



# TEST DATA OF SFS304805/SFCS304805

Regulated DC Power Supply  
Jun.1. 2007

Approved by :

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Design Manager

Prepared by :

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Design Engineer

COSEL CO.,LTD.

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Model	SFS304805/SFCS304805	Temperature	25°C																																																																							
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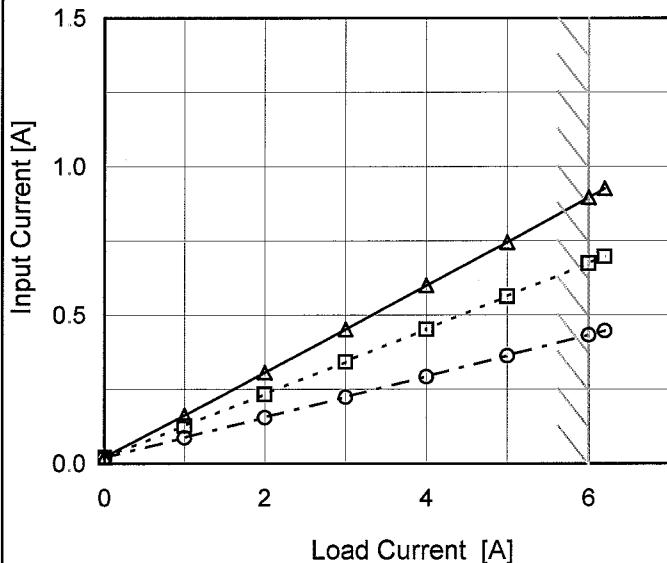
Model SFS304805/SFCS304805

Item Input Current (by Load Current)

Object \_\_\_\_\_

1. Graph

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



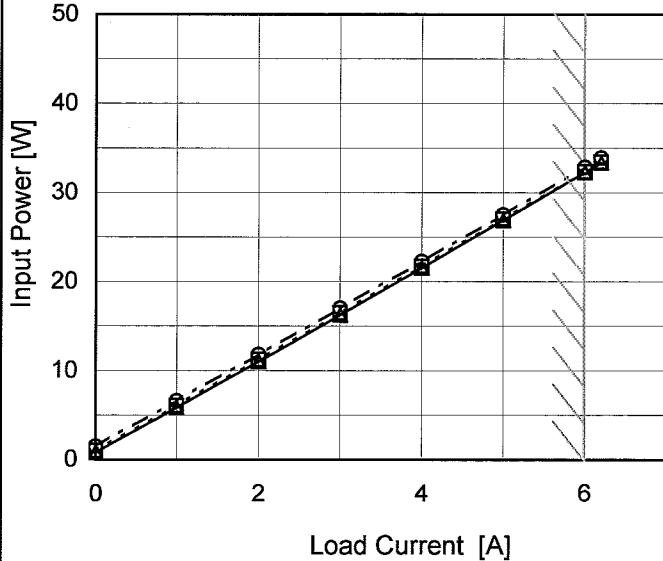
Note: Slanted line shows the range of the rated load current.

 Temperature 25°C  
 Testing Circuitry Figure A

2. Values

Load Current [A]	Input Current [A]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.0	0.023	0.021	0.020
1.0	0.163	0.127	0.087
2.0	0.307	0.234	0.156
3.0	0.453	0.343	0.224
4.0	0.600	0.453	0.294
5.0	0.746	0.563	0.363
6.0	0.897	0.675	0.433
6.2	0.927	0.698	0.447
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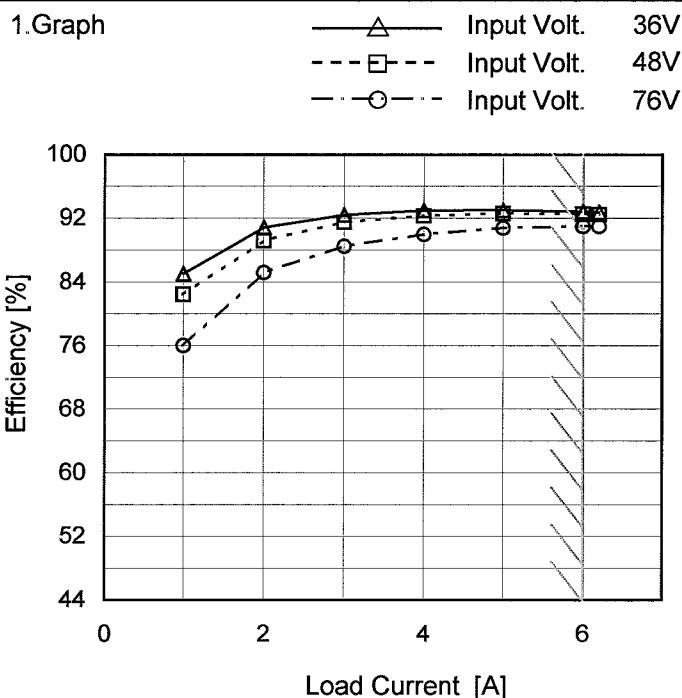
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1.Graph																																		
<p>The graph plots Efficiency [%] on the y-axis (72 to 100) against Input Voltage [V] on the x-axis (20 to 80). Two data series are shown: Load 50% (dashed line with open squares) and Load 100% (solid line with open triangles). Both series show a slight decrease in efficiency as input voltage increases. A slanted line indicates the rated input voltage range.</p> <table border="1"> <thead> <tr> <th>Input Voltage [V]</th> <th>Efficiency Load 50% [%]</th> <th>Efficiency Load 100% [%]</th> </tr> </thead> <tbody> <tr><td>33</td><td>92.2</td><td>92.6</td></tr> <tr><td>36</td><td>92.5</td><td>92.8</td></tr> <tr><td>40</td><td>92.2</td><td>92.8</td></tr> <tr><td>48</td><td>91.5</td><td>92.5</td></tr> <tr><td>55</td><td>90.9</td><td>92.2</td></tr> <tr><td>60</td><td>90.4</td><td>91.9</td></tr> <tr><td>70</td><td>89.2</td><td>91.4</td></tr> <tr><td>76</td><td>88.5</td><td>90.9</td></tr> <tr><td>80</td><td>88.1</td><td>90.7</td></tr> </tbody> </table>			Input Voltage [V]	Efficiency Load 50% [%]	Efficiency Load 100% [%]	33	92.2	92.6	36	92.5	92.8	40	92.2	92.8	48	91.5	92.5	55	90.9	92.2	60	90.4	91.9	70	89.2	91.4	76	88.5	90.9	80	88.1	90.7		
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<p>Note: Slanted line shows the range of the rated input voltage.</p>																																		

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Model	SFS304805/SFCS304805
Item	Efficiency (by Load Current)
Object	_____



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

Temperature 25°C  
Testing Circuitry Figure A

## 2.Values

Load Current [A]	Efficiency [%]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.0	-	-	-
1.0	85.1	82.4	76.0
2.0	90.9	89.2	85.2
3.0	92.4	91.5	88.5
4.0	93.0	92.3	90.0
5.0	93.1	92.6	90.8
6.0	92.8	92.5	91.0
6.2	92.7	92.5	91.0
--	-	-	-
--	-	-	-
--	-	-	-

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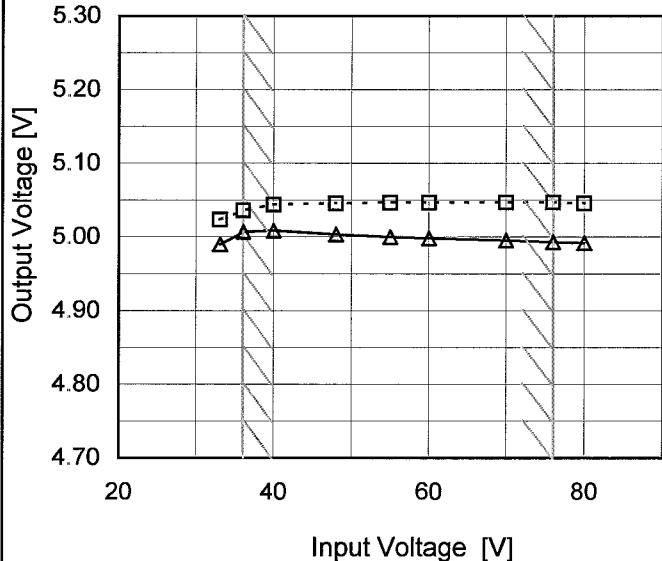
Model SFS304805/SFCS304805

Item Line Regulation

Object +5V6A

## 1. Graph

---□--- Load 50%  
 —△— Load 100%



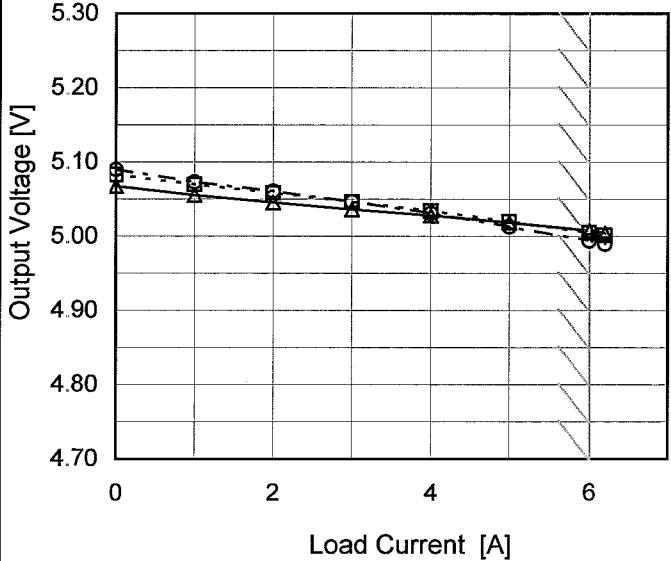
Note: Slanted line shows the range of the rated input voltage.

 Temperature 25°C  
 Testing Circuitry Figure A

## 2. Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
33	5.024	4.990
36	5.036	5.007
40	5.044	5.009
48	5.046	5.004
55	5.047	5.000
60	5.047	4.998
70	5.047	4.995
76	5.047	4.993
80	5.046	4.992

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Model	SFS304805/SFCS304805
Item	Dynamic Load Response
Object	+5V6A

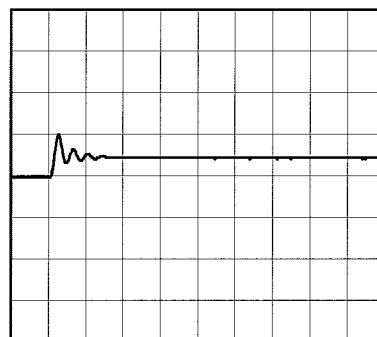
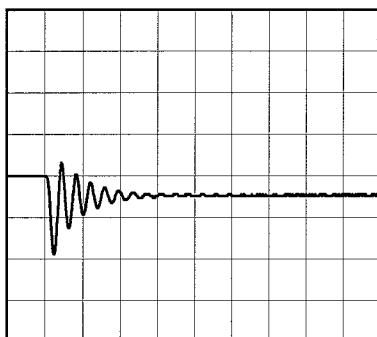
Temperature 25°C  
Testing Circuitry Figure A

Input Volt. 48 V  
Cycle 1000 mS

Load Current 6A / 200  $\mu$  sec

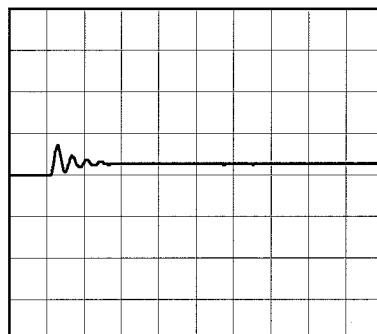
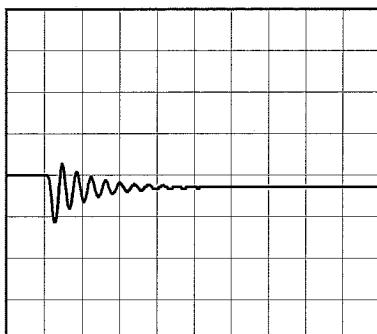
Min. Load (0A)  $\longleftrightarrow$   
Load 100% (6A)

200mV/div



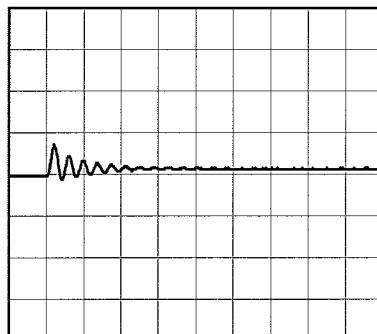
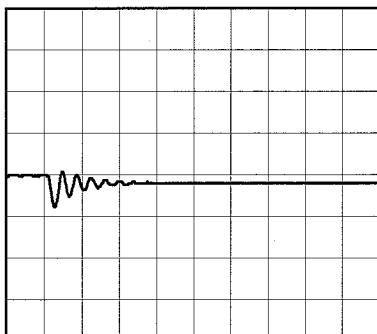
Min. Load (0A)  $\longleftrightarrow$   
Load 50% (3A)

200mV/div



Load 50% (3A)  $\longleftrightarrow$   
Load 100% (6A)

200mV/div



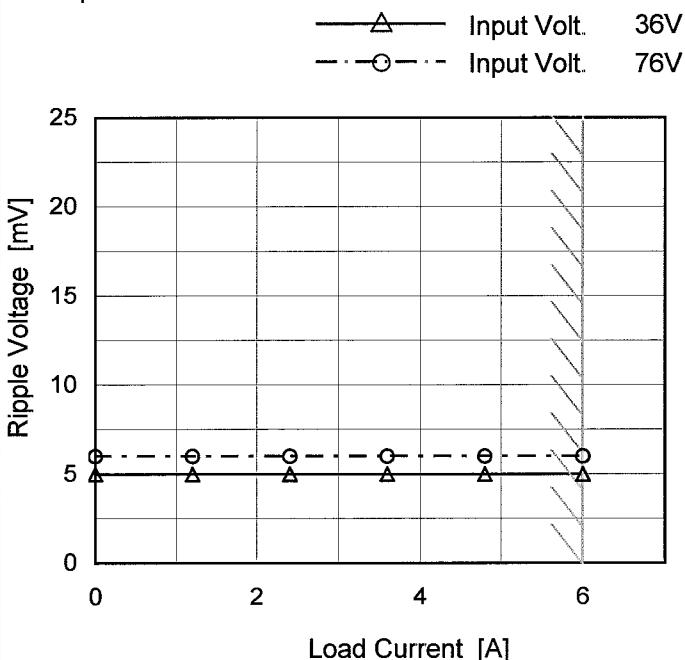
200 μs/div

200 μs/div

**COSEL**

Model	SFS304805/SFCS304805
Item	Ripple Voltage (by Load Current)
Object	+5V6A

## 1. Graph



Measured by 100 MHz Oscilloscope.

Ripple Voltage is shown as p-p in the figure below.

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

Temperature 25°C  
Testing Circuitry Figure C

## 2. Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 36 [V]	Input Volt. 76 [V]
0.0	5	6
1.2	5	6
2.4	5	6
3.6	5	6
4.8	5	6
6.0	5	6
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

Ripple [mVp-p]

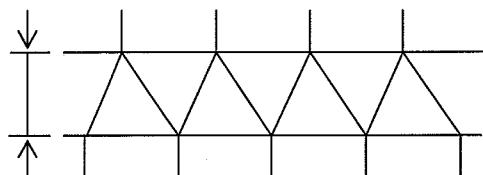
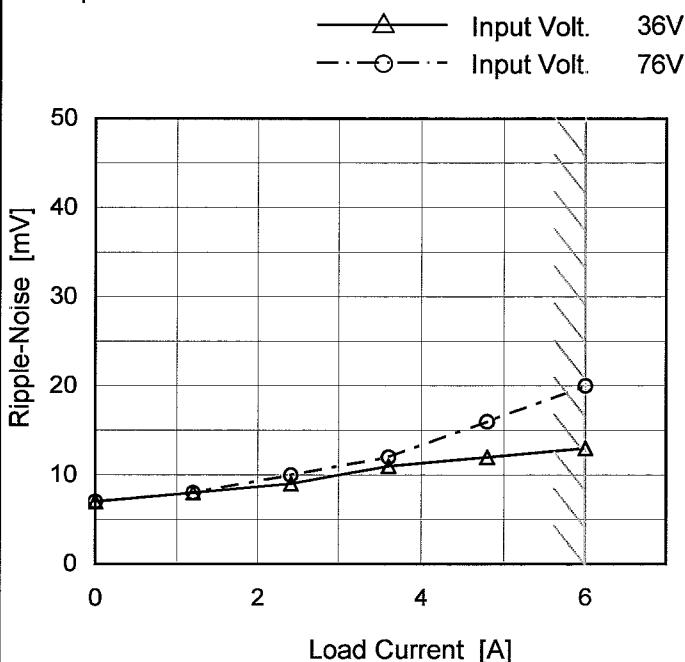


Fig.Complex Ripple Wave Form

Model	SFS304805/SFCS304805
Item	Ripple-Noise
Object	+5V6A

## 1. Graph



Measured by 100 MHz Oscilloscope.

Ripple-Noise is shown as p-p in the figure below.

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

Temperature 25°C  
Testing Circuitry Figure C

## 2. Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 36 [V]	Input Volt. 76 [V]
0.0	7	7
1.2	8	8
2.4	9	10
3.6	11	12
4.8	12	16
6.0	13	20
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

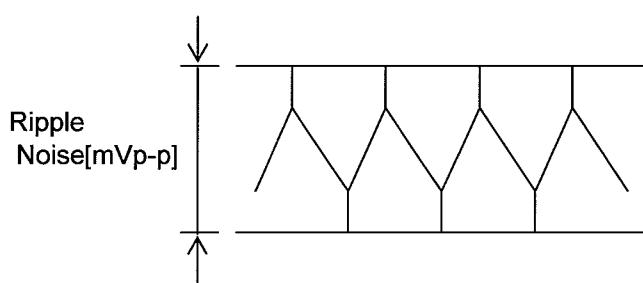


Fig.Complex Ripple Noise Wave Form

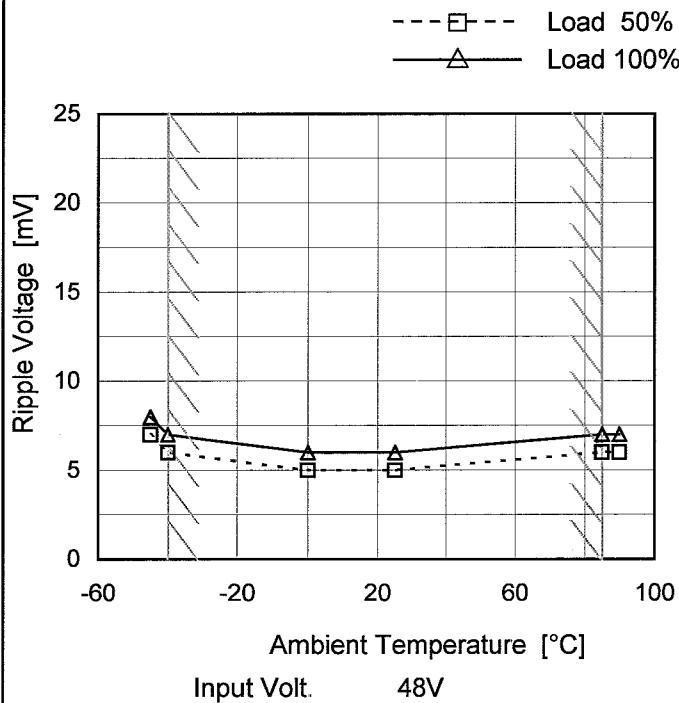
**COSEL**

Model SFS304805/SFCS304805

Item Ripple Voltage (by Ambient Temp.)

Object +5V6A

## 1. Graph



Measured by 100 MHz Oscilloscope.

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

Testing Circuitry Figure C

## 2. Values

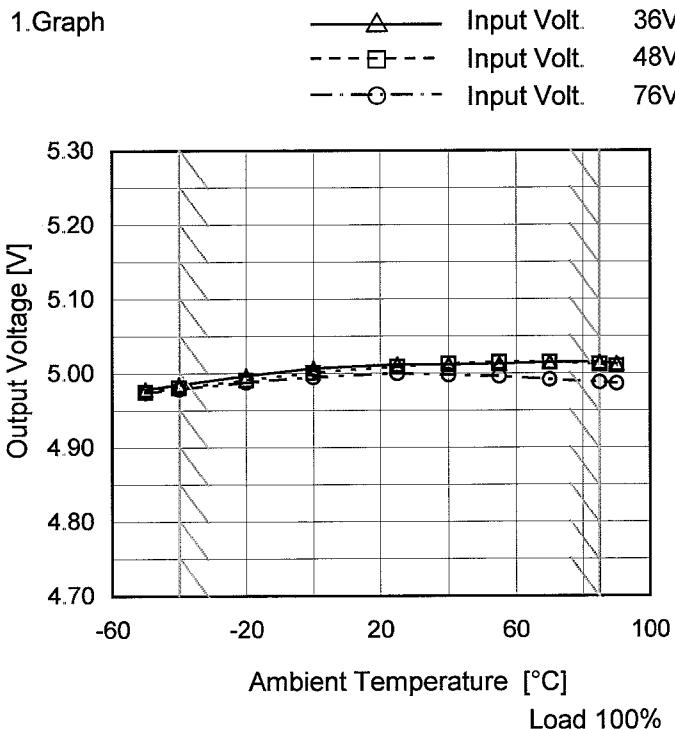
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-45	7	8
-40	6	7
0	5	6
25	5	6
85	6	7
90	6	7
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

**COSEL**

Model SFS304805/SFCS304805

Item Ambient Temperature Drift

Object +5V6A



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	4.979	4.975	4.974
-40	4.985	4.981	4.979
-20	4.997	4.991	4.988
0	5.007	5.001	4.995
25	5.012	5.009	5.000
40	5.012	5.013	4.998
55	5.013	5.015	4.996
70	5.015	5.015	4.992
85	5.015	5.012	4.988
90	5.013	5.010	4.986
--	-	-	-



Model	SFS304805/SFCS304805	Testing Circuitry Figure A
Item	Output Voltage Accuracy	
Object	+5V6A	

### 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 - 6A

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

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

### 2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	85	48	0	5.113	$\pm 67$	$\pm 1.3$
Minimum Voltage	-40	76	6	4.979		

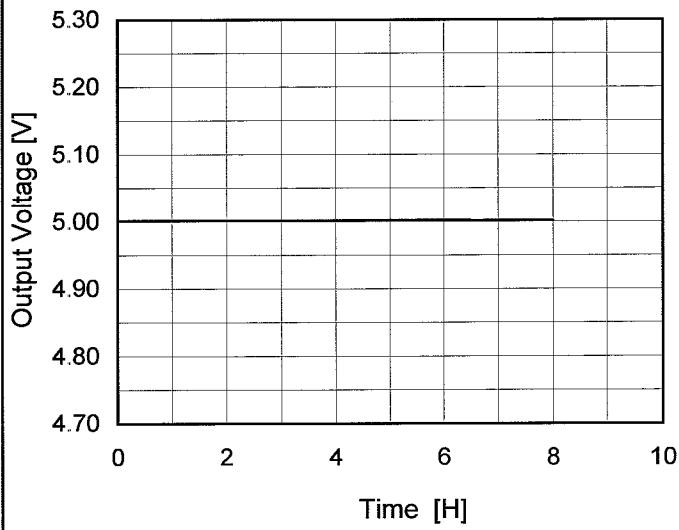
**COSEL**

Model SFS304805/SFCS304805

Item Time Lapse Drift

Object +5V6A

## 1. Graph



Input Volt. 48V  
Load 100%

Temperature 25°C  
Testing Circuitry Figure A

## 2. Values

Time since start [H]	Output Voltage [V]
0.0	5.002
0.5	5.002
1.0	5.002
2.0	5.002
3.0	5.002
4.0	5.002
5.0	5.002
6.0	5.002
7.0	5.002
8.0	5.002

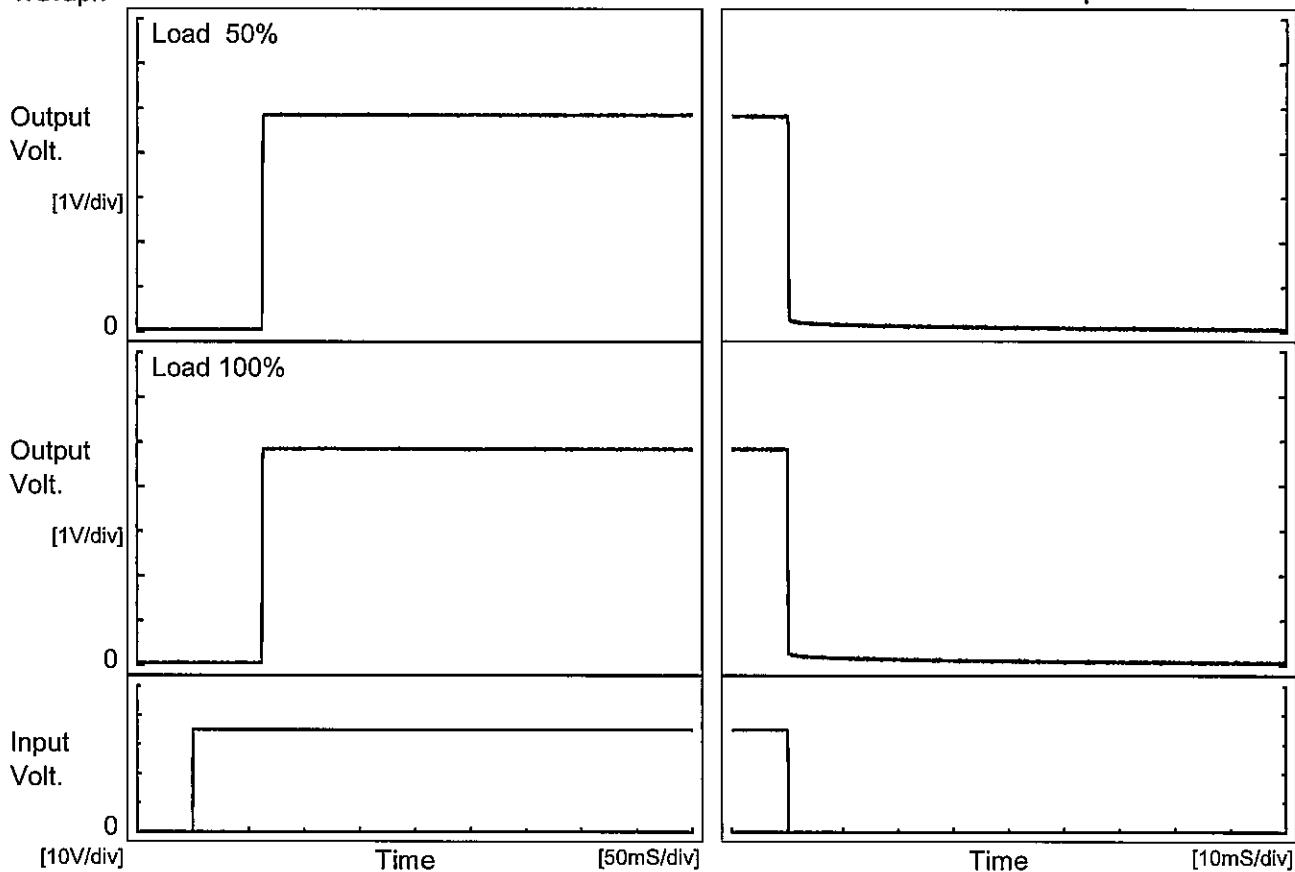
**COSEL**

Model	SFS304805/SFCS304805
Item	Rise and Fall Time
Object	+5V6A

Temperature 25°C  
Testing Circuitry Figure A

## 1. Graph

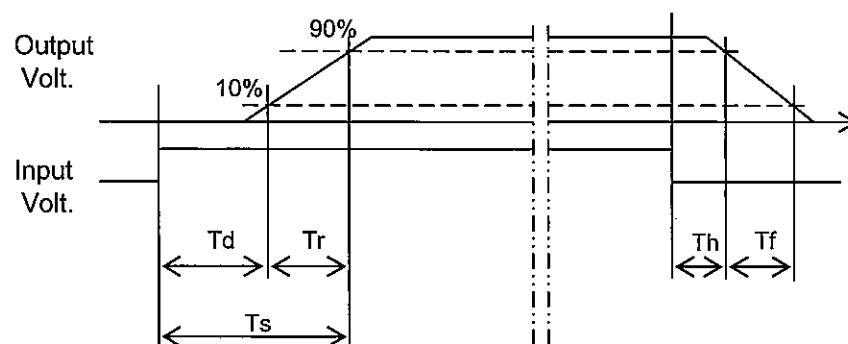
Input Volt. 36 V



## 2. Values

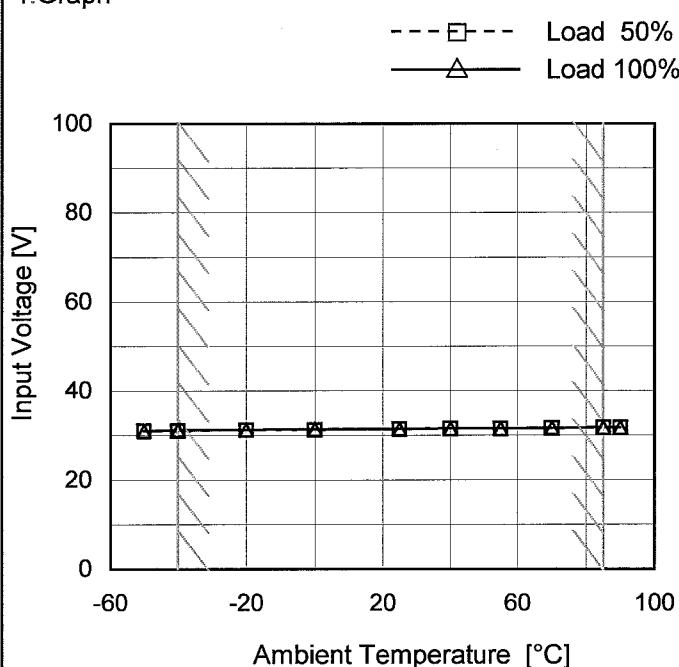
[mS]

Load	Time	Td	Tr	Ts	Th	Tf
50 %		62.3	0.5	62.8	0.1	0.2
100 %		62.0	0.6	62.6	0.0	0.2



Model	SFS304805/SFCS304805
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+5V6A

## 1. Graph



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

Testing Circuitry Figure A

## 2. Values

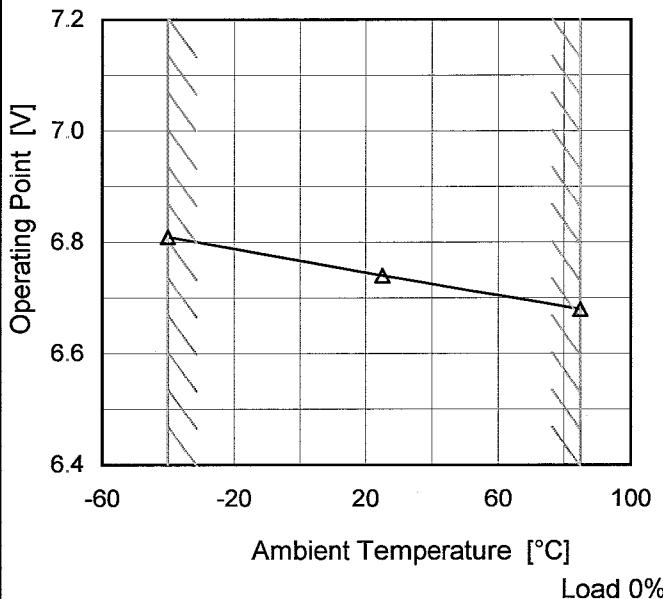
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-50	31.1	31.1
-40	31.1	31.3
-20	31.3	31.3
0	31.3	31.5
25	31.5	31.5
40	31.6	31.7
55	31.6	31.7
70	31.7	31.7
85	31.8	31.9
90	31.8	31.9
--	-	-

Model	SFS304805/SFCS304805	Temperature Testing Circuitry	25°C Figure A																																																																							
Item	Overcurrent Protection																																																																									
Object	+5V6A																																																																									
1.Graph		2.Values																																																																								
<p>The graph plots Output Voltage [V] on the y-axis (0 to 6) against Load Current [A] on the x-axis (0 to 8). Three curves represent different input voltages: 36V (top), 48V (middle), and 76V (bottom). Each curve is flat at its respective output voltage until about 6A, then drops sharply. A slanted line connects the points where each curve begins to drop, indicating the range of the rated load current.</p>		<table border="1"> <thead> <tr> <th rowspan="2">Output Voltage [V]</th> <th colspan="3">Load Current [A]</th> </tr> <tr> <th>Input Volt. 36[V]</th> <th>Input Volt. 48[V]</th> <th>Input Volt. 76[V]</th> </tr> </thead> <tbody> <tr><td>5.00</td><td>6.17</td><td>6.16</td><td>6.06</td></tr> <tr><td>4.75</td><td>6.62</td><td>6.65</td><td>6.80</td></tr> <tr><td>4.50</td><td>6.61</td><td>6.66</td><td>6.82</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> </tbody> </table>		Output Voltage [V]	Load Current [A]			Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]	5.00	6.17	6.16	6.06	4.75	6.62	6.65	6.80	4.50	6.61	6.66	6.82	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
Output Voltage [V]	Load Current [A]																																																																									
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]																																																																							
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4.75	6.62	6.65	6.80																																																																							
4.50	6.61	6.66	6.82																																																																							
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Note: Slanted line shows the range of the rated load current.																																																																										
When the output voltage fell to less than 4.5V, the unit shuts off the output by operating low voltage protection.																																																																										

Model	SFS304805/SFCS304805
Item	Overvoltage Protection
Object	+5V6A

1.Graph

—△— Input Volt. 48V



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

Testing Circuitry Figure A

2.Values

Ambient Temperature [°C]	Operating Point [V]		
	Input Volt.	Input Volt.	Input Volt.
-40	6.81	-	-
25	6.74	-	-
85	6.68	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

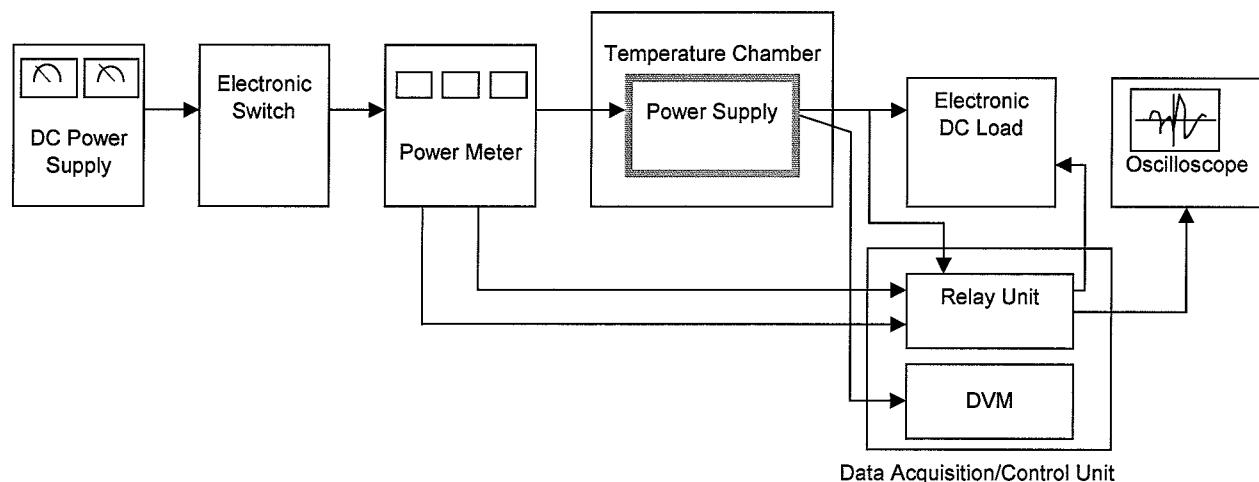


Figure A

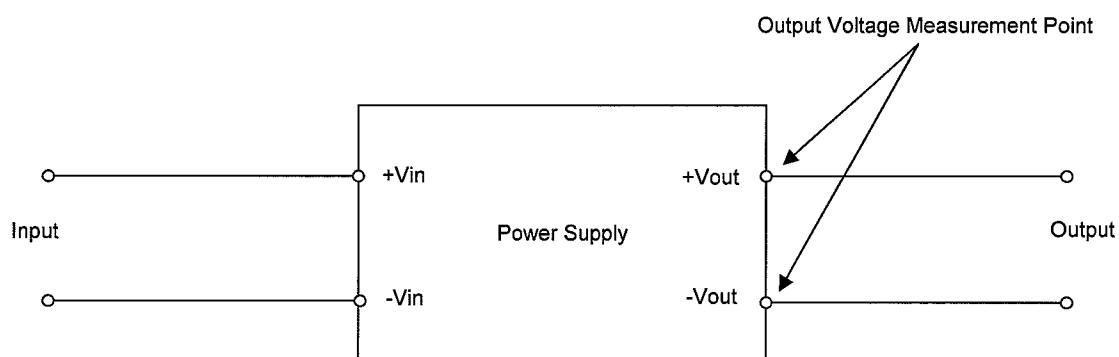


Figure B (General Electric Characteristic)

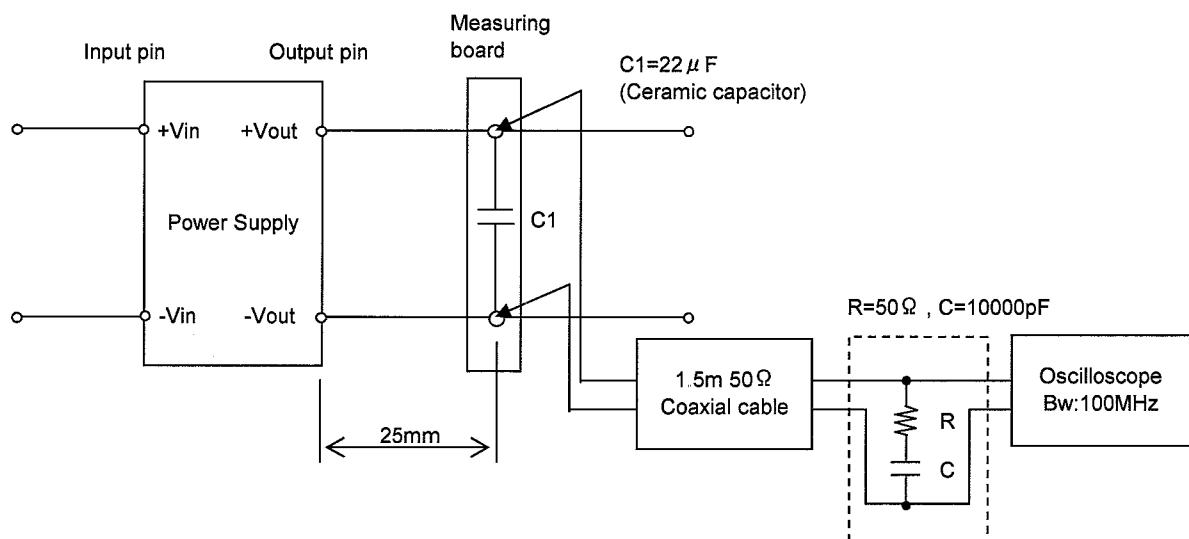


Figure C (Ripple and Ripple noise Characteristic)