

Model		LCA150S-36	
Item		Minimum Input Voltage for Regulated Output Voltage	
Object		+36V4.2A	
1.Graph		2.Values	

---		□	---		Load 50%
---		△	---		Load 100%

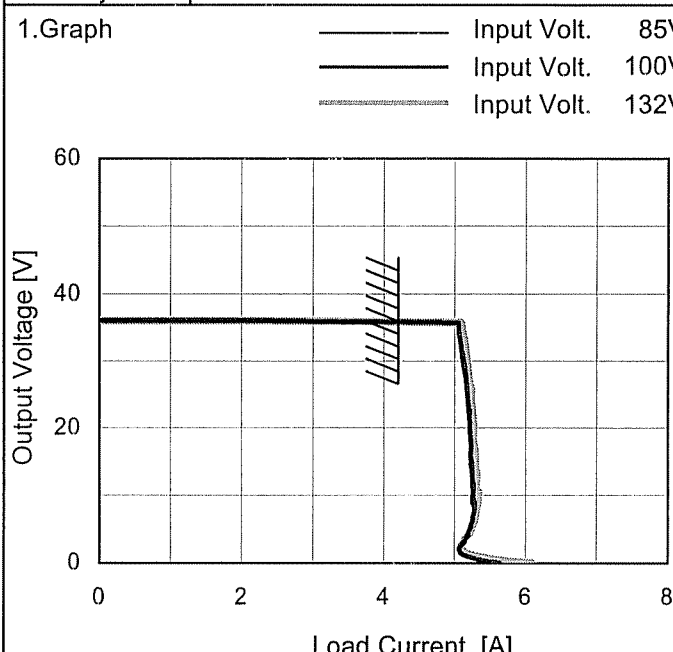
Input Voltage [V]	100	80	60	40	20	0	-40	-20	0	20	40	60	Ambient Temperature [°C]

Ambient Temperature [°C]		Input Voltage [V]	
		Load 50%	Load 100%
-20		67	72
-10		66	72
0		66	72
10		66	72
25		66	72
40		66	72
50		66	72
60		66	72
--		-	-
--		-	-
--		-	-

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

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Model	LCA150S-36																																																										
Item	Overcurrent Protection	Temperature	25°C																																																								
Object	+36V4.2A	Testing Circuitry	Figure A																																																								
1.Graph		2.Values																																																									
<div><div><div></div><div></div><div></div></div><div>Input Volt. 85V Input Volt. 100V Input Volt. 132V</div></div>  <p>Output Voltage [V]</p> <p>Load Current [A]</p> <p>Note: Slanted line shows the range of the rated load current.</p>		<table><tr><th rowspan="2">Output Voltage [V]</th><th colspan="3">Load Current [A]</th></tr><tr><th>Input Volt. 85[V]</th><th>Input Volt. 100[V]</th><th>Input Volt. 132[V]</th></tr><tr><td>36.0</td><td>5.04</td><td>5.05</td><td>5.09</td></tr><tr><td>34.2</td><td>5.05</td><td>5.06</td><td>5.11</td></tr><tr><td>32.4</td><td>5.07</td><td>5.09</td><td>5.15</td></tr><tr><td>28.8</td><td>5.11</td><td>5.15</td><td>5.19</td></tr><tr><td>25.2</td><td>5.16</td><td>5.18</td><td>5.24</td></tr><tr><td>21.6</td><td>5.19</td><td>5.20</td><td>5.26</td></tr><tr><td>18.0</td><td>5.21</td><td>5.23</td><td>5.26</td></tr><tr><td>14.4</td><td>5.21</td><td>5.25</td><td>5.30</td></tr><tr><td>10.8</td><td>5.25</td><td>5.26</td><td>5.33</td></tr><tr><td>7.2</td><td>5.26</td><td>5.26</td><td>5.30</td></tr><tr><td>3.6</td><td>5.17</td><td>5.16</td><td>5.16</td></tr><tr><td>0.0</td><td>5.68</td><td>5.92</td><td>6.49</td></tr></table>			Output Voltage [V]	Load Current [A]			Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]	36.0	5.04	5.05	5.09	34.2	5.05	5.06	5.11	32.4	5.07	5.09	5.15	28.8	5.11	5.15	5.19	25.2	5.16	5.18	5.24	21.6	5.19	5.20	5.26	18.0	5.21	5.23	5.26	14.4	5.21	5.25	5.30	10.8	5.25	5.26	5.33	7.2	5.26	5.26	5.30	3.6	5.17	5.16	5.16	0.0	5.68	5.92	6.49
Output Voltage [V]	Load Current [A]																																																										
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Model		LCA150S-36		Testing Circuitry Figure A	
Item		Overvoltage Protection			
Object		+36V4.2A			
1.Graph		<div><div><div>—△—</div><div>Input Volt.</div><div>85V</div></div><div><div>---□---</div><div>Input Volt.</div><div>100V</div></div><div><div>---○---</div><div>Input Volt.</div><div>132V</div></div></div>		2.Values	
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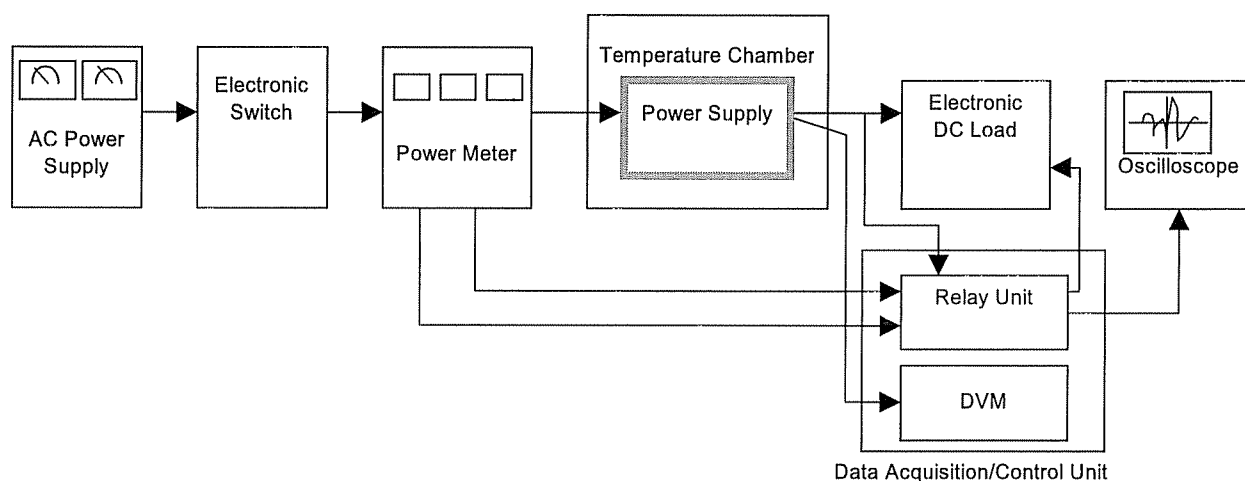


Figure A

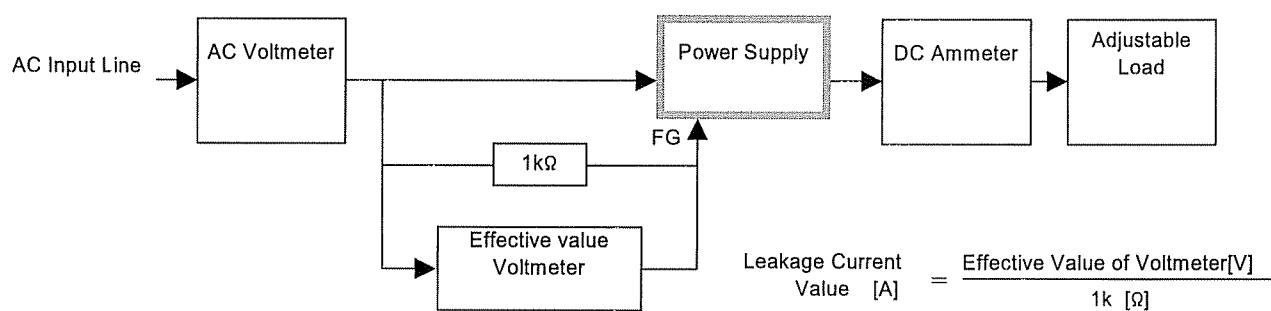


Figure B (DEN-AN)

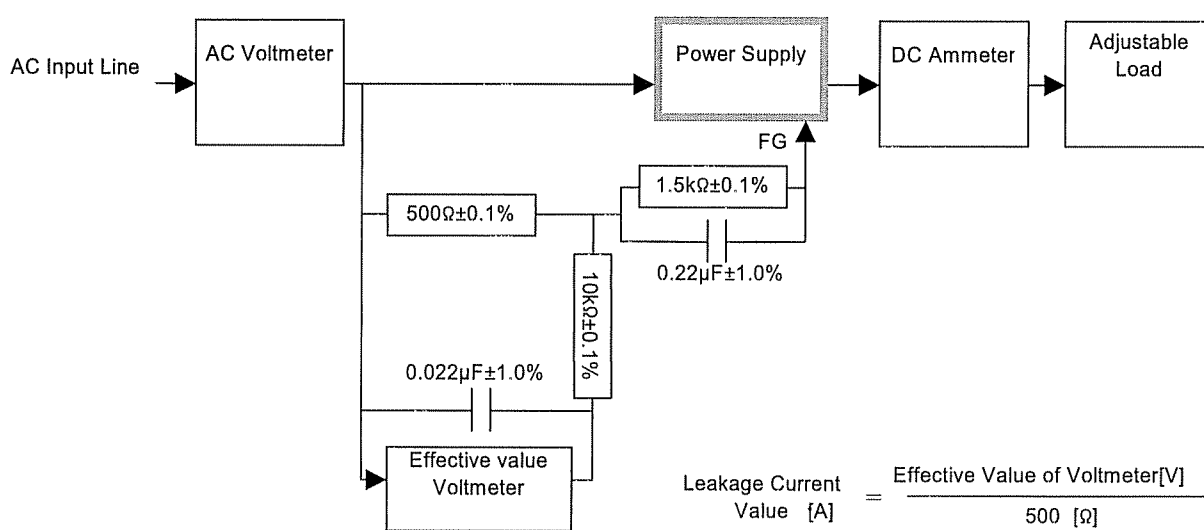


Figure B (IEC60950)