

# TEST DATA OF LFA300F-3R3-TY

Regulated DC Power Supply  
December 22, 2010

Approved by : *Yoshiaki Shimizu*  
Yoshiaki Shimizu Design Manager

Prepared by : *Tomoyuki Mukaiyama*  
Tomoyuki Mukaiyama Design Engineer

**COSEL CO.,LTD.**

## CONTENTS

1.Input Current (by Load Current) . . . . .	1
2.Input Power (by Load Current) . . . . .	2
3.Efficiency (by Input Voltage) . . . . .	3
4.Efficiency (by Load Current) . . . . .	4
5.Power Factor (by Input Voltage) . . . . .	5
6.Power Factor (by Load Current) . . . . .	6
7.Inrush Current . . . . .	7
8.Leakage Current . . . . .	8
9.Line Regulation . . . . .	9
10.Load Regulation . . . . .	10
11.Dynamic Load Response . . . . .	11
12.Ripple Voltage (by Load Current) . . . . .	12
13.Ripple-Noise . . . . .	13
14.Ripple Voltage (by Ambient Temperature) . . . . .	14
15.Ambient Temperature Drift . . . . .	15
16.Output Voltage Accuracy . . . . .	16
17.Time Lapse Drift . . . . .	17
18.Rise and Fall Time . . . . .	18
19.Hold-Up Time . . . . .	19
20.Instantaneous Interruption Compensation . . . . .	20
21.Minimum Input Voltage for Regulated Output Voltage . . . . .	21
22.Overcurrent Protection . . . . .	22
23.Overvoltage Protection . . . . .	23
24.Figure of Testing Circuitry . . . . .	24

(Final Page 25)

Model LFA300F-3R3-TY

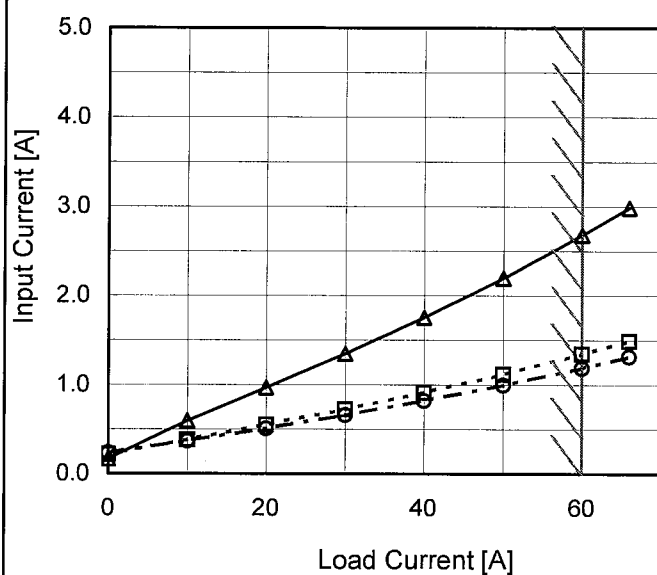
Item Input Current (by Load Current)

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 Current [A]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0	0.164	0.214	0.234
10	0.592	0.380	0.368
20	0.967	0.548	0.508
30	1.348	0.722	0.656
40	1.754	0.912	0.818
50	2.194	1.118	0.996
60	2.680	1.346	1.186
66	2.984	1.489	1.313
--	-	-	-
--	-	-	-
--	-	-	-

Model		LFA300F-3R3-TY		Temperature 25°C																																																		
Item		Input Power (by Load Current)		Testing Circuitry Figure A																																																		
Object																																																						
1.Graph		<div><div><div>—△—</div><div>---□---</div><div>-·-○-·-</div></div><div><div>Input Volt.</div><div>Input Volt.</div><div>Input Volt.</div></div><div><div>100V</div><div>200V</div><div>230V</div></div></div>		2.Values																																																		
<div><div><div>500</div><div>400</div><div>300</div><div>200</div><div>100</div><div>0</div></div><div><div>Input Power [W]</div><div></div><div></div><div></div><div></div><div></div></div><div><div>0</div><div>20</div><div>40</div><div>60</div></div><div><div>Load Current [A]</div><div></div><div></div><div></div></div></div>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Input Power [W]</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</td><td>9.9</td><td>10.0</td><td>10.0</td></tr><tr><td>10</td><td>54.3</td><td>53.0</td><td>53.0</td></tr><tr><td>20</td><td>92.7</td><td>90.0</td><td>89.0</td></tr><tr><td>30</td><td>131.4</td><td>128.0</td><td>127.0</td></tr><tr><td>40</td><td>172.5</td><td>167.0</td><td>167.0</td></tr><tr><td>50</td><td>217.2</td><td>211.0</td><td>209.0</td></tr><tr><td>60</td><td>265.2</td><td>257.0</td><td>256.0</td></tr><tr><td>66</td><td>296.4</td><td>286.0</td><td>284.0</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]	Input Power [W]			Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]	0	9.9	10.0	10.0	10	54.3	53.0	53.0	20	92.7	90.0	89.0	30	131.4	128.0	127.0	40	172.5	167.0	167.0	50	217.2	211.0	209.0	60	265.2	257.0	256.0	66	296.4	286.0	284.0	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Input Power [W]																																																					
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]																																																			
0	9.9	10.0	10.0																																																			
10	54.3	53.0	53.0																																																			
20	92.7	90.0	89.0																																																			
30	131.4	128.0	127.0																																																			
40	172.5	167.0	167.0																																																			
50	217.2	211.0	209.0																																																			
60	265.2	257.0	256.0																																																			
66	296.4	286.0	284.0																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			
Note: Slanted line shows the range of the rated load current.																																																						

- 2 -

BC-10491

Model		LFA300F-3R3-TY	
Item		Efficiency (by Input Voltage)	
Object			

1.Graph

Load 50%

Load 100%

Efficiency [%]

90

80

70

60

50

40

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]	Efficiency [%]	
	Load 50%	Load 100%
75	75.4	73.8
85	76.0	74.5
100	76.5	75.5
120	77.0	76.2
200	78.6	77.9
230	79.2	78.2
264	79.2	78.8
280	79.2	78.8
--	-	-

# COSEL

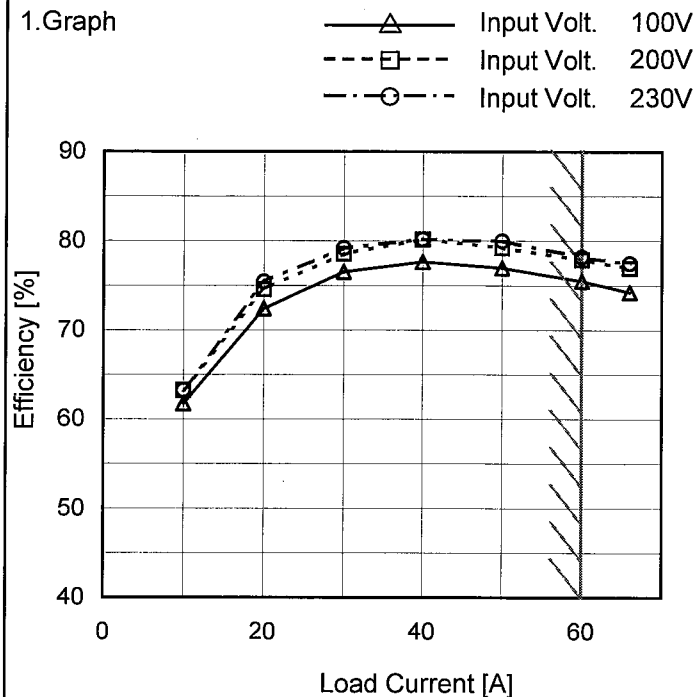
Model LFA300F-3R3-TY

Item Efficiency (by Load Current)

Object

Temperature 25°C  
Testing Circuitry Figure A

## 1. Graph



## 2. Values

Load Current [A]	Efficiency [%]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0	-	-	-
10	61.7	63.2	63.2
20	72.4	74.6	75.4
30	76.5	78.6	79.2
40	77.6	80.2	80.2
50	76.9	79.2	80.0
60	75.5	77.9	78.2
66	74.2	76.9	77.5
--	-	-	-
--	-	-	-
--	-	-	-

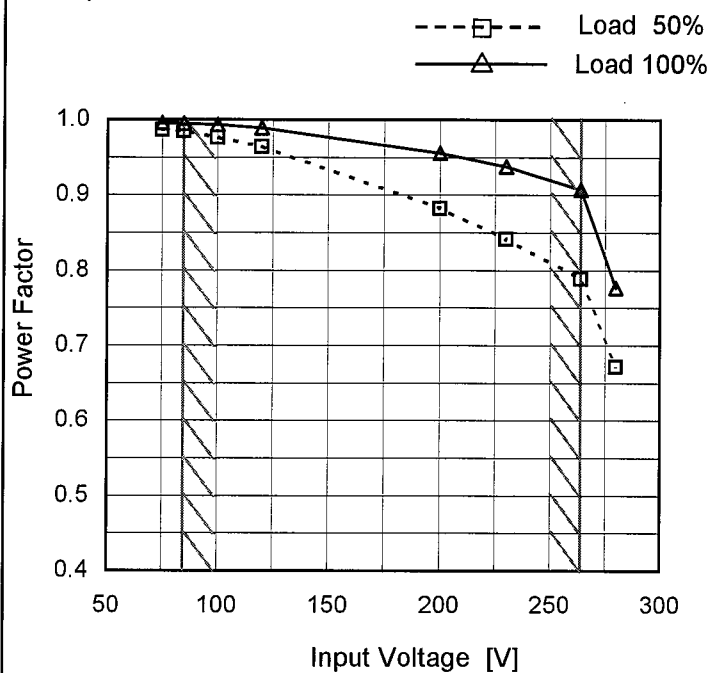
Model LFA300F-3R3-TY

Item Power Factor (by Input Voltage)

Object

Temperature 25°C  
Testing Circuitry Figure A

## 1. Graph



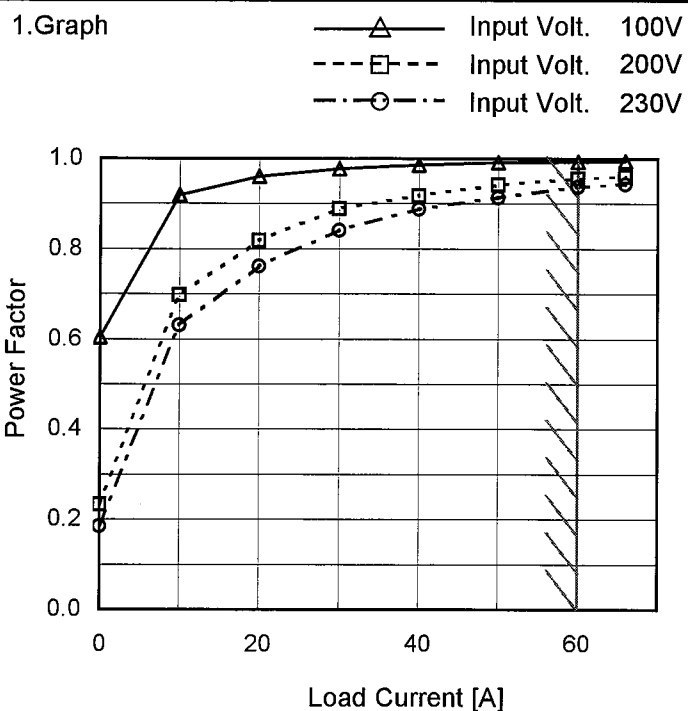
## 2. Values

Input Voltage [V]	Power Factor	
	Load 50%	Load 100%
75	0.986	0.996
85	0.984	0.995
100	0.977	0.993
120	0.965	0.989
200	0.889	0.955
230	0.841	0.938
264	0.789	0.907
280	0.672	0.777
--	-	-

Model LFA300F-3R3-TY

Item Power Factor (by Load Current)

Object

Temperature 25°C  
Testing Circuitry Figure A


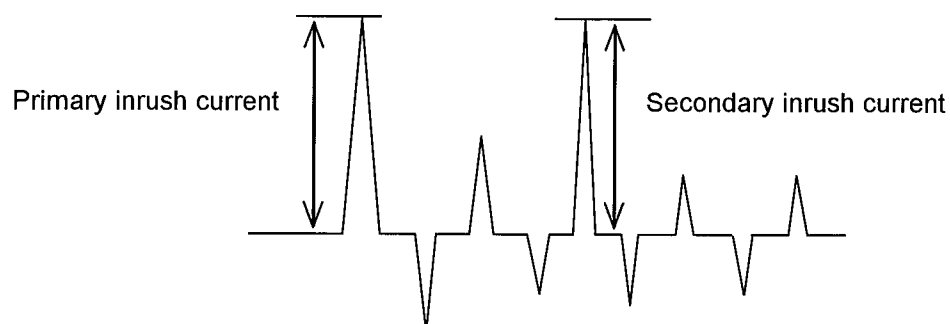
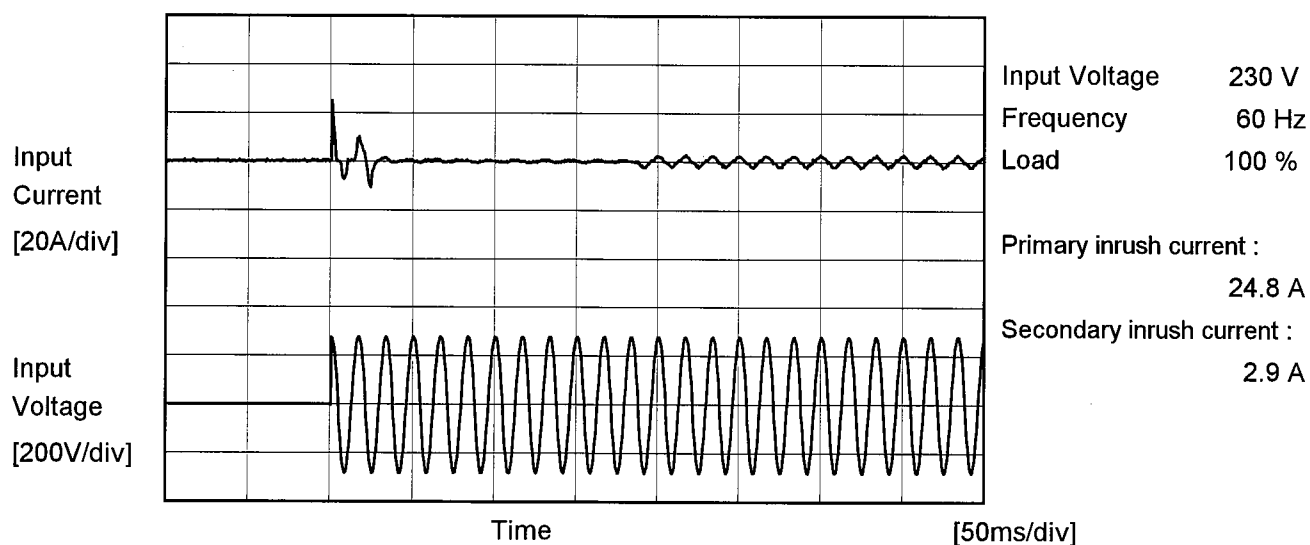
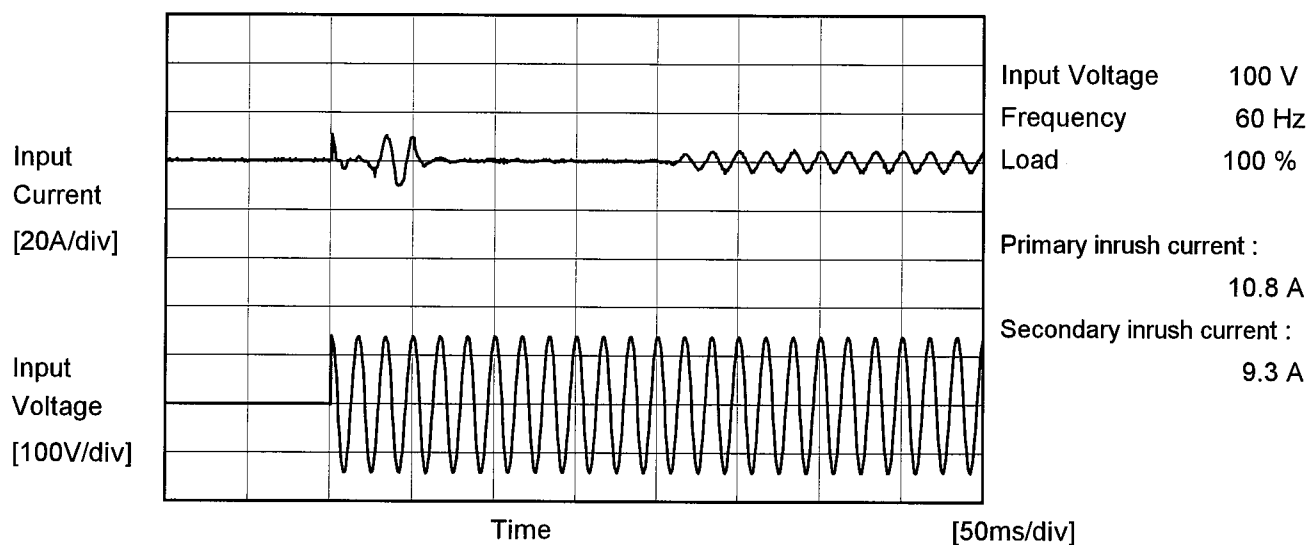
2. Values

Load Current [A]	Power Factor		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0	0.604	0.233	0.185
10	0.919	0.697	0.631
20	0.961	0.818	0.761
30	0.977	0.889	0.841
40	0.985	0.918	0.888
50	0.991	0.942	0.913
60	0.993	0.955	0.938
66	0.994	0.960	0.944
--	-	-	-
--	-	-	-
--	-	-	-



# COSEL

Model	LFA300F-3R3-TY	Temperature	25°C
Item	Inrush Current	Testing Circuitry	Figure A
Object	_____		



Model		LFA300F-3R3-TY	Temperature 25°C Testing Circuitry Figure B
Item		Leakage Current	
Object		_____	

## 1.Results

[mA]

Standards		Input Volt.			Note
		100 [V]	200 [V]	240 [V]	
DEN-AN	Both phases	0.33	0.53	0.60	Operation
	One of phases	0.34	0.70	0.83	Stand by
IEC60950-1	Both phases	0.24	0.50	0.57	Operation
	One of phases	0.32	0.68	0.74	Stand by

The value for "One of phases" is the reference value only.

## 2.Condition

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

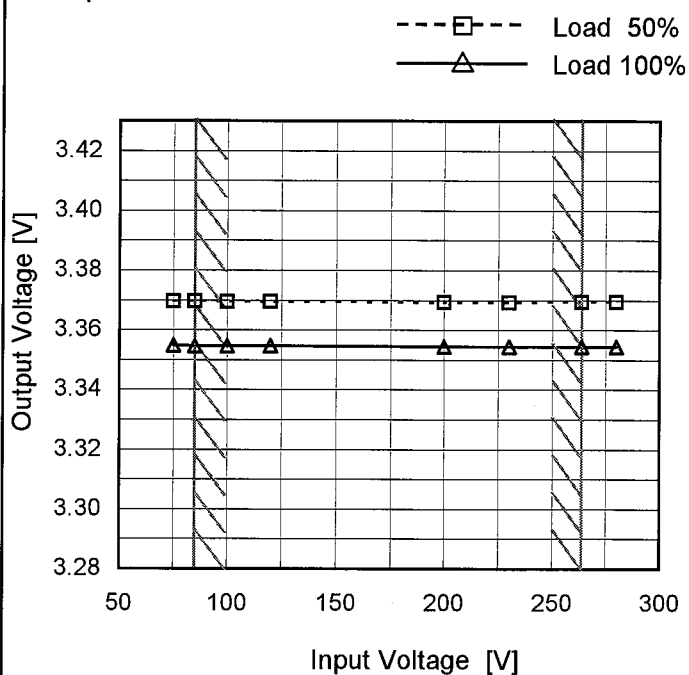
Model LFA300F-3R3-TY

Item Line Regulation

Object +3.3V60A

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	3.370	3.355
85	3.370	3.355
100	3.370	3.355
120	3.369	3.355
200	3.369	3.355
230	3.369	3.355
264	3.369	3.355
280	3.369	3.355
--	-	-

Model LFA300F-3R3-TY

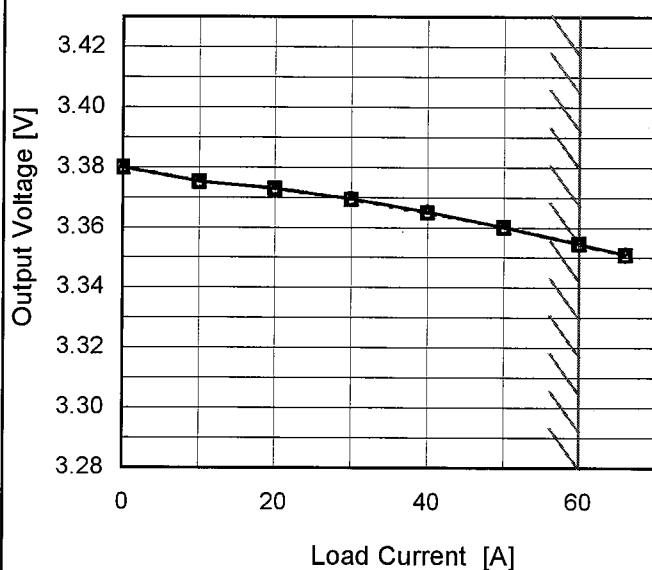
Item Load Regulation

Object +3.3V60A

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

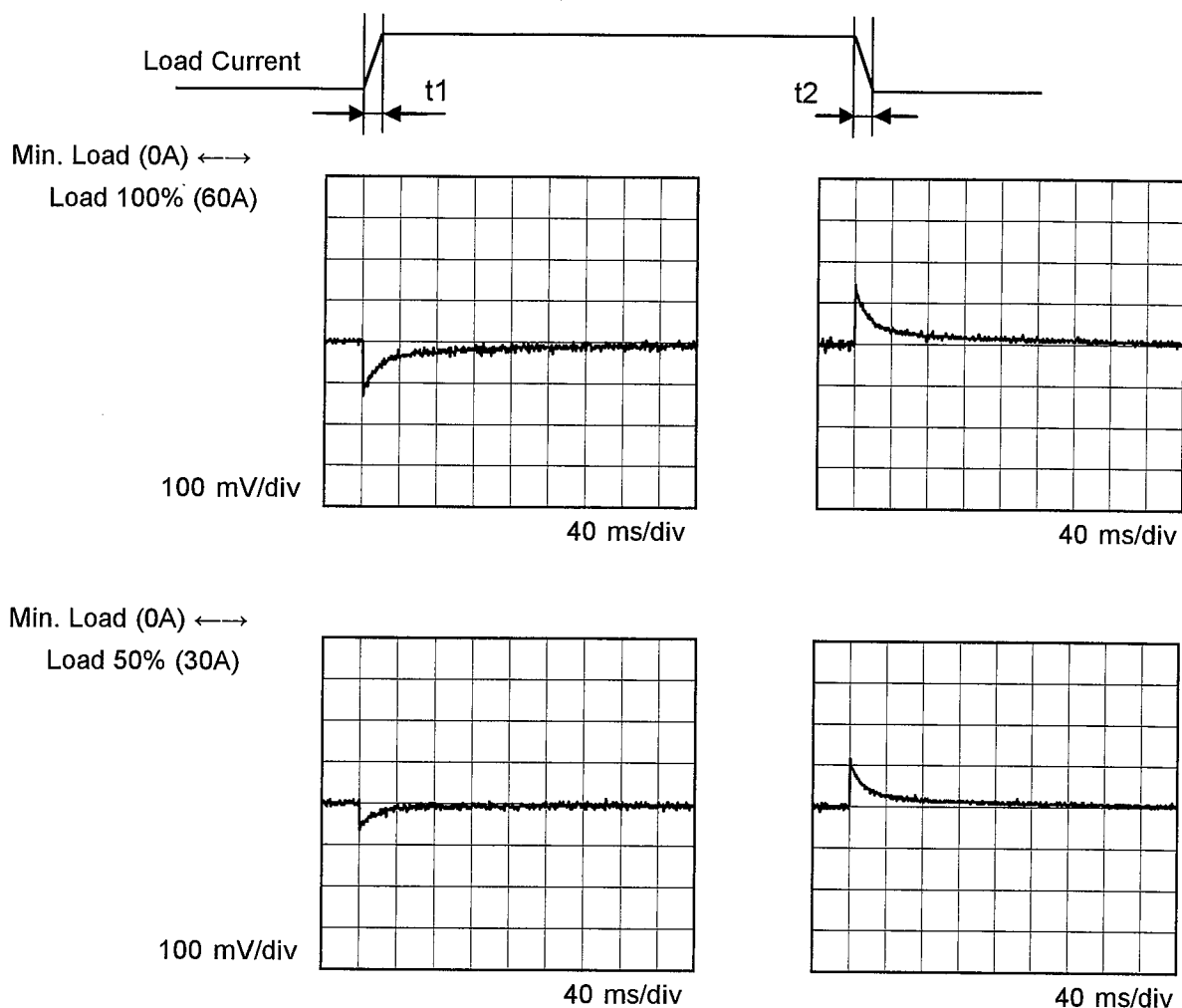
Load Current [A]	Output Voltage [V]		
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0	3.380	3.380	3.380
10	3.375	3.375	3.375
20	3.373	3.373	3.373
30	3.370	3.369	3.369
40	3.365	3.365	3.365
50	3.360	3.360	3.360
60	3.355	3.355	3.355
66	3.351	3.351	3.351
--	-	-	-
--	-	-	-
--	-	-	-

**COSEL**

Model	LFA300F-3R3-TY	Temperature Testing Circuitry	25°C Figure A
Item	Dynamic Load Response		
Object	+3.3V60A		

Input Volt. 100 V  
Cycle 1000 ms

Response.  $t_1=t_2=50\mu\text{s}$ . Typ



# COSEL

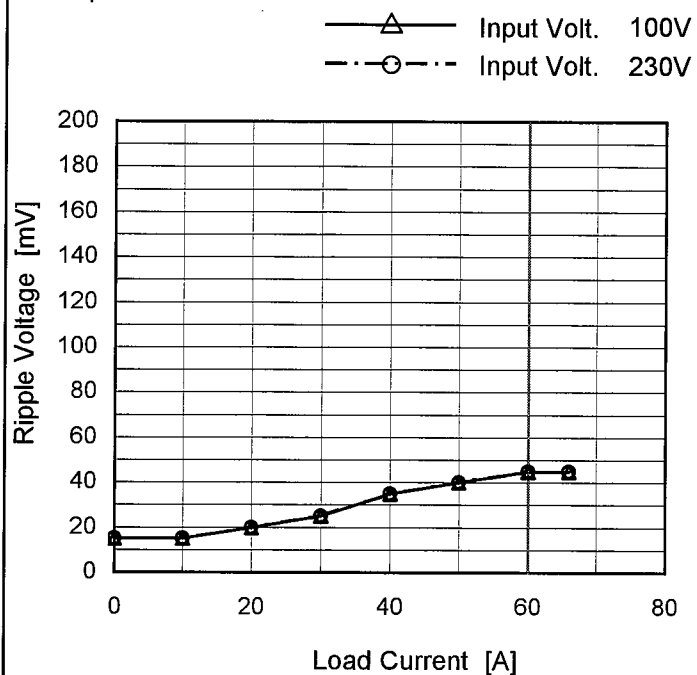
Model LFA300F-3R3-TY

Item Ripple Voltage (by Load Current)

Object +3.3V60A

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.

## 2. Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 100 [V]	Input Volt. 230 [V]
0	15	15
10	15	15
20	20	20
30	25	25
40	35	35
50	40	40
60	45	45
66	45	45
--	-	-
--	-	-
--	-	-

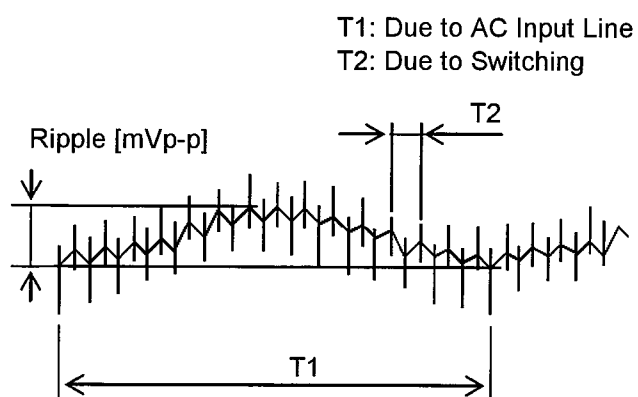
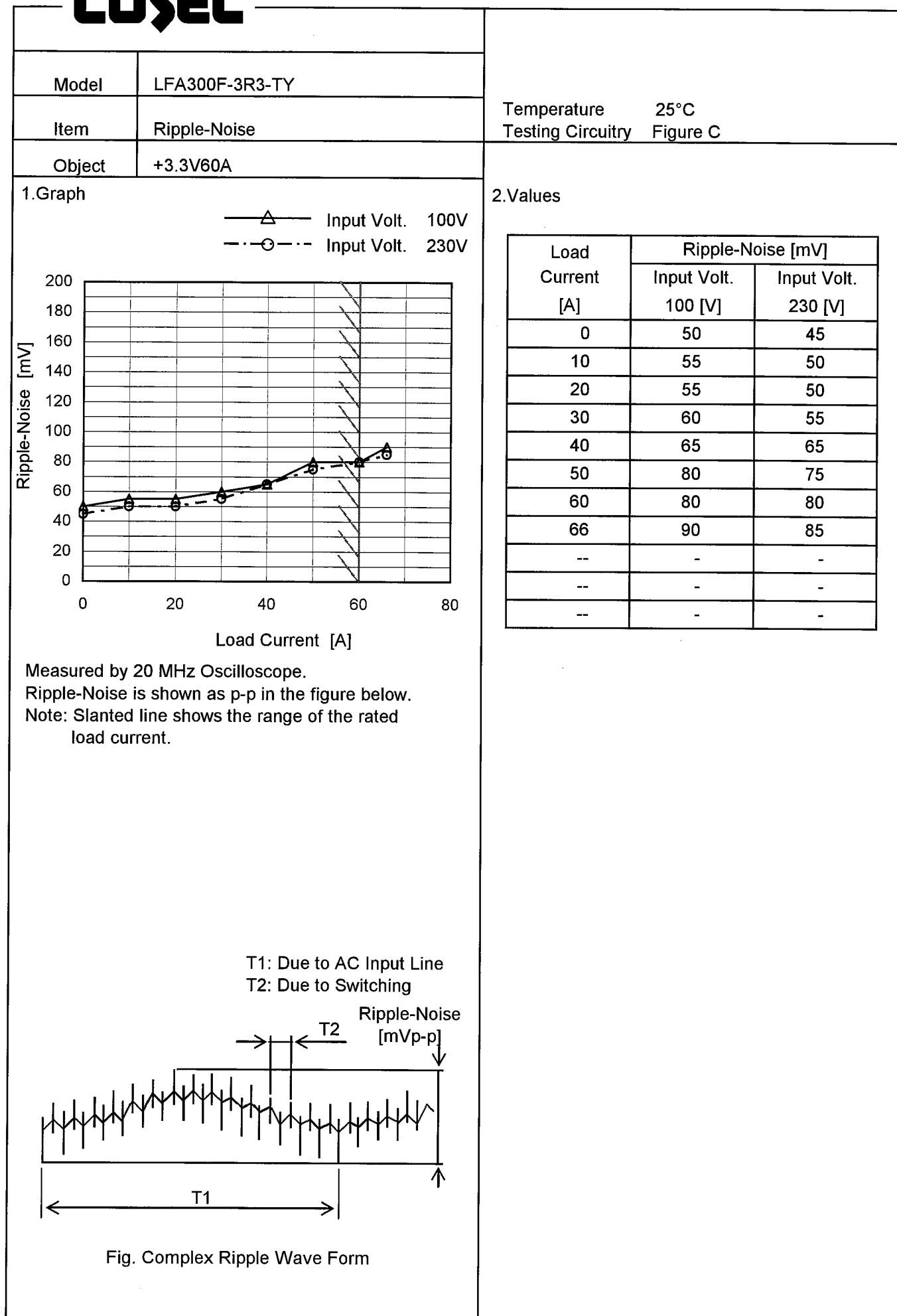
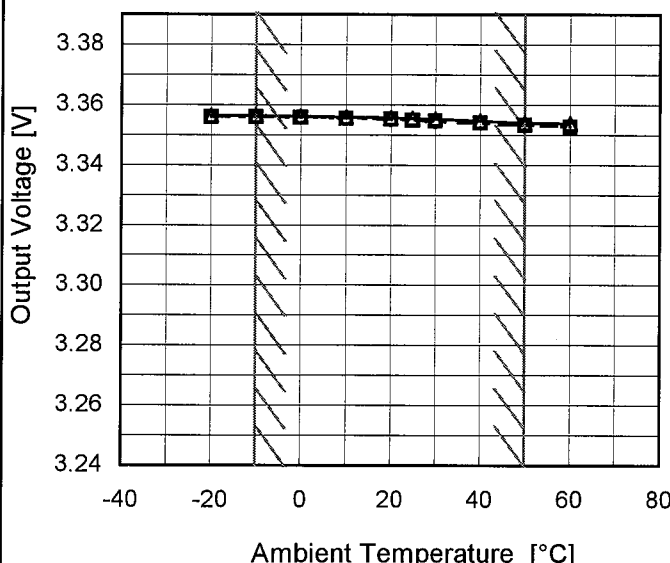


Fig. Complex Ripple Wave Form



Model	LFA300F-3R3-TY																																																																																		
Item	Ripple Voltage (by Ambient Temp.)																																																																																		
Object	+3.3V60A																																																																																		
1.Graph		2.Values																																																																																	
<div><div><div><div>---□---</div><div>Input Volt. 100V</div></div><div><div>—△—</div><div>Input Volt. 230V</div></div></div><div><div><div><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>Ripple Voltage [mV]</div></div></div><div><div><div><div>-40</div><div>0</div><div>40</div><div>80</div></div><div><div>Ambient Temperature [°C]</div></div></div><div><div>Load 100 %</div></div></div></div><table border="1"><thead><tr><th>Ambient Temperature [°C]</th><th>Input Volt. 100 [V]</th><th>Input Volt. 230 [V]</th></tr></thead><tbody><tr><td>-30</td><td>70</td><td>70</td></tr><tr><td>-10</td><td>50</td><td>50</td></tr><tr><td>0</td><td>45</td><td>45</td></tr><tr><td>25</td><td>40</td><td>40</td></tr><tr><td>50</td><td>25</td><td>25</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><tr><td>--</td><td>-</td><td>-</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></tbody></table></div></div>		Ambient Temperature [°C]	Input Volt. 100 [V]	Input Volt. 230 [V]	-30	70	70	-10	50	50	0	45	45	25	40	40	50	25	25	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	<table><tr><th rowspan="2">Ambient Temperature [°C]</th><th colspan="2">Ripple Voltage [mV]</th></tr><tr><th>Input Volt. 100 [V]</th><th>Input Volt. 230 [V]</th></tr><tr><td>-30</td><td>70</td><td>70</td></tr><tr><td>-10</td><td>50</td><td>50</td></tr><tr><td>0</td><td>45</td><td>45</td></tr><tr><td>25</td><td>40</td><td>40</td></tr><tr><td>50</td><td>25</td><td>25</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><tr><td>--</td><td>-</td><td>-</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>		Ambient Temperature [°C]	Ripple Voltage [mV]		Input Volt. 100 [V]	Input Volt. 230 [V]	-30	70	70	-10	50	50	0	45	45	25	40	40	50	25	25	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-
Ambient Temperature [°C]	Input Volt. 100 [V]	Input Volt. 230 [V]																																																																																	
-30	70	70																																																																																	
-10	50	50																																																																																	
0	45	45																																																																																	
25	40	40																																																																																	
50	25	25																																																																																	
--	-	-																																																																																	
--	-	-																																																																																	
--	-	-																																																																																	
--	-	-																																																																																	
--	-	-																																																																																	
--	-	-																																																																																	
--	-	-																																																																																	
Ambient Temperature [°C]	Ripple Voltage [mV]																																																																																		
	Input Volt. 100 [V]	Input Volt. 230 [V]																																																																																	
-30	70	70																																																																																	
-10	50	50																																																																																	
0	45	45																																																																																	
25	40	40																																																																																	
50	25	25																																																																																	
--	-	-																																																																																	
--	-	-																																																																																	
--	-	-																																																																																	
--	-	-																																																																																	
--	-	-																																																																																	
--	-	-																																																																																	
--	-	-																																																																																	
Measured by 20 MHz Oscilloscope. Note: Slanted line shows the range of the rated ambient temperature.																																																																																			



Model	LFA300F-3R3-TY																																																					
Item	Ambient Temperature Drift																																																					
Object	+3.3V60A																																																					
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>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. 100[V]</th><th>Input Volt. 200[V]</th><th>Input Volt. 230[V]</th></tr><tr><td>-20</td><td>3.356</td><td>3.356</td><td>3.356</td></tr><tr><td>-10</td><td>3.356</td><td>3.356</td><td>3.356</td></tr><tr><td>0</td><td>3.356</td><td>3.356</td><td>3.356</td></tr><tr><td>10</td><td>3.356</td><td>3.356</td><td>3.356</td></tr><tr><td>20</td><td>3.356</td><td>3.355</td><td>3.355</td></tr><tr><td>25</td><td>3.355</td><td>3.355</td><td>3.355</td></tr><tr><td>30</td><td>3.355</td><td>3.355</td><td>3.355</td></tr><tr><td>40</td><td>3.355</td><td>3.354</td><td>3.354</td></tr><tr><td>50</td><td>3.354</td><td>3.353</td><td>3.353</td></tr><tr><td>60</td><td>3.354</td><td>3.353</td><td>3.353</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr></table>		Ambient Temperature [°C]	Output Voltage [V]			Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]	-20	3.356	3.356	3.356	-10	3.356	3.356	3.356	0	3.356	3.356	3.356	10	3.356	3.356	3.356	20	3.356	3.355	3.355	25	3.355	3.355	3.355	30	3.355	3.355	3.355	40	3.355	3.354	3.354	50	3.354	3.353	3.353	60	3.354	3.353	3.353	--	-	-	-
Ambient Temperature [°C]	Output Voltage [V]																																																					
	Input Volt. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]																																																			
-20	3.356	3.356	3.356																																																			
-10	3.356	3.356	3.356																																																			
0	3.356	3.356	3.356																																																			
10	3.356	3.356	3.356																																																			
20	3.356	3.355	3.355																																																			
25	3.355	3.355	3.355																																																			
30	3.355	3.355	3.355																																																			
40	3.355	3.354	3.354																																																			
50	3.354	3.353	3.353																																																			
60	3.354	3.353	3.353																																																			
--	-	-	-																																																			

Model		LFA300F-3R3-TY	Testing Circuitry Figure A
Item		Output Voltage Accuracy	
Object		+3.3V60A	

### 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 - 264V

Load Current : 0 - 60A

\* 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	50	85	0	3.380	±14	±0.4
Minimum Voltage	-10	264	60	3.352		

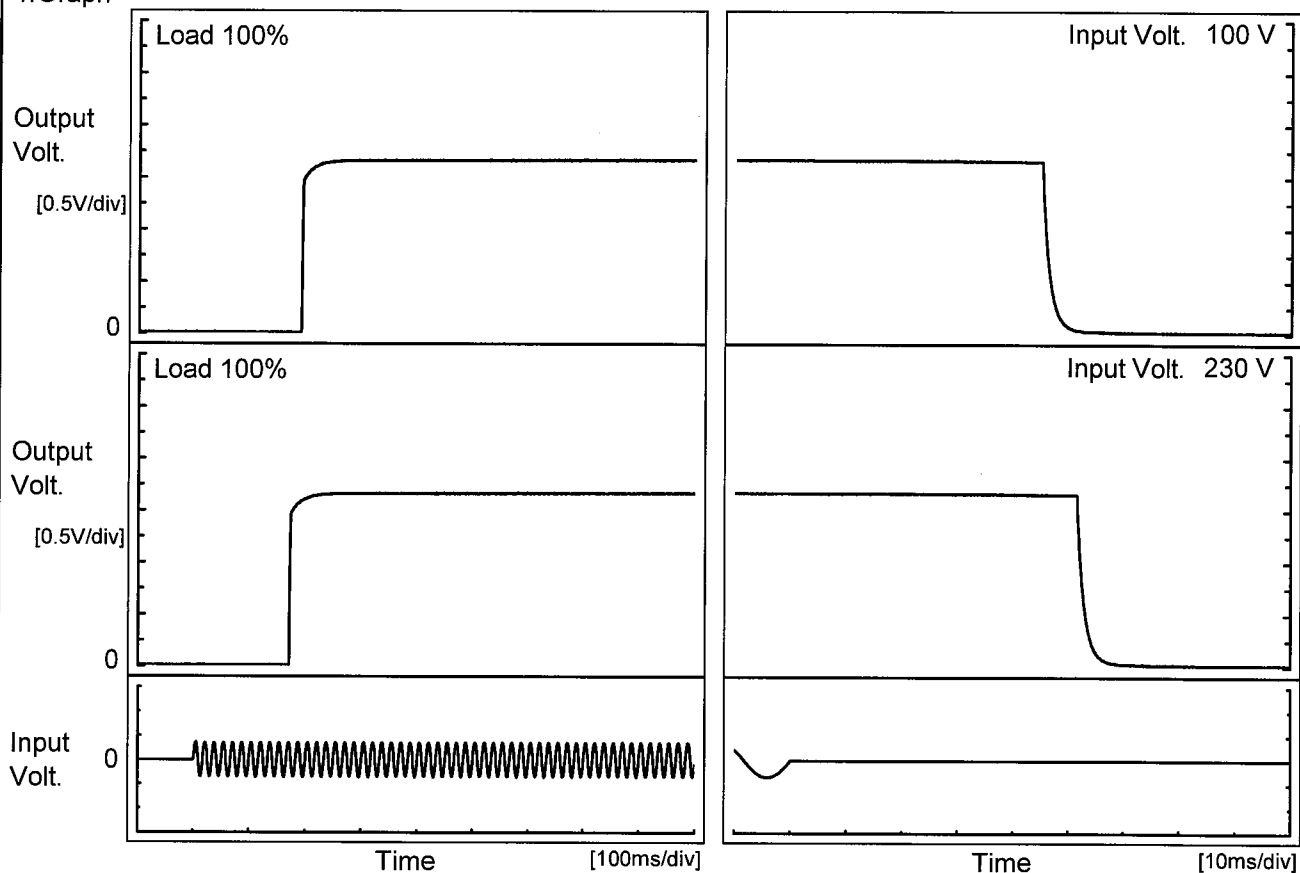
# COSEL

Model		LFA300F-3R3-TY	
Item		Time Lapse Drift	
Object		+3.3V60A	
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><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></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><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></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><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></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><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></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><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></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><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></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><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></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><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></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><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></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><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></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><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></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><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></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><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></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><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></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><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></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><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></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><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></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><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></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><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></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><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></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><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></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><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></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><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></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><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></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><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></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><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></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><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></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><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></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><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></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><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></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><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></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><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></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><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></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><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></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><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></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><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></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><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></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><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></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div>&lt;/</div></div></div></div></div>			

# COSEL

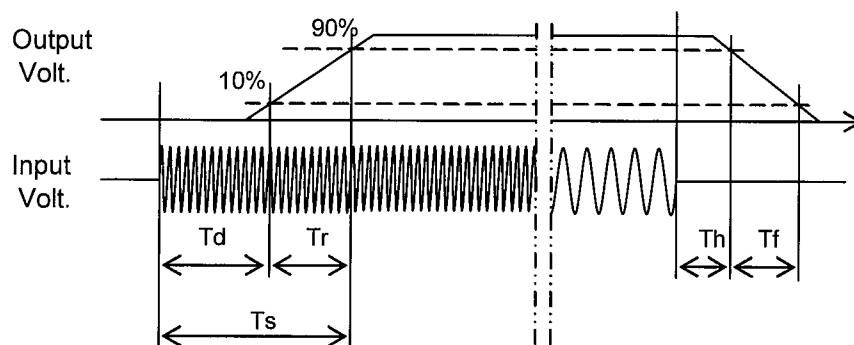
Model	LFA300F-3R3-TY	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	+3.3V60A		

## 1. Graph



## 2. Values

Input Volt. \ Time	Td	Tr	Ts	Th	Tf
100 V	192.0	5.0	197.0	45.2	2.9
230 V	173.0	4.5	177.5	51.7	2.9



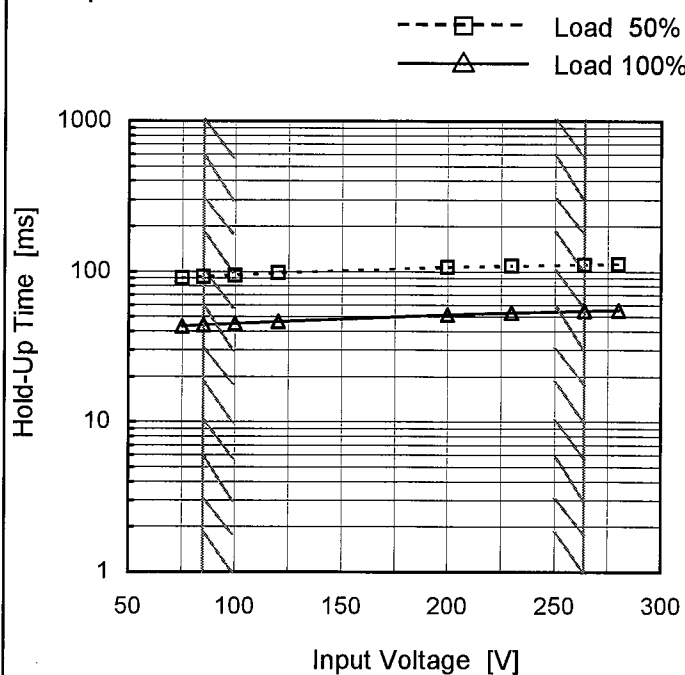
Model LFA300F-3R3-TY

Item Hold-Up Time

Object +3.3V60A

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	90	43
85	92	44
100	94	45
120	98	46
200	107	52
230	109	53
264	111	55
280	112	55
--	-	-

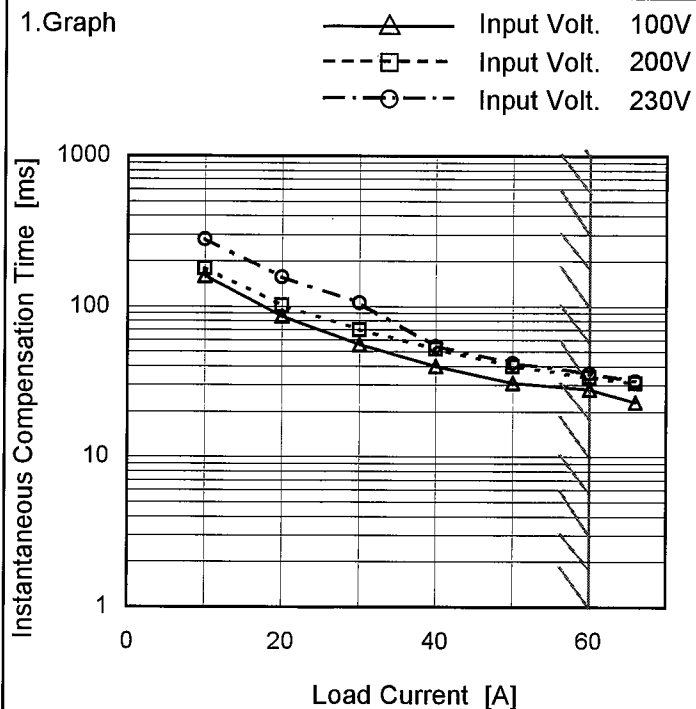
Model LFA300F-3R3-TY

Item Instantaneous Interruption Compensation

Object +3.3V60A

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. 100[V]	Input Volt. 200[V]	Input Volt. 230[V]
0	-	-	-
10	160	180	280
20	86	102	156
30	56	70	106
40	40	52	54
50	31	40	42
60	28	34	36
66	23	31	32
--	-	-	-
--	-	-	-
--	-	-	-

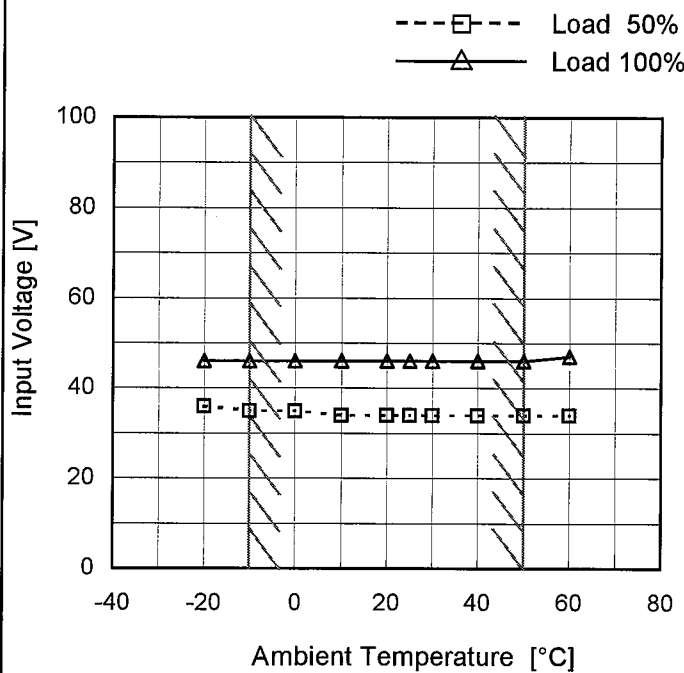
Model LFA300F-3R3-TY

Item Minimum Input Voltage  
for Regulated Output Voltage

Object +3.3V60A

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	36	46
-10	35	46
0	35	46
10	34	46
20	34	46
25	34	46
30	34	46
40	34	46
50	34	46
60	34	47
--	-	-

Model

LFA300F-3R3-TY

Item

Overcurrent Protection

Object

+3.3V60A

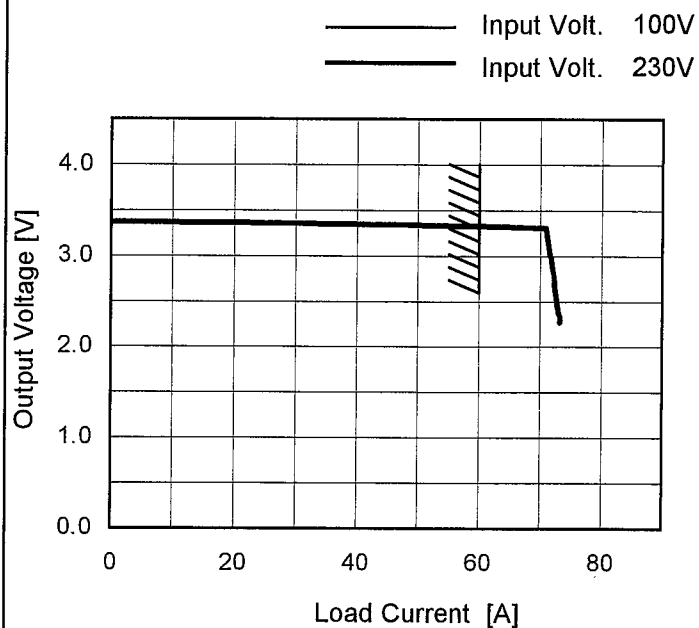
Temperature

25°C

Testing Circuitry

Figure A

## 1. Graph



## 2. Values

Output Voltage [V]	Load Current [A]	
	Input Volt. 100[V]	Input Volt. 230[V]
3.300	71.14	70.93
3.135	71.30	71.37
2.970	71.53	71.63
2.640	72.40	72.35
2.310	73.07	73.12
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-



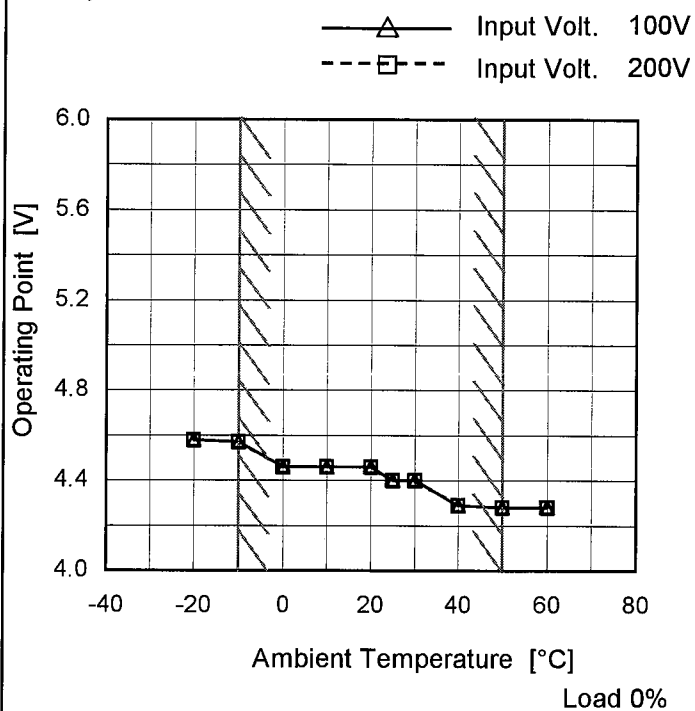
Model	LFA300F-3R3-TY
-------	----------------

Item	Overvoltage Protection
------	------------------------

Object	+3.3V60A
--------	----------

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. 100[V]	Input Volt. 200[V]
-20	4.58	4.58
-10	4.57	4.57
0	4.46	4.46
10	4.46	4.46
20	4.46	4.46
25	4.40	4.40
30	4.40	4.40
40	4.29	4.29
50	4.28	4.28
60	4.28	4.28
--	-	-

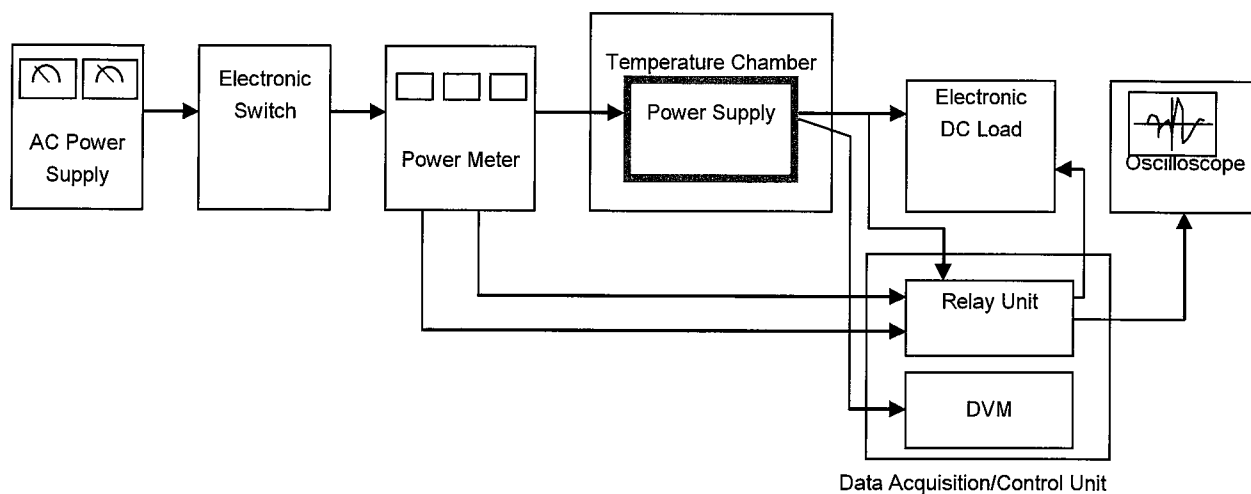


Figure A

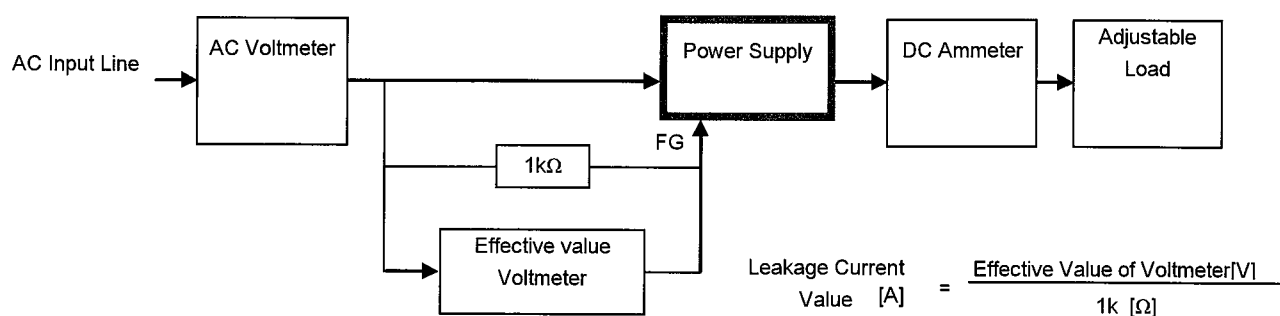


Figure B ( DEN-AN )

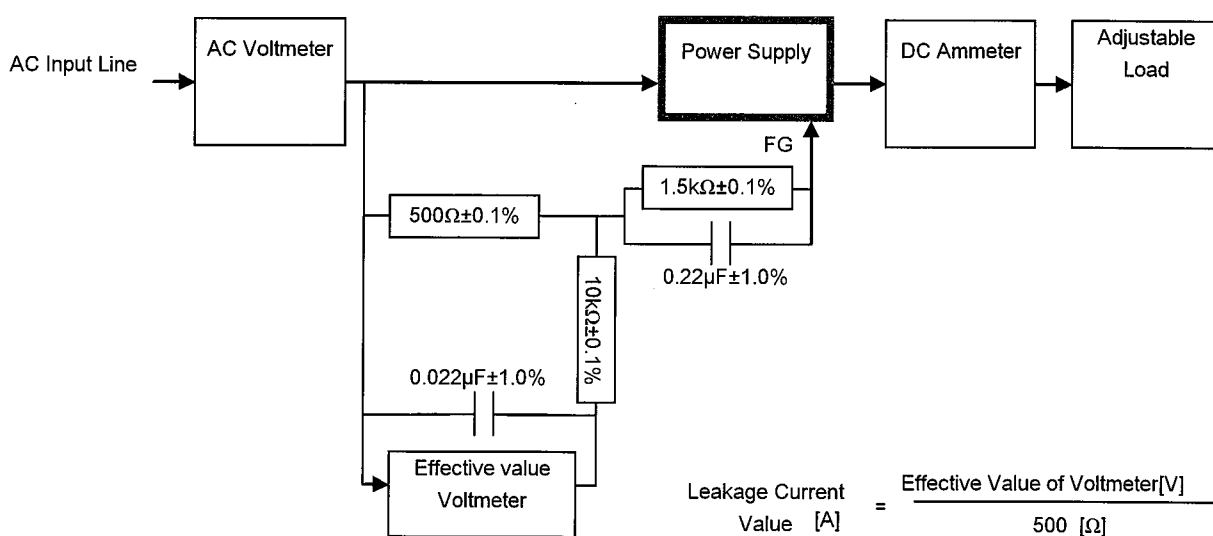


Figure B ( IEC60950-1 )

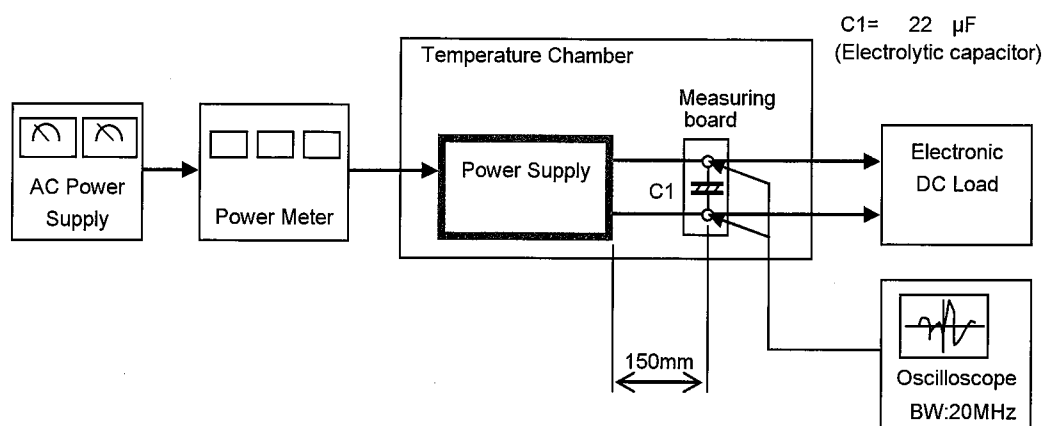


Figure C