COSEL

TEST DATA OF SFS154812/SFCS154812

Regulated DC Power Supply
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Item	Input Current (by Input Voltage)
Object	

Temperature	25°C
Testing Circuitry	Figure A

1.Graph

△ Load 100%
□ Load 50%
○ Load 0%

Input Current [A] vs Input Voltage [V]

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	0.000	0.000	0.000
16	0.000	0.000	0.000
24	0.000	0.000	0.000
33	0.000	0.000	0.000
35	0.025	0.247	0.478
36	0.024	0.242	0.467
40	0.024	0.219	0.419
48	0.022	0.185	0.351
60	0.022	0.151	0.284
70	0.022	0.132	0.245
76	0.021	0.123	0.227
80	0.021	0.118	0.217
--	-	-	-
--	-	-	-
--	-	-	-

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Model	SFS154812/SFCS154812
Item	Input Current (by Load Current)
Object	————————

Temperature	25°C
Testing Circuitry	Figure A

1.Graph

———△——— Input Volt. 36V
- - -□- - - Input Volt. 48V
— · —○— · · — Input Volt. 76V

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]
0.00	0.024	0.022	0.021
0.20	0.092	0.074	0.054
0.40	0.162	0.125	0.086
0.60	0.233	0.178	0.119
0.80	0.304	0.231	0.152
1.00	0.377	0.284	0.185
1.20	0.451	0.339	0.219
1.25	0.467	0.351	0.227
1.30	0.488	0.366	0.236
--	-	-	-
--	-	-	-

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Model	SFS154812/SFCS154812
Item	Input Power (by Load Current)
Object	

Temperature	25°C
Testing Circuitry	Figure A

1.Graph

	Input Volt.	36V
—△—	Input Volt.	48V
---☐---	Input Volt.	76V
—·—○—··—		

Input Power [W] vs Load Current [A]

2.Values

Load Current [A]	Input Power [W]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.00	0.86	1.07	1.63
0.20	3.32	3.53	4.09
0.40	5.81	6.00	6.57
0.60	8.34	8.50	9.06
0.80	10.90	11.04	11.57
1.00	13.49	13.60	14.09
1.20	16.13	16.19	16.62
1.25	16.81	16.83	17.26
1.30	17.45	17.48	17.91
--	-	-	-
--	-	-	-

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

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Model	SFS154812/SFCS154812
Item	Efficiency (by Input Voltage)
Object	
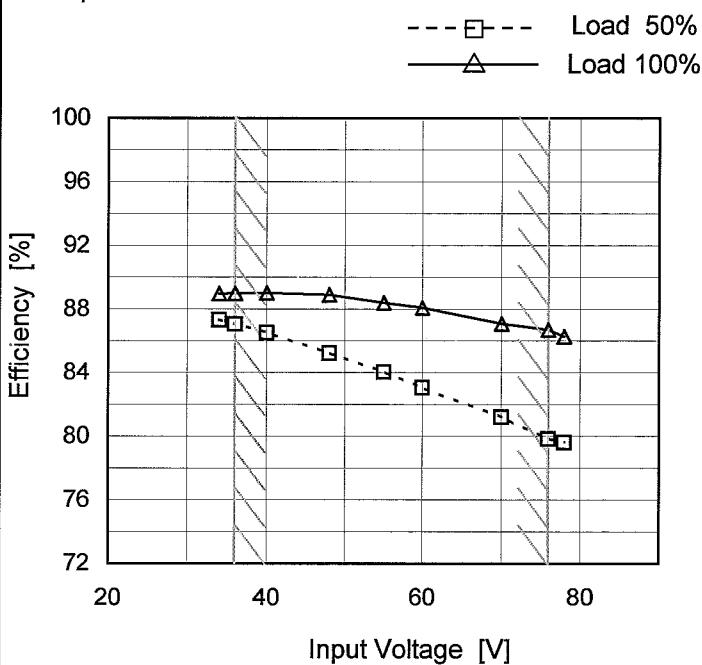
Temperature	25°C
Testing Circuitry	Figure A

1.Graph

- - - ◻ - - -   Load 50%
———△———   Load 100%

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

2.Values

Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
34	87.3	89.0
36	87.1	89.0
40	86.5	89.0
48	85.2	88.9
55	84.1	88.4
60	83.1	88.1
70	81.2	87.1
76	79.9	86.7
78	79.6	86.3

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Model	SFS154812/SFCS154812
Item	Efficiency (by Load Current)
Object	

Temperature   25°C
Testing Circuitry   Figure A

1.Graph

—△—	Input Volt.	36V
- - -◻- - -	Input Volt.	48V
— ·—○— ··	Input Volt.	76V

Efficiency [%] vs Load Current [A]

2.Values

Load Current [A]	Efficiency [%]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.00	-	-	-
0.20	73.4	68.7	59.4
0.40	83.3	80.6	73.4
0.60	86.9	85.0	79.6
0.80	88.4	87.1	82.9
1.00	89.0	88.2	85.0
1.20	89.1	88.8	86.4
1.25	89.0	88.9	86.7
1.30	89.0	88.9	86.8
--	-	-	-
--	-	-	-

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

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Model	SFS154812/SFCS154812
Item	Line Regulation
Object	+12V1.25A

Temperature   25°C
Testing Circuitry   Figure A

1.Graph

- - - ⊟ - - -   Load 50%
———△———   Load 100%

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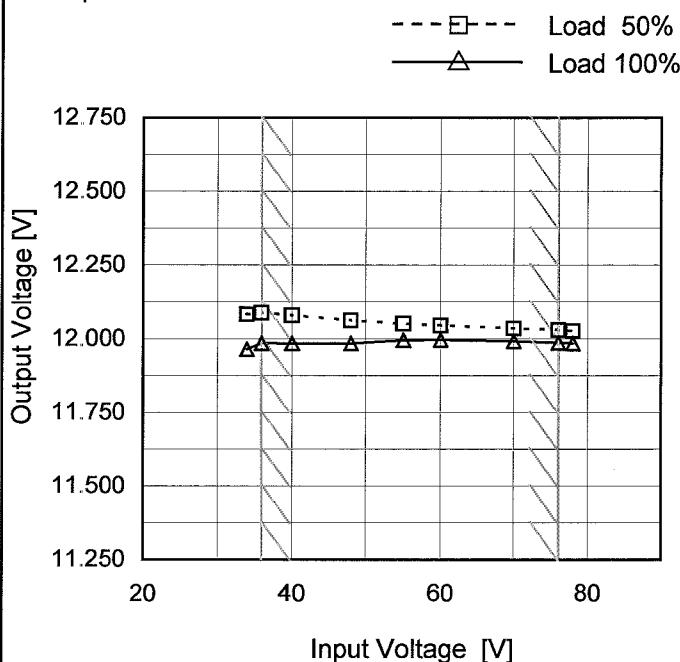
2.Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
34	12.083	11.964
36	12.089	11.986
40	12.080	11.984
48	12.062	11.985
55	12.051	11.995
60	12.045	11.996
70	12.036	11.992
76	12.030	11.987
78	12.027	11.984

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Model	SFS154812/SFCS154812
Item	Load Regulation
Object	+12V1.25A
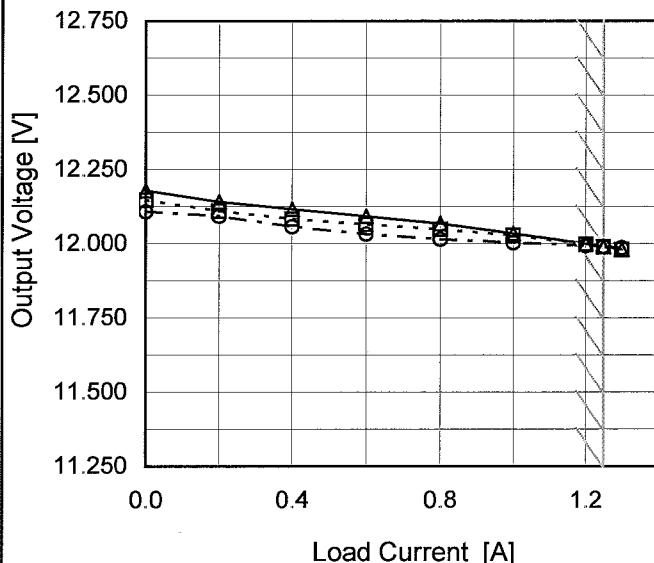
Temperature 25°C
Testing Circuitry Figure A

1.Graph

————△———— Input Volt. 36V
– – –❍– – – Input Volt. 48V
— ·· —◯— ·· — Input Volt. 76V

Output Voltage [V] vs Load Current [A]

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]
0.00	12.179	12.147	12.108
0.20	12.141	12.110	12.093
0.40	12.116	12.083	12.057
0.60	12.093	12.065	12.032
0.80	12.068	12.048	12.015
1.00	12.035	12.028	12.003
1.20	12.000	11.998	11.993
1.25	11.991	11.989	11.990
1.30	11.981	11.979	11.986
--	-	-	-
--	-	-	-

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参考資料

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Model	SFS154812/SFCS154812		
Item	Dynamic Load Response	Temperature	25°C
		Testing Circuitry	Figure A
Object	+12V1.25A		

Input Volt.　　48 V
Cycle　　1000 mS

Load Current　　1.25A / 200 μ sec

Min. Load (0A) ←→
Load 100% (1.25A)

200mV/div

200 μs/div　　　　200 μs/div

Min. Load (0A) ←→
Load 50% (0.625A)

200mV/div

200 μs/div　　　　200 μs/div

Load 50% (0.625A) ←→
Load 100% (1.25A)

200mV/div

200 μs/div　　　　200 μs/div

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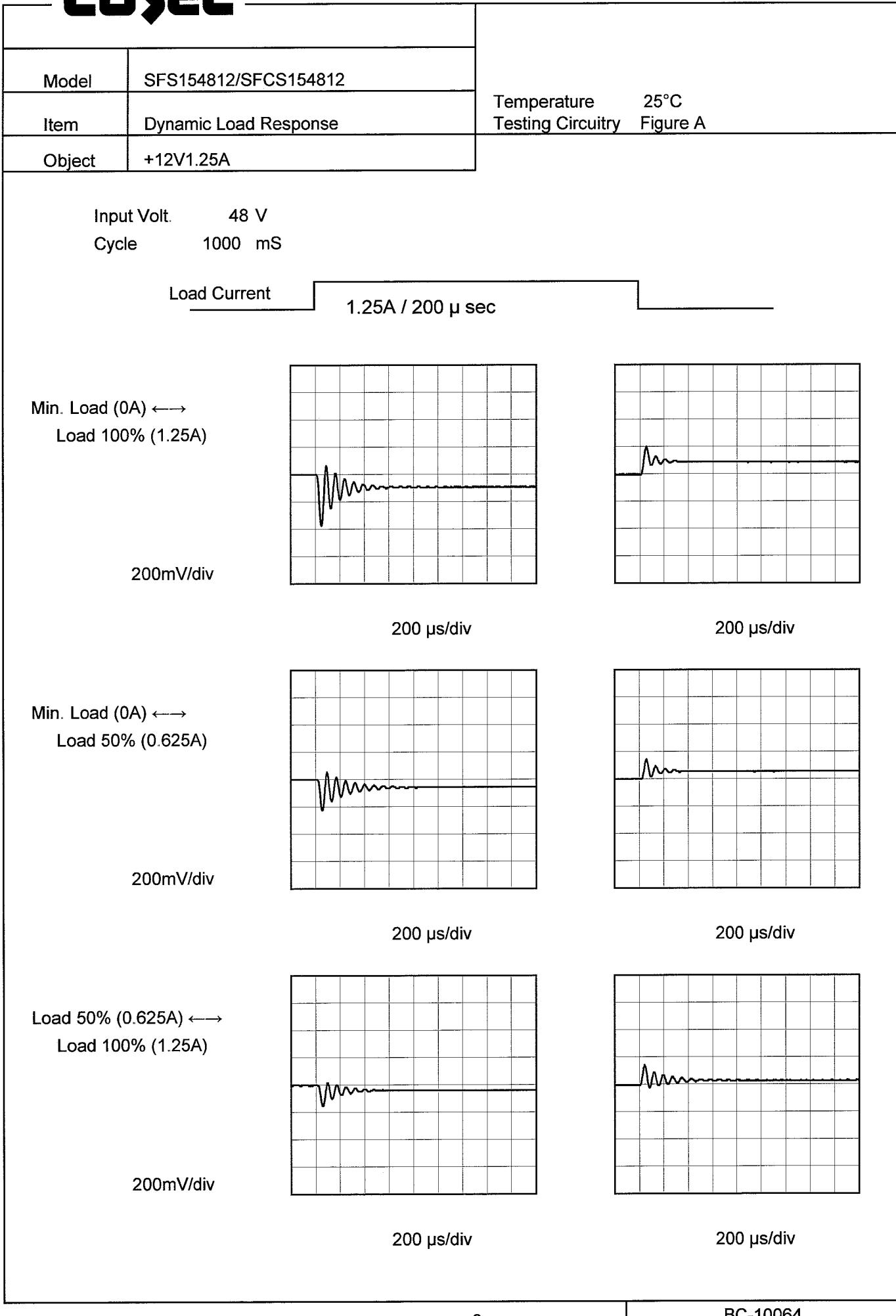
Model	SFS154812/SFCS154812
Item	Ripple Voltage (by Load Current)
Object	+12V1.25A

Temperature 25°C
Testing Circuitry Figure C

1.Graph

——△—— Input Volt. 36V
—·—○—·· Input Volt. 76V
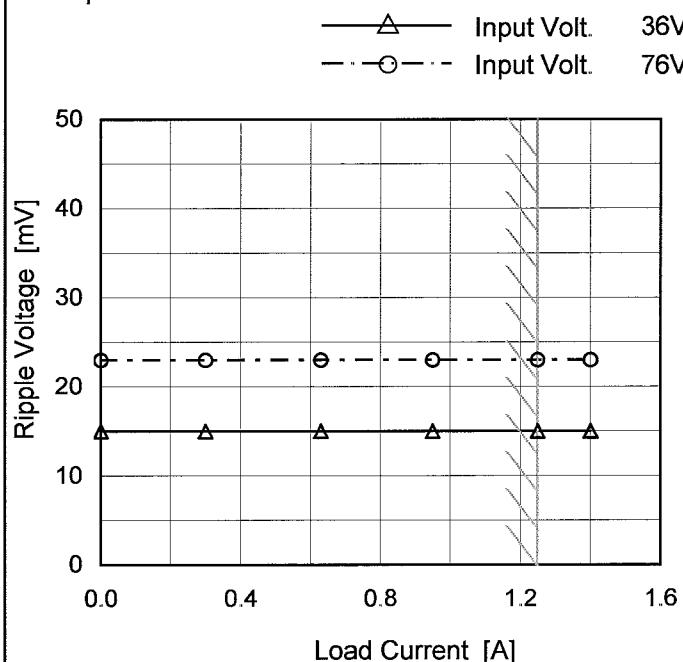
Load Current [A]

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]
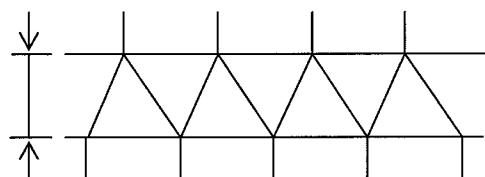
Fig.Complex Ripple Wave Form

2.Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 36 [V]	Input Volt. 76 [V]
0.00	15	23
0.30	15	23
0.63	15	23
0.95	15	23
1.25	15	23
1.40	15	23
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

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参考資料

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Model	SFS154812/SFCS154812
Item	Ripple-Noise
Object	+12V1.25A

Temperature　　　25°C
Testing Circuitry　Figure C

1.Graph

— △ — Input Volt.　36V
— ○ — Input Volt.　76V
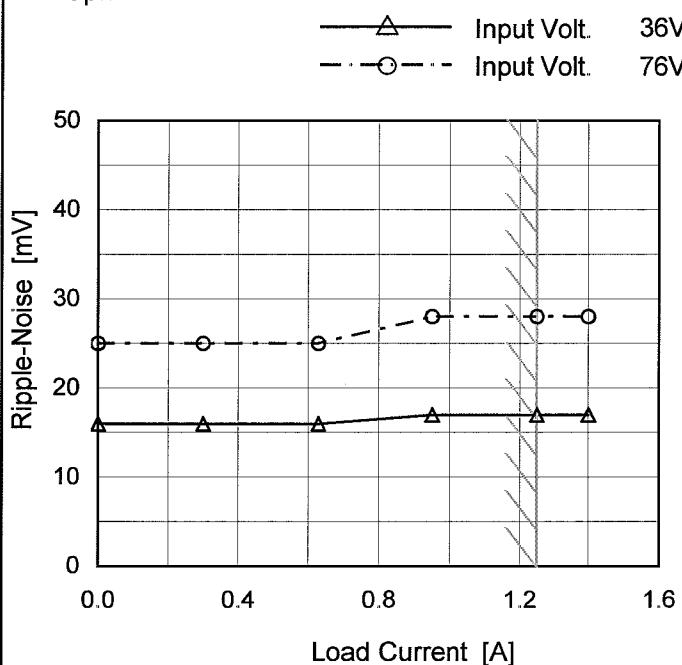
Load Current [A]

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.

2.Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 36 [V]	Input Volt. 76 [V]
0.00	16	25
0.30	16	25
0.63	16	25
0.95	17	28
1.25	17	28
1.40	17	28
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
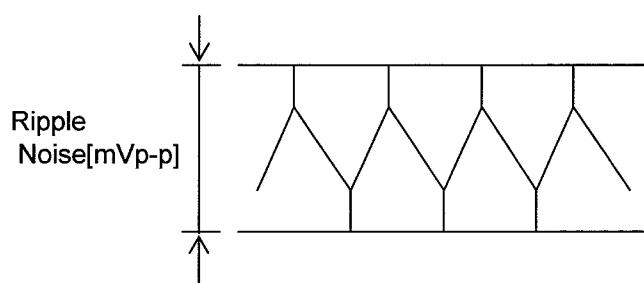
Ripple
Noise[mVp-p]

Fig.Complex Ripple Noise Wave Form

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Model	SFS154812/SFCS154812
Item	Ripple Voltage (by Ambient Temp.)
Object	+12V1.25A

Testing Circuitry   Figure C

1.Graph

- - - ⊟ - - - Load 50%

————△———— Load 100%

Ambient Temperature [°C]

Input Volt.   48V
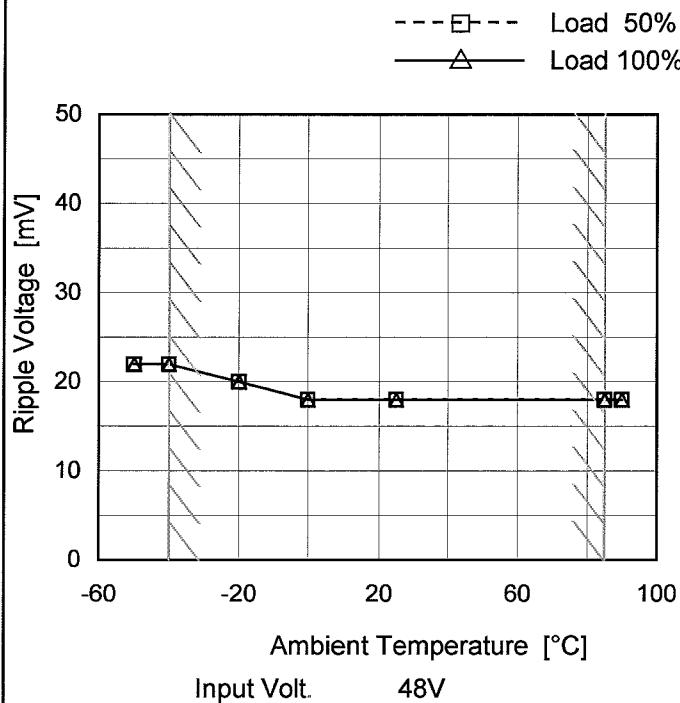
Measured by 100 MHz Oscilloscope.

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

2.Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-50	22	22
-40	22	22
-20	20	20
0	18	18
25	18	18
85	18	18
90	18	18
---	-	-
---	-	-
---	-	-
---	-	-

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Model	SFS154812/SFCS154812
Item	Ambient Temperature Drift
Object	+12V1.25A

Testing Circuitry   Figure A

1.Graph

——△——	Input Volt. 36V
- - -◻- - -	Input Volt. 48V
— ·—◯— ··	Input Volt. 76V

Ambient Temperature [°C]

Load 100%

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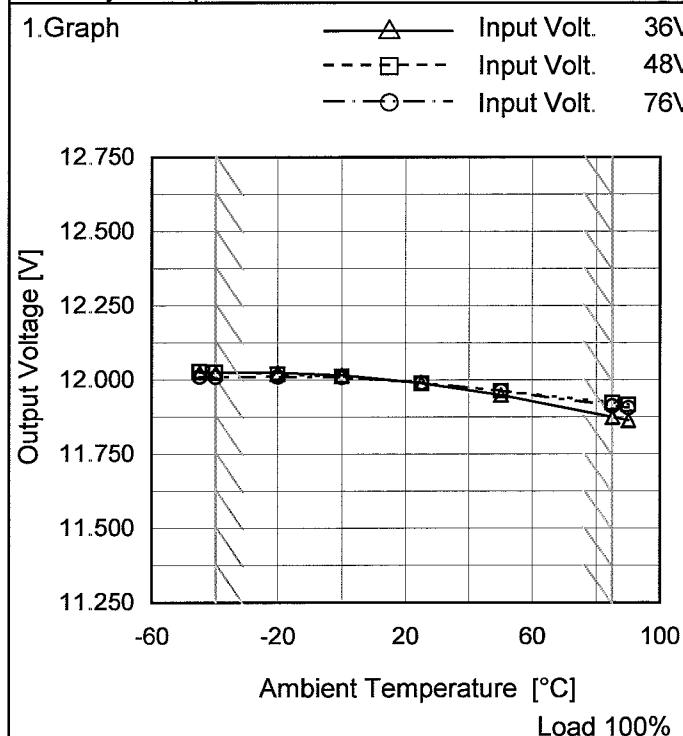
2.Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
-45	12.026	12.030	12.011
-40	12.025	12.027	12.010
-20	12.024	12.019	12.011
0	12.016	12.012	12.009
25	11.989	11.989	11.990
50	11.950	11.963	11.964
85	11.876	11.923	11.913
90	11.864	11.917	11.906
---	-	-	-
---	-	-	-
---	-	-	-

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Model	SFS154812/SFCS154812		
Item	Output Voltage Accuracy	Testing Circuitry	Figure A
Object	+12V1.25A		

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 - 1.25A

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

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

2.Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	85	36	0	12.195	±162	±1.4
Minimum Voltage	85	36	1.25	11.871		

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Model	SFS154812/SFCS154812
Item	Time Lapse Drift
Object	+12V1.25A

Temperature	25°C
Testing Circuitry	Figure A

1.Graph
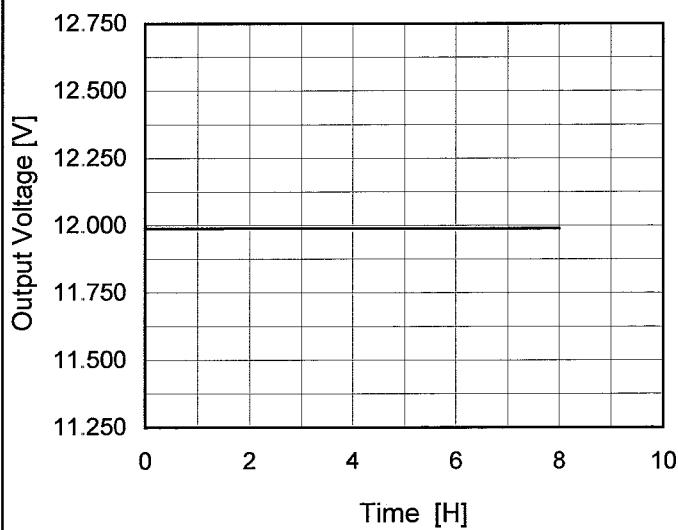
Input Volt.　　48V
Load　　　　100%

2.Values

Time since start [H]	Output Voltage [V]
0.0	12.005
0.5	11.989
1.0	11.989
2.0	11.990
3.0	11.990
4.0	11.989
5.0	11.989
6.0	11.989
7.0	11.989
8.0	11.989

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Model	SFS154812/SFCS154812
Item	Rise and Fall Time
Object	+12V1.25A

Temperature   25°C
Testing Circuitry   Figure A

1.Graph

Input Volt.   36 V

Load 50%

Output Volt.

[2V/div]

0

Load 100%

Output Volt.

[2V/div]

0

Input Volt.

0

[10V/div]   Time   [50mS/div]   Time   [50mS/div]
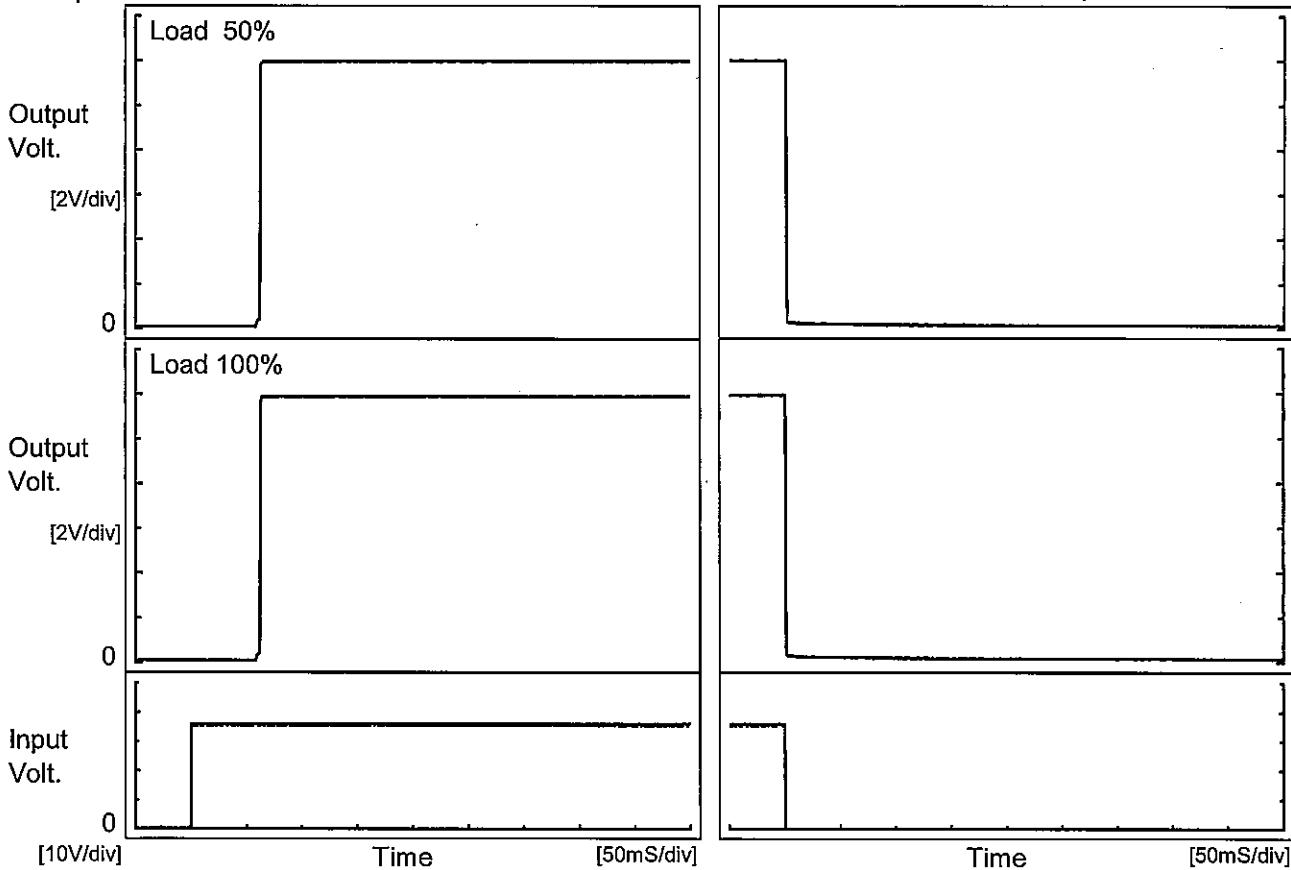
2.Values

[mS]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	62.5	0.8	63.3	0.3	1.3
100 %	62.3	0.8	63.1	0.3	0.8

Output Volt.

90%

10%

Input Volt.

Td   Tr   Th   Tf

Ts

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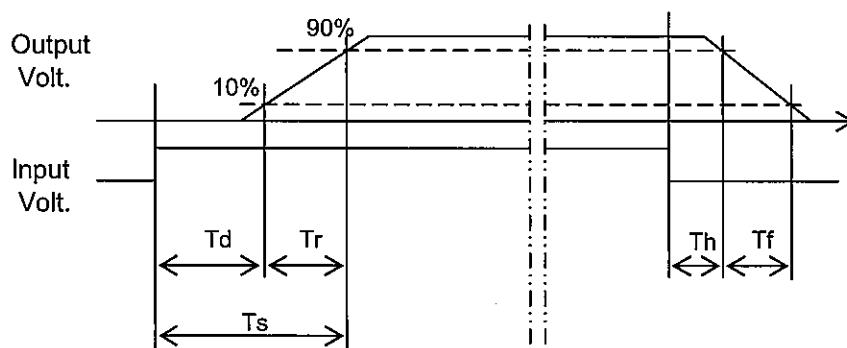
Model	SFS154812/SFCS154812
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+12V1.25A

Testing Circuitry   Figure A

1.Graph

```
--- □ ---    Load  50%
——— △ ———    Load 100%
```


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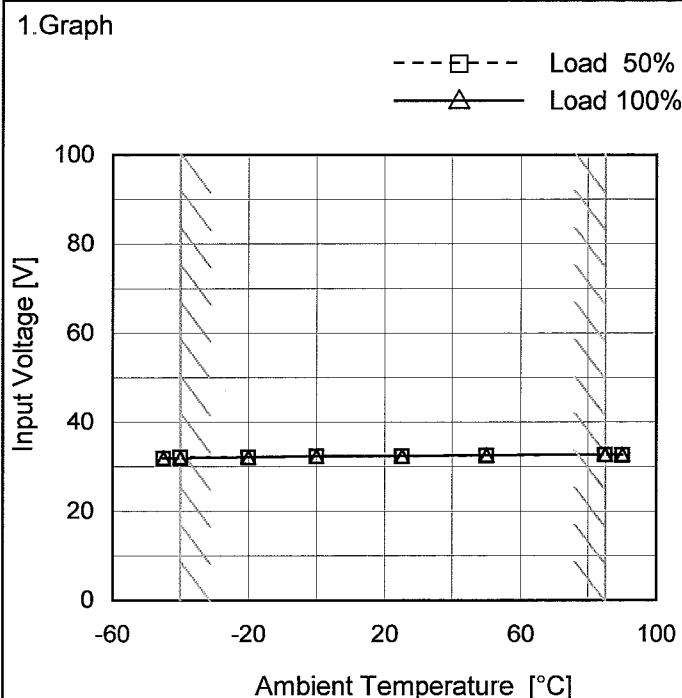
2.Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-45	31.9	32.0
-40	32.1	32.0
-20	32.2	32.2
0	32.3	32.4
25	32.4	32.4
50	32.5	32.6
85	32.7	32.8
90	32.7	32.8
---	-	-
---	-	-
---	-	-

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参考資料

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Model	SFS154812/SFCS154812
Item	Overcurrent Protection
Object	+12V1.25A

Temperature 25°C
Testing Circuitry Figure A

1. Graph

——————— Input Volt. 36V
——————— Input Volt. 48V
=========== Input Volt. 76V

Output Voltage [V] vs Load Current [A]
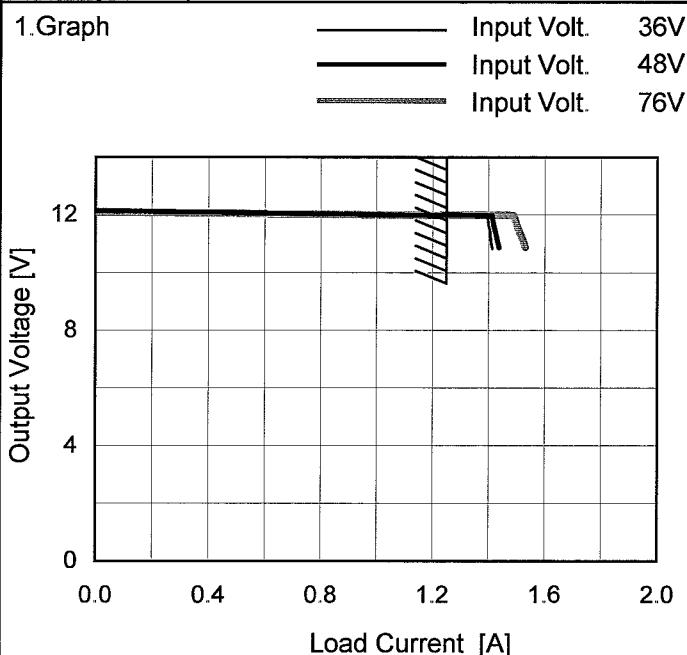
Note: Slanted line shows the range of the rated
load current.

When the output voltage fell to less than 10.8V,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]
12.0	1.29	1.29	1.29
11.4	1.41	1.42	1.51
10.8	1.41	1.44	1.53
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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Model	SFS154812/SFCS154812
Item	Overvoltage Protection
Object	+12V1.25A
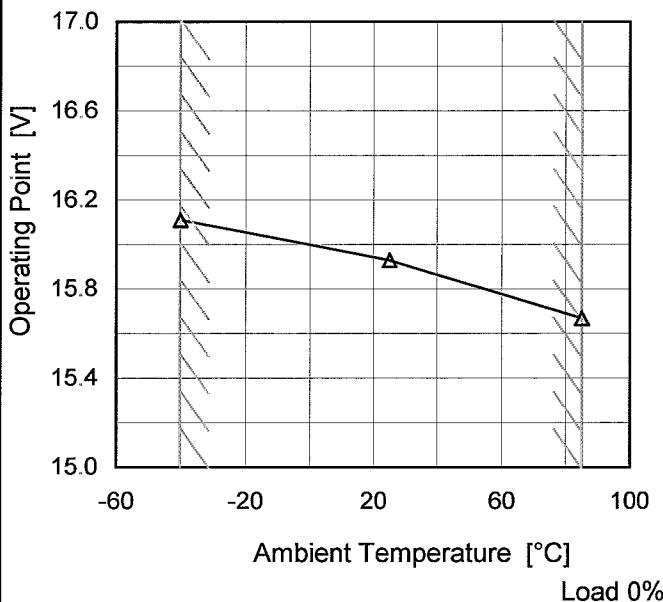
Testing Circuitry   Figure A

1.Graph ⸺△⸺ Input Volt. 48V

Operating Point [V] vs Ambient Temperature [°C]

Load 0%

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	16.11	-	-
25	15.93	-	-
85	15.67	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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Figure A

Output Voltage Measurement Point

Figure B (General Electric Characteristic)
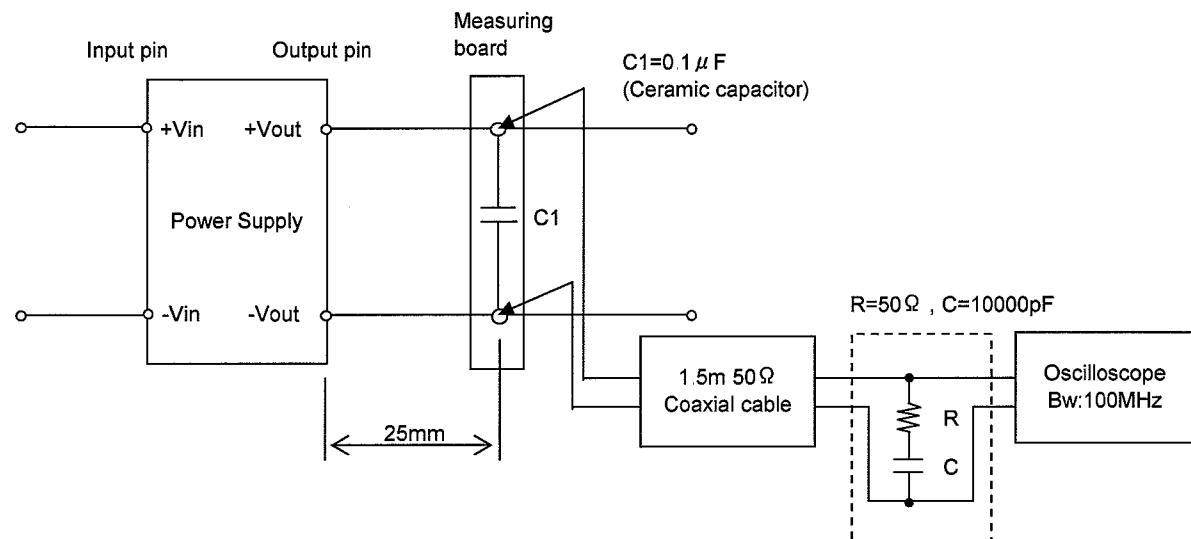
Figure C (Ripple and Ripple noise Characteristic)

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