COSEL

参考資料

TEST DATA OF SUTS100512

Regulated DC Power Supply
February 6, 2009

Approved by : Kazunari Asano
Kazunari Asano — Design Manager

Prepared by : Sho Saito
Sho Saito — Design Engineer

COSEL CO.,LTD.

COSEL

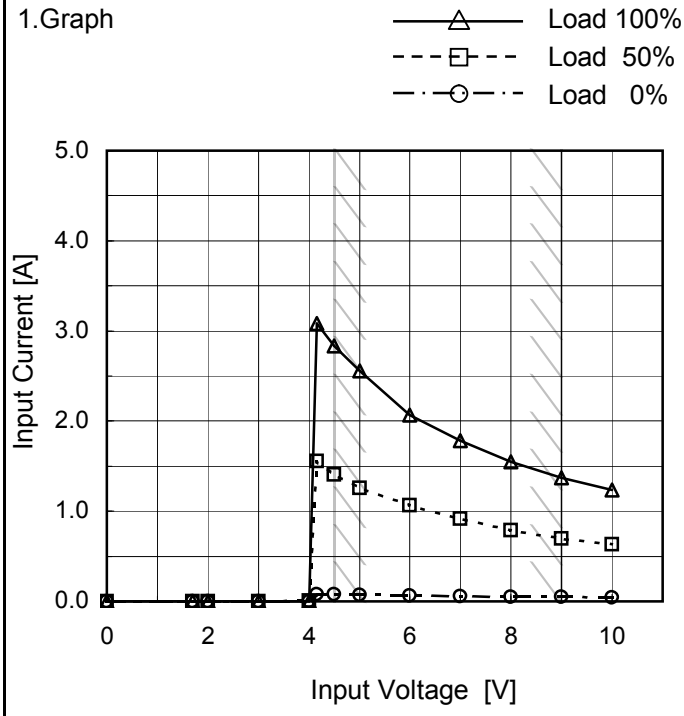
CONTENTS

COSEL

Model	SUTS100512
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

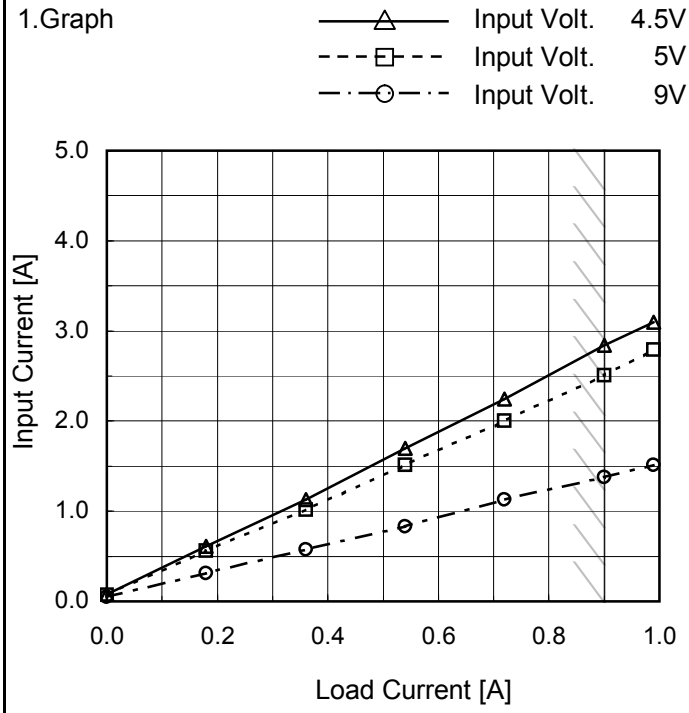
Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0.00	0.000	0.000	0.000
1.70	0.001	-0.001	0.000
2.00	0.000	0.000	-0.001
3.00	0.000	0.000	0.000
4.00	0.001	0.004	0.000
4.16	0.080	1.556	3.081
4.50	0.076	1.404	2.834
5.00	0.070	1.258	2.554
6.00	0.064	1.066	2.065
7.00	0.057	0.917	1.780
8.00	0.052	0.789	1.547
9.00	0.049	0.693	1.373
10.00	0.046	0.635	1.238
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SUTS100512
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

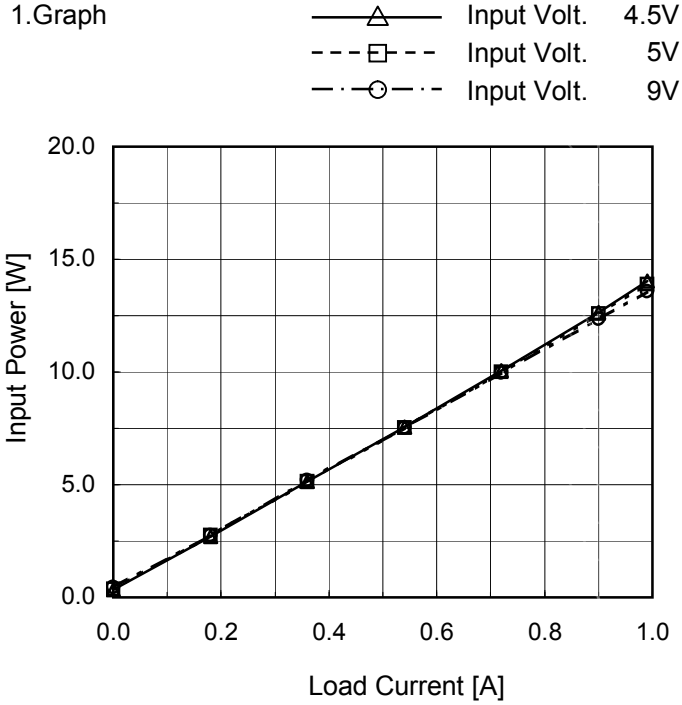
Load Current [A]	Input Current [A]		
	Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]
0.00	0.076	0.072	0.050
0.18	0.614	0.559	0.309
0.36	1.130	1.014	0.578
0.54	1.697	1.510	0.833
0.72	2.245	2.004	1.132
0.90	2.838	2.505	1.378
0.99	3.100	2.793	1.516
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SUTS100512
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

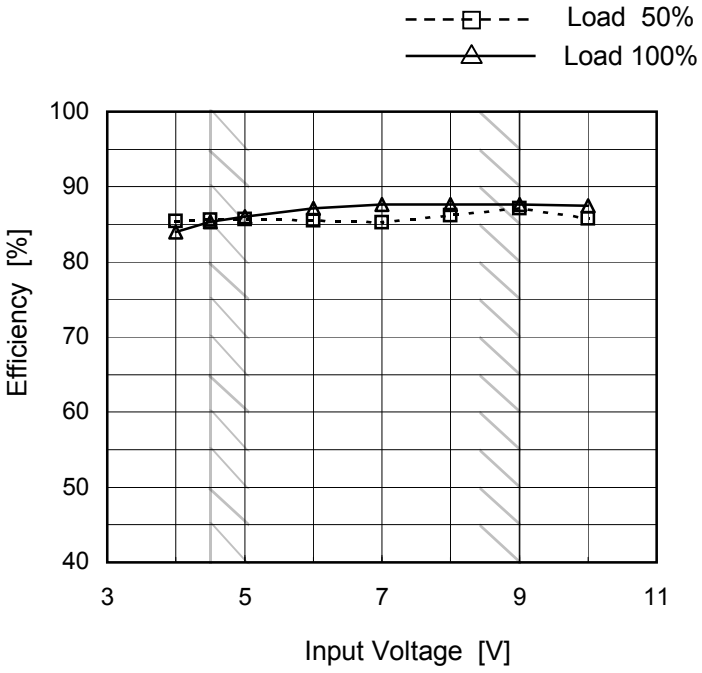
Load Current [A]	Input Power [W]		
	Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]
0.00	0.34	0.36	0.45
0.18	2.70	2.74	2.76
0.36	5.13	5.13	5.19
0.54	7.55	7.52	7.53
0.72	10.06	10.00	9.97
0.90	12.66	12.58	12.36
0.99	14.04	13.88	13.57
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SUTS100512
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

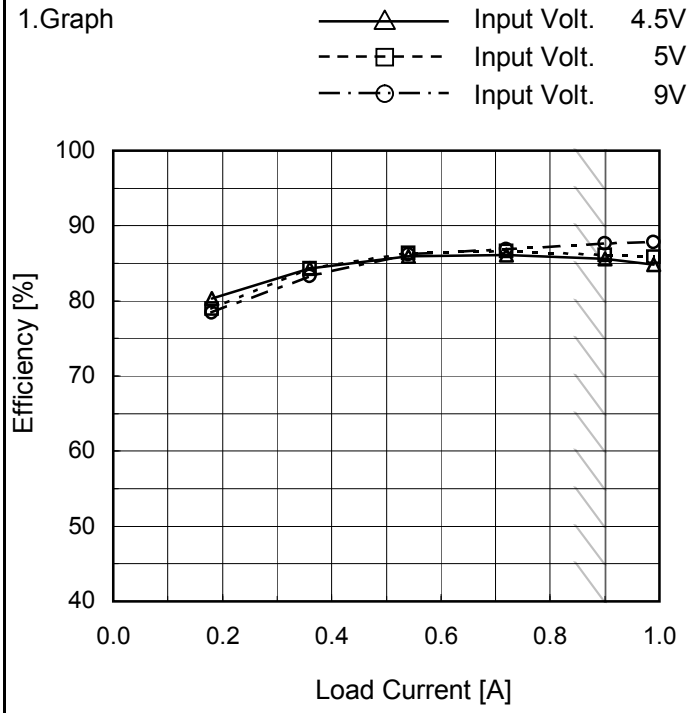
Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
4.0	85.4	84.0
4.5	85.6	85.3
5.0	85.7	86.0
6.0	85.5	87.2
7.0	85.3	87.6
8.0	86.2	87.7
9.0	87.1	87.6
10.0	85.8	87.5
--	-	-

COSEL

Model	SUTS100512
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

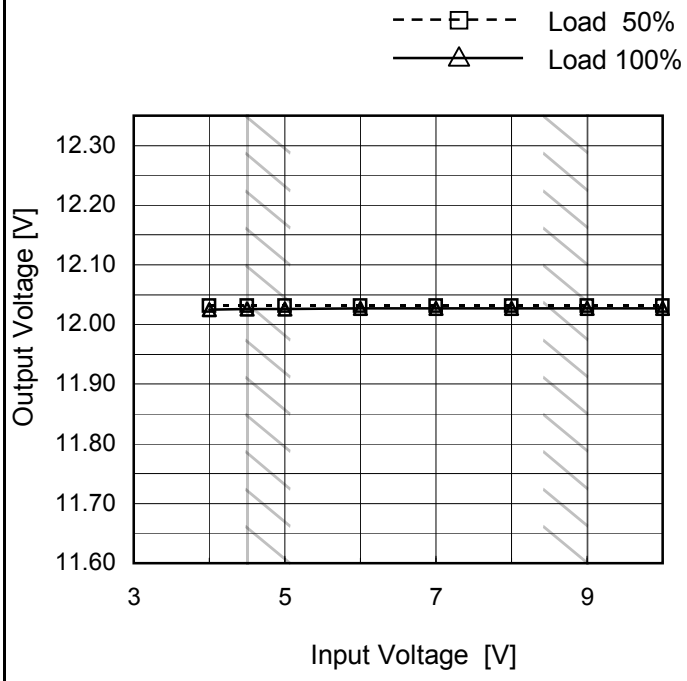
Load Current [A]	Efficiency [%]		
	Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]
0.00	-	-	-
0.18	80.3	78.9	78.4
0.36	84.3	84.4	83.3
0.54	85.9	86.3	86.2
0.72	86.1	86.6	86.9
0.90	85.6	86.1	87.6
0.99	84.8	85.8	87.8
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SUTS100512
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

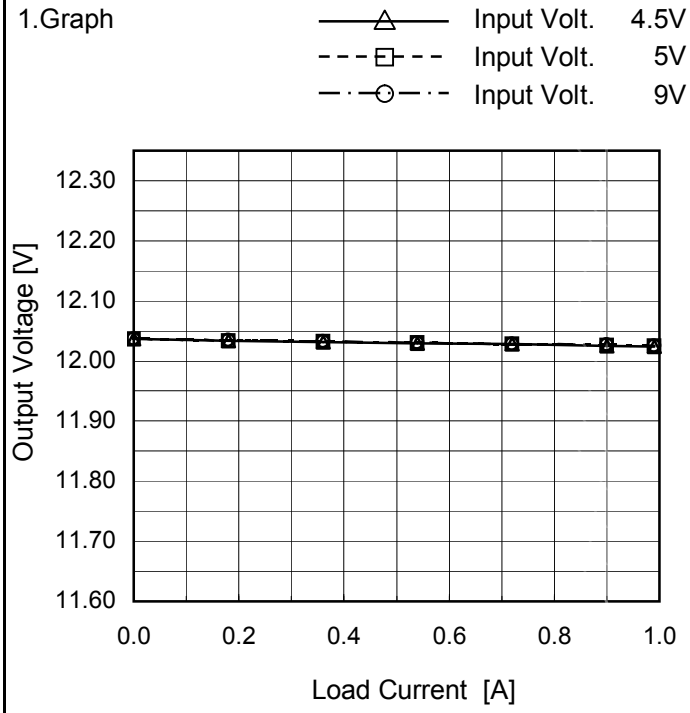
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
4.0	12.031	12.025
4.5	12.031	12.026
5.0	12.031	12.027
6.0	12.031	12.027
7.0	12.031	12.027
8.0	12.031	12.027
9.0	12.031	12.027
10.0	12.031	12.027
--	-	-

COSEL

Model	SUTS100512
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. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]
0.00	12.037	12.037	12.037
0.18	12.034	12.034	12.034
0.36	12.032	12.032	12.032
0.54	12.030	12.030	12.031
0.72	12.028	12.028	12.029
0.90	12.026	12.026	12.027
0.99	12.024	12.025	12.026
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

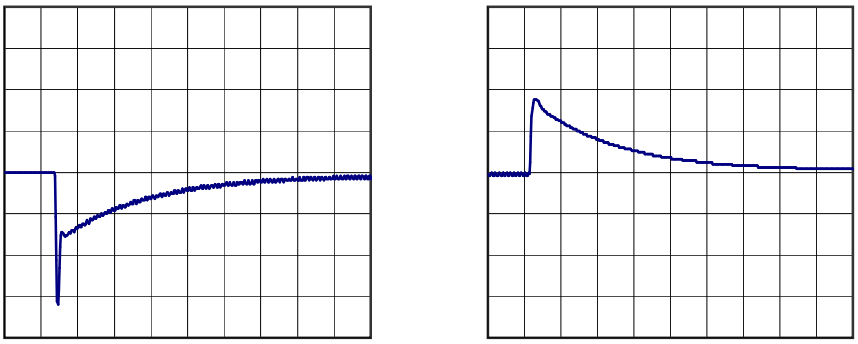
COSEL

Model	SUTS100512
Item	Dynamic Load Response
Object	+12V0.9A

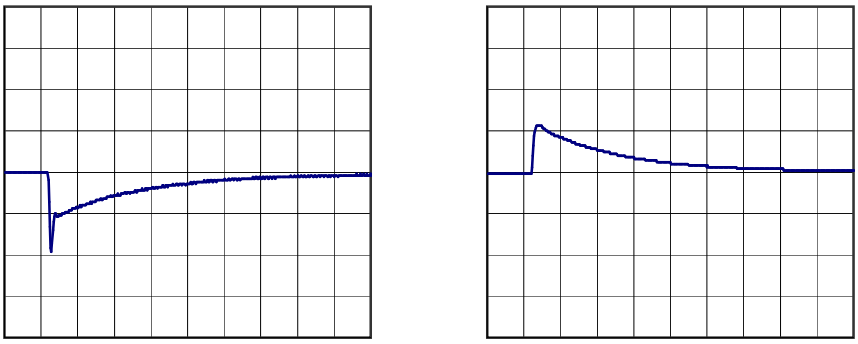
Temperature 25°C
Testing Circuitry Figure A

Input Volt. 5 V
Cycle 100 mS

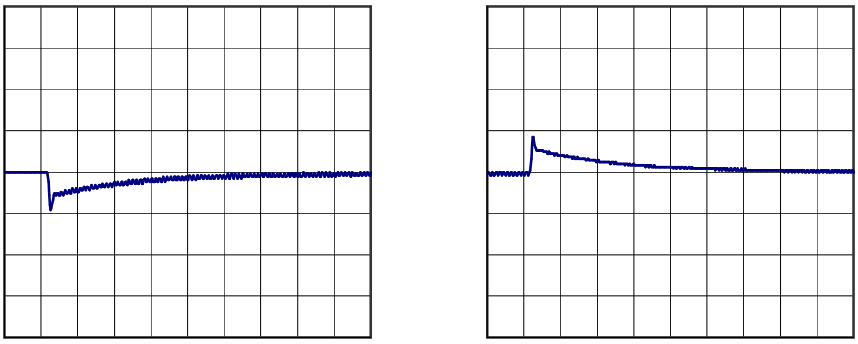
Min. Load (0A) ⟷
Load 100% (0.9A)



Min. Load (0A) ⟷
Load 50% (0.45A)



Load 50% (0.45A) ⟷
Load 100% (0.9A)

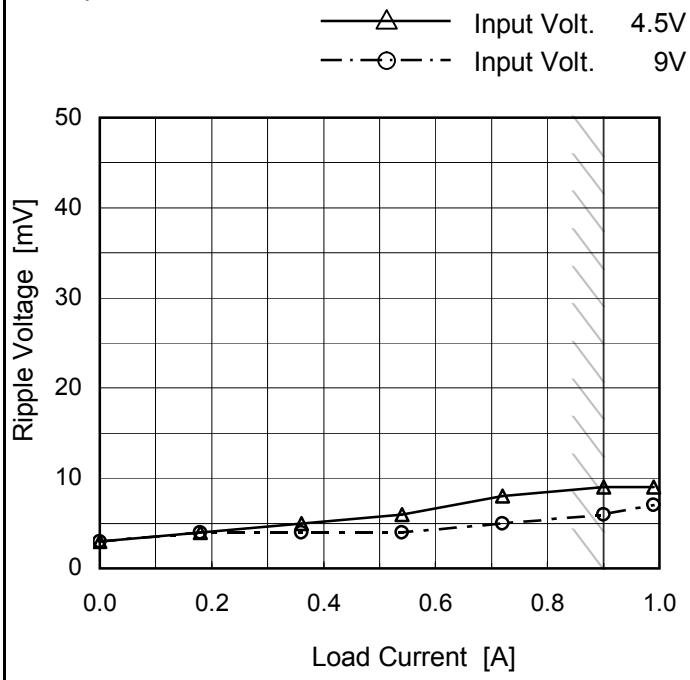


COSEL

Model	SUTS100512
Item	Ripple Voltage (by Load Current)
Object	+12V0.9A

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]

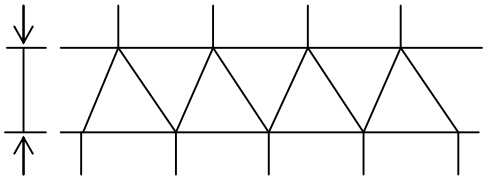


Fig.Complex Ripple Wave Form

2.Values

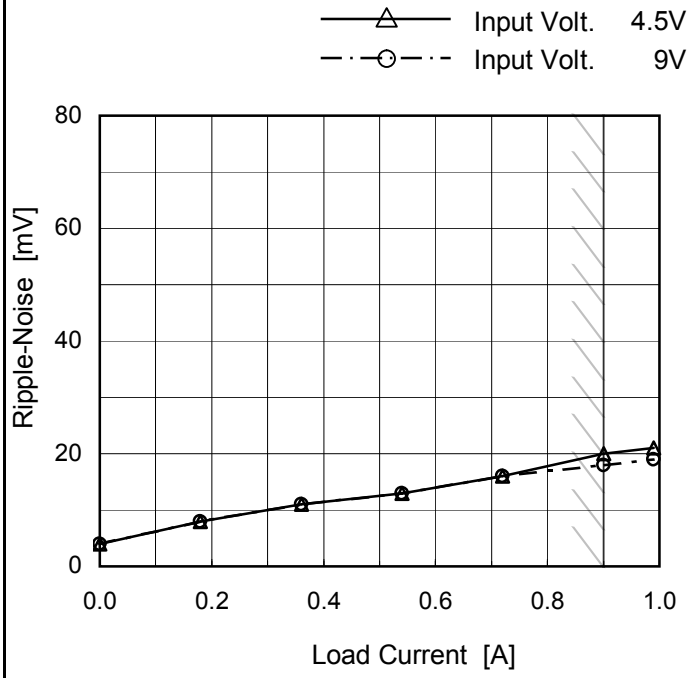
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 4.5 [V]	Input Volt. 9 [V]
0.00	3	3
0.18	4	4
0.36	5	4
0.54	6	4
0.72	8	5
0.90	9	6
0.99	9	7
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SUTS100512
Item	Ripple-Noise
Object	+12V0.9A

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.

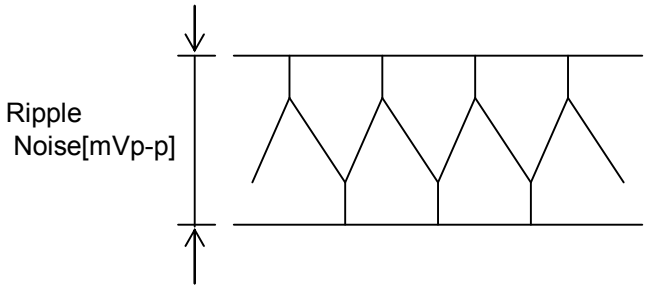


Fig.Complex Ripple Noise Wave Form

2.Values

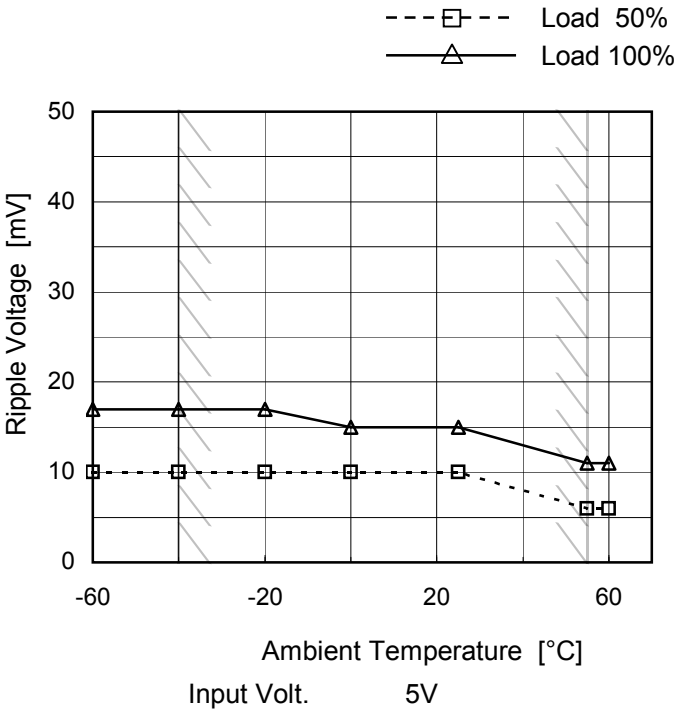
Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 4.5 [V]	Input Volt. 9 [V]
0.00	4	4
0.18	8	8
0.36	11	11
0.54	13	13
0.72	16	16
0.90	20	18
0.99	21	19
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SUTS100512
Item	Ripple Voltage (by Ambient Temp.)
Object	+12V0.9A

Testing Circuitry Figure B

1.Graph



Input Volt. 5V

Measured by 100 MHz Oscilloscope.

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

2.Values

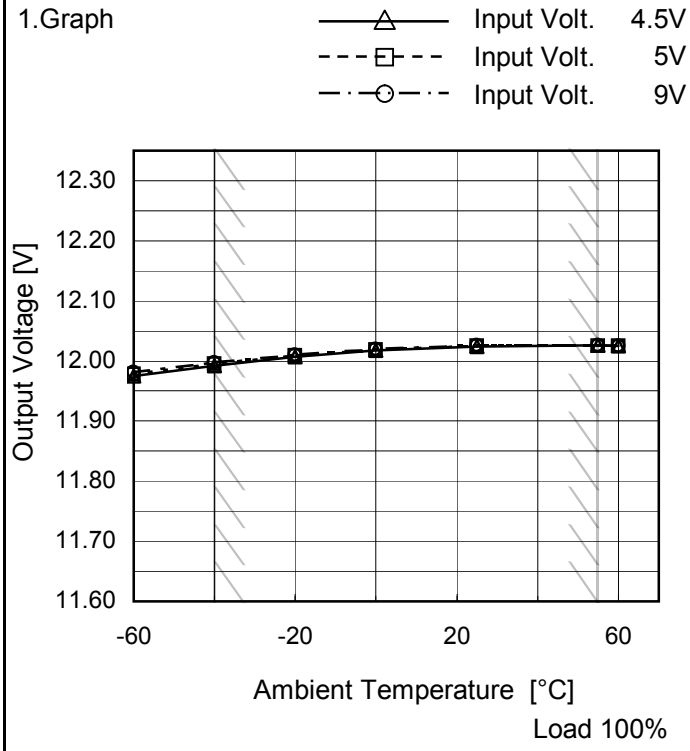
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	10	17
-40	10	17
-20	10	17
0	10	15
25	10	15
55	6	11
60	6	11
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SUTS100512
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. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]
-60	11.975	11.979	11.981
-40	11.993	11.995	11.997
-20	12.007	12.009	12.011
0	12.017	12.019	12.020
25	12.025	12.025	12.026
55	12.026	12.026	12.026
60	12.025	12.025	12.026
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SUTS100512	
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 - 55°C
Input Voltage : 4.5 - 9V
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

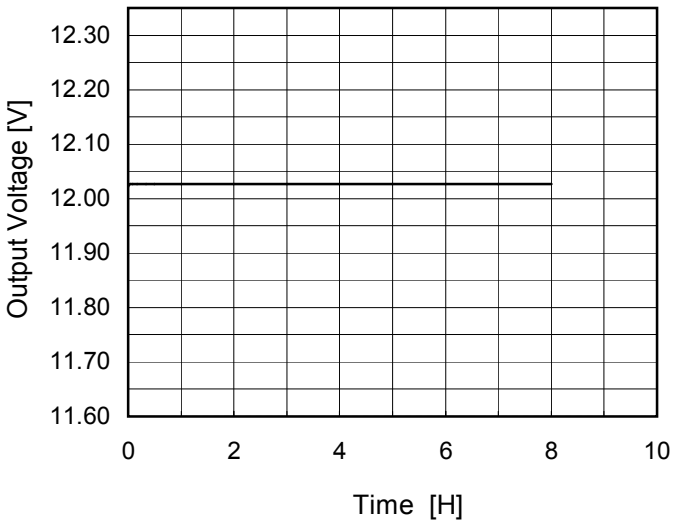
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	55	5	0	12.039	±23	±0.2
Minimum Voltage	-40	4.5	0.9	11.993		

COSEL

Model	SUTS100512
Item	Time Lapse Drift
Object	+12V0.9A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Input Volt. 5V
Load 100%

2.Values

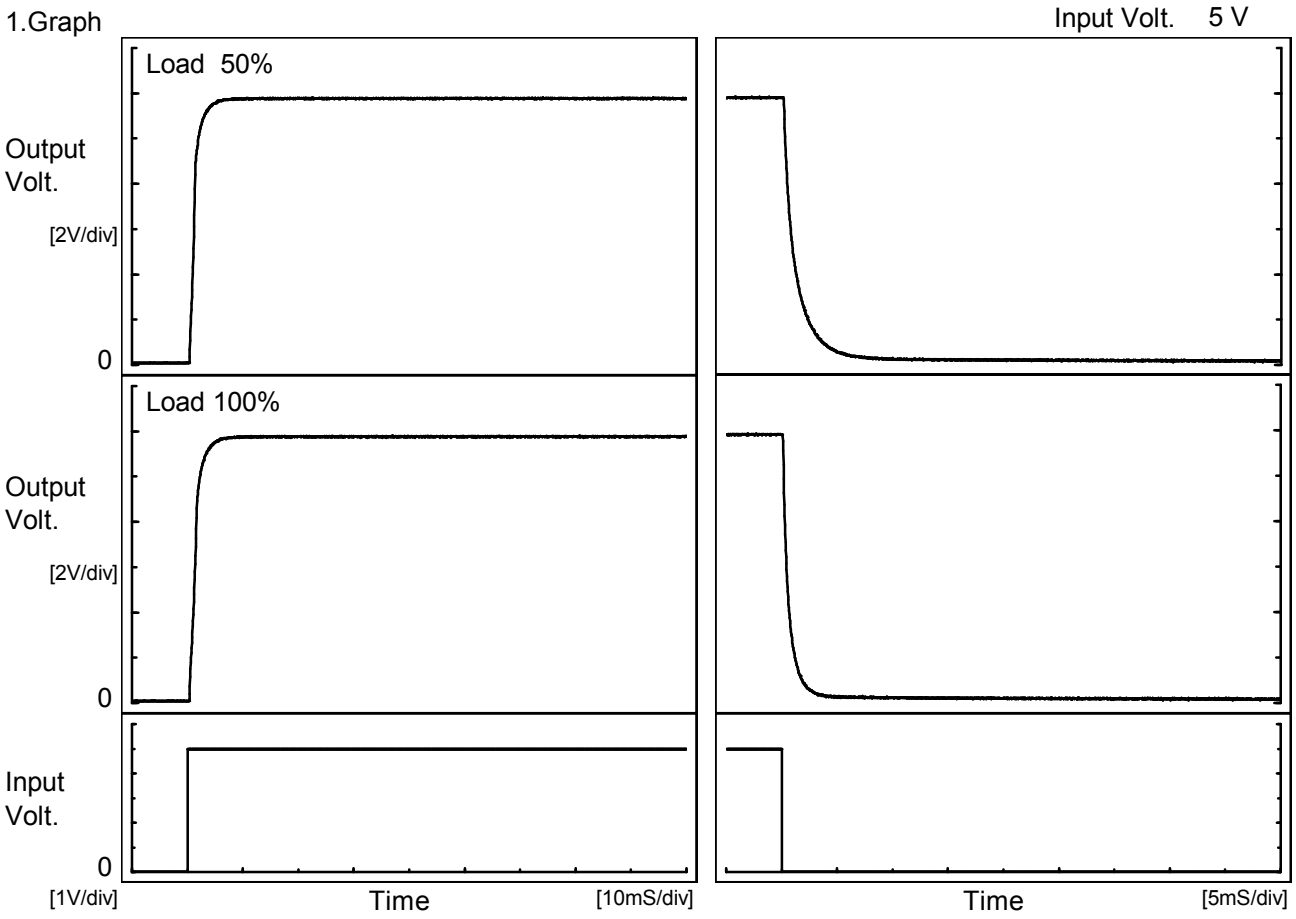
Time since start [H]	Output Voltage [V]
0.0	12.023
0.5	12.027
1.0	12.026
2.0	12.027
3.0	12.027
4.0	12.026
5.0	12.027
6.0	12.026
7.0	12.026
8.0	12.027

COSEL

Model	SUTS100512
Item	Rise and Fall Time
Object	+12V0.9A

Temperature 25°C
Testing Circuitry Figure A

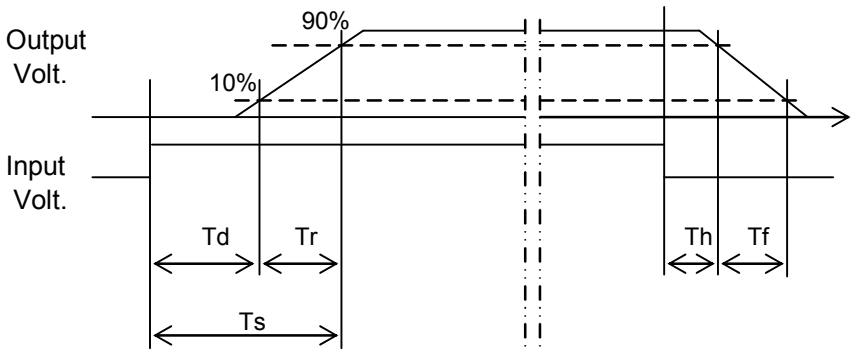
1.Graph



2.Values

[mS]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	0.6	2.3	2.9	0.2	3.0
100 %	0.6	2.7	3.3	0.2	1.4

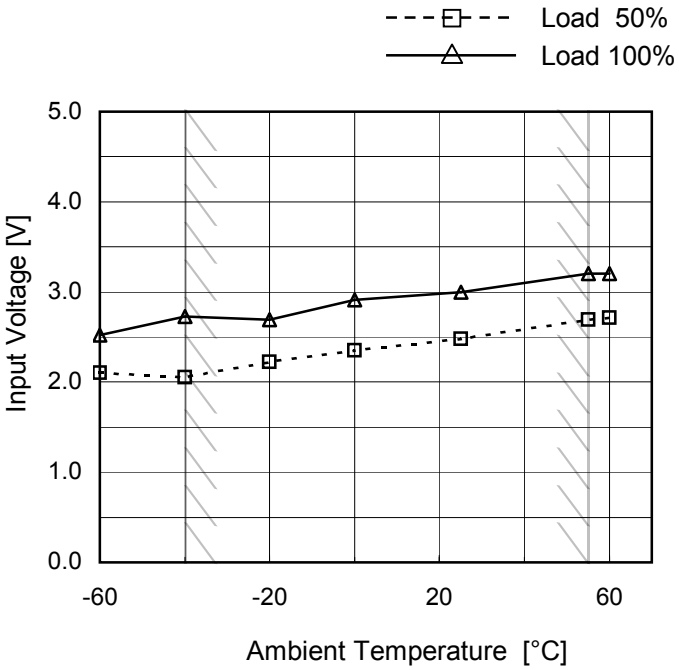


COSEL

Model	SUTS100512
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

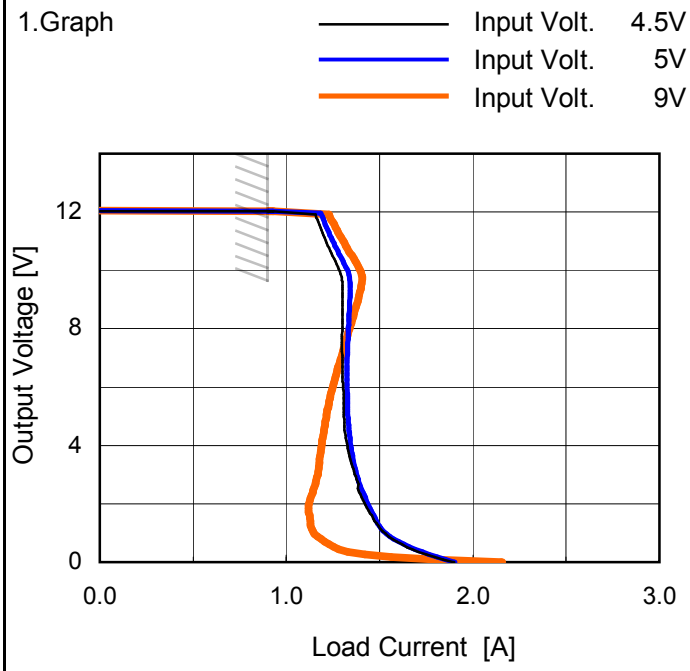
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	2.1	2.6
-40	2.1	2.8
-20	2.3	2.7
0	2.4	3.0
25	2.5	3.0
55	2.7	3.2
60	2.8	3.2
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SUTS100512
Item	Overcurrent Protection
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

Output Voltage [V]	Load Current [A]		
	Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]
12.0	0.90	0.90	0.90
11.4	1.19	1.22	1.27
10.8	1.22	1.26	1.32
9.6	1.30	1.34	1.41
8.4	1.30	1.34	1.36
7.2	1.30	1.33	1.30
6.0	1.30	1.33	1.25
4.8	1.31	1.33	1.21
3.6	1.34	1.35	1.18
2.4	1.39	1.40	1.14
1.2	1.49	1.50	1.13
0.0	1.90	1.90	2.15

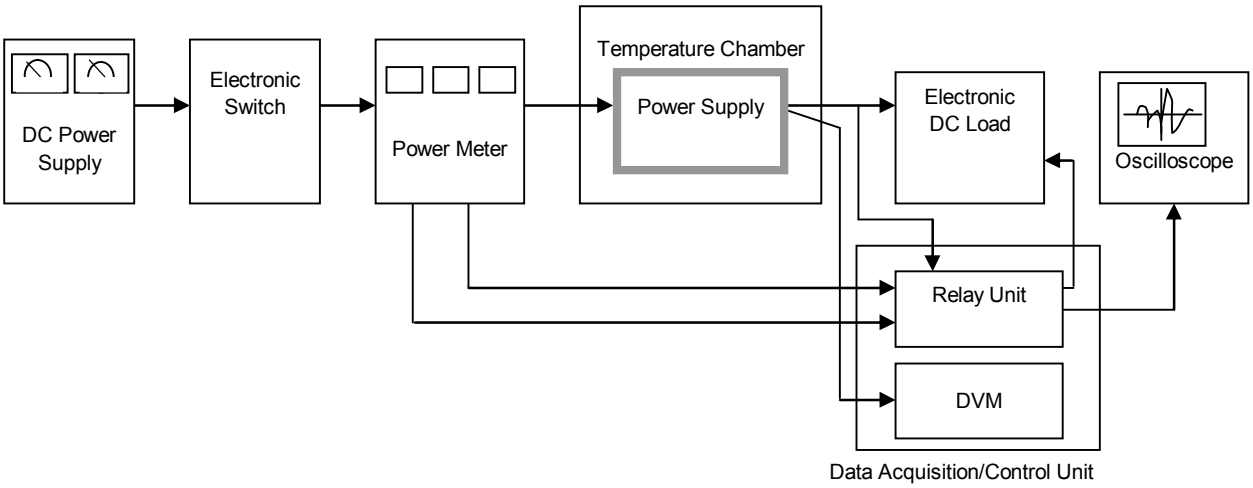


Figure A

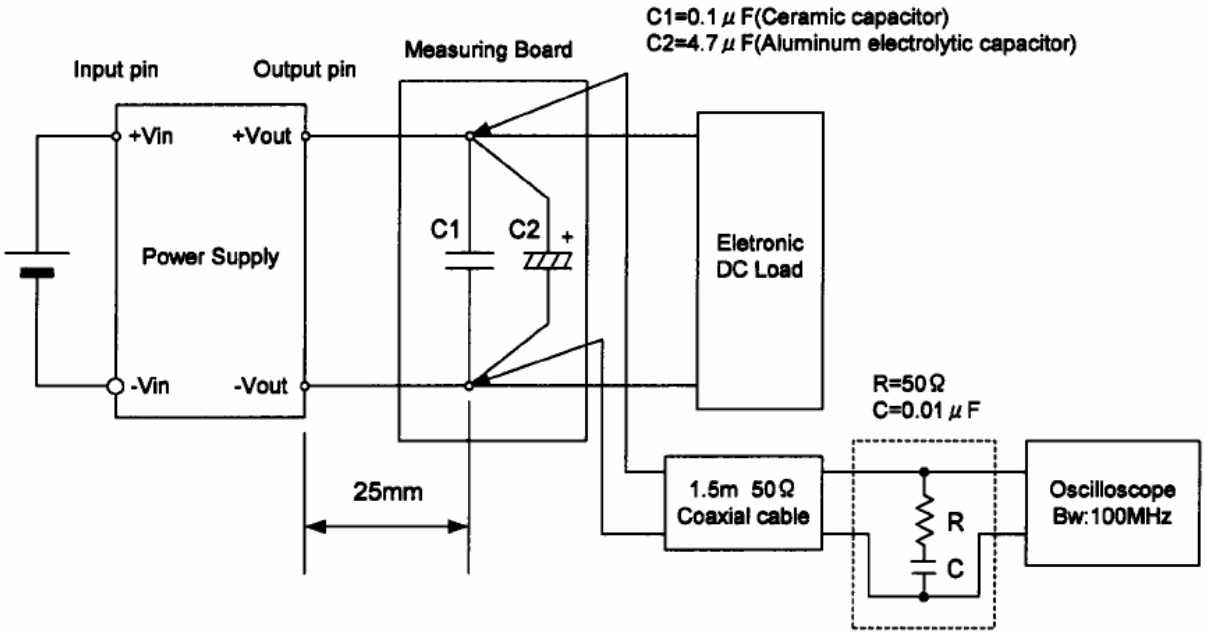


Figure B (Ripple and Ripple noise Characteristic)