参考資料

COSEL

TEST DATA OF SUS32412

Regulated DC Power Supply
Mar 8, 2005

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COSEL CO.,LTD.

参考資料

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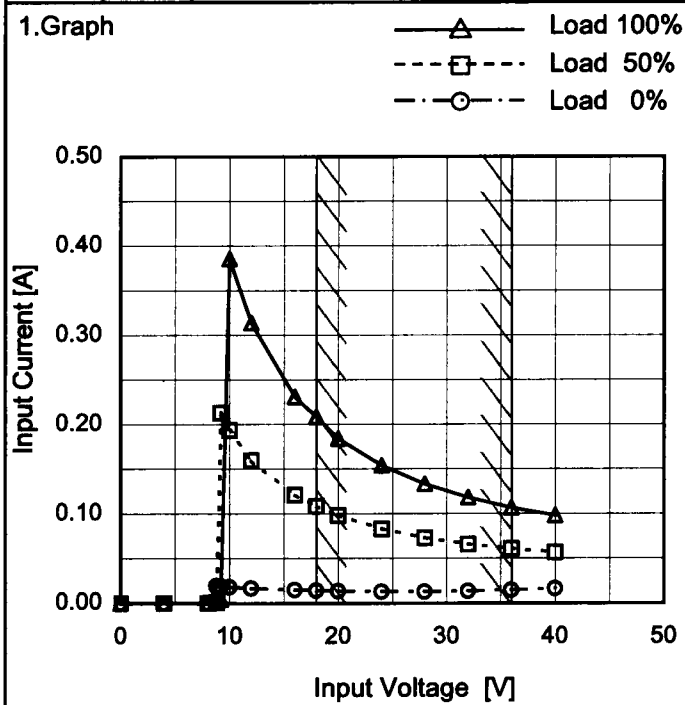
COSEL

Model	SUS32412
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
4.0	0.000	0.000	0.000
8.0	0.000	0.000	0.000
8.8	0.019	0.001	0.001
9.2	0.019	0.213	0.004
10.0	0.018	0.194	0.386
12.0	0.017	0.160	0.314
16.0	0.015	0.121	0.231
18.0	0.014	0.108	0.209
20.0	0.013	0.098	0.184
24.0	0.013	0.083	0.154
28.0	0.013	0.073	0.133
32.0	0.013	0.066	0.118
36.0	0.014	0.061	0.107
40.0	0.016	0.057	0.098
--	-	-	-
--	-	-	-
--	-	-	-

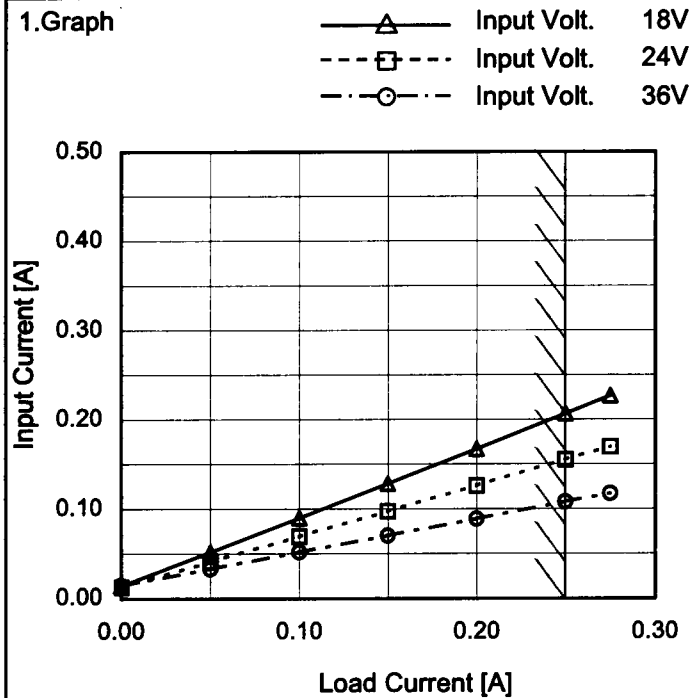
BC-3755

COSEL

Model	SUS32412
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

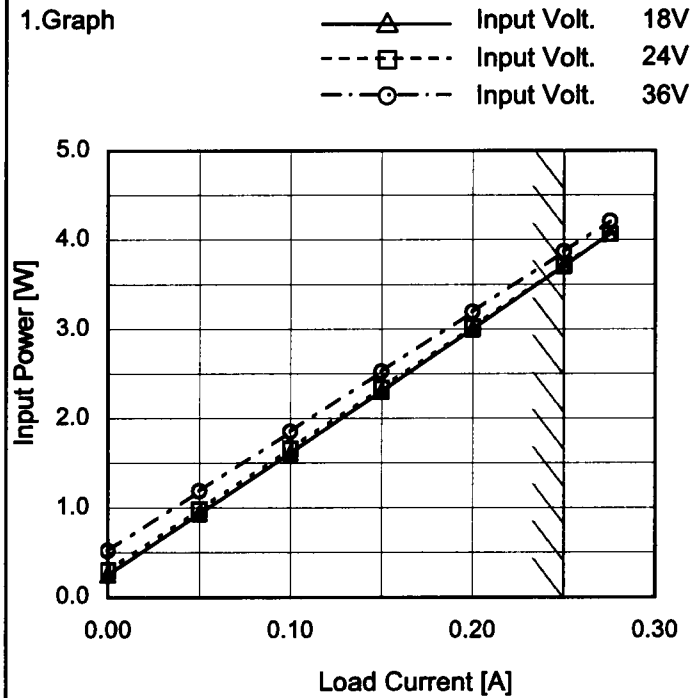
Load Current [A]	Input Current [A]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.000	0.014	0.013	0.014
0.050	0.052	0.041	0.033
0.100	0.090	0.069	0.052
0.150	0.128	0.098	0.070
0.200	0.167	0.126	0.089
0.250	0.207	0.155	0.108
0.275	0.227	0.170	0.117
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SUS32412
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

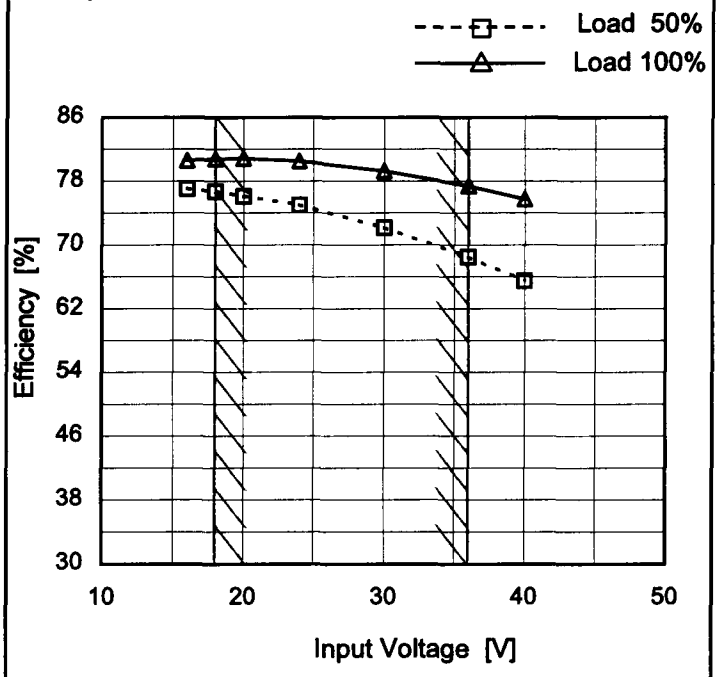
Load Current [A]	Input Power [W]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.000	0.25	0.30	0.52
0.050	0.93	0.99	1.19
0.100	1.61	1.66	1.86
0.150	2.30	2.34	2.52
0.200	3.00	3.03	3.19
0.250	3.71	3.72	3.87
0.275	4.06	4.07	4.21
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SUS32412
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

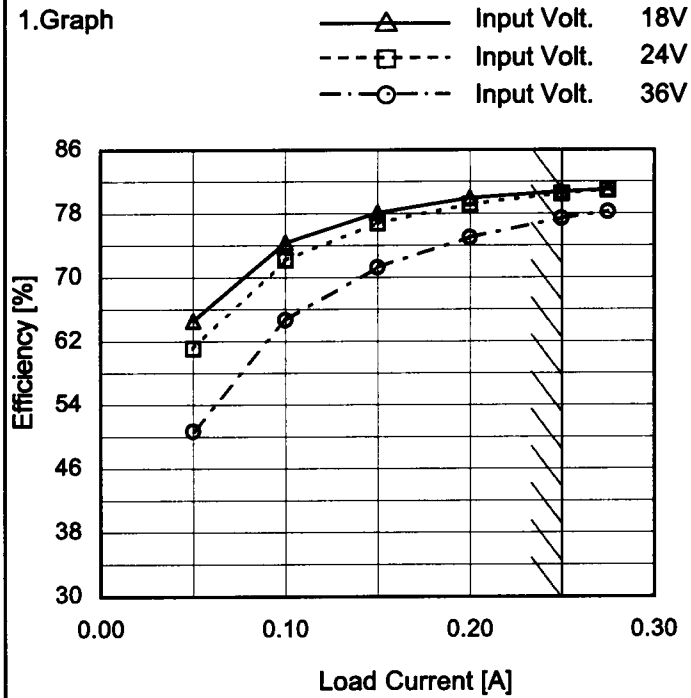
Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
16	77.1	80.6
18	76.7	80.8
20	76.1	80.8
24	75.0	80.5
30	72.2	79.3
36	68.5	77.4
40	65.5	75.7
--	-	-
--	-	-

COSEL

Model	SUS32412
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

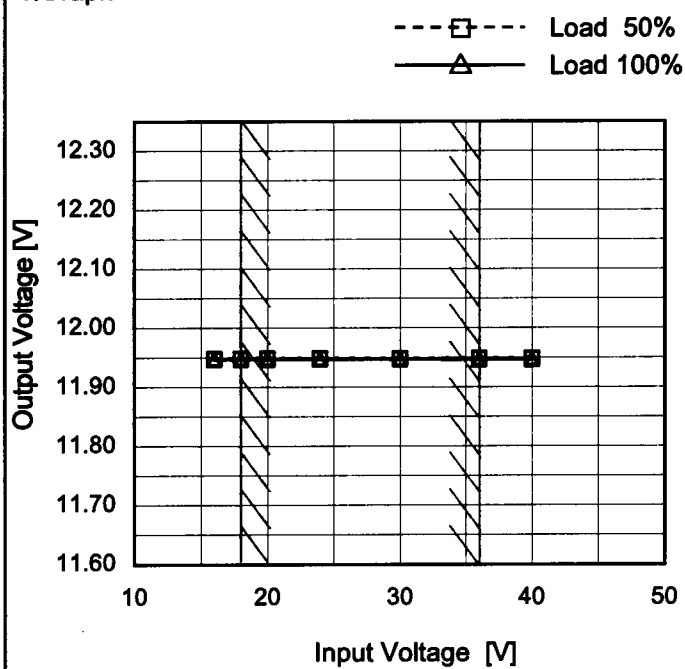
Load Current [A]	Efficiency [%]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.000	-	-	-
0.050	64.6	61.1	50.7
0.100	74.4	72.2	64.7
0.150	78.1	76.8	71.3
0.200	79.9	79.2	75.0
0.250	80.8	80.5	77.4
0.275	81.0	81.0	78.2
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SUS32412
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

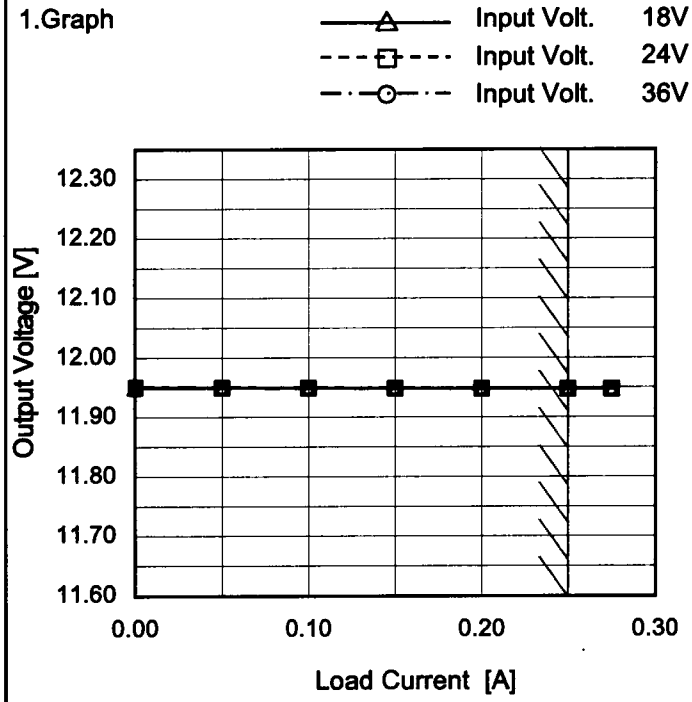
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
16	11.948	11.947
18	11.949	11.947
20	11.949	11.947
24	11.949	11.947
30	11.949	11.947
36	11.949	11.947
40	11.949	11.947
--	-	-
--	-	-

COSEL

Model	SUS32412
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. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.000	11.950	11.950	11.951
0.050	11.950	11.950	11.950
0.100	11.949	11.949	11.949
0.150	11.949	11.949	11.949
0.200	11.948	11.948	11.948
0.250	11.948	11.948	11.948
0.275	11.947	11.947	11.947
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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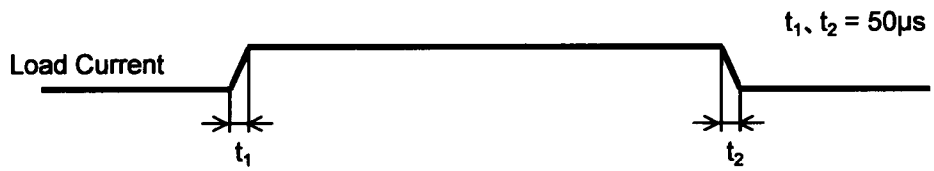
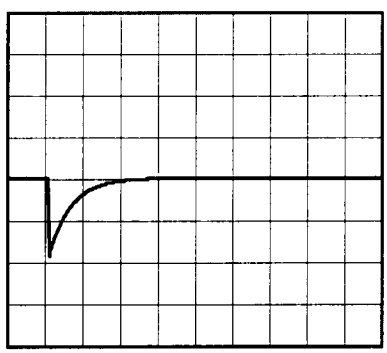
Model	SUS32412
Item	Dynamic Load Response
Object	+12V0.25A

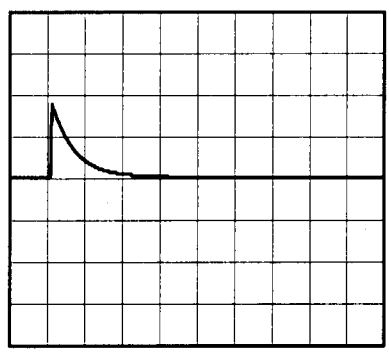
Temperature 25°C
Testing Circuitry Figure A

Input Volt. 24 V
Cycle 100 mS



Min. Load (0A) ←→
Load 100% (0.25A)

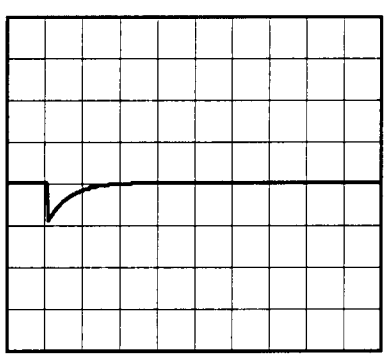


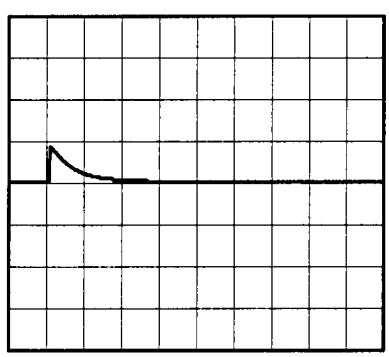


200mV/div

2ms/div 2ms/div

Min. Load (0A) ←→
Load 50% (0.125A)

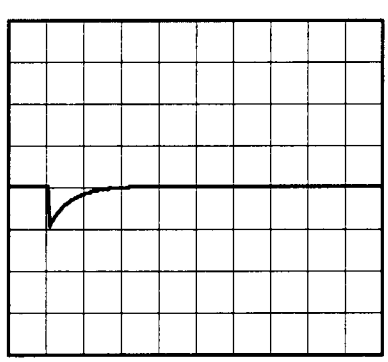


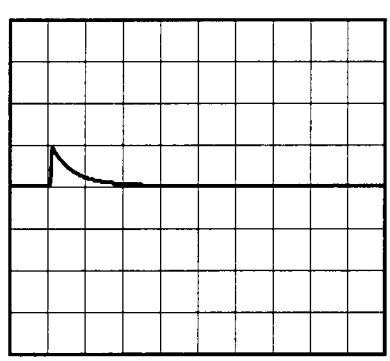


200mV/div

2ms/div 2ms/div

Load 50% (0.125A) ←→
Load 100% (0.25A)





200mV/div

2ms/div 2ms/div

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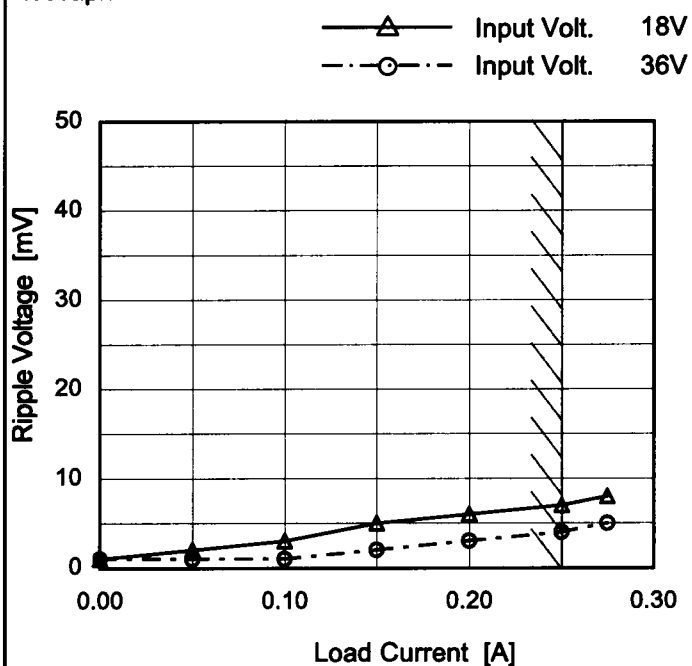
Model	SUS32412
Item	Ripple Voltage (by Load Current)
Object	+12V0.25A

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]

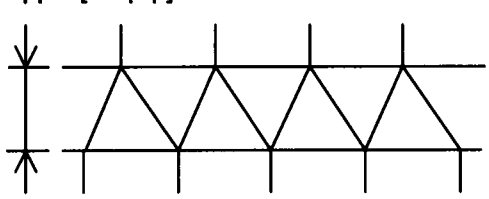


Fig.Complex Ripple Wave Form

2.Values

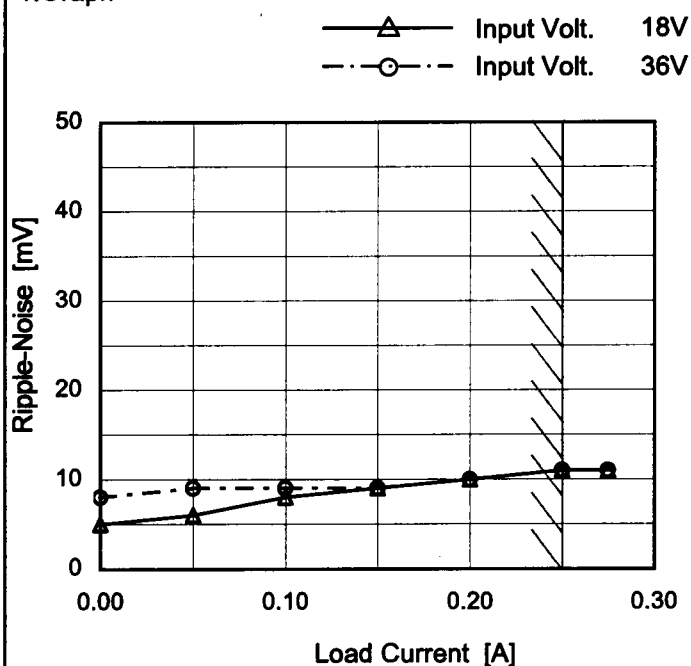
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 18 [V]	Input Volt. 36 [V]
0.000	1	1
0.050	2	1
0.100	3	1
0.150	5	2
0.200	6	3
0.250	7	4
0.275	8	5
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SUS32412
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.

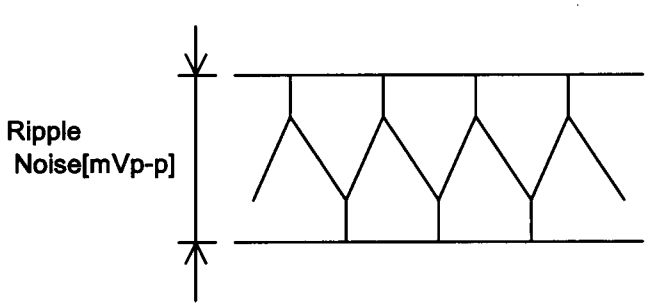


Fig.Complex Ripple Noise Wave Form

2.Values

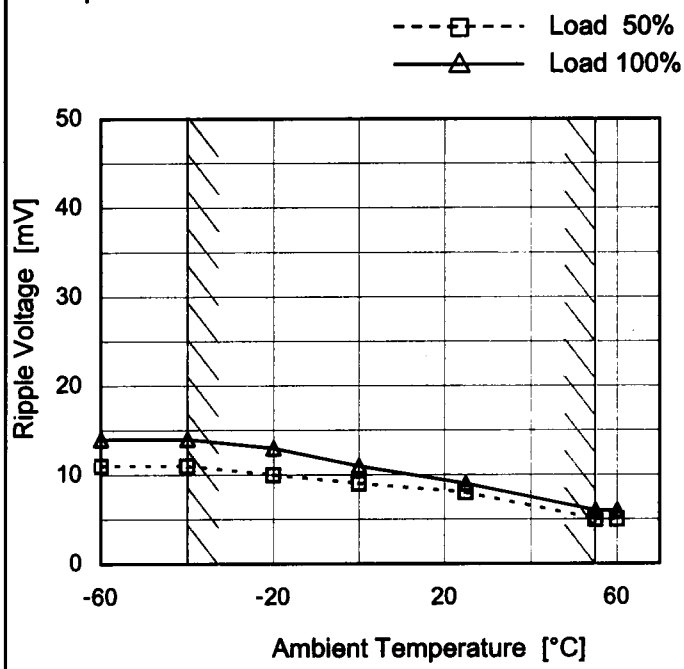
Load Current [A]	Ripple-Noise [mV] Input Volt. 18 [V]	Ripple-Noise [mV] Input Volt. 36 [V]
0.000	5	8
0.050	6	9
0.100	8	9
0.150	9	9
0.200	10	10
0.250	11	11
0.275	11	11
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SUS32412
Item	Ripple Voltage (by Ambient Temp.)
Object	+12V0.25A

Testing Circuitry Figure B

1.Graph



Input Volt. 24V

Measured by 100 MHz Oscilloscope.
Note: Slanted line shows the range of the rated ambient temperature.

2.Values

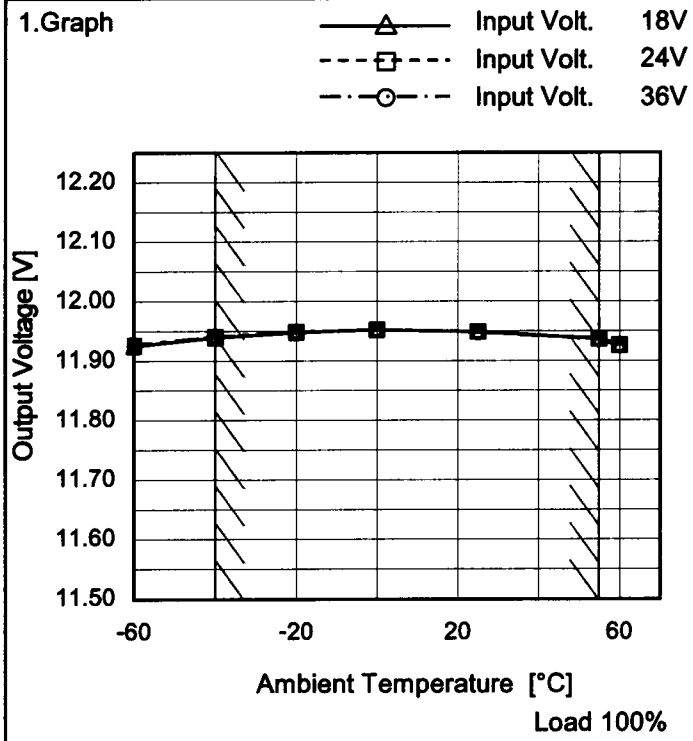
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	11	14
-40	11	14
-20	10	13
0	9	11
25	8	9
55	5	6
60	5	6
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SUS32412
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. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
-60	11.925	11.926	11.927
-40	11.939	11.940	11.941
-20	11.948	11.949	11.949
0	11.952	11.952	11.952
25	11.949	11.949	11.948
55	11.937	11.937	11.936
60	11.927	11.926	11.925
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SUS32412	
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 : 18 - 36V
Load Current : 0 - 0.25A

* Output Voltage Accuracy = ±(Maximum of Output Voltage - Minimum of Output Voltage) / 2

* Output Voltage Accuracy (Ration) = $\frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$

2.Values

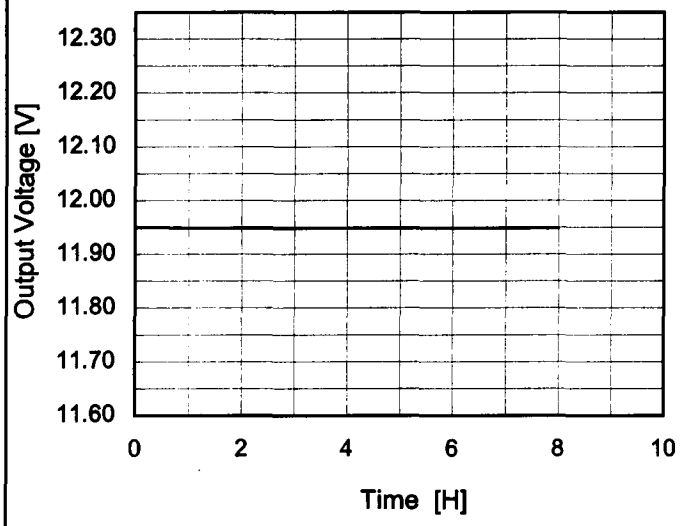
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	0	36	0	11.955	±10	±0.1
Minimum Voltage	55	36	0.25	11.936		

COSEL

Model	SUS32412
Item	Time Lapse Drift
Object	+12V0.25A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Input Volt. 24V
Load 100%

2.Values

Time since start [H]	Output Voltage [V]
0.0	11.951
0.5	11.950
1.0	11.949
2.0	11.949
3.0	11.949
4.0	11.949
5.0	11.949
6.0	11.949
7.0	11.949
8.0	11.949

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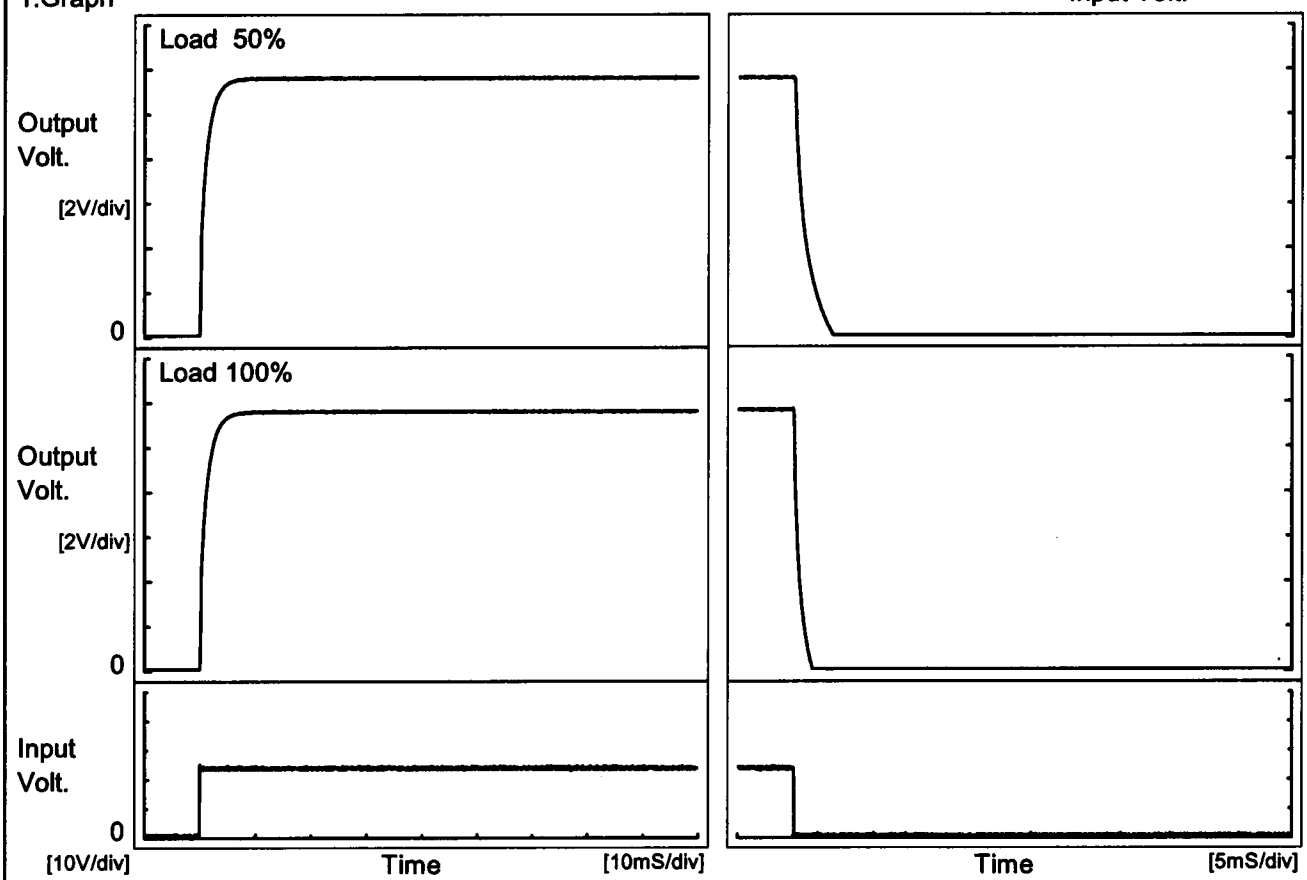
Model	SUS32412
Item	Rise and Fall Time
Object	+12V0.25A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

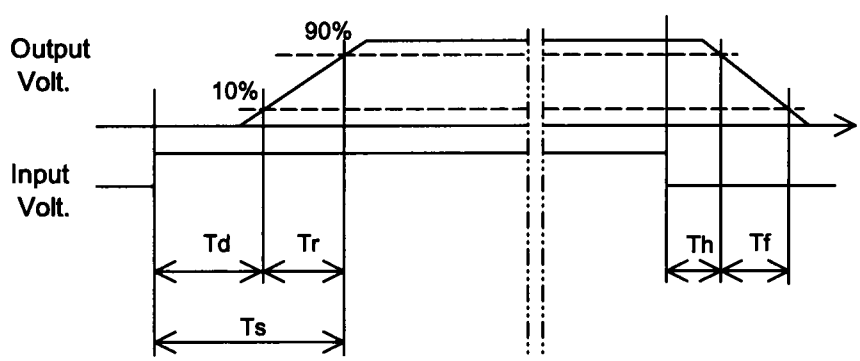
Input Volt. 24 V



2.Values

[mS]

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

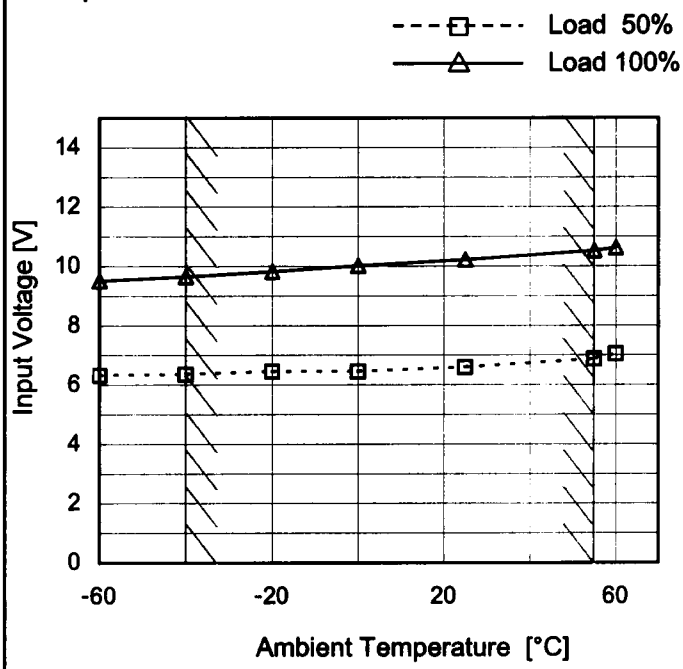


COSEL

Model	SUS32412
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

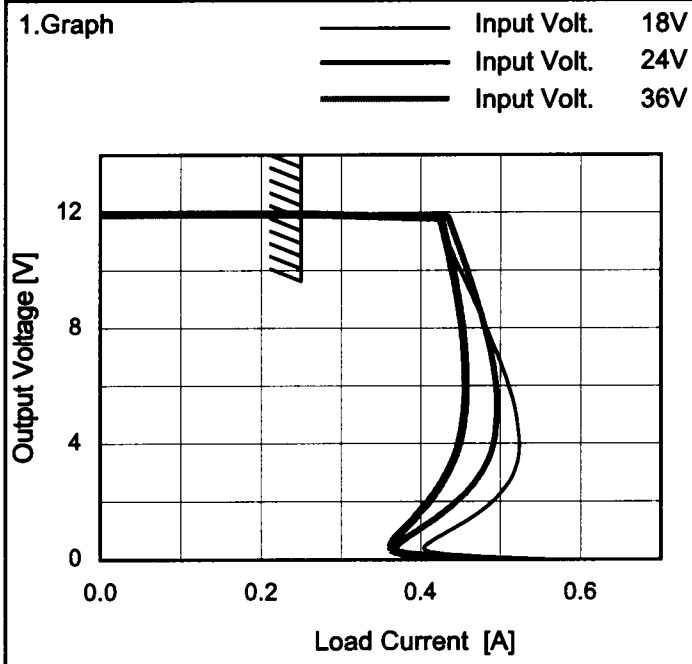
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	6.4	9.6
-40	6.4	9.7
-20	6.5	9.9
0	6.5	10.1
25	6.6	10.3
55	6.9	10.6
60	7.1	10.7
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SUS32412
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. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
12.0	0.25	0.25	0.25
11.4	0.43	0.44	0.43
10.8	0.44	0.45	0.43
9.6	0.46	0.46	0.44
8.4	0.48	0.48	0.45
7.2	0.49	0.49	0.45
6.0	0.51	0.49	0.46
4.8	0.52	0.50	0.45
3.6	0.52	0.49	0.44
2.4	0.50	0.46	0.42
1.2	0.45	0.41	0.39
0.0	0.56	0.47	0.48

COSEL

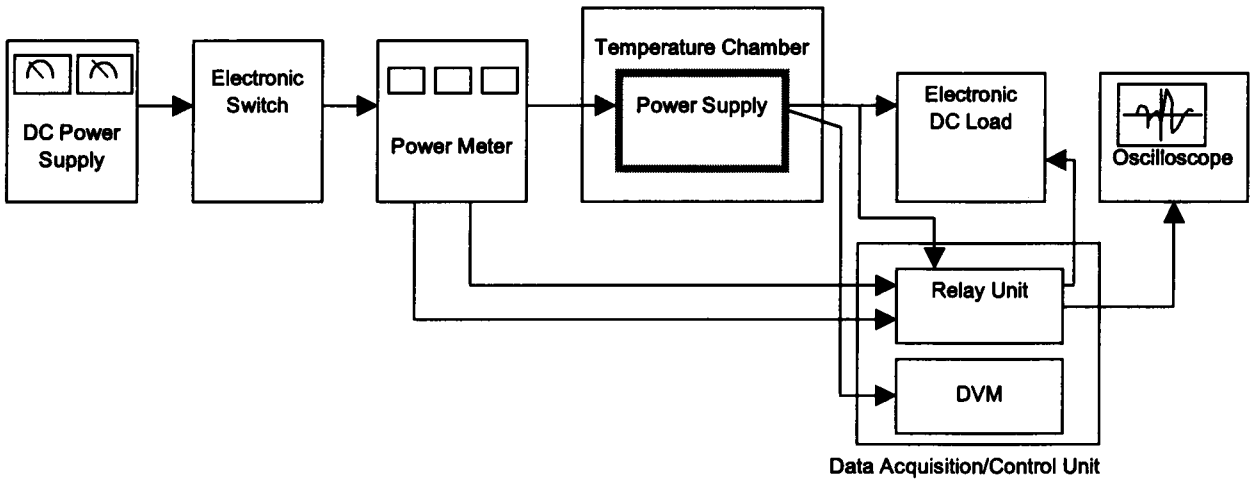


Figure A

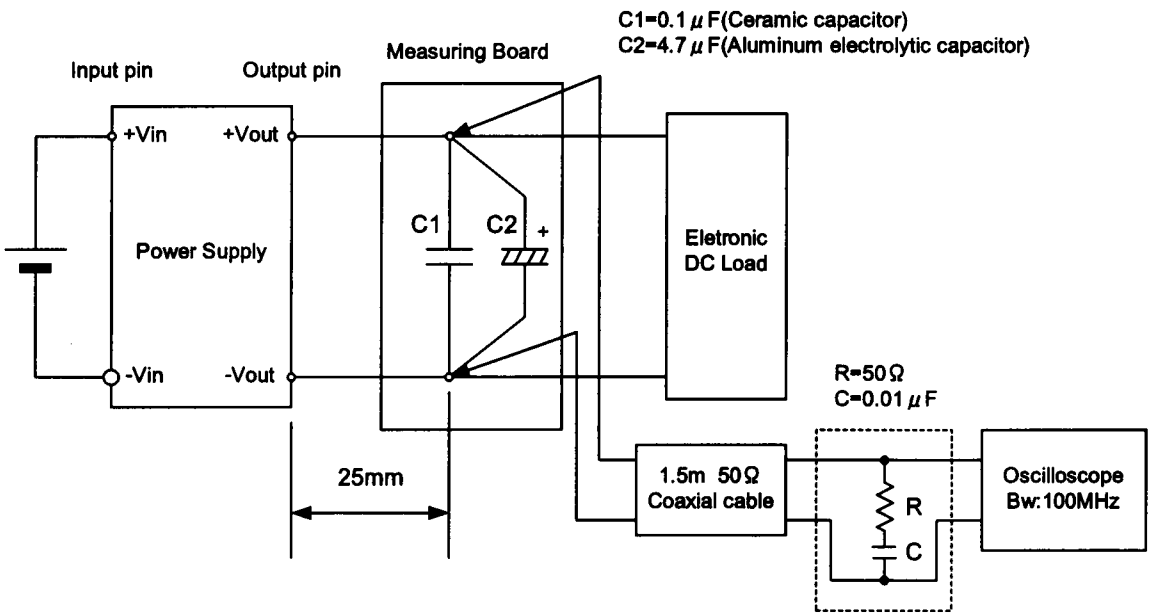


Figure B (Ripple and Ripple noise Characteristic)