参考資料

COSEL

TEST DATA OF SUS31212

Regulated DC Power Supply
Mar 10, 2005

Approved by : Tetsuo Sugimori
Tetsuo Sugimori — Design Manager

Prepared by : Hayato Nakatsubo
Hayato Nakatsubo — Design Engineer

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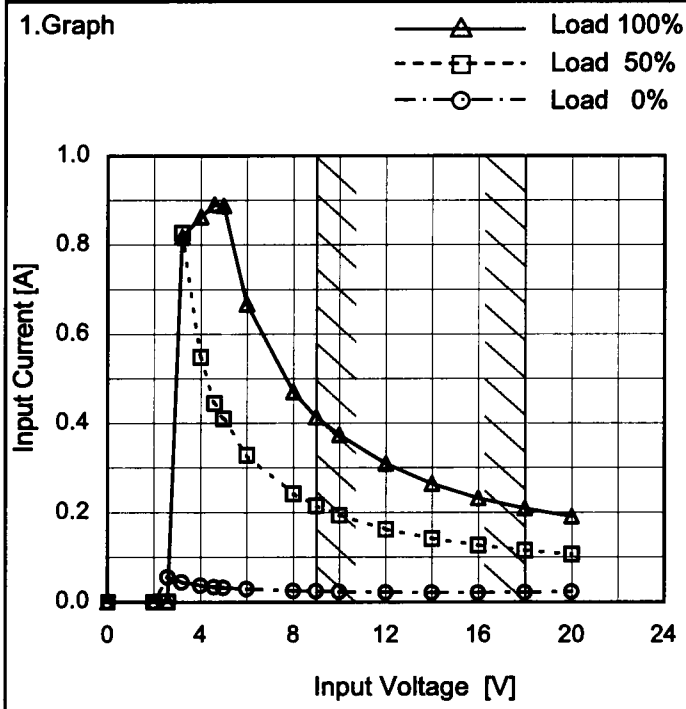
COSEL

Model	SUS31212
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
2.6	0.055	0.001	0.000
3.2	0.044	0.827	0.818
4.0	0.037	0.549	0.863
4.6	0.033	0.446	0.891
5.0	0.032	0.410	0.888
6.0	0.029	0.329	0.668
8.0	0.025	0.242	0.471
9.0	0.023	0.216	0.414
10.0	0.022	0.194	0.374
12.0	0.021	0.163	0.309
14.0	0.020	0.142	0.264
16.0	0.020	0.126	0.232
18.0	0.021	0.115	0.209
20.0	0.022	0.106	0.191
--	-	-	-
--	-	-	-

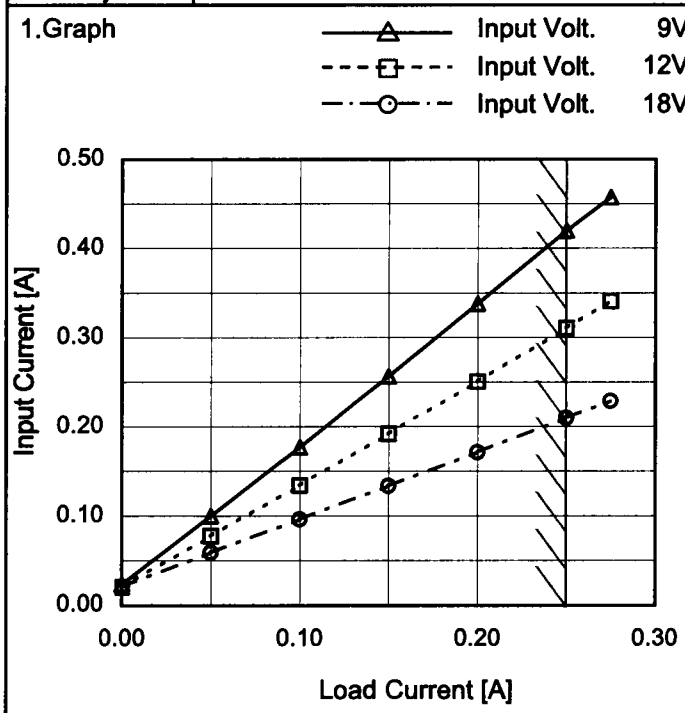
BC-3749

COSEL

Model	SUS31212
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

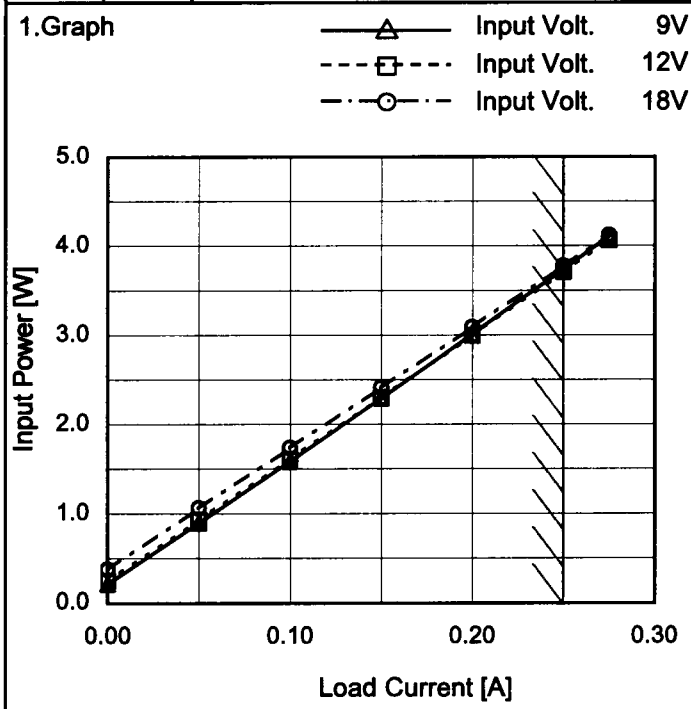
Load Current [A]	Input Current [A]		
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
0.000	0.023	0.021	0.021
0.050	0.100	0.078	0.059
0.100	0.177	0.135	0.096
0.150	0.257	0.192	0.134
0.200	0.338	0.251	0.171
0.250	0.420	0.311	0.210
0.275	0.457	0.341	0.229
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SUS31212
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

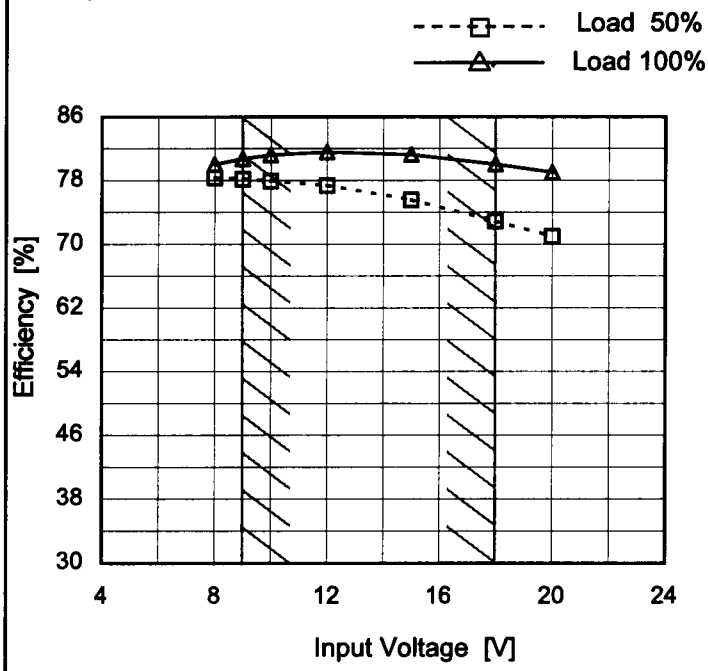
Load Current [A]	Input Power [W]		
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
0.000	0.21	0.25	0.38
0.050	0.90	0.93	1.06
0.100	1.58	1.61	1.74
0.150	2.29	2.30	2.41
0.200	3.01	3.00	3.09
0.250	3.74	3.71	3.78
0.275	4.11	4.07	4.12
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SUS31212
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

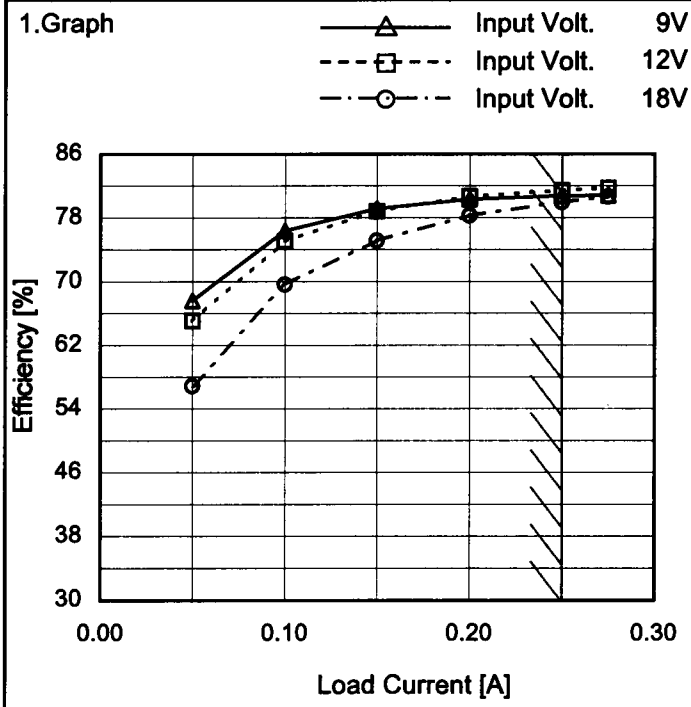
Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
8	78.4	80.0
9	78.2	80.7
10	78.0	81.2
12	77.4	81.6
15	75.6	81.3
18	72.9	80.0
20	71.0	79.1
--	-	-
--	-	-

COSEL

Model	SUS31212
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

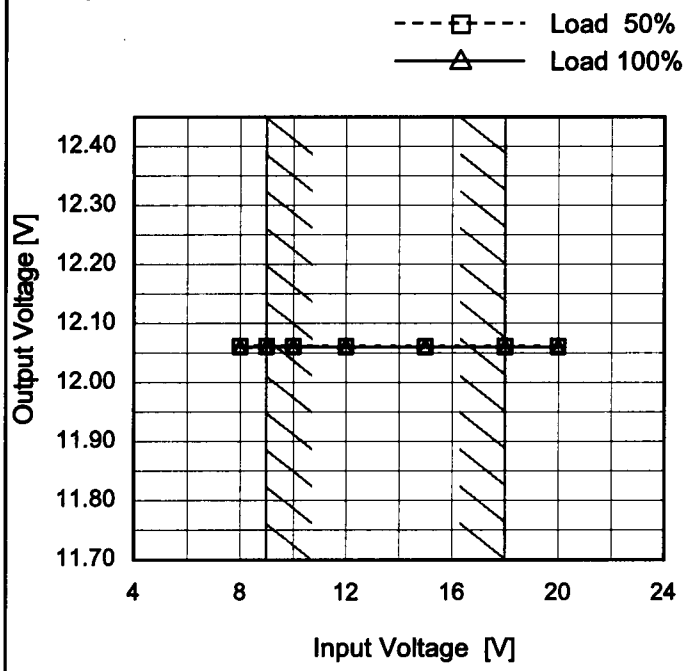
Load Current [A]	Efficiency [%]		
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]
0.000	-	-	-
0.050	67.6	65.1	56.9
0.100	76.4	75.1	69.6
0.150	79.1	78.8	75.2
0.200	80.3	80.7	78.3
0.250	80.8	81.4	80.0
0.275	80.8	81.7	80.6
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SUS31212
Item	Line Regulation
Object	+12V0.25A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

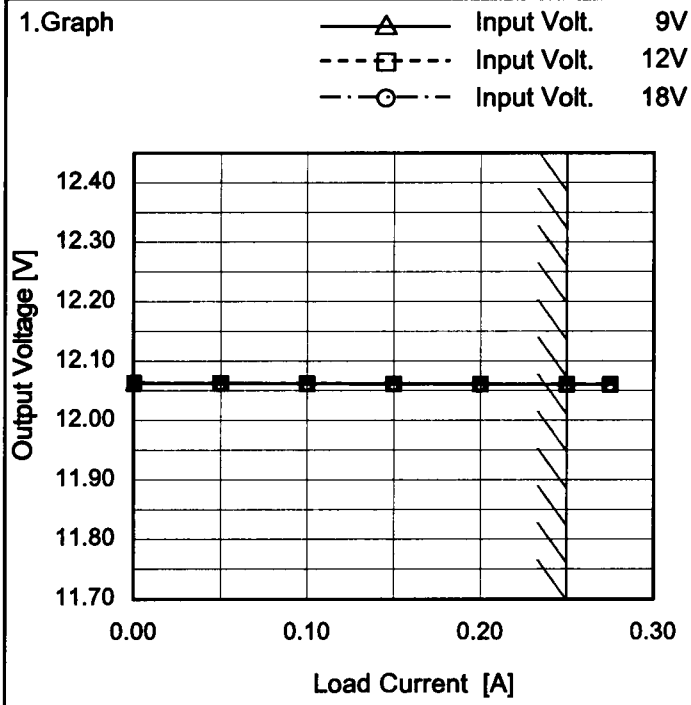
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
8	12.062	12.060
9	12.062	12.061
10	12.062	12.061
12	12.062	12.060
15	12.061	12.060
18	12.062	12.060
20	12.062	12.060
--	-	-
--	-	-

COSEL

Model	SUS31212
Item	Load Regulation
Object	+12V0.25A

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]
0.000	12.063	12.063	12.063
0.050	12.063	12.063	12.062
0.100	12.062	12.062	12.062
0.150	12.062	12.061	12.062
0.200	12.061	12.061	12.061
0.250	12.060	12.061	12.060
0.275	12.060	12.060	12.060
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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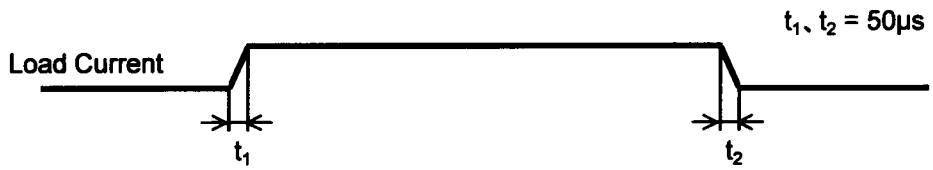
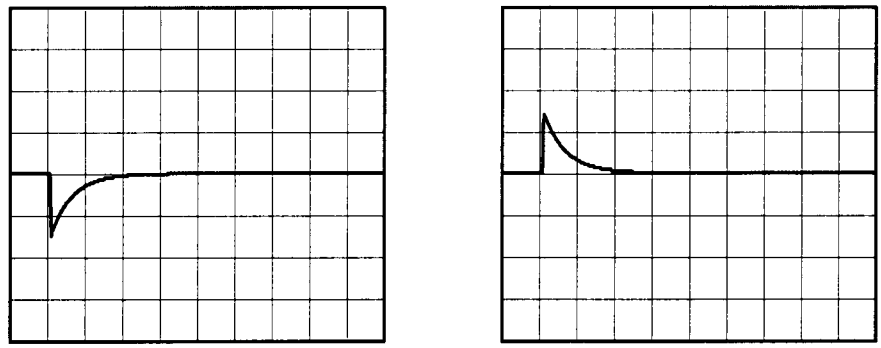
Model	SUS31212
Item	Dynamic Load Response
Object	+12V0.25A

Temperature 25°C
Testing Circuitry Figure A

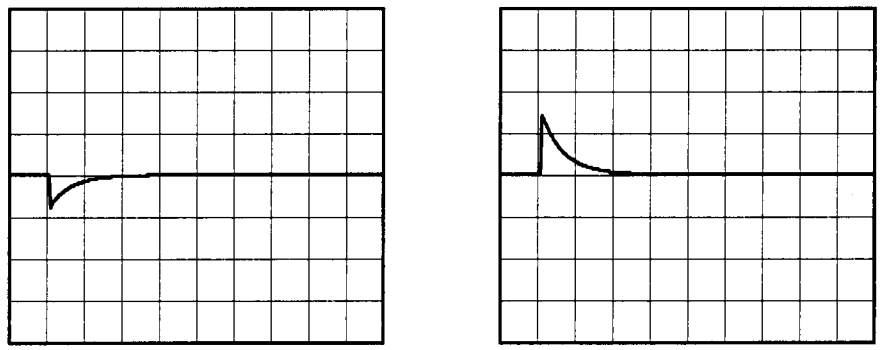
Input Volt. 12 V
Cycle 100 mS



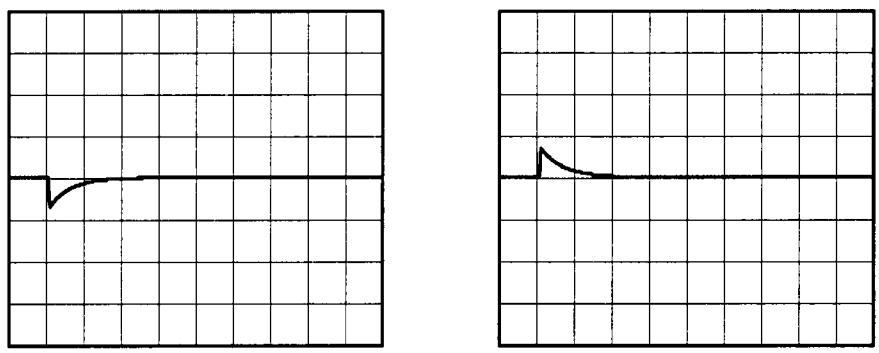
Min. Load (0A) ⟷
Load 100% (0.25A)



Min. Load (0A) ⟷
Load 50% (0.125A)



Load 50% (0.125A) ⟷
Load 100% (0.25A)

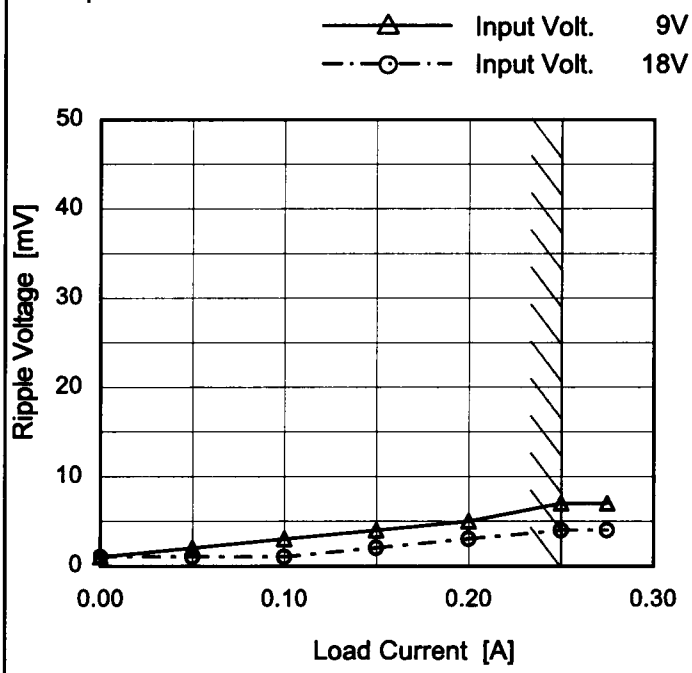


COSEL

Model	SUS31212
Item	Ripple Voltage (by Load Current)
Object	+12V0.25A

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]

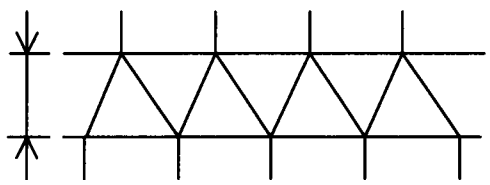


Fig.Complex Ripple Wave Form

2.Values

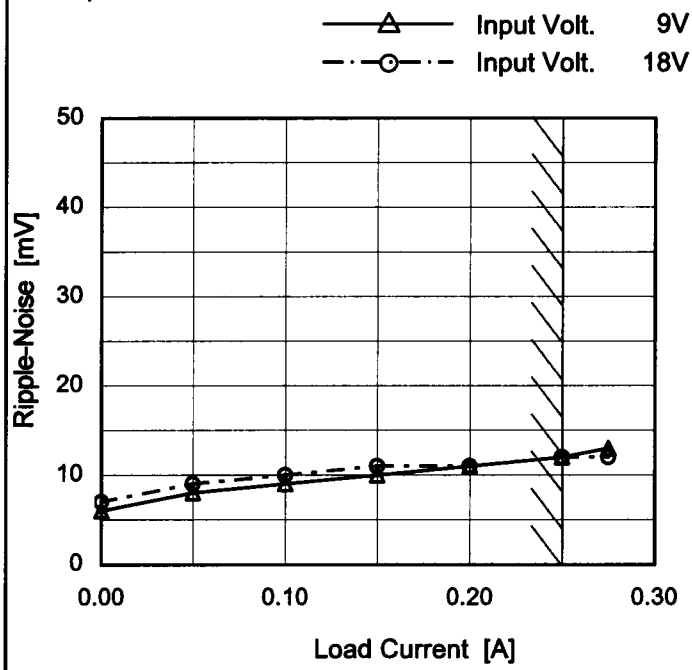
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 9 [V]	Input Volt. 18 [V]
0.000	1	1
0.050	2	1
0.100	3	1
0.150	4	2
0.200	5	3
0.250	7	4
0.275	7	4
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SUS31212
Item	Ripple-Noise
Object	+12V0.25A

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.

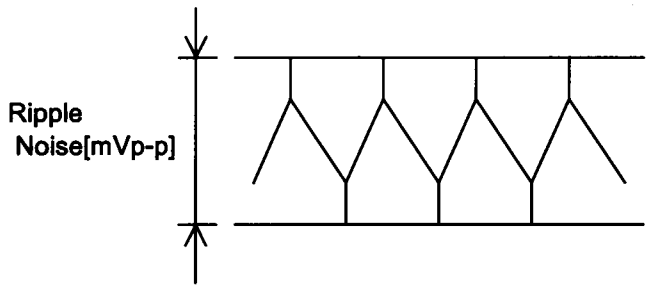


Fig.Complex Ripple Noise Wave Form

2.Values

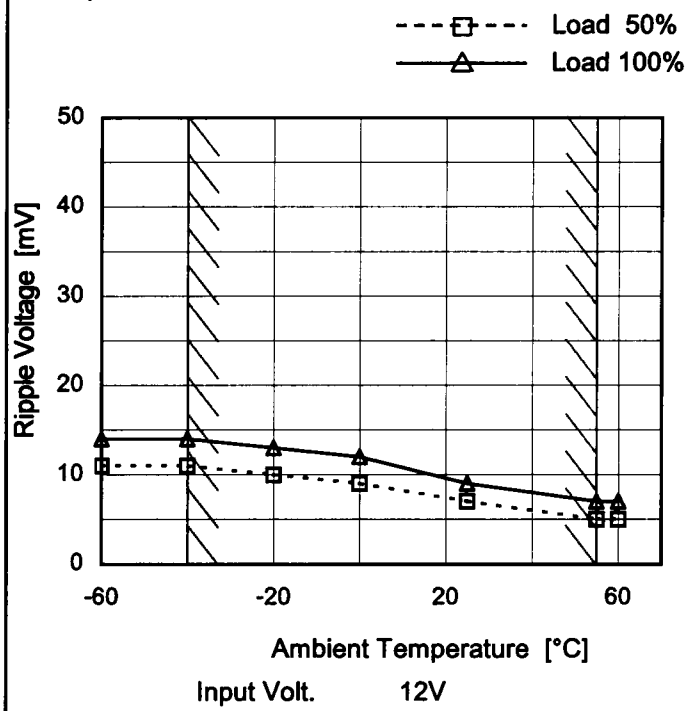
Load Current [A]	Ripple-Noise [mV] Input Volt. 9 [V]	Ripple-Noise [mV] Input Volt. 18 [V]
0.000	6	7
0.050	8	9
0.100	9	10
0.150	10	11
0.200	11	11
0.250	12	12
0.275	13	12
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SUS31212
Item	Ripple Voltage (by Ambient Temp.)
Object	+12V0.25A

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

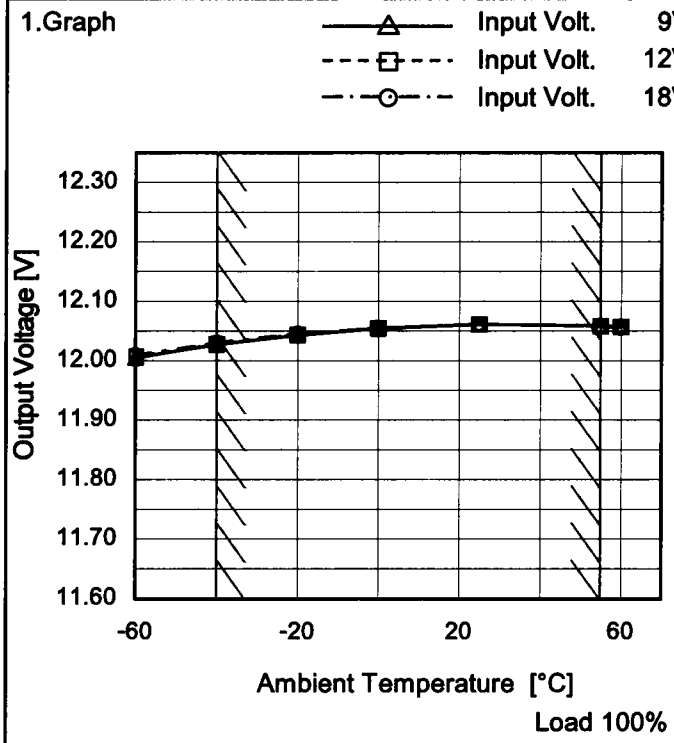
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	11	14
-40	11	14
-20	10	13
0	9	12
25	7	9
55	5	7
60	5	7
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SUS31212
Item	Ambient Temperature Drift
Object	+12V0.25A

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	12.005	12.007	12.009
-40	12.027	12.028	12.030
-20	12.043	12.044	12.045
0	12.054	12.055	12.055
25	12.061	12.061	12.061
55	12.059	12.058	12.058
60	12.057	12.057	12.056
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SUS31212	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+12V0.25A	

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 - 0.25A

* 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

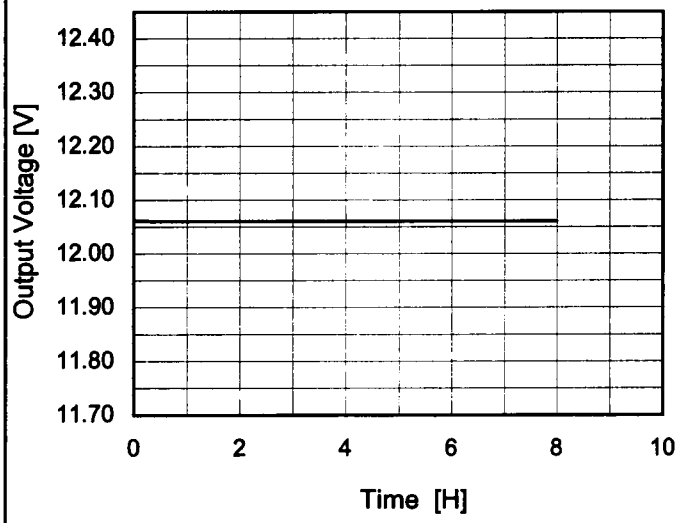
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	25	9	0	12.063	±18	±0.2
Minimum Voltage	-40	9	0.25	12.027		

COSEL

Model	SUS31212
Item	Time Lapse Drift
Object	+12V0.25A

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	12.063
0.5	12.061
1.0	12.061
2.0	12.061
3.0	12.061
4.0	12.061
5.0	12.061
6.0	12.061
7.0	12.061
8.0	12.061

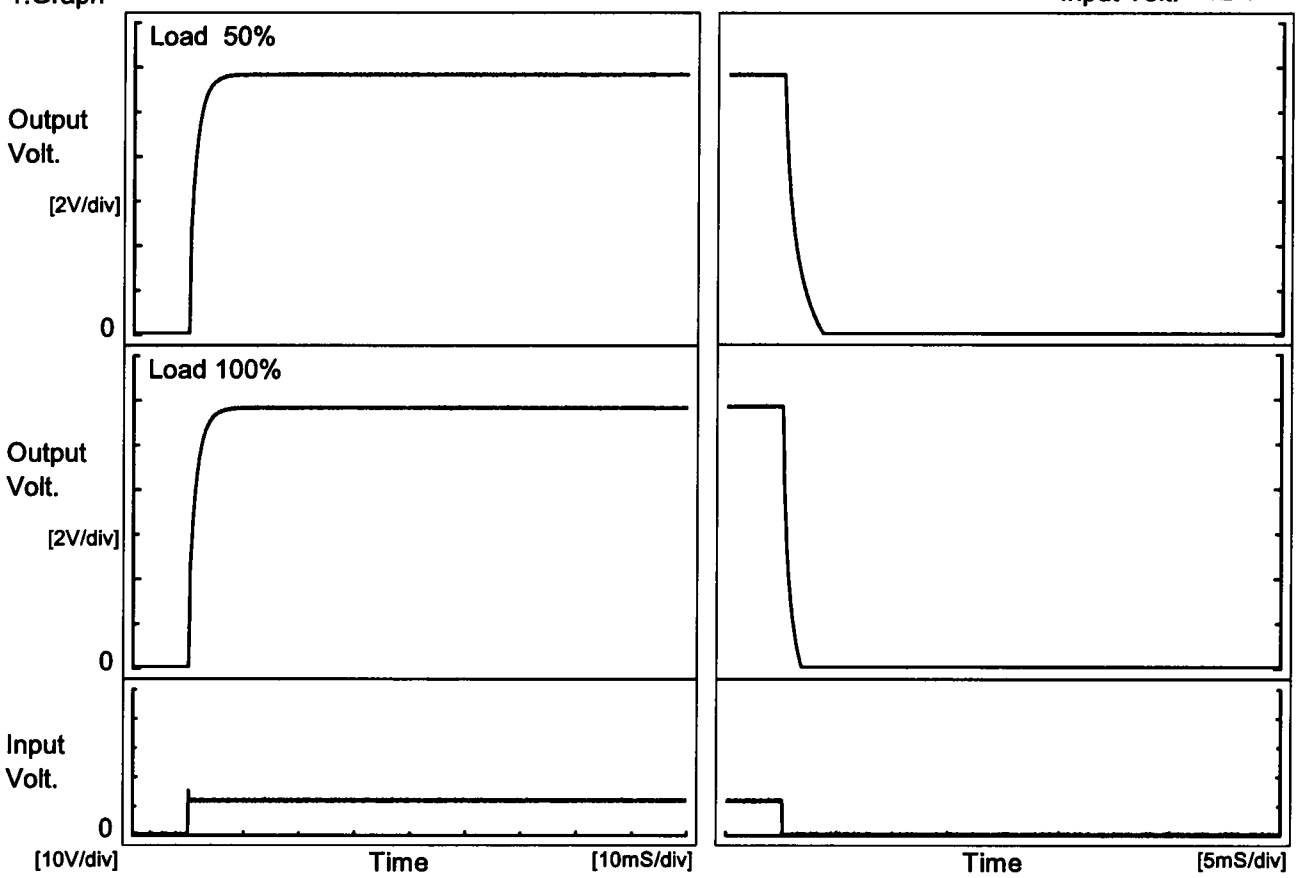
COSEL

Model	SUS31212
Item	Rise and Fall Time
Object	+12V0.25A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

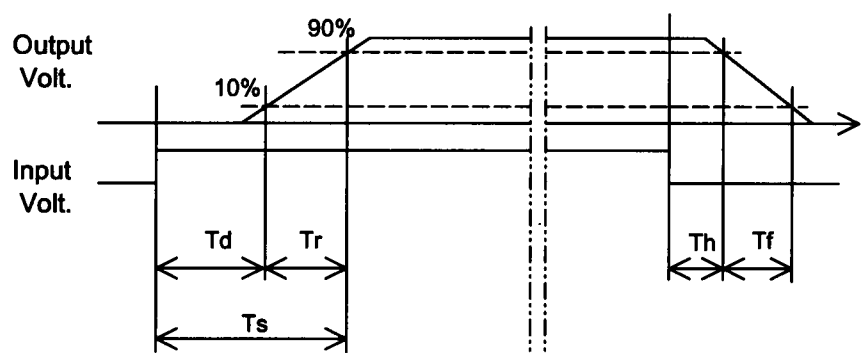
Input Volt. 12 V



2.Values

[mS]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	0.1	3.3	3.4	0.1	2.4
100 %	0.1	3.4	3.5	0.1	1.2

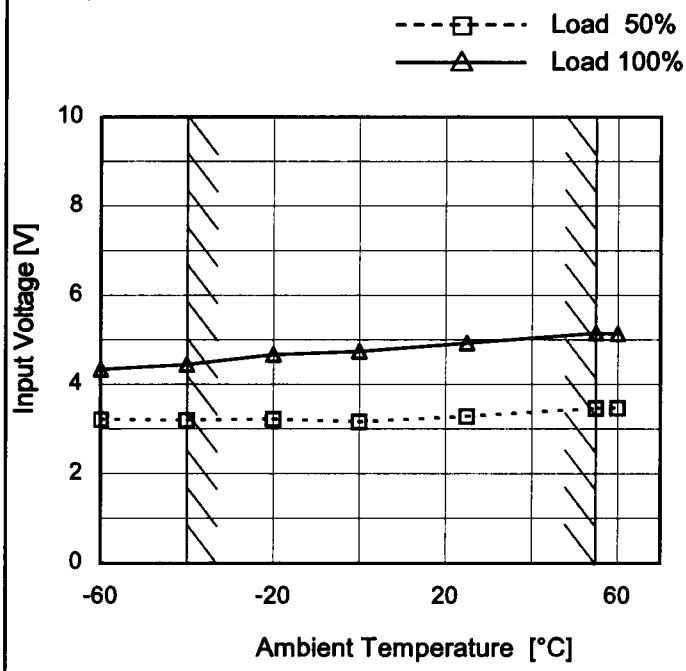


COSEL

Model	SUS31212
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+12V0.25A

Testing Circuitry Figure A

1.Graph



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

2.Values

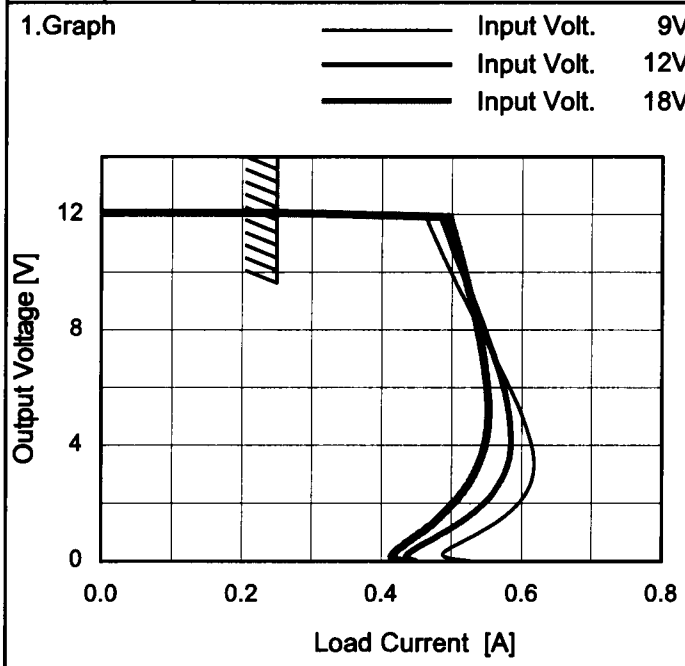
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	3.3	4.4
-40	3.2	4.5
-20	3.3	4.7
0	3.2	4.8
25	3.3	5.0
55	3.5	5.2
60	3.5	5.2
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SUS31212
Item	Overcurrent Protection
Object	+12V0.25A

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	0.25	0.25	0.25
11.4	0.47	0.49	0.50
10.8	0.48	0.50	0.51
9.6	0.51	0.52	0.52
8.4	0.53	0.54	0.53
7.2	0.56	0.56	0.54
6.0	0.58	0.57	0.55
4.8	0.60	0.58	0.55
3.6	0.62	0.58	0.54
2.4	0.61	0.56	0.52
1.2	0.56	0.51	0.47
0.0	0.53	0.45	0.43

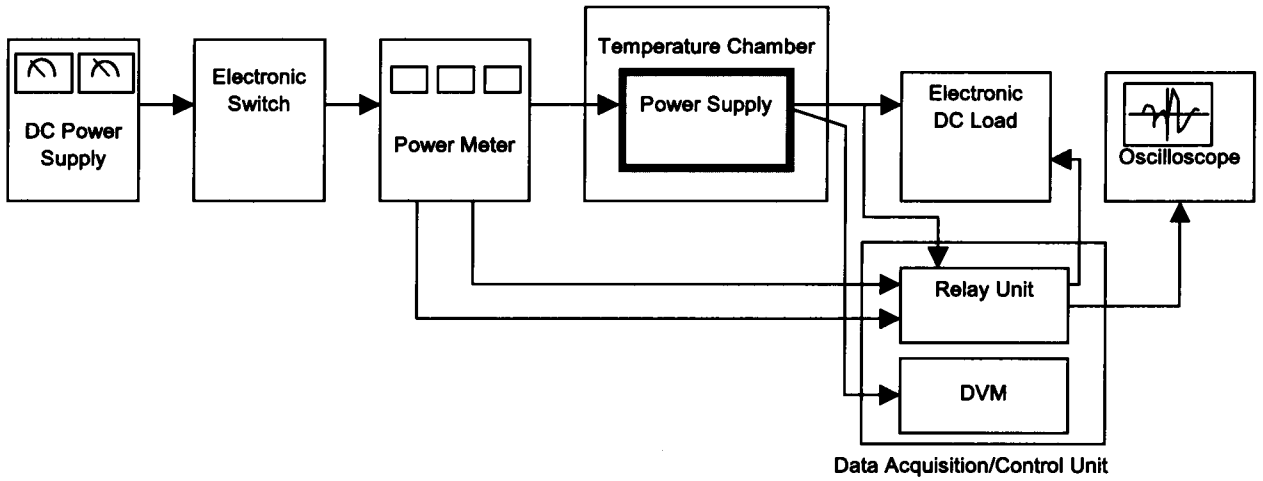


Figure A

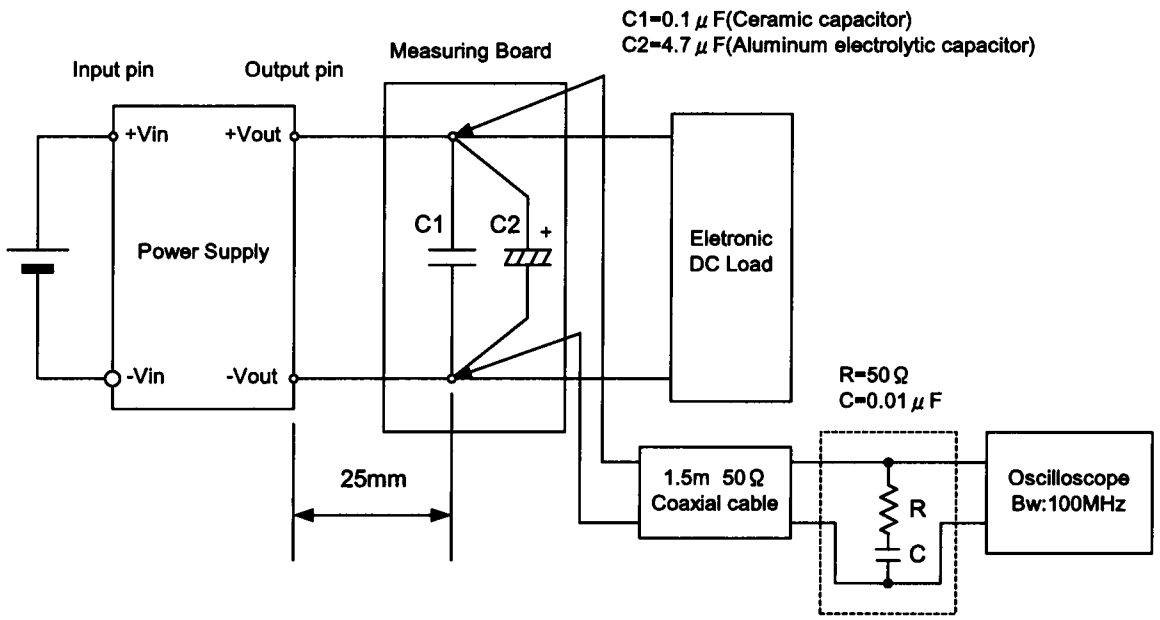


Figure B (Ripple and Ripple noise Characteristic)