



TEST DATA OF SFS20482R5

Regulated DC Power Supply
Sep 24, 2004

Approved by : Isao Yasuda
Isao Yasuda Design Manager

Prepared by : Kazuhiro Horii
Kazuhiro Horii Design Engineer

COSEL CO.,LTD.

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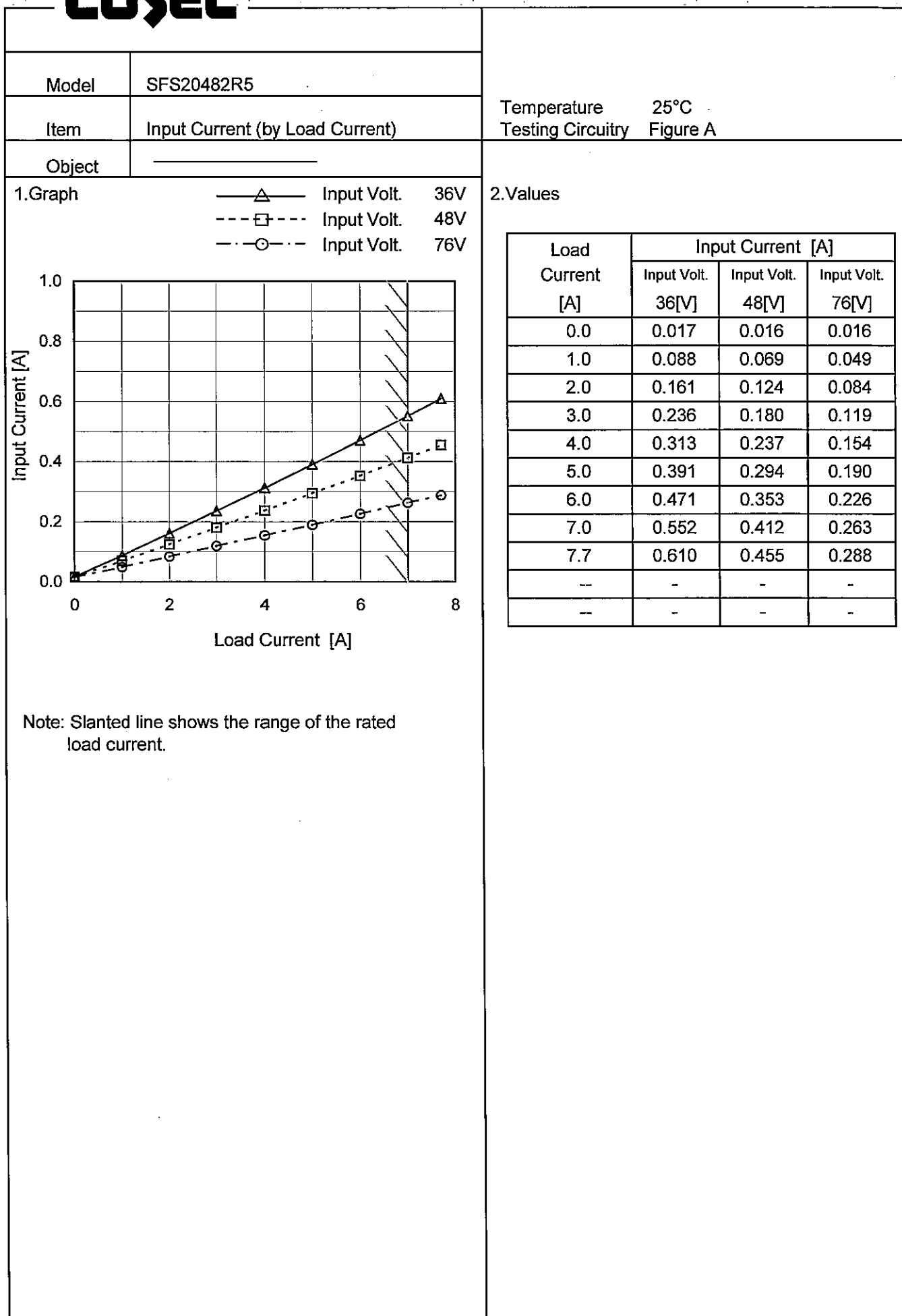
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Model		SFS20482R5		Temperature 25°C																																																																								
Item		Input Current (by Input Voltage)		Testing Circuitry Figure A																																																																								
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1.Graph		—△— Input Volt. 36V ---□--- Input Volt. 48V -·-○-·- Input Volt. 76V		2.Values																																																						
<div><div>Input Power [W]</div><div><div>Load Current [A]</div></div></div>				<table><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><tr><td>0.0</td><td>0.61</td><td>0.77</td><td>1.23</td></tr><tr><td>1.0</td><td>3.20</td><td>3.36</td><td>3.81</td></tr><tr><td>2.0</td><td>5.84</td><td>6.00</td><td>6.45</td></tr><tr><td>3.0</td><td>8.53</td><td>8.68</td><td>9.12</td></tr><tr><td>4.0</td><td>11.27</td><td>11.39</td><td>11.82</td></tr><tr><td>5.0</td><td>14.05</td><td>14.14</td><td>14.52</td></tr><tr><td>6.0</td><td>16.94</td><td>16.93</td><td>17.26</td></tr><tr><td>7.0</td><td>19.85</td><td>19.76</td><td>20.04</td></tr><tr><td>7.7</td><td>21.92</td><td>21.82</td><td>21.99</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 Power [W]			Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]	0.0	0.61	0.77	1.23	1.0	3.20	3.36	3.81	2.0	5.84	6.00	6.45	3.0	8.53	8.68	9.12	4.0	11.27	11.39	11.82	5.0	14.05	14.14	14.52	6.0	16.94	16.93	17.26	7.0	19.85	19.76	20.04	7.7	21.92	21.82	21.99	--	-	-	-	--	-	-	-
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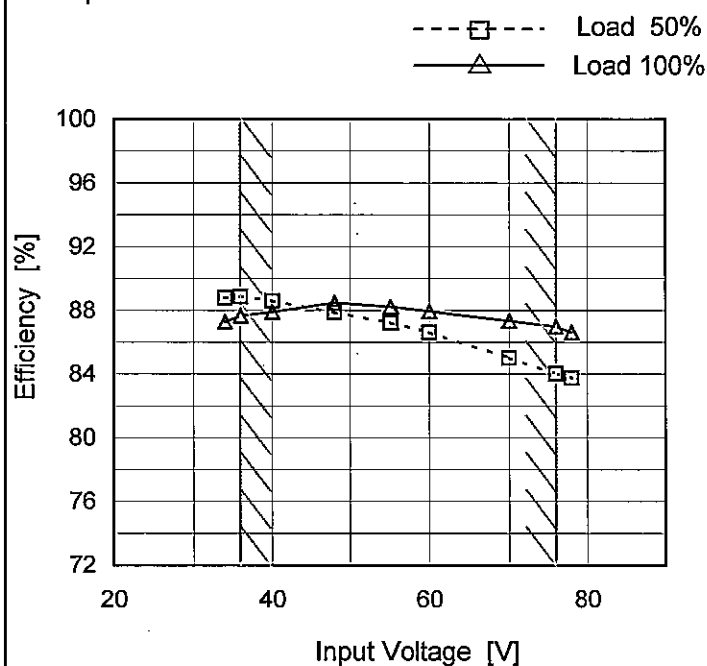
Model SFS20482R5

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.

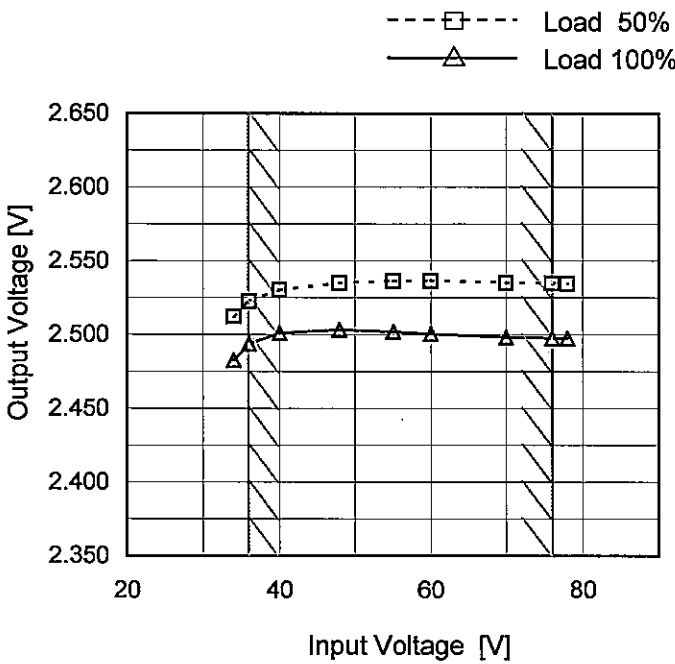
2. Values

Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
34	88.8	87.3
36	88.9	87.7
40	88.6	87.9
48	87.9	88.5
55	87.2	88.2
60	86.6	88.0
70	85.0	87.4
76	84.0	87.0
78	83.8	86.6

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<div><div><div>—△—</div><div>---□---</div><div>---○---</div></div><div><div>Input Volt.</div><div>Input Volt.</div><div>Input Volt.</div></div><div><div>36V</div><div>48V</div><div>76V</div></div></div> <div><div>100</div><div>92</div><div>84</div><div>76</div><div>68</div><div>60</div><div>52</div><div>44</div></div> <div><div>0</div><div>2</div><div>4</div><div>6</div><div>8</div></div> <div><div>Efficiency [%]</div><div>Load Current [A]</div></div> <div><div>Note: Slanted line shows the range of the rated load current.</div></div>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Efficiency [%]</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>-</td><td>-</td><td>-</td></tr><tr><td>1.0</td><td>79.3</td><td>75.9</td><td>67.1</td></tr><tr><td>2.0</td><td>86.6</td><td>84.7</td><td>78.9</td></tr><tr><td>3.0</td><td>88.6</td><td>87.5</td><td>83.4</td></tr><tr><td>4.0</td><td>89.2</td><td>88.7</td><td>85.4</td></tr><tr><td>5.0</td><td>89.2</td><td>89.0</td><td>86.5</td></tr><tr><td>6.0</td><td>88.4</td><td>88.8</td><td>87.0</td></tr><tr><td>7.0</td><td>87.7</td><td>88.5</td><td>87.0</td></tr><tr><td>7.7</td><td>87.1</td><td>87.9</td><td>87.0</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]	Efficiency [%]			Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]	0.0	-	-	-	1.0	79.3	75.9	67.1	2.0	86.6	84.7	78.9	3.0	88.6	87.5	83.4	4.0	89.2	88.7	85.4	5.0	89.2	89.0	86.5	6.0	88.4	88.8	87.0	7.0	87.7	88.5	87.0	7.7	87.1	87.9	87.0	--	-	-	-	--	-	-	-
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Item	Line Regulation																																		
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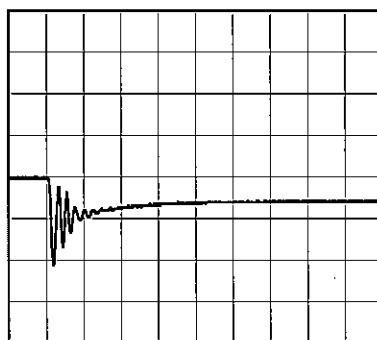
Model	SFS20482R5	Temperature 25°C Testing Circuitry Figure A
Item	Dynamic Load Response	
Object	+2.5V7A	

Input Volt. 48 V
Cycle 1000 mS

Load Current 7A / 200 μ s

Min. Load (0A) \longleftrightarrow
Load 100% (7A)

100mV/div



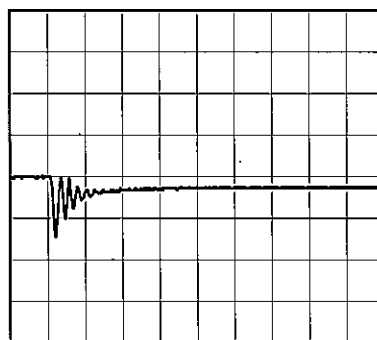
200 μ s/div



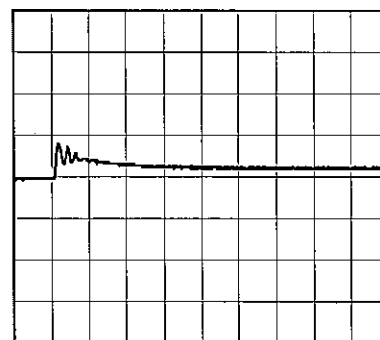
200 μ s/div

Min. Load (0A) \longleftrightarrow
Load 50% (3.5A)

100mV/div



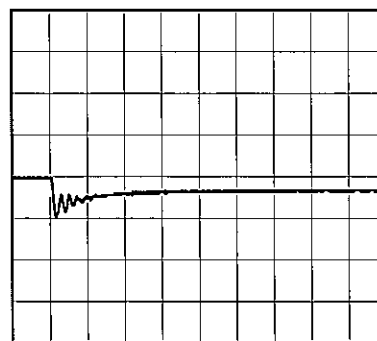
200 μ s/div



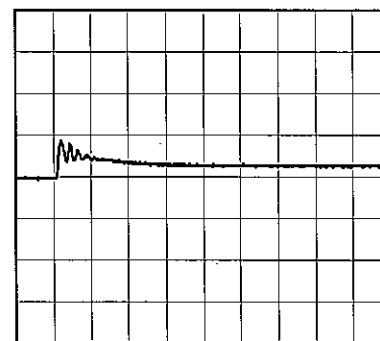
200 μ s/div

Load 50% (3.5A) \longleftrightarrow
Load 100% (7A)

100mV/div

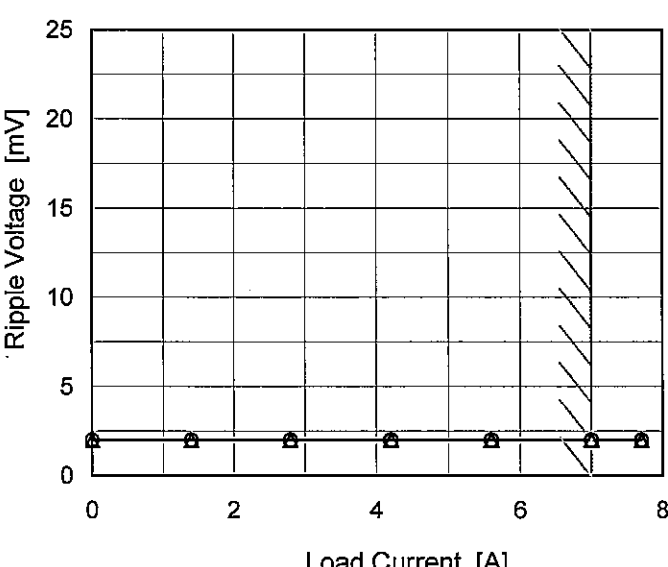
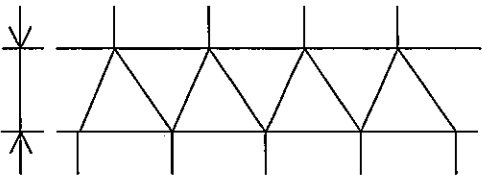


200 μ s/div



200 μ s/div

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Item		Ripple Voltage (by Load Current)		Testing Circuitry Figure C																																							
Object		+2.5V7A																																									
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<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><div>Ripple [mVp-p]</div><div></div></div><div>Fig.Complex Ripple Wave Form</div></div>																																											

COSEL

Model	SFS20482R5	Temperature	25°C
Item	Ripple-Noise	Testing Circuitry	Figure C
Object	+2.5V7A		
1.Graph		2.Values	
<div><div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div></div><div></div></div><div><div></div><div></div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> <div><div></div><div></div></div> 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Model		SFS20482R5																																																				
Item		Ambient Temperature Drift																																																				
Object		+2.5V7A																																																				
1.Graph		2.Values																																																				
<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>Output Voltage [V]</p> <p>Ambient Temperature [°C]</p> <p>Load 100%</p> <p>Note: Slanted line shows the range of the rated ambient temperature.</p>		<table><tr><th rowspan="2">Ambient Temperature [°C]</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><tr><td>-45</td><td>2.492</td><td>2.504</td><td>2.483</td></tr><tr><td>-40</td><td>2.492</td><td>2.504</td><td>2.484</td></tr><tr><td>-20</td><td>2.494</td><td>2.504</td><td>2.489</td></tr><tr><td>0</td><td>2.496</td><td>2.505</td><td>2.495</td></tr><tr><td>25</td><td>2.494</td><td>2.504</td><td>2.498</td></tr><tr><td>50</td><td>2.488</td><td>2.500</td><td>2.497</td></tr><tr><td>85</td><td>2.477</td><td>2.492</td><td>2.486</td></tr><tr><td>90</td><td>2.476</td><td>2.490</td><td>2.483</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]	Output Voltage [V]			Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]	-45	2.492	2.504	2.483	-40	2.492	2.504	2.484	-20	2.494	2.504	2.489	0	2.496	2.505	2.495	25	2.494	2.504	2.498	50	2.488	2.500	2.497	85	2.477	2.492	2.486	90	2.476	2.490	2.483	--	-	-	-	--	-	-	-	--	-	-	-
Ambient Temperature [°C]	Output Voltage [V]																																																					
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		Testing Circuitry Figure A
Model	SFS20482R5	
Item	Output Voltage Accuracy	
Object	+2.5V7A	

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 - 7A

* 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	2.574	±49	±2.0
Minimum Voltage	85	36	7	2.477		

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Model

SFS20482R5

Item

Time Lapse Drift

Object

+2.5V7A

1.Graph

Output Voltage [V]

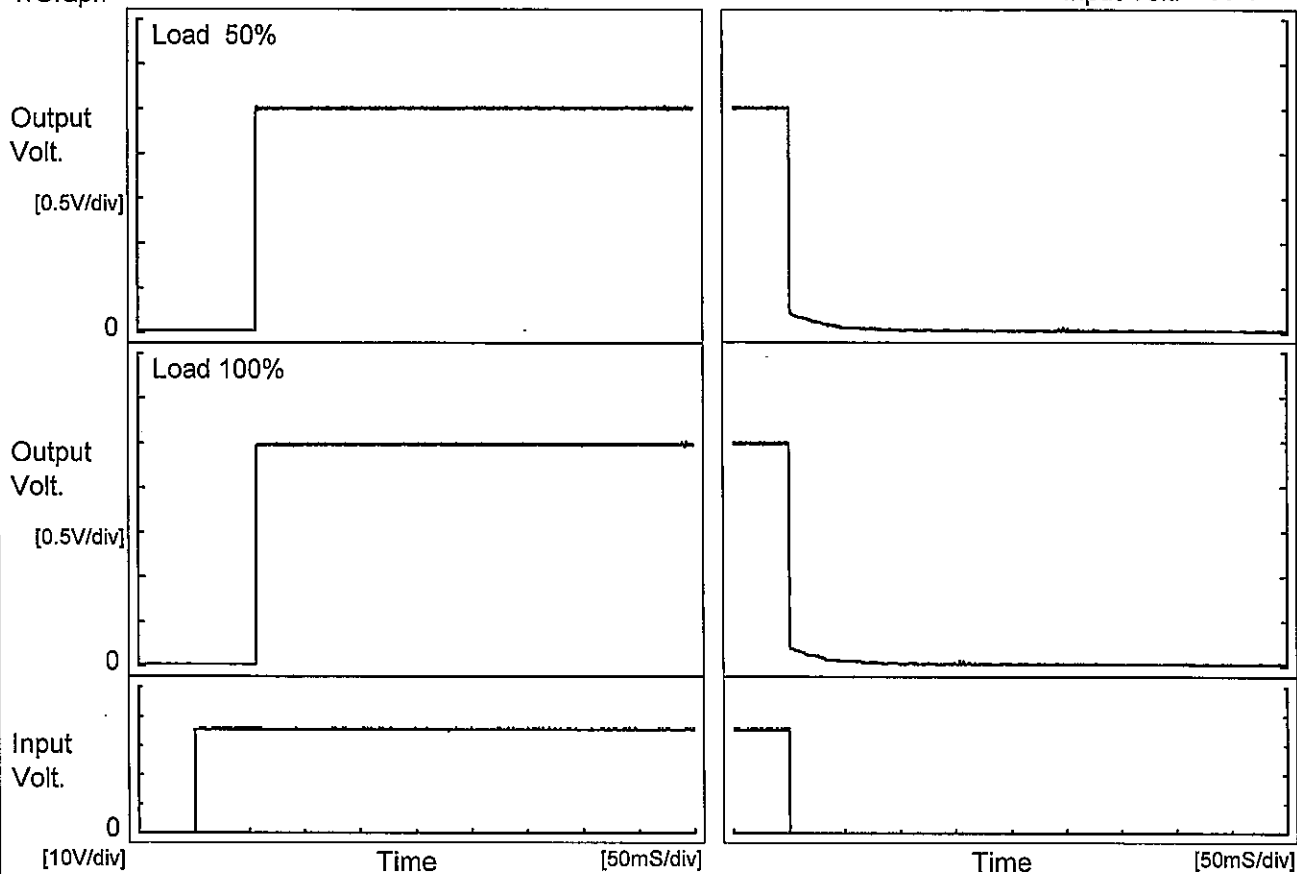
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Model	SFS20482R5	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	+2.5V7A		

1. Graph

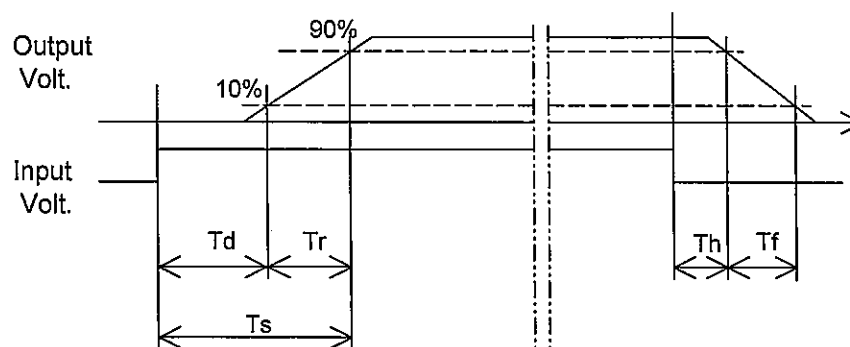
Input Volt. 36 V



2. Values

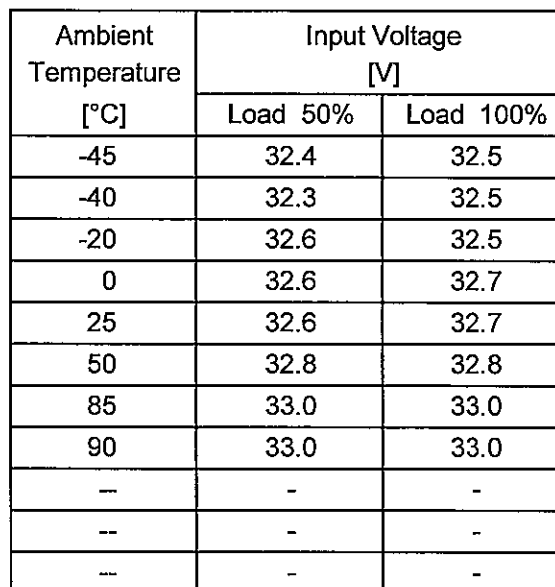
[mS]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	56.5	0.2	56.7	0.3	0.5
100 %	56.5	0.2	56.7	0.3	0.5



Testing Circuitry Figure A

2.Values



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

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Model SFS20482R5

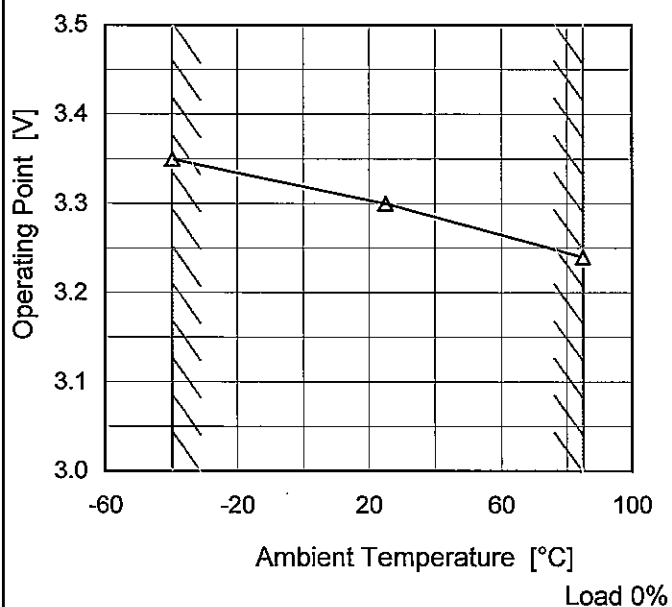
Item Overvoltage Protection

Object +2.5V7A

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	3.35	-	-
25	3.30	-	-
85	3.24	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
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--	-	-	-
--	-	-	-

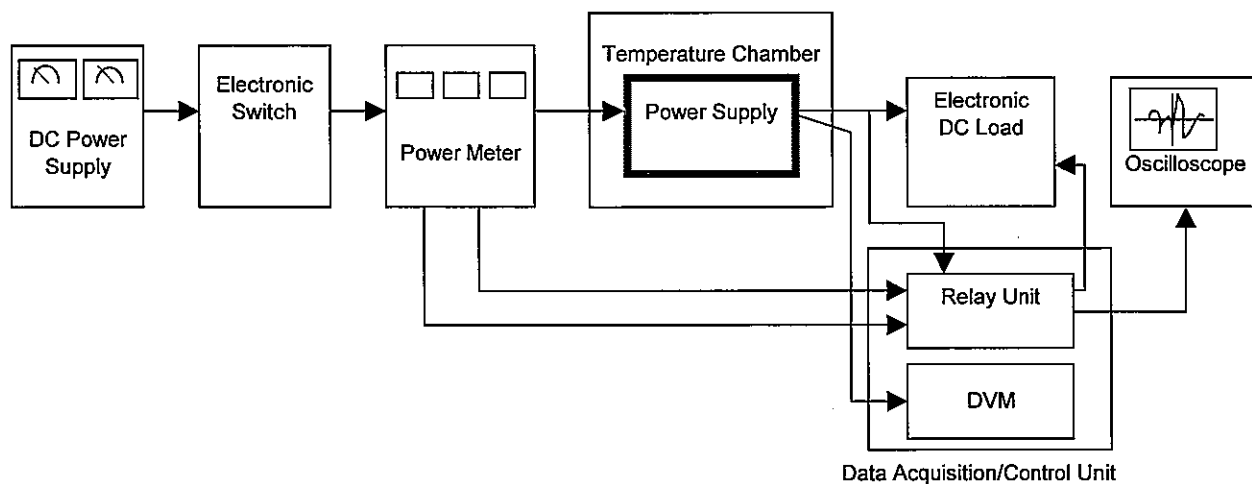


Figure A

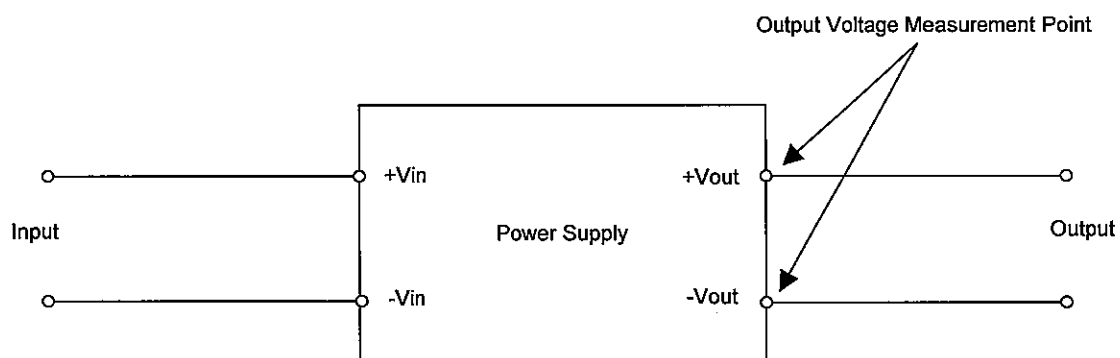


Figure B (General Electric Characteristic)

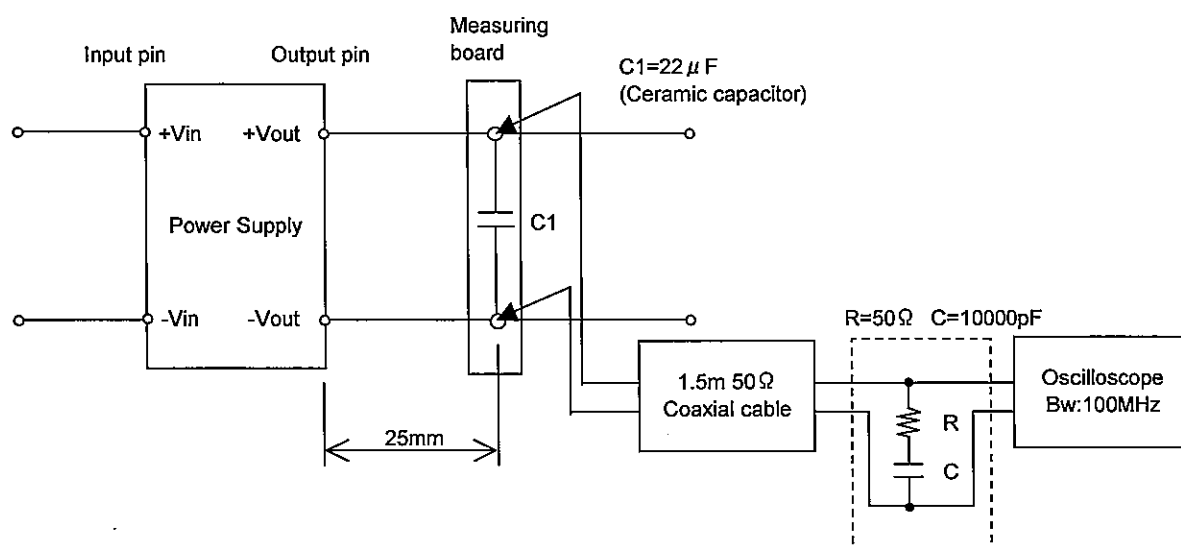


Figure C (Ripple and Ripple noise Characteristic)