

TEST DATA OF STMGFW302405

Regulated DC Power Supply
January 30, 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	10
10.Ripple Voltage (by Ambient Temperature)	12
11.Ambient Temperature Drift	13
12.Output Voltage Accuracy	14
13.Time Lapse Drift	15
14.Rise and Fall Time	16
15.Minimum Input Voltage for Regulated Output Voltage	18
16.Overcurrent Protection	19
17.Overvoltage Protection	20
18.Figure of Testing Circuitry	21

(Final Page 21)

Model

STMGEFW302405

Item

Input Current (by Input Voltage)

Object

1.Graph

—△—

Load 100%

---□---

Load 50%

---○---

Load 0%

Input Current [A]

5.0

4.0

3.0

2.0

1.0

0.0

0

10

20

30

40

Input Voltage [V]

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

2.Values

Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0.0	0.000	0.000	0.000
6.0	0.002	0.002	0.003
7.0	0.003	0.002	0.003
8.0	0.003	0.003	0.002
8.4	0.034	1.411	0.002
8.5	0.035	1.399	0.002
8.8	0.035	1.338	2.856
9.0	0.035	1.287	2.625
9.2	0.036	1.286	2.784
9.8	0.035	1.200	2.601
12.0	0.028	0.970	2.007
18.0	0.020	0.664	1.315
24.0	0.017	0.508	0.984
36.0	0.017	0.354	0.674
40.0	0.016	0.324	0.645
--	-	-	-
--	-	-	-
--	-	-	-

BC - 10732

Model		STMGFW302405																																																																														
Item		Input Current (by Load Current)																																																																														
Object																																																																																
1.Graph		<div><div><div>—△—</div>Input Volt. 9V</div><div><div>---□---</div>Input Volt. 12V</div><div><div>---*---</div>Input Volt. 18V</div><div><div>---○---</div>Input Volt. 24V</div><div><div>---◇---</div>Input Volt. 36V</div></div>																																																																														
<div><div>Input Current [A]</div><div>Load Ration [%]</div></div>		2.Values																																																																														
		<table><tr><th rowspan="2">Load Ration [%]</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><tr><td>0</td><td>0.036</td><td>0.027</td><td>0.020</td><td>0.018</td><td>0.016</td></tr><tr><td>20</td><td>0.558</td><td>0.422</td><td>0.288</td><td>0.225</td><td>0.165</td></tr><tr><td>40</td><td>1.063</td><td>0.797</td><td>0.542</td><td>0.416</td><td>0.293</td></tr><tr><td>60</td><td>1.575</td><td>1.177</td><td>0.795</td><td>0.605</td><td>0.420</td></tr><tr><td>80</td><td>2.084</td><td>1.571</td><td>1.048</td><td>0.792</td><td>0.545</td></tr><tr><td>100</td><td>2.625</td><td>2.007</td><td>1.315</td><td>0.984</td><td>0.674</td></tr><tr><td>110</td><td>2.895</td><td>2.147</td><td>1.443</td><td>1.083</td><td>0.740</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></table>		Load Ration [%]	Input Current [A]					Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	0	0.036	0.027	0.020	0.018	0.016	20	0.558	0.422	0.288	0.225	0.165	40	1.063	0.797	0.542	0.416	0.293	60	1.575	1.177	0.795	0.605	0.420	80	2.084	1.571	1.048	0.792	0.545	100	2.625	2.007	1.315	0.984	0.674	110	2.895	2.147	1.443	1.083	0.740	--	-	-	-	-	-	--	-	-	-	-	-	--	-	-	-	-	-	--	-	-	-	-	-
Load Ration [%]	Input Current [A]																																																																															
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]																																																																											
0	0.036	0.027	0.020	0.018	0.016																																																																											
20	0.558	0.422	0.288	0.225	0.165																																																																											
40	1.063	0.797	0.542	0.416	0.293																																																																											
60	1.575	1.177	0.795	0.605	0.420																																																																											
80	2.084	1.571	1.048	0.792	0.545																																																																											
100	2.625	2.007	1.315	0.984	0.674																																																																											
110	2.895	2.147	1.443	1.083	0.740																																																																											
--	-	-	-	-	-																																																																											
--	-	-	-	-	-																																																																											
--	-	-	-	-	-																																																																											
--	-	-	-	-	-																																																																											

Model	STMGFW302405																																																																																		
Item	Input Power (by Load Current)																																																																																		
Object																																																																																			
1.Graph		<div><div><div>—△—</div>Input Volt. 9V</div><div><div>---□---</div>Input Volt. 12V</div><div><div>---*---</div>Input Volt. 18V</div><div><div>---○---</div>Input Volt. 24V</div><div><div>---◇---</div>Input Volt. 36V</div></div>				2.Values																																																																													
<div><div>Input Power [W]</div><div><div><div>50</div><div>40</div><div>30</div><div>20</div><div>10</div><div>0</div></div><div><div>0</div><div>20</div><div>40</div><div>60</div><div>80</div><div>100</div><div>120</div></div><div>Load Ration [%]</div></div></div>		<table><tr><th rowspan="2">Load Ration [%]</th><th colspan="5">Input Power [W]</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><tr><td>0</td><td>0.32</td><td>0.33</td><td>0.35</td><td>0.42</td><td>0.58</td></tr><tr><td>20</td><td>5.00</td><td>5.09</td><td>5.19</td><td>5.40</td><td>5.93</td></tr><tr><td>40</td><td>9.53</td><td>9.57</td><td>9.75</td><td>9.98</td><td>10.55</td></tr><tr><td>60</td><td>14.22</td><td>14.15</td><td>14.28</td><td>14.48</td><td>15.05</td></tr><tr><td>80</td><td>18.90</td><td>18.82</td><td>18.90</td><td>19.07</td><td>19.62</td></tr><tr><td>100</td><td>23.75</td><td>23.84</td><td>23.66</td><td>23.73</td><td>24.25</td></tr><tr><td>110</td><td>26.23</td><td>26.00</td><td>25.87</td><td>26.11</td><td>26.59</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></table>					Load Ration [%]	Input Power [W]					Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	0	0.32	0.33	0.35	0.42	0.58	20	5.00	5.09	5.19	5.40	5.93	40	9.53	9.57	9.75	9.98	10.55	60	14.22	14.15	14.28	14.48	15.05	80	18.90	18.82	18.90	19.07	19.62	100	23.75	23.84	23.66	23.73	24.25	110	26.23	26.00	25.87	26.11	26.59	--	-	-	-	-	-	--	-	-	-	-	-	--	-	-	-	-	-	--	-	-	-	-	-
Load Ration [%]	Input Power [W]																																																																																		
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]																																																																														
0	0.32	0.33	0.35	0.42	0.58																																																																														
20	5.00	5.09	5.19	5.40	5.93																																																																														
40	9.53	9.57	9.75	9.98	10.55																																																																														
60	14.22	14.15	14.28	14.48	15.05																																																																														
80	18.90	18.82	18.90	19.07	19.62																																																																														
100	23.75	23.84	23.66	23.73	24.25																																																																														
110	26.23	26.00	25.87	26.11	26.59																																																																														
--	-	-	-	-	-																																																																														
--	-	-	-	-	-																																																																														
--	-	-	-	-	-																																																																														
--	-	-	-	-	-																																																																														

Model

STMGFW302405

Item

Efficiency (by Input Voltage)

Object

Temperature

25°C

Testing Circuitry

Figure A

1.Graph

Load 50%

Load 100%

Input Voltage [V]	Load 50% Efficiency [%]	Load 100% Efficiency [%]
8.5	85.9	85.2
9.0	86.4	85.5
12.0	85.9	86.1
15.0	85.1	86.2
18.0	83.8	86.1
24.0	82.9	85.7
30.0	81.0	84.8
36.0	79.1	83.8
40.0	77.9	83.0

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

2.Values

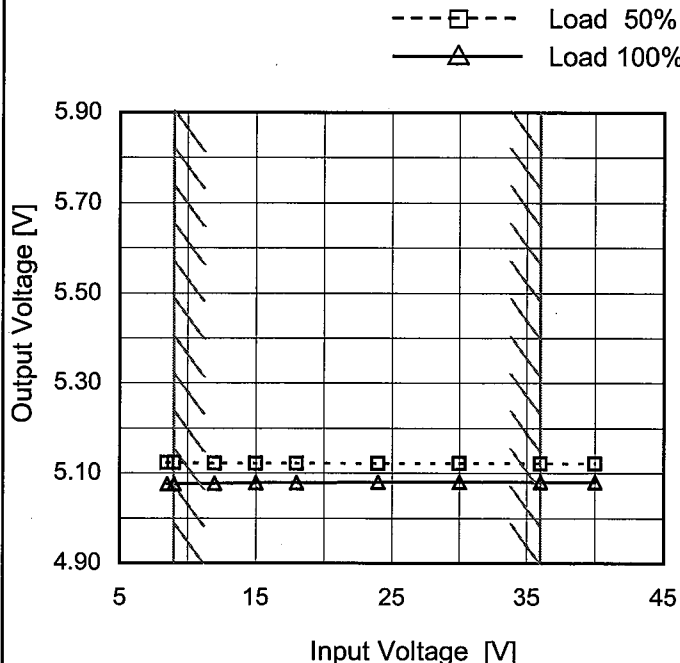
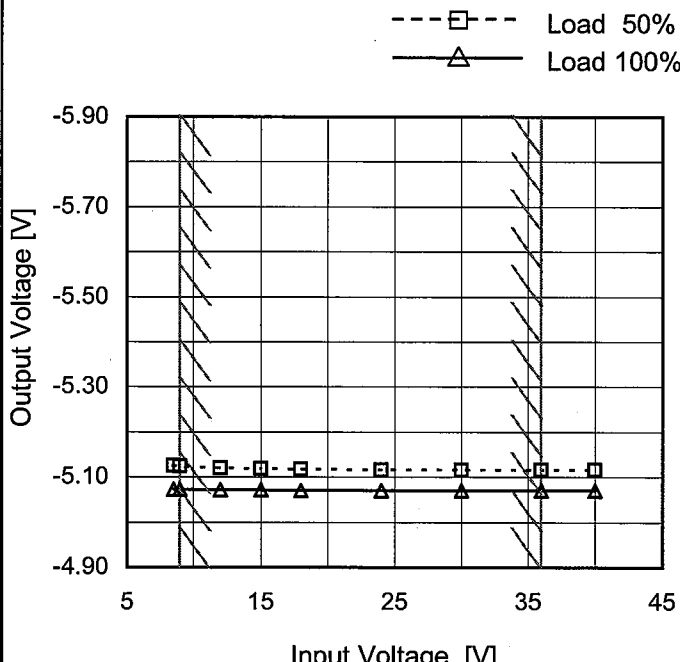
Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
8.5	85.9	85.2
9.0	86.4	85.5
12.0	85.9	86.1
15.0	85.1	86.2
18.0	83.8	86.1
24.0	82.9	85.7
30.0	81.0	84.8
36.0	79.1	83.8
40.0	77.9	83.0

- 4 -

BC - 10732

COSEL

Model	STMGFW302405																																																																																		
Item	Efficiency (by Load Current)																																																																																		
Object																																																																																			
1.Graph		2.Values																																																																																	
<div><div><div>—△—</div><div>Input Volt.</div><div>9V</div></div><div><div>---□---</div><div>Input Volt.</div><div>12V</div></div><div><div>---*---</div><div>Input Volt.</div><div>18V</div></div><div><div>---○---</div><div>Input Volt.</div><div>24V</div></div><div><div>---◇---</div><div>Input Volt.</div><div>36V</div></div></div> <div><div>Efficiency [%]</div><div><div>100</div><div>90</div><div>80</div><div>70</div><div>60</div><div>50</div></div><div><div>0</div><div>20</div><div>40</div><div>60</div><div>80</div><div>100</div><div>120</div></div><div><div>Load Ration [%]</div></div></div>		<table><tr><th rowspan="2">Load Ration [%]</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><tr><td>0</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr><tr><td>20</td><td>81.2</td><td>79.8</td><td>78.1</td><td>75.2</td><td>68.4</td></tr><tr><td>40</td><td>85.2</td><td>84.9</td><td>83.3</td><td>81.4</td><td>77.0</td></tr><tr><td>60</td><td>85.7</td><td>86.1</td><td>85.4</td><td>84.2</td><td>81.0</td></tr><tr><td>80</td><td>86.0</td><td>86.4</td><td>86.0</td><td>85.3</td><td>82.9</td></tr><tr><td>100</td><td>85.5</td><td>85.2</td><td>85.9</td><td>85.6</td><td>83.8</td></tr><tr><td>110</td><td>85.2</td><td>86.0</td><td>86.4</td><td>85.6</td><td>84.1</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></table>					Load Ration [%]	Efficiency [%]					Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	0	-	-	-	-	-	20	81.2	79.8	78.1	75.2	68.4	40	85.2	84.9	83.3	81.4	77.0	60	85.7	86.1	85.4	84.2	81.0	80	86.0	86.4	86.0	85.3	82.9	100	85.5	85.2	85.9	85.6	83.8	110	85.2	86.0	86.4	85.6	84.1	--	-	-	-	-	-	--	-	-	-	-	-	--	-	-	-	-	-	--	-	-	-	-	-
Load Ration [%]	Efficiency [%]																																																																																		
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]																																																																														
0	-	-	-	-	-																																																																														
20	81.2	79.8	78.1	75.2	68.4																																																																														
40	85.2	84.9	83.3	81.4	77.0																																																																														
60	85.7	86.1	85.4	84.2	81.0																																																																														
80	86.0	86.4	86.0	85.3	82.9																																																																														
100	85.5	85.2	85.9	85.6	83.8																																																																														
110	85.2	86.0	86.4	85.6	84.1																																																																														
--	-	-	-	-	-																																																																														
--	-	-	-	-	-																																																																														
--	-	-	-	-	-																																																																														
--	-	-	-	-	-																																																																														

Model	STMGFW302405																																		
Item	Line Regulation	Temperature	25°C																																
Object	+5V2A	Testing Circuitry	Figure A																																
1.Graph		2.Values																																	
<div><div>---□--- Load 50%</div><div>—△— Load 100%</div></div>		<table><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><tr><td>8.5</td><td>5.123</td><td>5.076</td></tr><tr><td>9.0</td><td>5.123</td><td>5.077</td></tr><tr><td>12.0</td><td>5.122</td><td>5.078</td></tr><tr><td>15.0</td><td>5.122</td><td>5.079</td></tr><tr><td>18.0</td><td>5.122</td><td>5.079</td></tr><tr><td>24.0</td><td>5.121</td><td>5.080</td></tr><tr><td>30.0</td><td>5.121</td><td>5.080</td></tr><tr><td>36.0</td><td>5.121</td><td>5.080</td></tr><tr><td>40.0</td><td>5.121</td><td>5.080</td></tr></table>		Input Voltage [V]	Output Voltage [V]		Load 50%	Load 100%	8.5	5.123	5.076	9.0	5.123	5.077	12.0	5.122	5.078	15.0	5.122	5.079	18.0	5.122	5.079	24.0	5.121	5.080	30.0	5.121	5.080	36.0	5.121	5.080	40.0	5.121	5.080
Input Voltage [V]	Output Voltage [V]																																		
	Load 50%	Load 100%																																	
8.5	5.123	5.076																																	
9.0	5.123	5.077																																	
12.0	5.122	5.078																																	
15.0	5.122	5.079																																	
18.0	5.122	5.079																																	
24.0	5.121	5.080																																	
30.0	5.121	5.080																																	
36.0	5.121	5.080																																	
40.0	5.121	5.080																																	
Object	-5V2A																																		
1.Graph		2.Values																																	
<div><div>---□--- Load 50%</div><div>—△— Load 100%</div></div>		<table><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><tr><td>8.5</td><td>-5.125</td><td>-5.073</td></tr><tr><td>9.0</td><td>-5.124</td><td>-5.073</td></tr><tr><td>12.0</td><td>-5.121</td><td>-5.072</td></tr><tr><td>15.0</td><td>-5.119</td><td>-5.071</td></tr><tr><td>18.0</td><td>-5.118</td><td>-5.071</td></tr><tr><td>24.0</td><td>-5.117</td><td>-5.071</td></tr><tr><td>30.0</td><td>-5.117</td><td>-5.071</td></tr><tr><td>36.0</td><td>-5.116</td><td>-5.071</td></tr><tr><td>40.0</td><td>-5.116</td><td>-5.071</td></tr></table>		Input Voltage [V]	Output Voltage [V]		Load 50%	Load 100%	8.5	-5.125	-5.073	9.0	-5.124	-5.073	12.0	-5.121	-5.072	15.0	-5.119	-5.071	18.0	-5.118	-5.071	24.0	-5.117	-5.071	30.0	-5.117	-5.071	36.0	-5.116	-5.071	40.0	-5.116	-5.071
Input Voltage [V]	Output Voltage [V]																																		
	Load 50%	Load 100%																																	
8.5	-5.125	-5.073																																	
9.0	-5.124	-5.073																																	
12.0	-5.121	-5.072																																	
15.0	-5.119	-5.071																																	
18.0	-5.118	-5.071																																	
24.0	-5.117	-5.071																																	
30.0	-5.117	-5.071																																	
36.0	-5.116	-5.071																																	
40.0	-5.116	-5.071																																	
Note: Slanted line shows the range of the rated input voltage.																																			

Model		STMGFW302405																																																																														
Item		Load Regulation																																																																														
Object		+5V2A																																																																														
1.Graph		<div><div><div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div>Input Volt. 9V</div><div>Input Volt. 12V</div><div>Input Volt. 18V</div><div>Input Volt. 24V</div><div>Input Volt. 36V</div></div></div><div><p>Output Voltage [V]</p><p>Load Current [A]</p></div></div>																																																																														
2.Values		<table><tr><th rowspan="2">Load Current [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><tr><td>0.0</td><td>5.564</td><td>5.571</td><td>5.600</td><td>5.615</td><td>5.647</td></tr><tr><td>0.4</td><td>5.161</td><td>5.161</td><td>5.160</td><td>5.161</td><td>5.162</td></tr><tr><td>0.8</td><td>5.135</td><td>5.135</td><td>5.134</td><td>5.134</td><td>5.134</td></tr><tr><td>1.2</td><td>5.114</td><td>5.114</td><td>5.114</td><td>5.114</td><td>5.114</td></tr><tr><td>1.6</td><td>5.095</td><td>5.096</td><td>5.096</td><td>5.096</td><td>5.096</td></tr><tr><td>2.0</td><td>5.076</td><td>5.078</td><td>5.079</td><td>5.079</td><td>5.079</td></tr><tr><td>2.2</td><td>5.067</td><td>5.069</td><td>5.070</td><td>5.071</td><td>5.071</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></table>		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]	0.0	5.564	5.571	5.600	5.615	5.647	0.4	5.161	5.161	5.160	5.161	5.162	0.8	5.135	5.135	5.134	5.134	5.134	1.2	5.114	5.114	5.114	5.114	5.114	1.6	5.095	5.096	5.096	5.096	5.096	2.0	5.076	5.078	5.079	5.079	5.079	2.2	5.067	5.069	5.070	5.071	5.071	--	-	-	-	-	-	--	-	-	-	-	-	--	-	-	-	-	-	--	-	-	-	-	-
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]																																																																											
0.0	5.564	5.571	5.600	5.615	5.647																																																																											
0.4	5.161	5.161	5.160	5.161	5.162																																																																											
0.8	5.135	5.135	5.134	5.134	5.134																																																																											
1.2	5.114	5.114	5.114	5.114	5.114																																																																											
1.6	5.095	5.096	5.096	5.096	5.096																																																																											
2.0	5.076	5.078	5.079	5.079	5.079																																																																											
2.2	5.067	5.069	5.070	5.071	5.071																																																																											
--	-	-	-	-	-																																																																											
--	-	-	-	-	-																																																																											
--	-	-	-	-	-																																																																											
--	-	-	-	-	-																																																																											

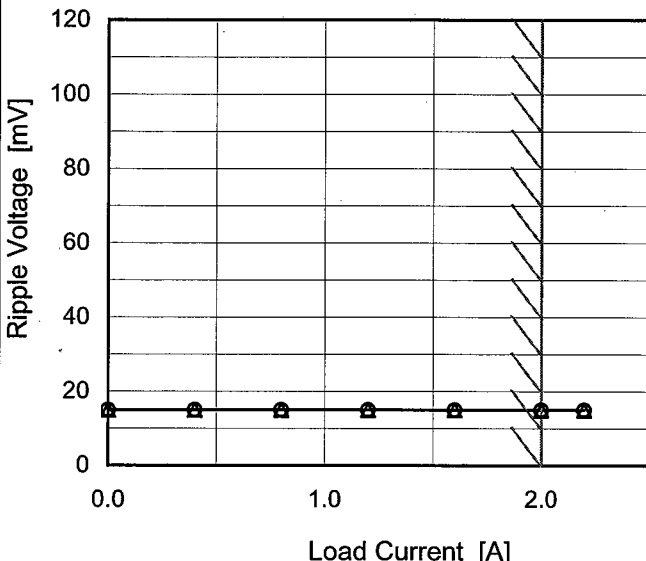
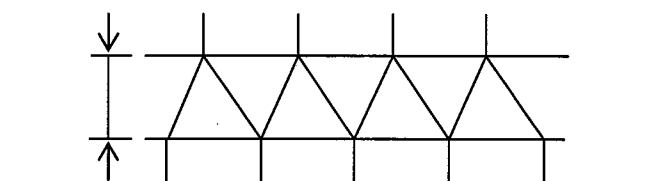
Object		-5V2A																																																																														
1.Graph		<div><div><div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div>Input Volt. 9V</div><div>Input Volt. 12V</div><div>Input Volt. 18V</div><div>Input Volt. 24V</div><div>Input Volt. 36V</div></div></div><div><p>Output Voltage [V]</p><p>Load Current [A]</p></div></div>																																																																														
2.Values		<table><tr><th rowspan="2">Load Current [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><tr><td>0.0</td><td>-5.413</td><td>-5.462</td><td>-5.432</td><td>-5.520</td><td>-5.758</td></tr><tr><td>0.4</td><td>-5.170</td><td>-5.171</td><td>-5.177</td><td>-5.179</td><td>-5.184</td></tr><tr><td>0.8</td><td>-5.136</td><td>-5.132</td><td>-5.130</td><td>-5.129</td><td>-5.130</td></tr><tr><td>1.2</td><td>-5.113</td><td>-5.110</td><td>-5.108</td><td>-5.106</td><td>-5.106</td></tr><tr><td>1.6</td><td>-5.093</td><td>-5.090</td><td>-5.089</td><td>-5.088</td><td>-5.088</td></tr><tr><td>2.0</td><td>-5.073</td><td>-5.072</td><td>-5.071</td><td>-5.070</td><td>-5.070</td></tr><tr><td>2.2</td><td>-5.064</td><td>-5.063</td><td>-5.062</td><td>-5.062</td><td>-5.062</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></table>		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]	0.0	-5.413	-5.462	-5.432	-5.520	-5.758	0.4	-5.170	-5.171	-5.177	-5.179	-5.184	0.8	-5.136	-5.132	-5.130	-5.129	-5.130	1.2	-5.113	-5.110	-5.108	-5.106	-5.106	1.6	-5.093	-5.090	-5.089	-5.088	-5.088	2.0	-5.073	-5.072	-5.071	-5.070	-5.070	2.2	-5.064	-5.063	-5.062	-5.062	-5.062	--	-	-	-	-	-	--	-	-	-	-	-	--	-	-	-	-	-	--	-	-	-	-	-
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]																																																																											
0.0	-5.413	-5.462	-5.432	-5.520	-5.758																																																																											
0.4	-5.170	-5.171	-5.177	-5.179	-5.184																																																																											
0.8	-5.136	-5.132	-5.130	-5.129	-5.130																																																																											
1.2	-5.113	-5.110	-5.108	-5.106	-5.106																																																																											
1.6	-5.093	-5.090	-5.089	-5.088	-5.088																																																																											
2.0	-5.073	-5.072	-5.071	-5.070	-5.070																																																																											
2.2	-5.064	-5.063	-5.062	-5.062	-5.062																																																																											
--	-	-	-	-	-																																																																											
--	-	-	-	-	-																																																																											
--	-	-	-	-	-																																																																											
--	-	-	-	-	-																																																																											

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

-7-

BC - 10732

COSEL

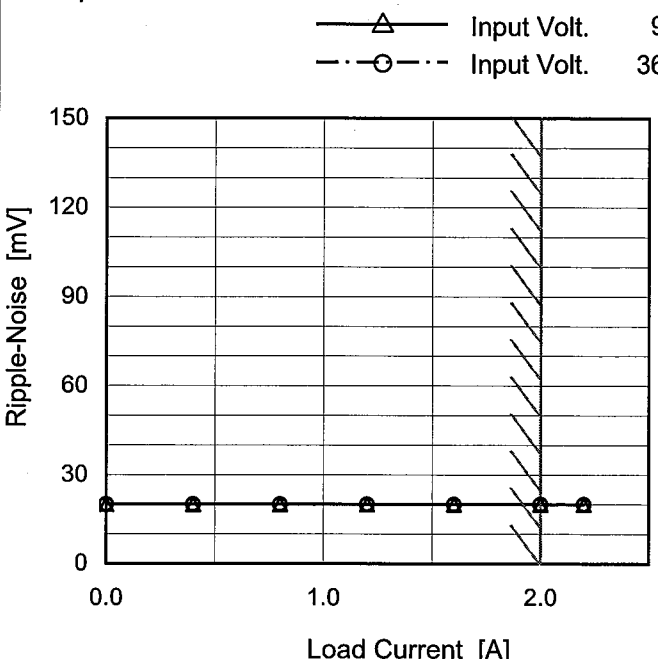
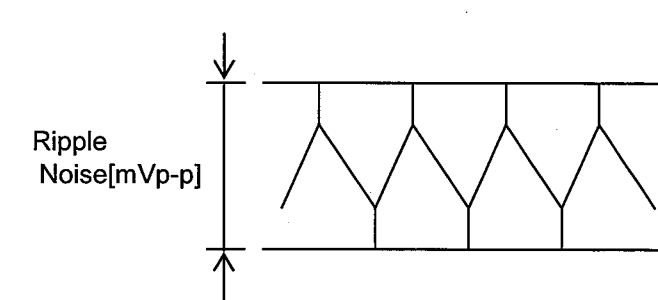
Model		STMGFW302405		Temperature 25°C																																							
Item		Ripple Voltage (by Load Current)		Testing Circuitry Figure B																																							
Object		+5V2A																																									
1.Graph				2.Values																																							
<div><div><div>—△—</div><div>Input Volt.</div><div>9V</div></div><div><div>---○---</div><div>Input Volt.</div><div>36V</div></div></div> 				<table><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><tr><td>0.0</td><td>15</td><td>15</td></tr><tr><td>0.4</td><td>15</td><td>15</td></tr><tr><td>0.8</td><td>15</td><td>15</td></tr><tr><td>1.2</td><td>15</td><td>15</td></tr><tr><td>1.6</td><td>15</td><td>15</td></tr><tr><td>2.0</td><td>15</td><td>15</td></tr><tr><td>2.2</td><td>15</td><td>15</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></table>		Load Current [A]	Ripple Voltage [mV]		Input Volt. 9 [V]	Input Volt. 36 [V]	0.0	15	15	0.4	15	15	0.8	15	15	1.2	15	15	1.6	15	15	2.0	15	15	2.2	15	15	--	-	-	--	-	-	--	-	-	--	-	-
Load Current [A]	Ripple Voltage [mV]																																										
	Input Volt. 9 [V]	Input Volt. 36 [V]																																									
0.0	15	15																																									
0.4	15	15																																									
0.8	15	15																																									
1.2	15	15																																									
1.6	15	15																																									
2.0	15	15																																									
2.2	15	15																																									
--	-	-																																									
--	-	-																																									
--	-	-																																									
--	-	-																																									
Ripple Voltage is shown as p-p in the figure below. Note: Slanted line shows the range of the rated load current.				-5V: Rated output current																																							
<div><div>Ripple [mVp-p]</div></div> <div>Fig.Complex Ripple Wave Form</div>																																											

- 8 -

BC - 10732

COSEL

Model		STMGEFW302405		Temperature 25°C																																							
Item		Ripple Voltage (by Load Current)		Testing Circuitry Figure B																																							
Object		-5V2A																																									
1.Graph				2.Values																																							
<div><div><div>—△—</div><div>Input Volt.</div><div>9V</div></div><div><div>---○---</div><div>Input Volt.</div><div>36V</div></div></div> <p>Ripple Voltage [mV]</p> <p>Load Current [A]</p>				<table><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><tr><td>0.0</td><td>20</td><td>20</td></tr><tr><td>0.4</td><td>20</td><td>20</td></tr><tr><td>0.8</td><td>20</td><td>20</td></tr><tr><td>1.2</td><td>20</td><td>20</td></tr><tr><td>1.6</td><td>20</td><td>20</td></tr><tr><td>2.0</td><td>20</td><td>20</td></tr><tr><td>2.2</td><td>20</td><td>20</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></table> <p>+5V: Rated output current</p>		Load Current [A]	Ripple Voltage [mV]		Input Volt. 9 [V]	Input Volt. 36 [V]	0.0	20	20	0.4	20	20	0.8	20	20	1.2	20	20	1.6	20	20	2.0	20	20	2.2	20	20	--	-	-	--	-	-	--	-	-	--	-	-
Load Current [A]	Ripple Voltage [mV]																																										
	Input Volt. 9 [V]	Input Volt. 36 [V]																																									
0.0	20	20																																									
0.4	20	20																																									
0.8	20	20																																									
1.2	20	20																																									
1.6	20	20																																									
2.0	20	20																																									
2.2	20	20																																									
--	-	-																																									
--	-	-																																									
--	-	-																																									
--	-	-																																									
<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>																																											
<div><p>Ripple [mVp-p]</p><p>Fig.Complex Ripple Wave Form</p></div>																																											

Model		STMGFW302405																																							
Item		Ripple-Noise																																							
Object		+5V2A																																							
1.Graph		2.Values																																							
<div><div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div>Input Volt.</div><div>9V</div></div><div><div>Input Volt.</div><div>36V</div></div></div></div>		<table><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><tr><td>0.0</td><td>20</td><td>20</td></tr><tr><td>0.4</td><td>20</td><td>20</td></tr><tr><td>0.8</td><td>20</td><td>20</td></tr><tr><td>1.2</td><td>20</td><td>20</td></tr><tr><td>1.6</td><td>20</td><td>20</td></tr><tr><td>2.0</td><td>20</td><td>20</td></tr><tr><td>2.2</td><td>20</td><td>20</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></table> <div>-5V: Rated output current</div>		Load Current [A]	Ripple-Noise [mV]		Input Volt. 9 [V]	Input Volt. 36 [V]	0.0	20	20	0.4	20	20	0.8	20	20	1.2	20	20	1.6	20	20	2.0	20	20	2.2	20	20	--	-	-	--	-	-	--	-	-	--	-	-
Load Current [A]	Ripple-Noise [mV]																																								
	Input Volt. 9 [V]	Input Volt. 36 [V]																																							
0.0	20	20																																							
0.4	20	20																																							
0.8	20	20																																							
1.2	20	20																																							
1.6	20	20																																							
2.0	20	20																																							
2.2	20	20																																							
--	-	-																																							
--	-	-																																							
--	-	-																																							
--	-	-																																							
<p>Ripple-Noise is shown as p-p in the figure below.</p> <p>Note: Slanted line shows the range of the rated load current.</p> 																																									
Fig.Complex Ripple Noise Wave Form																																									

- 10 -

BC - 10732

COSEL

Model		STMGFW302405																																							
Item		Ripple-Noise																																							
Object		-5V2A																																							
1.Graph		2.Values																																							
<div><div><div><div></div><div>Input Volt.</div><div>9V</div></div><div><div></div><div>Input Volt.</div><div>36V</div></div></div><div><p>Ripple-Noise [mV]</p><p>Load Current [A]</p></div></div>		<table><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><tr><td>0.0</td><td>30</td><td>30</td></tr><tr><td>0.4</td><td>30</td><td>30</td></tr><tr><td>0.8</td><td>30</td><td>30</td></tr><tr><td>1.2</td><td>30</td><td>30</td></tr><tr><td>1.6</td><td>30</td><td>30</td></tr><tr><td>2.0</td><td>30</td><td>30</td></tr><tr><td>2.2</td><td>30</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></table> <p>+5V: Rated output current</p>		Load Current [A]	Ripple-Noise [mV]		Input Volt. 9 [V]	Input Volt. 36 [V]	0.0	30	30	0.4	30	30	0.8	30	30	1.2	30	30	1.6	30	30	2.0	30	30	2.2	30	30	--	-	-	--	-	-	--	-	-	--	-	-
Load Current [A]	Ripple-Noise [mV]																																								
	Input Volt. 9 [V]	Input Volt. 36 [V]																																							
0.0	30	30																																							
0.4	30	30																																							
0.8	30	30																																							
1.2	30	30																																							
1.6	30	30																																							
2.0	30	30																																							
2.2	30	30																																							
--	-	-																																							
--	-	-																																							
--	-	-																																							
--	-	-																																							
<p>Measured by 100 MHz Oscilloscope.</p> <p>Ripple-Noise is shown as p-p in the figure below.</p> <p>Note: Slanted line shows the range of the rated load current.</p> <div><div><div></div><div>Ripple Noise[mVp-p]</div></div><div></div></div> <p>Fig.Complex Ripple Noise Wave Form</p>																																									

COSEL

Model		STMGEFW302405	
Item		Ripple Voltage (by Ambient Temp.)	
Object		+5V2A	
1.Graph			
<div><div><div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></</div></div></div></div></div>			

COSEL

Model		STMGEFW302405																																																																																	
Item		Ambient Temperature Drift																																																																																	
Object		+5V2A																																																																																	
1.Graph		<div><div><div>—△—</div><div>Input Volt.</div><div>9V</div></div><div><div>---□---</div><div>Input Volt.</div><div>12V</div></div><div><div>---*---</div><div>Input Volt.</div><div>18V</div></div><div><div>---○---</div><div>Input Volt.</div><div>24V</div></div><div><div>---◇---</div><div>Input Volt.</div><div>36V</div></div></div> <div><p>Output Voltage [V]</p><p>Ambient Temperature [°C]</p><p>Load 100%</p></div>																																																																																	
2.Values		<table><tr><th rowspan="2">Ambient Temperature [°C]</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><tr><td>-40</td><td>5.054</td><td>5.055</td><td>5.057</td><td>5.057</td><td>5.058</td></tr><tr><td>-20</td><td>5.063</td><td>5.064</td><td>5.065</td><td>5.066</td><td>5.066</td></tr><tr><td>0</td><td>5.070</td><td>5.072</td><td>5.073</td><td>5.074</td><td>5.074</td></tr><tr><td>10</td><td>5.073</td><td>5.075</td><td>5.076</td><td>5.076</td><td>5.076</td></tr><tr><td>25</td><td>5.076</td><td>5.078</td><td>5.079</td><td>5.079</td><td>5.079</td></tr><tr><td>30</td><td>5.077</td><td>5.079</td><td>5.080</td><td>5.080</td><td>5.080</td></tr><tr><td>40</td><td>5.078</td><td>5.080</td><td>5.081</td><td>5.082</td><td>5.082</td></tr><tr><td>50</td><td>5.079</td><td>5.081</td><td>5.082</td><td>5.082</td><td>5.082</td></tr><tr><td>60</td><td>5.080</td><td>5.081</td><td>5.082</td><td>5.083</td><td>5.083</td></tr><tr><td>65</td><td>5.080</td><td>5.081</td><td>5.082</td><td>5.083</td><td>5.083</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr></table>					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	5.054	5.055	5.057	5.057	5.058	-20	5.063	5.064	5.065	5.066	5.066	0	5.070	5.072	5.073	5.074	5.074	10	5.073	5.075	5.076	5.076	5.076	25	5.076	5.078	5.079	5.079	5.079	30	5.077	5.079	5.080	5.080	5.080	40	5.078	5.080	5.081	5.082	5.082	50	5.079	5.081	5.082	5.082	5.082	60	5.080	5.081	5.082	5.083	5.083	65	5.080	5.081	5.082	5.083	5.083	--	-	-	-	-	-
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	5.054	5.055	5.057	5.057	5.058																																																																														
-20	5.063	5.064	5.065	5.066	5.066																																																																														
0	5.070	5.072	5.073	5.074	5.074																																																																														
10	5.073	5.075	5.076	5.076	5.076																																																																														
25	5.076	5.078	5.079	5.079	5.079																																																																														
30	5.077	5.079	5.080	5.080	5.080																																																																														
40	5.078	5.080	5.081	5.082	5.082																																																																														
50	5.079	5.081	5.082	5.082	5.082																																																																														
60	5.080	5.081	5.082	5.083	5.083																																																																														
65	5.080	5.081	5.082	5.083	5.083																																																																														
--	-	-	-	-	-																																																																														
Object		-5V2A																																																																																	
1.Graph		<div><div><div>—△—</div><div>Input Volt.</div><div>9V</div></div><div><div>---□---</div><div>Input Volt.</div><div>12V</div></div><div><div>---*---</div><div>Input Volt.</div><div>18V</div></div><div><div>---○---</div><div>Input Volt.</div><div>24V</div></div><div><div>---◇---</div><div>Input Volt.</div><div>36V</div></div></div> <div><p>Output Voltage [V]</p><p>Ambient Temperature [°C]</p><p>Load 100%</p></div>																																																																																	
2.Values		<table><tr><th rowspan="2">Ambient Temperature [°C]</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><tr><td>-40</td><td>-5.049</td><td>-5.049</td><td>-5.049</td><td>-5.049</td><td>-5.049</td></tr><tr><td>-20</td><td>-5.058</td><td>-5.058</td><td>-5.057</td><td>-5.057</td><td>-5.058</td></tr><tr><td>0</td><td>-5.066</td><td>-5.065</td><td>-5.065</td><td>-5.065</td><td>-5.065</td></tr><tr><td>10</td><td>-5.069</td><td>-5.068</td><td>-5.067</td><td>-5.067</td><td>-5.068</td></tr><tr><td>25</td><td>-5.072</td><td>-5.071</td><td>-5.070</td><td>-5.070</td><td>-5.070</td></tr><tr><td>30</td><td>-5.073</td><td>-5.072</td><td>-5.071</td><td>-5.071</td><td>-5.071</td></tr><tr><td>40</td><td>-5.075</td><td>-5.073</td><td>-5.072</td><td>-5.072</td><td>-5.072</td></tr><tr><td>50</td><td>-5.076</td><td>-5.074</td><td>-5.073</td><td>-5.073</td><td>-5.073</td></tr><tr><td>60</td><td>-5.076</td><td>-5.075</td><td>-5.074</td><td>-5.073</td><td>-5.073</td></tr><tr><td>65</td><td>-5.076</td><td>-5.075</td><td>-5.074</td><td>-5.073</td><td>-5.073</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr></table>					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	-5.049	-5.049	-5.049	-5.049	-5.049	-20	-5.058	-5.058	-5.057	-5.057	-5.058	0	-5.066	-5.065	-5.065	-5.065	-5.065	10	-5.069	-5.068	-5.067	-5.067	-5.068	25	-5.072	-5.071	-5.070	-5.070	-5.070	30	-5.073	-5.072	-5.071	-5.071	-5.071	40	-5.075	-5.073	-5.072	-5.072	-5.072	50	-5.076	-5.074	-5.073	-5.073	-5.073	60	-5.076	-5.075	-5.074	-5.073	-5.073	65	-5.076	-5.075	-5.074	-5.073	-5.073	--	-	-	-	-	-
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	-5.049	-5.049	-5.049	-5.049	-5.049																																																																														
-20	-5.058	-5.058	-5.057	-5.057	-5.058																																																																														
0	-5.066	-5.065	-5.065	-5.065	-5.065																																																																														
10	-5.069	-5.068	-5.067	-5.067	-5.068																																																																														
25	-5.072	-5.071	-5.070	-5.070	-5.070																																																																														
30	-5.073	-5.072	-5.071	-5.071	-5.071																																																																														
40	-5.075	-5.073	-5.072	-5.072	-5.072																																																																														
50	-5.076	-5.074	-5.073	-5.073	-5.073																																																																														
60	-5.076	-5.075	-5.074	-5.073	-5.073																																																																														
65	-5.076	-5.075	-5.074	-5.073	-5.073																																																																														
--	-	-	-	-	-																																																																														
Note: Slanted line shows the range of the rated ambient temperature.																																																																																			

- 13 -

BC - 10732

COSEL

		Testing Circuitry . Figure A
Model	STMGFW302405	
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 - 2A (AVR 2) : 0 - 2A

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

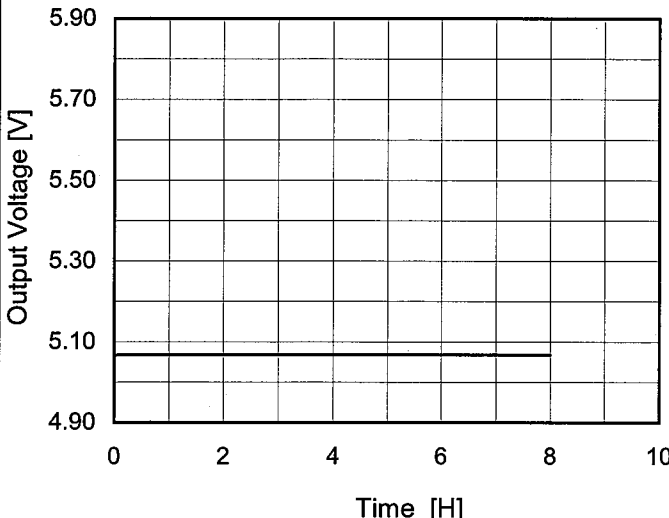
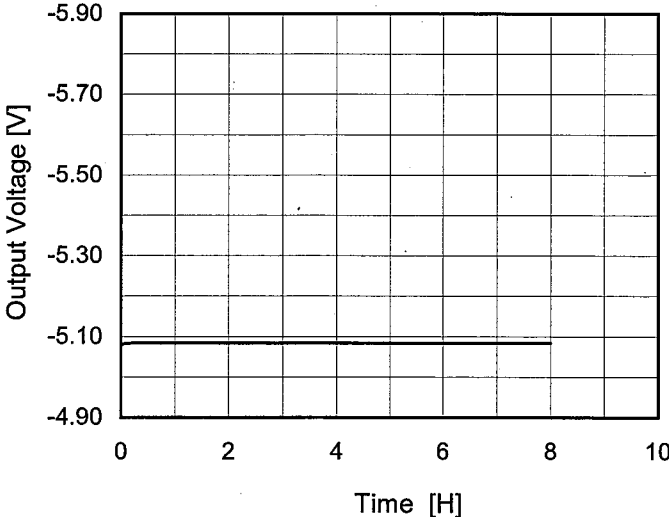
* Output Voltage Accuracy (Ration) = $\frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$

2. Values

Object	+5V2A					
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	10	36	0	5.645	±291	±5.8
Minimum Voltage	-20	9	2	5.063		

Object	-5V2A					
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	40	36	0	-5.796	±370	±7.4
Minimum Voltage	-20	24	2	-5.057		

COSEL

Model	STMGFW302405																								
Item	Time Lapse Drift		Temperature 25°C																						
Object	+5V2A		Testing Circuitry Figure A																						
1.Graph		2.Values																							
<div><p>Output Voltage [V]</p><p>Time [H]</p><p>Input Volt. 24V</p><p>Load 100%</p></div>		<table><tr><th>Time since start [H]</th><th>Output Voltage [V]</th></tr><tr><td>0.0</td><td>5.065</td></tr><tr><td>0.5</td><td>5.068</td></tr><tr><td>1.0</td><td>5.068</td></tr><tr><td>2.0</td><td>5.068</td></tr><tr><td>3.0</td><td>5.068</td></tr><tr><td>4.0</td><td>5.068</td></tr><tr><td>5.0</td><td>5.068</td></tr><tr><td>6.0</td><td>5.068</td></tr><tr><td>7.0</td><td>5.068</td></tr><tr><td>8.0</td><td>5.068</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	5.065	0.5	5.068	1.0	5.068	2.0	5.068	3.0	5.068	4.0	5.068	5.0	5.068	6.0	5.068	7.0	5.068	8.0	5.068
Time since start [H]	Output Voltage [V]																								
0.0	5.065																								
0.5	5.068																								
1.0	5.068																								
2.0	5.068																								
3.0	5.068																								
4.0	5.068																								
5.0	5.068																								
6.0	5.068																								
7.0	5.068																								
8.0	5.068																								
Object	-5V2A																								
1.Graph		2.Values																							
<div><p>Output Voltage [V]</p><p>Time [H]</p><p>Input Volt. 24V</p><p>Load 100%</p></div>		<table><tr><th>Time since start [H]</th><th>Output Voltage [V]</th></tr><tr><td>0.0</td><td>-5.078</td></tr><tr><td>0.5</td><td>-5.084</td></tr><tr><td>1.0</td><td>-5.084</td></tr><tr><td>2.0</td><td>-5.084</td></tr><tr><td>3.0</td><td>-5.084</td></tr><tr><td>4.0</td><td>-5.084</td></tr><tr><td>5.0</td><td>-5.084</td></tr><tr><td>6.0</td><td>-5.084</td></tr><tr><td>7.0</td><td>-5.084</td></tr><tr><td>8.0</td><td>-5.084</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	-5.078	0.5	-5.084	1.0	-5.084	2.0	-5.084	3.0	-5.084	4.0	-5.084	5.0	-5.084	6.0	-5.084	7.0	-5.084	8.0	-5.084
Time since start [H]	Output Voltage [V]																								
0.0	-5.078																								
0.5	-5.084																								
1.0	-5.084																								
2.0	-5.084																								
3.0	-5.084																								
4.0	-5.084																								
5.0	-5.084																								
6.0	-5.084																								
7.0	-5.084																								
8.0	-5.084																								

- 15 -

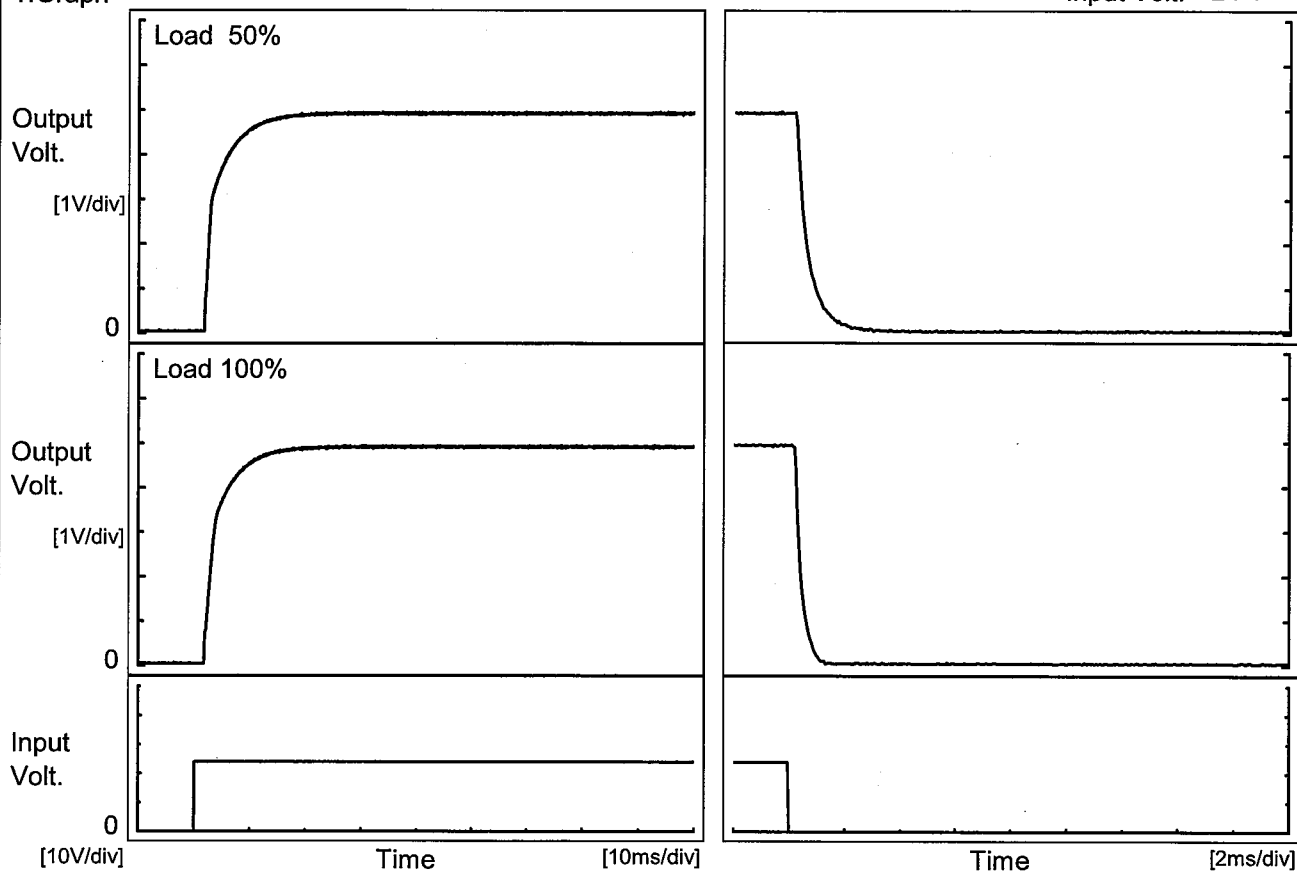
BC - 10732

COSEL

Model	STMGFW302405	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	+5V2A		

1. Graph

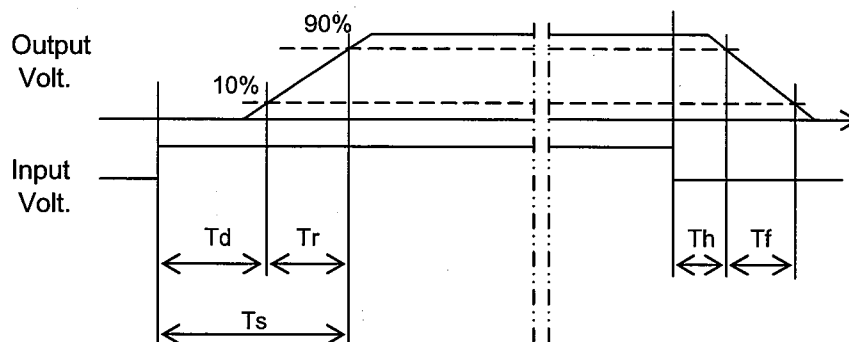
Input Volt. 24 V



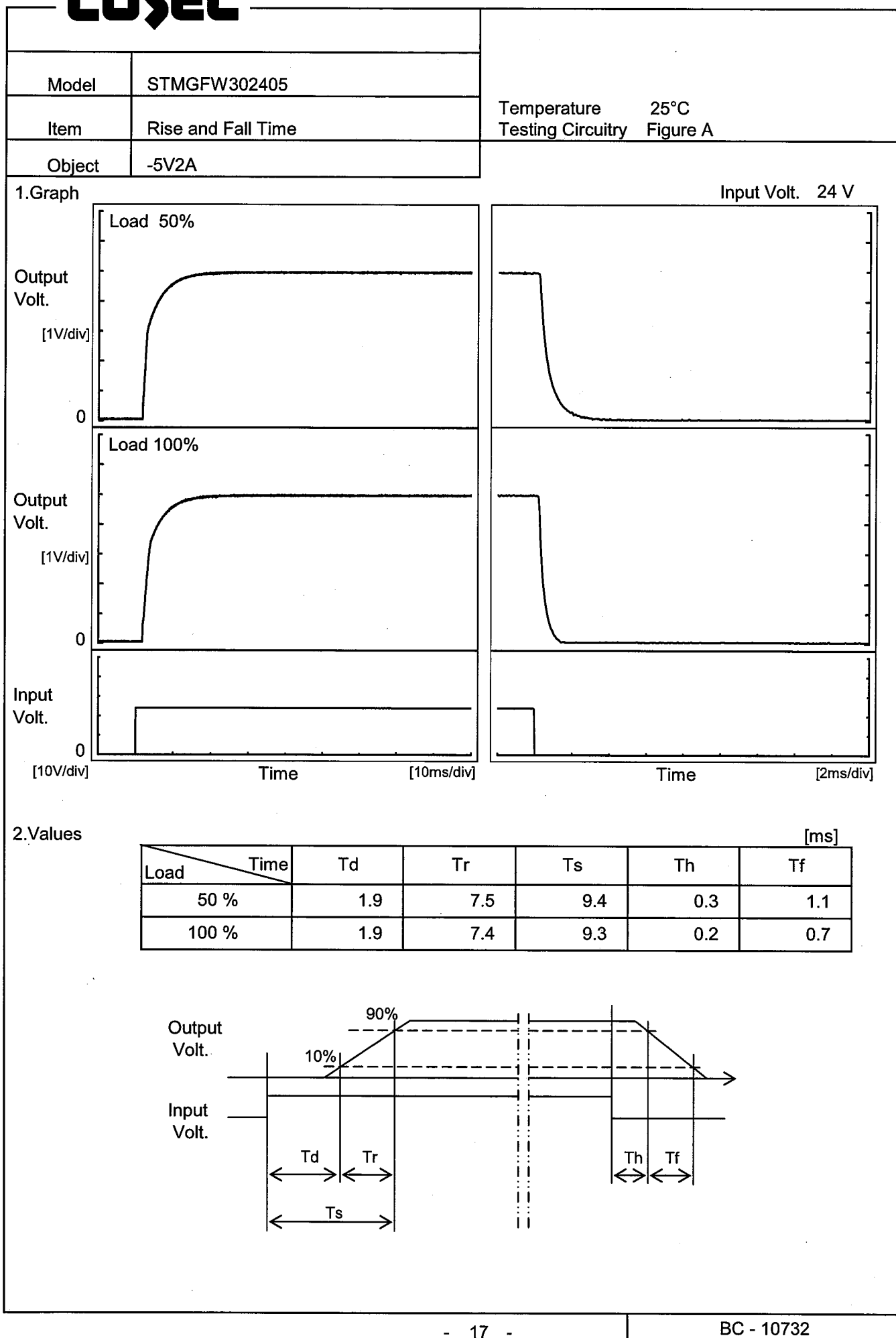
2. Values

[ms]

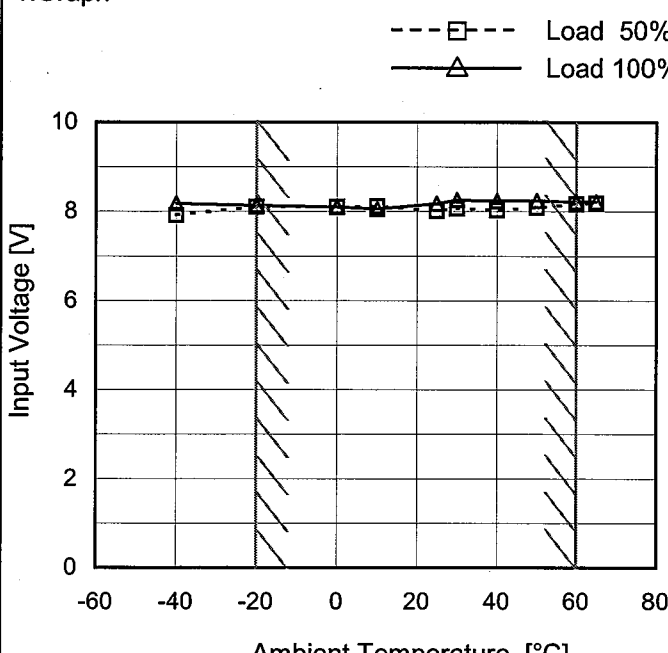
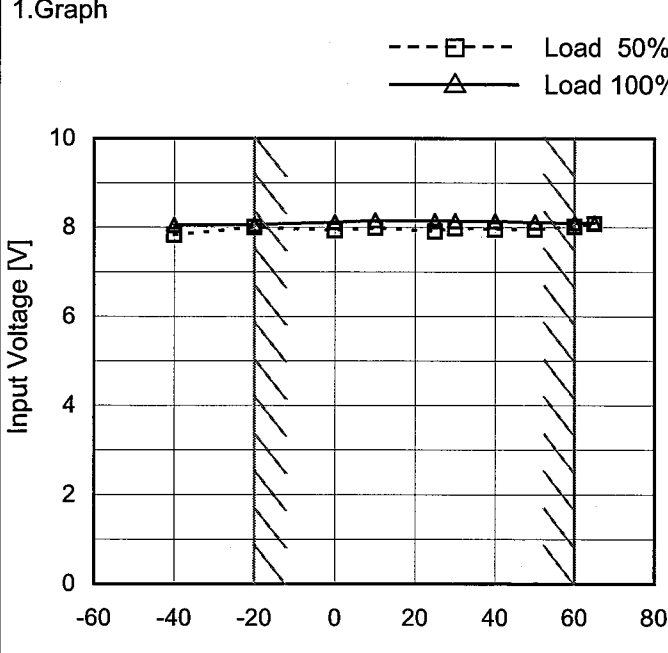
Load \ Time	Td	Tr	Ts	Th	Tf
50 %	1.9	7.9	9.8	0.3	1.0
100 %	1.9	8.2	10.1	0.2	0.6



COSEL



COSEL

Model	STMGEFW302405	Testing Circuitry Figure A																																							
Item	Minimum Input Voltage for Regulated Output Voltage																																								
Object	+5V2A																																								
1.Graph		2.Values																																							
<div><div>---□--- Load 50%</div><div>—△— Load 100%</div></div>		<table><tr><th rowspan="2">Ambient Temperature [°C]</th><th colspan="2">Input Voltage [V]</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr><tr><td>-40</td><td>8.0</td><td>8.2</td></tr><tr><td>-20</td><td>8.1</td><td>8.2</td></tr><tr><td>0</td><td>8.1</td><td>8.1</td></tr><tr><td>10</td><td>8.2</td><td>8.1</td></tr><tr><td>25</td><td>8.1</td><td>8.2</td></tr><tr><td>30</td><td>8.1</td><td>8.3</td></tr><tr><td>40</td><td>8.1</td><td>8.3</td></tr><tr><td>50</td><td>8.1</td><td>8.3</td></tr><tr><td>60</td><td>8.2</td><td>8.3</td></tr><tr><td>65</td><td>8.2</td><td>8.3</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></table>		Ambient Temperature [°C]	Input Voltage [V]		Load 50%	Load 100%	-40	8.0	8.2	-20	8.1	8.2	0	8.1	8.1	10	8.2	8.1	25	8.1	8.2	30	8.1	8.3	40	8.1	8.3	50	8.1	8.3	60	8.2	8.3	65	8.2	8.3	--	-	-
Ambient Temperature [°C]	Input Voltage [V]																																								
	Load 50%	Load 100%																																							
-40	8.0	8.2																																							
-20	8.1	8.2																																							
0	8.1	8.1																																							
10	8.2	8.1																																							
25	8.1	8.2																																							
30	8.1	8.3																																							
40	8.1	8.3																																							
50	8.1	8.3																																							
60	8.2	8.3																																							
65	8.2	8.3																																							
--	-	-																																							
Object	-5V2A																																								
1.Graph		2.Values																																							
<div><div>---□--- Load 50%</div><div>—△— Load 100%</div></div>		<table><tr><th rowspan="2">Ambient Temperature [°C]</th><th colspan="2">Input Voltage [V]</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr><tr><td>-40</td><td>7.9</td><td>8.1</td></tr><tr><td>-20</td><td>8.0</td><td>8.1</td></tr><tr><td>0</td><td>8.0</td><td>8.2</td></tr><tr><td>10</td><td>8.0</td><td>8.2</td></tr><tr><td>25</td><td>8.0</td><td>8.2</td></tr><tr><td>30</td><td>8.0</td><td>8.2</td></tr><tr><td>40</td><td>8.0</td><td>8.2</td></tr><tr><td>50</td><td>8.0</td><td>8.2</td></tr><tr><td>60</td><td>8.1</td><td>8.1</td></tr><tr><td>65</td><td>8.1</td><td>8.1</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></table>		Ambient Temperature [°C]	Input Voltage [V]		Load 50%	Load 100%	-40	7.9	8.1	-20	8.0	8.1	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	8.1	8.1	65	8.1	8.1	--	-	-
Ambient Temperature [°C]	Input Voltage [V]																																								
	Load 50%	Load 100%																																							
-40	7.9	8.1																																							
-20	8.0	8.1																																							
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	8.1	8.1																																							
65	8.1	8.1																																							
--	-	-																																							
Note: Slanted line shows the range of the rated ambient temperature.																																									

Temperature	25°C
Testing Circuitry	Figure A



Object	-5V2A
--------	-------



Intermittent operation occurs when overcurrent protection is activated.

COSEL

Model	STMGFW302405																																								
Item	Overvoltage Protection	Testing Circuitry Figure A																																							
Object	+10V2A																																								
1.Graph		2.Values																																							
<div><div><div>—△—</div><div>Input Volt. 24V</div></div><div><div>---□---</div><div>Input Volt. 36V</div></div></div> <p>Operating Point [V]</p> <p>Ambient Temperature [°C]</p> <p>Load 0%</p> <p>Note: Slanted line shows the range of the rated ambient temperature.</p>		<table><tr><th rowspan="2">Ambient Temperature [°C]</th><th colspan="2">Operating Point [V]</th></tr><tr><th>Input Volt. 24[V]</th><th>Input Volt. 36[V]</th></tr><tr><td>-40</td><td>13.48</td><td>13.49</td></tr><tr><td>-20</td><td>13.63</td><td>13.64</td></tr><tr><td>0</td><td>13.77</td><td>13.78</td></tr><tr><td>25</td><td>13.98</td><td>14.00</td></tr><tr><td>60</td><td>14.20</td><td>14.29</td></tr><tr><td>65</td><td>14.28</td><td>14.29</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></table>		Ambient Temperature [°C]	Operating Point [V]		Input Volt. 24[V]	Input Volt. 36[V]	-40	13.48	13.49	-20	13.63	13.64	0	13.77	13.78	25	13.98	14.00	60	14.20	14.29	65	14.28	14.29	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-
Ambient Temperature [°C]	Operating Point [V]																																								
	Input Volt. 24[V]	Input Volt. 36[V]																																							
-40	13.48	13.49																																							
-20	13.63	13.64																																							
0	13.77	13.78																																							
25	13.98	14.00																																							
60	14.20	14.29																																							
65	14.28	14.29																																							
--	-	-																																							
--	-	-																																							
--	-	-																																							
--	-	-																																							
--	-	-																																							

- 20 -

BC - 10732

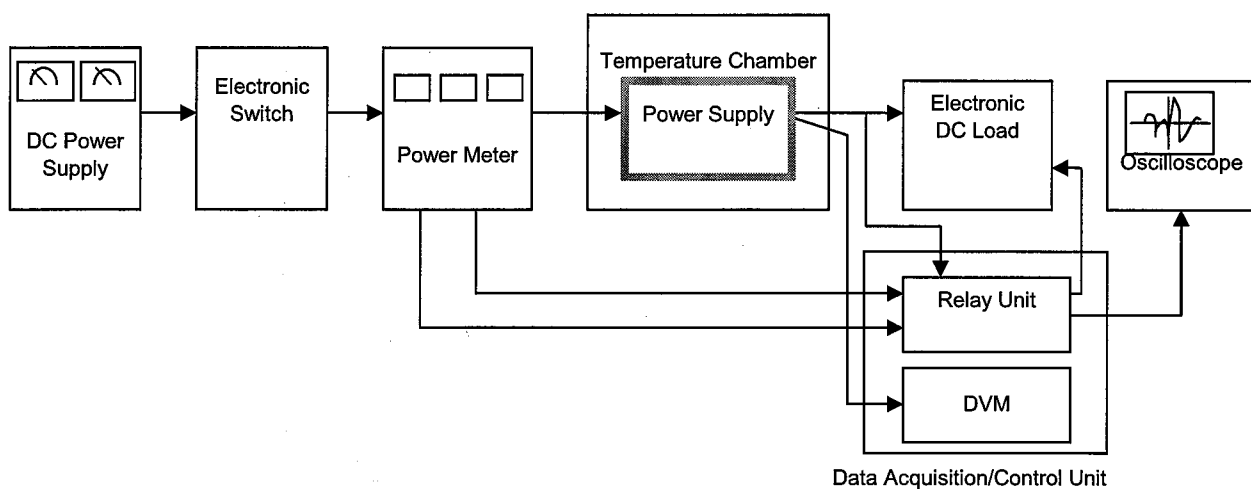


Figure A

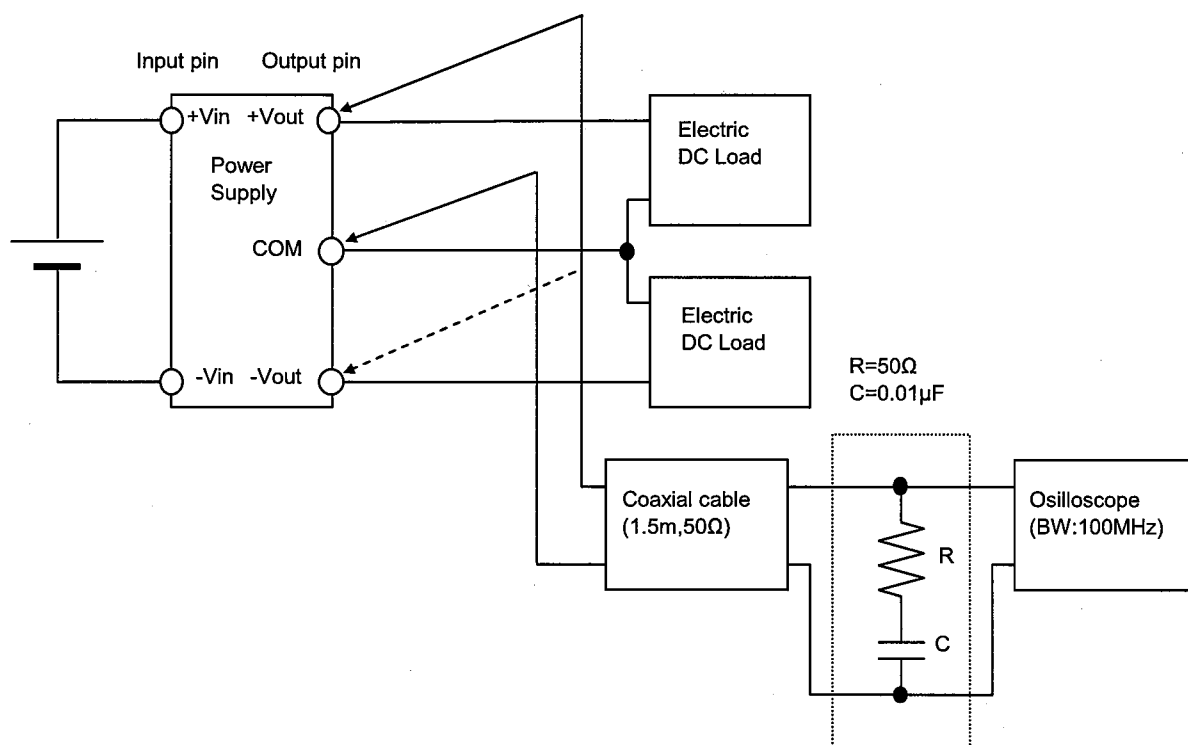


Figure B (Ripple and Ripple noise Characteristic)