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参考資料

TEST DATA OF MMC100B-2

Regulated DC Power Supply
April 5, 2011

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Naoki Tonami Design Manager

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Hironobu Shimizu Design Engineer

COSEL CO.,LTD.

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参考資料

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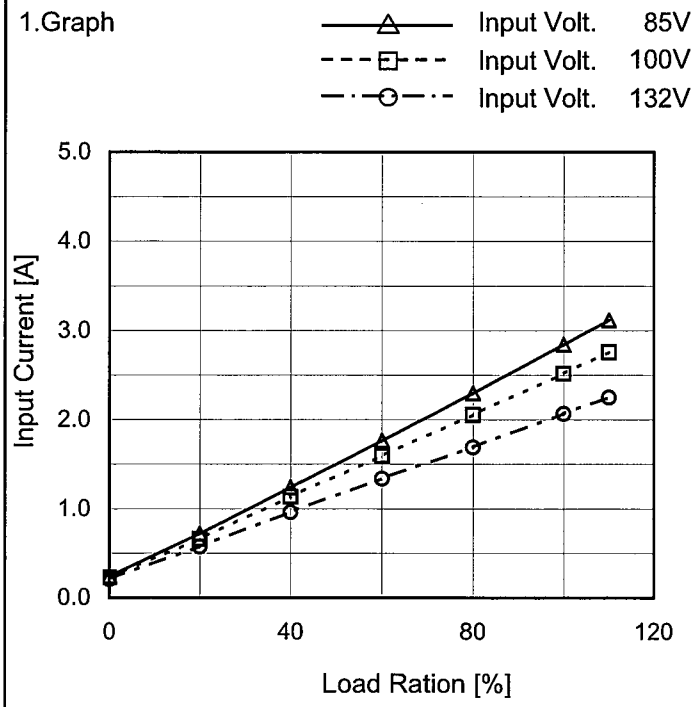
Model	MMC100B-2
Item	Input Current (by Load Current)
Object	――――――

Temperature 25°C
Testing Circuitry Figure A

1.Graph



2.Values

Load Ration [%]	Input Current [A]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0	0.240	0.227	0.209
20	0.721	0.661	0.575
40	1.243	1.135	0.964
60	1.766	1.596	1.340
80	2.298	2.055	1.692
100	2.844	2.517	2.068
110	3.118	2.757	2.252
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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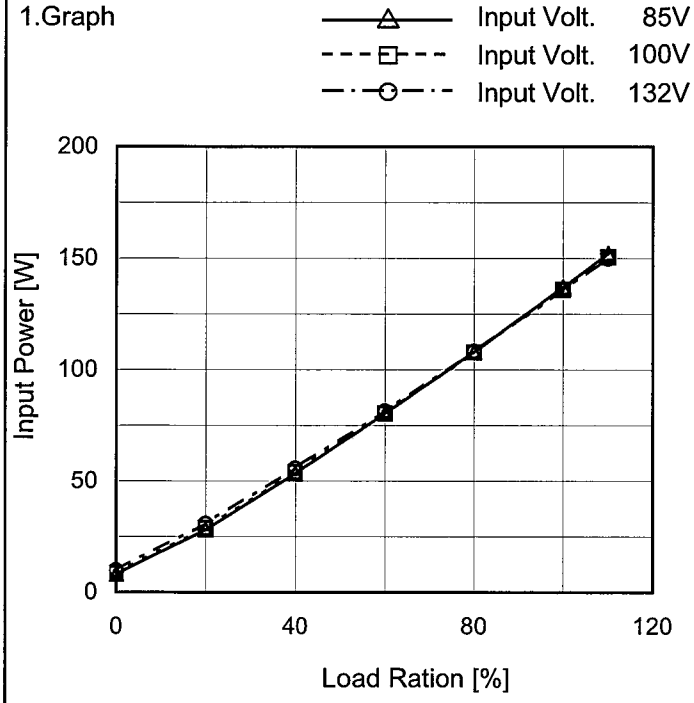
Model	MMC100B-2
Item	Input Power (by Load Current)
Object	――――――

Temperature 25°C
Testing Circuitry Figure A

1.Graph



2.Values

Load Ration [%]	Input Power [W]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0	8.1	8.7	10.0
20	28.2	28.9	30.9
40	53.5	54.0	55.8
60	80.4	80.4	81.4
80	108.0	107.7	108.3
100	137.1	135.9	135.9
110	152.1	150.6	150.0
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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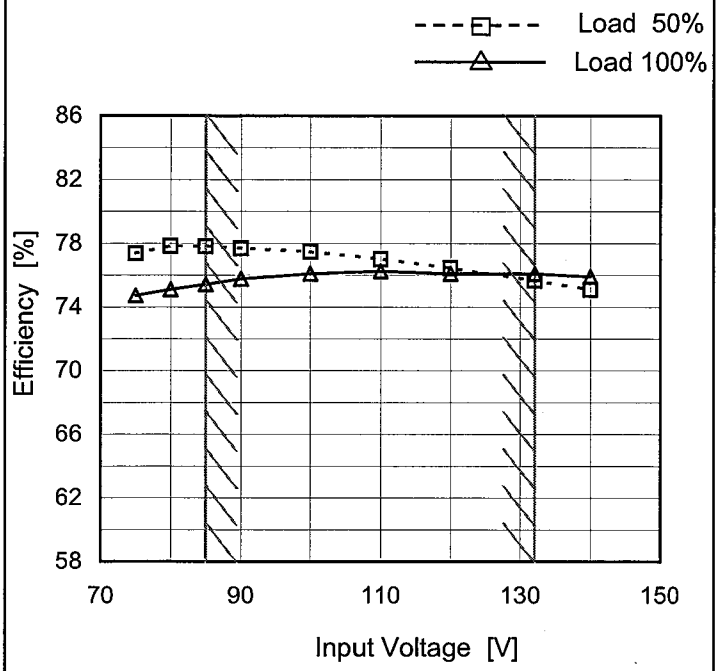
Model	MMC100B-2
Item	Efficiency (by Input Voltage)
Object	――――――――――

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%
75	77.4	74.7
80	77.8	75.1
85	77.8	75.4
90	77.7	75.8
100	77.5	76.1
110	77.0	76.3
120	76.4	76.1
132	75.7	76.1
140	75.1	75.9

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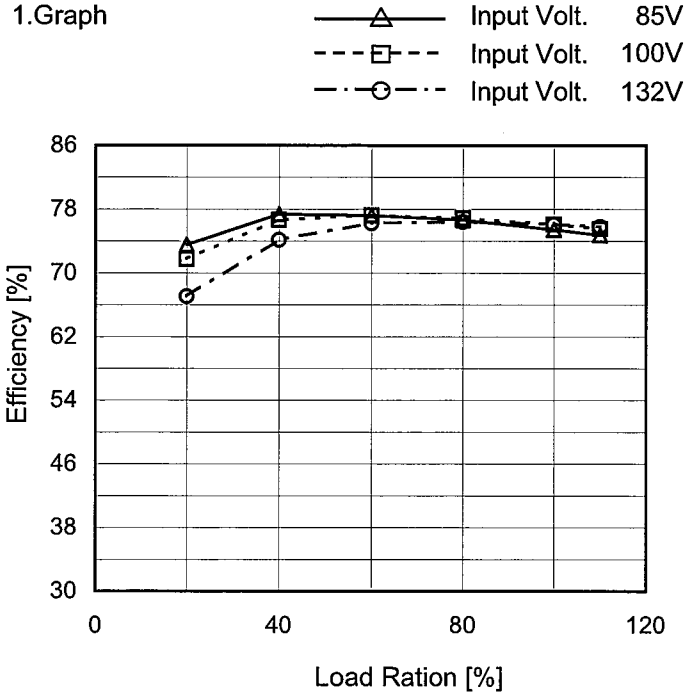
Model	MMC100B-2
Item	Efficiency (by Load Current)
Object	――――――

Temperature 25°C
Testing Circuitry Figure A

1.Graph



2.Values

Load Ration [%]	Efficiency [%]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0	-	-	-
20	73.6	71.8	67.1
40	77.4	76.7	74.2
60	77.2	77.2	76.3
80	76.7	76.9	76.4
100	75.4	76.1	76.1
110	74.8	75.5	75.8
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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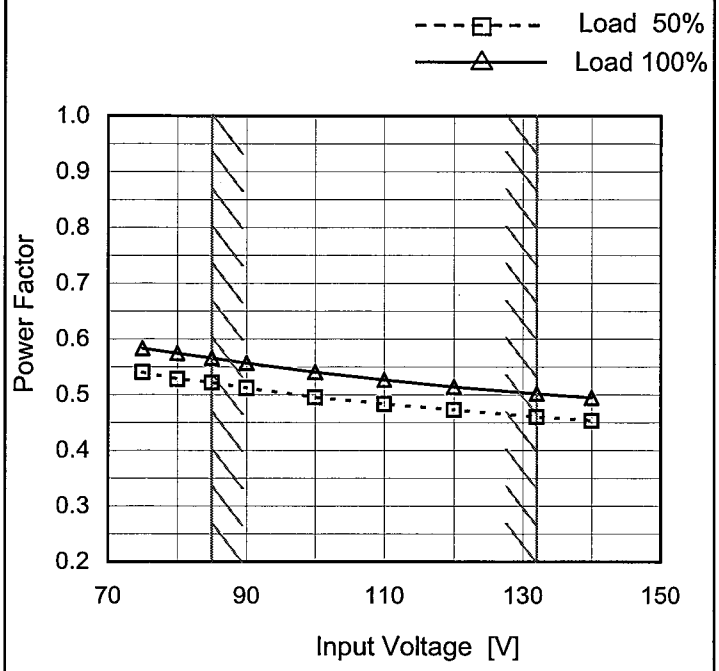
Model	MMC100B-2
Item	Power Factor (by Input Voltage)
Object	――――――――――

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]	Power Factor	
	Load 50%	Load 100%
75	0.540	0.583
80	0.528	0.575
85	0.522	0.566
90	0.512	0.557
100	0.496	0.541
110	0.483	0.527
120	0.473	0.514
132	0.460	0.502
140	0.454	0.495

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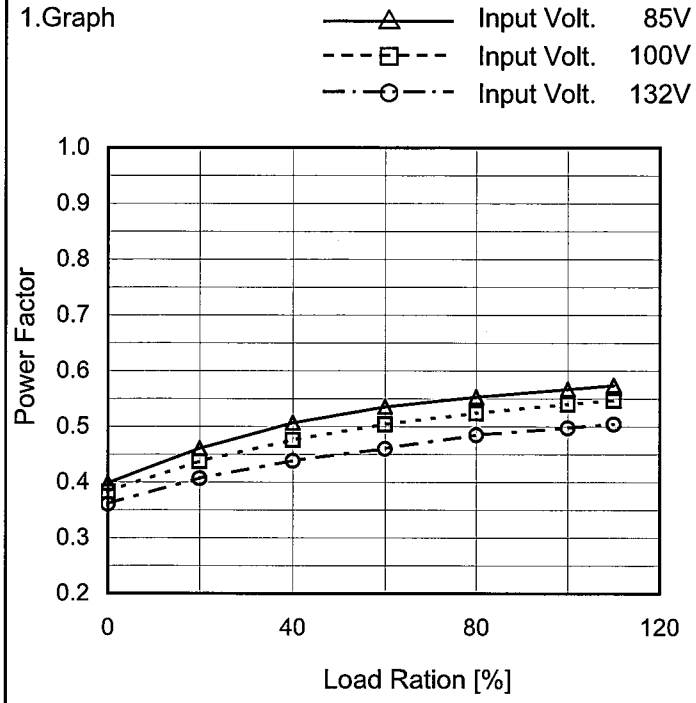
Model	MMC100B-2
Item	Power Factor (by Load Current)
Object	――――――

Temperature 25°C
Testing Circuitry Figure A

1.Graph



2.Values

Load Ration [%]	Power Factor		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0	0.399	0.383	0.361
20	0.461	0.437	0.407
40	0.507	0.476	0.438
60	0.536	0.504	0.460
80	0.554	0.524	0.485
100	0.567	0.540	0.497
110	0.574	0.546	0.504
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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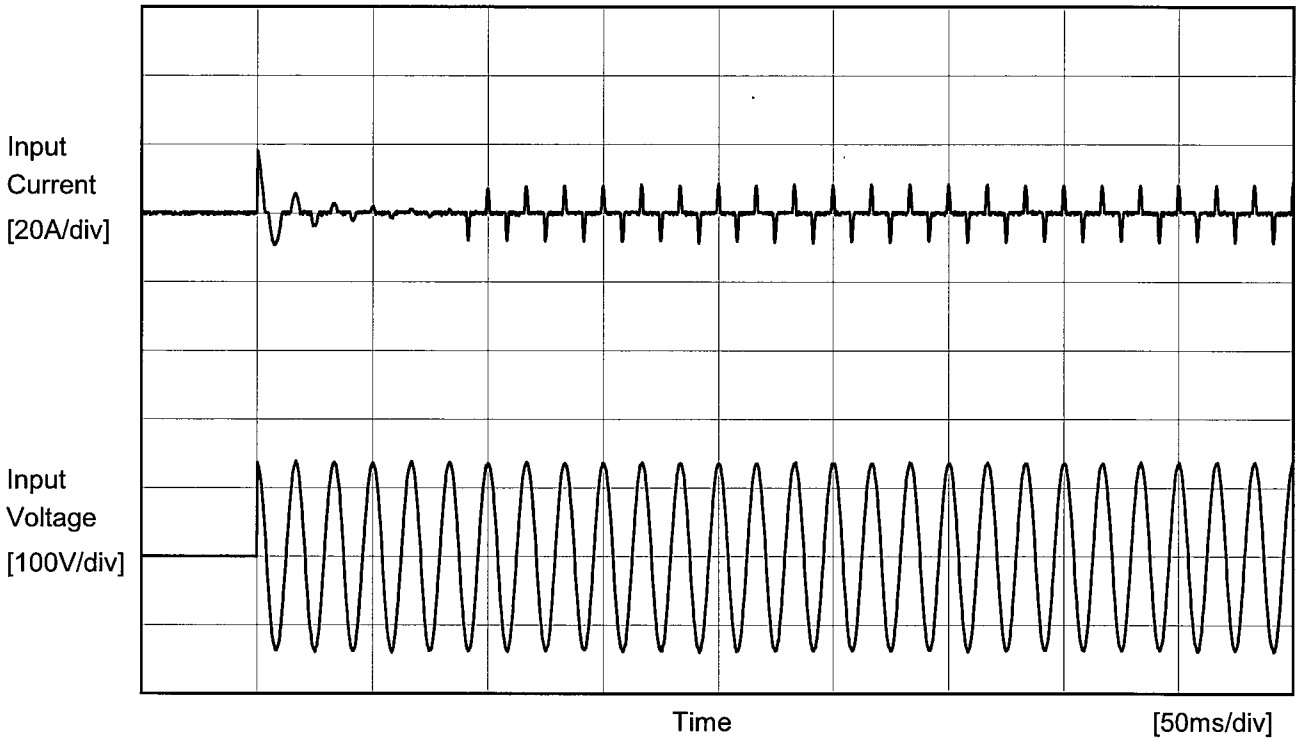
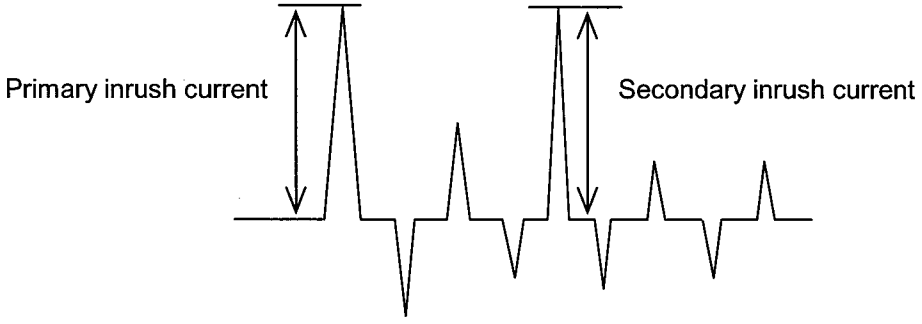
Model	MMC100B-2	Temperature	25°C
Item	Inrush Current	Testing Circuitry	Figure A
Object	————————		



Input Voltage	100 V
Frequency	60 Hz
Load	100 %
Primary inrush current	17.9 A
Secondary inrush current	8.7 A



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Model	MMC100B-2	
Item	Leakage Current	Temperature 25°C Testing Circuitry Figure B
Object	――――――――	

1.Results

Standards	Leakage Current [mA]		
	Input Volt. 85 [V]	Input Volt. 100 [V]	Input Volt. 132 [V]
(A)DEN-AN	0.15	0.18	0.22
(B)IEC60950-1	0.15	0.19	0.25

Standards	Leakage Current [mA]		
	Input Volt. 170 [V]	Input Volt. 230 [V]	Input Volt. 264 [V]
(B)IEC60950-1	-	-	-

2.Condition

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

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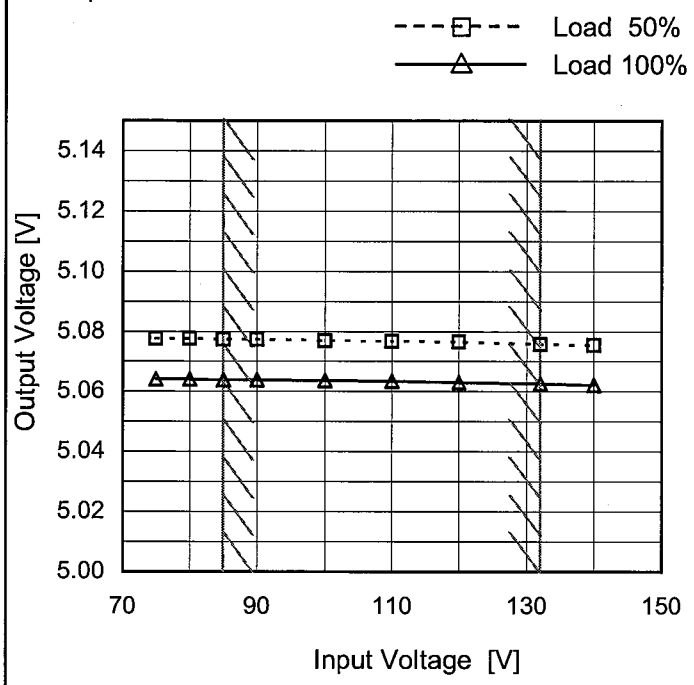
Model	MMC100B-2
Item	Line Regulation
Object	+5V13A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

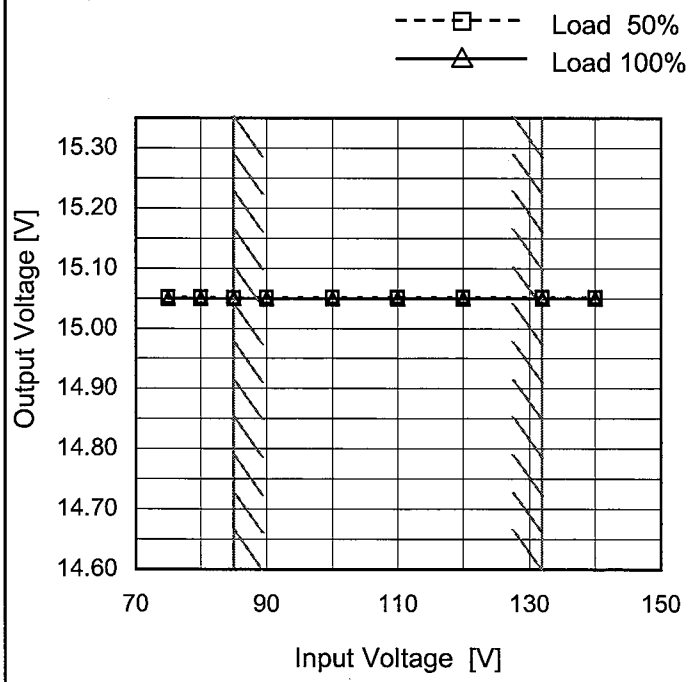


2.Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
75	5.078	5.064
80	5.078	5.064
85	5.077	5.064
90	5.077	5.064
100	5.077	5.064
110	5.077	5.063
120	5.076	5.063
132	5.076	5.063
140	5.075	5.062

Object	+15V1.5A

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%
75	15.051	15.050
80	15.051	15.050
85	15.051	15.050
90	15.051	15.050
100	15.051	15.050
110	15.052	15.050
120	15.051	15.050
132	15.051	15.050
140	15.051	15.050

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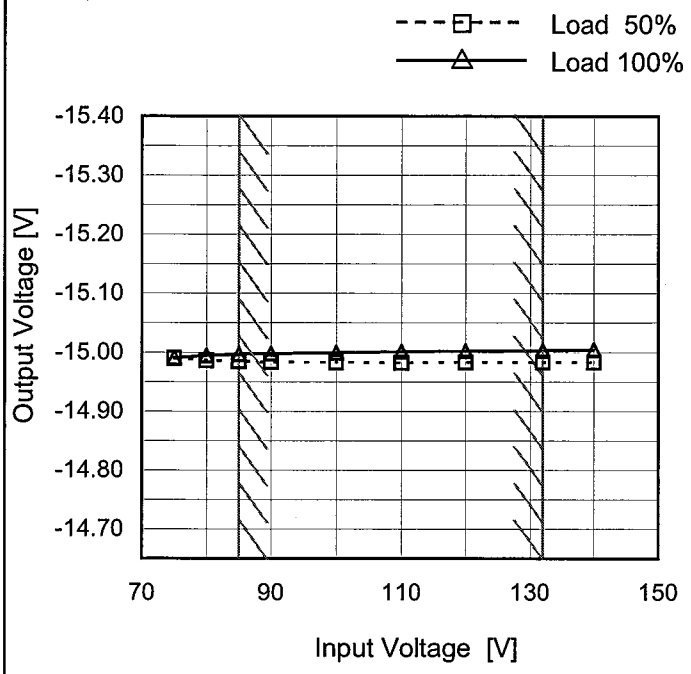
Model	MMC100B-2
Item	Line Regulation
Object	-15V1A

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%
75	-14.990	-14.991
80	-14.986	-14.995
85	-14.984	-14.997
90	-14.984	-14.998
100	-14.983	-15.000
110	-14.982	-15.001
120	-14.983	-15.002
132	-14.983	-15.004
140	-14.983	-15.005

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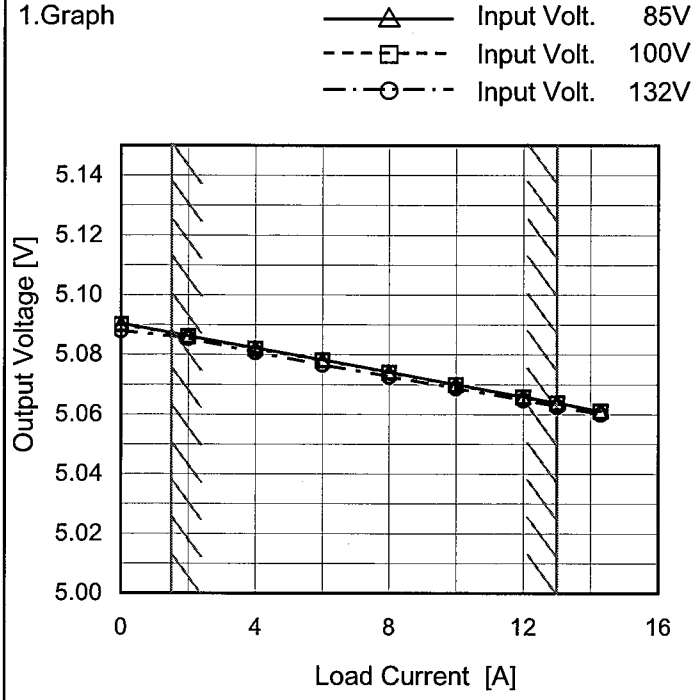
Model	MMC100B-2
Item	Load Regulation
Object	+5V13A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

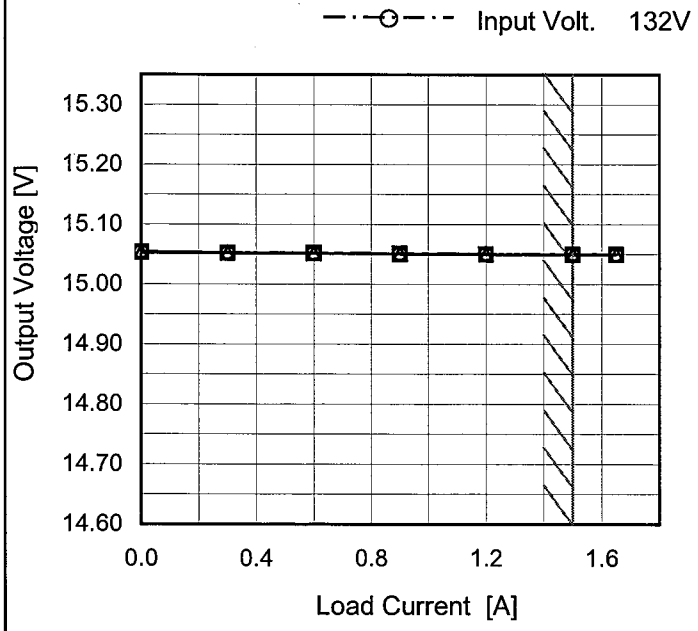


2.Values

Load Current [A]	Output Voltage [V] Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.0	5.090	5.090	5.088
2.0	5.086	5.086	5.085
4.0	5.082	5.082	5.081
6.0	5.078	5.078	5.077
8.0	5.074	5.074	5.073
10.0	5.070	5.070	5.069
12.0	5.066	5.066	5.065
13.0	5.064	5.064	5.063
14.3	5.061	5.061	5.060
--	-	-	-
--	-	-	-

Object	+15V1.5A

1.Graph



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

2.Values

Load Current [A]	Output Voltage [V] Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.00	15.054	15.054	15.054
0.30	15.052	15.053	15.053
0.60	15.052	15.052	15.052
0.90	15.051	15.051	15.051
1.20	15.050	15.050	15.050
1.50	15.050	15.050	15.050
1.65	15.049	15.049	15.049
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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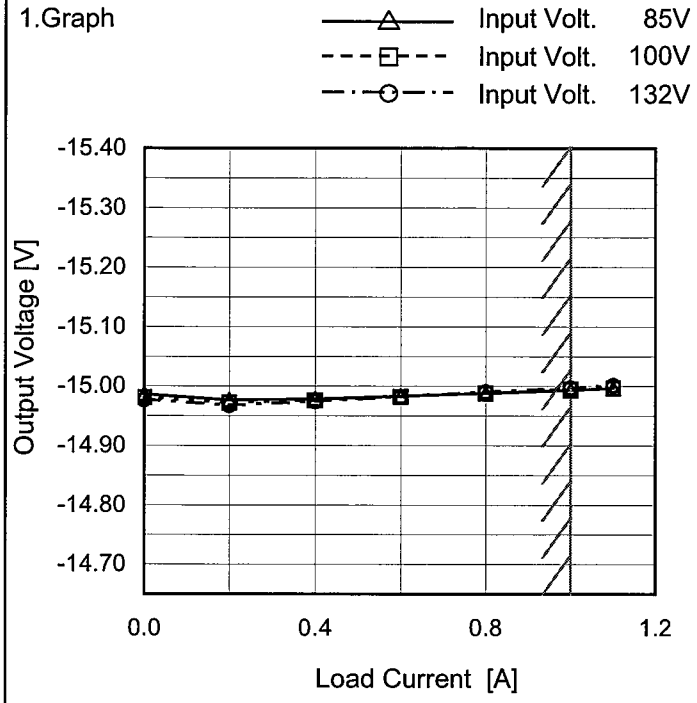
Model	MMC100B-2
Item	Load Regulation
Object	-15V1A

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. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.0	-14.987	-14.981	-14.977
0.2	-14.977	-14.972	-14.968
0.4	-14.979	-14.976	-14.975
0.6	-14.983	-14.982	-14.982
0.8	-14.988	-14.988	-14.990
1.0	-14.994	-14.995	-14.997
1.1	-14.997	-14.997	-15.001
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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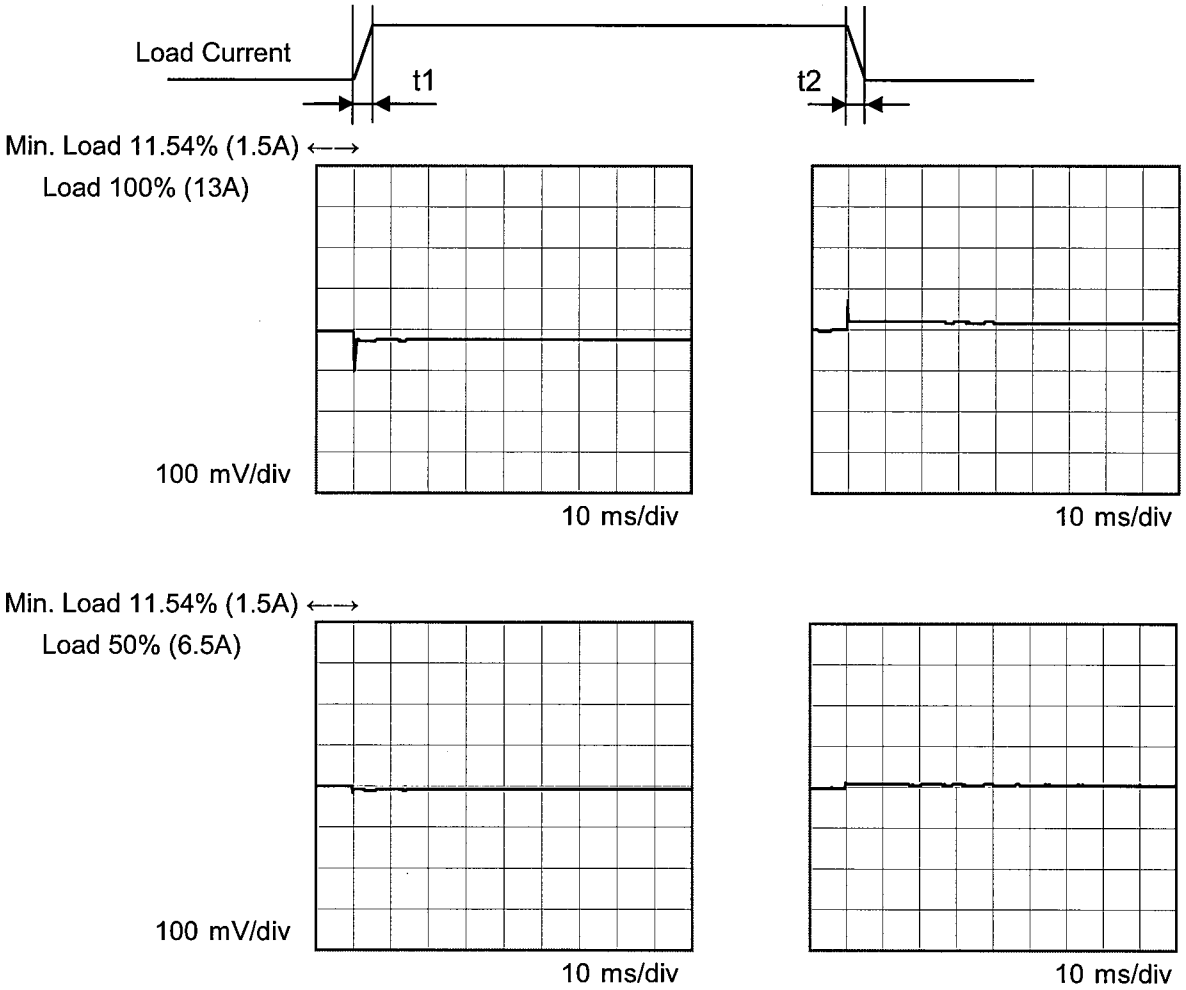
Model	MMC100B-2		
Item	Dynamic Load Response	Temperature Testing Circuitry	25°C Figure A
Object	+5V13A		

Input Volt. 100 V
Cycle 200 ms

Response. t1=t2=50us. Typ

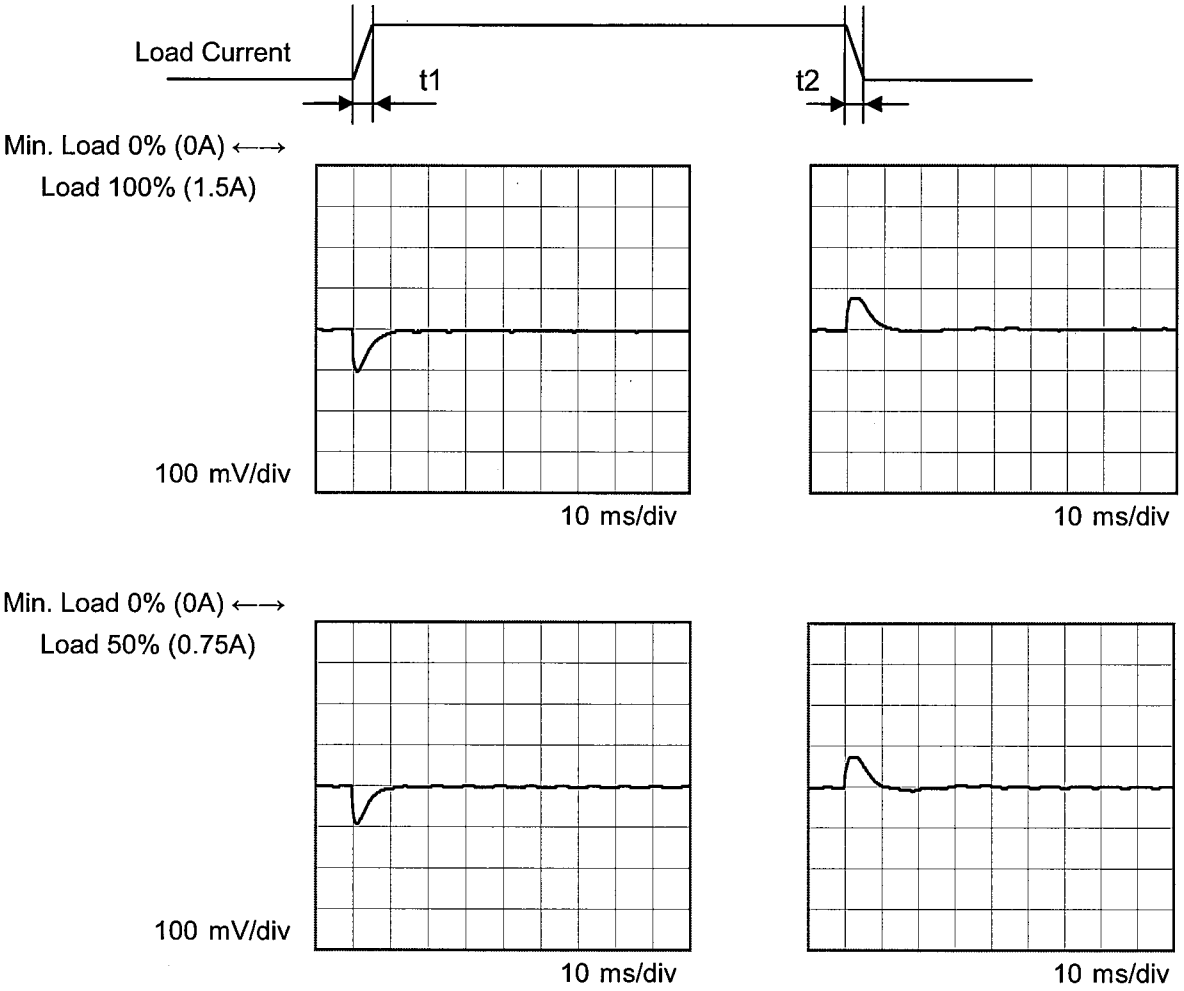


COSEL

Model	MMC100B-2		
Item	Dynamic Load Response	Temperature Testing Circuitry	25˚C Figure A
Object	+15V1.5A		

Input Volt. 100 V
Cycle 200 ms

Response. t1=t2=50us. Typ

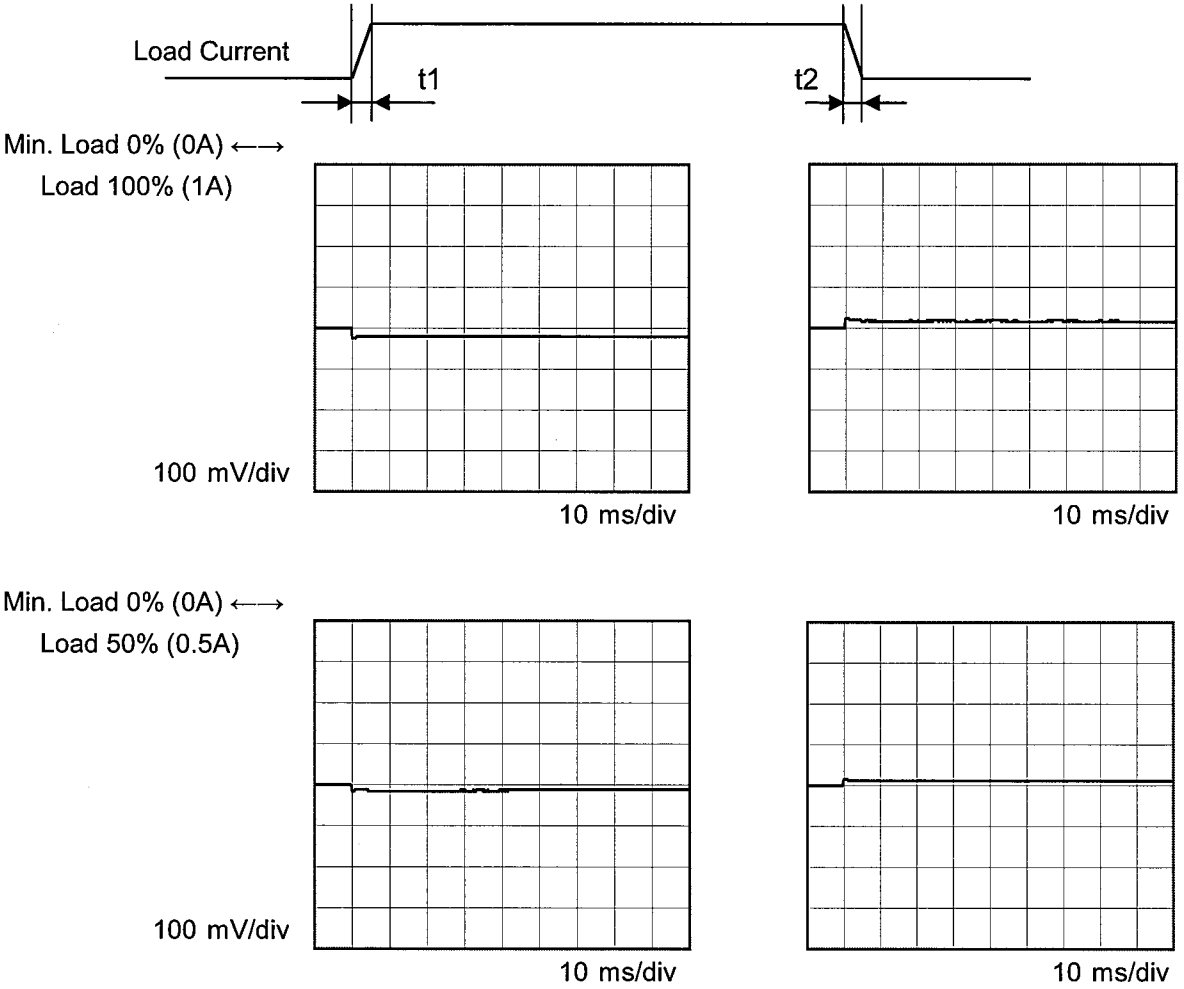


COSEL

Model	MMC100B-2		
Item	Dynamic Load Response	Temperature Testing Circuitry	25˚C Figure A
Object	-15V1A		

Input Volt. 100 V
Cycle 200 ms

Response. t1=t2=50us. Typ



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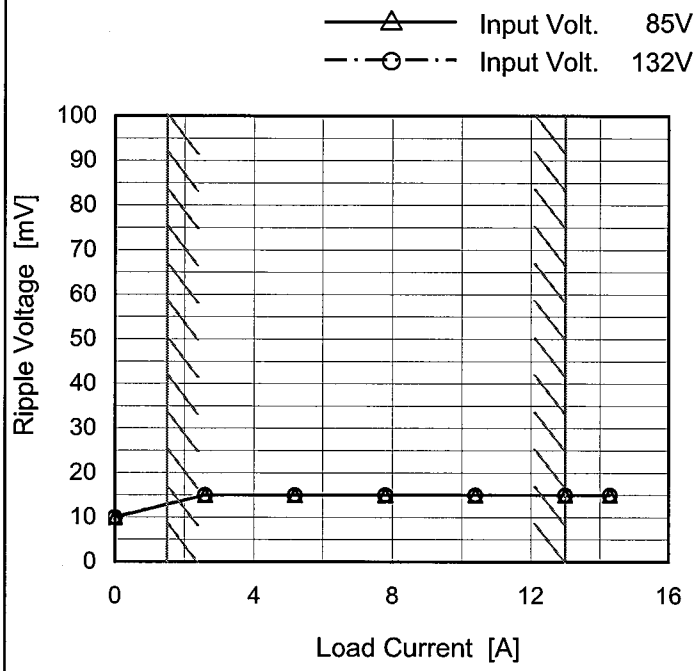
Model	MMC100B-2
Item	Ripple Voltage (by Load Current)
Object	+5V13A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Measured by 20 MHz Oscilloscope.
Ripple Voltage is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated load current.

T1: Due to AC Input Line
T2: Due to Switching

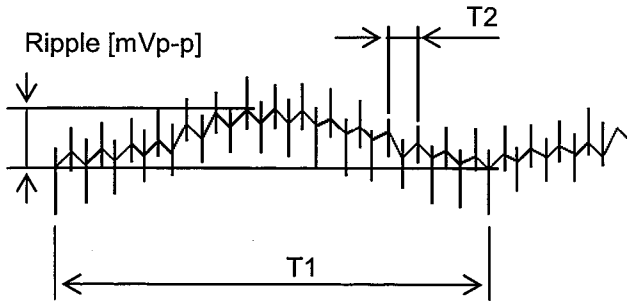


Fig. Complex Ripple Wave Form

2.Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 85 [V]	Input Volt. 132 [V]
0.0	10	10
2.6	15	15
5.2	15	15
7.8	15	15
10.4	15	15
13.0	15	15
14.3	15	15
--	-	-
--	-	-
--	-	-
--	-	-

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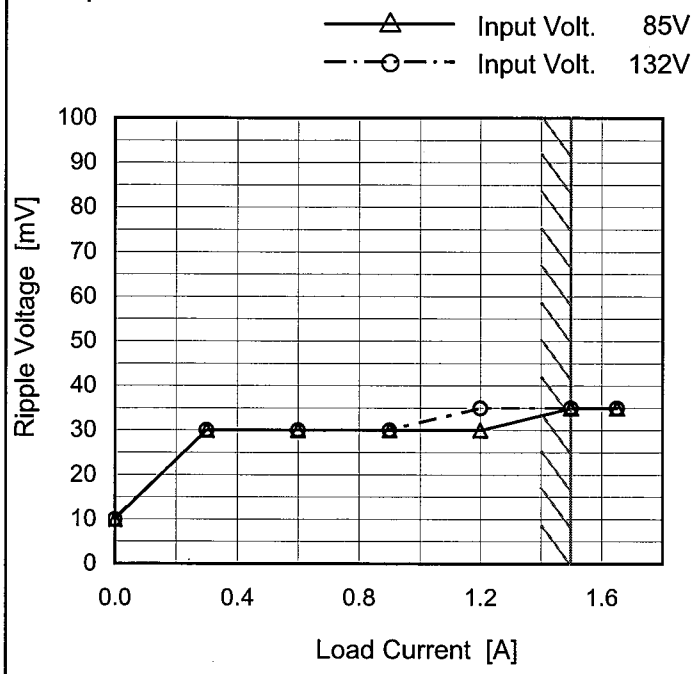
Model	MMC100B-2
Item	Ripple Voltage (by Load Current)
Object	+15V1.5A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Measured by 20 MHz Oscilloscope.
Ripple Voltage is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated load current.

T1: Due to AC Input Line
T2: Due to Switching

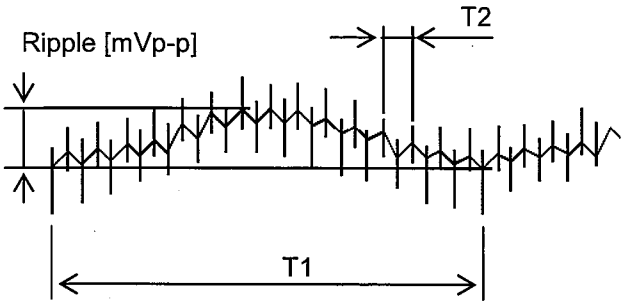


Fig. Complex Ripple Wave Form

2.Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 85 [V]	Input Volt. 132 [V]
0.00	10	10
0.30	30	30
0.60	30	30
0.90	30	30
1.20	30	35
1.50	35	35
1.65	35	35
--	-	-
--	-	-
--	-	-
--	-	-

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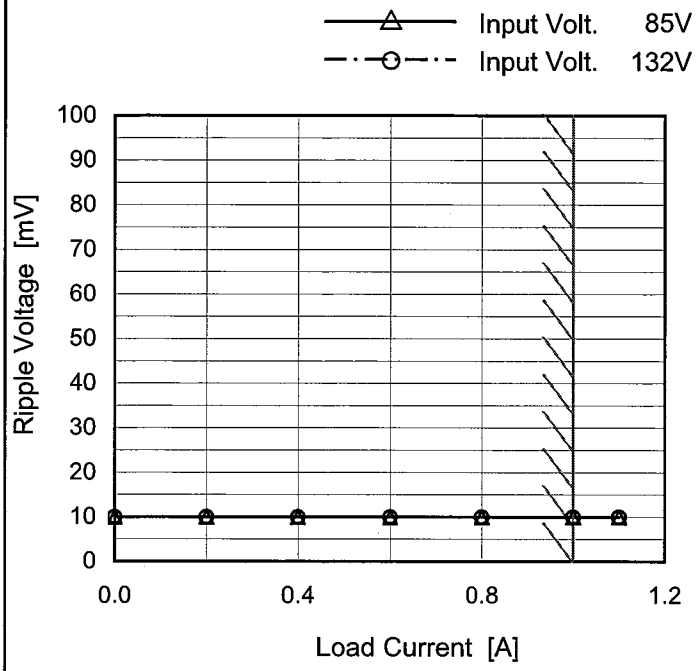
Model	MMC100B-2
Item	Ripple Voltage (by Load Current)
Object	-15V1A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Measured by 20 MHz Oscilloscope.
Ripple Voltage is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated load current.

T1: Due to AC Input Line
T2: Due to Switching

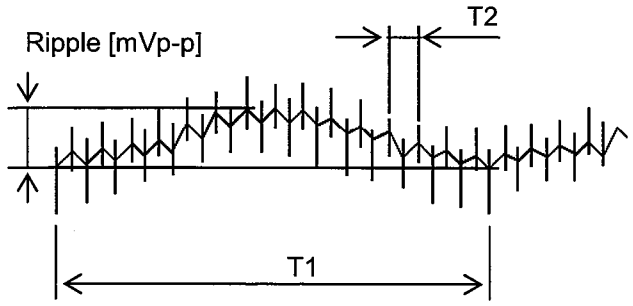


Fig. Complex Ripple Wave Form

2.Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 85 [V]	Input Volt. 132 [V]
0.0	10	10
0.2	10	10
0.4	10	10
0.6	10	10
0.8	10	10
1.0	10	10
1.1	10	10
--	-	-
--	-	-
--	-	-
--	-	-

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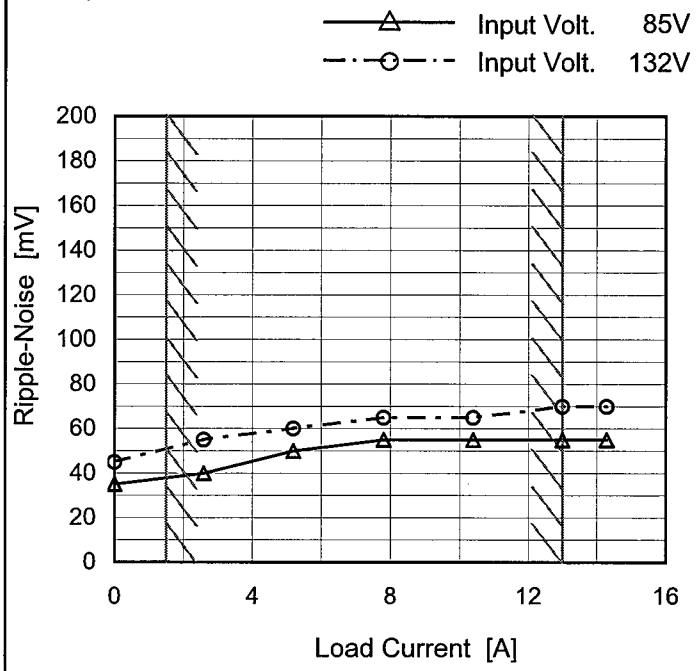
Model	MMC100B-2
Item	Ripple-Noise
Object	+5V13A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Measured by 20 MHz Oscilloscope.
Ripple-Noise is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated load current.

T1: Due to AC Input Line
T2: Due to Switching

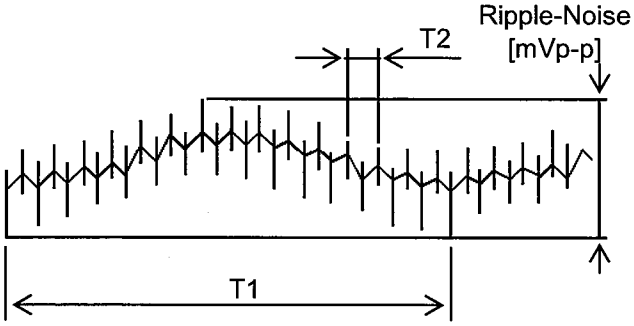


Fig. Complex Ripple Wave Form

2.Values

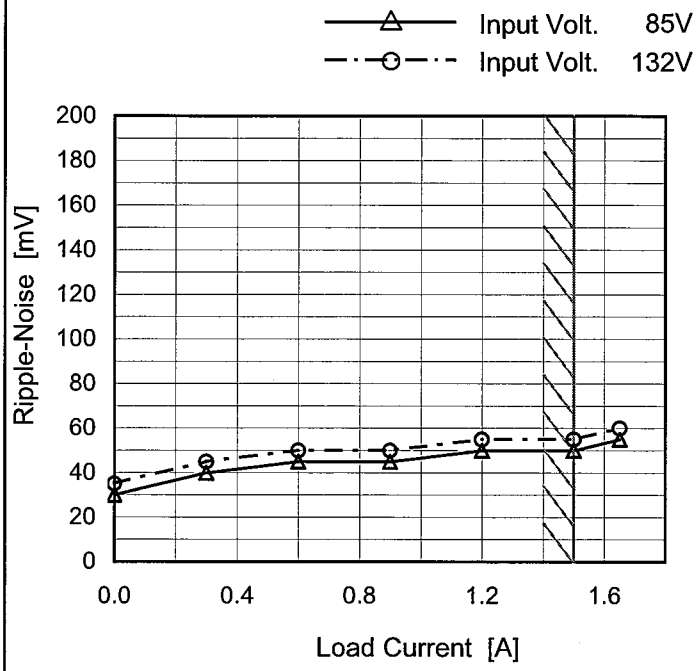
Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 85 [V]	Input Volt. 132 [V]
0.0	35	45
2.6	40	55
5.2	50	60
7.8	55	65
10.4	55	65
13.0	55	70
14.3	55	70
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	MMC100B-2
Item	Ripple-Noise
Object	+15V1.5A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Measured by 20 MHz Oscilloscope.
Ripple-Noise is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated load current.

T1: Due to AC Input Line
T2: Due to Switching

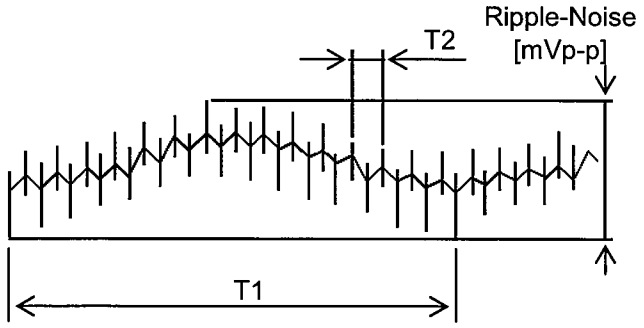


Fig. Complex Ripple Wave Form

2.Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 85 [V]	Input Volt. 132 [V]
0.00	30	35
0.30	40	45
0.60	45	50
0.90	45	50
1.20	50	55
1.50	50	55
1.65	55	60
--	-	-
--	-	-
--	-	-
--	-	-

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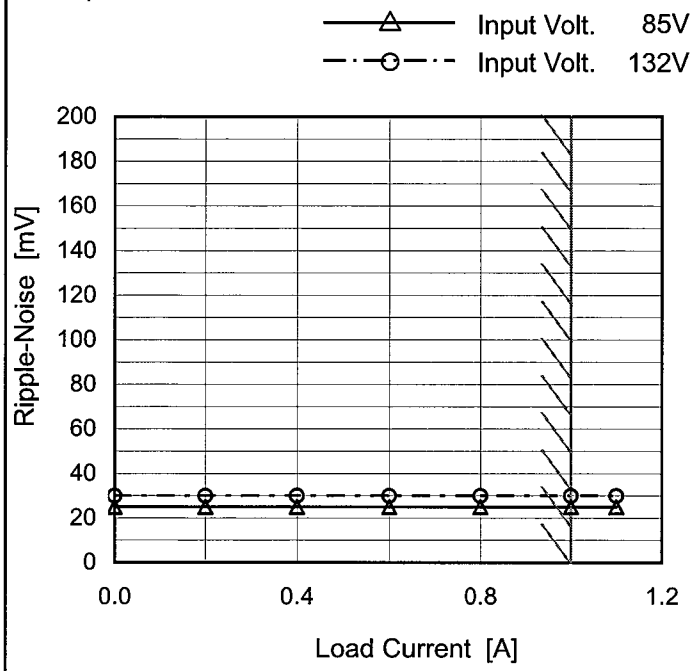
COSEL

Model	MMC100B-2
Item	Ripple-Noise
Object	-15V1A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Measured by 20 MHz Oscilloscope.
Ripple-Noise is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated load current.

T1: Due to AC Input Line
T2: Due to Switching

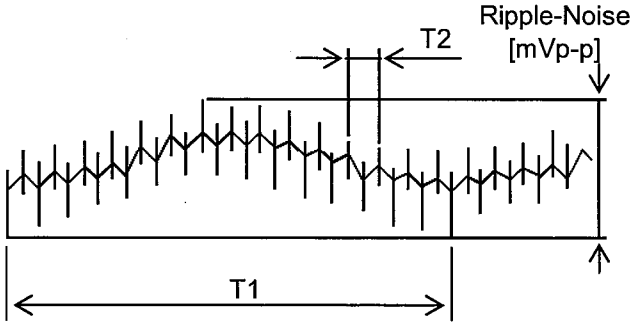


Fig. Complex Ripple Wave Form

2.Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 85 [V]	Input Volt. 132 [V]
0.0	25	30
0.2	25	30
0.4	25	30
0.6	25	30
0.8	25	30
1.0	25	30
1.1	25	30
--	-	-
--	-	-
--	-	-
--	-	-

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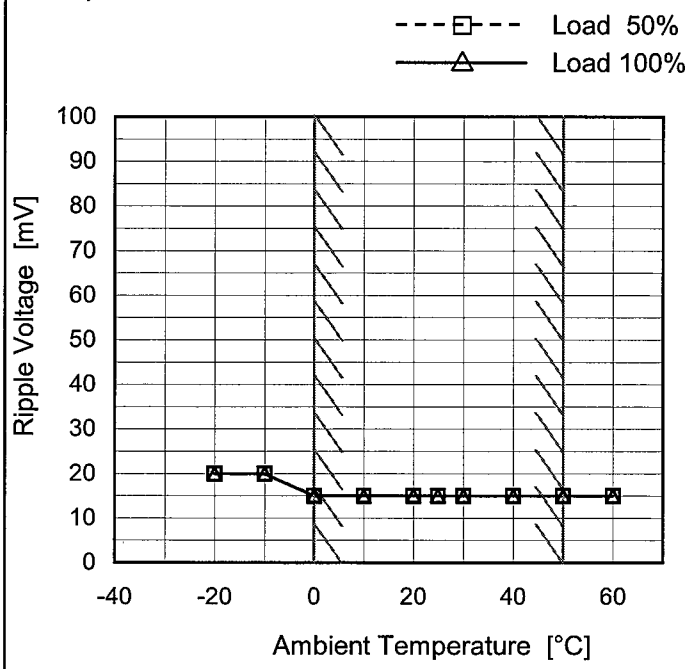
COSEL

Model	MMC100B-2
Item	Ripple Voltage (by Ambient Temp.)
Object	+5V13A

Testing Circuitry Figure A

1.Graph



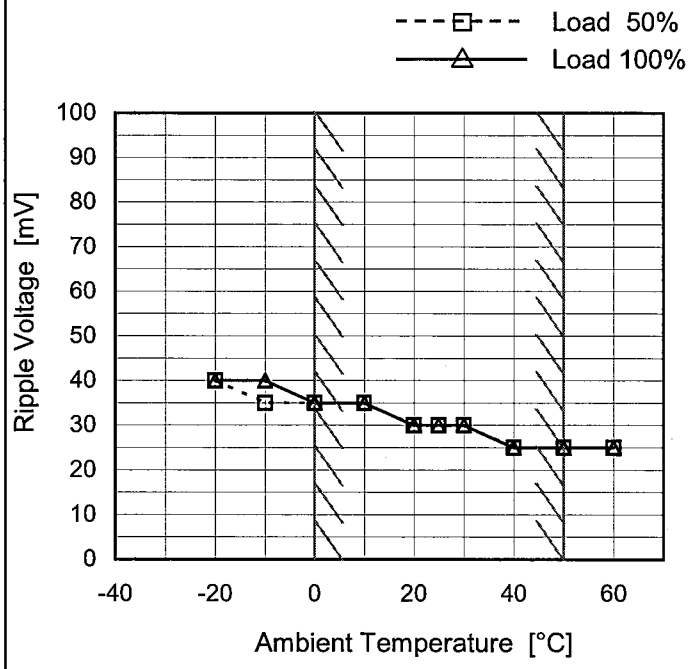
Input Volt. 100V

2.Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-20	20	20
-10	20	20
0	15	15
10	15	15
20	15	15
25	15	15
30	15	15
40	15	15
50	15	15
60	15	15
--	-	-

Object	+15V1.5A

1.Graph



Input Volt. 100V

Measured by 20 MHz Oscilloscope.

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

2.Values

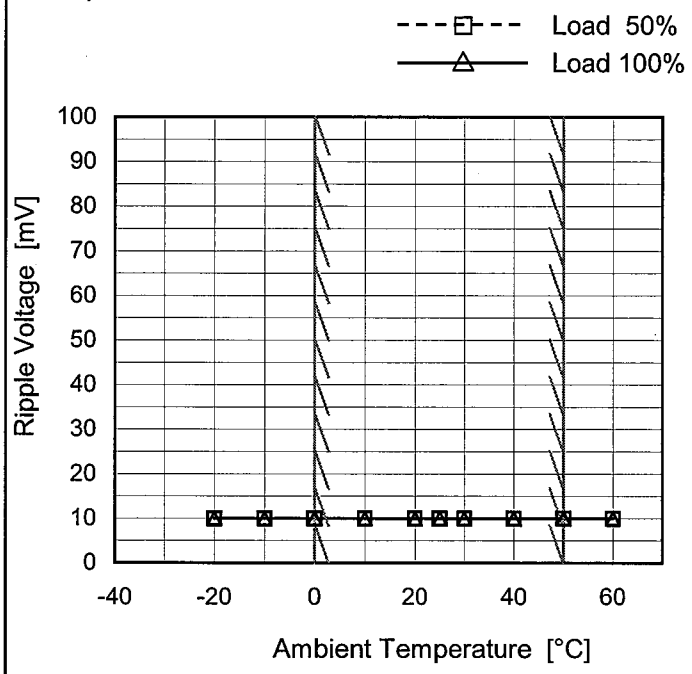
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-20	40	40
-10	35	40
0	35	35
10	35	35
20	30	30
25	30	30
30	30	30
40	25	25
50	25	25
60	25	25
--	-	-

COSEL

Model	MMC100B-2
Item	Ripple Voltage (by Ambient Temp.)
Object	-15V1A

Testing Circuitry Figure A

1.Graph



Input Volt. 100V

Measured by 20 MHz Oscilloscope.
Note: Slanted line shows the range of the rated ambient temperature.

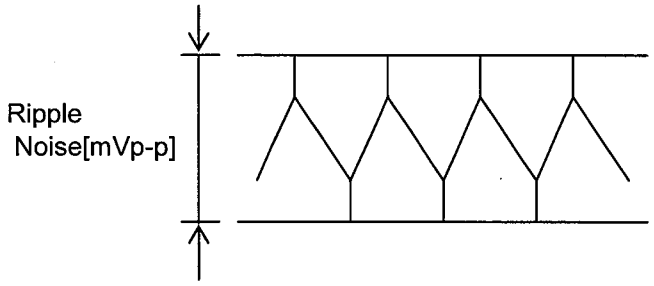


Fig.Complex Ripple Noise Wave Form

2.Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-20	10	10
-10	10	10
0	10	10
10	10	10
20	10	10
25	10	10
30	10	10
40	10	10
50	10	10
60	10	10
--	-	-

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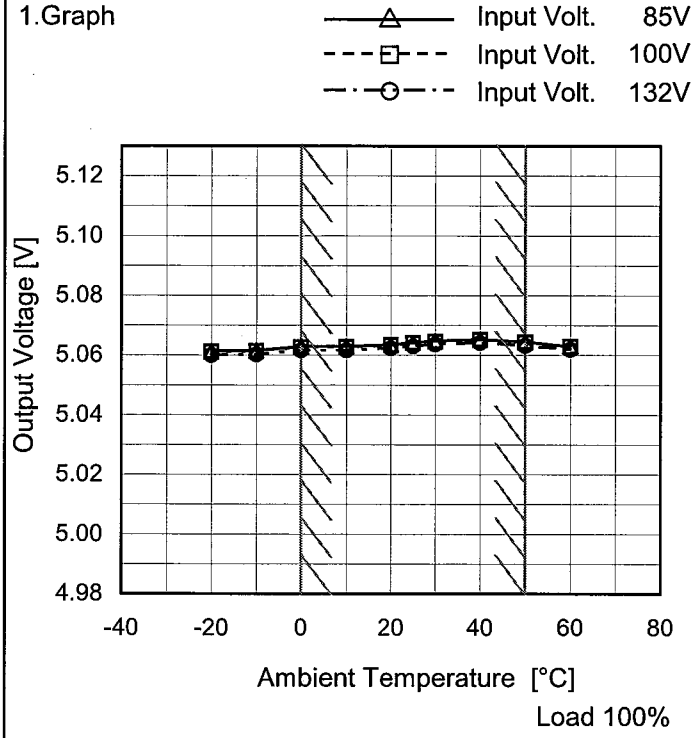
COSEL

Model	MMC100B-2
Item	Ambient Temperature Drift
Object	+5V13A

Testing Circuitry Figure A

1.Graph

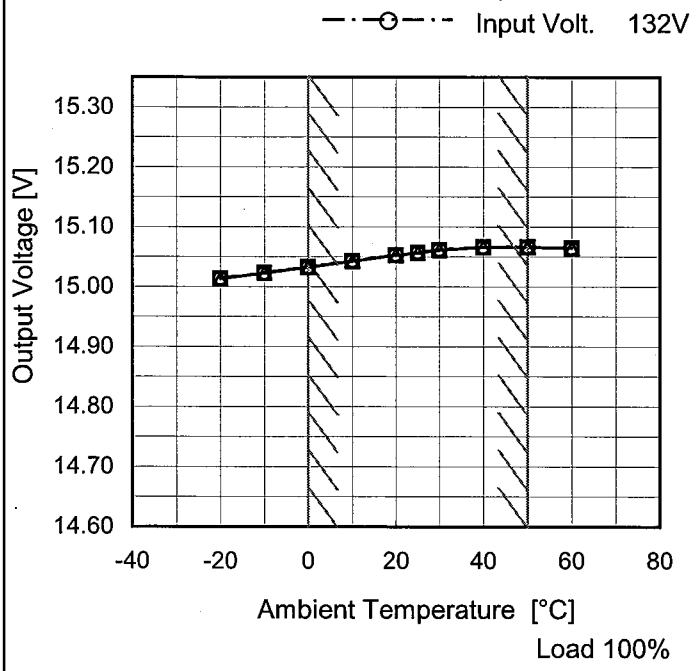


2.Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
-20	5.061	5.061	5.060
-10	5.062	5.061	5.060
0	5.063	5.063	5.062
10	5.063	5.063	5.062
20	5.064	5.063	5.062
25	5.064	5.064	5.063
30	5.065	5.065	5.064
40	5.065	5.065	5.064
50	5.065	5.064	5.063
60	5.063	5.063	5.062
--	-	-	-

Object	+15V1.5A

1.Graph



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

2.Values

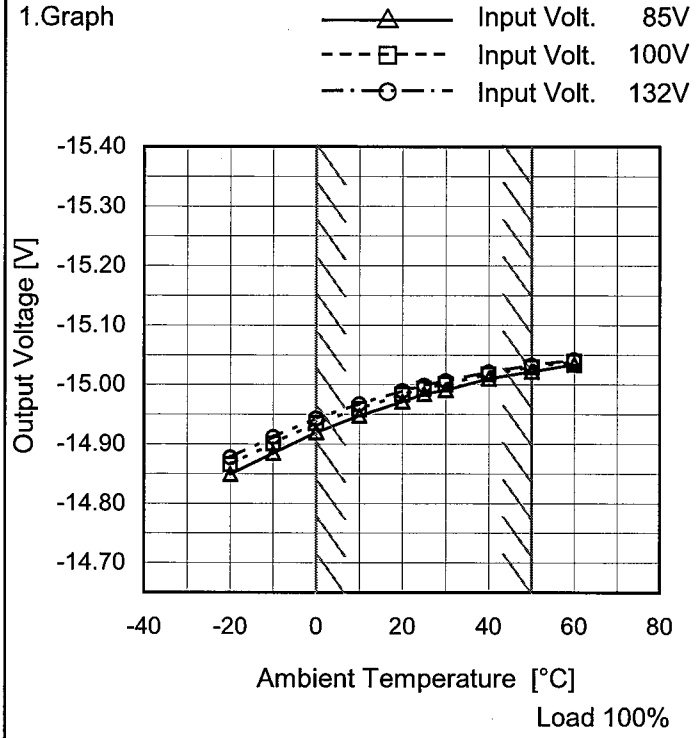
Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
-20	15.013	15.013	15.014
-10	15.023	15.023	15.023
0	15.032	15.032	15.033
10	15.042	15.043	15.043
20	15.053	15.053	15.053
25	15.057	15.057	15.057
30	15.061	15.061	15.062
40	15.066	15.066	15.066
50	15.066	15.066	15.067
60	15.065	15.065	15.065
--	-	-	-

COSEL

Model	MMC100B-2
Item	Ambient Temperature Drift
Object	-15V1A

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. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
-20	-14.849	-14.866	-14.877
-10	-14.885	-14.901	-14.912
0	-14.920	-14.935	-14.943
10	-14.948	-14.959	-14.967
20	-14.972	-14.983	-14.989
25	-14.985	-14.993	-14.999
30	-14.991	-15.001	-15.006
40	-15.011	-15.017	-15.021
50	-15.022	-15.029	-15.033
60	-15.034	-15.039	-15.042
--	-	-	-

COSEL

Model	MMC100B-2	
Item	Output Voltage Accuracy	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 : 0 - 50°C

Input Voltage : 85 - 132V

Load Current (AVR 1) : 1.5 - 13A (AVR 2) : 0 - 1.5A (AVR 3) : 0 - 1A

* 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

Object	+5V13A					
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	40	132	1.5	5.091	±15	±0.3
Minimum Voltage	0	132	13	5.062		

Object	+15V1.5A					
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	50	100	0	15.071	±21	±0.1
Minimum Voltage	0	100	1.5	15.030		

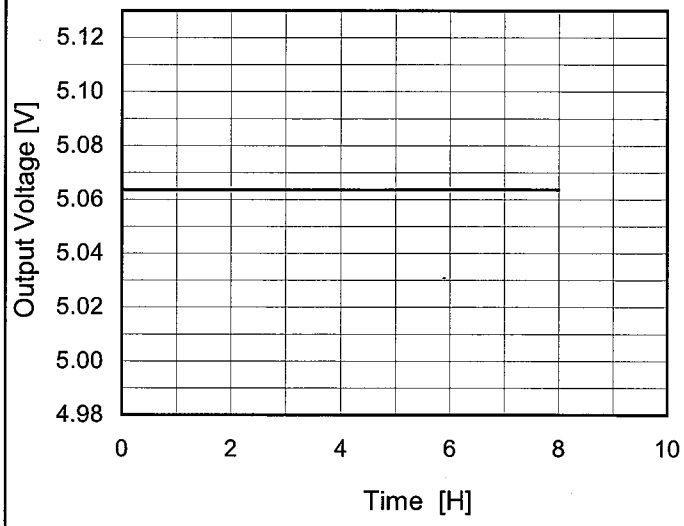
Object	-15V1A					
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	50	132	1	-15.033	±82	±0.5
Minimum Voltage	0	132	0	-14.870		

COSEL

Model	MMC100B-2
Item	Time Lapse Drift
Object	+5V13A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



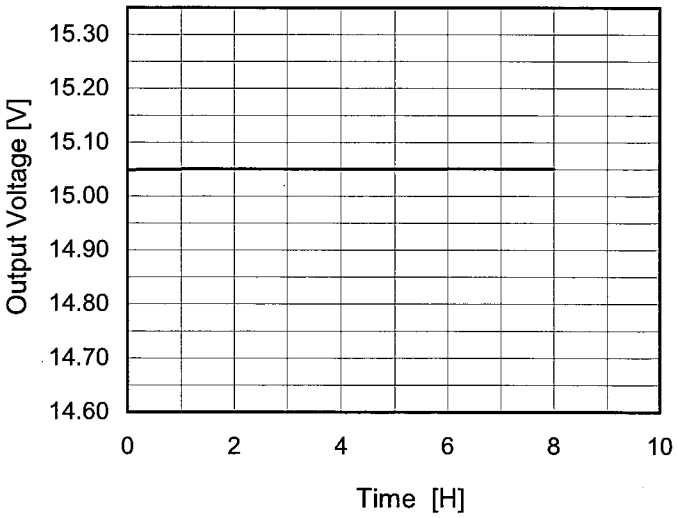
Input Volt. 100V
Load 100%

2.Values

Time since start [H]	Output Voltage [V]
0.0	5.064
0.5	5.064
1.0	5.064
2.0	5.064
3.0	5.064
4.0	5.064
5.0	5.064
6.0	5.064
7.0	5.064
8.0	5.064

Object	+15V1.5A

1.Graph



Input Volt. 100V
Load 100%

2.Values

Time since start [H]	Output Voltage [V]
0.0	15.047
0.5	15.050
1.0	15.050
2.0	15.050
3.0	15.051
4.0	15.051
5.0	15.051
6.0	15.051
7.0	15.051
8.0	15.051

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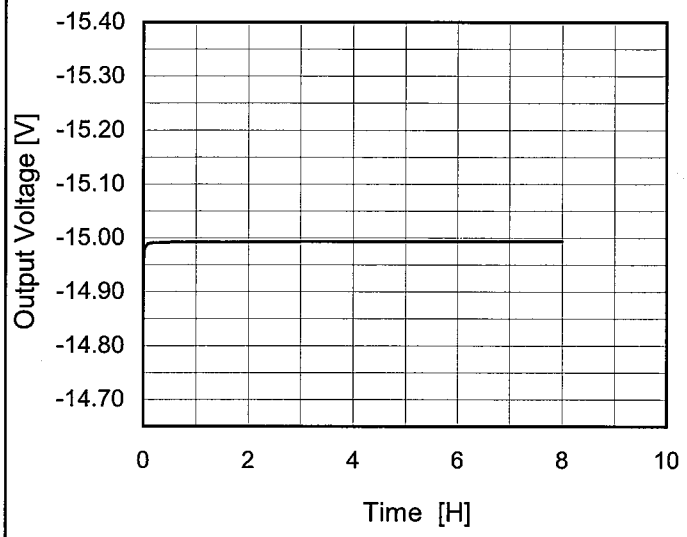
COSEL

Model	MMC100B-2
Item	Time Lapse Drift
Object	-15V1A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Input Volt. 100V
Load 100%

2.Values

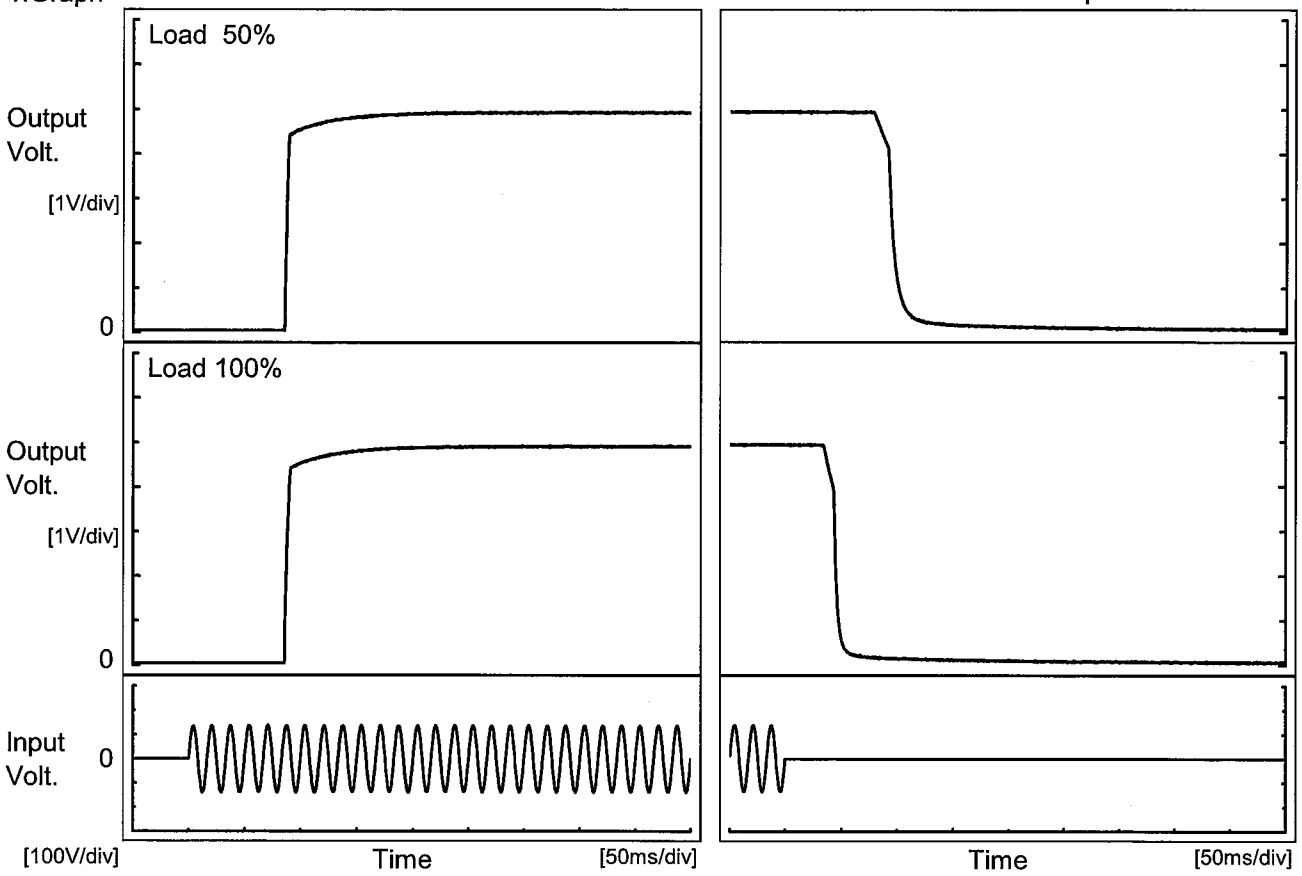
Time since start [H]	Output Voltage [V]
0.0	-14.950
0.5	-14.992
1.0	-14.993
2.0	-14.993
3.0	-14.993
4.0	-14.994
5.0	-14.993
6.0	-14.994
7.0	-14.994
8.0	-14.994

COSEL

Model	MMC100B-2	
Item	Rise and Fall Time	Temperature 25°C Testing Circuitry Figure A
Object	+5V13A	

1.Graph

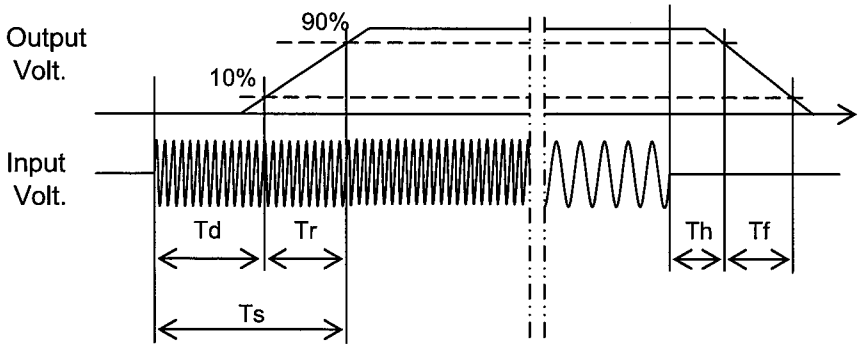
Input Volt. 100 V



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	86.0	13.0	99.0	84.8	22.3
100 %	86.0	14.0	100.0	37.3	13.0



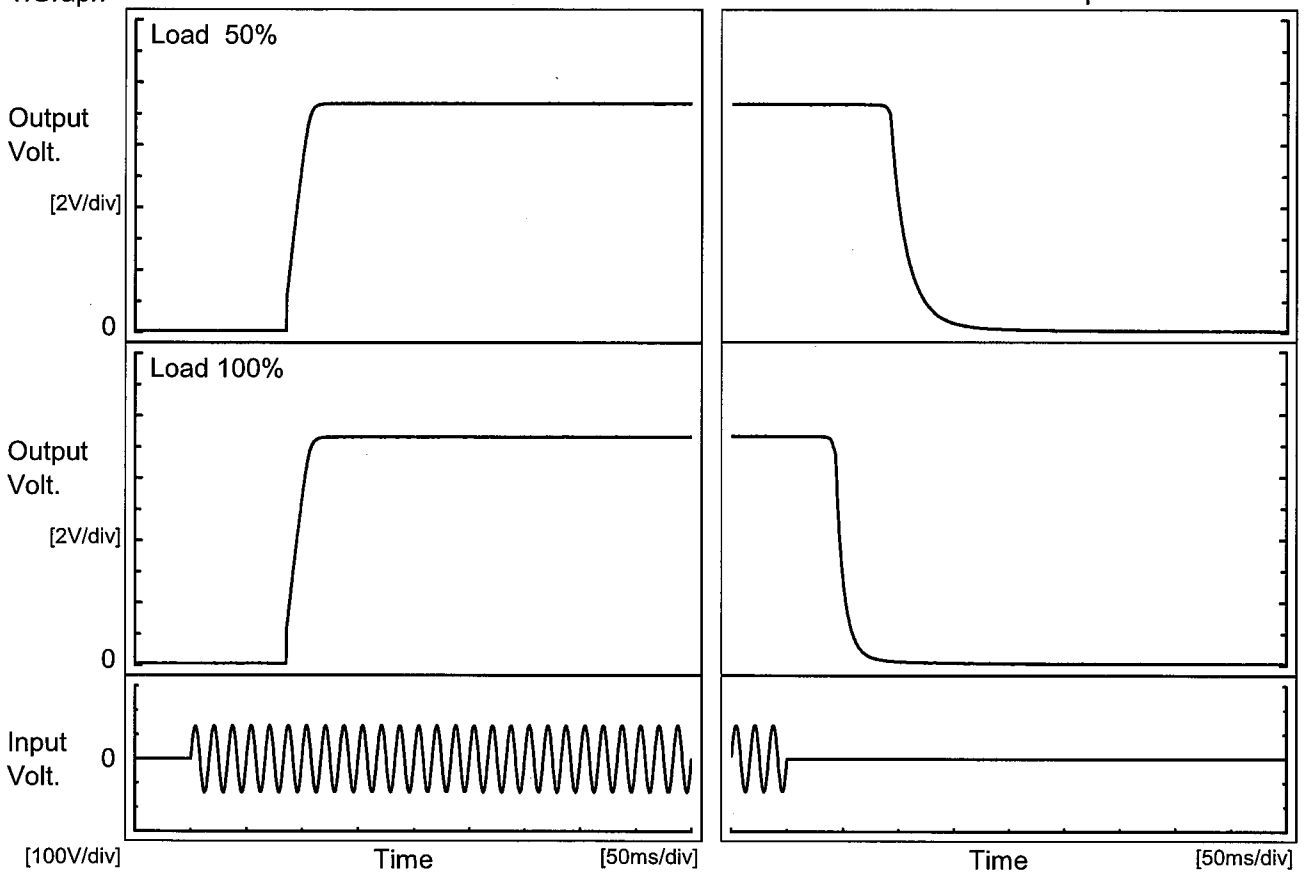
COSEL

Model	MMC100B-2
Item	Rise and Fall Time
Object	+15V1.5A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

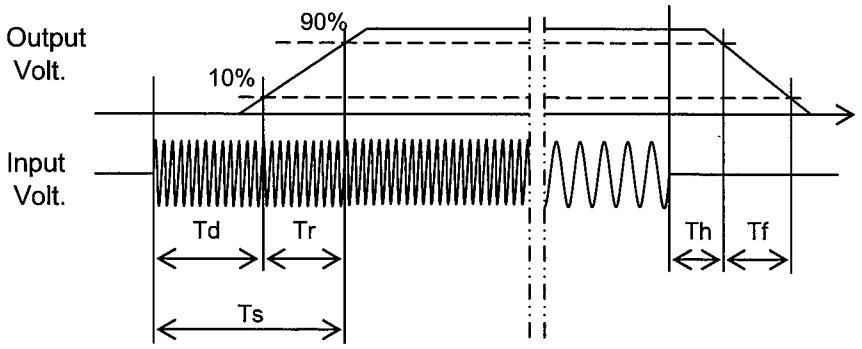
Input Volt. 100 V



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	86.0	20.3	106.3	92.3	35.5
100 %	86.0	20.5	106.5	43.0	18.3



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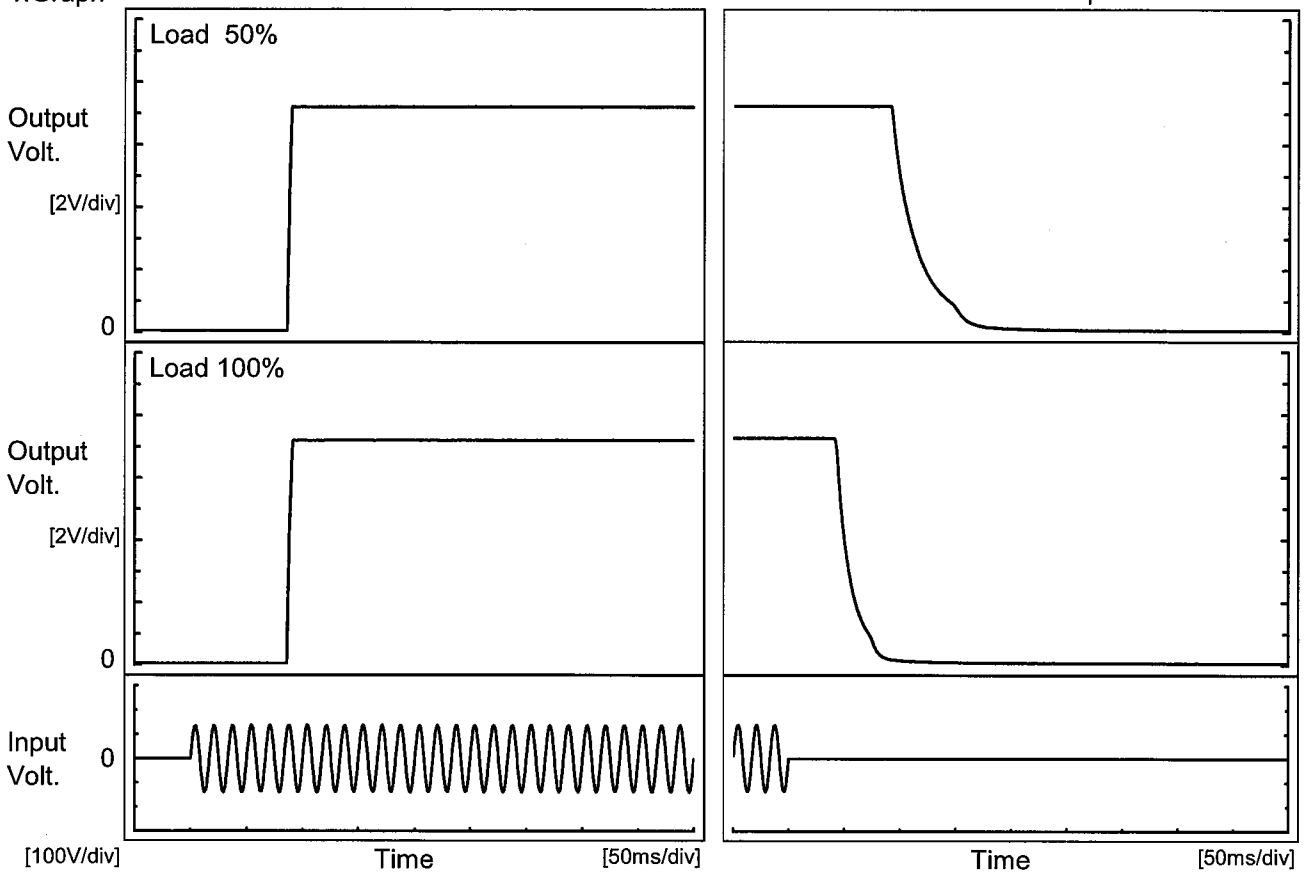
COSEL

Model	MMC100B-2
Item	Rise and Fall Time
Object	-15V1A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

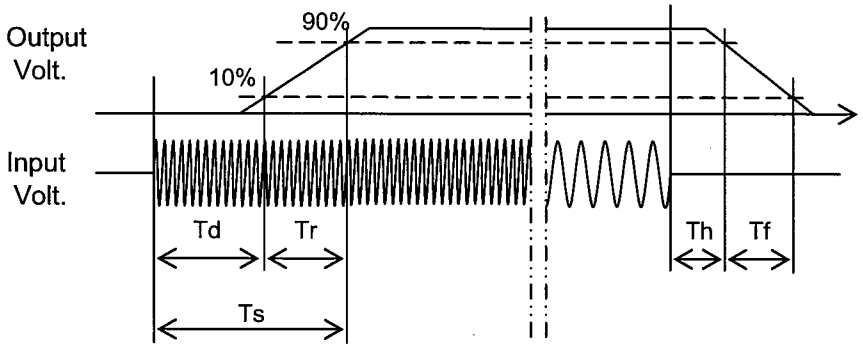
Input Volt. 100 V



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	86.3	3.3	89.6	93.3	56.3
100 %	86.3	4.3	90.6	43.5	31.5



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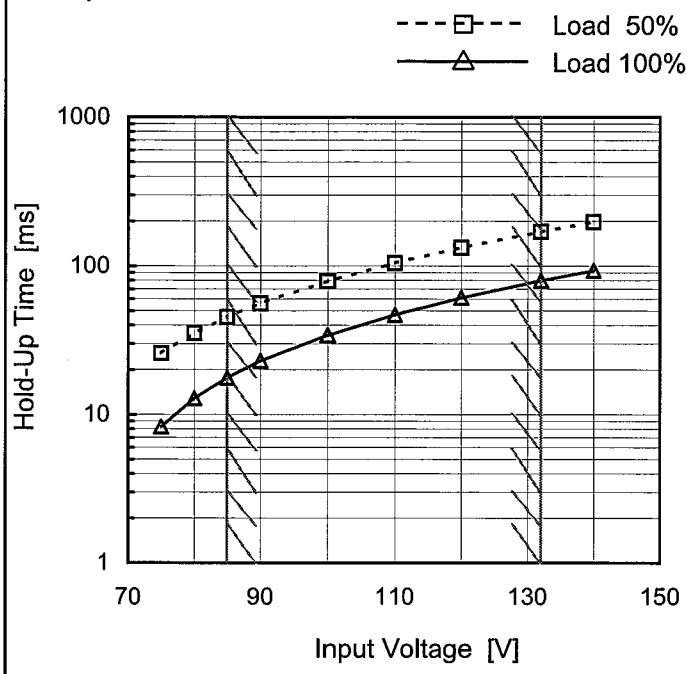
COSEL

Model	MMC100B-2
Item	Hold-Up Time
Object	+5V13A

Temperature 25°C
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.

2.Values

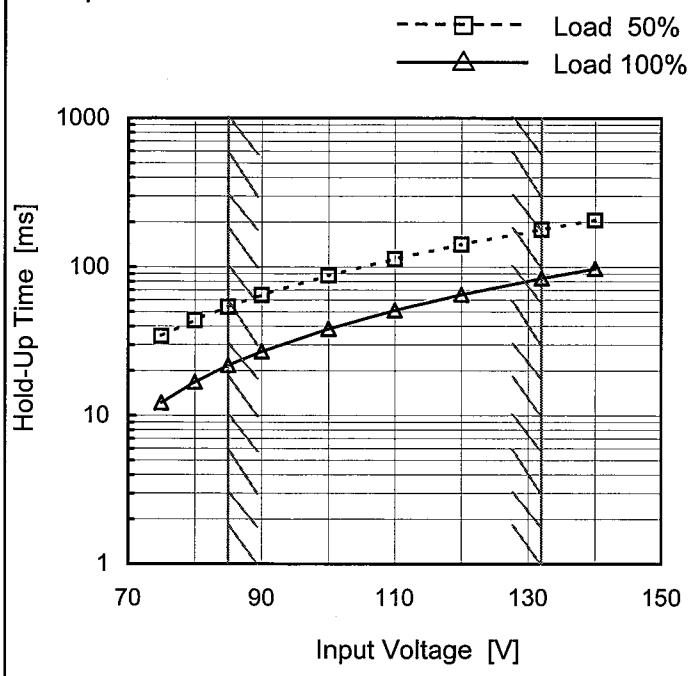
Input Voltage [V]	Hold-Up Time [ms]	
	Load 50%	Load 100%
75	26	8
80	35	13
85	45	18
90	56	23
100	79	34
110	105	47
120	133	61
132	170	80
140	197	93

COSEL

Model	MMC100B-2
Item	Hold-Up Time
Object	+15V1.5A

Temperature 25°C
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.

2.Values

Input Voltage [V]	Hold-Up Time [ms]	
	Load 50%	Load 100%
75	34	12
80	44	17
85	54	22
90	65	27
100	88	38
110	113	51
120	142	65
132	179	84
140	206	98

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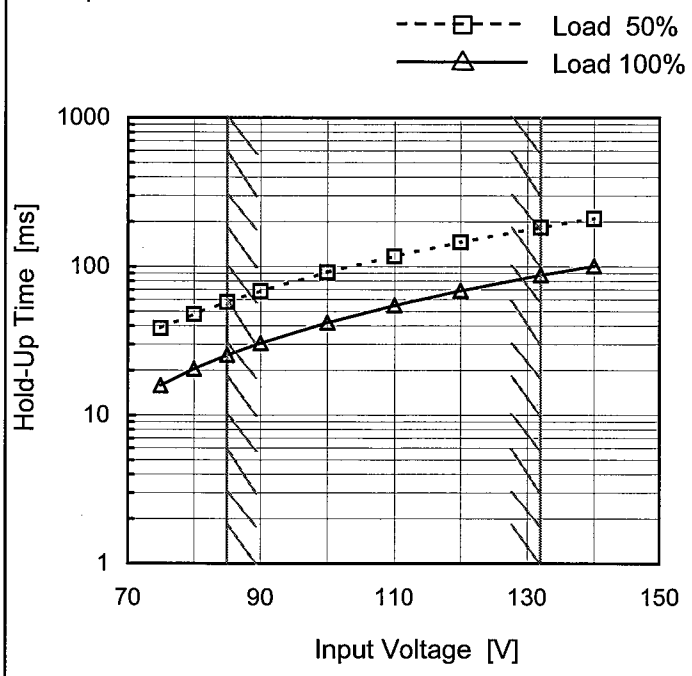
COSEL

Model	MMC100B-2
Item	Hold-Up Time
Object	-15V1A

Temperature 25°C
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.

2.Values

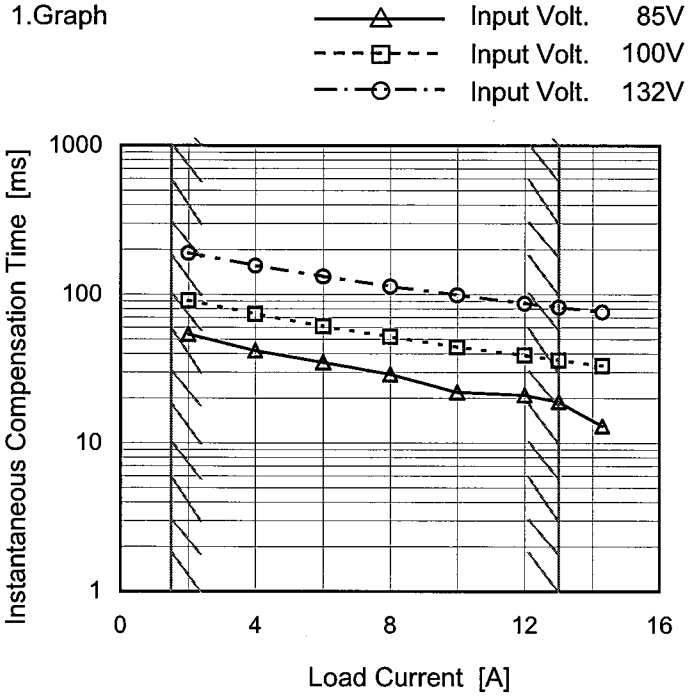
Input Voltage [V]	Hold-Up Time [ms]	
	Load 50%	Load 100%
75	38	16
80	48	21
85	58	25
90	68	31
100	91	42
110	117	55
120	146	69
132	183	88
140	210	101

COSEL

Model	MMC100B-2
Item	Instantaneous Interruption Compensation
Object	+5V13A

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]	Time [ms]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.0	-	-	-
2.0	54	91	190
4.0	42	74	156
6.0	35	61	132
8.0	29	52	113
10.0	22	44	99
12.0	21	39	87
13.0	19	36	82
14.3	13	33	76
--	-	-	-
--	-	-	-

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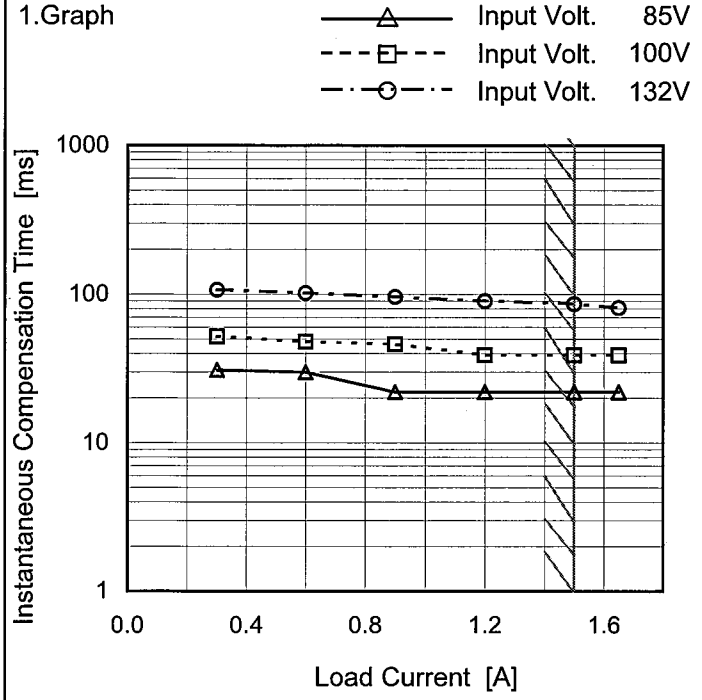
COSEL

Model	MMC100B-2
Item	Instantaneous Interruption Compensation
Object	+15V1.5A

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]	Time [ms]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.00	-	-	-
0.30	31	52	107
0.60	30	48	102
0.90	22	46	96
1.20	22	39	90
1.50	22	39	86
1.65	22	39	81
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

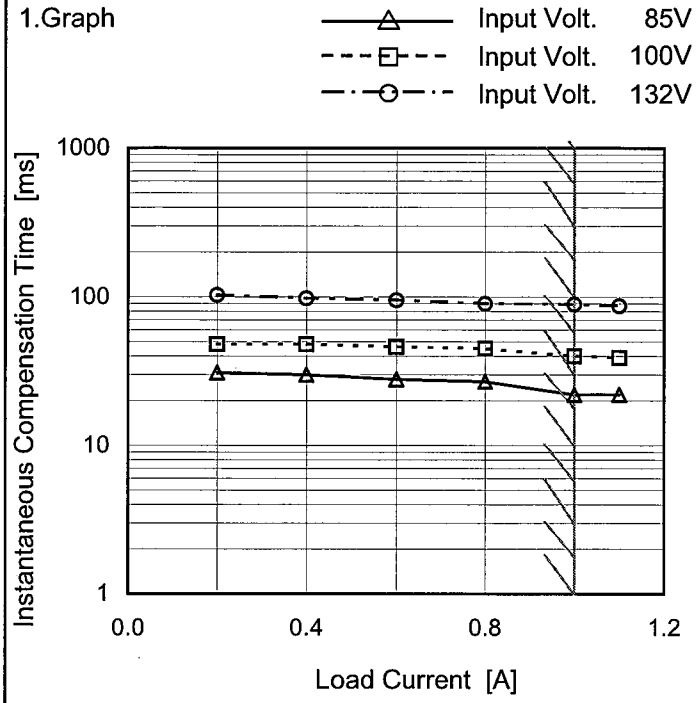
BC-10557

COSEL

Model	MMC100B-2
Item	Instantaneous Interruption Compensation
Object	-15V1A

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]	Time [ms]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.0	-	-	-
0.2	31	48	103
0.4	30	48	98
0.6	28	46	95
0.8	27	45	90
1.0	22	40	89
1.1	22	39	87
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

BC-10557

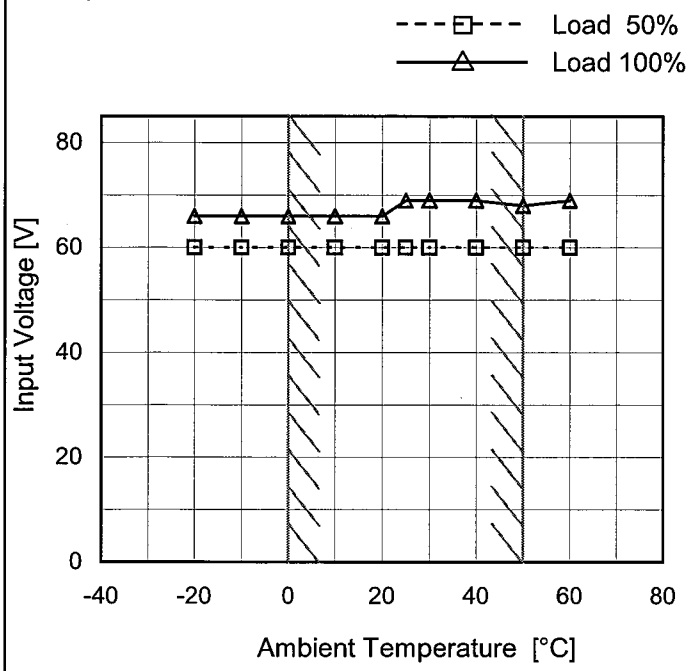
COSEL

Model	MMC100B-2
Item	Minimum Input Voltage for Regulated Output Voltage

Testing Circuitry Figure A

Object: +5V13A

1.Graph

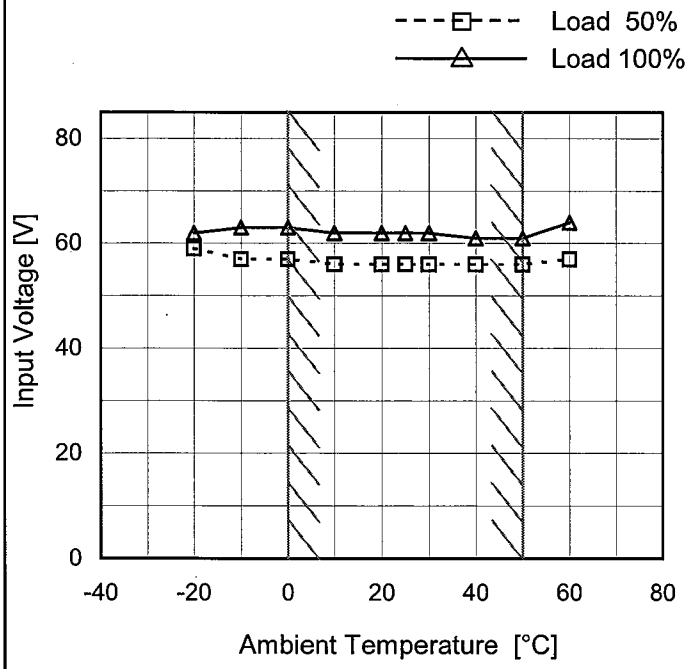


2.Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-20	60	66
-10	60	66
0	60	66
10	60	66
20	60	66
25	60	69
30	60	69
40	60	69
50	60	68
60	60	69
--	-	-

Object: +15V1.5A

1.Graph



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

2.Values

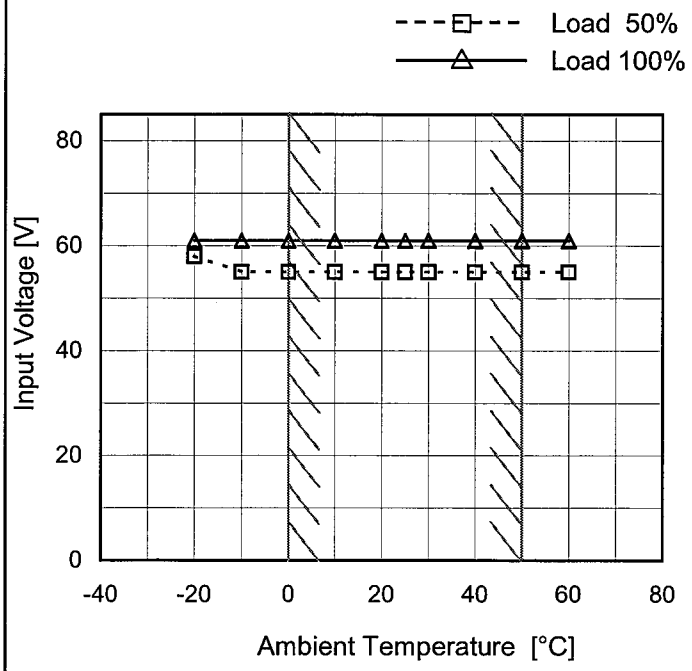
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-20	59	62
-10	57	63
0	57	63
10	56	62
20	56	62
25	56	62
30	56	62
40	56	61
50	56	61
60	57	64
--	-	-

COSEL

Model	MMC100B-2
Item	Minimum Input Voltage for Regulated Output Voltage
Object	-15V1A

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%
-20	58	61
-10	55	61
0	55	61
10	55	61
20	55	61
25	55	61
30	55	61
40	55	61
50	55	61
60	55	61
--	-	-

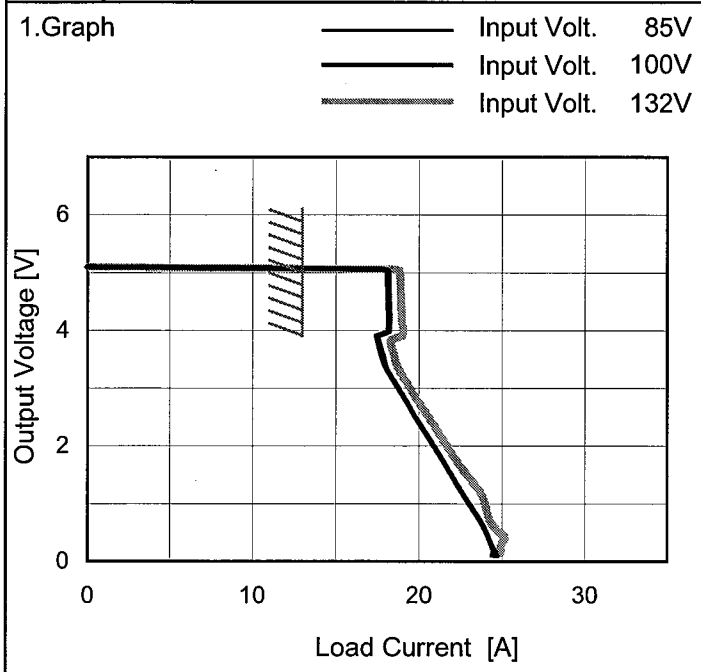
COSEL

Model	MMC100B-2
Item	Overcurrent Protection

Temperature 25°C
Testing Circuitry Figure A

Object +5V13A

1.Graph

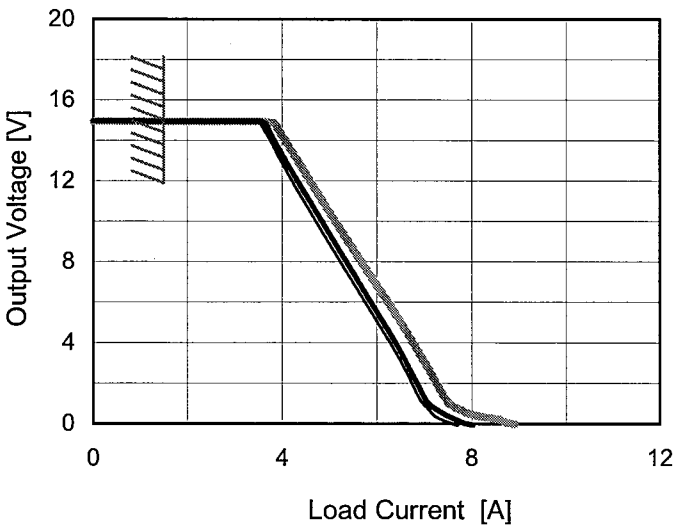


2.Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
4.75	18.03	18.18	18.88
4.50	18.07	18.20	18.90
4.00	18.07	18.21	19.02
3.50	17.72	17.90	18.53
3.00	18.59	18.68	19.38
2.50	19.72	19.74	20.58
2.00	20.86	20.85	21.60
1.50	21.94	21.92	22.90
1.00	22.99	22.99	23.96
0.50	24.04	24.02	24.75
0.00	24.32	24.44	24.84
--	-	-	-

Object +15V1.5A

1.Graph



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

2.Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
14.25	3.71	3.79	4.01
13.50	3.84	3.93	4.17
12.00	4.22	4.33	4.59
10.50	4.58	4.71	4.98
9.00	4.96	5.09	5.38
7.50	5.34	5.46	5.81
6.00	5.76	5.87	6.22
4.50	6.14	6.25	6.62
3.00	6.50	6.61	6.99
1.50	6.83	6.94	7.38
0.00	7.70	8.02	8.91
--	-	-	-

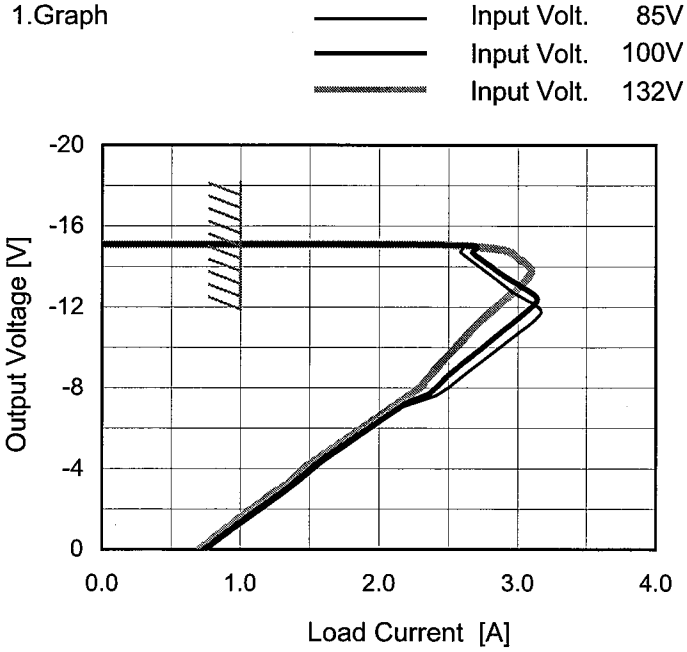
BC-10557

COSEL

Model	MMC100B-2
Item	Overcurrent Protection
Object	-15V1A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
-14.25	2.68	2.76	3.04
-13.50	2.82	2.91	3.08
-12.00	3.14	3.11	2.84
-10.50	3.00	2.92	2.63
-9.00	2.74	2.57	2.43
-7.50	2.41	2.36	2.25
-6.00	2.01	1.98	1.88
-4.50	1.59	1.59	1.48
-3.00	1.42	1.34	1.36
-1.50	1.07	1.05	0.99
0.00	0.75	0.74	0.70
--	-	-	-

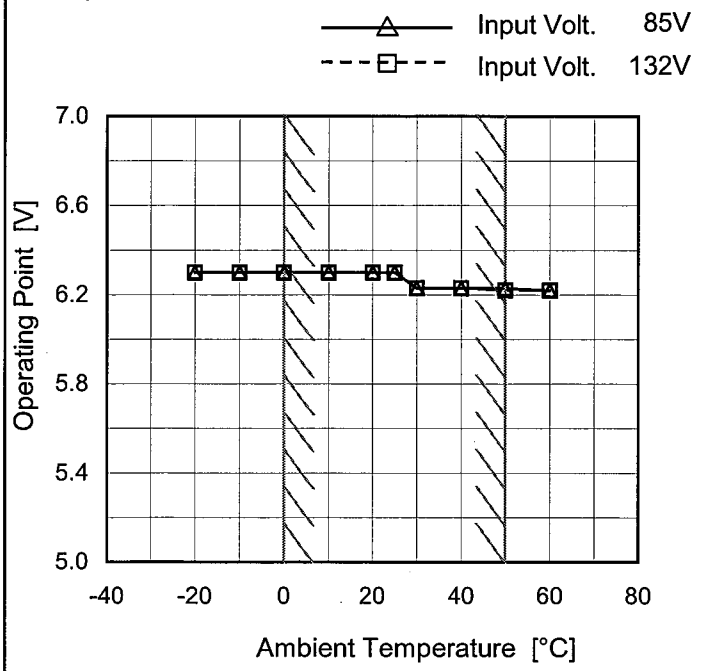
BC-10557

COSEL

Model	MMC100B-2
Item	Overvoltage Protection
Object	+5V13A

Testing Circuitry Figure A

1.Graph



Load 0%

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

2.Values

Ambient Temperature [°C]	Operating Point [V]	
	Input Volt. 85[V]	Input Volt. 132[V]
-20	6.30	6.30
-10	6.30	6.30
0	6.30	6.30
10	6.30	6.30
20	6.30	6.30
25	6.30	6.30
30	6.23	6.23
40	6.23	6.23
50	6.23	6.22
60	6.22	6.22
--	-	-

COSEL

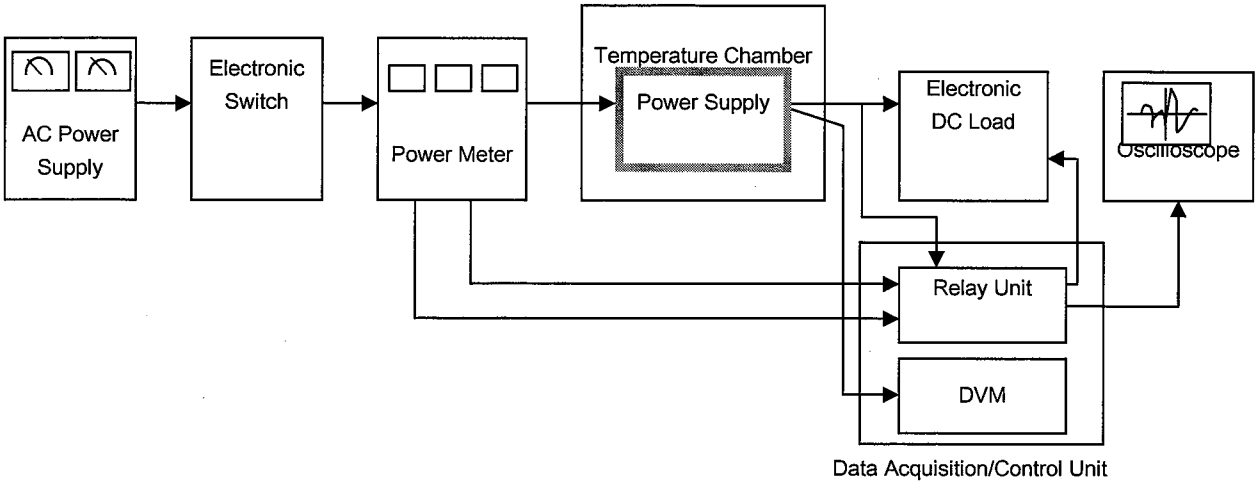


Figure A

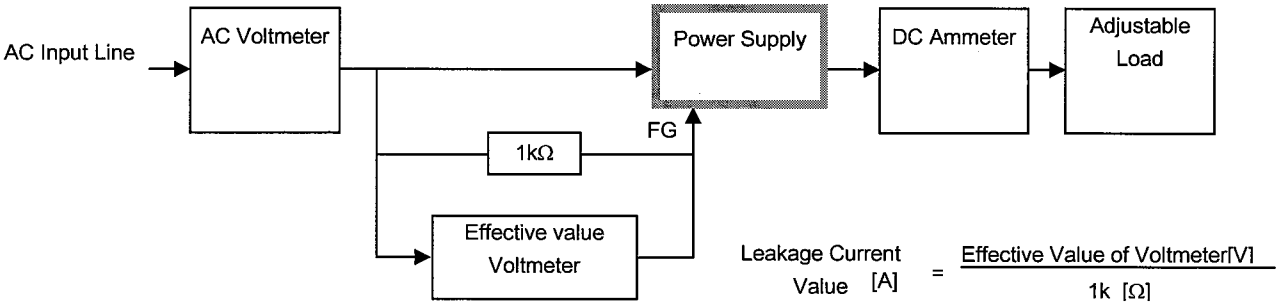


Figure B (DEN-AN)

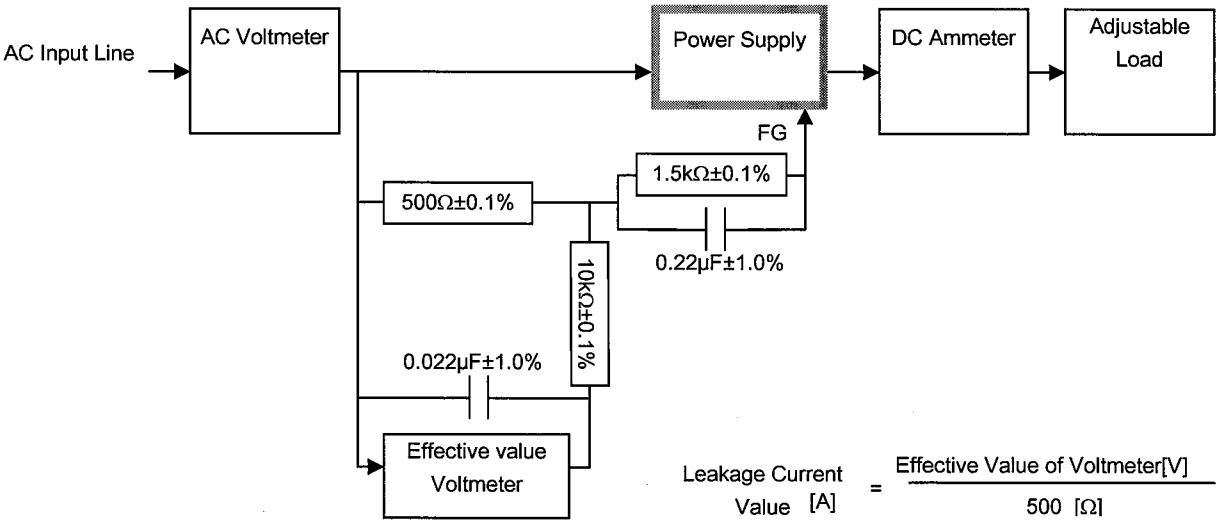


Figure B (IEC60950-1)