参考資料

COSEL

TEST DATA OF SFS152415/SFCS152415

Regulated DC Power Supply
May.28. 2007

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COSEL CO.,LTD.

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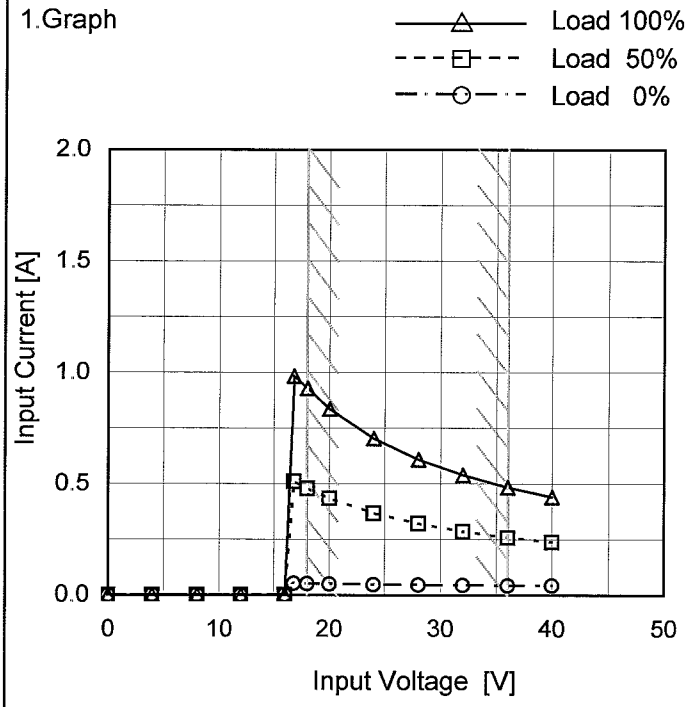
COSEL

Model	SFS152415/SFCS152415
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
4	0.001	0.001	0.001
8	0.001	0.001	0.001
12	0.002	0.002	0.002
16	0.002	0.002	0.002
17	0.053	0.511	0.984
18	0.052	0.480	0.930
20	0.050	0.435	0.836
24	0.047	0.368	0.704
28	0.045	0.322	0.609
32	0.044	0.286	0.540
36	0.044	0.259	0.484
40	0.043	0.238	0.441
--	-	-	-
--	-	-	-
--	-	-	-

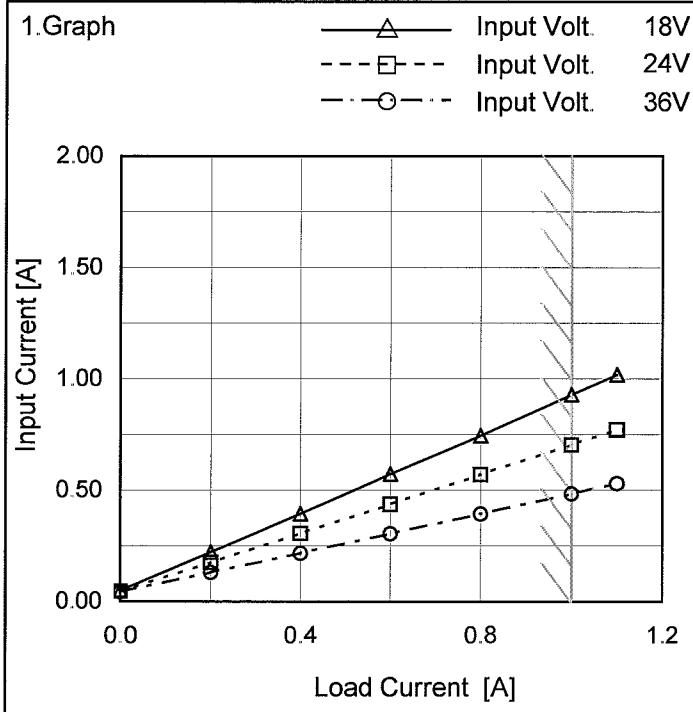
BC-10061

COSEL

Model	SFS152415/SFCS152415
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

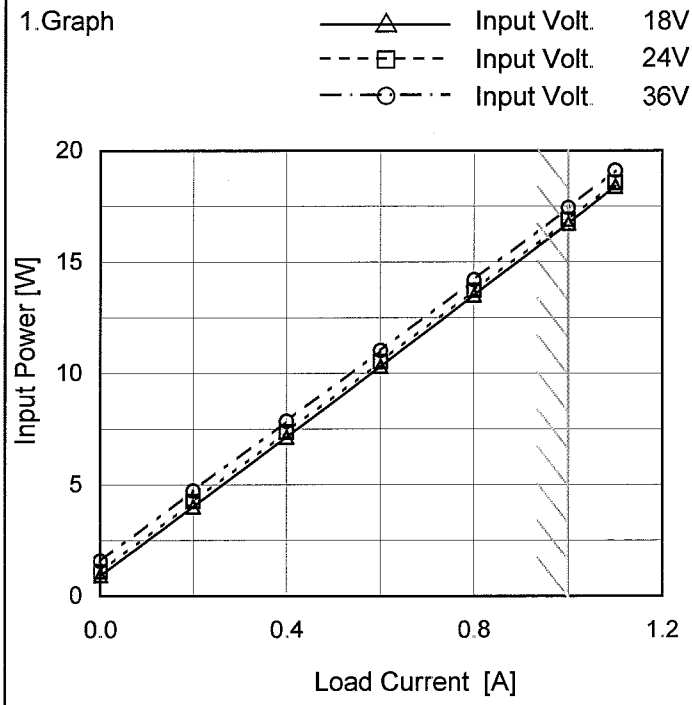
Load Current [A]	Input Current [A]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.0	0.051	0.047	0.043
0.2	0.223	0.176	0.130
0.4	0.396	0.306	0.217
0.6	0.573	0.437	0.305
0.8	0.746	0.571	0.394
1.0	0.930	0.704	0.484
1.1	1.018	0.772	0.530
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SFS152415/SFCS152415
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. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.0	0.94	1.11	1.58
0.2	4.02	4.25	4.72
0.4	7.16	7.37	7.86
0.6	10.33	10.53	11.03
0.8	13.54	13.74	14.21
1.0	16.75	16.91	17.44
1.1	18.40	18.56	19.11
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

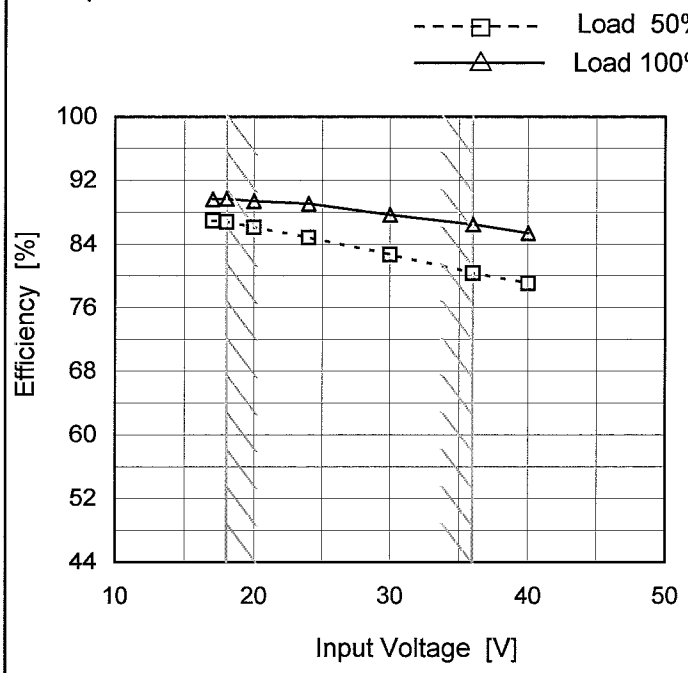
BC-10061

COSEL

Model	SFS152415/SFCS152415
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

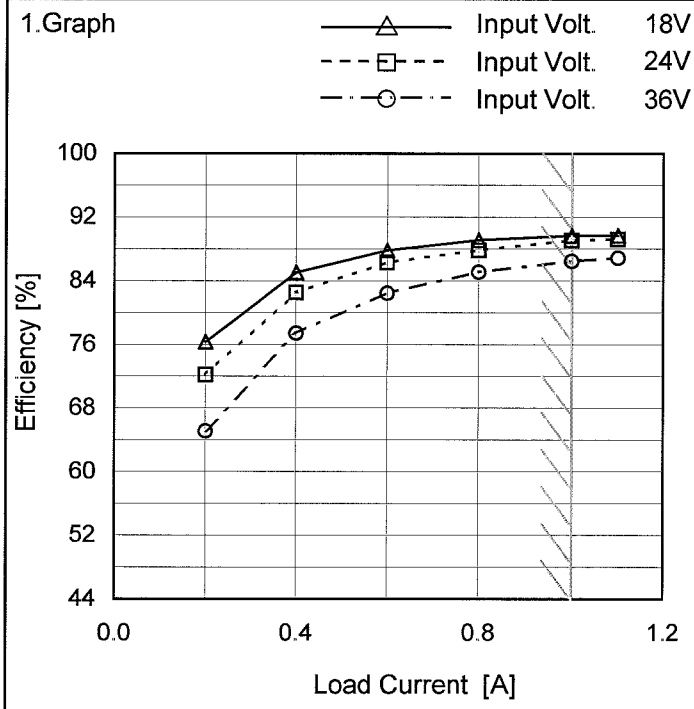
Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
17	87.0	89.6
18	86.8	89.7
20	86.1	89.4
24	84.8	89.1
30	82.7	87.7
36	80.4	86.5
40	79.1	85.4
--	-	-
--	-	-

COSEL

Model	SFS152415/SFCS152415
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

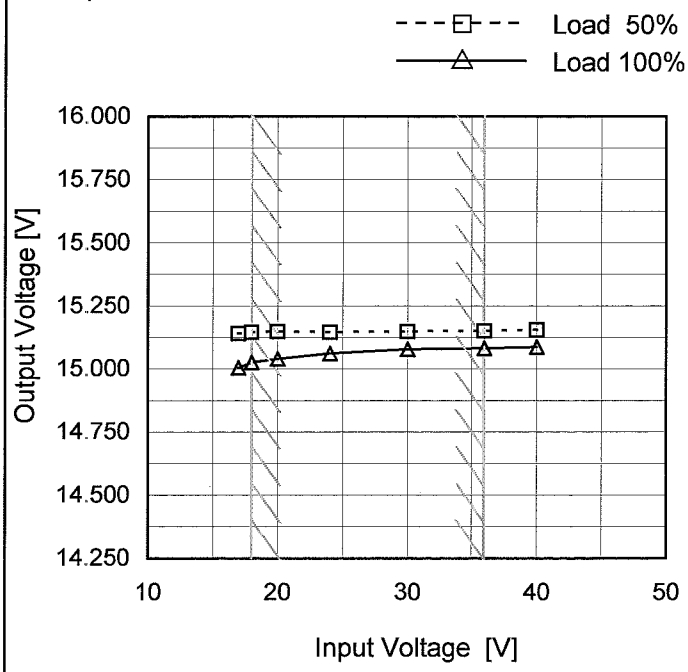
Load Current [A]	Efficiency [%]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.0	-	-	-
0.2	76.3	72.2	65.1
0.4	85.1	82.5	77.4
0.6	87.9	86.3	82.5
0.8	89.1	87.9	85.1
1.0	89.7	89.1	86.5
1.1	89.7	89.2	86.9
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SFS152415/SFCS152415
Item	Line Regulation
Object	+15V1A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

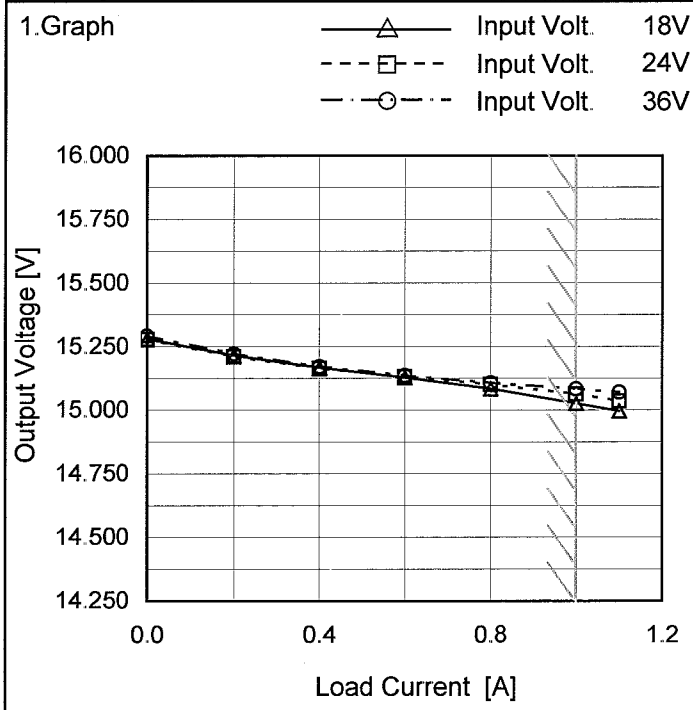
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
17	15.141	15.006
18	15.145	15.027
20	15.148	15.041
24	15.146	15.063
30	15.148	15.079
36	15.152	15.083
40	15.155	15.088
--	-	-
--	-	-

COSEL

Model	SFS152415/SFCS152415
Item	Load Regulation
Object	+15V1A

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. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.0	15.281	15.279	15.292
0.2	15.215	15.211	15.222
0.4	15.168	15.165	15.172
0.6	15.128	15.132	15.136
0.8	15.084	15.101	15.108
1.0	15.027	15.063	15.083
1.1	14.997	15.036	15.071
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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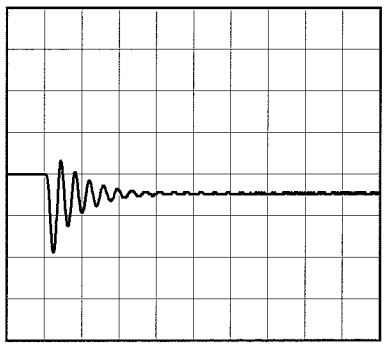
Model	SFS152415/SFCS152415
Item	Dynamic Load Response
Object	+15V1A

Temperature 25°C
Testing Circuitry Figure A

Input Volt. 24 V
Cycle 1000 mS

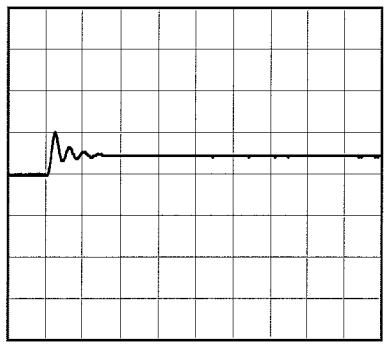
Load Current
1A / 200 μ sec

Min. Load (0A) ⟷
Load 100% (1A)



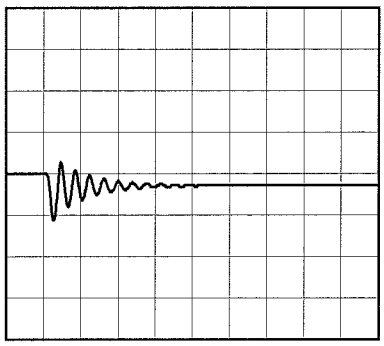
500mV/div

200 μs/div



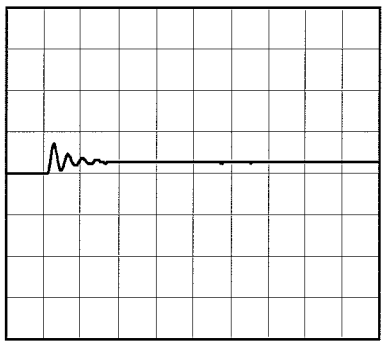
200 μs/div

Min. Load (0A) ⟷
Load 50% (0.5A)



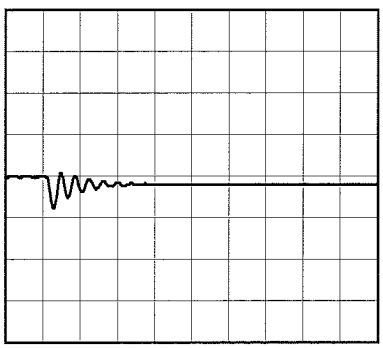
500mV/div

200 μs/div



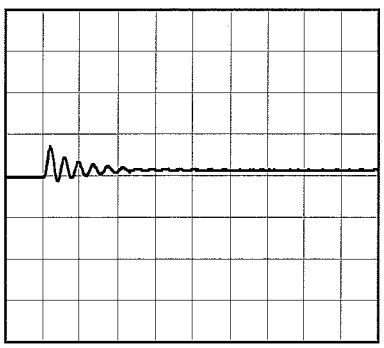
200 μs/div

Load 50% (0.5A) ⟷
Load 100% (1A)



500mV/div

200 μs/div



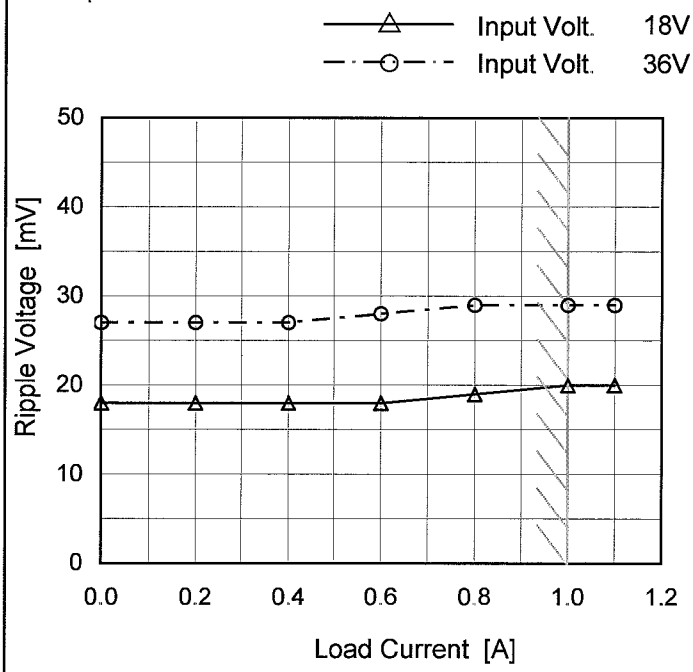
200 μs/div

COSEL

Model	SFS152415/SFCS152415
Item	Ripple Voltage (by Load Current)
Object	+15V1A

Temperature 25°C
Testing Circuitry Figure C

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.

Ripple [mVp-p]

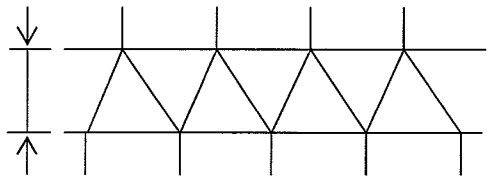


Fig.Complex Ripple Wave Form

2.Values

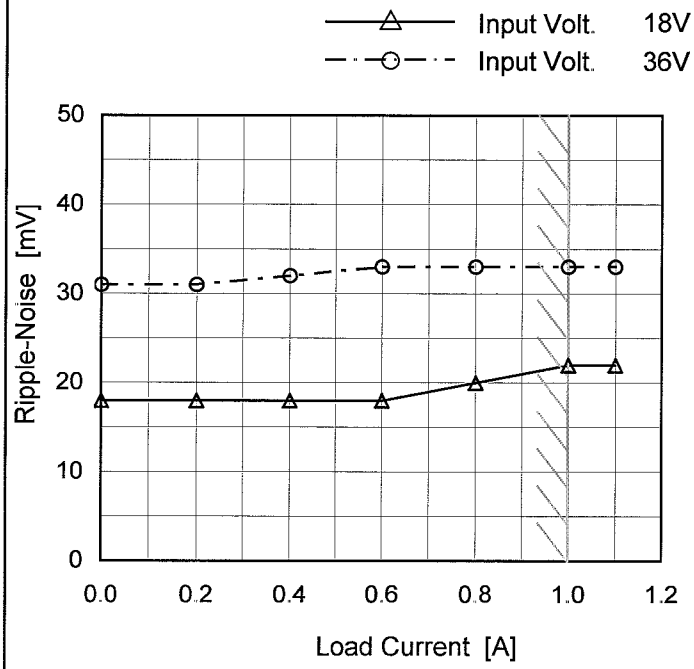
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 18 [V]	Input Volt. 36 [V]
0.0	18	27
0.2	18	27
0.4	18	27
0.6	18	28
0.8	19	29
1.0	20	29
1.1	20	29
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SFS152415/SFCS152415
Item	Ripple-Noise
Object	+15V1A

Temperature 25°C
Testing Circuitry Figure C

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.

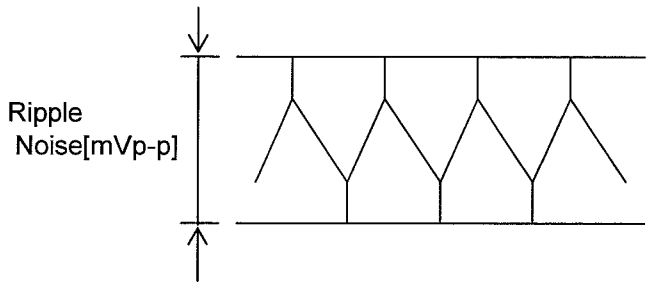


Fig.Complex Ripple Noise Wave Form

2.Values

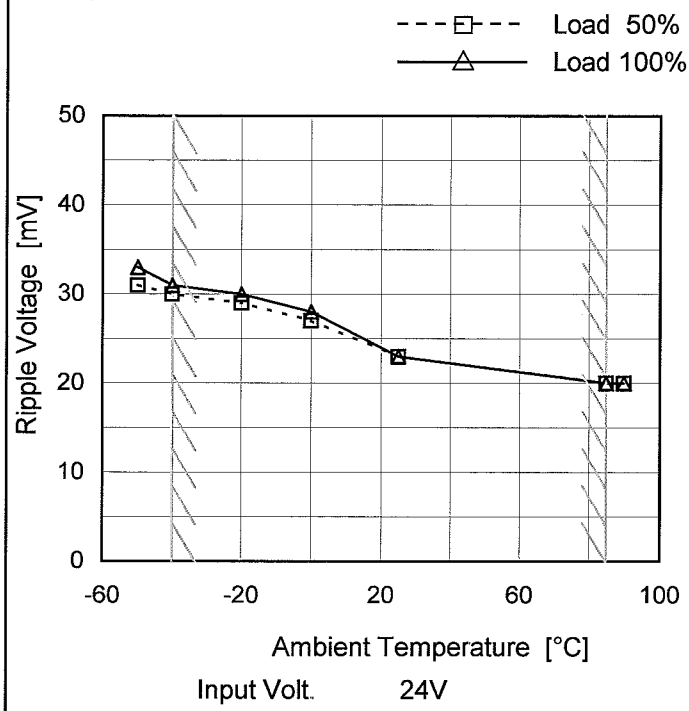
Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 18 [V]	Input Volt. 36 [V]
0.0	18	31
0.2	18	31
0.4	18	32
0.6	18	33
0.8	20	33
1.0	22	33
1.1	22	33
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SFS152415/SFCS152415
Item	Ripple Voltage (by Ambient Temp.)
Object	+15V1A

Testing Circuitry Figure C

1.Graph



Input Volt. 24V

Measured by 100 MHz Oscilloscope.

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

2.Values

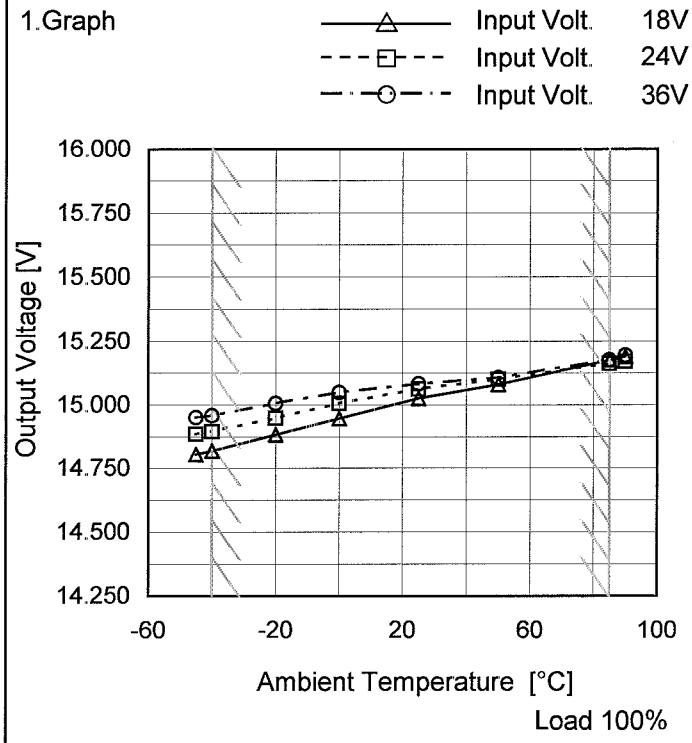
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-50	31	33
-40	30	31
-20	29	30
0	27	28
25	23	23
85	20	20
90	20	20
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SFS152415/SFCS152415
Item	Ambient Temperature Drift
Object	+15V1A

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. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
-45	14.806	14.886	14.951
-40	14.820	14.896	14.959
-20	14.883	14.949	15.007
0	14.948	15.007	15.049
25	15.027	15.063	15.083
50	15.081	15.101	15.107
85	15.176	15.163	15.178
90	15.190	15.172	15.195
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SFS152415/SFCS152415	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+15V1A	

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 : 18 - 36V
Load Current : 0 - 1A

* 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

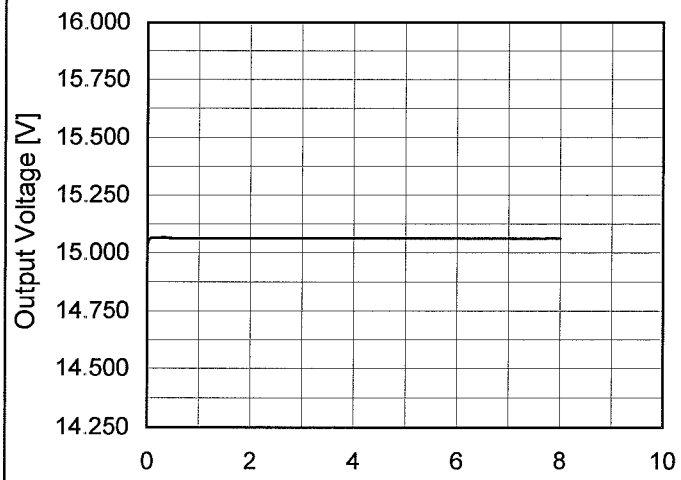
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	85	18	0	15.473	±327	±2.2
Minimum Voltage	-40	18	1	14.820		

COSEL

Model	SFS152415/SFCS152415
Item	Time Lapse Drift
Object	+15V1A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Input Volt. 24V
Load 100%

2.Values

Time since start [H]	Output Voltage [V]
0.0	15.036
0.5	15.063
1.0	15.063
2.0	15.063
3.0	15.063
4.0	15.063
5.0	15.063
6.0	15.063
7.0	15.063
8.0	15.063

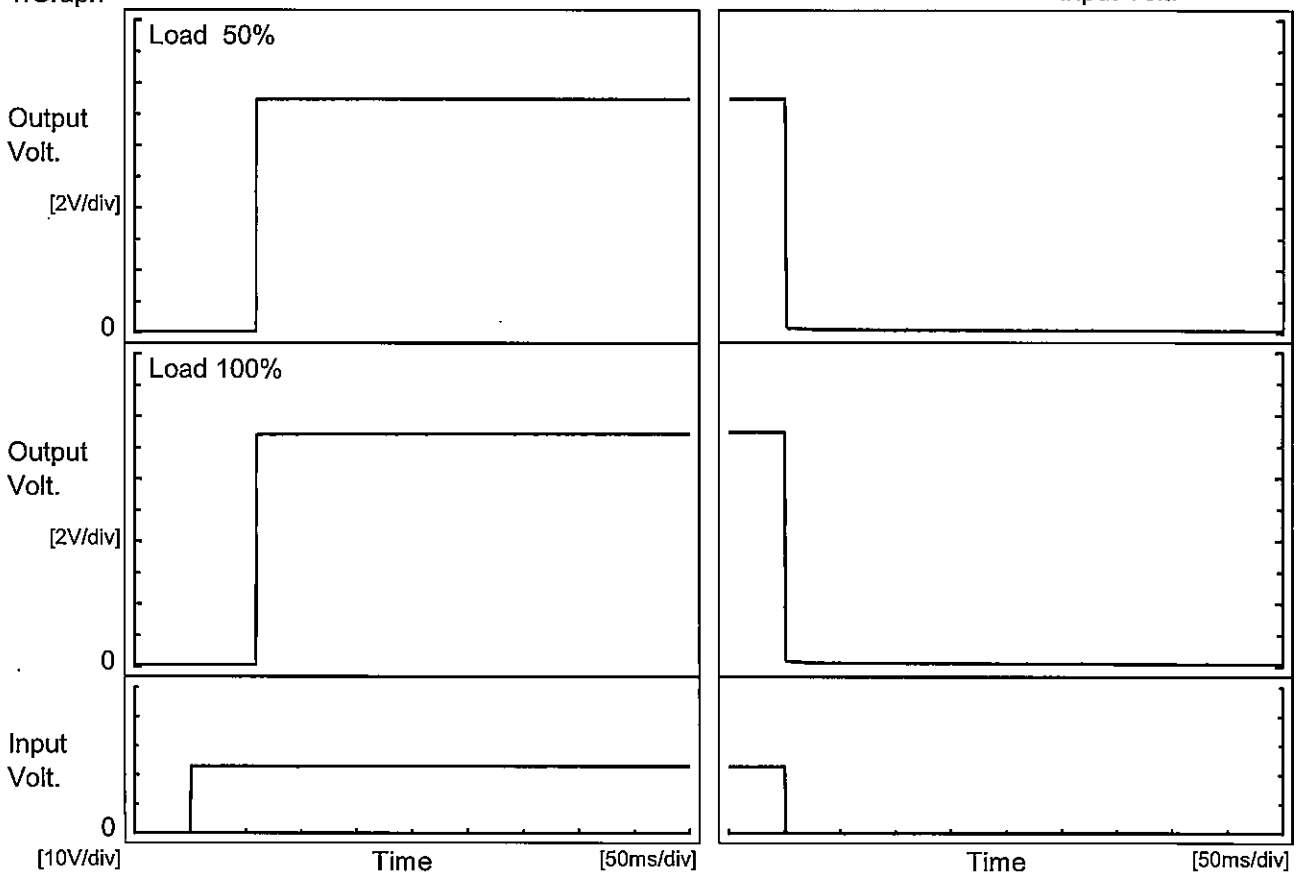
COSEL

Model	SFS152415/SFCS152415
Item	Rise and Fall Time
Object	+15V1A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

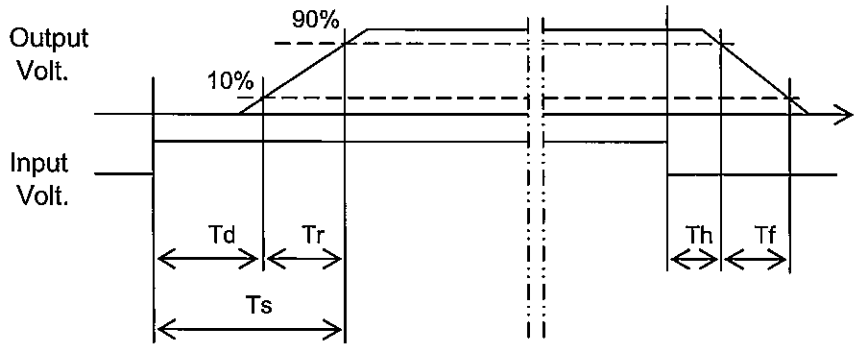
Input Volt. 24 V



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	59.0	0.6	59.6	0.3	1.5
100 %	59.0	0.6	59.6	0.3	1.0

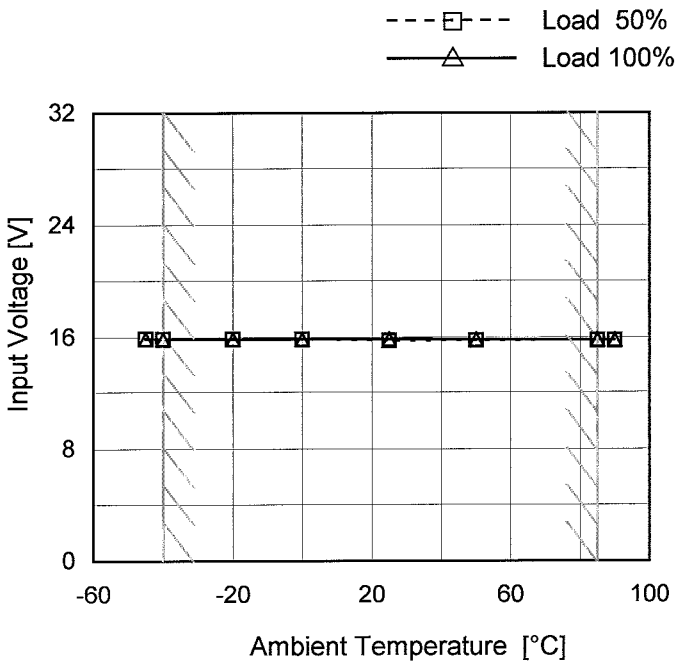


COSEL

Model	SFS152415/SFCS152415
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+15V1A

Testing Circuitry Figure A

1.Graph



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

2.Values

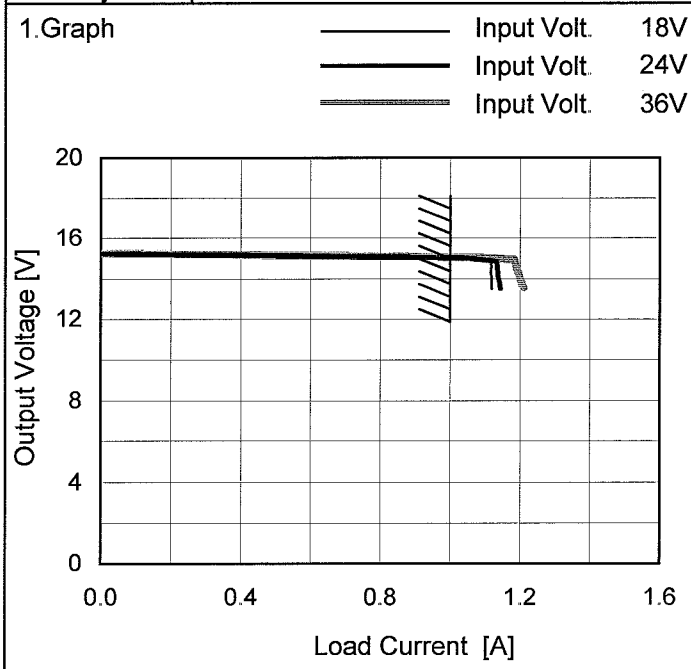
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-45	16.0	16.0
-40	15.9	15.9
-20	15.9	15.9
0	15.9	15.9
25	15.8	15.9
50	15.8	15.9
85	15.8	15.9
90	15.8	15.9
--	-	-
--	-	-
--	-	-

COSEL

Model	SFS152415/SFCS152415
Item	Overcurrent Protection
Object	+15V1A

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 13.5V,the unit shuts off the output by operating low voltage protection.

2.Values

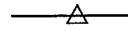
Output Voltage [V]	Load Current [A]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
15.0	1.00	1.00	1.01
14.3	1.12	1.14	1.20
13.5	1.12	1.14	1.21
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

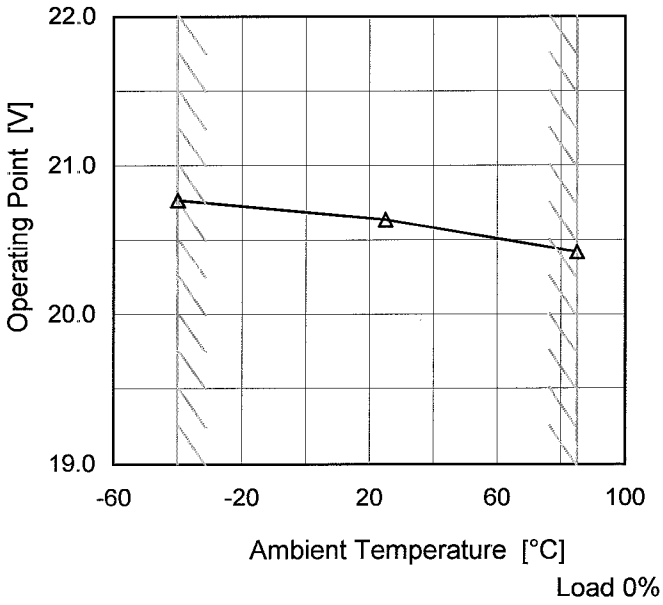
COSEL

Model	SFS152415/SFCS152415
Item	Overvoltage Protection
Object	+15V1A

Testing Circuitry Figure A

1.Graph





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

2.Values

Ambient Temperature [°C]	Operating Point [V]		
	Input Volt. 24[V]	Input Volt.	Input Volt.
-40	20.8	-	-
25	20.6	-	-
85	20.4	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

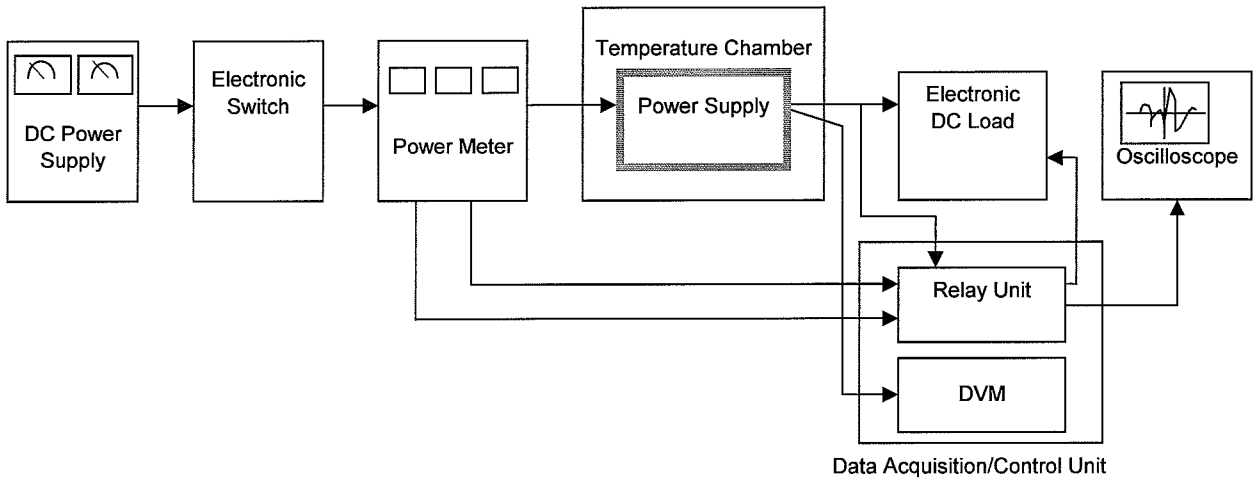


Figure A

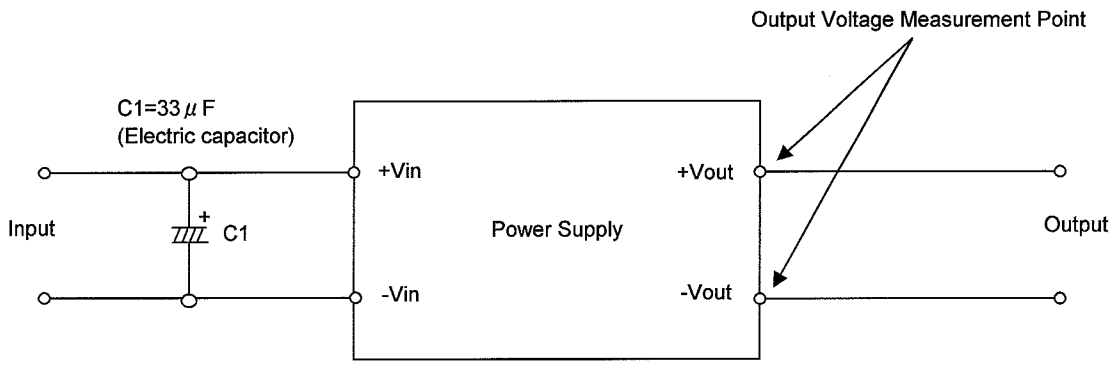


Figure B (General Electric Characteristic)

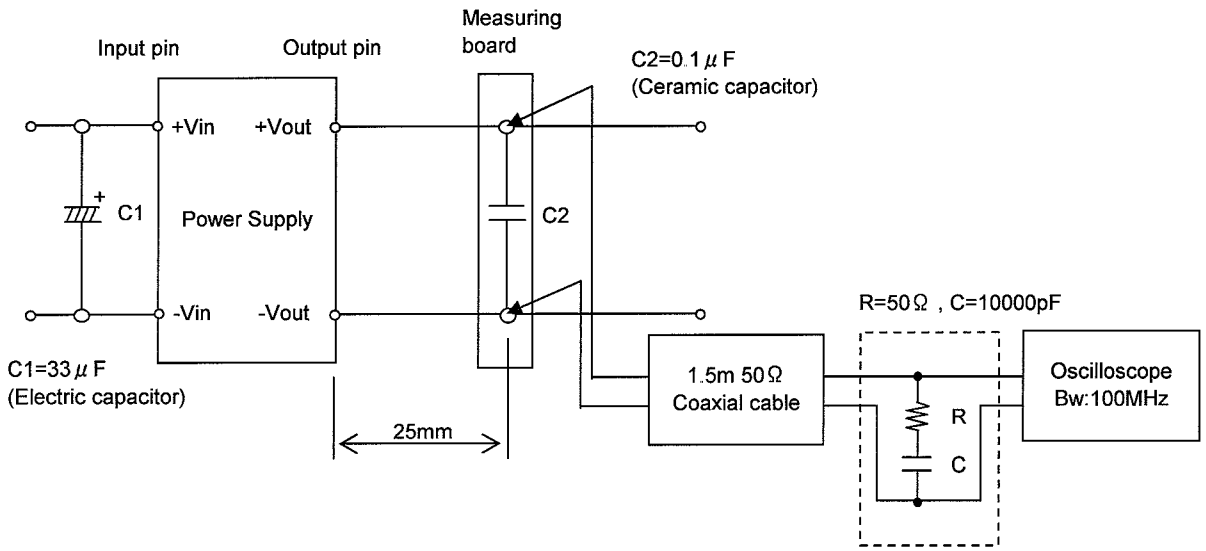


Figure C (Ripple and Ripple noise Characteristic)