



# TEST DATA OF SFS304815/SFCS304815

Regulated DC Power Supply  
Jun.1. 2007

Approved by : Toshiyuki Tsuri Design Manager  
Toshiyuki Tsuri

Prepared by : Kenichi Shibutani Design Engineer  
Kenichi Shibutani

**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)

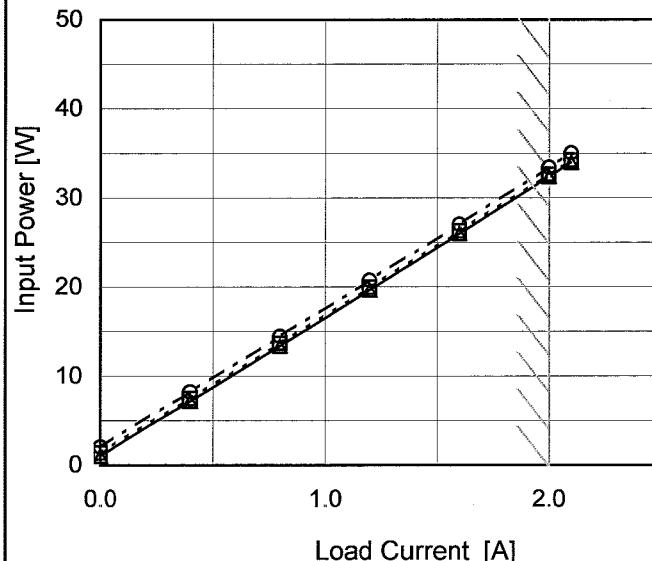
Model	SFS304815/SFCS304815	Temperature Testing Circuitry	25°C Figure A																																																																					
Item	Input Current (by Input Voltage)																																																																							
Object																																																																								
1.Graph	<p>—△— Load 100%</p> <p>- - -□-- Load 50%</p> <p>- - -○-- Load 0%</p> <table border="1"> <caption>Data points estimated from Graph 1</caption> <thead> <tr> <th>Input Voltage [V]</th> <th>Load 0% [A]</th> <th>Load 50% [A]</th> <th>Load 100% [A]</th> </tr> </thead> <tbody> <tr><td>0</td><td>0.000</td><td>0.000</td><td>0.000</td></tr> <tr><td>8</td><td>0.001</td><td>0.001</td><td>0.001</td></tr> <tr><td>16</td><td>0.001</td><td>0.001</td><td>0.001</td></tr> <tr><td>24</td><td>0.002</td><td>0.002</td><td>0.002</td></tr> <tr><td>33</td><td>0.002</td><td>0.002</td><td>0.002</td></tr> <tr><td>34</td><td>0.030</td><td>0.475</td><td>0.934</td></tr> <tr><td>36</td><td>0.029</td><td>0.454</td><td>0.893</td></tr> <tr><td>40</td><td>0.029</td><td>0.412</td><td>0.809</td></tr> <tr><td>48</td><td>0.028</td><td>0.347</td><td>0.677</td></tr> <tr><td>60</td><td>0.028</td><td>0.284</td><td>0.547</td></tr> <tr><td>70</td><td>0.027</td><td>0.248</td><td>0.474</td></tr> <tr><td>76</td><td>0.027</td><td>0.230</td><td>0.439</td></tr> <tr><td>80</td><td>0.027</td><td>0.220</td><td>0.418</td></tr> </tbody> </table>	Input Voltage [V]	Load 0% [A]	Load 50% [A]	Load 100% [A]	0	0.000	0.000	0.000	8	0.001	0.001	0.001	16	0.001	0.001	0.001	24	0.002	0.002	0.002	33	0.002	0.002	0.002	34	0.030	0.475	0.934	36	0.029	0.454	0.893	40	0.029	0.412	0.809	48	0.028	0.347	0.677	60	0.028	0.284	0.547	70	0.027	0.248	0.474	76	0.027	0.230	0.439	80	0.027	0.220	0.418															
Input Voltage [V]	Load 0% [A]	Load 50% [A]	Load 100% [A]																																																																					
0	0.000	0.000	0.000																																																																					
8	0.001	0.001	0.001																																																																					
16	0.001	0.001	0.001																																																																					
24	0.002	0.002	0.002																																																																					
33	0.002	0.002	0.002																																																																					
34	0.030	0.475	0.934																																																																					
36	0.029	0.454	0.893																																																																					
40	0.029	0.412	0.809																																																																					
48	0.028	0.347	0.677																																																																					
60	0.028	0.284	0.547																																																																					
70	0.027	0.248	0.474																																																																					
76	0.027	0.230	0.439																																																																					
80	0.027	0.220	0.418																																																																					
2.Values	<table border="1"> <thead> <tr> <th rowspan="2">Input Voltage [V]</th> <th colspan="3">Input Current [A]</th> </tr> <tr> <th>Load 0%</th> <th>Load 50%</th> <th>Load 100%</th> </tr> </thead> <tbody> <tr><td>0</td><td>0.000</td><td>0.000</td><td>0.000</td></tr> <tr><td>8</td><td>0.001</td><td>0.001</td><td>0.001</td></tr> <tr><td>16</td><td>0.001</td><td>0.001</td><td>0.001</td></tr> <tr><td>24</td><td>0.002</td><td>0.002</td><td>0.002</td></tr> <tr><td>33</td><td>0.002</td><td>0.002</td><td>0.002</td></tr> <tr><td>34</td><td>0.030</td><td>0.475</td><td>0.934</td></tr> <tr><td>36</td><td>0.029</td><td>0.454</td><td>0.893</td></tr> <tr><td>40</td><td>0.029</td><td>0.412</td><td>0.809</td></tr> <tr><td>48</td><td>0.028</td><td>0.347</td><td>0.677</td></tr> <tr><td>60</td><td>0.028</td><td>0.284</td><td>0.547</td></tr> <tr><td>70</td><td>0.027</td><td>0.248</td><td>0.474</td></tr> <tr><td>76</td><td>0.027</td><td>0.230</td><td>0.439</td></tr> <tr><td>80</td><td>0.027</td><td>0.220</td><td>0.418</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> </tbody> </table>	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	0.002	0.002	0.002	33	0.002	0.002	0.002	34	0.030	0.475	0.934	36	0.029	0.454	0.893	40	0.029	0.412	0.809	48	0.028	0.347	0.677	60	0.028	0.284	0.547	70	0.027	0.248	0.474	76	0.027	0.230	0.439	80	0.027	0.220	0.418	--	-	-	-	--	-	-	-	--	-	-	-
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	0.002	0.002	0.002																																																																					
33	0.002	0.002	0.002																																																																					
34	0.030	0.475	0.934																																																																					
36	0.029	0.454	0.893																																																																					
40	0.029	0.412	0.809																																																																					
48	0.028	0.347	0.677																																																																					
60	0.028	0.284	0.547																																																																					
70	0.027	0.248	0.474																																																																					
76	0.027	0.230	0.439																																																																					
80	0.027	0.220	0.418																																																																					
--	-	-	-																																																																					
--	-	-	-																																																																					
--	-	-	-																																																																					

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

Model	SFS304815/SFCS304815	Temperature	25°C																																																			
Item	Input Current (by Load Current)	Testing Circuitry	Figure A																																																			
Object	_____																																																					
1. Graph		2. Values																																																				
<p>—△— Input Volt. 36V        - - -□- - Input Volt. 48V        - - ○ - - Input Volt. 76V</p>		<table border="1"> <thead> <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> </thead> <tbody> <tr><td>0.0</td><td>0.029</td><td>0.028</td><td>0.027</td></tr> <tr><td>0.4</td><td>0.199</td><td>0.157</td><td>0.108</td></tr> <tr><td>0.8</td><td>0.373</td><td>0.285</td><td>0.191</td></tr> <tr><td>1.2</td><td>0.549</td><td>0.416</td><td>0.274</td></tr> <tr><td>1.6</td><td>0.725</td><td>0.548</td><td>0.357</td></tr> <tr><td>2.0</td><td>0.900</td><td>0.681</td><td>0.440</td></tr> <tr><td>2.1</td><td>0.945</td><td>0.714</td><td>0.461</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> </tbody> </table>		Load Current [A]	Input Current [A]			Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]	0.0	0.029	0.028	0.027	0.4	0.199	0.157	0.108	0.8	0.373	0.285	0.191	1.2	0.549	0.416	0.274	1.6	0.725	0.548	0.357	2.0	0.900	0.681	0.440	2.1	0.945	0.714	0.461	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Input Current [A]																																																					
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]																																																			
0.0	0.029	0.028	0.027																																																			
0.4	0.199	0.157	0.108																																																			
0.8	0.373	0.285	0.191																																																			
1.2	0.549	0.416	0.274																																																			
1.6	0.725	0.548	0.357																																																			
2.0	0.900	0.681	0.440																																																			
2.1	0.945	0.714	0.461																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			

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

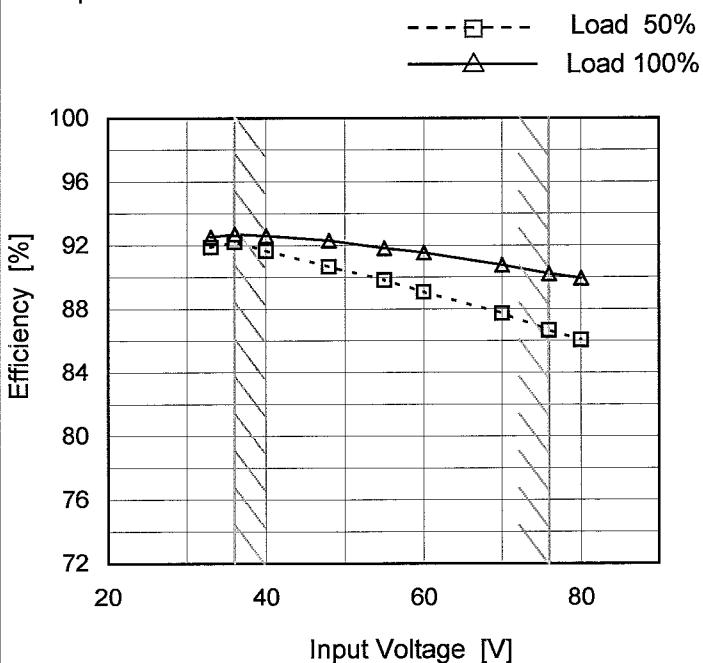
**COSEL**

Model	SFS304815/SFCS304815	Temperature	25°C																																																			
Item	Input Power (by Load Current)	Testing Circuitry	Figure A																																																			
Object	<hr/>																																																					
1.Graph	<p style="text-align: center;"> <span style="color: black;">△</span> Input Volt. 36V  <span style="color: gray;">□</span> Input Volt. 48V  <span style="color: gray;">○</span> Input Volt. 76V         </p>  <p>The graph plots Input Power [W] on the y-axis (0 to 50) against Load Current [A] on the x-axis (0.0 to 2.0). Three data series are shown for input voltages of 36V, 48V, and 76V. Each series consists of four data points connected by dashed lines. A slanted line is drawn through the origin, representing the rated load current range.</p>																																																					
2.Values	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="3">Input Power [W]</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>0.0</td><td>1.06</td><td>1.35</td><td>2.06</td></tr> <tr><td>0.4</td><td>7.17</td><td>7.48</td><td>8.23</td></tr> <tr><td>0.8</td><td>13.39</td><td>13.70</td><td>14.49</td></tr> <tr><td>1.2</td><td>19.69</td><td>19.99</td><td>20.77</td></tr> <tr><td>1.6</td><td>26.00</td><td>26.30</td><td>27.06</td></tr> <tr><td>2.0</td><td>32.40</td><td>32.65</td><td>33.44</td></tr> <tr><td>2.1</td><td>34.01</td><td>34.25</td><td>35.05</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> </tbody> </table>			Load Current [A]	Input Power [W]			Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]	0.0	1.06	1.35	2.06	0.4	7.17	7.48	8.23	0.8	13.39	13.70	14.49	1.2	19.69	19.99	20.77	1.6	26.00	26.30	27.06	2.0	32.40	32.65	33.44	2.1	34.01	34.25	35.05	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Input Power [W]																																																					
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]																																																			
0.0	1.06	1.35	2.06																																																			
0.4	7.17	7.48	8.23																																																			
0.8	13.39	13.70	14.49																																																			
1.2	19.69	19.99	20.77																																																			
1.6	26.00	26.30	27.06																																																			
2.0	32.40	32.65	33.44																																																			
2.1	34.01	34.25	35.05																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			
Note:	Slanted line shows the range of the rated load current.																																																					

**COSEL**

Model	SFS304815/SFCS304815
Item	Efficiency (by Input Voltage)
Object	

## 1. Graph



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

 Temperature 25°C  
 Testing Circuitry Figure A

## 2. Values

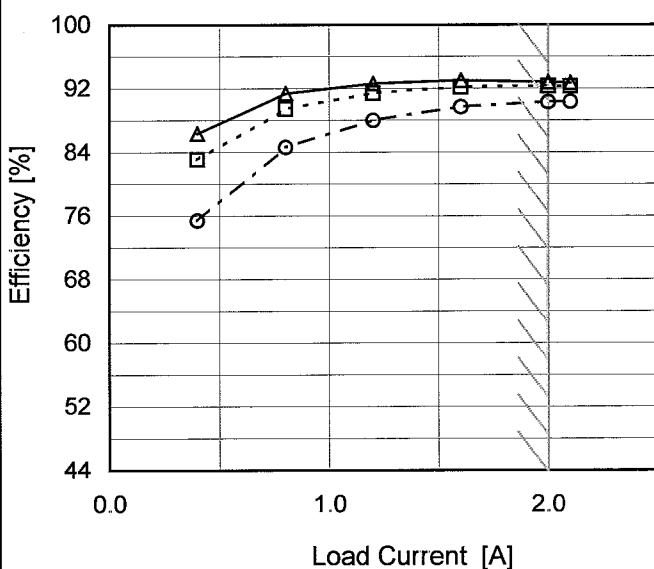
Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
33	91.9	92.5
36	92.2	92.7
40	91.7	92.6
48	90.7	92.3
55	89.8	91.8
60	89.1	91.5
70	87.7	90.8
76	86.7	90.2
80	86.1	89.9

**COSEL**

Model	SFS304815/SFCS304815
Item	Efficiency (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]	Efficiency [%]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.0	-	-	-
0.4	86.4	83.1	75.4
0.8	91.4	89.4	84.6
1.2	92.7	91.4	88.0
1.6	93.1	92.2	89.7
2.0	92.8	92.3	90.3
2.1	92.7	92.3	90.4
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

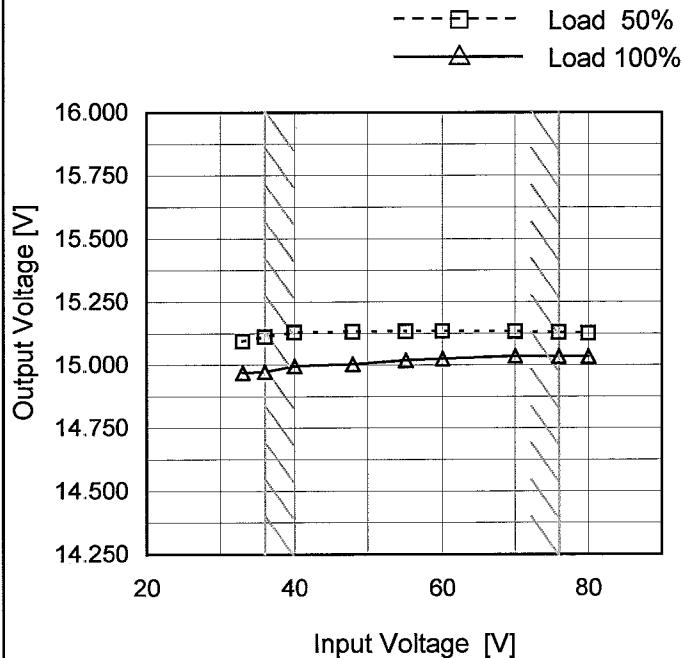
**COSEL**

Model SFS304815/SFCS304815

Item Line Regulation

Object +15V2A

## 1. Graph



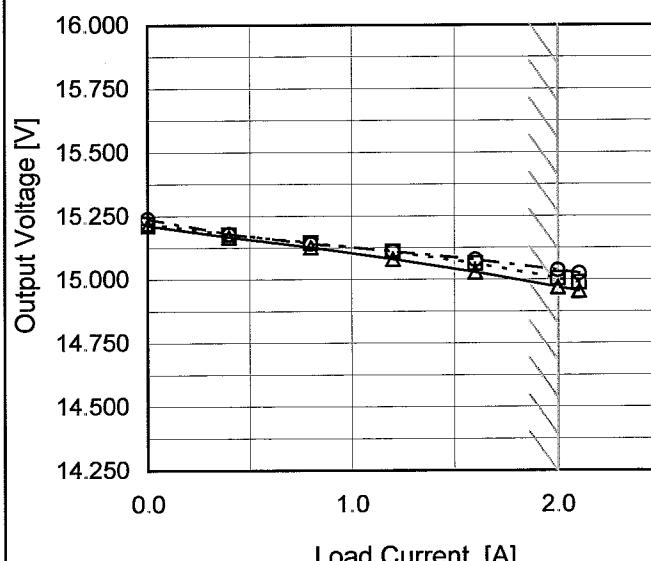
Note: Slanted line shows the range of the rated input voltage.

Temperature 25°C  
Testing Circuitry Figure A

## 2. Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
33	15.094	14.970
36	15.112	14.973
40	15.129	14.996
48	15.132	15.004
55	15.133	15.020
60	15.135	15.026
70	15.133	15.035
76	15.129	15.035
80	15.126	15.035

**COSEL**

Model	SFS304815/SFCS304815	Temperature Testing Circuitry 25°C Figure A																																																			
Item	Load Regulation																																																				
Object	+15V2A																																																				
1.Graph	<p>—△— Input Volt. 36V        - - -□--- Input Volt. 48V        - - ○--- Input Volt. 76V</p>  <p>Output Voltage [V]</p> <p>Load Current [A]</p>	2.Values																																																			
		<table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="3">Output Voltage [V]</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>0.0</td><td>15.213</td><td>15.221</td><td>15.239</td></tr> <tr><td>0.4</td><td>15.167</td><td>15.177</td><td>15.179</td></tr> <tr><td>0.8</td><td>15.128</td><td>15.146</td><td>15.141</td></tr> <tr><td>1.2</td><td>15.081</td><td>15.110</td><td>15.111</td></tr> <tr><td>1.6</td><td>15.029</td><td>15.063</td><td>15.078</td></tr> <tr><td>2.0</td><td>14.970</td><td>15.004</td><td>15.037</td></tr> <tr><td>2.1</td><td>14.955</td><td>14.988</td><td>15.025</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> </tbody> </table>	Load Current [A]	Output Voltage [V]			Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]	0.0	15.213	15.221	15.239	0.4	15.167	15.177	15.179	0.8	15.128	15.146	15.141	1.2	15.081	15.110	15.111	1.6	15.029	15.063	15.078	2.0	14.970	15.004	15.037	2.1	14.955	14.988	15.025	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Output Voltage [V]																																																				
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]																																																		
0.0	15.213	15.221	15.239																																																		
0.4	15.167	15.177	15.179																																																		
0.8	15.128	15.146	15.141																																																		
1.2	15.081	15.110	15.111																																																		
1.6	15.029	15.063	15.078																																																		
2.0	14.970	15.004	15.037																																																		
2.1	14.955	14.988	15.025																																																		
--	-	-	-																																																		
--	-	-	-																																																		
--	-	-	-																																																		
--	-	-	-																																																		

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

**COSEL**

Model	SFS304815/SFCS304815
Item	Dynamic Load Response
Object	+15V2A

Temperature 25°C  
Testing Circuitry Figure A

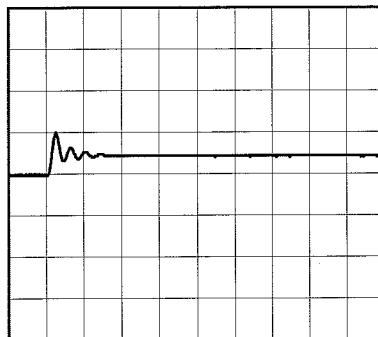
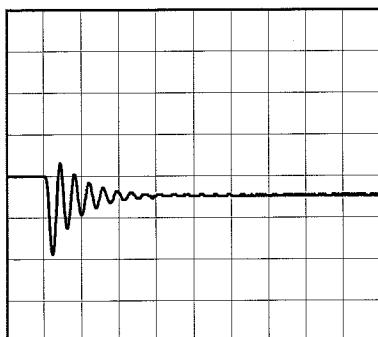
Input Volt. 48 V  
Cycle 100 mS

Load Current

2A / 200 μ sec

Min. Load (0A) ↔  
Load 100% (2A)

500mV/div

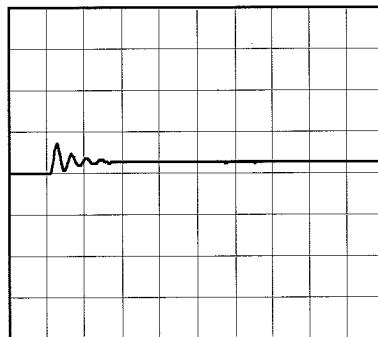
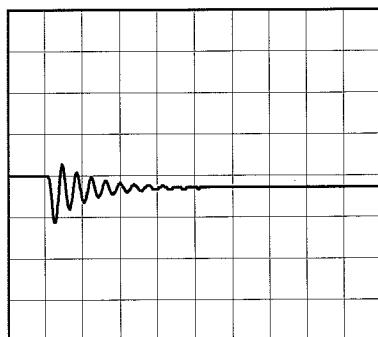


200 μs/div

200 μs/div

Min. Load (0A) ↔  
Load 50% (1A)

500mV/div

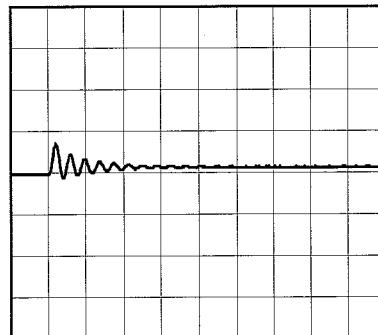
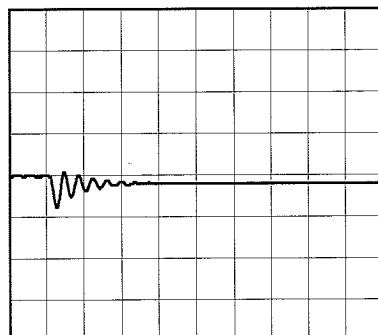


200 μs/div

200 μs/div

Load 50% (1A) ↔  
Load 100% (2A)

500mV/div



200 μs/div

200 μs/div



Model	SFS304815/SFCS304815	Temperature	25°C																																																																										
Item	Ripple Voltage (by Load Current)	Testing Circuitry	Figure C																																																																										
Object	+15V2A																																																																												
1. Graph		2. Values																																																																											
<p>Graph showing Ripple Voltage [mV] vs Load Current [A]. The Y-axis ranges from 0 to 120 mV, and the X-axis ranges from 0.0 to 2.5 A. Two horizontal lines represent Input Volt. 36V (triangles) and Input Volt. 76V (circles). A slanted line indicates the range of the rated load current.</p> <table border="1"> <thead> <tr> <th>Load Current [A]</th> <th>Ripple Voltage [mV] (Input Volt. 36 V)</th> <th>Ripple Voltage [mV] (Input Volt. 76 V)</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>41</td><td>61</td></tr> <tr><td>0.4</td><td>41</td><td>61</td></tr> <tr><td>0.8</td><td>41</td><td>61</td></tr> <tr><td>1.2</td><td>41</td><td>61</td></tr> <tr><td>1.6</td><td>41</td><td>61</td></tr> <tr><td>2.0</td><td>41</td><td>61</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>		Load Current [A]	Ripple Voltage [mV] (Input Volt. 36 V)	Ripple Voltage [mV] (Input Volt. 76 V)	0.0	41	61	0.4	41	61	0.8	41	61	1.2	41	61	1.6	41	61	2.0	41	61	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	<table border="1"> <thead> <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> </thead> <tbody> <tr><td>0.0</td><td>41</td><td>61</td></tr> <tr><td>0.4</td><td>41</td><td>61</td></tr> <tr><td>0.8</td><td>41</td><td>61</td></tr> <tr><td>1.2</td><td>41</td><td>61</td></tr> <tr><td>1.6</td><td>41</td><td>61</td></tr> <tr><td>2.0</td><td>41</td><td>61</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>		Load Current [A]	Ripple Voltage [mV]		Input Volt. 36 [V]	Input Volt. 76 [V]	0.0	41	61	0.4	41	61	0.8	41	61	1.2	41	61	1.6	41	61	2.0	41	61	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-
Load Current [A]	Ripple Voltage [mV] (Input Volt. 36 V)	Ripple Voltage [mV] (Input Volt. 76 V)																																																																											
0.0	41	61																																																																											
0.4	41	61																																																																											
0.8	41	61																																																																											
1.2	41	61																																																																											
1.6	41	61																																																																											
2.0	41	61																																																																											
--	-	-																																																																											
--	-	-																																																																											
--	-	-																																																																											
--	-	-																																																																											
--	-	-																																																																											
Load Current [A]	Ripple Voltage [mV]																																																																												
	Input Volt. 36 [V]	Input Volt. 76 [V]																																																																											
0.0	41	61																																																																											
0.4	41	61																																																																											
0.8	41	61																																																																											
1.2	41	61																																																																											
1.6	41	61																																																																											
2.0	41	61																																																																											
--	-	-																																																																											
--	-	-																																																																											
--	-	-																																																																											
--	-	-																																																																											
--	-	-																																																																											
<p>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.</p>		<p>Fig. Complex Ripple Wave Form</p>																																																																											

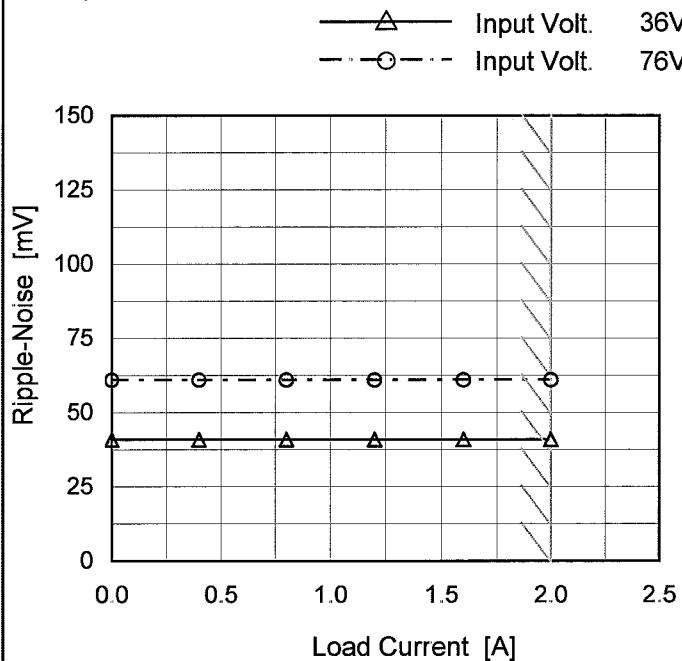
**COSEL**

Model SFS304815/SFCS304815

Item Ripple-Noise

Object +15V2A

## 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.

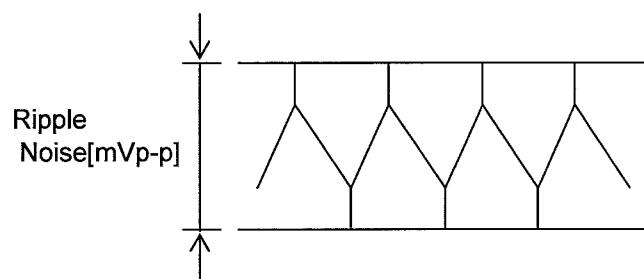


Fig.Complex Ripple Noise Wave Form

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	41	61
0.4	41	61
0.8	41	61
1.2	41	61
1.6	41	61
2.0	41	61
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

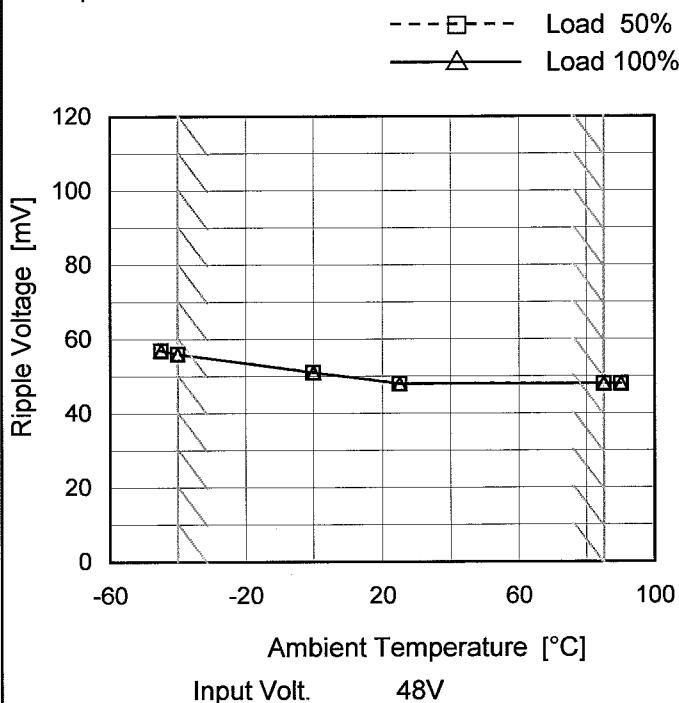
**COSEL**

Model SFS304815/SFCS304815

Item Ripple Voltage (by Ambient Temp.)

Object +15V2A

## 1. Graph



Measured by 100 MHz Oscilloscope.

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

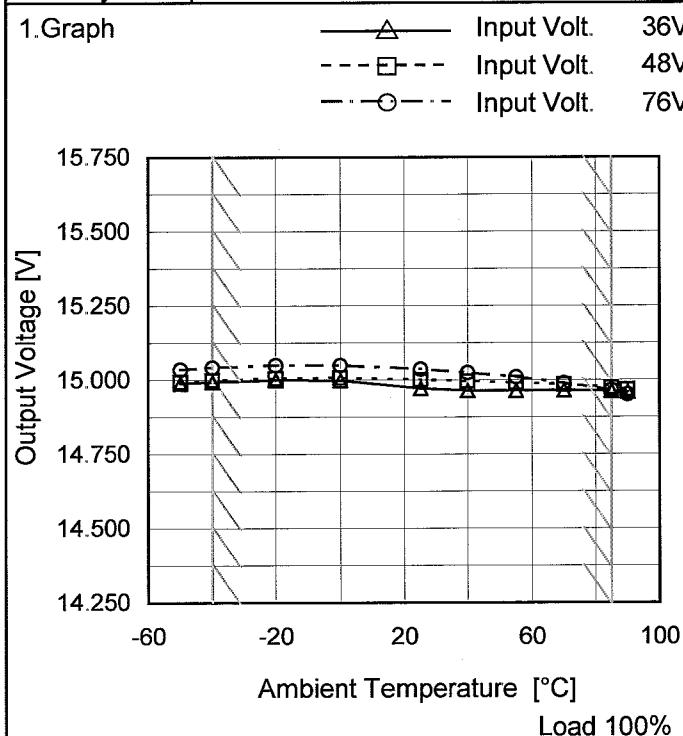
Testing Circuitry Figure C

## 2. Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-45	57	57
-40	56	56
0	51	51
25	48	48
85	48	48
90	48	48
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

**COSEL**

Model	SFS304815/SFCS304815
Item	Ambient Temperature Drift
Object	+15V2A



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	14.989	14.994	15.036
-40	14.993	14.999	15.042
-20	15.000	15.005	15.050
0	14.999	15.008	15.050
25	14.972	15.001	15.037
40	14.964	14.996	15.025
55	14.964	14.990	15.010
70	14.966	14.985	14.989
85	14.963	14.974	14.965
90	14.960	14.968	14.952
--	-	-	-

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



Model	SFS304815/SFCS304815	Testing Circuitry Figure A
Item	Output Voltage Accuracy	
Object	+15V2A	

### 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 - 2A

\* 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	36	0	15.267	$\pm 152$	$\pm 1.0$
Minimum Voltage	85	36	2	14.963		

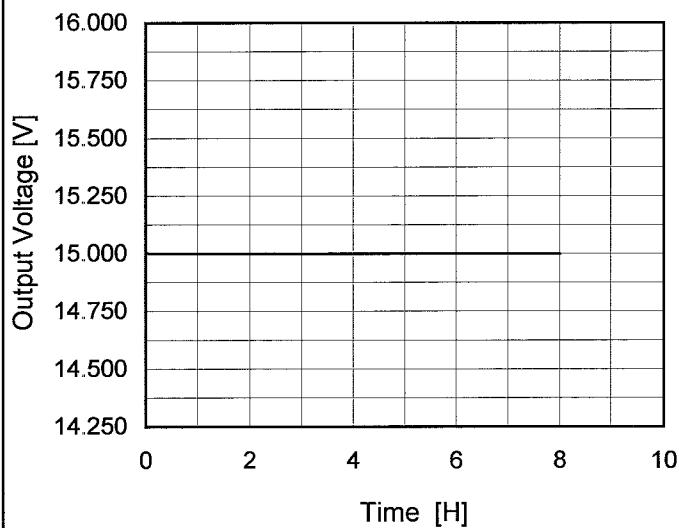
**COSEL**

Model SFS304815/SFCS304815

Item Time Lapse Drift

Object +15V2A

## 1.Graph

Temperature 25°C  
Testing Circuitry Figure A

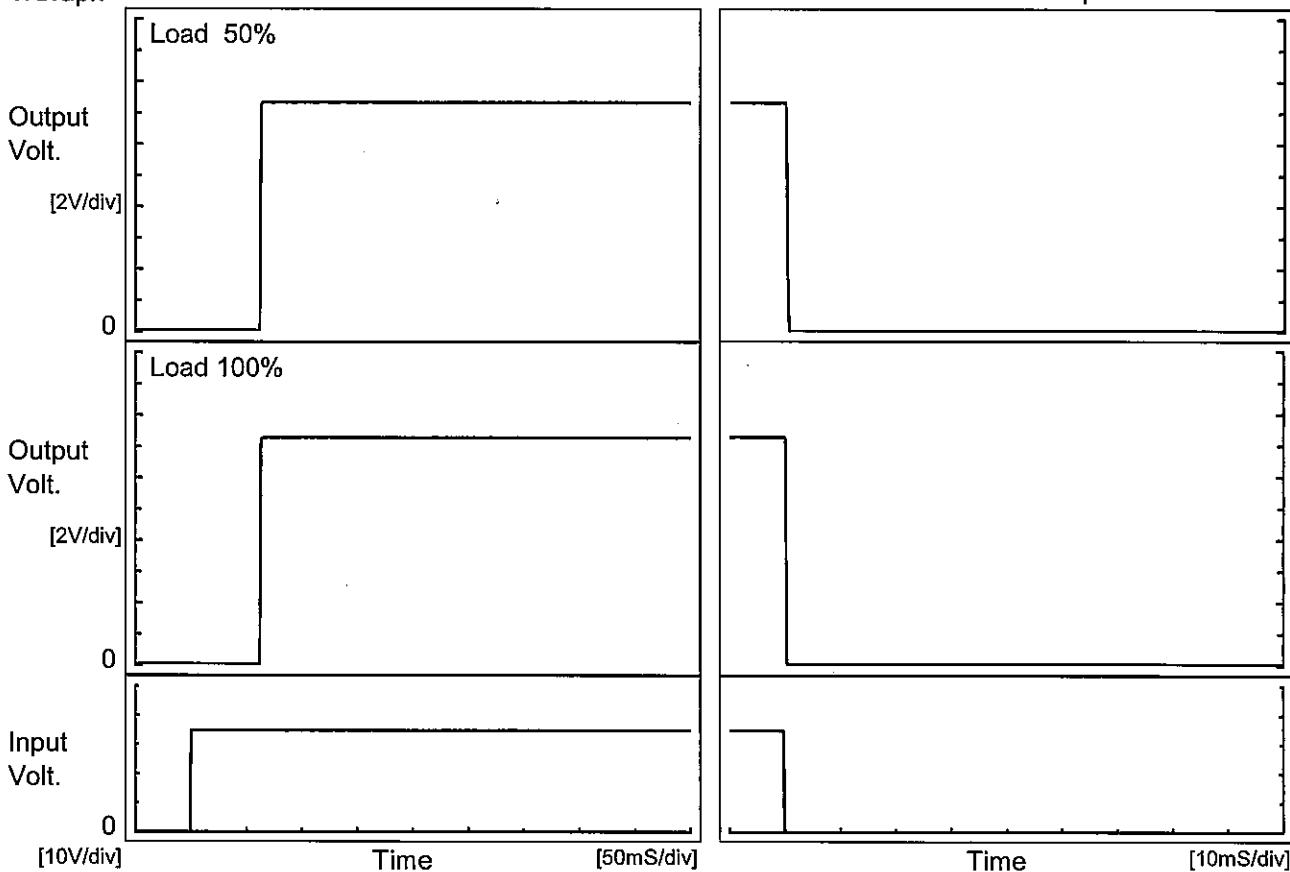
## 2.Values

Time since start [H]	Output Voltage [V]
0.0	15.014
0.5	15.000
1.0	15.000
2.0	15.000
3.0	15.000
4.0	15.000
5.0	15.000
6.0	15.000
7.0	15.000
8.0	15.000

Model	SFS304815/SFCS304815
Item	Rise and Fall Time
Object	+15V2A

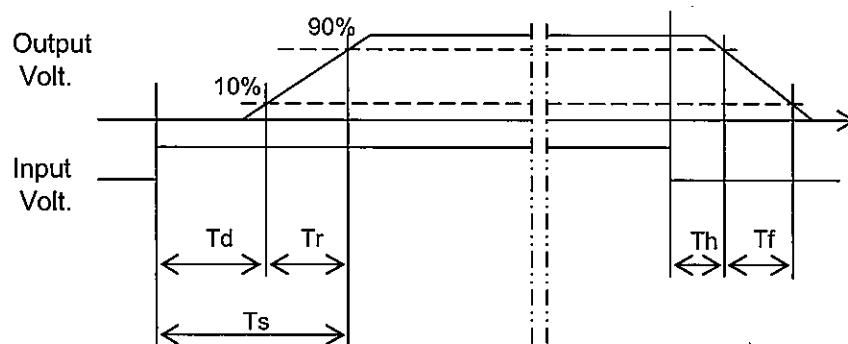
Temperature 25°C  
Testing Circuitry Figure A

## 1. Graph



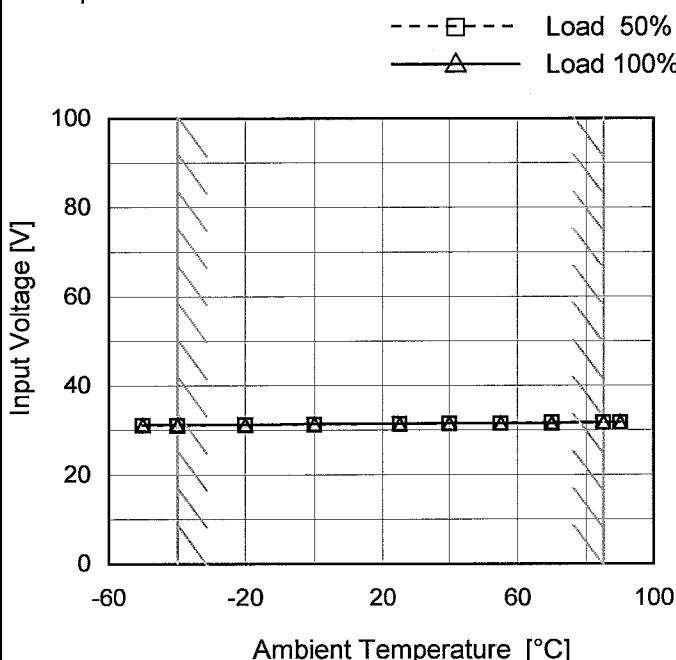
## 2. Values

Load	Time	Td	Tr	Ts	Th	Tf	[mS]
50 %		62.5	0.8	63.3	0.1	0.5	
100 %		62.5	0.9	63.4	0.1	0.3	



Model	SFS304815/SFCS304815
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+15V2A

## 1. Graph



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

Testing Circuitry Figure A

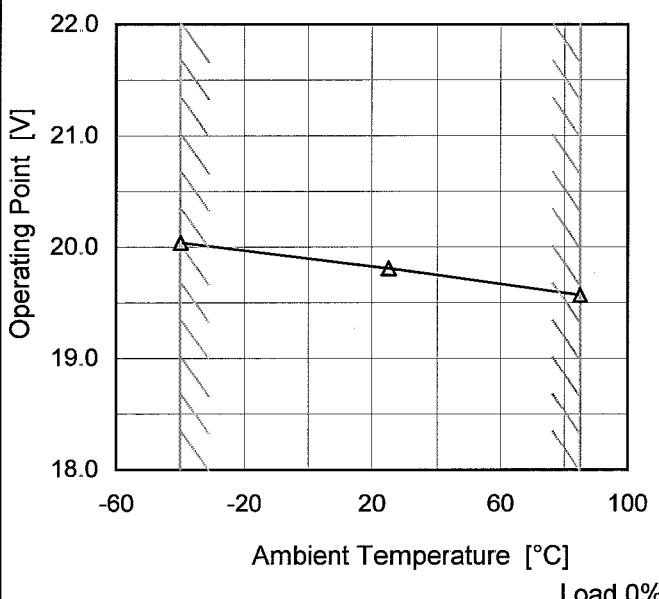
## 2. Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-50	31.1	31.3
-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	31.8	31.7
85	31.8	31.9
90	31.8	31.9
--	-	-

Model	SFS304815/SFCS304815	Temperature	25°C																																																																							
Item	Overcurrent Protection	Testing Circuitry	Figure A																																																																							
Object	+15V2A																																																																									
1.Graph		2.Values																																																																								
<p>Output Voltage [V]</p> <p>Load Current [A]</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>15.00</td><td>2.06</td><td>2.06</td><td>2.07</td></tr> <tr><td>14.25</td><td>2.19</td><td>2.22</td><td>2.31</td></tr> <tr><td>13.50</td><td>2.20</td><td>2.23</td><td>2.35</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]	15.00	2.06	2.06	2.07	14.25	2.19	2.22	2.31	13.50	2.20	2.23	2.35	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
Output Voltage [V]	Load Current [A]																																																																									
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]																																																																							
15.00	2.06	2.06	2.07																																																																							
14.25	2.19	2.22	2.31																																																																							
13.50	2.20	2.23	2.35																																																																							
--	-	-	-																																																																							
--	-	-	-																																																																							
--	-	-	-																																																																							
--	-	-	-																																																																							
--	-	-	-																																																																							
--	-	-	-																																																																							
--	-	-	-																																																																							
--	-	-	-																																																																							
--	-	-	-																																																																							
--	-	-	-																																																																							
--	-	-	-																																																																							
--	-	-	-																																																																							
--	-	-	-																																																																							
<p>Note: Slanted line shows the range of the rated load current.</p> <p>When the output voltage fell to less than 13.5V, the unit shuts off the output by operating low voltage protection.</p>																																																																										

Model	SFS304815/SFCS304815
Item	Overvoltage Protection
Object	+15V2A

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. 48[V]	Input Volt.	Input Volt.
-40	20.04	-	-
25	19.81	-	-
85	19.57	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

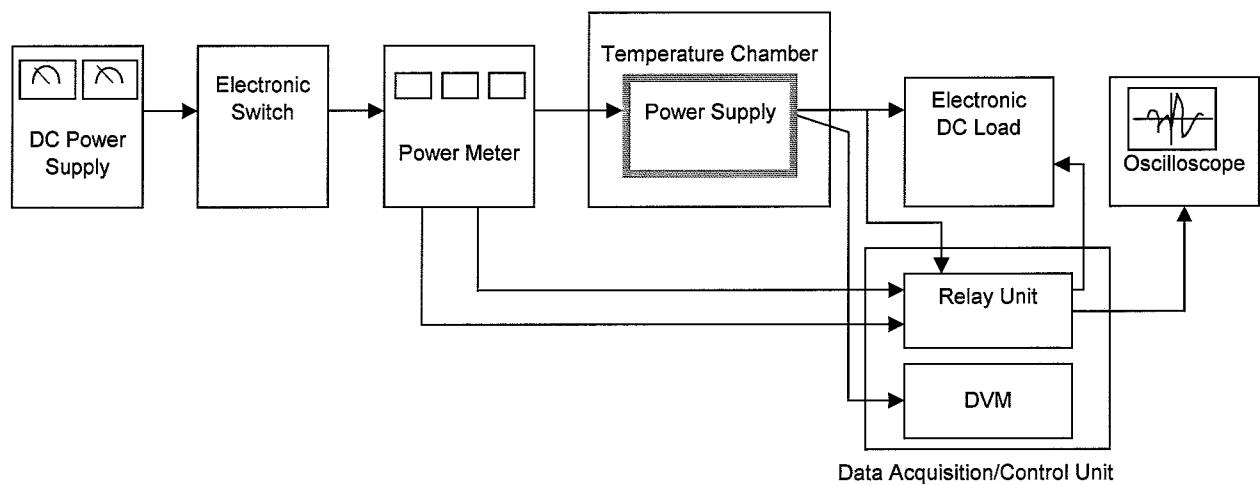


Figure A

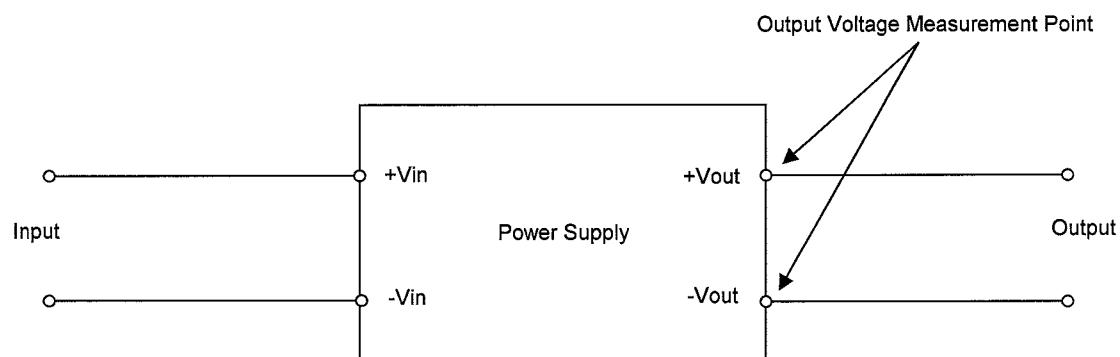


Figure B (General Electric Characteristic)

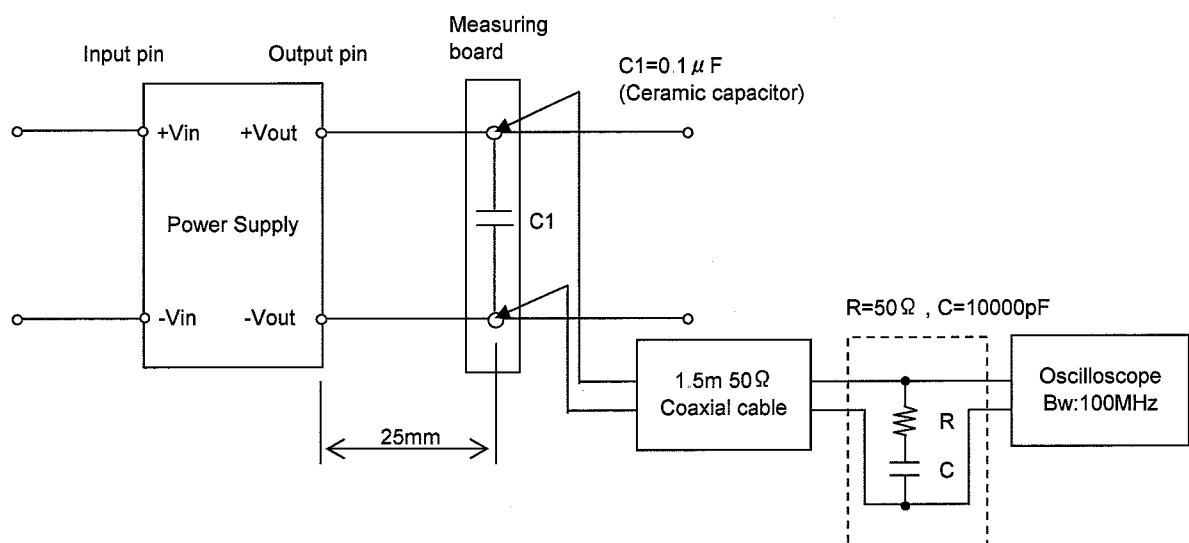


Figure C (Ripple and Ripple noise Characteristic)