

# TEST DATA OF LEA150F-18

Regulated DC Power Supply  
Dec 19, 2005

Approved by : Chikako Makino  
Chikako Makino Design Manager

Prepared by : Saori Ueda  
Saori Ueda Design Engineer

**COSEL CO.,LTD.**

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Model		LEA150F-18		Temperature 25°C																																																				
Item		Input Current (by Load Current)		Testing Circuitry Figure A																																																				
Object																																																								
1.Graph		<div><div><div>—△—</div><div>Input Volt.</div><div>100V</div></div><div><div>---□---</div><div>Input Volt.</div><div>200V</div></div><div><div>---○---</div><div>Input Volt.</div><div>230V</div></div></div> <div><p>Note: Slanted line shows the range of the rated load current.</p></div>		2.Values																																																				
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Model LEA150F-18

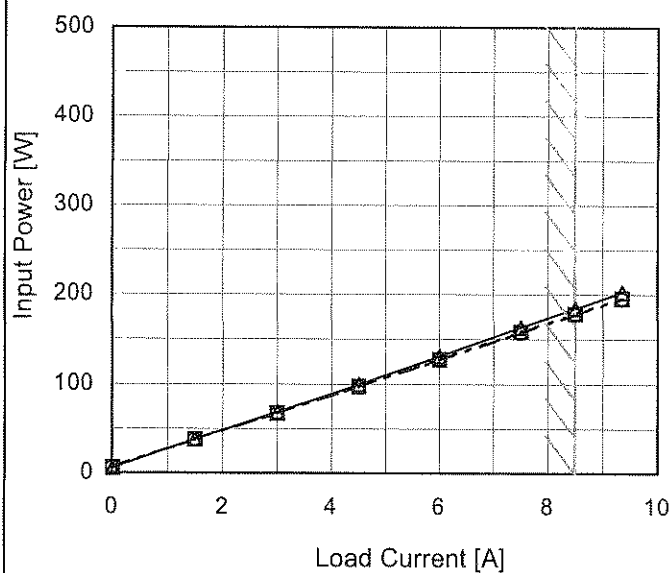
Item Input Power (by Load Current)

Object

 Temperature 25°C  
 Testing Circuitry Figure A

## 1. Graph

—△— Input Volt. 100V  
 ---□--- Input Volt. 200V  
 -·-○-·- Input Volt. 230V



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	5.9	6.4	6.6
1.50	38.3	38.0	38.1
3.00	68.9	67.7	67.6
4.50	99.8	97.6	97.4
6.00	131.3	127.9	127.3
7.50	163.5	158.4	157.5
8.50	184.6	178.7	177.7
9.35	202.8	196.1	195.4
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Model		LEA150F-18	
Item		Power Factor (by Input Voltage)	
Object			

1.Graph

Load 50%

Load 100%

Power Factor

1.0

0.9

0.8

0.7

0.6

0.5

0.4

50

100

150

200

250

300

Input Voltage [V]

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

2.Values

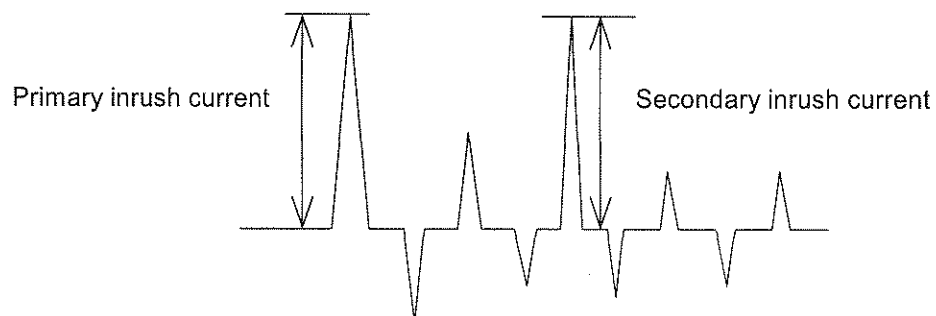
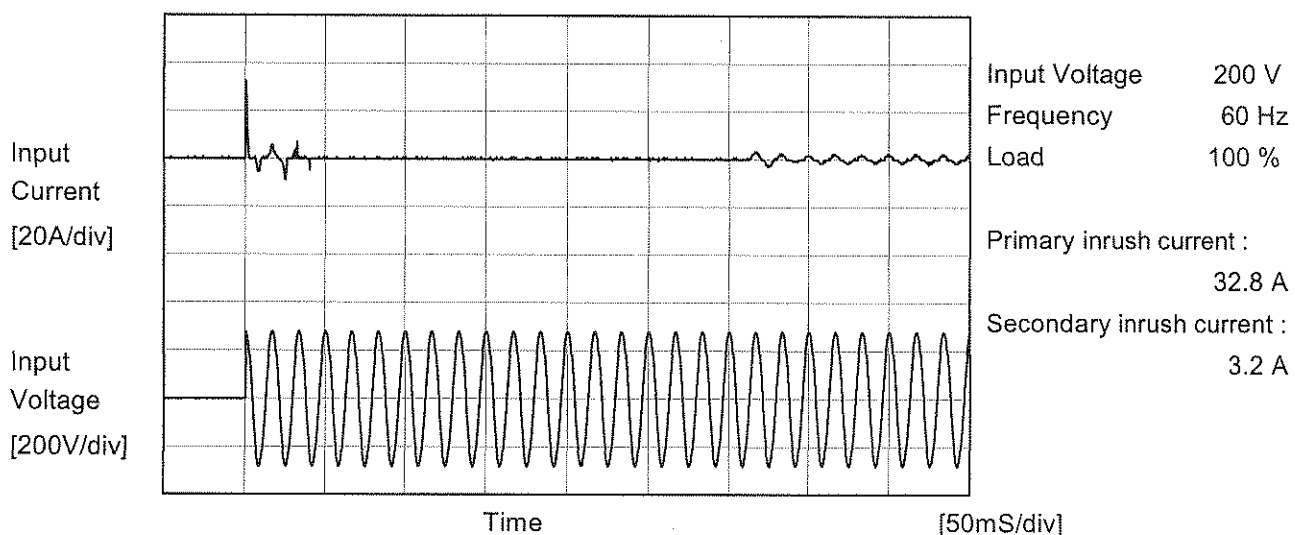
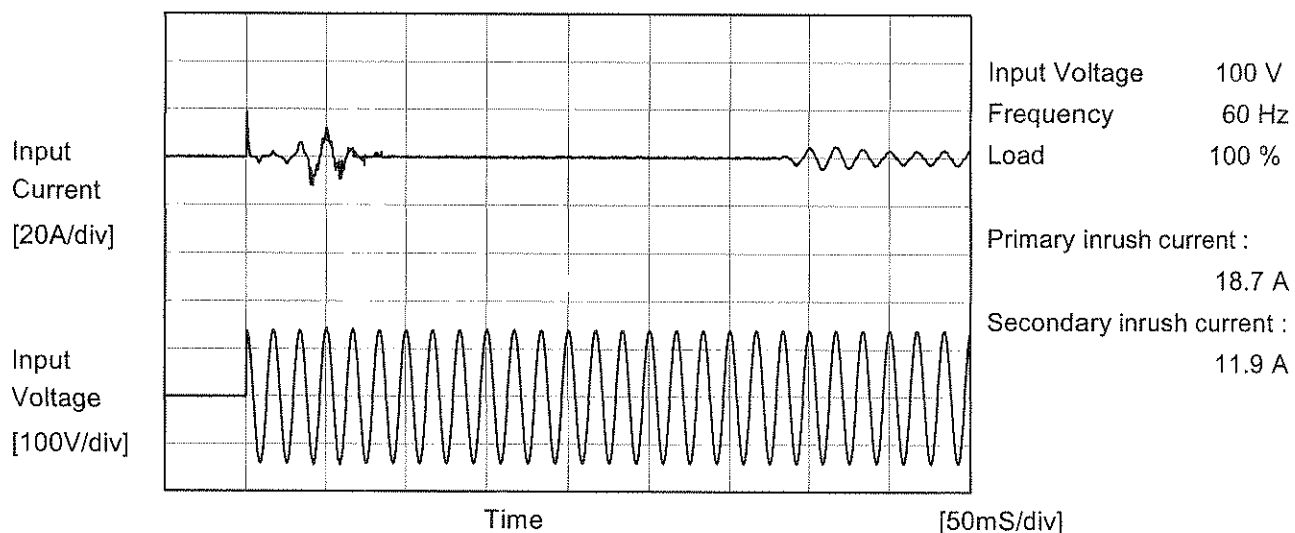
Input Voltage [V]	Power Factor	
	Load 50%	Load 100%
85	0.981	0.998
100	0.972	0.994
120	0.957	0.986
200	0.879	0.939
230	0.846	0.912
264	0.804	0.881
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# COSEL

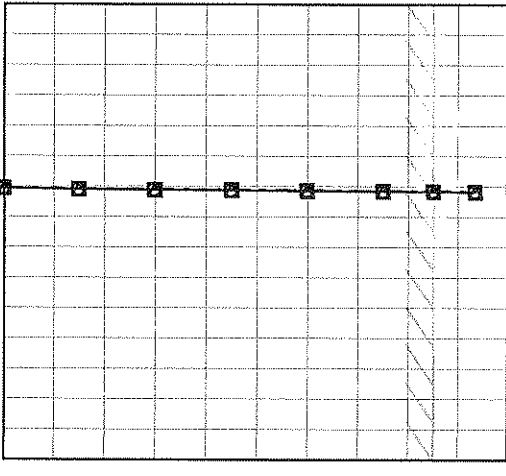
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Item	Inrush Current	Testing Circuitry	Figure A
Object	_____		



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<p>Note: Slanted line shows the range of the rated input voltage.</p>																																																																	

Model		LEA150F-18		Temperature25°C Testing CircuitryFigure A
Item		Load Regulation		
Object		+18V8.5A		
1.Graph				
		—△— Input Volt. 100V ---□--- Input Volt. 200V ---○--- Input Volt. 230V		
Output Voltage [V]				
Load Current [A]				
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		18.047	18.047	18.047
1.50		18.045	18.046	18.045
3.00		18.044	18.045	18.045
4.50		18.044	18.044	18.044
6.00		18.043	18.043	18.043
7.50		18.043	18.042	18.043
8.50		18.042	18.042	18.042
9.35		18.041	18.042	18.042
--		-	-	-
--		-	-	-
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Model	LEA150F-18	Temperature	25°C
Item	Dynamic Load Response	Testing Circuitry	Figure A
Object	+18V8.5A		

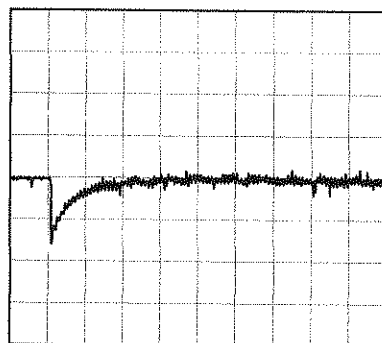
Input Volt. 100 V  
Cycle 1000 ms

Load Current

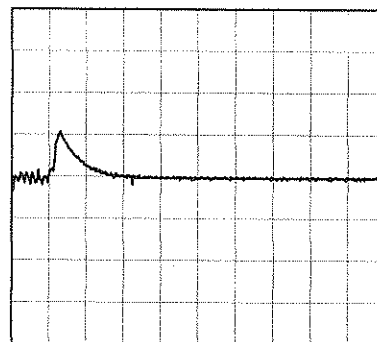
Min. Load (0A) ←→

Load 100% (8.5A)

100 mV/div



10 ms/div

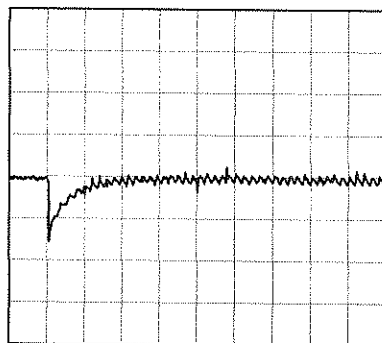


10 ms/div

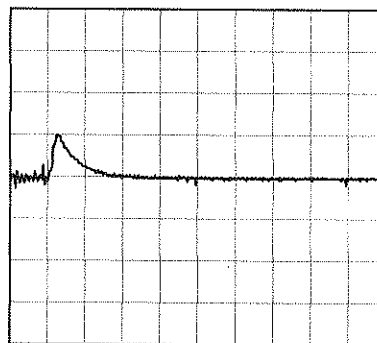
Min. Load (0A) ←→

Load 50% (4.25A)

100 mV/div



10 ms/div



10 ms/div

Model		LEA150F-18	
Item		Ripple Voltage (by Load Current)	
Object		+18V8.5A	
1.Graph		2.Values	

<

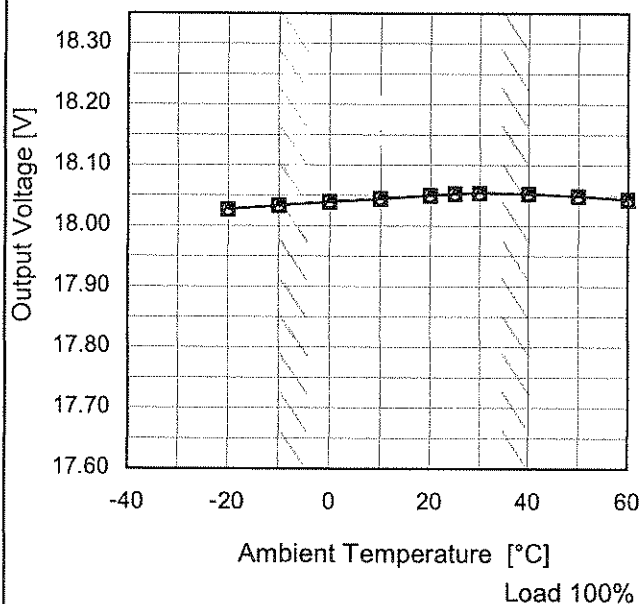
Model		LEA150F-18																																							
Item		Ripple-Noise																																							
Object		+18V8.5A																																							
1.Graph		2.Values																																							
<div><div><div>—△—</div><div>Input Volt. 100V</div></div><div><div>-○-</div><div>Input Volt. 200V</div></div></div> <div><div><div>Ripple-Noise [mV]</div><div>200</div><div>180</div><div>160</div><div>140</div><div>120</div><div>100</div><div>80</div><div>60</div><div>40</div><div>20</div><div>0</div></div><div><div>0</div><div>2</div><div>4</div><div>6</div><div>8</div><div>10</div></div><div><div>Load Current [A]</div></div></div> <div><div>Measured by 20 MHz Oscilloscope.</div><div>Ripple-Noise is shown as p-p in the figure below.</div><div>Note: Slanted line shows the range of the rated load current.</div></div>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="2">Ripple-Noise [mV]</th></tr><tr><th>Input Volt. 100 [V]</th><th>Input Volt. 200 [V]</th></tr><tr><td>0.00</td><td>10</td><td>10</td></tr><tr><td>1.50</td><td>25</td><td>25</td></tr><tr><td>3.00</td><td>30</td><td>40</td></tr><tr><td>4.50</td><td>30</td><td>40</td></tr><tr><td>6.00</td><td>50</td><td>55</td></tr><tr><td>7.50</td><td>55</td><td>55</td></tr><tr><td>8.50</td><td>55</td><td>55</td></tr><tr><td>9.35</td><td>60</td><td>60</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></table>		Load Current [A]	Ripple-Noise [mV]		Input Volt. 100 [V]	Input Volt. 200 [V]	0.00	10	10	1.50	25	25	3.00	30	40	4.50	30	40	6.00	50	55	7.50	55	55	8.50	55	55	9.35	60	60	--	-	-	--	-	-	--	-	-
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<div><div><div>T1: Due to AC Input Line</div><div>T2: Due to Switching</div></div><div><div><div>Ripple-Noise [mVp-p]</div><div>T2</div></div><div><div>T1</div></div></div></div> <div>Fig. Complex Ripple Wave Form</div>																																									



Model	LEA150F-18
Item	Ambient Temperature Drift
Object	+18V8.5A

## 1.Graph

—△— Input Volt. 100V  
 ---□--- Input Volt. 200V  
 -·-○-·- Input Volt. 230V



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

## Testing Circuitry Figure A

## 2.Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
-20	18.027	18.027	18.027
-10	18.033	18.034	18.034
0	18.039	18.040	18.040
10	18.045	18.045	18.045
20	18.050	18.050	18.051
25	18.053	18.053	18.053
30	18.054	18.054	18.054
40	18.053	18.053	18.053
50	18.049	18.049	18.049
60	18.044	18.044	18.043
--	-	-	-



		Testing Circuitry Figure A
Model	LEA150F-18	
Item	Output Voltage Accuracy	
Object	+18V8.5A	

## 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 - 40°C

Input Voltage : 85 - 264V

Load Current : 0 - 8.5A

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

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

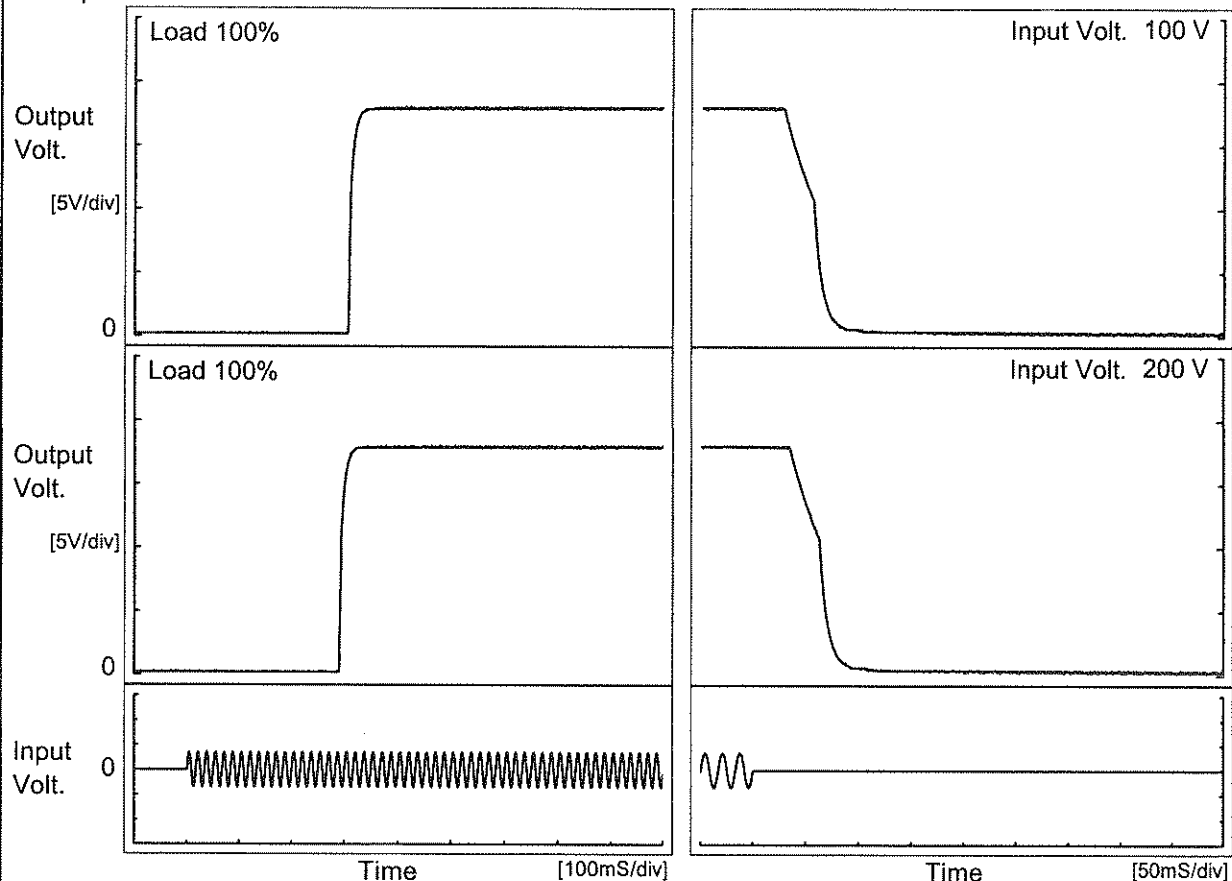
## 2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	25	200	0	18.060	±12	±0.1
Minimum Voltage	-10	200	8.5	18.036		

Model	LEA150F-18		
Item	Time Lapse Drift	Temperature	25°C
		Testing Circuitry	Figure A
Object	+18V8.5A		
1.Graph		2.Values	
<div><div>Output Voltage 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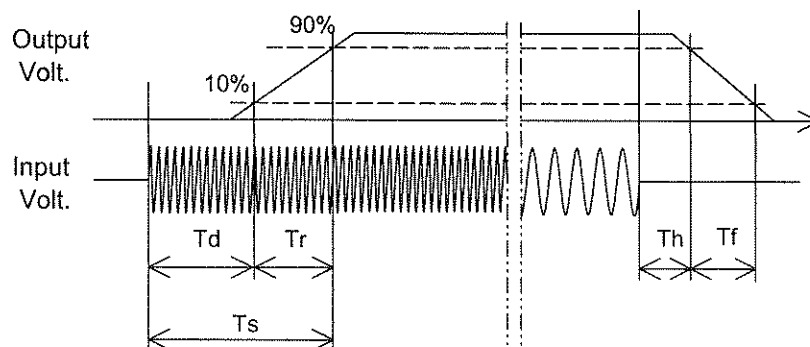
Model	LEA150F-18	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	+18V8.5A		

## 1. Graph



## 2. Values

Input Volt.	Time	Td	Tr	Ts	Th	Tf
100 V		307.5	15.0	322.5	33.5	38.0
200 V		291.0	14.5	305.5	39.8	38.0





Model	LEA150F-18																																																					
Item	Instantaneous Interruption Compensation	Temperature	25°C																																																			
Object	+18V8.5A	Testing Circuitry	Figure A																																																			
1.Graph		2.Values																																																				
<div><div><div>—△—</div><div>Input Volt. 100V</div></div><div><div>---□---</div><div>Input Volt. 200V</div></div><div><div>---○---</div><div>Input Volt. 230V</div></div></div> <p>Instantaneous Compensation Time [ms]</p> <p>Load Current [A]</p>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Time [ms]</th></tr><tr><th>Input Volt. 100[V]</th><th>Input Volt. 200[V]</th><th>Input Volt. 230[V]</th></tr><tr><td>0.00</td><td>-</td><td>-</td><td>-</td></tr><tr><td>1.50</td><td>164</td><td>194</td><td>196</td></tr><tr><td>3.00</td><td>80</td><td>102</td><td>105</td></tr><tr><td>4.50</td><td>45</td><td>70</td><td>70</td></tr><tr><td>6.00</td><td>40</td><td>52</td><td>55</td></tr><tr><td>7.50</td><td>35</td><td>40</td><td>42</td></tr><tr><td>8.50</td><td>30</td><td>36</td><td>37</td></tr><tr><td>9.35</td><td>24</td><td>31</td><td>32</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. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]	0.00	-	-	-	1.50	164	194	196	3.00	80	102	105	4.50	45	70	70	6.00	40	52	55	7.50	35	40	42	8.50	30	36	37	9.35	24	31	32	--	-	-	-	--	-	-	-	--	-	-	-
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Note: Slanted line shows the range of the rated load current.																																																						

Model		LEA150F-18	Testing Circuitry    Figure A																																						
Item		Minimum Input Voltage for Regulated Output Voltage																																							
Object		+18V8.5A																																							
1.Graph			2.Values																																						
<div><div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div></div><div></div></div></div><div><div></div><div></div></div><div>Load 50%</div></div> <div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div></div><div></div></div></div> <div><div></div><div></div></div> <div>Load 100%</div> <div><div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div></div><div></div></div></div><div><div></div><div></div></div><div>Input Voltage [V]</div></div> <div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div></div><div></div></div></div> <div><div></div><div></div></div> <div>Ambient Temperature [°C]</div> <div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div></div><div></div></div></div> <div><div></div><div></div></div> <div>Note: Slanted line shows the range of the rated ambient temperature.</div>			<table><tr><th rowspan="2">Ambient Temperature [°C]</th><th colspan="2">Input Voltage [V]</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr><tr><td>-20</td><td>73</td><td>74</td></tr><tr><td>-10</td><td>73</td><td>75</td></tr><tr><td>0</td><td>73</td><td>75</td></tr><tr><td>10</td><td>74</td><td>75</td></tr><tr><td>20</td><td>74</td><td>75</td></tr><tr><td>25</td><td>74</td><td>75</td></tr><tr><td>30</td><td>74</td><td>75</td></tr><tr><td>40</td><td>74</td><td>75</td></tr><tr><td>50</td><td>74</td><td>75</td></tr><tr><td>60</td><td>74</td><td>75</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></table>	Ambient Temperature [°C]	Input Voltage [V]		Load 50%	Load 100%	-20	73	74	-10	73	75	0	73	75	10	74	75	20	74	75	25	74	75	30	74	75	40	74	75	50	74	75	60	74	75	--	-	-
Ambient Temperature [°C]	Input Voltage [V]																																								
	Load 50%	Load 100%																																							
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Model		LEA150F-18	
Item		Overvoltage Protection	
Object		+18V8.5A	
1.Graph		2.Values	

—△—

Input Volt. 100V

---□---

Input Volt. 200V

Operating Point [V]

Ambient Temperature [°C]

Load 0%

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

Ambient Temperature [°C]	Operating Point [V]	
	Input Volt. 100[V]	Input Volt. 200[V]
-20	22.21	22.21
-10	22.45	22.45
0	22.68	22.62
10	22.86	22.80
20	22.97	22.97
25	23.09	23.03
30	23.15	23.09
40	23.38	23.32
50	23.50	23.44
60	23.67	23.55
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BC-10037



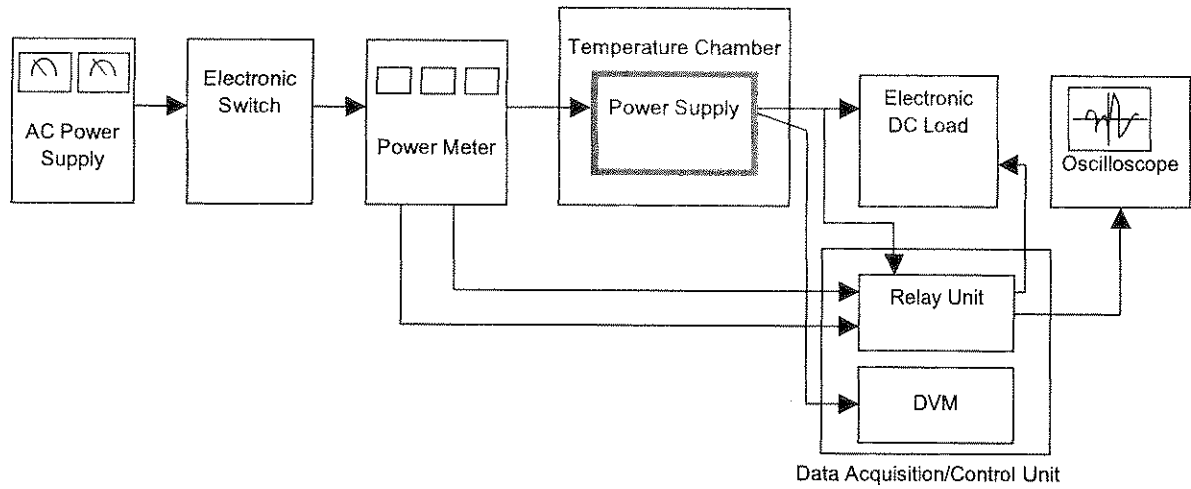


Figure A