COSEL

参考資料

TEST DATA OF G2W-15

Regulated DC Power Supply
October 19, 2010

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Design Manager

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Design Engineer

COSEL CO.,LTD.

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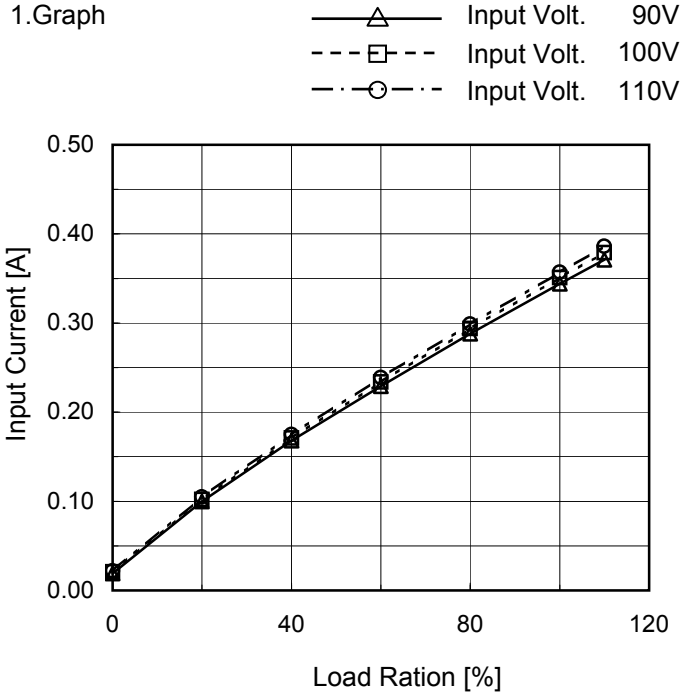
Model	G2W-15
Item	Input Current (by Load Current)
Object	――――――

Temperature 25°C
Testing Circuitry Figure A

1.Graph



2.Values

Load Ration [%]	Input Current [A]		
	Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
0	0.019	0.021	0.022
20	0.100	0.102	0.105
40	0.168	0.171	0.175
60	0.229	0.234	0.239
80	0.288	0.294	0.299
100	0.344	0.351	0.357
110	0.371	0.379	0.386
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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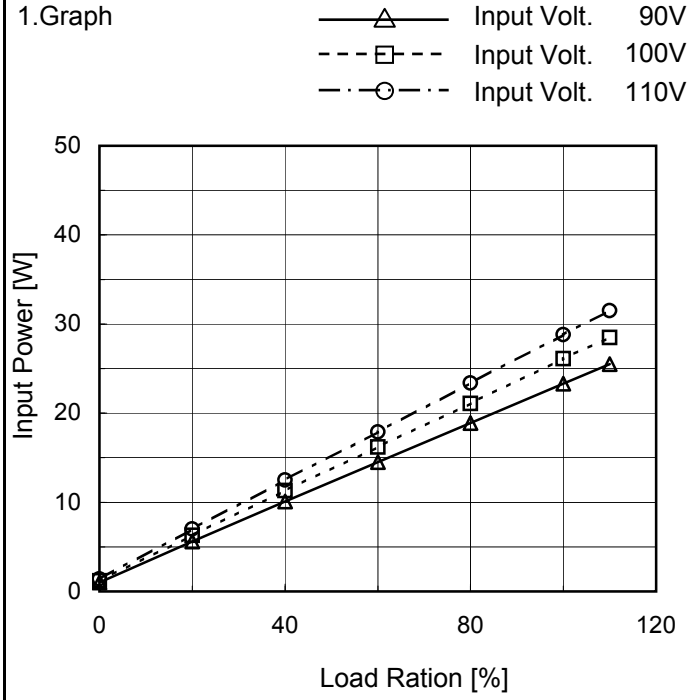
Model	G2W-15
Item	Input Power (by Load Current)
Object	――――――

Temperature 25°C
Testing Circuitry Figure A

1.Graph



2.Values

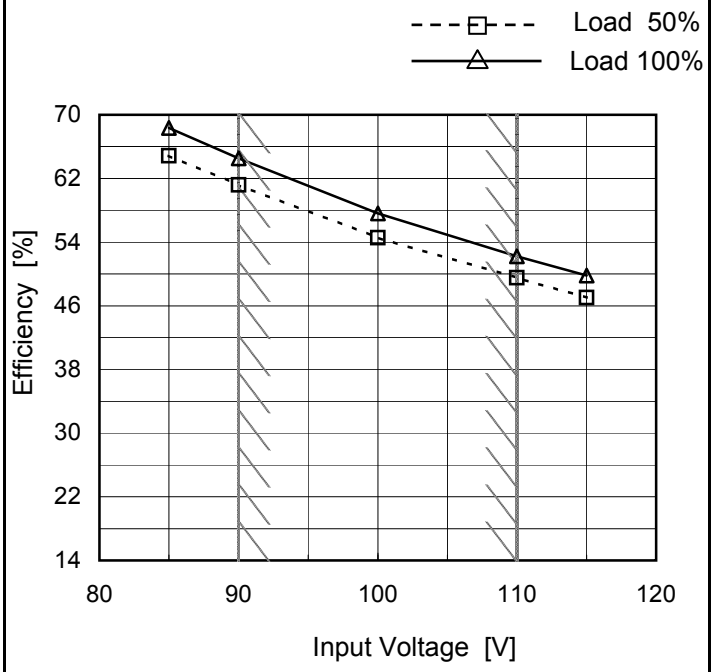
Load Ration [%]	Input Power [W]		
	Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
0	1.00	1.20	1.40
20	5.60	6.30	7.00
40	10.10	11.30	12.50
60	14.50	16.20	17.90
80	18.90	21.10	23.40
100	23.30	26.10	28.80
110	25.50	28.50	31.50
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	G2W-15
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%
85	64.9	68.4
90	61.2	64.5
100	54.5	57.6
110	49.5	52.2
115	47.0	49.8
--	-	-
--	-	-
--	-	-
--	-	-

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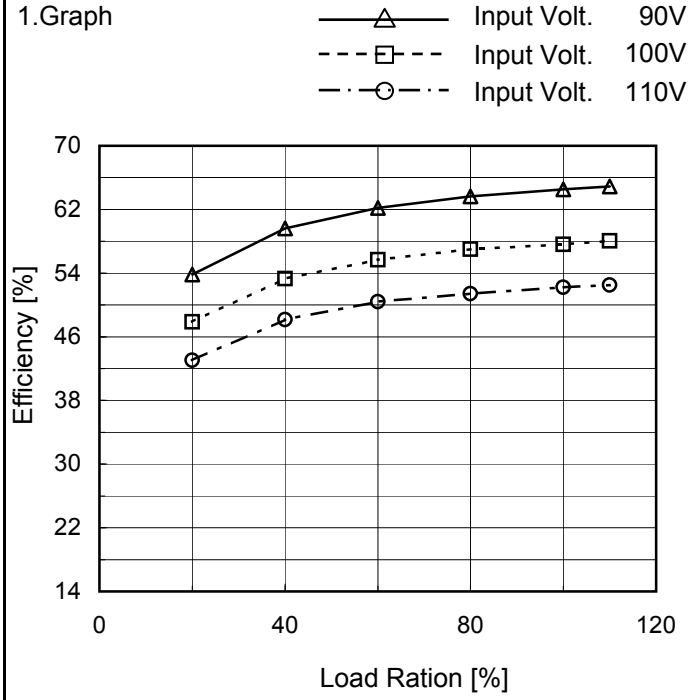
COSEL

Model	G2W-15
Item	Efficiency (by Load Current)
Object	――――――

Temperature 25°C
Testing Circuitry Figure A

1.Graph



2.Values

Load Ration [%]	Efficiency [%]		
	Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
0	-	-	-
20	53.8	47.9	43.1
40	59.6	53.3	48.2
60	62.2	55.7	50.4
80	63.6	57.0	51.4
100	64.5	57.6	52.2
110	64.9	58.0	52.5
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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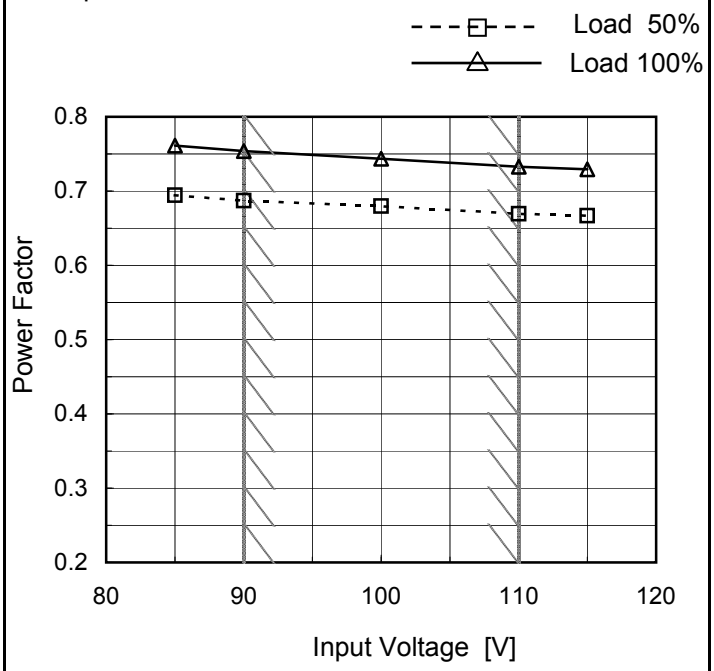
COSEL

Model	G2W-15
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%
85	0.695	0.761
90	0.687	0.754
100	0.680	0.744
110	0.670	0.733
115	0.667	0.729
--	-	-
--	-	-
--	-	-
--	-	-

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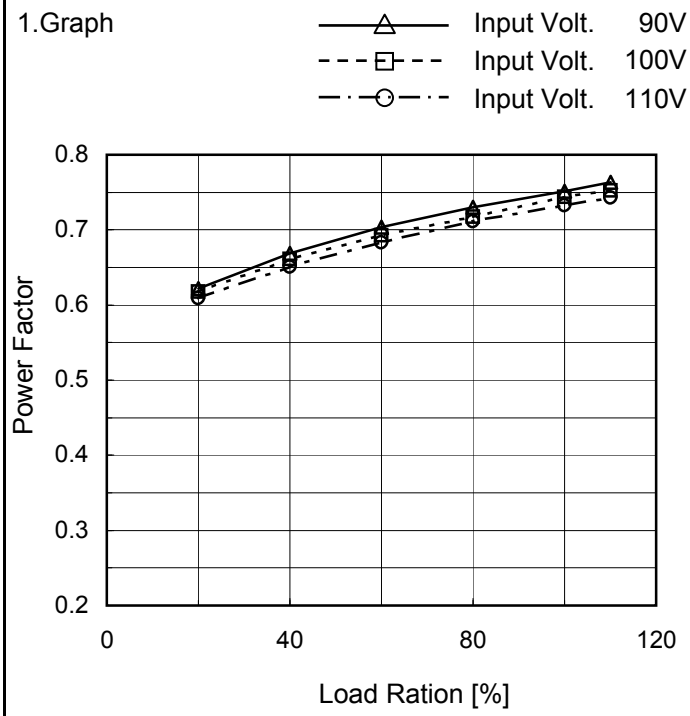
COSEL

Model	G2W-15
Item	Power Factor (by Load Current)
Object	――――――

Temperature 25°C
Testing Circuitry Figure A

1.Graph



2.Values

Load Ration [%]	Power Factor		
	Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
0	-	-	-
20	0.622	0.618	0.609
40	0.669	0.661	0.651
60	0.704	0.692	0.683
80	0.730	0.718	0.711
100	0.752	0.744	0.733
110	0.763	0.752	0.743
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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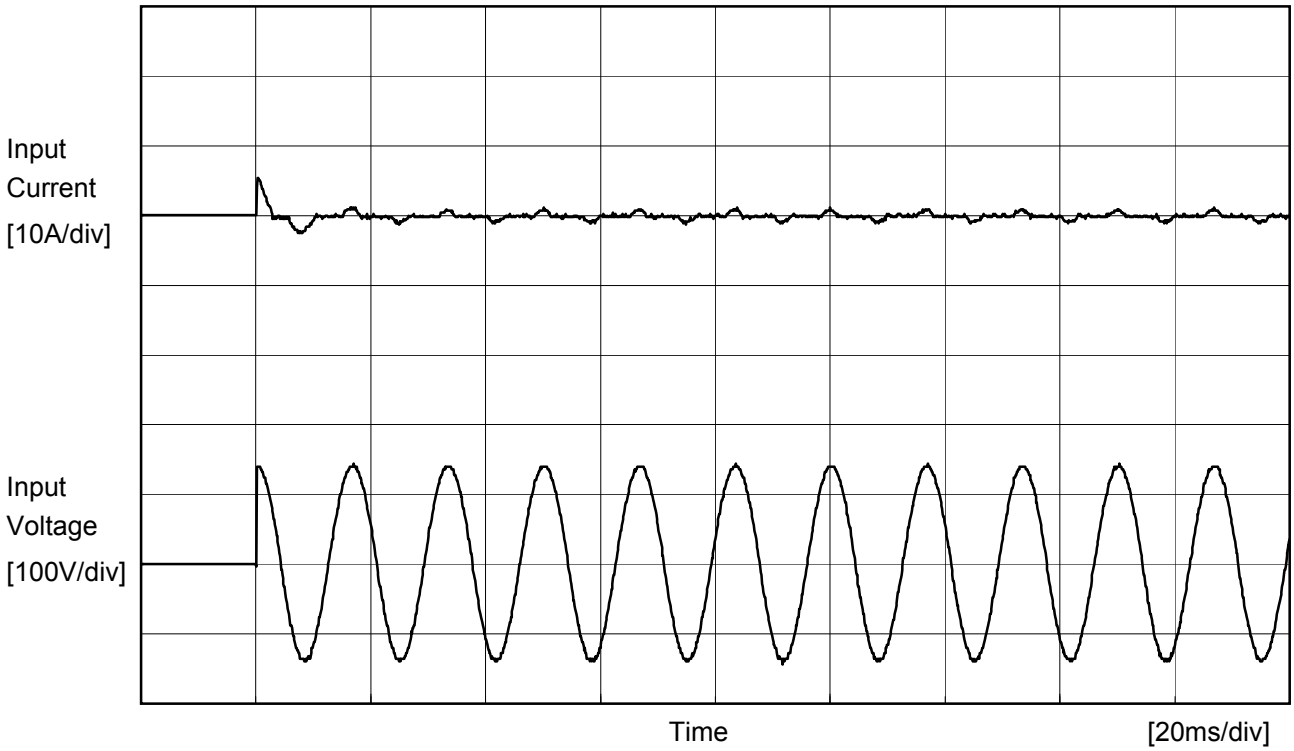
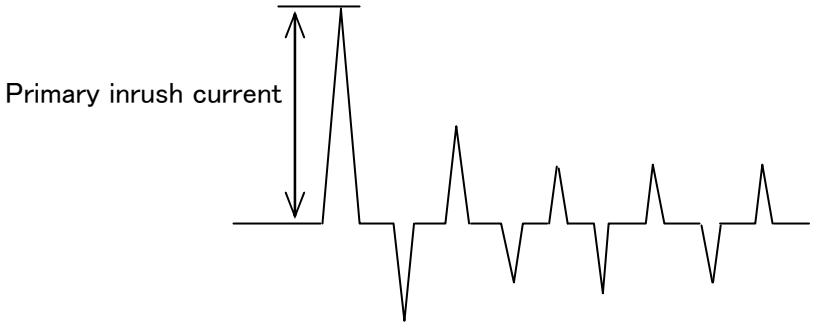
COSEL

Model	G2W-15	Temperature 25°C
Item	Inrush Current	Testing Circuitry Figure A
Object	――――――	



Input Voltage	100 V
Frequency	60 Hz
Load	100 %
Primary inrush current	5.5 A

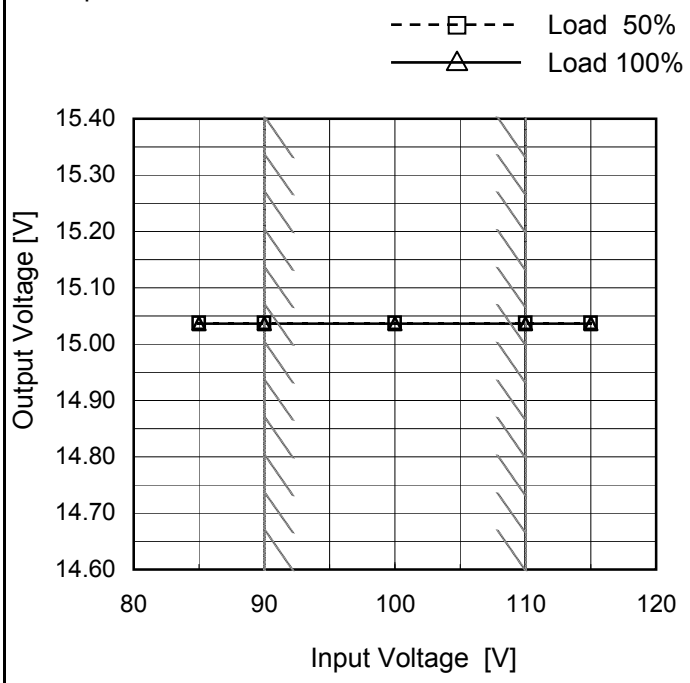


COSEL

Model	G2W-15
Item	Line Regulation
Object	+15V0.5A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

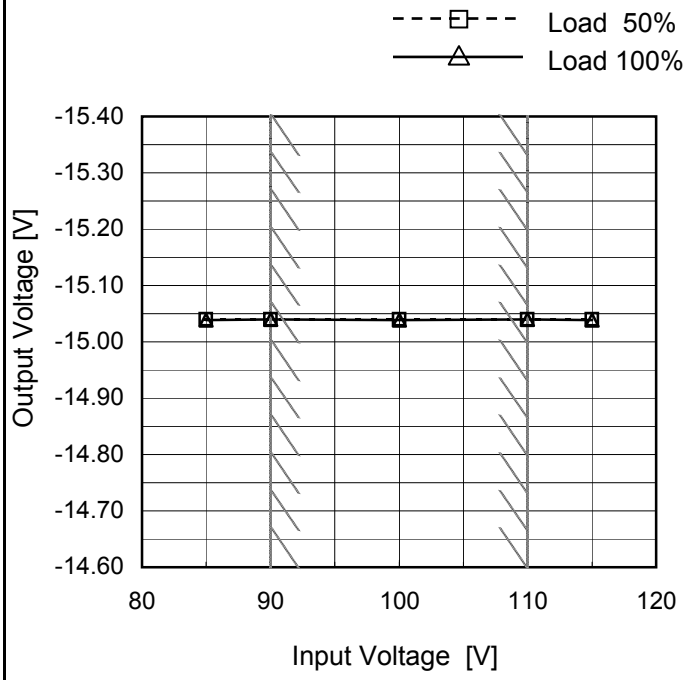


2.Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
85	15.037	15.037
90	15.037	15.037
100	15.037	15.037
110	15.037	15.037
115	15.037	15.037
--	-	-
--	-	-
--	-	-
--	-	-

Object	-15V0.5A

1.Graph



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

2.Values

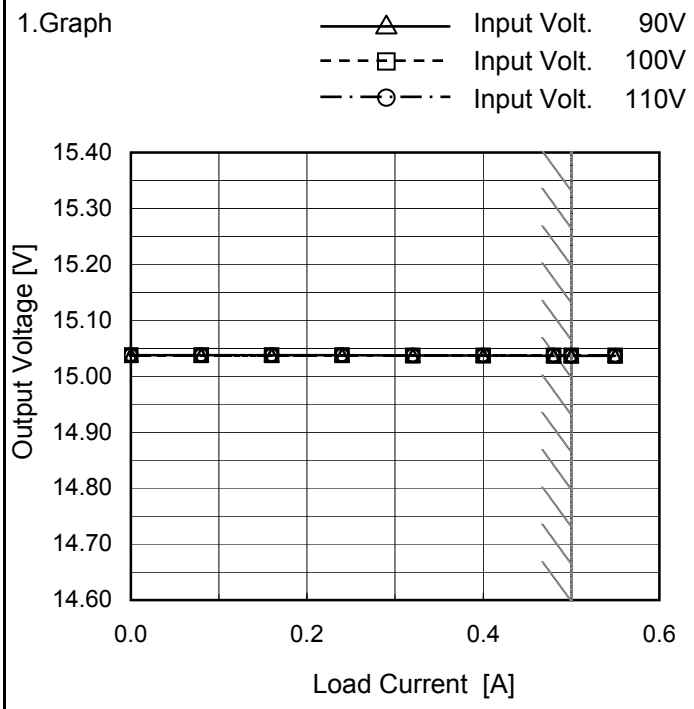
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
85	-15.040	-15.039
90	-15.040	-15.039
100	-15.040	-15.039
110	-15.040	-15.039
115	-15.040	-15.039
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	G2W-15
Item	Load Regulation
Object	+15V0.5A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

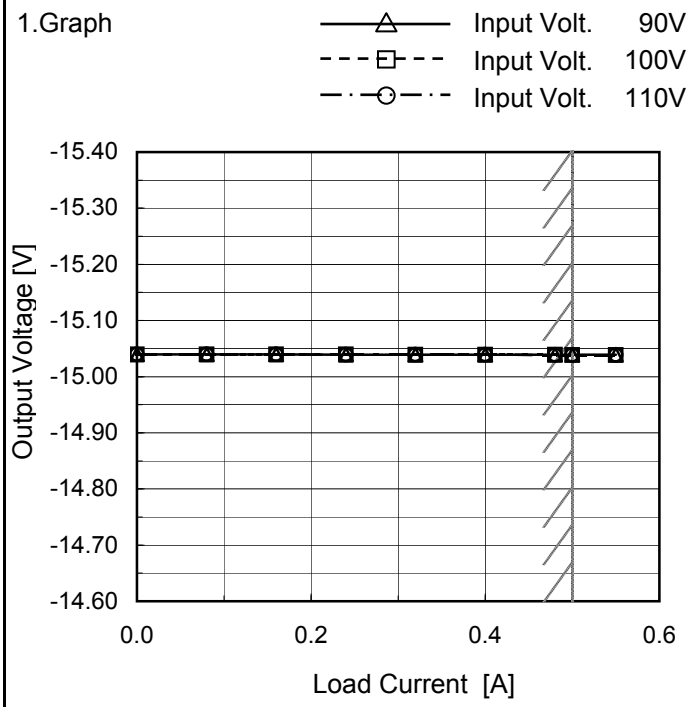


2.Values

Load Current [A]	Output Voltage [V]		
	Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
0.00	15.038	15.038	15.038
0.08	15.038	15.038	15.038
0.16	15.038	15.038	15.038
0.24	15.038	15.038	15.038
0.32	15.037	15.037	15.037
0.40	15.037	15.037	15.037
0.48	15.037	15.037	15.037
0.50	15.037	15.037	15.037
0.55	15.037	15.037	15.037
--	-	-	-
--	-	-	-

Object	-15V0.5A

1.Graph



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

2.Values

Load Current [A]	Output Voltage [V]		
	Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
0.00	-15.040	-15.040	-15.040
0.08	-15.040	-15.040	-15.040
0.16	-15.040	-15.039	-15.040
0.24	-15.039	-15.039	-15.039
0.32	-15.039	-15.039	-15.039
0.40	-15.039	-15.039	-15.039
0.48	-15.039	-15.039	-15.039
0.50	-15.039	-15.039	-15.039
0.55	-15.039	-15.039	-15.039
--	-	-	-
--	-	-	-

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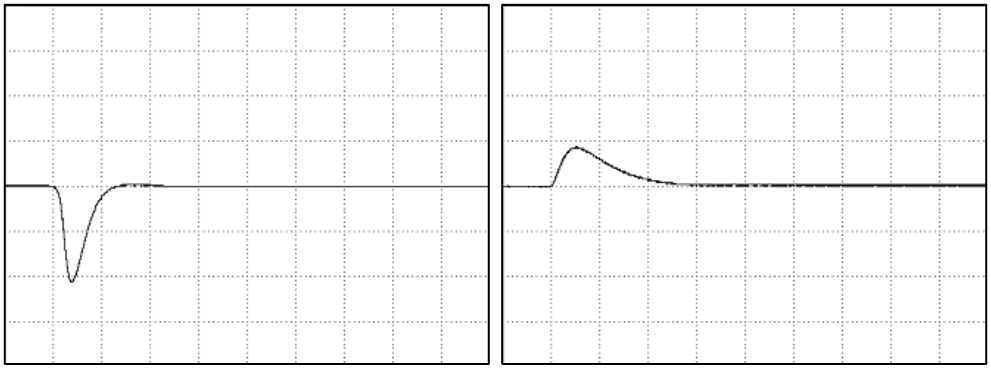
COSEL

Model	G2W-15		
Item	Dynamic Load Response	Temperature Testing Circuitry	25°C Figure A
Object	+15V0.5A		

Input Volt. 100 V
Cycle 1000 ms

Load Current

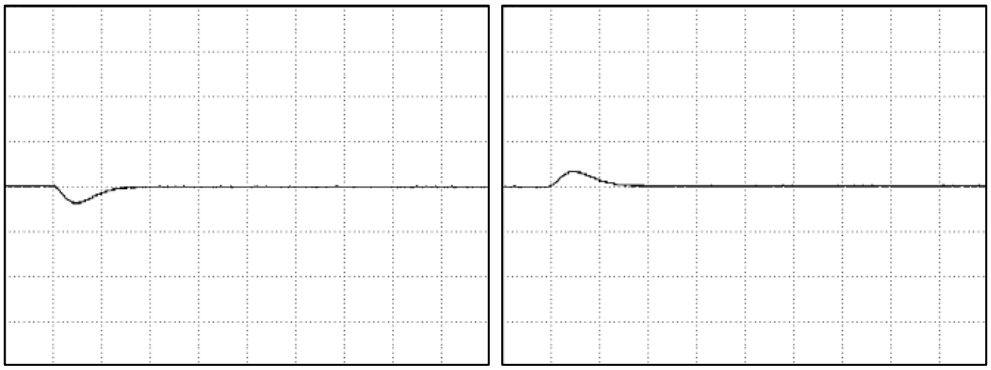
Min. Load (0A) ←→
Load 100% (0.5A)



50 mV/div

100 μs/div 100 μs/div

Load 50% (0.25A) ←→
Load 100% (0.5A)



50 mV/div

100 μs/div 100 μs/div

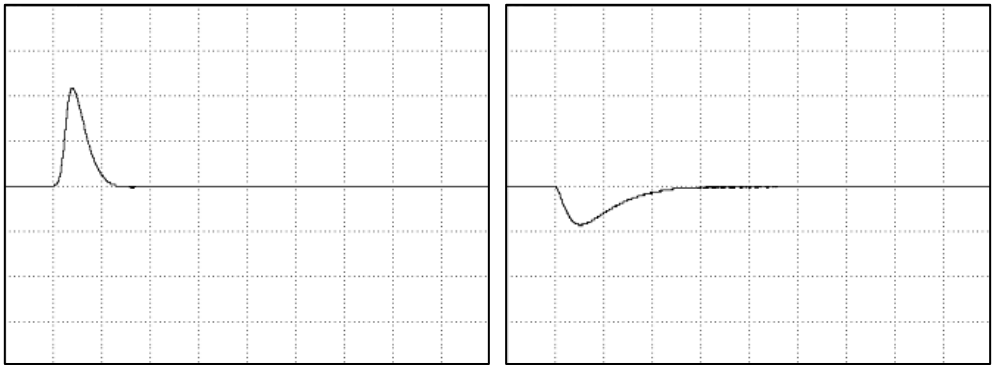
COSEL

Model	G2W-15		
Item	Dynamic Load Response	Temperature Testing Circuitry	25°C Figure A
Object	-15V0.5A		

Input Volt. 100 V
Cycle 1000 ms

Load Current

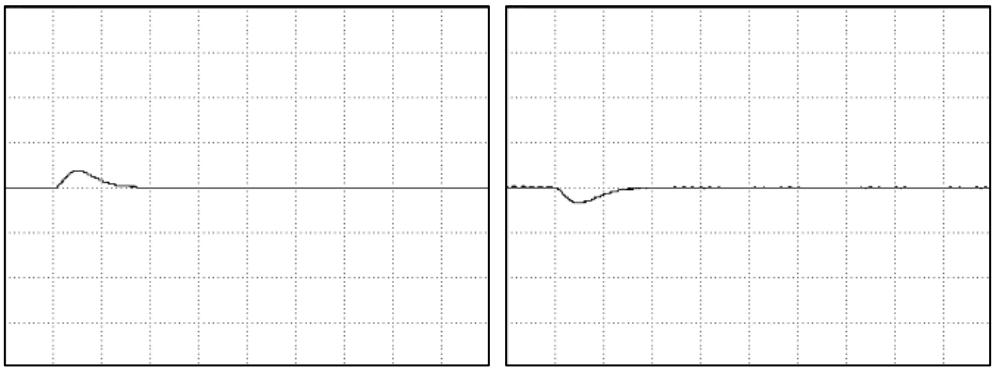
Min. Load (0A) ←→
Load 100% (0.5A)



50 mV/div

100 μs/div 100 μs/div

Load 50% (0.25A) ←→
Load 100% (0.5A)



50 mV/div

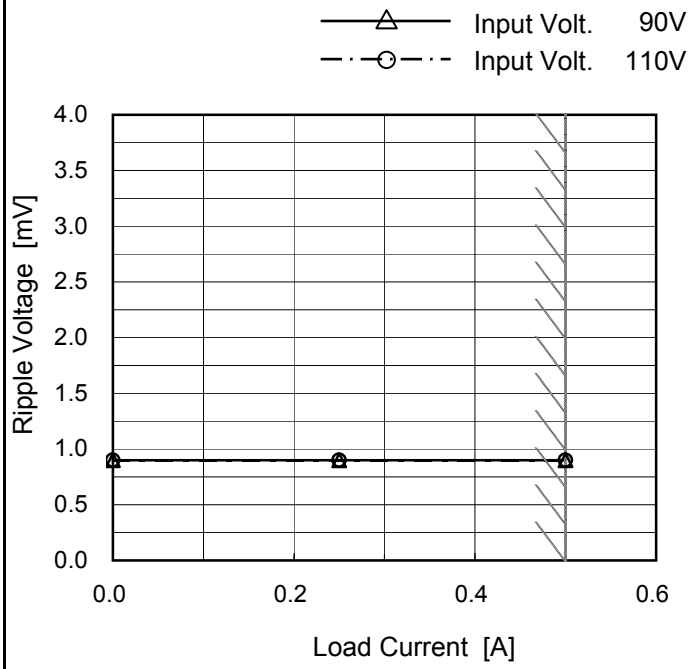
100 μs/div 100 μs/div

COSEL

Model	G2W-15
Item	Ripple Voltage (by Load Current)
Object	+15V0.5A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Measured by 20 MHz Oscilloscope.
Note: Slanted line shows the range of the rated load current.

2.Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 90 [V]	Input Volt. 110 [V]
0.00	0.9	0.9
0.25	0.9	0.9
0.50	0.9	0.9
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

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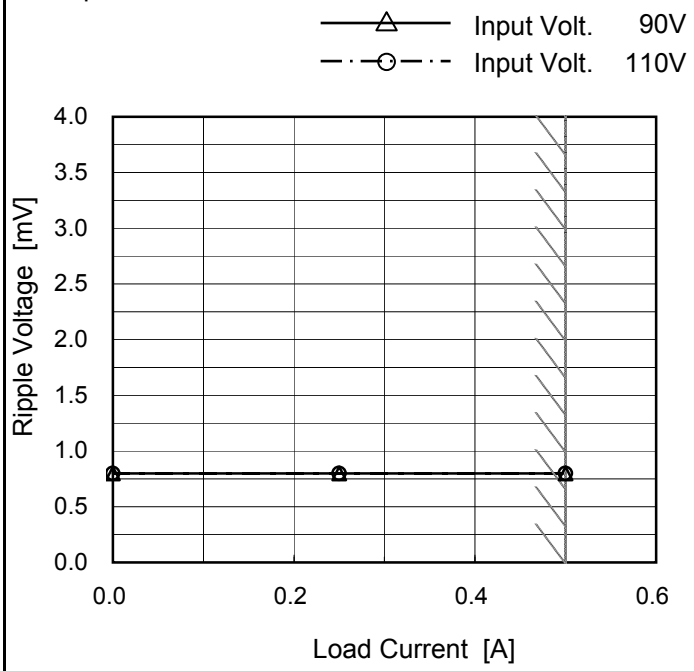
COSEL

Model	G2W-15
Item	Ripple Voltage (by Load Current)
Object	-15V0.5A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Measured by 20 MHz Oscilloscope.
Note: Slanted line shows the range of the rated load current.

2.Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 90 [V]	Input Volt. 110 [V]
0.00	0.8	0.8
0.25	0.8	0.8
0.50	0.8	0.8
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

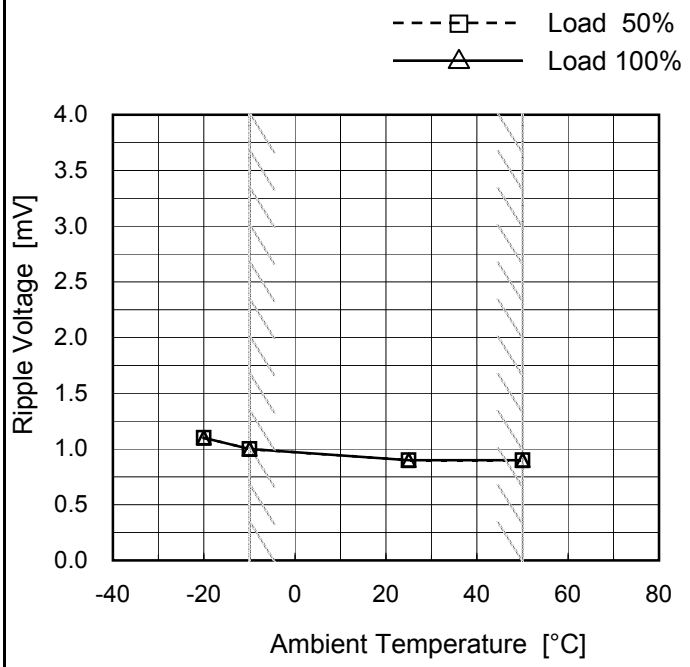
COSEL

Model	G2W-15
Item	Ripple Voltage (by Ambient Temp.)

Testing Circuitry Figure A

Object: +15V0.5A

1.Graph



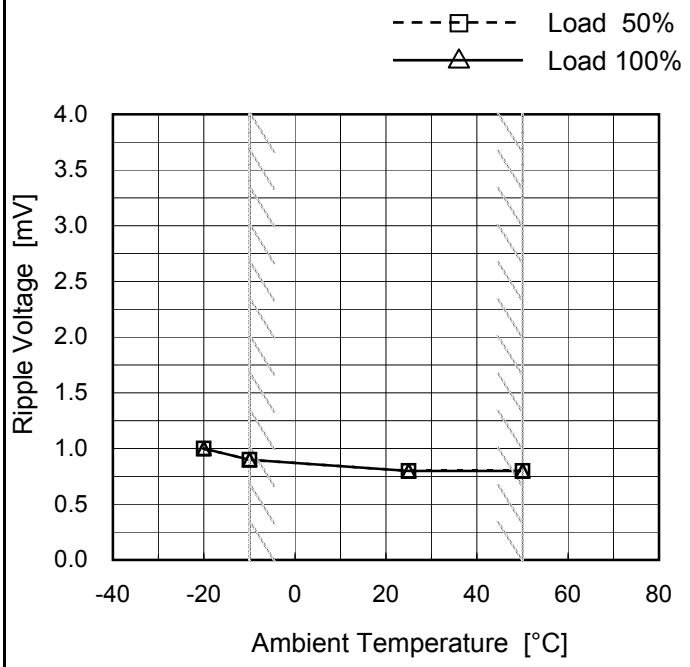
Input Volt. 100V

2.Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-20	1.1	1.1
-10	1.0	1.0
25	0.9	0.9
50	0.9	0.9
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

Object: -15V0.5A

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	1.0	1.0
-10	0.9	0.9
25	0.8	0.8
50	0.8	0.8
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

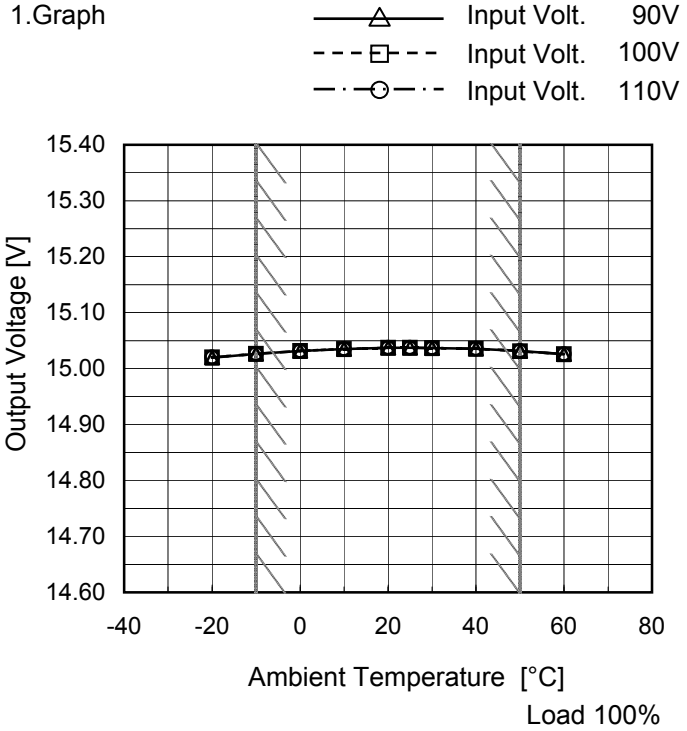
COSEL

Model	G2W-15
Item	Ambient Temperature Drift

Testing Circuitry Figure A

Object +15V0.5A

1.Graph

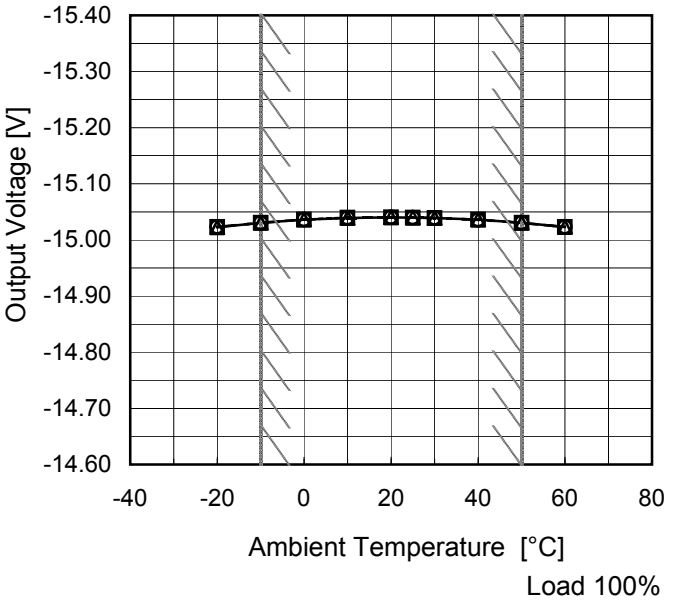


2.Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
-20	15.020	15.020	15.020
-10	15.026	15.026	15.027
0	15.031	15.031	15.031
10	15.035	15.035	15.035
20	15.037	15.037	15.037
25	15.037	15.037	15.037
30	15.037	15.037	15.037
40	15.035	15.035	15.035
50	15.031	15.031	15.031
60	15.026	15.026	15.026
--	-	-	-

Object -15V0.5A

1.Graph



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

2.Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
-20	-15.023	-15.023	-15.023
-10	-15.030	-15.030	-15.030
0	-15.036	-15.036	-15.036
10	-15.039	-15.039	-15.039
20	-15.040	-15.040	-15.040
25	-15.040	-15.040	-15.040
30	-15.039	-15.039	-15.039
40	-15.036	-15.036	-15.036
50	-15.031	-15.030	-15.030
60	-15.023	-15.023	-15.023
--	-	-	-

COSEL

Model	G2W-15	
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 : -10 - 50°C

Input Voltage : 90 - 110V

Load Current (AVR 1) : 0 - 0.5A (AVR 2) : 0 - 0.5A

* 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	+15V0.5A					
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	20	110	0	15.038	±6	±0.1
Minimum Voltage	-10	90	0	15.026		

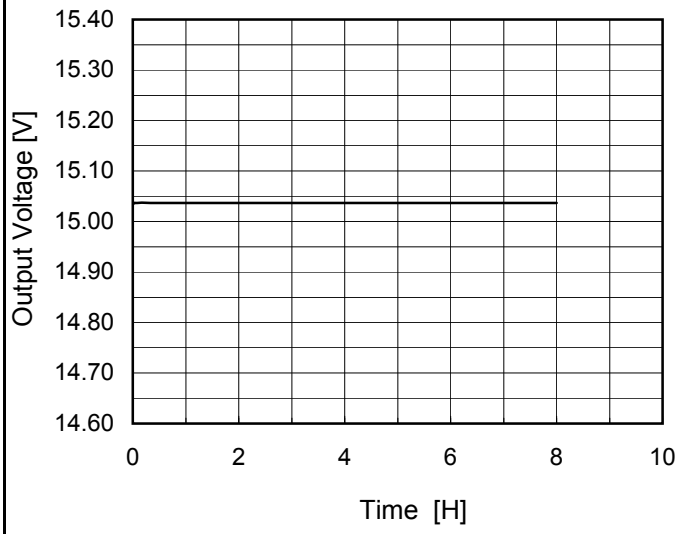
Object	-15V0.5A					
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	20	90	0	-15.041	±6	±0.1
Minimum Voltage	-10	90	0.5	-15.029		

COSEL

Model	G2W-15
Item	Time Lapse Drift
Object	+15V0.5A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



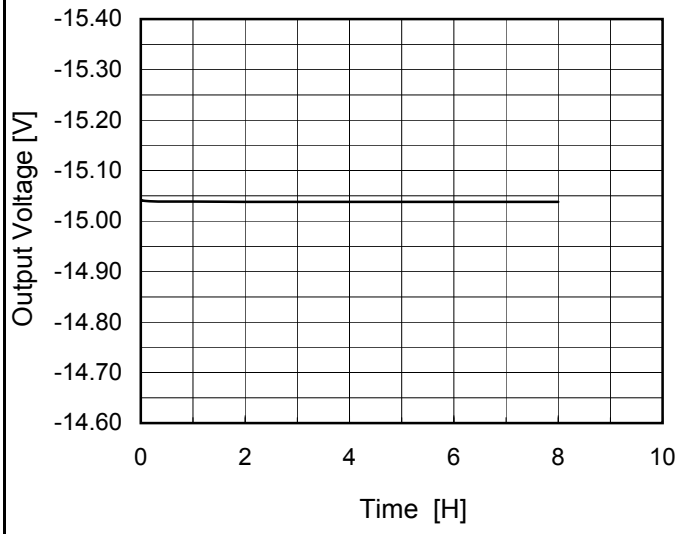
Input Volt. 100V
Load 100%

2.Values

Time since start [H]	Output Voltage [V]
0.0	15.036
0.5	15.037
1.0	15.037
2.0	15.037
3.0	15.037
4.0	15.037
5.0	15.037
6.0	15.037
7.0	15.037
8.0	15.037

Object	-15V0.5A

1.Graph



Input Volt. 100V
Load 100%

2.Values

Time since start [H]	Output Voltage [V]
0.0	-15.040
0.5	-15.039
1.0	-15.038
2.0	-15.038
3.0	-15.038
4.0	-15.038
5.0	-15.038
6.0	-15.038
7.0	-15.038
8.0	-15.038

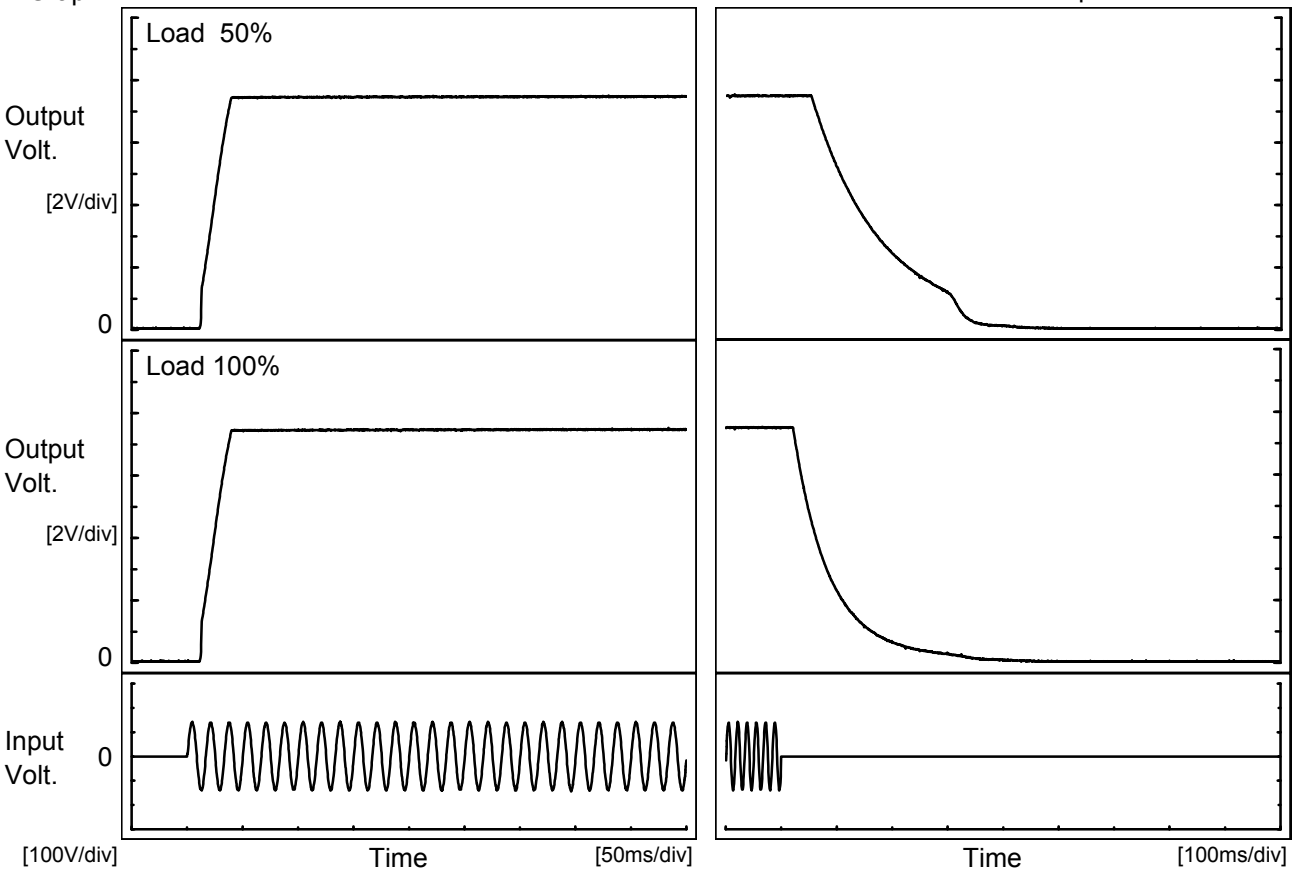
COSEL

Model	G2W-15
Item	Rise and Fall Time
Object	+15V0.5A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

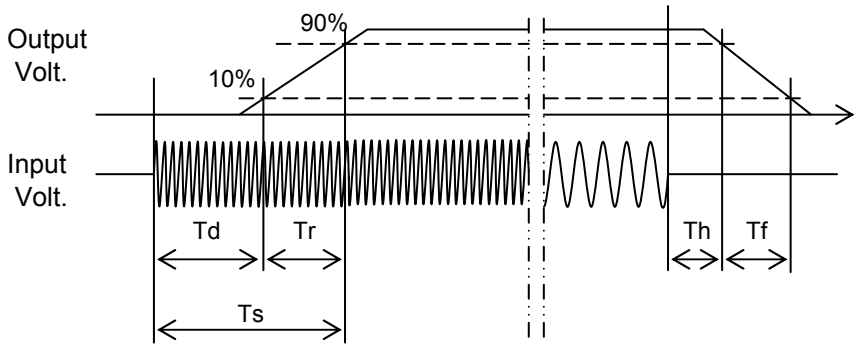
Input Volt. 100 V



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	13.0	23.3	36.3	65.5	250.0
100 %	13.0	23.3	36.3	27.5	156.5



BC-10214

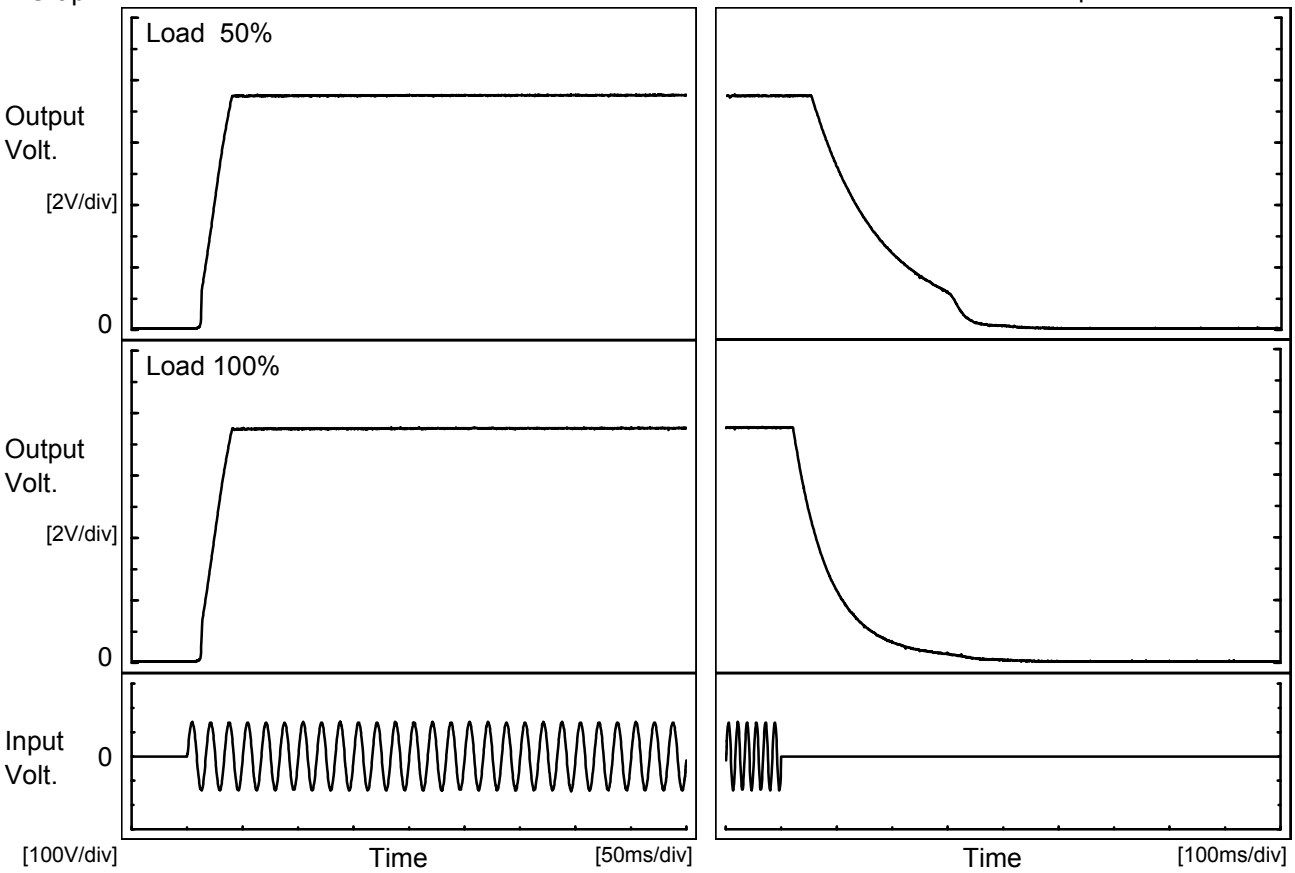
COSEL

Model	G2W-15
Item	Rise and Fall Time
Object	-15V0.5A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

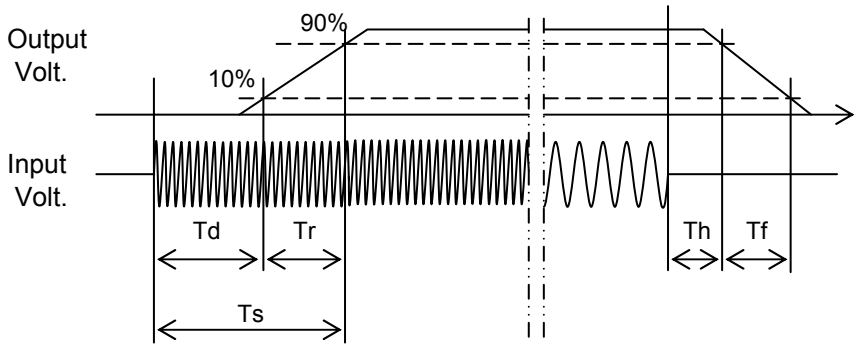
Input Volt. 100 V



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	13.0	23.8	36.8	65.5	261.5
100 %	13.3	23.5	36.8	27.0	155.5



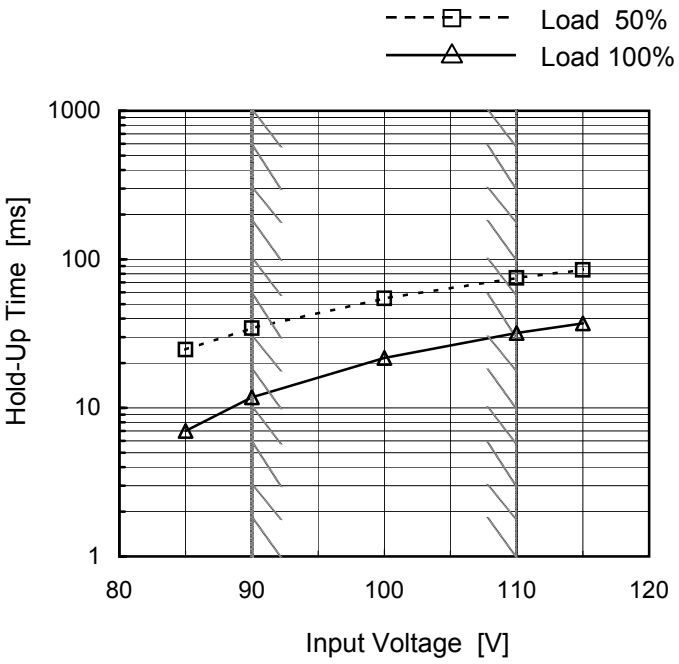
BC-10214

COSEL

Model	G2W-15
Item	Hold-Up Time
Object	+15V0.5A

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%
85	25	7
90	34	12
100	55	22
110	75	32
115	85	37
--	-	-
--	-	-
--	-	-
--	-	-

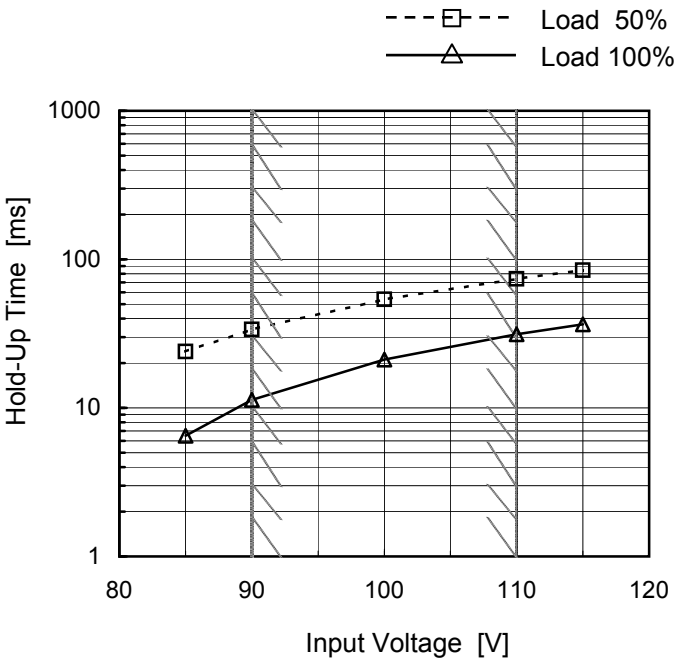
BC-10214

COSEL

Model	G2W-15
Item	Hold-Up Time
Object	-15V0.5A

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

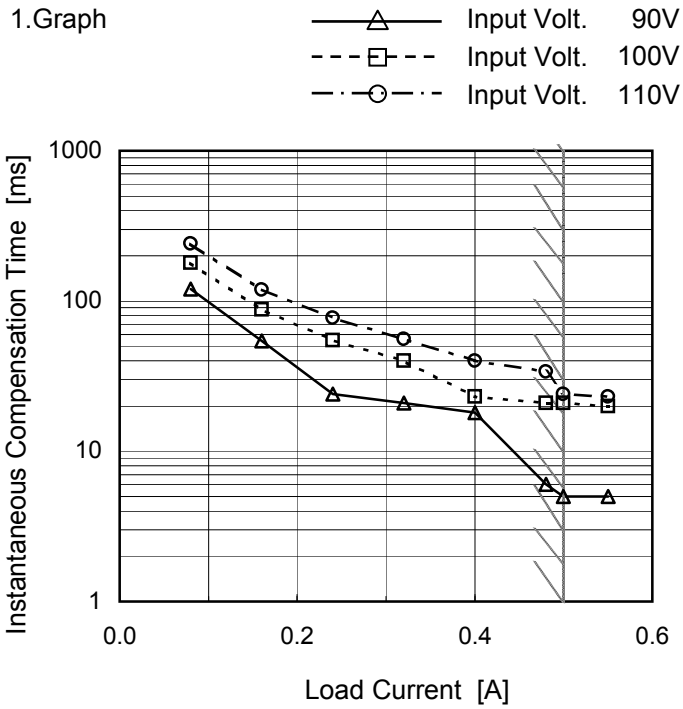
Input Voltage [V]	Hold-Up Time [ms]	
	Load 50%	Load 100%
85	24	7
90	34	11
100	54	21
110	74	31
115	84	37
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	G2W-15
Item	Instantaneous Interruption Compensation
Object	+15V0.5A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

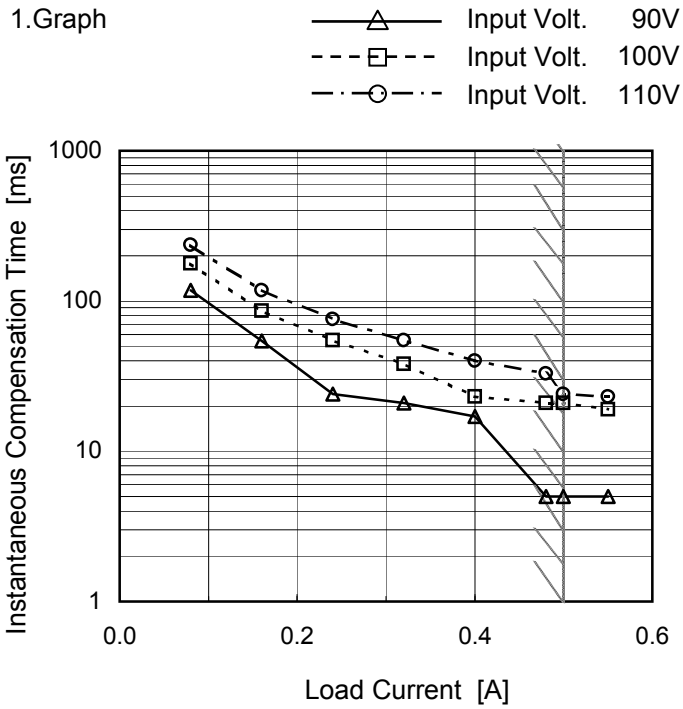
Load Current [A]	Time [ms]		
	Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
0.000	-	-	-
0.080	120	179	240
0.160	54	88	119
0.240	24	55	77
0.320	21	40	56
0.400	18	23	40
0.480	6	21	34
0.500	5	21	24
0.550	5	20	23
--	-	-	-
--	-	-	-

COSEL

Model	G2W-15
Item	Instantaneous Interruption Compensation
Object	-15V0.5A

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. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
0.000	-	-	-
0.080	118	177	236
0.160	54	86	118
0.240	24	55	76
0.320	21	38	55
0.400	17	23	40
0.480	5	21	33
0.500	5	21	24
0.550	5	19	23
--	-	-	-
--	-	-	-

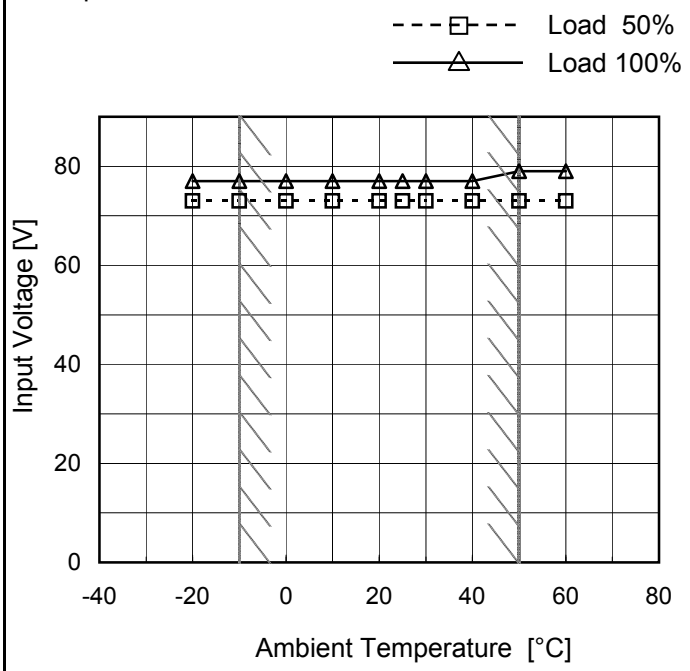
COSEL

Model	G2W-15
Item	Minimum Input Voltage for Regulated Output Voltage

Testing Circuitry Figure A

Object: +15V0.5A

1.Graph

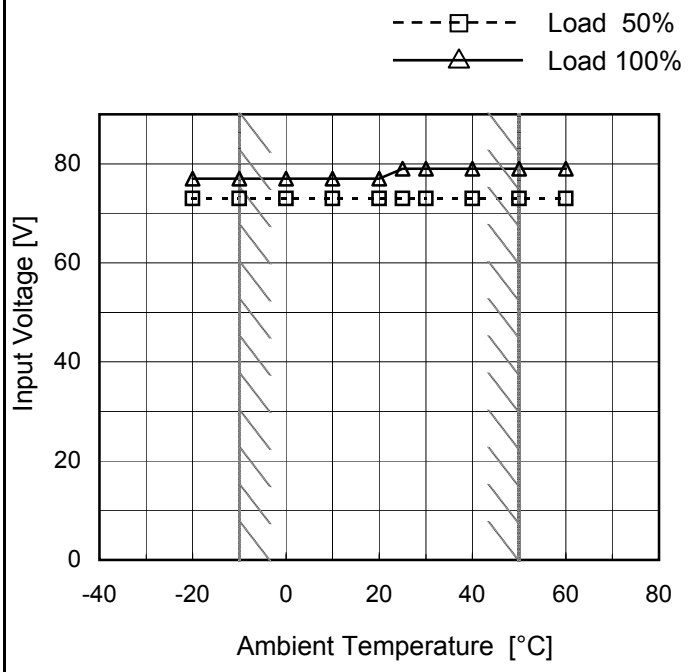


2.Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-20	73	77
-10	73	77
0	73	77
10	73	77
20	73	77
25	73	77
30	73	77
40	73	77
50	73	79
60	73	79
--	-	-

Object: -15V0.5A

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	73	77
-10	73	77
0	73	77
10	73	77
20	73	77
25	73	79
30	73	79
40	73	79
50	73	79
60	73	79
--	-	-

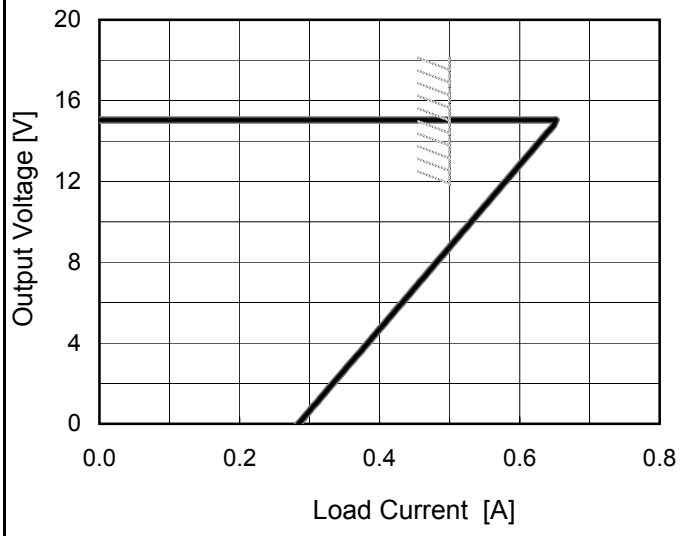
COSEL

Model	G2W-15
Item	Overcurrent Protection

Temperature 25°C
Testing Circuitry Figure A

Object +15V0.5A

1.Graph

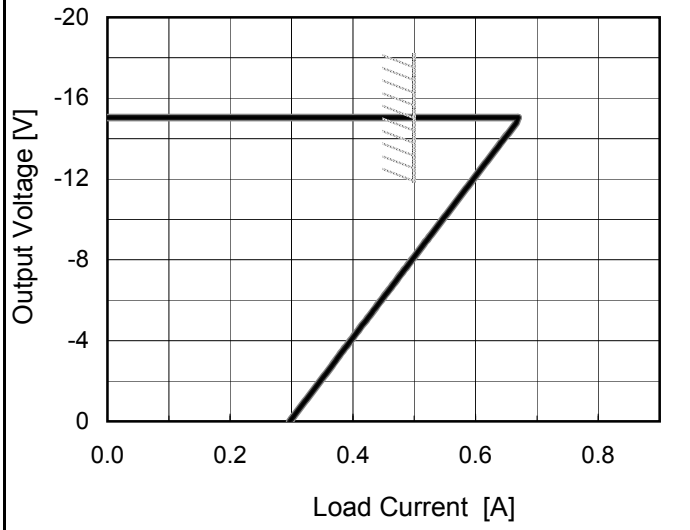


2.Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
15.0	0.65	0.65	0.65
14.3	0.64	0.64	0.64
13.5	0.62	0.62	0.62
12.0	0.58	0.58	0.58
10.5	0.54	0.54	0.54
9.0	0.51	0.51	0.51
7.5	0.47	0.47	0.47
6.0	0.43	0.43	0.43
4.5	0.40	0.40	0.40
3.0	0.36	0.36	0.36
1.5	0.32	0.32	0.32
0.0	0.28	0.28	0.28

Object -15V0.5A

1.Graph



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

2.Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
-15.00	0.67	0.67	0.67
-14.25	0.65	0.65	0.65
-13.50	0.63	0.63	0.63
-12.00	0.60	0.60	0.60
-10.50	0.56	0.56	0.56
-9.00	0.52	0.52	0.52
-7.50	0.48	0.48	0.48
-6.00	0.45	0.45	0.45
-4.50	0.41	0.41	0.41
-3.00	0.37	0.37	0.37
-1.50	0.34	0.34	0.34
0.00	0.30	0.30	0.30

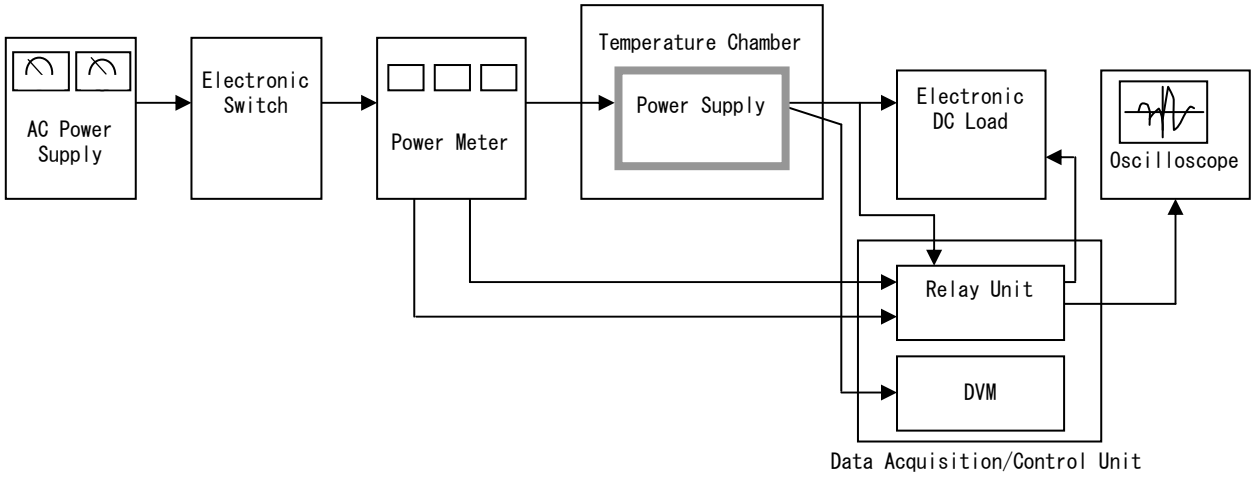

AC Power Supply
Electronic Switch
Power Meter
Temperature Chamber
Power Supply
Electronic DC Load
Oscilloscope
Relay Unit
DVM
Data Acquisition/Control Unit

Figure A