参考資料

COSEL

TEST DATA OF SUCS32415

Regulated DC Power Supply
Mar 23, 2005

Approved by : Tetsuo Sugimori
Tetsuo Sugimori Design Manager

Prepared by : Hayato Nakatsubo
Hayato Nakatsubo Design Engineer

COSEL CO.,LTD.

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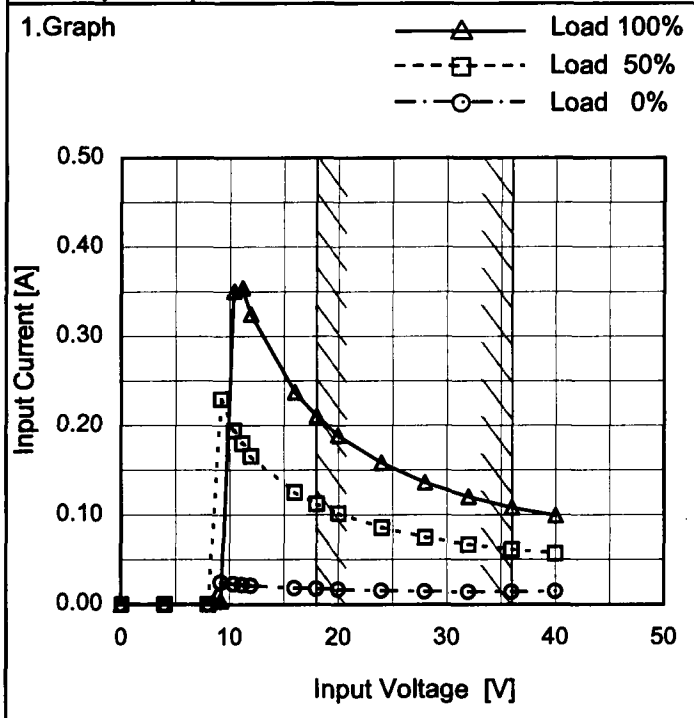
CONTENTS

COSEL

Model	SUCS32415
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

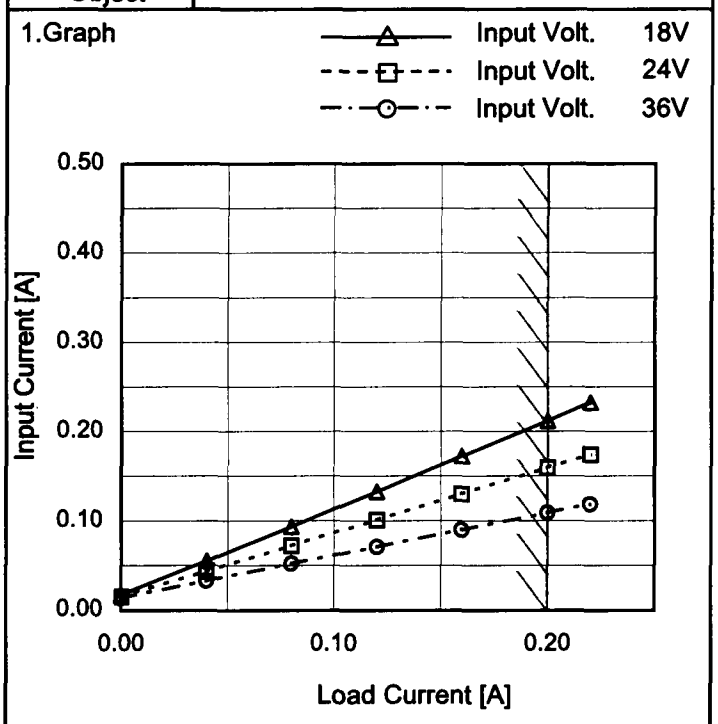
Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0.0	0.000	0.000	0.000
4.0	0.000	0.000	0.000
8.0	0.000	0.000	0.000
9.2	0.025	0.230	0.004
10.4	0.023	0.194	0.351
11.2	0.022	0.180	0.354
12.0	0.021	0.166	0.325
16.0	0.018	0.125	0.238
18.0	0.017	0.112	0.211
20.0	0.016	0.102	0.189
24.0	0.015	0.086	0.158
28.0	0.014	0.075	0.136
32.0	0.014	0.067	0.120
36.0	0.014	0.061	0.108
40.0	0.014	0.057	0.099
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SUCS32415
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

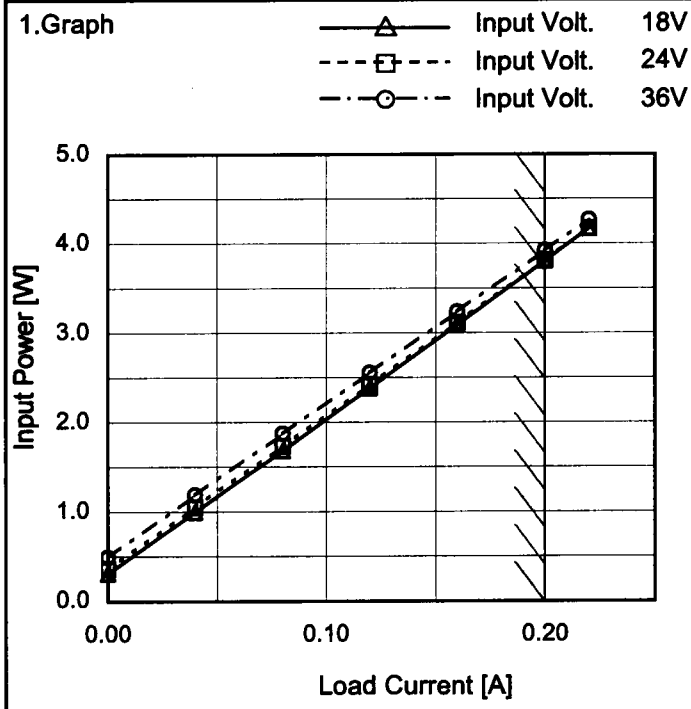
Load Current [A]	Input Current [A]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.00	0.017	0.015	0.014
0.04	0.055	0.044	0.033
0.08	0.094	0.072	0.052
0.12	0.133	0.101	0.071
0.16	0.172	0.130	0.090
0.20	0.212	0.159	0.109
0.22	0.232	0.174	0.119
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SUCS32415
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

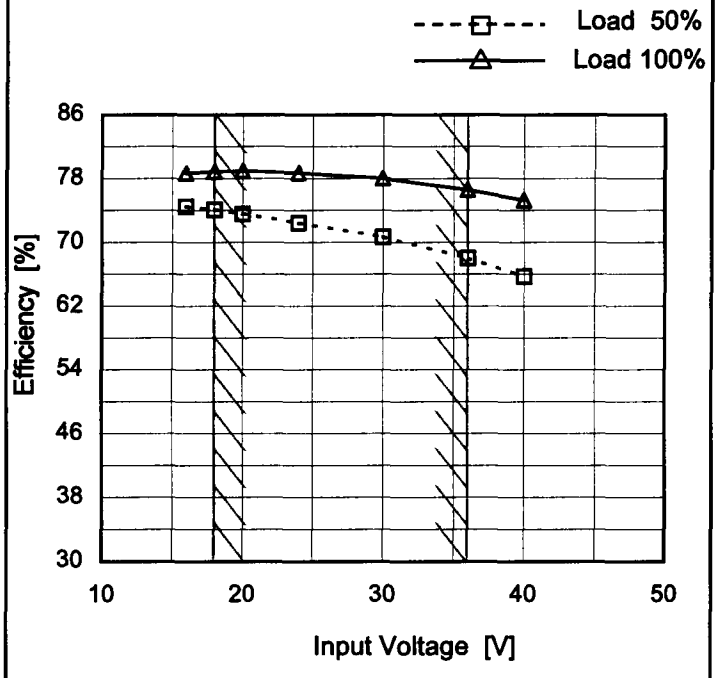
Load Current [A]	Input Power [W]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.00	0.31	0.36	0.49
0.04	0.99	1.05	1.19
0.08	1.68	1.73	1.88
0.12	2.38	2.42	2.55
0.16	3.09	3.11	3.24
0.20	3.80	3.82	3.92
0.22	4.17	4.17	4.27
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SUCS32415
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

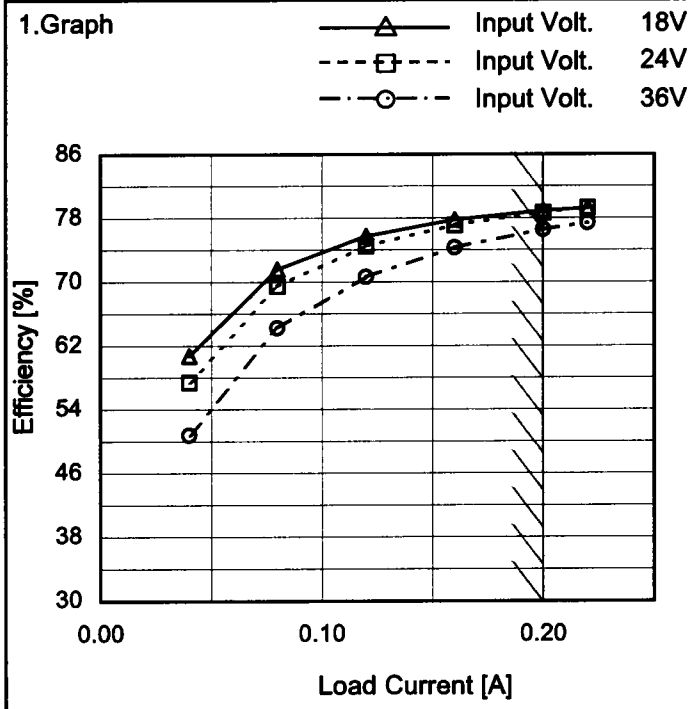
Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
16	74.5	78.7
18	74.1	78.9
20	73.6	79.0
24	72.5	78.7
30	70.7	78.0
36	68.0	76.6
40	65.7	75.3
--	-	-
--	-	-

COSEL

Model	SUCS32415
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

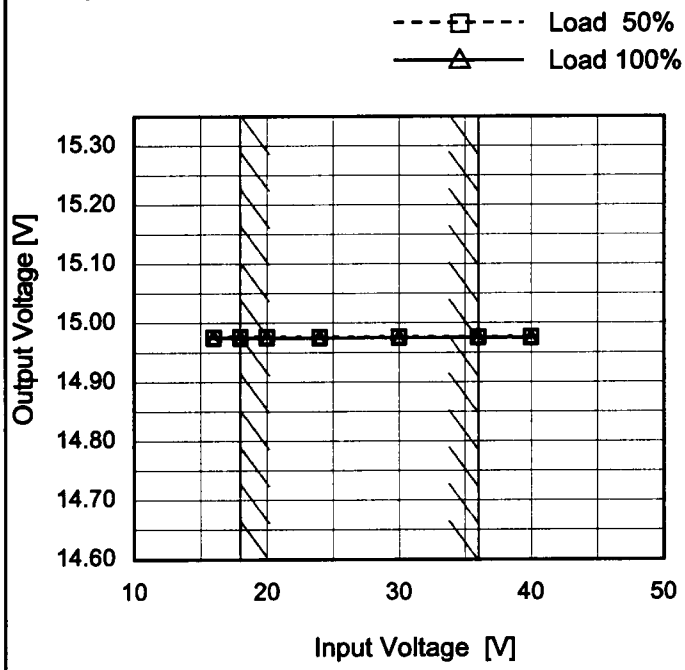
Load Current [A]	Efficiency [%]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.00	-	-	-
0.04	60.7	57.4	50.8
0.08	71.6	69.5	64.2
0.12	75.7	74.5	70.6
0.16	77.8	77.1	74.3
0.20	78.9	78.7	76.6
0.22	79.2	79.3	77.4
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SUCS32415
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

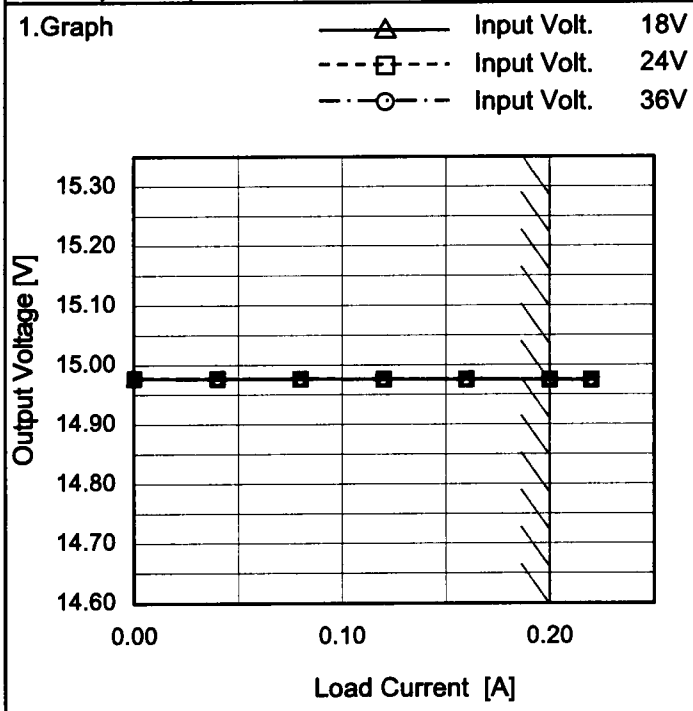
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
16	14.976	14.975
18	14.976	14.975
20	14.976	14.975
24	14.977	14.975
30	14.976	14.975
36	14.976	14.975
40	14.976	14.975
--	-	-
--	-	-

COSEL

Model	SUCS32415
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

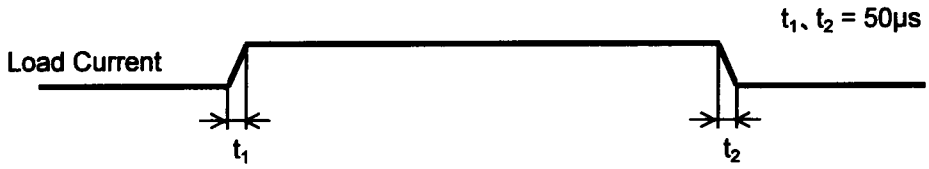
Load Current [A]	Output Voltage [V]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.00	14.977	14.978	14.978
0.04	14.977	14.977	14.977
0.08	14.976	14.977	14.977
0.12	14.976	14.976	14.976
0.16	14.975	14.976	14.976
0.20	14.975	14.975	14.975
0.22	14.975	14.975	14.975
--	-	-	-
--	-	-	-
--	-	-	-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

COSEL

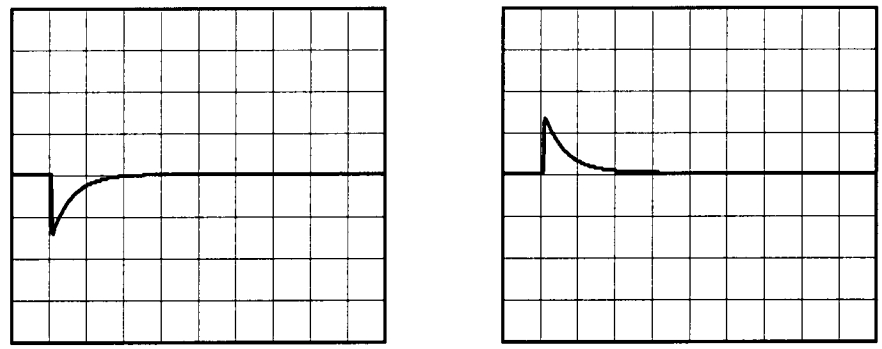
Model	SUCS32415
Item	Dynamic Load Response
Object	+15V0.2A

Temperature 25°C
Testing Circuitry Figure A

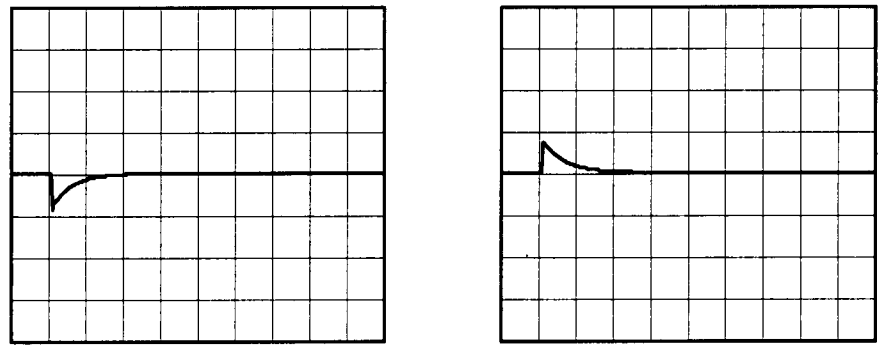
Input Volt. 24 V
Cycle 100 mS



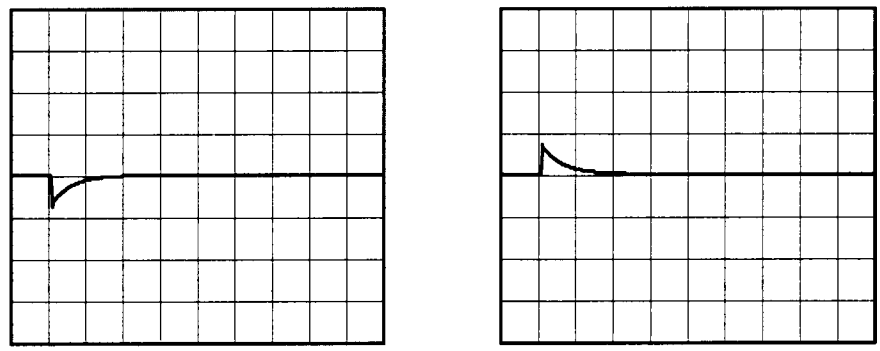
Min. Load (0A) ⟷ Load 100% (0.2A)



Min. Load (0A) ⟷ Load 50% (0.1A)



Load 50% (0.1A) ⟷ Load 100% (0.2A)

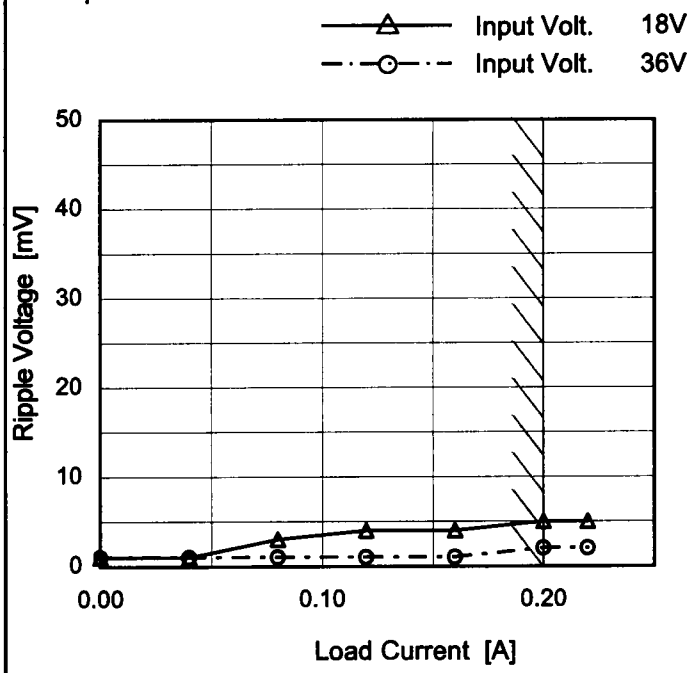


COSEL

Model	SUCS32415
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]

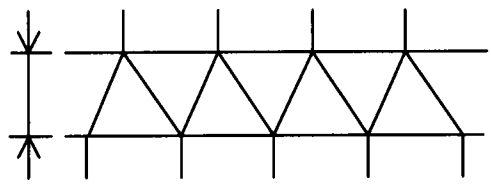


Fig.Complex Ripple Wave Form

2.Values

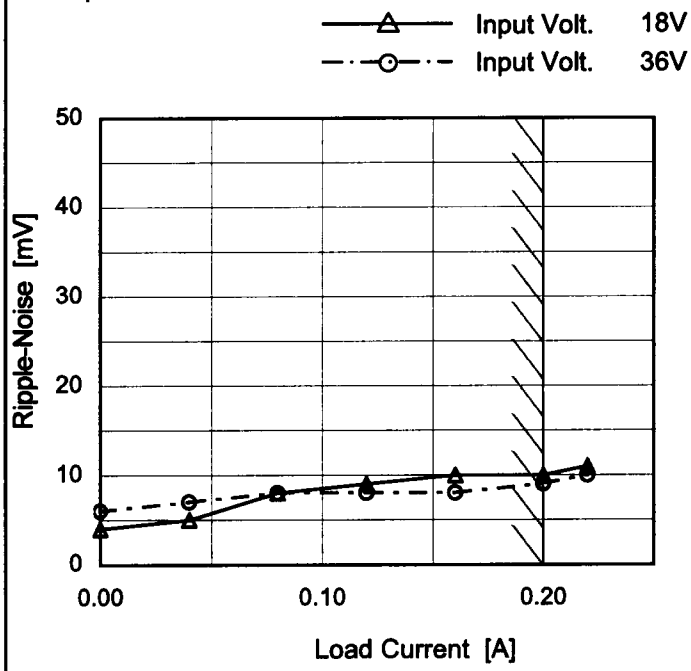
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 18 [V]	Input Volt. 36 [V]
0.00	1	1
0.04	1	1
0.08	3	1
0.12	4	1
0.16	4	1
0.20	5	2
0.22	5	2
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SUCS32415
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.

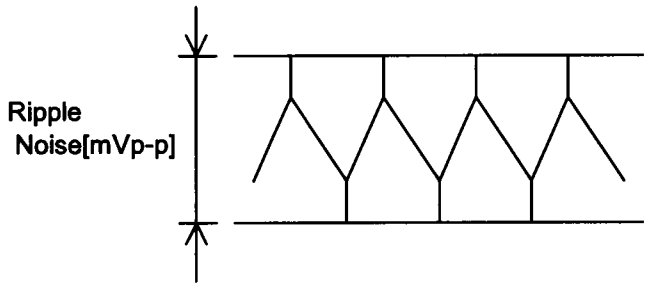


Fig.Complex Ripple Noise Wave Form

2.Values

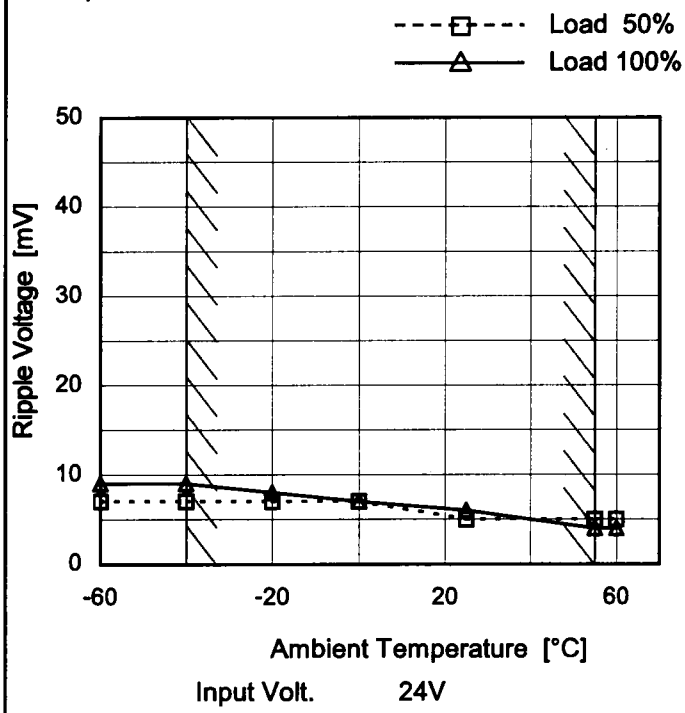
Load Current [A]	Ripple-Noise [mV] Input Volt. 18 [V]	Ripple-Noise [mV] Input Volt. 36 [V]
0.00	4	6
0.04	5	7
0.08	8	8
0.12	9	8
0.16	10	8
0.20	10	9
0.22	11	10
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SUCS32415
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

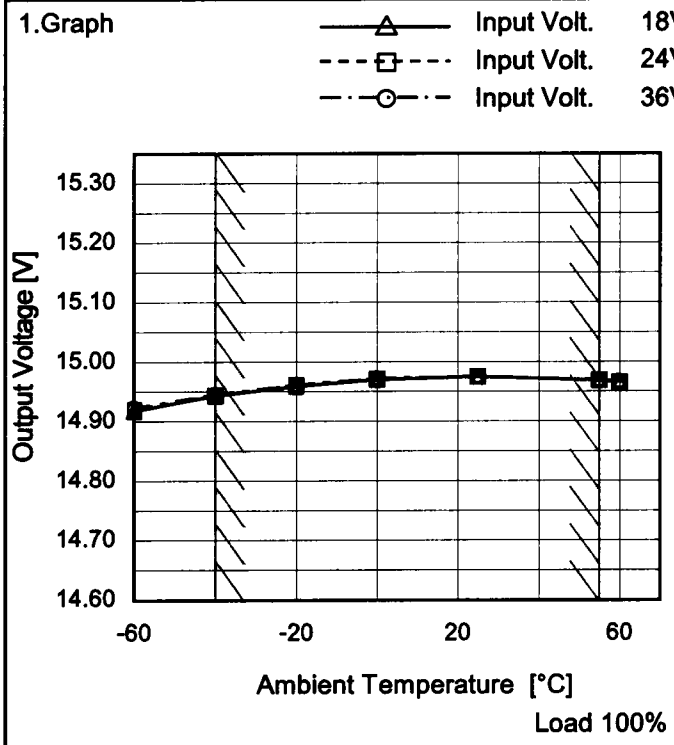
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	7	9
-40	7	9
-20	7	8
0	7	7
25	5	6
55	5	4
60	5	4
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SUCS32415
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	14.918	14.920	14.922
-40	14.943	14.944	14.945
-20	14.959	14.961	14.961
0	14.970	14.971	14.972
25	14.975	14.975	14.975
55	14.969	14.969	14.968
60	14.967	14.966	14.966
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SUCS32415	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+15V0.2A	

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

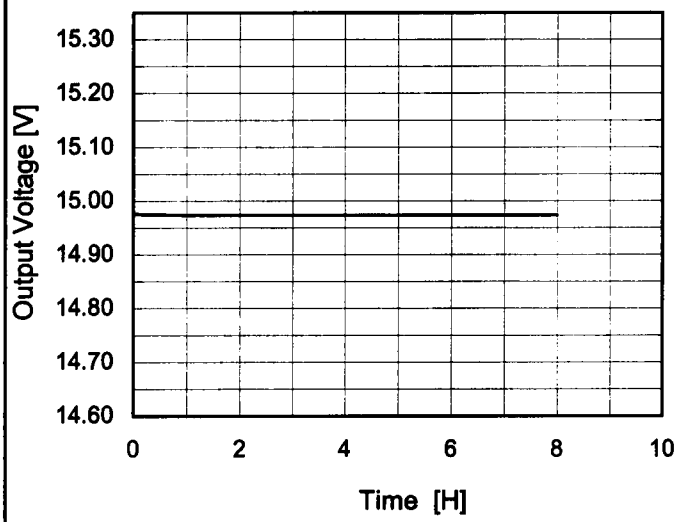
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	25	36	0	14.977	±17	±0.1
Minimum Voltage	-40	18	0.2	14.943		

COSEL

Model	SUCS32415
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

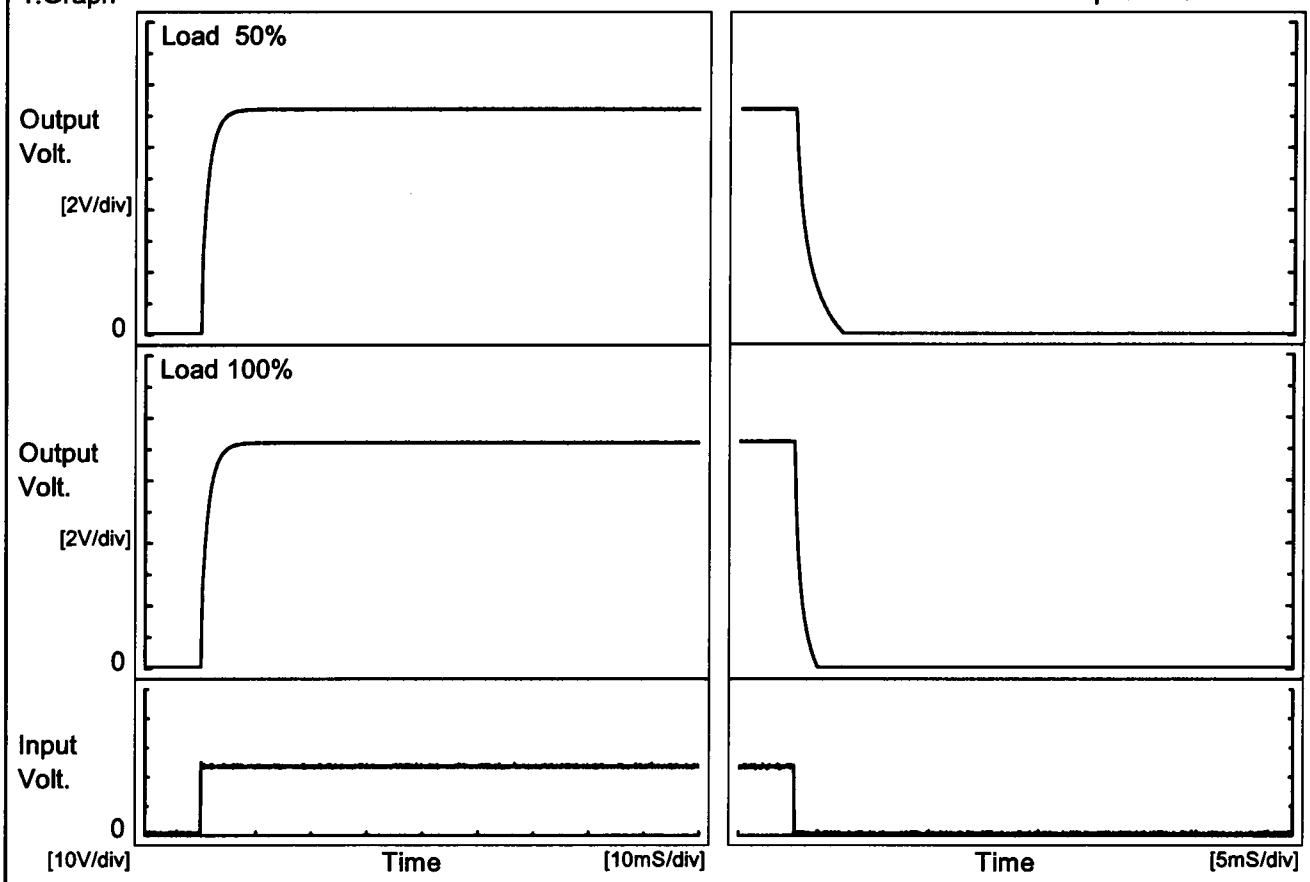
COSEL

Model	SUCS32415
Item	Rise and Fall Time
Object	+15V0.2A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

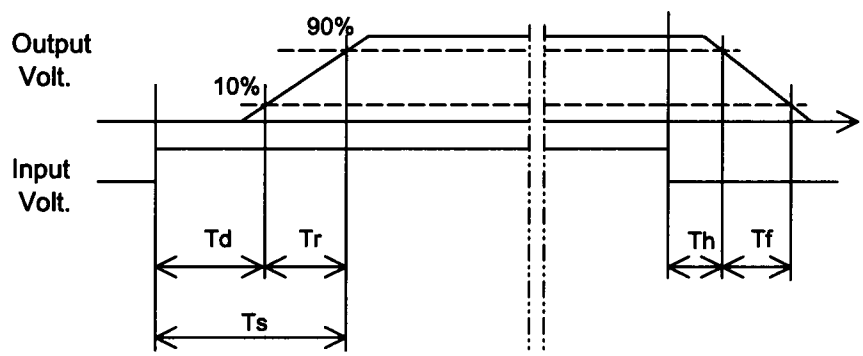
Input Volt. 24 V



2.Values

[mS]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	0.1	3.6	3.7	0.1	2.8
100 %	0.1	3.6	3.7	0.1	1.4



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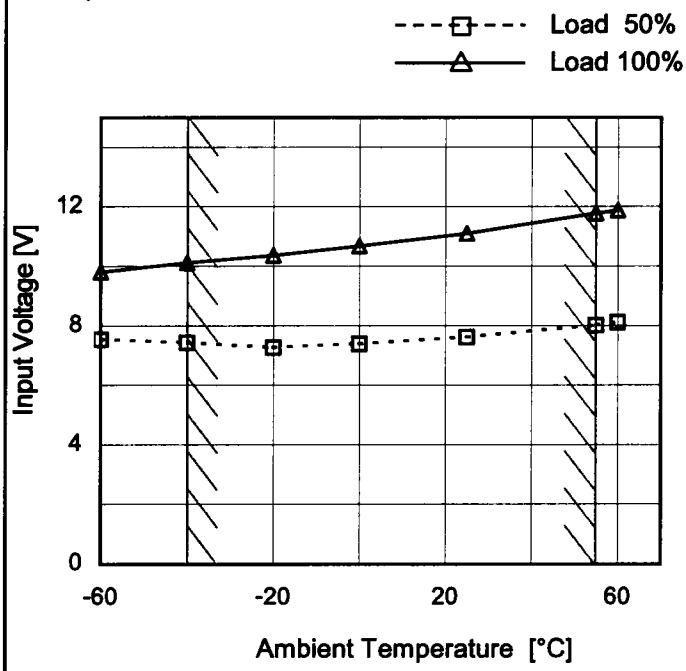
Model	SUCS32415
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+15V0.2A

Testing Circuitry Figure A

1.Graph



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

2.Values

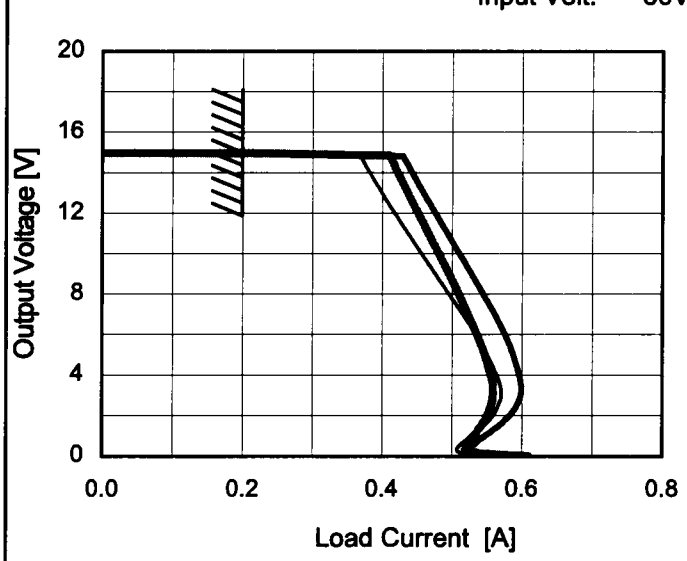
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	7.6	9.9
-40	7.5	10.2
-20	7.3	10.4
0	7.4	10.7
25	7.7	11.1
55	8.1	11.8
60	8.2	11.9
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SUCS32415
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	0.38	0.44	0.42
13.5	0.39	0.45	0.43
12.0	0.42	0.48	0.45
10.5	0.45	0.50	0.47
9.0	0.48	0.53	0.49
7.5	0.51	0.55	0.52
6.0	0.54	0.58	0.54
4.5	0.56	0.59	0.55
3.0	0.57	0.60	0.56
1.5	0.55	0.57	0.54
0.0	0.57	0.60	0.61

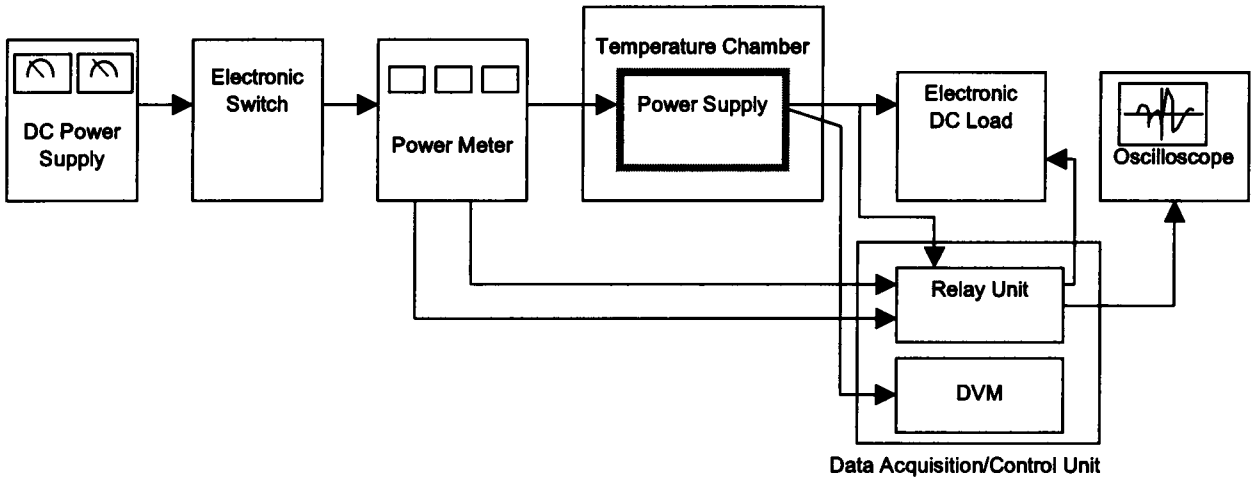


Figure A

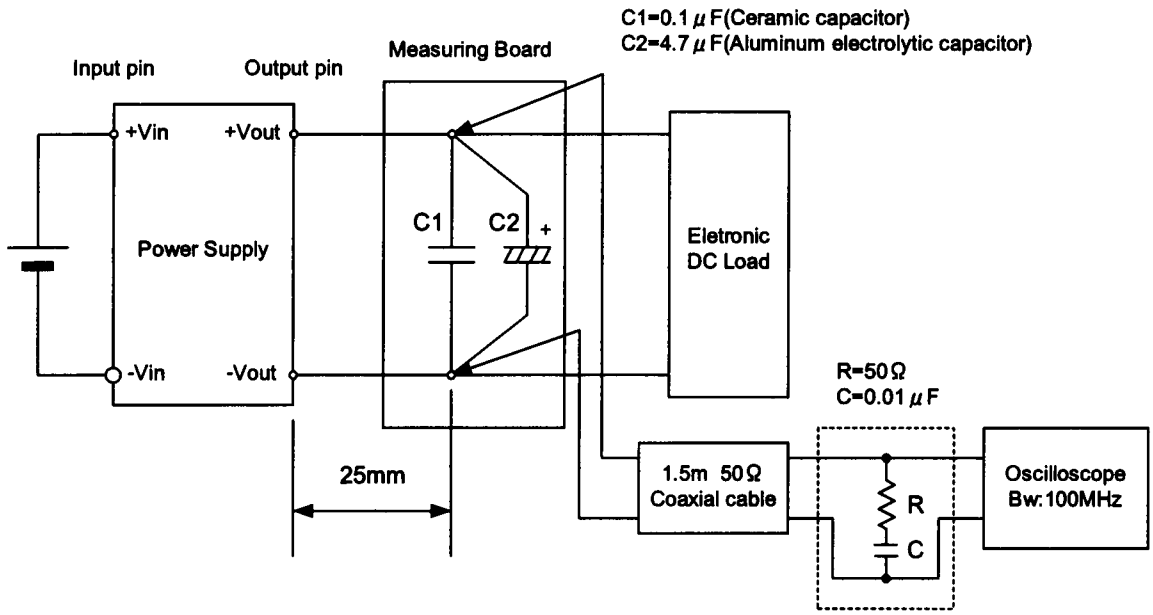


Figure B (Ripple and Ripple noise Characteristic)