参考資料

COSEL

TEST DATA OF DBS700B28

Regulated DC Power Supply
Jun 30, 2008

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Masanobu Shima — Design Engineer

COSEL CO.,LTD.

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Object	———————

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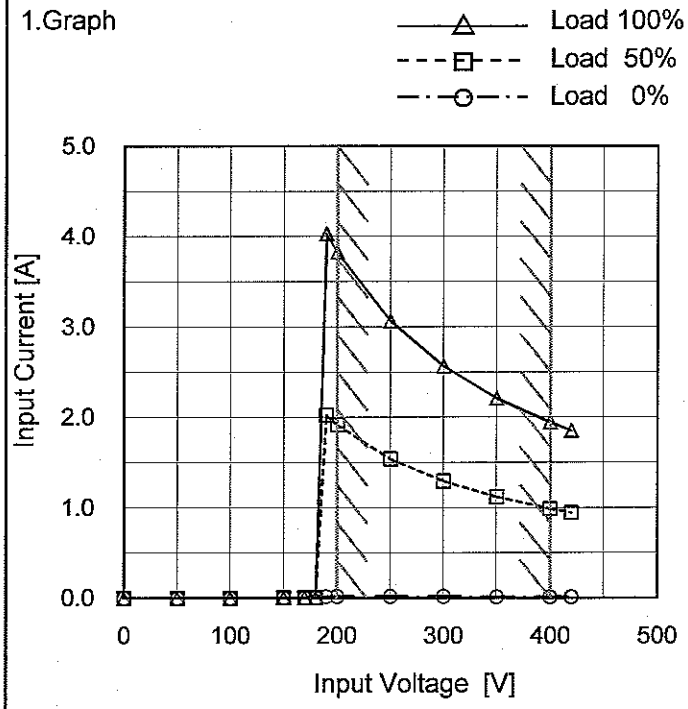


Note: Slanted line shows the range of the rated input voltage.

2.Values

Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0	0.000	0.000	0.000
50	0.000	0.000	0.000
100	0.000	0.000	0.000
150	0.003	0.003	0.003
170	0.003	0.003	0.003
180	0.003	0.003	0.003
190	0.019	2.022	4.030
200	0.019	1.917	3.824
250	0.017	1.538	3.066
300	0.017	1.293	2.564
350	0.016	1.119	2.209
400	0.016	0.990	1.944
420	0.016	0.947	1.853
---	-	-	-
---	-	-	-
---	-	-	-
---	-	-	-
---	-	-	-

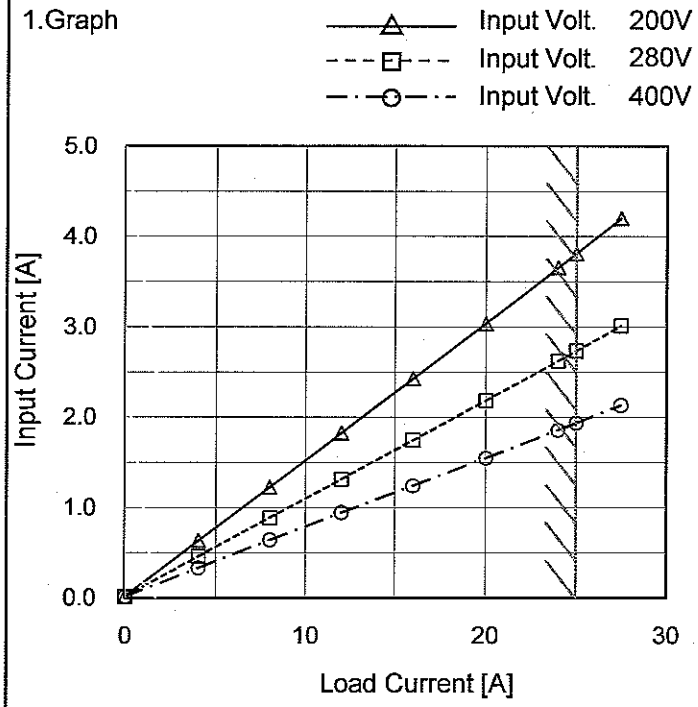
BC-10176

COSEL

Model	DBS700B28
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

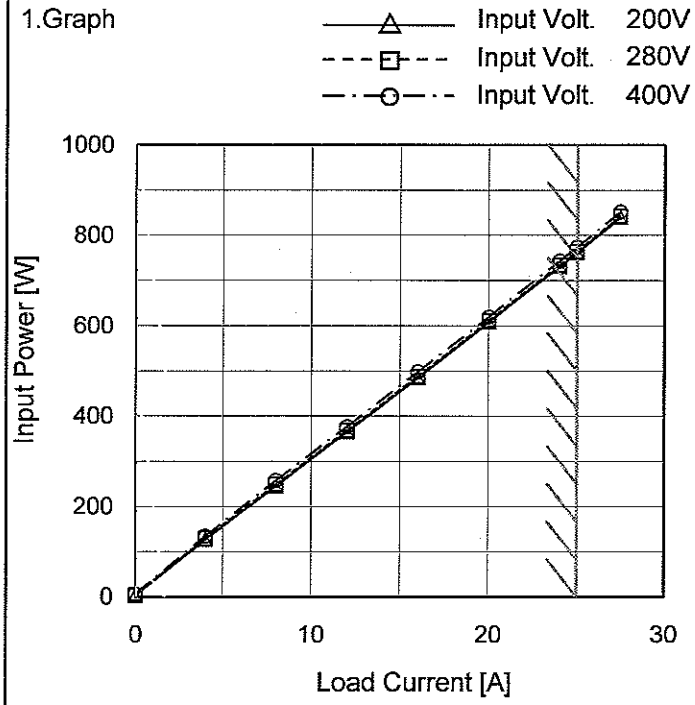
Load Current [A]	Input Current [A]		
	Input Volt. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
0.0	0.019	0.017	0.016
4.0	0.637	0.463	0.336
8.0	1.227	0.889	0.644
12.0	1.826	1.316	0.944
16.0	2.426	1.745	1.245
20.0	3.038	2.184	1.551
24.0	3.656	2.622	1.860
25.0	3.811	2.732	1.936
27.5	4.200	3.010	2.132
--	-	-	-
--	-	-	-

COSEL

Model	DBS700B28
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. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
0.0	3.7	4.7	6.4
4.0	127.3	129.5	134.3
8.0	245.3	248.9	257.4
12.0	365.0	368.2	377.0
16.0	485.0	488.6	498.0
20.0	608.0	611.0	620.0
24.0	731.0	734.0	743.0
25.0	762.0	765.0	774.0
27.5	840.0	843.0	852.0
--	-	-	-
--	-	-	-

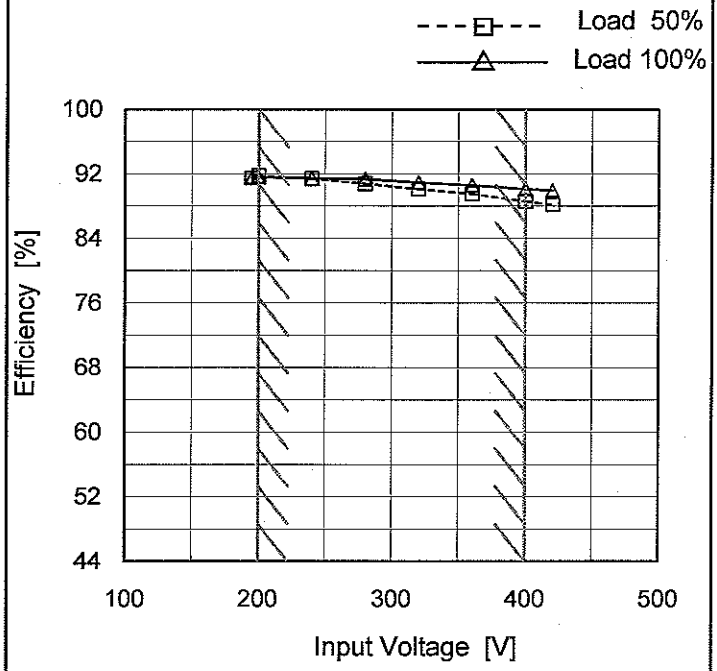
BC-10176

COSEL

Model	DBS700B28
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%
195	91.5	91.6
200	91.7	91.6
240	91.4	91.5
280	90.8	91.3
320	90.1	91.0
360	89.5	90.6
400	88.6	90.1
420	88.2	90.0
--	-	-

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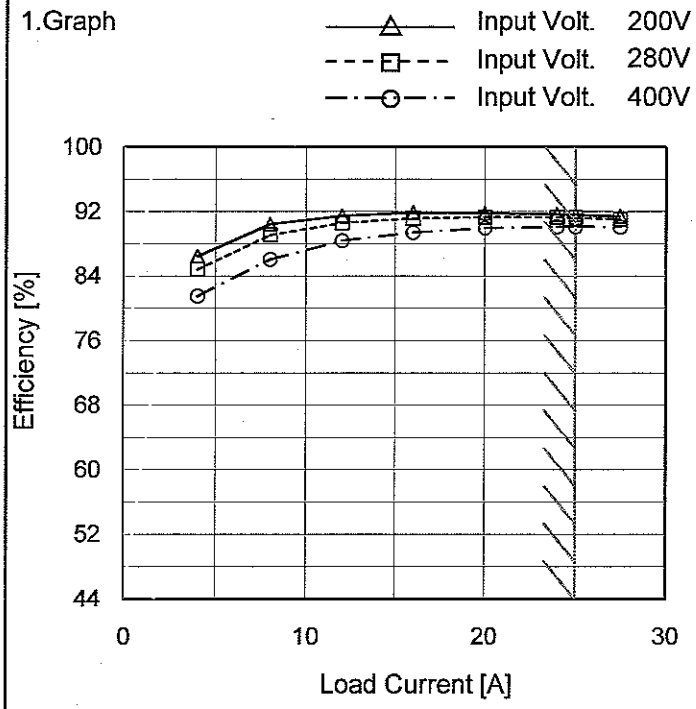
Model	DBS700B28
Item	Efficiency (by Load Current)
Object	———————

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. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
0.0	-	-	-
4.0	86.5	84.8	81.5
8.0	90.5	89.1	86.1
12.0	91.5	90.6	88.4
16.0	91.9	91.2	89.4
20.0	91.8	91.3	89.9
24.0	91.7	91.3	90.1
25.0	91.6	91.2	90.1
27.5	91.4	91.1	90.1
--	-	-	-
--	-	-	-

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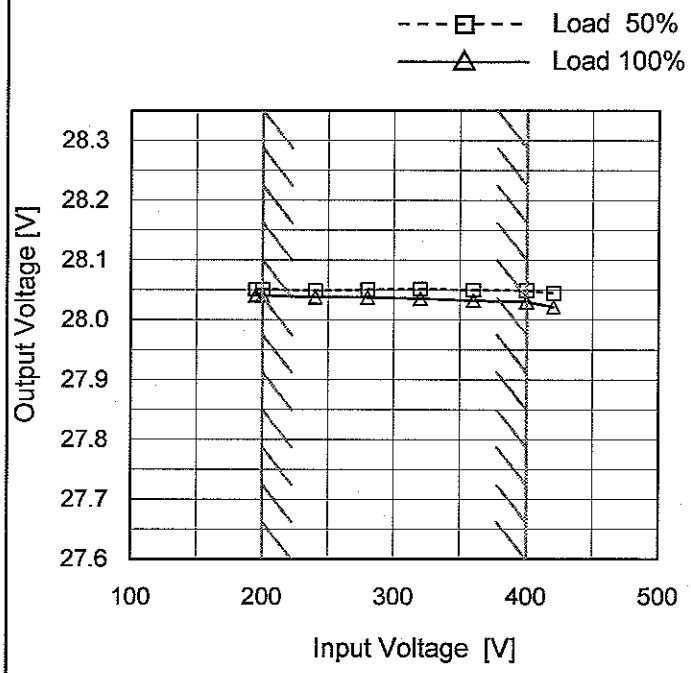
Model	DBS700B28
Item	Line Regulation
Object	+28V25A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

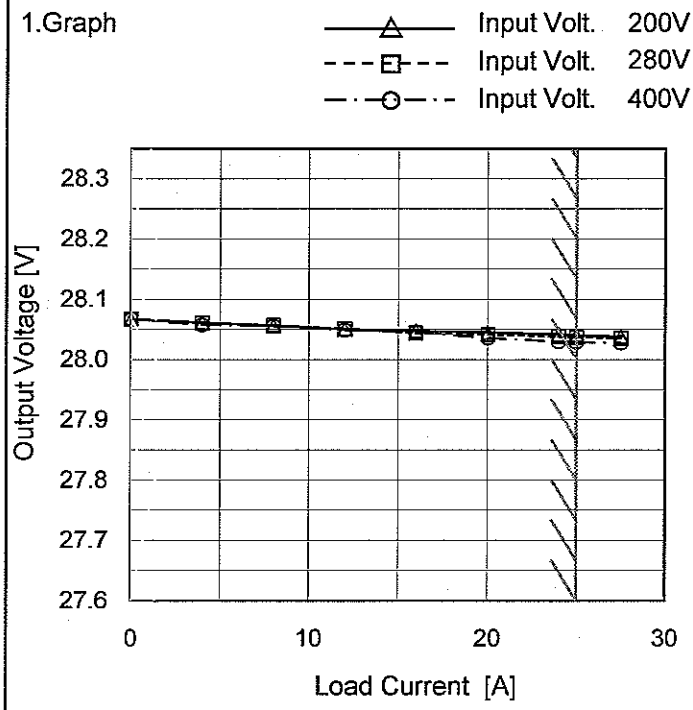
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
195	28.052	28.041
200	28.052	28.041
240	28.049	28.039
280	28.051	28.038
320	28.052	28.036
360	28.050	28.033
400	28.049	28.030
420	28.045	28.022
--	-	-

COSEL

Model	DBS700B28
Item	Load Regulation
Object	+28V25A

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. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
0.0	28.067	28.067	28.068
4.0	28.062	28.060	28.058
8.0	28.056	28.057	28.056
12.0	28.050	28.051	28.049
16.0	28.048	28.044	28.046
20.0	28.045	28.041	28.036
24.0	28.042	28.038	28.030
25.0	28.040	28.037	28.029
27.5	28.038	28.035	28.028
--	-	-	-
--	-	-	-

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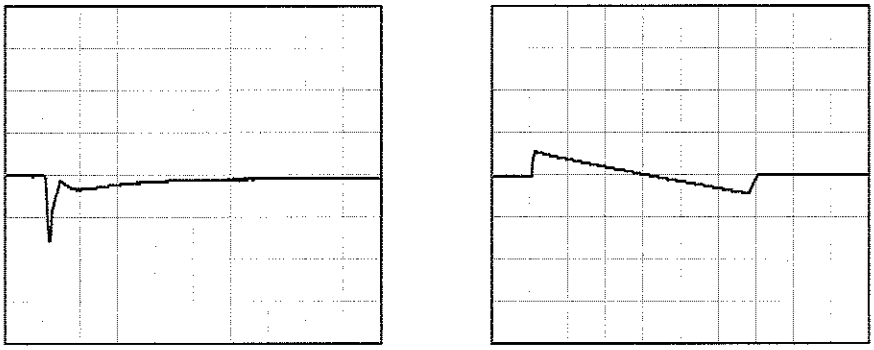
Model	DBS700B28
Item	Dynamic Load Response
Object	+28V25A

Temperature 25°C
Testing Circuitry Figure A

Input Volt. 28 V
Cycle 1000 mS

Load Current
25A / 35 μ

Min. Load (0A) ⟷
Load 100% (25A)

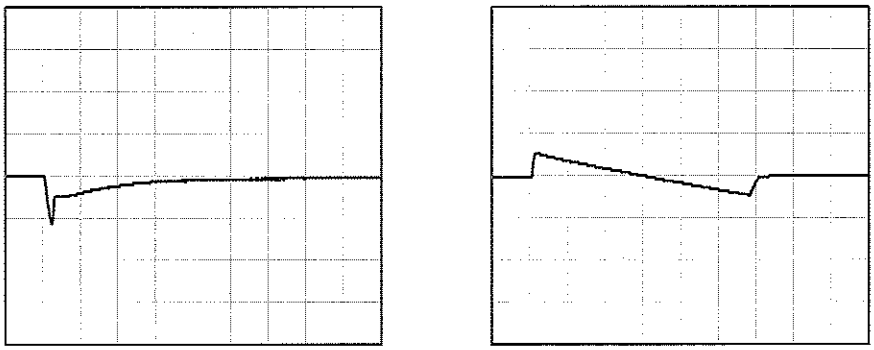


500mV/div

500 μs/div

5 ms/div

Min. Load (0A) ⟷
Load 50% (12.5A)

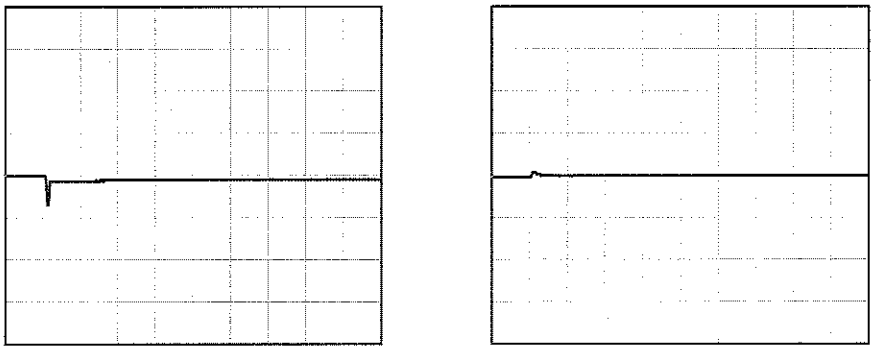


500mV/div

500 μs/div

5 ms/div

Load 10% (2.5A) ⟷
Load 100% (25A)



500mV/div

500 μs/div

5 ms/div

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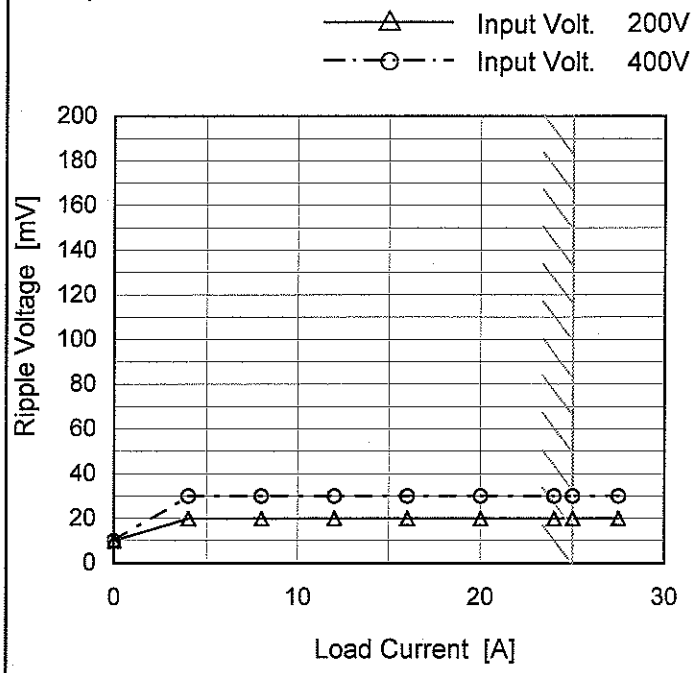
Model	DBS700B28
Item	Ripple Voltage (by Load Current)
Object	+28V25A

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]

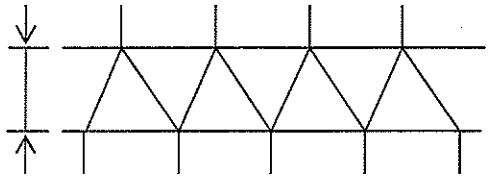


Fig.Complex Ripple Wave Form

2.Values

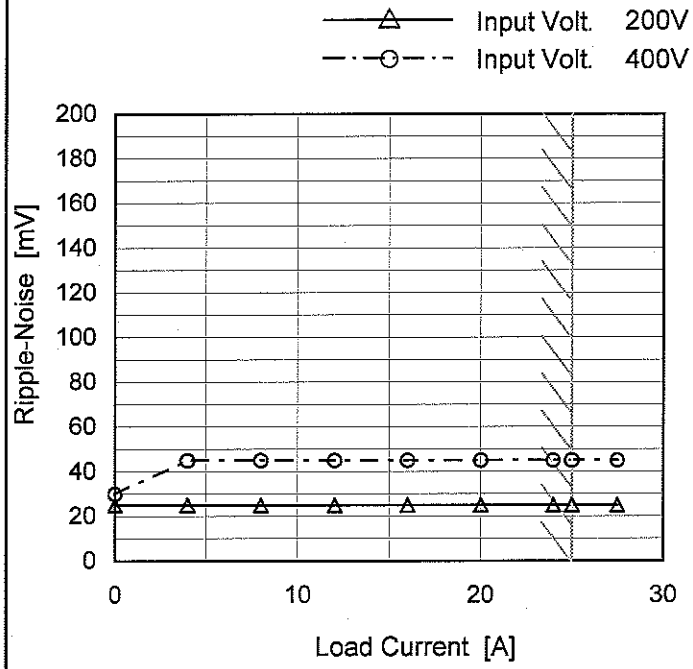
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 200 [V]	Input Volt. 400 [V]
0.0	10	10
4.0	20	30
8.0	20	30
12.0	20	30
16.0	20	30
20.0	20	30
24.0	20	30
25.0	20	30
27.5	20	30
--	-	-
--	-	-

COSEL

Model	DBS700B28
Item	Ripple-Noise
Object	+28V25A

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.

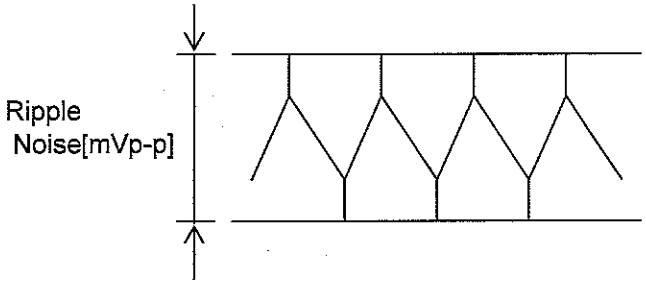


Fig.Complex Ripple Noise Wave Form

2.Values

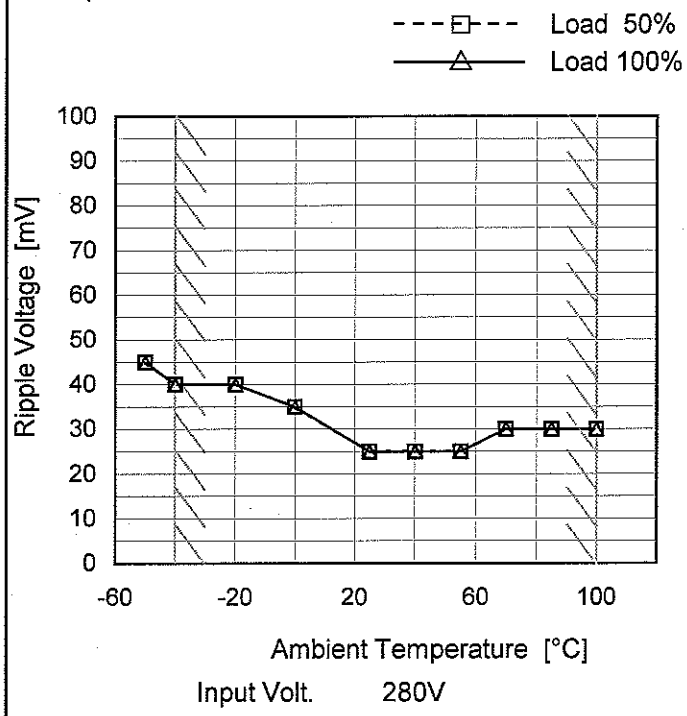
Load Current [A]	Ripple-Noise [mV] Input Volt. 200 [V]	Ripple-Noise [mV] Input Volt. 400 [V]
0.0	25	30
4.0	25	45
8.0	25	45
12.0	25	45
16.0	25	45
20.0	25	45
24.0	25	45
25.0	25	45
27.5	25	45
--	-	-
--	-	-

COSEL

Model	DBS700B28
Item	Ripple Voltage (by Ambient Temp.)
Object	+28V25A

Testing Circuitry Figure B

1.Graph



Input Volt. 280V

Measured by 100 MHz Oscilloscope.

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

2.Values

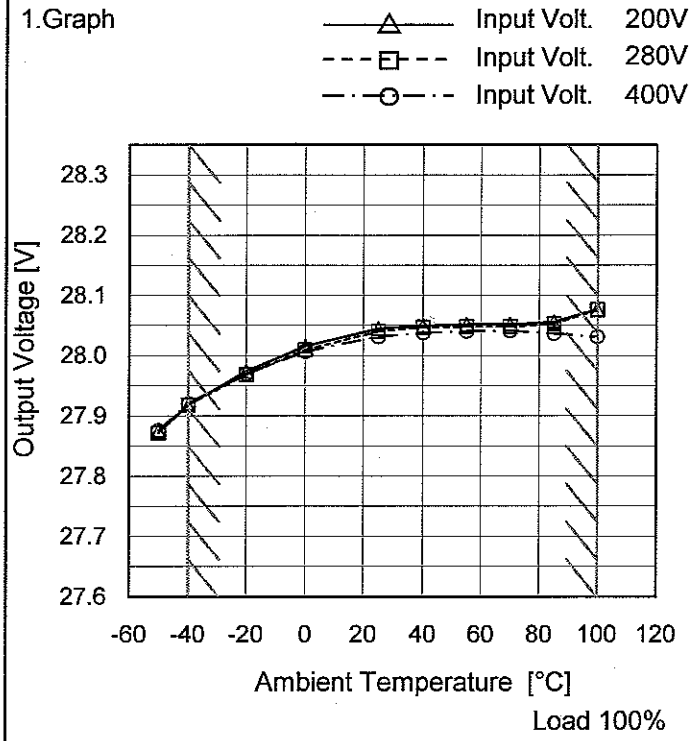
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-50	45	45
-40	40	40
-20	40	40
0	35	35
25	25	25
40	25	25
55	25	25
70	30	30
85	30	30
100	30	30
--	-	-

COSEL

Model	DBS700B28
Item	Ambient Temperature Drift
Object	+28V25A

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. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
-50	27.875	27.872	27.876
-40	27.918	27.919	27.921
-20	27.974	27.969	27.970
0	28.016	28.010	28.007
25	28.045	28.040	28.032
40	28.050	28.047	28.038
55	28.052	28.048	28.041
70	28.052	28.048	28.042
85	28.056	28.053	28.037
100	28.077	28.076	28.032
---	-	-	-

COSEL

Model	DBS700B28	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+28V25A	

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 - 100°C
Input Voltage : 200 - 400V
Load Current : 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

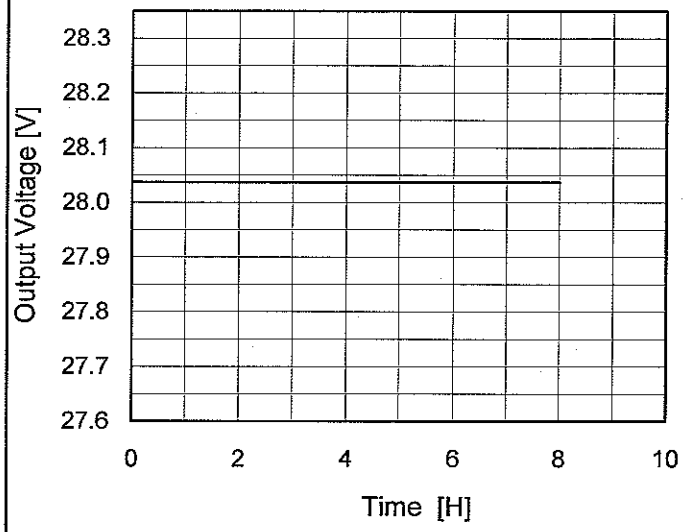
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	100	200	0	28.110	±96	±0.3
Minimum Voltage	-40	280	25	27.918		

COSEL

Model	DBS700B28
Item	Time Lapse Drift
Object	+28V25A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Input Volt. 280V
Load 100%

2.Values

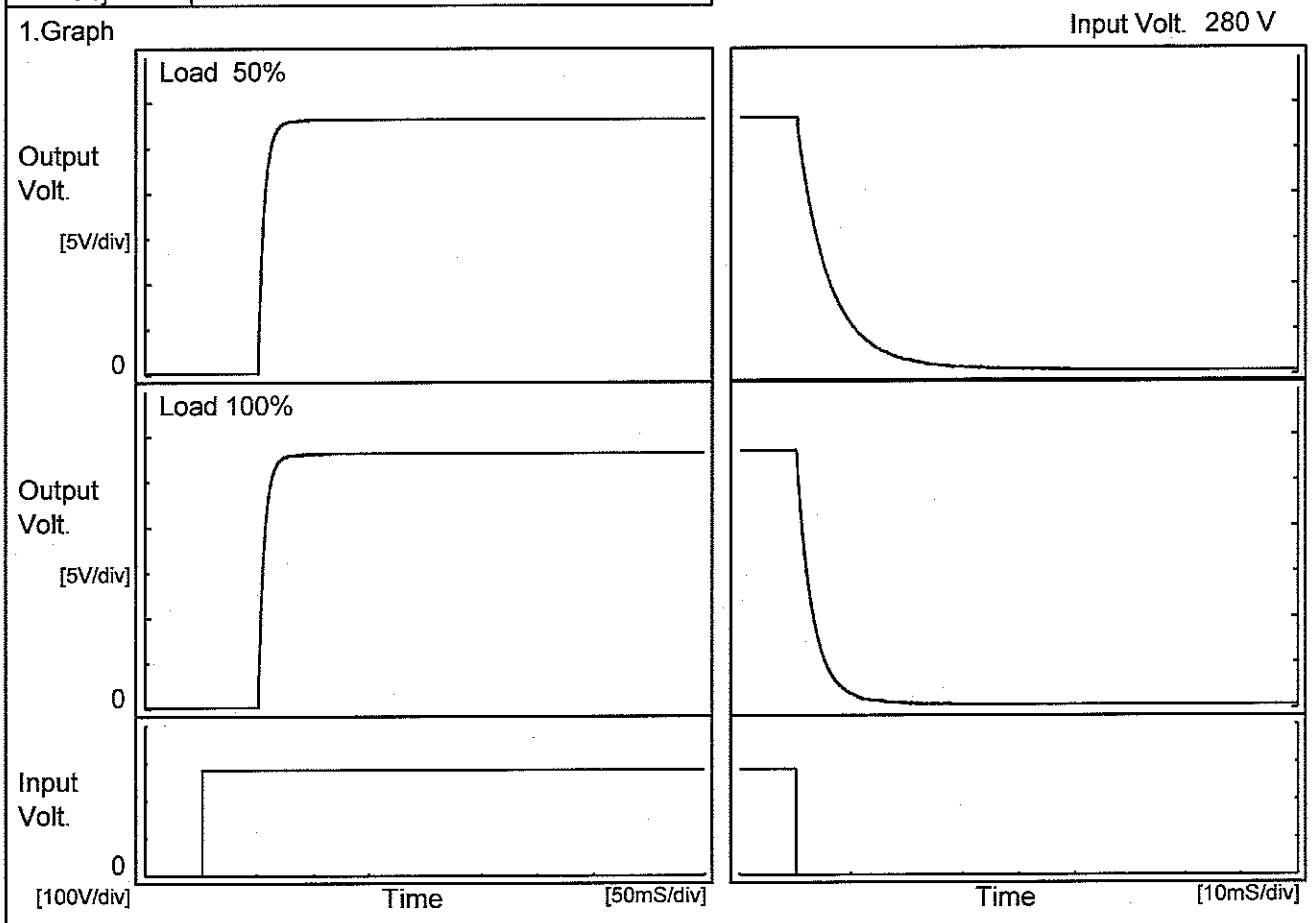
Time since start [H]	Output Voltage [V]
0.0	28.037
0.5	28.037
1.0	28.037
2.0	28.037
3.0	28.037
4.0	28.037
5.0	28.037
6.0	28.037
7.0	28.037
8.0	28.037

COSEL

Model	DBS700B28
Item	Rise and Fall Time
Object	+28V25A

Temperature 25°C
Testing Circuitry Figure A

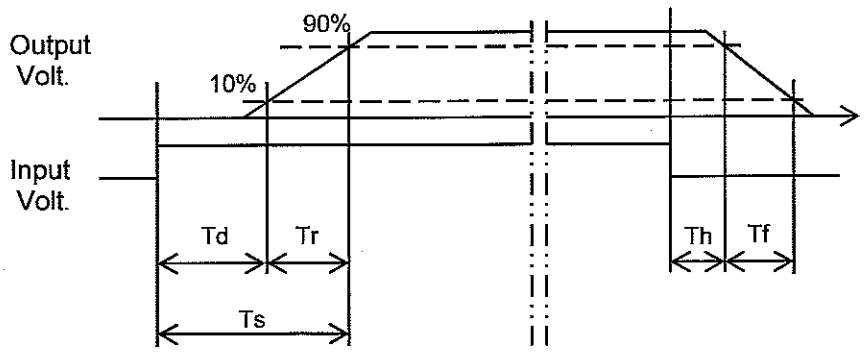
1.Graph



2.Values

[mS]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	51.5	11.5	63.0	0.8	13.4
100 %	51.8	11.5	63.3	0.4	6.7

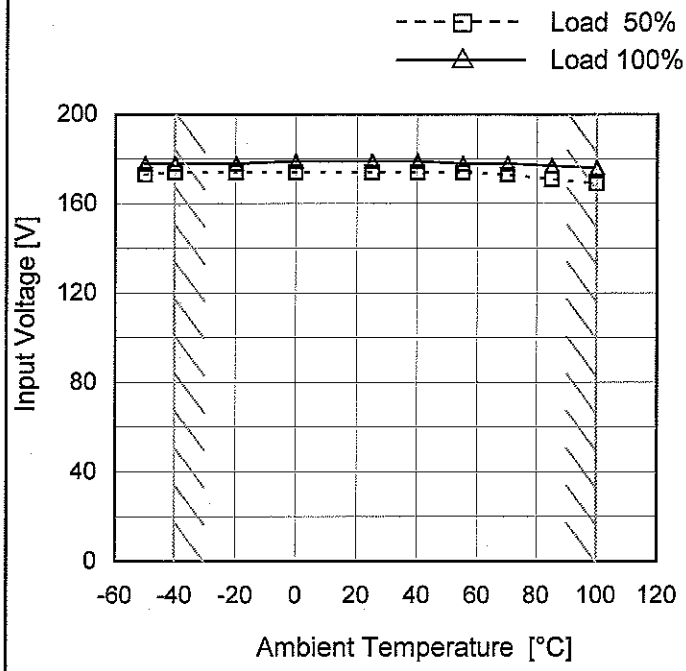


COSEL

Model	DBS700B28
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+28V25A

Testing Circuitry Figure A

1.Graph



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

2.Values

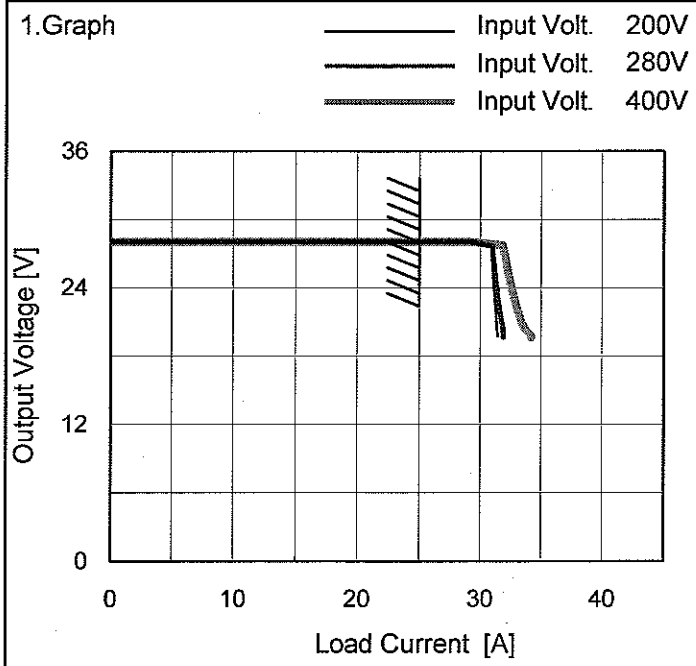
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-50	173	178
-40	174	178
-20	174	178
0	174	179
25	174	179
40	174	179
55	174	178
70	173	178
85	171	177
100	169	176
--	-	-

COSEL

Model	DBS700B28
Item	Overcurrent Protection
Object	+28V25A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

Intermittent operation occurs when the output voltage is from 19.6V to 0V.

2.Values

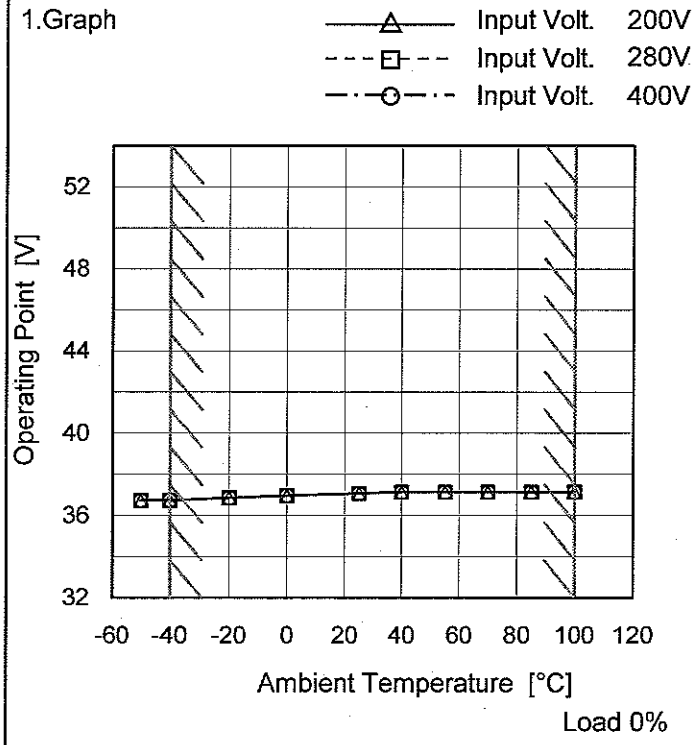
Output Voltage [V]	Load Current [A]		
	Input Volt. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
28.0	25.10	25.09	25.08
26.6	30.98	31.08	32.08
25.2	31.03	31.22	32.33
22.4	31.24	31.53	32.96
19.6	31.46	31.92	34.20
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	DBS700B28
Item	Overvoltage Protection
Object	+28V25A

Testing Circuitry Figure A

1.Graph



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

2.Values

Ambient Temperature [°C]	Operating Point [V]		
	Input Volt. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
-50	36.74	36.74	36.74
-40	36.74	36.74	36.74
-20	36.86	36.86	36.86
0	36.97	36.97	36.97
25	37.09	37.09	37.09
40	37.15	37.15	37.15
55	37.15	37.15	37.15
70	37.15	37.15	37.15
85	37.15	37.15	37.15
100	37.14	37.14	37.14
--	-	-	-

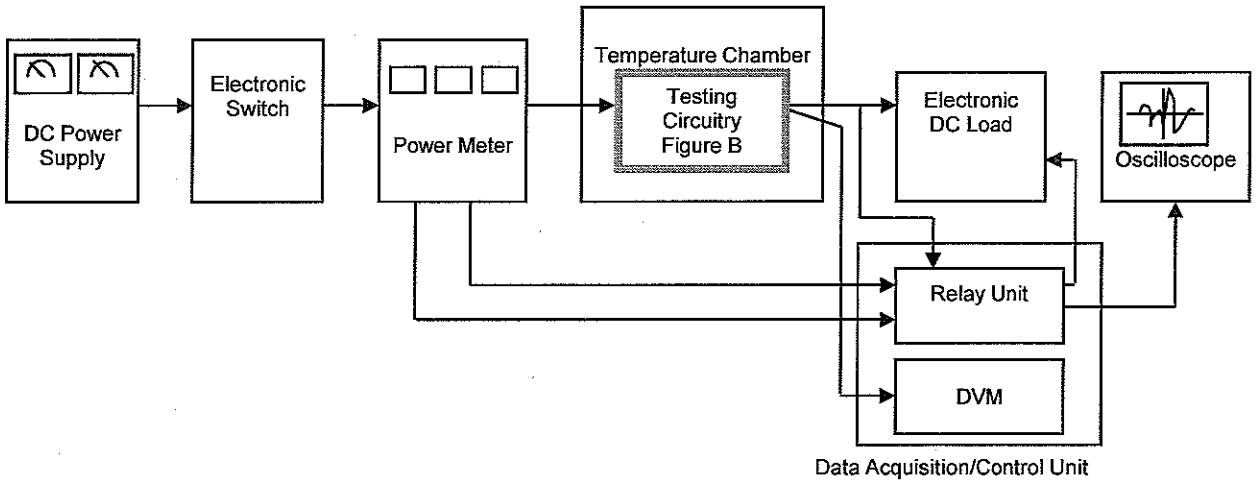


Figure A

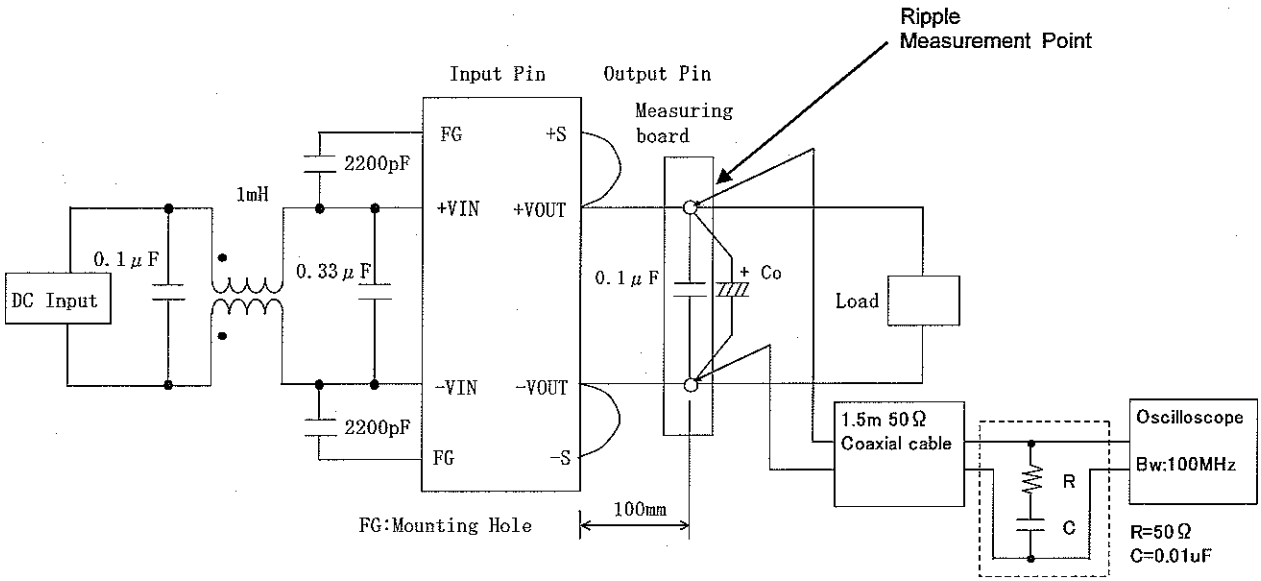


Figure B

Co[μF]	
Base plate temperature: Tc=-20℃～+100℃	Base plate temperature: Tc=-40℃～+100℃
2200	2200×3