

TEST DATA OF SFLS30483R3

Regulated DC Power Supply
May 12, 2007

Approved by : Isao Yasuda
Isao Yasuda Design Manager

Prepared by : Toshiyuki Tsuru
Toshiyuki Tsuru Design Engineer

COSEL CO.,LTD.

CONTENTS

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

(Final Page 19)

COSEL

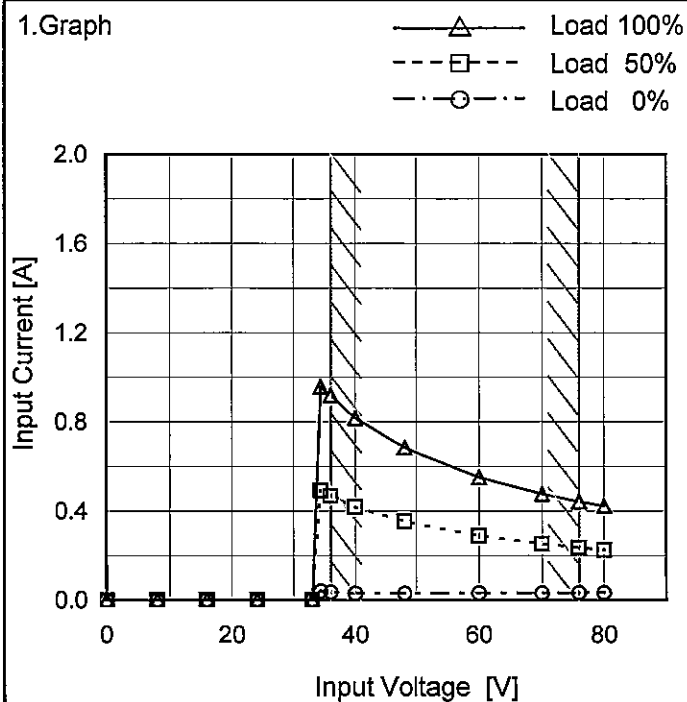
Model SFLS30483R3

Item Input Current (by Input Voltage)

Temperature 25°C
Testing Circuitry Figure A

Object

1. Graph

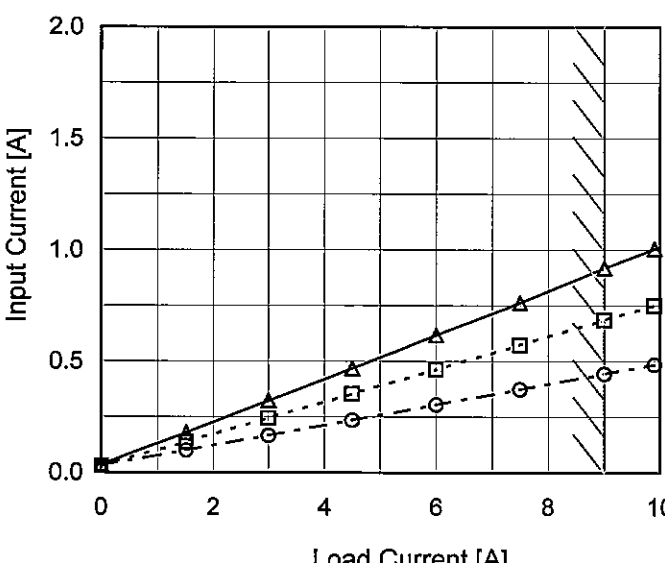


Note: Slanted line shows the range of the rated input voltage.

2. Values

Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0	0.000	0.000	0.000
8	0.001	0.001	0.001
16	0.001	0.001	0.001
24	0.001	0.001	0.001
33	0.002	0.002	0.002
34	0.040	0.493	0.958
36	0.036	0.468	0.920
40	0.030	0.418	0.817
48	0.030	0.354	0.686
60	0.031	0.289	0.551
70	0.032	0.253	0.478
76	0.032	0.236	0.443
80	0.033	0.226	0.422
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model		SFLS30483R3		Temperature 25°C																																																		
Item		Input Current (by Load Current)		Testing Circuitry Figure A																																																		
Object		_____																																																				
1.Graph		<div><div>—△—</div>Input Volt. 36V</div> <div><div>---□---</div>Input Volt. 48V</div> <div><div>---○---</div>Input Volt. 76V</div>		2.Values																																																		
<div><div>Input Current [A]</div><div></div><div>Load Current [A]</div></div> <div>Note: Slanted line shows the range of the rated load current.</div>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Input Current [A]</th></tr><tr><th>Input Volt. 36[V]</th><th>Input Volt. 48[V]</th><th>Input Volt. 76[V]</th></tr><tr><td>0.0</td><td>0.036</td><td>0.030</td><td>0.032</td></tr><tr><td>1.5</td><td>0.179</td><td>0.137</td><td>0.100</td></tr><tr><td>3.0</td><td>0.323</td><td>0.245</td><td>0.167</td></tr><tr><td>4.5</td><td>0.468</td><td>0.354</td><td>0.236</td></tr><tr><td>6.0</td><td>0.618</td><td>0.463</td><td>0.304</td></tr><tr><td>7.5</td><td>0.763</td><td>0.573</td><td>0.374</td></tr><tr><td>9.0</td><td>0.920</td><td>0.686</td><td>0.443</td></tr><tr><td>9.9</td><td>1.005</td><td>0.751</td><td>0.485</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 Current [A]			Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]	0.0	0.036	0.030	0.032	1.5	0.179	0.137	0.100	3.0	0.323	0.245	0.167	4.5	0.468	0.354	0.236	6.0	0.618	0.463	0.304	7.5	0.763	0.573	0.374	9.0	0.920	0.686	0.443	9.9	1.005	0.751	0.485	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Input Current [A]																																																					
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]																																																			
0.0	0.036	0.030	0.032																																																			
1.5	0.179	0.137	0.100																																																			
3.0	0.323	0.245	0.167																																																			
4.5	0.468	0.354	0.236																																																			
6.0	0.618	0.463	0.304																																																			
7.5	0.763	0.573	0.374																																																			
9.0	0.920	0.686	0.443																																																			
9.9	1.005	0.751	0.485																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			

COSEL

Model

SFLS30483R3

Item

Input Power (by Load Current)

Object

1.Graph

—△—

Input Volt.

36V

---□---

Input Volt.

48V

---○---

Input Volt.

76V

50

40

30

20

10

0

0

2

4

6

8

10

Input Power [W]

Load Current [A]

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

Temperature

25°C

Testing Circuitry

Figure A

2.Values

Load Current [A]	Input Power [W]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.0	1.29	1.43	2.45
1.5	6.43	6.58	7.58
3.0	11.60	11.72	12.71
4.5	16.85	16.94	17.90
6.0	22.14	22.19	23.13
7.5	27.47	27.51	28.36
9.0	32.91	32.85	33.69
9.9	36.19	36.07	36.88
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

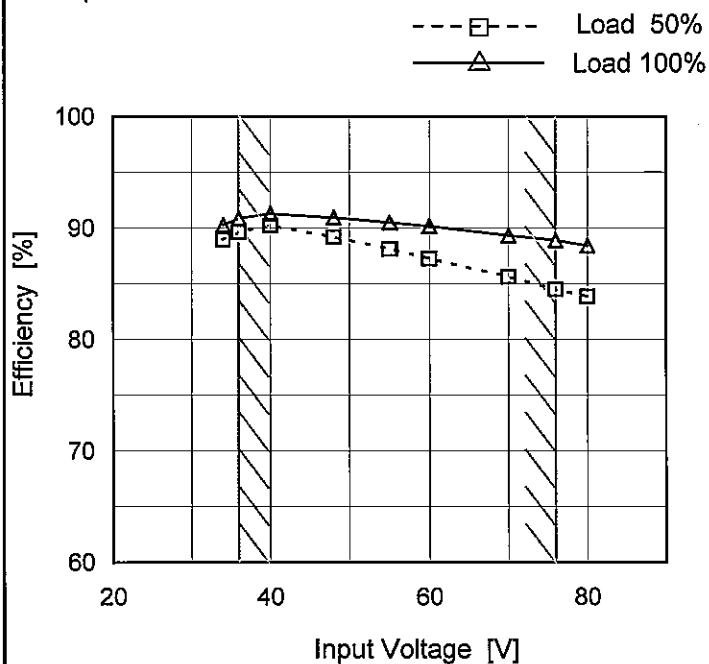
Model SFLS30483R3

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%
34	89.0	90.3
36	89.6	90.9
40	90.2	91.3
48	89.2	91.0
55	88.1	90.5
60	87.3	90.2
70	85.6	89.4
76	84.5	88.9
80	83.8	88.4

COSEL

Model SFLS30483R3

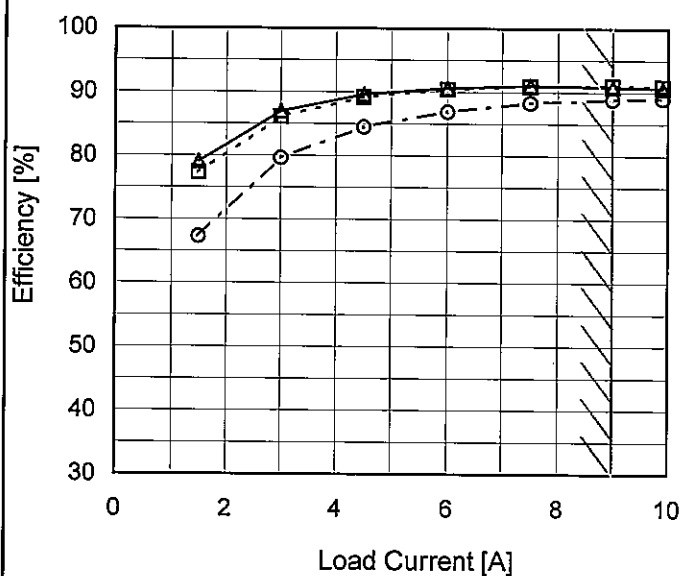
Item Efficiency (by Load Current)

Object

Temperature 25°C
Testing Circuitry Figure A

1. Graph

—△— Input Volt. 36V
 ---□--- Input Volt. 48V
 ---○--- Input Volt. 76V



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

2. Values

Load Current [A]	Efficiency [%]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.0	-	-	-
1.5	79.1	77.3	67.3
3.0	87.0	86.1	79.6
4.5	89.6	89.2	84.5
6.0	90.6	90.5	86.9
7.5	91.0	90.9	88.3
9.0	90.9	91.0	88.9
9.9	90.6	90.9	89.0
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

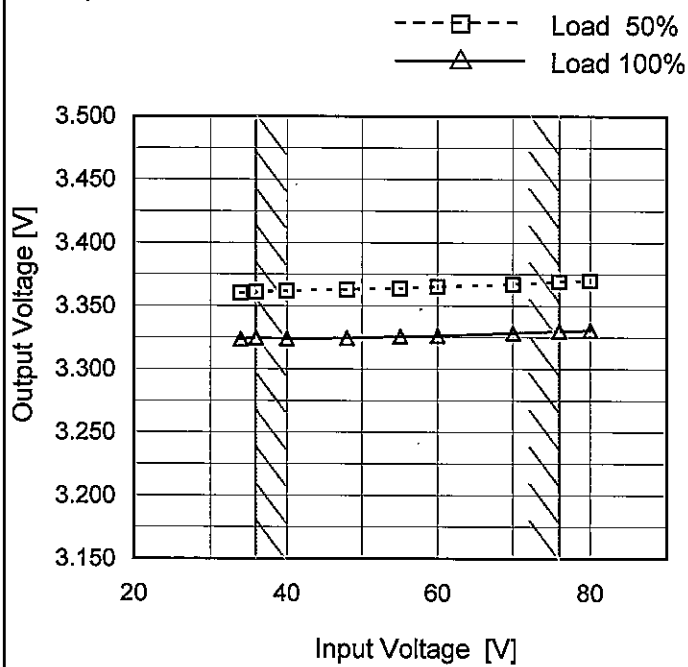
Model SFLS30483R3

Item Line Regulation

Object +3.3V9A

Temperature 25°C
Testing Circuitry Figure A

1. Graph



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

2. Values

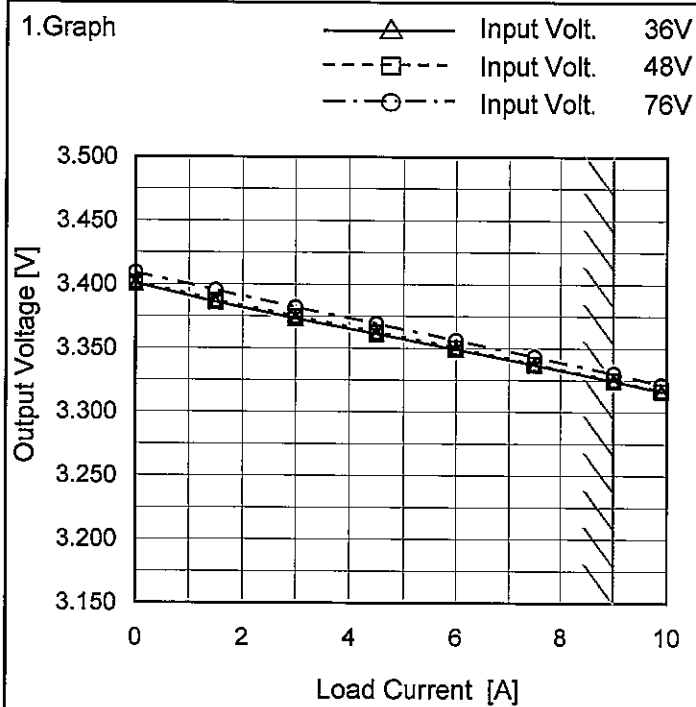
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
34	3.360	3.324
36	3.361	3.325
40	3.362	3.324
48	3.363	3.325
55	3.364	3.326
60	3.365	3.327
70	3.367	3.329
76	3.369	3.330
80	3.370	3.331

COSEL

Model SFLS30483R3

Item Load Regulation

Object +3.3V9A

Temperature 25°C
Testing Circuitry Figure A

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

2. Values

Load Current [A]	Output Voltage [V]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.0	3.401	3.402	3.409
1.5	3.386	3.388	3.396
3.0	3.373	3.375	3.382
4.5	3.361	3.363	3.369
6.0	3.349	3.351	3.356
7.5	3.337	3.338	3.343
9.0	3.325	3.325	3.330
9.9	3.316	3.317	3.322
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

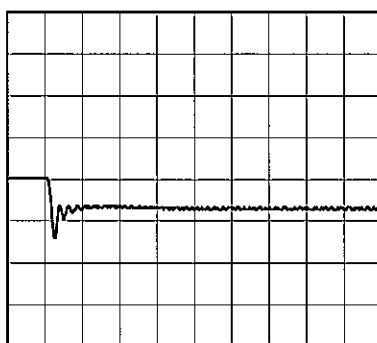
Model	SFLS30483R3	Temperature 25°C Testing Circuitry Figure A
Item	Dynamic Load Response	
Object	+3.3V9A	

Input Volt. 48 V
Cycle 1000 mS

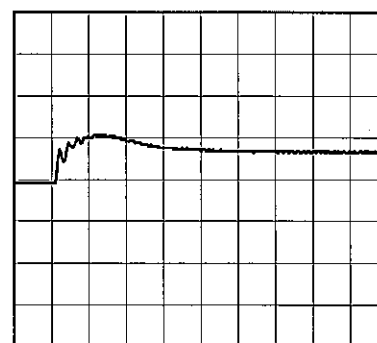
Load Current 9A / 200 μ sec

Min. Load (0A) \longleftrightarrow
Load 100% (9A)

100mV/div



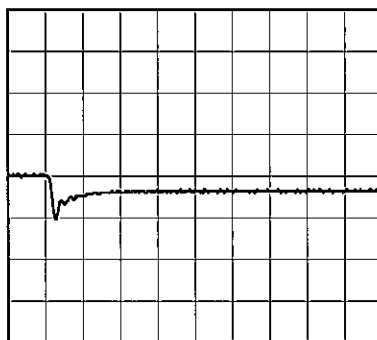
200 μ s/div



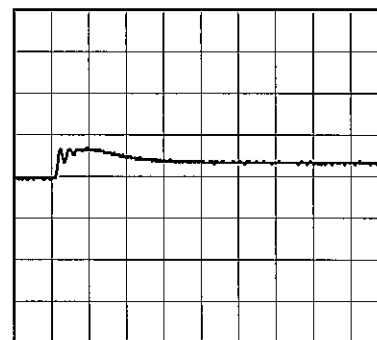
200 μ s/div

Min. Load (0A) \longleftrightarrow
Load 50% (4.5A)

100mV/div



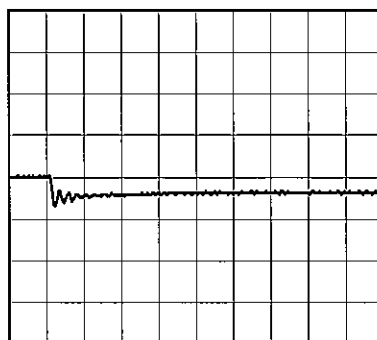
200 μ s/div



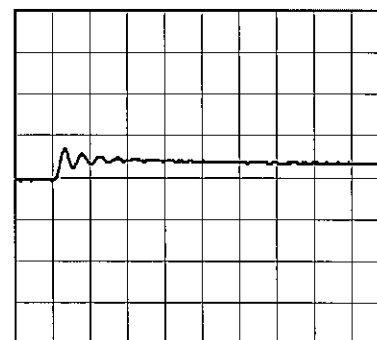
200 μ s/div

Load 50% (4.5A) \longleftrightarrow
Load 100% (9A)

100mV/div



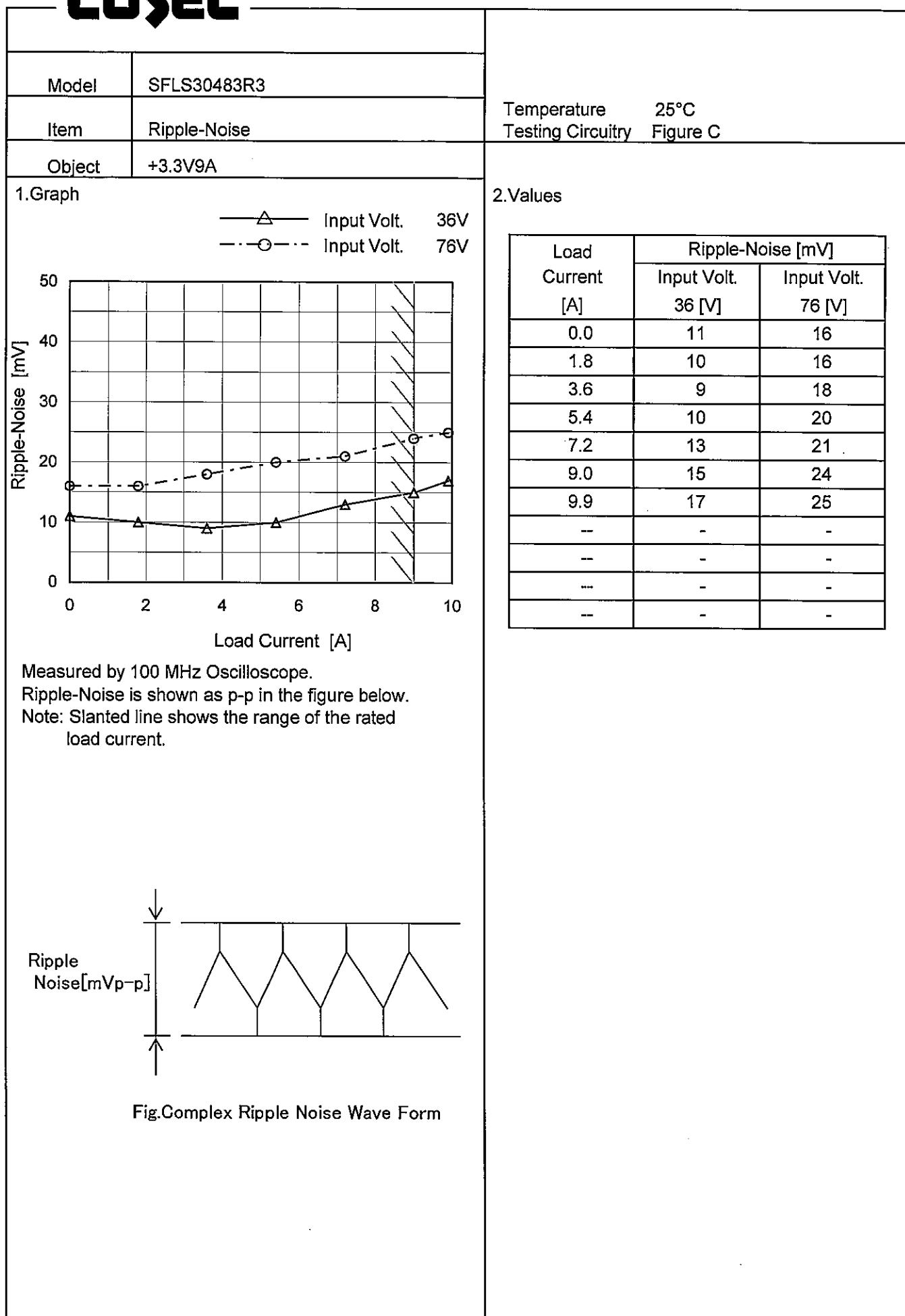
200 μ s/div



200 μ s/div

COSEL

Model	SFLS30483R3																																								
Item	Ripple Voltage (by Load Current)	Temperature	25°C																																						
Object	+3.3V9A	Testing Circuitry	Figure C																																						
1.Graph		2.Values																																							
<div><div><div><div></div><div>Input Volt.</div><div>36V</div></div><div><div></div><div>Input Volt.</div><div>76V</div></div></div><p>Ripple Voltage [mV]</p><p>Load Current [A]</p></div> <div><p>Measured by 100 MHz Oscilloscope.</p><p>Ripple Voltage is shown as p-p in the figure below.</p><p>Note: Slanted line shows the range of the rated load current.</p></div> <div><p>Ripple [mVp-p]</p><p>Fig.Complex Ripple Wave Form</p></div>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="2">Ripple Voltage [mV]</th></tr><tr><th>Input Volt. 36 [V]</th><th>Input Volt. 76 [V]</th></tr><tr><td>0.0</td><td>3</td><td>5</td></tr><tr><td>1.8</td><td>3</td><td>5</td></tr><tr><td>3.6</td><td>3</td><td>5</td></tr><tr><td>5.4</td><td>3</td><td>5</td></tr><tr><td>7.2</td><td>4</td><td>5</td></tr><tr><td>9.0</td><td>4</td><td>6</td></tr><tr><td>9.9</td><td>4</td><td>6</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>		Load Current [A]	Ripple Voltage [mV]		Input Volt. 36 [V]	Input Volt. 76 [V]	0.0	3	5	1.8	3	5	3.6	3	5	5.4	3	5	7.2	4	5	9.0	4	6	9.9	4	6	--	-	-	--	-	-	--	-	-	--	-	-
Load Current [A]	Ripple Voltage [mV]																																								
	Input Volt. 36 [V]	Input Volt. 76 [V]																																							
0.0	3	5																																							
1.8	3	5																																							
3.6	3	5																																							
5.4	3	5																																							
7.2	4	5																																							
9.0	4	6																																							
9.9	4	6																																							
--	-	-																																							
--	-	-																																							
--	-	-																																							
--	-	-																																							

COSEL

COSEL

Model		SFLS30483R3	
Item		Ambient Temperature Drift	
Object		+3.3V9A	
1.Graph		2.Values	

—△—

Input Volt.

36V

---□---

Input Volt.

48V

---○---

Input Volt.

76V

Output Voltage [V]

Ambient Temperature [°C]

Load 100%

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

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
-50	3.334	3.336	3.342
-40	3.335	3.336	3.341
-20	3.335	3.335	3.340
0	3.333	3.333	3.337
25	3.325	3.325	3.330
55	3.315	3.316	3.322
85	3.299	3.302	3.312
90	3.296	3.299	3.310
--	-	-	-
--	-	-	-
--	-	-	-



		Testing Circuitry Figure A
Model	SFLS30483R3	
Item	Output Voltage Accuracy	
Object	+3.3V9A	

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 : -40 - 85°C

Input Voltage : 36 - 76V

Load Current : 0 - 9A

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

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

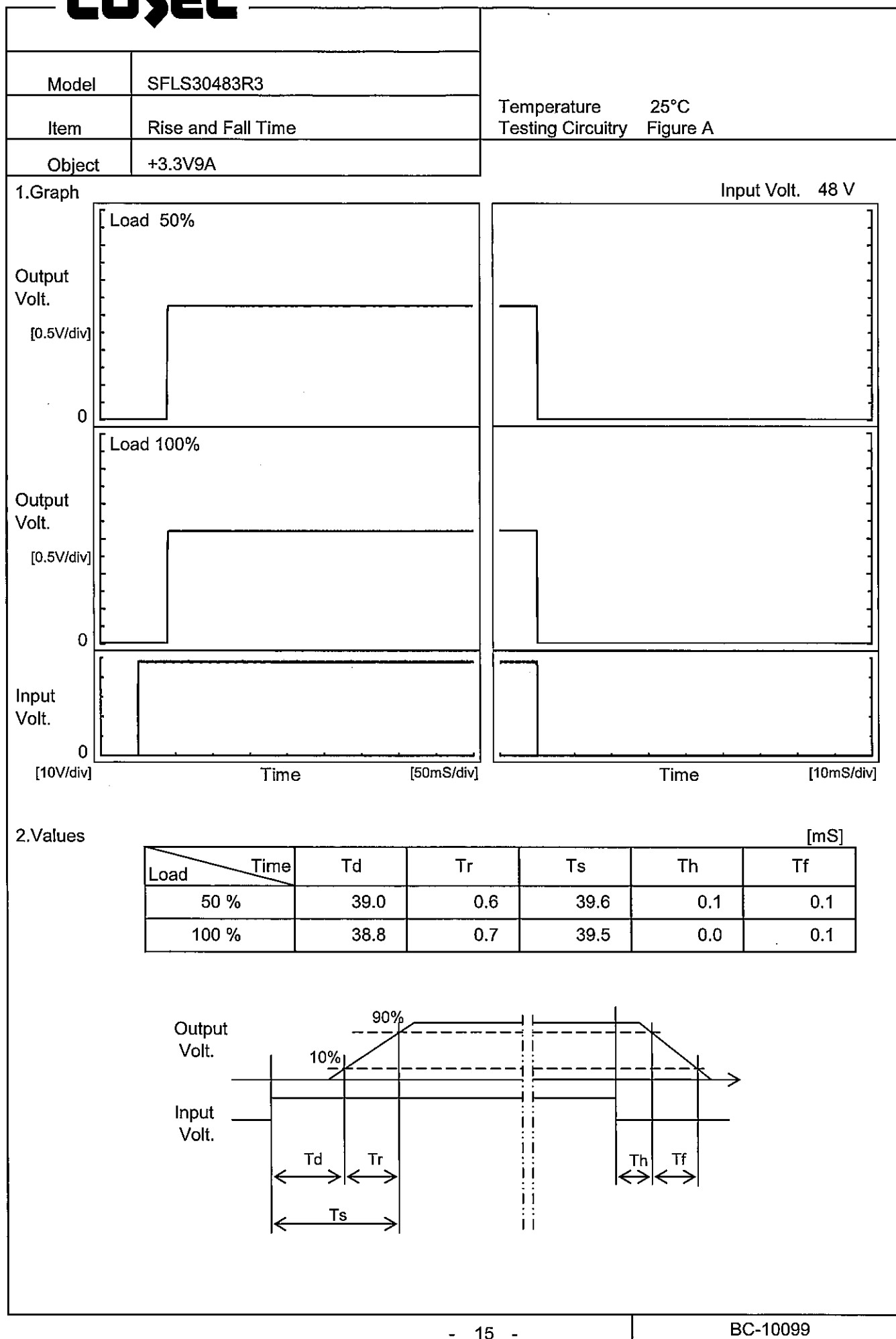
2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	85	76	0	3.411	±56	±1.7
Minimum Voltage	85	36	9	3.299		

COSEL

</

COSEL



COSEL

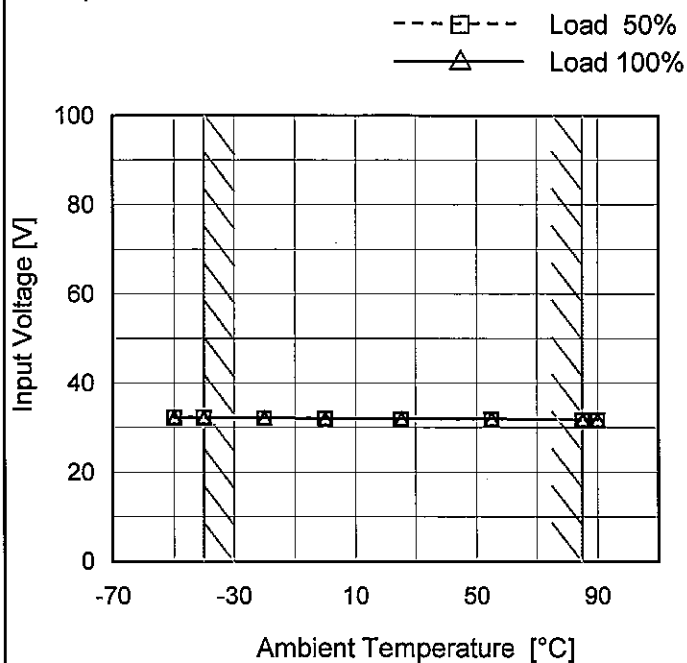
Model SFLS30483R3

Item Minimum Input Voltage
for Regulated Output Voltage

Object +3.3V9A

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%
-50	32.4	32.3
-40	32.4	32.3
-20	32.2	32.3
0	32.2	32.1
25	31.9	32.1
55	31.9	32.1
85	31.8	31.8
90	31.7	31.9
--	-	-
--	-	-
--	-	-

BC-10099

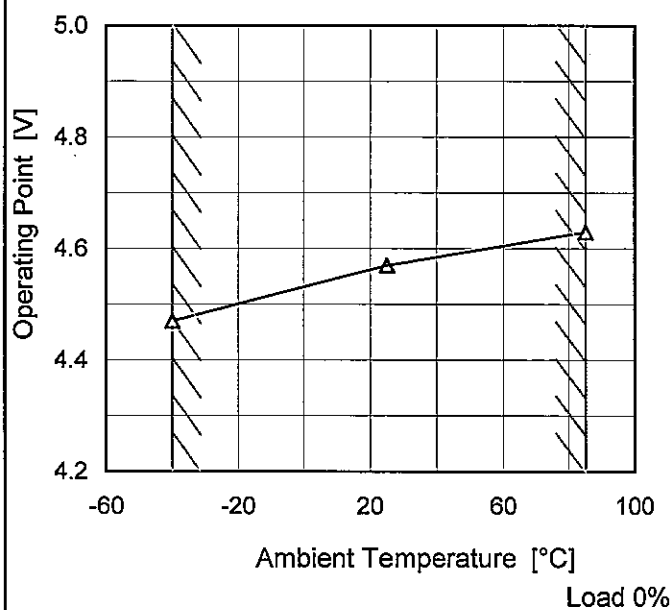
Model SFLS30483R3

Item Overvoltage Protection

Object +3.3V9A

Testing Circuitry Figure A

1.Graph —△— Input Volt. 48V



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

2.Values

Ambient Temperature [°C]	Operating Point [V]		
	Input Volt. 48[V]	Input Volt.	Input Volt.
-40	4.47	-	-
25	4.57	-	-
85	4.63	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

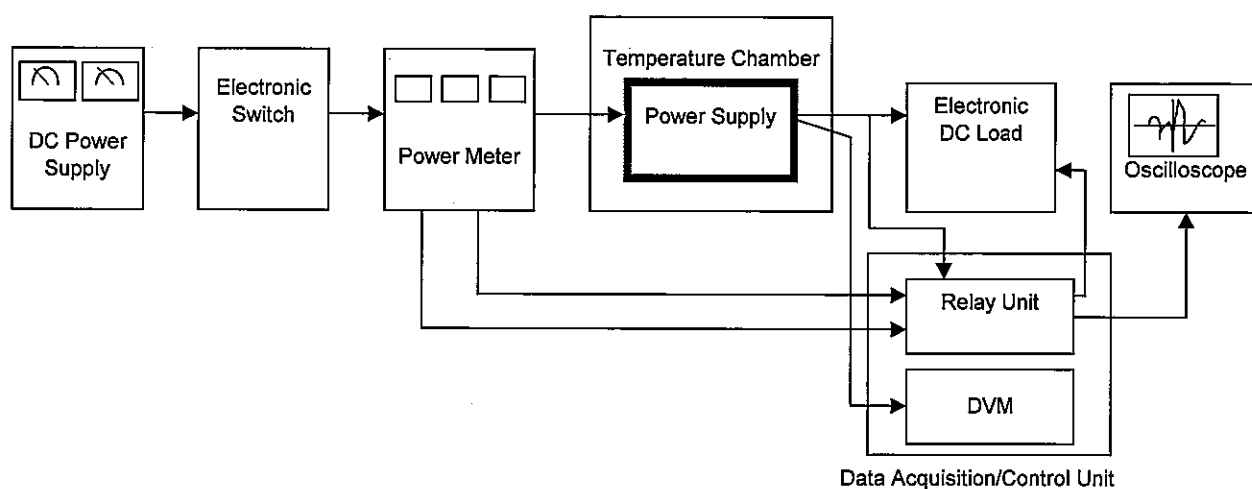


Figure A

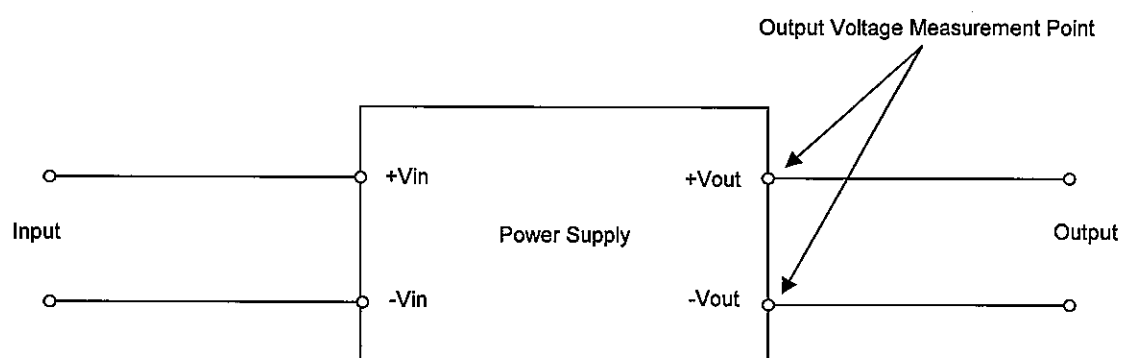


Figure B (General Electric Characteristic)

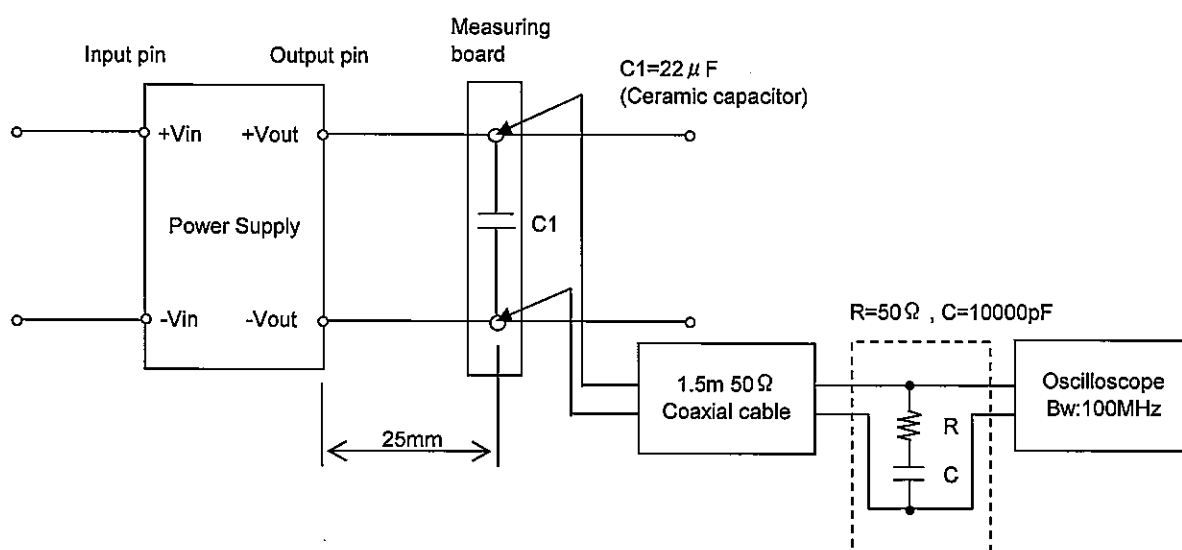


Figure C (Ripple and Ripple noise Characteristic)