参考資料

COSEL

TEST DATA OF GT2.5W-15

Regulated DC Power Supply
November 2, 2010

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COSEL CO.,LTD.

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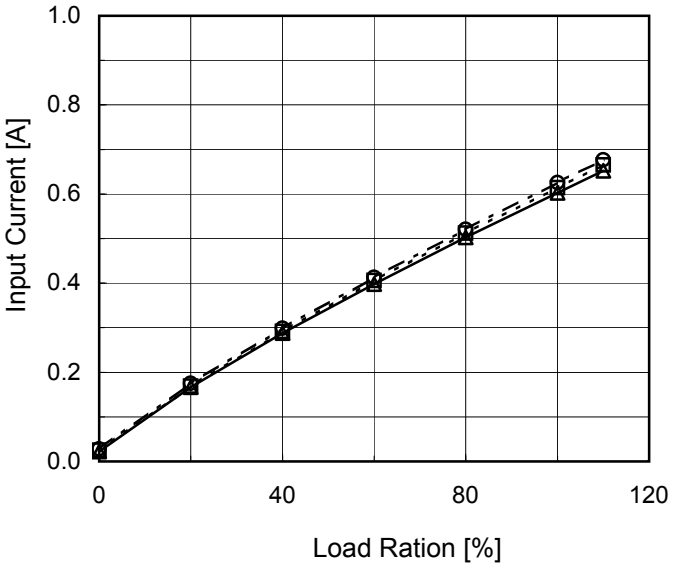
Model	GT2.5W-15
Item	Input Current (by Load Current)
Object	――――――

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	0.022	0.025	0.028
20	0.167	0.169	0.175
40	0.288	0.292	0.299
60	0.398	0.406	0.413
80	0.503	0.512	0.521
100	0.603	0.614	0.626
110	0.652	0.665	0.677
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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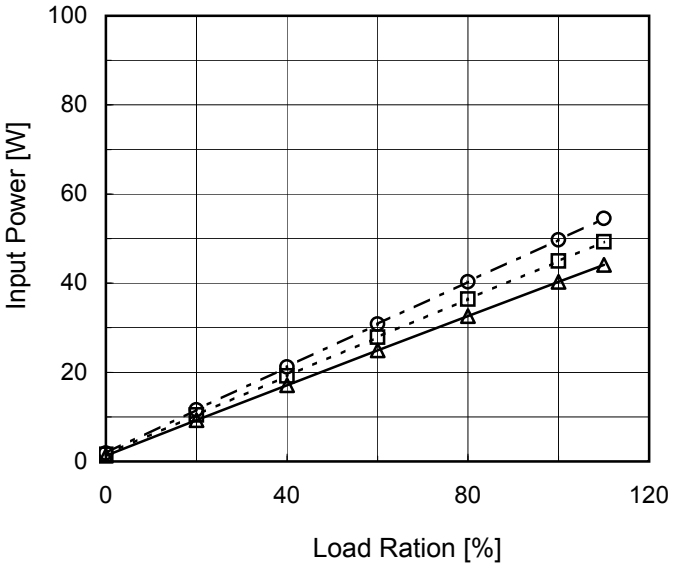
Model	GT2.5W-15
Item	Input Power (by Load Current)
Object	――――――

Temperature 25°C
Testing Circuitry Figure A

1.Graph



2.Values

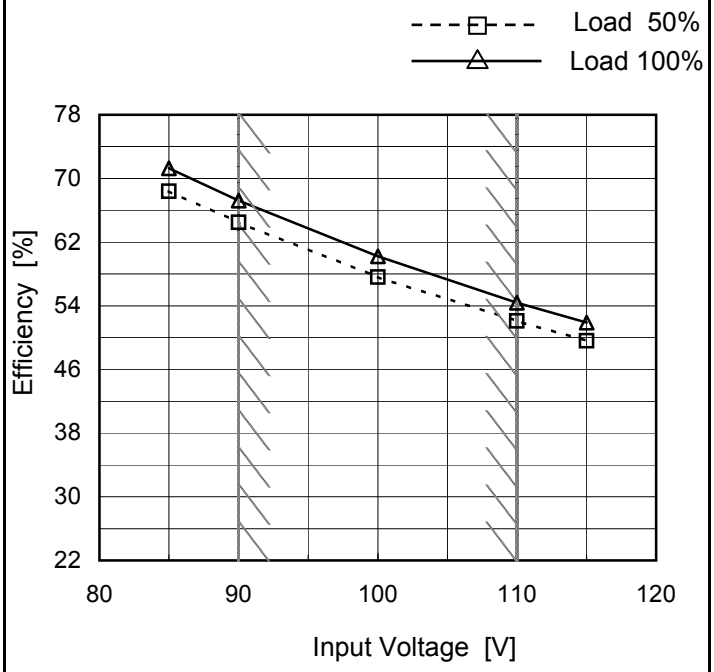
Load Ration [%]	Input Power [W]		
	Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
0	1.30	1.60	1.90
20	9.30	10.40	11.60
40	17.10	19.20	21.20
60	24.90	27.90	30.80
80	32.60	36.40	40.30
100	40.30	45.00	49.70
110	44.10	49.30	54.50
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	GT2.5W-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	68.4	71.3
90	64.5	67.2
100	57.6	60.2
110	52.1	54.4
115	49.6	51.9
--	-	-
--	-	-
--	-	-
--	-	-

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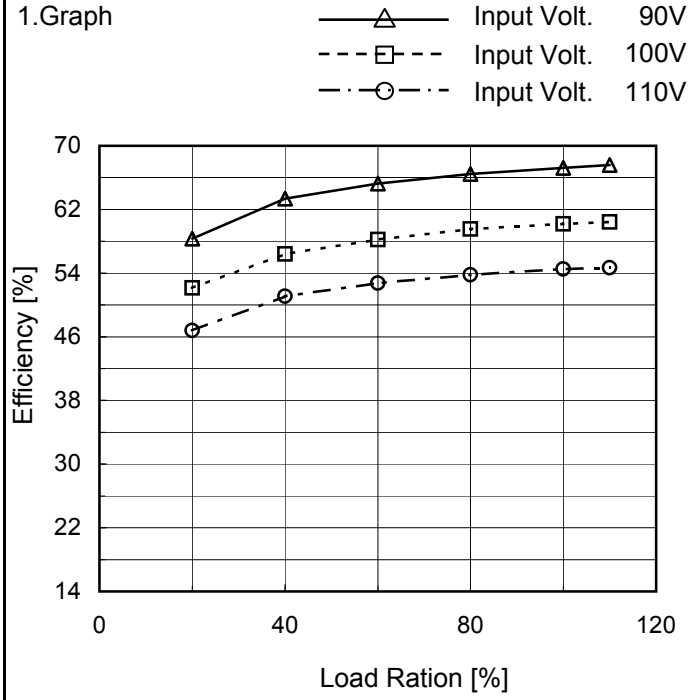
COSEL

Model	GT2.5W-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	58.3	52.2	46.8
40	63.4	56.4	51.1
60	65.3	58.2	52.8
80	66.5	59.5	53.8
100	67.2	60.2	54.5
110	67.6	60.4	54.7
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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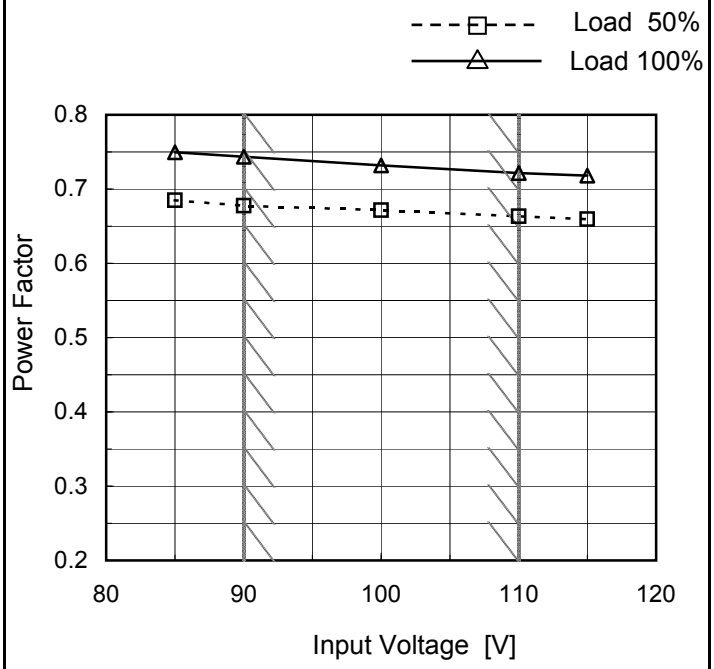
COSEL

Model	GT2.5W-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	0.685	0.750
90	0.677	0.744
100	0.671	0.732
110	0.663	0.722
115	0.659	0.718
--	-	-
--	-	-
--	-	-
--	-	-

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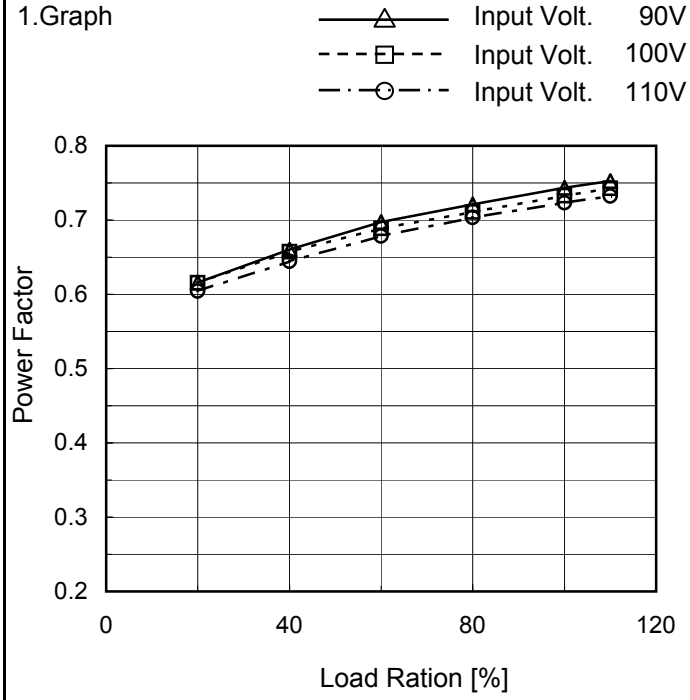
COSEL

Model	GT2.5W-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	0.616	0.615	0.604
40	0.660	0.658	0.644
60	0.697	0.689	0.678
80	0.721	0.711	0.703
100	0.744	0.733	0.723
110	0.753	0.742	0.733
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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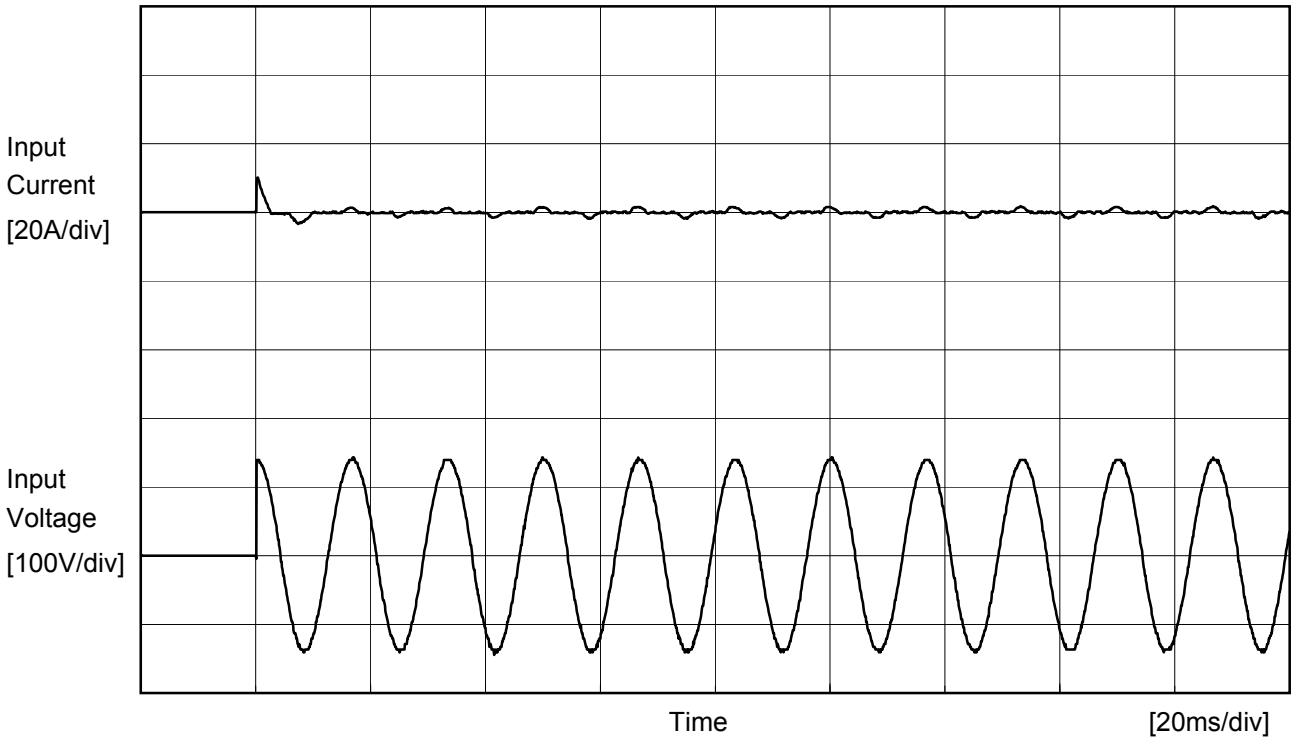
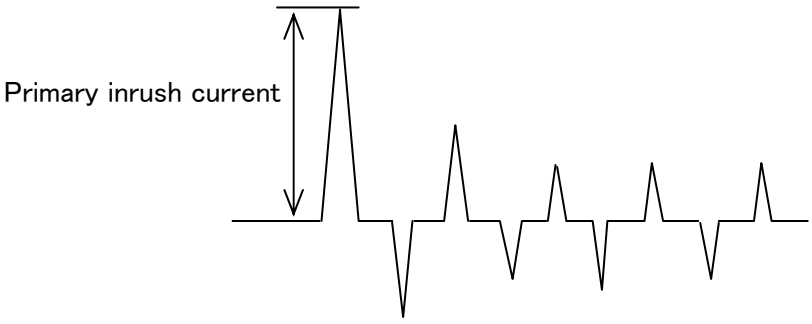
Model	GT2.5W-15	
Item	Inrush Current	Temperature 25°C Testing Circuitry Figure A
Object	――――――	



Input Voltage	100 V
Frequency	60 Hz
Load	100 %
Primary inrush current	10.1 A

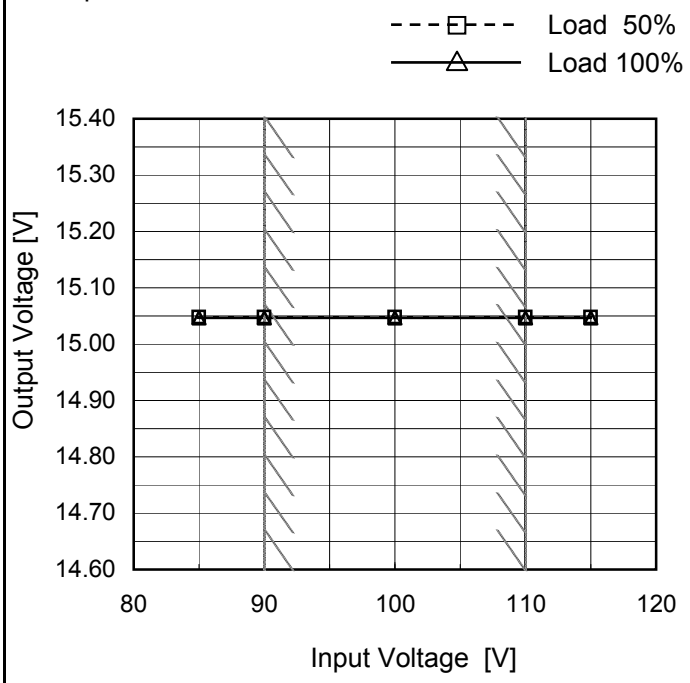


COSEL

Model	GT2.5W-15
Item	Line Regulation
Object	+15V0.9A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

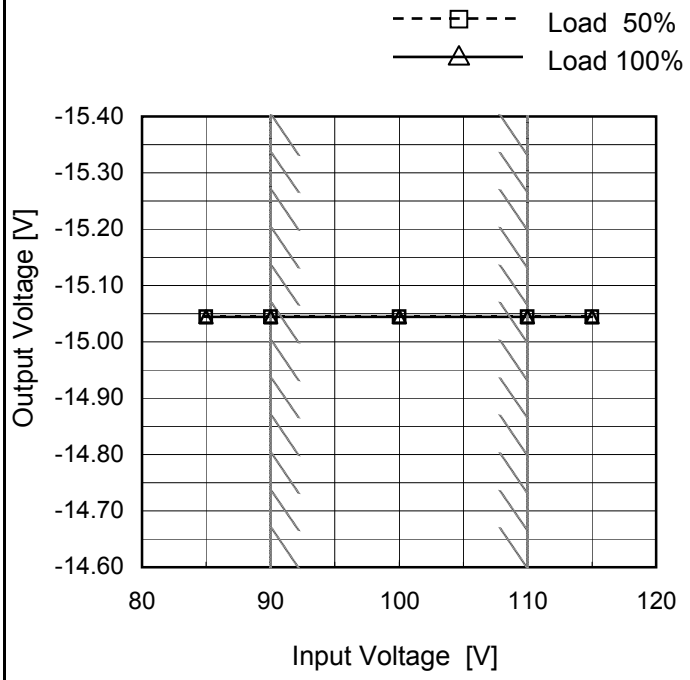


2.Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
85	15.048	15.047
90	15.048	15.047
100	15.048	15.047
110	15.048	15.047
115	15.048	15.047
--	-	-
--	-	-
--	-	-
--	-	-

Object	-15V0.9A

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	-15.045	-15.044
90	-15.045	-15.044
100	-15.045	-15.044
110	-15.045	-15.044
115	-15.045	-15.044
--	-	-
--	-	-
--	-	-
--	-	-

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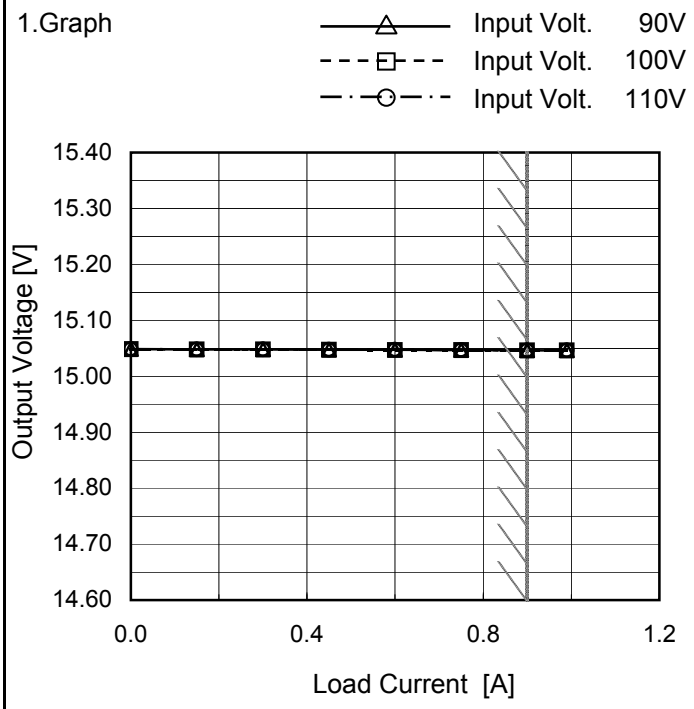
COSEL

Model	GT2.5W-15
Item	Load Regulation
Object	+15V0.9A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

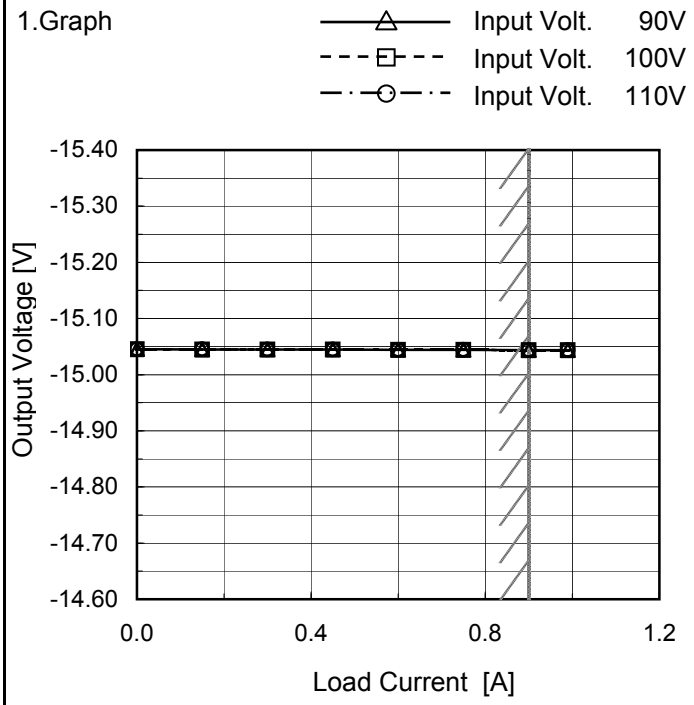


2.Values

Load Current [A]	Output Voltage [V] Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
0.00	15.049	15.049	15.049
0.15	15.048	15.048	15.048
0.30	15.048	15.048	15.048
0.45	15.048	15.048	15.048
0.60	15.047	15.047	15.047
0.75	15.047	15.047	15.047
0.90	15.047	15.047	15.047
0.99	15.046	15.046	15.046
--	-	-	-
--	-	-	-
--	-	-	-

Object	-15V0.9A

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	-15.045	-15.045	-15.045
0.15	-15.045	-15.045	-15.045
0.30	-15.045	-15.045	-15.045
0.45	-15.045	-15.045	-15.045
0.60	-15.044	-15.044	-15.044
0.75	-15.044	-15.044	-15.044
0.90	-15.044	-15.044	-15.044
0.99	-15.044	-15.044	-15.044
--	-	-	-
--	-	-	-
--	-	-	-

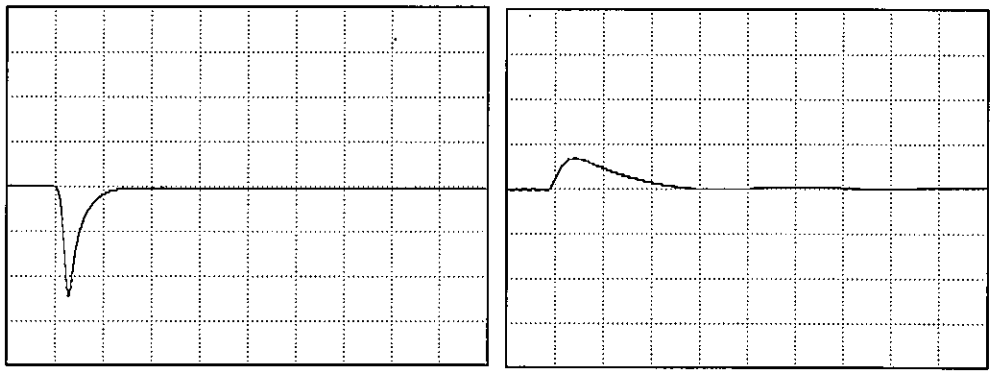
COSEL

Model	GT2.5W-15		
Item	Dynamic Load Response	Temperature	25°C
		Testing Circuitry	Figure A
Object	+15V0.9A		

Input Volt. 100 V
Cycle 1000 ms

Load Current

Min. Load (0A) ⟷
Load 100% (0.9A)

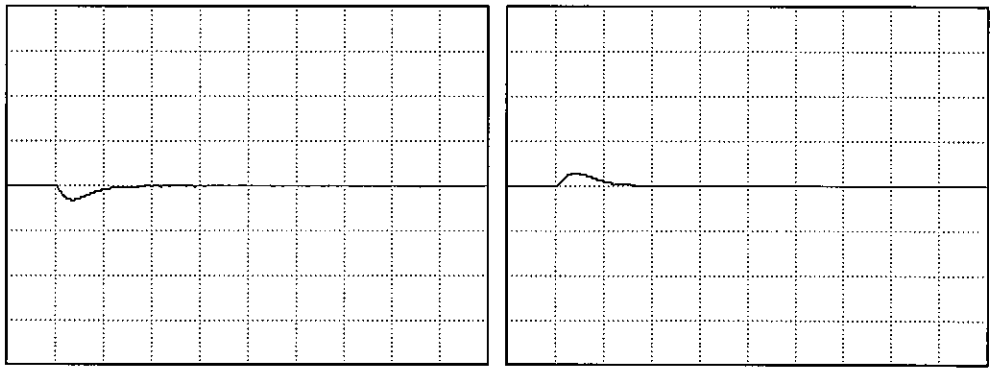


50 mV/div

100 μs/div

100 μs/div

Load 50% (0.45A) ⟷
Load 100% (0.9A)



50 mV/div

100 μs/div

100 μs/div

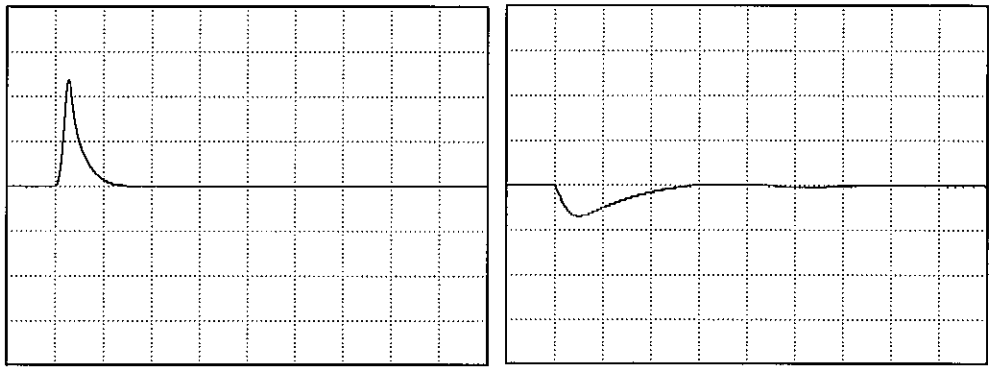
COSEL

Model	GT2.5W-15		
Item	Dynamic Load Response	Temperature	25°C
		Testing Circuitry	Figure A
Object	-15V0.9A		

Input Volt. 100 V
Cycle 1000 ms

Load Current

Min. Load (0A) ⟷
Load 100% (0.9A)

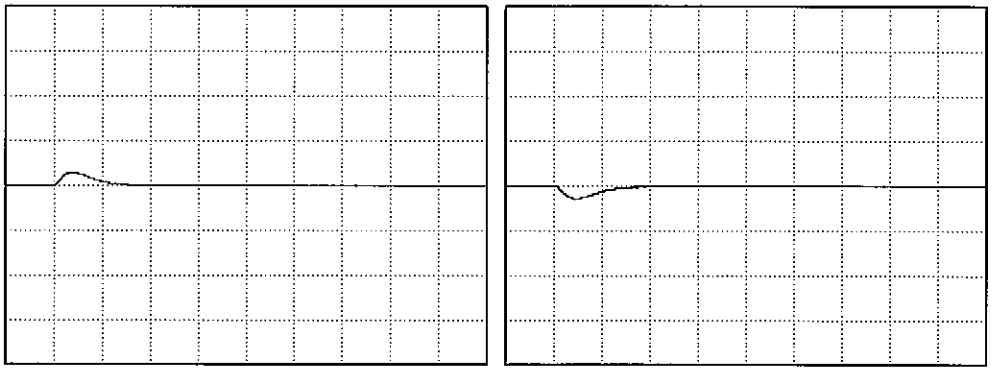


50 mV/div

100 μs/div

100 μs/div

Load 50% (0.45A) ⟷
Load 100% (0.9A)



50 mV/div

100 μs/div

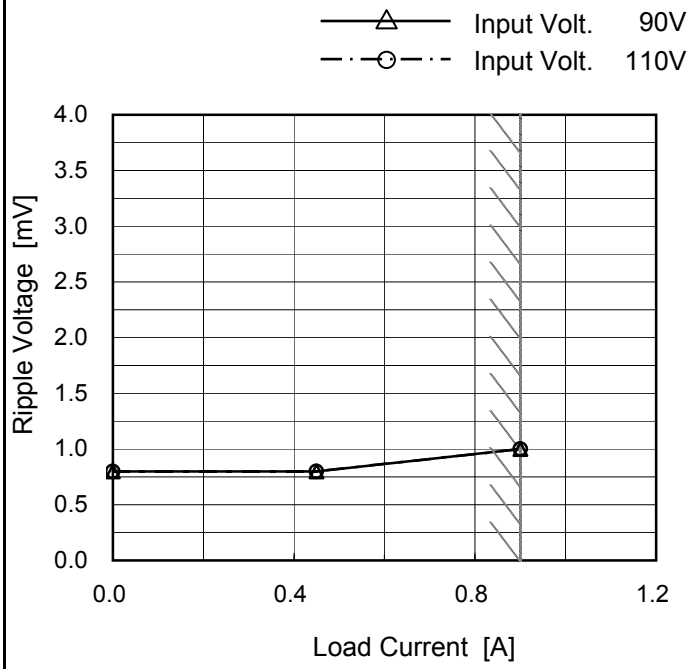
100 μs/div

COSEL

Model	GT2.5W-15
Item	Ripple Voltage (by Load Current)
Object	+15V0.9A

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
0.45	0.8	0.8
0.90	1.0	1.0
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

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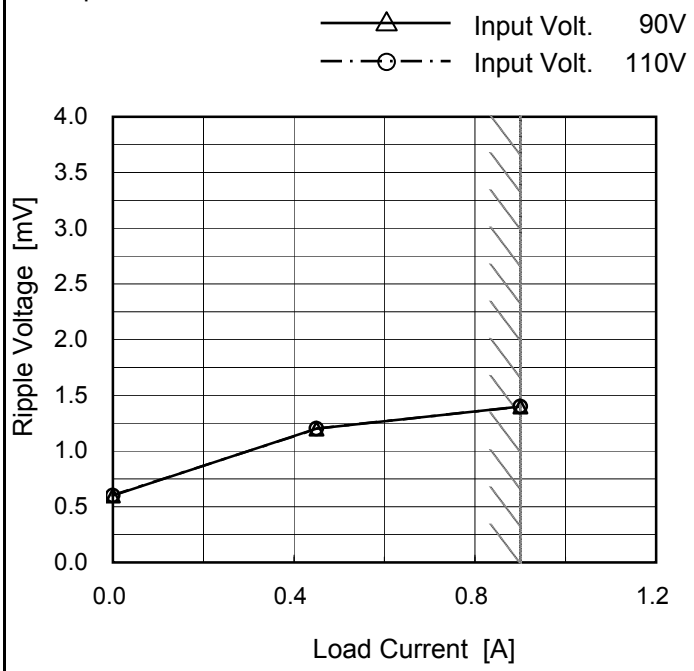
Model	GT2.5W-15
Item	Ripple Voltage (by Load Current)
Object	-15V0.9A

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	0.6	0.6
0.45	1.2	1.2
0.90	1.4	1.4
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

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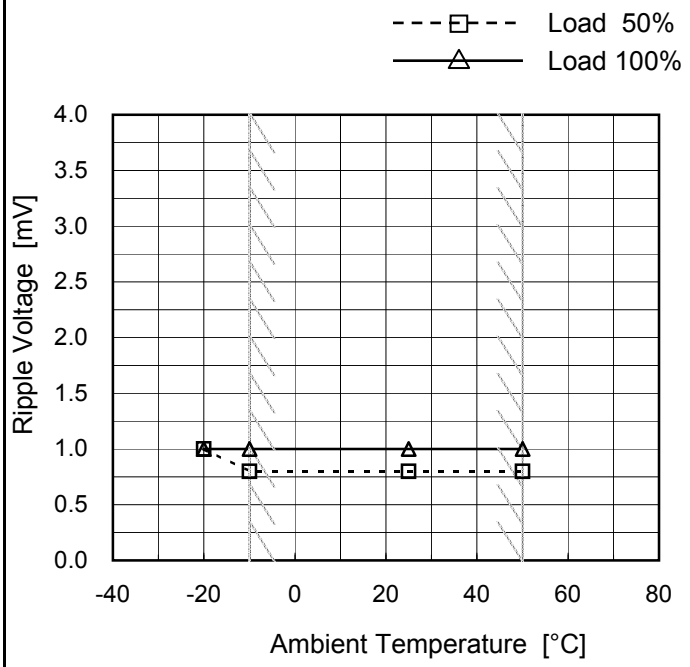
COSEL

Model	GT2.5W-15
Item	Ripple Voltage (by Ambient Temp.)
Object	+15V0.9A

Testing Circuitry Figure A

1.Graph



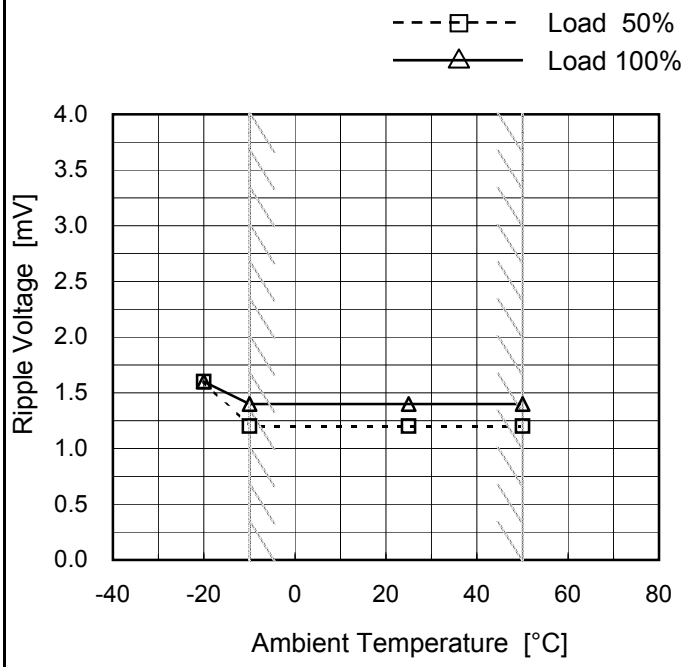
Input Volt. 100V

2.Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-20	1.0	1.0
-10	0.8	1.0
25	0.8	1.0
50	0.8	1.0
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

Object	-15V0.9A

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	1.6	1.6
-10	1.2	1.4
25	1.2	1.4
50	1.2	1.4
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

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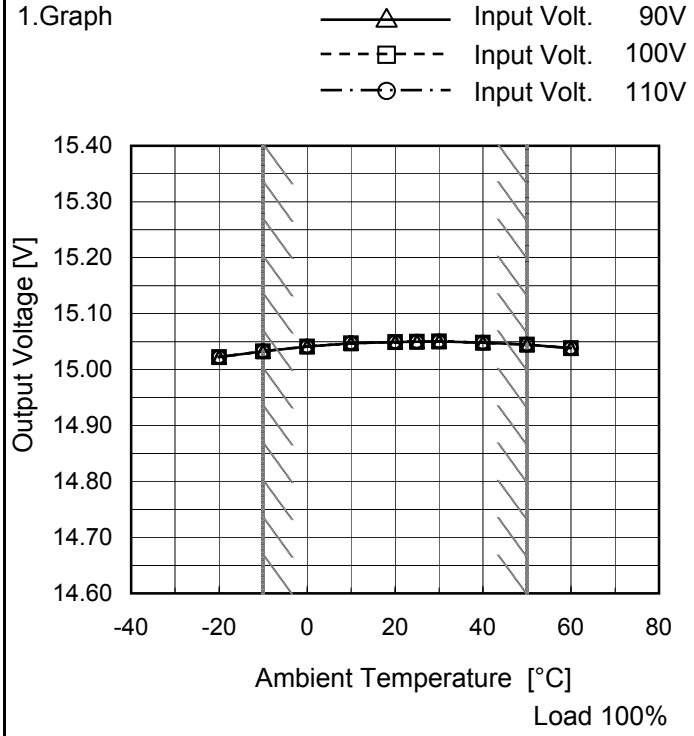
Model	GT2.5W-15
Item	Ambient Temperature Drift
Object	+15V0.9A

Testing Circuitry Figure A

1.Graph

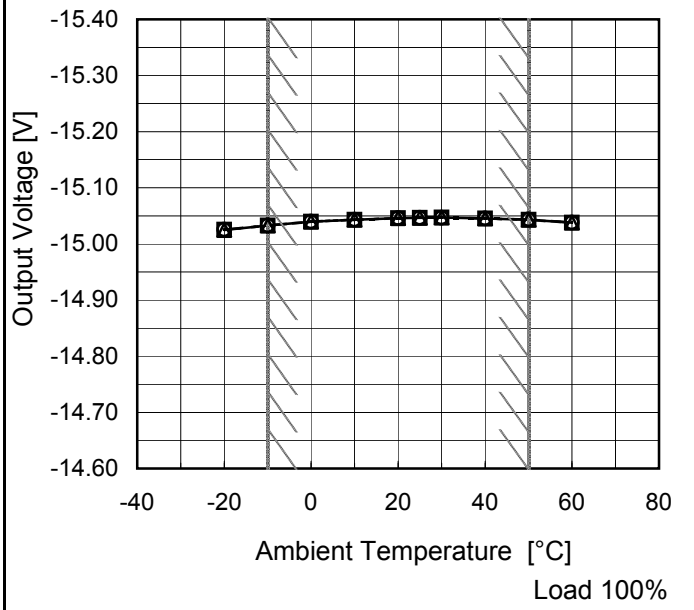


2.Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
-20	15.022	15.023	15.023
-10	15.033	15.033	15.033
0	15.041	15.041	15.041
10	15.047	15.047	15.047
20	15.049	15.049	15.049
25	15.050	15.050	15.050
30	15.050	15.050	15.050
40	15.048	15.048	15.048
50	15.045	15.045	15.045
60	15.038	15.038	15.038
--	-	-	-

Object	-15V0.9A

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	-15.025	-15.025	-15.025
-10	-15.033	-15.033	-15.033
0	-15.040	-15.040	-15.040
10	-15.043	-15.043	-15.043
20	-15.046	-15.046	-15.046
25	-15.047	-15.047	-15.047
30	-15.047	-15.047	-15.047
40	-15.046	-15.046	-15.046
50	-15.043	-15.043	-15.043
60	-15.038	-15.038	-15.038
--	-	-	-

COSEL

Model	GT2.5W-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 - 0.9A (AVR 2) : 0 - 0.9A

* 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	+15V0.9A					
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	30	90	0	15.053	±11	±0.1
Minimum Voltage	-10	90	0.9	15.032		

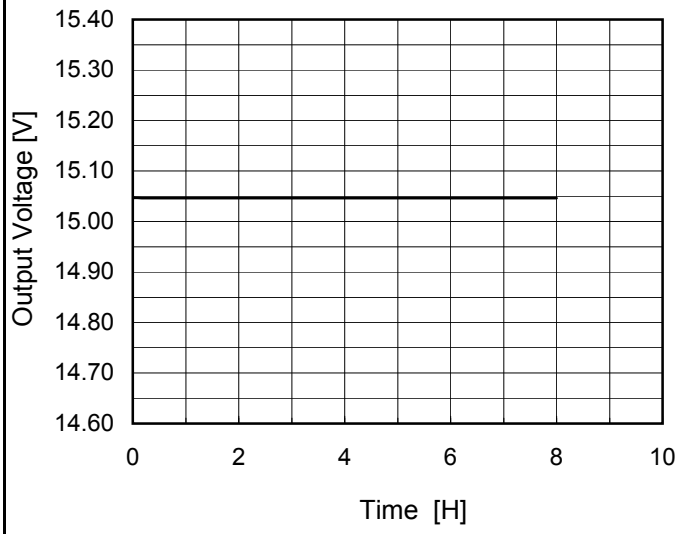
Object	-15V0.9A					
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	30	110	0	-15.048	±8	±0.1
Minimum Voltage	-10	90	0.9	-15.032		

COSEL

Model	GT2.5W-15
Item	Time Lapse Drift
Object	+15V0.9A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



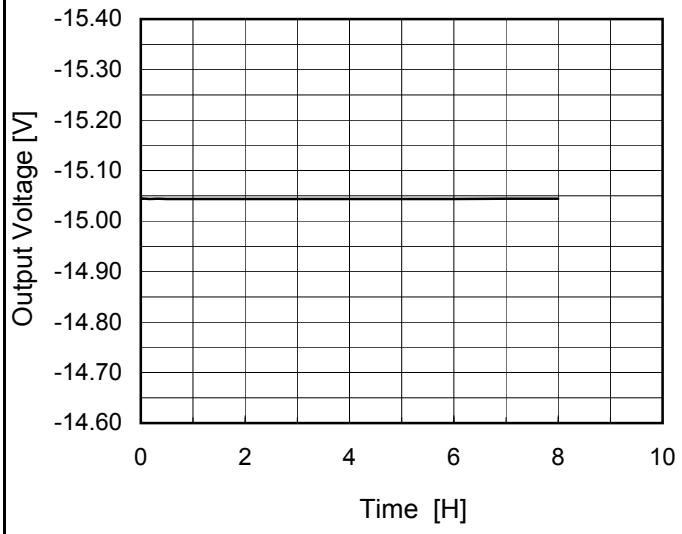
Input Volt. 100V
Load 100%

2.Values

Time since start [H]	Output Voltage [V]
0.0	15.047
0.5	15.046
1.0	15.046
2.0	15.046
3.0	15.046
4.0	15.046
5.0	15.046
6.0	15.046
7.0	15.046
8.0	15.046

Object	-15V0.9A

1.Graph



Input Volt. 100V
Load 100%

2.Values

Time since start [H]	Output Voltage [V]
0.0	-15.045
0.5	-15.044
1.0	-15.044
2.0	-15.044
3.0	-15.044
4.0	-15.044
5.0	-15.044
6.0	-15.044
7.0	-15.044
8.0	-15.044

BC-10218

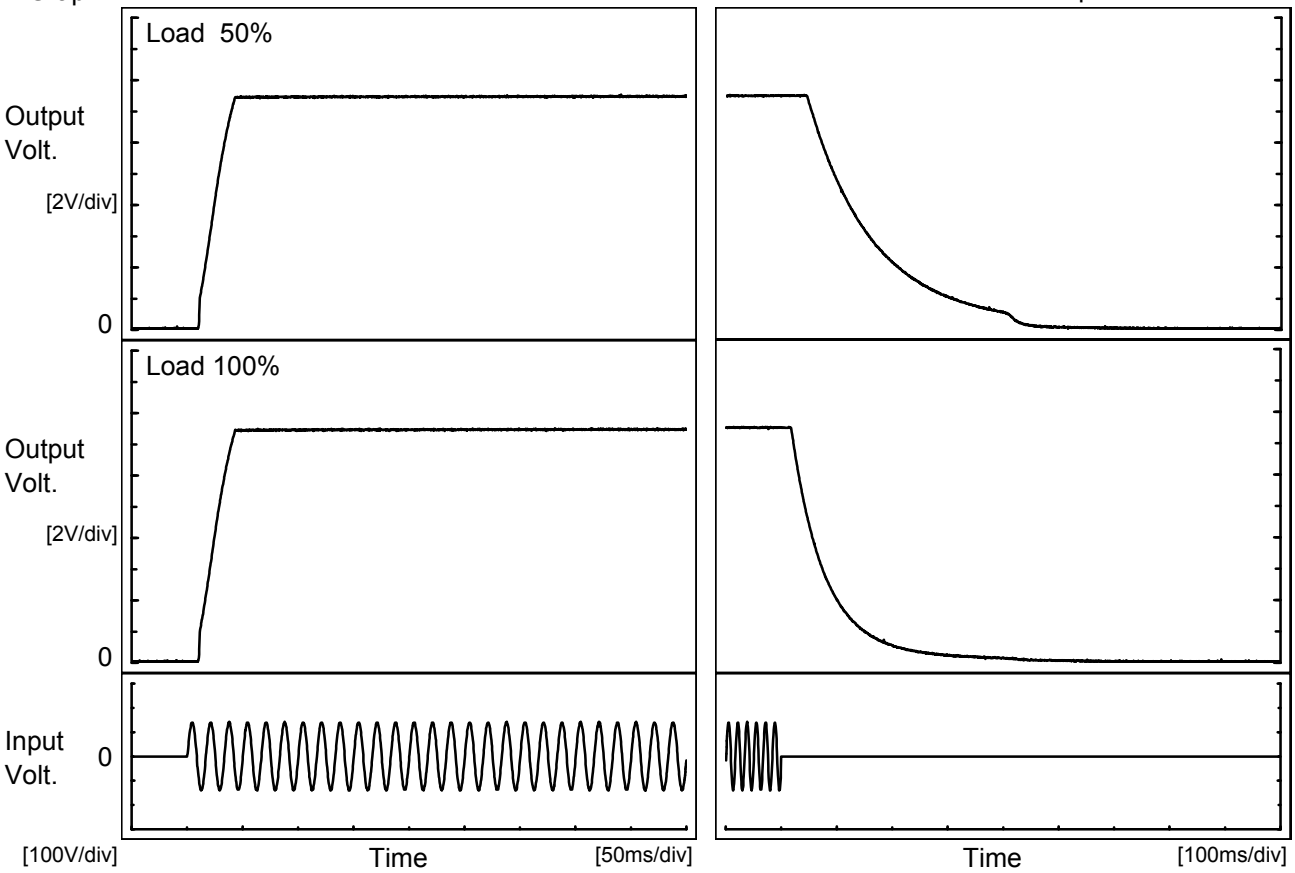
COSEL

Model	GT2.5W-15
Item	Rise and Fall Time
Object	+15V0.9A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

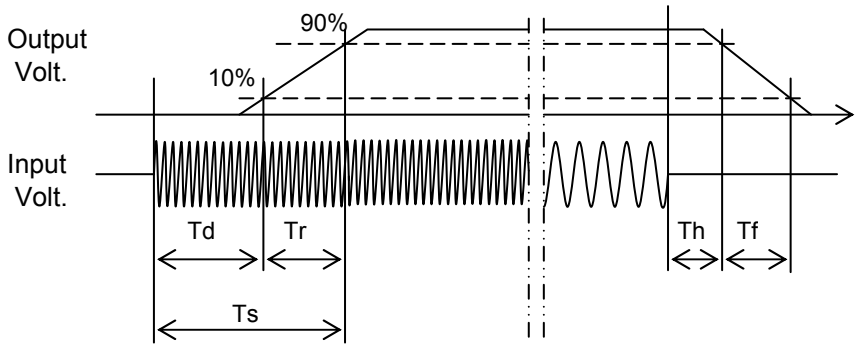
Input Volt. 100 V



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	11.5	27.0	38.5	57.5	285.5
100 %	11.5	27.0	38.5	23.5	145.0



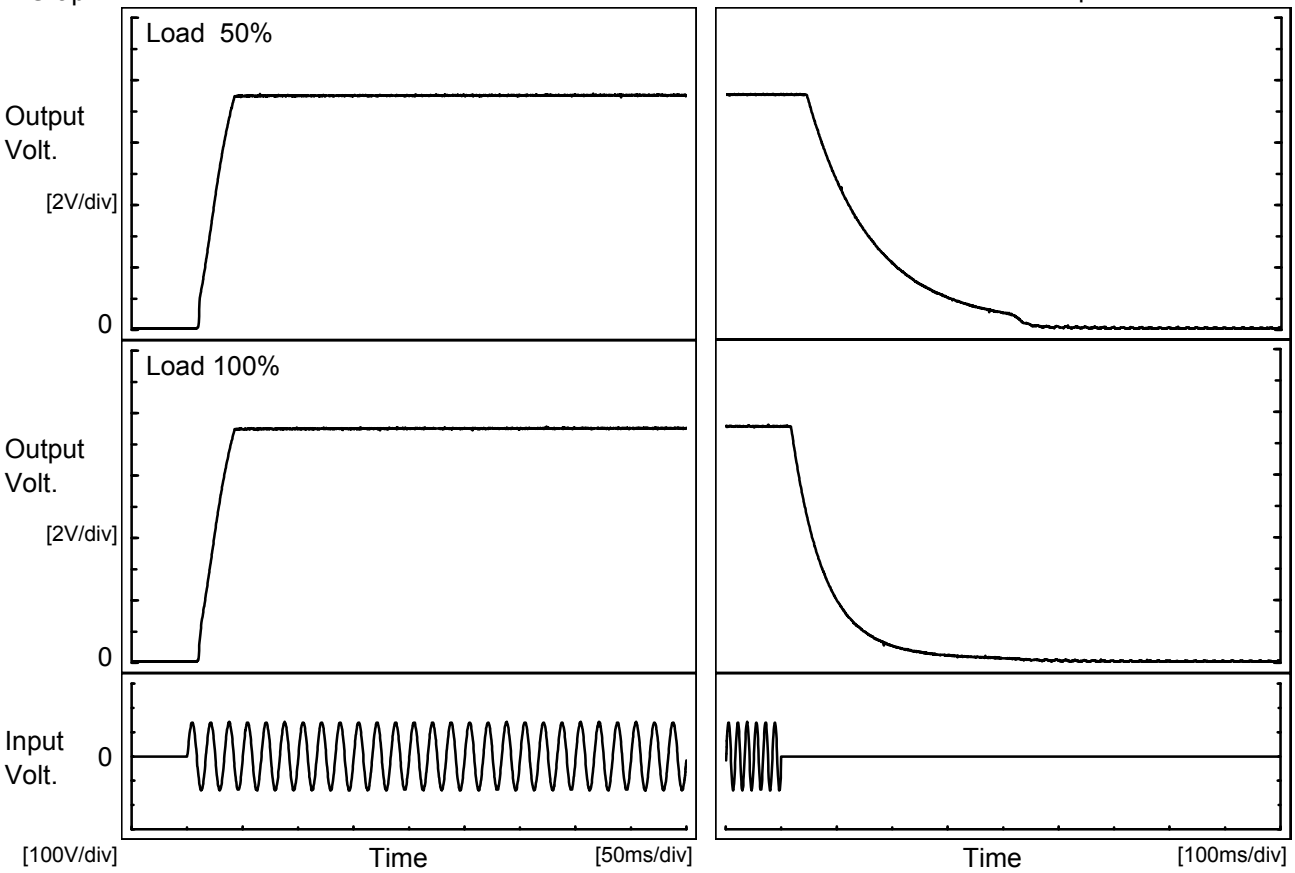
COSEL

Model	GT2.5W-15
Item	Rise and Fall Time
Object	-15V0.9A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

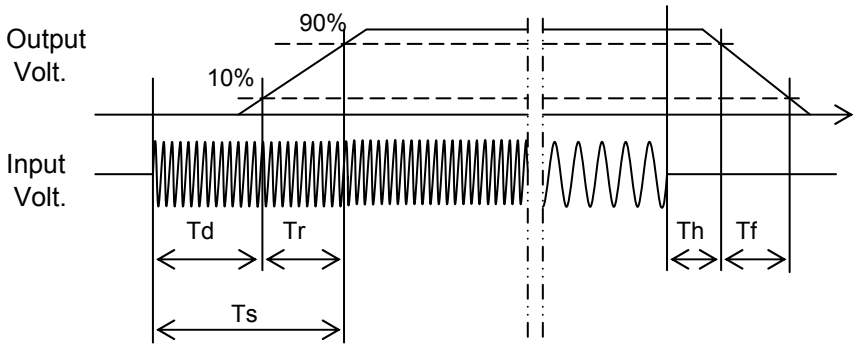
Input Volt. 100 V



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	11.3	26.8	38.1	56.5	282.5
100 %	11.8	26.5	38.3	23.5	143.0



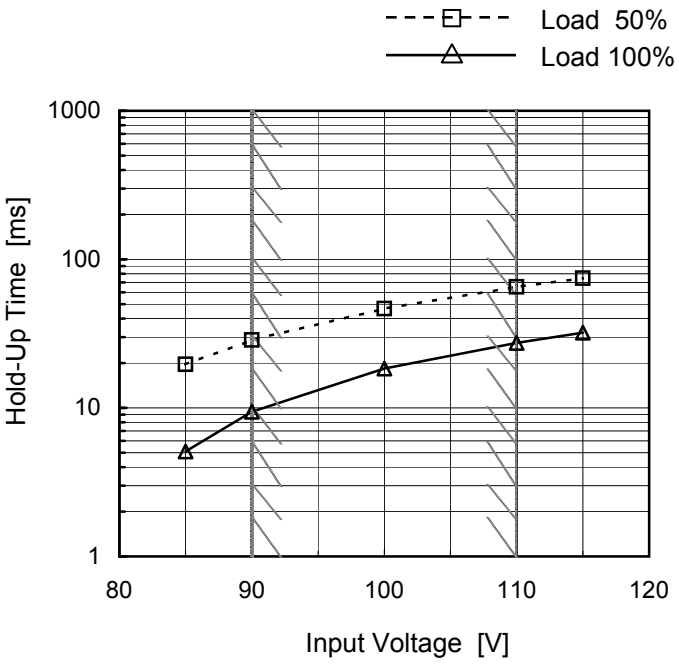
BC-10218

COSEL

Model	GT2.5W-15
Item	Hold-Up Time
Object	+15V0.9A

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	20	5
90	29	9
100	47	18
110	65	27
115	75	32
--	-	-
--	-	-
--	-	-
--	-	-

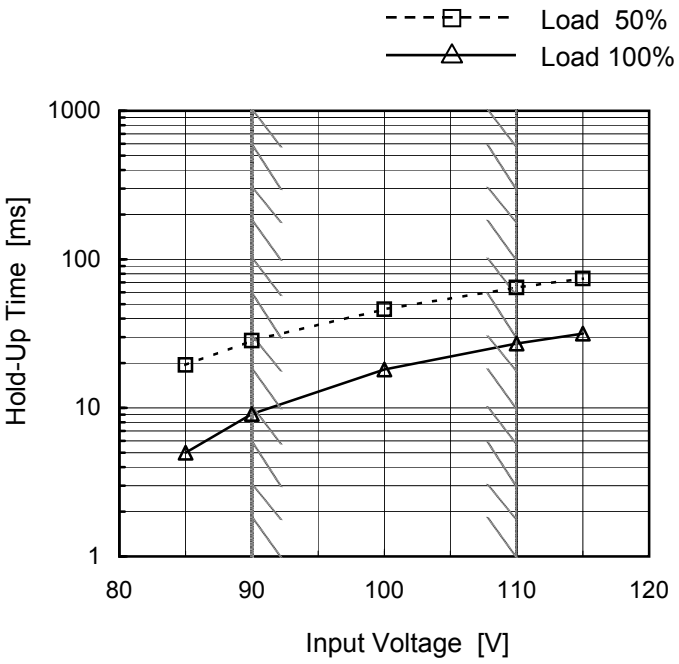
BC-10218

COSEL

Model	GT2.5W-15
Item	Hold-Up Time
Object	-15V0.9A

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	19	5
90	28	9
100	46	18
110	65	27
115	74	32
--	-	-
--	-	-
--	-	-
--	-	-

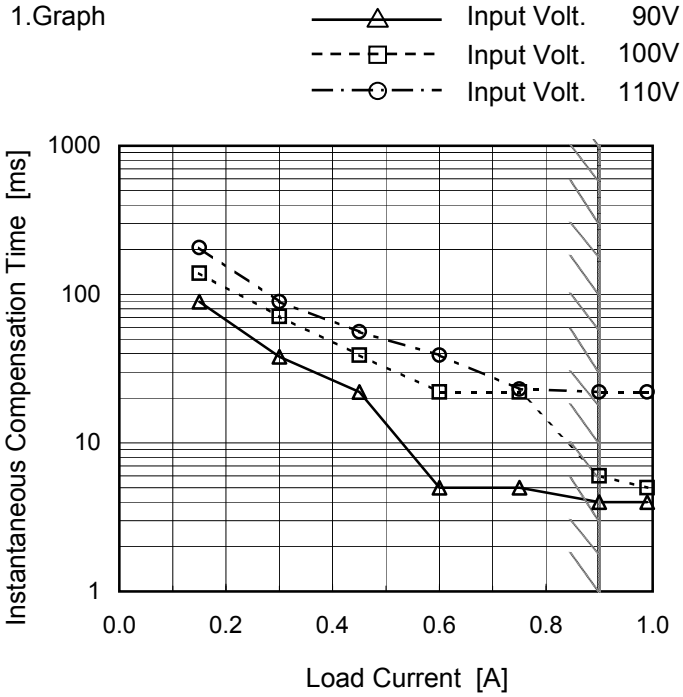
BC-10218

COSEL

Model	GT2.5W-15
Item	Instantaneous Interruption Compensation
Object	+15V0.9A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

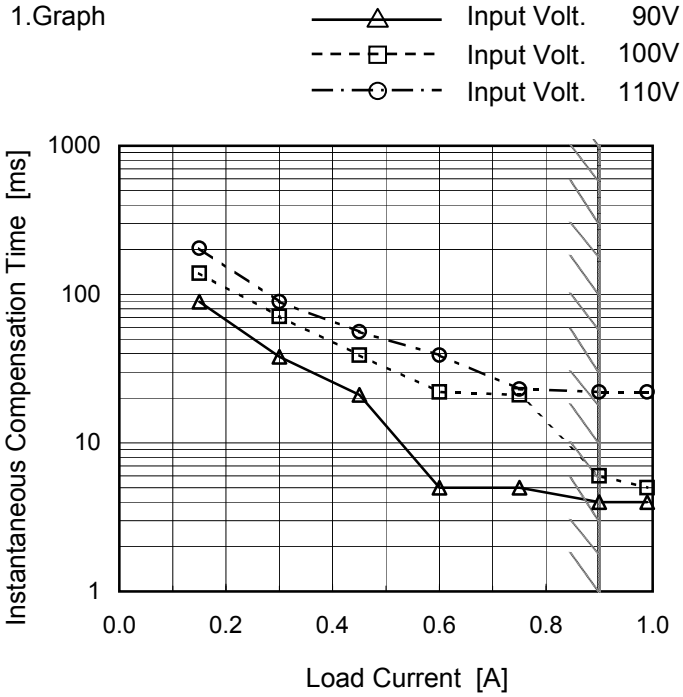
Load Current [A]	Time [ms]		
	Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
0.00	-	-	-
0.15	89	139	206
0.30	38	71	89
0.45	22	39	56
0.60	5	22	39
0.75	5	22	23
0.90	4	6	22
0.99	4	5	22
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	GT2.5W-15
Item	Instantaneous Interruption Compensation
Object	-15V0.9A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

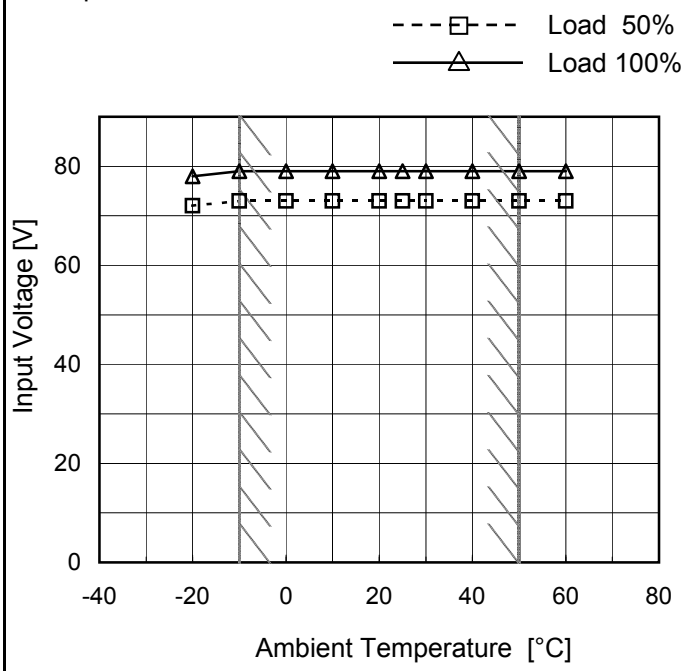
Load Current [A]	Time [ms]		
	Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
0.00	-	-	-
0.15	89	139	204
0.30	38	71	89
0.45	21	39	56
0.60	5	22	39
0.75	5	21	23
0.90	4	6	22
0.99	4	5	22
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	GT2.5W-15
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+15V0.9A

Testing Circuitry Figure A

1.Graph

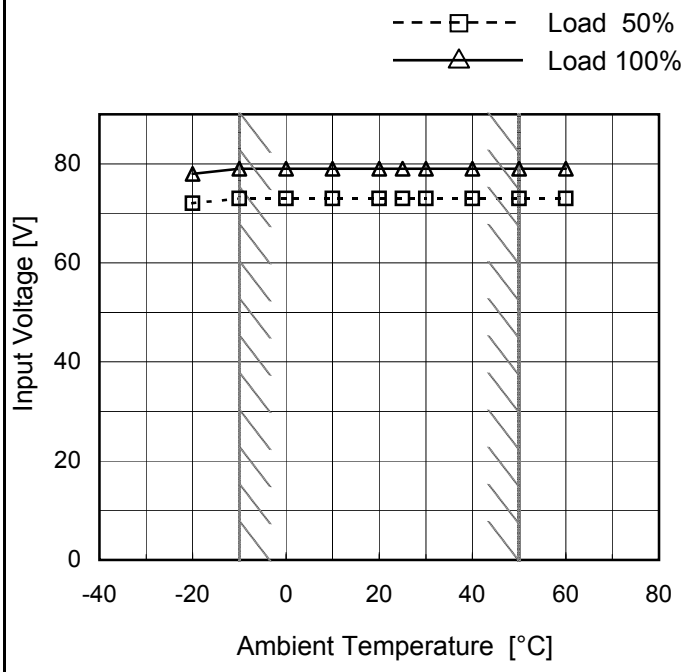


2.Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-20	72	78
-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	-15V0.9A

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	72	78
-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
--	-	-

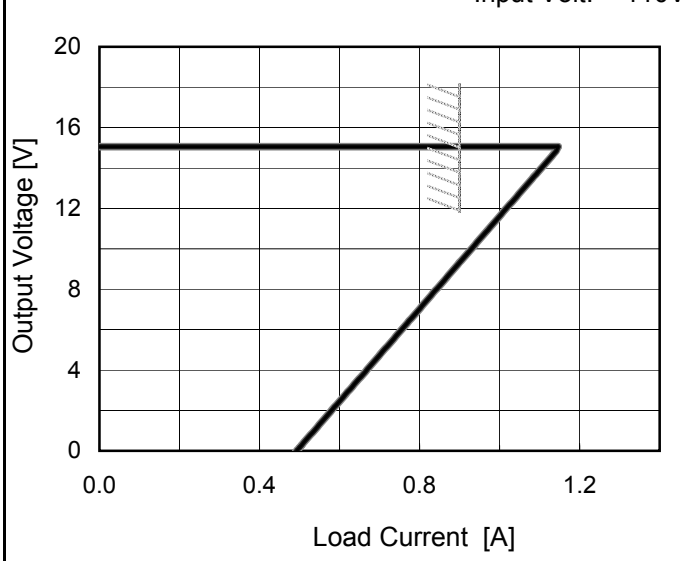
COSEL

Model	GT2.5W-15
Item	Overcurrent Protection

Temperature 25°C
Testing Circuitry Figure A

Object +15V0.9A

1.Graph

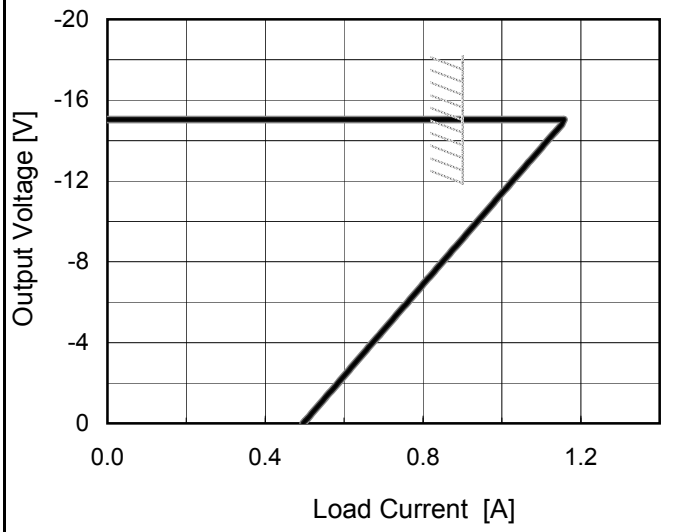


2.Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
15.0	1.15	1.15	1.15
14.3	1.11	1.11	1.11
13.5	1.08	1.08	1.08
12.0	1.02	1.02	1.02
10.5	0.95	0.95	0.95
9.0	0.89	0.89	0.89
7.5	0.82	0.82	0.82
6.0	0.76	0.76	0.76
4.5	0.69	0.69	0.69
3.0	0.63	0.63	0.63
1.5	0.56	0.56	0.56
0.0	0.49	0.49	0.49

Object -15V0.9A

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	1.16	1.16	1.16
-14.25	1.13	1.13	1.13
-13.50	1.09	1.09	1.09
-12.00	1.03	1.03	1.03
-10.50	0.96	0.96	0.96
-9.00	0.90	0.90	0.90
-7.50	0.83	0.83	0.83
-6.00	0.76	0.76	0.76
-4.50	0.70	0.70	0.70
-3.00	0.63	0.63	0.63
-1.50	0.57	0.57	0.57
0.00	0.50	0.50	0.50

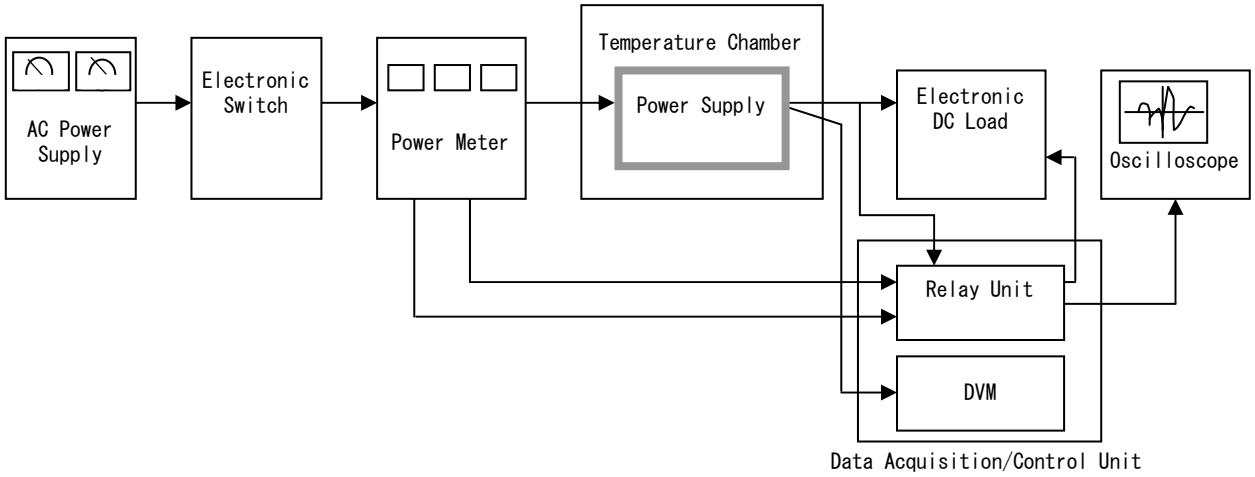

AC Power Supply
Electronic Switch
Power Meter
Temperature Chamber
Power Supply
Electronic DC Load
Oscilloscope
Relay Unit
DVM
Data Acquisition/Control Unit

Figure A