参考資料

COSEL

TEST DATA OF CDS6002428

(24V INPUT)

Regulated DC Power Supply

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COSEL CO., LTD.

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CONTENTS

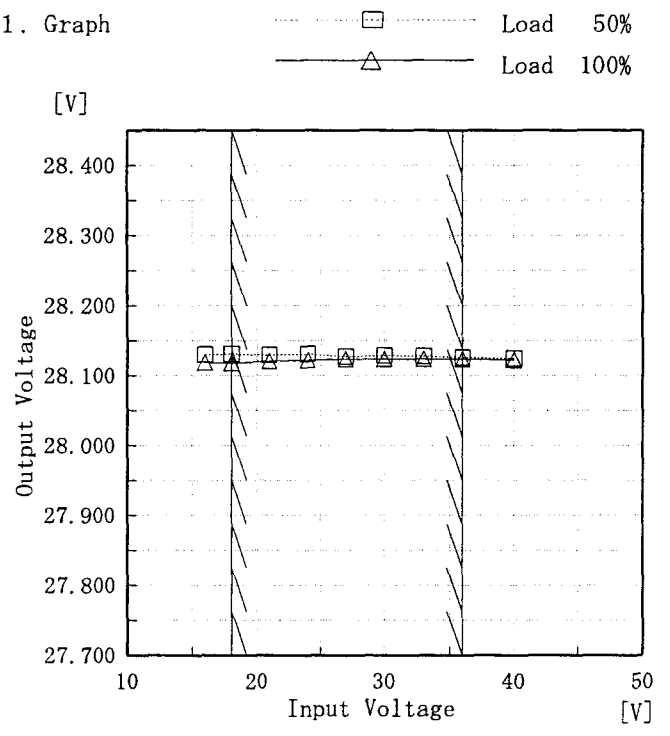
(Final Page 21)

COSEL

Model	CDS6002428
Item	Line Regulation 静的入力変動
Object	+28.0V22A

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%
16	28.130	28.119
18	28.131	28.118
21	28.130	28.121
24	28.131	28.122
27	28.127	28.124
30	28.129	28.123
33	28.128	28.124
36	28.126	28.124
40	28.125	28.122

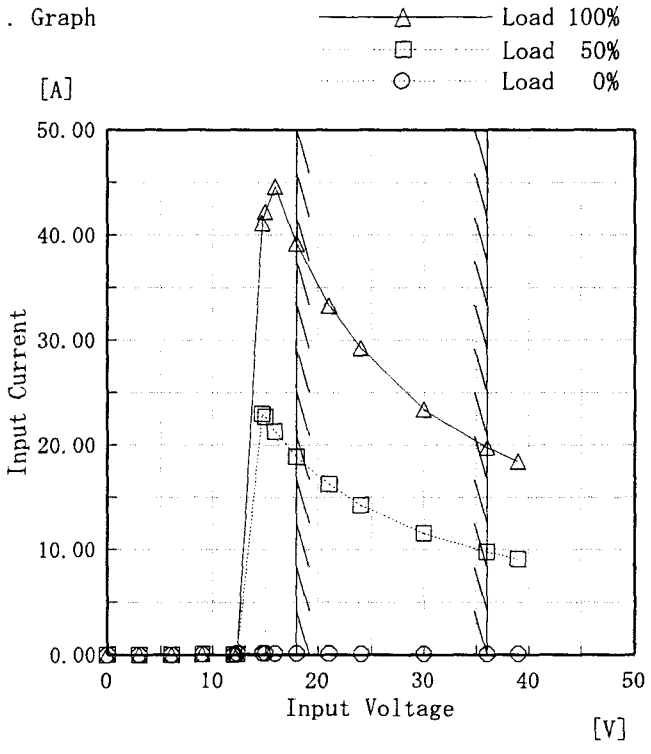
BC−3396

COSEL

Model	CDS6002428
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

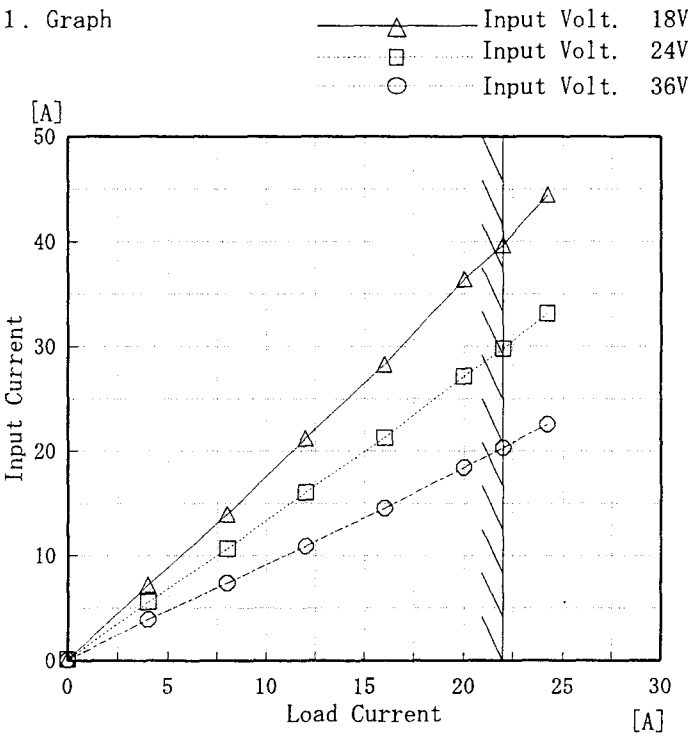
Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0.0	0.000	0.000	0.000
3.0	0.000	0.000	0.000
6.0	0.000	0.000	0.000
9.0	0.059	0.056	0.053
12.0	0.044	0.043	0.044
12.3	0.169	0.039	0.038
14.7	0.144	22.959	41.135
15.0	0.136	22.700	42.193
15.9	0.134	21.297	44.592
18.0	0.120	18.880	39.159
21.0	0.108	16.251	33.262
24.0	0.095	14.259	29.247
30.0	0.087	11.570	23.385
36.0	0.079	9.791	19.730
39.0	0.071	9.092	18.410
—	—	—	—

COSEL

Model	CDS6002428
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

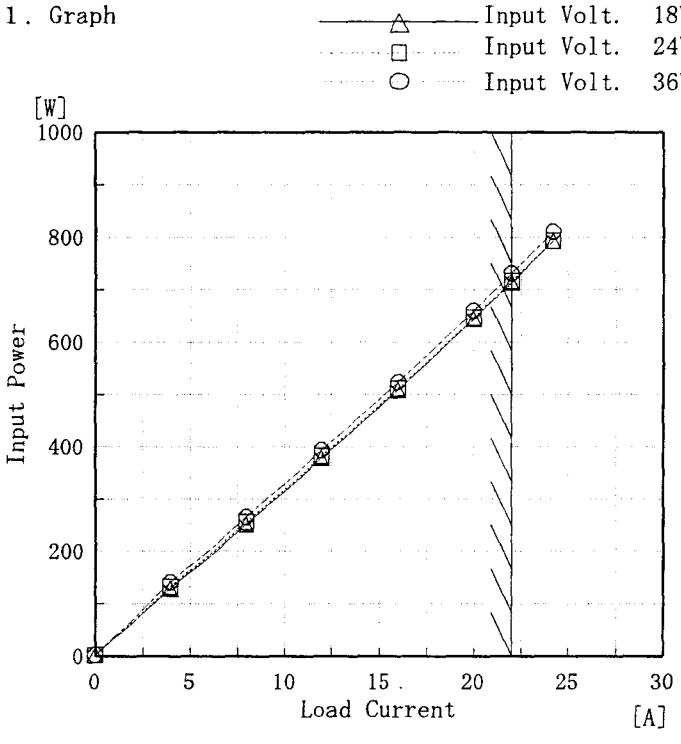
Load Current [A]	Input Current [A]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.0	0.113	0.096	0.063
4.0	7.197	5.562	3.926
8.0	13.957	10.696	7.414
12.0	21.224	16.053	10.919
16.0	28.264	21.284	14.562
20.0	36.428	27.137	18.439
22.0	39.674	29.793	20.307
24.2	44.470	33.174	22.557
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

COSEL

Model	CDS6002428
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. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.0	2.03	2.33	2.27
4.0	129.41	133.26	141.29
8.0	252.12	256.57	265.85
12.0	378.25	382.22	393.55
16.0	508.01	511.57	523.13
20.0	644.91	646.88	660.15
22.0	713.82	716.45	731.36
24.2	793.20	793.58	810.67
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

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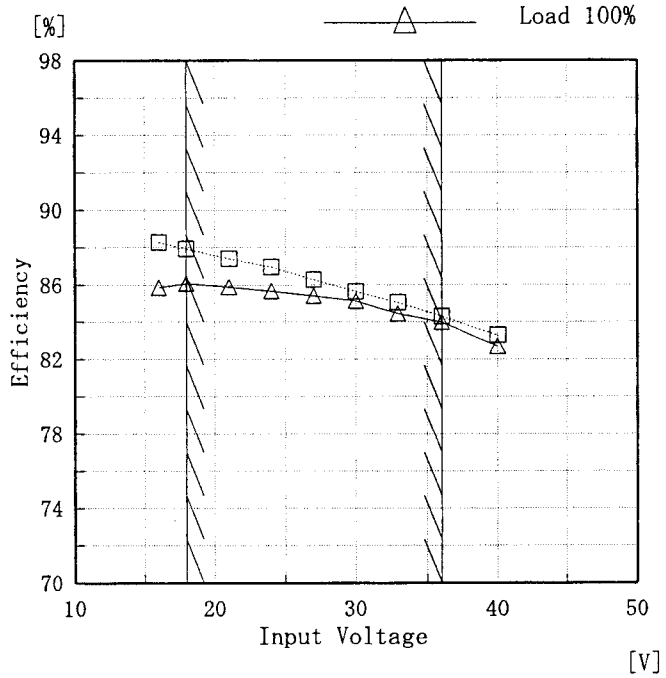
COSEL

Model	CDS6002428		
Item	Efficiency (by Input Voltage) 効率（入力電圧特性）	Temperature Testing Circuitry	25℃ Figure A
Object	———————————		

1. Graph

Load 50%

Load 100%



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

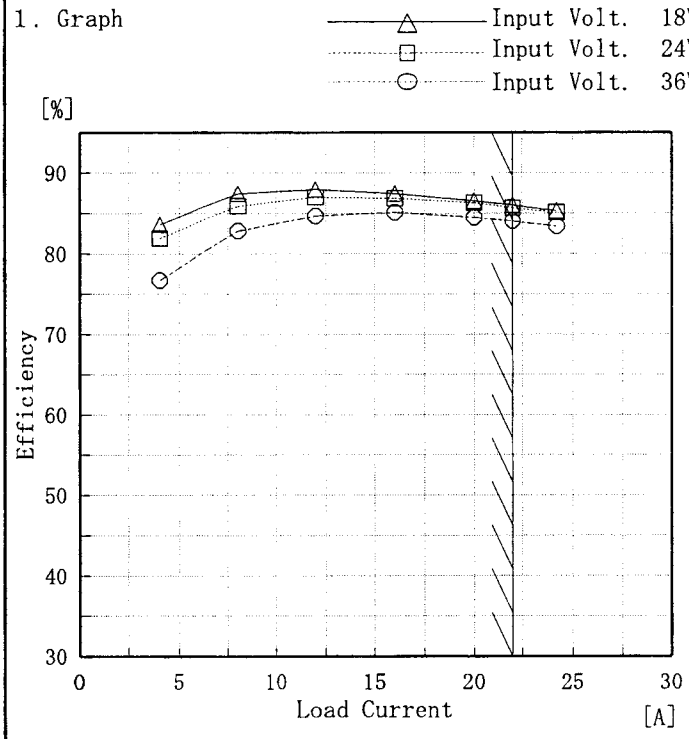
Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
16	88.3	85.8
18	87.9	86.1
21	87.4	85.9
24	87.0	85.7
27	86.3	85.4
30	85.6	85.1
33	85.1	84.4
36	84.3	84.0
40	83.3	82.7

COSEL

Model	CDS6002428
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

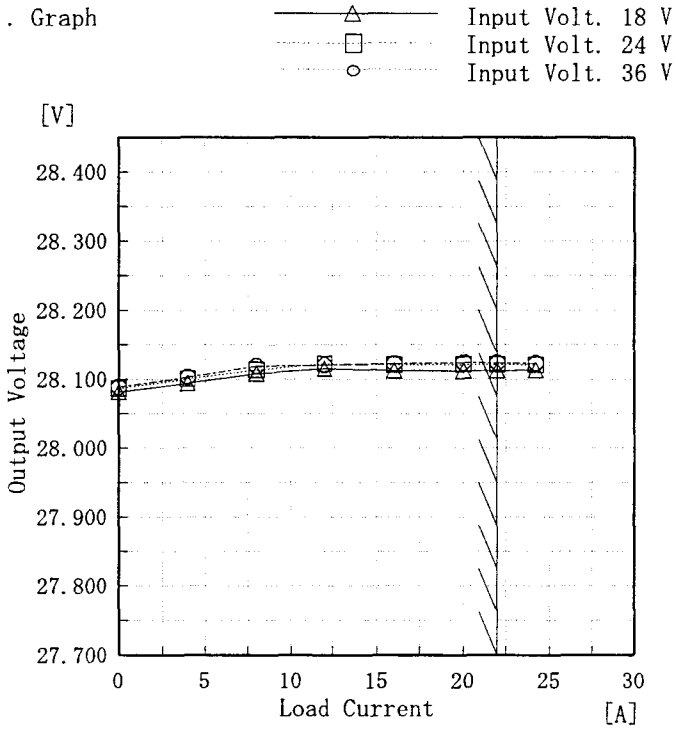
Load Current [A]	Efficiency [%] Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
4.0	83.6	81.9	76.7
8.0	87.4	85.9	82.8
12.0	87.9	87.0	84.7
16.0	87.4	86.8	85.1
20.0	86.5	86.3	84.5
22.0	86.0	85.7	84.0
24.2	85.3	85.1	83.4
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

COSEL

Model	CDS6002428
Item	Load Regulation 静的負荷変動
Object	+28.0V22A

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

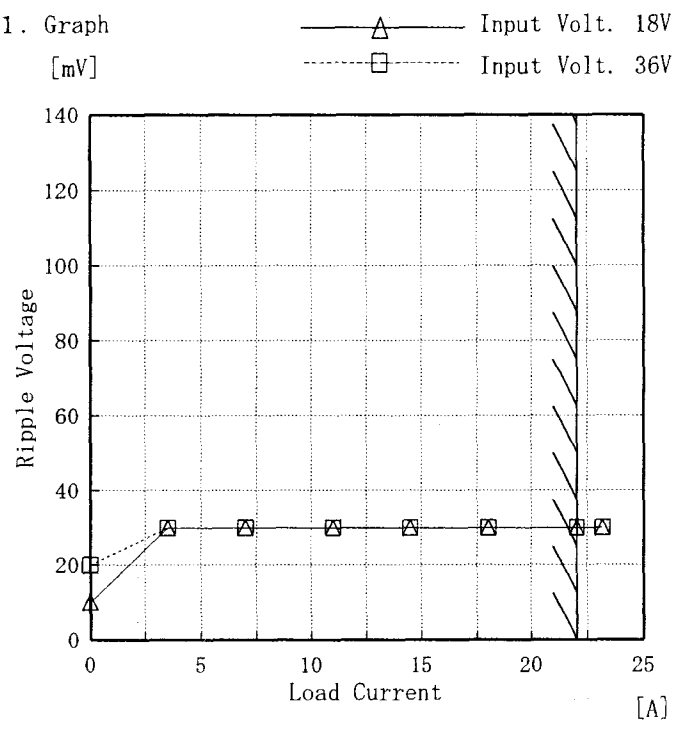
Load Current [A]	Output Voltage [V]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.0	28.081	28.086	28.089
4.0	28.094	28.101	28.103
8.0	28.108	28.114	28.119
12.0	28.116	28.122	28.121
16.0	28.113	28.121	28.123
20.0	28.112	28.121	28.124
22.0	28.113	28.121	28.124
24.2	28.113	28.121	28.123
—	—	—	—
—	—	—	—

COSEL

Model	CDS6002428
Item	Ripple Voltage(by Load Current) リップル電圧(負荷特性)
Object	+28.0V22A

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。

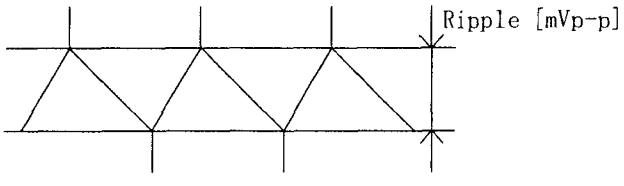


図　リップル波形図

2. Values

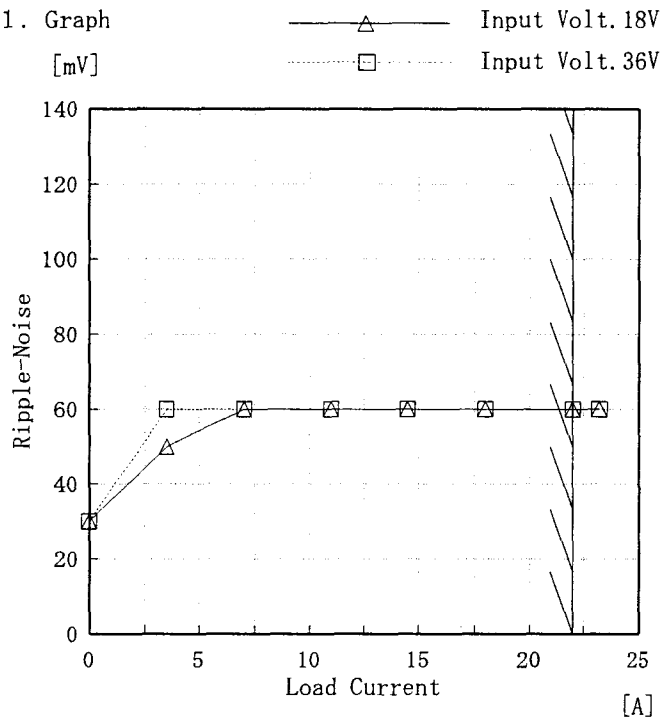
Load Current [A]	Ripple Output Volt. [mV]	
	Input Volt. 18 [V]	Input Volt. 36 [V]
0.0	10	20
3.5	30	30
7.0	30	30
11.0	30	30
14.5	30	30
18.0	30	30
22.0	30	30
23.2	30	30
—	—	—
—	—	—
—	—	—

COSEL

Model	CDS6002428
Item	Ripple-Noise　リップルノイズ
Object	+28.0V22A

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。

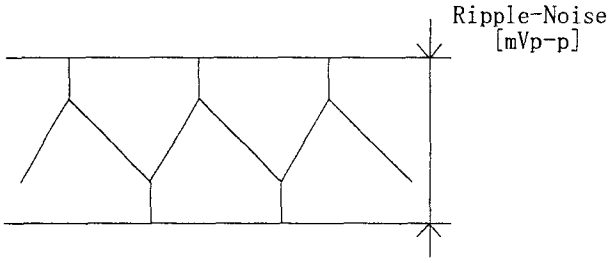


図　リップルノイズ波形図

2. Values

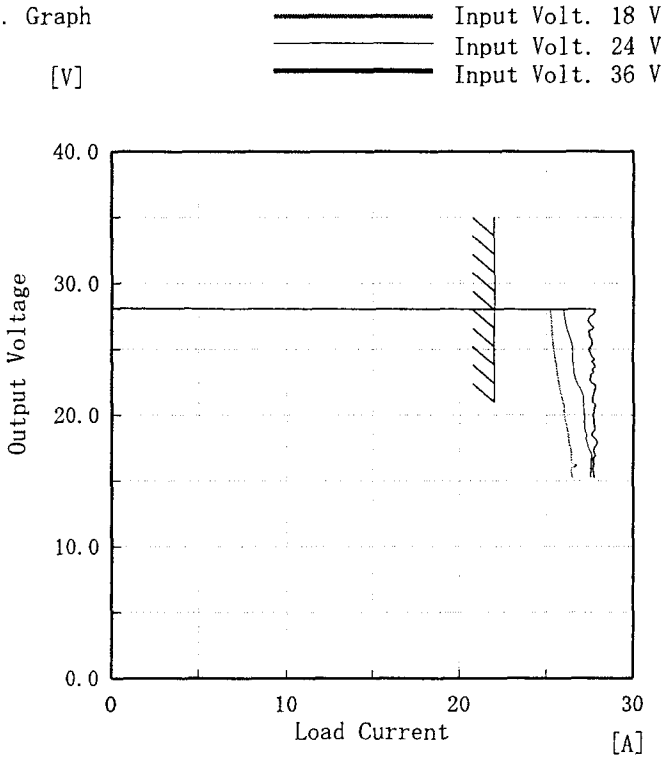
Load current [A]	Ripple-Noise [mV]	
	Input Volt. 18 [V]	Input Volt. 36 [V]
0.0	30	30
3.5	50	60
7.0	60	60
11.0	60	60
14.5	60	60
18.0	60	60
22.0	60	60
23.2	60	60
—	—	—
—	—	—
—	—	—

COSEL

Model	CDS6002428
Item	Overcurrent Protection 過電流保護
Object	+28.0V22A

Temperature 25℃
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 15V to 0V.

(注)斜線は定格負荷電流範囲を示す。
15V～0V間は、間欠モードとなる。

2. Values

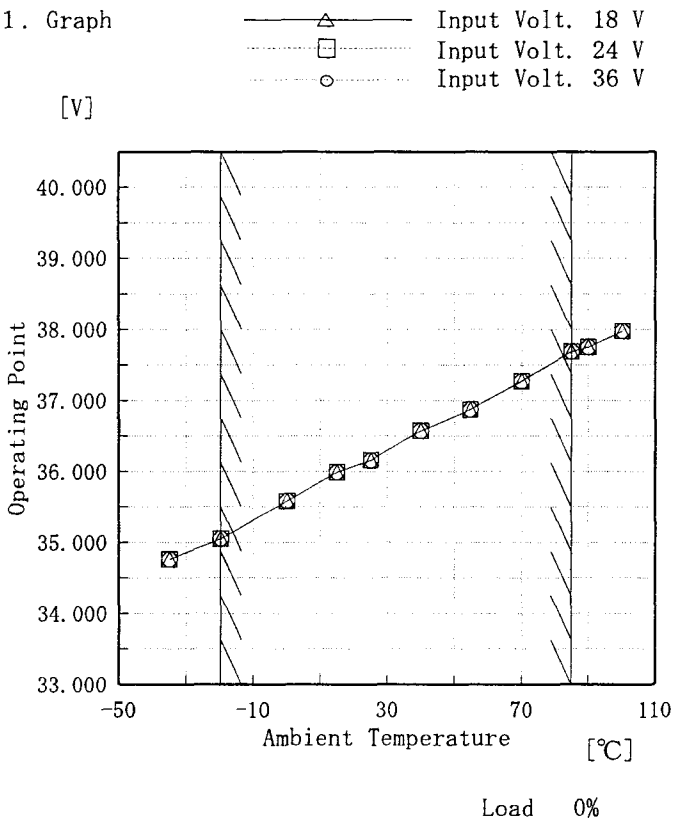
Output Voltage [V]	Load Current [A]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
28.00	25.23	25.99	27.73
26.60	25.33	26.20	27.61
25.20	25.44	26.52	27.50
22.40	25.72	26.74	27.50
19.60	26.09	27.12	27.65
16.80	26.48	27.55	27.75
14.00	—	—	—
11.20	—	—	—
8.40	—	—	—
5.60	—	—	—
2.80	—	—	—
0.00	—	—	—

COSEL

Model	CDS6002428
Item	Overvoltage Protection 過電圧保護
Object	+28.0V22A

Testing Circuitry Figure A

1. Graph



Load 0%

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. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
-35	34.76	34.76	34.76
-20	35.05	35.05	35.05
0	35.58	35.58	35.58
15	35.99	35.99	35.99
25	36.16	36.16	36.16
40	36.57	36.57	36.57
55	36.87	36.87	36.87
70	37.28	37.27	37.27
85	37.69	37.69	37.69
90	37.75	37.75	37.75
100	37.98	37.98	37.98

COSEL

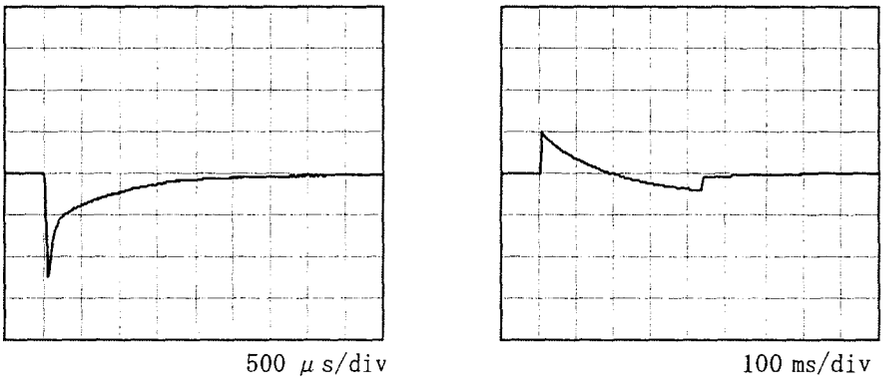
Model	CDS6002428		
Item	Dynamic Load Response 動的負荷変動	Temperature Testing Circuitry	25℃ Figure A
Object	+28.0V22A		

Input Volt. 24 V

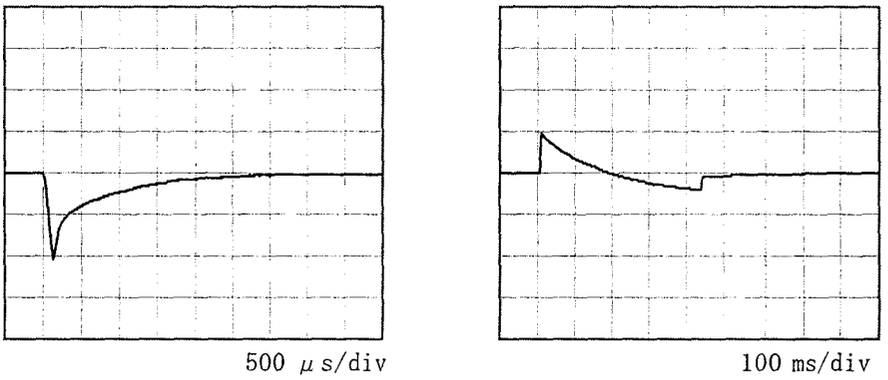
Cycle 1000 ms

Load Current

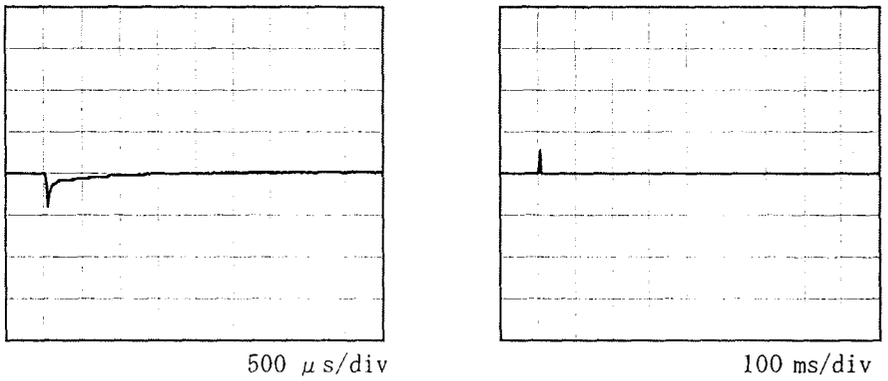
Min. Load (0A) ⟷
Load 100% (22A)



Min. Load (0A) ⟷
Load 50% (11A)



Load 10% (2.2A) ⟷
Load 100% (22A)

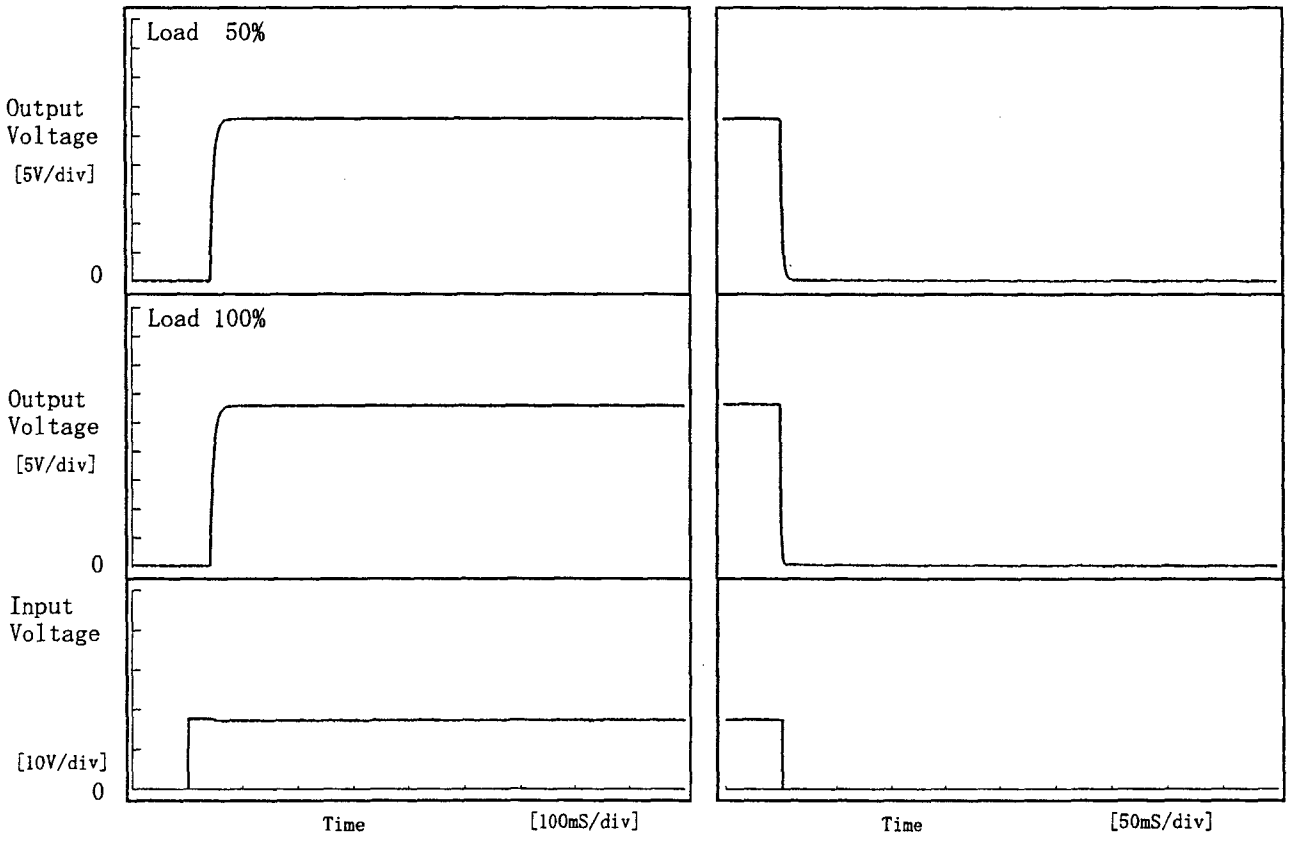


COSEL

Model	CDS6002428		
Item	Rise and Fall Time 立上り、立下り時間	Temperature Testing Circuitry	25℃ Figure A
Object	+28.0V22A		

1. Graph

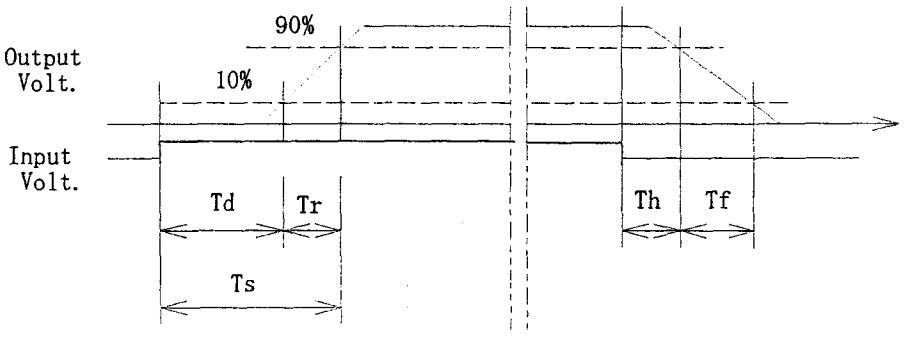
Input Volt. 18 V



2. Values

[mS]

Load \ Time	T d	T r	T s	T h	T f
50 %	41.50	14.50	56.00	0.50	4.00
100 %	41.50	14.50	56.00	0.50	2.00

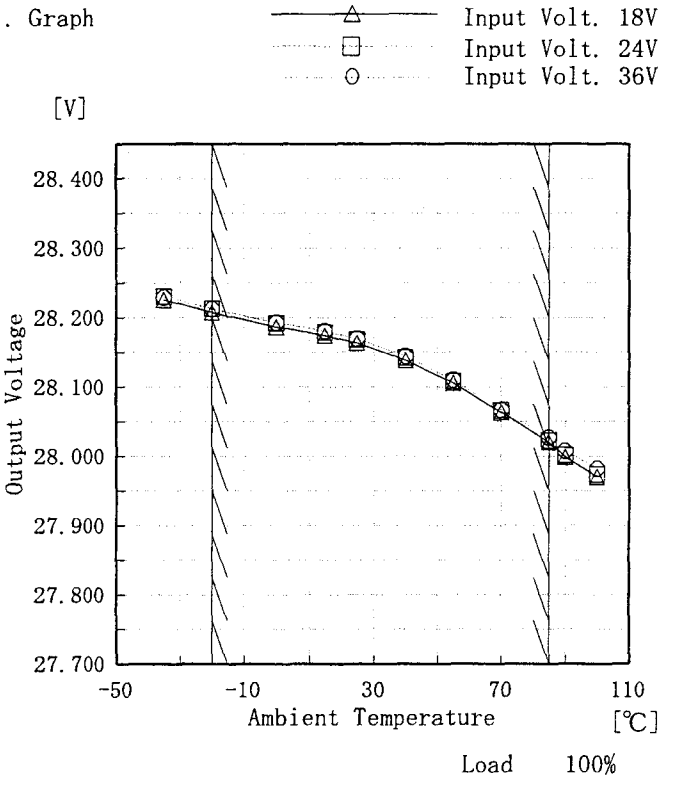


COSEL

Model	CDS6002428
Item	Ambient Temperature Drift 周囲温度変動
Object	+28.0V22A

Testing Circuitry Figure A

1. Graph



Load 100%

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

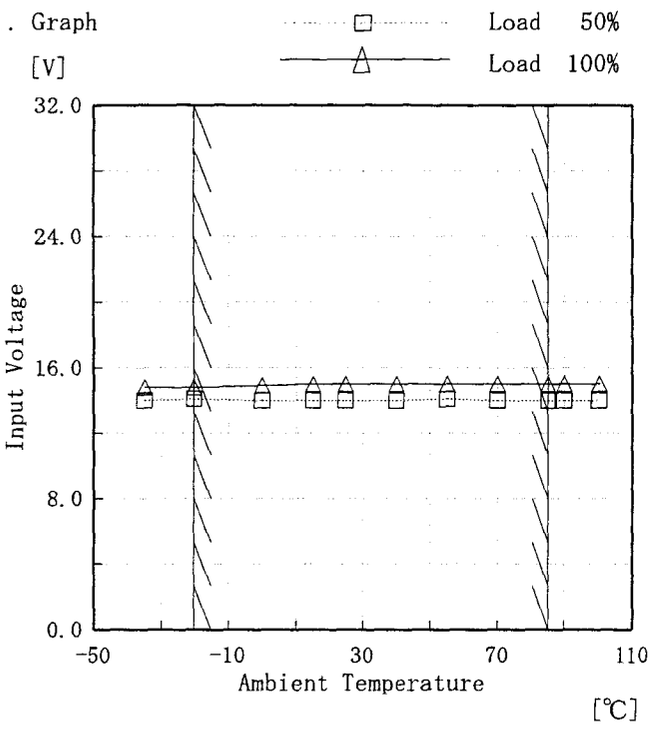
Ambient Temperature [℃]	Output Voltage [V]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
-35	28.226	28.231	28.230
-20	28.208	28.213	28.213
0	28.187	28.192	28.193
15	28.174	28.179	28.180
25	28.163	28.168	28.170
40	28.138	28.142	28.144
55	28.105	28.108	28.110
70	28.063	28.066	28.067
85	28.020	28.023	28.027
90	27.999	28.001	28.007
100	27.970	27.974	27.982

COSEL

Model	CDS6002428
Item	Minimum Input Voltage for Regulated Output Voltage 最低レギュレーション電圧
Object	+28.0V22A

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

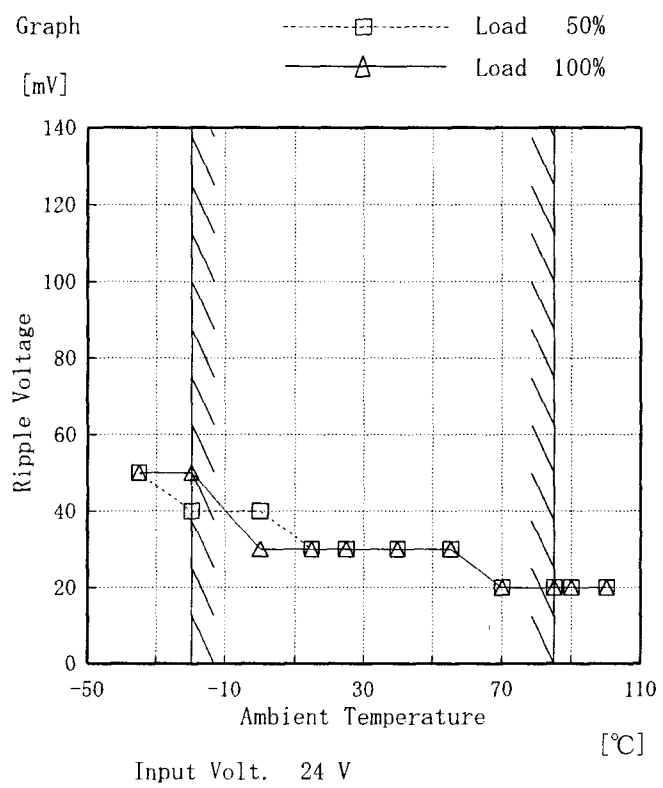
Ambient Temperature [℃]	Input Voltage [V]	
	Load 50%	Load 100%
-35	14.0	14.8
-20	14.1	14.8
0	14.0	14.9
15	14.0	15.0
25	14.0	15.0
40	14.0	15.0
55	14.1	15.0
70	14.0	15.0
85	14.0	15.0
90	14.0	15.0
100	14.0	15.0

COSEL

Model	CDS6002428
Item	Ripple Voltage (by Ambient Temp.) リップル電圧（周囲温度特性）
Object	+28.0V22A

Testing Circuitry Figure A

1. Graph



Input Volt. 24 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

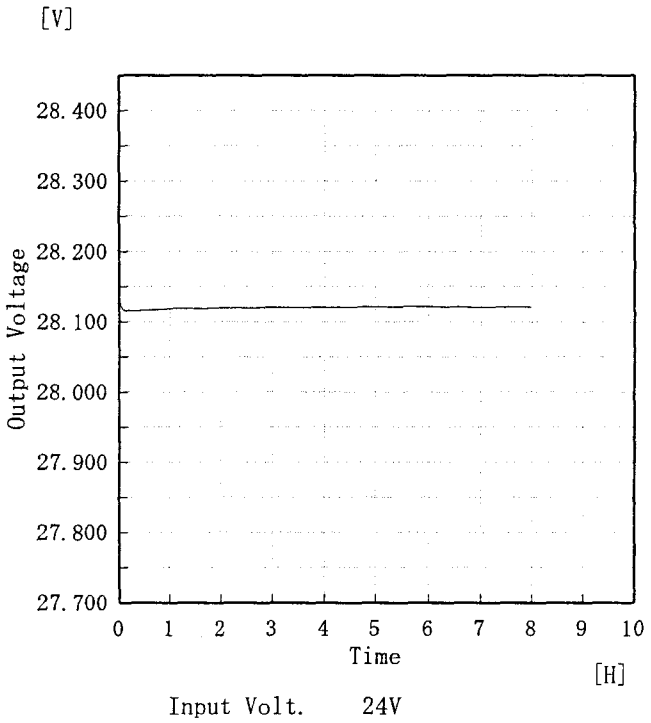
Ambient Temp. [℃]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-35	50	50
-20	40	50
0	40	30
15	30	30
25	30	30
40	30	30
55	30	30
70	20	20
85	20	20
90	20	20
100	20	20

COSEL

Model	CDS6002428
Item	Time Lapse Drift 経時ドリフト
Object	+28.0V22A

Temperature 25℃
Testing Circuitry Figure A

1. Graph



Input Volt. 24V
Load 100%

2. Values

Time since start [H]	Output Voltage [V]
0.0	28.155
0.5	28.116
1.0	28.119
2.0	28.119
3.0	28.120
4.0	28.120
5.0	28.121
6.0	28.122
7.0	28.121
8.0	28.121

COSEL

Model	CDS6002428
Item	Output Voltage Accuracy 定電圧精度
Object	+28.0V22A

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 : -20～85 ℃
Input Voltage : 18～ 36 V
Load Current : 0～22 A

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

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

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 18～ 36 V
負荷電流 0～22 A

* 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

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

2. Values

Item	Temperature [℃]	Input Voltage [V]	Output Current [A]	Output Voltage [V]	Output Voltage Accuracy [mV]	Output Voltage Accuracy (Ration) [%]
Maximum Voltage	-20	24	22	28.215	±115	±0.5
Minimum Voltage	85	36	0	27.986		

COSEL

Model	CDS6002428	
Item	Condensation 結露特性	Testing Circuitry Figure A
Object	+28.0V22A	

1. Condensation test

Testing procedure is as follows.

① Keeping and cooling the unit in a tank at -10℃ for an hour with the input off.

② Taking it out of the tank and dewing itself in a room where the temperature is 25℃ and the humidity is 40%RH.

③ Testing electrical characteristics of the unit to confirm there be no fault.

1．結露特性試験

入力を切った状態で、恒温槽で－１０℃に冷却しておき、約１時間後に恒温槽から取り出し、室温２５℃、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。

2．Values

Item	Data	Testing Conditions
Output Voltage [V]	28.122	Input Volt.: 24V, Load Current:22A
Line Regulation [mV]	6	Input Volt.: 18～36V, Load Current:22A
Load Regulation [mV]	36	Input Volt.: 24V, Load Current:0～22A

COSEL

Model	CDS6002428		
Item	Line Noise Tolerance 入力雑音耐量	Temperature Testing Circuitry	25℃ Figure B
Object	+28.0V22A		

1. Results

Pulse Width [nS]	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 :24 V
Pulse Voltage :±2000 V
Pulse Cycle :10 mS
Pulse Input Duration:1 min. or more
Load :100 %

COSEL

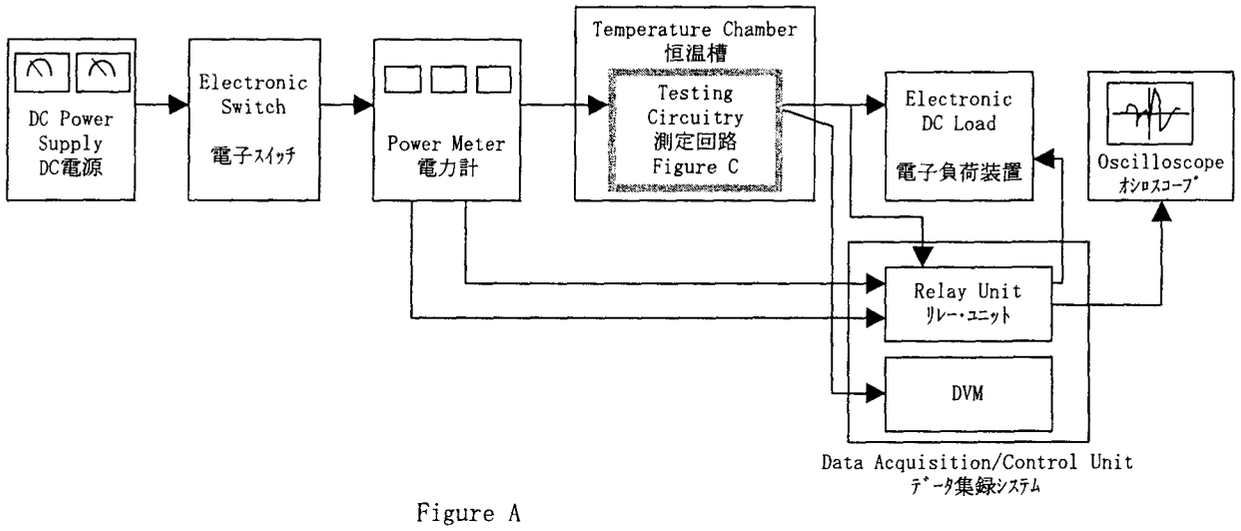


Figure A

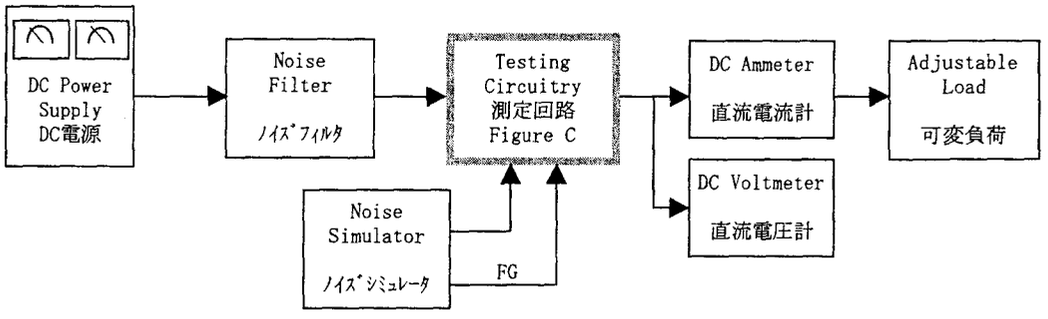


Figure B

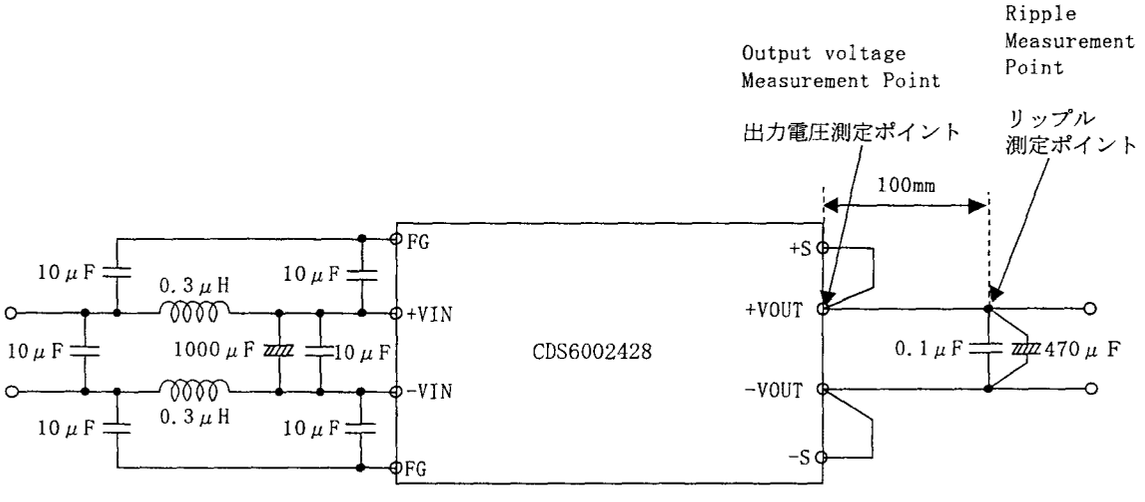


Figure C (General Electric Characteristic)
一般電気特性