参考資料

COSEL

TEST DATA OF SUW100515
SUCW100515

Regulated DC Power Supply
Mar 28, 2005

Approved by : Tetsuo Sugimori
Tetsuo Sugimori Design Manager

Prepared by : Yoshimichi Hirokawa
Yoshimichi Hirokawa Design Engineer

COSEL CO.,LTD.

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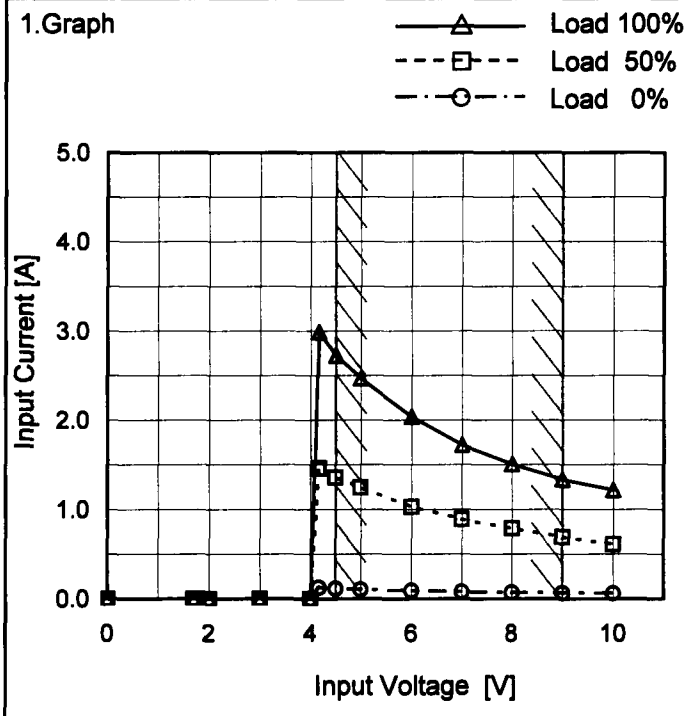
COSEL

Model	SUW100515/SUCW100515
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

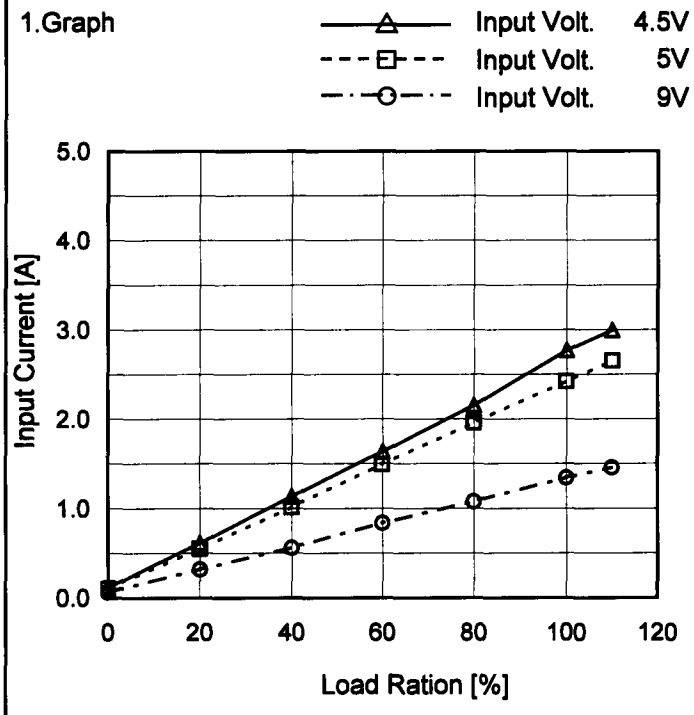
Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0.00	0.000	0.000	0.000
1.70	0.000	0.000	0.000
2.00	0.000	0.000	0.000
3.00	0.000	0.000	0.000
4.00	0.000	0.000	0.000
4.16	0.126	1.463	2.990
4.50	0.117	1.356	2.727
5.00	0.105	1.245	2.471
6.00	0.092	1.031	2.040
7.00	0.080	0.891	1.723
8.00	0.071	0.789	1.507
9.00	0.065	0.688	1.335
10.00	0.059	0.612	1.219
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SUW100515/SUCW100515
Item	Input Current (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



2.Values

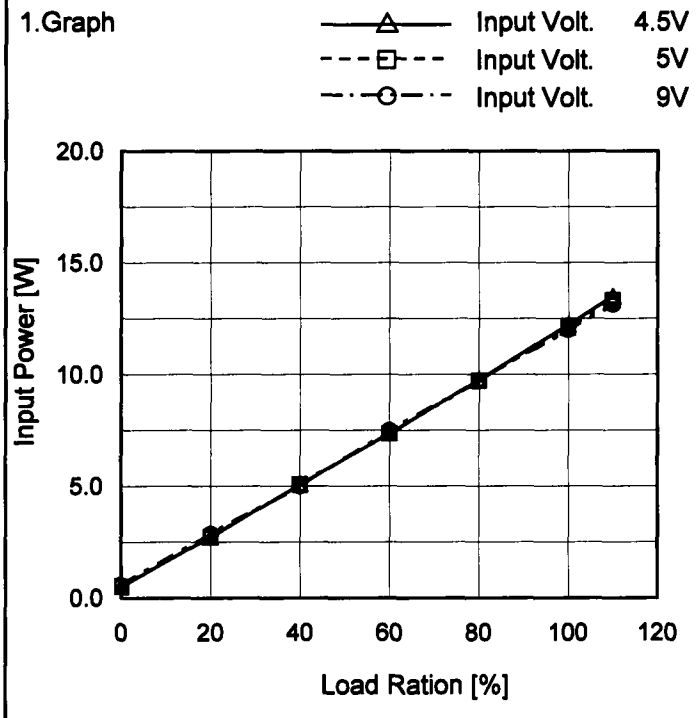
Load Ration [%]	Input Current [A]		
	Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]
0	0.117	0.107	0.066
20	0.615	0.549	0.320
40	1.136	1.013	0.559
60	1.637	1.496	0.838
80	2.154	1.960	1.078
100	2.769	2.422	1.343
110	2.997	2.655	1.460
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SUW100515/SUCW100515
Item	Input Power (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



2.Values

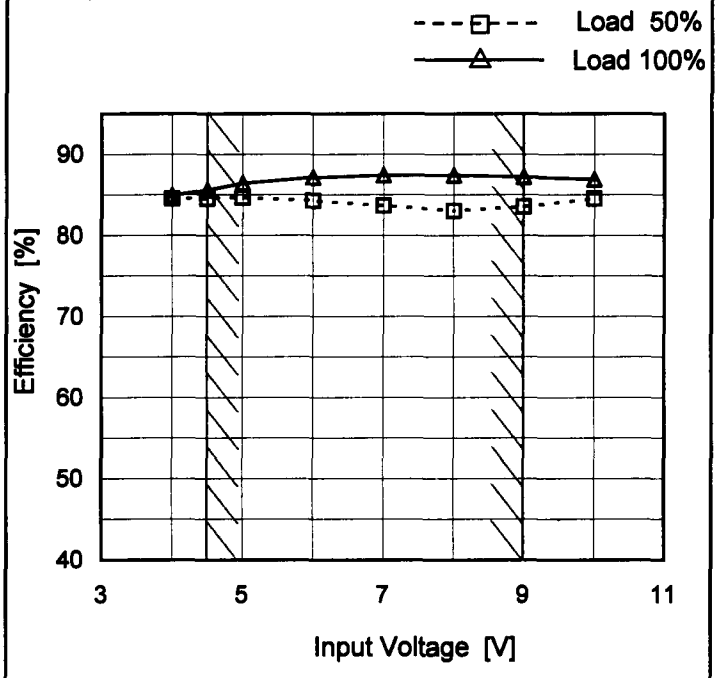
Load Ration [%]	Input Power [W]		
	Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]
0	0.52	0.53	0.59
20	2.73	2.73	2.88
40	5.07	5.08	5.00
60	7.37	7.35	7.50
80	9.76	9.71	9.73
100	12.22	12.09	12.00
110	13.49	13.32	13.13
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SUW100515/SUCW100515
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

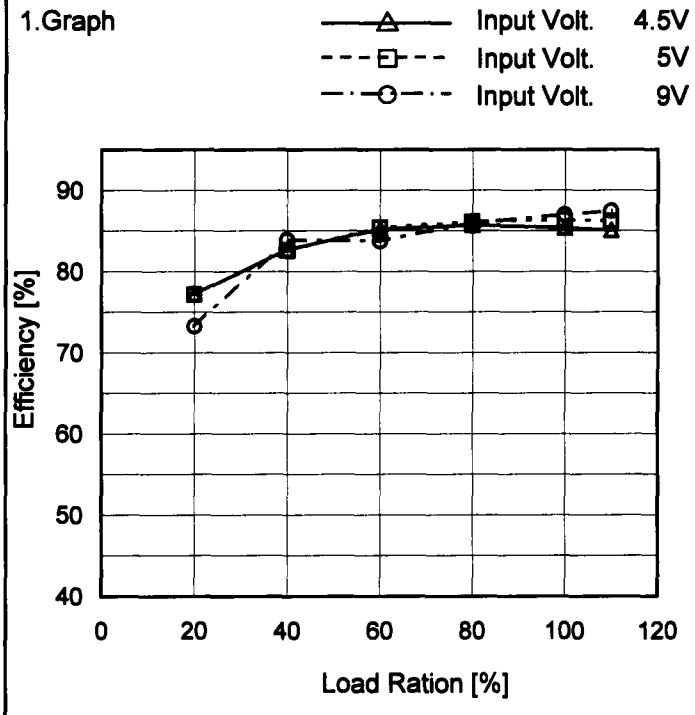
Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
4.0	84.5	84.9
4.5	84.5	85.6
5.0	84.6	86.4
6.0	84.2	87.1
7.0	83.7	87.4
8.0	83.0	87.4
9.0	83.5	87.2
10.0	84.5	86.9
–	-	-

COSEL

Model	SUW100515/SUCW100515
Item	Efficiency (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



2.Values

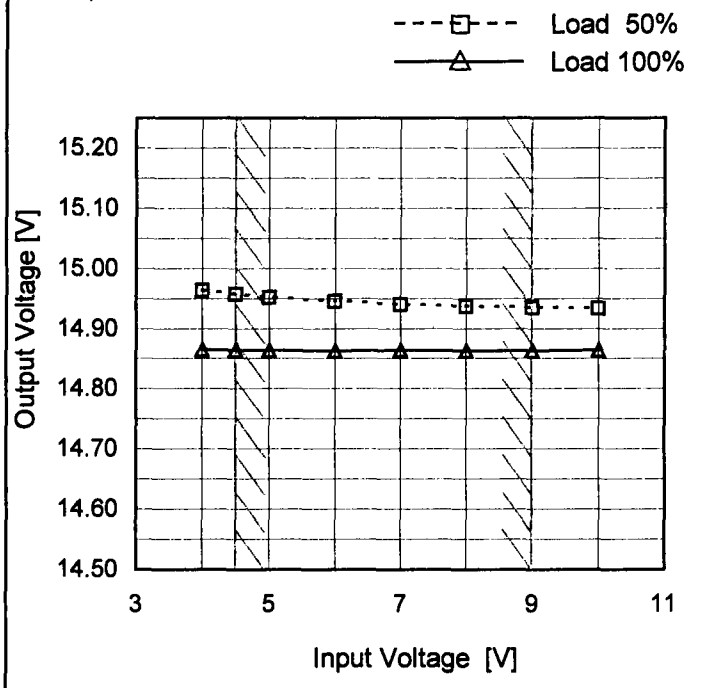
Load Ration [%]	Efficiency [%] Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]
0	-	-	-
20	77.3	77.2	73.3
40	82.7	82.5	83.9
60	85.2	85.4	83.7
80	85.7	86.1	86.0
100	85.4	86.3	87.0
110	85.1	86.2	87.4
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SUW100515/SUCW100515
Item	Line Regulation
Object	+15V0.35A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

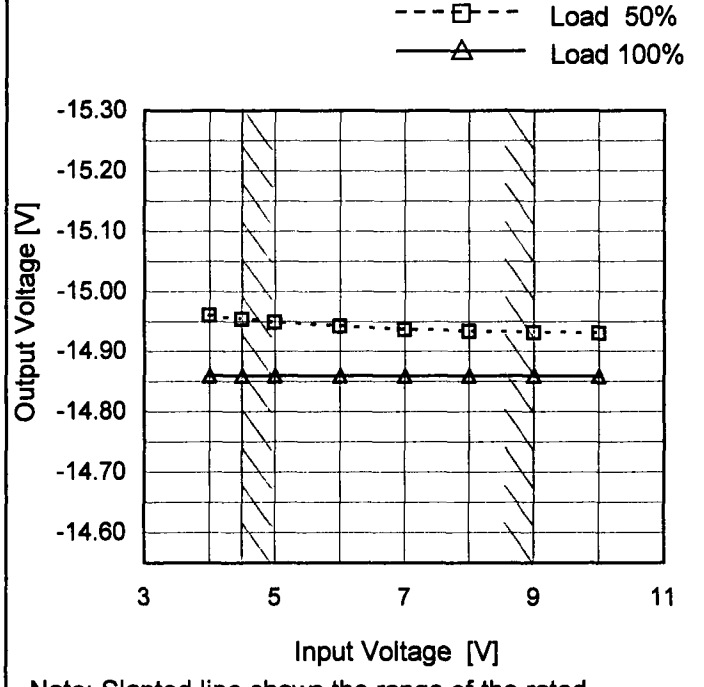


2.Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
4.0	14.964	14.865
4.5	14.957	14.865
5.0	14.952	14.864
6.0	14.945	14.864
7.0	14.940	14.864
8.0	14.937	14.864
9.0	14.935	14.864
10.0	14.933	14.864
--	-	-

Object	-15V0.35A

1.Graph



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

2.Values

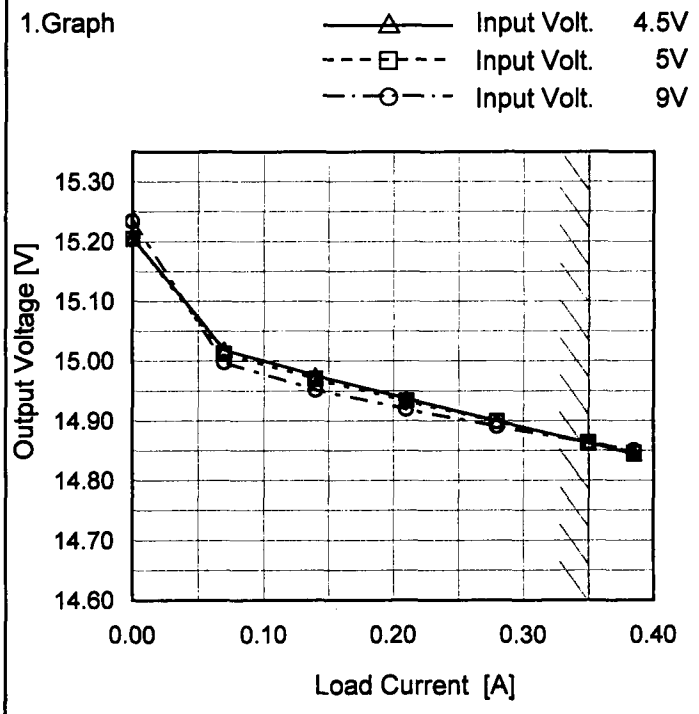
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
4.0	-14.960	-14.860
4.5	-14.954	-14.860
5.0	-14.949	-14.861
6.0	-14.942	-14.861
7.0	-14.936	-14.860
8.0	-14.933	-14.860
9.0	-14.931	-14.860
10.0	-14.930	-14.859
--	-	-

COSEL

Model	SUW100515/SUCW100515
Item	Load Regulation
Object	+15V0.35A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

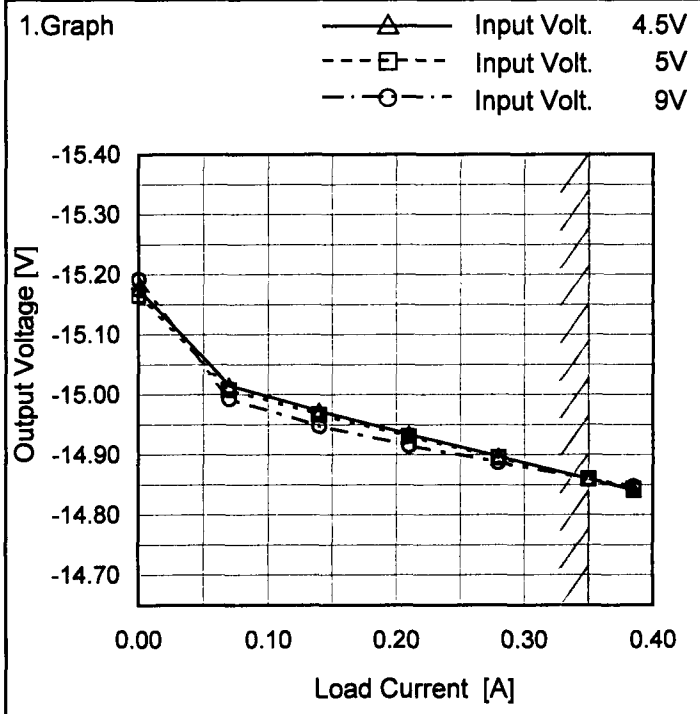


2.Values

Load Current [A]	Output Voltage [V] Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]
0.000	15.208	15.205	15.234
0.070	15.019	15.012	14.998
0.140	14.976	14.970	14.952
0.210	14.937	14.933	14.920
0.280	14.900	14.899	14.891
0.350	14.863	14.864	14.864
0.385	14.845	14.846	14.850
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

Object	-15V0.35A

1.Graph



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

2.Values

Load Current [A]	Output Voltage [V] Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]
0.000	-15.177	-15.166	-15.192
0.070	-15.016	-15.008	-14.993
0.140	-14.973	-14.967	-14.948
0.210	-14.934	-14.930	-14.916
0.280	-14.897	-14.895	-14.887
0.350	-14.860	-14.860	-14.860
0.385	-14.842	-14.844	-14.847
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SUW100515/SUCW100515
Item	Dynamic Load Response
Object	+15V0.35A

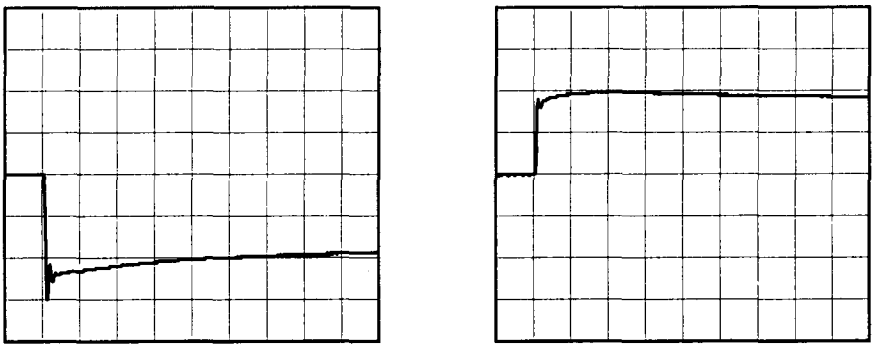
Temperature 25°C
Testing Circuitry Figure A

Input Volt. 5 V
Cycle 100 mS

t_1、t_2 = 50μs

Load Current

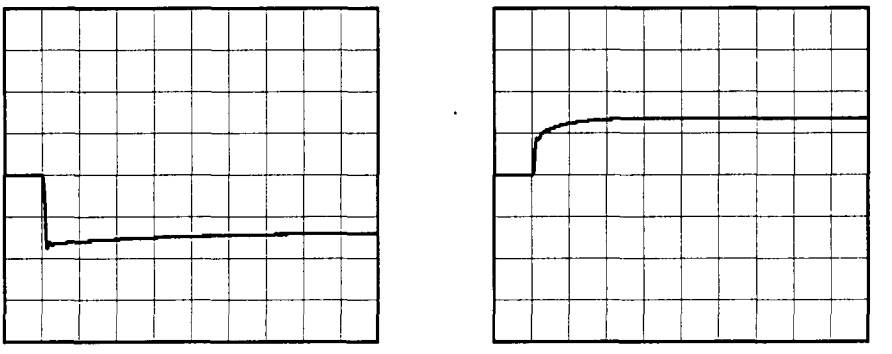
Min. Load (0A) ⟷
Load 100% (0.35A)



200mV/div

500μs/div 500μs/div

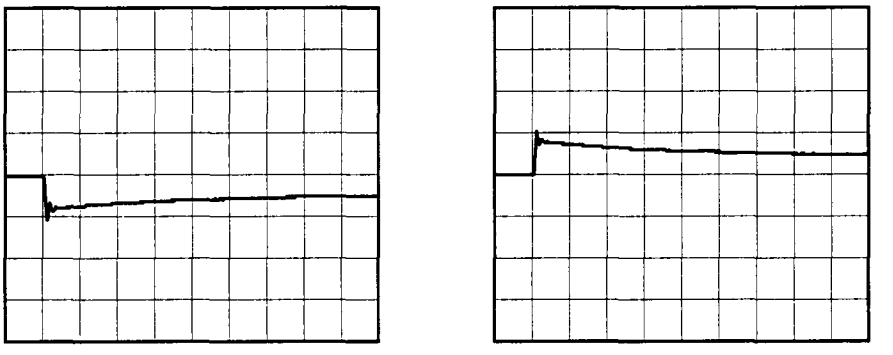
Min. Load (0A) ⟷
Load 50% (0.175A)



200mV/div

500μs/div 500μs/div

Load 50% (0.175A) ⟷
Load 100% (0.35A)



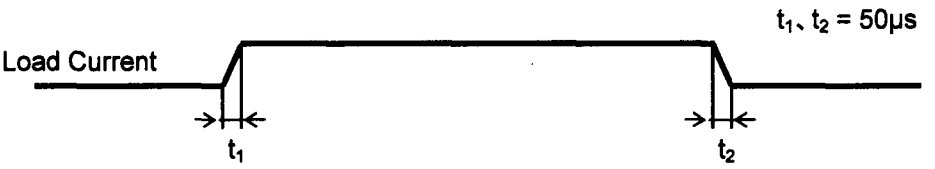
200mV/div

500μs/div 500μs/div

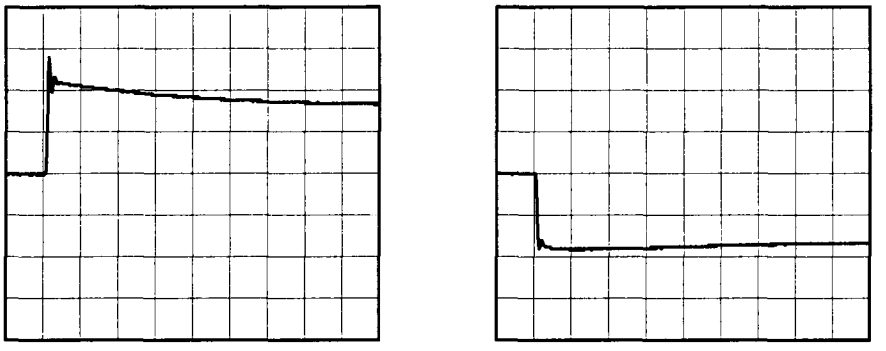
COSEL

Model	SUW100515/SUCW100515	
Item	Dynamic Load Response	Temperature 25°C Testing Circuitry Figure A
Object	-15V0.35A	

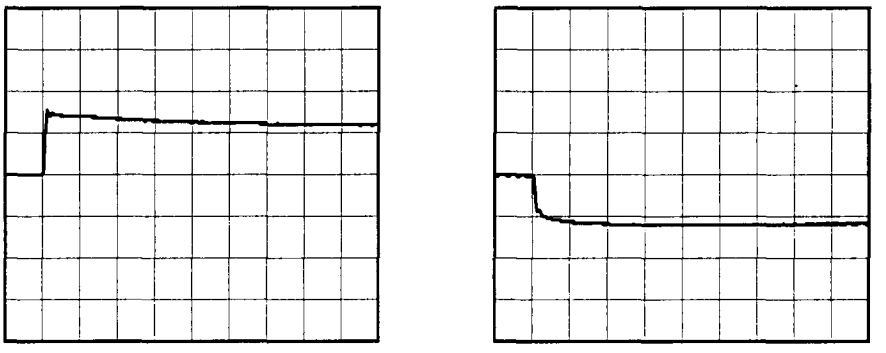
Input Volt. 5 V
Cycle 100 mS



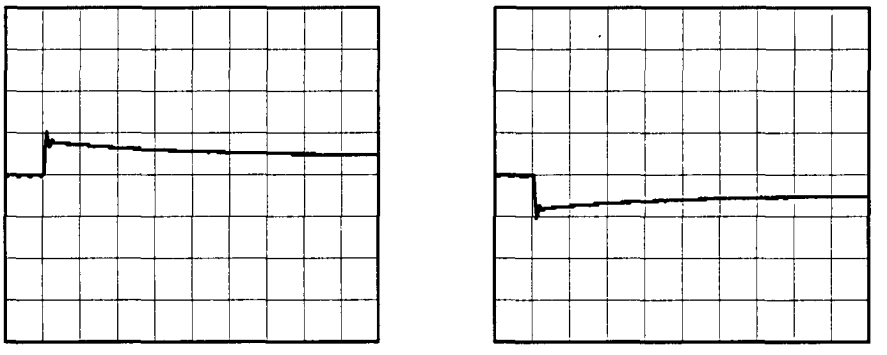
Min. Load (0A) ⟷
Load 100% (0.35A)



Min. Load (0A) ⟷
Load 50% (0.175A)



Load 50% (0.175A) ⟷
Load 100% (0.35A)

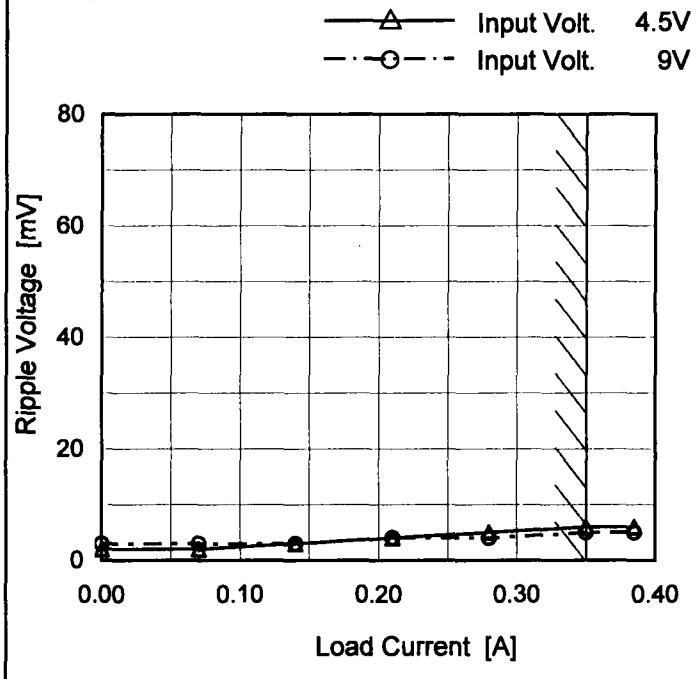


COSEL

Model	SUW100515/SUCW100515
Item	Ripple Voltage (by Load Current)
Object	+15V0.35A

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]

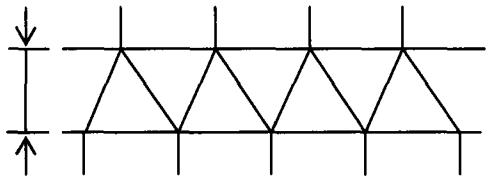


Fig.Complex Ripple Wave Form

2.Values

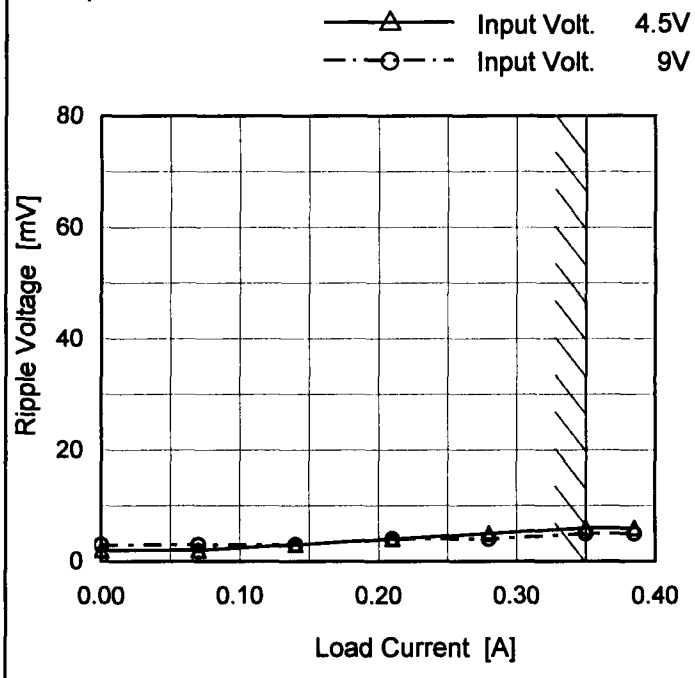
Load Current [A]	Ripple Voltage [mV] Input Volt. 4.5 [V]	Ripple Voltage [mV] Input Volt. 9 [V]
0.000	2	3
0.070	2	3
0.140	3	3
0.210	4	4
0.280	5	4
0.350	6	5
0.385	6	5
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SUW100515/SUCW100515
Item	Ripple Voltage (by Load Current)
Object	-15V0.35A

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]

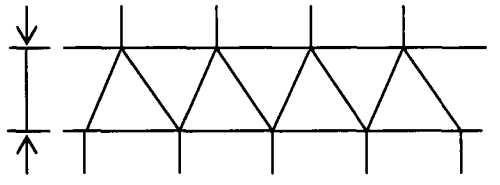


Fig.Complex Ripple Wave Form

2.Values

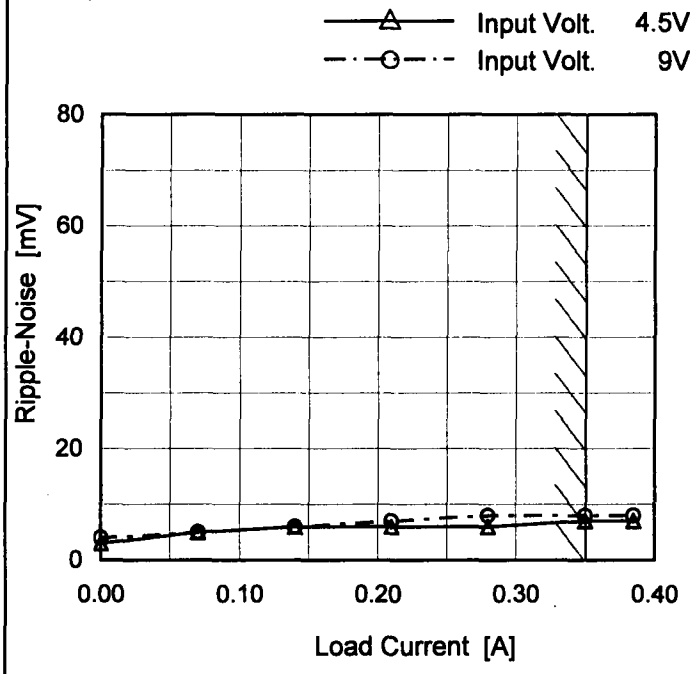
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 4.5 [V]	Input Volt. 9 [V]
0.000	2	3
0.070	2	3
0.140	3	3
0.210	4	4
0.280	5	4
0.350	6	5
0.385	6	5
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SUW100515/SUCW100515
Item	Ripple-Noise
Object	+15V0.35A

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.

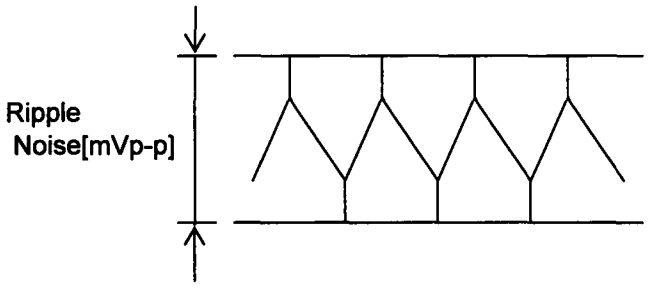


Fig.Complex Ripple Noise Wave Form

2.Values

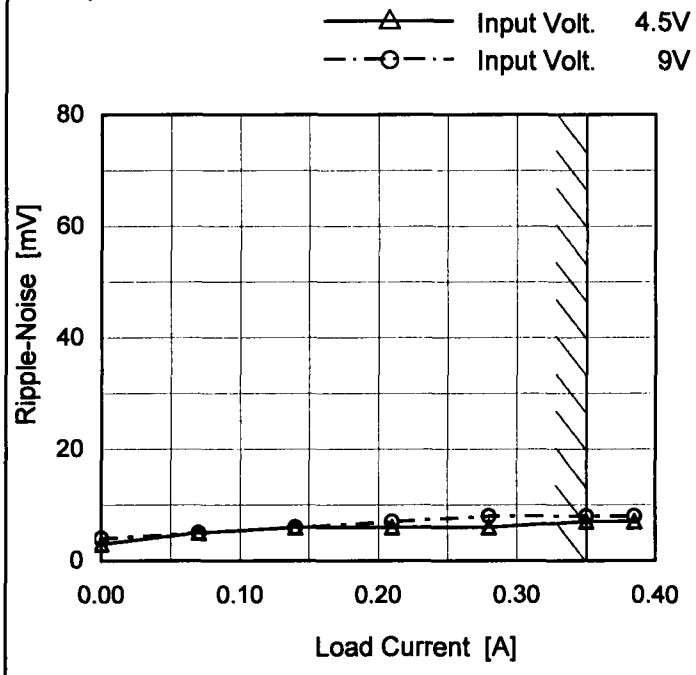
Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 4.5 [V]	Input Volt. 9 [V]
0.000	3	4
0.070	5	5
0.140	6	6
0.210	6	7
0.280	6	8
0.350	7	8
0.385	7	8
–	-	-
–	-	-
–	-	-
–	-	-

COSEL

Model	SUW100515/SUCW100515
Item	Ripple-Noise
Object	-15V0.35A

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.

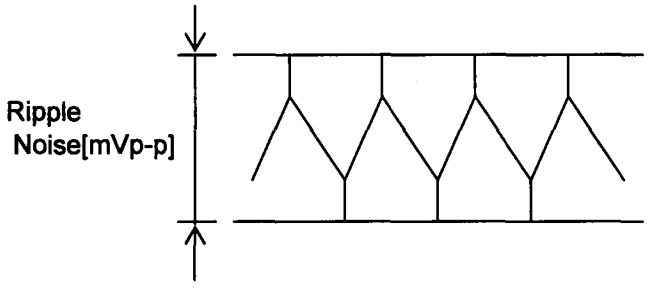


Fig.Complex Ripple Noise Wave Form

2.Values

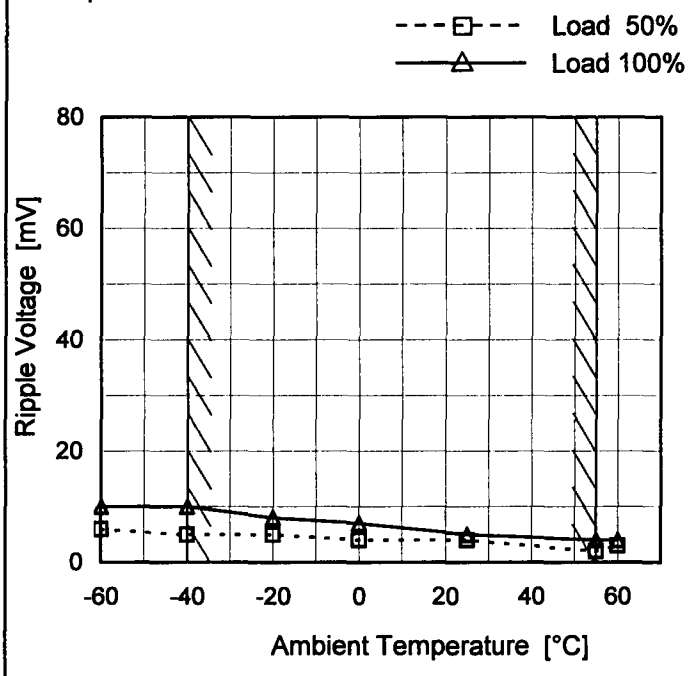
Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 4.5 [V]	Input Volt. 9 [V]
0.000	3	4
0.070	5	5
0.140	6	6
0.210	6	7
0.280	6	8
0.350	7	8
0.385	7	8
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SUW100515/SUCW100515
Item	Ripple Voltage (by Ambient Temp.)
Object	+15V0.35A

Testing Circuitry Figure B

1.Graph



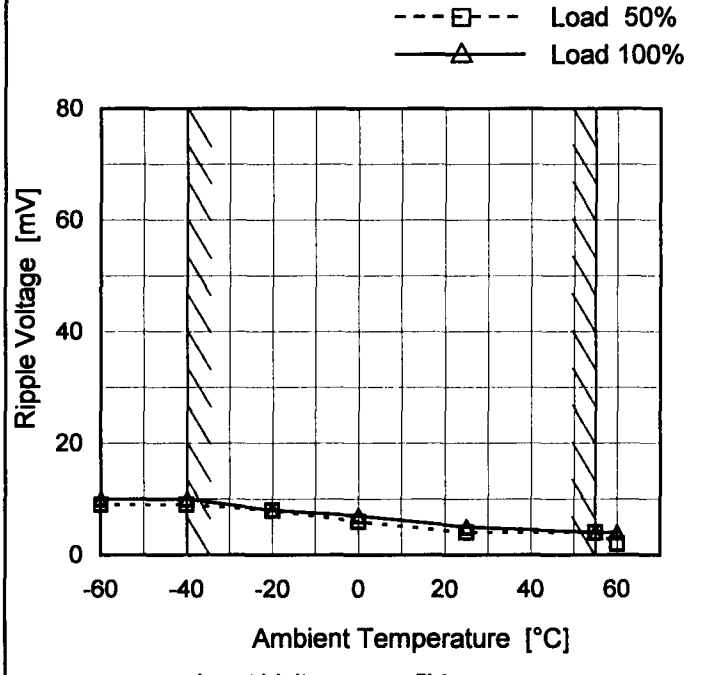
Input Volt. 5V

2.Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	6	10
-40	5	10
-20	5	8
0	4	7
25	4	5
55	2	4
60	3	4
--	-	-
--	-	-
--	-	-
--	-	-

Object	-15V0.35A

1.Graph



Input Volt. 5V

Measured by 100 MHz Oscilloscope.

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

2.Values

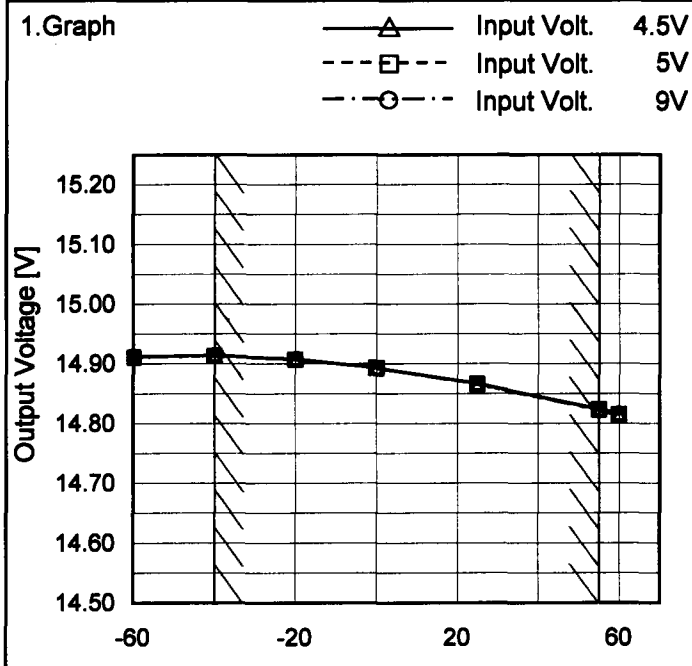
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	9	10
-40	9	10
-20	8	8
0	6	7
25	4	5
55	4	4
60	2	4
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SUW100515/SUCW100515
Item	Ambient Temperature Drift
Object	+15V0.35A

Testing Circuitry Figure A

1.Graph

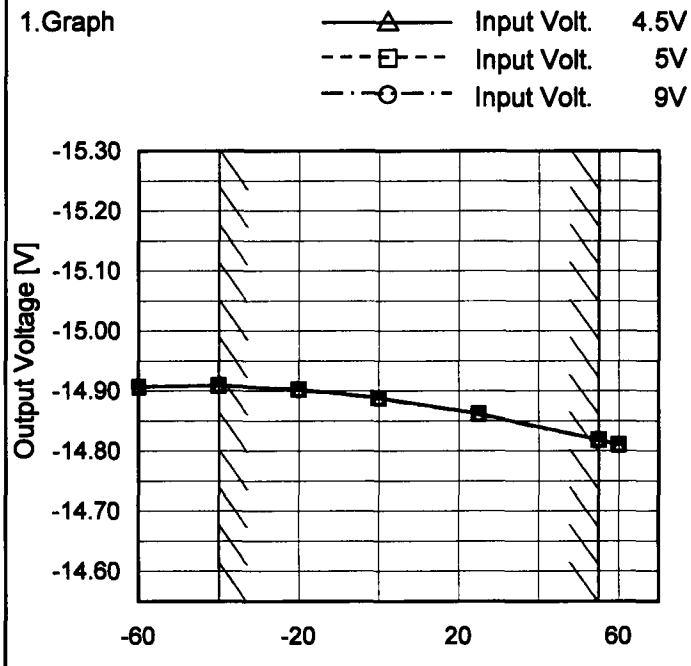


2.Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]
-60	14.912	14.911	14.912
-40	14.914	14.913	14.914
-20	14.908	14.907	14.907
0	14.893	14.893	14.893
25	14.867	14.866	14.866
55	14.824	14.823	14.822
60	14.816	14.815	14.814
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

Object	-15V0.35A

1.Graph



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

2.Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]
-60	-14.907	-14.907	-14.907
-40	-14.909	-14.909	-14.909
-20	-14.903	-14.903	-14.902
0	-14.889	-14.888	-14.888
25	-14.862	-14.862	-14.861
55	-14.819	-14.819	-14.818
60	-14.811	-14.811	-14.810
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SUW100515/SUCW100515	
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 : 4.5 - 9V
Load Current (AVR 1) : 0 - 0.35A (AVR 2) : 0 - 0.35A
* 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	+15V0.35A					
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	-20	9	0	15.258	±218	±1.5
Minimum Voltage	55	9	0.35	14.822		

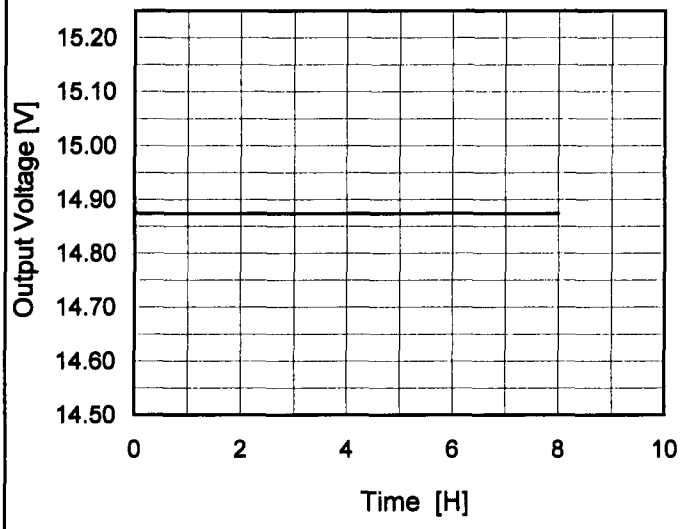
Object	-15V0.35A					
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	-20	9	0	-15.216	±199	±1.3
Minimum Voltage	55	9	0.35	-14.818		

COSEL

Model	SUW100515/SUCW100515
Item	Time Lapse Drift
Object	+15V0.35A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



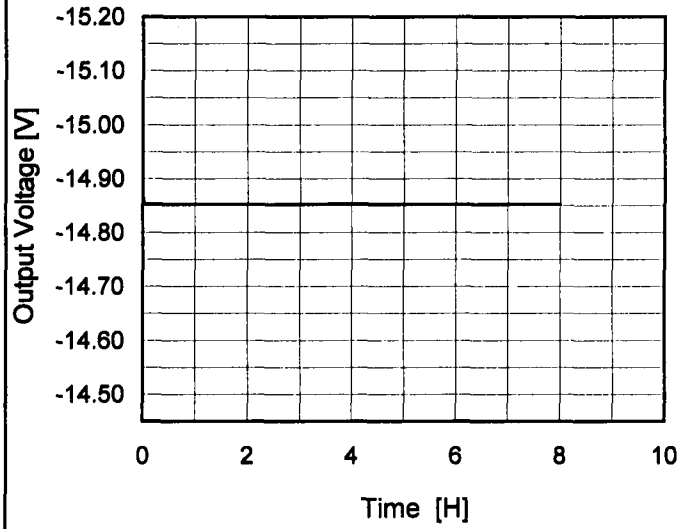
Input Volt. 5V
Load 100%

2.Values

Time since start [H]	Output Voltage [V]
0.0	14.886
0.5	14.874
1.0	14.874
2.0	14.874
3.0	14.874
4.0	14.874
5.0	14.874
6.0	14.874
7.0	14.874
8.0	14.874

Object	-15V0.35A

1.Graph



Input Volt. 5V
Load 100%

2.Values

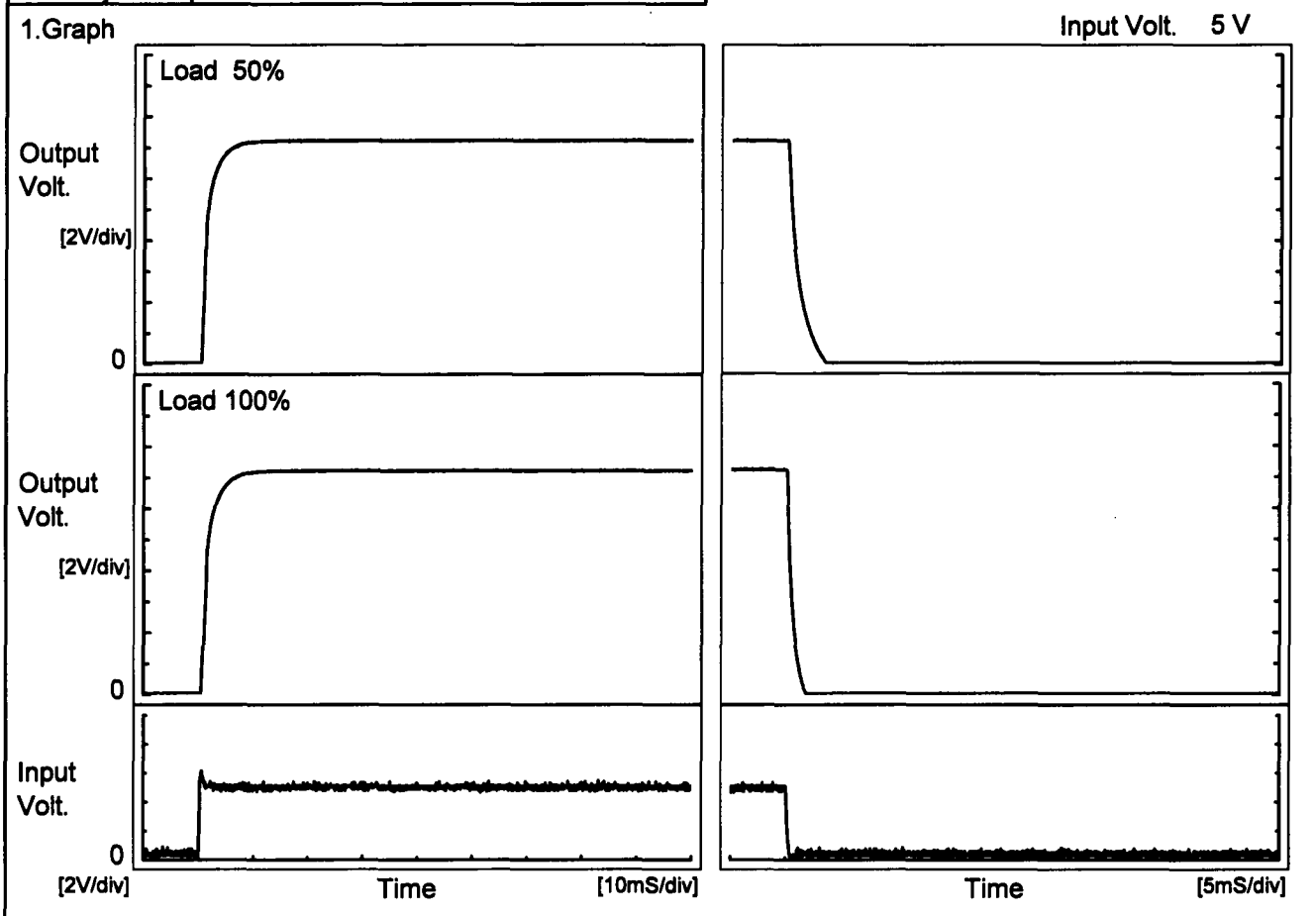
Time since start [H]	Output Voltage [V]
0.0	-14.865
0.5	-14.852
1.0	-14.853
2.0	-14.853
3.0	-14.852
4.0	-14.853
5.0	-14.853
6.0	-14.853
7.0	-14.852
8.0	-14.852

COSEL

Model	SUW100515/SUCW100515
Item	Rise and Fall Time
Object	+15V0.35A

Temperature 25°C
Testing Circuitry Figure A

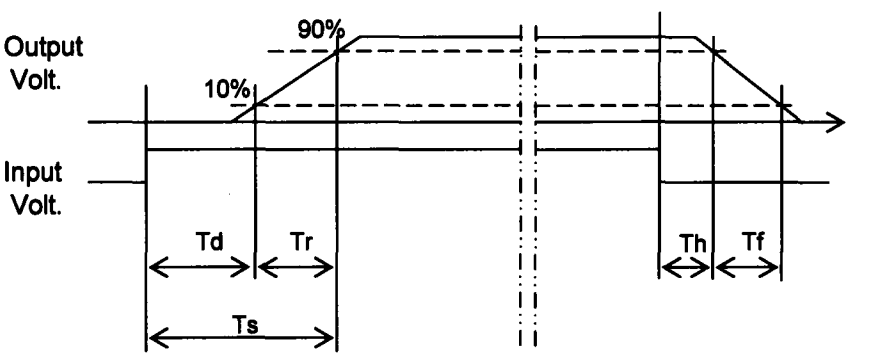
1.Graph



2.Values

[mS]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	0.6	4.4	5.0	0.2	2.2
100 %	0.6	4.6	5.2	0.2	1.1

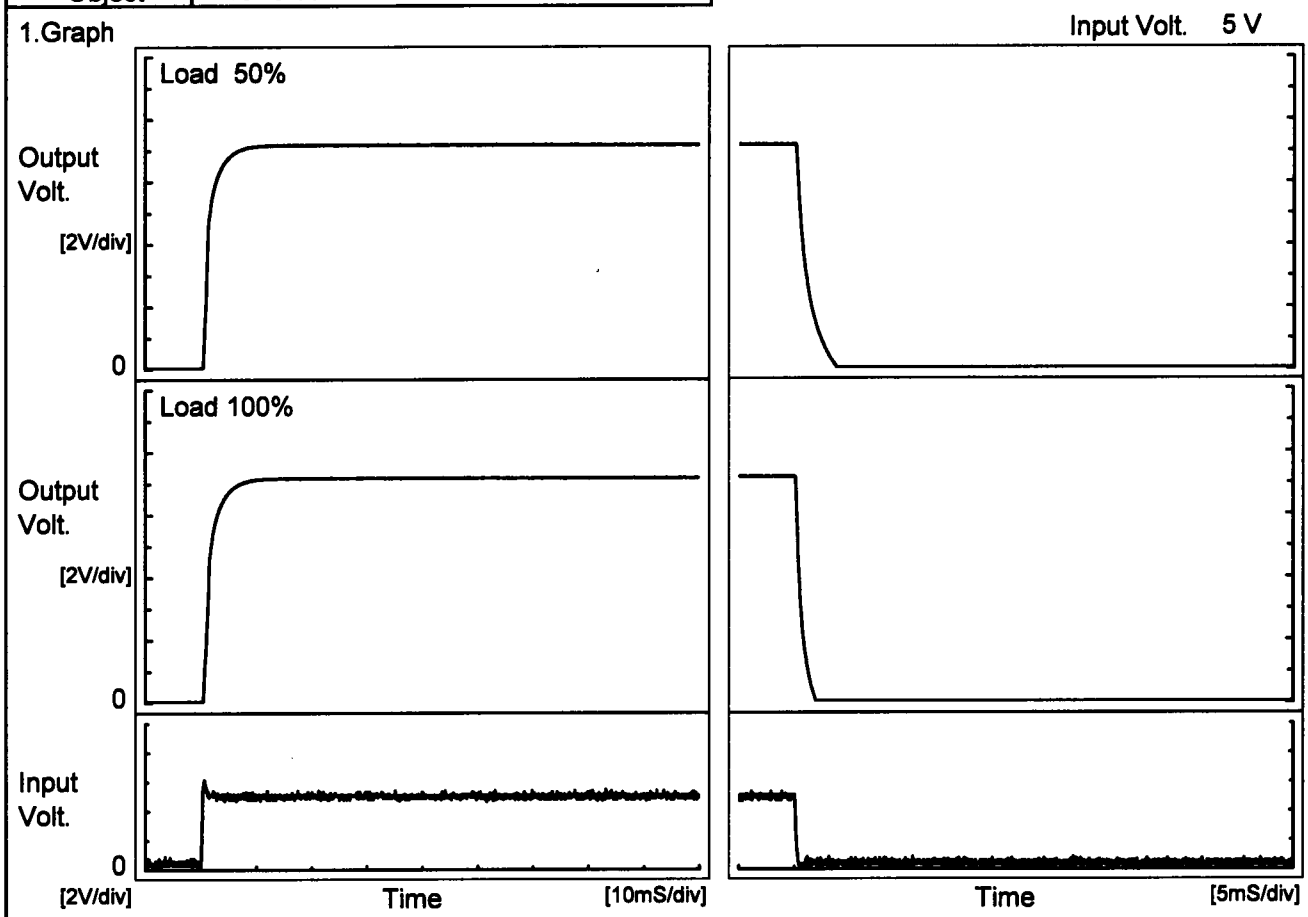


COSEL

Model	SUW100515/SUCW100515
Item	Rise and Fall Time
Object	-15V0.35A

Temperature 25°C
Testing Circuitry Figure A

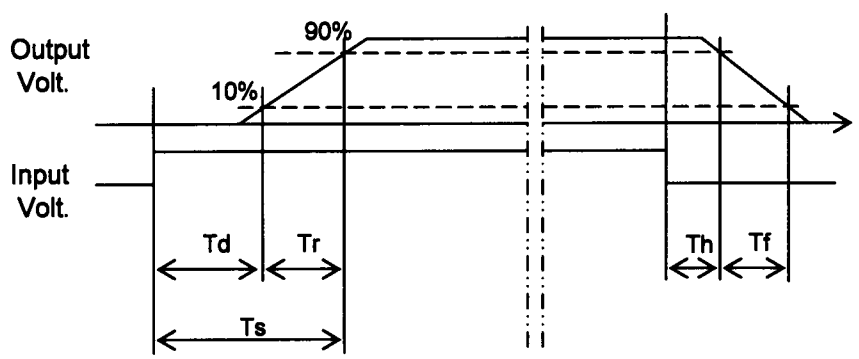
1.Graph



2.Values

[mS]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	0.6	4.6	5.2	0.2	2.4
100 %	0.6	4.8	5.4	0.2	1.2

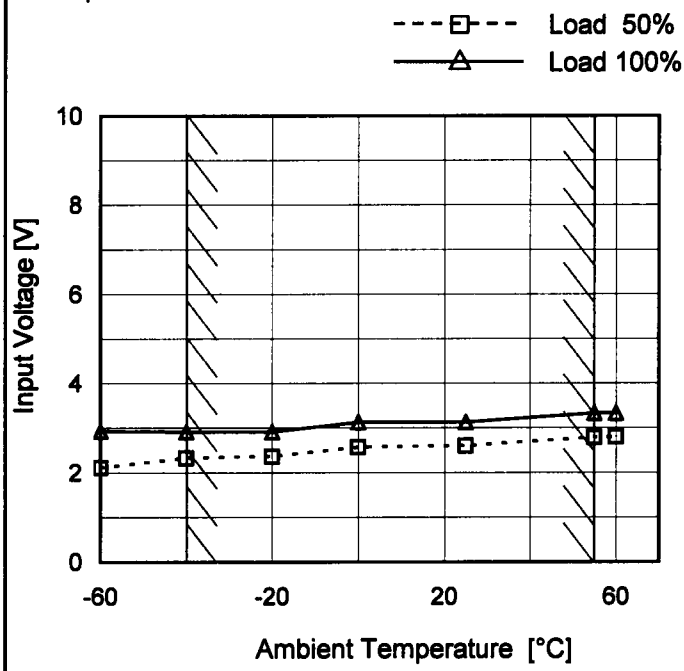


COSEL

Model	SUW100515/SUCW100515
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+15V0.35A

Testing Circuitry Figure A

1.Graph

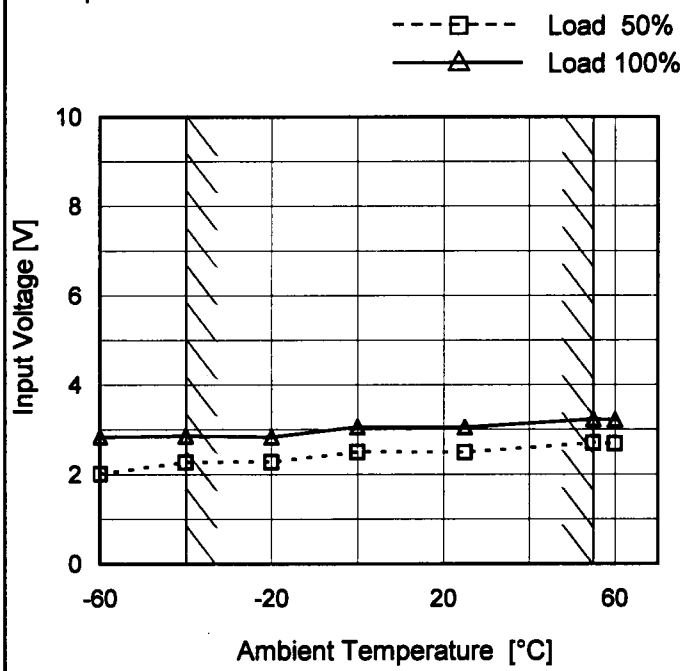


2.Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	2.2	3.0
-40	2.4	3.0
-20	2.4	3.0
0	2.6	3.2
25	2.6	3.2
55	2.8	3.4
60	2.8	3.4
--	-	-
--	-	-
--	-	-
--	-	-

Object	-15V0.35A

1.Graph



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

2.Values

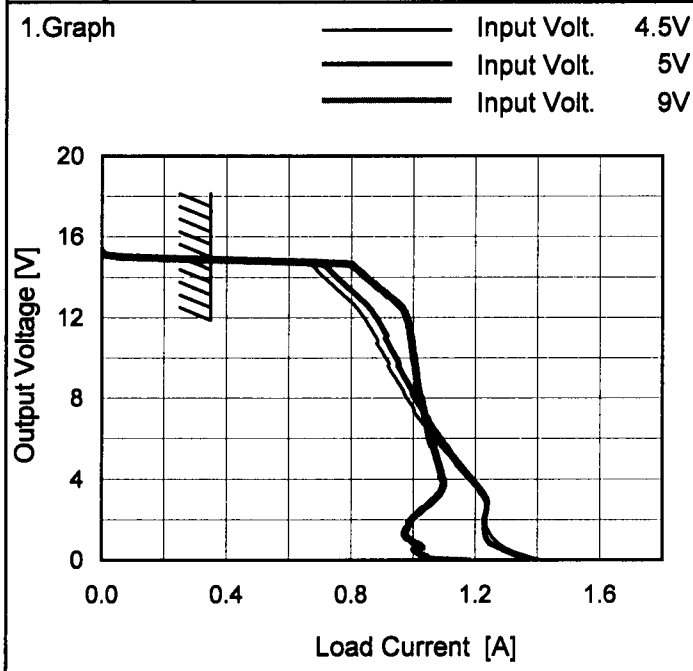
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	2.1	2.9
-40	2.3	2.9
-20	2.3	2.9
0	2.5	3.1
25	2.5	3.1
55	2.7	3.3
60	2.7	3.3
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SUW100515/SUCW100515
Item	Overcurrent Protection
Object	+15V0.35A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

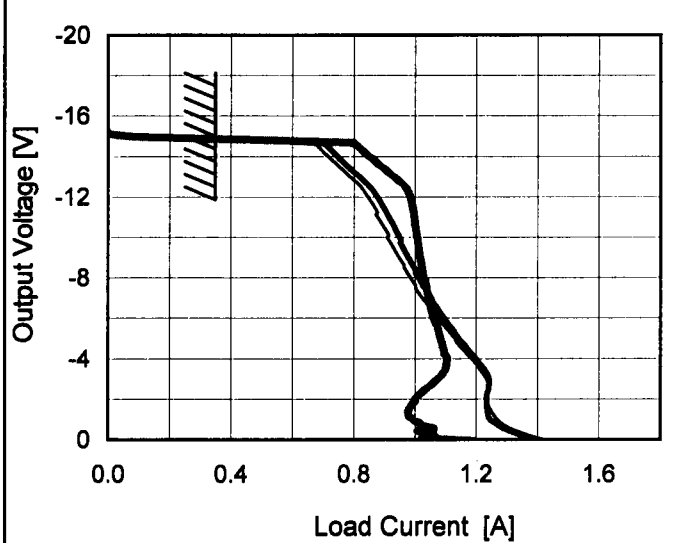


2.Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]
15.0	0.47	0.47	0.45
14.3	0.70	0.74	0.83
13.5	0.75	0.79	0.89
12.0	0.84	0.88	0.98
10.5	0.89	0.93	1.00
9.0	0.94	0.97	1.01
7.5	1.00	1.03	1.03
6.0	1.07	1.09	1.05
4.5	1.15	1.17	1.09
3.0	1.23	1.24	1.07
1.5	1.24	1.23	0.98
0.0	1.41	1.40	1.18

Object	-15V0.35A

1.Graph



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

2.Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]
-15.00	0.35	0.37	0.57
-14.25	0.70	0.73	0.83
-13.50	0.75	0.78	0.89
-12.00	0.85	0.88	0.98
-10.50	0.90	0.93	1.00
-9.00	0.95	0.98	1.02
-7.50	1.00	1.03	1.04
-6.00	1.08	1.09	1.06
-4.50	1.16	1.17	1.09
-3.00	1.23	1.24	1.07
-1.50	1.25	1.24	0.98
0.00	1.43	1.42	1.20

BC-3797

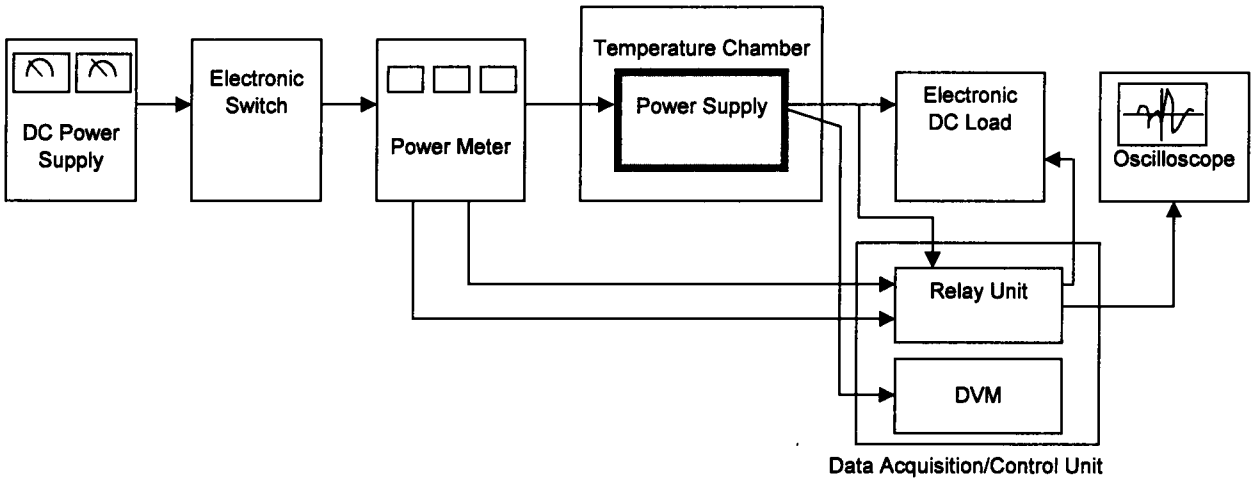


Figure A

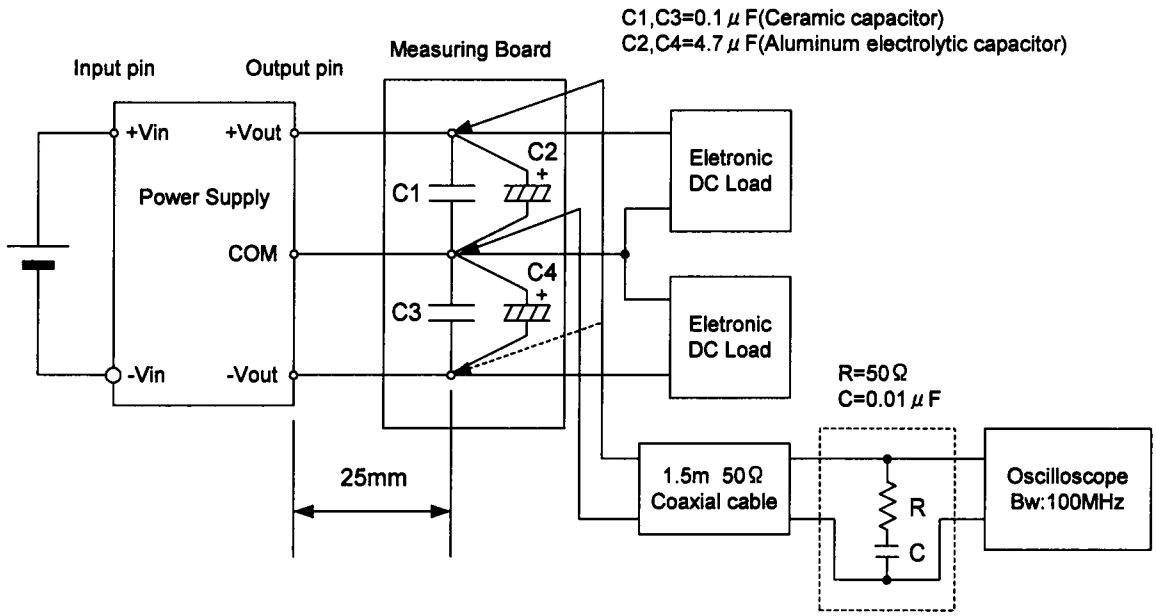


Figure B(Ripple and Ripple noise Characteristic)