参考資料

COSEL

TEST DATA OF SUS101212 SUCS101212

Regulated DC Power Supply
Mar 24, 2005

Approved by : Tetsuo Sugimori
Tetsuo Sugimori Design Manager

Prepared by : Yoshimichi Hirokawa
Yoshimichi Hirokawa Design Engineer

COSEL CO.,LTD.

COSEL

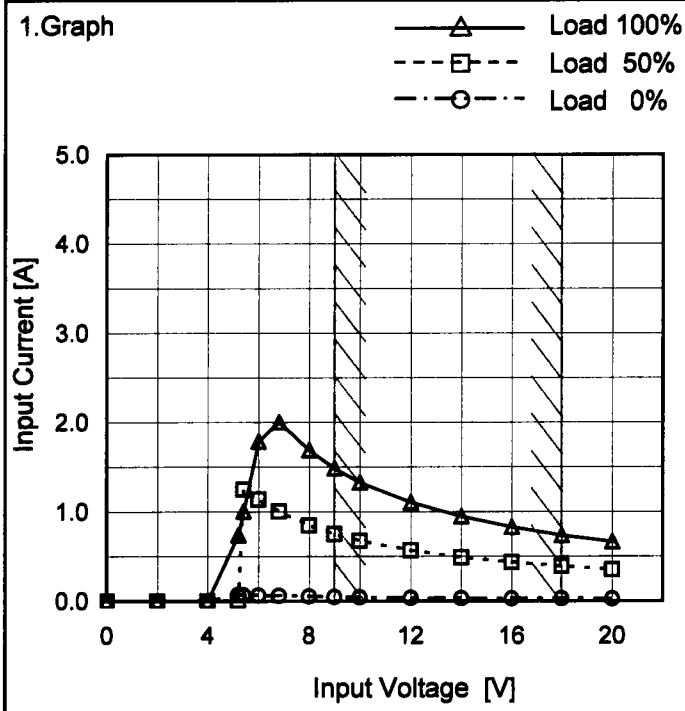
CONTENTS

COSEL

Model	SUS101212/SUCS101212
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

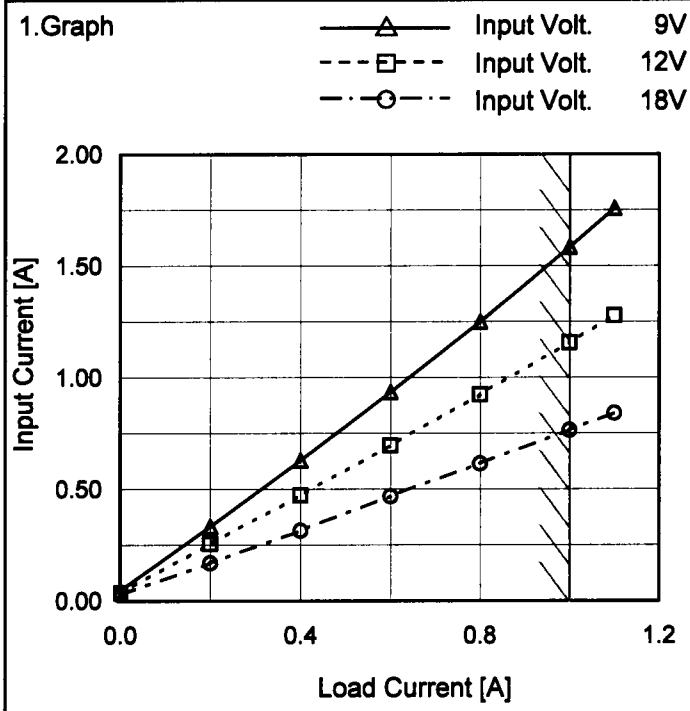
Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0.0	0.000	0.000	0.000
2.0	0.000	0.000	0.000
4.0	0.000	0.000	0.000
5.2	0.070	0.004	0.739
5.4	0.068	1.249	1.005
6.0	0.064	1.138	1.788
6.8	0.060	1.004	2.004
8.0	0.053	0.848	1.693
9.0	0.048	0.752	1.486
10.0	0.044	0.677	1.328
12.0	0.037	0.566	1.108
14.0	0.033	0.489	0.949
16.0	0.030	0.434	0.829
18.0	0.028	0.390	0.738
20.0	0.026	0.351	0.666
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SUS101212/SUCS101212
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

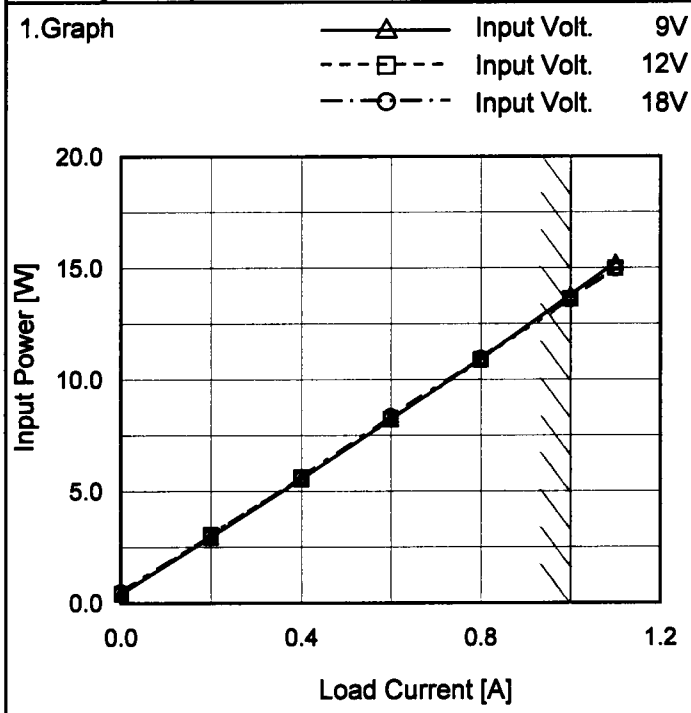
Load Current [A]	Input Current [A]		
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
0.0	0.047	0.036	0.027
0.2	0.333	0.256	0.169
0.4	0.630	0.473	0.315
0.6	0.936	0.695	0.468
0.8	1.250	0.924	0.614
1.0	1.585	1.157	0.765
1.1	1.758	1.277	0.840
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SUS101212/SUCS101212
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

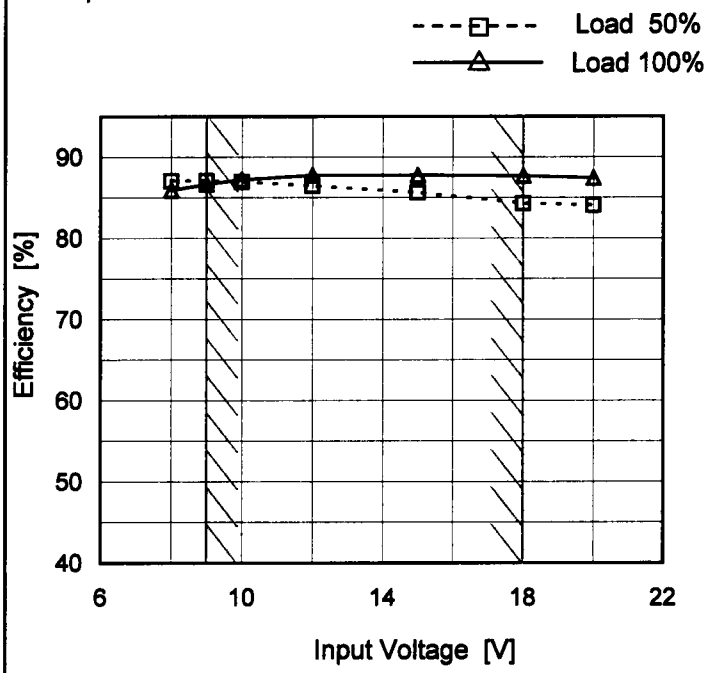
Load Current [A]	Input Power [W] Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
0.0	0.42	0.43	0.51
0.2	2.96	3.04	3.02
0.4	5.57	5.61	5.63
0.6	8.23	8.22	8.36
0.8	10.93	10.89	10.96
1.0	13.79	13.61	13.63
1.1	15.25	14.99	14.96
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SUS101212/SUCS101212
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

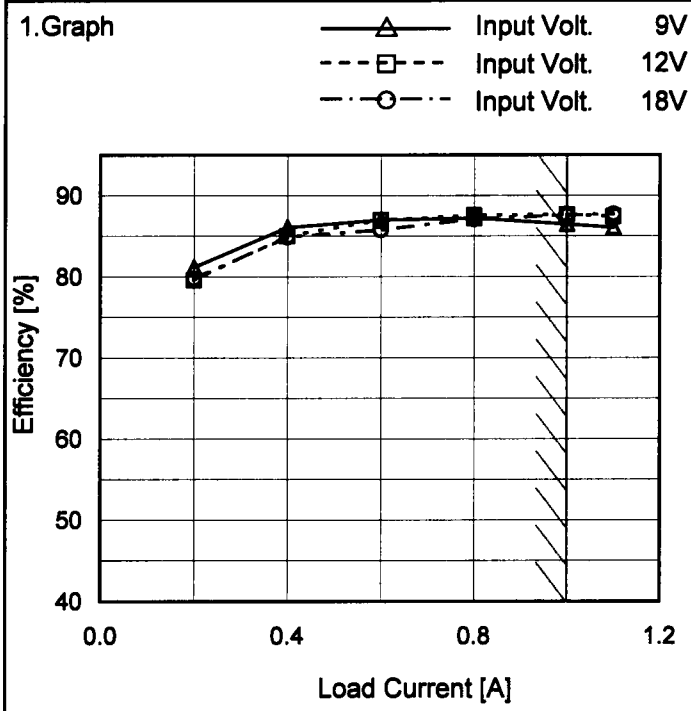
Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
8	87.1	85.9
9	87.1	86.7
10	87.0	87.2
12	86.4	87.8
15	85.6	87.8
18	84.3	87.7
20	84.0	87.4
--	-	-
--	-	-

COSEL

Model	SUS101212/SUCS101212
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

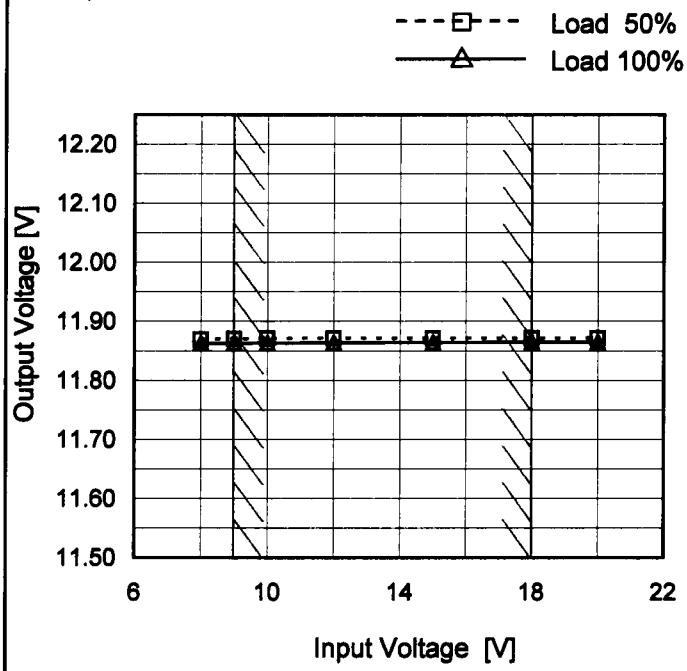
Load Current [A]	Efficiency [%] Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
0.0	-	-	-
0.2	81.2	79.6	79.8
0.4	86.1	85.0	84.9
0.6	87.0	87.0	85.7
0.8	87.2	87.5	87.1
1.0	86.5	87.6	87.6
1.1	86.1	87.4	87.7
—	-	-	-
—	-	-	-
—	-	-	-
—	-	-	-

COSEL

Model	SUS101212/SUCS101212
Item	Line Regulation
Object	+12V1A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

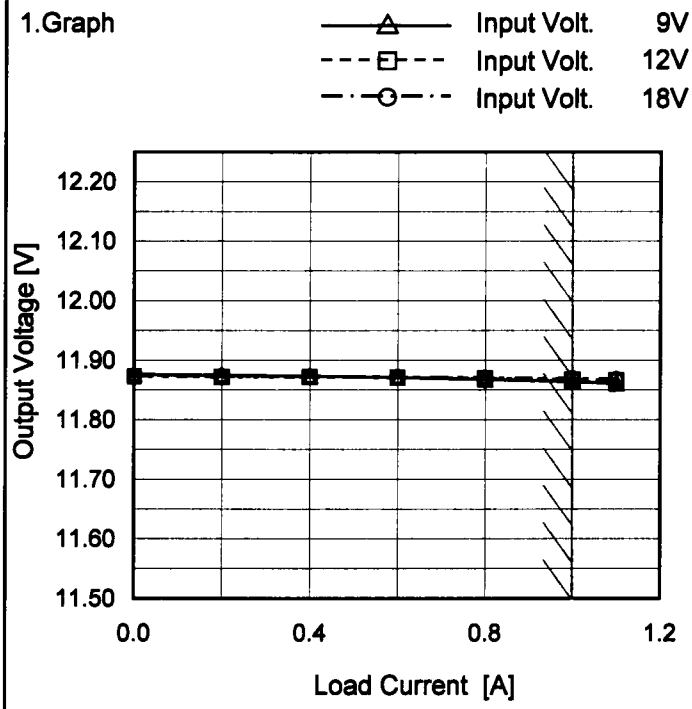
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
8	11.869	11.863
9	11.871	11.863
10	11.871	11.863
12	11.871	11.864
15	11.871	11.865
18	11.871	11.865
20	11.871	11.865
–	-	-
–	-	-

COSEL

Model	SUS101212/SUCS101212
Item	Load Regulation
Object	+12V1A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

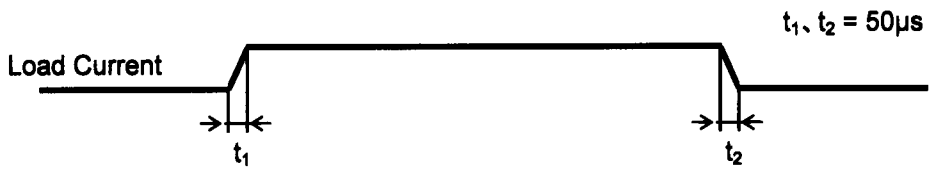
Load Current [A]	Output Voltage [V]		
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
0.0	11.876	11.873	11.873
0.2	11.875	11.872	11.873
0.4	11.873	11.872	11.872
0.6	11.871	11.871	11.872
0.8	11.868	11.870	11.871
1.0	11.864	11.868	11.869
1.1	11.861	11.866	11.868
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

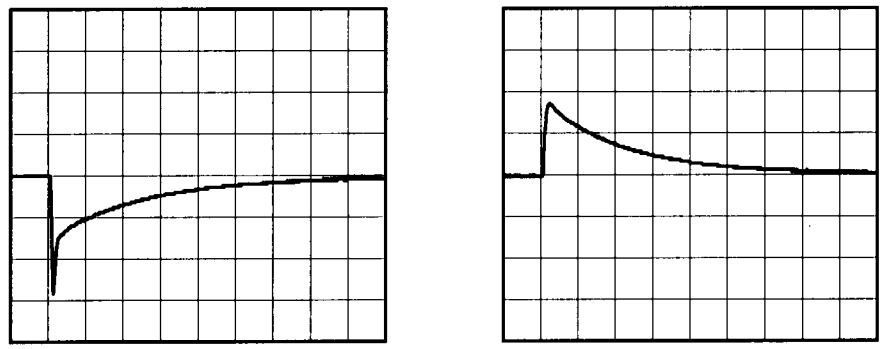
Model	SUS101212/SUCS101212
Item	Dynamic Load Response
Object	+12V1A

Temperature 25°C
Testing Circuitry Figure A

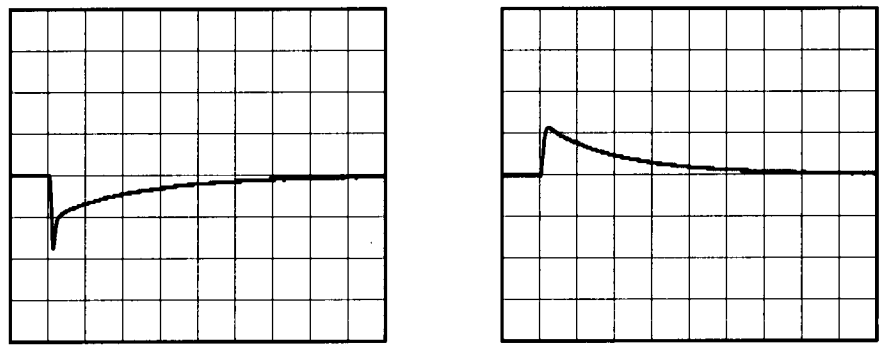
Input Volt. 12 V
Cycle 100 mS



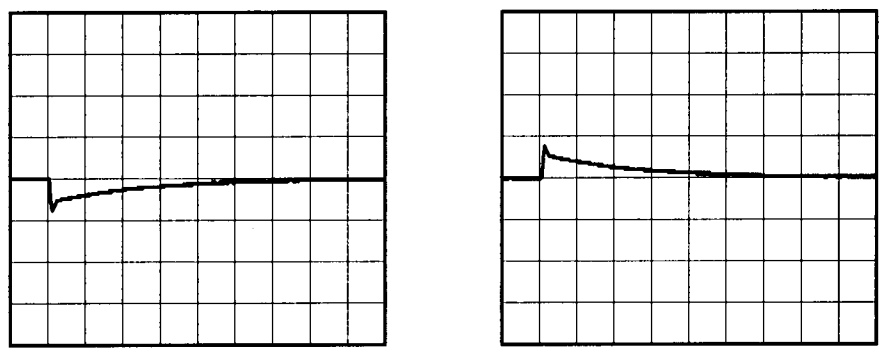
Min. Load (0A) ⟷ Load 100% (1A)



Min. Load (0A) ⟷ Load 50% (0.5A)



Load 50% (0.5A) ⟷ Load 100% (1A)

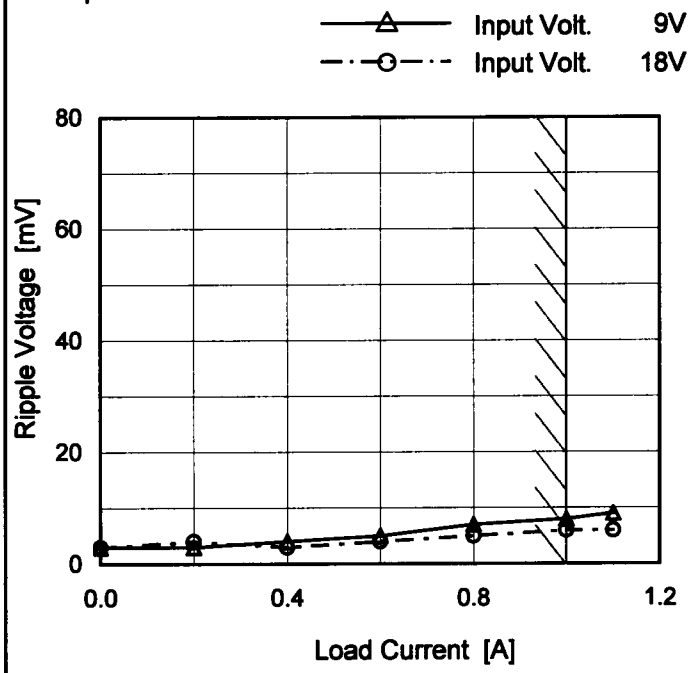


COSEL

Model	SUS101212/SUCS101212
Item	Ripple Voltage (by Load Current)
Object	+12V1A

Temperature 25°C
Testing Circuitry Figure B

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]

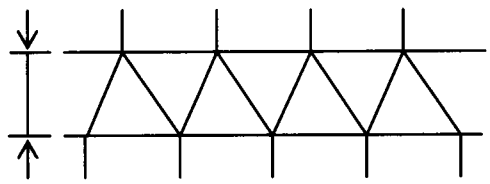


Fig.Complex Ripple Wave Form

2.Values

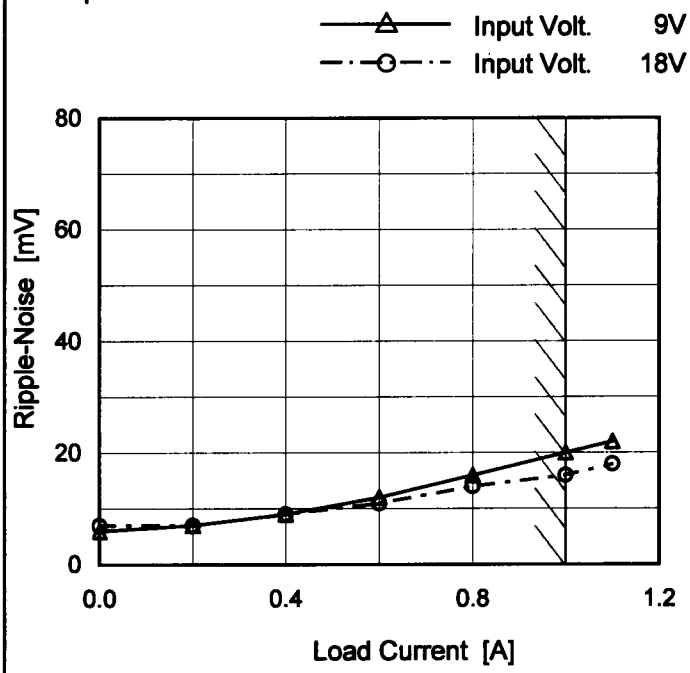
Load Current [A]	Ripple Voltage [mV] Input Volt. 9 [V]	Ripple Voltage [mV] Input Volt. 18 [V]
0.0	3	3
0.2	3	4
0.4	4	3
0.6	5	4
0.8	7	5
1.0	8	6
1.1	9	6
—	-	-
—	-	-
—	-	-
—	-	-

COSEL

Model	SUS101212/SUCS101212
Item	Ripple-Noise
Object	+12V1A

Temperature 25°C
Testing Circuitry Figure B

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.

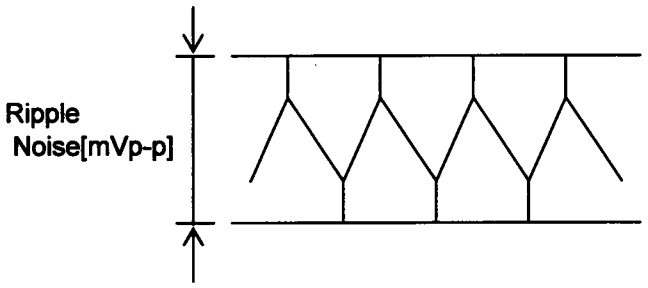


Fig.Complex Ripple Noise Wave Form

2.Values

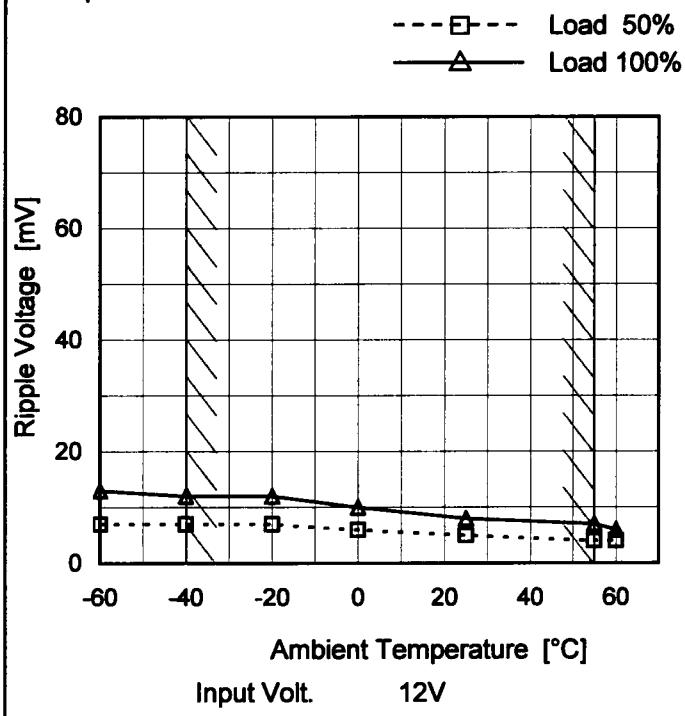
Load Current [A]	Ripple-Noise [mV] Input Volt. 9 [V]	Ripple-Noise [mV] Input Volt. 18 [V]
0.0	6	7
0.2	7	7
0.4	9	9
0.6	12	11
0.8	16	14
1.0	20	16
1.1	22	18
–	-	-
–	-	-
–	-	-
–	-	-

COSEL

Model	SUS101212/SUCS101212
Item	Ripple Voltage (by Ambient Temp.)
Object	+12V1A

Testing Circuitry Figure B

1.Graph



Input Volt. 12V

Measured by 100 MHz Oscilloscope.

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

2.Values

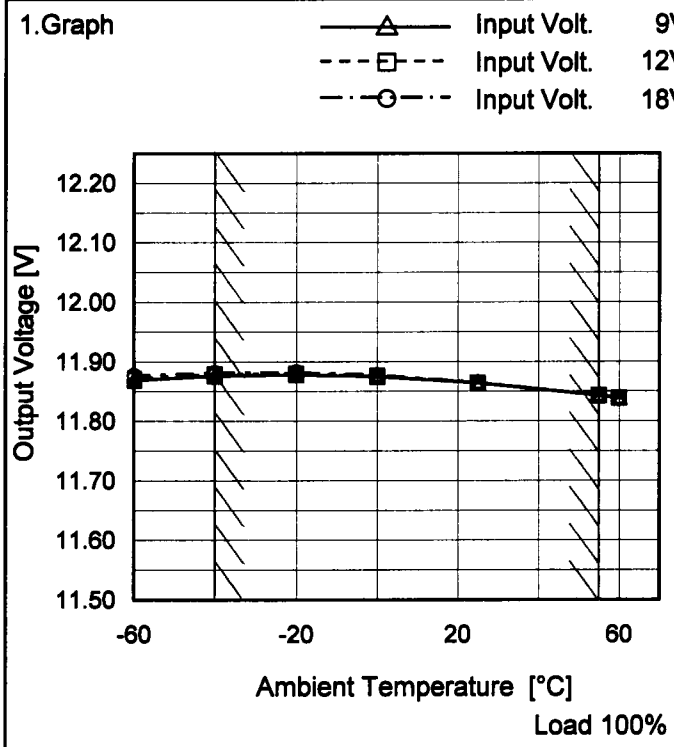
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	7	13
-40	7	12
-20	7	12
0	6	10
25	5	8
55	4	7
60	4	6
—	-	-
—	-	-
—	-	-
—	-	-

COSEL

Model	SUS101212/SUCS101212
Item	Ambient Temperature Drift
Object	+12V1A

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. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
-60	11.869	11.872	11.876
-40	11.876	11.879	11.881
-20	11.878	11.880	11.882
0	11.875	11.876	11.877
25	11.864	11.864	11.865
55	11.843	11.843	11.843
60	11.839	11.839	11.839
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SUS101212/SUCS101212
Item	Output Voltage Accuracy
Object	+12V1A

Testing Circuitry Figure A

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 - 55°C
Input Voltage : 9 - 18V
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

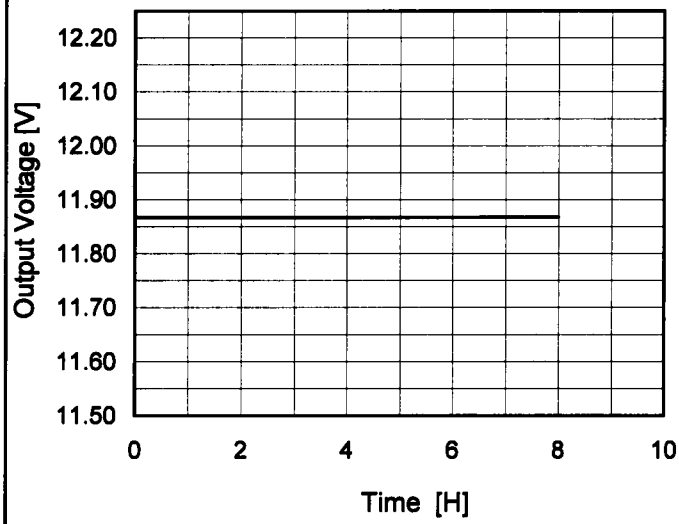
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	-20	9	0	11.887	±22	±0.2
Minimum Voltage	55	9	1	11.843		

COSEL

Model	SUS101212/SUCS101212
Item	Time Lapse Drift
Object	+12V1A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Input Volt. 12V
Load 100%

2.Values

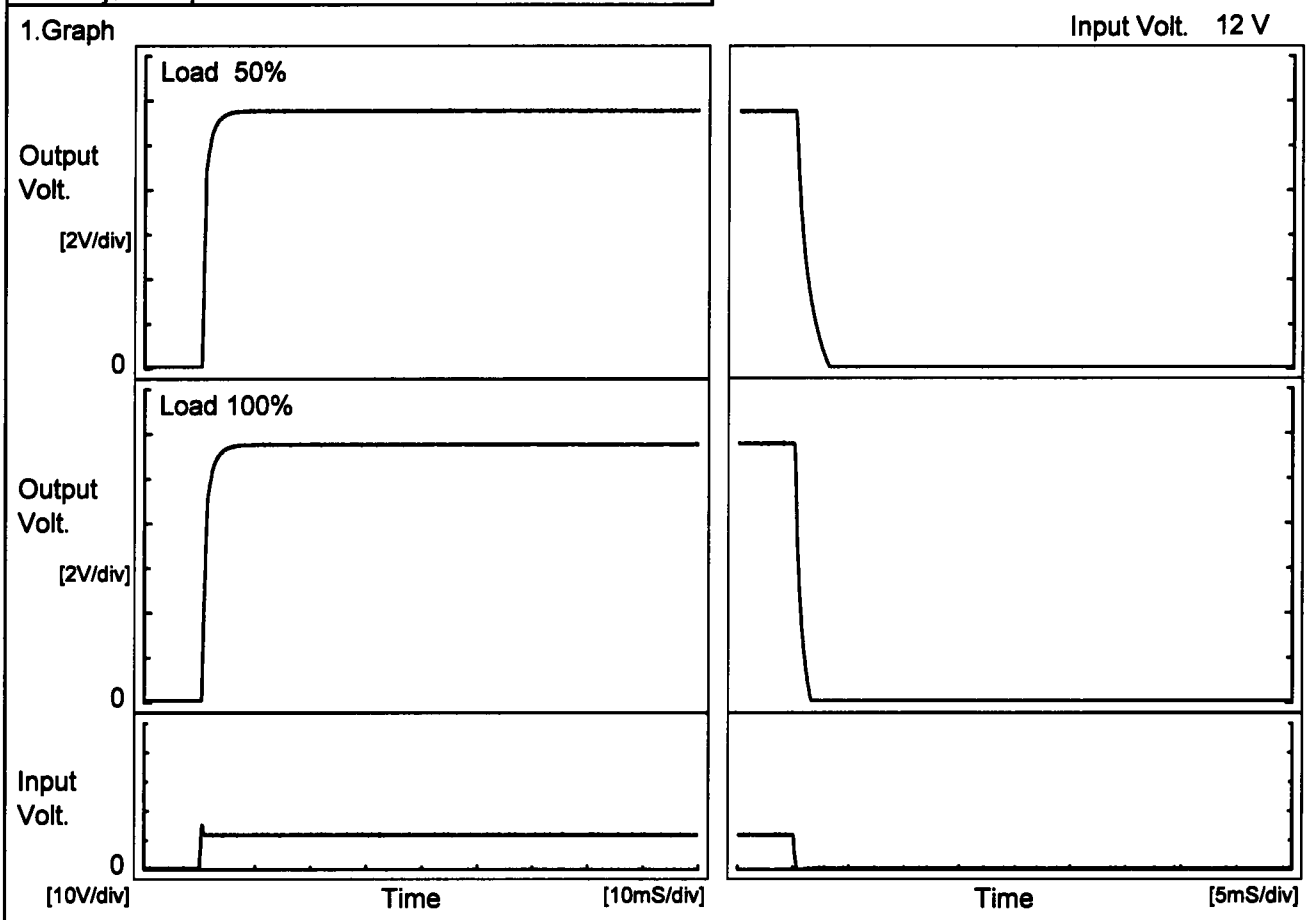
Time since start [H]	Output Voltage [V]
0.0	11.873
0.5	11.867
1.0	11.867
2.0	11.867
3.0	11.867
4.0	11.867
5.0	11.867
6.0	11.867
7.0	11.868
8.0	11.868

COSEL

Model	SUS101212/SUCS101212
Item	Rise and Fall Time
Object	+12V1A

Temperature 25°C
Testing Circuitry Figure A

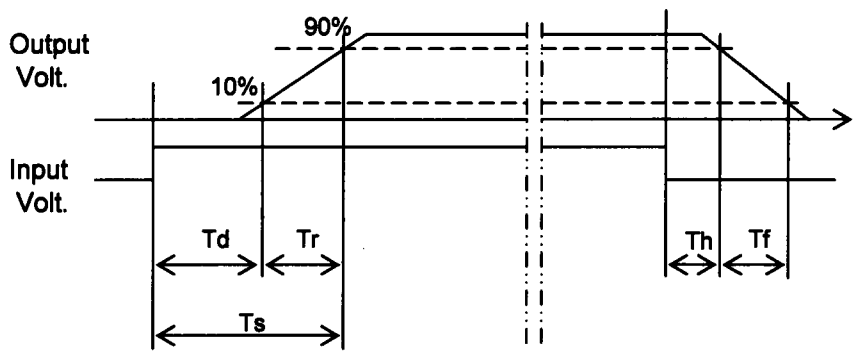
1.Graph



2.Values

[mS]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	0.5	2.3	2.8	0.2	2.1
100 %	0.5	2.6	3.1	0.2	1.1

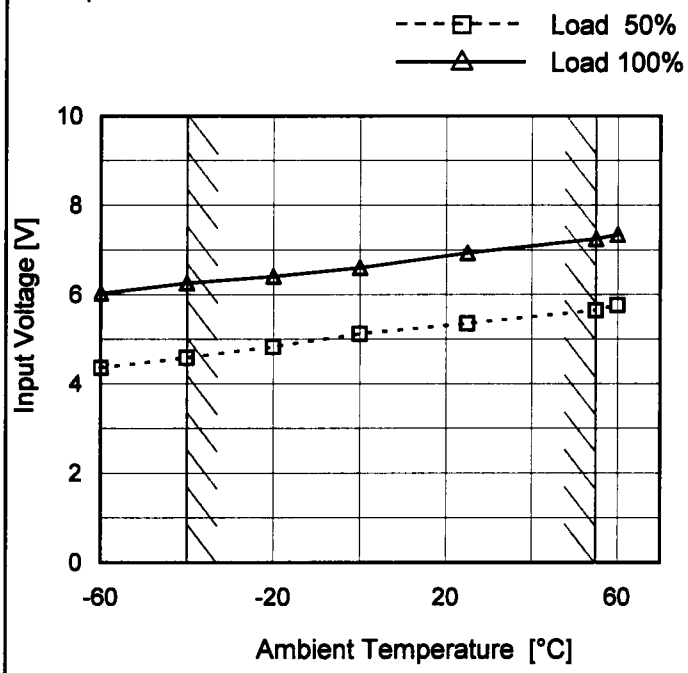


COSEL

Model	SUS101212/SUCS101212
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+12V1A

Testing Circuitry Figure A

1.Graph



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

2.Values

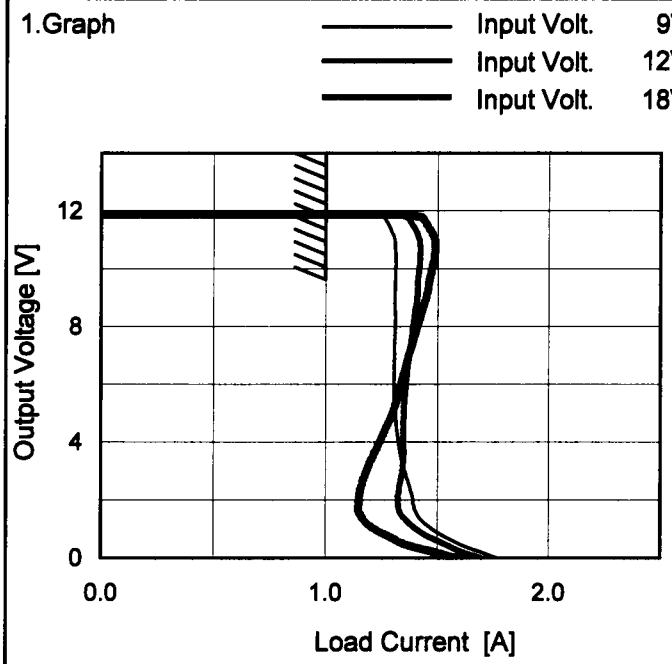
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	4.4	6.1
-40	4.6	6.3
-20	4.9	6.5
0	5.2	6.6
25	5.4	7.0
55	5.7	7.3
60	5.8	7.4
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SUS101212/SUCS101212
Item	Overcurrent Protection
Object	+12V1A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
12.0	1.25	1.33	1.36
11.4	1.29	1.39	1.46
10.8	1.31	1.42	1.49
9.6	1.31	1.41	1.46
8.4	1.31	1.40	1.42
7.2	1.31	1.38	1.38
6.0	1.31	1.36	1.34
4.8	1.31	1.35	1.29
3.6	1.34	1.35	1.22
2.4	1.38	1.33	1.16
1.2	1.45	1.38	1.19
0.0	1.79	1.71	1.64

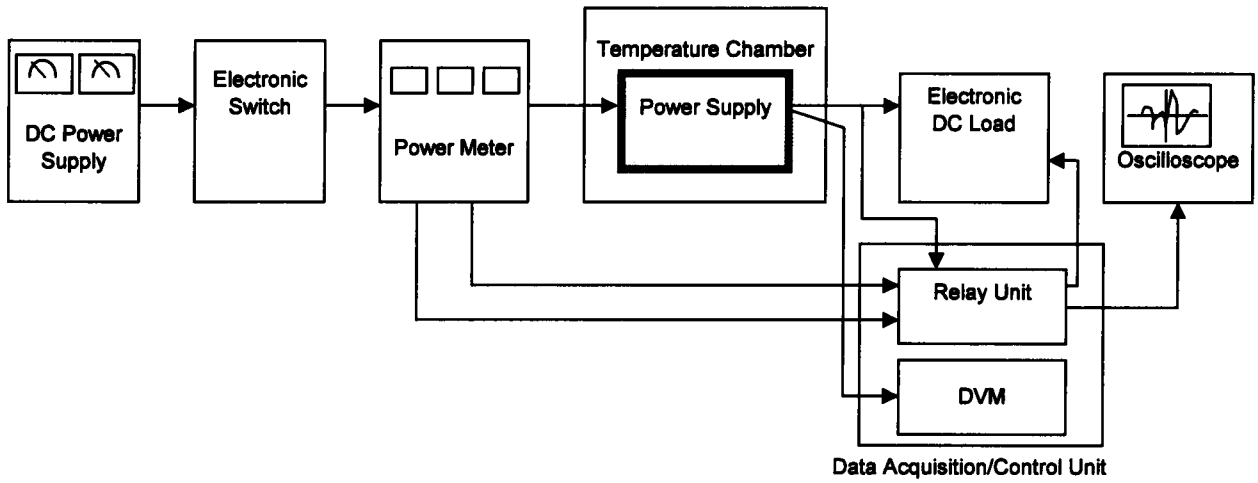


Figure A

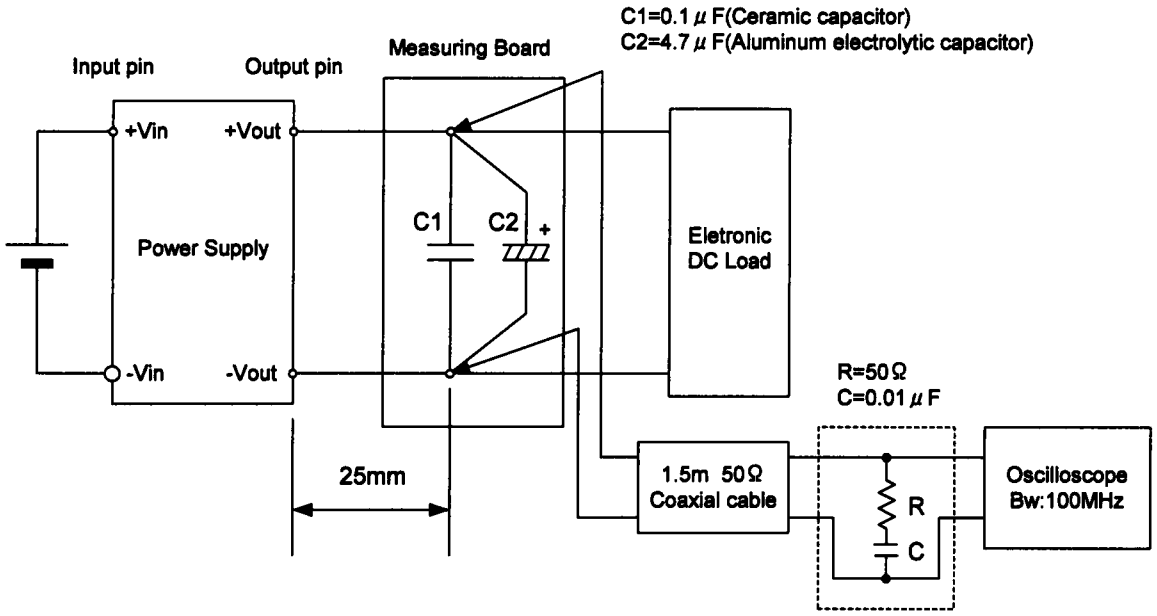


Figure B (Ripple and Ripple noise Characteristic)