



# TEST DATA OF DBS200B07

(280V INPUT)

Regulated DC Power Supply

Date : Apr.15. 1999

Approved by :           *K. Shimano*            
Design Manager

Prepared by :           *K. Mizui*            
Design Engineer

**コーセル株式会社**

**COSEL CO.,LTD.**



# CONTENTS

1.	Line Regulation . . . . .	1
	静的入力変動	
2.	Input Current (by Input Voltage) . . . . .	2
	入力電流 (入力電圧特性)	
3.	Input Current (by Load Current) . . . . .	3
	入力電流 (負荷特性)	
4.	Input Power (by Load Current) . . . . .	4
	入力電力 (負荷特性)	
5.	Efficiency (by Input Voltage) . . . . .	5
	効率 (入力電圧特性)	
6.	Efficiency (by Load Current) . . . . .	6
	効率 (負荷特性)	
7.	Load Regulation . . . . .	7
	静的負荷変動	
8.	Ripple Voltage (by Load Current) . . . . .	8
	リップル電圧 (負荷特性)	
9.	Ripple-Noise . . . . .	9
	リップルノイズ	
10.	Overcurrent Protection . . . . .	10
	過電流保護	
11.	Overvoltage Protection . . . . .	11
	過電圧保護	
12.	Dynamic Load Responce . . . . .	12
	動的負荷変動	
13.	Rise and Fall Time . . . . .	13
	立上り、立下り時間	
14.	Ambient Temperature Drift . . . . .	14
	周囲温度変動	
15.	Minimum Input Voltage for Regulated Output Voltage . . . . .	15
	最低レギュレーション電圧	
16.	Ripple Voltage (by Ambient Temperature) . . . . .	16
	リップル電圧 (周囲温度特性)	
17.	Time Lapse Drift . . . . .	17
	経時ドリフト	
18.	Output Voltage Accuracy . . . . .	18
	定電圧精度	
19.	Condensation . . . . .	19
	結露特性	
20.	Line Noise Tolerance . . . . .	20
	入力雑音耐量	
21.	Figure of Testing Circuitry . . . . .	21
	測定回路図	

(Final Page 22 )



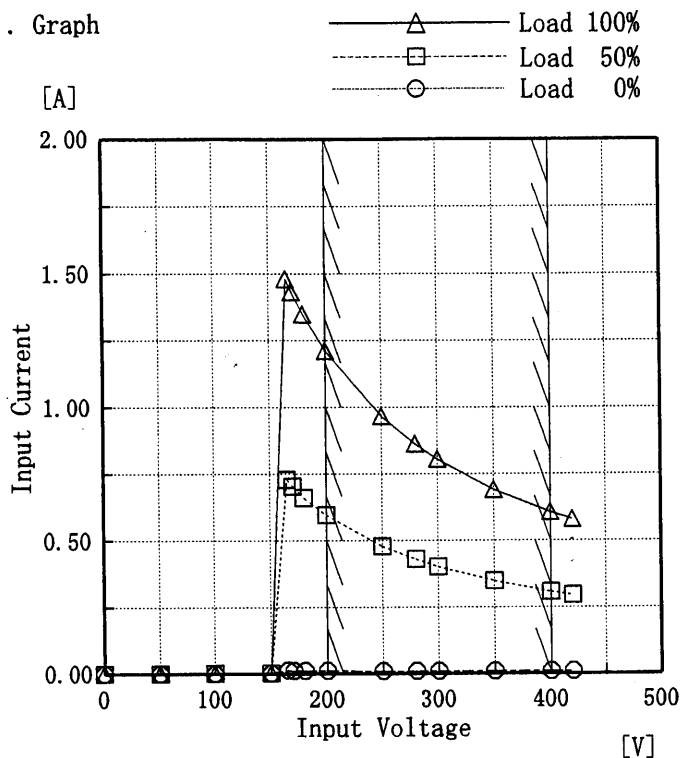
Model		DBS200B07		Temperature		25°C																																	
Item		Line Regulation 静的入力変動		Testing Circuitry		Figure A																																	
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Model	DBS200B07
Item	Input Current (by Input Voltage) 入力電流 (入力電圧特性)
Object	_____

Temperature 25°C  
Testing Circuitry Figure A

1. Graph



2. Values

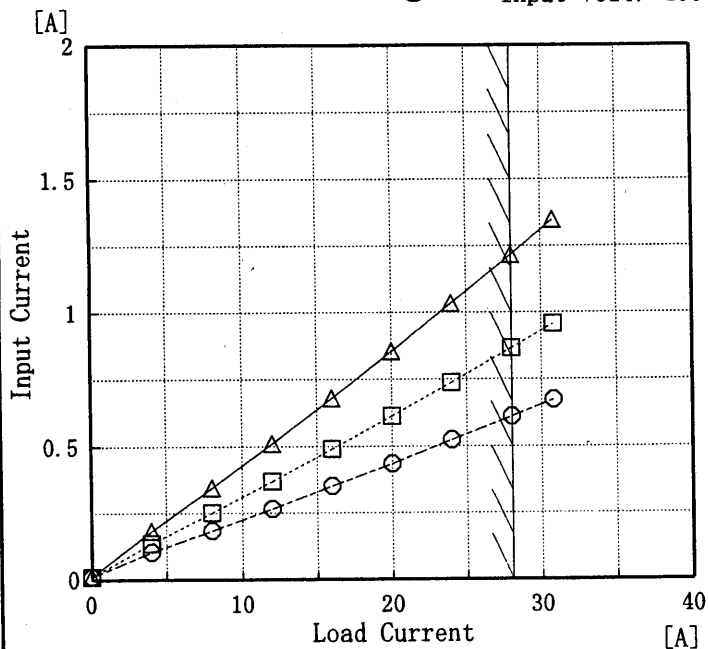
Input Volt. [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0	0.000	0.000	0.000
50	0.000	0.000	0.000
100	0.000	0.002	0.002
150	0.003	0.003	0.003
165	0.012	0.729	1.479
170	0.012	0.704	1.432
180	0.012	0.662	1.349
200	0.011	0.596	1.211
250	0.010	0.480	0.965
280	0.010	0.431	0.862
300	0.010	0.403	0.805
350	0.009	0.349	0.692
400	0.009	0.309	0.607
420	0.009	0.296	0.581
—	—	—	—
—	—	—	—



Model	DBS200B07	
Item	Input Current (by Load Current) 入力電流 (負荷特性)	Temperature 25°C Testing Circuitry Figure A
Object	_____	

1. Graph

- △— Input Volt. 200V
- - -□- - - Input Volt. 280V
- - -○- - - Input Volt. 400V



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

(注) 斜線は定格負荷電流範囲を示す。

2. Values

Load Current [A]	Input Current [A]		
	Input Volt. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
0.0	0.01	0.01	0.01
4.0	0.18	0.14	0.10
8.0	0.34	0.25	0.18
12.0	0.51	0.37	0.27
16.0	0.68	0.49	0.35
20.0	0.86	0.61	0.44
24.0	1.03	0.74	0.52
28.0	1.22	0.87	0.61
30.8	1.35	0.96	0.67
—	—	—	—
—	—	—	—
—	—	—	—

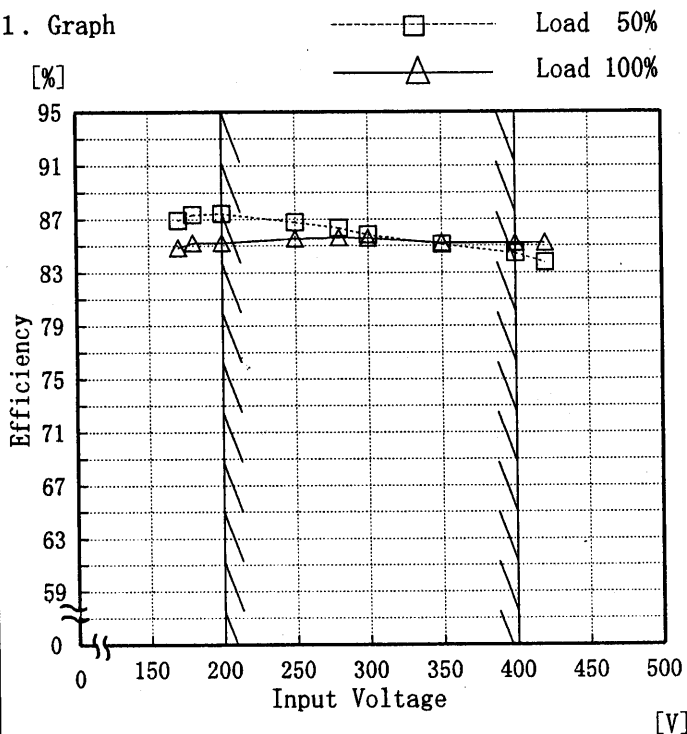


Model		DBS200B07		Temperature		25°C																																																								
Item		Input Power (by Load Current) 入力電力 (負荷特性)		Testing Circuitry		Figure A																																																								
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Model	DBS200B07	Temperature	25°C
Item	Efficiency (by Input Voltage) 効率 (入力電圧特性)	Testing Circuitry	Figure A
Object			

1. Graph



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

(注)斜線は定格入力電圧範囲を示す。

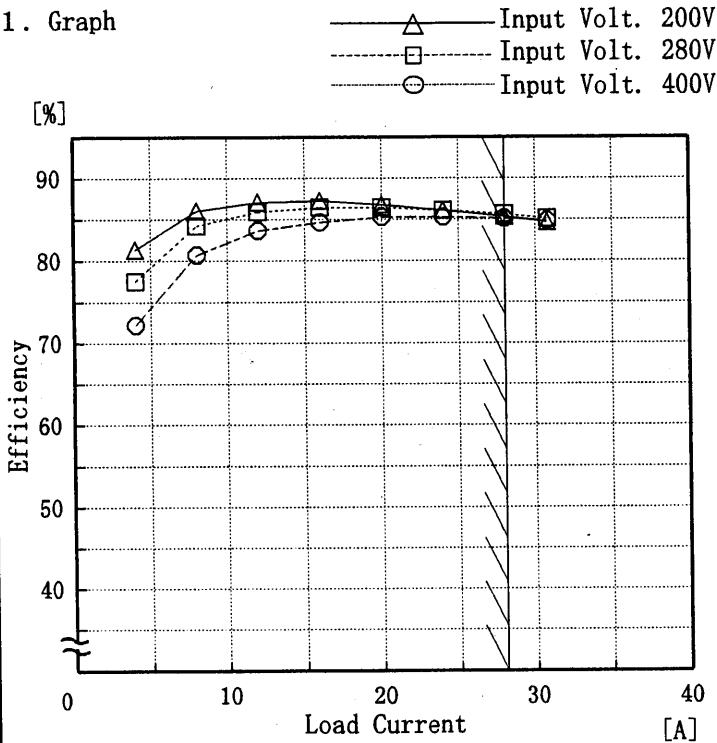
2. Values

Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
170	86.9	84.9
180	87.4	85.2
200	87.4	85.2
250	86.8	85.5
280	86.3	85.6
300	85.8	85.6
350	85.1	85.2
400	84.4	85.2
420	83.8	85.2



Model	DBS200B07	Temperature	25°C
Item	Efficiency (by Load Current) 効率 (負荷特性)	Testing Circuitry	Figure A
Object	_____		

1. Graph



2. Values

Load Current [A]	Efficiency [%]		
	Input Volt. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
4.0	81.3	77.5	72.2
8.0	86.0	84.2	80.8
12.0	87.1	85.9	83.7
16.0	87.3	86.4	84.7
20.0	86.8	86.5	85.3
24.0	86.1	86.1	85.3
28.0	85.4	85.6	85.1
30.8	84.7	85.2	84.8
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

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

(注) 斜線は定格負荷電流範囲を示す。



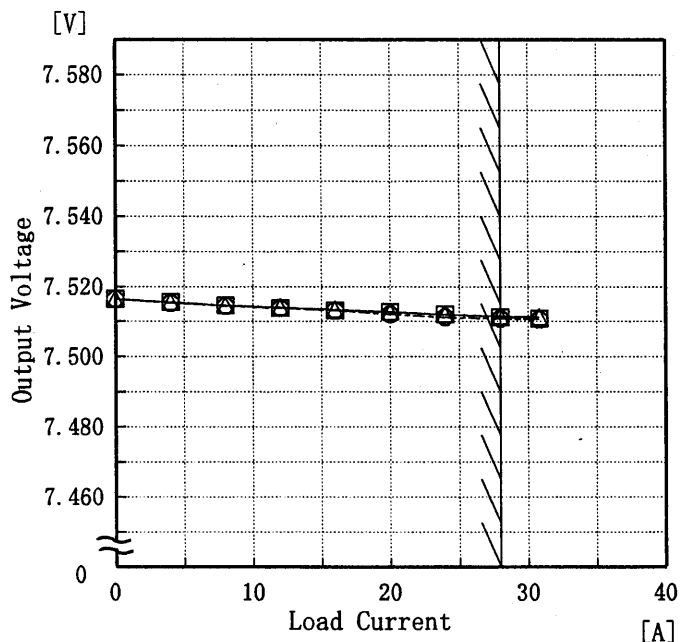


Model	DBS200B07
Item	Load Regulation 静的負荷変動
Object	+7.5V28A

Temperature 25°C  
Testing Circuitry Figure A

1. Graph

—△— Input Volt. 200V  
- - -□- - - Input Volt. 280V  
- - -○- - - Input Volt. 400V



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

(注) 斜線は定格負荷電流範囲を示す。

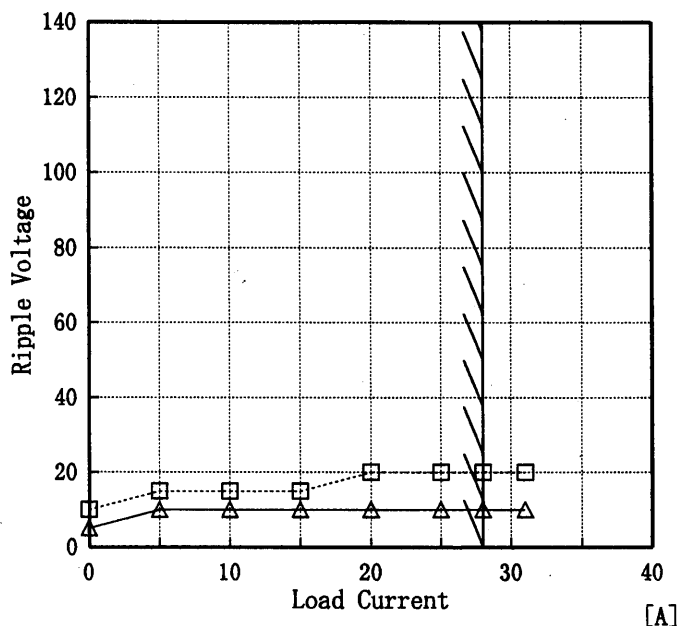
2. Values

Load Current [A]	Output Voltage [V]		
	Input Volt. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
0.0	7.516	7.517	7.516
4.0	7.516	7.516	7.515
8.0	7.515	7.515	7.515
12.0	7.514	7.514	7.514
16.0	7.513	7.513	7.513
20.0	7.513	7.513	7.512
24.0	7.512	7.512	7.511
28.0	7.512	7.511	7.511
30.8	7.511	7.511	7.511
-	-	-	-

# COSEL

Model	DBS200B07	
Item	Ripple Voltage (by Load Current) リップル電圧(負荷特性)	Temperature 25°C Testing Circuitry Figure A
Object	+7.5V28A	

1. Graph  
 [mV]  
 —△— Input Volt. 200V  
 - - -□- - - Input Volt. 400V



Ripple Voltage is shown as p-p in the figure below.

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

リップル電圧は、下図 p-p 値で示される。  
 (注) 斜線は定格負荷電流範囲を示す。

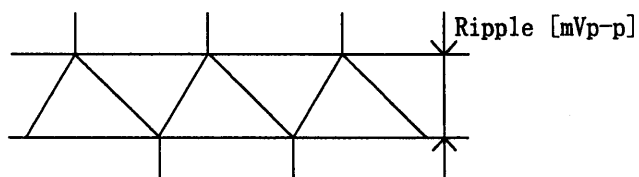


図 リップル波形図

2. Values

Load Current [A]	Ripple Output Volt. [mV]	
	Input Volt. 200 [V]	Input Volt. 400 [V]
0	5	10
5	10	15
10	10	15
15	10	15
20	10	20
25	10	20
28	10	20
31	10	20
—	—	—
—	—	—
—	—	—

# COSEL

Model		DBS200B07		Temperature		25°C																																							
Item		Ripple-Noise リップルノイズ		Testing Circuitry		Figure A																																							
Object		+7.5V28A																																											
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<p>Model DBS200B07</p> <p>Item Overcurrent Protection 過電流保護</p> <p>Object +7.5V28A</p>		<p>Temperature 25°C</p> <p>Testing Circuitry Figure A</p>																																																						
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Model	DBS200B07	Temperature	25°C
Item	Dynamic Load Responce 動的負荷変動	Testing Circuitry	Figure A
Object	+7.5V28A		

Input Volt. 280 V

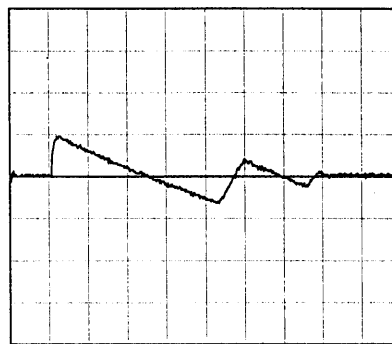
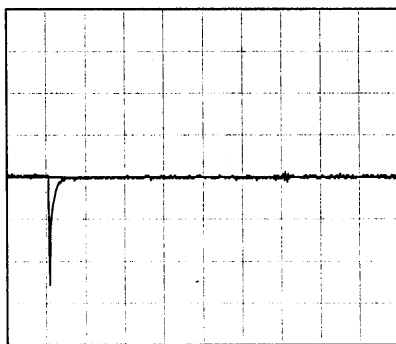
Cycle 1000 mS



Min. Load (0.0A) ↔

Load 100% (28.0A)

500 mV/div

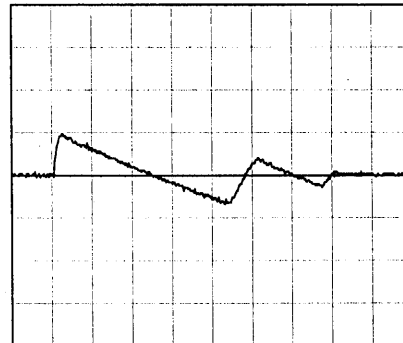
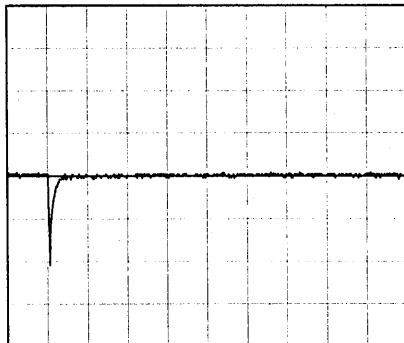


5 ms/div

Min. Load (0.0A) ↔

Load 50% (14.0A)

500 mV/div

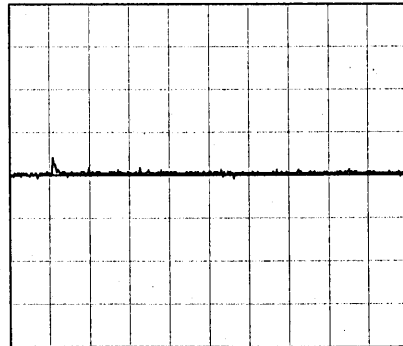
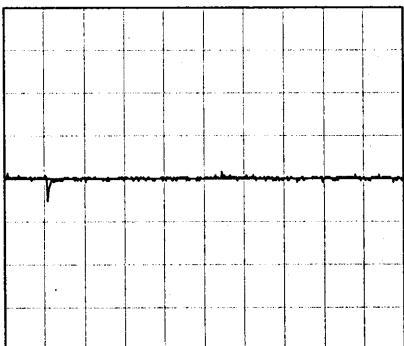


5 ms/div

Load 10% (2.8A) ↔

Load 100% (28.0A)

500 mV/div



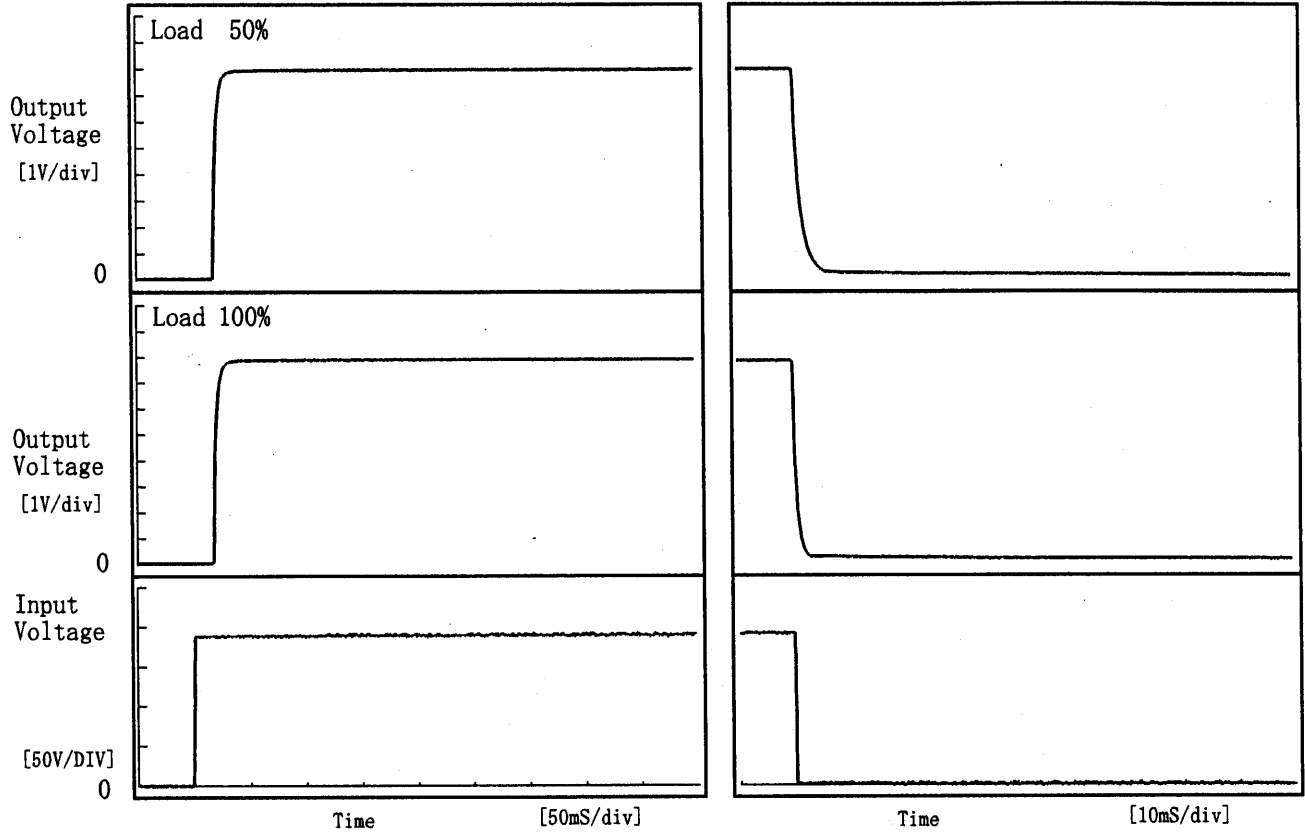
5 ms/div

# COSEL

Model	DBS200B07	Temperature	25°C
Item	Rise and Fall Time 立上り、立下り時間	Testing Circuitry	Figure A
Object	+7.5V28A		

1. Graph

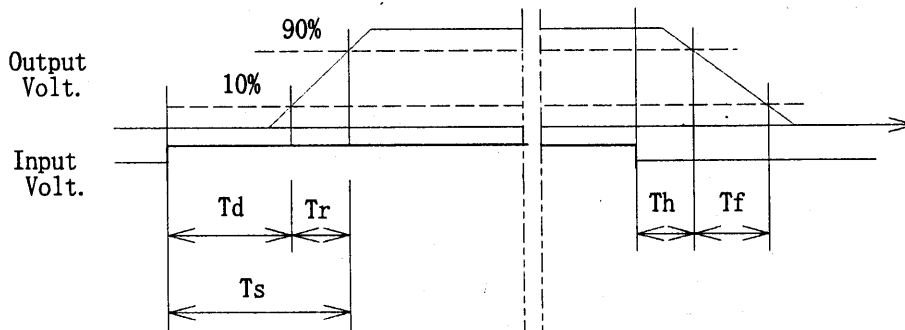
Input Volt. 200 V



2. Values

[mS]

Load \ Time	T d	T r	T s	T h	T f
50 %	18.25	4.75	23.00	0.2	3.55
100 %	18.25	4.75	23.00	0.0	1.75





Model		DBS200B07		Testing Circuitry Figure A																																																				
Item		Ambient Temperature Drift 周囲温度変動																																																						
Object		+7.5V28A																																																						
1. Graph		<p> <input type="checkbox"/> —△— Input Volt. 200V  <input type="checkbox"/> —□— Input Volt. 280V  <input type="checkbox"/> —○— Input Volt. 400V                 </p>		2. Values																																																				
<p>Output Voltage [V]</p> <p>Ambient Temperature [°C]</p> <p>Load 100%</p>		<table border="1"> <thead> <tr> <th rowspan="2">Temperature [°C]</th> <th colspan="3">Output Voltage [V]</th> </tr> <tr> <th>Input Volt. 200[V]</th> <th>Input Volt. 280[V]</th> <th>Input Volt. 400[V]</th> </tr> </thead> <tbody> <tr><td>-35</td><td>7.644</td><td>7.643</td><td>7.643</td></tr> <tr><td>-20</td><td>7.639</td><td>7.639</td><td>7.638</td></tr> <tr><td>0</td><td>7.632</td><td>7.632</td><td>7.631</td></tr> <tr><td>15</td><td>7.627</td><td>7.627</td><td>7.626</td></tr> <tr><td>25</td><td>7.622</td><td>7.621</td><td>7.620</td></tr> <tr><td>40</td><td>7.611</td><td>7.610</td><td>7.609</td></tr> <tr><td>55</td><td>7.597</td><td>7.596</td><td>7.596</td></tr> <tr><td>70</td><td>7.582</td><td>7.581</td><td>7.580</td></tr> <tr><td>85</td><td>7.565</td><td>7.564</td><td>7.563</td></tr> <tr><td>90</td><td>7.557</td><td>7.556</td><td>7.556</td></tr> <tr><td>—</td><td>—</td><td>—</td><td>—</td></tr> </tbody> </table>				Temperature [°C]	Output Voltage [V]			Input Volt. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]	-35	7.644	7.643	7.643	-20	7.639	7.639	7.638	0	7.632	7.632	7.631	15	7.627	7.627	7.626	25	7.622	7.621	7.620	40	7.611	7.610	7.609	55	7.597	7.596	7.596	70	7.582	7.581	7.580	85	7.565	7.564	7.563	90	7.557	7.556	7.556	—	—	—	—
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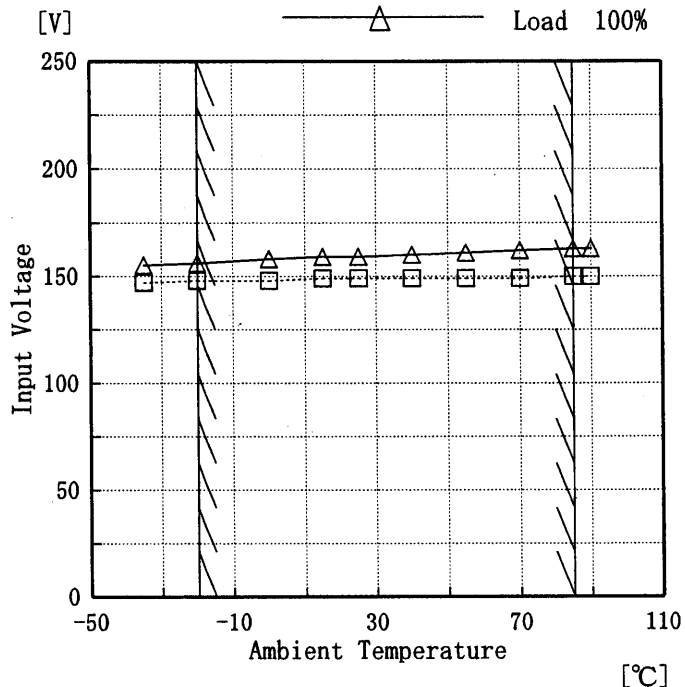




Model	DBS200B07
Item	Minimum Input Voltage for Regulated Output Voltage 最低レギュレーション電圧
Object	+7.5V28A

Testing Circuitry Figure A

1. Graph



2. Values

Ambient Temp. [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-35	147	155
-20	148	156
0	148	158
15	149	159
25	149	159
40	149	160
55	149	161
70	149	162
85	150	163
90	150	163
-	-	-

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

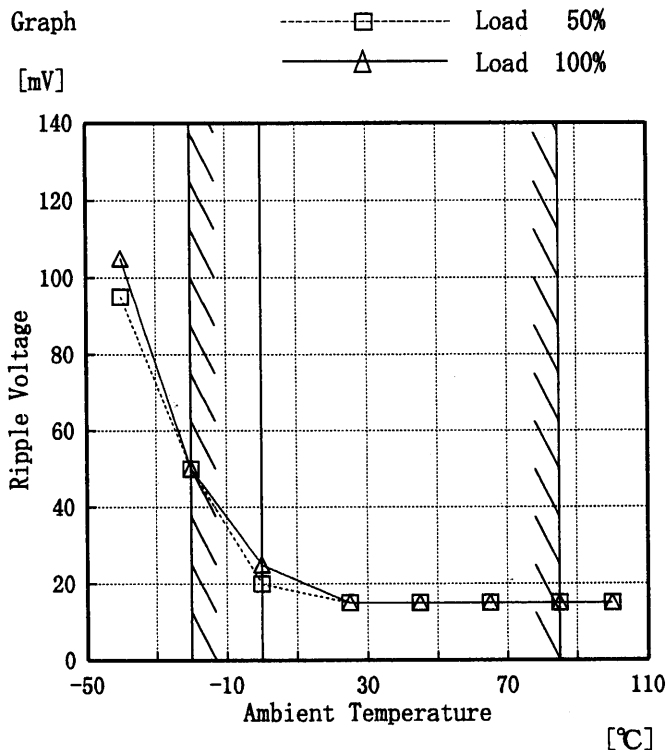
(注)斜線は定格周囲温度範囲を示す。



Model	DBS200B07
Item	Ripple Voltage (by Ambient Temp.) リップル電圧 (周囲温度特性)
Object	+7.5V28A

Testing Circuitry Figure A

1. Graph



Input Volt. 280 V

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

(注) 斜線は定格周囲温度範囲を示す。

2. Values

Ambient Temp. [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-40	95	105
-20	50	50
0	20	25
25	15	15
45	15	15
65	15	15
85	15	15
100	15	15
—	—	—
—	—	—
—	—	—

# COSEL

Model		DBS200B07		Temperature		25 °C																							
Item		Time Lapse Drift 経時ドリフト		Testing Circuitry		Figure A																							
Object		+7.5V28A																											
1. Graph				2. Values																									
<p>[V]</p> <p>Output Voltage [V]</p> <p>Time [H]</p> <p>Input Volt. 280V Load 100%</p>				<table border="1"> <thead> <tr> <th>Time since start [H]</th> <th>Output Voltage [V]</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>7.566</td></tr> <tr><td>0.5</td><td>7.563</td></tr> <tr><td>1.0</td><td>7.563</td></tr> <tr><td>2.0</td><td>7.563</td></tr> <tr><td>3.0</td><td>7.563</td></tr> <tr><td>4.0</td><td>7.563</td></tr> <tr><td>5.0</td><td>7.563</td></tr> <tr><td>6.0</td><td>7.563</td></tr> <tr><td>7.0</td><td>7.563</td></tr> <tr><td>8.0</td><td>7.563</td></tr> </tbody> </table>				Time since start [H]	Output Voltage [V]	0.0	7.566	0.5	7.563	1.0	7.563	2.0	7.563	3.0	7.563	4.0	7.563	5.0	7.563	6.0	7.563	7.0	7.563	8.0	7.563
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7.0	7.563																												
8.0	7.563																												



Model		DBS200B07	Testing Circuitry Figure A
Item	Output Voltage Accuracy 定電圧精度		
Object	+7.5V28A		

**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 : -20~85 °C

Input Voltage : 200~400 V

Load Current : 0~28 A

\* Output Voltage Accuracy =  $\pm (\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

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

**定電圧精度**

周囲温度、入力電圧、負荷を下記仕様内で、任意に変動させたときの出力電圧の変動をいう。

周囲温度 -20~85 °C

入力電圧 200~400 V

負荷電流 0~28 A

\* 定電圧精度(変動値) =  $\pm (\text{出力電圧の最高値} - \text{出力電圧の最低値}) / 2$

\* 定電圧精度(変動率) =  $\frac{\text{変動値}}{\text{定格出力電圧}} \times 100$

Item	Temperature [°C]	Input Voltage [V]	Output Current [A]	Output Voltage [V]	Output Voltage Accuracy [mV]	Output Voltage Accuracy (Ration) [%]
Maximum Voltage	-20	200	0	7.643	±43	±0.6
Minimum Voltage	85	400	28	7.557		

# COSEL

Model		DBS200B07	Testing Circuitry Figure A												
Item		Condensation 結露特性													
Object		+7.5V28A													
<p>1. Condensation test</p> <p>Testing procedure is as follows.</p> <p>① Keeping and cooling the unit in a tank at <math>-10^{\circ}\text{C}</math> for an hour with the input off.</p> <p>② Taking it out of the tank and dewing itself in a room where the temperature is <math>25^{\circ}\text{C}</math> and the humidity is 40%RH.</p> <p>③ Testing electrical characteristics of the unit to confirm there be no fault.</p>															
<p>1. 結露特性試験</p> <p>入力を切った状態で、恒温槽で<math>-10^{\circ}\text{C}</math>に冷却しておき、約1時間後に恒温槽から取り出し、室温<math>25^{\circ}\text{C}</math>、湿度40%RHの状態におき結露させ、その電気的特性の測定を行い、異常のないことを確認する。</p>															
<p>2. Values</p> <table border="1"> <thead> <tr> <th>Item</th> <th>Data</th> <th>Testing Conditions</th> </tr> </thead> <tbody> <tr> <td>Output Voltage [V]</td> <td>7.536</td> <td>Input Volt. : 280V, Load Current:28A</td> </tr> <tr> <td>Line Regulation [mV]</td> <td>1</td> <td>Input Volt. : 200~400V, Load Current:28A</td> </tr> <tr> <td>Load Regulation [mV]</td> <td>8</td> <td>Input Volt. : 280V, Load Current:0~28A</td> </tr> </tbody> </table>				Item	Data	Testing Conditions	Output Voltage [V]	7.536	Input Volt. : 280V, Load Current:28A	Line Regulation [mV]	1	Input Volt. : 200~400V, Load Current:28A	Load Regulation [mV]	8	Input Volt. : 280V, Load Current:0~28A
Item	Data	Testing Conditions													
Output Voltage [V]	7.536	Input Volt. : 280V, Load Current:28A													
Line Regulation [mV]	1	Input Volt. : 200~400V, Load Current:28A													
Load Regulation [mV]	8	Input Volt. : 280V, Load Current:0~28A													



Model		DBS200B07	Temperature Testing Circuitry	25°C Figure C
Item		Line Noise Tolerance 入力雑音耐量		
Object		+7.5V28A		

1. Results

Pulse Width [n S]	MODE	No protection failure should occur 保護回路の誤動作がない	DC-like Regulation of Output Voltage 出力電圧の直流的変動
50	COMMON	OK	no fluctuation
	NORMAL	OK	no fluctuation
1000	COMMON	OK	no fluctuation
	NORMAL	OK	no fluctuation

Conditions

Input Voltage : 200 V  
 Pulse Voltage : ±2000 V  
 Pulse Cycle : 10 mS  
 Pulse Input Duration: 1 min. or more  
 Load : 100 %

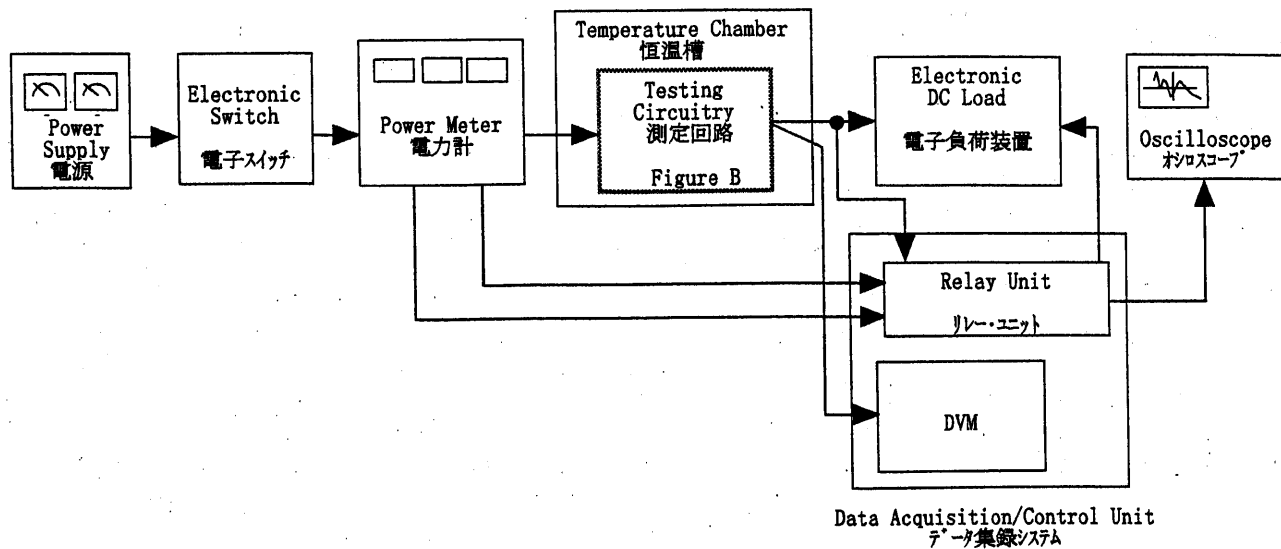


Figure A

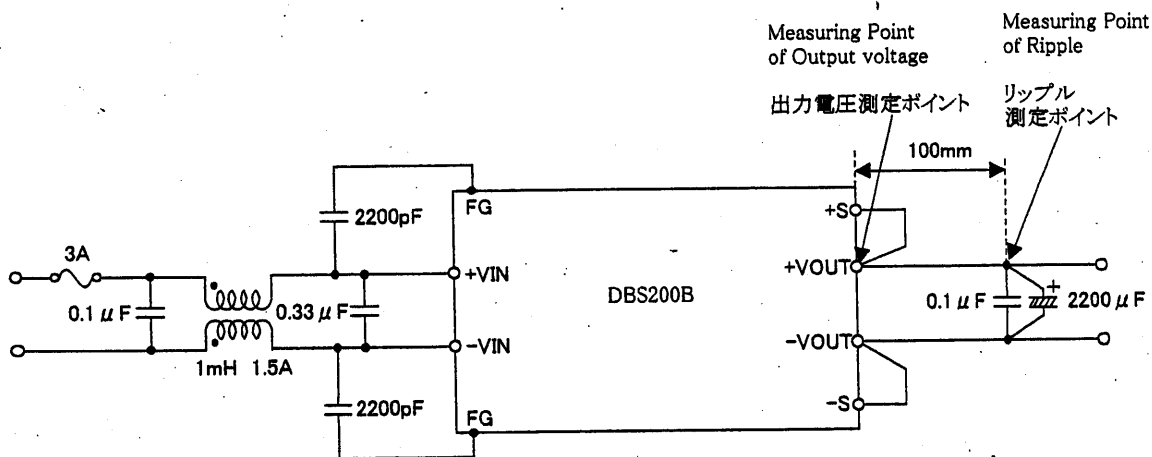


Figure B (General Electric Characteristic)  
一般電気特性

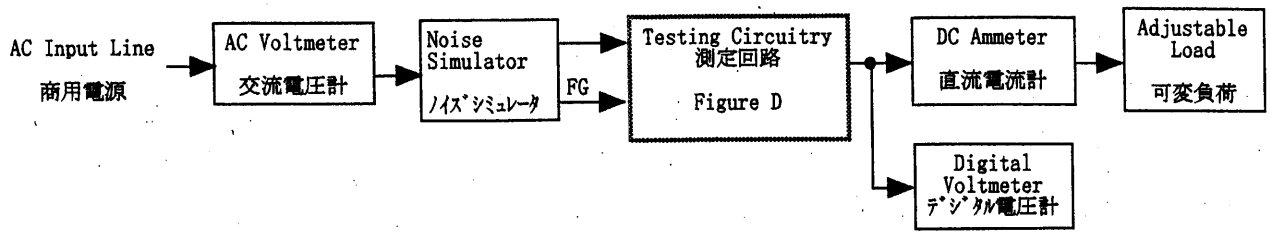


Figure C

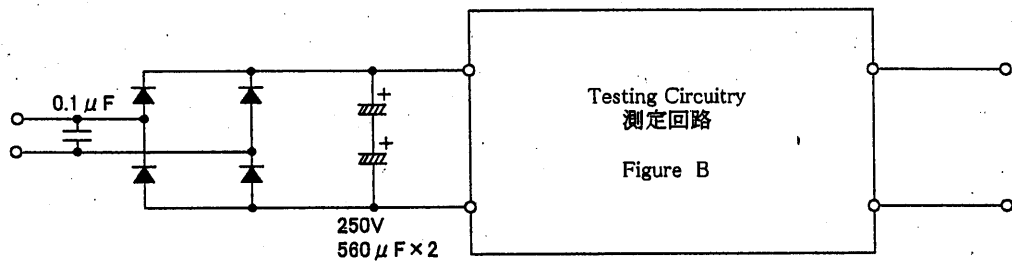


Figure D (Line Noise Tolerance)  
入力雑音耐量