COSEL

参考資料

TEST DATA OF GT2W-12

Regulated DC Power Supply
October 26, 2010

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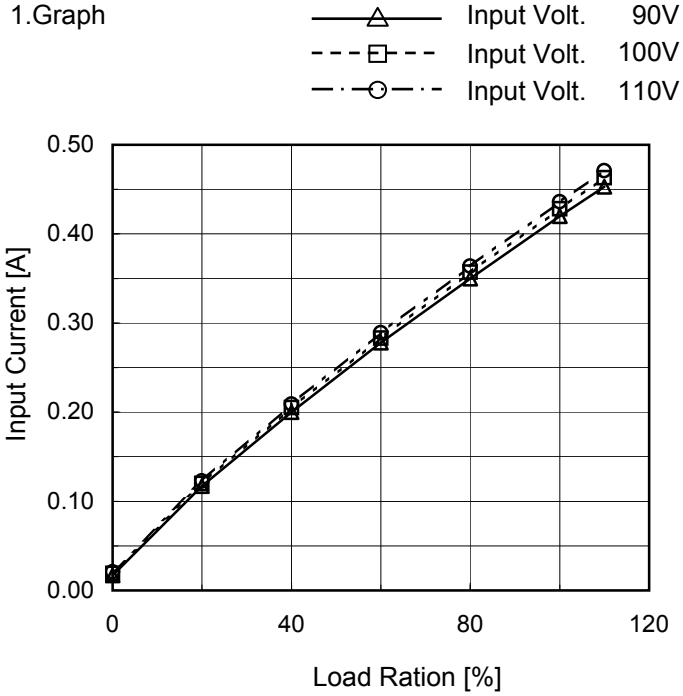
COSEL

Model	GT2W-12
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	0.017	0.019	0.021
20	0.117	0.120	0.123
40	0.200	0.205	0.209
60	0.278	0.283	0.289
80	0.350	0.357	0.364
100	0.420	0.428	0.436
110	0.453	0.463	0.471
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

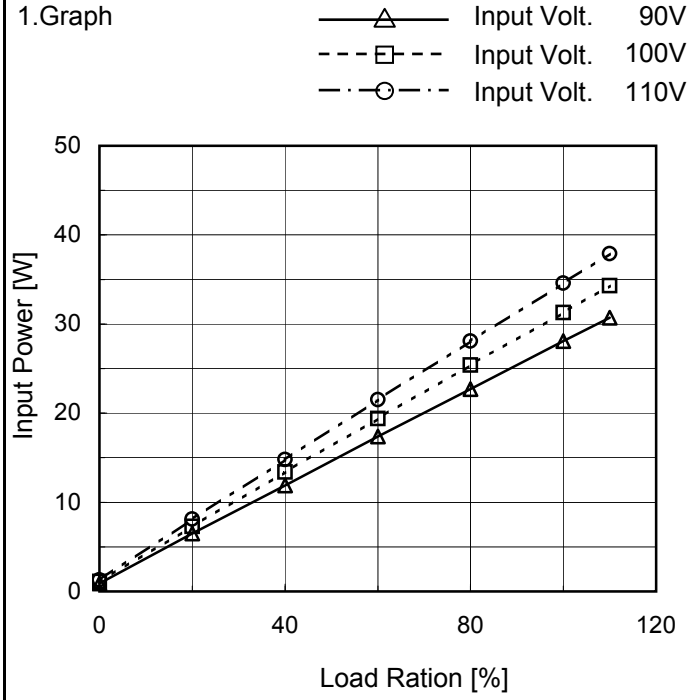
BC-10215

COSEL

Model	GT2W-12
Item	Input Power (by Load Current)
Object	――――――

Temperature 25°C
Testing Circuitry Figure A

1.Graph



2.Values

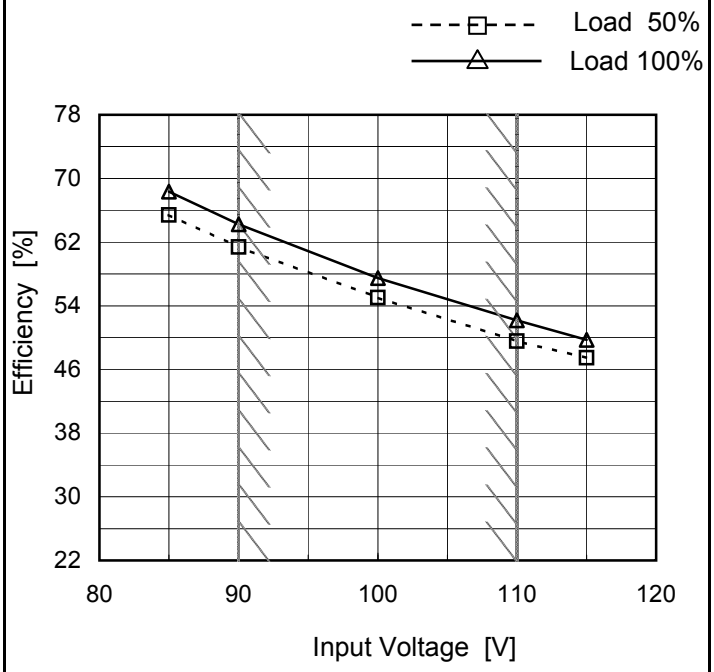
Load Ration [%]	Input Power [W]		
	Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
0	0.90	1.10	1.30
20	6.50	7.30	8.10
40	11.90	13.40	14.80
60	17.40	19.40	21.50
80	22.70	25.40	28.10
100	28.10	31.30	34.60
110	30.70	34.30	37.90
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	GT2W-12
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	65.4	68.4
90	61.4	64.2
100	55.0	57.5
110	49.6	52.2
115	47.5	49.7
--	-	-
--	-	-
--	-	-
--	-	-

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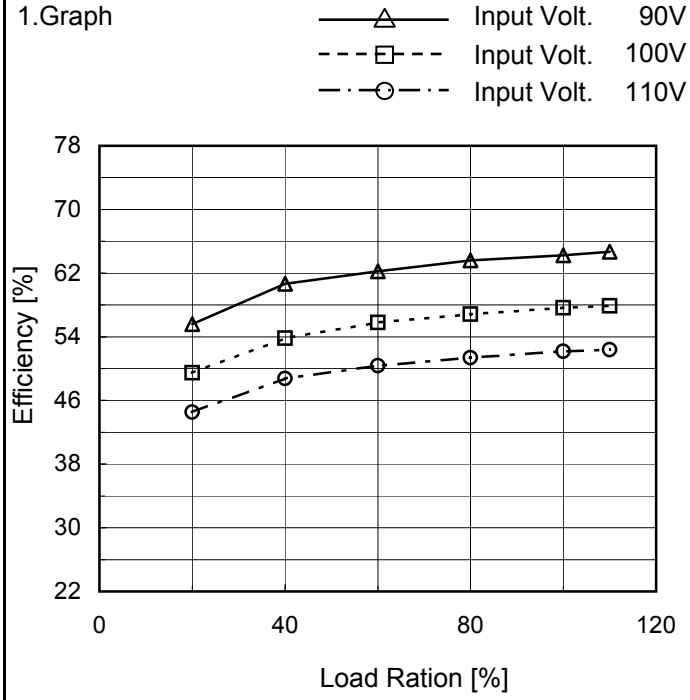
COSEL

Model	GT2W-12
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	55.6	49.5	44.5
40	60.6	53.8	48.7
60	62.2	55.8	50.3
80	63.6	56.8	51.4
100	64.2	57.7	52.2
110	64.7	57.9	52.4
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

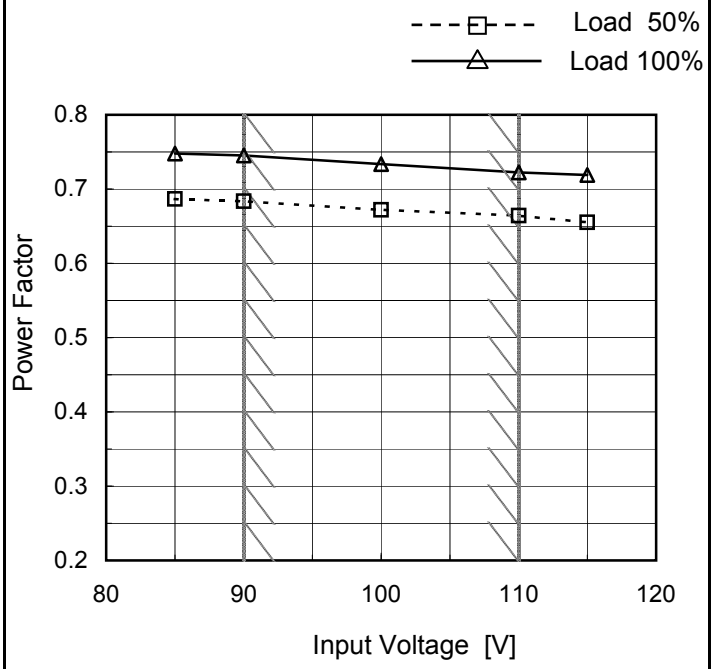
BC-10215

COSEL

Model	GT2W-12
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	0.687	0.748
90	0.684	0.745
100	0.672	0.734
110	0.664	0.722
115	0.655	0.719
--	-	-
--	-	-
--	-	-
--	-	-

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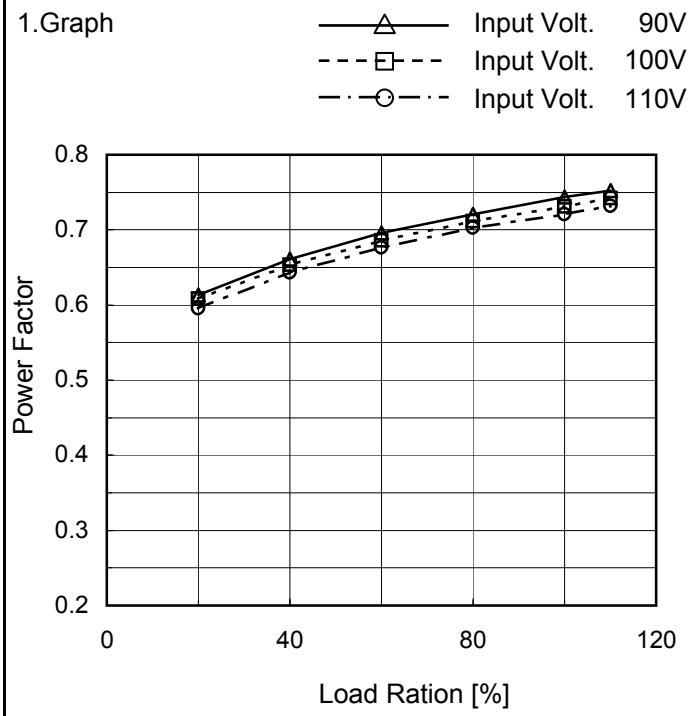
COSEL

Model	GT2W-12
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	0.613	0.608	0.596
40	0.661	0.654	0.643
60	0.696	0.686	0.676
80	0.721	0.711	0.703
100	0.743	0.731	0.721
110	0.752	0.742	0.732
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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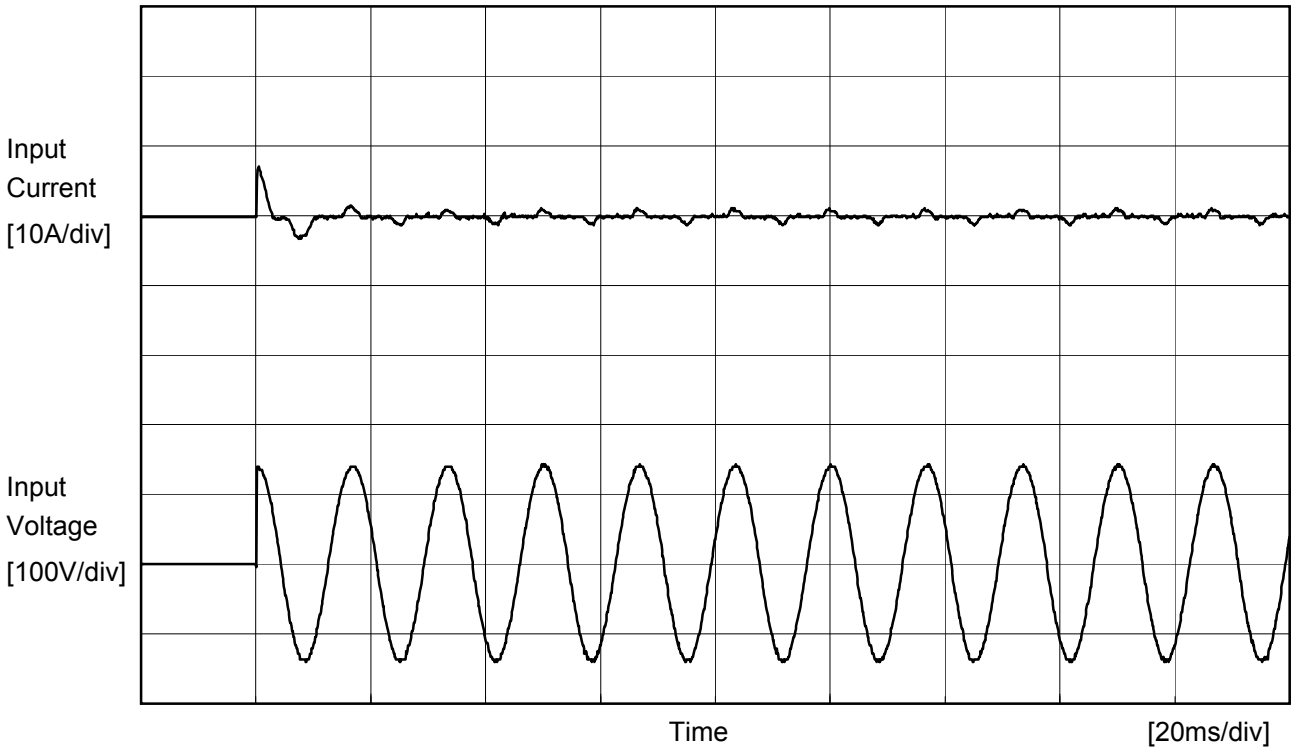
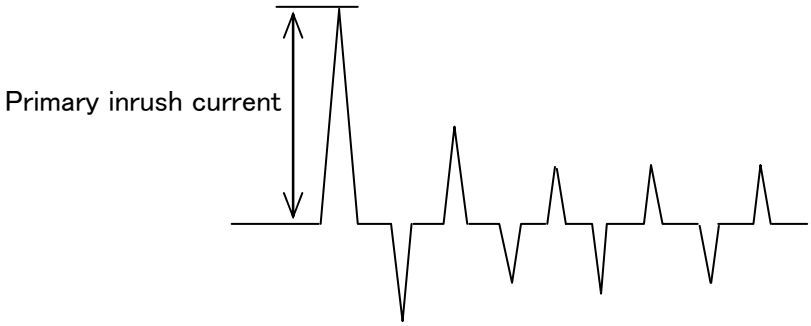
COSEL

Model	GT2W-12	Temperature 25°C
Item	Inrush Current	Testing Circuitry Figure A
Object	――――――	



Input Voltage	100 V
Frequency	60 Hz
Load	100 %
Primary inrush current	7.3 A

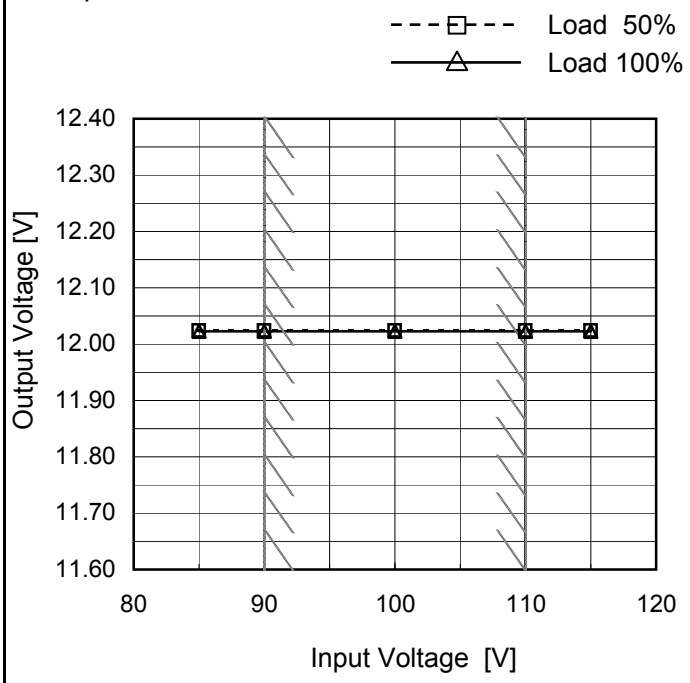


COSEL

Model	GT2W-12
Item	Line Regulation
Object	+12V0.75A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

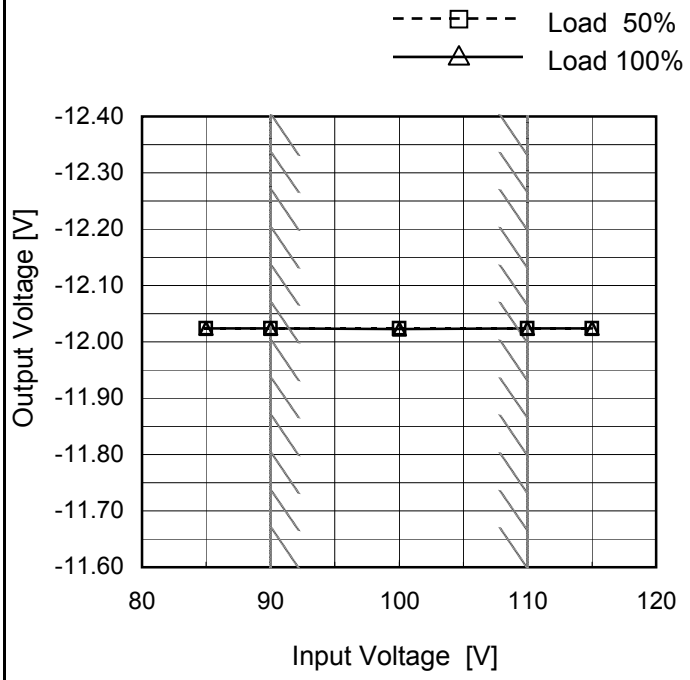


2.Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
85	12.024	12.023
90	12.024	12.023
100	12.024	12.023
110	12.024	12.023
115	12.024	12.023
--	-	-
--	-	-
--	-	-
--	-	-

Object	-12V0.75A

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	-12.024	-12.023
90	-12.024	-12.023
100	-12.024	-12.023
110	-12.024	-12.023
115	-12.024	-12.023
--	-	-
--	-	-
--	-	-
--	-	-

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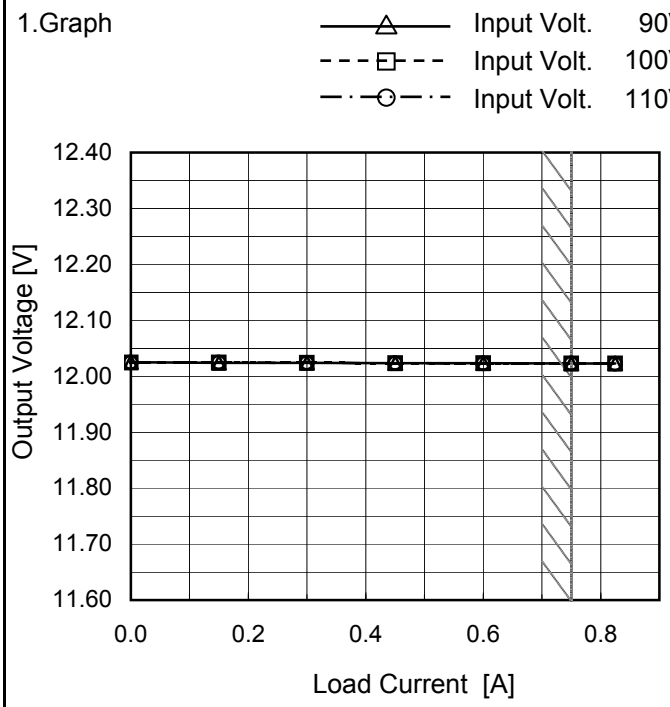
COSEL

Model	GT2W-12
Item	Load Regulation
Object	+12V0.75A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

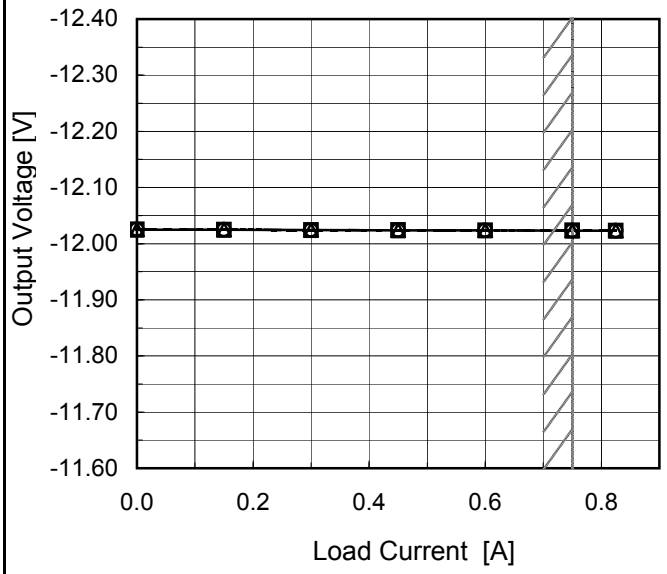


2.Values

Load Current [A]	Output Voltage [V] Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
0.000	12.025	12.025	12.025
0.150	12.024	12.025	12.024
0.300	12.024	12.024	12.024
0.450	12.024	12.024	12.024
0.600	12.023	12.023	12.023
0.750	12.023	12.023	12.023
0.825	12.023	12.023	12.023
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

Object	-12V0.75A

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]
0.000	-12.025	-12.025	-12.025
0.150	-12.025	-12.025	-12.025
0.300	-12.024	-12.024	-12.024
0.450	-12.024	-12.024	-12.024
0.600	-12.024	-12.024	-12.024
0.750	-12.023	-12.023	-12.023
0.825	-12.023	-12.023	-12.023
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

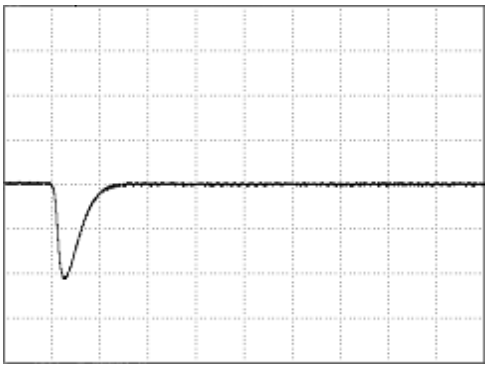
COSEL

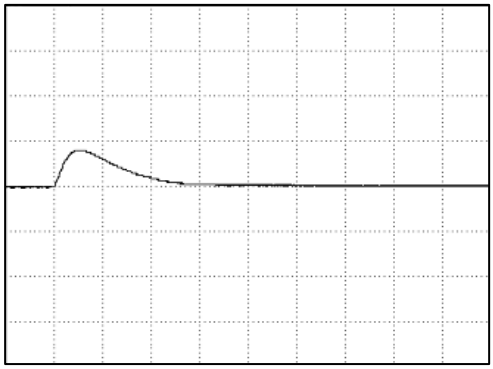
Model	GT2W-12		
Item	Dynamic Load Response	Temperature Testing Circuitry	25°C Figure A
Object	+12V0.75A		

Input Volt. 100 V
Cycle 1000 ms

Load Current

Min. Load (0A) ←→
Load 100% (0.75A)



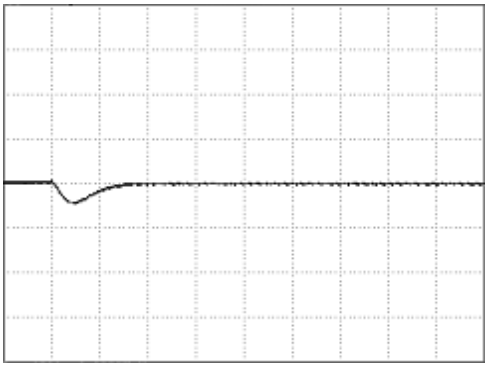


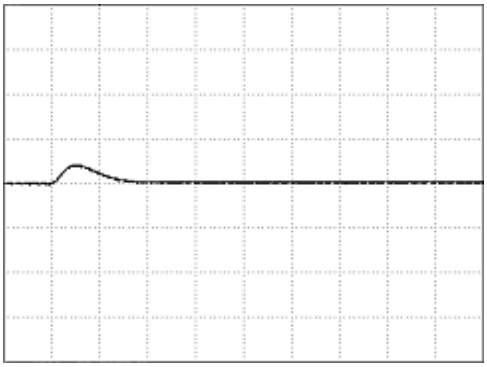
50 mV/div

100 μs/div

100 μs/div

Load 50% (0.375A) ←→
Load 100% (0.75A)





50 mV/div

100 μs/div

100 μs/div

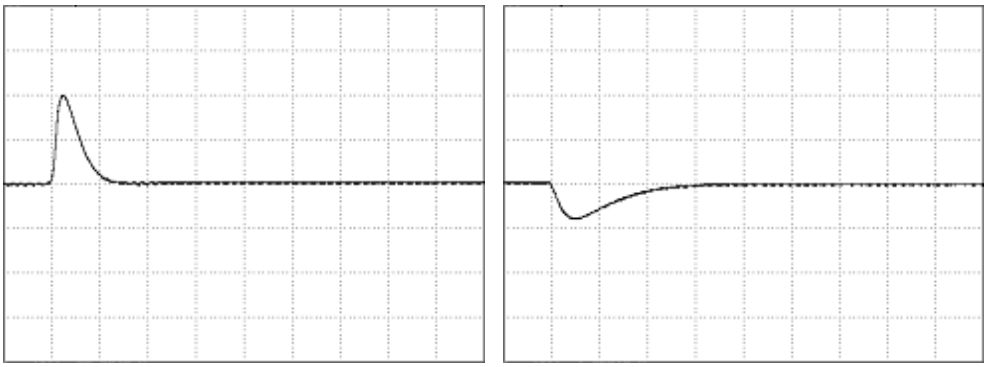
COSEL

Model	GT2W-12		
Item	Dynamic Load Response	Temperature Testing Circuitry	25°C Figure A
Object	-12V0.75A		

Input Volt. 100 V
Cycle 1000 ms

Load Current

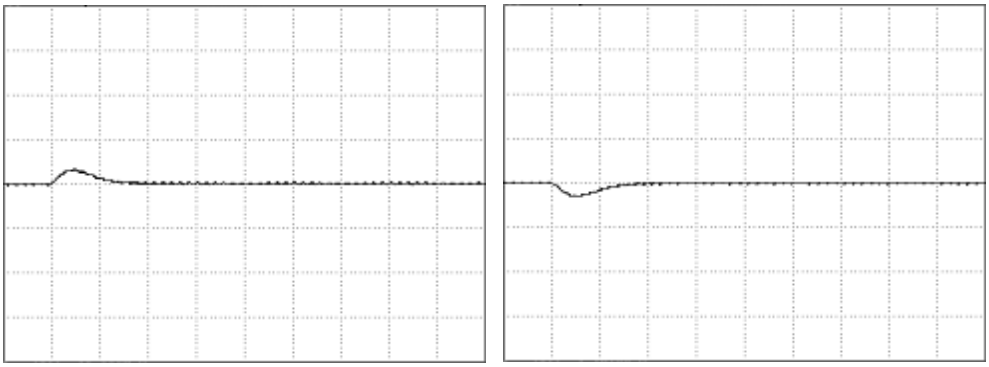
Min. Load (0A) ←→
Load 100% (0.75A)



50 mV/div

100 μs/div 100 μs/div

Load 50% (0.375A) ←→
Load 100% (0.75A)



50 mV/div

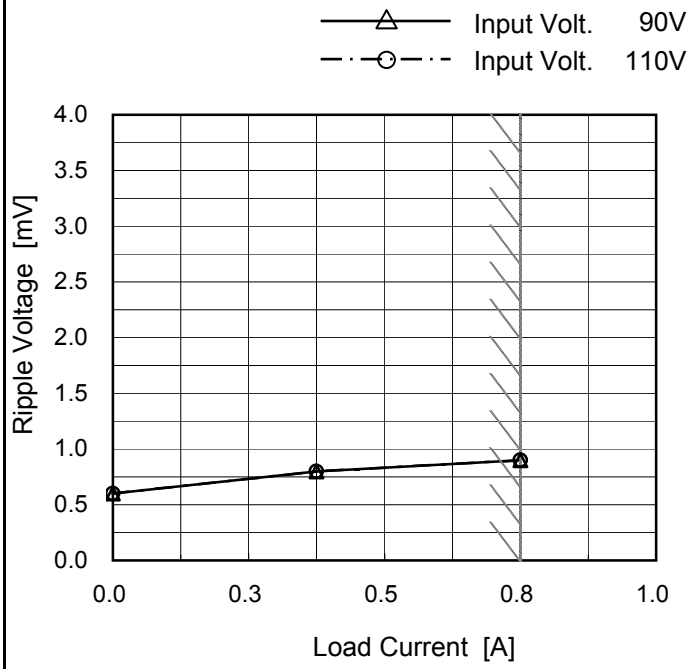
100 μs/div 100 μs/div

COSEL

Model	GT2W-12
Item	Ripple Voltage (by Load Current)
Object	+12V0.75A

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]
0.000	0.6	0.6
0.375	0.8	0.8
0.750	0.9	0.9
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

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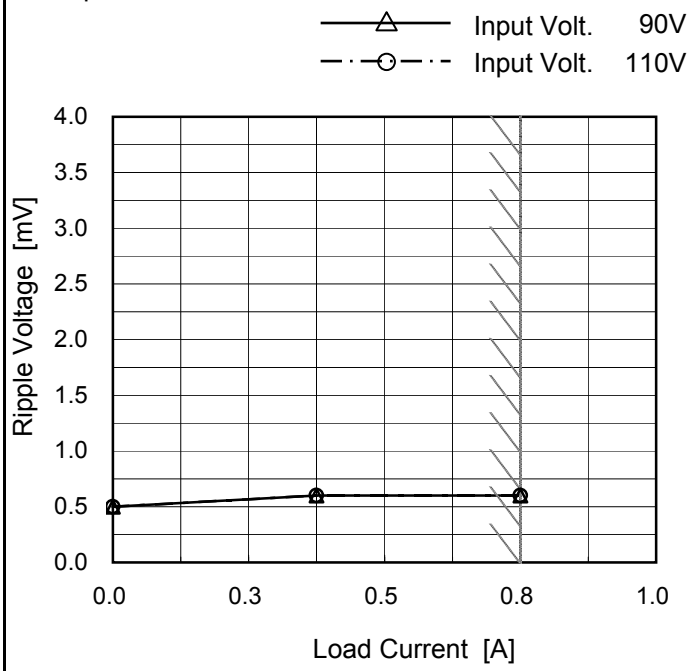
COSEL

Model	GT2W-12
Item	Ripple Voltage (by Load Current)
Object	-12V0.75A

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]
0.000	0.5	0.5
0.375	0.6	0.6
0.750	0.6	0.6
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

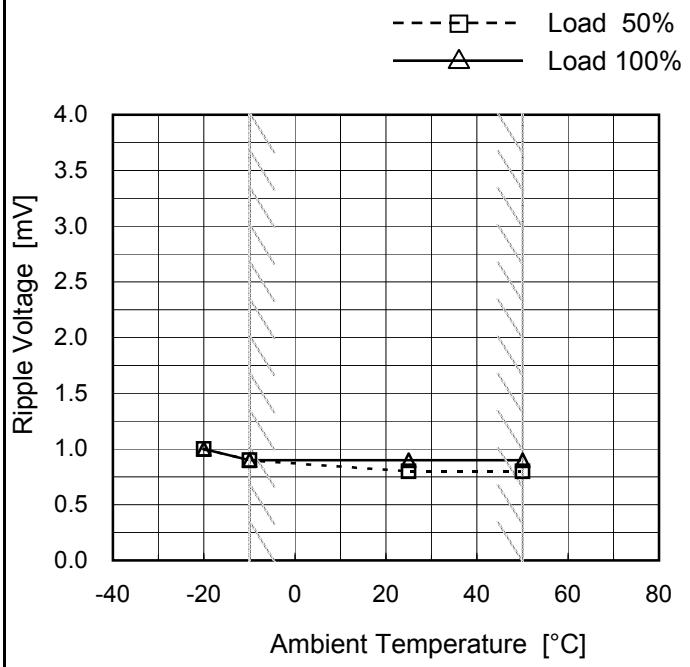
BC-10215

COSEL

Model	GT2W-12
Item	Ripple Voltage (by Ambient Temp.)
Object	+12V0.75A

Testing Circuitry Figure A

1.Graph



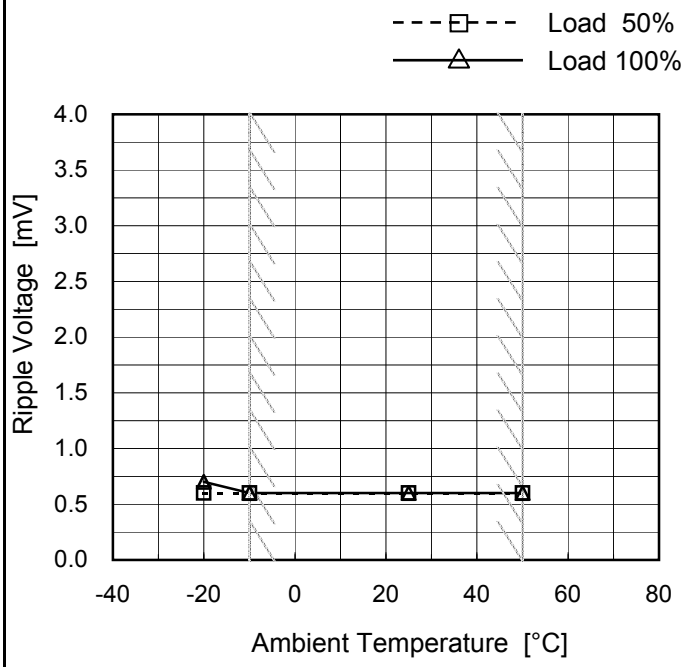
Input Volt. 100V

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	0.9
50	0.8	0.9
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

Object	-12V0.75A

1.Graph



Input Volt. 100V

Measured by 20 MHz Oscilloscope.

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

2.Values

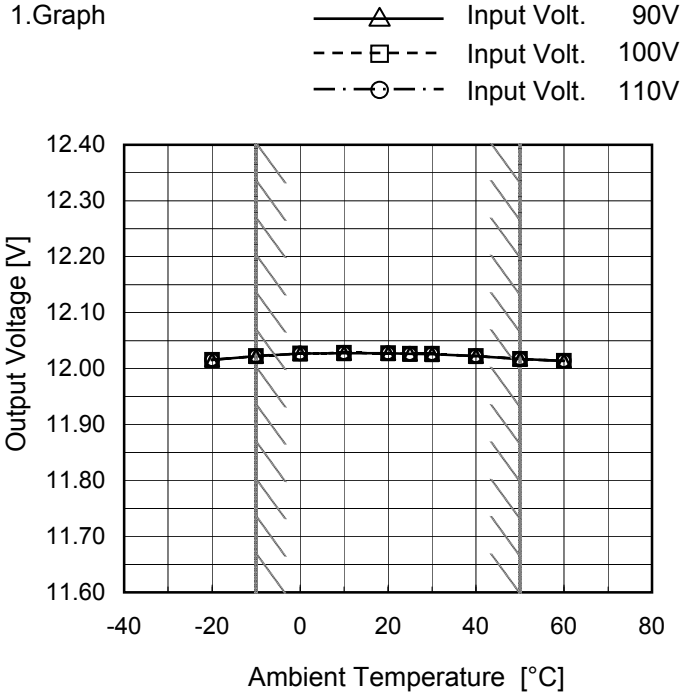
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-20	0.6	0.7
-10	0.6	0.6
25	0.6	0.6
50	0.6	0.6
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	GT2W-12
Item	Ambient Temperature Drift
Object	+12V0.75A

Testing Circuitry Figure A

1.Graph



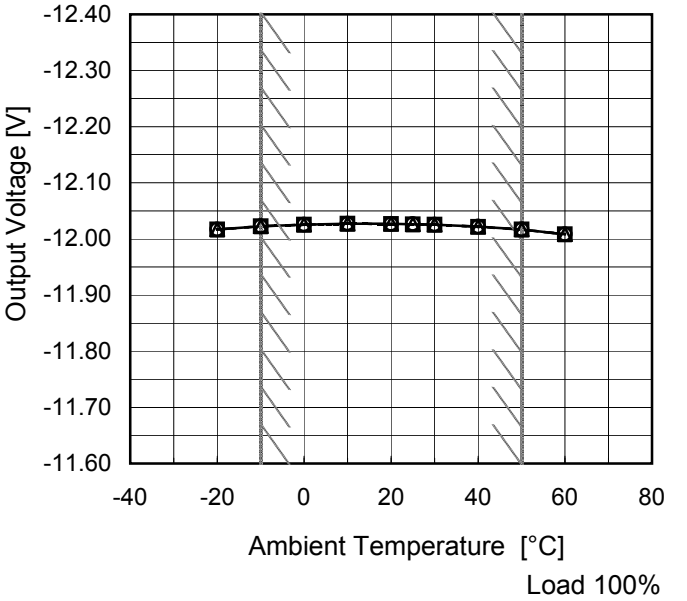
Load 100%

2.Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
-20	12.015	12.015	12.016
-10	12.022	12.022	12.022
0	12.027	12.027	12.027
10	12.028	12.028	12.028
20	12.027	12.027	12.027
25	12.027	12.027	12.027
30	12.026	12.026	12.026
40	12.023	12.023	12.023
50	12.017	12.017	12.017
60	12.014	12.014	12.014
--	-	-	-

Object	-12V0.75A

1.Graph



Load 100%

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	-12.017	-12.017	-12.017
-10	-12.022	-12.022	-12.022
0	-12.026	-12.026	-12.026
10	-12.027	-12.027	-12.027
20	-12.027	-12.027	-12.027
25	-12.026	-12.026	-12.026
30	-12.025	-12.025	-12.025
40	-12.022	-12.022	-12.022
50	-12.017	-12.017	-12.017
60	-12.008	-12.008	-12.008
--	-	-	-

COSEL

Model	GT2W-12	
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 - 0.75A (AVR 2) : 0 - 0.75A

* 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	+12V0.75A					
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	10	100	0	12.030	±7	±0.1
Minimum Voltage	50	110	0.75	12.016		

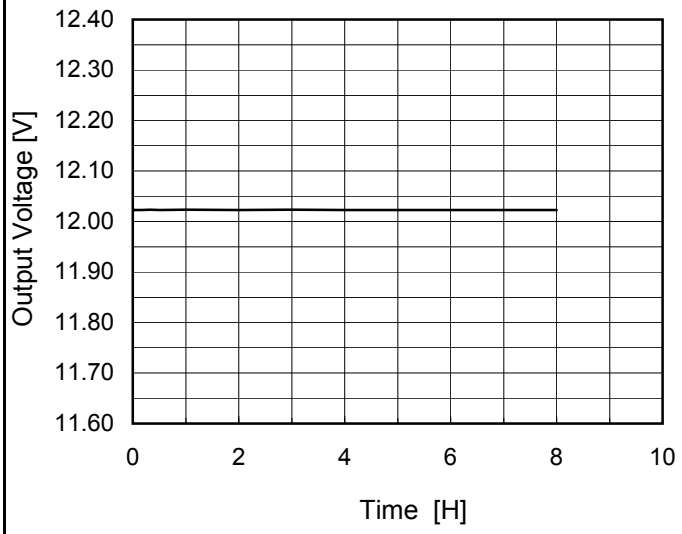
Object	-12V0.75A					
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	10	90	0	-12.029	±7	±0.1
Minimum Voltage	50	90	0.75	-12.016		

COSEL

Model	GT2W-12
Item	Time Lapse Drift
Object	+12V0.75A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



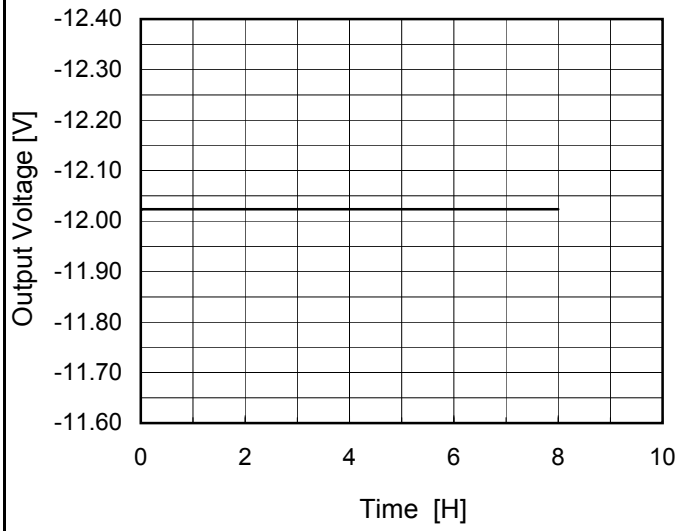
Input Volt. 100V
Load 100%

2.Values

Time since start [H]	Output Voltage [V]
0.0	12.023
0.5	12.023
1.0	12.023
2.0	12.023
3.0	12.023
4.0	12.023
5.0	12.023
6.0	12.023
7.0	12.023
8.0	12.023

Object	-12V0.75A

1.Graph



Input Volt. 100V
Load 100%

2.Values

Time since start [H]	Output Voltage [V]
0.0	-12.024
0.5	-12.023
1.0	-12.023
2.0	-12.023
3.0	-12.023
4.0	-12.023
5.0	-12.023
6.0	-12.023
7.0	-12.023
8.0	-12.023

BC-10215

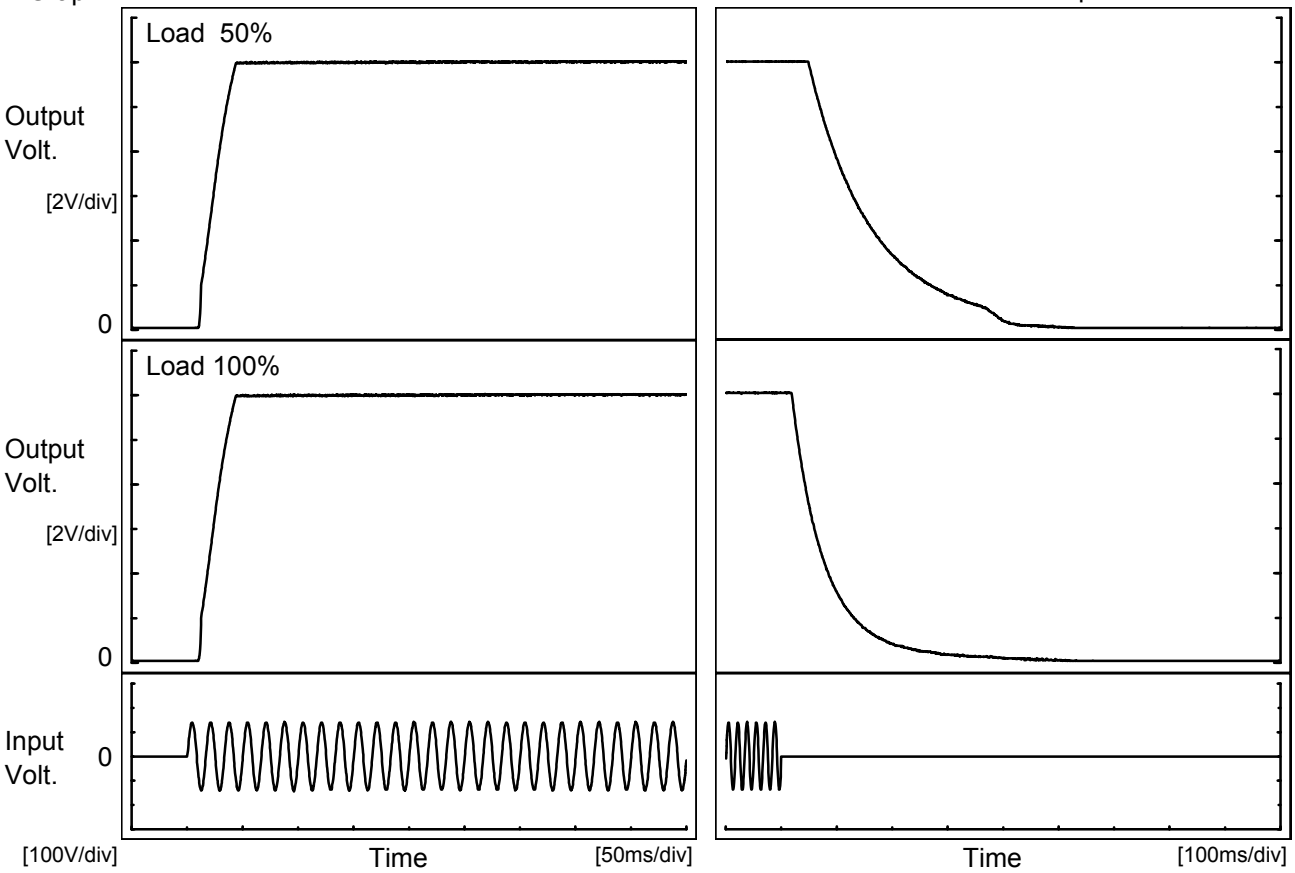
COSEL

Model	GT2W-12
Item	Rise and Fall Time
Object	+12V0.75A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

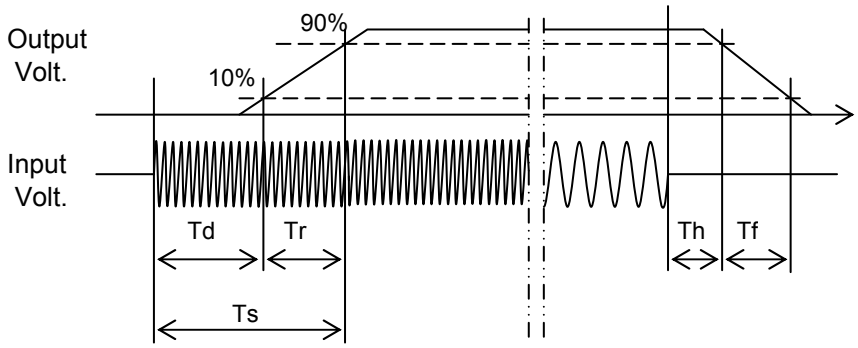
Input Volt. 100 V



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	12.3	26.8	39.1	58.5	273.0
100 %	12.5	26.5	39.0	24.5	141.5



BC-10215

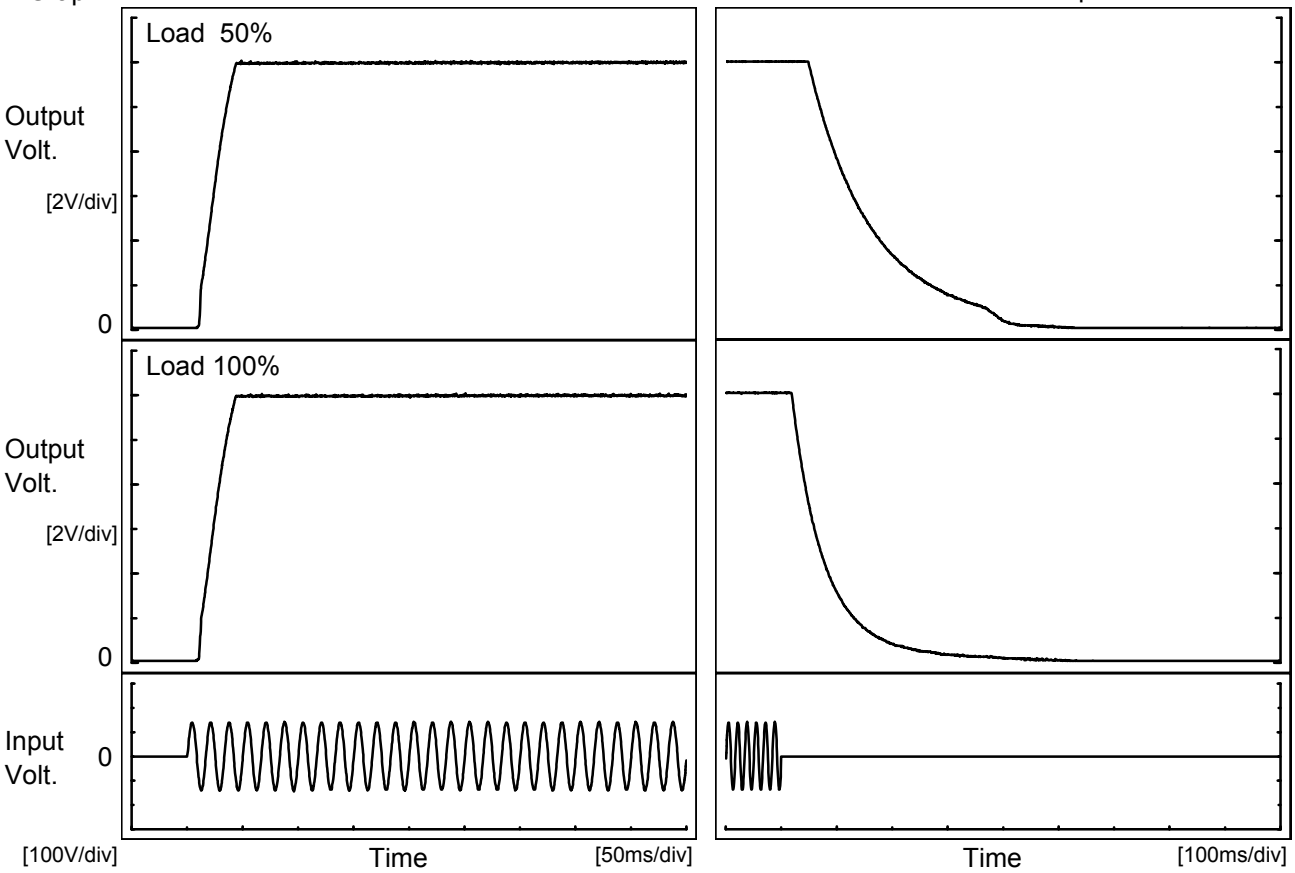
COSEL

Model	GT2W-12
Item	Rise and Fall Time
Object	-12V0.75A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

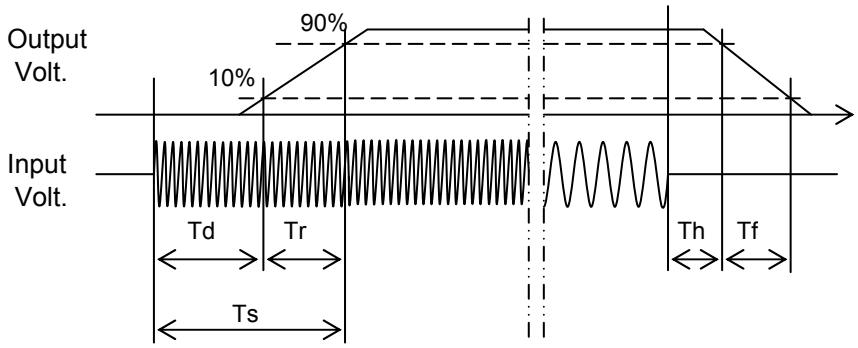
Input Volt. 100 V



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	12.0	27.0	39.0	58.5	272.5
100 %	12.3	26.8	39.1	24.0	139.5



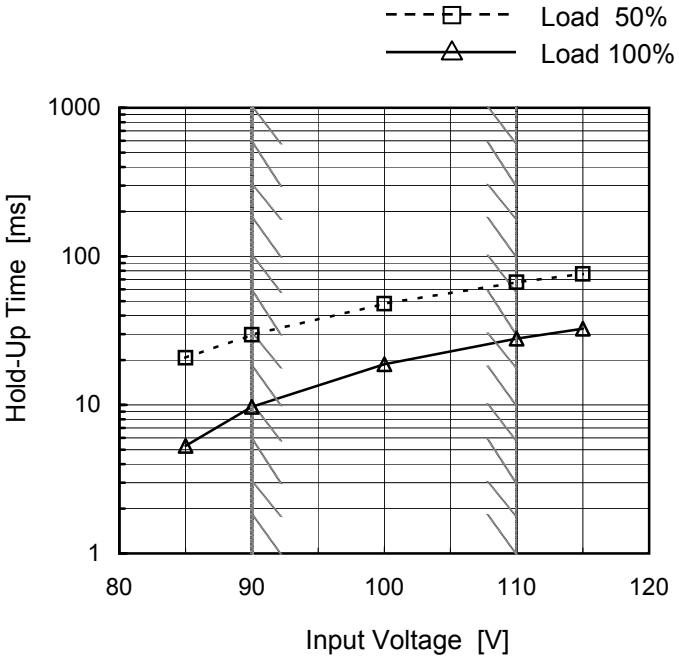
BC-10215

COSEL

Model	GT2W-12
Item	Hold-Up Time
Object	+12V0.75A

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	21	5
90	30	10
100	48	19
110	67	28
115	76	33
--	-	-
--	-	-
--	-	-
--	-	-

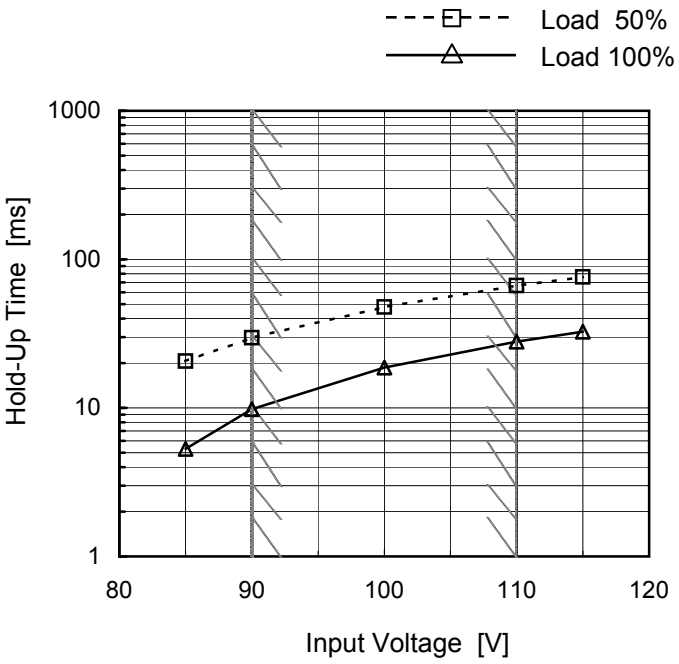
BC-10215

COSEL

Model	GT2W-12
Item	Hold-Up Time
Object	-12V0.75A

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	21	5
90	30	10
100	48	19
110	67	28
115	76	33
--	-	-
--	-	-
--	-	-
--	-	-

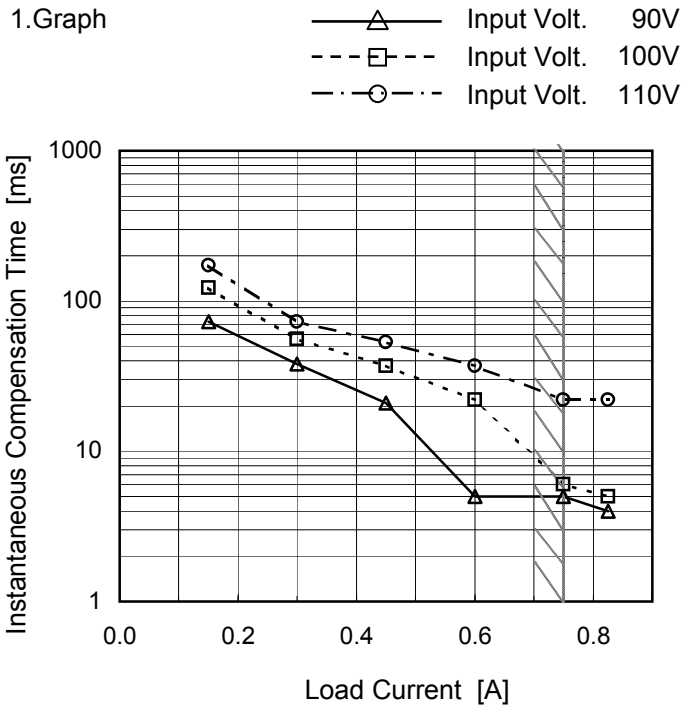
BC-10215

COSEL

Model	GT2W-12
Item	Instantaneous Interruption Compensation
Object	+12V0.75A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

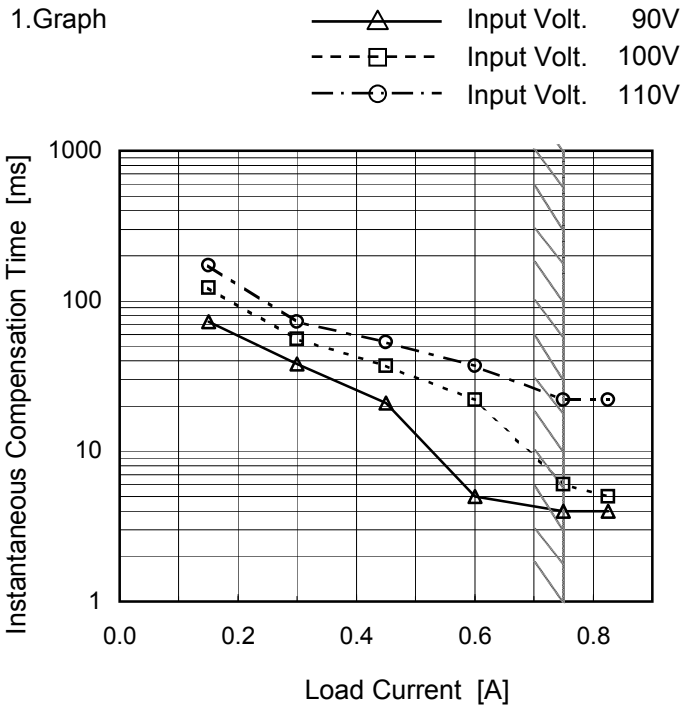
Load Current [A]	Time [ms]		
	Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
0.000	-	-	-
0.150	73	123	173
0.300	38	56	73
0.450	21	37	53
0.600	5	22	37
0.750	5	6	22
0.825	4	5	22
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	GT2W-12
Item	Instantaneous Interruption Compensation
Object	-12V0.75A

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	-	-	-
0.150	73	123	173
0.300	38	56	73
0.450	21	37	53
0.600	5	22	37
0.750	4	6	22
0.825	4	5	22
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

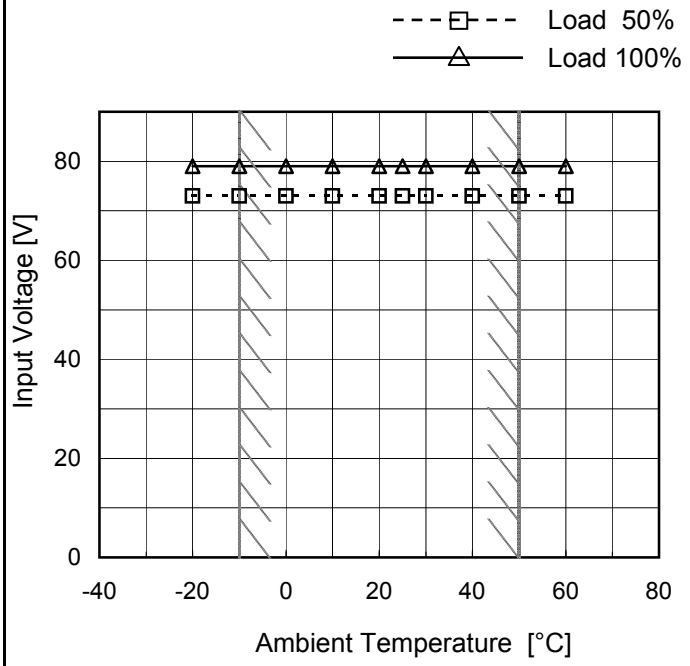
COSEL

Model	GT2W-12
Item	Minimum Input Voltage for Regulated Output Voltage

Testing Circuitry Figure A

Object: +12V0.75A

1.Graph

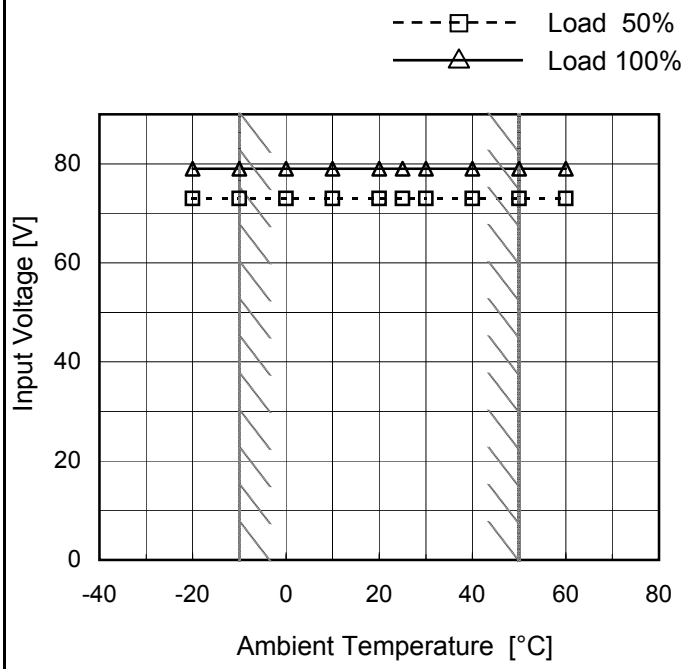


2.Values

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

Object: -12V0.75A

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

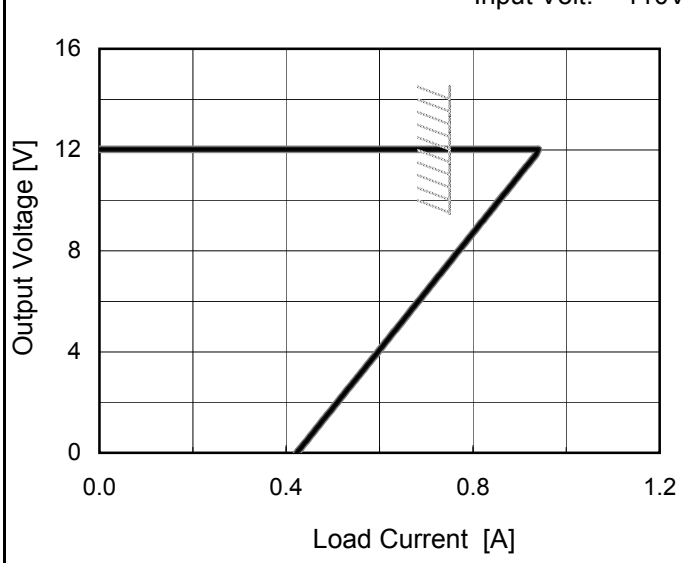
COSEL

Model	GT2W-12
Item	Overcurrent Protection

Temperature 25°C
Testing Circuitry Figure A

Object +12V0.75A

1.Graph

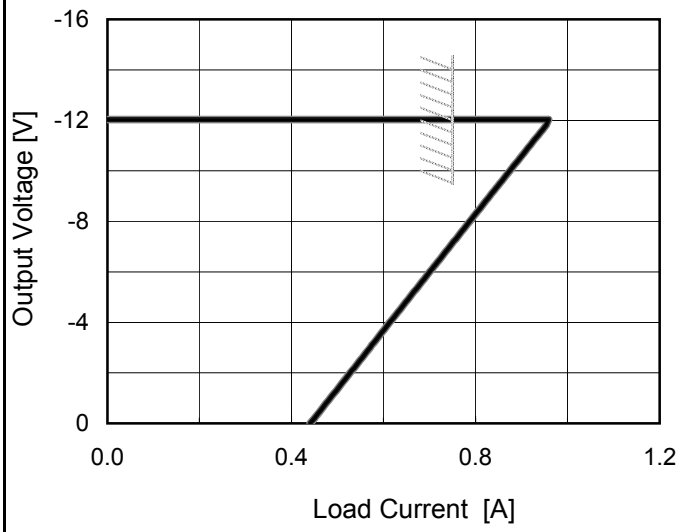


2.Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
12.0	0.94	0.94	0.94
11.4	0.92	0.92	0.92
10.8	0.89	0.89	0.89
9.6	0.84	0.84	0.84
8.4	0.79	0.79	0.79
7.2	0.74	0.74	0.74
6.0	0.69	0.68	0.68
4.8	0.64	0.64	0.64
3.6	0.58	0.58	0.58
2.4	0.53	0.53	0.53
1.2	0.48	0.48	0.48
0.0	0.42	0.42	0.42

Object -12V0.75A

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]
-12.0	0.96	0.96	0.96
-11.4	0.94	0.94	0.94
-10.8	0.91	0.91	0.91
-9.6	0.86	0.86	0.86
-8.4	0.81	0.81	0.81
-7.2	0.75	0.75	0.75
-6.0	0.70	0.70	0.70
-4.8	0.65	0.65	0.65
-3.6	0.60	0.60	0.60
-2.4	0.55	0.54	0.54
-1.2	0.50	0.50	0.50
0.0	0.44	0.44	0.44

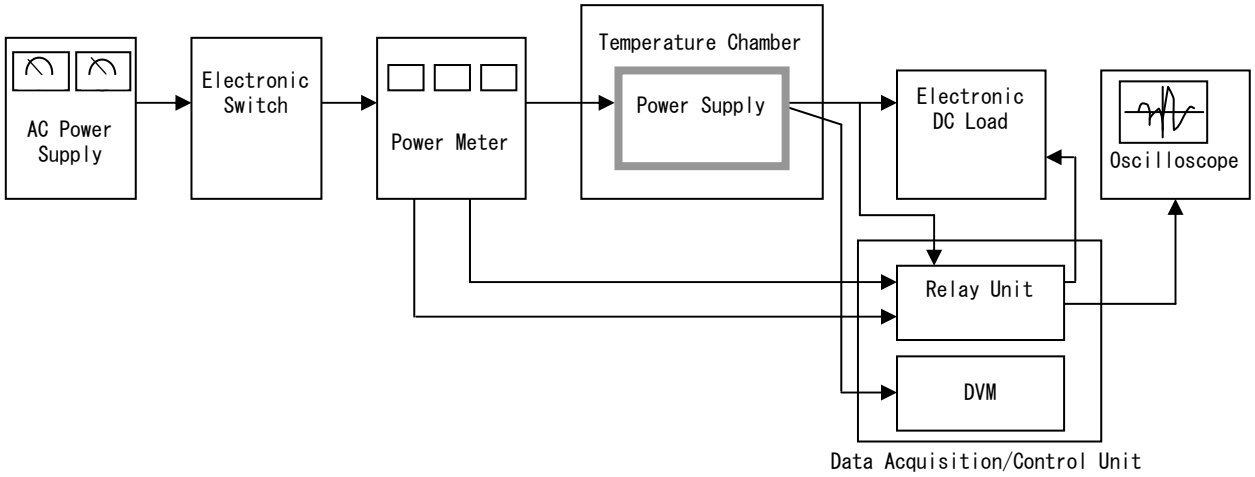

AC Power Supply
Electronic Switch
Power Meter
Temperature Chamber
Power Supply
Electronic DC Load
Oscilloscope
Relay Unit
DVM
Data Acquisition/Control Unit

Figure A