

# TEST DATA OF GT2W-12

Regulated DC Power Supply  
October 26, 2010

Approved by : Eiyoshi Wakamatsu  
Eiyoshi Wakamatsu Design Manager

Prepared by : Satoshi Kinoshita  
Satoshi Kinoshita Design Engineer

**COSEL CO.,LTD.**

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Model		GT2W-12		Temperature 25°C Testing Circuitry Figure A																																																			
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<p>Input Current [A]</p> <p>0.50 0.40 0.30 0.20 0.10 0.00</p> <p>0 40 80 120</p> <p>Load Ration [%]</p>		2.Values																																																					
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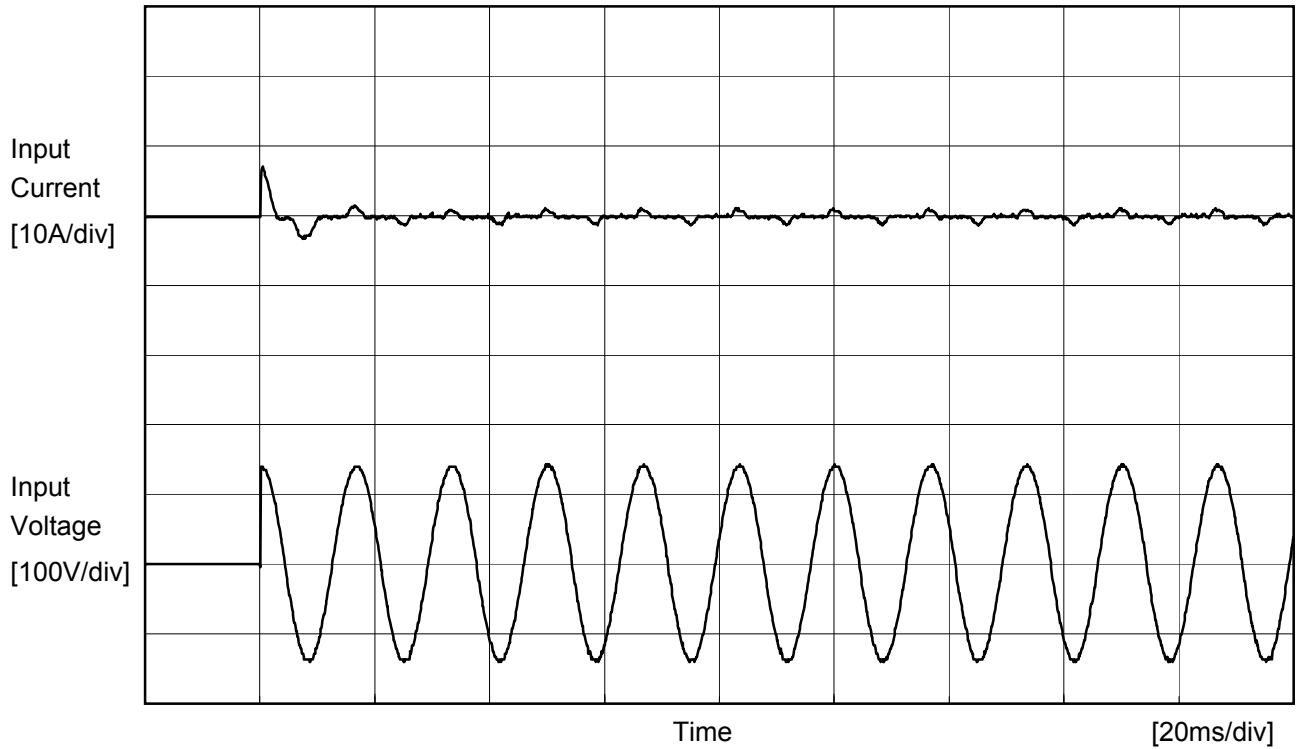


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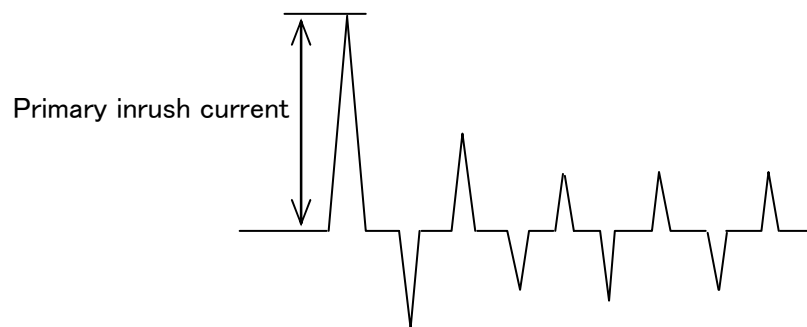




Model		GT2W-12	Temperature 25°C Testing Circuitry Figure A
Item		Inrush Current	
Object		_____	



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



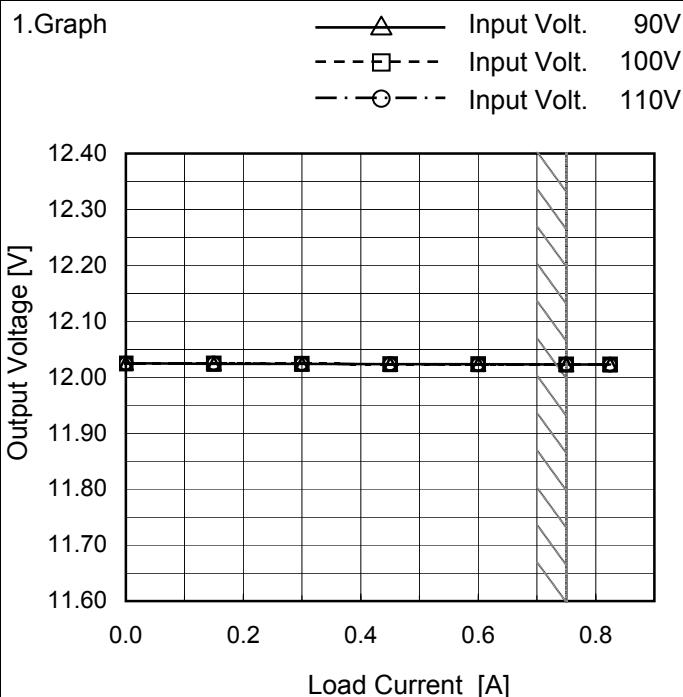


<b>COSEL</b>																																			
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Model	GT2W-12
Item	Load Regulation
Object	+12V0.75A

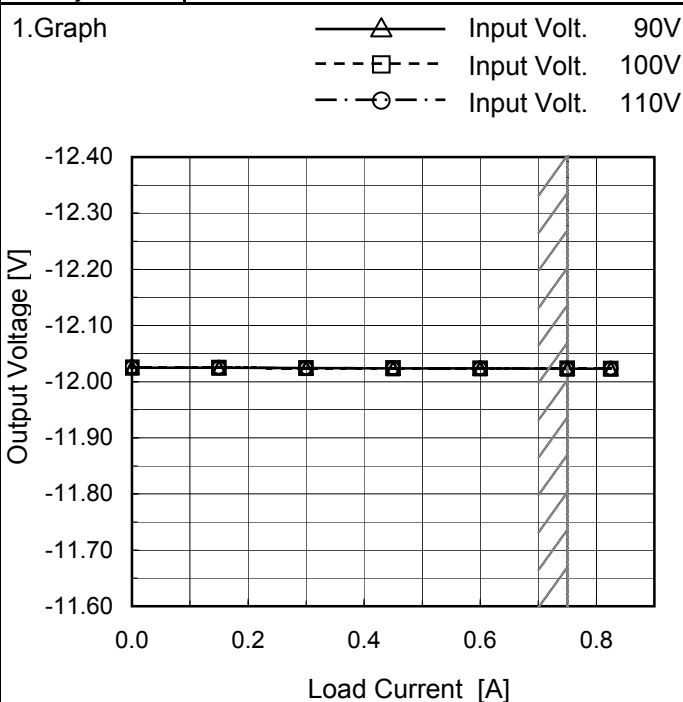
Temperature 25°C  
Testing Circuitry Figure A



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
--	-	-	-
--	-	-	-
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Object	-12V0.75A
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2.Values

Load Current [A]	Output Voltage [V]		
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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
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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



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

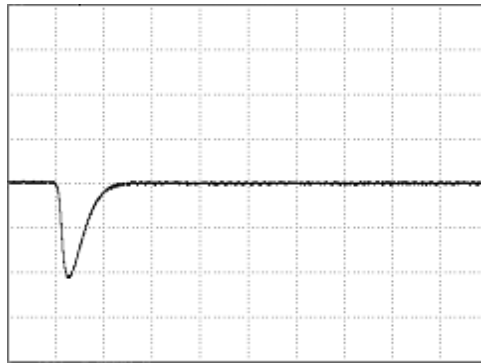
Input Volt. 100 V  
 Cycle 1000 ms

Load Current

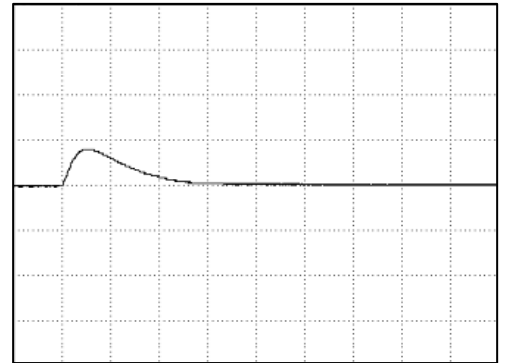


Min. Load (0A) ←→  
 Load 100% (0.75A)

50 mV/div



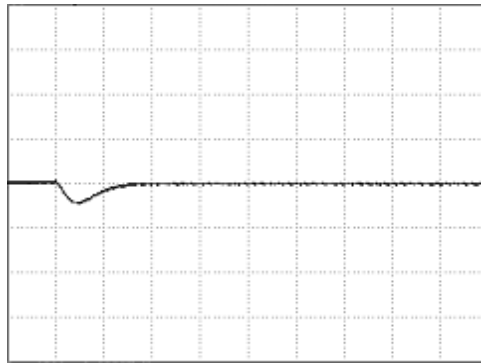
100 μs/div



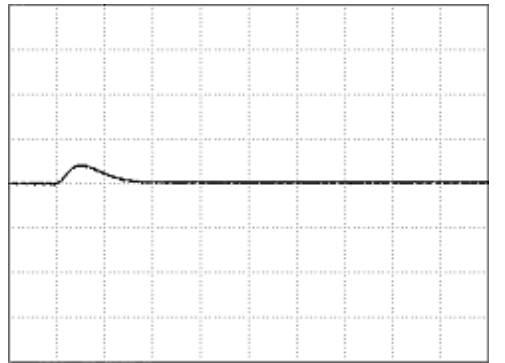
100 μs/div

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

50 mV/div



100 μs/div



100 μs/div



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

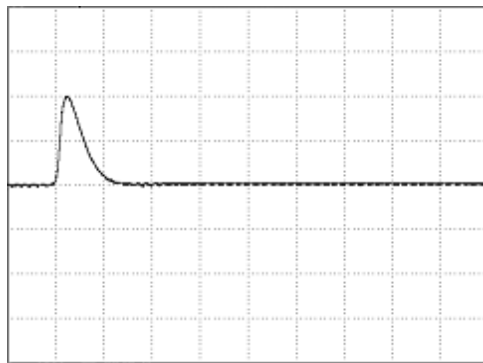
Input Volt. 100 V  
Cycle 1000 ms

Load Current

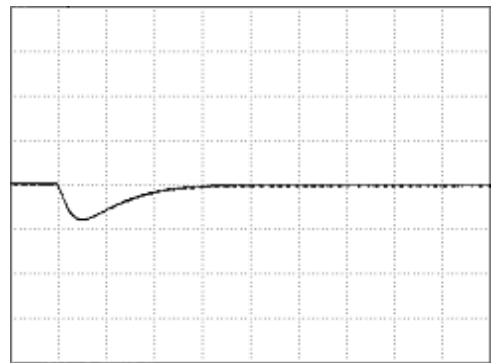


Min. Load (0A) ←→  
Load 100% (0.75A)

50 mV/div



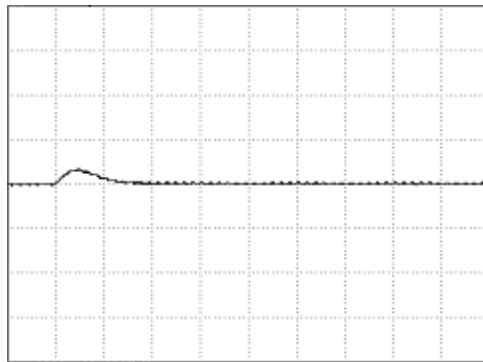
100 μs/div



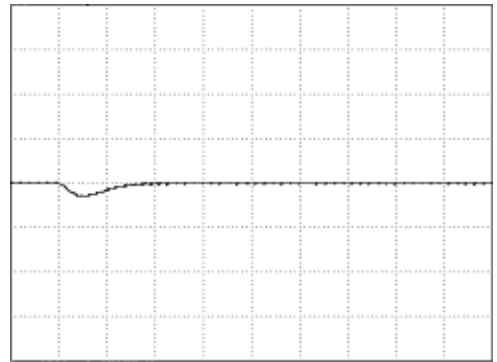
100 μs/div

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

50 mV/div



100 μs/div



100 μs/div



<p>Model GT2W-12</p>		<p>Temperature 25°C Testing Circuitry Figure A</p>																																									
<p>Item</p>	<p>Ripple Voltage (by Load Current)</p>																																										
<p>Object</p>	<p>+12V0.75A</p>																																										
<p>1.Graph</p> <div style="text-align: right;"> <p>—△— Input Volt. 90V</p> <p>-·-○-·- Input Volt. 110V</p> </div> <p>Measured by 20 MHz Oscilloscope. Note: Slanted line shows the range of the rated load current.</p>		<p>2.Values</p> <table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="2">Ripple Voltage [mV]</th> </tr> <tr> <th>Input Volt. 90 [V]</th> <th>Input Volt. 110 [V]</th> </tr> </thead> <tbody> <tr> <td>0.000</td> <td>0.6</td> <td>0.6</td> </tr> <tr> <td>0.375</td> <td>0.8</td> <td>0.8</td> </tr> <tr> <td>0.750</td> <td>0.9</td> <td>0.9</td> </tr> <tr> <td>--</td> <td>-</td> <td>-</td> </tr> <tr> <td>--</td> <td>-</td> <td>-</td> </tr> <tr> <td>--</td> <td>-</td> <td>-</td> </tr> <tr> <td>--</td> <td>-</td> <td>-</td> </tr> <tr> <td>--</td> <td>-</td> <td>-</td> </tr> <tr> <td>--</td> <td>-</td> <td>-</td> </tr> <tr> <td>--</td> <td>-</td> <td>-</td> </tr> <tr> <td>--</td> <td>-</td> <td>-</td> </tr> <tr> <td>--</td> <td>-</td> <td>-</td> </tr> </tbody> </table>	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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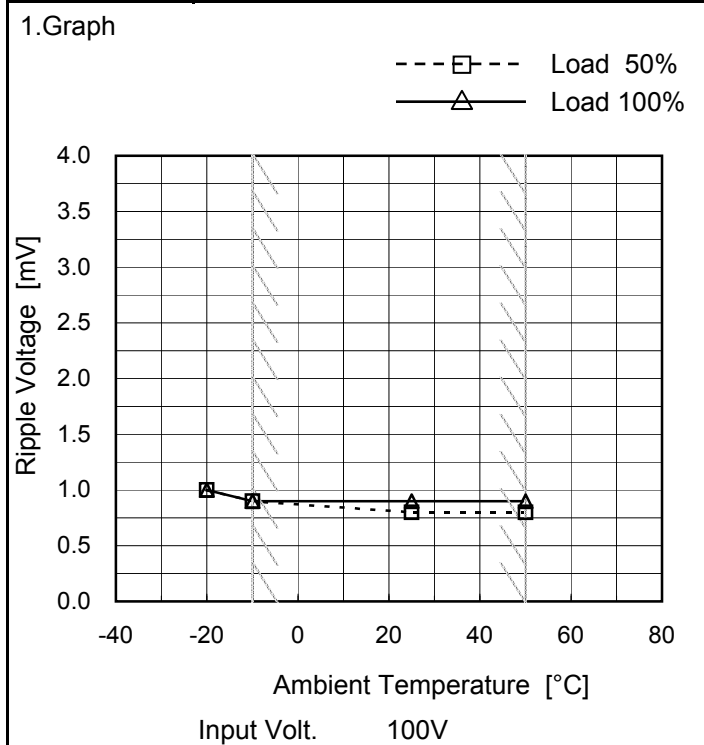


<b>COSEL</b>																																												
Model	GT2W-12	Temperature	25°C																																									
Item	Ripple Voltage (by Load Current)	Testing Circuitry	Figure A																																									
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Model	GT2W-12
Item	Ripple Voltage (by Ambient Temp.)
Object	+12V0.75A

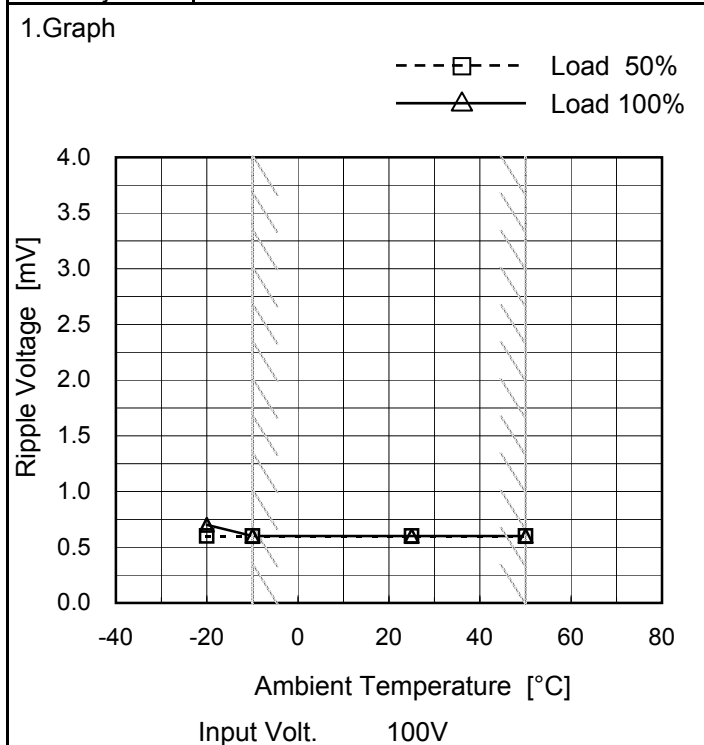
Testing Circuitry Figure A



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
--------	-----------



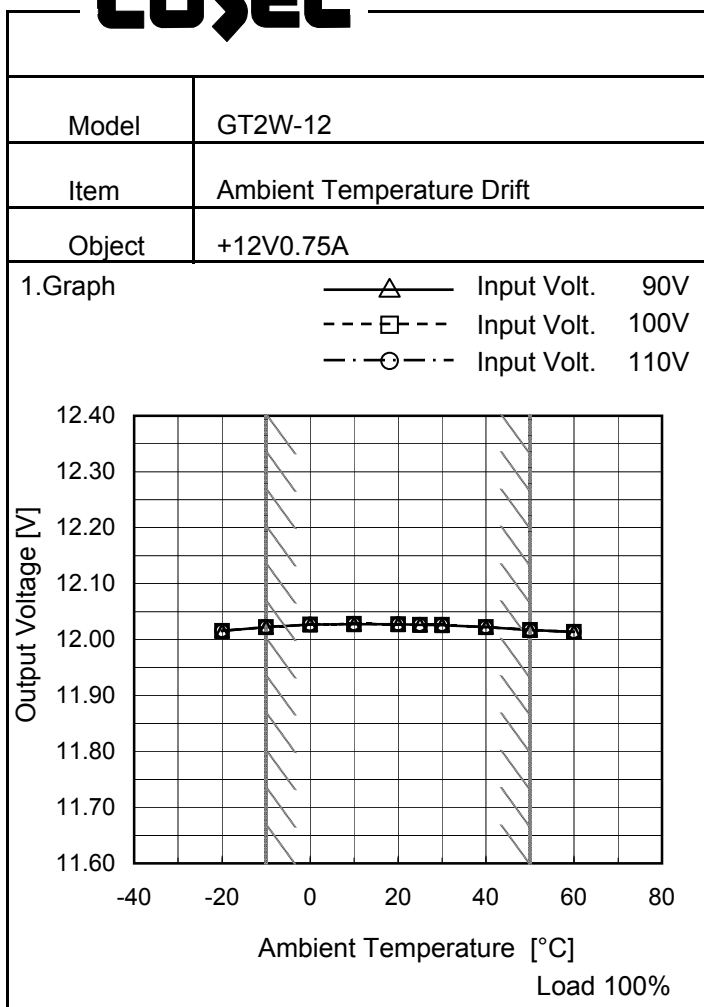
2.Values

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
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

Measured by 20 MHz Oscilloscope.

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

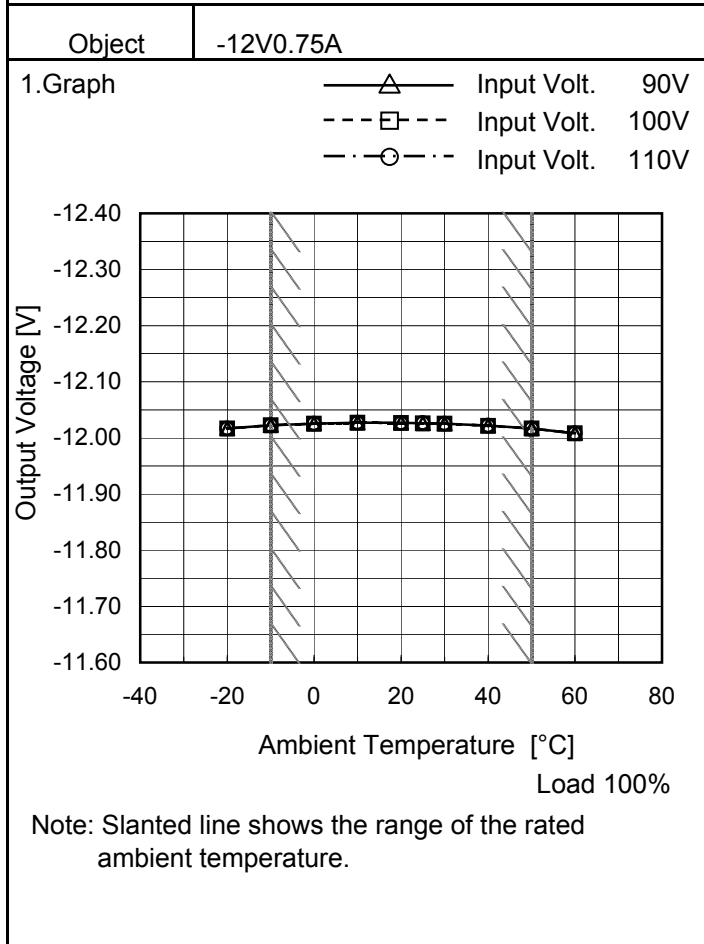




Testing Circuitry Figure A

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
--	-	-	-



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
--	-	-	-



<b>COSEL</b>		
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 =  $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

\* 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		

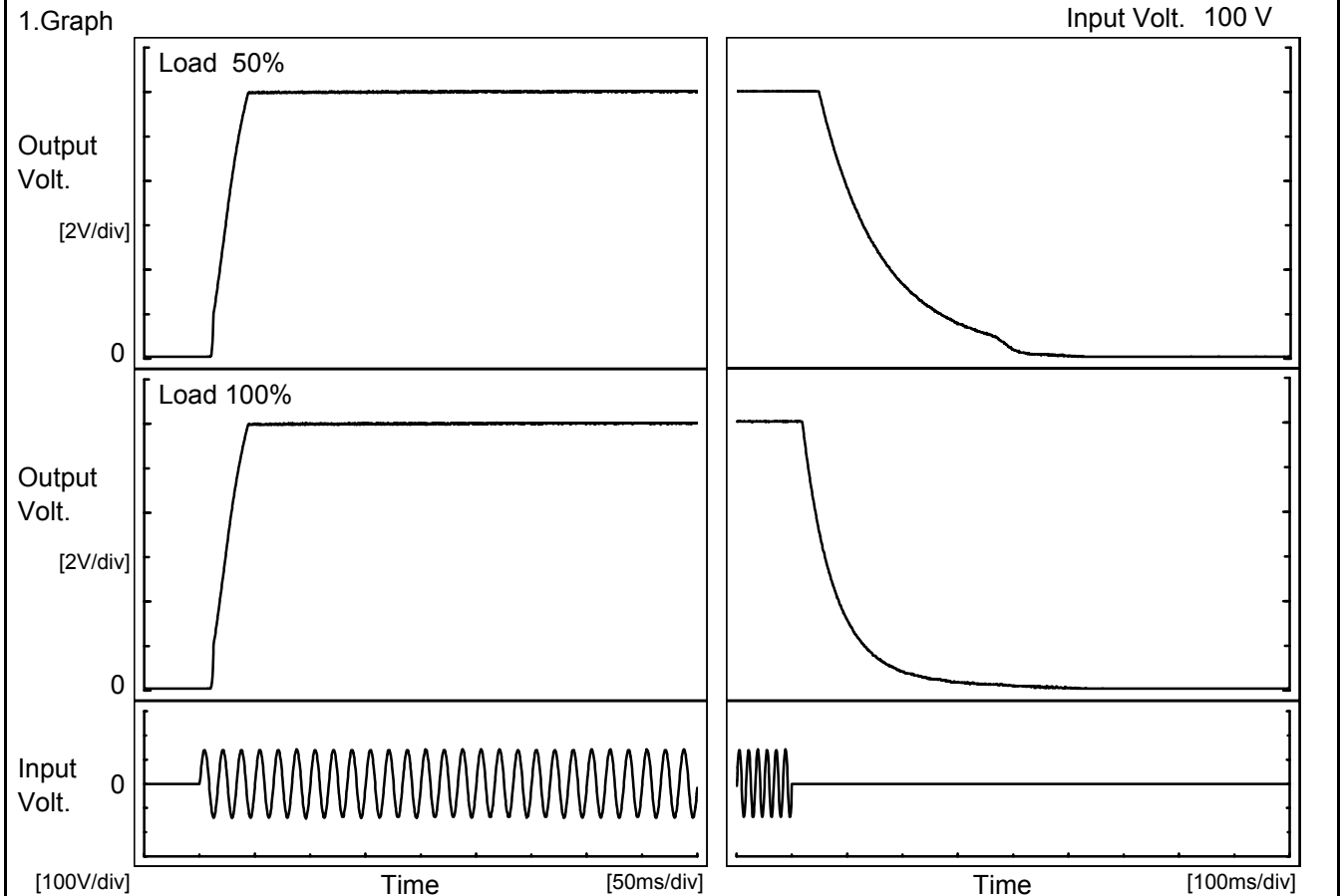
Object		-12V0.75A				
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	10	90	0	-12.029	±7	±0.1
Minimum Voltage	50	90	0.75	-12.016		



<b>COSEL</b>																									
Model	GT2W-12	Temperature	25°C																						
Item	Time Lapse Drift	Testing Circuitry	Figure A																						
Object	+12V0.75A																								
<p>1.Graph</p> <p style="text-align: center;">Time [H]</p> <p style="text-align: center;">Input Volt.    100V Load            100%</p>		<p>2.Values</p> <table border="1"> <thead> <tr> <th>Time since start [H]</th> <th>Output Voltage [V]</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>12.023</td></tr> <tr><td>0.5</td><td>12.023</td></tr> <tr><td>1.0</td><td>12.023</td></tr> <tr><td>2.0</td><td>12.023</td></tr> <tr><td>3.0</td><td>12.023</td></tr> <tr><td>4.0</td><td>12.023</td></tr> <tr><td>5.0</td><td>12.023</td></tr> <tr><td>6.0</td><td>12.023</td></tr> <tr><td>7.0</td><td>12.023</td></tr> <tr><td>8.0</td><td>12.023</td></tr> </tbody> </table>		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
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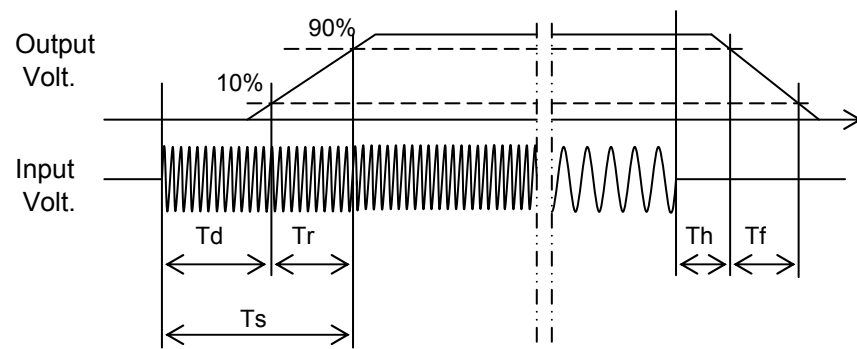
Model	GT2W-12	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	+12V0.75A		



2.Values

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

[ms]

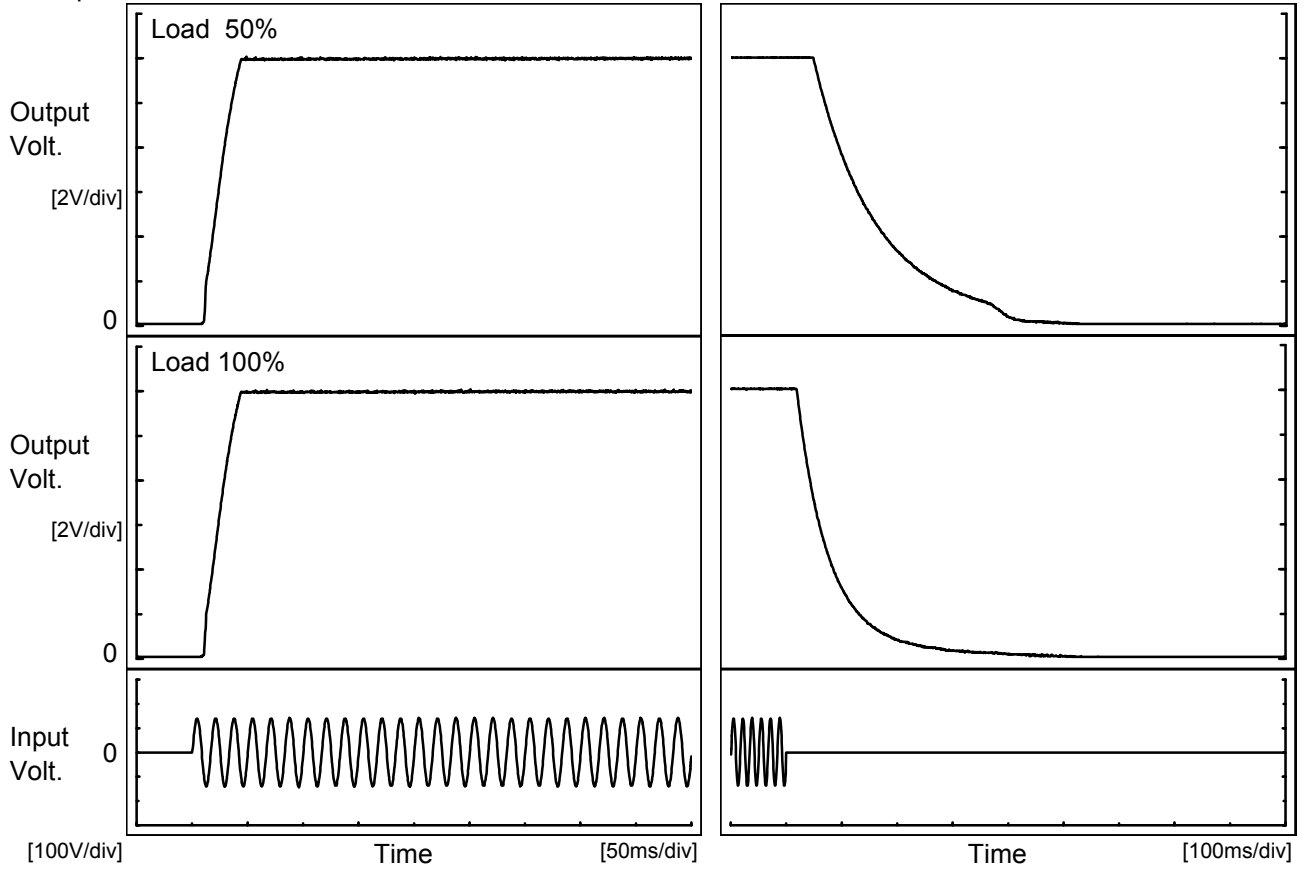




Model	GT2W-12	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	-12V0.75A		

1. Graph

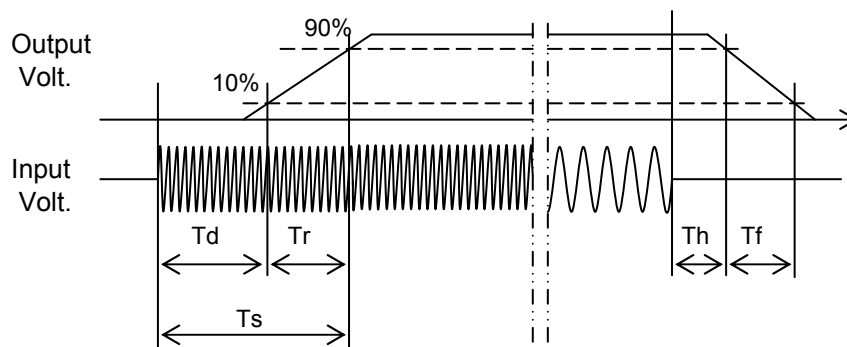
Input Volt. 100 V



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





Model		GT2W-12																																	
Item		Hold-Up Time																																	
Object		+12V0.75A																																	
Temperature		25°C																																	
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<p>Model GT2W-12</p>		<p>Temperature 25°C Testing Circuitry Figure A</p>																																																			
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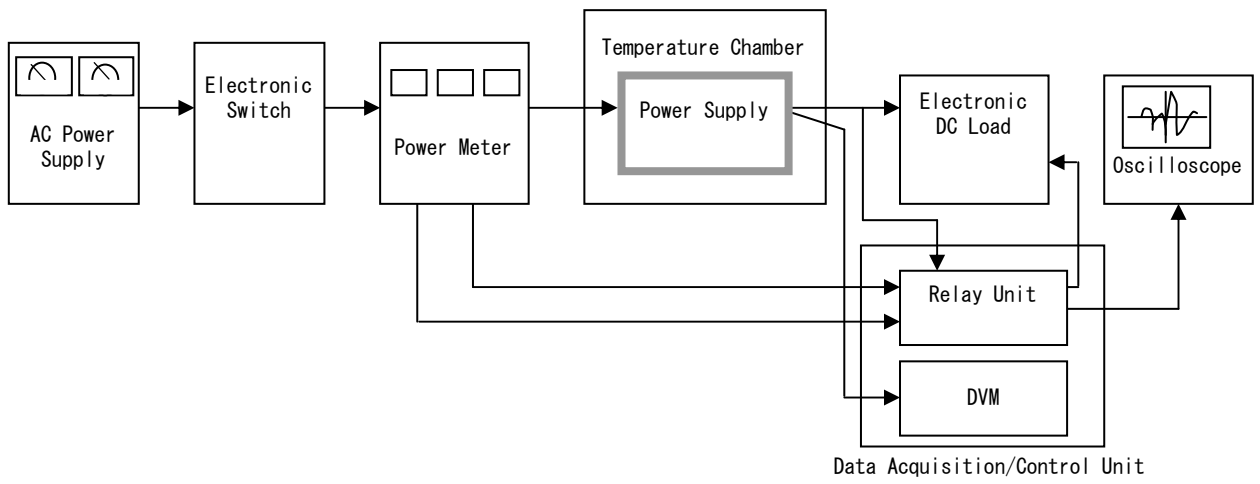


Figure A