COSEL

参考資料

TEST DATA OF SFS104812

Regulated DC Power Supply
Jan.9. 2004

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COSEL CO.,LTD.

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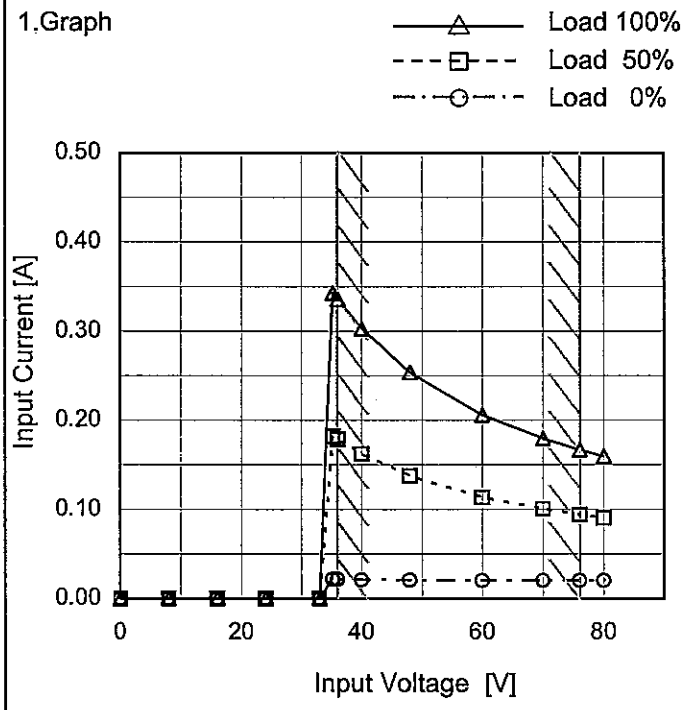
(Final Page 19)

COSEL

Model	SFS104812
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	0.000	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	0.022	0.182	0.343
36	0.022	0.179	0.336
40	0.021	0.162	0.303
48	0.020	0.138	0.254
60	0.020	0.113	0.206
70	0.020	0.100	0.180
76	0.020	0.094	0.167
80	0.020	0.091	0.160
--	-	-	-
--	-	-	-
--	-	-	-

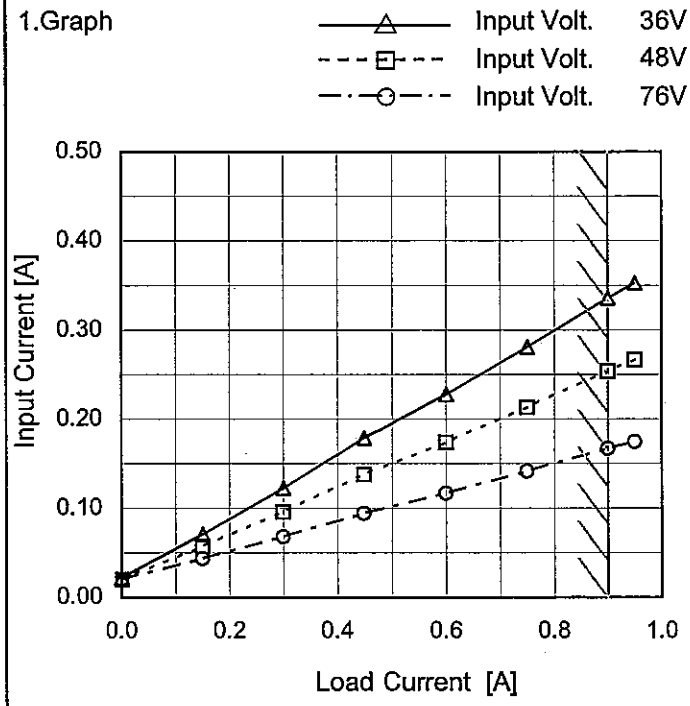
BC-3533

COSEL

Model	SFS104812
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

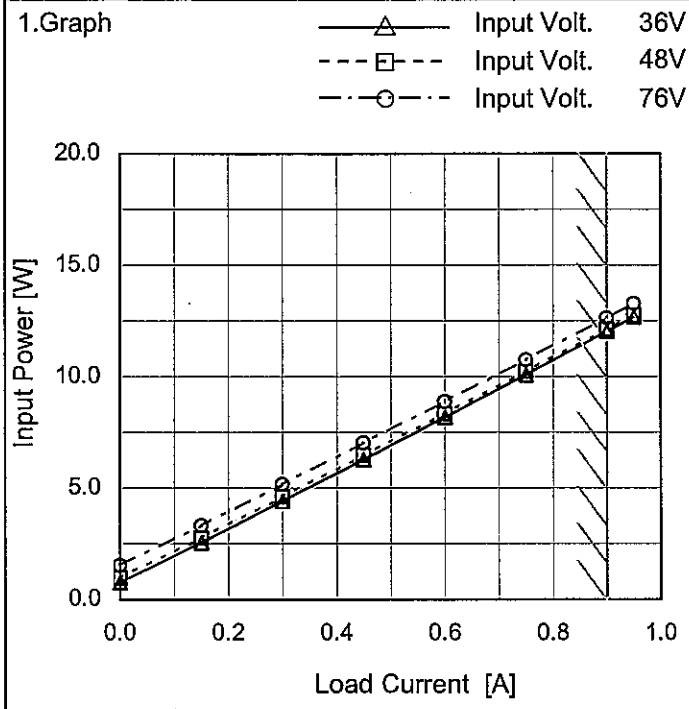
Load Current [A]	Input Current [A]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.00	0.022	0.020	0.020
0.15	0.071	0.057	0.043
0.30	0.123	0.096	0.068
0.45	0.179	0.138	0.094
0.60	0.228	0.174	0.117
0.75	0.281	0.213	0.141
0.90	0.336	0.254	0.167
0.95	0.353	0.267	0.175
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SFS104812
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]
0.00	0.76	0.97	1.52
0.15	2.55	2.74	3.30
0.30	4.41	4.60	5.15
0.45	6.28	6.46	7.02
0.60	8.18	8.33	8.88
0.75	10.09	10.22	10.75
0.90	12.02	12.13	12.63
0.95	12.67	12.77	13.27
---	-	-	-
--	-	-	-
--	-	-	-

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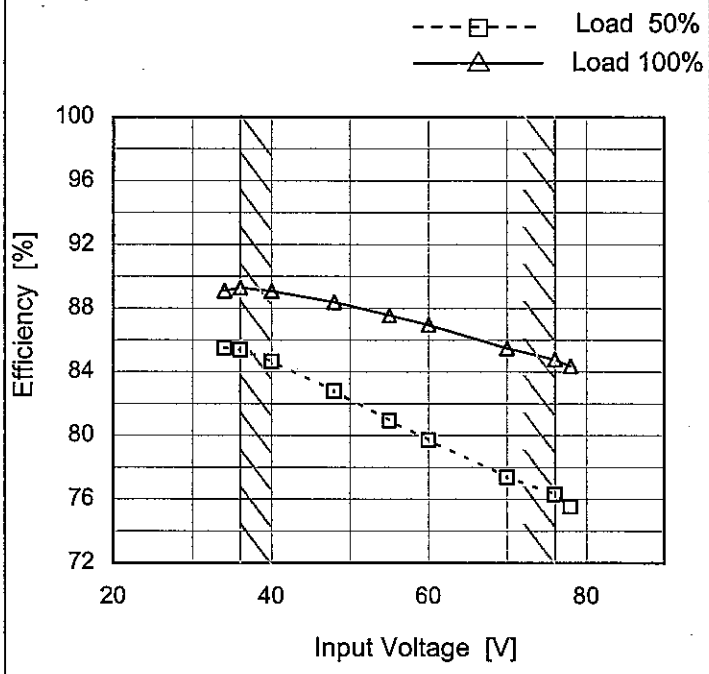
Model	SFS104812
Item	Efficiency (by Input Voltage)
Object	

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	85.5	89.1
36	85.4	89.3
40	84.7	89.1
48	82.8	88.4
55	81.0	87.6
60	79.7	87.0
70	77.4	85.5
76	76.3	84.8
78	75.5	84.4

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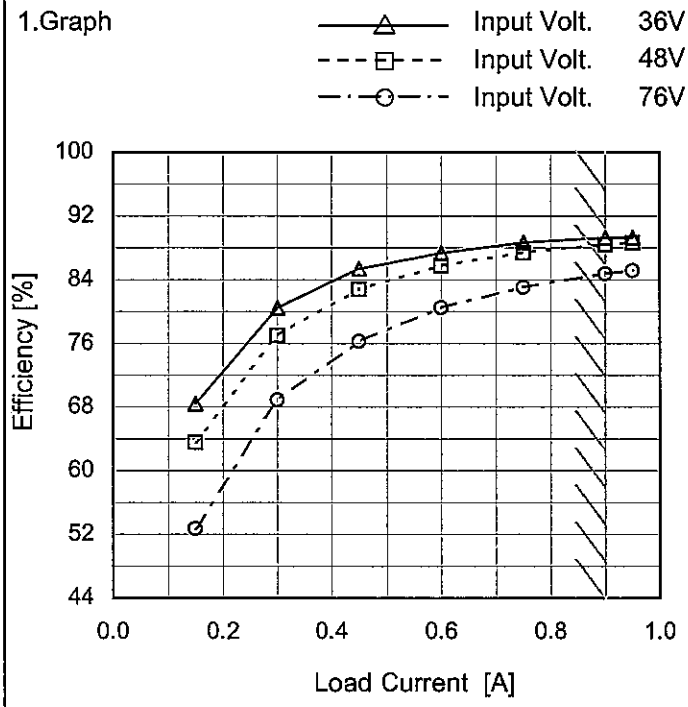
Model	SFS104812
Item	Efficiency (by Load Current)
Object	———————

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]
0.00	-	-	-
0.15	68.4	63.6	52.7
0.30	80.5	77.0	68.9
0.45	85.4	82.8	76.3
0.60	87.4	85.7	80.5
0.75	88.7	87.4	83.1
0.90	89.3	88.4	84.8
0.95	89.3	88.6	85.2
--	-	-	-
--	-	-	-
--	-	-	-

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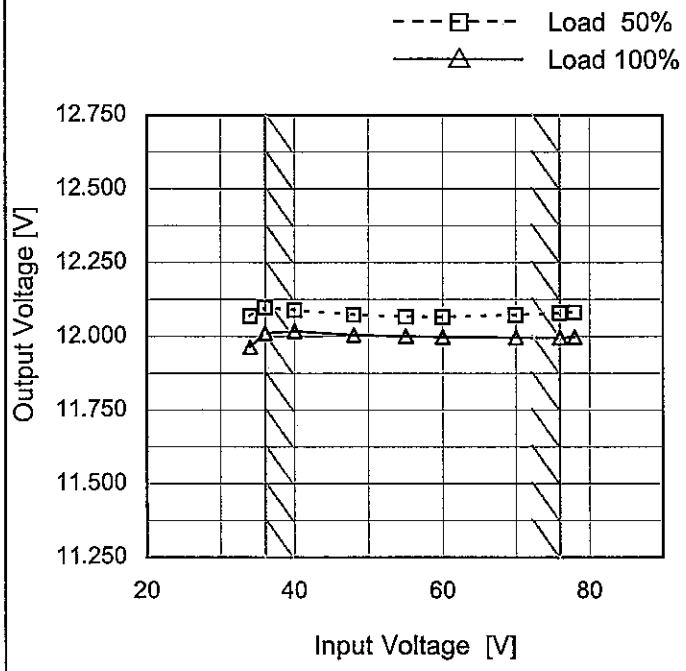
Model	SFS104812
Item	Line Regulation
Object	+12V0.9A

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	12.069	11.964
36	12.097	12.012
40	12.090	12.018
48	12.073	12.005
55	12.067	12.000
60	12.066	11.998
70	12.072	11.996
76	12.079	11.997
78	12.081	11.997

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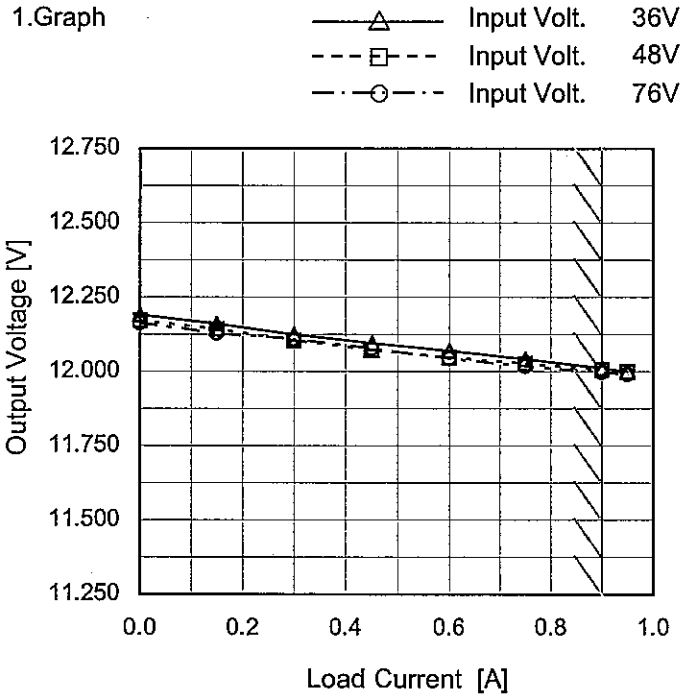
Model	SFS104812
Item	Load Regulation
Object	+12V0.9A

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]
0.00	12.191	12.172	12.162
0.15	12.160	12.143	12.128
0.30	12.125	12.104	12.109
0.45	12.096	12.072	12.078
0.60	12.070	12.048	12.043
0.75	12.043	12.027	12.017
0.90	12.012	12.006	11.997
0.95	12.001	11.999	11.991
--	-	-	-
--	-	-	-
--	-	-	-

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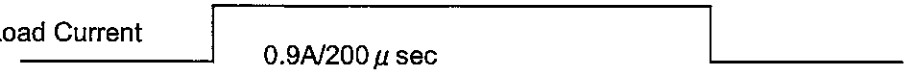
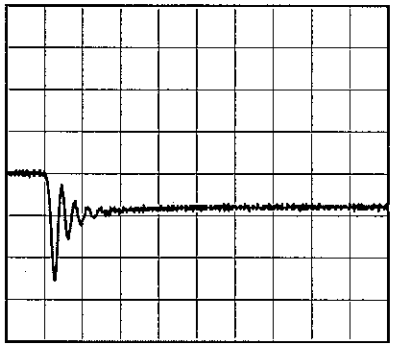
Model	SFS104812		
Item	Dynamic Load Response	Temperature	25℃
		Testing Circuitry	Figure A
Object	+12V0.9A		

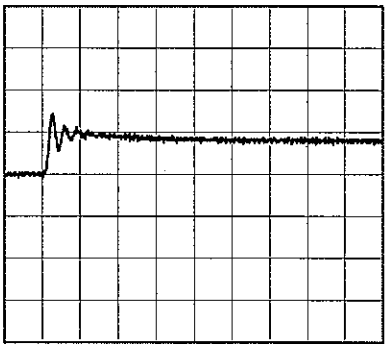
Input Volt. 48 V
Cycle 1000 ms

Load Current

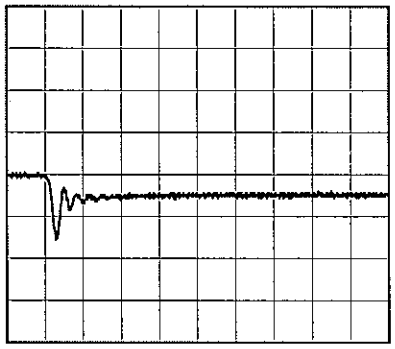


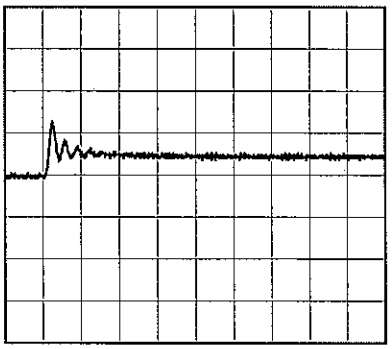
Min. Load (0A)
Load 100% (0.9A)



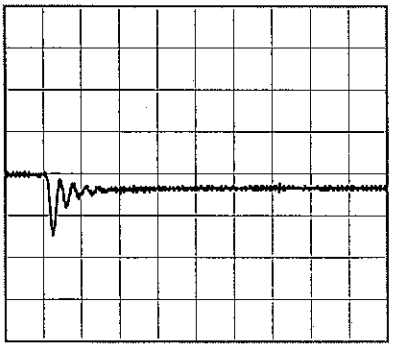


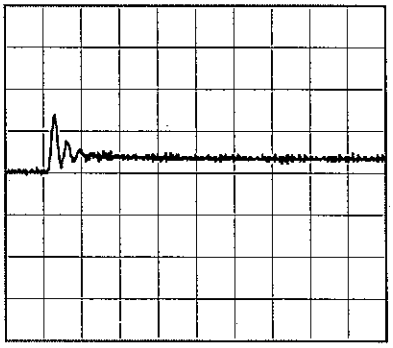
Min. Load (0A)
Load 50% (0.45A)





Load 50% (0.45A)
Load 100% (0.9A)





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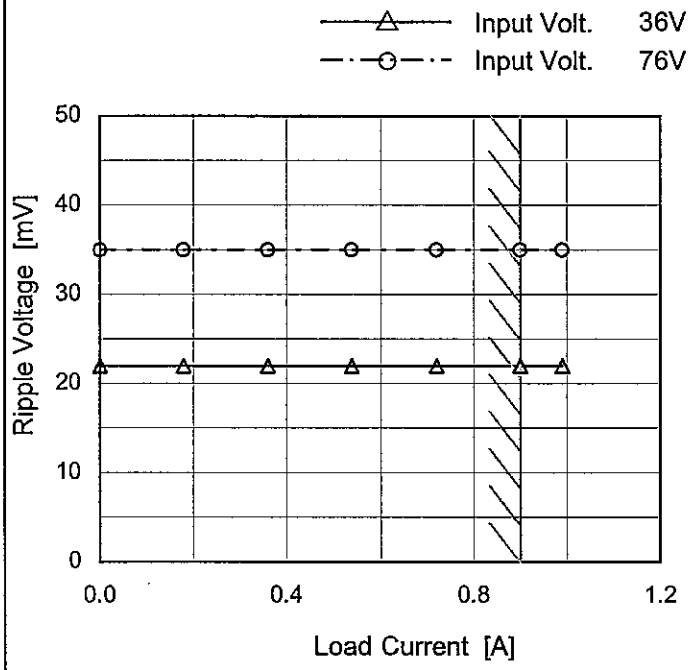
Model	SFS104812
Item	Ripple Voltage (by Load Current)
Object	+12V0.9A

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]

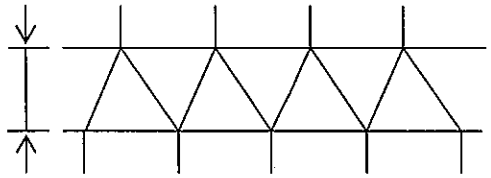


Fig.Complex Ripple Wave Form

2.Values

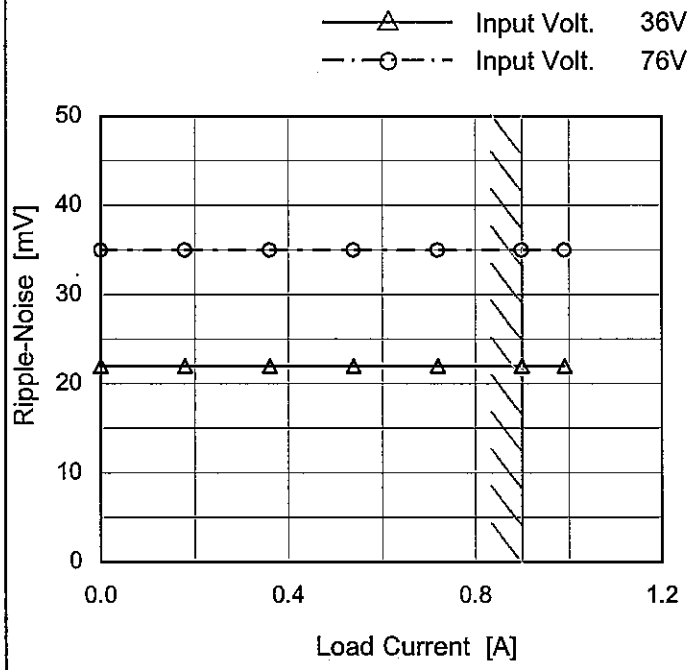
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 36 [V]	Input Volt. 76 [V]
0.00	22	35
0.18	22	35
0.36	22	35
0.54	22	35
0.72	22	35
0.90	22	35
0.99	22	35
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SFS104812
Item	Ripple-Noise
Object	+12V0.9A

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.

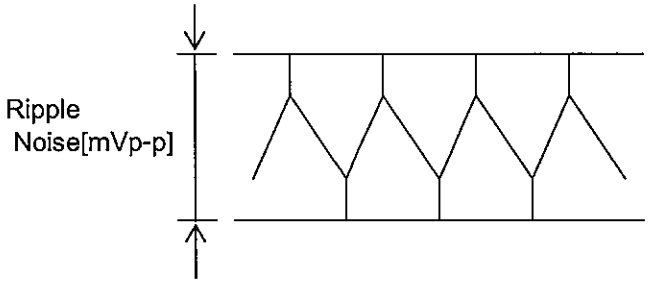


Fig.Complex Ripple Noise Wave Form

2.Values

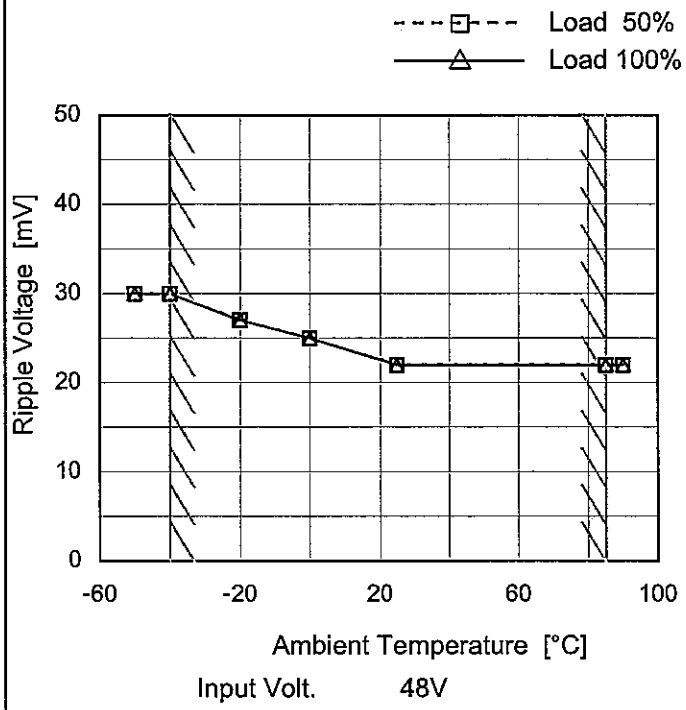
Load Current [A]	Ripple-Noise [mV] Input Volt. 36 [V]	Ripple-Noise [mV] Input Volt. 76 [V]
0.00	22	35
0.18	22	35
0.36	22	35
0.54	22	35
0.72	22	35
0.90	22	35
0.99	22	35
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SFS104812
Item	Ripple Voltage (by Ambient Temp.)
Object	+12V0.9A

Testing Circuitry Figure C

1.Graph



Input Volt. 48V

Measured by 100 MHz Oscilloscope.

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

2.Values

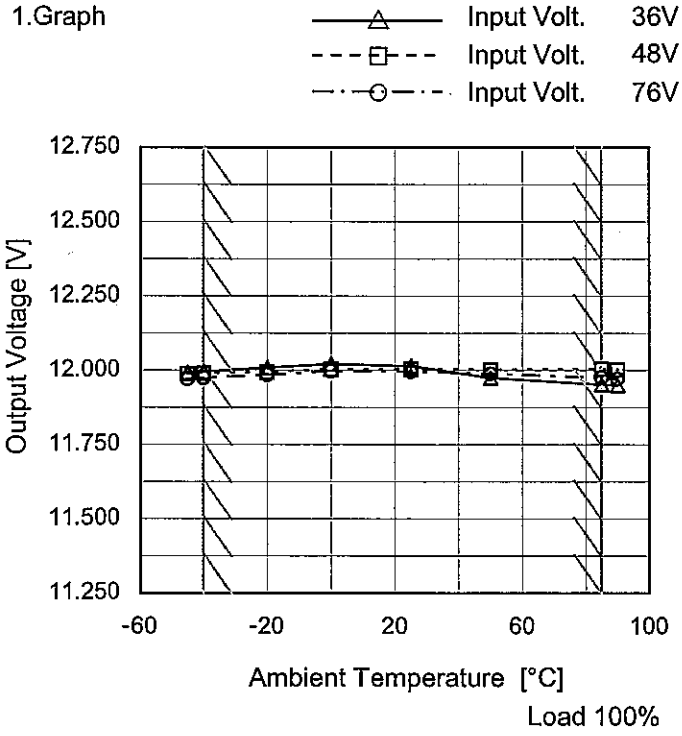
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-50	30	30
-40	30	30
-20	27	27
0	25	25
25	22	22
85	22	22
90	22	22
---	-	-
---	-	-
---	-	-
---	-	-

COSEL

Model	SFS104812
Item	Ambient Temperature Drift
Object	+12V0.9A

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]
-45	11.992	11.988	11.971
-40	11.996	11.989	11.974
-20	12.010	11.995	11.985
0	12.022	12.004	11.997
25	12.015	12.005	11.996
50	11.975	12.003	11.988
85	11.953	12.004	11.975
90	11.951	12.002	11.971
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SFS104812	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+12V0.9A	

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 - 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

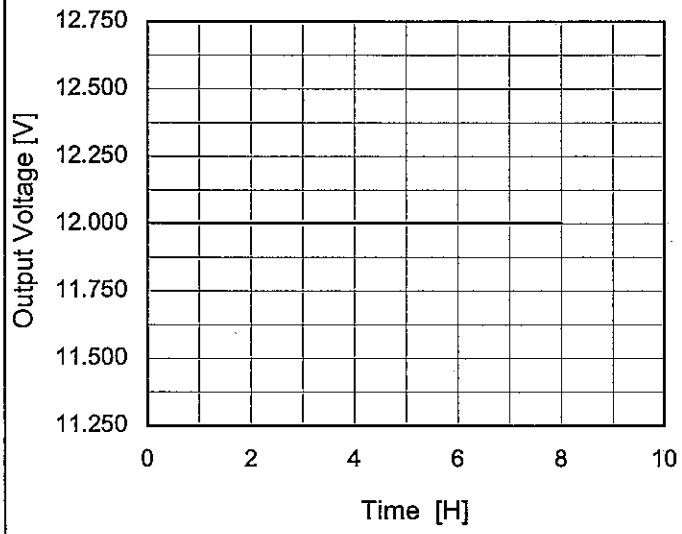
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	85	48	0	12.224	±136	±1.1
Minimum Voltage	85	36	0.9	11.952		

COSEL

Model	SFS104812
Item	Time Lapse Drift
Object	+12V0.9A

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	12.007
0.5	12.003
1.0	12.004
2.0	12.003
3.0	12.004
4.0	12.003
5.0	12.004
6.0	12.004
7.0	12.003
8.0	12.003

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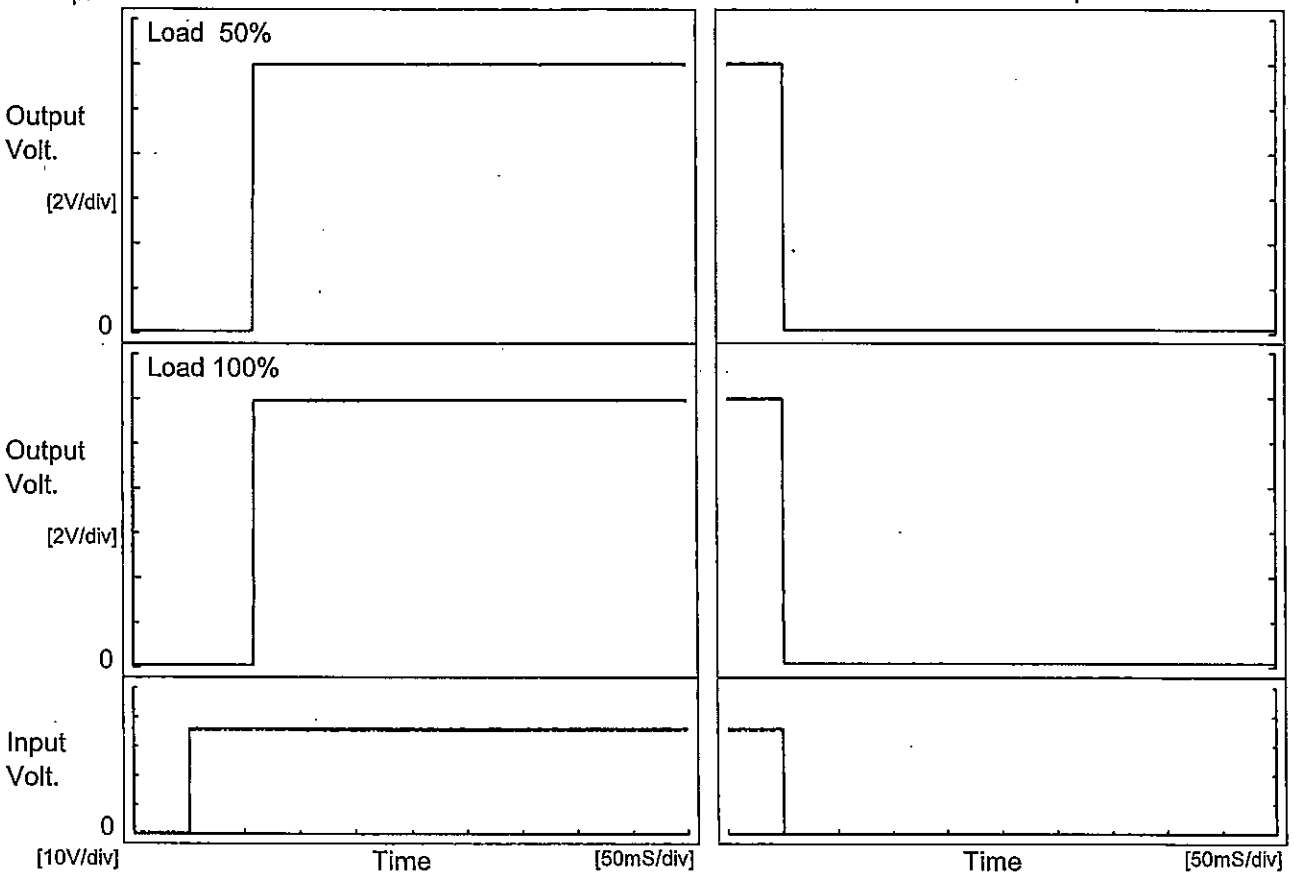
Model	SFS104812
Item	Rise and Fall Time
Object	+12V0.9A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

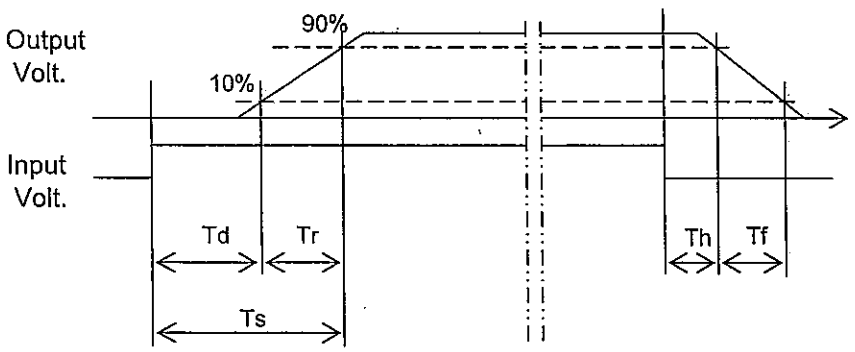
Input Volt. 36 V



2.Values

[mS]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	58.8	0.8	59.6	0.3	1.3
100 %	58.8	0.8	59.6	0.3	0.8

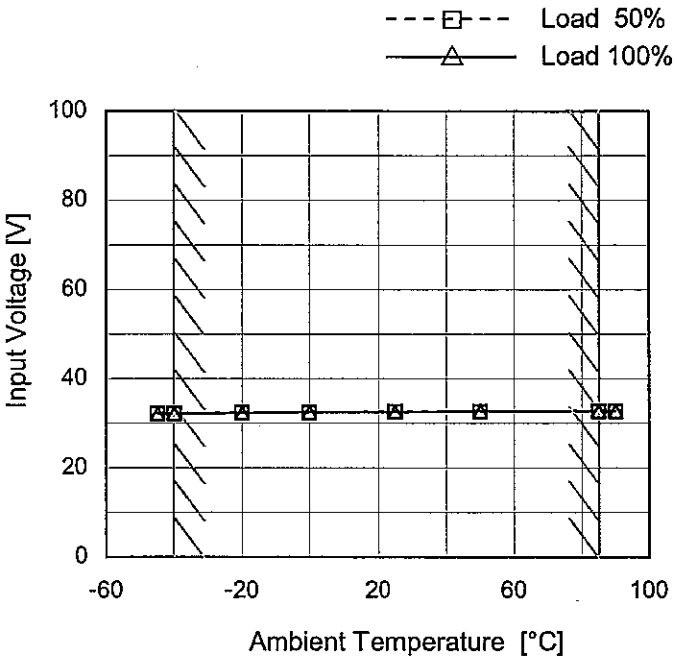


COSEL

Model	SFS104812
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+12V0.9A

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	32.2	32.2
-40	32.2	32.2
-20	32.4	32.4
0	32.4	32.6
25	32.6	32.6
50	32.6	32.8
85	32.8	32.8
90	32.8	32.8
--	-	-
--	-	-
--	-	-

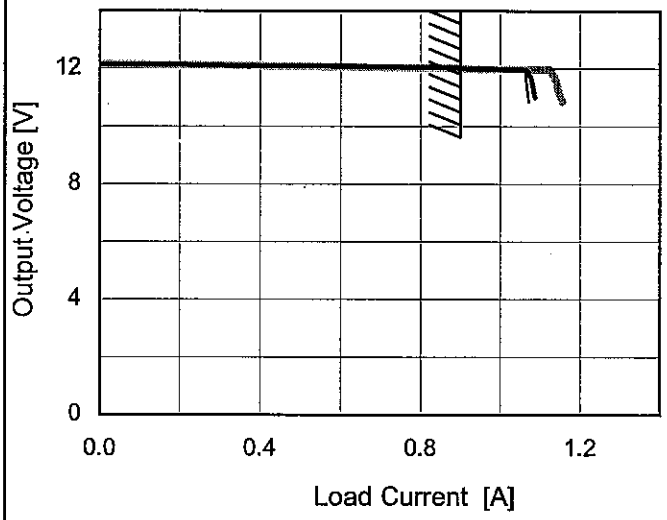
COSEL

Model	SFS104812
Item	Overcurrent Protection
Object	+12V0.9A

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.

When the output voltage fell to less than 10.8V,the unit shuts off the output by operating low voltage protection.

2.Values

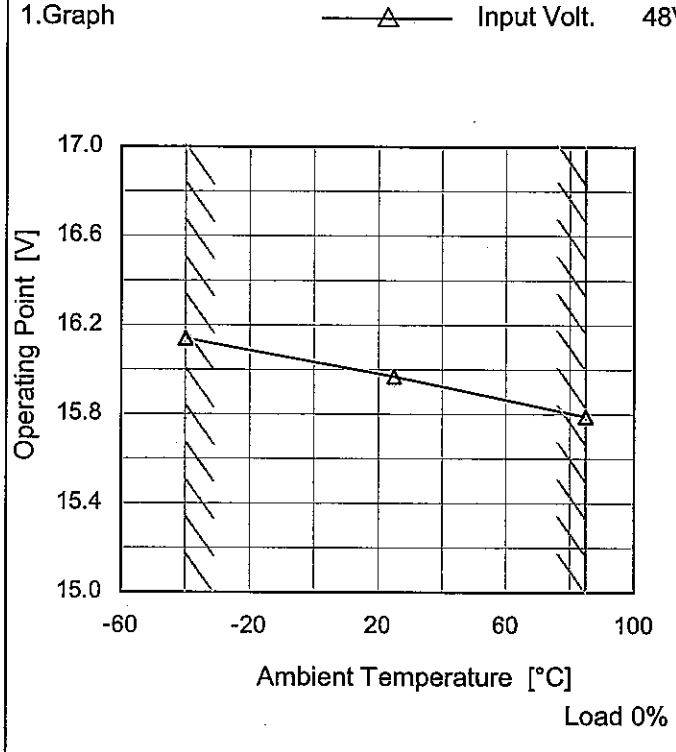
Output Voltage [V]	Load Current [A]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
12.0	0.92	0.92	0.92
11.4	1.07	1.08	1.14
10.8	1.07	1.09	1.16
—	-	-	-
—	-	-	-
—	-	-	-
—	-	-	-
—	-	-	-
—	-	-	-
—	-	-	-
—	-	-	-
—	-	-	-

COSEL

Model	SFS104812
Item	Overvoltage Protection
Object	+12V0.9A

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. 48[V]	Input Volt.	Input Volt.
-40	16.14	-	-
25	15.97	-	-
85	15.79	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

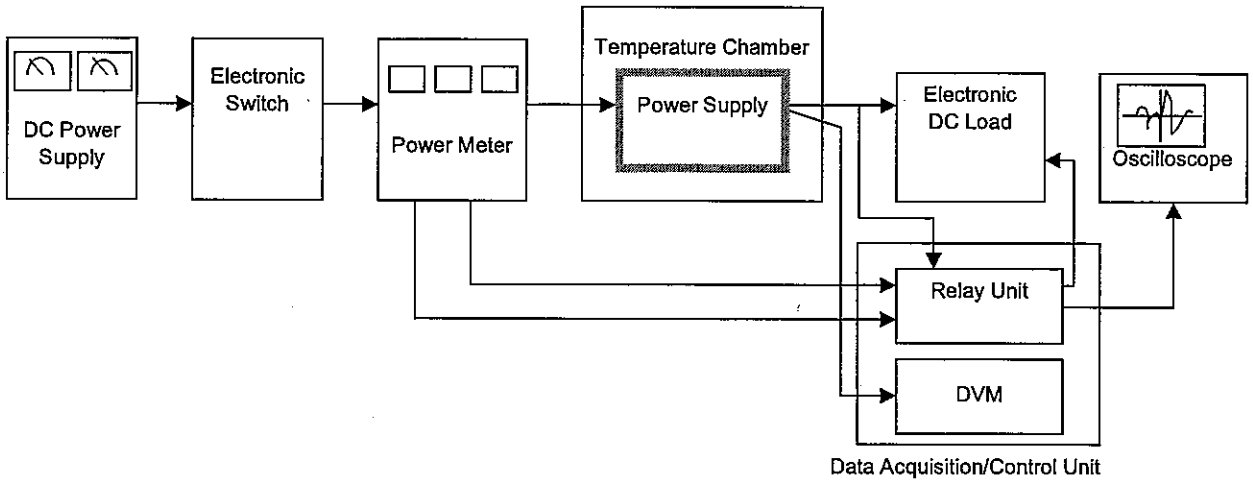


Figure A

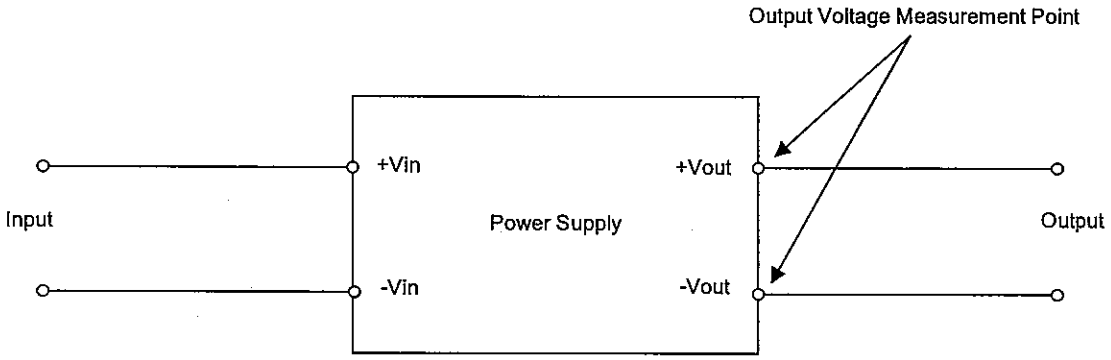


Figure B (General Electric Characteristic)

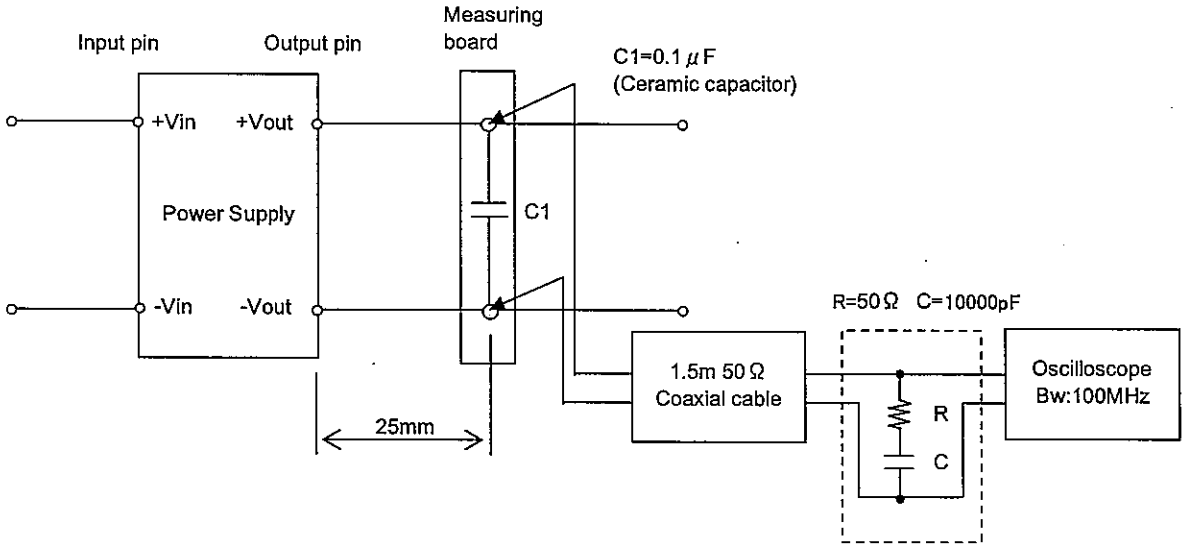


Figure C (Ripple and Ripple noise Characteristic)