



TEST DATA OF SFS30483R3/SFCS30483R3

Regulated DC Power Supply
Jun.1. 2007

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Kenichi Shibutani Design Engineer

COSEL CO.,LTD.

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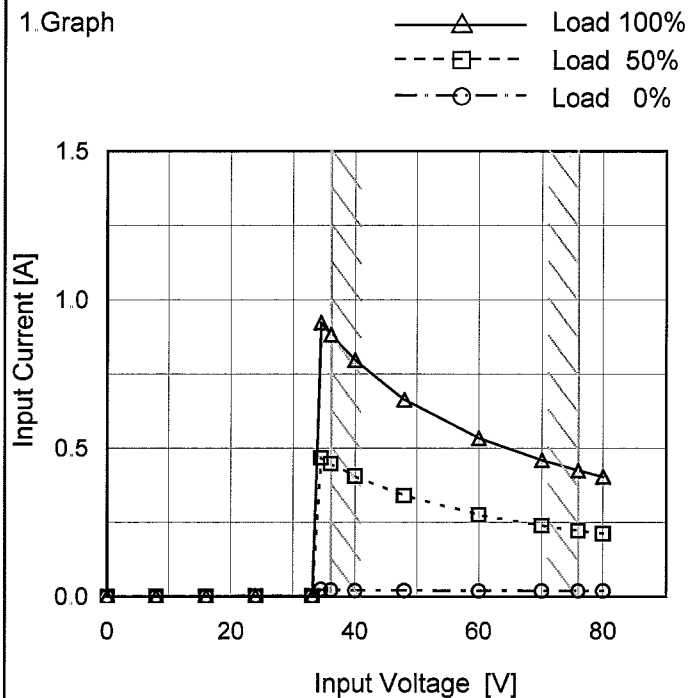
Model SFS30483R3/SFCS30483R3

Item Input Current (by Input Voltage)

Object

Temperature 25°C
Testing Circuitry Figure A

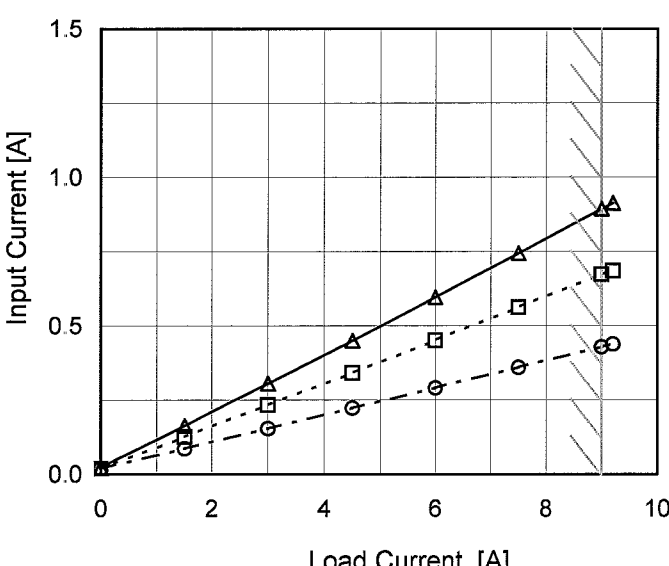
1. Graph



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

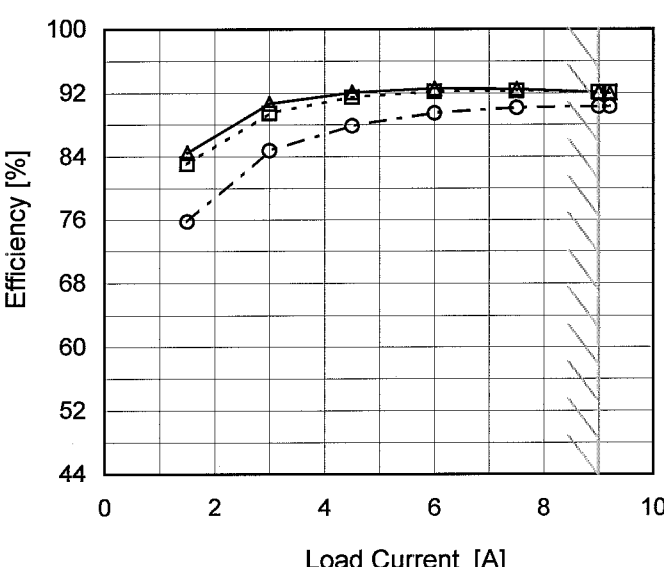
2. Values

Input Voltage [V]	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	0.025	0.468	0.923
36	0.023	0.448	0.883
40	0.021	0.406	0.797
48	0.020	0.340	0.664
60	0.019	0.275	0.534
70	0.019	0.239	0.460
76	0.019	0.222	0.425
80	0.019	0.212	0.404
--	-	-	-
--	-	-	-
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Model		SFS30483R3/SFCS30483R3		Temperature 25°C																																																				
Item		Input Current (by Load Current)		Testing Circuitry Figure A																																																				
Object		_____																																																						
1.Graph		<div><div><div>—△—</div><div>Input Volt.</div><div>36V</div></div><div><div>---□---</div><div>Input Volt.</div><div>48V</div></div><div><div>---○---</div><div>Input Volt.</div><div>76V</div></div></div>  <p>Note: Slanted line shows the range of the rated load current.</p>		2. Values																																																				
		<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>0.023</td><td>0.020</td><td>0.019</td></tr><tr><td>1.5</td><td>0.163</td><td>0.126</td><td>0.086</td></tr><tr><td>3.0</td><td>0.306</td><td>0.234</td><td>0.154</td></tr><tr><td>4.5</td><td>0.450</td><td>0.342</td><td>0.223</td></tr><tr><td>6.0</td><td>0.597</td><td>0.452</td><td>0.291</td></tr><tr><td>7.5</td><td>0.745</td><td>0.562</td><td>0.360</td></tr><tr><td>9.0</td><td>0.894</td><td>0.673</td><td>0.429</td></tr><tr><td>9.2</td><td>0.914</td><td>0.685</td><td>0.439</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	0.023	0.020	0.019	1.5	0.163	0.126	0.086	3.0	0.306	0.234	0.154	4.5	0.450	0.342	0.223	6.0	0.597	0.452	0.291	7.5	0.745	0.562	0.360	9.0	0.894	0.673	0.429	9.2	0.914	0.685	0.439	--	-	-	-	--	-	-	-	--	-	-	-
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Model	SFS30483R3/SFCS30483R3	Temperature25°C Testing CircuitryFigure A																															
Item	Efficiency (by Input Voltage)																																
Object																																	
1.Graph		2.Values																															
<div><div><div>---</div><div>□</div><div>---</div></div><div>Load 50%</div></div> <div><div>—</div><div>△</div><div>—</div></div> <div>Load 100%</div> <table><thead><tr><th>Input Voltage [V]</th><th>Load 50% Efficiency [%]</th><th>Load 100% Efficiency [%]</th></tr></thead><tbody><tr><td>34</td><td>91.7</td><td>91.8</td></tr><tr><td>36</td><td>92.2</td><td>92.1</td></tr><tr><td>40</td><td>92.3</td><td>92.3</td></tr><tr><td>48</td><td>91.5</td><td>92.1</td></tr><tr><td>55</td><td>90.7</td><td>91.8</td></tr><tr><td>60</td><td>90.1</td><td>91.4</td></tr><tr><td>70</td><td>88.7</td><td>90.8</td></tr><tr><td>76</td><td>87.8</td><td>90.3</td></tr><tr><td>78</td><td>87.6</td><td>90.1</td></tr></tbody></table> <p>Note: Slanted line shows the range of the rated input voltage.</p>		Input Voltage [V]	Load 50% Efficiency [%]	Load 100% Efficiency [%]	34	91.7	91.8	36	92.2	92.1	40	92.3	92.3	48	91.5	92.1	55	90.7	91.8	60	90.1	91.4	70	88.7	90.8	76	87.8	90.3	78	87.6	90.1		
Input Voltage [V]	Load 50% Efficiency [%]	Load 100% Efficiency [%]																															
34	91.7	91.8																															
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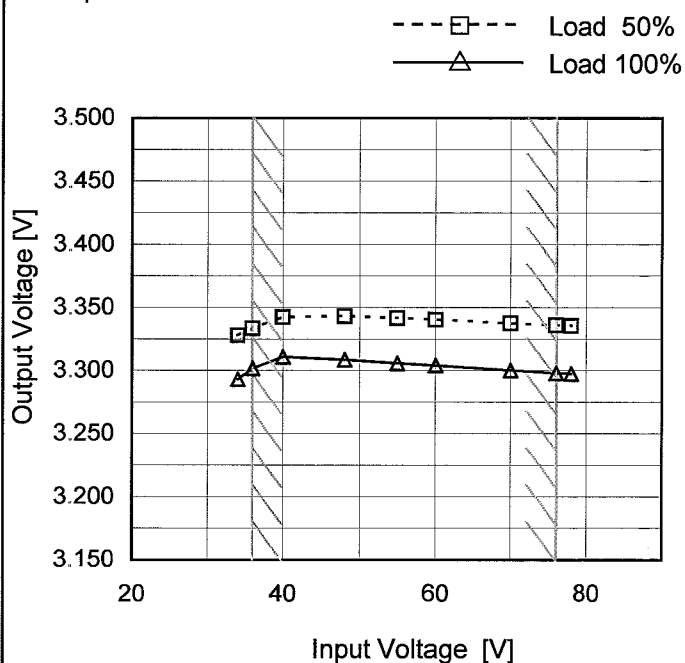
Model SFS30483R3/SFCS30483R3

Item Line Regulation

Object +3.3V9A

Temperature 25°C
Testing Circuitry Figure A

1. Graph



2. Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
34	3.328	3.293
36	3.334	3.302
40	3.342	3.311
48	3.343	3.309
55	3.342	3.306
60	3.340	3.304
70	3.338	3.300
76	3.336	3.298
78	3.336	3.298

Model	SFS30483R3/SFCS30483R3																																																					
Item	Load Regulation	Temperature	25°C																																																			
Object	+3.3V9A	Testing Circuitry	Figure A																																																			
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Load Current [A]	Output Voltage [V]																																																					
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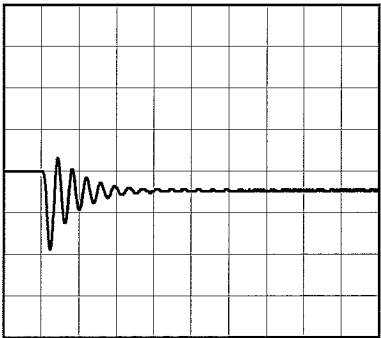
Model	SFS30483R3/SFCS30483R3		
Item	Dynamic Load Response	Temperature	25°C
Object	+3.3V9A	Testing Circuitry	Figure A

Input Volt. 48 V
Cycle 1000 mS

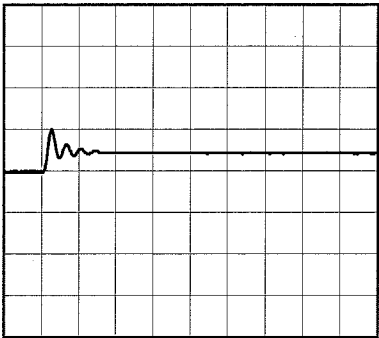
Load Current 9A / 200 μ sec

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

200mV/div



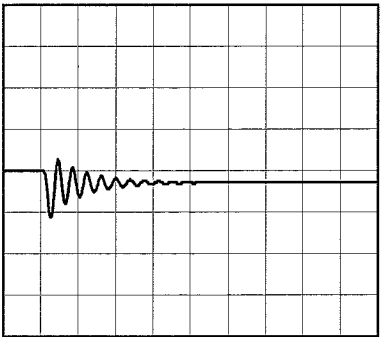
200 μ s/div



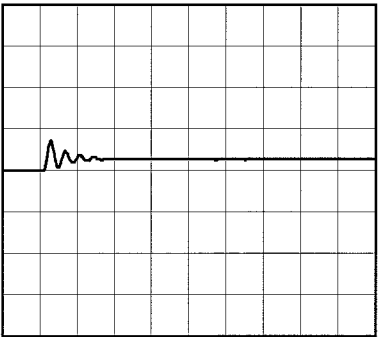
200 μ s/div

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

200mV/div



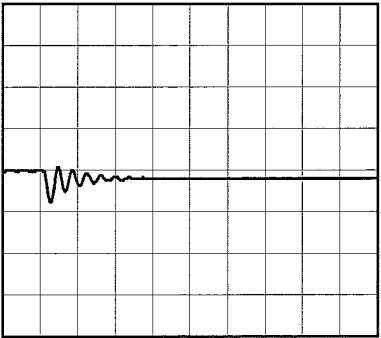
200 μ s/div



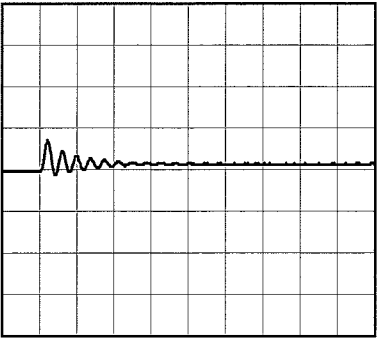
200 μ s/div

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

200mV/div



200 μ s/div



200 μ s/div

Model		SFS30483R3/SFCS30483R3		Temperature 25°C																																							
Item		Ripple-Noise		Testing Circuitry Figure C																																							
Object		+3.3V9A																																									
1.Graph				2.Values																																							
<div><div><div>—△— Input Volt. 36V</div><div>- -○- - Input Volt. 76V</div></div><div>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.</div></div>				<table><tr><th rowspan="2">Load Current [A]</th><th colspan="2">Ripple-Noise [mV]</th></tr><tr><th>Input Volt. 36 [V]</th><th>Input Volt. 76 [V]</th></tr><tr><td>0.0</td><td>9</td><td>8</td></tr><tr><td>1.8</td><td>8</td><td>8</td></tr><tr><td>3.6</td><td>8</td><td>8</td></tr><tr><td>5.4</td><td>9</td><td>9</td></tr><tr><td>7.2</td><td>11</td><td>11</td></tr><tr><td>9.0</td><td>13</td><td>13</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-Noise [mV]		Input Volt. 36 [V]	Input Volt. 76 [V]	0.0	9	8	1.8	8	8	3.6	8	8	5.4	9	9	7.2	11	11	9.0	13	13	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-
Load Current [A]	Ripple-Noise [mV]																																										
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<div><div><div>Ripple Noise[mVp-p]</div></div><div>Fig.Complex Ripple Noise Wave Form</div></div>																																											

BC-10068

BC-10068



		Testing Circuitry Figure A
Model	SFS30483R3/SFCS30483R3	
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	48	0	3.386	±49	±1.5
Minimum Voltage	85	76	9	3.289		

COSEL

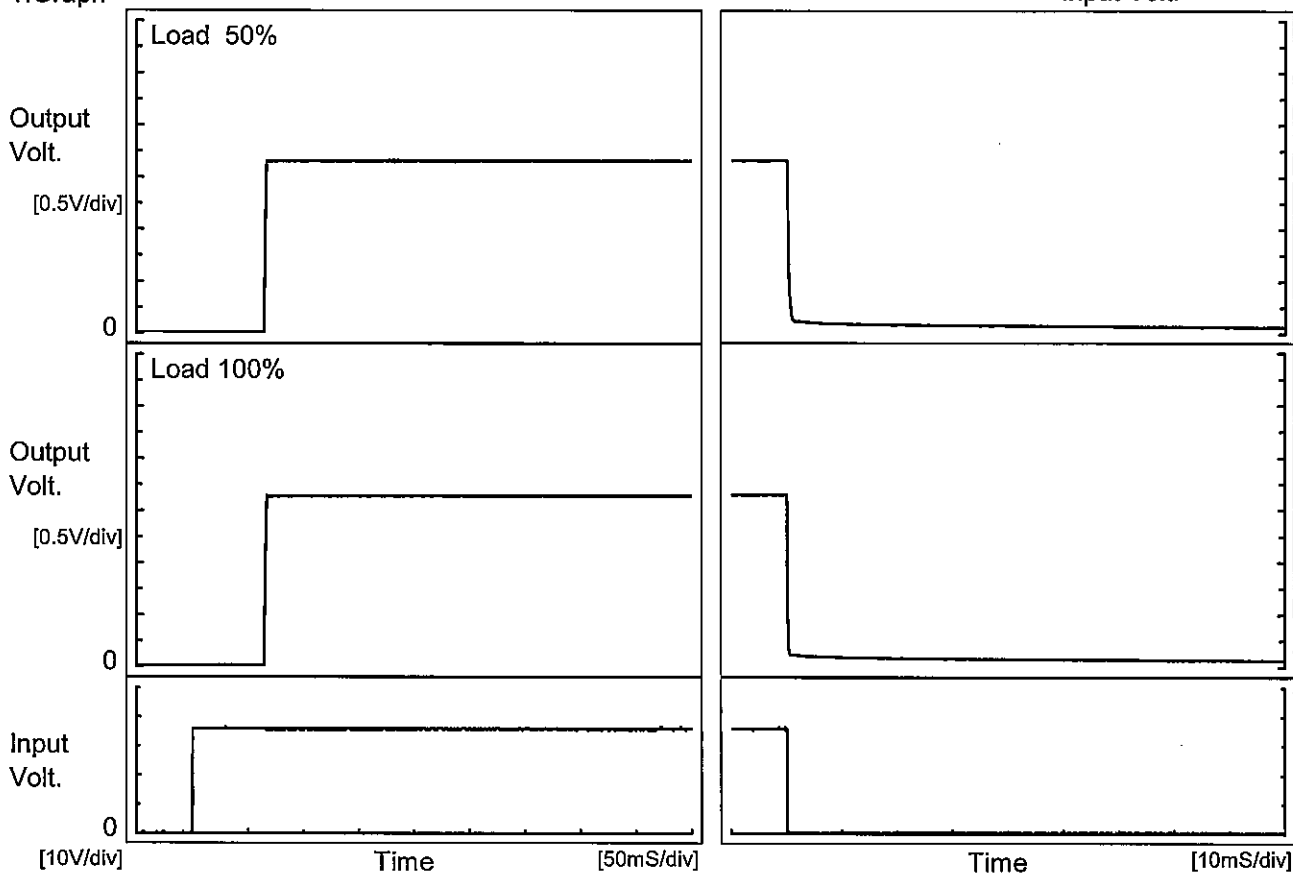
Model	SFS30483R3/SFCS30483R3																								
Item	Time Lapse Drift	Temperature	25°C																						
		Testing Circuitry	Figure A																						
Object	+3.3V9A																								
1.Graph		2.Values																							
<div><div><div>3.500</div><div>3.450</div><div>3.400</div><div>3.350</div><div>3.300</div><div>3.250</div><div>3.200</div><div>3.150</div></div><div><div>0</div><div>2</div><div>4</div><div>6</div><div>8</div><div>10</div></div><div><div>Output Voltage [V]</div><div>Time [H]</div></div><div><div>Input Volt.</div><div>Load</div></div><div><div>48V</div><div>100%</div></div></div>		<table><tr><th>Time since start [H]</th><th>Output Voltage [V]</th></tr><tr><td>0.0</td><td>3.308</td></tr><tr><td>0.5</td><td>3.308</td></tr><tr><td>1.0</td><td>3.308</td></tr><tr><td>2.0</td><td>3.308</td></tr><tr><td>3.0</td><td>3.308</td></tr><tr><td>4.0</td><td>3.308</td></tr><tr><td>5.0</td><td>3.308</td></tr><tr><td>6.0</td><td>3.308</td></tr><tr><td>7.0</td><td>3.308</td></tr><tr><td>8.0</td><td>3.308</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	3.308	0.5	3.308	1.0	3.308	2.0	3.308	3.0	3.308	4.0	3.308	5.0	3.308	6.0	3.308	7.0	3.308	8.0	3.308
Time since start [H]	Output Voltage [V]																								
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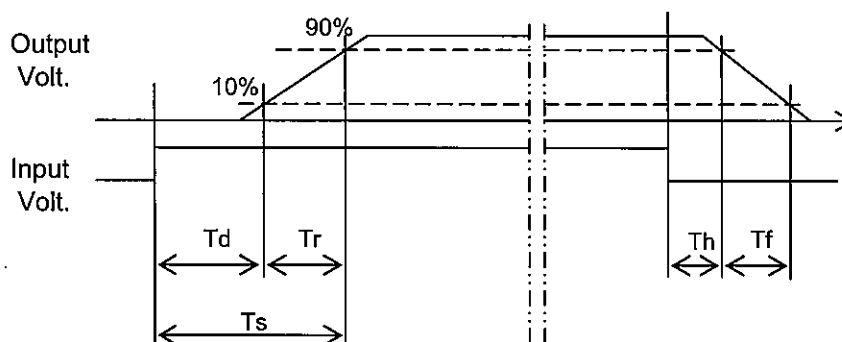
Model	SFS30483R3/SFCS30483R3	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	+3.3V9A		

1.Graph



2.Values

		[mS]				
Load	Time	Td	Tr	Ts	Th	Tf
50 %		65.0	0.5	65.5	0.1	0.8
100 %		65.0	0.5	65.5	0.1	0.4



Model	SFS30483R3/SFCS30483R3																																								
Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A																																							
Object	+3.3V9A																																								
1.Graph		2.Values																																							
<div><div><div>---□---</div><div>Load 50%</div></div><div><div>—△—</div><div>Load 100%</div></div></div> <div>Note: Slanted line shows the range of the rated ambient temperature.</div>		<table><tr><th rowspan="2">Ambient Temperature [°C]</th><th colspan="2">Input Voltage [V]</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr><tr><td>-50</td><td>31.3</td><td>31.4</td></tr><tr><td>-40</td><td>31.3</td><td>31.4</td></tr><tr><td>-20</td><td>31.3</td><td>31.4</td></tr><tr><td>0</td><td>31.5</td><td>31.5</td></tr><tr><td>25</td><td>31.5</td><td>31.5</td></tr><tr><td>40</td><td>31.4</td><td>31.5</td></tr><tr><td>55</td><td>31.6</td><td>31.7</td></tr><tr><td>70</td><td>31.7</td><td>31.7</td></tr><tr><td>85</td><td>31.6</td><td>31.7</td></tr><tr><td>90</td><td>31.6</td><td>31.9</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></table>		Ambient Temperature [°C]	Input Voltage [V]		Load 50%	Load 100%	-50	31.3	31.4	-40	31.3	31.4	-20	31.3	31.4	0	31.5	31.5	25	31.5	31.5	40	31.4	31.5	55	31.6	31.7	70	31.7	31.7	85	31.6	31.7	90	31.6	31.9	--	-	-
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90	31.6	31.9																																							
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BC-10068

Model	SFS30483R3/SFCS30483R3																												
Item	Overvoltage Protection	Testing Circuitry Figure A																											
Object	+3.3V9A																												
1.Graph		2.Values																											
<div><div>—△— Input Volt. 48V</div><div><table><thead><tr><th>Ambient Temperature [°C]</th><th>Operating Point [V]</th></tr></thead><tbody><tr><td>-40</td><td>4.18</td></tr><tr><td>25</td><td>4.15</td></tr><tr><td>85</td><td>4.11</td></tr><tr><td>--</td><td>-</td></tr><tr><td>--</td><td>-</td></tr><tr><td>--</td><td>-</td></tr><tr><td>--</td><td>-</td></tr><tr><td>--</td><td>-</td></tr><tr><td>--</td><td>-</td></tr><tr><td>--</td><td>-</td></tr><tr><td>--</td><td>-</td></tr><tr><td>--</td><td>-</td></tr></tbody></table></div><div>Operating Point [V]</div><div>Ambient Temperature [°C]</div><div>Load 0%</div><div>Note: Slanted line shows the range of the rated ambient temperature.</div></div>		Ambient Temperature [°C]	Operating Point [V]	-40	4.18	25	4.15	85	4.11	--	-	--	-	--	-	--	-	--	-	--	-	--	-	--	-	--	-		
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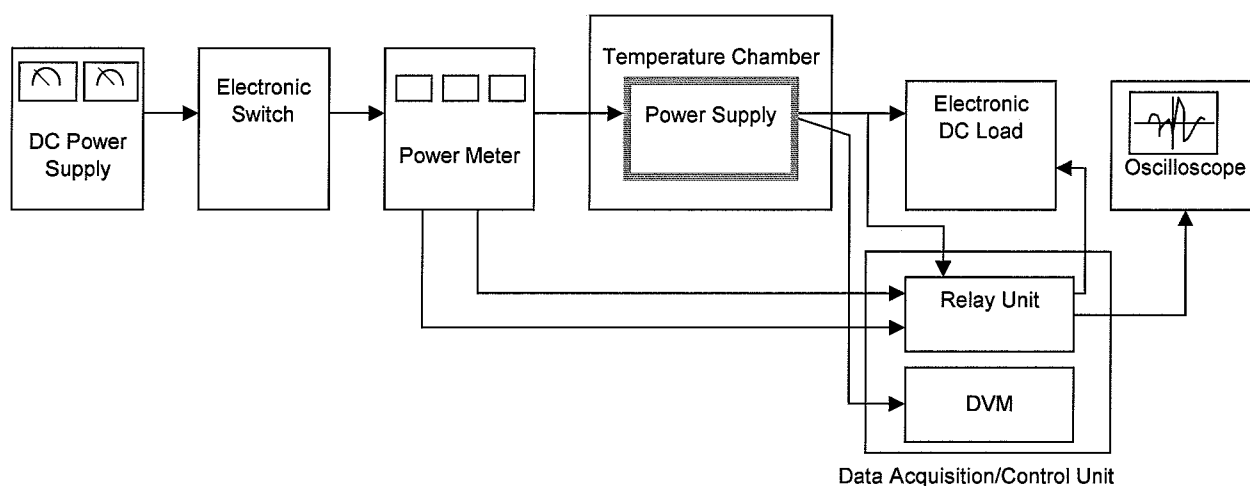


Figure A

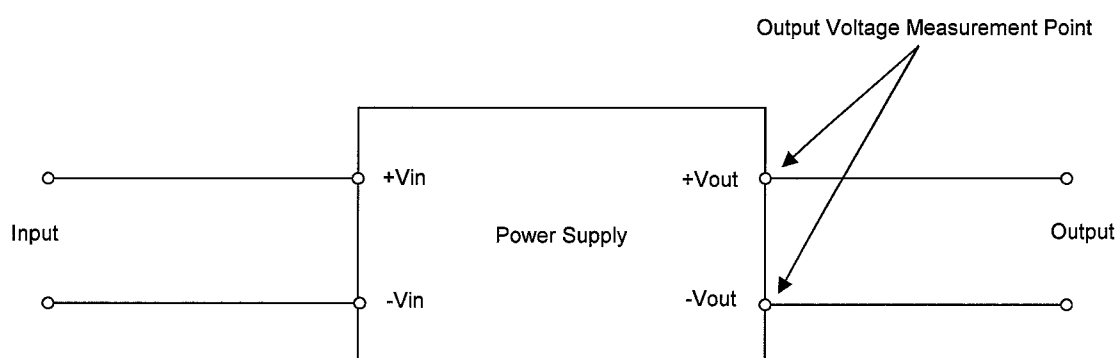


Figure B (General Electric Characteristic)

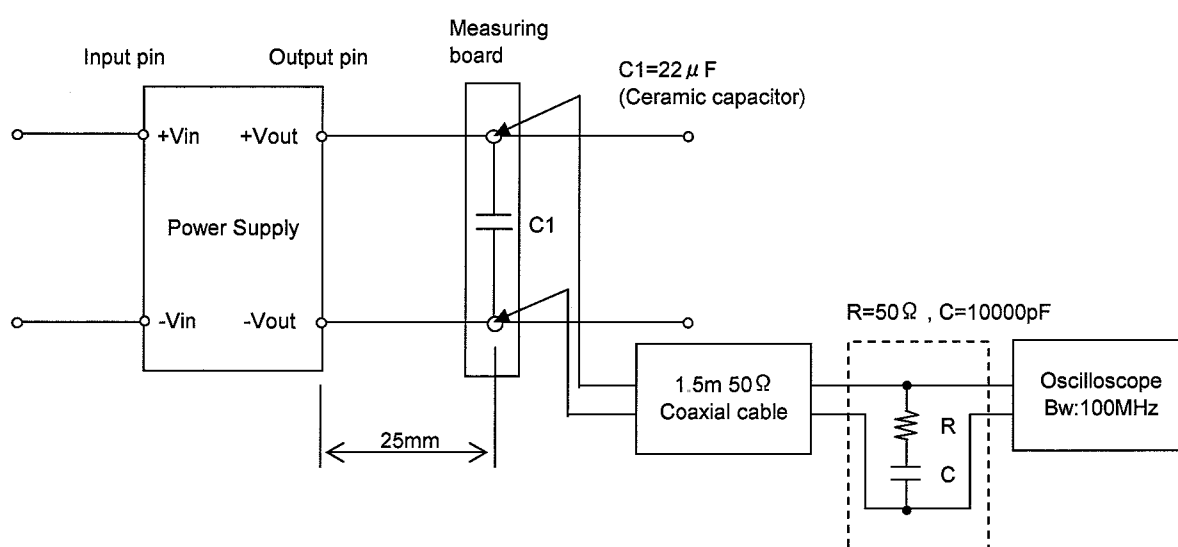


Figure C (Ripple and Ripple noise Characteristic)