

# TEST DATA OF STMGF152415

Regulated DC Power Supply  
January 26, 2013

Approved by : Takahiro Yoneda  
Takahiro Yoneda Design Manager

Prepared by : Satoshi Kinoshita  
Satoshi Kinoshita Design Engineer

**COSEL CO.,LTD.**

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Model		STMGFW152415		Temperature	25°C																																																																															
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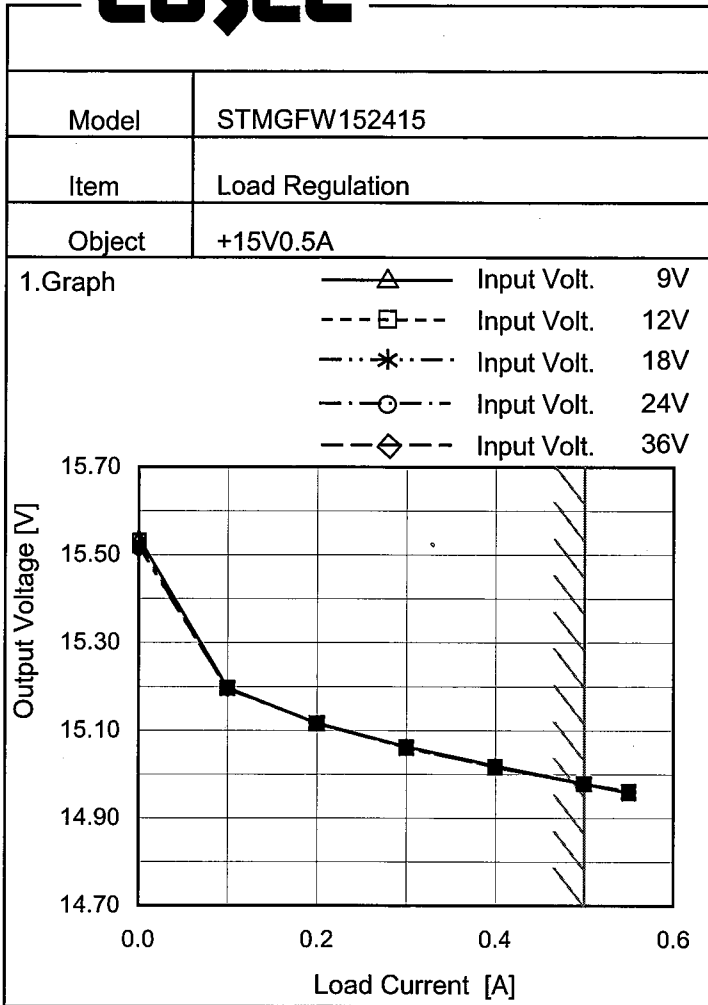


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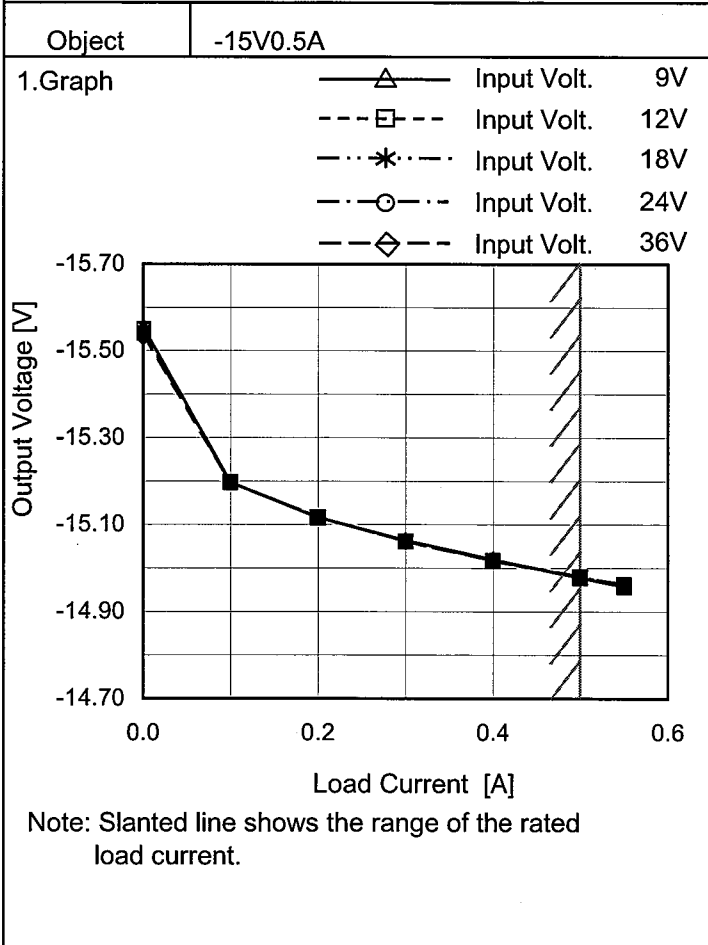




Temperature 25°C  
Testing Circuitry Figure A

2.Values

Load Current [A]	Output Voltage [V]				
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.00	15.539	15.531	15.522	15.516	15.514
0.10	15.197	15.197	15.196	15.196	15.196
0.20	15.116	15.116	15.116	15.116	15.115
0.30	15.064	15.061	15.061	15.061	15.060
0.40	15.020	15.016	15.016	15.017	15.016
0.50	14.979	14.979	14.979	14.979	14.979
0.55	14.958	14.961	14.961	14.961	14.961
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-



2.Values

Load Current [A]	Output Voltage [V]				
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.00	-15.556	-15.550	-15.543	-15.538	-15.532
0.10	-15.198	-15.198	-15.198	-15.197	-15.197
0.20	-15.116	-15.117	-15.117	-15.117	-15.116
0.30	-15.064	-15.061	-15.062	-15.061	-15.061
0.40	-15.020	-15.017	-15.018	-15.017	-15.017
0.50	-14.979	-14.979	-14.980	-14.980	-14.979
0.55	-14.958	-14.961	-14.962	-14.962	-14.962
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-



<p>Model STMGFW152415</p>		<p>Temperature 25°C Testing Circuitry Figure B</p>																																						
Item	Ripple Voltage (by Load Current)																																							
Object	+15V0.5A	<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. 9 [V]</th> <th>Input Volt. 36 [V]</th> </tr> </thead> <tbody> <tr><td>0.000</td><td>20</td><td>30</td></tr> <tr><td>0.100</td><td>25</td><td>30</td></tr> <tr><td>0.200</td><td>25</td><td>30</td></tr> <tr><td>0.300</td><td>25</td><td>30</td></tr> <tr><td>0.400</td><td>25</td><td>30</td></tr> <tr><td>0.500</td><td>25</td><td>30</td></tr> <tr><td>0.550</td><td>25</td><td>30</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> <p>-15V: Rated output current</p>	Load Current [A]	Ripple Voltage [mV]		Input Volt. 9 [V]	Input Volt. 36 [V]	0.000	20	30	0.100	25	30	0.200	25	30	0.300	25	30	0.400	25	30	0.500	25	30	0.550	25	30	--	-	-	--	-	-	--	-	-	--	-	-
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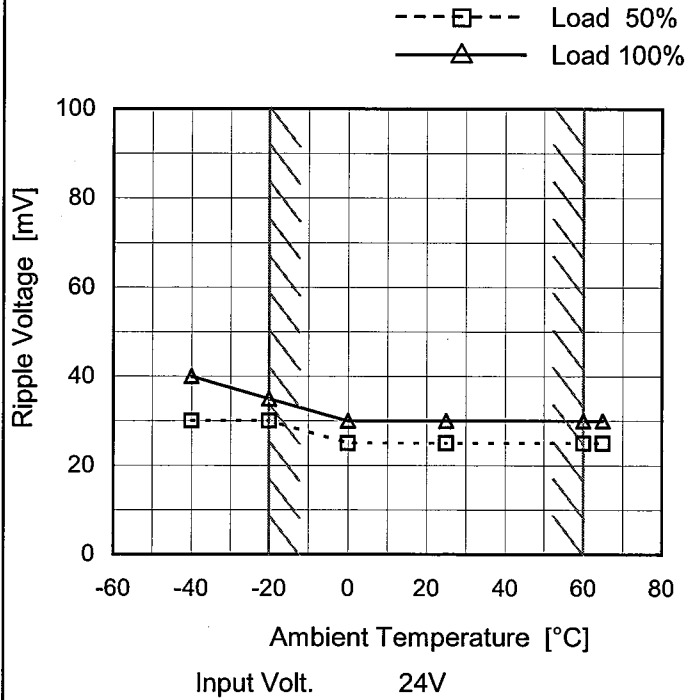
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Model	STMGFW152415
Item	Ripple Voltage (by Ambient Temp.)
Object	+15V0.5A

Testing Circuitry Figure B

1.Graph



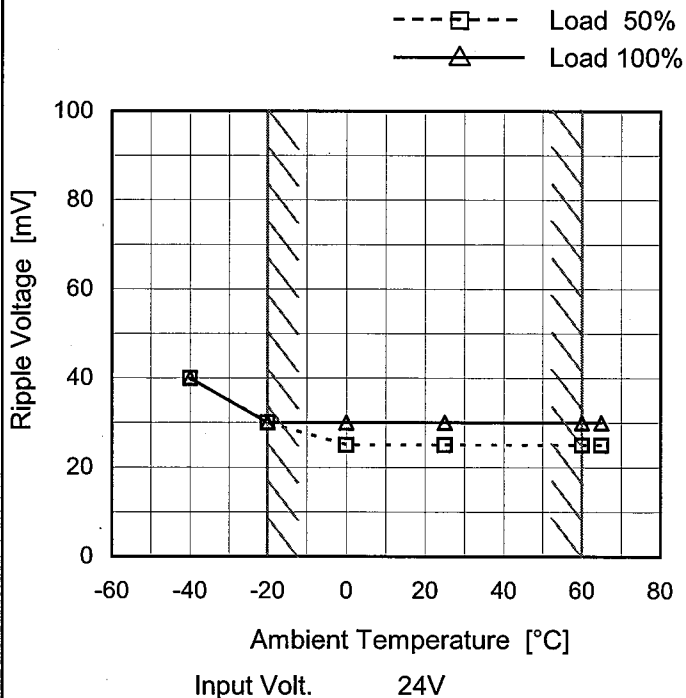
2.Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-40	30	40
-20	30	35
0	25	30
25	25	30
60	25	30
65	25	30
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

-15V: Rated output current

Object	-15V0.5A
--------	----------

1.Graph



2.Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-40	40	40
-20	30	30
0	25	30
25	25	30
60	25	30
65	25	30
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

+15V: Rated output current

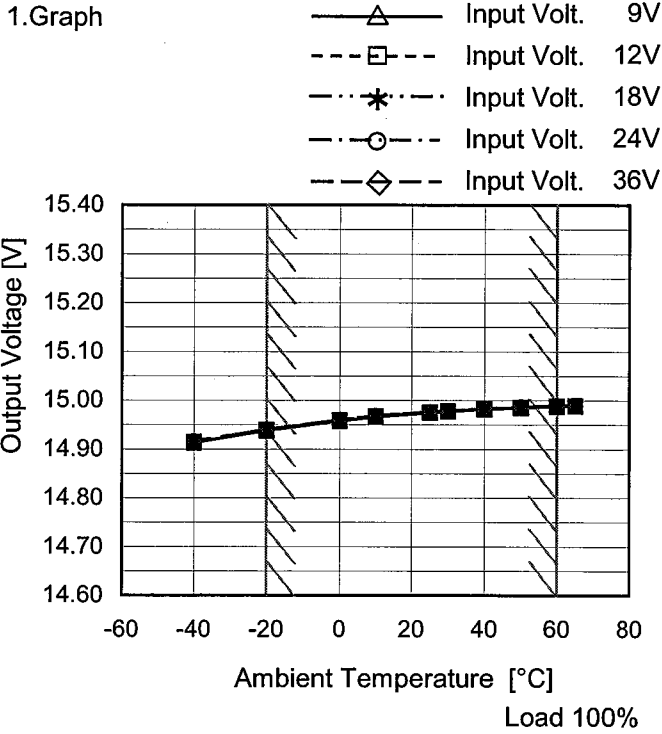
Measured by 100 MHz Oscilloscope.

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



Model	STMGFW152415
Item	Ambient Temperature Drift
Object	+15V0.5A

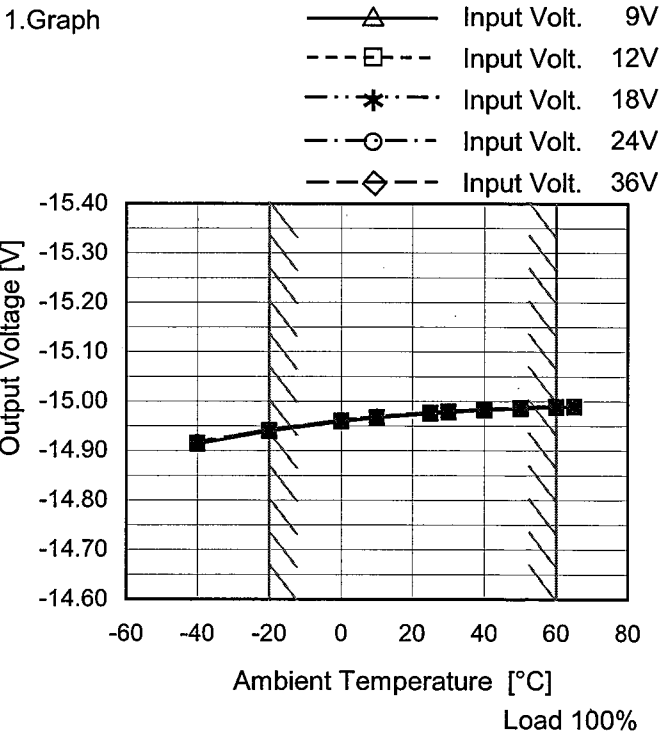
Testing Circuitry Figure A



2.Values

Ambient Temperature [°C]	Output Voltage [V]				
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
-40	14.913	14.914	14.915	14.916	14.916
-20	14.939	14.939	14.940	14.941	14.941
0	14.958	14.959	14.960	14.960	14.960
10	14.967	14.967	14.968	14.968	14.968
25	14.975	14.975	14.976	14.977	14.977
30	14.978	14.978	14.979	14.979	14.979
40	14.982	14.982	14.983	14.983	14.983
50	14.986	14.986	14.986	14.987	14.987
60	14.988	14.989	14.989	14.989	14.989
65	14.989	14.989	14.990	14.990	14.990
--	-	-	-	-	-

Object	-15V0.5A
--------	----------



2.Values

Ambient Temperature [°C]	Output Voltage [V]				
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
-40	-14.914	-14.916	-14.917	-14.917	-14.918
-20	-14.940	-14.941	-14.942	-14.942	-14.943
0	-14.960	-14.960	-14.961	-14.962	-14.962
10	-14.967	-14.968	-14.969	-14.969	-14.969
25	-14.975	-14.976	-14.977	-14.978	-14.978
30	-14.978	-14.979	-14.980	-14.980	-14.980
40	-14.982	-14.983	-14.984	-14.985	-14.984
50	-14.986	-14.987	-14.987	-14.988	-14.987
60	-14.989	-14.989	-14.990	-14.990	-14.990
65	-14.989	-14.990	-14.990	-14.991	-14.991
--	-	-	-	-	-

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



Model		STMGF152415	Testing Circuitry Figure A
Item		Output Voltage Accuracy	

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 : -20 - 60°C

Input Voltage : 9 - 36V

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

\* 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		+15V0.5A		Output		Output Voltage Accuracy	
Item	Temperature [°C]	Input Voltage[V]	Output		Value [mV]	Ration [%]	
			Current[A]	Voltage[V]			
Maximum Voltage	60	9	0	15.564	±314	±2.1	
Minimum Voltage	-20	9	0.5	14.936			

Object		-15V0.5A		Output		Output Voltage Accuracy	
Item	Temperature [°C]	Input Voltage[V]	Output		Value [mV]	Ration [%]	
			Current[A]	Voltage[V]			
Maximum Voltage	60	9	0	-15.586	±323	±2.2	
Minimum Voltage	-20	9	0.5	-14.940			





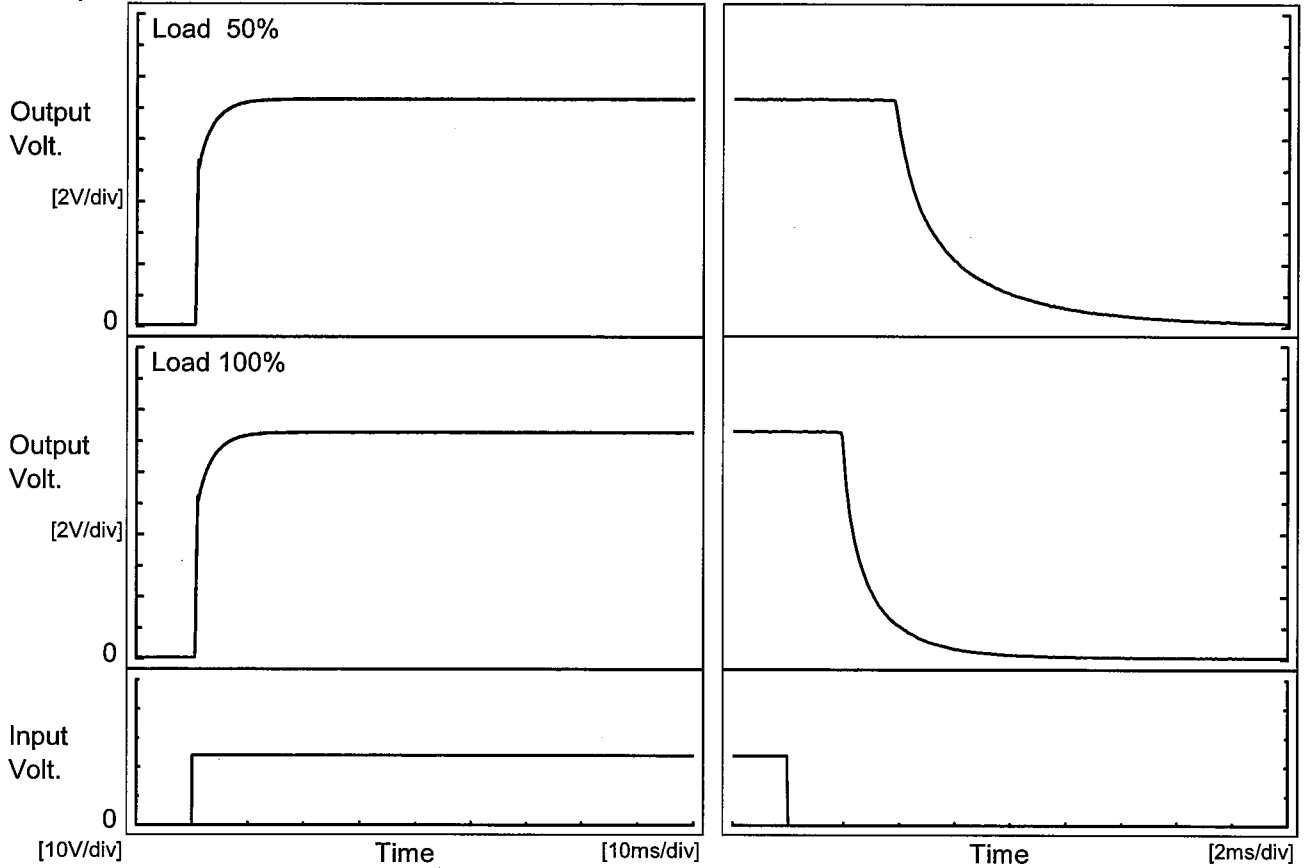
<b>COSEL</b>																									
Model	STMGFW152415	Temperature	25°C																						
Item	Time Lapse Drift	Testing Circuitry	Figure A																						
Object	+15V0.5A																								
<p>1.Graph</p> <p style="text-align: center;">Time [H]</p> <p>Input Volt. 24V Load 100%</p>		<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>14.963</td></tr> <tr><td>0.5</td><td>14.971</td></tr> <tr><td>1.0</td><td>14.971</td></tr> <tr><td>2.0</td><td>14.971</td></tr> <tr><td>3.0</td><td>14.971</td></tr> <tr><td>4.0</td><td>14.971</td></tr> <tr><td>5.0</td><td>14.971</td></tr> <tr><td>6.0</td><td>14.971</td></tr> <tr><td>7.0</td><td>14.971</td></tr> <tr><td>8.0</td><td>14.971</td></tr> </tbody> </table>		Time since start [H]	Output Voltage [V]	0.0	14.963	0.5	14.971	1.0	14.971	2.0	14.971	3.0	14.971	4.0	14.971	5.0	14.971	6.0	14.971	7.0	14.971	8.0	14.971
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<p>1.Graph</p> <p style="text-align: center;">Time [H]</p> <p>Input Volt. 24V 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>-14.978</td></tr> <tr><td>0.5</td><td>-14.987</td></tr> <tr><td>1.0</td><td>-14.987</td></tr> <tr><td>2.0</td><td>-14.987</td></tr> <tr><td>3.0</td><td>-14.987</td></tr> <tr><td>4.0</td><td>-14.987</td></tr> <tr><td>5.0</td><td>-14.987</td></tr> <tr><td>6.0</td><td>-14.987</td></tr> <tr><td>7.0</td><td>-14.987</td></tr> <tr><td>8.0</td><td>-14.987</td></tr> </tbody> </table>		Time since start [H]	Output Voltage [V]	0.0	-14.978	0.5	-14.987	1.0	-14.987	2.0	-14.987	3.0	-14.987	4.0	-14.987	5.0	-14.987	6.0	-14.987	7.0	-14.987	8.0	-14.987
Time since start [H]	Output Voltage [V]																								
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Model	STMGFW152415	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	+15V0.5A		

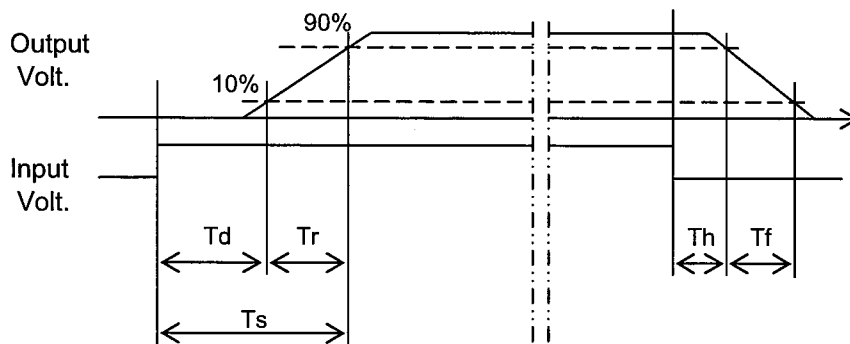
1. Graph

Input Volt. 24 V



2. Values

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	0.7	4.6	5.3	3.9	5.2
100 %	0.6	4.6	5.2	2.0	2.6

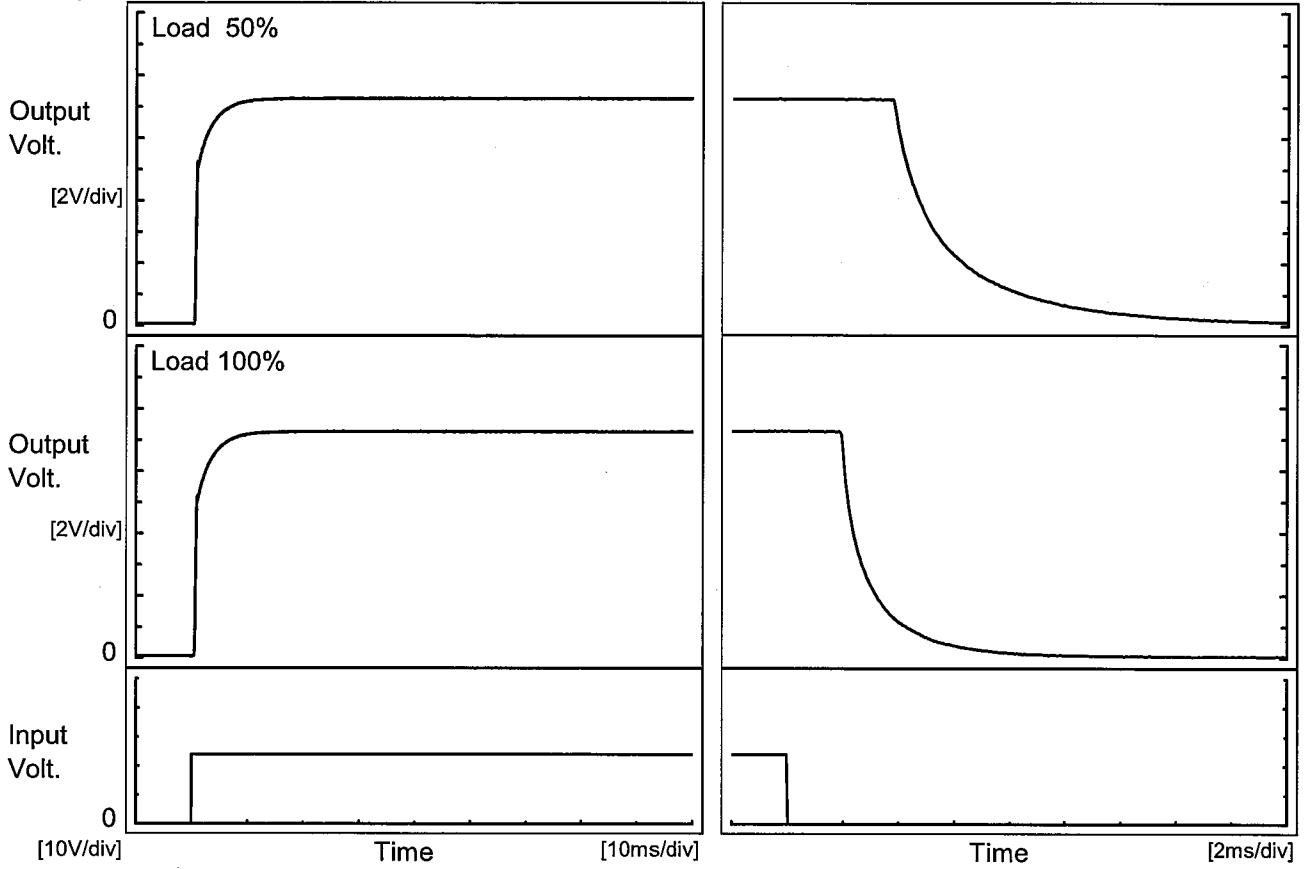




Model	STMGFW152415	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	-15V0.5A		

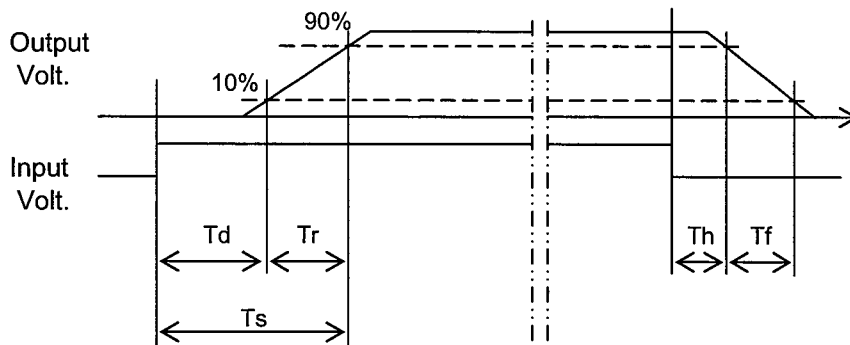
1. Graph

Input Volt. 24 V



2. Values

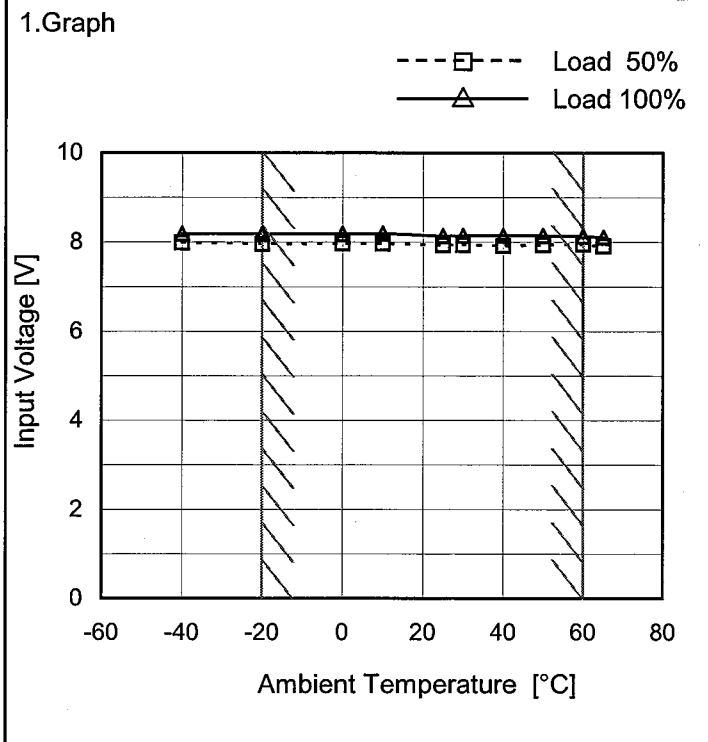
Load \ Time	Td	Tr	Ts	Th	Tf
50 %	0.7	4.7	5.4	3.9	5.5
100 %	0.7	4.7	5.4	2.0	2.7





Model	STMGFW152415
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+15V0.5A

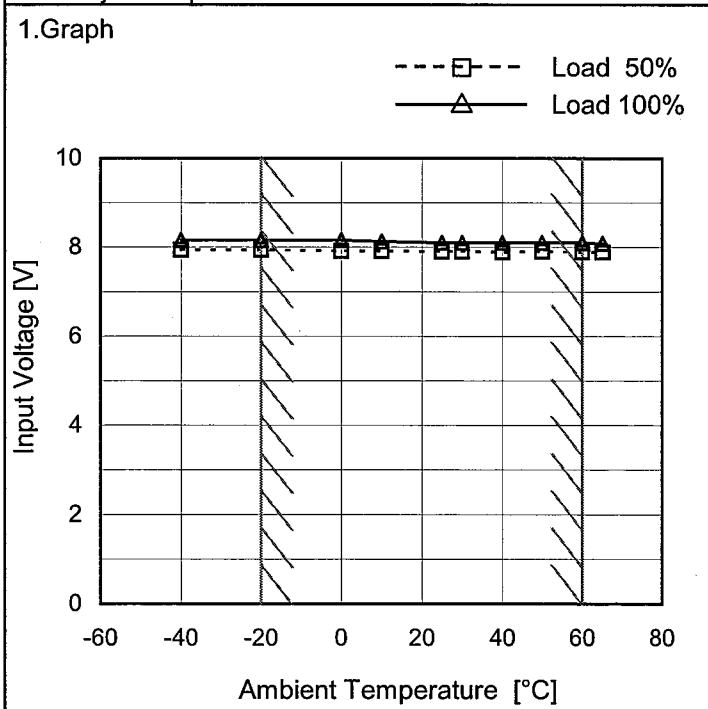
Testing Circuitry Figure A



2.Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-40	8.0	8.2
-20	8.0	8.2
0	8.0	8.2
10	8.0	8.2
25	8.0	8.2
30	8.0	8.2
40	8.0	8.2
50	8.0	8.2
60	8.0	8.2
65	8.0	8.2
--	-	-

Object	-15V0.5A
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2.Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-40	8.0	8.2
-20	8.0	8.2
0	8.0	8.2
10	8.0	8.2
25	7.9	8.1
30	7.9	8.1
40	7.9	8.1
50	7.9	8.1
60	7.9	8.1
65	7.9	8.1
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Note: Slanted line shows the range of the rated ambient temperature.



<b>COSEL</b>																																																																																									
Model	STMGFW152415	Temperature 25°C Testing Circuitry Figure A																																																																																							
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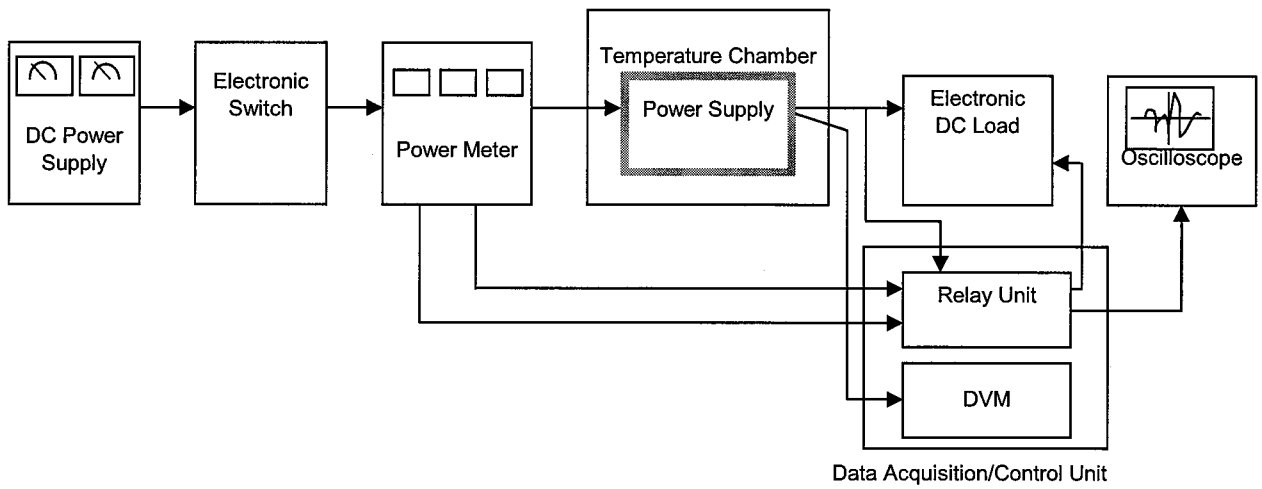


Figure A

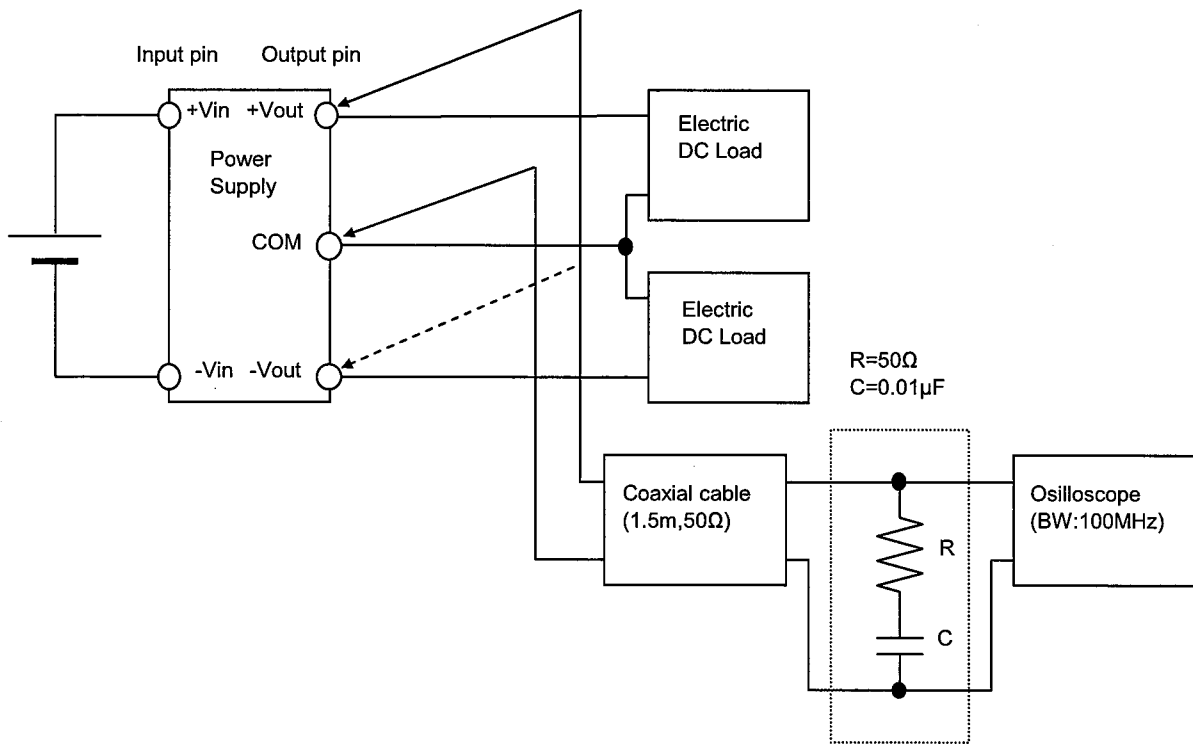


Figure B (Ripple and Ripple noise Characteristic)