参考資料

COSEL

TEST DATA OF SFS30481R8

Regulated DC Power Supply
Dec.8.2003

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Kazuhiro Horii Design Engineer

COSEL CO.,LTD.

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Object	————————

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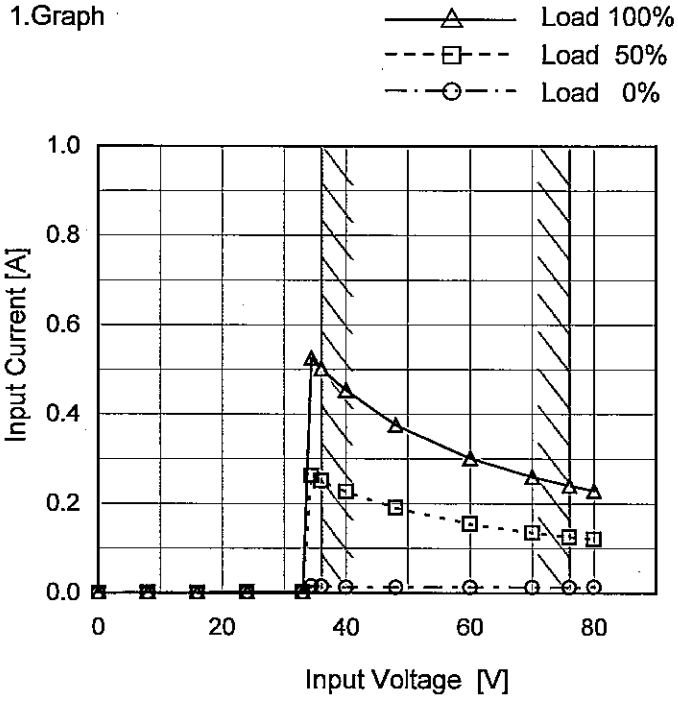


Note: Slanted line shows the range of the rated input voltage.

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	0.016	0.263	0.526
36	0.015	0.251	0.502
40	0.013	0.227	0.454
48	0.013	0.191	0.377
60	0.013	0.155	0.302
70	0.013	0.135	0.260
76	0.013	0.126	0.240
80	0.013	0.120	0.229
–	-	-	-
–	-	-	-
–	-	-	-

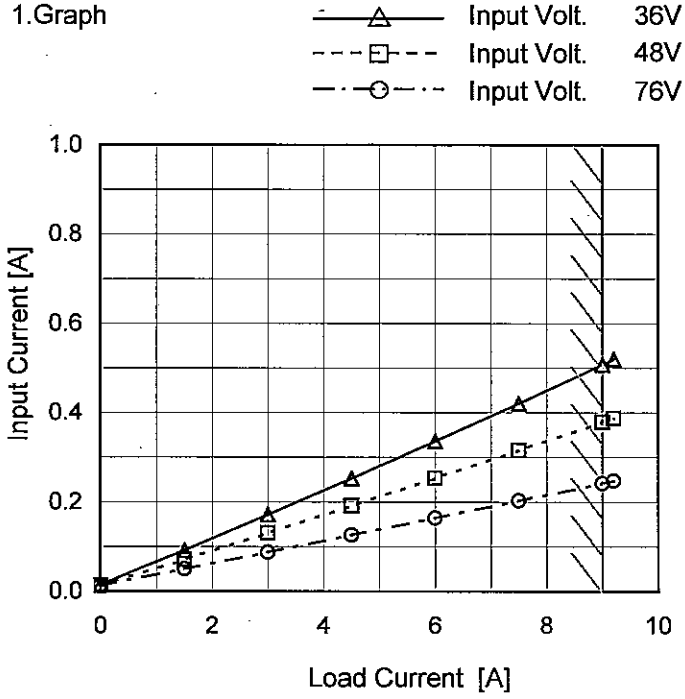
BC-3529

COSEL

Model	SFS30481R8
Item	Input Current (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

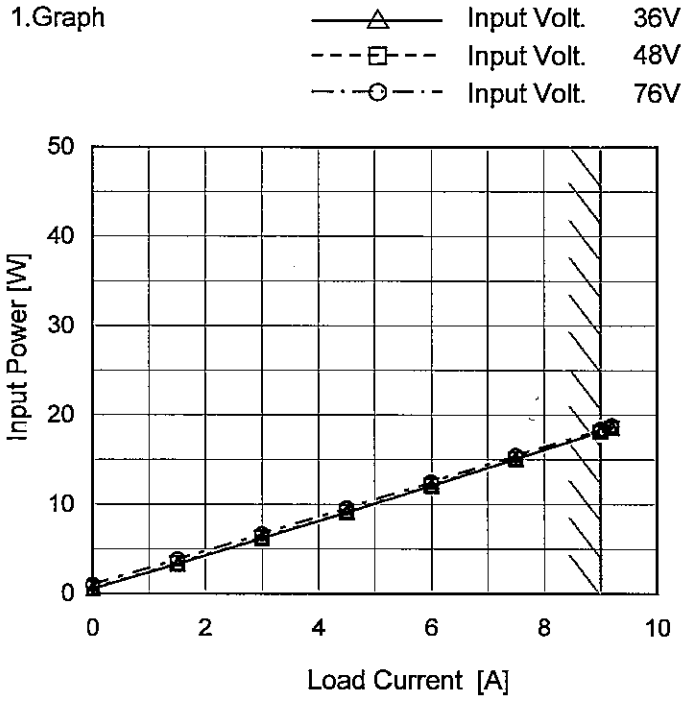
Load Current [A]	Input Current [A]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.0	0.015	0.013	0.013
1.5	0.092	0.071	0.050
3.0	0.172	0.131	0.088
4.5	0.253	0.192	0.126
6.0	0.336	0.253	0.165
7.5	0.421	0.316	0.204
9.0	0.508	0.379	0.242
9.2	0.520	0.388	0.248
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SFS30481R8
Item	Input Power (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

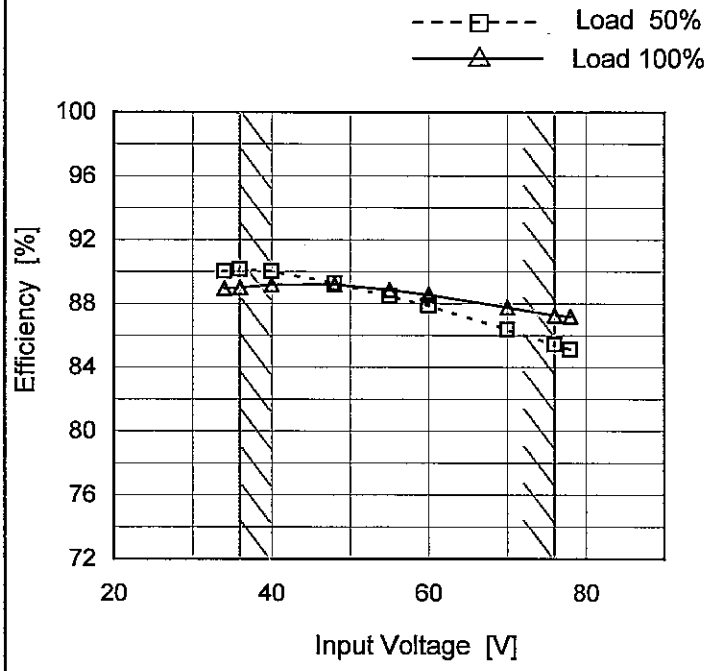
Load Current [A]	Input Power [W]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.0	0.55	0.60	1.00
1.5	3.32	3.43	3.83
3.0	6.17	6.28	6.69
4.5	9.08	9.19	9.59
6.0	12.06	12.14	12.51
7.5	15.08	15.13	15.47
9.0	18.19	18.14	18.42
9.2	18.62	18.55	18.83
—	-	-	-
—	-	-	-
—	-	-	-

COSEL

Model	SFS30481R8
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	90.1	89.0
36	90.2	89.0
40	90.0	89.2
48	89.3	89.2
55	88.5	88.9
60	87.9	88.6
70	86.4	87.8
76	85.5	87.3
78	85.1	87.2

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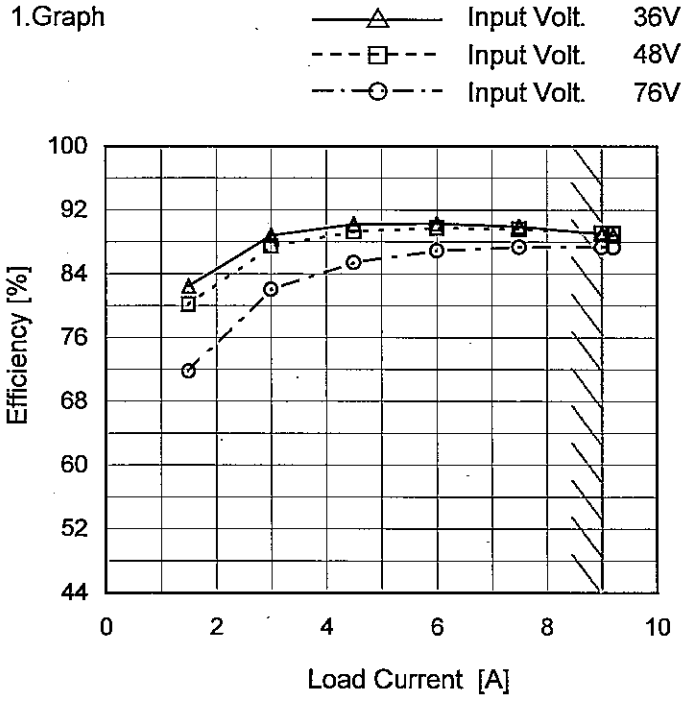
Model	SFS30481R8
Item	Efficiency (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

Load Current [A]	Efficiency [%] Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.0	-	-	-
1.5	82.4	80.2	71.8
3.0	88.8	87.5	82.0
4.5	90.2	89.3	85.4
6.0	90.3	89.8	86.9
7.5	89.9	89.6	87.4
9.0	89.0	89.2	87.4
9.2	88.8	89.1	87.3
--	-	-	-
--	-	-	-
--	-	-	-

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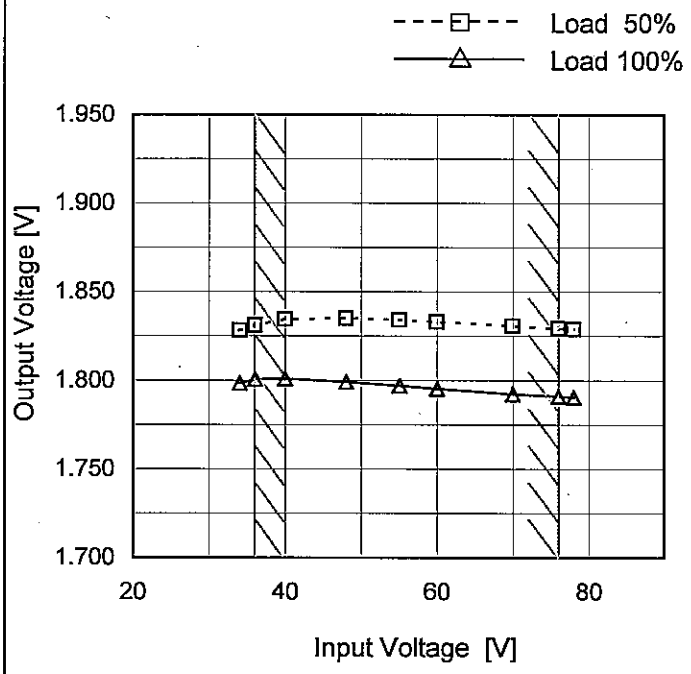
Model	SFS30481R8
Item	Line Regulation
Object	+1.8V9A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

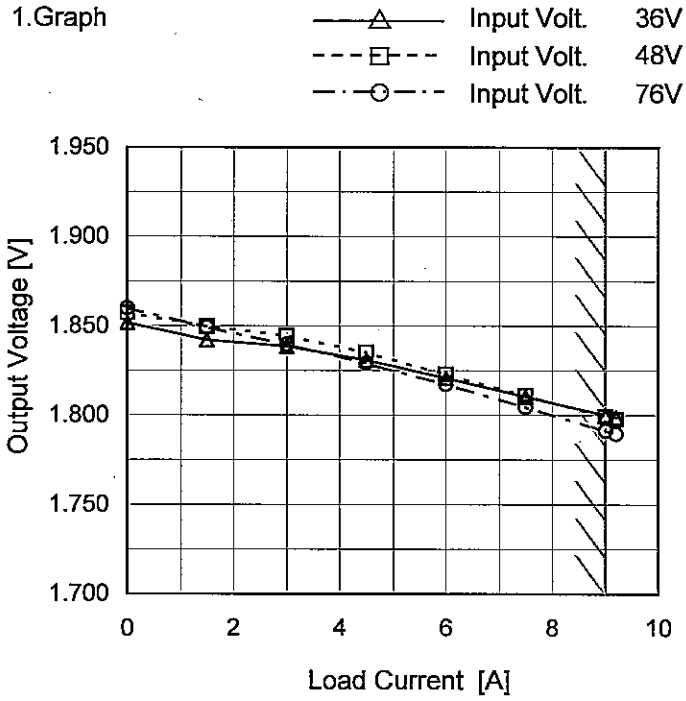
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
34	1.828	1.799
36	1.831	1.801
40	1.835	1.801
48	1.835	1.799
55	1.834	1.797
60	1.833	1.795
70	1.831	1.792
76	1.829	1.791
78	1.829	1.791

COSEL

Model	SFS30481R8
Item	Load Regulation
Object	+1.8V9A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

Load Current [A]	Output Voltage [V]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.0	1.852	1.857	1.860
1.5	1.842	1.850	1.849
3.0	1.839	1.845	1.840
4.5	1.831	1.835	1.829
6.0	1.821	1.823	1.818
7.5	1.810	1.811	1.805
9.0	1.800	1.799	1.792
9.2	1.799	1.798	1.790
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

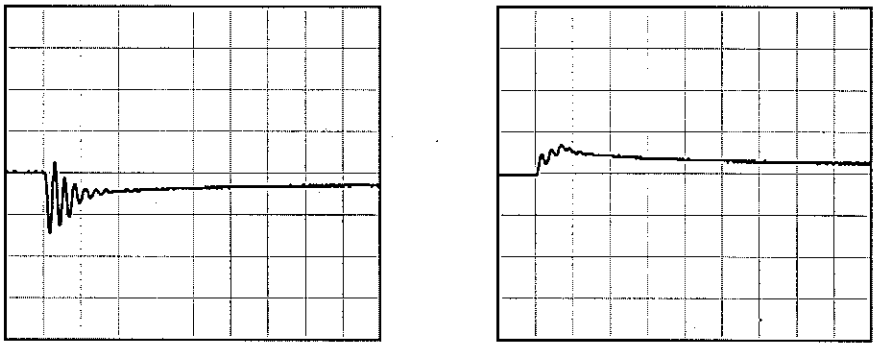
Model	SFS30481R8
Item	Dynamic Load Response
Object	+1.8V9A

Temperature 25°C
Testing Circuitry Figure A

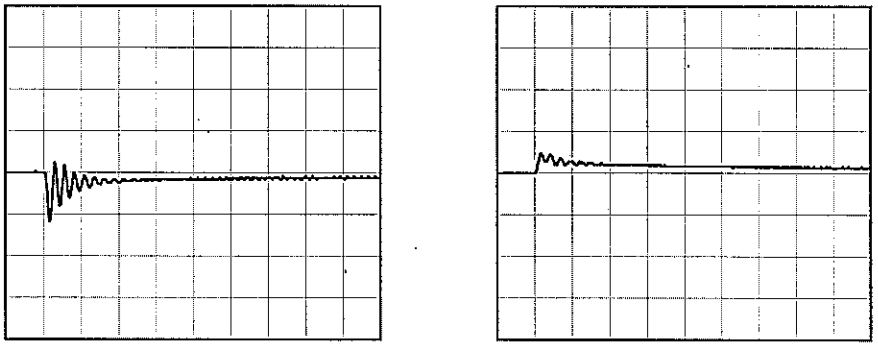
Input Volt. 48 V
Cycle 1000 mS

Load Current
9A / 200 µs

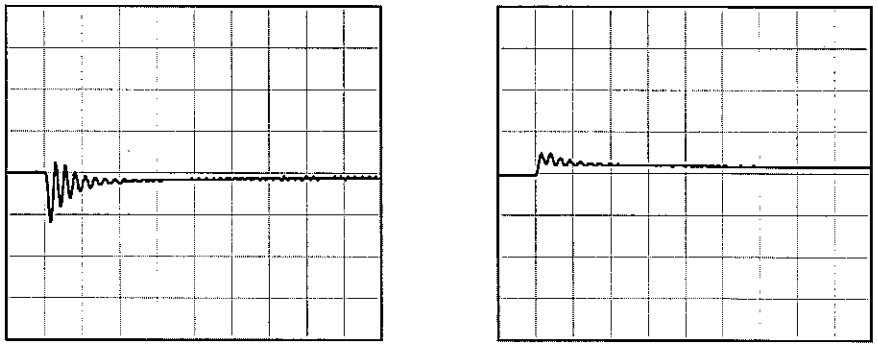
Min. Load (0A) ⟷ Load 100% (9A)



Min. Load (0A) ⟷ Load 50% (4.5A)



Load 50% (4.5A) ⟷ Load 100% (9A)



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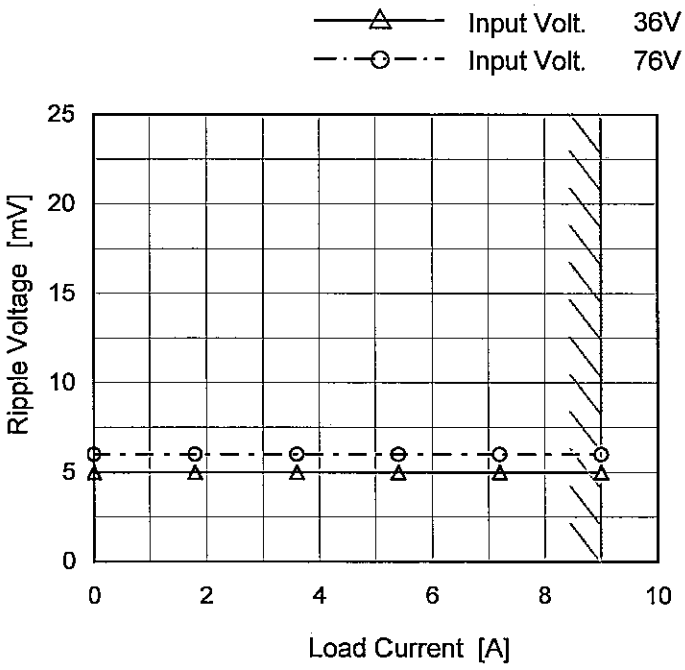
Model	SFS30481R8
Item	Ripple Voltage (by Load Current)
Object	+1.8V9A

Temperature 25°C
Testing Circuitry Figure C

1.Graph



Measured by 100MHz Ossiloscope.
Ripple Voltage is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated load current.

2.Values

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
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

Ripple [mVp-p]

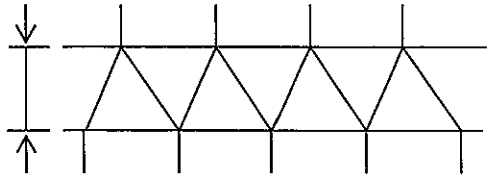


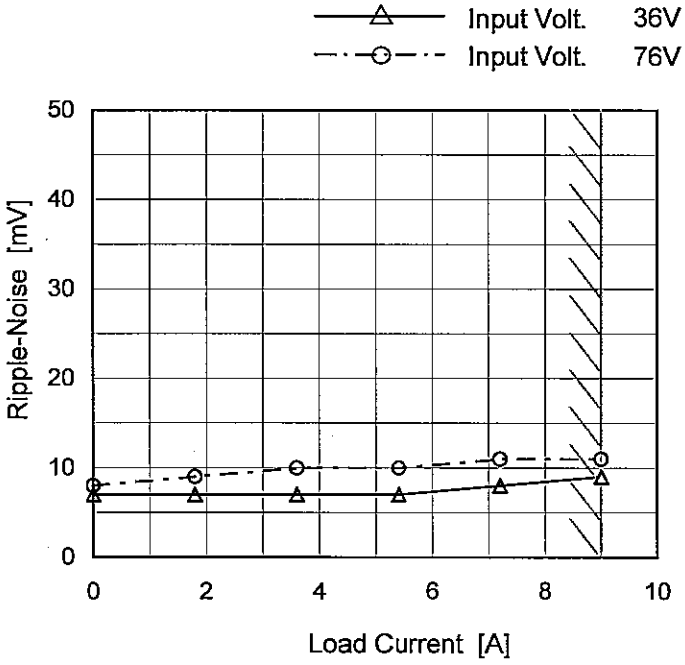
Fig.Complex Ripple Wave Form

COSEL

Model	SFS30481R8
Item	Ripple-Noise
Object	+1.8V9A

Temperature 25°C
Testing Circuitry Figure C

1.Graph



Measured by 100MHz Ossiloscope.
Ripple-Noise is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated load current.

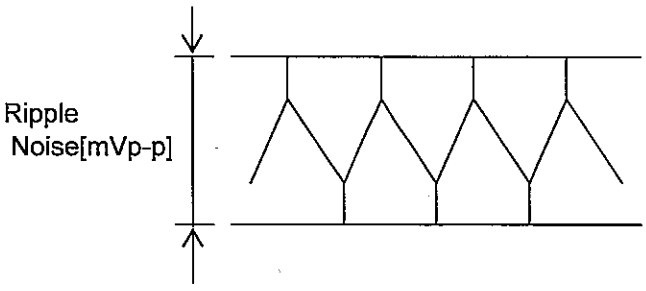


Fig.Complex Ripple Noise Wave Form

2.Values

Load Current [A]	Ripple-Noise [mV] Input Volt. 36 [V]	Ripple-Noise [mV] Input Volt. 76 [V]
0.0	7	8
1.8	7	9
3.6	7	10
5.4	7	10
7.2	8	11
9.0	9	11
—	-	-
—	-	-
—	-	-
—	-	-
—	-	-

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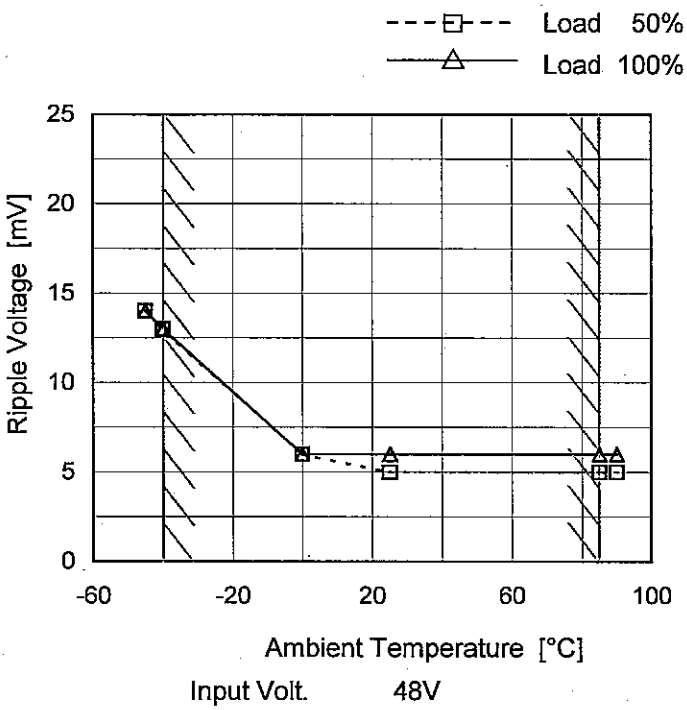
Model	SFS30481R8
Item	Ripple Voltage (by Ambient Temp.)
Object	+1.8V9A

Testing Circuitry Figure C

1.Graph



Input Volt. 48V

Measured by 100MHz Ossiloscope.
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
-40	13	13
0	6	6
25	5	6
85	5	6
90	5	6
—	-	-
—	-	-
—	-	-
—	-	-
—	-	-

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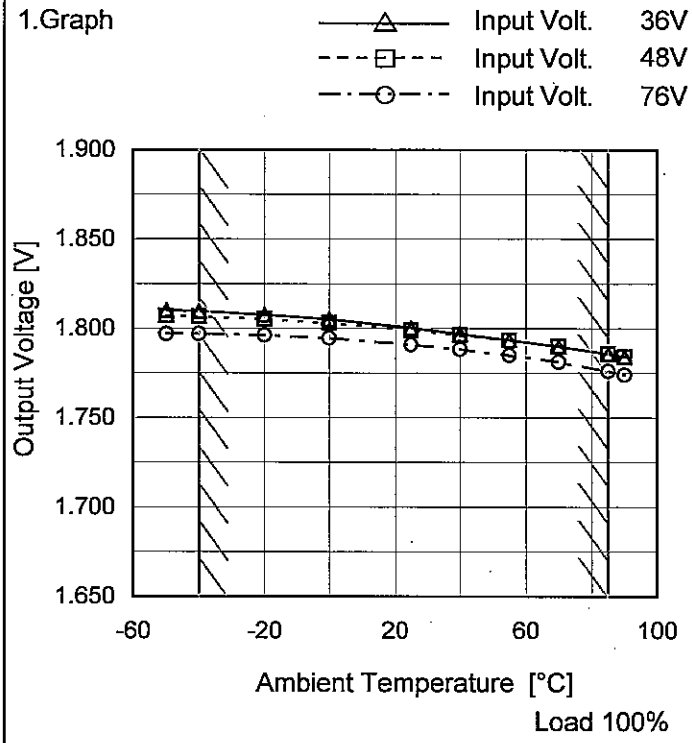
Model	SFS30481R8
Item	Ambient Temperature Drift
Object	+1.8V9A

Testing Circuitry Figure A

1.Graph



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

2.Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
-50	1.810	1.807	1.797
-40	1.810	1.807	1.797
-20	1.808	1.805	1.796
0	1.805	1.803	1.795
25	1.800	1.799	1.791
40	1.797	1.796	1.788
55	1.794	1.794	1.785
70	1.790	1.790	1.781
85	1.786	1.786	1.776
90	1.784	1.784	1.774
---	-	-	-

COSEL

Model	SFS30481R8	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+1.8V9A	

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 = ±(Maximum of Output Voltage - Minimum of Output Voltage) / 2

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

2.Values

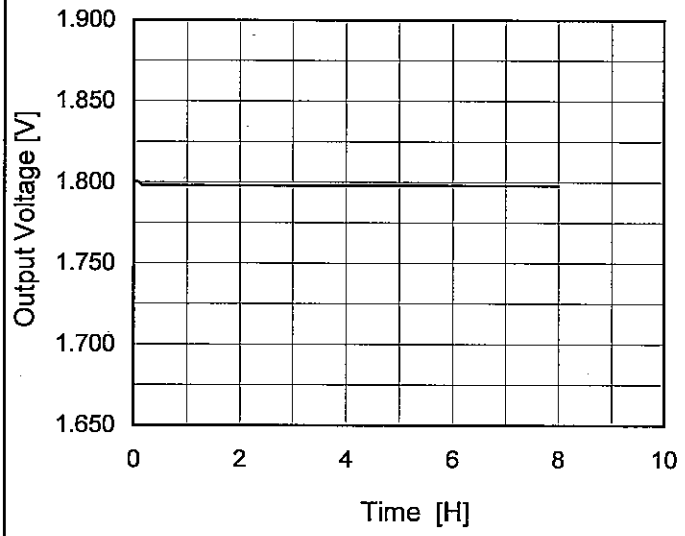
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	85	36	0	1.863	±44	±2.4
Minimum Voltage	85	76	9	1.776		

COSEL

Model	SFS30481R8
Item	Time Lapse Drift
Object	+1.8V9A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Input Volt. 48V
Load 100%

2.Values

Time since start [H]	Output Voltage [V]
0.0	1.801
0.5	1.798
1.0	1.798
2.0	1.798
3.0	1.798
4.0	1.798
5.0	1.798
6.0	1.798
7.0	1.798
8.0	1.798

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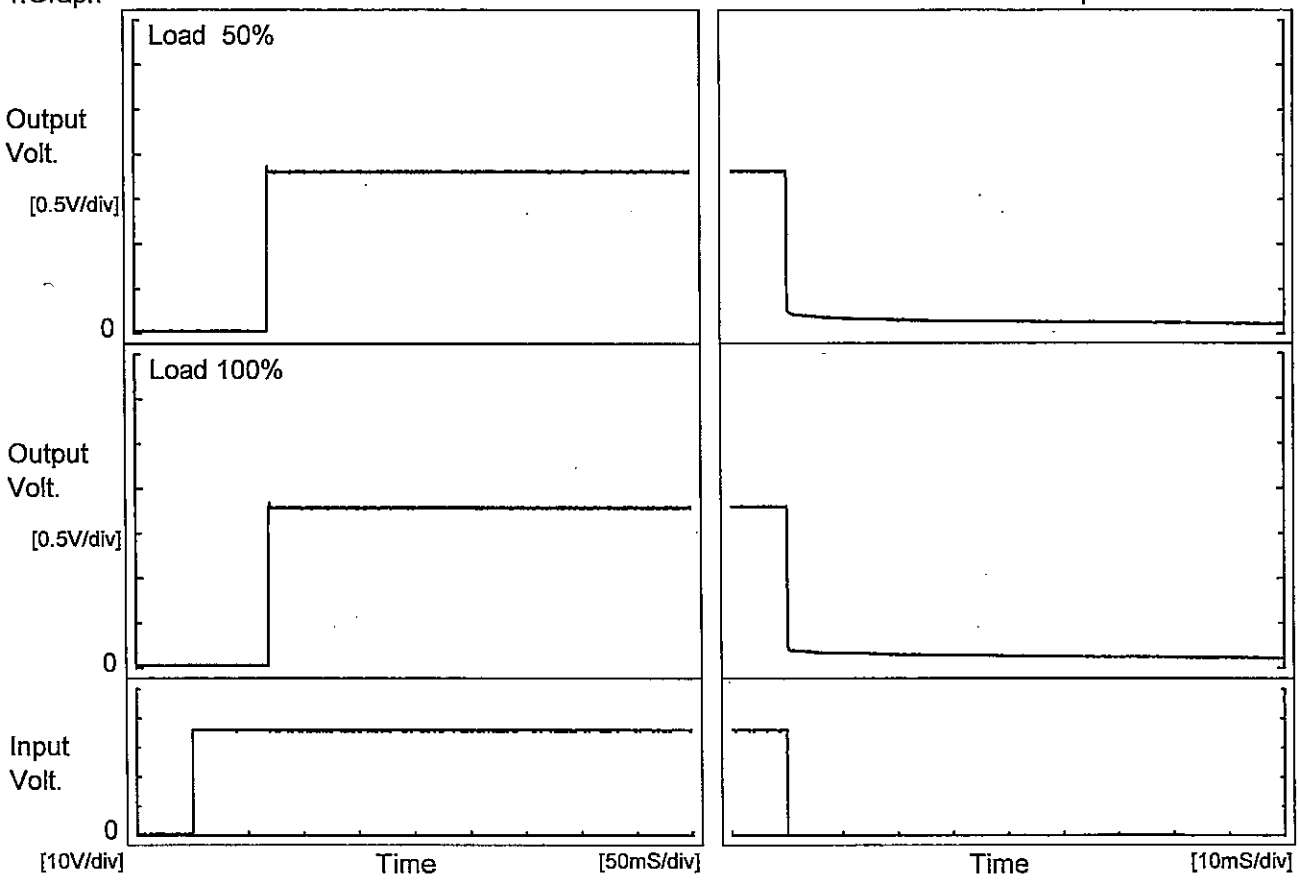
Model	SFS30481R8
Item	Rise and Fall Time
Object	+1.8V9A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

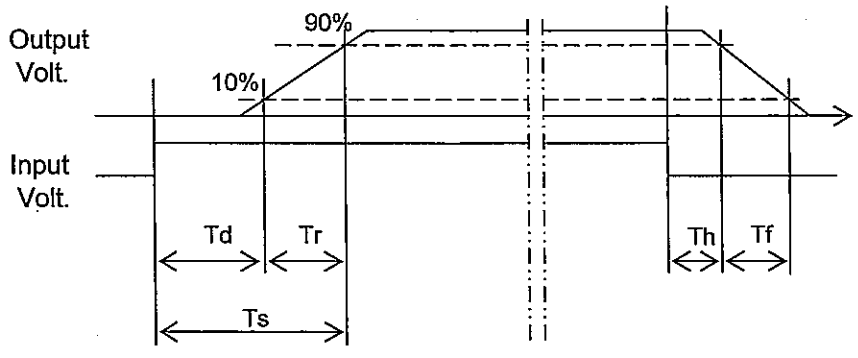
Input Volt. 36 V



2.Values

[mS]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	68.3	0.3	68.6	0.1	3.4
100 %	68.3	0.3	68.6	0.1	0.5



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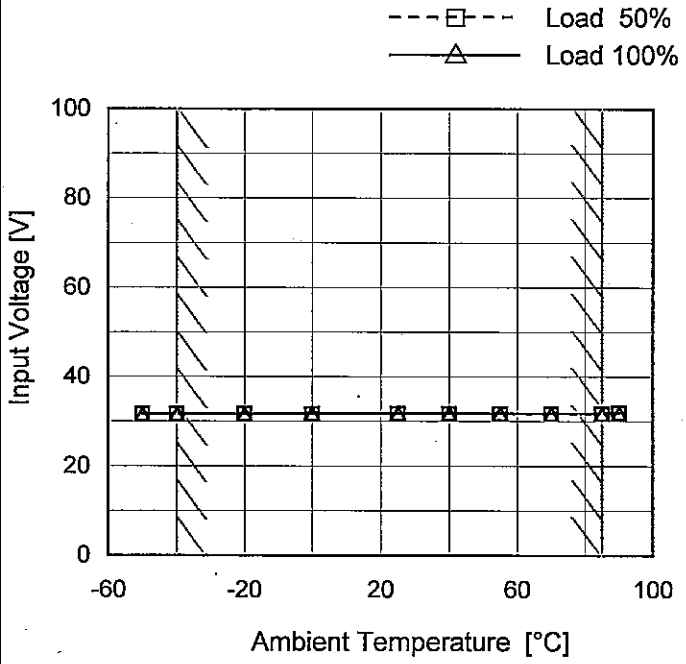
Model	SFS30481R8
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+1.8V9A

Testing Circuitry Figure A

1.Graph



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

2.Values

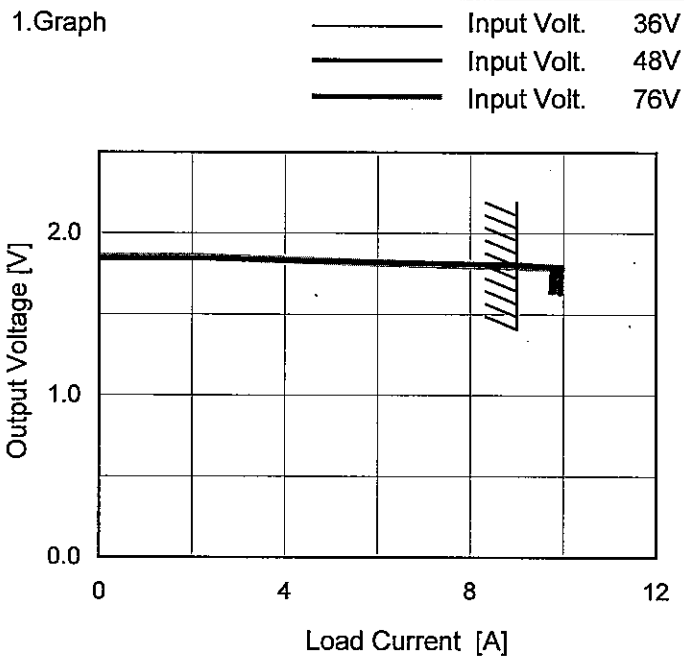
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-50	31.7	31.7
-40	31.7	31.7
-20	31.7	31.7
0	31.7	31.9
25	31.8	31.9
40	31.8	31.9
55	31.8	31.9
70	31.8	31.8
85	31.8	31.8
90	32.0	32.0
--	-	-

COSEL

Model	SFS30481R8
Item	Overcurrent Protection
Object	+1.8V9A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

When the output voltage fell to less than 1.62V ,the unit shuts off the output by operating low voltage protection .

2.Values

Output Voltage [V]	Load Current [A] Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
1.80	9.22	9.11	9.95
1.71	9.72	9.79	9.92
1.62	9.70	9.78	9.92
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

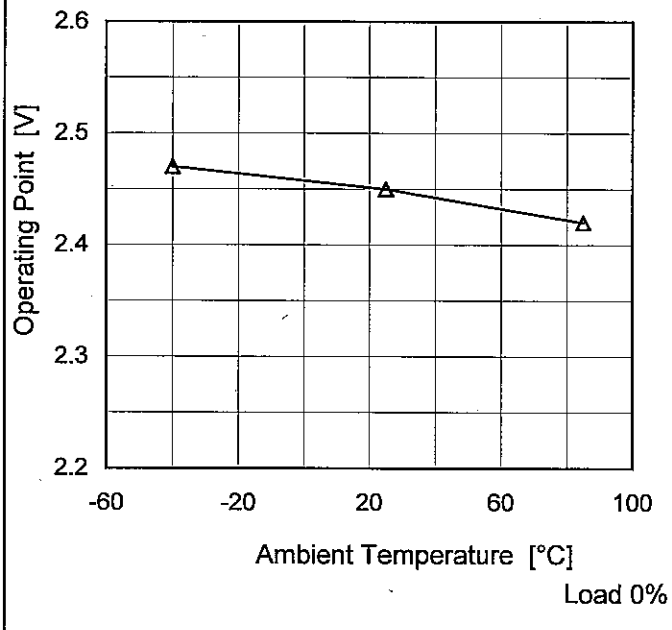
COSEL

Model	SFS30481R8
Item	Overvoltage Protection
Object	+1.8V9A

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	2.47	-	-
25	2.45	-	-
85	2.42	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

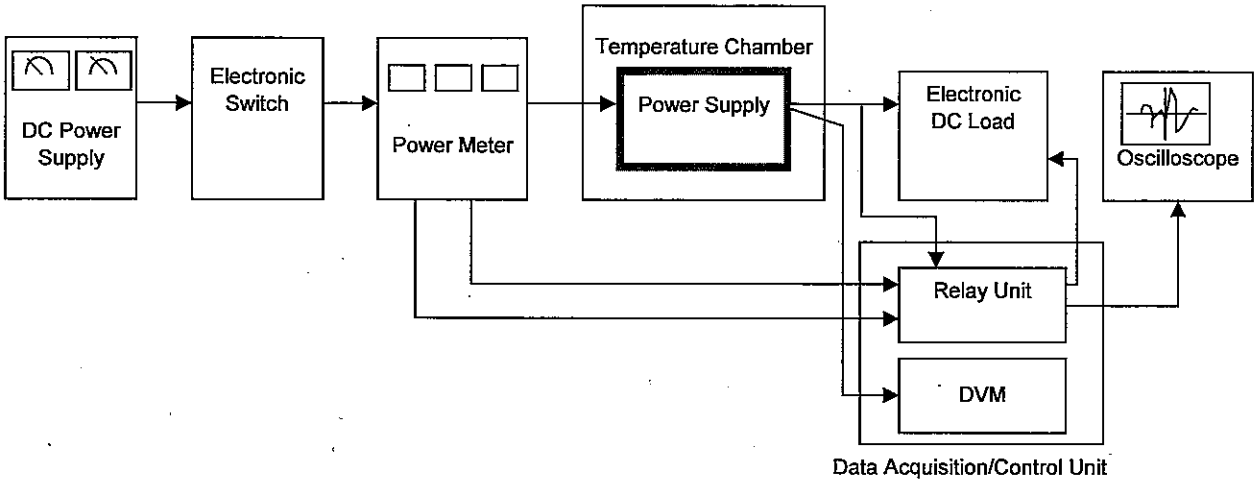


Figure A

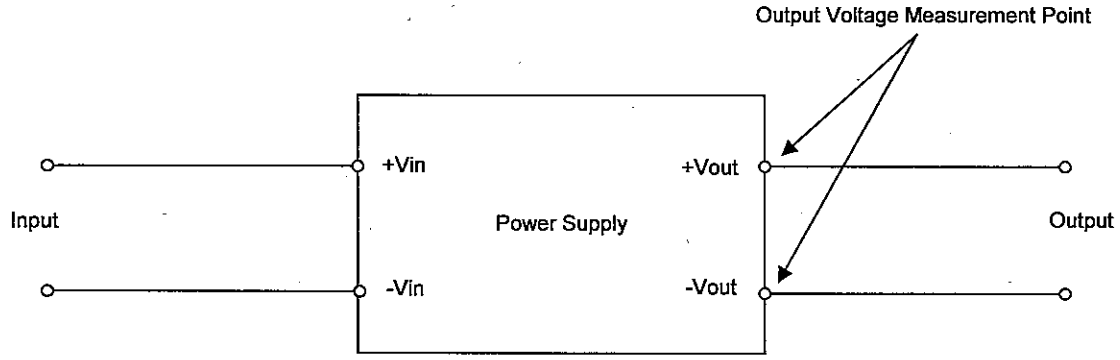


Figure B (General Electric Characteristic)

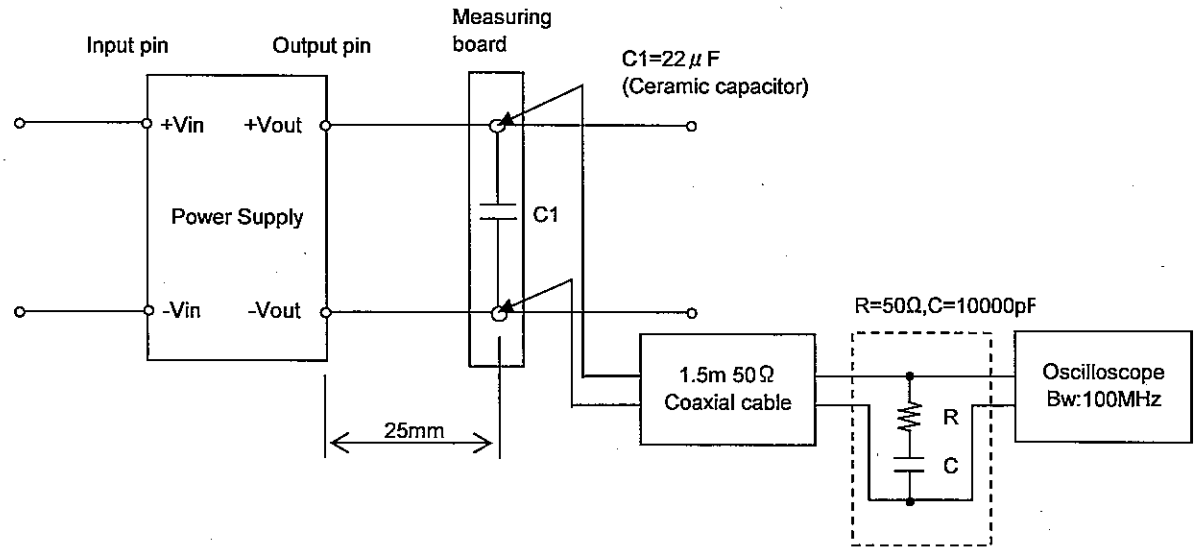


Figure C (Ripple and Ripple noise Characteristic)