参考資料

COSEL

TEST DATA OF DBS100A13R8
(110V INPUT)

Regulated DC Power Supply
Feb. 3. 2003

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コーセル株式会社
COSEL CO.,LTD.

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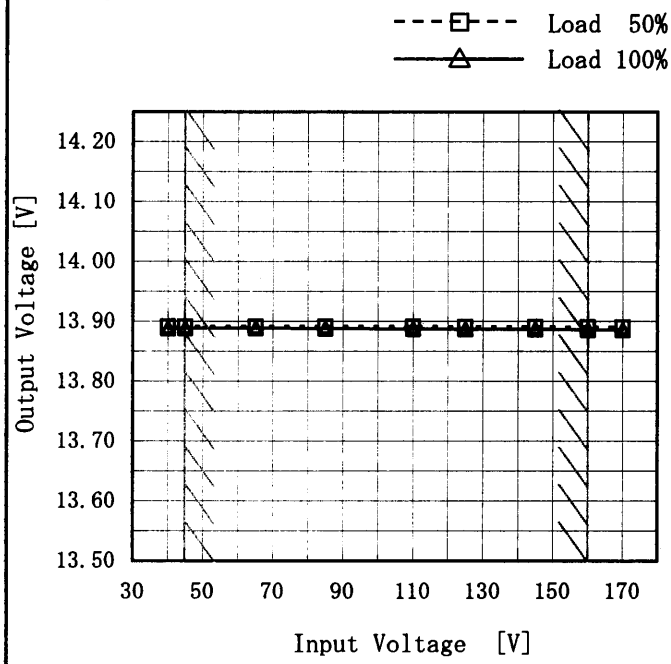
Model	DBS100A13R8
Item	Line Regulation 静的入力変動
Object	+13.8V7.3A

Temperature 25℃
Testing Circuitry Figure A

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]	Output Voltage [V]	
	Load 50%	Load 100%
40	13.892	13.888
45	13.892	13.889
65	13.892	13.889
85	13.892	13.888
110	13.891	13.888
125	13.891	13.887
145	13.891	13.887
160	13.890	13.886
170	13.890	13.886

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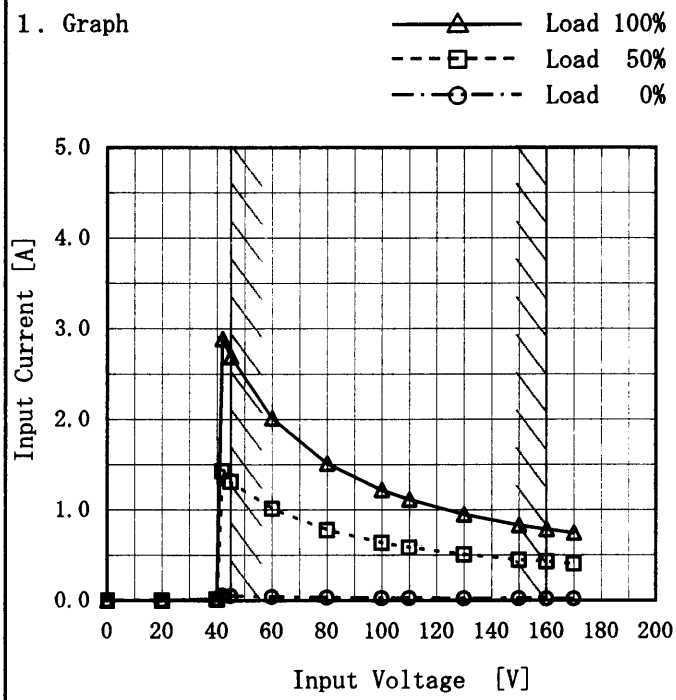
Model	DBS100A13R8
Item	Input Current (by Input Voltage) 入力電流（入力電圧特性）
Object	――――――――

Temperature 25℃
Testing Circuitry Figure A

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

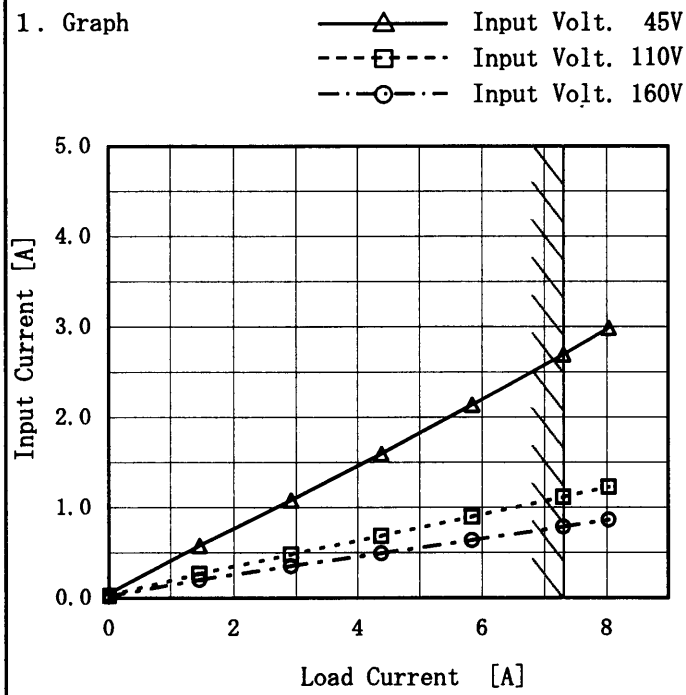
Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0	0.000	0.000	0.000
20	0.000	0.000	0.000
40	0.016	0.016	0.016
42	0.052	1.430	2.890
45	0.049	1.312	2.692
60	0.039	1.015	2.011
80	0.030	0.778	1.514
100	0.026	0.636	1.220
110	0.025	0.584	1.114
130	0.022	0.505	0.949
150	0.019	0.447	0.831
160	0.019	0.428	0.785
170	0.019	0.405	0.745
--	—	—	—
--	—	—	—
--	—	—	—

COSEL

Model	DBS100A13R8
Item	Input Current (by Load Current) 入力電流（負荷特性）
Object	――――――

Temperature 25℃
Testing Circuitry Figure A

1. Graph



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

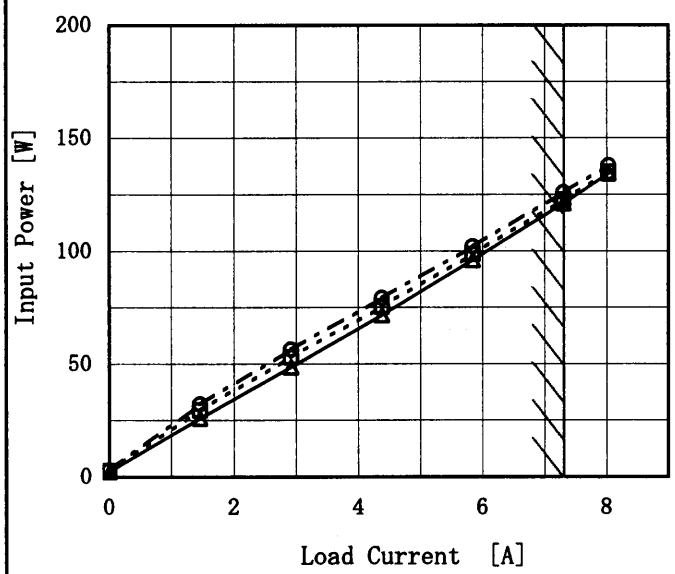
Load Current [A]	Input Current [A]		
	Input Volt. 45[V]	Input Volt. 110[V]	Input Volt. 160[V]
0.000	0.049	0.025	0.019
1.460	0.576	0.268	0.200
2.920	1.079	0.482	0.352
4.380	1.594	0.686	0.494
5.840	2.136	0.896	0.637
7.300	2.692	1.116	0.785
8.030	2.988	1.227	0.862
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

COSEL

Model	DBS100A13R8
Item	Input Power (by Load Current) 入力電力（負荷特性）
Object	――――――――

Temperature 25℃
Testing Circuitry Figure A

1. Graph



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

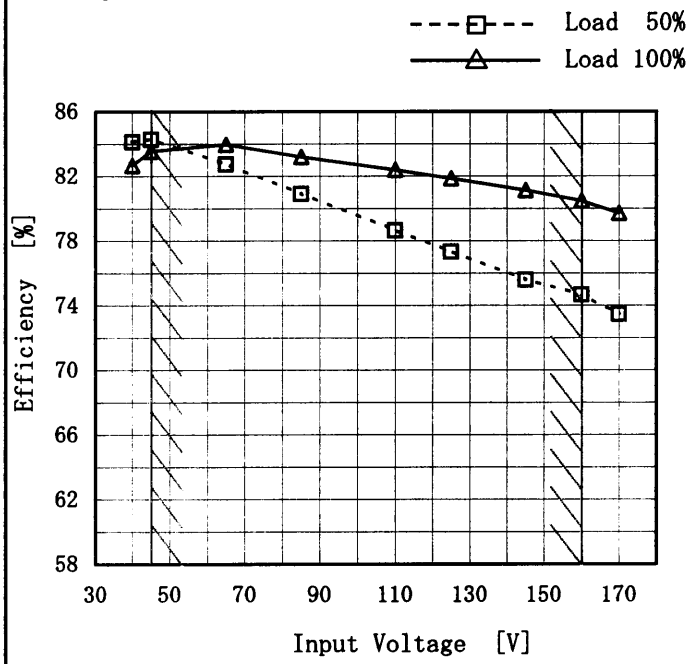
Load Current [A]	Input Power [W]		
	Input Volt. 45[V]	Input Volt. 110[V]	Input Volt. 160[V]
0.000	2.3	2.8	3.1
1.460	25.9	29.5	32.2
2.920	48.5	53.1	56.4
4.380	71.7	75.5	79.2
5.840	96.0	98.7	102.1
7.300	121.1	122.8	125.9
8.030	134.3	135.0	138.0
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

COSEL

Model	DBS100A13R8
Item	Efficiency (by Input Voltage) 効率（入力電圧特性）
Object	――――――――

Temperature 25℃
Testing Circuitry Figure A

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

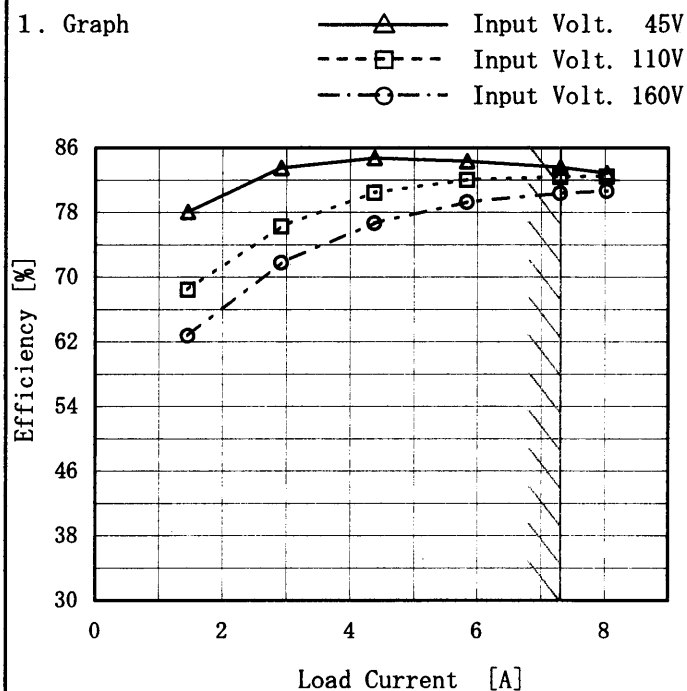
Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
40	84.1	82.7
45	84.3	83.6
65	82.7	84.0
85	80.9	83.2
110	78.7	82.4
125	77.3	81.9
145	75.6	81.1
160	74.7	80.5
170	73.5	79.7

COSEL

Model	DBS100A13R8
Item	Efficiency (by Load Current) 効率（負荷特性）
Object	――――――

Temperature 25℃
Testing Circuitry Figure A

1. Graph



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

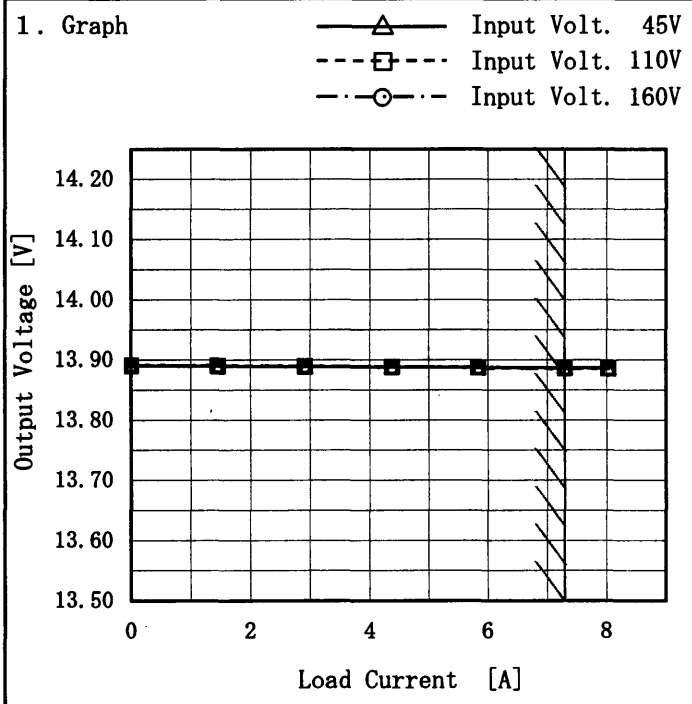
Load Current [A]	Efficiency [%]		
	Input Volt. 45[V]	Input Volt. 110[V]	Input Volt. 160[V]
0.000	—	—	—
1.460	78.1	68.5	62.8
2.920	83.5	76.2	71.8
4.380	84.7	80.4	76.7
5.840	84.3	82.0	79.3
7.300	83.6	82.4	80.4
8.030	82.9	82.4	80.6
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

COSEL

Model	DBS100A13R8
Item	Load Regulation 静的負荷変動
Object	+13.8V7.3A

Temperature 25℃
Testing Circuitry Figure A

1. Graph



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

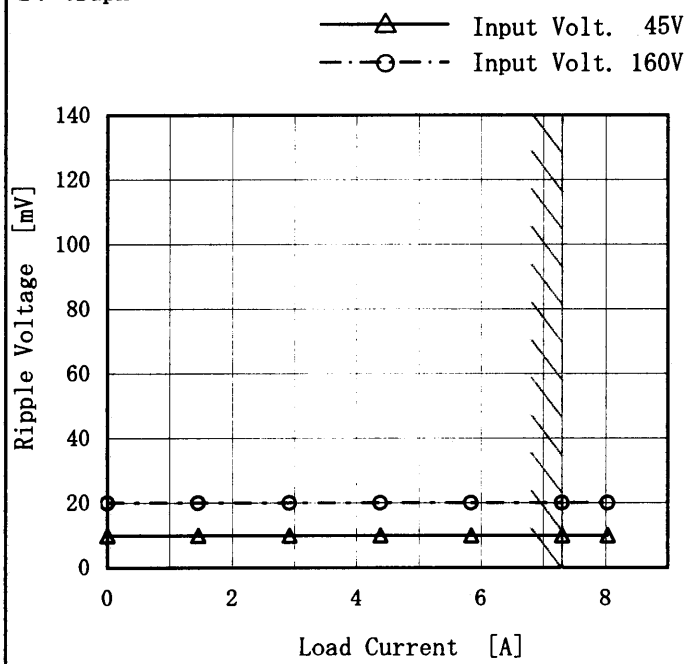
Load Current [A]	Output Voltage [V]		
	Input Volt. 45[V]	Input Volt. 110[V]	Input Volt. 160[V]
0.000	13.891	13.891	13.891
1.460	13.890	13.891	13.890
2.920	13.889	13.890	13.890
4.380	13.888	13.889	13.888
5.840	13.888	13.887	13.887
7.300	13.887	13.886	13.885
8.030	13.887	13.886	13.885
—	—	—	—
—	—	—	—
—	—	—	—

COSEL

Model	DBS100A13R8
Item	Ripple Voltage (by Load Current) リップル電圧（負荷特性）
Object	+13.8V7.3A

Temperature 25℃
Testing Circuitry Figure A

1. Graph



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。

Ripple [mVp-p]

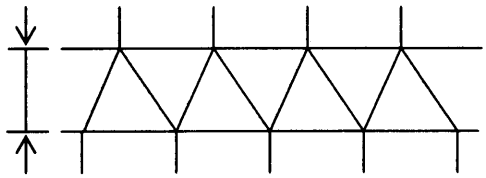


Fig. Complex Ripple Wave Form
図　リップル波形詳細図

2. Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 45 [V]	Input Volt. 160 [V]
0.000	10	20
1.460	10	20
2.920	10	20
4.380	10	20
5.840	10	20
7.300	10	20
8.030	10	20
—	—	—
—	—	—
—	—	—
—	—	—

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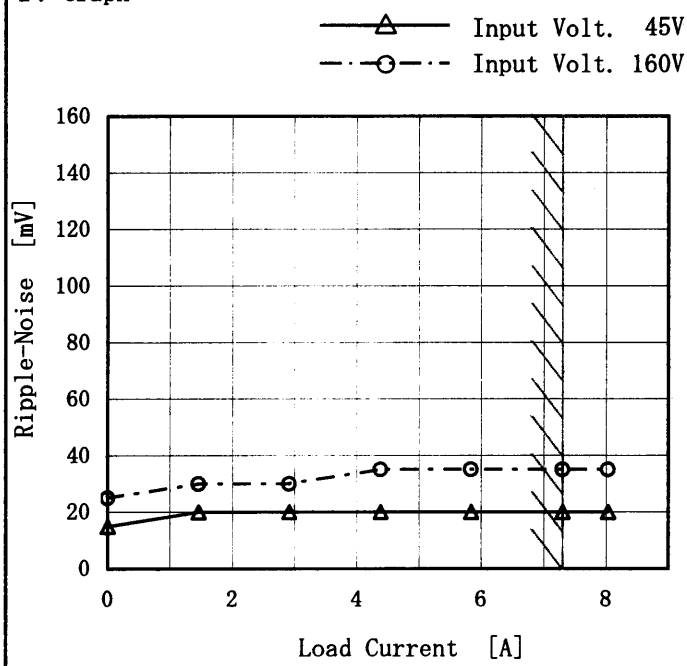
Model	DBS100A13R8
Item	Ripple-Noise リップルノイズ
Object	+13.8V7.3A

Temperature 25℃
Testing Circuitry Figure A

1. Graph



Ripple-Noise is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated load current.

リップルノイズは、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。

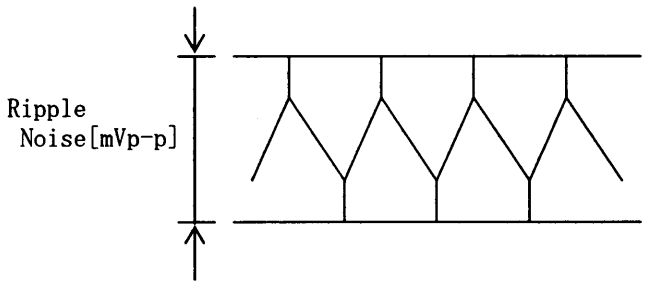


Fig. Complex Ripple Noise Wave Form
図　リップルノイズ波形

2. Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 45 [V]	Input Volt. 160 [V]
0.000	15	25
1.460	20	30
2.920	20	30
4.380	20	35
5.840	20	35
7.300	20	35
8.030	20	35
--	—	—
--	—	—
--	—	—
--	—	—

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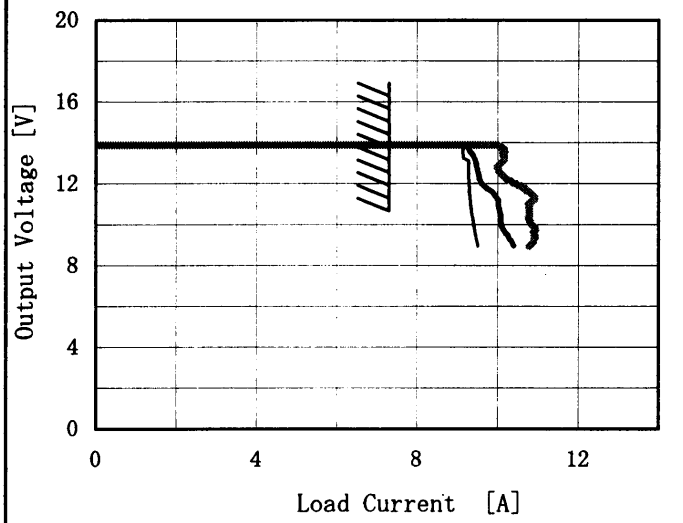
Model	DBS100A13R8
Item	Overcurrent Protection 過電流保護
Object	+13.8V7.3A

Temperature 25℃
Testing Circuitry Figure A

1. Graph



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。

Intermittent operation occurs when the output voltage is from 8.9V to 0V.
8.9V～0V間は、間欠モードとなる。

2. Values

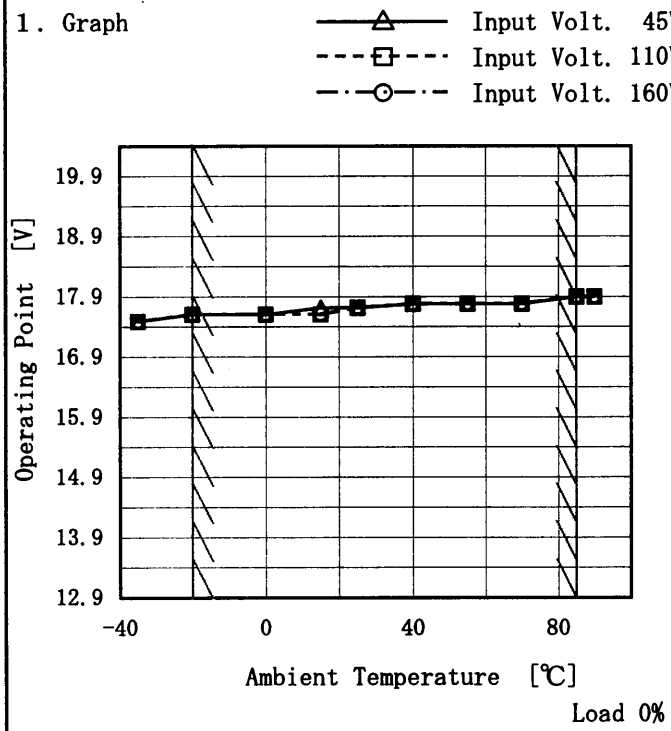
Output Voltage [V]	Load Current [A]		
	Input Volt. 45[V]	Input Volt. 110[V]	Input Volt. 160[V]
13.80	9.14	9.26	10.08
13.11	9.28	9.44	10.14
12.42	9.28	9.53	10.11
11.04	9.33	10.02	10.76
9.66	9.44	10.15	10.89
--	—	—	—
--	—	—	—
--	—	—	—
--	—	—	—
--	—	—	—
--	—	—	—
--	—	—	—

COSEL

Model	DBS100A13R8
Item	Overvoltage Protection 過電圧保護
Object	+13.8V7.3A

Testing Circuitry　Figure A

1. Graph



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 Temperature [℃]	Operating Point [V]		
	Input Volt. 45[V]	Input Volt. 110[V]	Input Volt. 160[V]
-35	17.45	17.45	17.45
-20	17.57	17.57	17.57
0	17.57	17.57	17.57
15	17.68	17.57	17.57
25	17.68	17.68	17.68
40	17.74	17.74	17.74
55	17.74	17.74	17.74
70	17.74	17.74	17.74
85	17.86	17.86	17.86
90	17.86	17.86	17.86
--	—	—	—

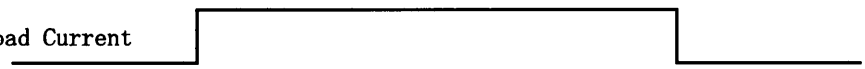
COSEL

Model	DBS100A13R8		
Item	Dynamic Load Response 動的負荷変動	Temperature Testing Circuitry	25℃ Figure A
Object	+13.8V7.3A		

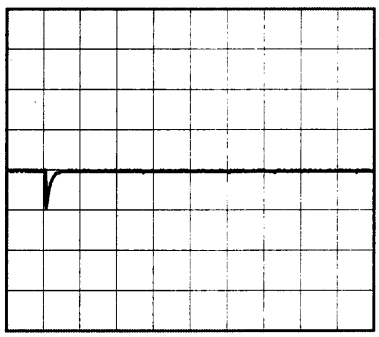
Input Volt. 110 V

Cycle 1000 ms

Load Current

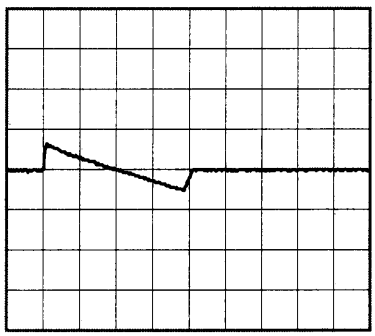


Min. Load (0A) ←→
Load 100% (7.3A)



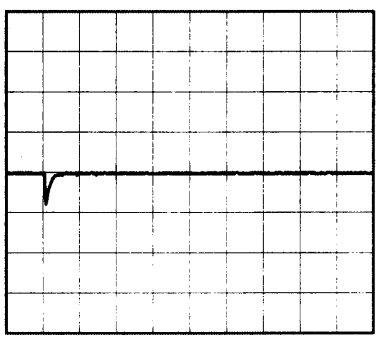
500 mV/div

5 ms/div



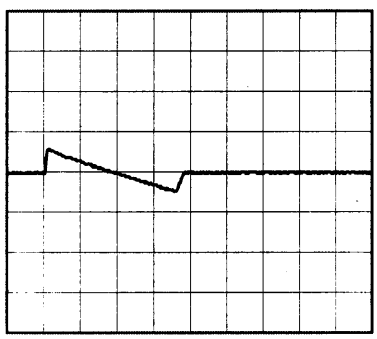
5 ms/div

Min. Load (0A) ←→
Load 50% (3.65A)



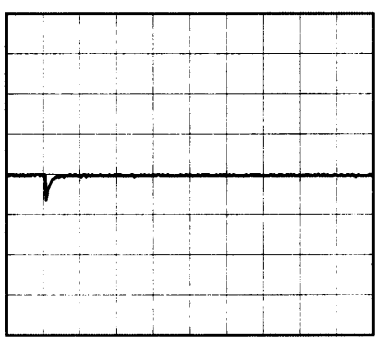
500 mV/div

5 ms/div



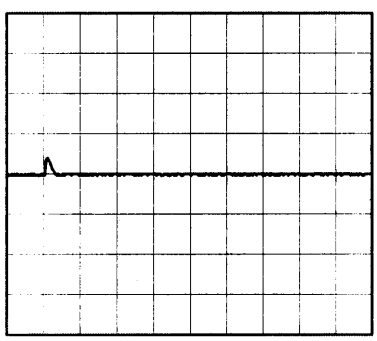
5 ms/div

Load 10% (0.73A) ←→
Load 100% (7.3A)



500 mV/div

5 ms/div



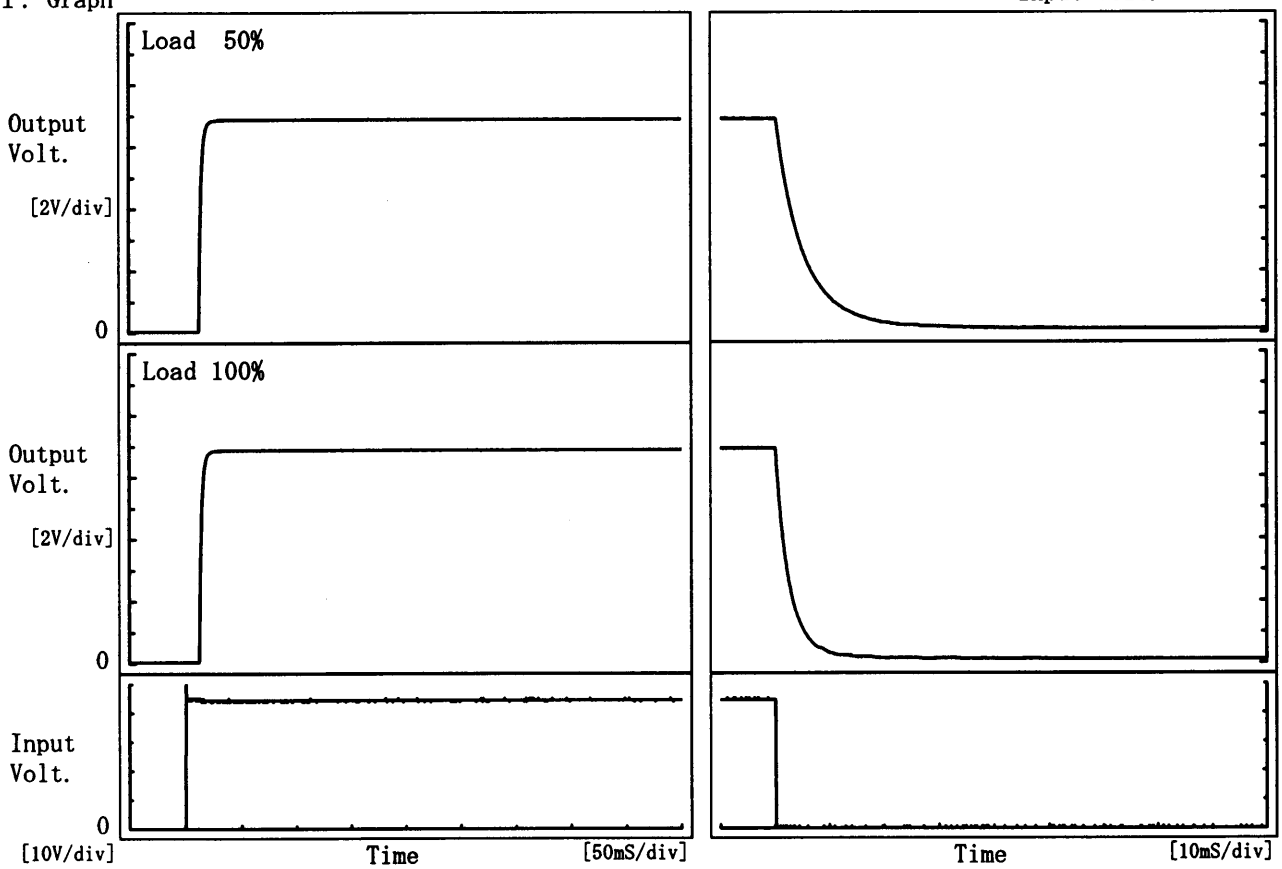
5 ms/div

COSEL

Model	DBS100A13R8		
Item	Rise and Fall Time 立上り、立下り時間	Temperature Testing Circuitry	25℃ Figure A
Object	+13.8V7.3A		

1. Graph

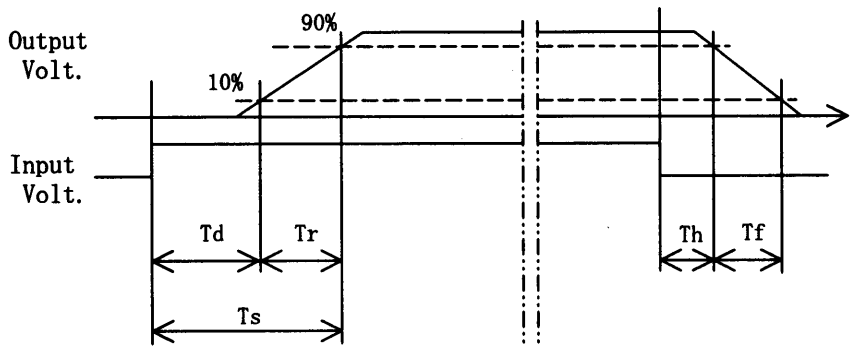
Input Volt. 45 V



2. Values

[mS]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	12.8	4.8	17.5	0.6	12.3
100 %	12.8	4.5	17.3	0.3	6.2



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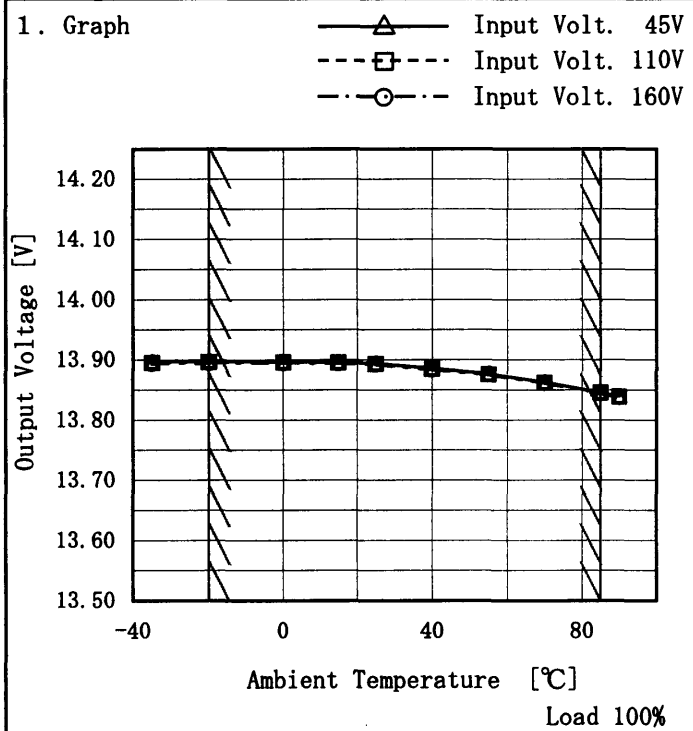
COSEL

Model	DBS100A13R8
Item	Ambient Temperature Drift 周囲温度変動
Object	+13.8V7.3A

Testing Circuitry Figure A

1. Graph



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

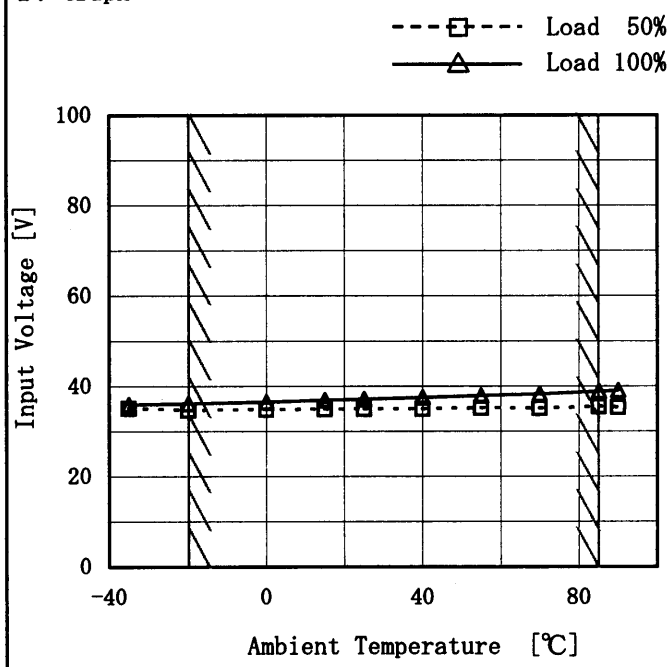
Ambient Temperature [℃]	Output Voltage [V]		
	Input Volt. 45[V]	Input Volt. 110[V]	Input Volt. 160[V]
-35	13.897	13.895	13.894
-20	13.898	13.896	13.895
0	13.897	13.896	13.895
15	13.897	13.895	13.894
25	13.894	13.893	13.892
40	13.886	13.885	13.884
55	13.877	13.876	13.875
70	13.863	13.862	13.862
85	13.846	13.846	13.844
90	13.839	13.839	13.838
—	—	—	—

COSEL

Model	DBS100A13R8
Item	Minimum Input Voltage for Regulated Output Voltage 最低レギュレーション電圧
Object	+13.8V7.3A

Testing Circuitry Figure A

1. Graph



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

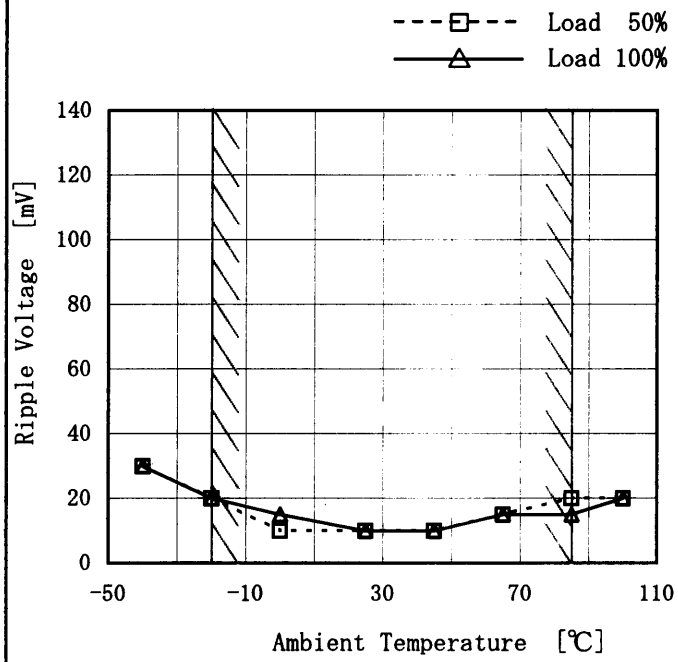
Ambient Temperature [℃]	Input Voltage [V]	
	Load 50%	Load 100%
-35	36	36
-20	35	37
0	35	37
15	35	37
25	35	38
40	35	38
55	36	38
70	36	39
85	36	39
90	36	39
--	—	—

COSEL

Model	DBS100A13R8
Item	Ripple Voltage (by Ambient Temp.) リップル電圧（周囲温度特性）
Object	+13.8V7.3A

Testing Circuitry　Figure A

1. Graph



Input Volt.　110V

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

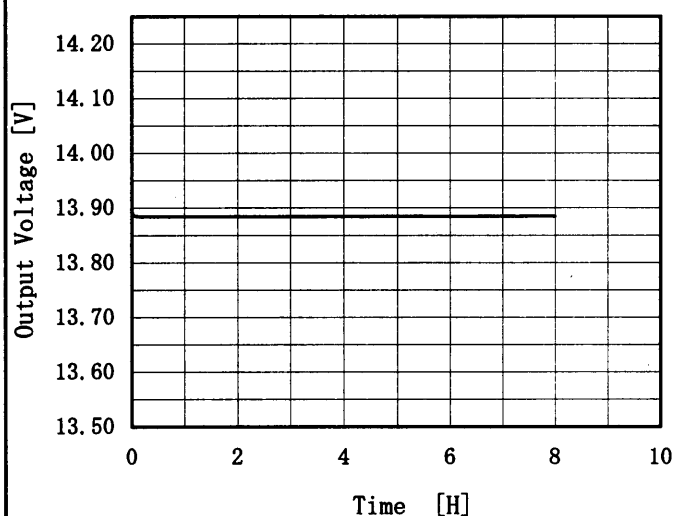
Ambient Temperature [℃]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-40	30	30
-20	20	20
0	10	15
25	10	10
45	10	10
65	15	15
85	20	15
100	20	20
--	—	—
--	—	—
--	—	—

COSEL

Model	DBS100A13R8
Item	Time Lapse Drift 経時ドリフト
Object	+13.8V7.3A

Temperature 25℃
Testing Circuitry Figure A

1. Graph



Input Volt. 110V
Load 100%

2. Values

Time since start [H]	Output Voltage [V]
0.0	13.895
0.5	13.885
1.0	13.885
2.0	13.885
3.0	13.885
4.0	13.885
5.0	13.885
6.0	13.885
7.0	13.885
8.0	13.885

COSEL

Model	DBS100A13R8	
Item	Output Voltage Accuracy 定電圧精度	Testing Circuitry　Figure A
Object	+13.8V7.3A	

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　: -20 ～ 85℃
Input Voltage　: 45 ～ 160V
Load Current　: 0 ～ 7.3A

* Output Voltage Accuracy = ±(Maximum of Output Voltage − Minimum of Output Voltage)／2

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

1. 定電圧精度

周囲温度、入力電圧、負荷電流を下記仕様内で、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℃
入力電圧　: 45 ～ 160V
負荷電流　: 0 ～ 7.3A

* 定電圧精度(変動値) ＝ ±(出力電圧の最高値－出力電圧の最低値)／2

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

2. Values

Item	Temperature [℃]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	-20	45	0	13.900	±29	±0.2
Minimum Voltage	85	160	7.3	13.842		

COSEL

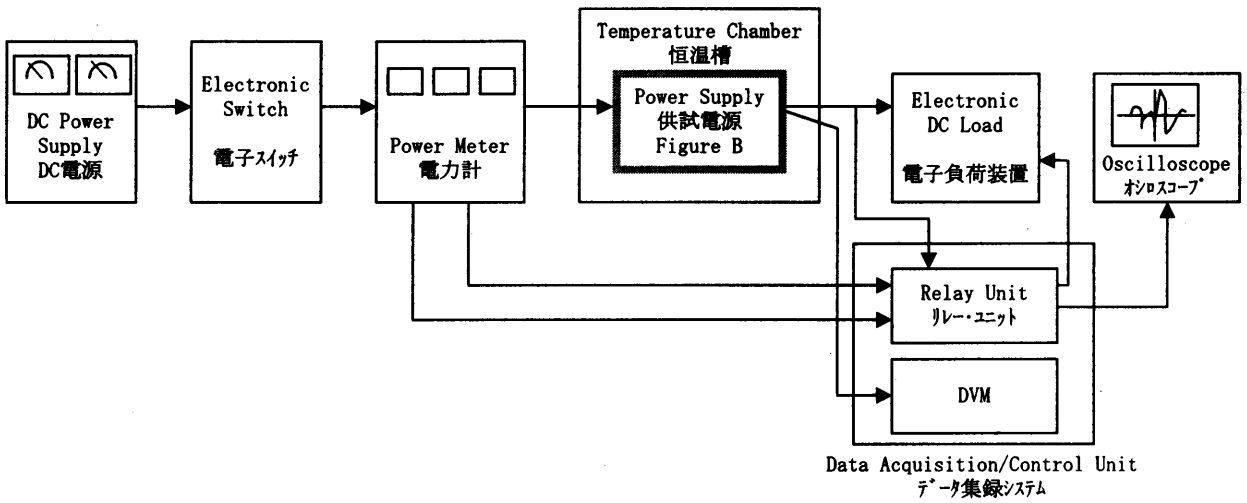


Figure A

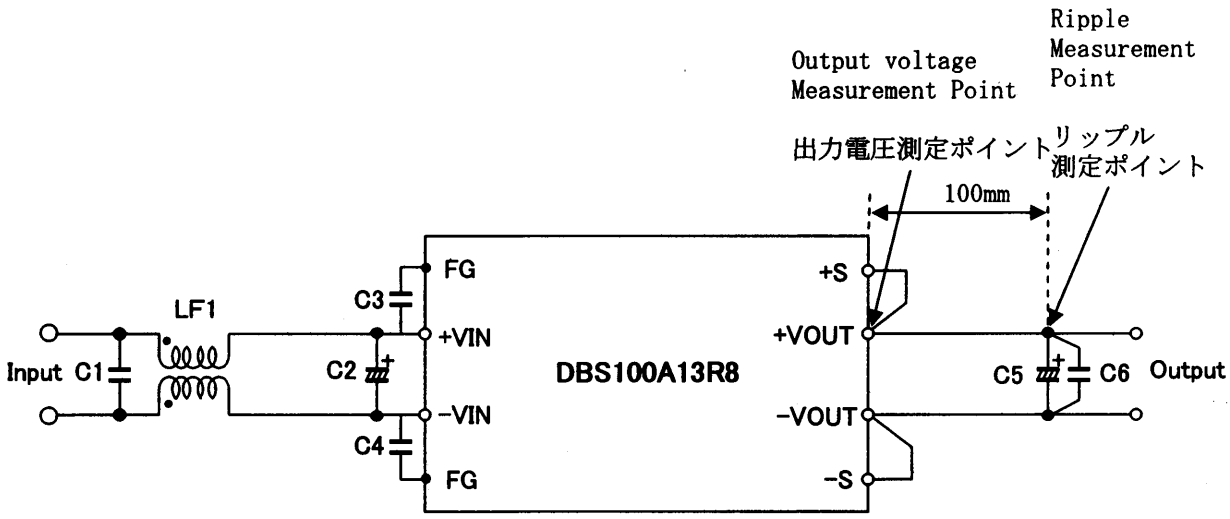


Figure B (General Electric Characteristic)
一般電気特性

C1	:	0.1μF 250V Film capacitor
C2	:	47μF 250V Electric capacitor
C3、C4	:	2200pF 250V Ceramic capacitor
C5	:	1000μF 25V Electric capacitor
C6	:	0.1μF 50V Film capacitor
LF1	:	1mH 3A Common mode Choke Coil