参考資料

COSEL

TEST DATA OF SUS32415

Regulated DC Power Supply
Mar 8, 2005

Approved by : Tetsuo Sugimori
Tetsuo Sugimori — Design Manager

Prepared by : Hayato Nakatsubo
Hayato Nakatsubo — Design Engineer

COSEL CO.,LTD.

COSEL

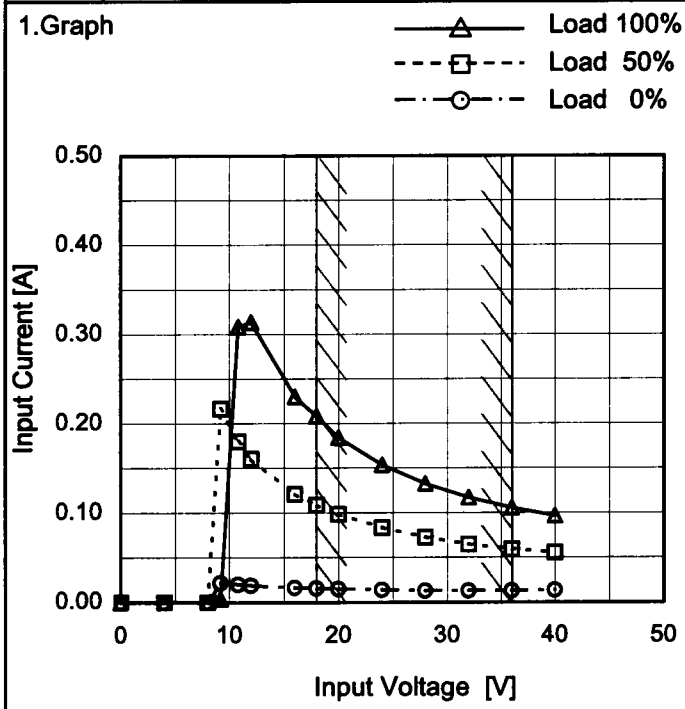
CONTENTS

COSEL

Model	SUS32415
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
9.2	0.022	0.217	0.004
10.8	0.020	0.180	0.308
12.0	0.019	0.161	0.314
16.0	0.016	0.121	0.230
18.0	0.015	0.109	0.208
20.0	0.015	0.098	0.184
24.0	0.014	0.083	0.154
28.0	0.013	0.073	0.133
32.0	0.013	0.065	0.117
36.0	0.013	0.059	0.106
40.0	0.013	0.055	0.097
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

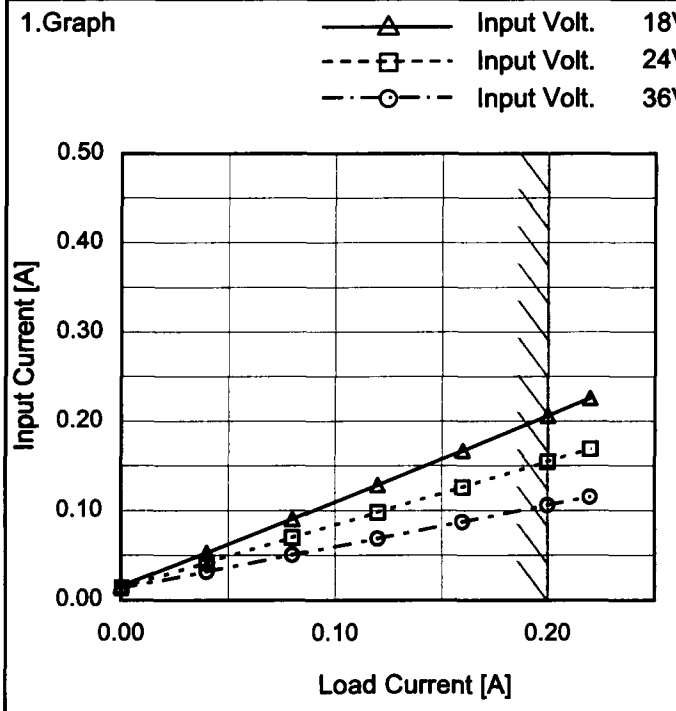
BC-3756

COSEL

Model	SUS32415
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

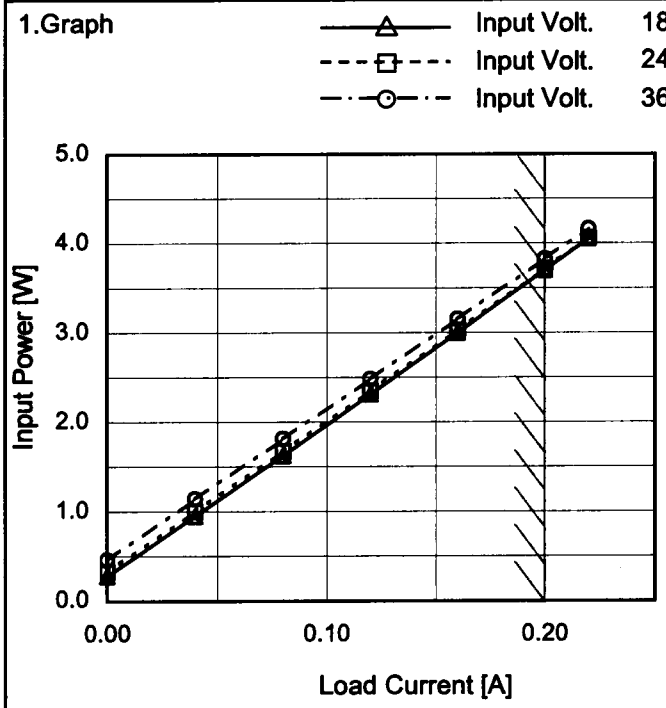
Load Current [A]	Input Current [A]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.00	0.015	0.014	0.013
0.04	0.053	0.042	0.032
0.08	0.090	0.070	0.050
0.12	0.129	0.098	0.069
0.16	0.167	0.126	0.087
0.20	0.206	0.155	0.106
0.22	0.226	0.169	0.115
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SUS32415
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

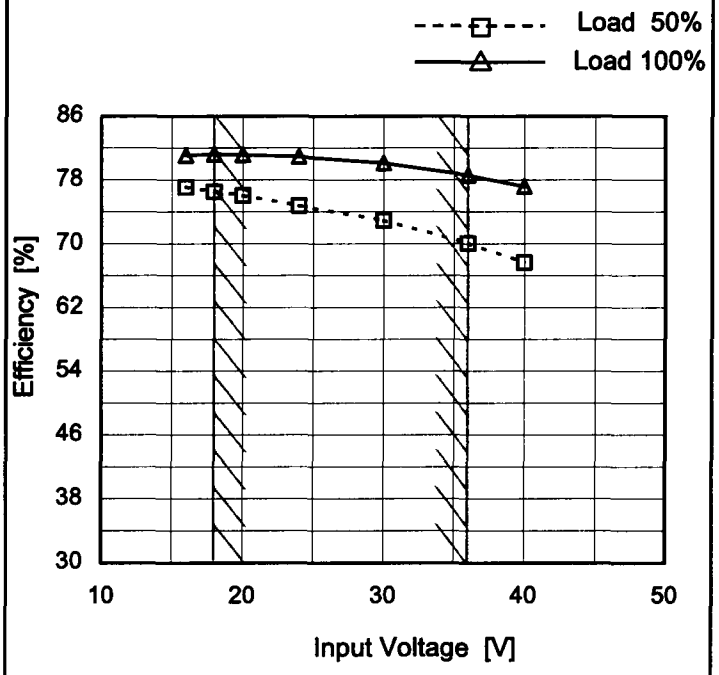
Load Current [A]	Input Power [W]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.00	0.28	0.33	0.46
0.04	0.95	1.00	1.14
0.08	1.62	1.67	1.81
0.12	2.31	2.35	2.48
0.16	3.00	3.03	3.15
0.20	3.70	3.71	3.83
0.22	4.05	4.06	4.16
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SUS32415
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

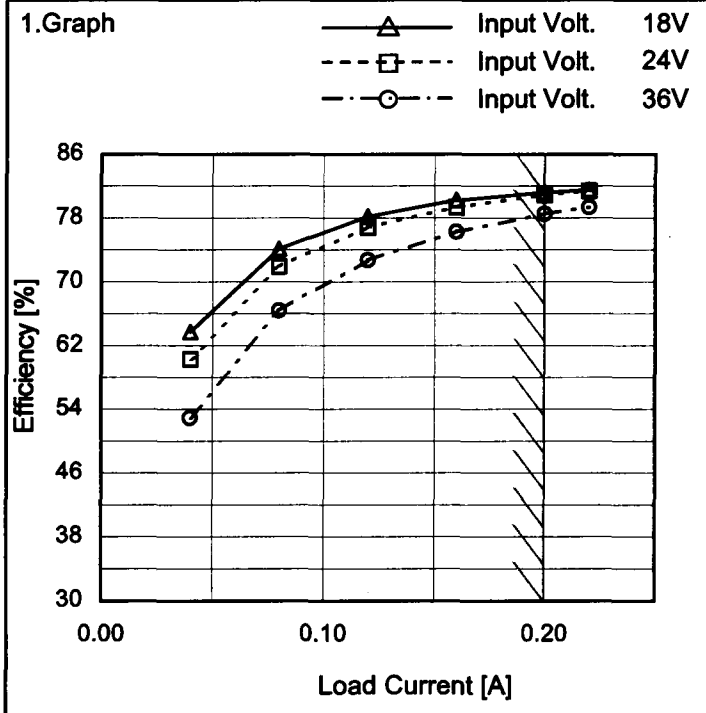
Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
16	77.1	81.1
18	76.5	81.3
20	76.1	81.2
24	74.8	80.9
30	72.9	80.1
36	70.1	78.6
40	67.7	77.2
--	-	-
--	-	-

COSEL

Model	SUS32415
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

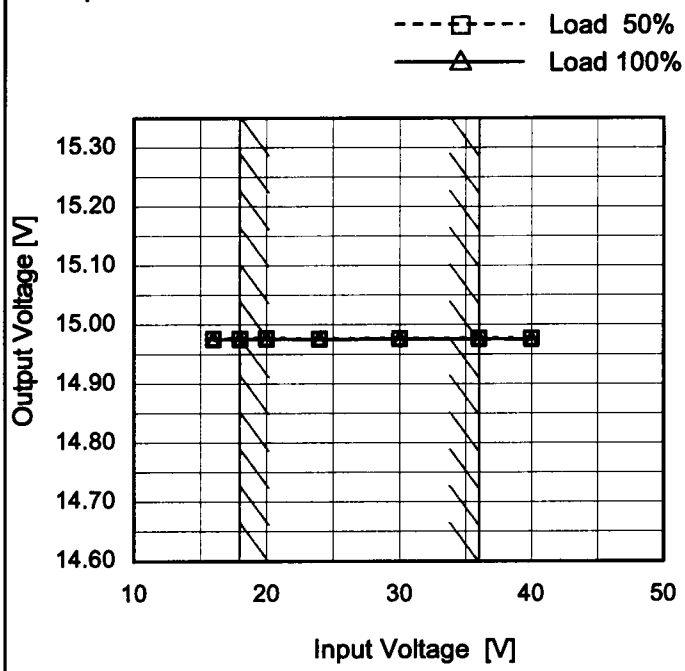
Load Current [A]	Efficiency [%] Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.00	-	-	-
0.04	63.7	60.3	52.9
0.08	74.1	71.9	66.4
0.12	78.2	76.8	72.7
0.16	80.2	79.4	76.2
0.20	81.2	80.9	78.5
0.22	81.5	81.4	79.4
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SUS32415
Item	Line Regulation
Object	+15V0.2A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

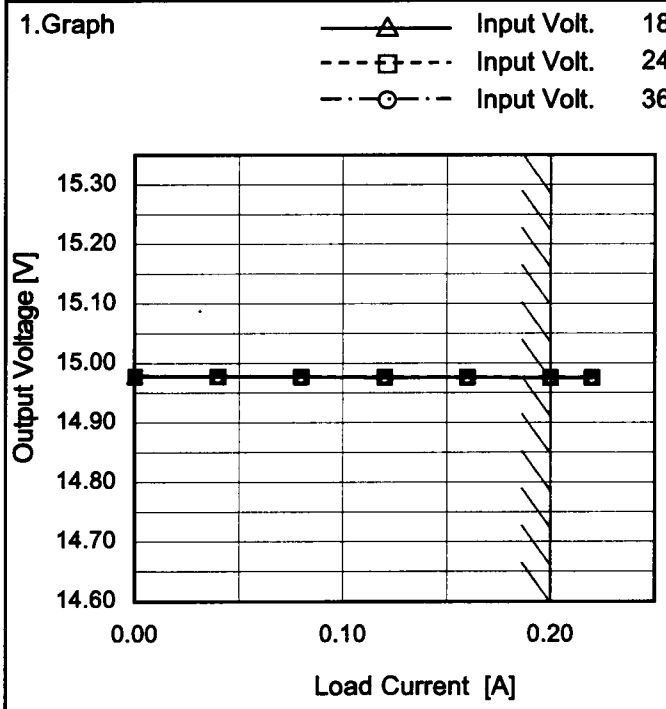
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
16	14.976	14.975
18	14.976	14.976
20	14.977	14.976
24	14.977	14.976
30	14.977	14.976
36	14.977	14.976
40	14.977	14.976
--	-	-
--	-	-

COSEL

Model	SUS32415
Item	Load Regulation
Object	+15V0.2A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

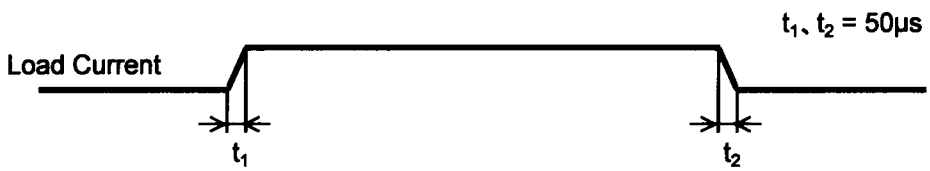
Load Current [A]	Output Voltage [V] Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.00	14.978	14.978	14.978
0.04	14.978	14.978	14.978
0.08	14.977	14.977	14.977
0.12	14.976	14.977	14.977
0.16	14.976	14.977	14.976
0.20	14.976	14.976	14.976
0.22	14.976	14.976	14.975
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

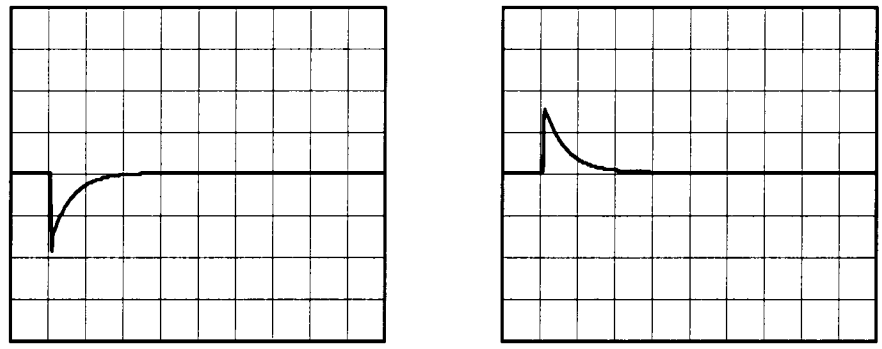
Model	SUS32415
Item	Dynamic Load Response
Object	+15V0.2A

Temperature 25°C
Testing Circuitry Figure A

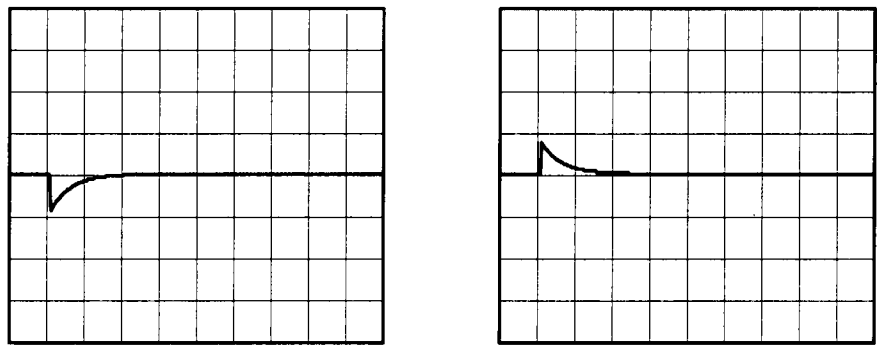
Input Volt. 24 V
Cycle 100 mS



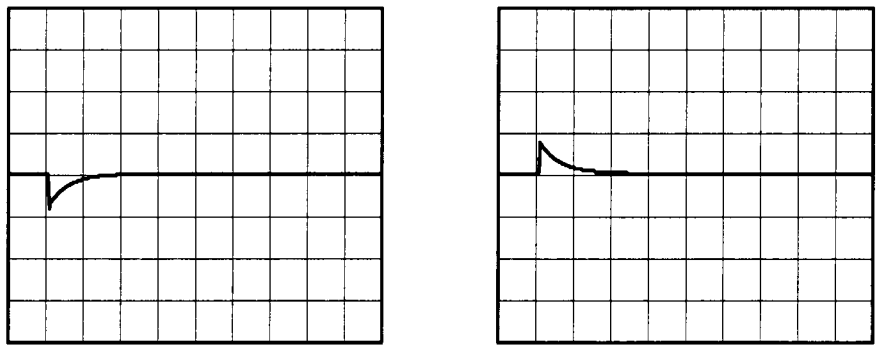
Min. Load (0A) ⟷ Load 100% (0.2A)



Min. Load (0A) ⟷ Load 50% (0.1A)



Load 50% (0.1A) ⟷ Load 100% (0.2A)

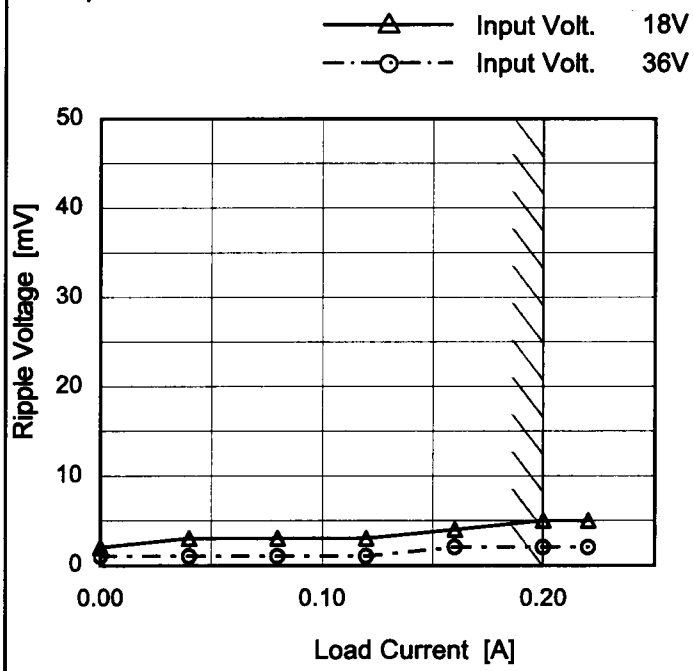


COSEL

Model	SUS32415
Item	Ripple Voltage (by Load Current)
Object	+15V0.2A

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]

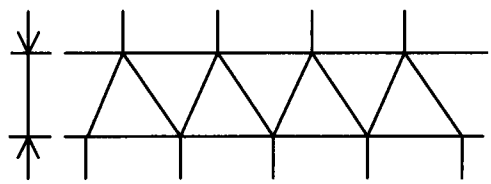


Fig.Complex Ripple Wave Form

2.Values

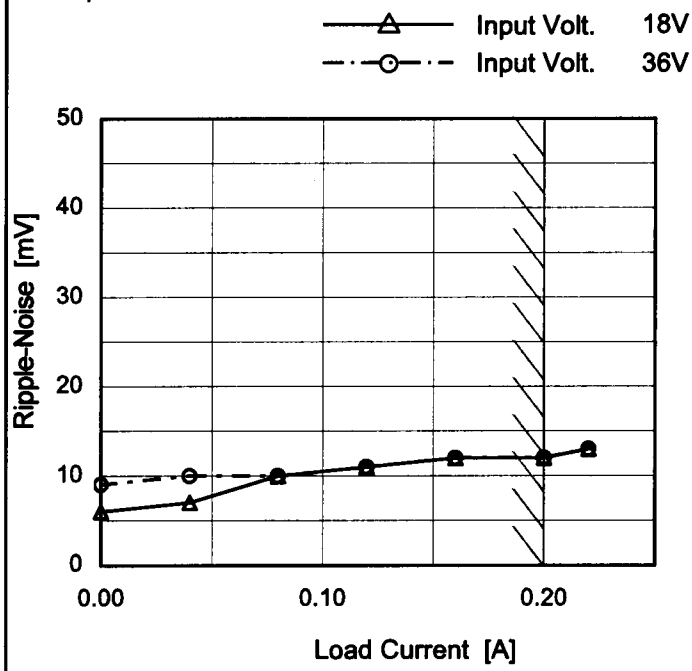
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 18 [V]	Input Volt. 36 [V]
0.00	2	1
0.04	3	1
0.08	3	1
0.12	3	1
0.16	4	2
0.20	5	2
0.22	5	2
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SUS32415
Item	Ripple-Noise
Object	+15V0.2A

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.

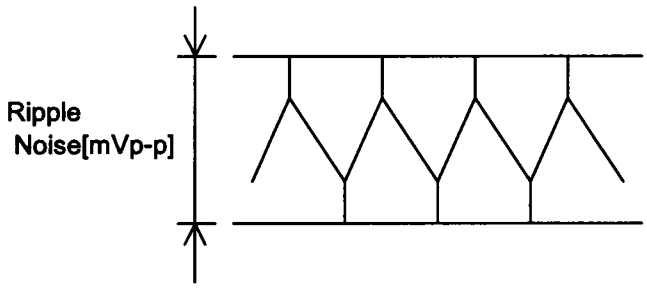


Fig.Complex Ripple Noise Wave Form

2.Values

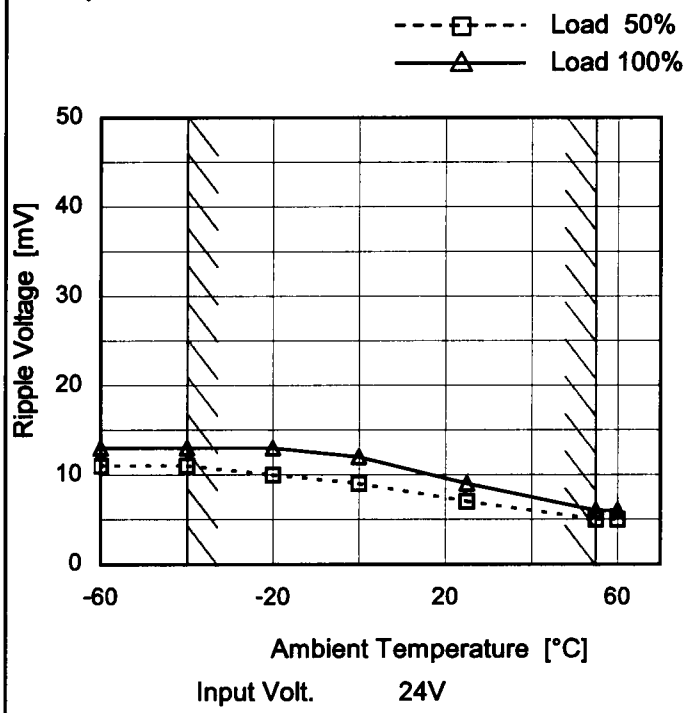
Load Current [A]	Ripple-Noise [mV] Input Volt. 18 [V]	Ripple-Noise [mV] Input Volt. 36 [V]
0.00	6	9
0.04	7	10
0.08	10	10
0.12	11	11
0.16	12	12
0.20	12	12
0.22	13	13
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SUS32415
Item	Ripple Voltage (by Ambient Temp.)
Object	+15V0.2A

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

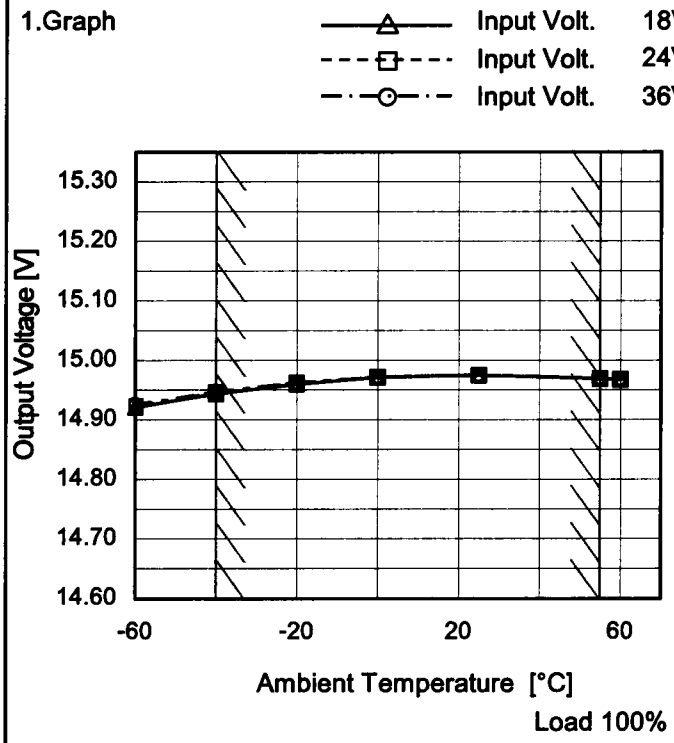
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	11	13
-40	11	13
-20	10	13
0	9	12
25	7	9
55	5	6
60	5	6
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SUS32415
Item	Ambient Temperature Drift
Object	+15V0.2A

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	14.921	14.923	14.925
-40	14.944	14.946	14.947
-20	14.960	14.962	14.962
0	14.971	14.972	14.972
25	14.975	14.975	14.975
55	14.969	14.969	14.969
60	14.968	14.968	14.968
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SUS32415
Item	Output Voltage Accuracy
Object	+15V0.2A

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 : 18 - 36V
Load Current : 0 - 0.2A

* 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

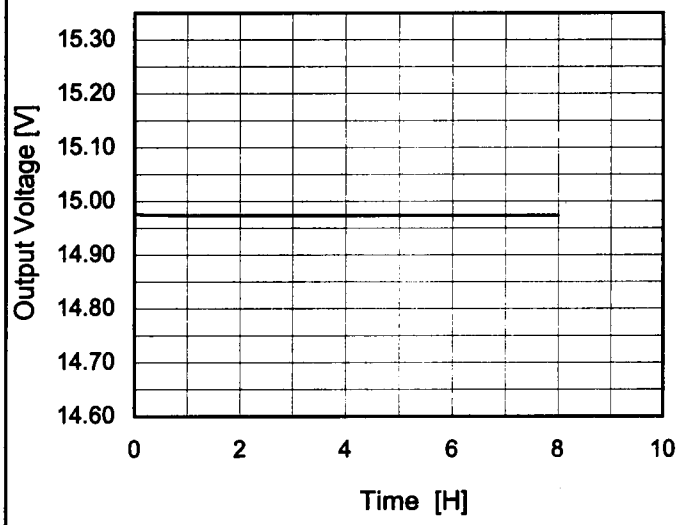
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	25	36	0	14.978	±17	±0.1
Minimum Voltage	-40	18	0.2	14.944		

COSEL

Model	SUS32415
Item	Time Lapse Drift
Object	+15V0.2A

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	14.977
0.5	14.975
1.0	14.974
2.0	14.974
3.0	14.974
4.0	14.974
5.0	14.974
6.0	14.974
7.0	14.974
8.0	14.974

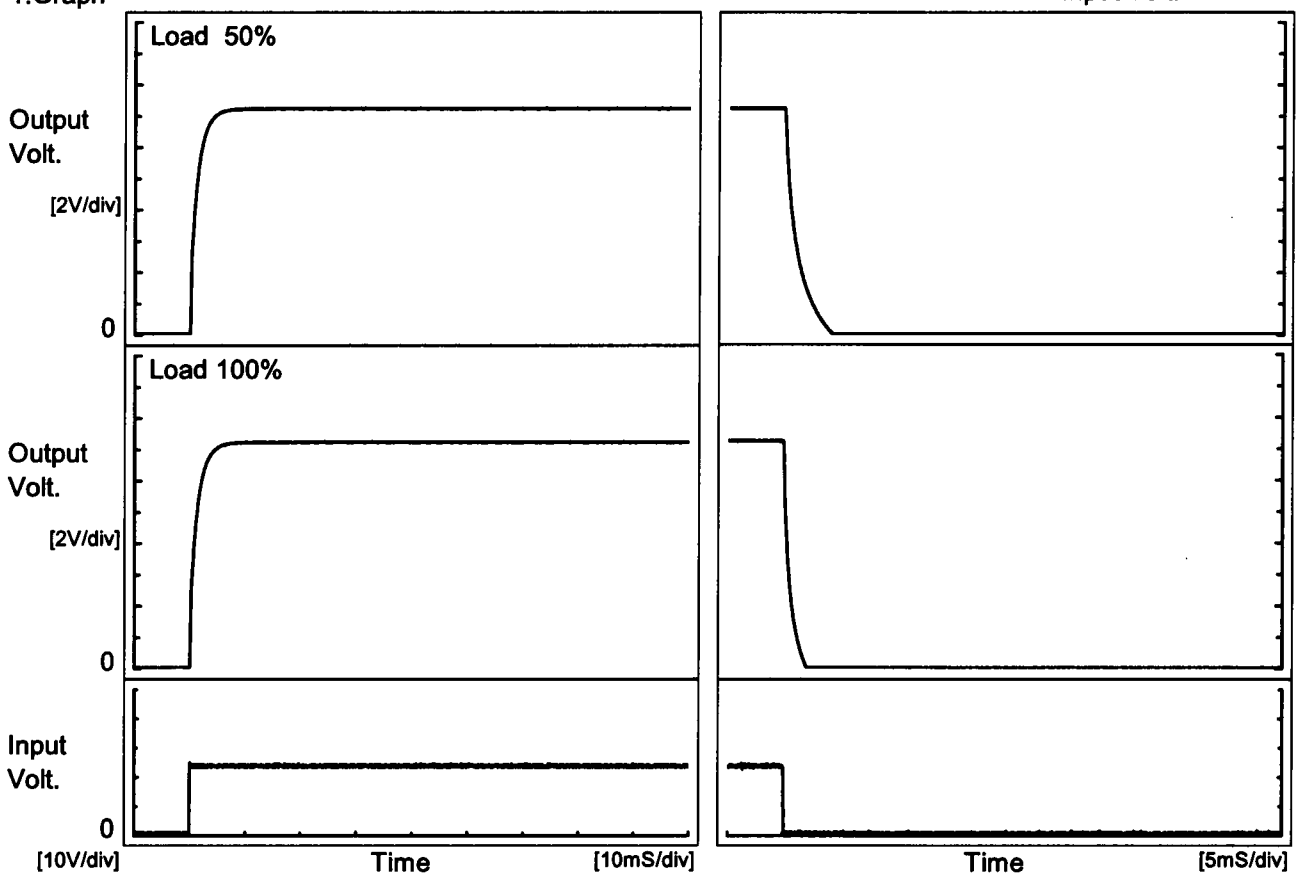
COSEL

Model	SUS32415
Item	Rise and Fall Time
Object	+15V0.2A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

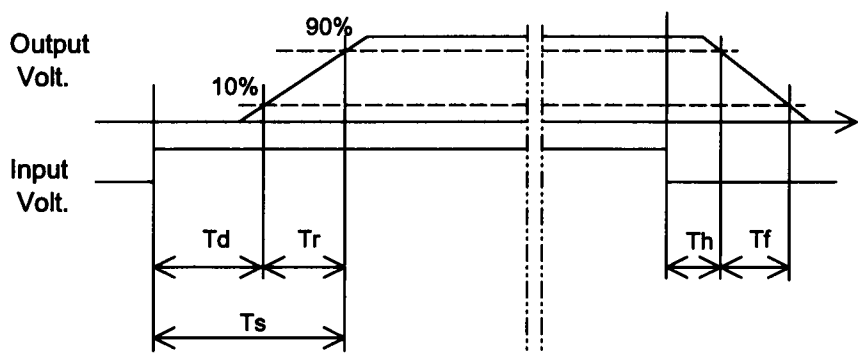
Input Volt. 24 V



2.Values

[mS]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	0.1	3.5	3.6	0.1	2.7
100 %	0.1	3.6	3.7	0.1	1.4

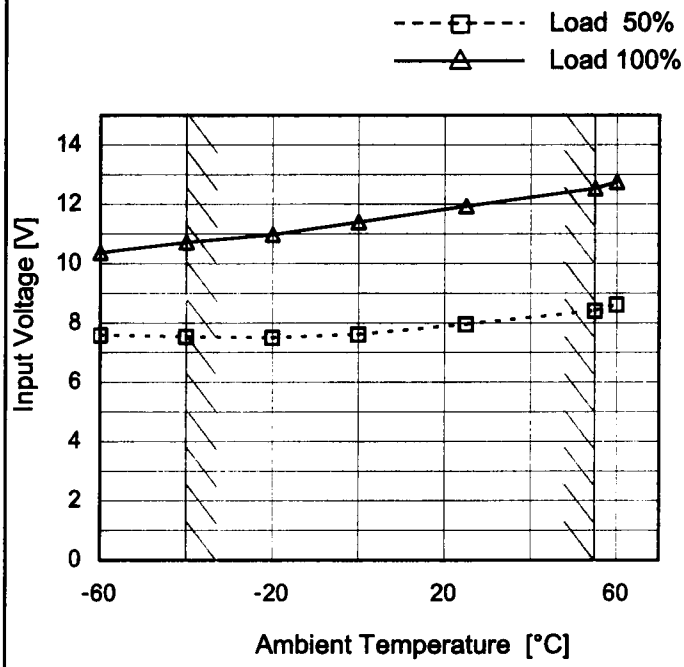


COSEL

Model	SUS32415
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+15V0.2A

Testing Circuitry Figure A

1.Graph



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

2.Values

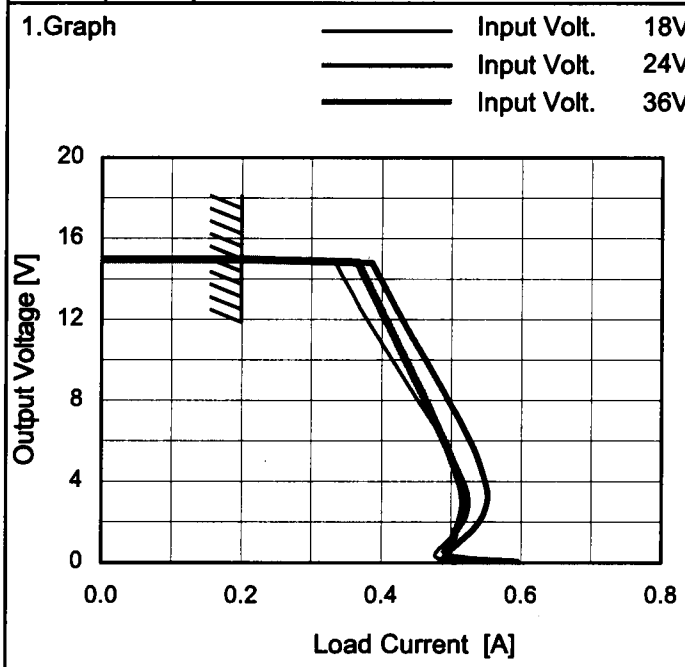
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	7.6	10.4
-40	7.6	10.8
-20	7.5	11.0
0	7.7	11.4
25	8.0	12.0
55	8.5	12.6
60	8.7	12.8
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SUS32415
Item	Overcurrent Protection
Object	+15V0.2A

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]
15.0	0.20	0.20	0.20
14.3	0.34	0.39	0.37
13.5	0.35	0.41	0.38
12.0	0.38	0.43	0.41
10.5	0.41	0.45	0.43
9.0	0.43	0.48	0.45
7.5	0.46	0.50	0.47
6.0	0.49	0.53	0.49
4.5	0.51	0.54	0.51
3.0	0.53	0.55	0.52
1.5	0.51	0.53	0.51
0.0	0.54	0.58	0.59

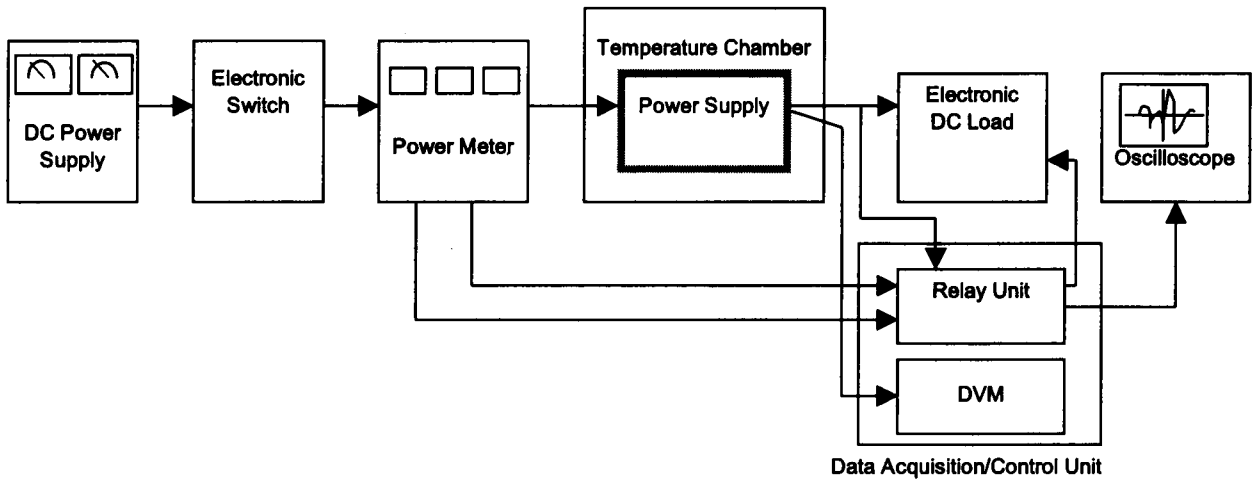


Figure A

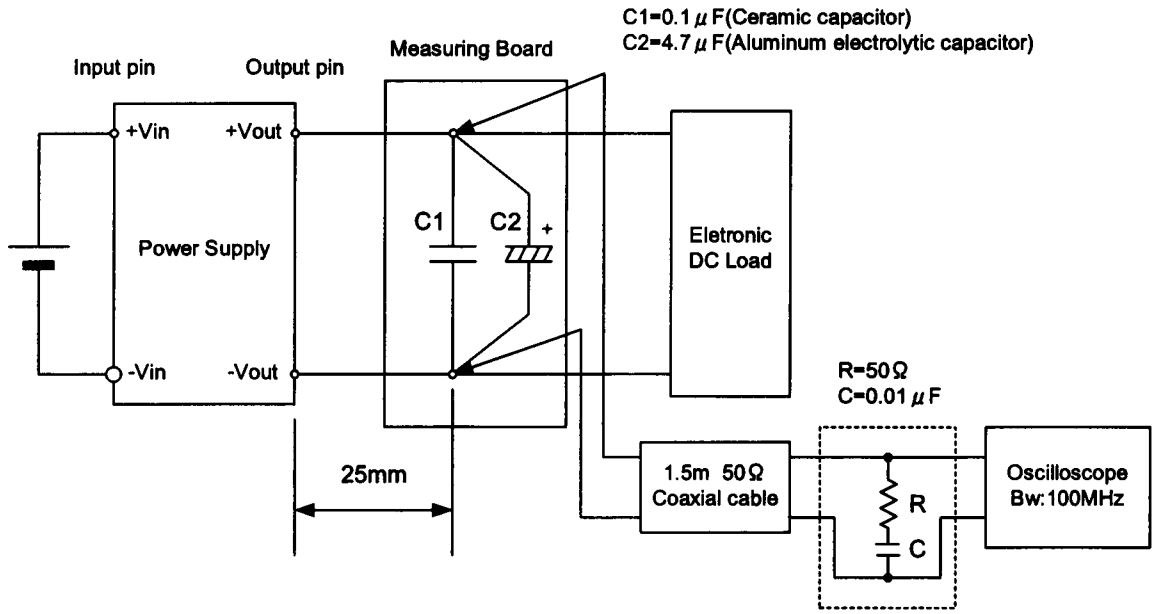


Figure B (Ripple and Ripple noise Characteristic)