COSEL

参考資料

TEST DATA OF SUTS101212

Regulated DC Power Supply
February 10, 2009

Approved by : Kazunari Asano
Kazunari Asano Design Manager

Prepared by : Sho Saito
Sho Saito Design Engineer

COSEL CO.,LTD.

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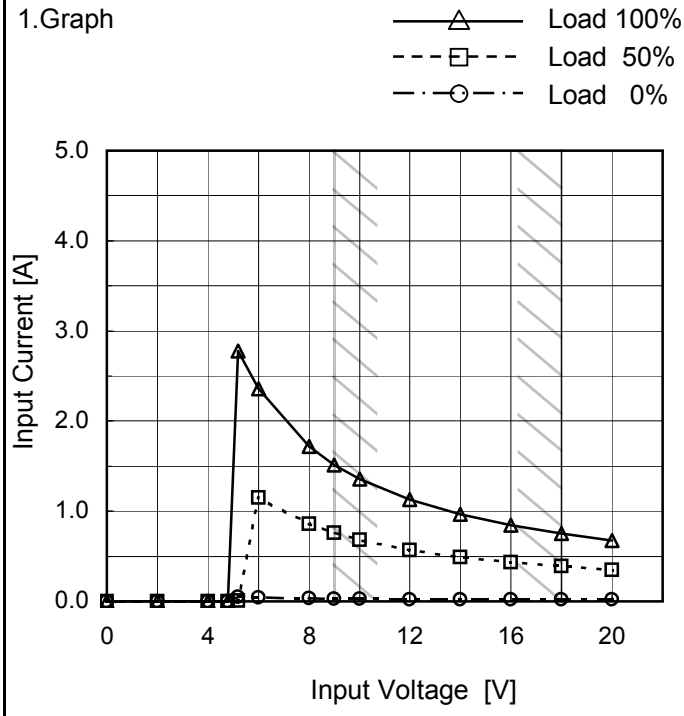
COSEL

Model	SUTS101212
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

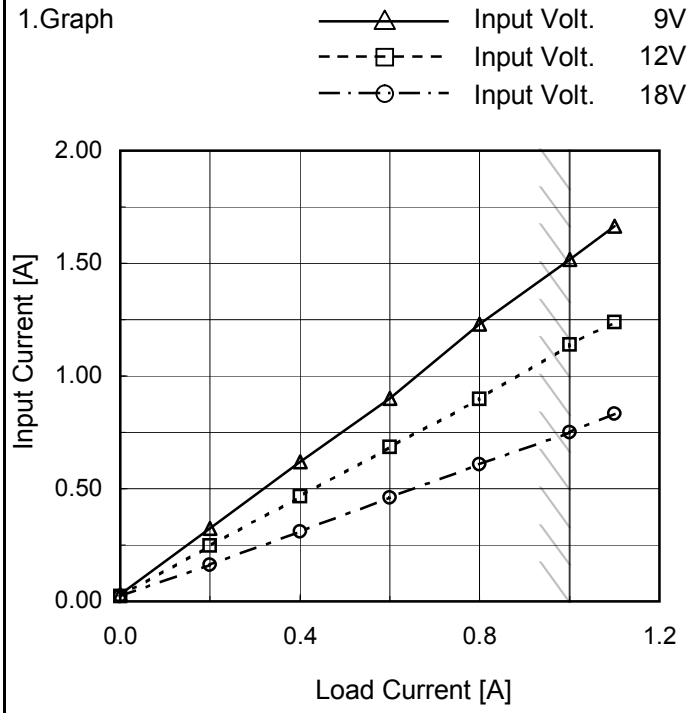
Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0.0	0.000	0.000	0.000
2.0	0.000	0.001	0.000
4.0	0.001	0.001	0.000
4.8	0.001	-0.001	0.001
5.2	0.047	0.004	2.778
6.0	0.044	1.154	2.357
8.0	0.034	0.858	1.720
9.0	0.029	0.760	1.515
10.0	0.027	0.684	1.355
12.0	0.023	0.571	1.130
14.0	0.022	0.493	0.968
16.0	0.021	0.434	0.845
18.0	0.021	0.389	0.752
20.0	0.020	0.350	0.678
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SUTS101212
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	0.030	0.024	0.021
0.2	0.323	0.247	0.163
0.4	0.619	0.466	0.309
0.6	0.902	0.685	0.461
0.8	1.230	0.898	0.609
1.0	1.518	1.141	0.750
1.1	1.665	1.239	0.834
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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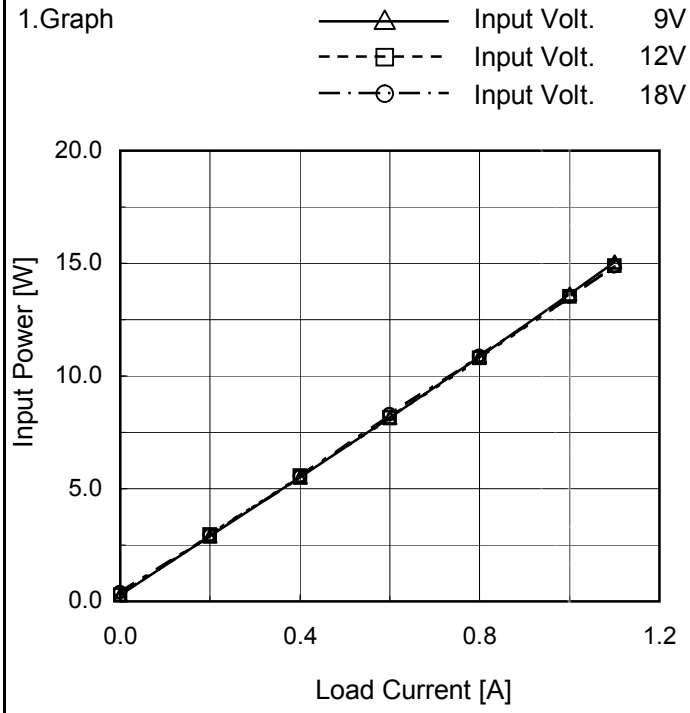
Model	SUTS101212
Item	Input Power (by Load Current)
Object	————————

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	0.27	0.29	0.38
0.2	2.89	2.96	2.93
0.4	5.50	5.56	5.53
0.6	8.15	8.16	8.29
0.8	10.85	10.80	10.89
1.0	13.63	13.52	13.52
1.1	15.07	14.87	14.86
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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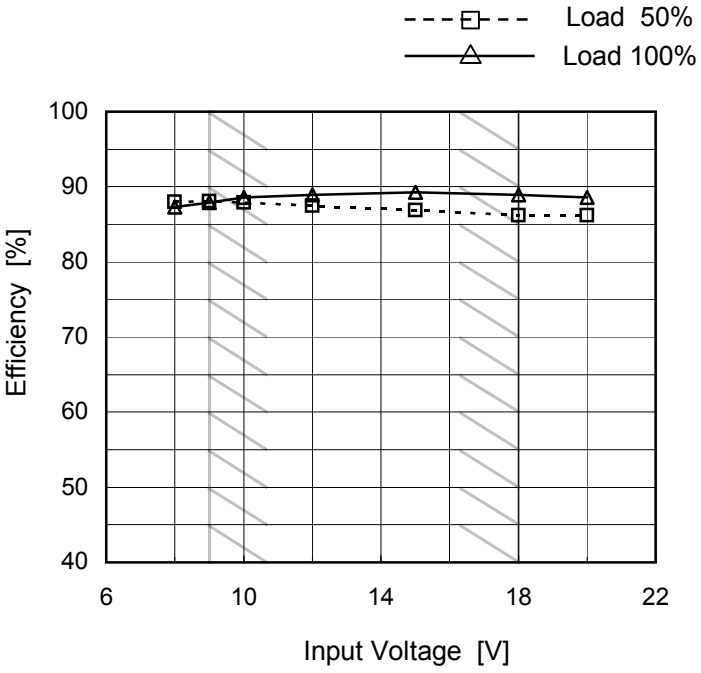
Model	SUTS101212
Item	Efficiency (by Input Voltage)
Object	――――――――――

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	88.0	87.3
9	88.1	87.9
10	87.9	88.6
12	87.5	88.9
15	86.9	89.3
18	86.2	88.9
20	86.2	88.6
--	-	-
--	-	-

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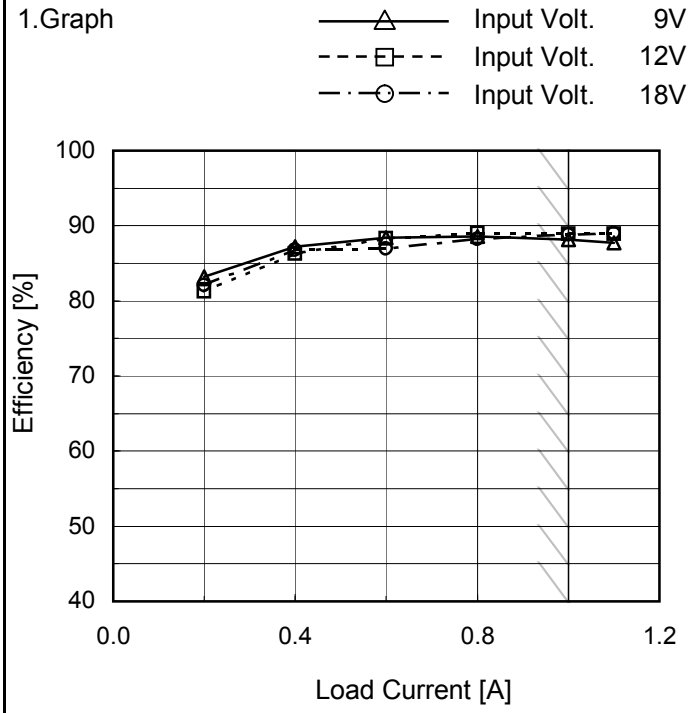
Model	SUTS101212
Item	Efficiency (by Load Current)
Object	————————

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	83.2	81.3	82.1
0.4	87.2	86.3	86.8
0.6	88.4	88.4	86.9
0.8	88.6	89.0	88.3
1.0	88.1	88.9	88.9
1.1	87.7	88.9	89.0
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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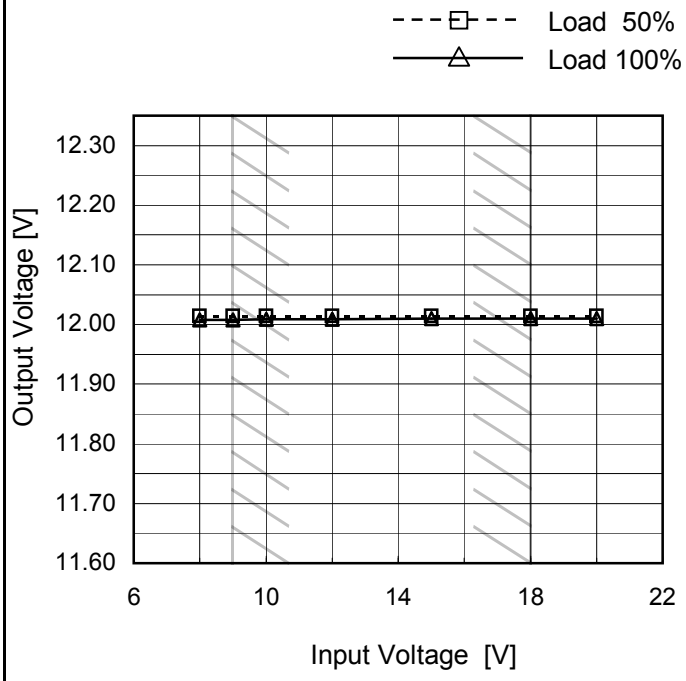
Model	SUTS101212
Item	Line Regulation
Object	+12V1A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

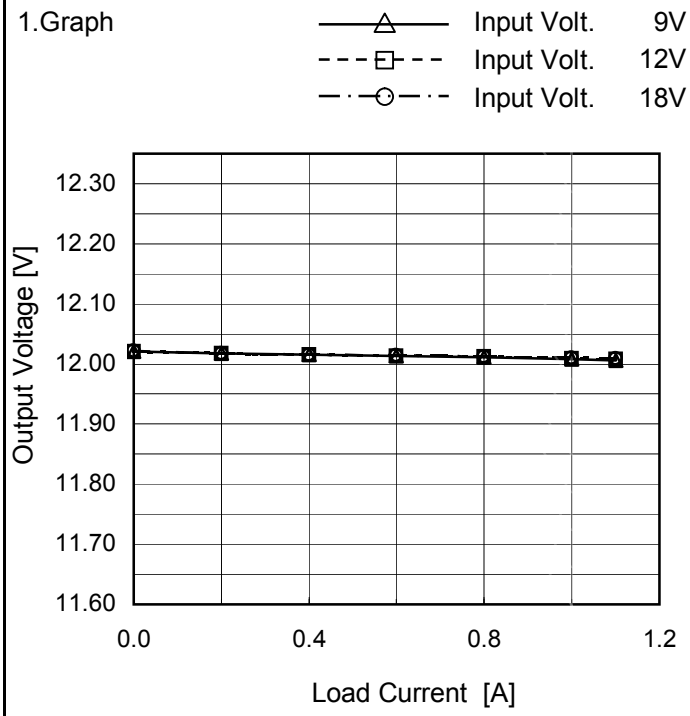
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
8	12.014	12.007
9	12.014	12.008
10	12.015	12.009
12	12.014	12.009
15	12.014	12.010
18	12.014	12.010
20	12.014	12.010
--	-	-
--	-	-

COSEL

Model	SUTS101212
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	12.021	12.020	12.022
0.2	12.018	12.018	12.018
0.4	12.016	12.016	12.016
0.6	12.013	12.014	12.014
0.8	12.011	12.012	12.012
1.0	12.008	12.009	12.010
1.1	12.006	12.008	12.009
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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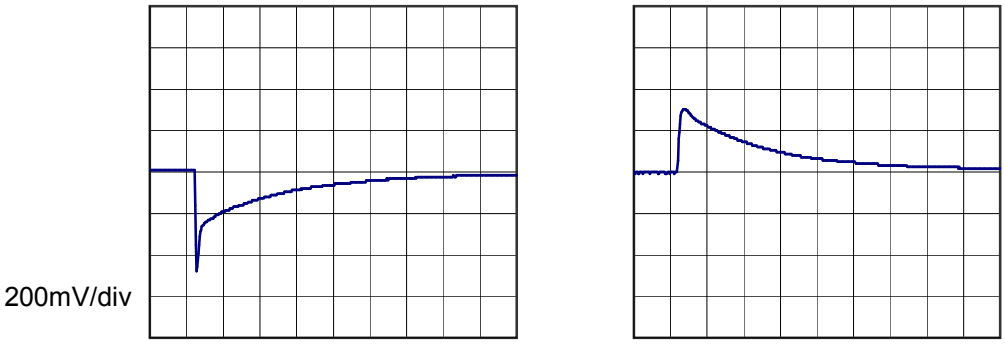
Model	SUTS101212
Item	Dynamic Load Response
Object	+12V1A

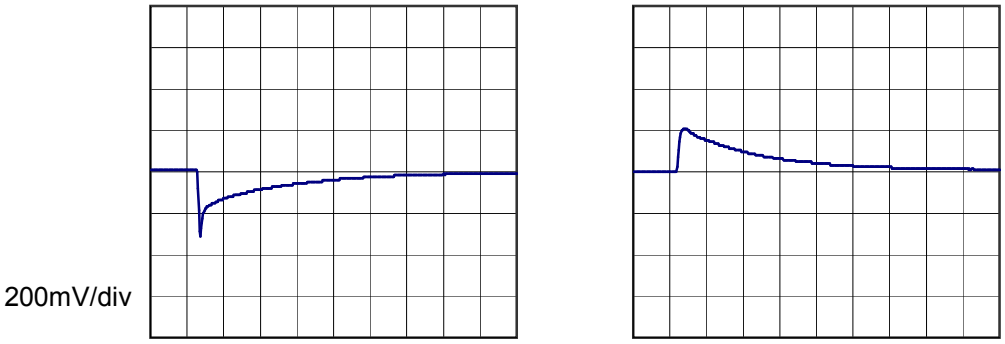
Temperature 25°C
Testing Circuitry Figure A

Input Volt. 12 V
Cycle 100 mS

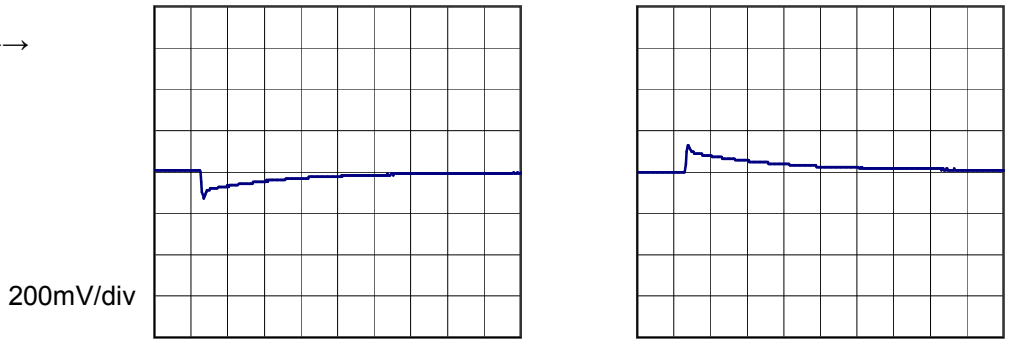
Min. Load (0A) ⟷ Load 100% (1A)



Min. Load (0A) ⟷ Load 50% (0.5A)



Load 50% (0.5A) ⟷ Load 100% (1A)



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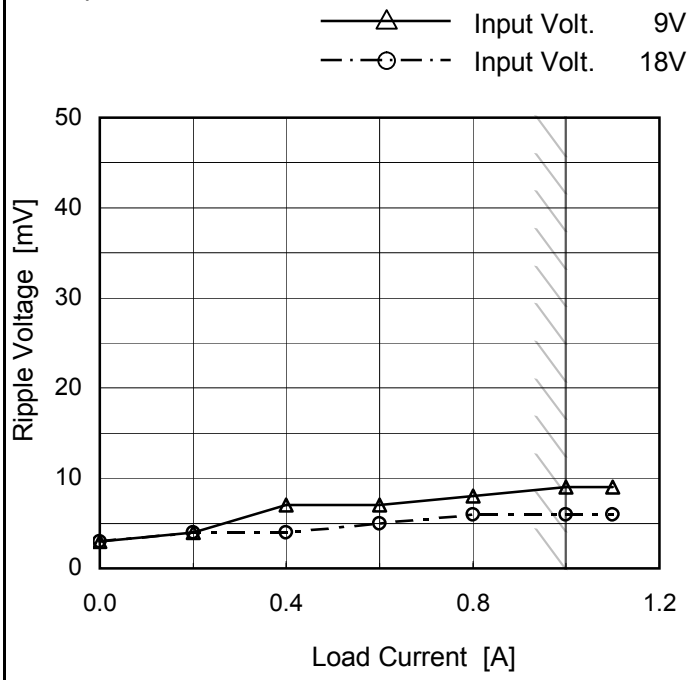
Model	SUTS101212
Item	Ripple Voltage (by Load Current)
Object	+12V1A

Temperature 25°C
Testing Circuitry Figure B

1.Graph



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]

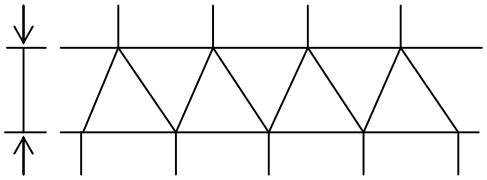


Fig.Complex Ripple Wave Form

2.Values

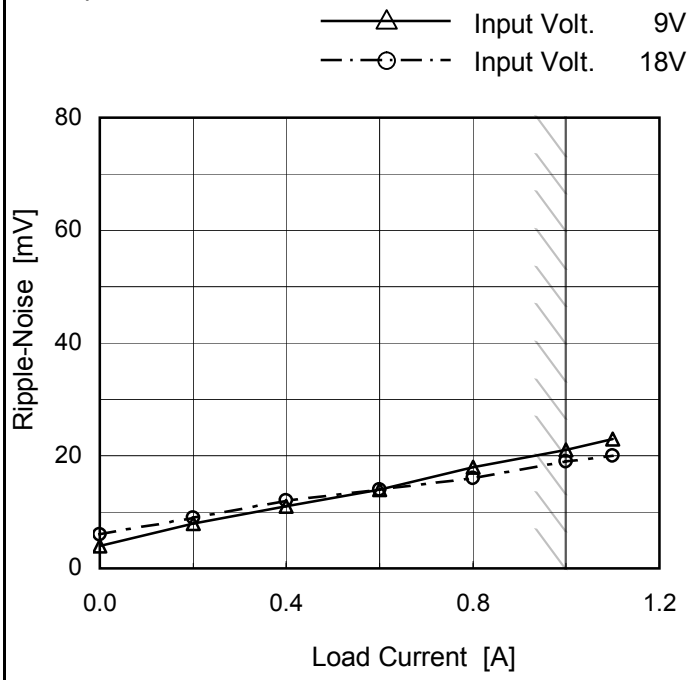
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 9 [V]	Input Volt. 18 [V]
0.0	3	3
0.2	4	4
0.4	7	4
0.6	7	5
0.8	8	6
1.0	9	6
1.1	9	6
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SUTS101212
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.

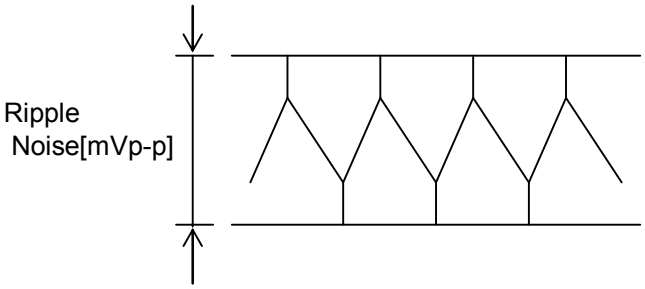


Fig.Complex Ripple Noise Wave Form

2.Values

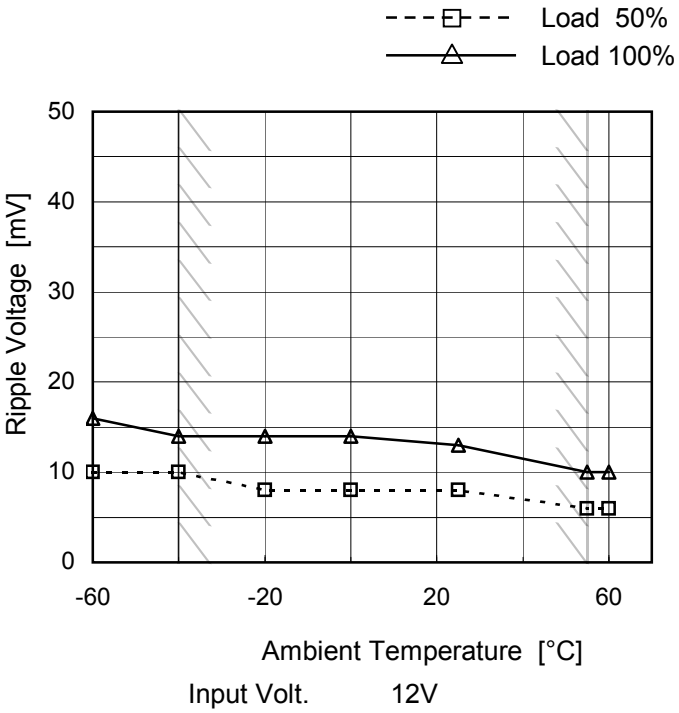
Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 9 [V]	Input Volt. 18 [V]
0.0	4	6
0.2	8	9
0.4	11	12
0.6	14	14
0.8	18	16
1.0	21	19
1.1	23	20
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SUTS101212
Item	Ripple Voltage (by Ambient Temp.)
Object	+12V1A

Testing Circuitry Figure B

1.Graph



Input Volt. 12V

Measured by 150 MHz Oscilloscope.

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

2.Values

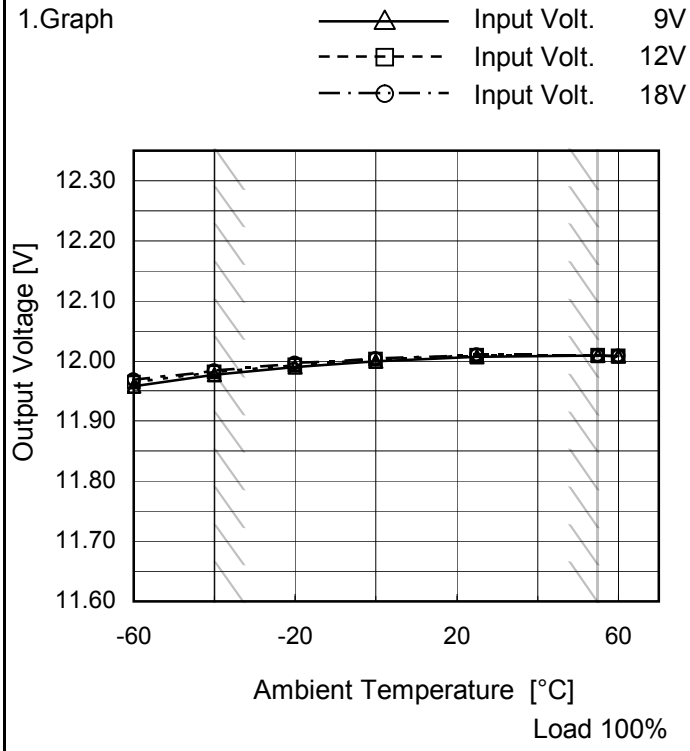
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	10	16
-40	10	14
-20	8	14
0	8	-
25	8	13
55	6	10
60	6	10
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SUTS101212
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	11.958	11.965	11.968
-40	11.977	11.981	11.984
-20	11.990	11.993	11.996
0	12.000	12.002	12.004
25	12.007	12.009	12.010
55	12.009	12.009	12.009
60	12.008	12.008	12.008
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SUTS101212	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+12V1A	

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

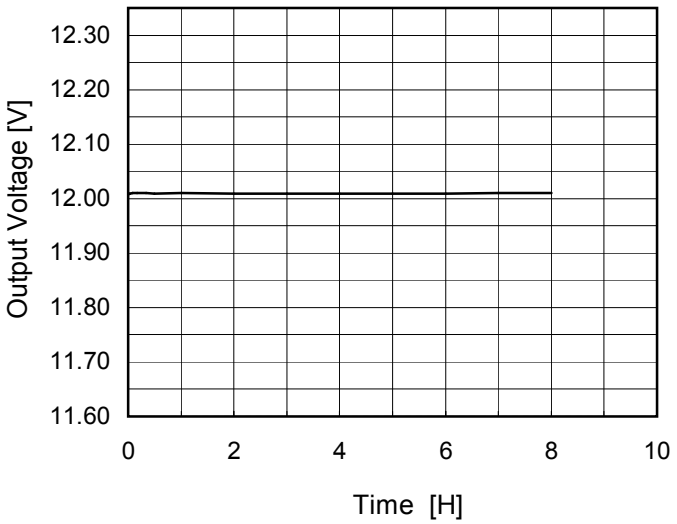
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	55	18	0	12.023	±23	±0.2
Minimum Voltage	-40	9	1	11.977		

COSEL

Model	SUTS101212
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	12.006
0.5	12.009
1.0	12.010
2.0	12.009
3.0	12.010
4.0	12.010
5.0	12.009
6.0	12.010
7.0	12.010
8.0	12.010

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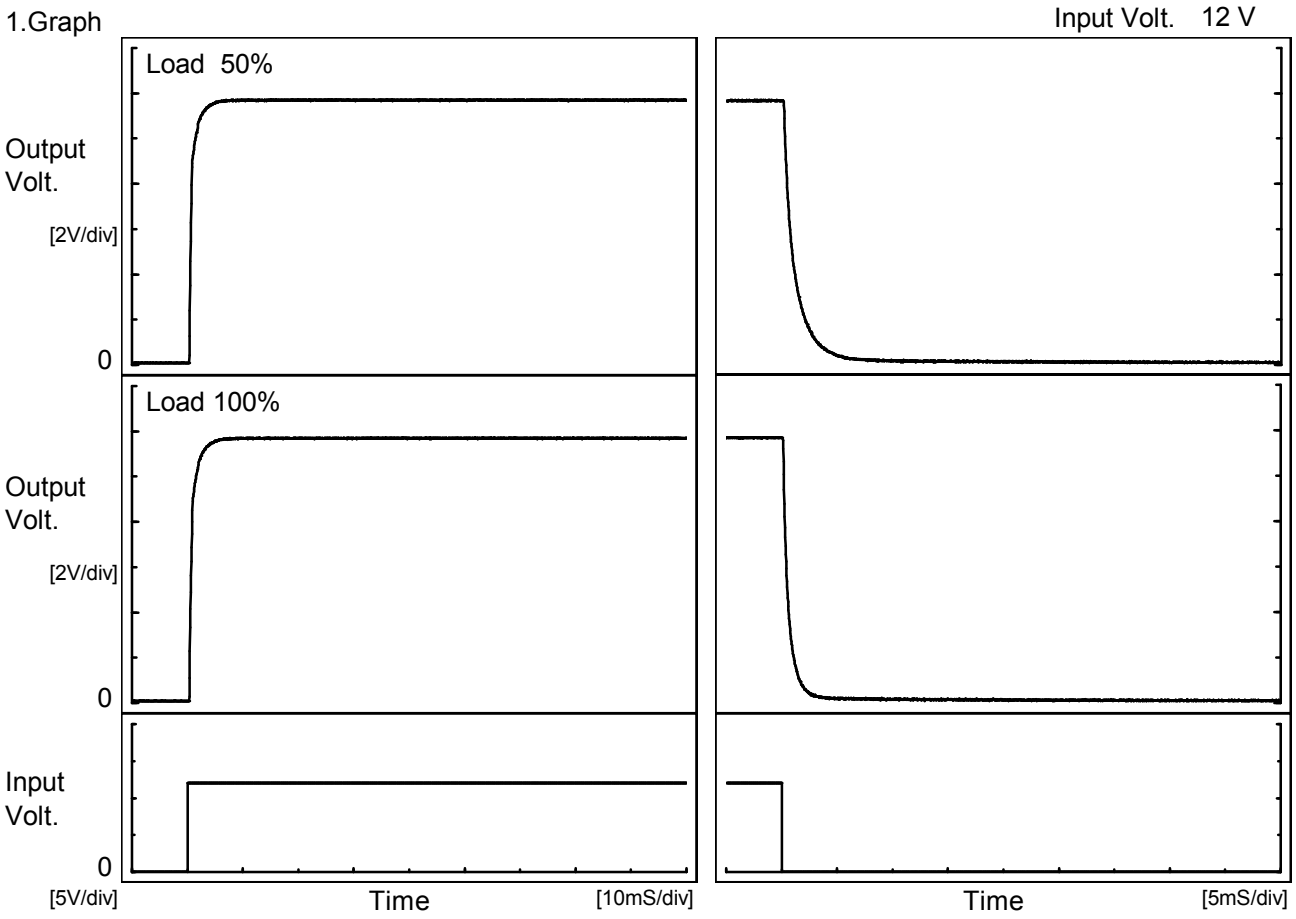
Model	SUTS101212
Item	Rise and Fall Time
Object	+12V1A

Temperature 25°C
Testing Circuitry Figure A

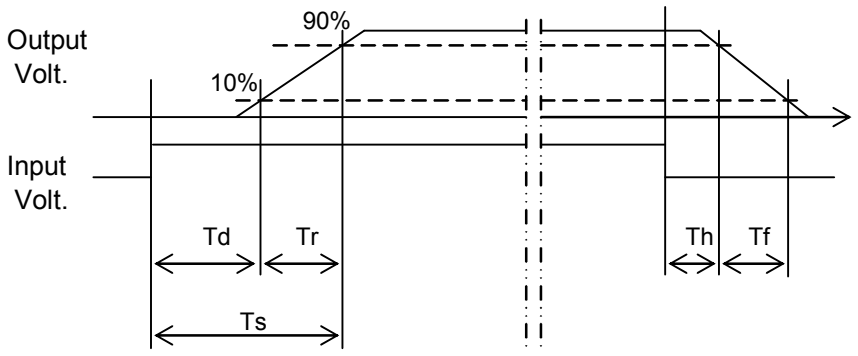
1.Graph



2.Values

[mS]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	0.5	1.9	2.4	0.2	2.5
100 %	0.5	2.0	2.5	0.2	1.3



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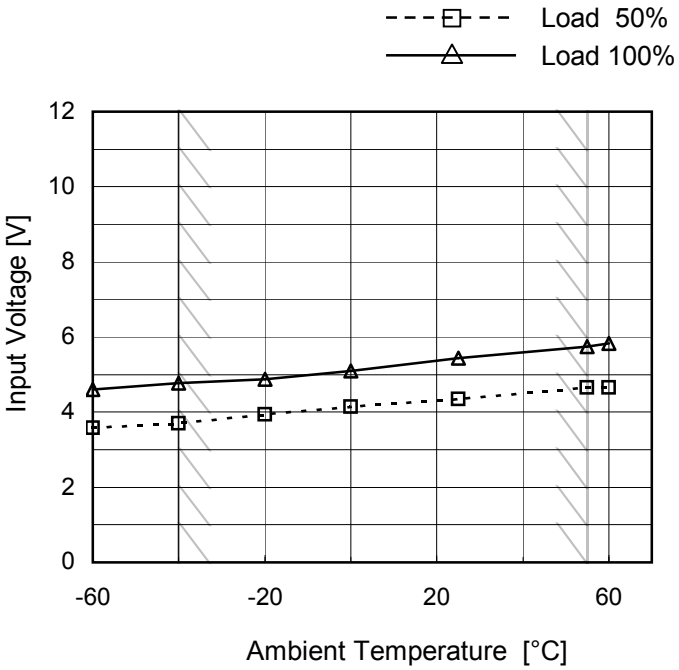
Model	SUTS101212
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+12V1A

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	3.6	4.7
-40	3.7	4.8
-20	4.0	4.9
0	4.2	5.1
25	4.4	5.5
55	4.7	5.8
60	4.7	5.9
--	-	-
--	-	-
--	-	-
--	-	-

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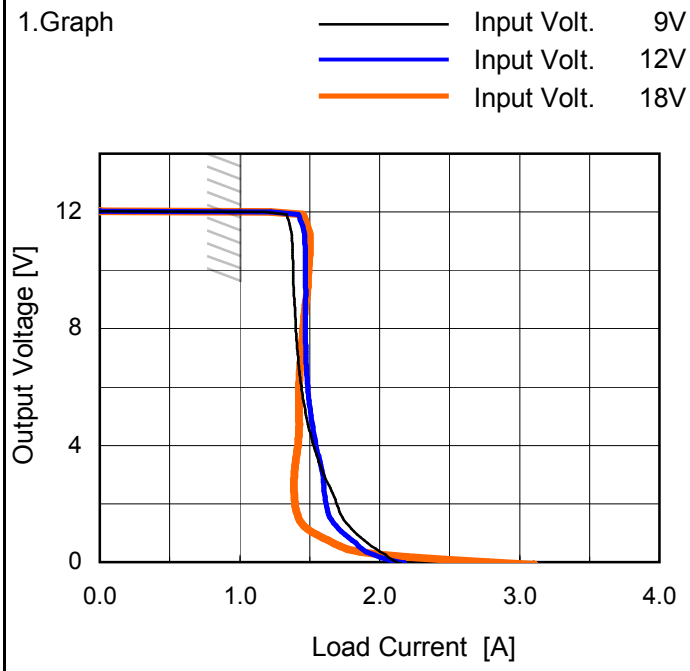
Model	SUTS101212
Item	Overcurrent Protection
Object	+12V1A

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	1.19	1.22	1.22
11.4	1.37	1.45	1.49
10.8	1.19	1.22	1.22
9.6	1.38	1.47	1.49
8.4	1.40	1.47	1.46
7.2	1.41	1.47	1.44
6.0	1.44	1.49	1.42
4.8	1.48	1.51	1.43
3.6	1.55	1.56	1.40
2.4	1.66	1.60	1.39
1.2	1.78	1.69	1.46
0.0	2.14	2.16	3.10

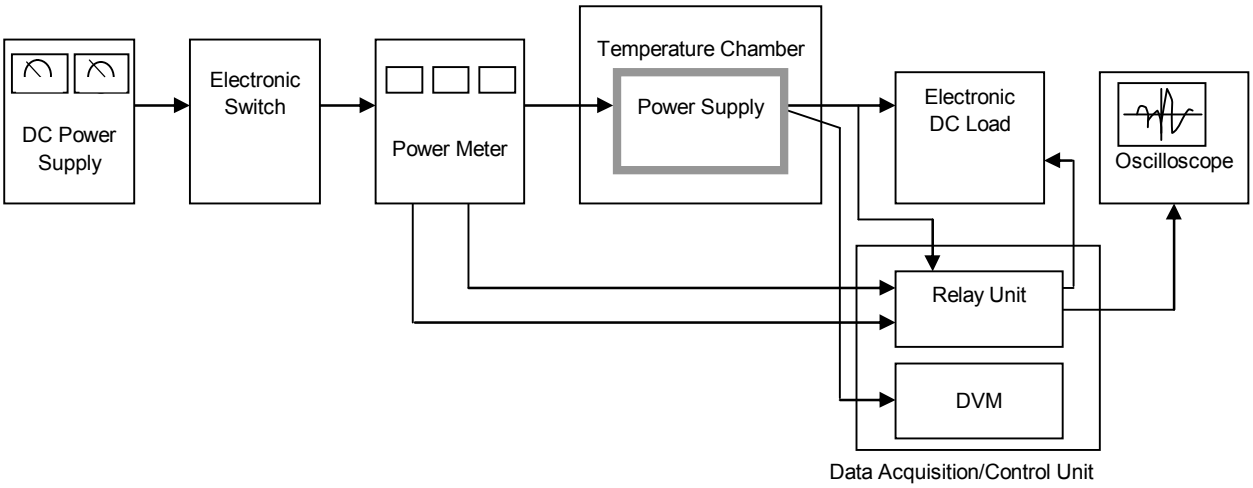


Figure A

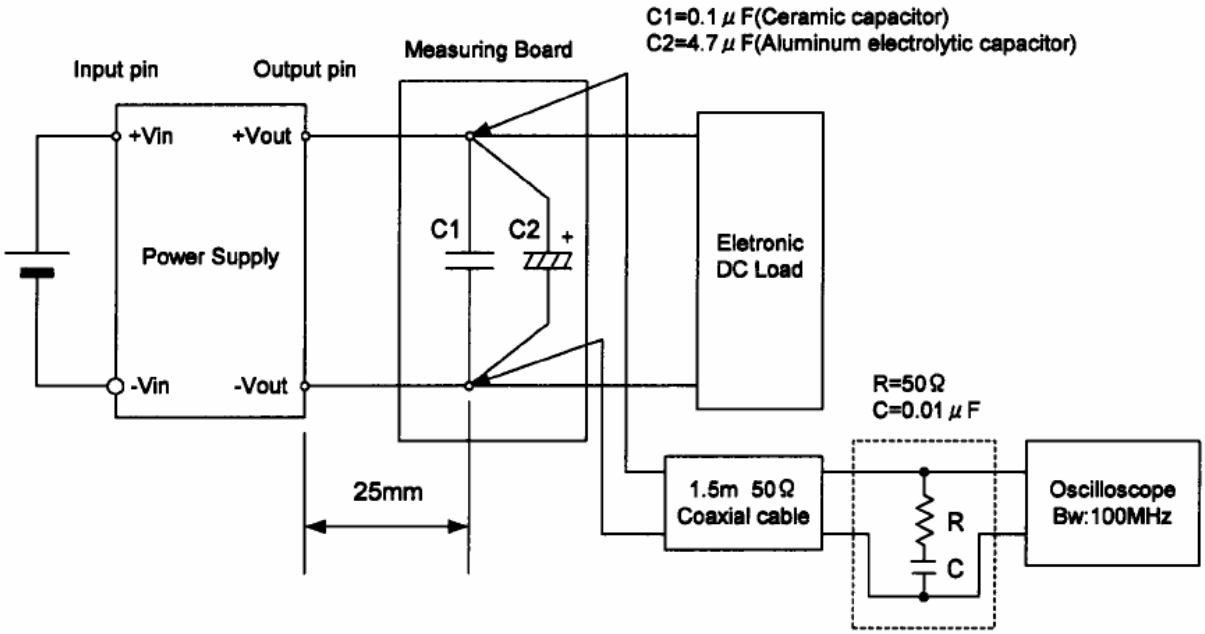


Figure B (Ripple and Ripple noise Characteristic)