参考資料

COSEL

TEST DATA OF SUW101212
SUCW101212

Regulated DC Power Supply
Mar 24, 2005

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COSEL CO.,LTD.

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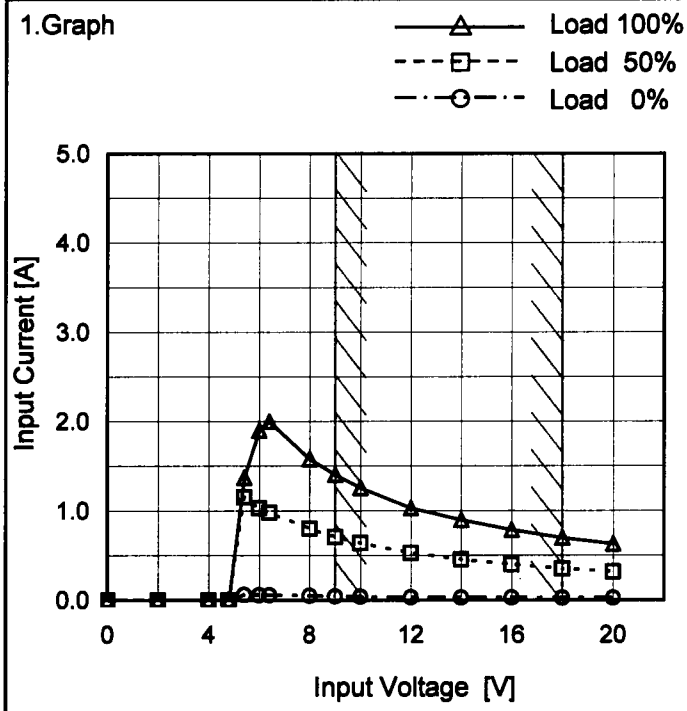
COSEL

Model	SUW101212/SUCW101212
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

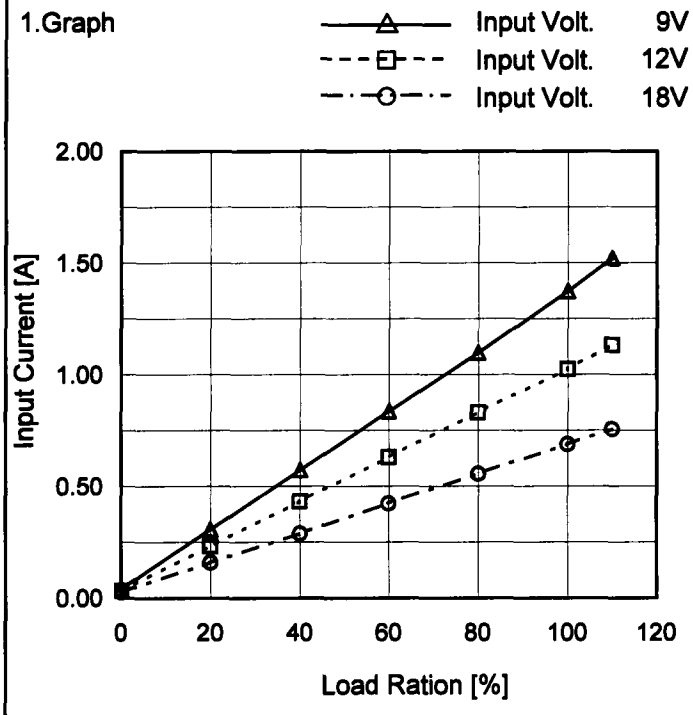
Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0.0	0.000	0.000	0.000
2.0	0.000	0.000	0.000
4.0	0.000	0.000	0.000
4.8	0.000	0.000	0.000
5.4	0.062	1.154	1.373
6.0	0.058	1.032	1.901
6.4	0.057	0.980	2.002
8.0	0.050	0.801	1.582
9.0	0.043	0.707	1.403
10.0	0.039	0.638	1.257
12.0	0.033	0.528	1.031
14.0	0.030	0.456	0.899
16.0	0.028	0.399	0.787
18.0	0.027	0.353	0.697
20.0	0.026	0.317	0.628
—	-	-	-
—	-	-	-
—	-	-	-

COSEL

Model	SUW101212/SUCW101212
Item	Input Current (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



2.Values

Load Ration [%]	Input Current [A]		
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
0	0.044	0.033	0.027
20	0.308	0.233	0.159
40	0.573	0.433	0.289
60	0.837	0.630	0.424
80	1.098	0.831	0.556
100	1.374	1.025	0.688
110	1.522	1.132	0.756
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

BC-3802

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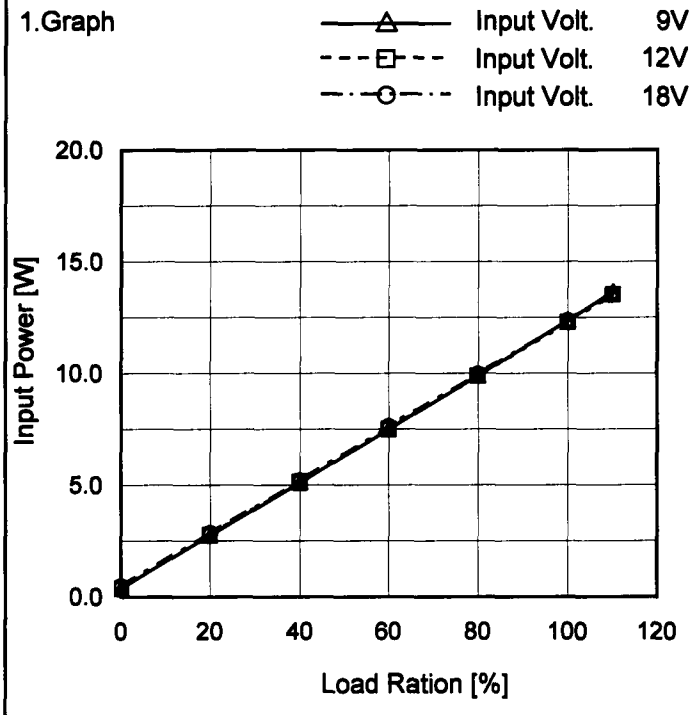
Model	SUW101212/SUCW101212
Item	Input Power (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



2.Values

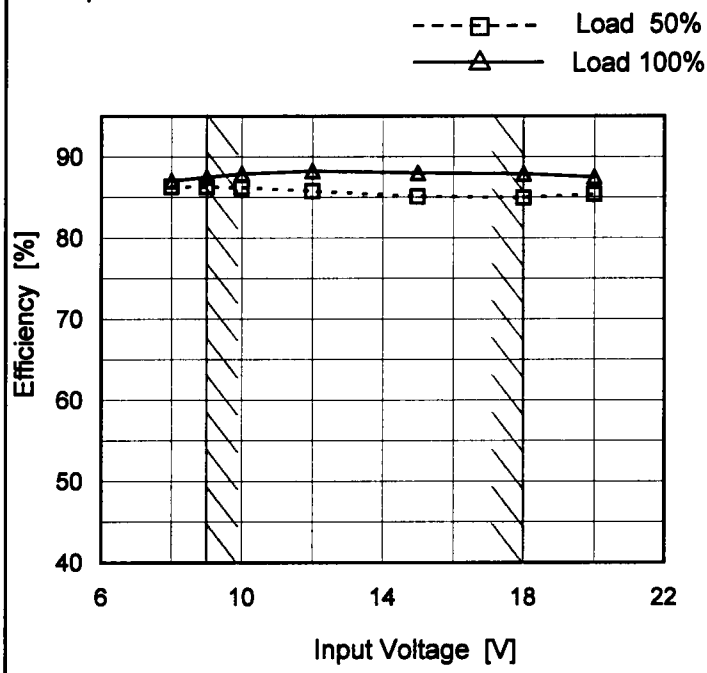
Load Ration [%]	Input Power [W]		
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
0	0.39	0.39	0.48
20	2.76	2.78	2.86
40	5.12	5.16	5.20
60	7.49	7.52	7.63
80	9.90	9.89	9.97
100	12.37	12.29	12.35
110	13.65	13.52	13.56
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SUW101212/SUCW101212
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

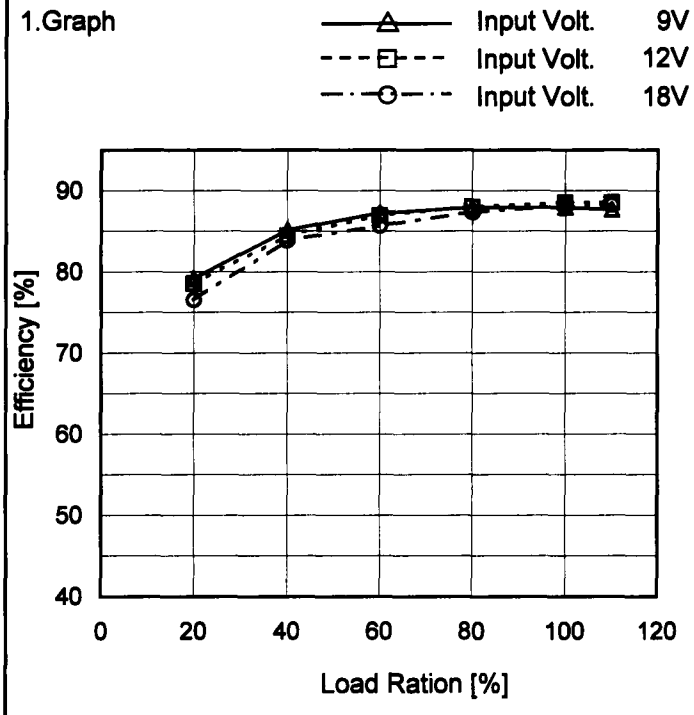
Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
8	86.3	87.0
9	86.3	87.5
10	86.2	87.9
12	85.7	88.2
15	85.1	88.0
18	84.9	87.9
20	85.3	87.5
–	-	-
–	-	-

COSEL

Model	SUW101212/SUCW101212
Item	Efficiency (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



2.Values

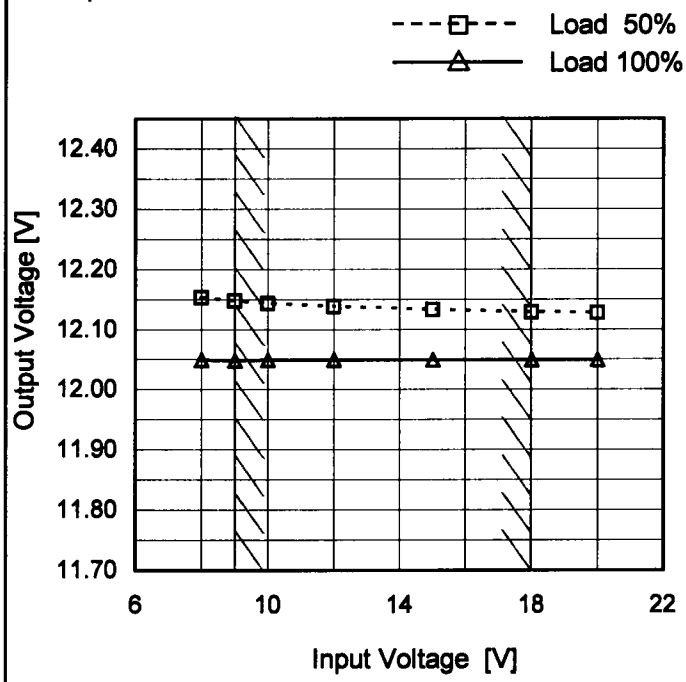
Load Ration [%]	Efficiency [%] Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
0	-	-	-
20	79.2	78.6	76.5
40	85.2	84.4	83.9
60	87.2	86.9	85.7
80	87.9	88.0	87.3
100	87.9	88.5	88.1
110	87.7	88.5	88.2
—	-	-	-
—	-	-	-
—	-	-	-
—	-	-	-

COSEL

Model	SUW101212/SUCW101212
Item	Line Regulation
Object	+12V0.45A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

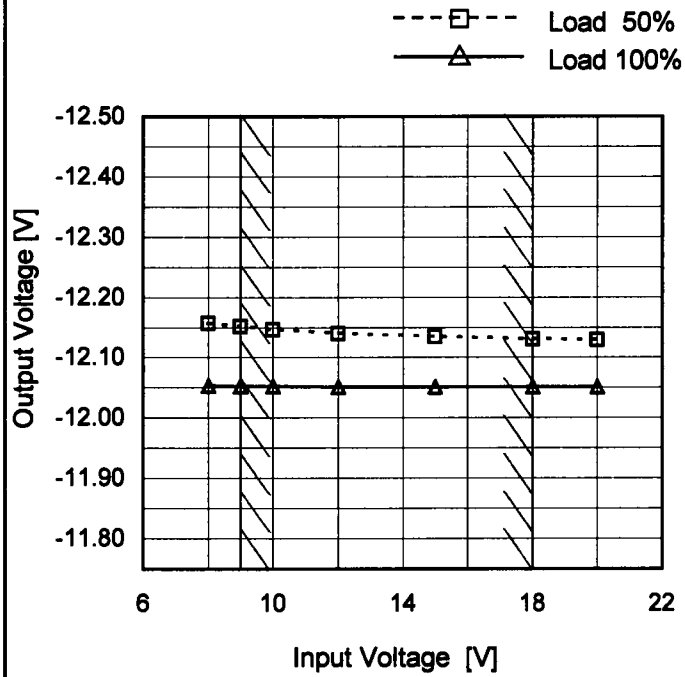


2.Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
8	12.153	12.049
9	12.148	12.049
10	12.144	12.049
12	12.138	12.049
15	12.132	12.049
18	12.129	12.050
20	12.127	12.050
--	-	-
--	-	-

Object	-12V0.45A

1.Graph



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

2.Values

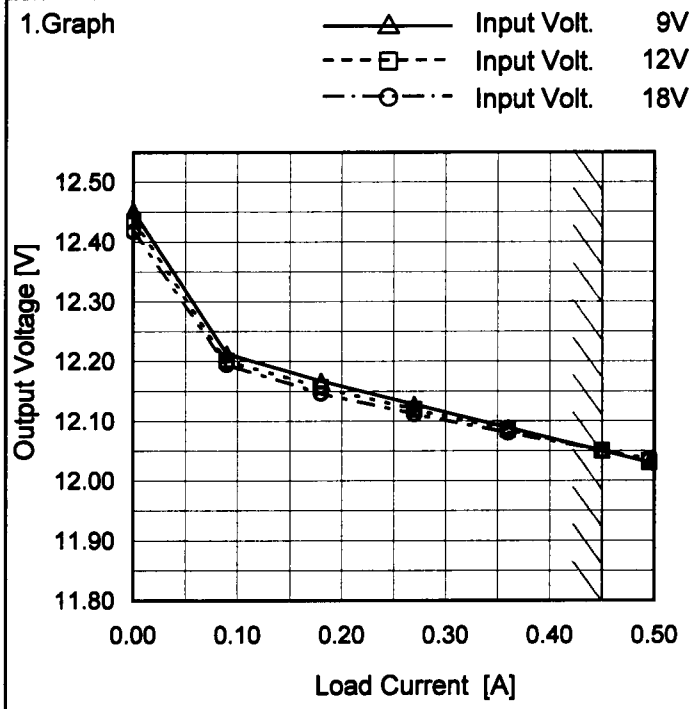
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
8	-12.157	-12.053
9	-12.151	-12.053
10	-12.147	-12.052
12	-12.140	-12.052
15	-12.134	-12.052
18	-12.131	-12.052
20	-12.129	-12.051
--	-	-
--	-	-

COSEL

Model	SUW101212/SUCW101212
Item	Load Regulation
Object	+12V0.45A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

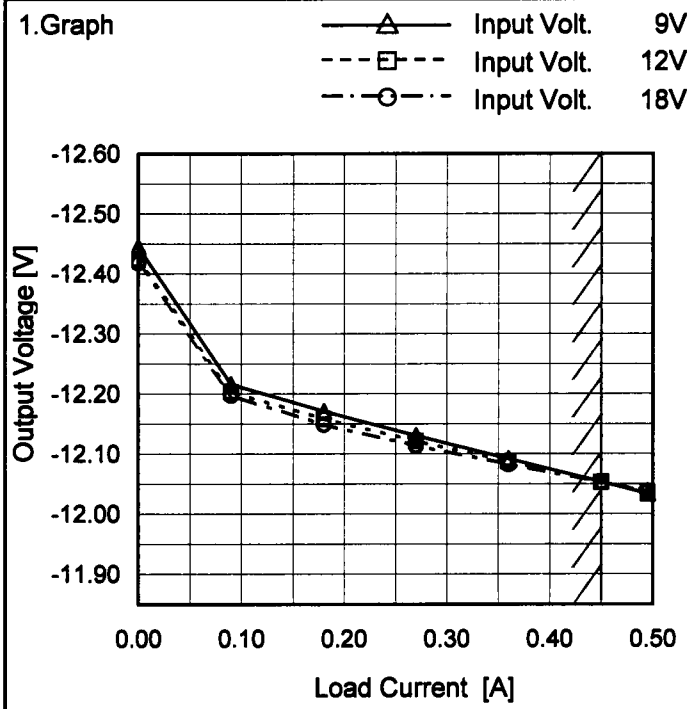


2.Values

Load Current [A]	Output Voltage [V]		
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
0.000	12.453	12.435	12.418
0.090	12.213	12.201	12.195
0.180	12.168	12.157	12.147
0.270	12.128	12.120	12.112
0.360	12.089	12.085	12.080
0.450	12.050	12.051	12.050
0.495	12.031	12.033	12.036
---	-	-	-
---	-	-	-
---	-	-	-
---	-	-	-

Object	-12V0.45A

1.Graph



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

2.Values

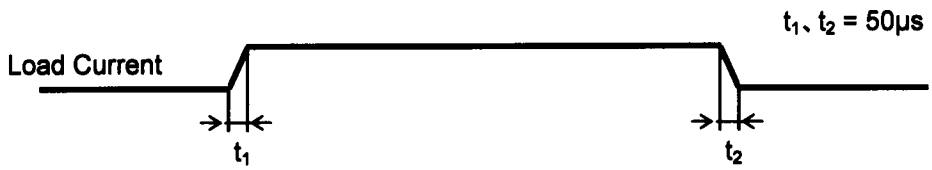
Load Current [A]	Output Voltage [V]		
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
0.000	-12.446	-12.424	-12.418
0.090	-12.216	-12.204	-12.197
0.180	-12.171	-12.159	-12.149
0.270	-12.131	-12.122	-12.114
0.360	-12.092	-12.087	-12.083
0.450	-12.054	-12.053	-12.053
0.495	-12.034	-12.036	-12.038
---	-	-	-
---	-	-	-
---	-	-	-
---	-	-	-

COSEL

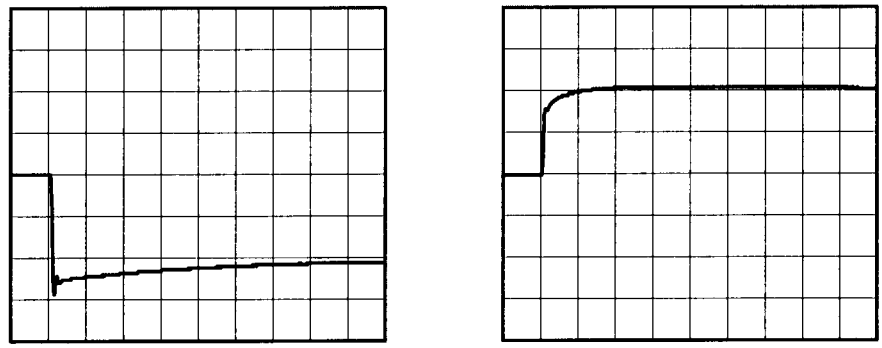
Model	SUW101212/SUCW101212
Item	Dynamic Load Response
Object	+12V0.45A

Temperature 25°C
Testing Circuitry Figure A

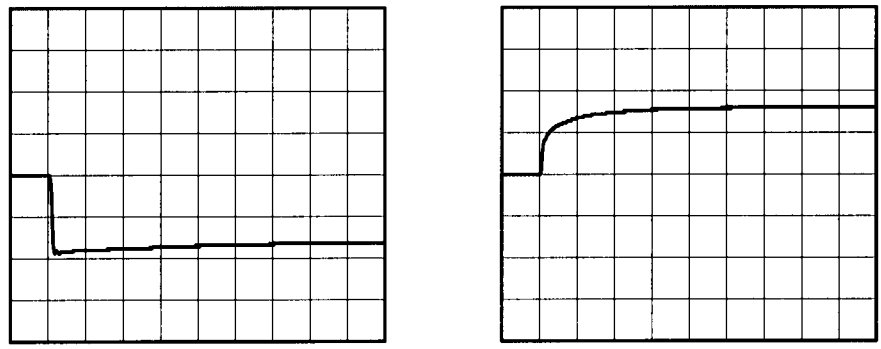
Input Volt. 12 V
Cycle 100 mS



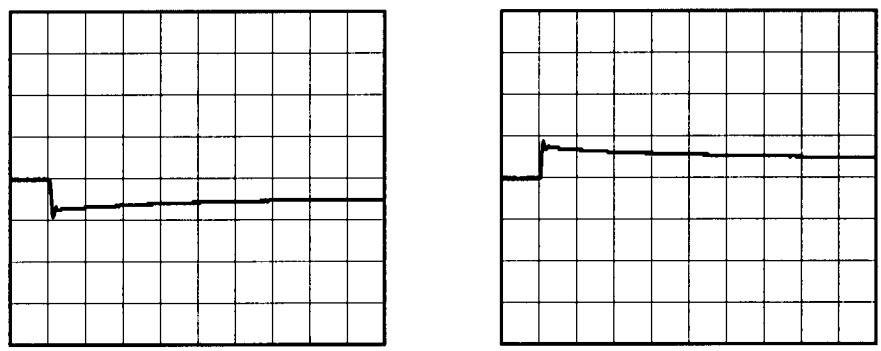
Min. Load (0A) ⟷
Load 100% (0.45A)



Min. Load (0A) ⟷
Load 50% (0.225A)



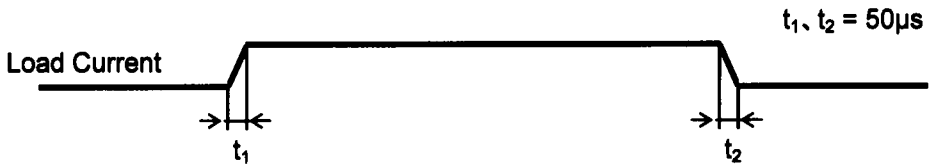
Load 50% (0.225A) ⟷
Load 100% (0.45A)



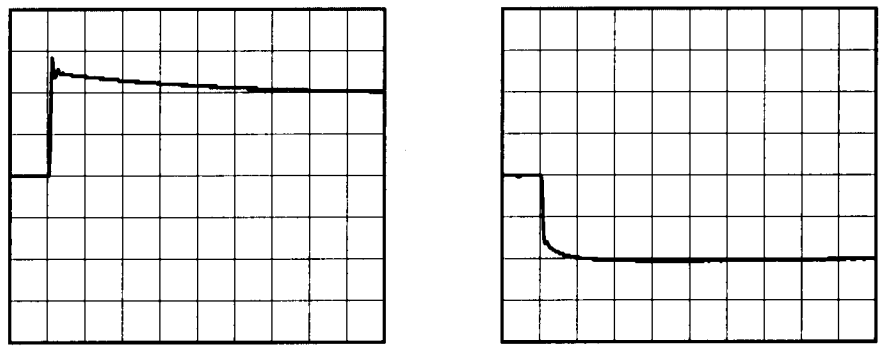
COSEL

Model	SUW101212/SUCW101212	
Item	Dynamic Load Response	Temperature 25°C Testing Circuitry Figure A
Object	-12V0.45A	

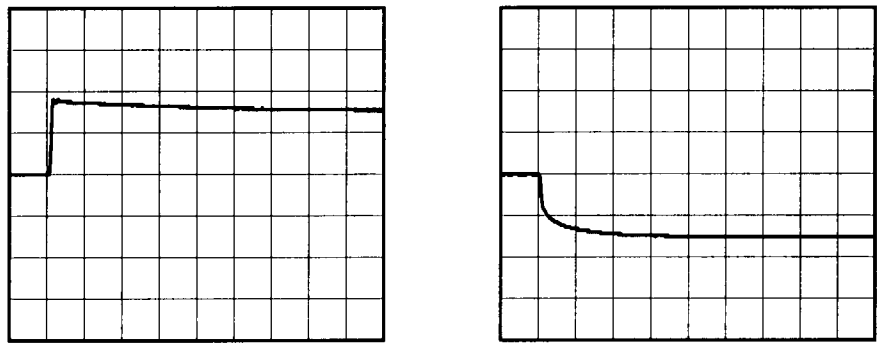
Input Volt. 12 V
Cycle 100 mS



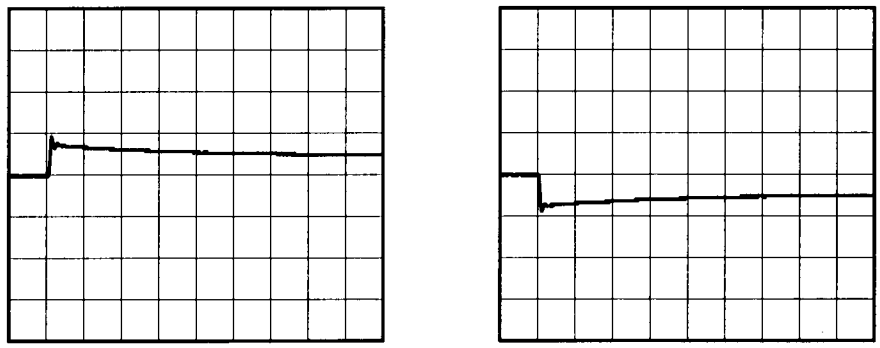
Min. Load (0A) ⟷ Load 100% (0.45A)



Min. Load (0A) ⟷ Load 50% (0.225A)



Load 50% (0.225A) ⟷ Load 100% (0.45A)

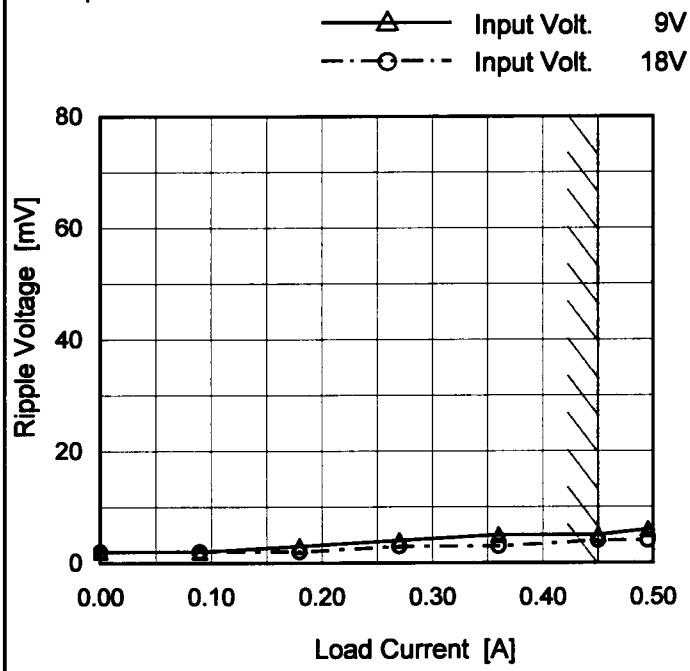


COSEL

Model	SUW101212/SUCW101212
Item	Ripple Voltage (by Load Current)
Object	+12V0.45A

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]

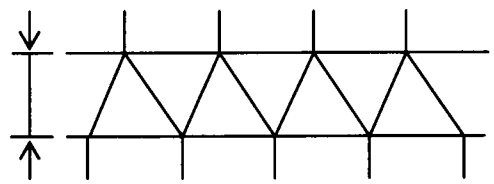


Fig.Complex Ripple Wave Form

2.Values

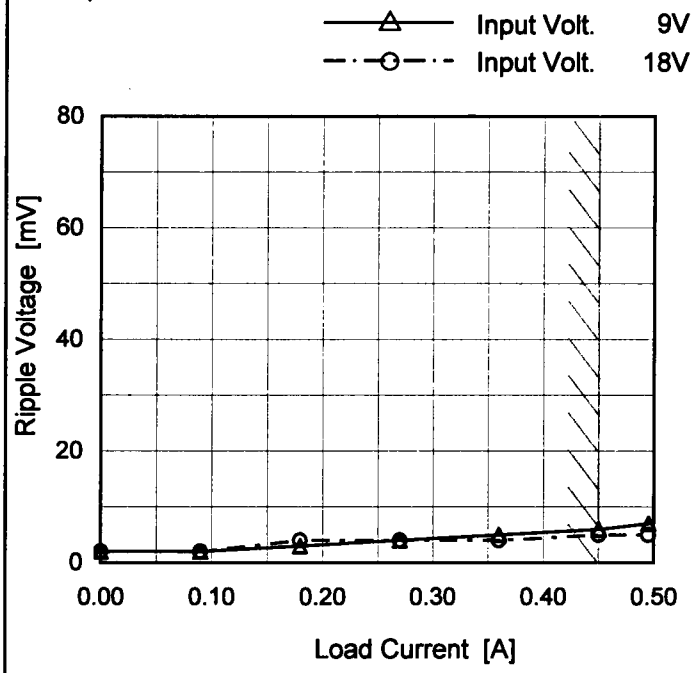
Load Current [A]	Ripple Voltage [mV] Input Volt. 9 [V]	Input Volt. 18 [V]
0.000	2	2
0.090	2	2
0.180	3	2
0.270	4	3
0.360	5	3
0.450	5	4
0.495	6	4
—	-	-
—	-	-
—	-	-
—	-	-

COSEL

Model	SUW101212/SUCW101212
Item	Ripple Voltage (by Load Current)
Object	-12V0.45A

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.

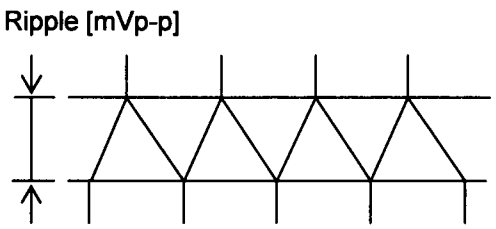


Fig.Complex Ripple Wave Form

2.Values

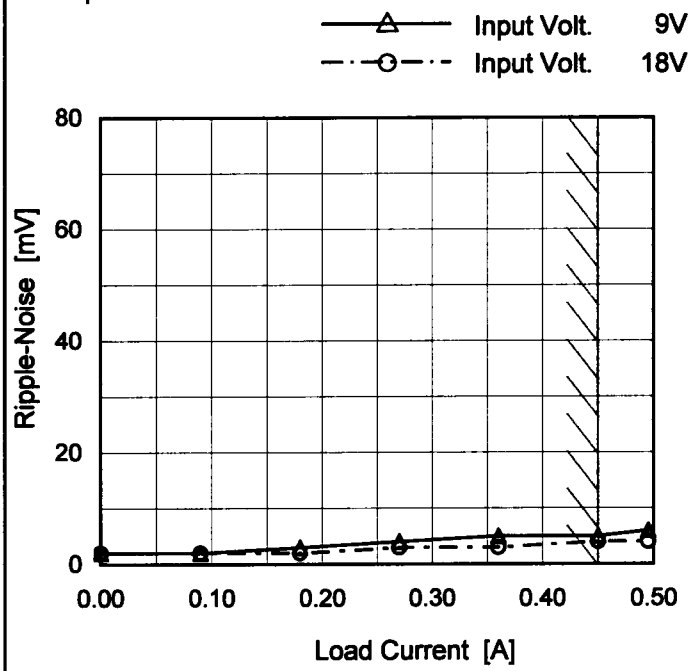
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 9 [V]	Input Volt. 18 [V]
0.000	2	2
0.090	2	2
0.180	3	4
0.270	4	4
0.360	5	4
0.450	6	5
0.495	7	5
—	-	-
—	-	-
—	-	-
—	-	-

COSEL

Model	SUW101212/SUCW101212
Item	Ripple-Noise
Object	+12V0.45A

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.

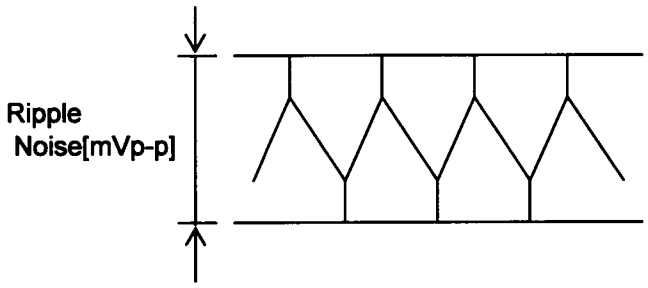


Fig.Complex Ripple Noise Wave Form

2.Values

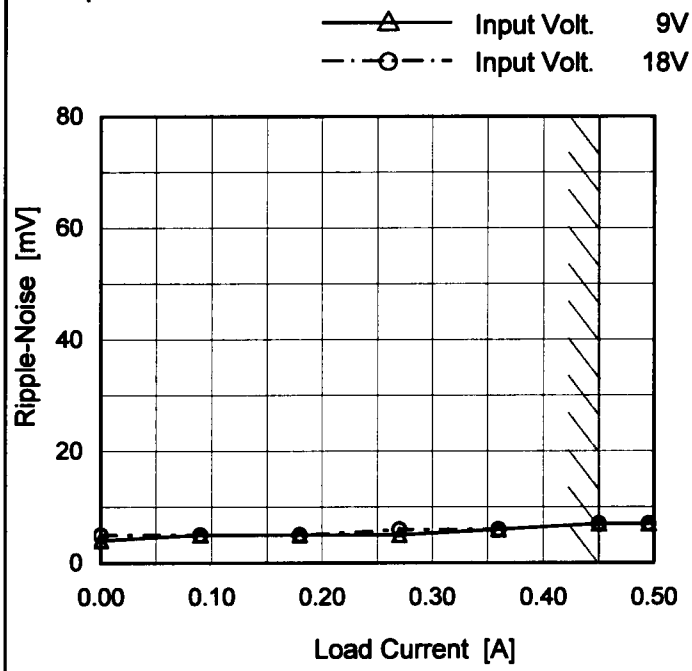
Load Current [A]	Ripple-Noise [mV] Input Volt. 9 [V]	Ripple-Noise [mV] Input Volt. 18 [V]
0.000	2	2
0.090	2	2
0.180	3	2
0.270	4	3
0.360	5	3
0.450	5	4
0.495	6	4
—	-	-
—	-	-
—	-	-
—	-	-

COSEL

Model	SUW101212/SUCW101212
Item	Ripple-Noise
Object	-12V0.45A

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.

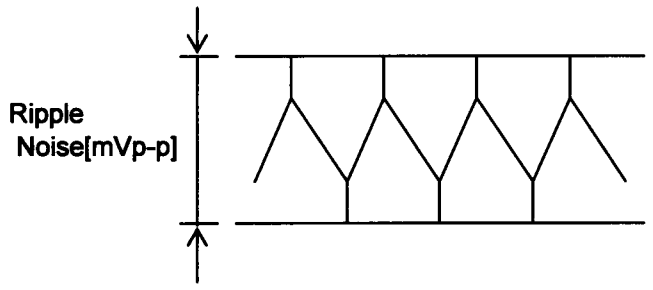


Fig.Complex Ripple Noise Wave Form

2.Values

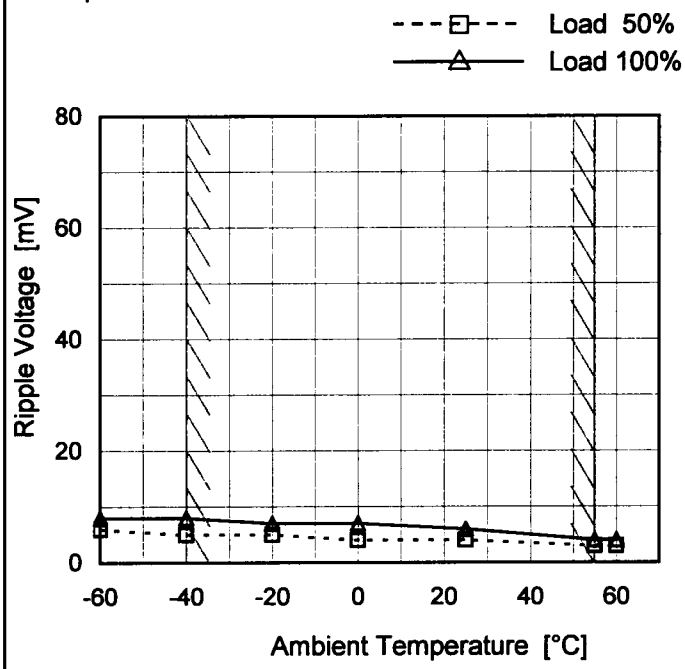
Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 9 [V]	Input Volt. 18 [V]
0.000	4	5
0.090	5	5
0.180	5	5
0.270	5	6
0.360	6	6
0.450	7	7
0.495	7	7
—	-	-
—	-	-
—	-	-
—	-	-

COSEL

Model	SUW101212/SUCW101212
Item	Ripple Voltage (by Ambient Temp.)
Object	+12V0.45A

Testing Circuitry Figure B

1.Graph



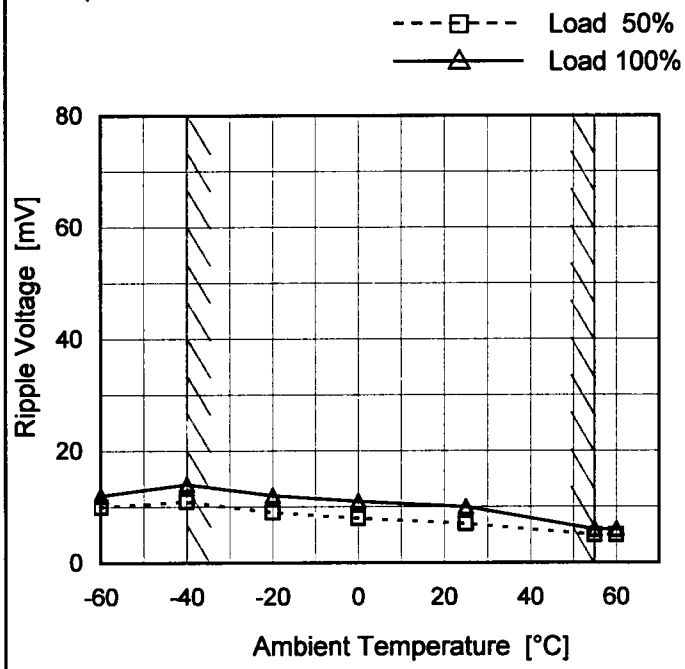
Input Volt. 12V

2.Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	6	8
-40	5	8
-20	5	7
0	4	7
25	4	6
55	3	4
60	3	4
–	-	-
–	-	-
–	-	-
–	-	-

Object	-12V0.45A

1.Graph



Input Volt. 12V

Measured by 100 MHz Oscilloscope.

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

2.Values

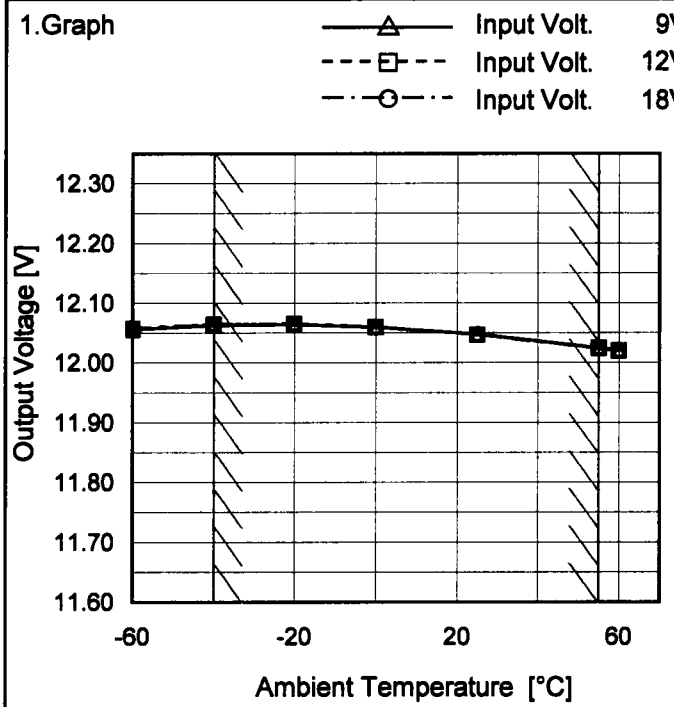
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	10	12
-40	11	14
-20	9	12
0	8	11
25	7	10
55	5	6
60	5	6
–	-	-
–	-	-
–	-	-
–	-	-

COSEL

Model	SUW101212/SUCW101212
Item	Ambient Temperature Drift
Object	+12V0.45A

Testing Circuitry Figure A

1.Graph

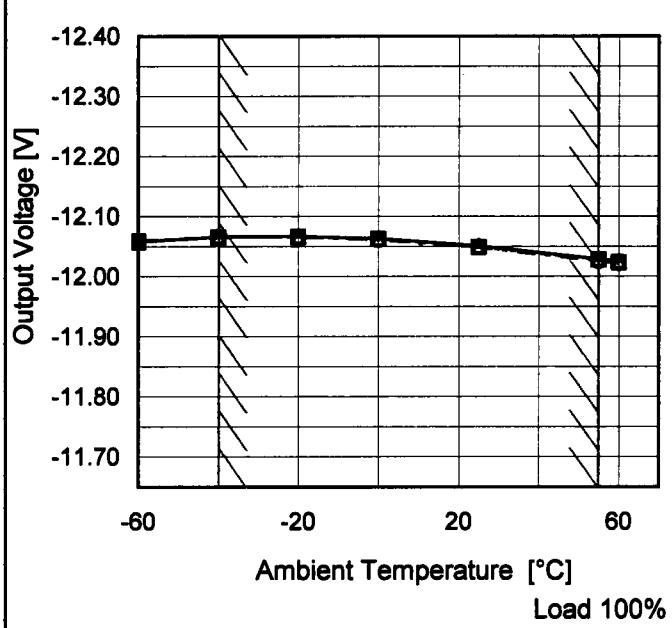


2.Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
-60	12.056	12.057	12.058
-40	12.063	12.064	12.064
-20	12.064	12.065	12.065
0	12.060	12.060	12.060
25	12.048	12.047	12.047
55	12.025	12.025	12.024
60	12.021	12.020	12.020
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

Object	-12V0.45A

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	-12.058	-12.059	-12.059
-40	-12.066	-12.065	-12.066
-20	-12.067	-12.066	-12.066
0	-12.063	-12.062	-12.061
25	-12.051	-12.049	-12.048
55	-12.029	-12.028	-12.026
60	-12.025	-12.023	-12.022
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SUW101212/SUCW101212	
Item	Output Voltage Accuracy	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 (AVR 1) : 0 - 0.45A (AVR 2) : 0 - 0.45A
* Other Output : Rated Load

* 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

Object	+12V0.45A					
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	25	9	0	12.465	±221	±1.8
Minimum Voltage	55	18	0.45	12.024		

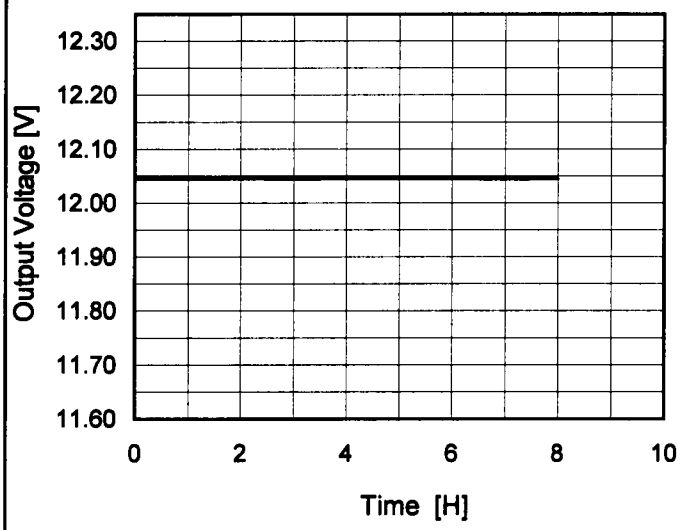
Object	-12V0.45A					
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	25	9	0	-12.458	±216	±1.8
Minimum Voltage	55	18	0.45	-12.026		

COSEL

Model	SUW101212/SUCW101212
Item	Time Lapse Drift
Object	+12V0.45A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



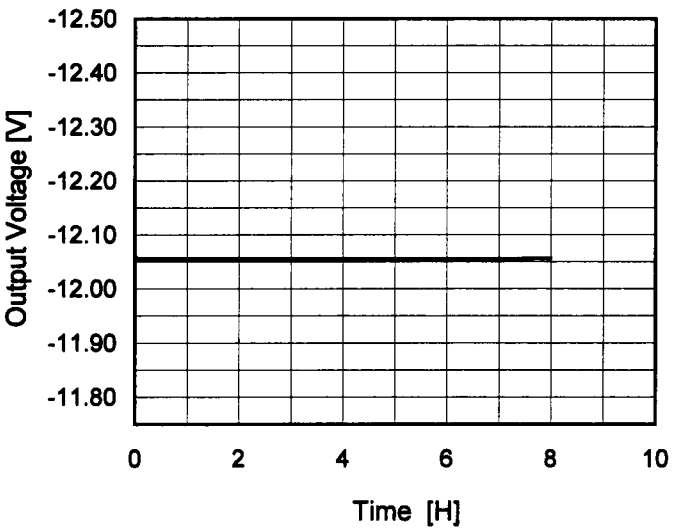
Input Volt. 12V
Load 100%

2.Values

Time since start [H]	Output Voltage [V]
0.0	12.055
0.5	12.045
1.0	12.045
2.0	12.045
3.0	12.045
4.0	12.045
5.0	12.045
6.0	12.045
7.0	12.045
8.0	12.045

Object	-12V0.45A

1.Graph



Input Volt. 12V
Load 100%

2.Values

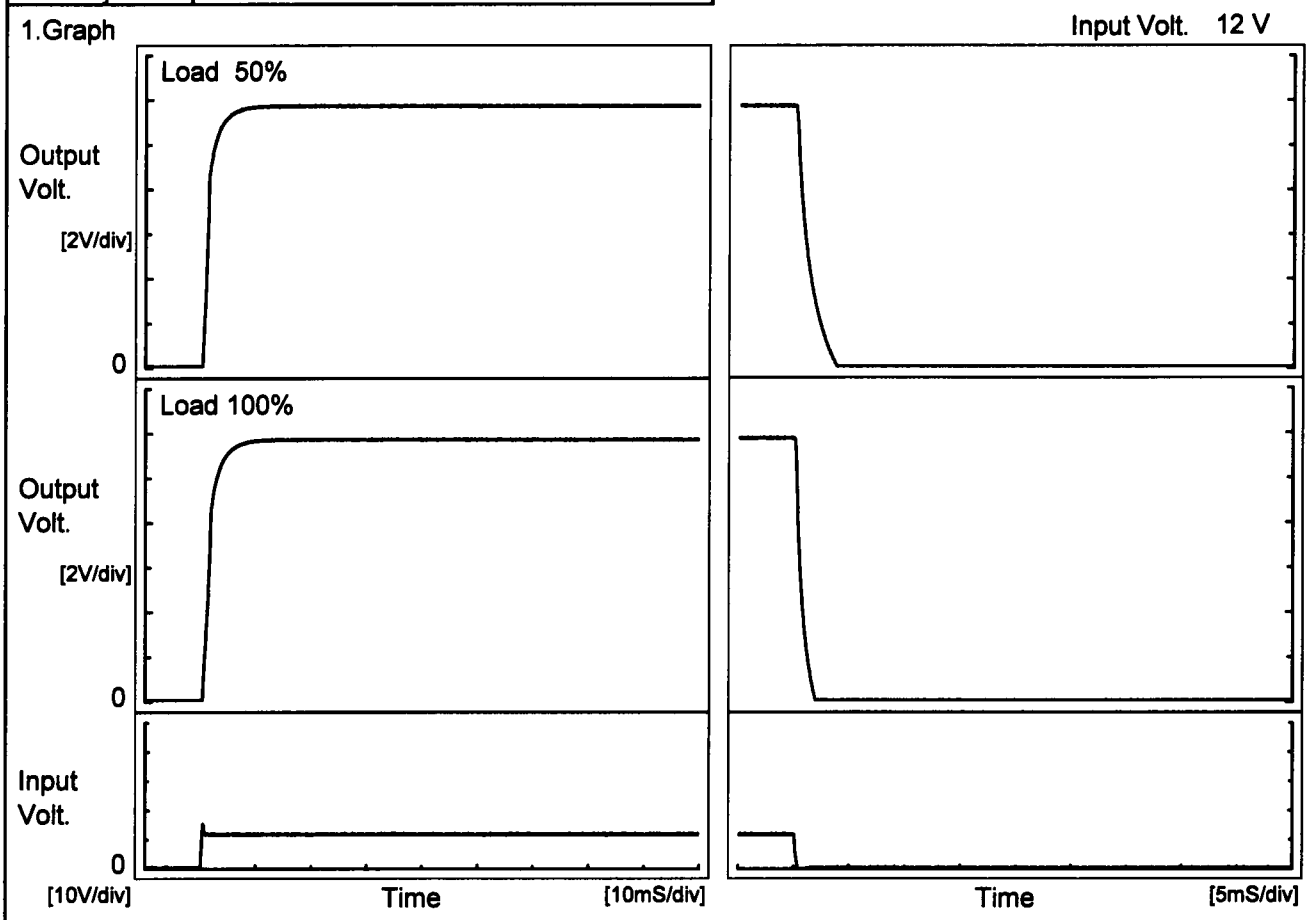
Time since start [H]	Output Voltage [V]
0.0	-12.064
0.5	-12.056
1.0	-12.056
2.0	-12.056
3.0	-12.056
4.0	-12.056
5.0	-12.056
6.0	-12.056
7.0	-12.056
8.0	-12.056

COSEL

Model	SUW101212/SUCW101212
Item	Rise and Fall Time
Object	+12V0.45A

Temperature 25°C
Testing Circuitry Figure A

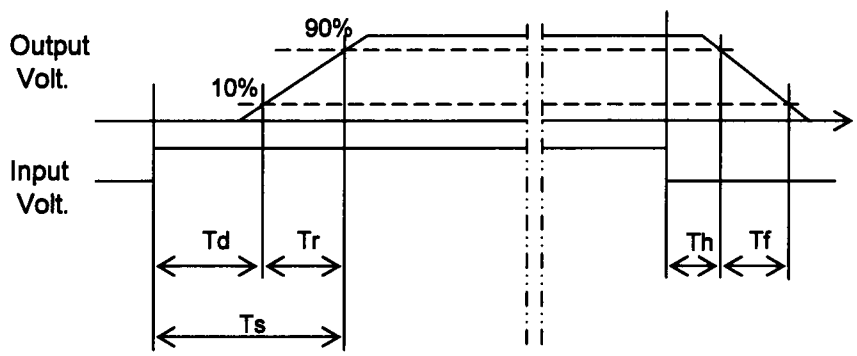
1.Graph



2.Values

[mS]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	0.5	3.4	3.9	0.3	2.5
100 %	0.6	3.8	4.4	0.2	1.3

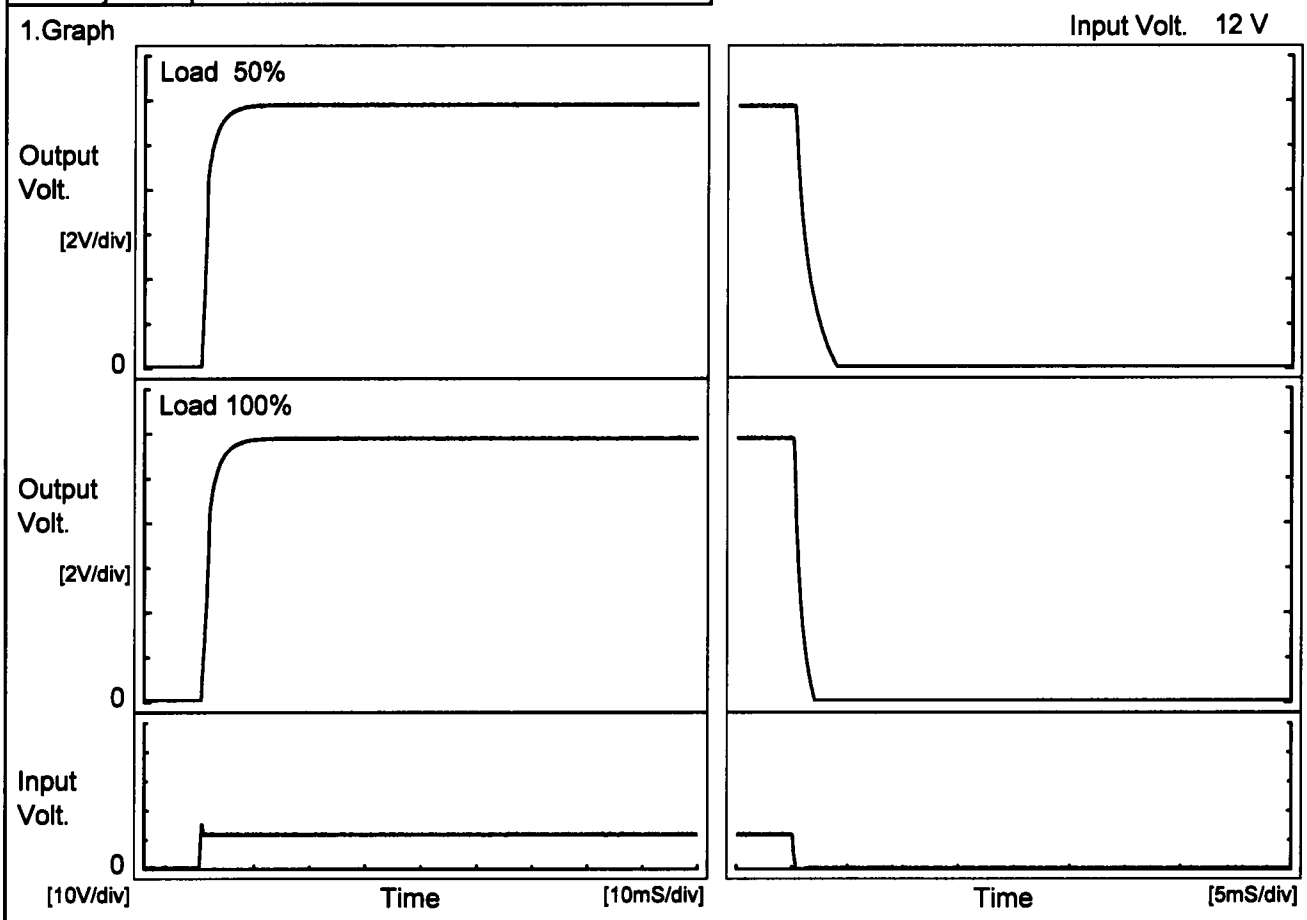


COSEL

Model	SUW101212/SUCW101212
Item	Rise and Fall Time
Object	-12V0.45A

Temperature 25°C
Testing Circuitry Figure A

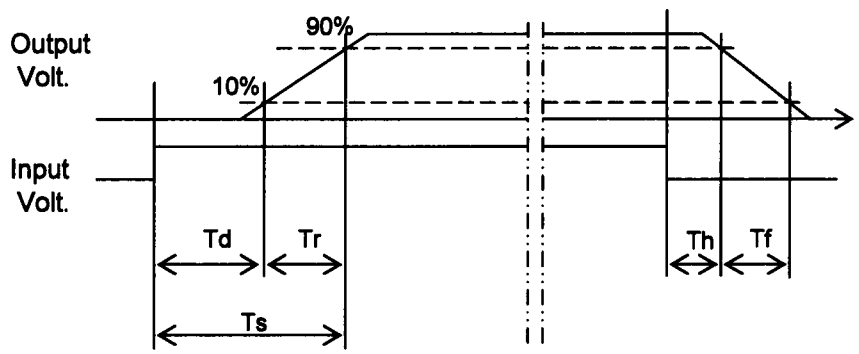
1.Graph



2.Values

[mS]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	0.5	3.2	3.7	0.3	2.6
100 %	0.6	3.6	4.2	0.2	1.3

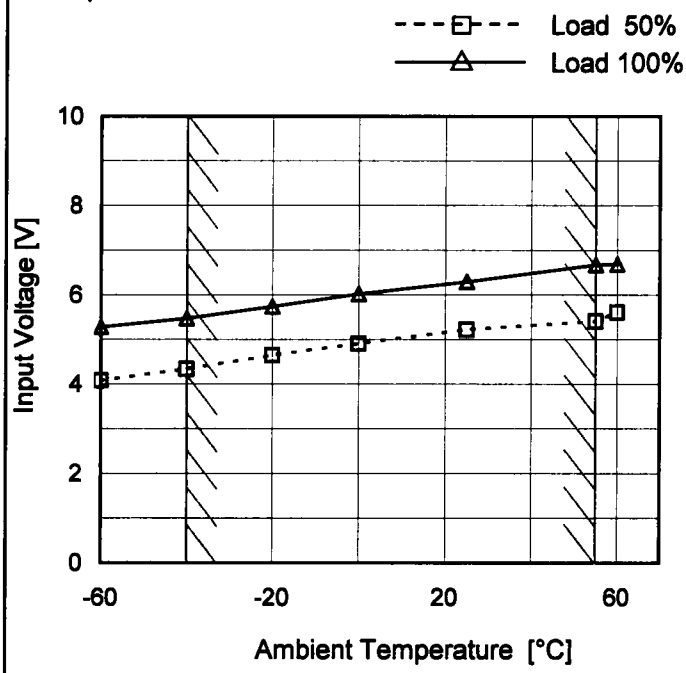


COSEL

Model	SUW101212/SUCW101212
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+12V0.45A

Testing Circuitry Figure A

1.Graph

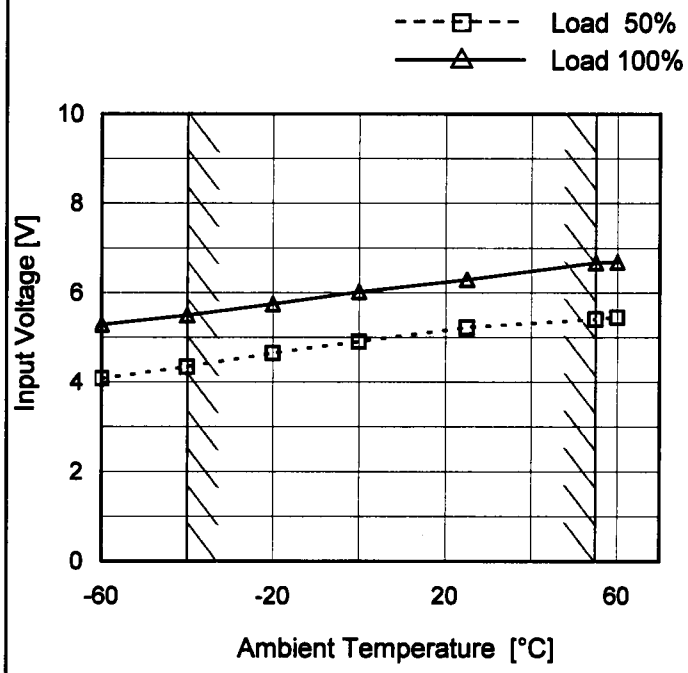


2.Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	4.1	5.3
-40	4.4	5.5
-20	4.7	5.8
0	4.9	6.1
25	5.3	6.3
55	5.5	6.7
60	5.6	6.7
--	-	-
--	-	-
--	-	-
--	-	-

Object	-12V0.45A

1.Graph



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

2.Values

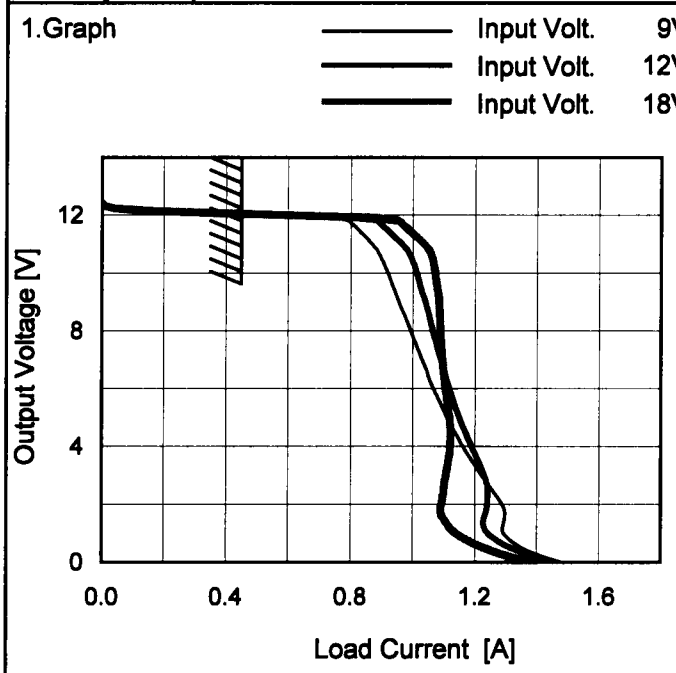
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	4.1	5.3
-40	4.4	5.5
-20	4.7	5.8
0	4.9	6.1
25	5.3	6.3
55	5.5	6.7
60	5.5	6.7
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SUW101212/SUCW101212
Item	Overcurrent Protection
Object	+12V0.45A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

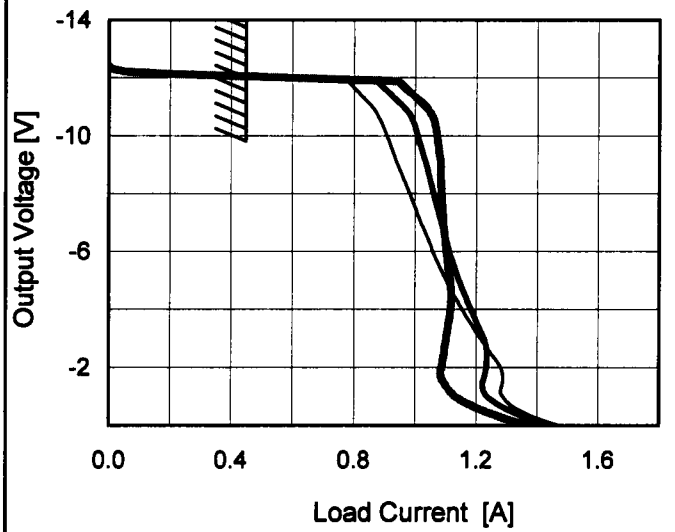


2.Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
12.0	0.55	0.59	0.64
11.4	0.83	0.93	1.00
10.8	0.89	0.98	1.05
9.6	0.94	1.02	1.08
8.4	0.98	1.05	1.09
7.2	1.02	1.09	1.09
6.0	1.07	1.12	1.11
4.8	1.12	1.16	1.12
3.6	1.19	1.21	1.12
2.4	1.27	1.24	1.10
1.2	1.29	1.23	1.12
0.0	1.48	1.46	1.39

Object	-12V0.45A

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	0.61	0.66	0.70
-11.4	0.83	0.93	1.00
-10.8	0.88	0.98	1.05
-9.6	0.92	1.02	1.08
-8.4	0.97	1.05	1.09
-7.2	1.01	1.08	1.09
-6.0	1.06	1.11	1.10
-4.8	1.11	1.15	1.12
-3.6	1.18	1.20	1.11
-2.4	1.25	1.24	1.09
-1.2	1.28	1.23	1.12
0.0	1.49	1.47	1.41

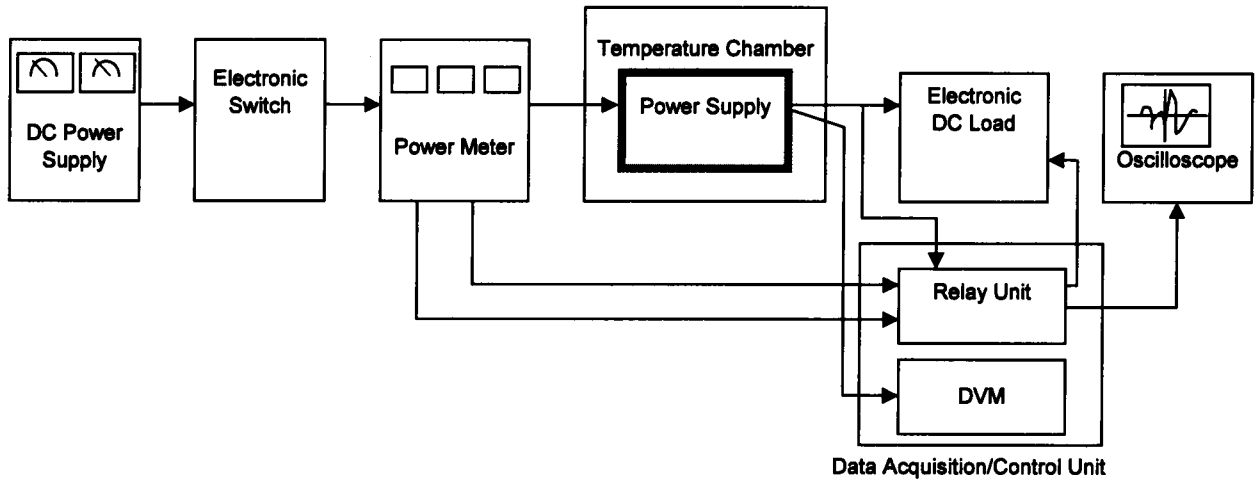


Figure A

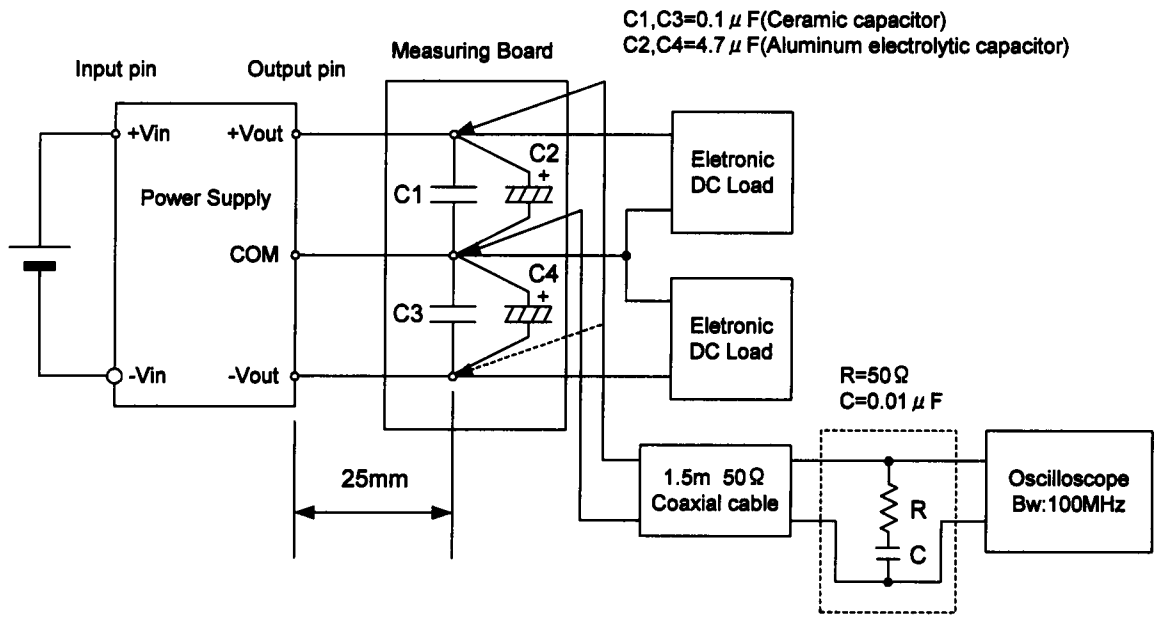


Figure B (Ripple and Ripple noise Characteristic)