

TEST DATA OF STMGFS152405

Regulated DC Power Supply
January 28, 2013

Approved by :

Takahiro Yoneda

Takahiro Yoneda

Design Manager

Prepared by :

Satoshi Kinoshita

Satoshi Kinoshita

Design Engineer

COSEL CO.,LTD.

CONTENTS

1. Input Current (by Input Voltage) · · · · ·	1
2. Input Current (by Load Current) · · · · ·	2
3. Input Power (by Load Current) · · · · ·	3
4. Efficiency (by Input Voltage) · · · · ·	4
5. Efficiency (by Load Current) · · · · ·	5
6. Line Regulation · · · · ·	6
7. Load Regulation · · · · ·	7
8. Ripple Voltage (by Load Current) · · · · ·	8
9. Ripple-Noise · · · · ·	9
10. Ripple Voltage (by Ambient Temperature) · · · · ·	10
11. Ambient Temperature Drift · · · · ·	11
12. Output Voltage Accuracy · · · · ·	12
13. Time Lapse Drift · · · · ·	13
14. Rise and Fall Time · · · · ·	14
15. Minimum Input Voltage for Regulated Output Voltage · · · · ·	15
16. Overcurrent Protection · · · · ·	16
17. Figure of Testing Circuitry · · · · ·	17

(Final Page 17)

COSEL

Model	STMGFS152405	Temperature Testing Circuitry	25°C Figure A																																																																															
Item	Input Current (by Input Voltage)																																																																																	
Object	—																																																																																	
1.Graph	<p>—△— Load 100%</p> <p>- - □ - - Load 50%</p> <p>- - ○ - - Load 0%</p> <table border="1"> <caption>Data points estimated from Graph</caption> <thead> <tr> <th>Input Voltage [V]</th> <th>Load 0% [A]</th> <th>Load 50% [A]</th> <th>Load 100% [A]</th> </tr> </thead> <tbody> <tr><td>8</td><td>0.000</td><td>0.000</td><td>0.000</td></tr> <tr><td>10</td><td>0.000</td><td>0.000</td><td>0.000</td></tr> <tr><td>12</td><td>0.000</td><td>0.000</td><td>0.000</td></tr> <tr><td>15</td><td>0.000</td><td>0.000</td><td>0.000</td></tr> <tr><td>20</td><td>0.000</td><td>0.000</td><td>0.000</td></tr> <tr><td>25</td><td>0.000</td><td>0.000</td><td>0.000</td></tr> <tr><td>30</td><td>0.000</td><td>0.000</td><td>0.000</td></tr> <tr><td>35</td><td>0.000</td><td>0.000</td><td>0.000</td></tr> <tr><td>40</td><td>0.000</td><td>0.000</td><td>0.000</td></tr> </tbody> </table>			Input Voltage [V]	Load 0% [A]	Load 50% [A]	Load 100% [A]	8	0.000	0.000	0.000	10	0.000	0.000	0.000	12	0.000	0.000	0.000	15	0.000	0.000	0.000	20	0.000	0.000	0.000	25	0.000	0.000	0.000	30	0.000	0.000	0.000	35	0.000	0.000	0.000	40	0.000	0.000	0.000																																							
Input Voltage [V]	Load 0% [A]	Load 50% [A]	Load 100% [A]																																																																															
8	0.000	0.000	0.000																																																																															
10	0.000	0.000	0.000																																																																															
12	0.000	0.000	0.000																																																																															
15	0.000	0.000	0.000																																																																															
20	0.000	0.000	0.000																																																																															
25	0.000	0.000	0.000																																																																															
30	0.000	0.000	0.000																																																																															
35	0.000	0.000	0.000																																																																															
40	0.000	0.000	0.000																																																																															
2.Values	<table border="1"> <thead> <tr> <th rowspan="2">Input Voltage [V]</th> <th colspan="3">Input Current [A]</th> </tr> <tr> <th>Load 0%</th> <th>Load 50%</th> <th>Load 100%</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>0.000</td><td>0.000</td><td>0.000</td></tr> <tr><td>2.0</td><td>0.000</td><td>0.000</td><td>0.000</td></tr> <tr><td>4.0</td><td>0.001</td><td>0.001</td><td>0.002</td></tr> <tr><td>6.0</td><td>0.002</td><td>0.002</td><td>0.003</td></tr> <tr><td>7.0</td><td>0.002</td><td>0.002</td><td>0.002</td></tr> <tr><td>8.0</td><td>0.002</td><td>0.002</td><td>0.002</td></tr> <tr><td>8.1</td><td>0.002</td><td>0.003</td><td>0.002</td></tr> <tr><td>8.3</td><td>0.086</td><td>1.067</td><td>0.306</td></tr> <tr><td>8.5</td><td>0.084</td><td>1.039</td><td>0.845</td></tr> <tr><td>8.6</td><td>0.083</td><td>1.028</td><td>2.117</td></tr> <tr><td>9.0</td><td>0.081</td><td>0.991</td><td>2.026</td></tr> <tr><td>12.0</td><td>0.068</td><td>0.726</td><td>1.469</td></tr> <tr><td>18.0</td><td>0.053</td><td>0.494</td><td>0.959</td></tr> <tr><td>24.0</td><td>0.044</td><td>0.368</td><td>0.719</td></tr> <tr><td>36.0</td><td>0.036</td><td>0.249</td><td>0.479</td></tr> <tr><td>40.0</td><td>0.033</td><td>0.226</td><td>0.432</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td></tr> </tbody> </table>			Input Voltage [V]	Input Current [A]			Load 0%	Load 50%	Load 100%	0.0	0.000	0.000	0.000	2.0	0.000	0.000	0.000	4.0	0.001	0.001	0.002	6.0	0.002	0.002	0.003	7.0	0.002	0.002	0.002	8.0	0.002	0.002	0.002	8.1	0.002	0.003	0.002	8.3	0.086	1.067	0.306	8.5	0.084	1.039	0.845	8.6	0.083	1.028	2.117	9.0	0.081	0.991	2.026	12.0	0.068	0.726	1.469	18.0	0.053	0.494	0.959	24.0	0.044	0.368	0.719	36.0	0.036	0.249	0.479	40.0	0.033	0.226	0.432	--	-	-	-	--	-	-	-
Input Voltage [V]	Input Current [A]																																																																																	
	Load 0%	Load 50%	Load 100%																																																																															
0.0	0.000	0.000	0.000																																																																															
2.0	0.000	0.000	0.000																																																																															
4.0	0.001	0.001	0.002																																																																															
6.0	0.002	0.002	0.003																																																																															
7.0	0.002	0.002	0.002																																																																															
8.0	0.002	0.002	0.002																																																																															
8.1	0.002	0.003	0.002																																																																															
8.3	0.086	1.067	0.306																																																																															
8.5	0.084	1.039	0.845																																																																															
8.6	0.083	1.028	2.117																																																																															
9.0	0.081	0.991	2.026																																																																															
12.0	0.068	0.726	1.469																																																																															
18.0	0.053	0.494	0.959																																																																															
24.0	0.044	0.368	0.719																																																																															
36.0	0.036	0.249	0.479																																																																															
40.0	0.033	0.226	0.432																																																																															
--	-	-	-																																																																															
--	-	-	-																																																																															
Note:	Slanted line shows the range of the rated input voltage.																																																																																	

COSEL

Model	STMGFS152405	Temperature 25°C Testing Circuitry Figure A																																																																																
Item	Input Current (by Load Current)																																																																																	
Object	—																																																																																	
1.Graph	<p>—△— Input Volt. 9V - - □ - - Input Volt. 12V - - * - - Input Volt. 18V - - ○ - - Input Volt. 24V - - ◇ - - Input Volt. 36V</p> <table border="1"> <caption>Data points estimated from Figure A</caption> <thead> <tr> <th>Load Current [A]</th> <th>9[V]</th> <th>12[V]</th> <th>18[V]</th> <th>24[V]</th> <th>36[V]</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>0.081</td><td>0.068</td><td>0.053</td><td>0.044</td><td>0.036</td></tr> <tr><td>0.6</td><td>0.427</td><td>0.327</td><td>0.224</td><td>0.173</td><td>0.121</td></tr> <tr><td>1.2</td><td>0.789</td><td>0.589</td><td>0.398</td><td>0.304</td><td>0.207</td></tr> <tr><td>1.8</td><td>1.174</td><td>0.869</td><td>0.577</td><td>0.435</td><td>0.295</td></tr> <tr><td>2.4</td><td>1.578</td><td>1.165</td><td>0.767</td><td>0.572</td><td>0.385</td></tr> <tr><td>3.0</td><td>2.026</td><td>1.469</td><td>0.959</td><td>0.719</td><td>0.479</td></tr> </tbody> </table>					Load Current [A]	9[V]	12[V]	18[V]	24[V]	36[V]	0.0	0.081	0.068	0.053	0.044	0.036	0.6	0.427	0.327	0.224	0.173	0.121	1.2	0.789	0.589	0.398	0.304	0.207	1.8	1.174	0.869	0.577	0.435	0.295	2.4	1.578	1.165	0.767	0.572	0.385	3.0	2.026	1.469	0.959	0.719	0.479																																			
Load Current [A]	9[V]	12[V]	18[V]	24[V]	36[V]																																																																													
0.0	0.081	0.068	0.053	0.044	0.036																																																																													
0.6	0.427	0.327	0.224	0.173	0.121																																																																													
1.2	0.789	0.589	0.398	0.304	0.207																																																																													
1.8	1.174	0.869	0.577	0.435	0.295																																																																													
2.4	1.578	1.165	0.767	0.572	0.385																																																																													
3.0	2.026	1.469	0.959	0.719	0.479																																																																													
2.Values	<table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="5">Input Current [A]</th> </tr> <tr> <th>Input Volt. 9[V]</th> <th>Input Volt. 12[V]</th> <th>Input Volt. 18[V]</th> <th>Input Volt. 24[V]</th> <th>Input Volt. 36[V]</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>0.081</td><td>0.068</td><td>0.053</td><td>0.044</td><td>0.036</td></tr> <tr><td>0.6</td><td>0.427</td><td>0.327</td><td>0.224</td><td>0.173</td><td>0.121</td></tr> <tr><td>1.2</td><td>0.789</td><td>0.589</td><td>0.398</td><td>0.304</td><td>0.207</td></tr> <tr><td>1.8</td><td>1.174</td><td>0.869</td><td>0.577</td><td>0.435</td><td>0.295</td></tr> <tr><td>2.4</td><td>1.578</td><td>1.165</td><td>0.767</td><td>0.572</td><td>0.385</td></tr> <tr><td>3.0</td><td>2.026</td><td>1.469</td><td>0.959</td><td>0.719</td><td>0.479</td></tr> <tr><td>3.3</td><td>2.233</td><td>1.624</td><td>1.059</td><td>0.786</td><td>0.532</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> </tbody> </table>					Load Current [A]	Input Current [A]					Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	0.0	0.081	0.068	0.053	0.044	0.036	0.6	0.427	0.327	0.224	0.173	0.121	1.2	0.789	0.589	0.398	0.304	0.207	1.8	1.174	0.869	0.577	0.435	0.295	2.4	1.578	1.165	0.767	0.572	0.385	3.0	2.026	1.469	0.959	0.719	0.479	3.3	2.233	1.624	1.059	0.786	0.532	--	-	-	-	-	-	--	-	-	-	-	-	--	-	-	-	-	-	--	-	-	-	-	-
Load Current [A]	Input Current [A]																																																																																	
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]																																																																													
0.0	0.081	0.068	0.053	0.044	0.036																																																																													
0.6	0.427	0.327	0.224	0.173	0.121																																																																													
1.2	0.789	0.589	0.398	0.304	0.207																																																																													
1.8	1.174	0.869	0.577	0.435	0.295																																																																													
2.4	1.578	1.165	0.767	0.572	0.385																																																																													
3.0	2.026	1.469	0.959	0.719	0.479																																																																													
3.3	2.233	1.624	1.059	0.786	0.532																																																																													
--	-	-	-	-	-																																																																													
--	-	-	-	-	-																																																																													
--	-	-	-	-	-																																																																													
--	-	-	-	-	-																																																																													
Note:	Slanted line shows the range of the rated load current.																																																																																	

COSEL

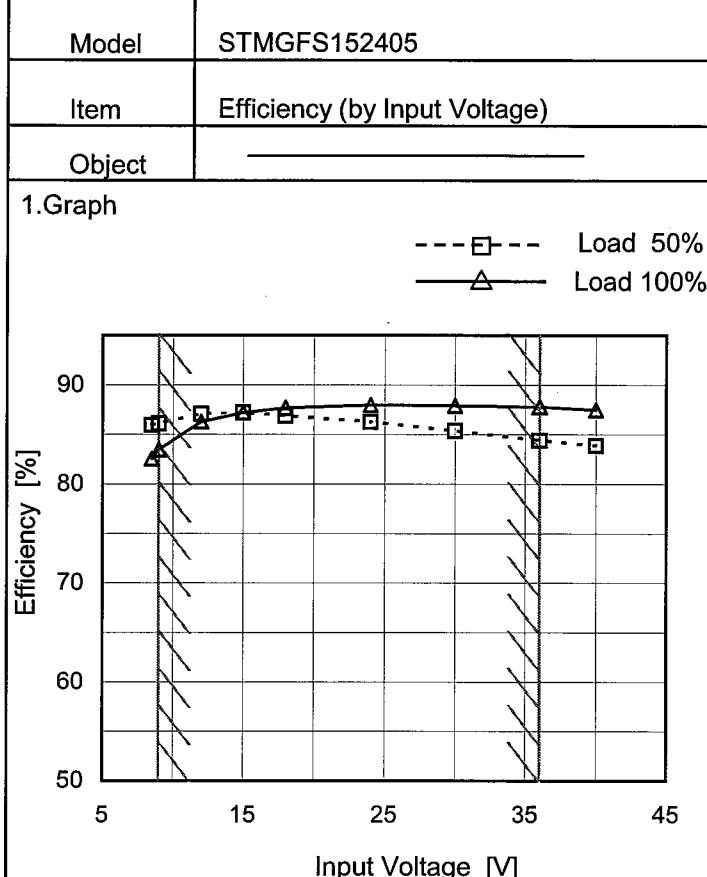
Model	STMGFS152405																																																																													
Item	Input Power (by Load Current)																																																																													
Object	<p>1. Graph</p> <p>Input Power [W]</p> <p>Load Current [A]</p> <p>Legend:</p> <ul style="list-style-type: none"> —△— Input Volt. 9V - - □ - - Input Volt. 12V - - * - - Input Volt. 18V - - ○ - - Input Volt. 24V - - ◇ - - Input Volt. 36V <table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="5">Input Power [W]</th> </tr> <tr> <th>9[V]</th> <th>12[V]</th> <th>18[V]</th> <th>24[V]</th> <th>36[V]</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>0.73</td><td>0.81</td><td>0.95</td><td>1.05</td><td>1.30</td></tr> <tr><td>0.6</td><td>3.83</td><td>3.89</td><td>4.02</td><td>4.15</td><td>4.35</td></tr> <tr><td>1.2</td><td>7.09</td><td>7.08</td><td>7.17</td><td>7.26</td><td>7.43</td></tr> <tr><td>1.8</td><td>10.57</td><td>10.44</td><td>10.37</td><td>10.42</td><td>10.58</td></tr> <tr><td>2.4</td><td>14.26</td><td>13.93</td><td>13.79</td><td>13.73</td><td>13.81</td></tr> <tr><td>3.0</td><td>18.15</td><td>17.55</td><td>17.25</td><td>17.21</td><td>17.25</td></tr> <tr><td>3.3</td><td>20.14</td><td>19.48</td><td>19.07</td><td>18.94</td><td>19.08</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> </tbody> </table>	Load Current [A]	Input Power [W]					9[V]	12[V]	18[V]	24[V]	36[V]	0.0	0.73	0.81	0.95	1.05	1.30	0.6	3.83	3.89	4.02	4.15	4.35	1.2	7.09	7.08	7.17	7.26	7.43	1.8	10.57	10.44	10.37	10.42	10.58	2.4	14.26	13.93	13.79	13.73	13.81	3.0	18.15	17.55	17.25	17.21	17.25	3.3	20.14	19.48	19.07	18.94	19.08	--	-	-	-	-	-	--	-	-	-	-	-	--	-	-	-	-	-	--	-	-	-	-	-
Load Current [A]	Input Power [W]																																																																													
	9[V]	12[V]	18[V]	24[V]	36[V]																																																																									
0.0	0.73	0.81	0.95	1.05	1.30																																																																									
0.6	3.83	3.89	4.02	4.15	4.35																																																																									
1.2	7.09	7.08	7.17	7.26	7.43																																																																									
1.8	10.57	10.44	10.37	10.42	10.58																																																																									
2.4	14.26	13.93	13.79	13.73	13.81																																																																									
3.0	18.15	17.55	17.25	17.21	17.25																																																																									
3.3	20.14	19.48	19.07	18.94	19.08																																																																									
--	-	-	-	-	-																																																																									
--	-	-	-	-	-																																																																									
--	-	-	-	-	-																																																																									
--	-	-	-	-	-																																																																									

Temperature 25°C
Testing Circuitry Figure A

2.Values

Load Current [A]	Input Power [W]				
	9[V]	12[V]	18[V]	24[V]	36[V]
0.0	0.73	0.81	0.95	1.05	1.30
0.6	3.83	3.89	4.02	4.15	4.35
1.2	7.09	7.08	7.17	7.26	7.43
1.8	10.57	10.44	10.37	10.42	10.58
2.4	14.26	13.93	13.79	13.73	13.81
3.0	18.15	17.55	17.25	17.21	17.25
3.3	20.14	19.48	19.07	18.94	19.08
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

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

COSEL

Temperature 25°C
Testing Circuitry Figure A

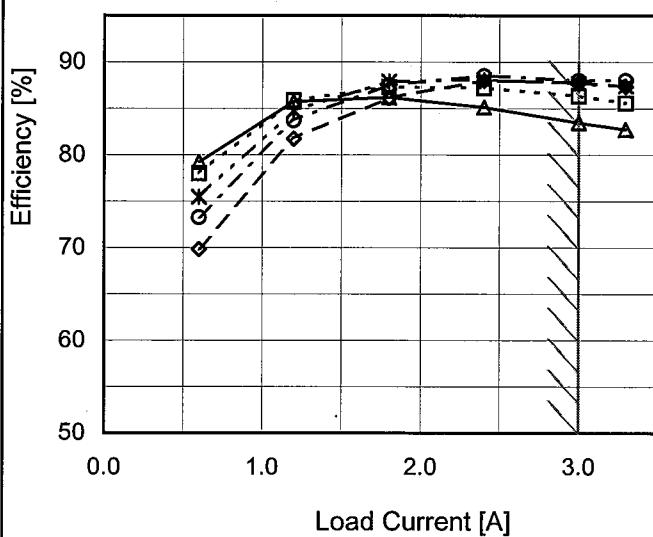
2. Values

Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
8.5	86.0	82.6
9.0	86.1	83.5
12.0	87.1	86.3
15.0	87.2	87.2
18.0	86.9	87.7
24.0	86.3	88.0
30.0	85.4	87.9
36.0	84.4	87.8
40.0	83.9	87.5

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

COSEL

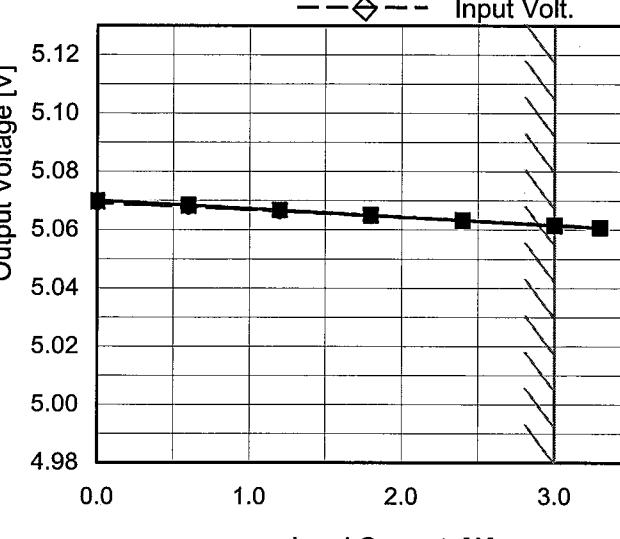
Model	STMGFS152405	Temperature 25°C Testing Circuitry Figure A																																																																																
Item	Efficiency (by Load Current)																																																																																	
Object	—																																																																																	
1.Graph	<p>—△— Input Volt. 9V - - □ - - Input Volt. 12V - - * - - Input Volt. 18V - - ○ - - Input Volt. 24V - - ♦ - - Input Volt. 36V</p> <table border="1"> <caption>Data points estimated from Graph 1</caption> <thead> <tr> <th>Load Current [A]</th> <th>9[V] (%)</th> <th>12[V] (%)</th> <th>18[V] (%)</th> <th>24[V] (%)</th> <th>36[V] (%)</th> </tr> </thead> <tbody> <tr><td>0.6</td><td>79.2</td><td>78.0</td><td>75.5</td><td>73.3</td><td>69.8</td></tr> <tr><td>1.2</td><td>85.8</td><td>85.8</td><td>84.8</td><td>83.7</td><td>81.8</td></tr> <tr><td>1.8</td><td>86.2</td><td>87.3</td><td>87.9</td><td>87.5</td><td>86.1</td></tr> <tr><td>2.4</td><td>85.1</td><td>87.2</td><td>88.1</td><td>88.5</td><td>88.0</td></tr> <tr><td>3.0</td><td>83.5</td><td>86.3</td><td>87.7</td><td>88.0</td><td>87.8</td></tr> </tbody> </table>					Load Current [A]	9[V] (%)	12[V] (%)	18[V] (%)	24[V] (%)	36[V] (%)	0.6	79.2	78.0	75.5	73.3	69.8	1.2	85.8	85.8	84.8	83.7	81.8	1.8	86.2	87.3	87.9	87.5	86.1	2.4	85.1	87.2	88.1	88.5	88.0	3.0	83.5	86.3	87.7	88.0	87.8																																									
Load Current [A]	9[V] (%)	12[V] (%)	18[V] (%)	24[V] (%)	36[V] (%)																																																																													
0.6	79.2	78.0	75.5	73.3	69.8																																																																													
1.2	85.8	85.8	84.8	83.7	81.8																																																																													
1.8	86.2	87.3	87.9	87.5	86.1																																																																													
2.4	85.1	87.2	88.1	88.5	88.0																																																																													
3.0	83.5	86.3	87.7	88.0	87.8																																																																													
2.Values	<table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="5">Efficiency [%]</th> </tr> <tr> <th>Input Volt. 9[V]</th> <th>Input Volt. 12[V]</th> <th>Input Volt. 18[V]</th> <th>Input Volt. 24[V]</th> <th>Input Volt. 36[V]</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>0.6</td><td>79.2</td><td>78.0</td><td>75.5</td><td>73.3</td><td>69.8</td></tr> <tr><td>1.2</td><td>85.8</td><td>85.8</td><td>84.8</td><td>83.7</td><td>81.8</td></tr> <tr><td>1.8</td><td>86.2</td><td>87.3</td><td>87.9</td><td>87.5</td><td>86.1</td></tr> <tr><td>2.4</td><td>85.1</td><td>87.2</td><td>88.1</td><td>88.5</td><td>88.0</td></tr> <tr><td>3.0</td><td>83.5</td><td>86.3</td><td>87.7</td><td>88.0</td><td>87.8</td></tr> <tr><td>3.3</td><td>82.8</td><td>85.6</td><td>87.4</td><td>88.0</td><td>87.4</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> </tbody> </table>					Load Current [A]	Efficiency [%]					Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	0.0	-	-	-	-	-	0.6	79.2	78.0	75.5	73.3	69.8	1.2	85.8	85.8	84.8	83.7	81.8	1.8	86.2	87.3	87.9	87.5	86.1	2.4	85.1	87.2	88.1	88.5	88.0	3.0	83.5	86.3	87.7	88.0	87.8	3.3	82.8	85.6	87.4	88.0	87.4	--	-	-	-	-	-	--	-	-	-	-	-	--	-	-	-	-	-	--	-	-	-	-	-
Load Current [A]	Efficiency [%]																																																																																	
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]																																																																													
0.0	-	-	-	-	-																																																																													
0.6	79.2	78.0	75.5	73.3	69.8																																																																													
1.2	85.8	85.8	84.8	83.7	81.8																																																																													
1.8	86.2	87.3	87.9	87.5	86.1																																																																													
2.4	85.1	87.2	88.1	88.5	88.0																																																																													
3.0	83.5	86.3	87.7	88.0	87.8																																																																													
3.3	82.8	85.6	87.4	88.0	87.4																																																																													
--	-	-	-	-	-																																																																													
--	-	-	-	-	-																																																																													
--	-	-	-	-	-																																																																													
--	-	-	-	-	-																																																																													



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

Model	STMGFS152405																																	
Item	Line Regulation	Temperature 25°C Testing Circuitry Figure A																																
Object	+5V3A																																	
1.Graph																																		
		2.Values																																
<table border="1"> <thead> <tr> <th rowspan="2">Input Voltage [V]</th> <th colspan="2">Output Voltage [V]</th> </tr> <tr> <th>Load 50%</th> <th>Load 100%</th> </tr> </thead> <tbody> <tr><td>8.5</td><td>5.062</td><td>5.061</td></tr> <tr><td>9.0</td><td>5.063</td><td>5.062</td></tr> <tr><td>12.0</td><td>5.063</td><td>5.062</td></tr> <tr><td>15.0</td><td>5.063</td><td>5.062</td></tr> <tr><td>18.0</td><td>5.063</td><td>5.062</td></tr> <tr><td>24.0</td><td>5.063</td><td>5.062</td></tr> <tr><td>30.0</td><td>5.063</td><td>5.062</td></tr> <tr><td>36.0</td><td>5.063</td><td>5.062</td></tr> <tr><td>40.0</td><td>5.063</td><td>5.062</td></tr> </tbody> </table>			Input Voltage [V]	Output Voltage [V]		Load 50%	Load 100%	8.5	5.062	5.061	9.0	5.063	5.062	12.0	5.063	5.062	15.0	5.063	5.062	18.0	5.063	5.062	24.0	5.063	5.062	30.0	5.063	5.062	36.0	5.063	5.062	40.0	5.063	5.062
Input Voltage [V]	Output Voltage [V]																																	
	Load 50%	Load 100%																																
8.5	5.062	5.061																																
9.0	5.063	5.062																																
12.0	5.063	5.062																																
15.0	5.063	5.062																																
18.0	5.063	5.062																																
24.0	5.063	5.062																																
30.0	5.063	5.062																																
36.0	5.063	5.062																																
40.0	5.063	5.062																																
<p>Note: Slanted line shows the range of the rated input voltage.</p>																																		

COSEL

Model	STMGFS152405	Temperature 25°C Testing Circuitry Figure A																																																																																
Item	Load Regulation																																																																																	
Object	+5V3A																																																																																	
1.Graph	<p>—△— Input Volt. 9V - - □ - - Input Volt. 12V - - * - - Input Volt. 18V - - ○ - - Input Volt. 24V - - ◇ - - Input Volt. 36V</p> 																																																																																	
	<p>2.Values</p> <table border="1"> <thead> <tr> <th rowspan="2">Load [A]</th> <th colspan="5">Output Voltage [V]</th> </tr> <tr> <th>Input Volt. 9[V]</th> <th>Input Volt. 12[V]</th> <th>Input Volt. 18[V]</th> <th>Input Volt. 24[V]</th> <th>Input Volt. 36[V]</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>5.070</td><td>5.070</td><td>5.070</td><td>5.069</td><td>5.069</td></tr> <tr><td>0.6</td><td>5.069</td><td>5.069</td><td>5.068</td><td>5.068</td><td>5.068</td></tr> <tr><td>1.2</td><td>5.067</td><td>5.067</td><td>5.067</td><td>5.067</td><td>5.066</td></tr> <tr><td>1.8</td><td>5.065</td><td>5.065</td><td>5.065</td><td>5.065</td><td>5.065</td></tr> <tr><td>2.4</td><td>5.063</td><td>5.063</td><td>5.063</td><td>5.063</td><td>5.063</td></tr> <tr><td>3.0</td><td>5.062</td><td>5.062</td><td>5.062</td><td>5.062</td><td>5.062</td></tr> <tr><td>3.3</td><td>5.061</td><td>5.061</td><td>5.061</td><td>5.061</td><td>5.061</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> </tbody> </table>					Load [A]	Output Voltage [V]					Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	0.0	5.070	5.070	5.070	5.069	5.069	0.6	5.069	5.069	5.068	5.068	5.068	1.2	5.067	5.067	5.067	5.067	5.066	1.8	5.065	5.065	5.065	5.065	5.065	2.4	5.063	5.063	5.063	5.063	5.063	3.0	5.062	5.062	5.062	5.062	5.062	3.3	5.061	5.061	5.061	5.061	5.061	--	-	-	-	-	-	--	-	-	-	-	-	--	-	-	-	-	-	--	-	-	-	-	-
Load [A]	Output Voltage [V]																																																																																	
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]																																																																													
0.0	5.070	5.070	5.070	5.069	5.069																																																																													
0.6	5.069	5.069	5.068	5.068	5.068																																																																													
1.2	5.067	5.067	5.067	5.067	5.066																																																																													
1.8	5.065	5.065	5.065	5.065	5.065																																																																													
2.4	5.063	5.063	5.063	5.063	5.063																																																																													
3.0	5.062	5.062	5.062	5.062	5.062																																																																													
3.3	5.061	5.061	5.061	5.061	5.061																																																																													
--	-	-	-	-	-																																																																													
--	-	-	-	-	-																																																																													
--	-	-	-	-	-																																																																													
--	-	-	-	-	-																																																																													

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

COSEL

Model	STMGFS152405																																							
Item	Ripple Voltage (by Load Current)	Temperature 25°C Testing Circuitry Figure B																																						
Object	+5V3A																																							
1. Graph																																								
<p>Graph showing Ripple Voltage [mV] vs Load Current [A]. The graph shows two curves: one for Input Volt. 9V (solid line with triangle markers) and one for Input Volt. 36V (dashed line with circle markers). The x-axis represents Load Current [A] from 0.0 to 3.0. The y-axis represents Ripple Voltage [mV] from 0 to 100. Both curves remain relatively flat around 10 mV until a load current of approximately 2.4 A, after which they rise sharply to about 90 mV at 3.0 A. A slanted line on the graph indicates the rated load current range.</p>																																								
2. Values																																								
<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>0.0</td><td>10</td><td>10</td></tr> <tr><td>0.6</td><td>10</td><td>10</td></tr> <tr><td>1.2</td><td>10</td><td>10</td></tr> <tr><td>1.8</td><td>10</td><td>10</td></tr> <tr><td>2.4</td><td>10</td><td>10</td></tr> <tr><td>3.0</td><td>10</td><td>10</td></tr> <tr><td>3.3</td><td>10</td><td>10</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. 9 [V]	Input Volt. 36 [V]	0.0	10	10	0.6	10	10	1.2	10	10	1.8	10	10	2.4	10	10	3.0	10	10	3.3	10	10	--	-	-	--	-	-	--	-	-	--	-	-
Load Current [A]	Ripple Voltage [mV]																																							
	Input Volt. 9 [V]	Input Volt. 36 [V]																																						
0.0	10	10																																						
0.6	10	10																																						
1.2	10	10																																						
1.8	10	10																																						
2.4	10	10																																						
3.0	10	10																																						
3.3	10	10																																						
--	-	-																																						
--	-	-																																						
--	-	-																																						
--	-	-																																						
<p>Measured by 100 MHz Oscilloscope. Ripple Voltage is shown as p-p in the figure below. Note: Slanted line shows the range of the rated load current.</p> <p>Ripple [mVp-p]</p> <p>Fig. Complex Ripple Wave Form</p>																																								

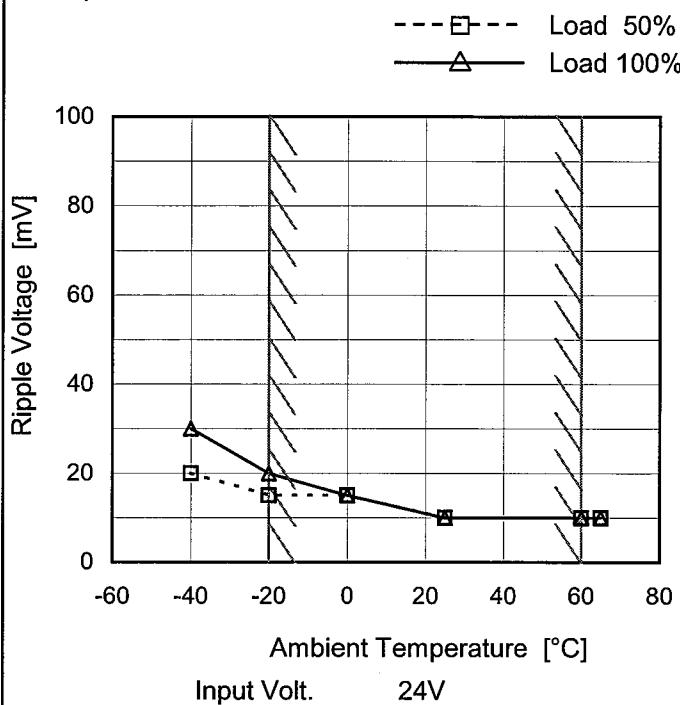
COSEL

Model	STMGFS152405																																							
Item	Ripple-Noise	Temperature 25°C Testing Circuitry Figure B																																						
Object	+5V3A																																							
1. Graph																																								
<p>Y-axis: Ripple-Noise [mV] (0 to 100) X-axis: Load Current [A] (0.0 to 3.0) Legend: Solid line - Input Volt. 9V; Dashed line - Input Volt. 36V</p>																																								
2. Values																																								
<table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="2">Ripple-Noise [mV]</th> </tr> <tr> <th>Input Volt. 9 [V]</th> <th>Input Volt. 36 [V]</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>20</td><td>25</td></tr> <tr><td>0.6</td><td>30</td><td>30</td></tr> <tr><td>1.2</td><td>30</td><td>30</td></tr> <tr><td>1.8</td><td>30</td><td>30</td></tr> <tr><td>2.4</td><td>30</td><td>30</td></tr> <tr><td>3.0</td><td>35</td><td>35</td></tr> <tr><td>3.3</td><td>35</td><td>35</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-Noise [mV]		Input Volt. 9 [V]	Input Volt. 36 [V]	0.0	20	25	0.6	30	30	1.2	30	30	1.8	30	30	2.4	30	30	3.0	35	35	3.3	35	35	--	-	-	--	-	-	--	-	-	--	-	-
Load Current [A]	Ripple-Noise [mV]																																							
	Input Volt. 9 [V]	Input Volt. 36 [V]																																						
0.0	20	25																																						
0.6	30	30																																						
1.2	30	30																																						
1.8	30	30																																						
2.4	30	30																																						
3.0	35	35																																						
3.3	35	35																																						
--	-	-																																						
--	-	-																																						
--	-	-																																						
--	-	-																																						
<p>Measured by 100 MHz Oscilloscope. Ripple-Noise is shown as p-p in the figure below. Note: Slanted line shows the range of the rated load current.</p>																																								
<p>Y-axis: Ripple Noise [mVp-p]</p>																																								
Fig.Complex Ripple Noise Wave Form																																								

COSEL

Model	STMGFS152405
Item	Ripple Voltage (by Ambient Temp.)
Object	+5V3A

1. Graph



Measured by 100 MHz Oscilloscope.

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

Testing Circuitry Figure B

2. Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-40	20	30
-20	15	20
0	15	15
25	10	10
60	10	10
65	10	10
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

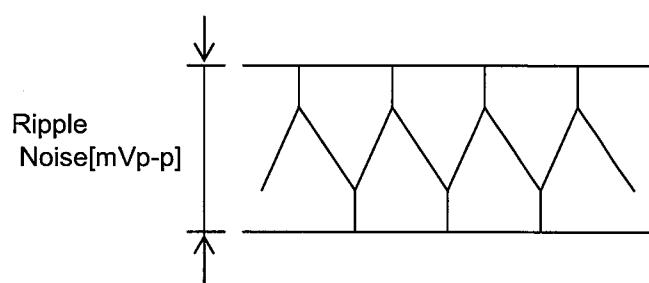
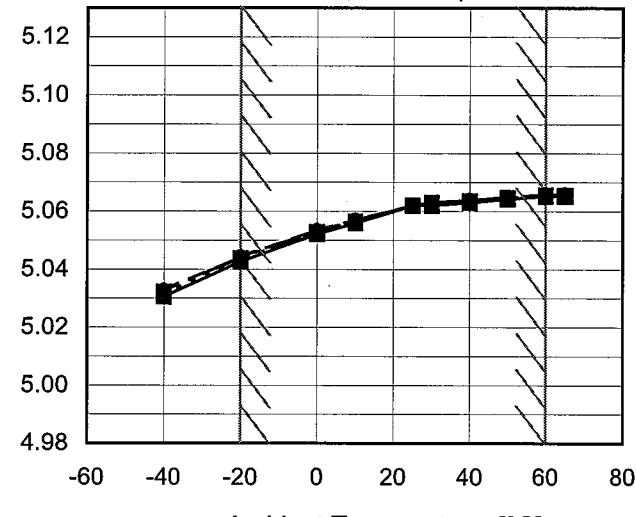


Fig.Complex Ripple Noise Wave Form

COSEL

Model	STMGFS152405
Item	Ambient Temperature Drift
Object	+5V3A
1.Graph	<p>—△— Input Volt. 9V - - □ - - Input Volt. 12V - - * - - Input Volt. 18V - - ○ - - Input Volt. 24V - - ♦ - - Input Volt. 36V</p>  <p>Output Voltage [V]</p> <p>Ambient Temperature [°C]</p> <p>Load 100%</p>
Note:	Slanted line shows the range of the rated ambient temperature.

Testing Circuitry Figure A

2.Values

Ambient Temperature [°C]	Output Voltage [V]				
	9[V]	12[V]	18[V]	24[V]	36[V]
-40	5.031	5.032	5.032	5.033	5.033
-20	5.043	5.044	5.044	5.044	5.044
0	5.052	5.053	5.053	5.053	5.054
10	5.056	5.056	5.057	5.057	5.057
25	5.062	5.062	5.062	5.062	5.062
30	5.062	5.063	5.063	5.063	5.063
40	5.063	5.063	5.064	5.064	5.064
50	5.064	5.065	5.065	5.065	5.065
60	5.065	5.066	5.066	5.066	5.066
65	5.065	5.065	5.066	5.066	5.066
--	-	-	-	-	-



Model	STMGFS152405	Testing Circuitry Figure A
Item	Output Voltage Accuracy	
Object	+5V3A	

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 : 0 - 3A

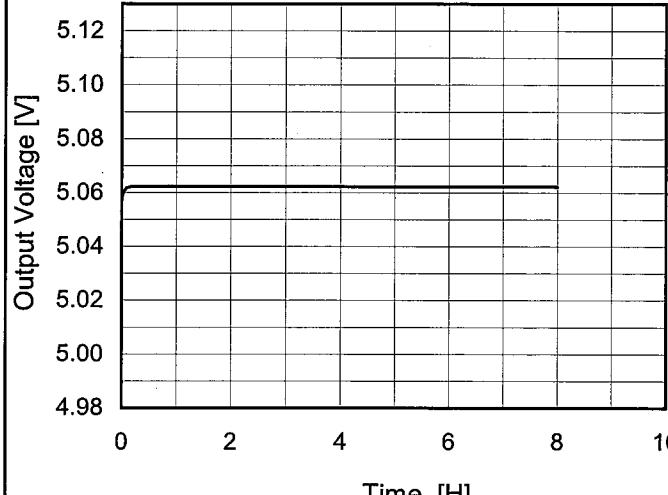
* Output Voltage Accuracy = $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

$$* \text{ Output Voltage Accuracy (Ration)} = \frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$$

2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	60	9	0	5.074	± 16	± 0.3
Minimum Voltage	-20	9	3	5.043		

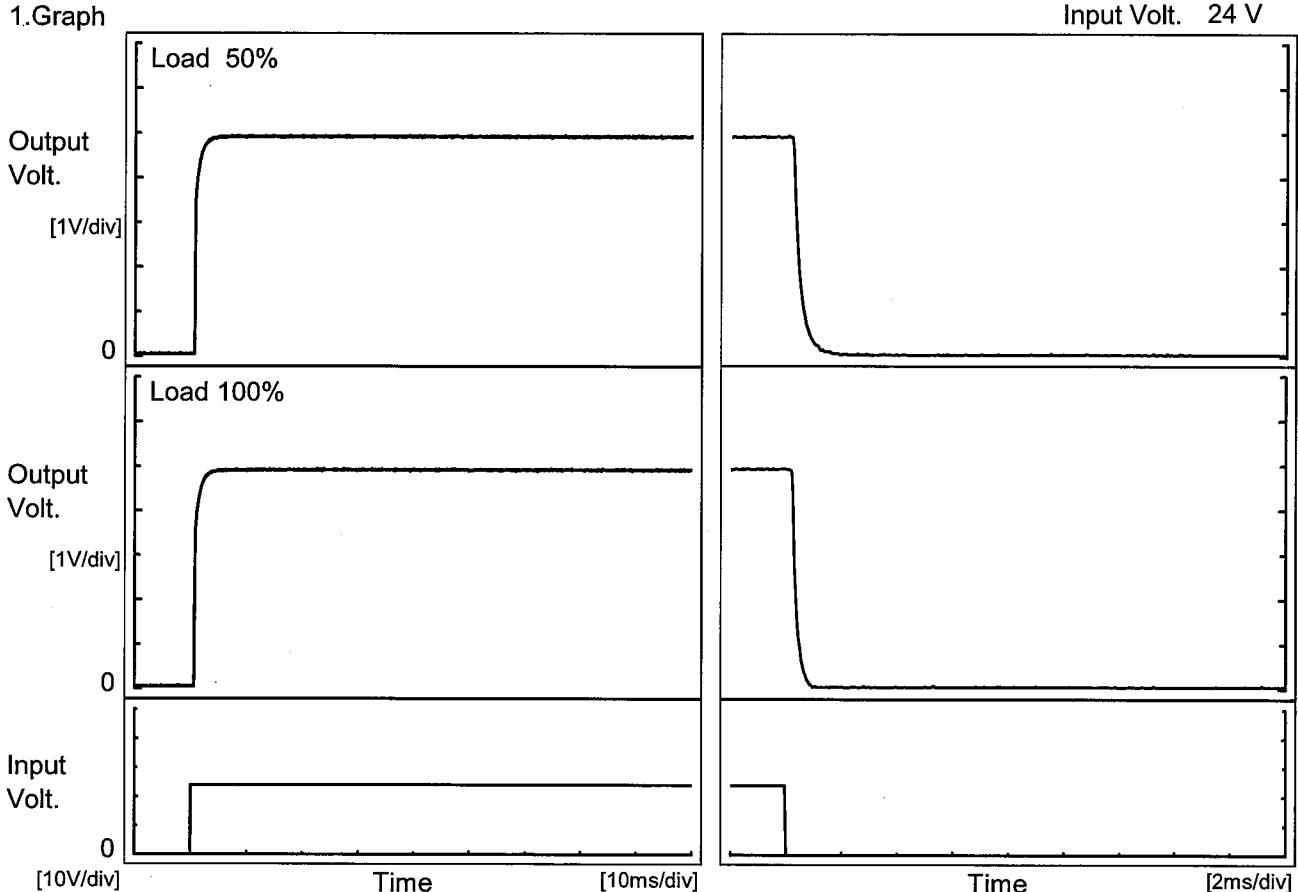
COSEL

Model	STMGFS152405	Temperature	25°C																						
Item	Time Lapse Drift	Testing Circuitry	Figure A																						
Object	+5V3A																								
1.Graph			2.Values																						
 <p>Output Voltage [V]</p> <p>Time [H]</p> <p>Input Volt. 24V Load 100%</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>5.058</td></tr> <tr><td>0.5</td><td>5.062</td></tr> <tr><td>1.0</td><td>5.062</td></tr> <tr><td>2.0</td><td>5.062</td></tr> <tr><td>3.0</td><td>5.062</td></tr> <tr><td>4.0</td><td>5.062</td></tr> <tr><td>5.0</td><td>5.062</td></tr> <tr><td>6.0</td><td>5.062</td></tr> <tr><td>7.0</td><td>5.062</td></tr> <tr><td>8.0</td><td>5.062</td></tr> </tbody> </table>	Time since start [H]	Output Voltage [V]	0.0	5.058	0.5	5.062	1.0	5.062	2.0	5.062	3.0	5.062	4.0	5.062	5.0	5.062	6.0	5.062	7.0	5.062	8.0	5.062
Time since start [H]	Output Voltage [V]																								
0.0	5.058																								
0.5	5.062																								
1.0	5.062																								
2.0	5.062																								
3.0	5.062																								
4.0	5.062																								
5.0	5.062																								
6.0	5.062																								
7.0	5.062																								
8.0	5.062																								

COSEL

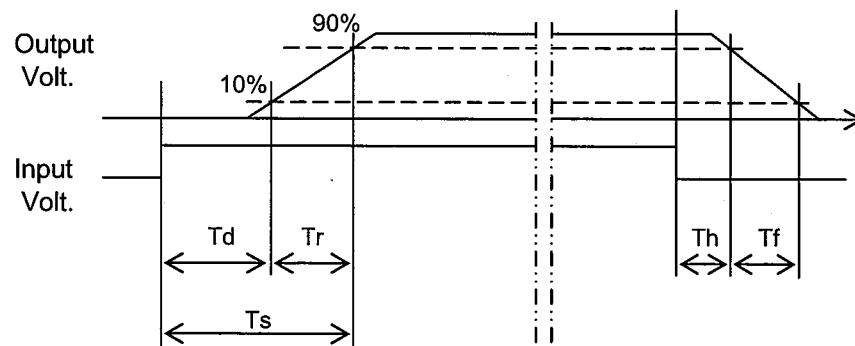
Model	STMGFS152405	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	+5V3A		

1. Graph



2. Values

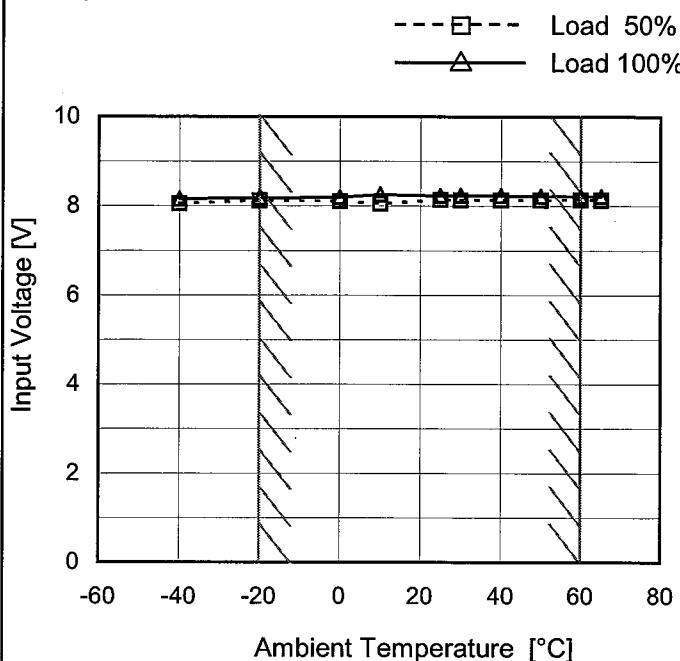
Load	Time	Td	Tr	Ts	Th	Tf	[ms]
50 %		0.7	1.2	1.9	0.3	0.6	
100 %		0.7	1.3	2.0	0.2	0.4	





Model	STMGFS152405
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+5V3A

1.Graph



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

Testing Circuitry Figure A

2.Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-40	8.1	8.2
-20	8.2	8.2
0	8.1	8.2
10	8.1	8.3
25	8.2	8.3
30	8.2	8.3
40	8.2	8.3
50	8.2	8.3
60	8.2	8.3
65	8.2	8.3
--	-	-



Model	STMGFS152405	Temperature 25°C Testing Circuitry Figure A																																																																																						
Item	Overcurrent Protection																																																																																							
Object	+5V3A																																																																																							
1.Graph	<p>Legend:</p> <ul style="list-style-type: none"> △ Input Volt. 9V □ Input Volt. 12V * Input Volt. 18V ○ Input Volt. 24V ◇ Input Volt. 36V <table border="1"> <thead> <tr> <th>Load Current [A]</th> <th>9V</th> <th>12V</th> <th>18V</th> <th>24V</th> <th>36V</th> </tr> </thead> <tbody> <tr> <td>0.0</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>3.0</td> <td>-</td> <td>-</td> <td>4.0</td> <td>-</td> <td>-</td> </tr> <tr> <td>4.5</td> <td>5.0</td> <td>5.0</td> <td>5.0</td> <td>5.0</td> <td>5.0</td> </tr> </tbody> </table>					Load Current [A]	9V	12V	18V	24V	36V	0.0	-	-	-	-	-	3.0	-	-	4.0	-	-	4.5	5.0	5.0	5.0	5.0	5.0																																																											
Load Current [A]	9V	12V	18V	24V	36V																																																																																			
0.0	-	-	-	-	-																																																																																			
3.0	-	-	4.0	-	-																																																																																			
4.5	5.0	5.0	5.0	5.0	5.0																																																																																			
2.Values	<table border="1"> <thead> <tr> <th rowspan="2">Output Voltage [V]</th> <th colspan="5">Load Current [A]</th> </tr> <tr> <th>9[V]</th> <th>12[V]</th> <th>18[V]</th> <th>24[V]</th> <th>36[V]</th> </tr> </thead> <tbody> <tr> <td>5.00</td> <td>3.662</td> <td>4.129</td> <td>4.491</td> <td>4.542</td> <td>4.234</td> </tr> <tr> <td>4.75</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>4.50</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>4.00</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>3.50</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>3.00</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>2.50</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>2.00</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>1.50</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>1.00</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>0.50</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>0.00</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> </tbody> </table>					Output Voltage [V]	Load Current [A]					9[V]	12[V]	18[V]	24[V]	36[V]	5.00	3.662	4.129	4.491	4.542	4.234	4.75	-	-	-	-	-	4.50	-	-	-	-	-	4.00	-	-	-	-	-	3.50	-	-	-	-	-	3.00	-	-	-	-	-	2.50	-	-	-	-	-	2.00	-	-	-	-	-	1.50	-	-	-	-	-	1.00	-	-	-	-	-	0.50	-	-	-	-	-	0.00	-	-	-	-	-
Output Voltage [V]	Load Current [A]																																																																																							
	9[V]	12[V]	18[V]	24[V]	36[V]																																																																																			
5.00	3.662	4.129	4.491	4.542	4.234																																																																																			
4.75	-	-	-	-	-																																																																																			
4.50	-	-	-	-	-																																																																																			
4.00	-	-	-	-	-																																																																																			
3.50	-	-	-	-	-																																																																																			
3.00	-	-	-	-	-																																																																																			
2.50	-	-	-	-	-																																																																																			
2.00	-	-	-	-	-																																																																																			
1.50	-	-	-	-	-																																																																																			
1.00	-	-	-	-	-																																																																																			
0.50	-	-	-	-	-																																																																																			
0.00	-	-	-	-	-																																																																																			

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

Intermittent operation occurs when overcurrent protection is activated.

COSEL

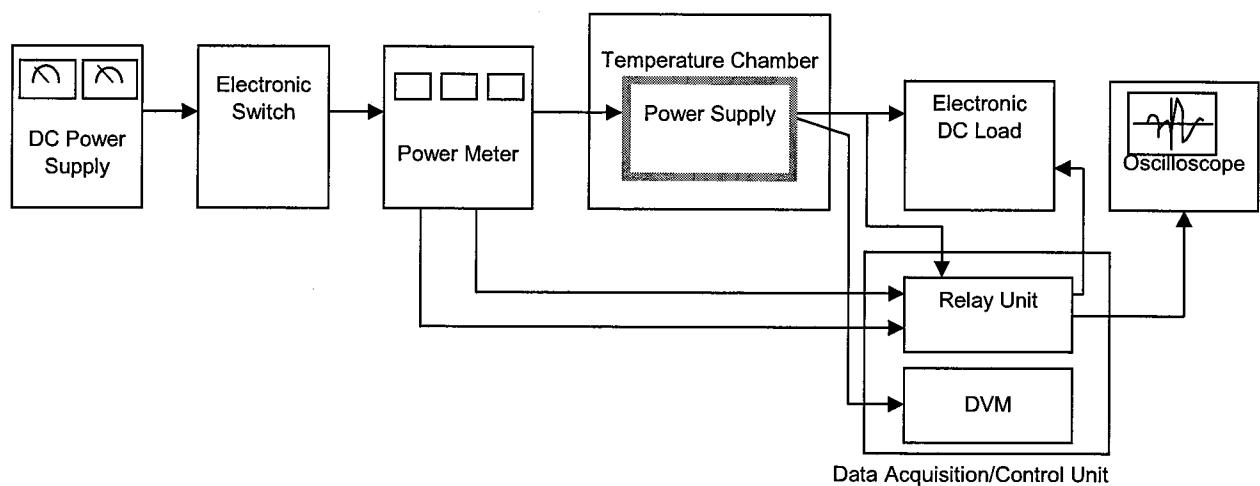


Figure A

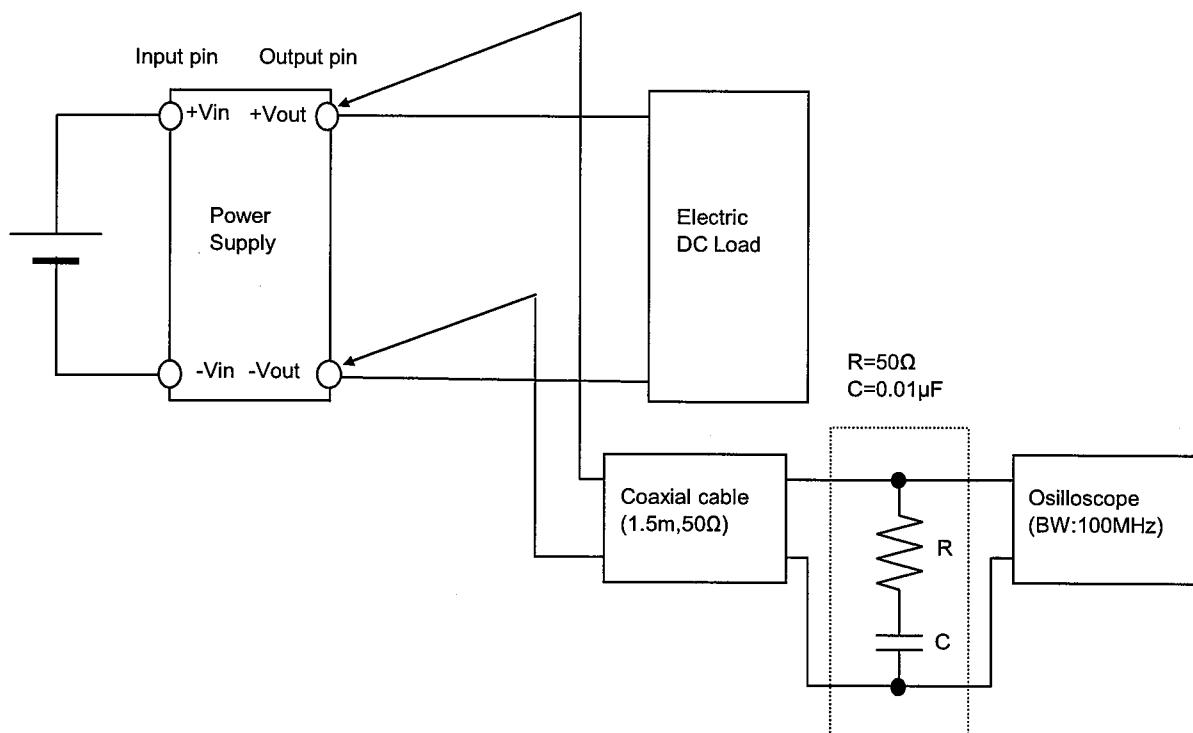


Figure B (Ripple and Ripple noise Characteristic)