参考資料

COSEL

TEST DATA OF MMB50A-3

(100V INPUT)

Regulated DC Power Supply

Date : Feb.15. 1999

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Design Manager

Prepared by : H. Ishikawa
Design Engineer

コーセル株式会社

COSEL CO.,LTD.

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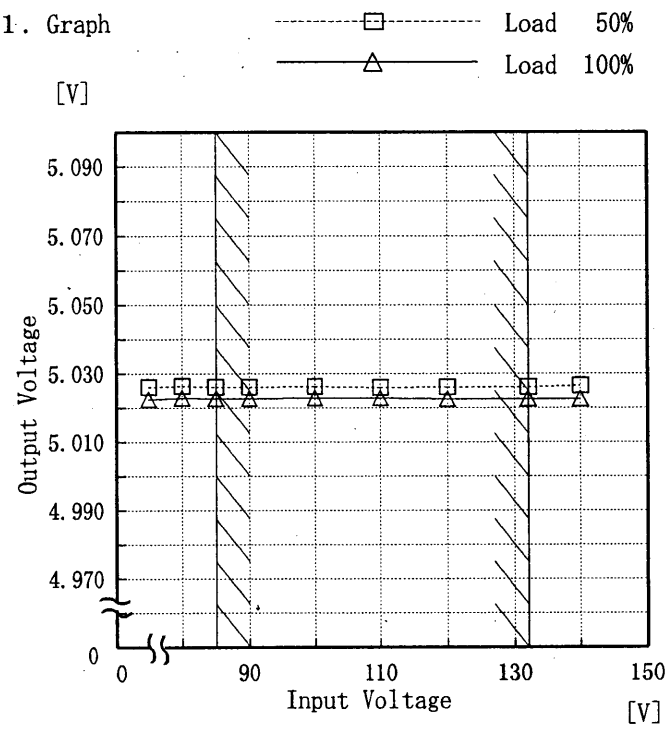
Testing Circuitry Figure A

Object +5.0V3.00A

1. Graph

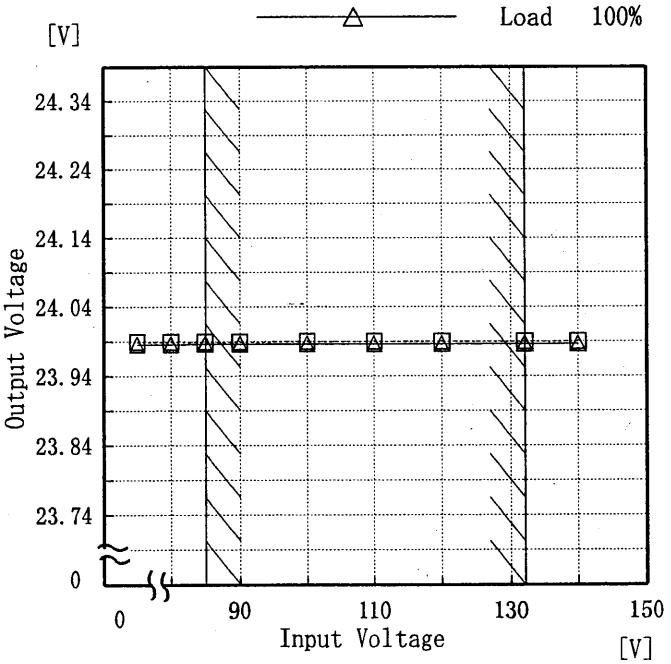


2. Values

Input Voltage [V]	Load 50% Output Volt. [V]	Load 100% Output Volt. [V]
75	5.026	5.022
80	5.026	5.023
85	5.026	5.023
90	5.026	5.023
100	5.026	5.023
110	5.026	5.023
120	5.026	5.023
132	5.026	5.023
140	5.026	5.023
—	—	—
—	—	—
—	—	—

Object +24V1.50A

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]	Load 50% Output Volt. [V]	Load 100% Output Volt. [V]
75	23.990	23.986
80	23.990	23.986
85	23.990	23.986
90	23.990	23.987
100	23.990	23.987
110	23.990	23.987
120	23.990	23.987
132	23.990	23.987
140	23.990	23.987
—	—	—
—	—	—
—	—	—

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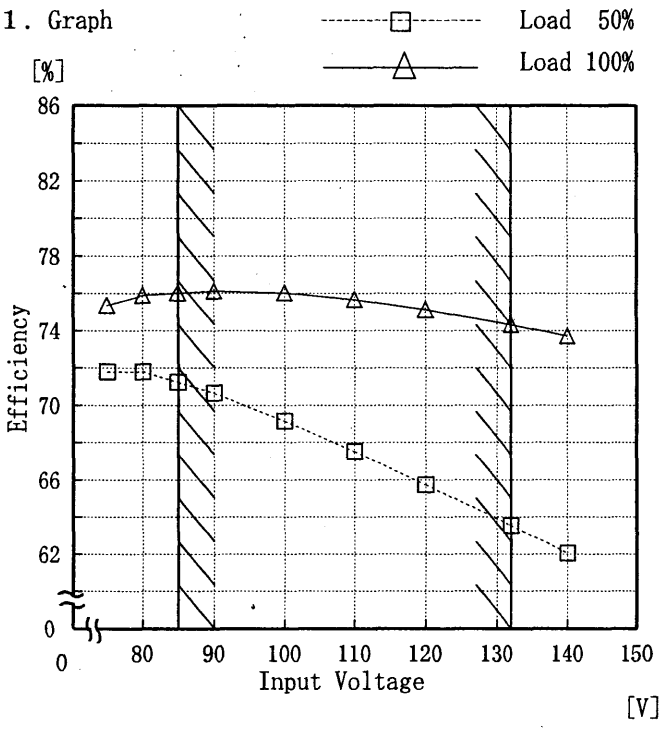
COSEL

Model	MMB50A-3
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]	Load 50% Efficiency [%]	Load 100% Efficiency [%]
75	71.8	75.4
80	71.8	75.9
85	71.2	76.0
90	70.7	76.1
100	69.2	76.0
110	67.5	75.7
120	65.7	75.1
132	63.5	74.3
140	62.0	73.7

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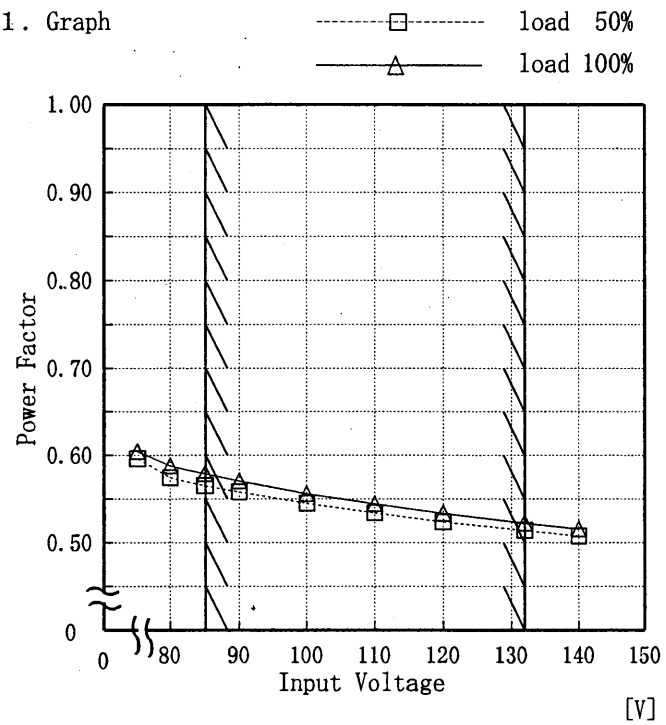
COSEL

Model	MMB50A-3
Item	Power Factor (by Input Voltage) 力率（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]	load 50% Power Factor	load 100% Power Factor
75	0.60	0.60
80	0.57	0.59
85	0.57	0.58
90	0.56	0.57
100	0.55	0.56
110	0.53	0.54
120	0.52	0.53
132	0.51	0.52
140	0.51	0.52

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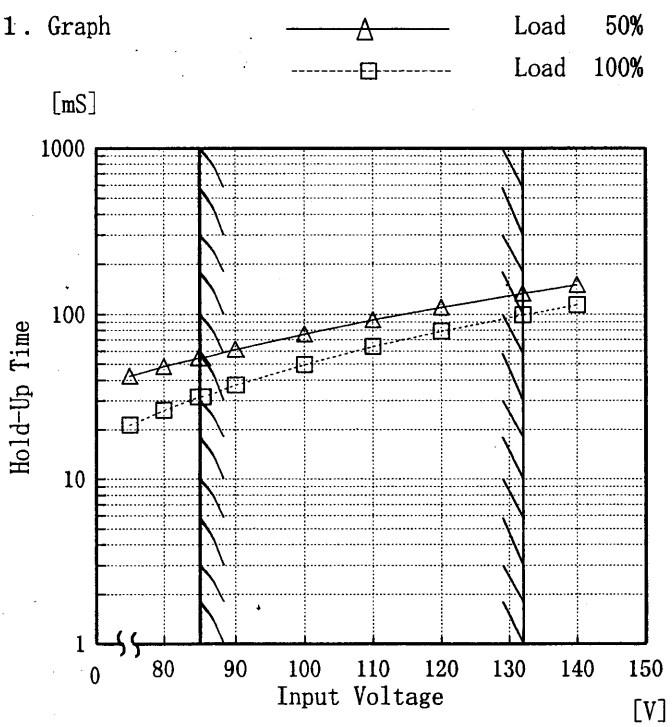
Model	MMB50A-3
Item	Hold-Up Time　出力保持時間
Object	+5.0V3A

Temperature　25℃
Testing Circuitry　Figure A

1. Graph



This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.

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

出力保持時間とは、入力電圧断から出力電圧が、定電圧精度の規格範囲を保持しているところまでの時間。

(注)斜線は定格入力電圧範囲を示す。

2. Values

Input Voltage [V]	Load 50% Hold-Up Time [mS]	Load 100% Hold-Up Time [mS]
75	42	21
80	48	26
85	54	32
90	61	37
100	76	50
110	92	64
120	110	79
132	134	99
140	151	114

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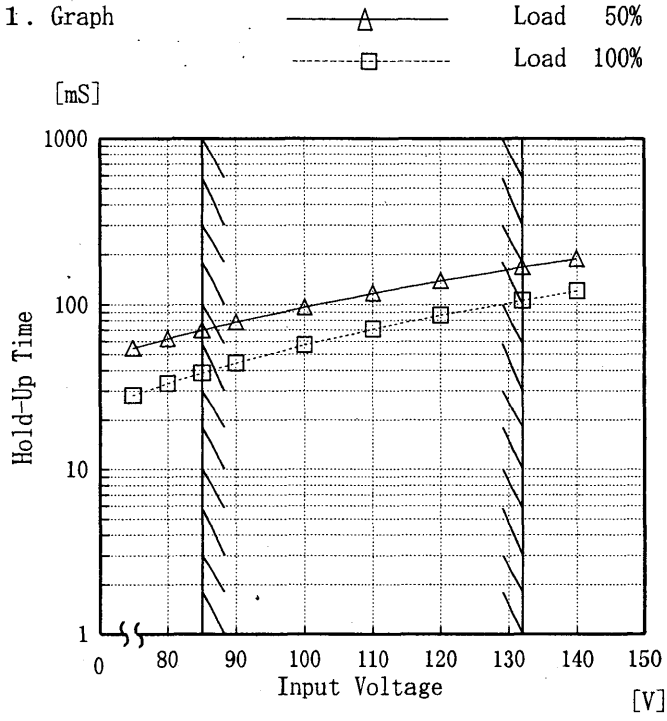
Model	MMB50A-3
Item	Hold-Up Time 出力保持時間
Object	+24.0V1.5A

Temperature 25℃
Testing Circuitry Figure A

1. Graph



This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.

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

出力保持時間とは、入力電圧断から出力電圧が、定電圧精度の規格範囲を保持しているところまでの時間。

(注)斜線は定格入力電圧範囲を示す。

2. Values

Input Voltage [V]	Load 50% Hold-Up Time [mS]	Load 100% Hold-Up Time [mS]
75	55	28
80	62	33
85	70	39
90	78	44
100	97	57
110	117	71
120	139	86
132	168	106
140	189	121

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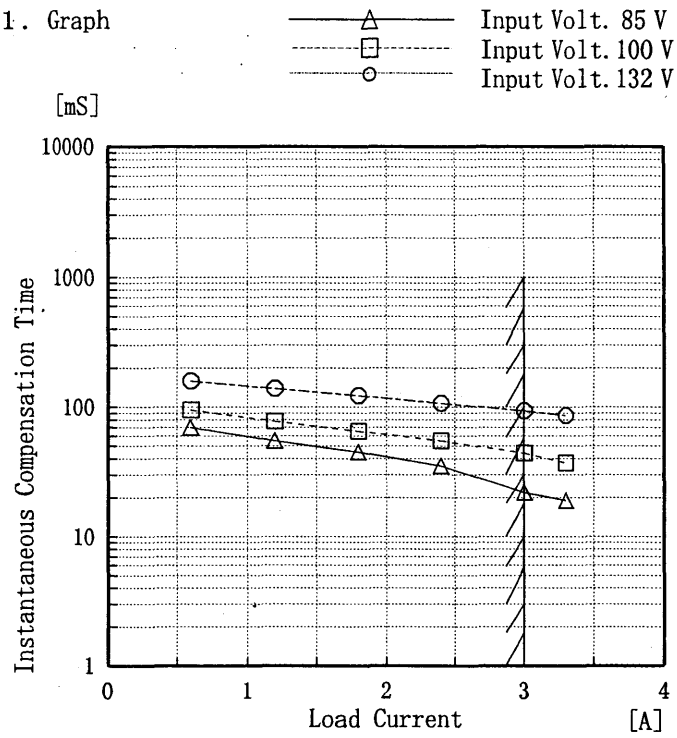
Model	MMB50A-3
Item	Instantaneous Interruption Compensation 瞬時停電保障
Object	+5.0V3.00A

Temperature 25℃
Testing Circuitry Figure A

1. Graph



This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.
Note:Slanted line shows the range of the rated load current.

瞬時停電保障時間とは、出力電圧が定電圧精度の規格範囲を保持している瞬時停電時間をいう。
(注)斜線は定格負荷電流範囲を示す。

2. Values

Load Current [A]	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
	Time [mS]		
0.0	—	—	—
0.6	70	95	160
1.2	55	78	139
1.8	45	65	123
2.4	35	55	107
3.0	22	44	94
3.3	19	37	86
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

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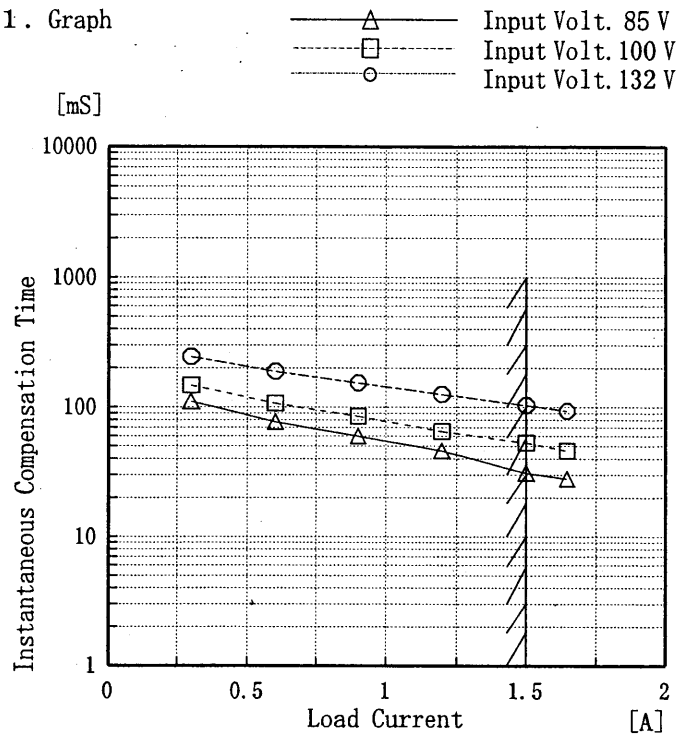
COSEL

Model	MMB50A-3
Item	Instantaneous Interruption Compensation 瞬時停電保障
Object	+24.0V1.50A

Temperature 25℃
Testing Circuitry Figure A

1. Graph



This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.
Note:Slanted line shows the range of the rated load current.

瞬時停電保障時間とは、出力電圧が定電圧精度の規格範囲を保持している瞬時停電時間をいう。
(注)斜線は定格負荷電流範囲を示す。

2. Values

Load Current [A]	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
	Time [mS]		
0.00	—	—	—
0.30	111	148	246
0.60	77	107	189
0.90	60	85	154
1.20	46	65	126
1.50	31	53	104
1.65	28	46	94
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

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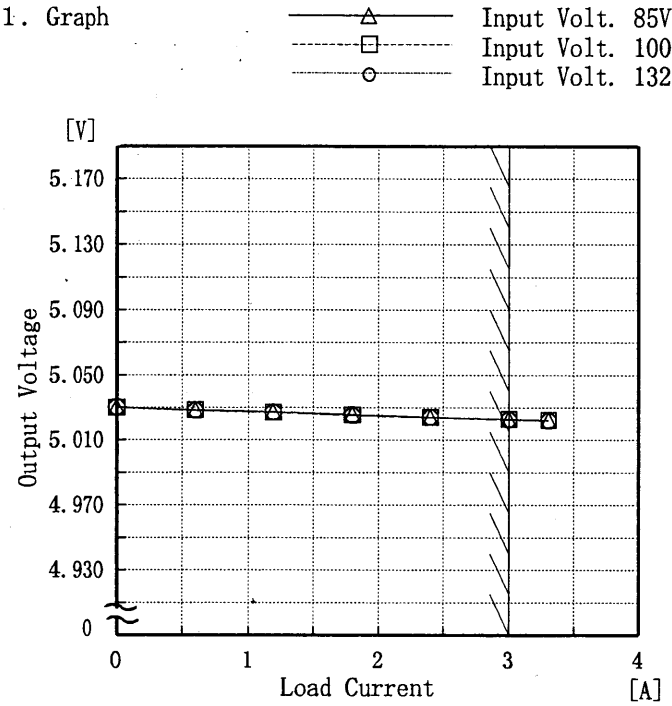
Model	MMB50A-3
Item	Load Regulation 静的負荷変動

Temperature 25℃
Testing Circuitry Figure A

Object +5.0V3.00A

1. Graph

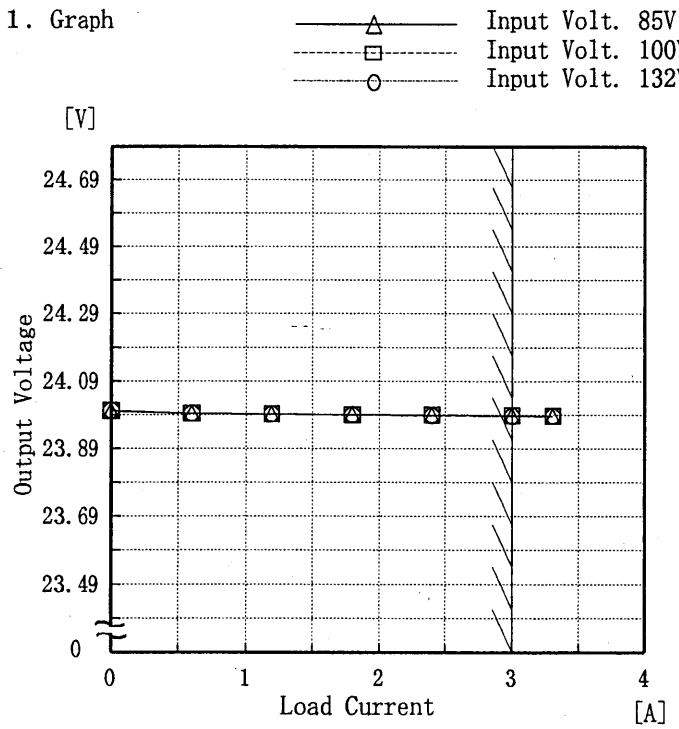


2. Values

Load Current [A]	Input Volt. 85.0[V] Output Volt. [V]	Input Volt. 100.0[V] Output Volt. [V]	Input Volt. 132.0[V] Output Volt. [V]
0.000	5.030	5.030	5.030
0.600	5.029	5.029	5.028
1.200	5.027	5.027	5.027
1.800	5.026	5.026	5.025
2.400	5.024	5.024	5.024
3.000	5.023	5.023	5.023
3.300	5.022	5.022	5.022
—	—	—	—
—	—	—	—
—	—	—	—

Object +24V1.50A

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 Volt. 85.0[V] Output Volt. [V]	Input Volt. 100.0[V] Output Volt. [V]	Input Volt. 132.0[V] Output Volt. [V]
0.000	24.001	24.002	24.002
0.300	23.994	23.994	23.994
0.600	23.992	23.992	23.992
0.900	23.991	23.990	23.990
1.200	23.989	23.989	23.989
1.500	23.988	23.988	23.987
1.650	23.987	23.987	23.987
—	—	—	—
—	—	—	—
—	—	—	—

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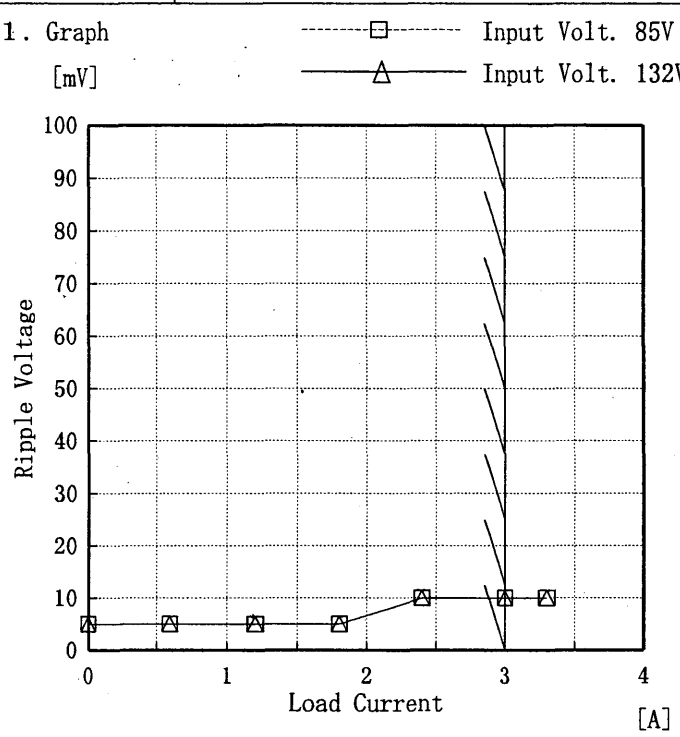
Model	MMB50A-3
Item	Ripple Voltage(by Load Current) リップル電圧(負荷電流特性)
Object	+5.0V3.00A

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。

T1: Due to AC Input Line
入力商用周期
T2: Due to Switching
ｽｲｯﾁﾝｸﾞ周期

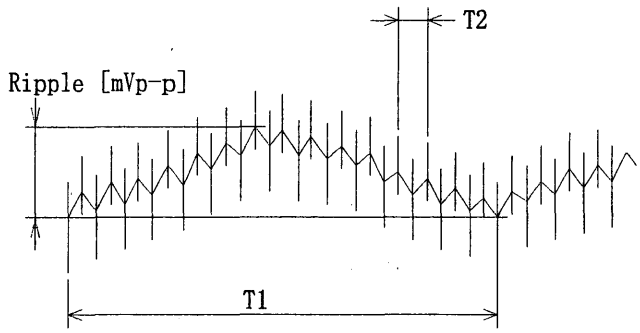


Fig. Complex Ripple Wave Form
図 リップル波形詳細図

2. Values

Load Current [A]	Input Volt. 85 [V] Ripple Output Volt. [mV]	Input Volt. 132 [V] Ripple Output Volt. [mV]
0.0	5	5
0.6	5	5
1.2	5	5
1.8	5	5
2.4	10	10
3.0	10	10
3.3	10	10
—	—	—
—	—	—
—	—	—
—	—	—

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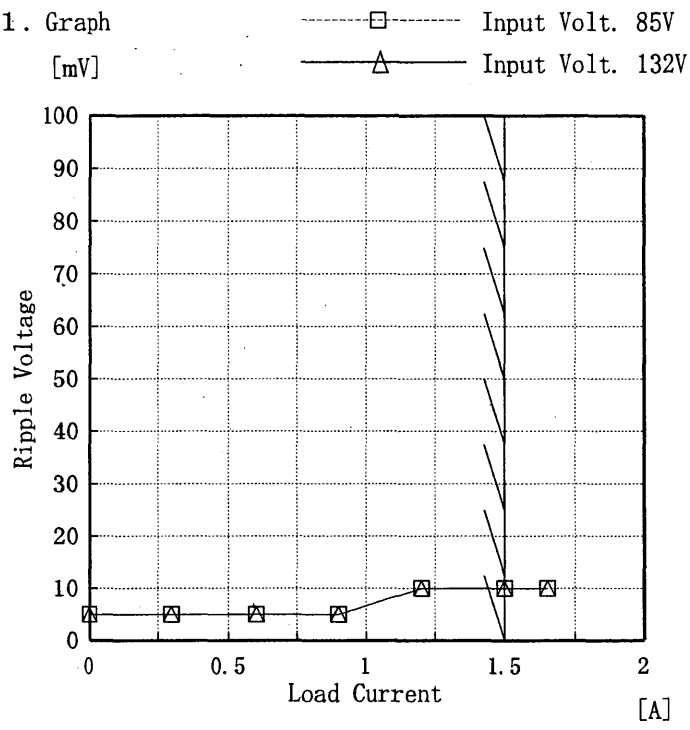
COSEL

Model	MMB50A-3
Item	Ripple Voltage(by Load Current) リップル電圧(負荷電流特性)
Object	+24.0V1.50A

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。

T1: Due to AC Input Line
入力商用周期
T2: Due to Switching
ｽｲｯﾁﾝｸﾞ周期

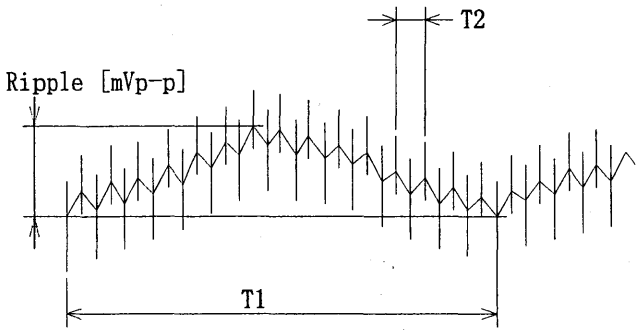


Fig. Complex Ripple Wave Form
図 リップル波形詳細図

2. Values

Load Current [A]	Input Volt. 85 [V] Ripple Output Volt. [mV]	Input Volt. 132 [V] Ripple Output Volt. [mV]
0.0	5	5
0.3	5	5
0.6	5	5
0.9	5	5
1.2	10	10
1.5	10	10
1.7	10	10
—	—	—
—	—	—
—	—	—
—	—	—

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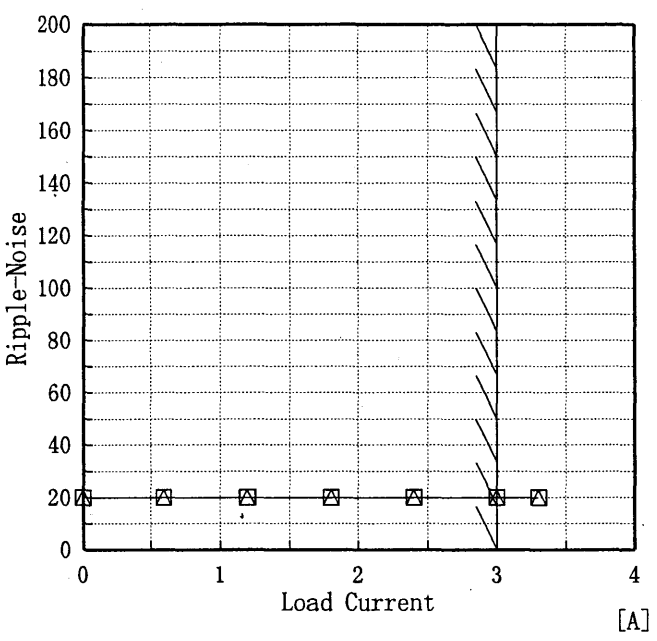
Model	MMB50A-3
Item	Ripple-Noise リップルノイズ
Object	+5.0V3.00A

Temperature 25℃
Testing Circuitry Figure A

1. Graph

Input Volt.85V
Input Volt.132V



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。

T1: Due to AC Input Line
入力商用周期
T2: Due to Switching
ｽｲｯﾁﾝｸﾞ周期

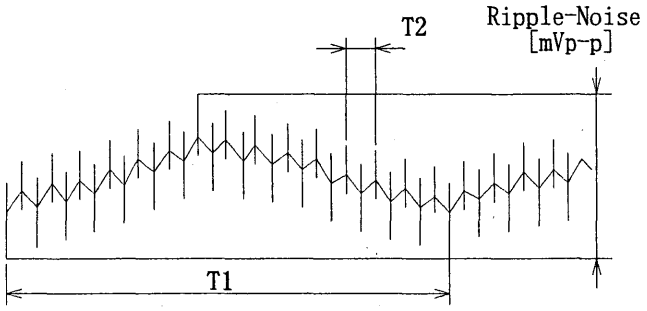


Fig. Complex Ripple Wave Form
図 リップル波形詳細図

2. Values

Load current [A]	Input Volt. 85 [V] Ripple-Noise [mV]	Input Volt. 132 [V] Ripple-Noise [mV]
0.0	20	20
0.6	20	20
1.2	20	20
1.8	20	20
2.4	20	20
3.0	20	20
3.3	20	20
—	—	—
—	—	—
—	—	—
—	—	—

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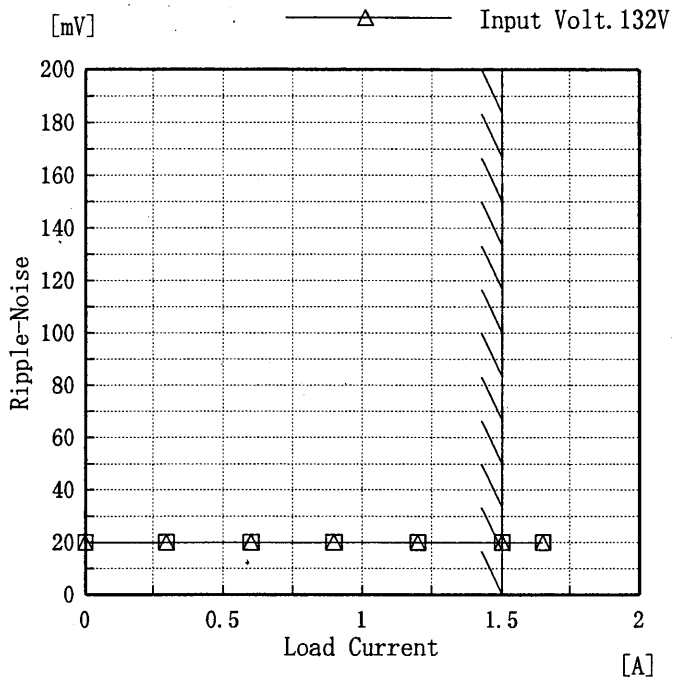
COSEL

Model	MMB50A-3
Item	Ripple-Noise リップルノイズ
Object	+24.0V1.50A

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。

T1: Due to AC Input Line
入力商用周期
T2: Due to Switching
ｽｲｯﾁﾝｸﾞ周期

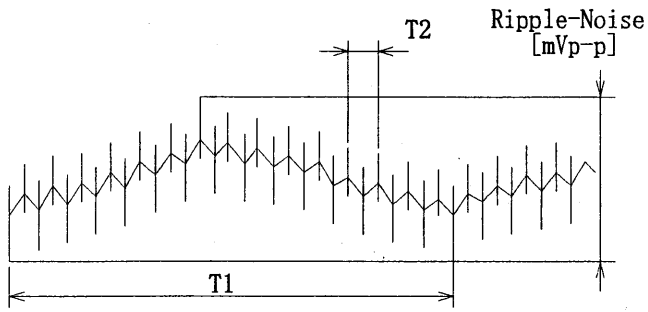


Fig. Complex Ripple Wave Form
図 リップル波形詳細図

2. Values

Load current [A]	Input Volt. 85 [V] Ripple-Noise [mV]	Input Volt. 132 [V] Ripple-Noise [mV]
0.0	20	20
0.3	20	20
0.6	20	20
0.9	20	20
1.2	20	20
1.5	20	20
1.7	20	20
—	—	—
—	—	—
—	—	—
—	—	—

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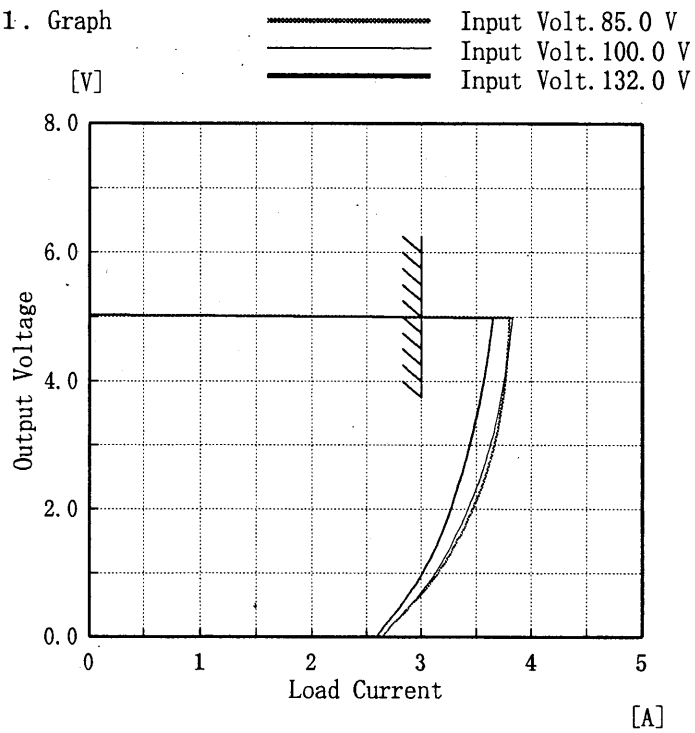
Model	MMB50A-3	Temperature 25℃
Item	Overcurrent Protection 過電流保護	Testing Circuitry Figure A

Object +5.0V3.00A

1. Graph

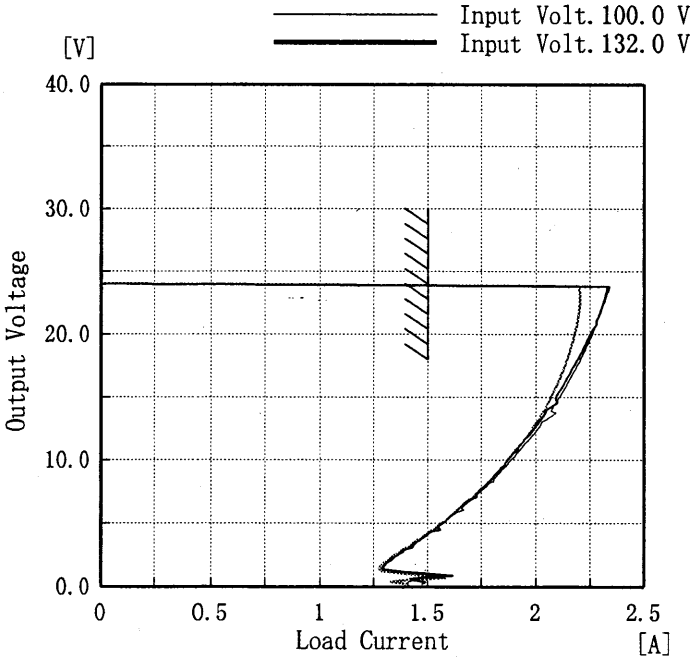


2. Values

Output Voltage [V]	Input Volt. 85.0[V] Load Current [A]	Input Volt. 100.0[V] Load Current [A]	Input Volt. 132.0[V] Load Current [A]
5.00	—	—	—
4.75	3.797	3.815	3.627
4.50	3.789	3.799	3.611
4.00	3.764	3.751	3.561
3.50	3.721	3.693	3.505
3.00	3.659	3.620	3.437
2.50	3.586	3.542	3.367
2.00	3.471	3.427	3.268
1.50	3.332	3.292	3.153
1.00	3.153	3.125	3.011
0.50	2.919	2.907	2.823
0.00	2.641	2.648	2.594

Object +24V1.50A

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

Output Voltage [V]	Input Volt. 85.0[V] Load Current [A]	Input Volt. 100.0[V] Load Current [A]	Input Volt. 132.0[V] Load Current [A]
24.00	—	—	—
22.80	2.207	2.313	2.318
21.60	2.202	2.299	2.297
19.20	2.171	2.243	2.235
16.80	2.122	2.174	2.160
14.40	2.052	2.090	2.087
12.00	1.977	1.997	1.979
9.60	1.859	1.875	1.859
7.20	1.722	1.732	1.721
4.80	1.550	1.560	1.558
2.40	1.344	1.353	1.358
0.00	1.420	1.406	1.471

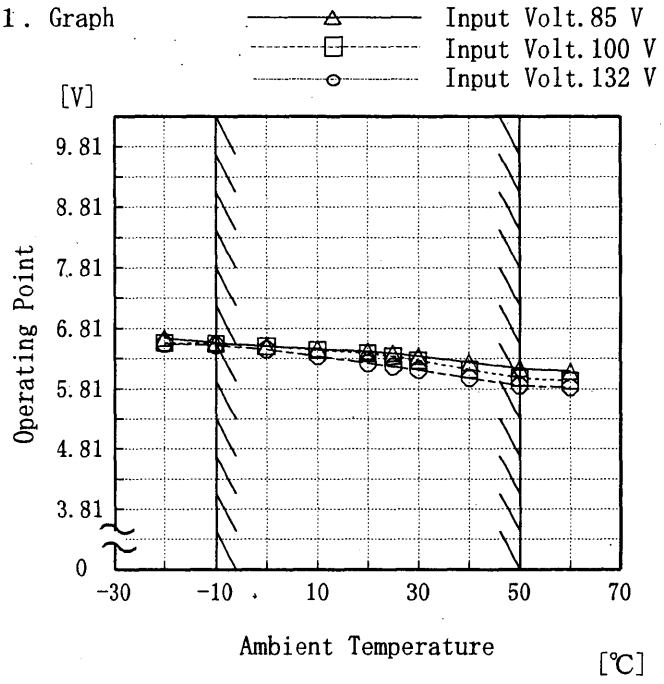
COSEL

Model	MMB50A-3
Item	Overvoltage Protection 過電圧保護

Testing Circuitry Figure A

Object +5.0V3.00A

1. Graph

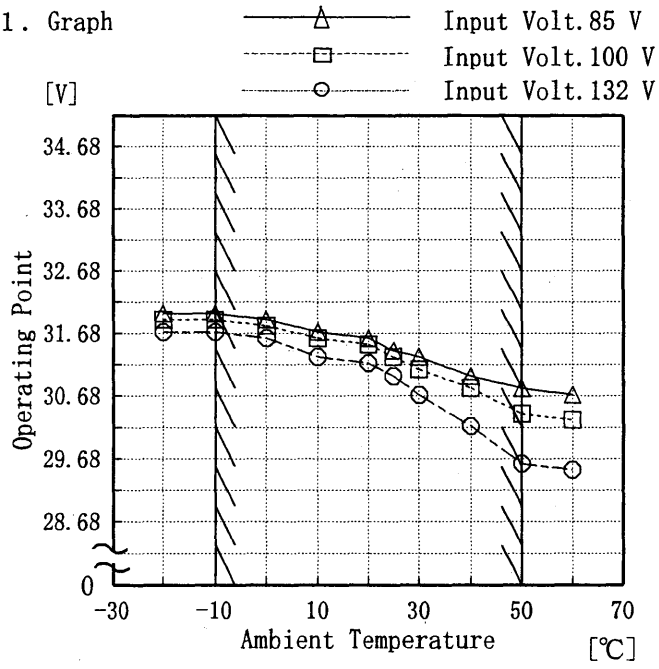


2. Values

Ambient Temp. [℃]	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
	Operating Point [V]		
-20	6.65	6.57	6.56
-10	6.57	6.56	6.53
0	6.52	6.52	6.46
10	6.47	6.45	6.35
20	6.43	6.40	6.23
25	6.40	6.35	6.18
30	6.35	6.28	6.12
40	6.25	6.13	5.99
50	6.15	5.99	5.86
60	6.10	5.94	5.83
-	—	—	—

Object +24V1.50A

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。

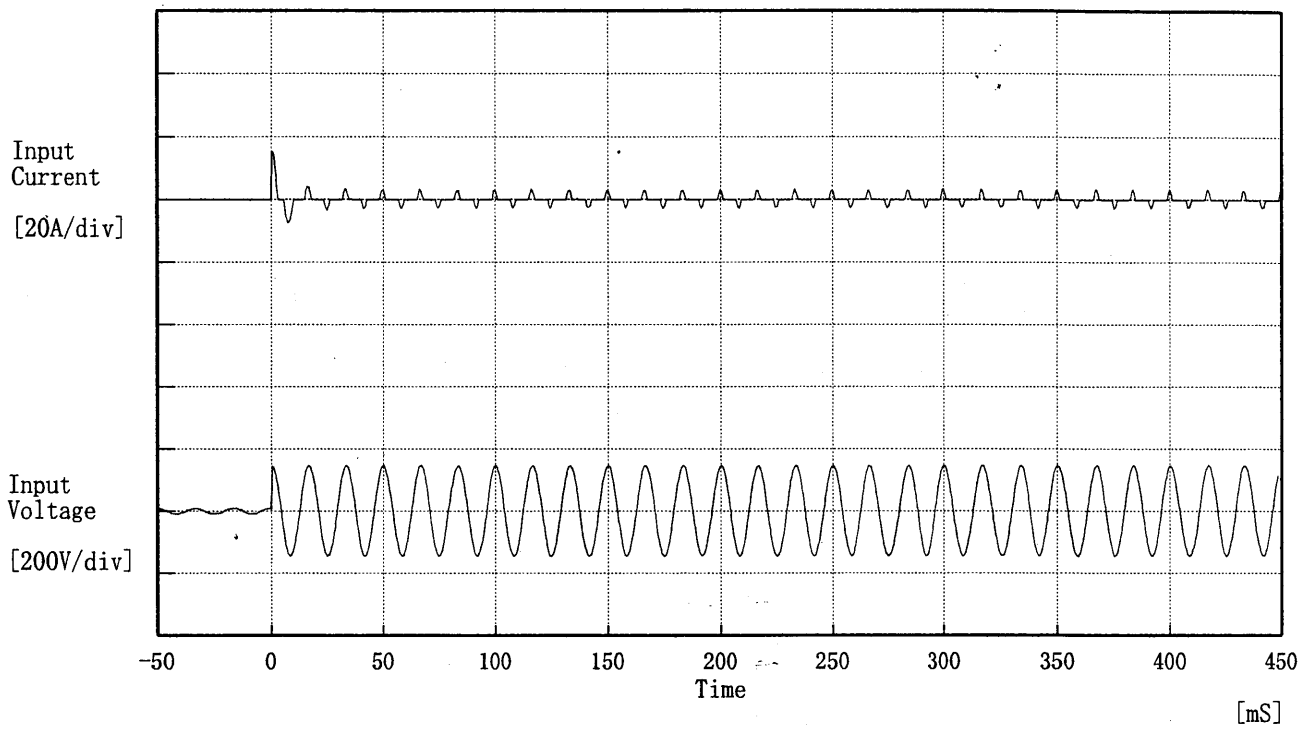
2. Values

Ambient Temp. [℃]	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
	Operating Point [V]		
-20	32.0	31.9	31.7
-10	32.0	31.9	31.7
0	31.9	31.8	31.6
10	31.7	31.6	31.3
20	31.6	31.5	31.2
25	31.4	31.3	31.0
30	31.3	31.1	30.7
40	31.0	30.8	30.2
50	30.8	30.4	29.6
60	30.7	30.3	29.5
-	—	—	—

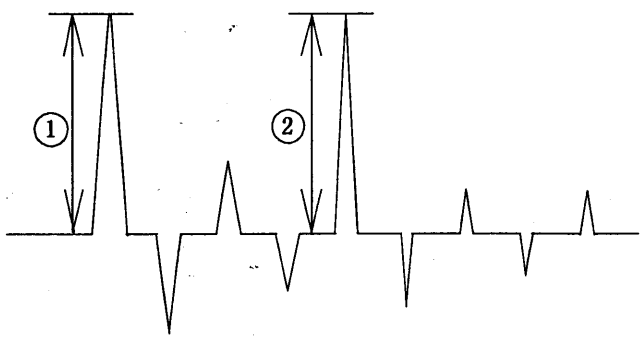
BC-3211

COSEL

Model	MMB50A-3	Temperature	25℃
Item	Inrush Current 突入電流	Testing Circuitry	Figure A
Object	――――――――		



Input Voltage 100 V
Frequency 60 Hz
Load 100 %
Inrush Current
① 15.19 [A]
② 3.19 [A]



COSEL

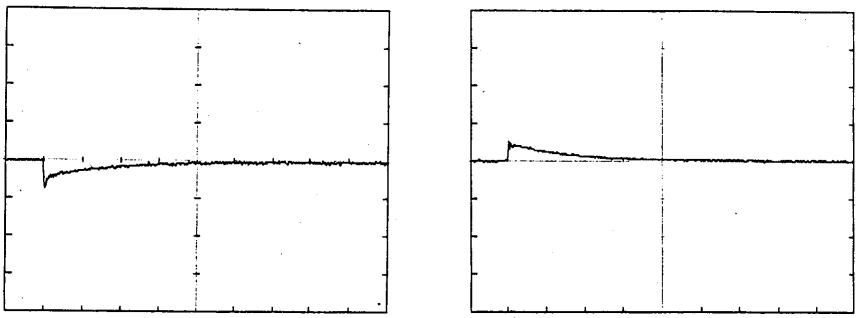
Model	MMB50A-3		
Item	Dynamic Load Responce 動的負荷変動	Temperature Testing Circuitry	25℃ Figure A
Object	+5.0V3.00A		

Input Volt. 100 V

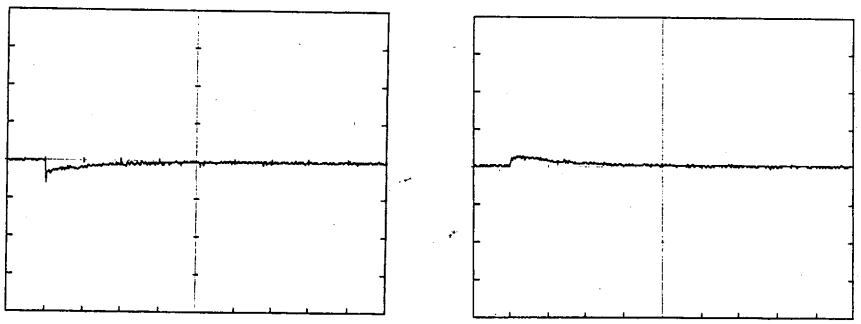
Cycle 200 mS

Load Current

Load 0% ⟷
Load 100 %



Load 0% ⟷
Load 50 %



100 mV/div

10 mS/div

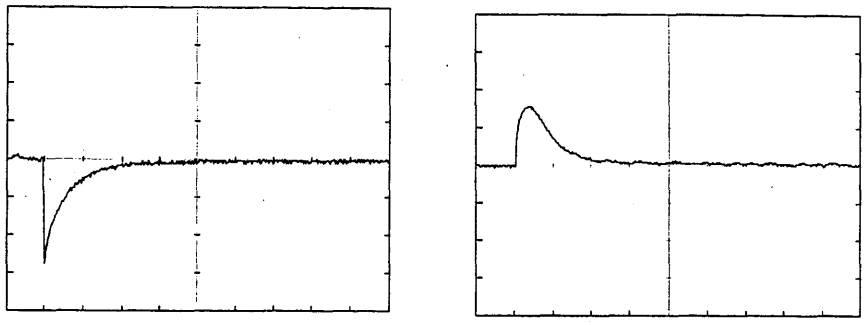
COSEL

Model	MMB50A-3	
Item	Dynamic Load Responce 動的負荷変動	Temperature 25℃ Testing Circuitry Figure A
Object	+24.0V1.50A	

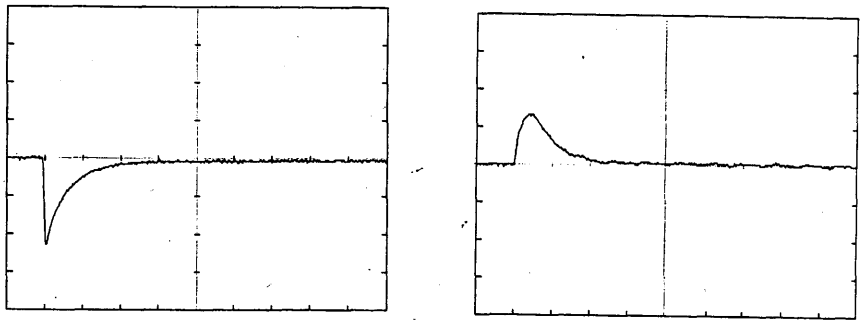
Input Volt. 100 V
Cycle 200 mS

Load Current

Load 0% ⟷
Load 100 %



Load 0% ⟷
Load 50 %



100 mV/div

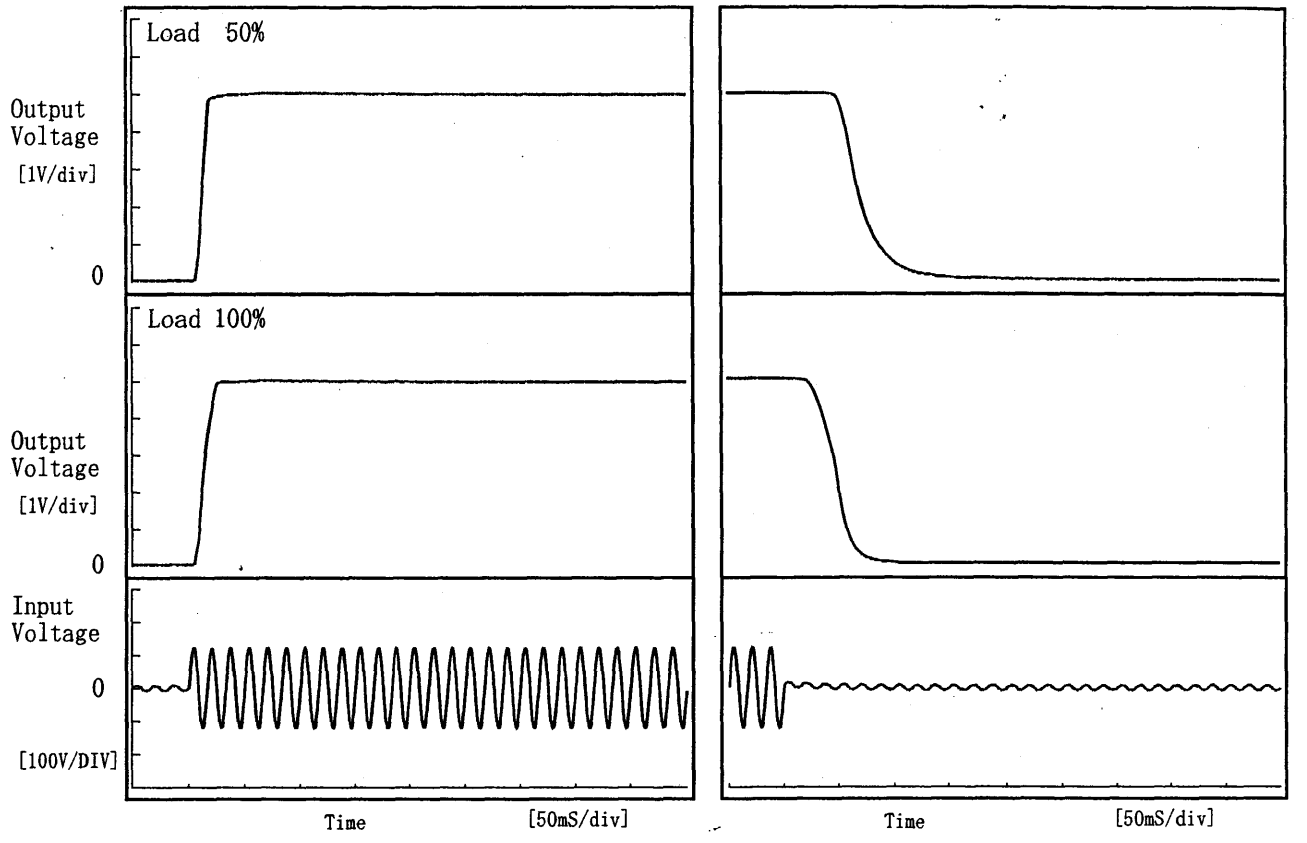
10 mS/div

COSEL

Model	MMB50A-3		
Item	Rise and Fall Time 立上り、立下り時間	Temperature Testing Circuitry	25℃ Figure A
Object	+5.0V3.00A		

1. Graph

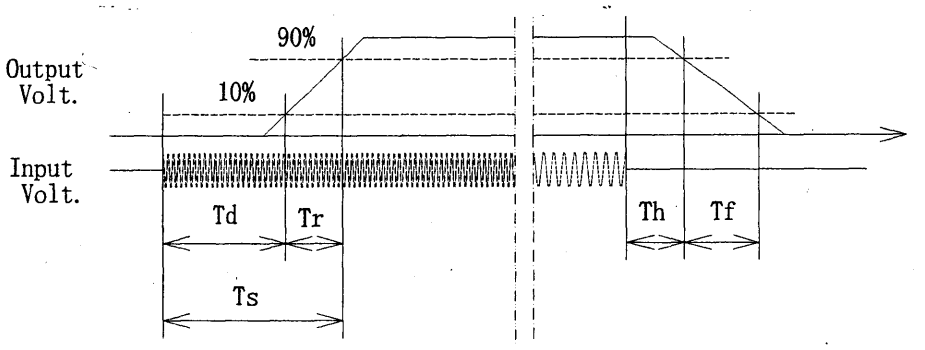
Input Volt. 85 V



2. Values

[mS]

Load \ Time	T d	T r	T s	T h	T f
50 %	7.3	9.8	17.0	54.5	47.3
100 %	7.5	15.0	22.5	31.5	34.8



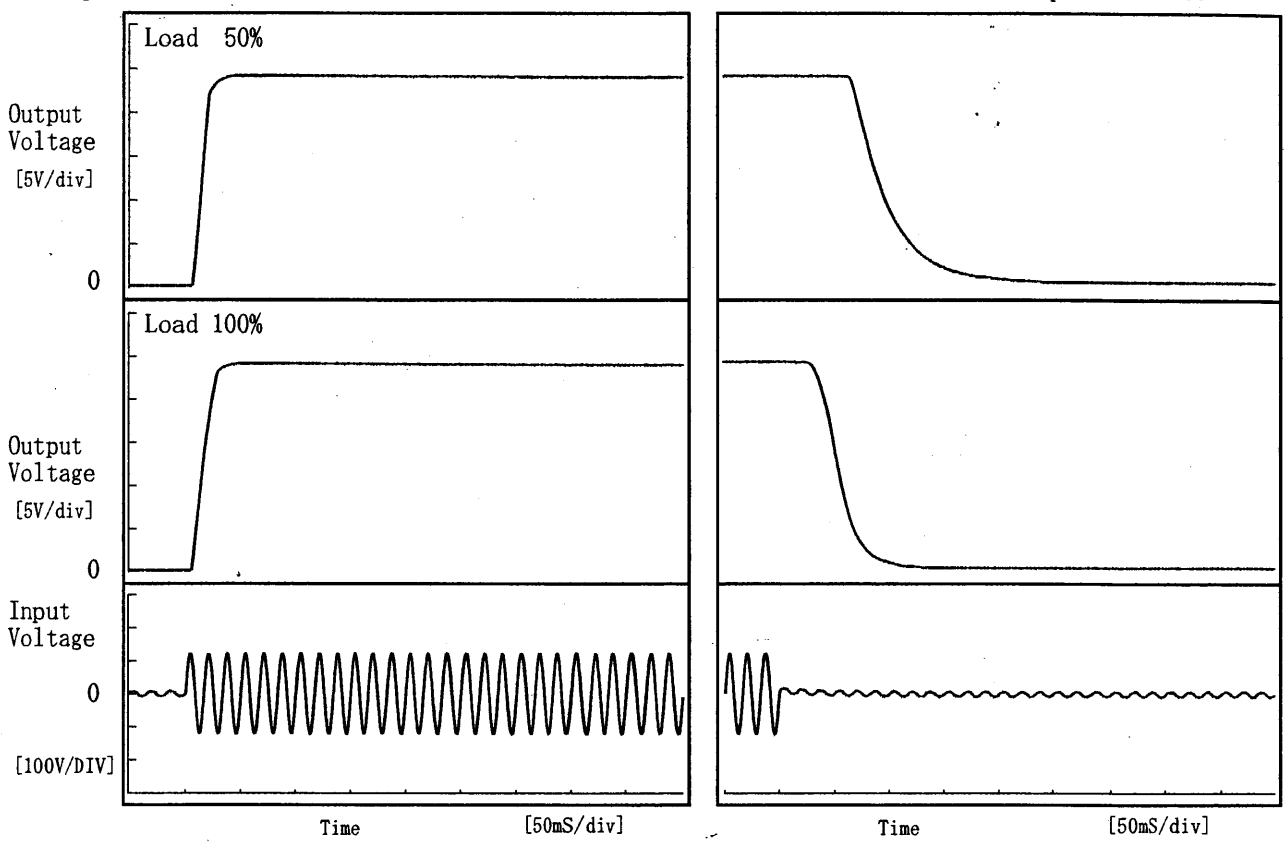
BC−3211

COSEL

Model	MMB50A-3		
Item	Rise and Fall Time 立上り、立下り時間	Temperature	25℃
		Testing Circuitry	Figure A
Object	+24.0V1.50A		

1. Graph

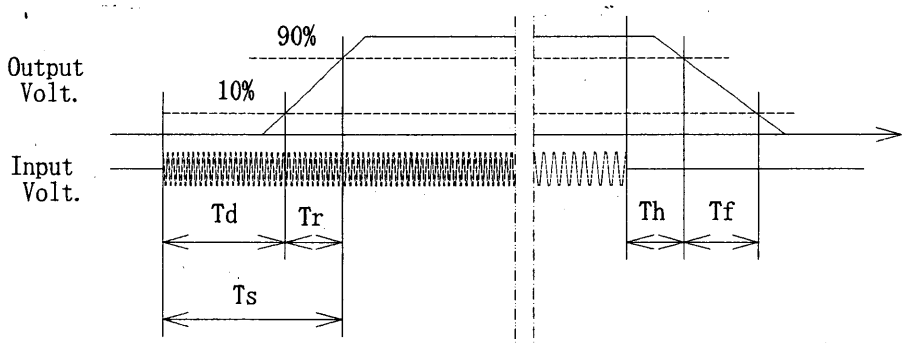
Input Volt. 85 V



2. Values

[mS]

Load \ Time	T d	T r	T s	T h	T f
50 %	7.0	13.5	20.5	71.0	75.3
100 %	7.0	19.0	26.0	38.3	42.8



BC−3211

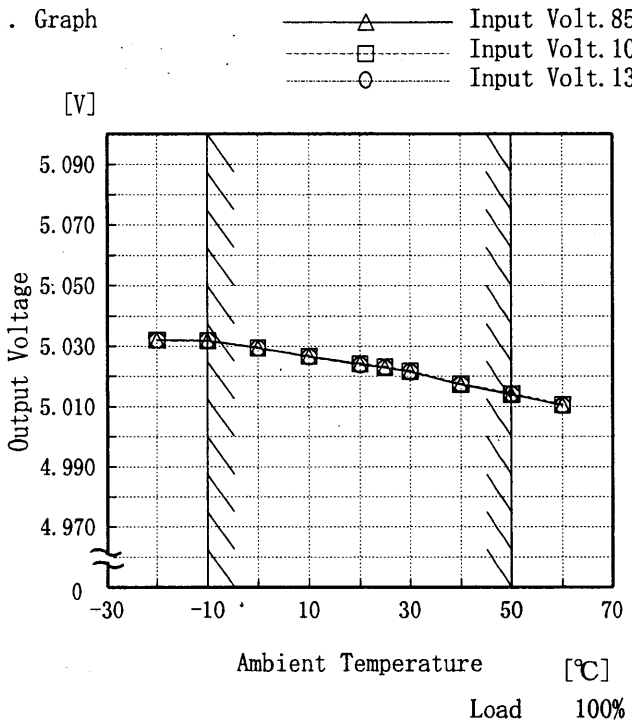
COSEL

Model	MMB50A-3
Item	Ambient Temperature Drift 周囲温度変動

Testing Circuitry Figure A

Object +5.0V3.00A

1. Graph

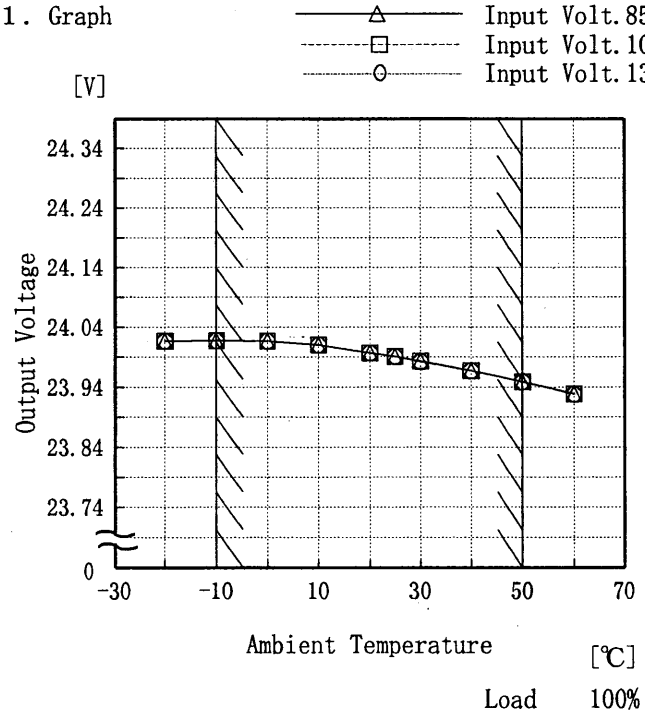


2. Values

Temperature [℃]	Input Volt. 85.0[V] Output Volt. [V]	Input Volt. 100.0[V] Output Volt. [V]	Input Volt. 132.0[V] Output Volt. [V]
-20	5.032	5.032	5.032
-10	5.032	5.032	5.032
0	5.029	5.030	5.029
10	5.027	5.027	5.026
20	5.024	5.024	5.024
25	5.023	5.023	5.023
30	5.022	5.022	5.021
40	5.017	5.018	5.017
50	5.014	5.014	5.014
60	5.010	5.011	5.010
—	—	—	—

Object +24V1.50A

1. Graph



2. Values

Temperature [℃]	Input Volt. 85.0[V] Output Volt. [V]	Input Volt. 100.0[V] Output Volt. [V]	Input Volt. 132.0[V] Output Volt. [V]
-20	24.016	24.016	24.017
-10	24.017	24.017	24.018
0	24.016	24.016	24.016
10	24.010	24.010	24.010
20	23.997	23.997	23.997
25	23.991	23.991	23.991
30	23.983	23.983	23.982
40	23.967	23.967	23.967
50	23.949	23.948	23.948
60	23.928	23.928	23.928
—	—	—	—

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。

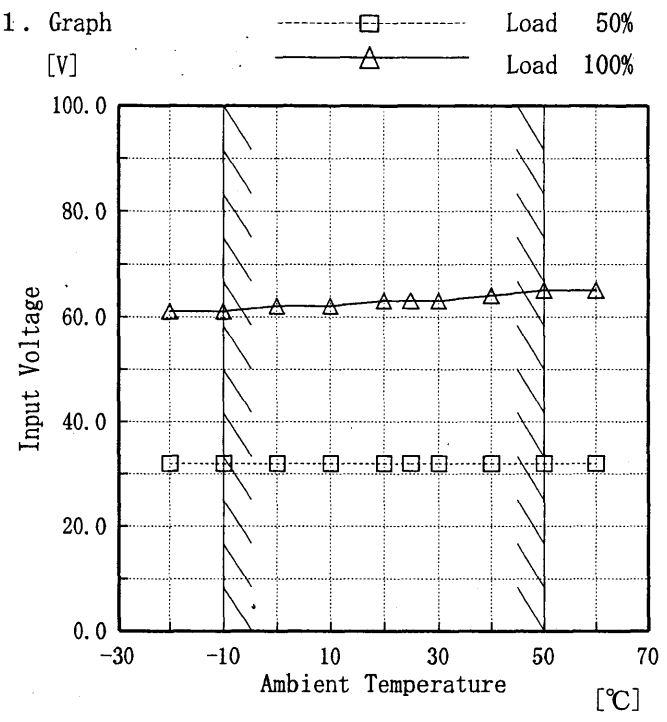
COSEL

Model	MMB50A-3
Item	Minimum Input Voltage for Regulated Output Voltage 最低レギュレーション電圧

Testing Circuitry Figure A

Object +5.0V3.00A

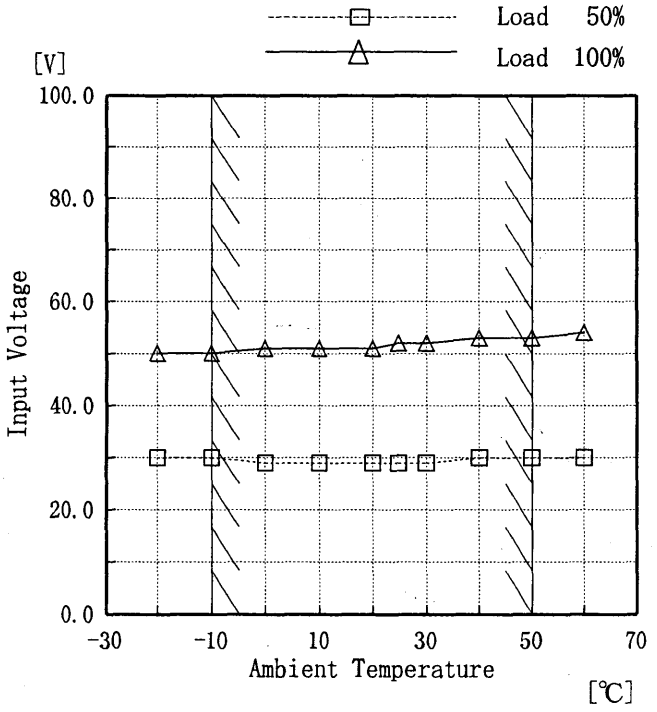
1. Graph



2. Values

Ambient Temp. [℃]	Load 50% Input Volt. [V]	Load 100% Input Volt. [V]
-20	32.0	61.0
-10	32.0	61.1
0	32.0	62.1
10	32.0	62.1
20	32.0	63.1
25	32.0	63.1
30	32.0	63.1
40	32.0	64.1
50	32.0	65.1
60	32.0	65.1
—	—	—

Object +24V1.50A



2. Values

Ambient Temp. [℃]	Load 50% Input Volt. [V]	Load 100% Input Volt. [V]
-20	30.0	50.0
-10	30.0	50.0
0	29.0	51.0
10	29.0	51.0
20	29.0	51.0
25	29.0	52.0
30	29.0	52.0
40	30.0	53.0
50	30.0	53.0
60	30.0	54.0
—	—	—

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。

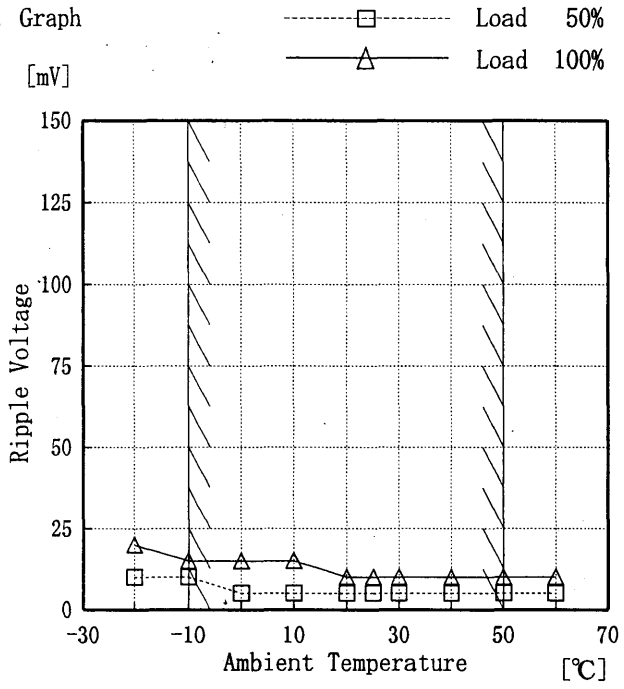
COSEL

Model	MMB50A-3
Item	Ripple Voltage (by Ambient Temp.) リップル電圧 (周囲温度特性)

Testing Circuitry Figure A

Object ＋5.0V3.00A

1. Graph



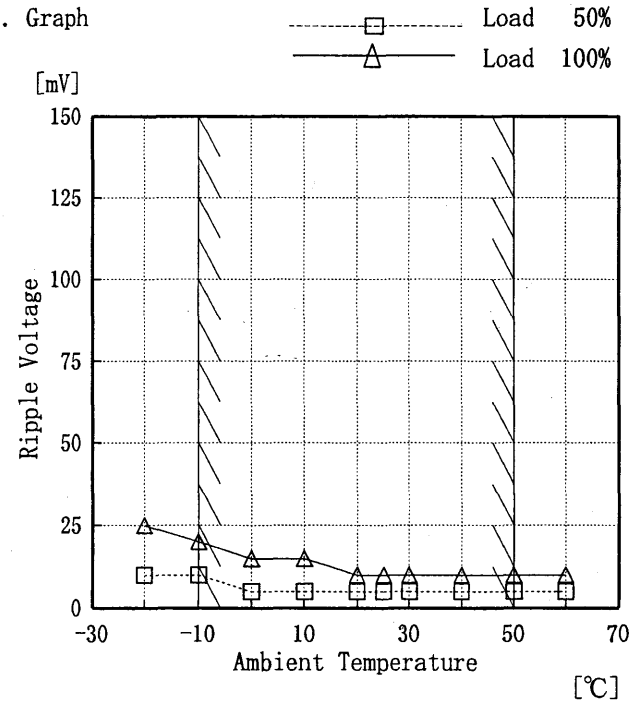
Input Volt. 85 V

2. Values

Ambient Temp. [℃]	Load 50% Ripple Output Volt. [mV]	Load 100% Ripple Output Volt. [mV]
-20	10	20
-10	10	15
0	5	15
10	5	15
20	5	10
25	5	10
30	5	10
40	5	10
50	5	10
60	5	10
—	—	—

Object 24V1.50A

1. Graph



Input Volt. 85 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. [℃]	Load 50% Ripple Output Volt. [mV]	Load 100% Ripple Output Volt. [mV]
-20	10	25
-10	10	20
0	5	15
10	5	15
20	5	10
25	5	10
30	5	10
40	5	10
50	5	10
60	5	10
—	—	—

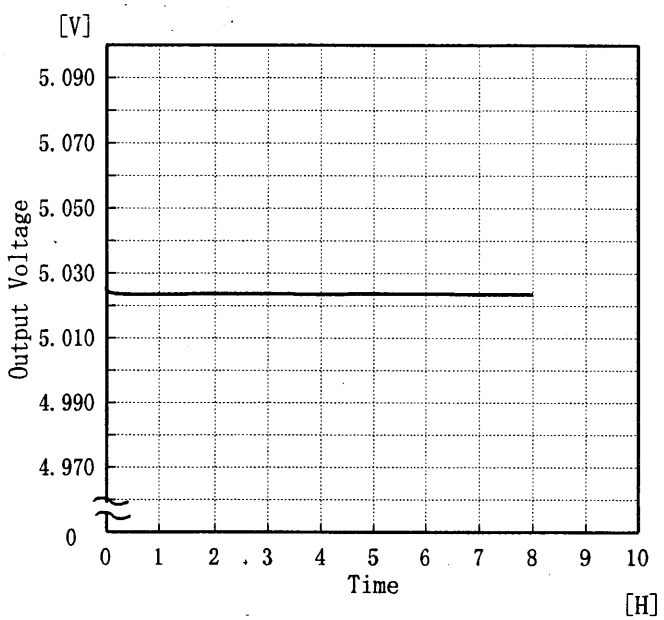
COSEL

Model	MMB50A-3
Item	Time Lapse Drift 経時ドリフト

Temperature 25 ℃
Testing Circuitry Figure A

Object +5.0V3.00A

1. Graph



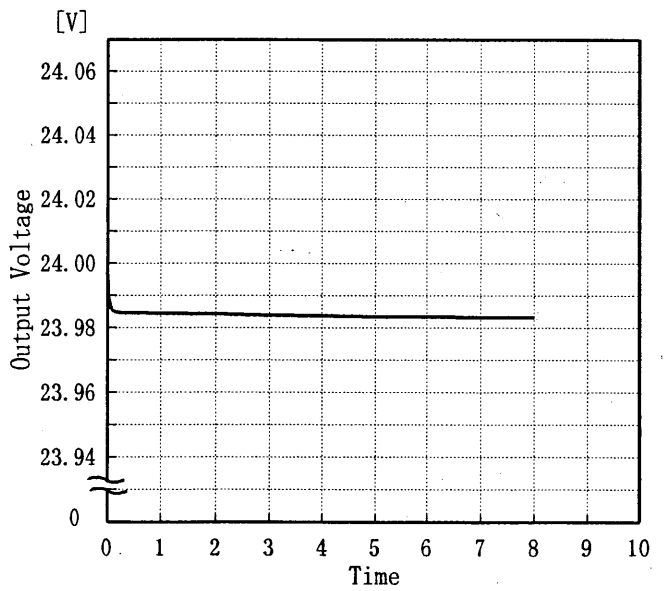
Input Volt. 100.0V
Load 100%

2. Values

Time since start [H]	Output Voltage [V]
0.0	5.025
0.5	5.024
1.0	5.024
2.0	5.024
3.0	5.024
4.0	5.024
5.0	5.024
6.0	5.024
7.0	5.023
8.0	5.024

Object +24V1.50A

1. Graph



Input Volt. 100.0V
Load 100%

2. Values

Time since start [H]	Output Voltage [V]
0.0	23.997
0.5	23.985
1.0	23.984
2.0	23.984
3.0	23.984
4.0	23.984
5.0	23.983
6.0	23.983
7.0	23.983
8.0	23.983

COSEL

Model	MMB50A-3	
Item	Output Voltage Accuracy 定電圧精度	Testing Circuitry Figure A

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 : -10～50 ℃

Input Voltage : 85.0～132.0 V

Load Current (AVR 1) : 0.00～3.00 A

(AVR 2) : 0.00～1.50 A

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

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

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 -10～50 ℃

入力電圧 85.0～132.0 V

負荷電流 (AVR 1) 0.00～3.00 A

(AVR 2) 0.00～1.50 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

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

Object +5.0V3.00A

Item	Temperature [℃]	Input Voltage [V]	Output Current [A]	Output Voltage [V]	Output Voltage Accuracy [mV]	Output Voltage Accuracy(Ration)[%]
Maximum Voltage	-10	132.0	0.00	5.039	±13	±0.3
Minimum Voltage	50	132.0	3.00	5.013		

Object +24.0V1.50A

Item	Temperature [℃]	Input Voltage [V]	Output Current [A]	Output Voltage [V]	Output Voltage Accuracy [mV]	Output Voltage Accuracy(Ration)[%]
Maximum Voltage	-10	132.0	0.00	24.031	±46	±0.2
Minimum Voltage	50	85.0	1.50	23.940		

COSEL

Model	MMB50A-3	
Item	Condensation 結露特性	Testing Circuitry Figure A
Object	+5.0V3A	

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]	5.085	Input Volt.: 100V, Load Current:3A
Line Regulation [mV]	1	Input Volt.: 85～132V, Load Current:3A
Load Regulation [mV]	7	Input Volt.: 100V, Load Current:0～3A

COSEL

Model	MMB50A-3
Item	Condensation 結露特性
Object	+24.0V1.5A

Testing Circuitry Figure A

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]	23.987	Input Volt.: 100V, Load Current:1.5A
Line Regulation [mV]	1	Input Volt.: 85～132V, Load Current:1.5A
Load Regulation [mV]	5	Input Volt.: 100V, Load Current:0.0～1.5A

COSEL

Model	MMB50A-3		
Item	Leakage Current 漏洩電流	Temperature Testing Circuitry	25℃ Figure A
Object	――――――		

1. Results

Standards	Leakage Current [mA]		
	Input Volt. 85 [V]	Input Volt. 100 [V]	Input Volt. 132 [V]
(A) DENTORI	0.14	0.15	0.20
(B) IEC60950	0.13	0.14	0.19

Standards	Leakage Current [mA]		
	Input Volt. 170 [V]	Input Volt. 230 [V]	Input Volt. 264 [V]
(B) IEC60950	—	—	—

2. Condition

Leakage current value is concluded after measuring both phases of AC input and by choosing the larger one.

交流入力の両相について測定し、その大きい方を漏洩電流測定値とする。

COSEL

Model	MMB50A-3
Item	Conducted Emission 雑音端子電圧
Object	――――――――

Testing Circuitry Figure D

1. Graph

Remarks

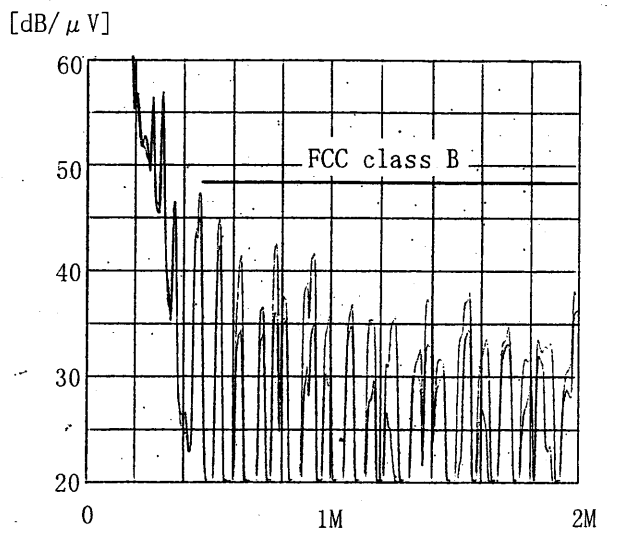
Input Volt. 120 V

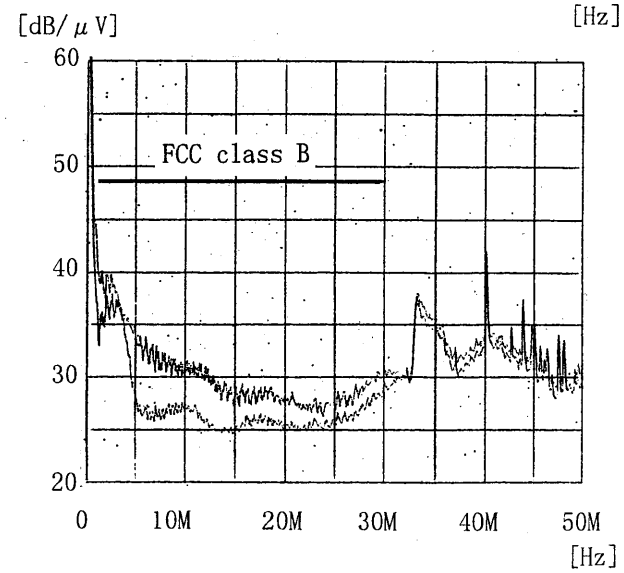
Load 100 %

Note: Slanted line shows the range of Tolerance.

(注)斜線は許容値を示す。

NO	Standards	Standards Complied	Frequency [MHz]	Tolerance [dB/μV]
1	FCC class A		0.45～1.6	60
			1.6～30	69.5
2	FCC class B	○	0.45～30	48
3	VCCI class A		0.15～0.5	79
			0.5～30	73
4	VCCI class B		0.15～0.5	66-56
			0.5～5	56
			5～30	60
5	CISPR Pub.22 class A (EN55022)		0.15～0.5	79
			0.5～30	73
6	CISPR Pub.22 class B (EN55022)		0.15～0.5	66-56
			0.5～5	56
			5～30	60





COSEL

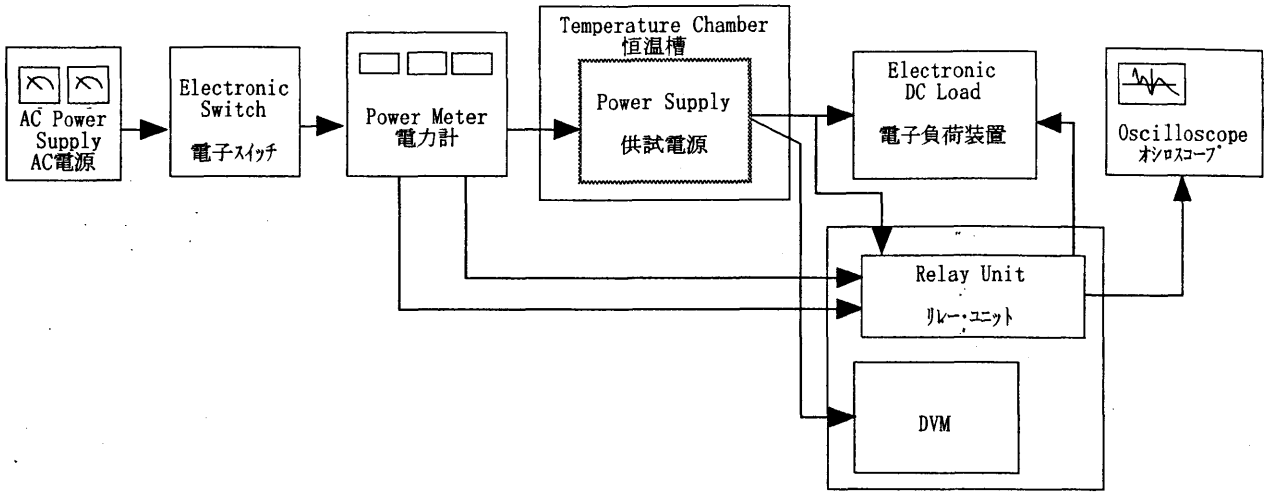


Figure A

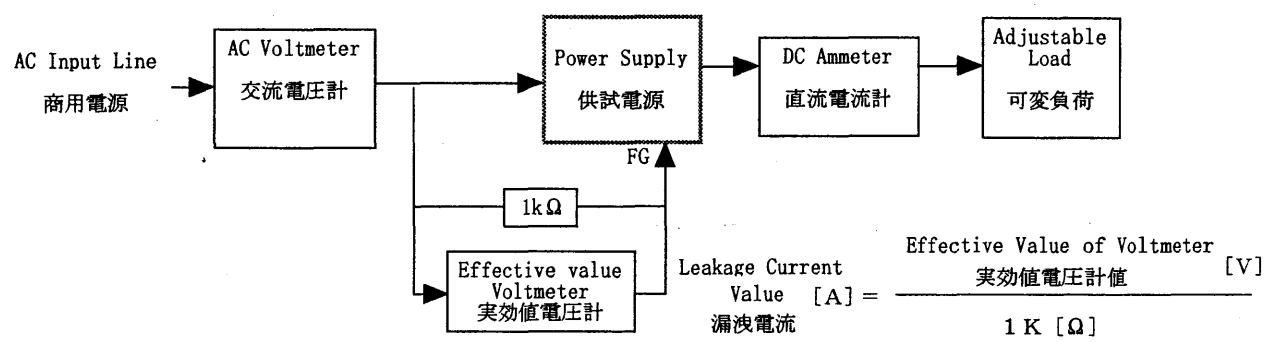


Figure B(DENTORI)

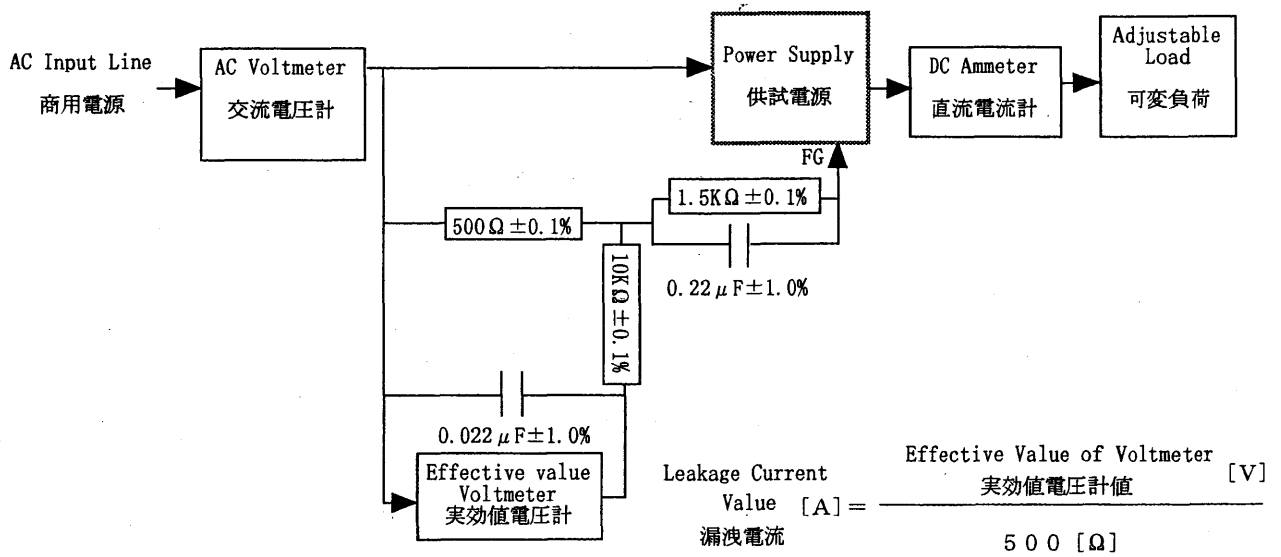


Figure B（ＩＥＣ６０９５０）

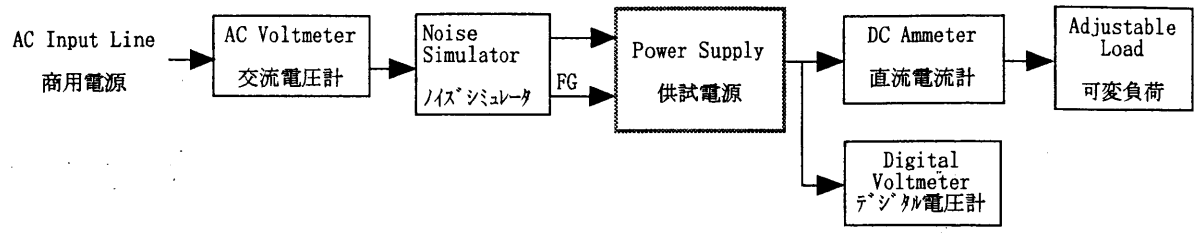


Figure C

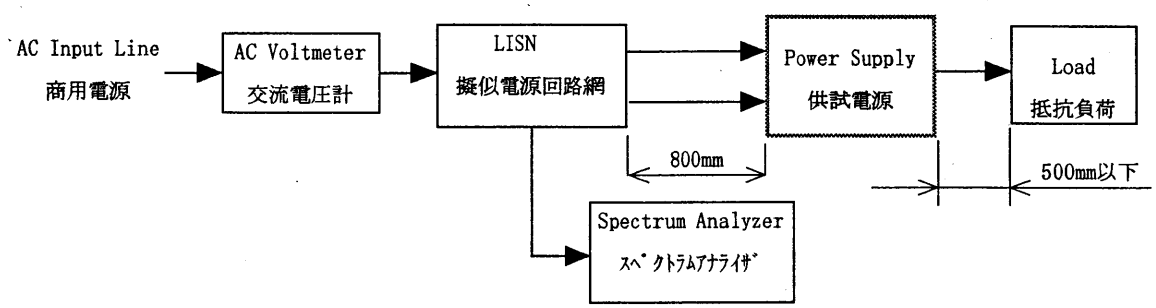


Figure D

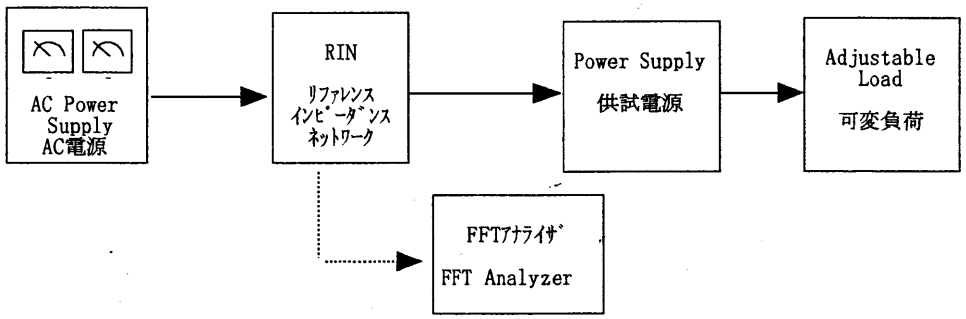


Figure E