

TEST DATA OF SFS30482R5

Regulated DC Power Supply
Dec.8. 2003

Approved by : Isao Yasuda
Isao Yasuda Design Manager

Prepared by : Kazuhiro Horii
Kazuhiro Horii Design Engineer

COSEL CO.,LTD.

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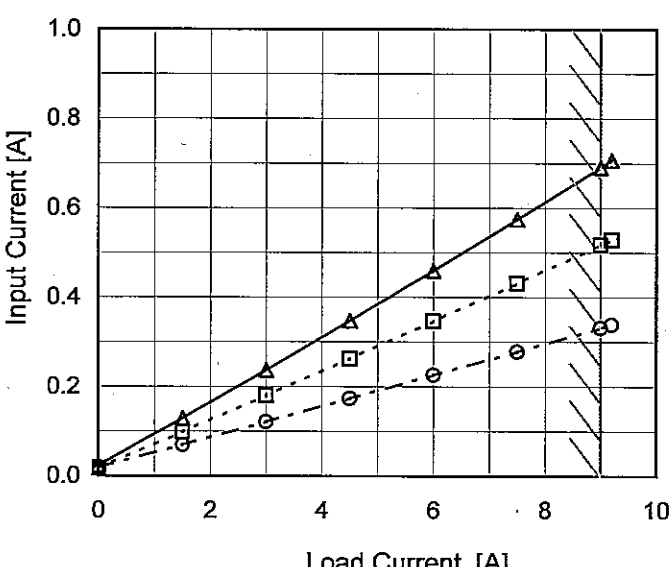
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Object			

1.Graph

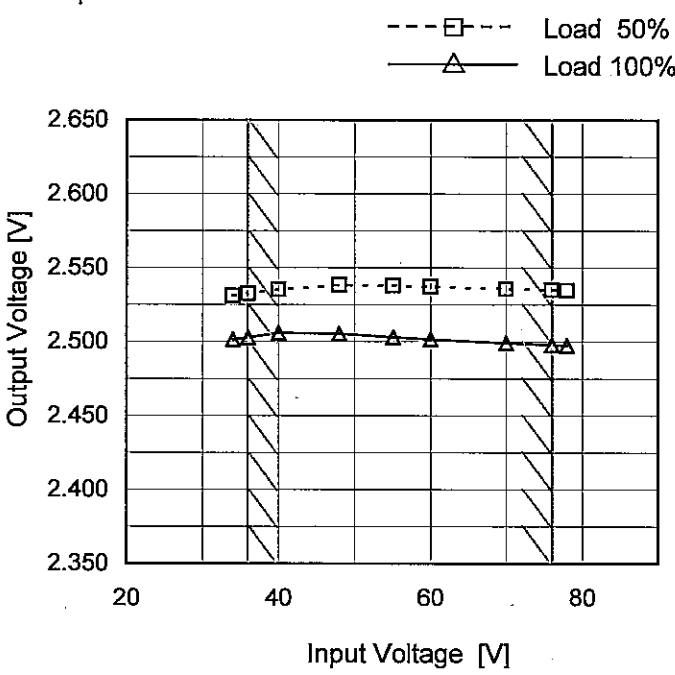
Load 50%

Load 100%

Efficiency [%]

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9.2	2.502	2.505	2.497																																																			
--	-	-	-																																																			
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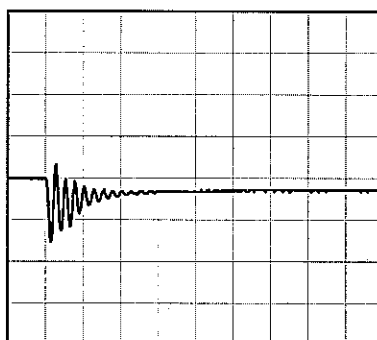
Model	SFS30482R5	Temperature	25°C
Item	Dynamic Load Response	Testing Circuitry	Figure A
Object	+2.5V9A		

Input Volt. 48 V
Cycle 1000 mS

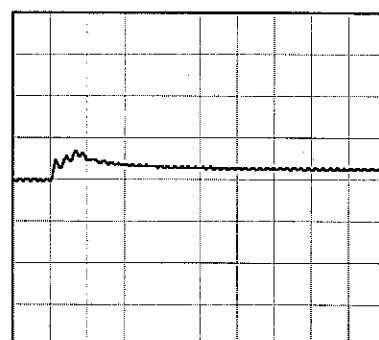
Load Current 9A / 200 μ s

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

200mV/div



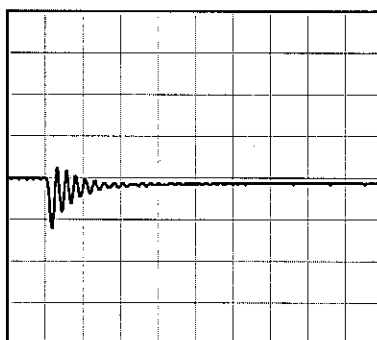
200 μ s/div



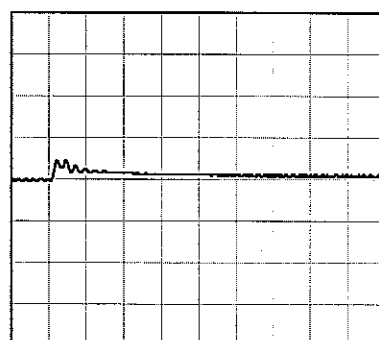
200 μ s/div

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

200mV/div



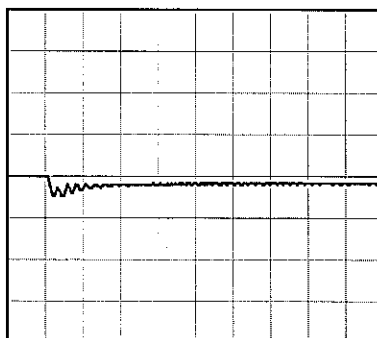
200 μ s/div



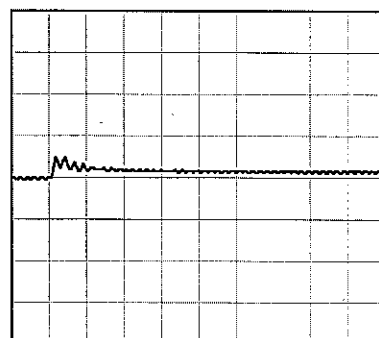
200 μ s/div

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

200mV/div

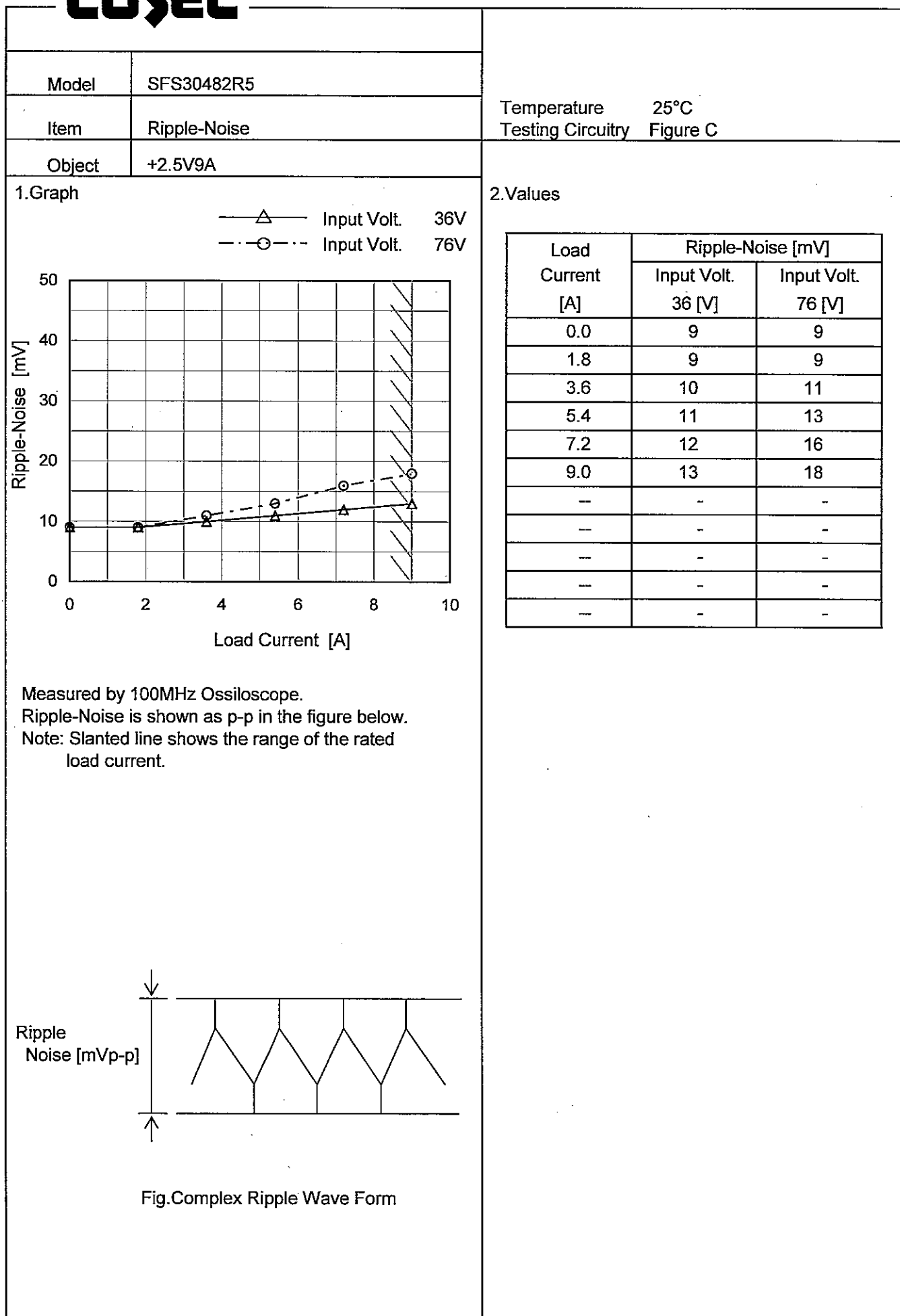


200 μ s/div



200 μ s/div

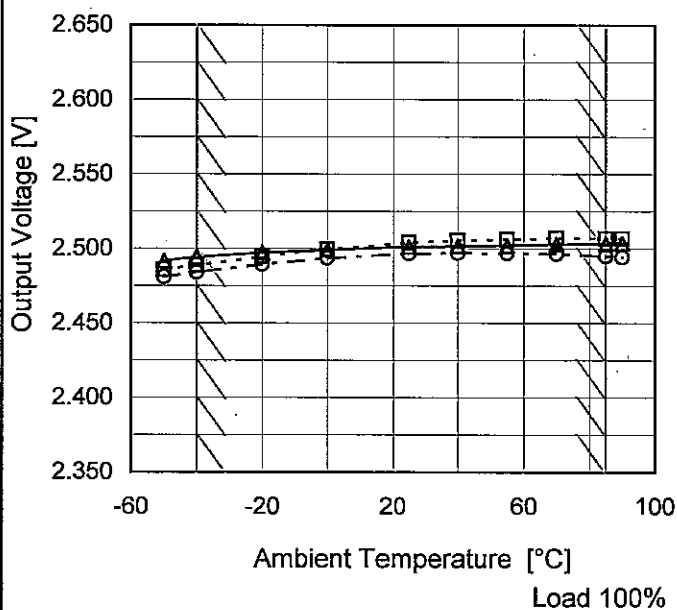
Model		SFS30482R5		Temperature Testing Circuitry	25°C Figure C																																						
Item		Ripple Voltage (by Load Current)																																									
Object		+2.5V9A																																									
1.Graph																																											
<div><div><div><div><div></div><div></div></div><div>—△—</div><div>Input Volt.</div><div>36V</div></div><div><div><div></div><div></div></div><div>- - ○ - -</div><div>Input Volt.</div><div>76V</div></div></div><div><p>Measured by 100MHz Ossilloscope. Ripple Voltage is shown as p-p in the figure below. Note: Slanted line shows the range of the rated load current.</p></div></div>																																											
2.Values																																											
<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>5</td><td>6</td></tr><tr><td>1.8</td><td>5</td><td>6</td></tr><tr><td>3.6</td><td>5</td><td>6</td></tr><tr><td>5.4</td><td>5</td><td>6</td></tr><tr><td>7.2</td><td>5</td><td>6</td></tr><tr><td>9.0</td><td>5</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><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	5	6	1.8	5	6	3.6	5	6	5.4	5	6	7.2	5	6	9.0	5	6	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-
Load Current [A]	Ripple Voltage [mV]																																										
	Input Volt. 36 [V]	Input Volt. 76 [V]																																									
0.0	5	6																																									
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<div><div><div><div></div><div></div></div><div>Ripple [mVp-p]</div><div></div></div><div>Fig.Complex Ripple Wave Form</div></div>																																											



Model		SFS30482R5	Testing Circuitry Figure C																																				
Item		Ripple Voltage (by Ambient Temp.)																																					
Object		+2.5V9A																																					
1.Graph																																							
<div><div><div>---□---</div><div>Load 50%</div></div><div><div>—△—</div><div>Load 100%</div></div></div> <table><thead><tr><th>Ambient Temperature [°C]</th><th>Load 50% [mV]</th><th>Load 100% [mV]</th></tr></thead><tbody><tr><td>-45</td><td>14</td><td>14</td></tr><tr><td>-40</td><td>13</td><td>13</td></tr><tr><td>0</td><td>8</td><td>8</td></tr><tr><td>25</td><td>7</td><td>7</td></tr><tr><td>85</td><td>7</td><td>7</td></tr><tr><td>90</td><td>7</td><td>7</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> <p>Input Volt. 48V</p>				Ambient Temperature [°C]	Load 50% [mV]	Load 100% [mV]	-45	14	14	-40	13	13	0	8	8	25	7	7	85	7	7	90	7	7	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-
Ambient Temperature [°C]	Load 50% [mV]	Load 100% [mV]																																					
-45	14	14																																					
-40	13	13																																					
0	8	8																																					
25	7	7																																					
85	7	7																																					
90	7	7																																					
--	-	-																																					
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Measured by 100MHz Ossilloscope. Note: Slanted line shows the range of the rated ambient temperature.																																							
2.Values																																							
Ambient Temperature [°C]		Ripple Voltage [mV]																																					
		Load 50%	Load 100%																																				
-45		14	14																																				
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Model	SFS30482R5
Item	Ambient Temperature Drift
Object	+2.5V9A

1. Graph
- △— Input Volt. 36V
 - Input Volt. 48V
 - Input Volt. 76V



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. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
-50	2.492	2.486	2.481
-40	2.495	2.489	2.484
-20	2.497	2.495	2.489
0	2.499	2.500	2.494
25	2.501	2.504	2.497
40	2.502	2.506	2.497
55	2.502	2.506	2.497
70	2.503	2.507	2.497
85	2.503	2.507	2.495
90	2.504	2.507	2.494
--	-	-	-

		Testing Circuitry Figure A
Model	SFS30482R5	
Item	Output Voltage Accuracy	
Object	+2.5V9A	

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

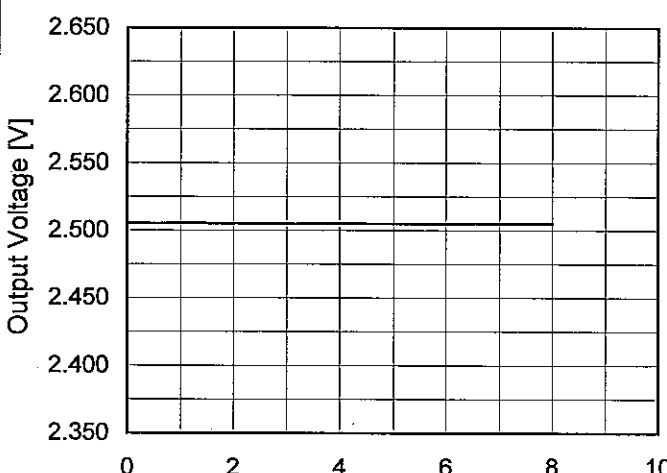
Load Current : 0 - 9A

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

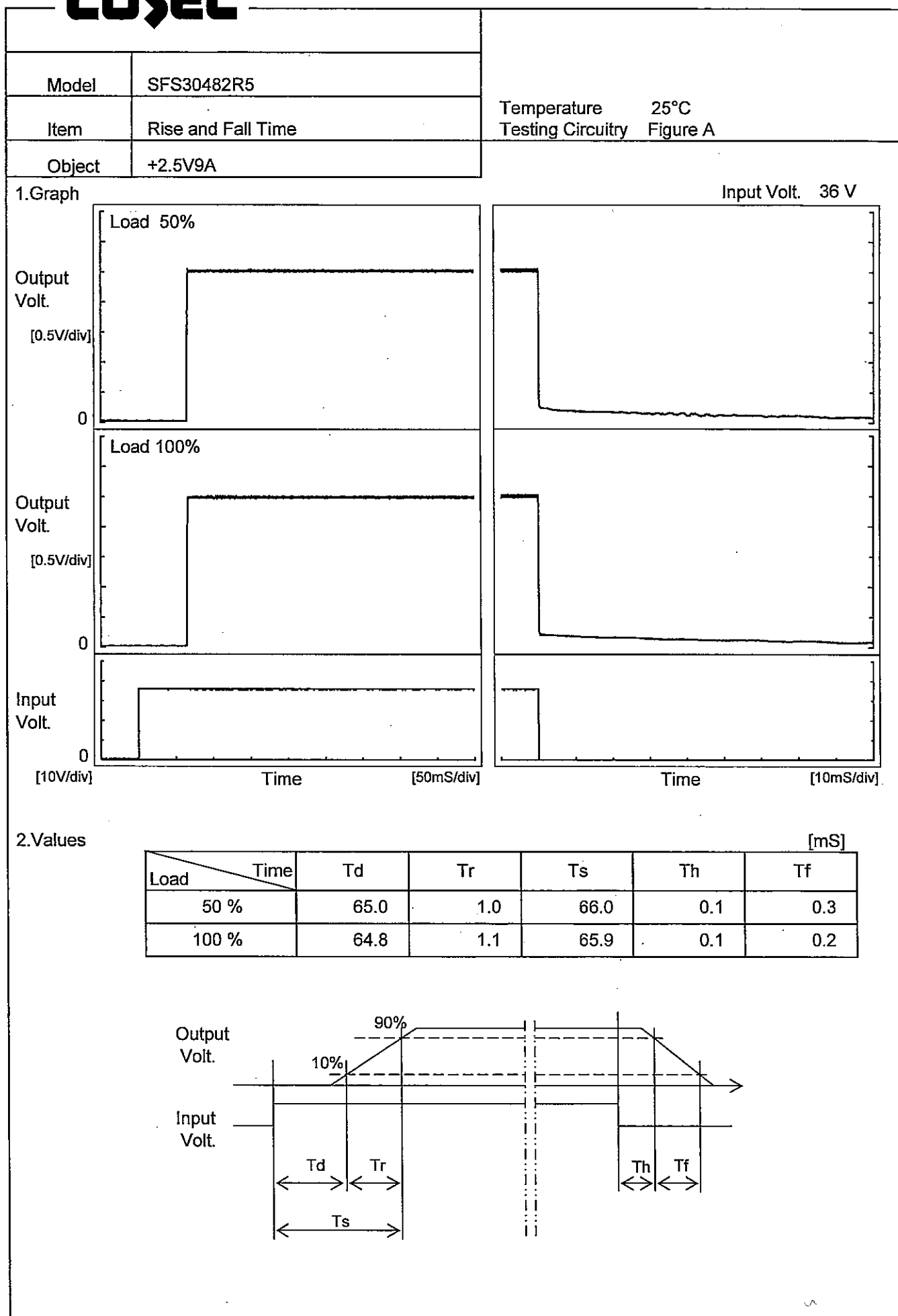
* Output Voltage Accuracy (Ration) = $\frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$

2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	85	48	0	2.574	±45	±1.8
Minimum Voltage	-40	76	9	2.484		

Model	SFS30482R5																								
Item	Time Lapse Drift	Temperature	25°C																						
Object	+2.5V9A	Testing Circuitry	Figure A																						
1.Graph		2.Values																							
<div><p>Output Voltage [V]</p><p>Time [H]</p><p>Input Volt. 48V</p><p>Load 100%</p></div>		<table><tr><th>Time since start [H]</th><th>Output Voltage [V]</th></tr><tr><td>0.0</td><td>2.505</td></tr><tr><td>0.5</td><td>2.505</td></tr><tr><td>1.0</td><td>2.505</td></tr><tr><td>2.0</td><td>2.505</td></tr><tr><td>3.0</td><td>2.505</td></tr><tr><td>4.0</td><td>2.505</td></tr><tr><td>5.0</td><td>2.505</td></tr><tr><td>6.0</td><td>2.505</td></tr><tr><td>7.0</td><td>2.505</td></tr><tr><td>8.0</td><td>2.505</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	2.505	0.5	2.505	1.0	2.505	2.0	2.505	3.0	2.505	4.0	2.505	5.0	2.505	6.0	2.505	7.0	2.505	8.0	2.505
Time since start [H]	Output Voltage [V]																								
0.0	2.505																								
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3.0	2.505																								
4.0	2.505																								
5.0	2.505																								
6.0	2.505																								
7.0	2.505																								
8.0	2.505																								

COSEL



Model	SFS30482R5																																						
Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A																																					
Object	+2.5V9A																																						
1.Graph		2.Values																																					
<div><div><div>---□---</div><div>Load 50%</div></div><div><div>---△---</div><div>Load 100%</div></div></div> <table><thead><tr><th>Ambient Temperature [°C]</th><th>Load 50%</th><th>Load 100%</th></tr></thead><tbody><tr><td>-50</td><td>31.8</td><td>31.9</td></tr><tr><td>-40</td><td>31.8</td><td>31.9</td></tr><tr><td>-20</td><td>31.8</td><td>31.9</td></tr><tr><td>0</td><td>32.0</td><td>32.0</td></tr><tr><td>25</td><td>32.0</td><td>32.0</td></tr><tr><td>40</td><td>32.0</td><td>32.0</td></tr><tr><td>55</td><td>32.2</td><td>32.0</td></tr><tr><td>70</td><td>32.1</td><td>32.2</td></tr><tr><td>85</td><td>32.1</td><td>32.2</td></tr><tr><td>90</td><td>32.0</td><td>32.2</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></tbody></table>		Ambient Temperature [°C]	Load 50%	Load 100%	-50	31.8	31.9	-40	31.8	31.9	-20	31.8	31.9	0	32.0	32.0	25	32.0	32.0	40	32.0	32.0	55	32.2	32.0	70	32.1	32.2	85	32.1	32.2	90	32.0	32.2	--	-	-		
Ambient Temperature [°C]	Load 50%	Load 100%																																					
-50	31.8	31.9																																					
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0	32.0	32.0																																					
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--	-	-																																					
Note: Slanted line shows the range of the rated ambient temperature.																																							

- 17 -

Model		SFS30482R5																																																									
Item		Overvoltage Protection	Testing Circuitry Figure A																																																								
Object		+2.5V9A																																																									
1.Graph			2.Values																																																								
<div><div>—△— Input Volt. 48V</div><div><p>Operating Point [V]</p><p>Ambient Temperature [°C]</p><p>Load 0%</p></div></div>			<table><tr><th rowspan="2">Ambient Temperature [°C]</th><th colspan="3">Operating Point [V]</th></tr><tr><th>Input Volt. 48[V]</th><th>Input Volt.</th><th>Input Volt.</th></tr><tr><td>-40</td><td>3.27</td><td>-</td><td>-</td></tr><tr><td>25</td><td>3.24</td><td>-</td><td>-</td></tr><tr><td>85</td><td>3.21</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><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><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><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr></table>		Ambient Temperature [°C]	Operating Point [V]			Input Volt. 48[V]	Input Volt.	Input Volt.	-40	3.27	-	-	25	3.24	-	-	85	3.21	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
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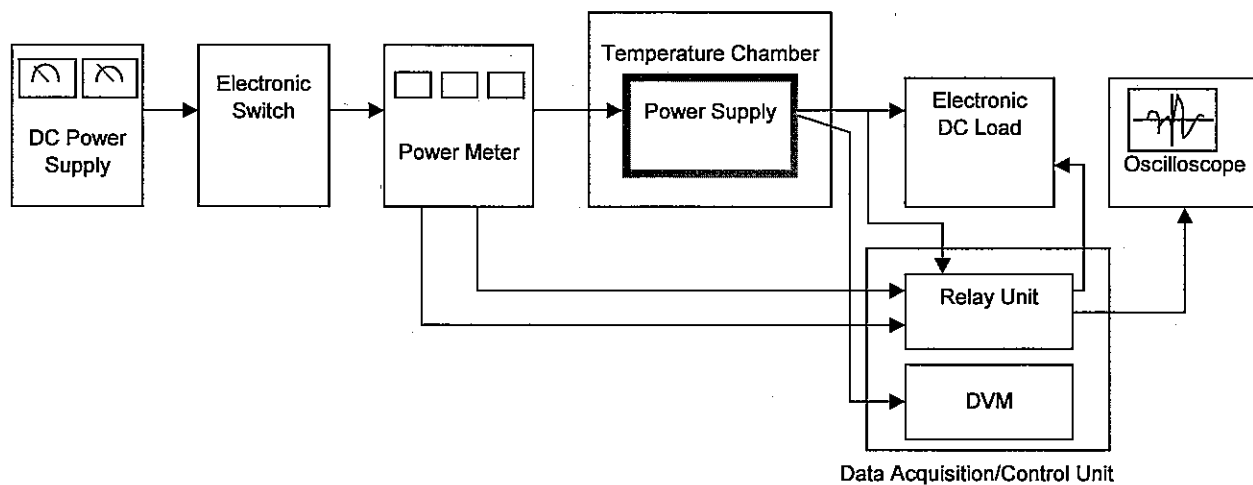


Figure A

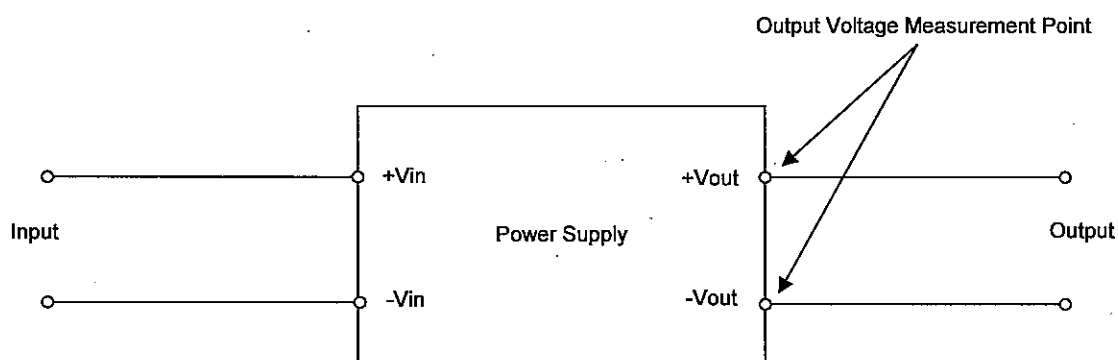


Figure B (General Electric Characteristic)

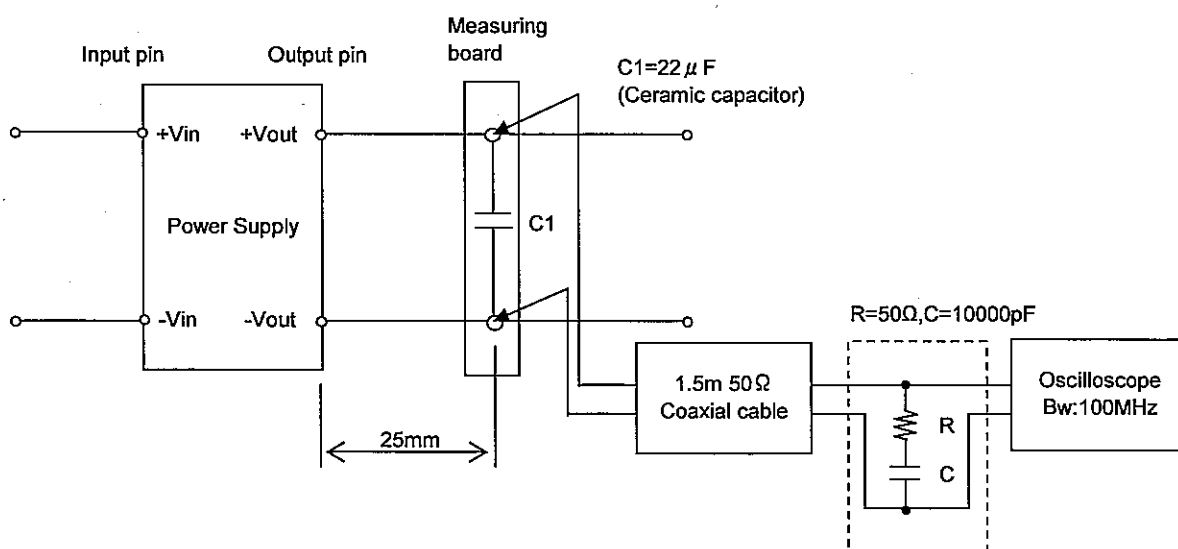


Figure C (Ripple and Ripple noise Characteristic)