

TEST DATA OF MGW154805

Regulated DC Power Supply
September 10, 2010

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Kazunari Asano Design Manager

Prepared by : Hidetaka Kobayashi
Hidetaka Kobayashi Design Engineer

COSEL CO.,LTD.

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(Final Page 22)

Model	MGW154805	Temperature Testing Circuitry 25°C Figure A																															
Item	Input Current (by Input Voltage)																																
Object	_____	2.Values																															
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>0</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>0.600</td></tr> <tr><td>40</td><td>0.000</td><td>0.200</td><td>0.500</td></tr> <tr><td>50</td><td>0.000</td><td>0.150</td><td>0.400</td></tr> <tr><td>60</td><td>0.000</td><td>0.100</td><td>0.300</td></tr> <tr><td>70</td><td>0.000</td><td>0.080</td><td>0.250</td></tr> <tr><td>80</td><td>0.000</td><td>0.070</td><td>0.250</td></tr> </tbody> </table>	Input Voltage [V]	Load 0% [A]	Load 50% [A]	Load 100% [A]	0	0.000	0.000	0.000	35	0.000	0.000	0.600	40	0.000	0.200	0.500	50	0.000	0.150	0.400	60	0.000	0.100	0.300	70	0.000	0.080	0.250	80	0.000	0.070	0.250
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Note: Slanted line shows the range of the rated input voltage.

Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0.0	0.000	0.000	0.000
8.0	0.003	0.003	0.003
16.0	0.003	0.003	0.003
24.0	0.003	0.003	0.003
28.0	0.003	0.003	0.003
32.0	0.004	0.004	0.004
32.8	0.011	0.277	0.612
33.6	0.011	0.270	0.600
34.0	0.011	0.267	0.593
36.0	0.011	0.252	0.558
40.0	0.010	0.227	0.499
48.0	0.008	0.187	0.413
60.0	0.007	0.153	0.329
70.0	0.008	0.133	0.284
76.0	0.008	0.123	0.261
80.0	0.008	0.117	0.249
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--	-	-	-

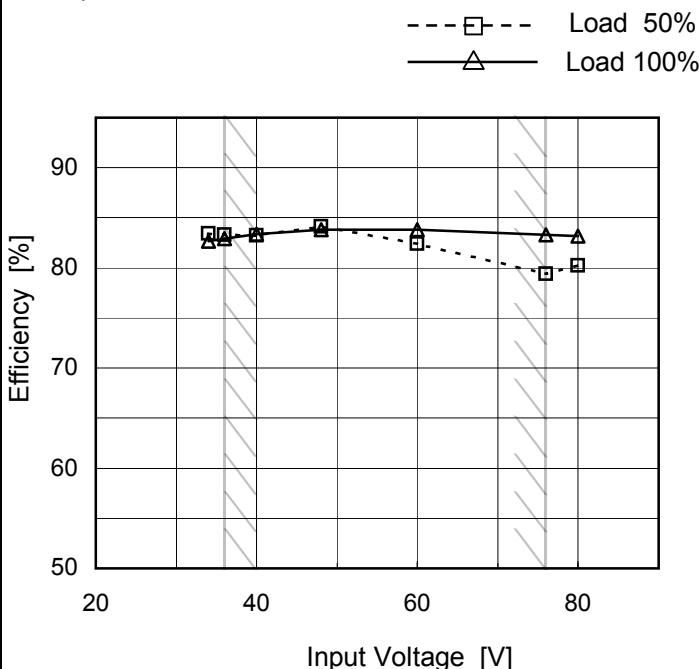
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Model	MGW154805
Item	Efficiency (by Input Voltage)
Object	—

Temperature 25°C
Testing Circuitry Figure A

1.Graph



2.Values

Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
34	83.4	82.7
36	83.3	82.9
40	83.2	83.4
48	84.1	83.8
60	82.4	83.8
76	79.4	83.3
80	80.3	83.2
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--	-	-

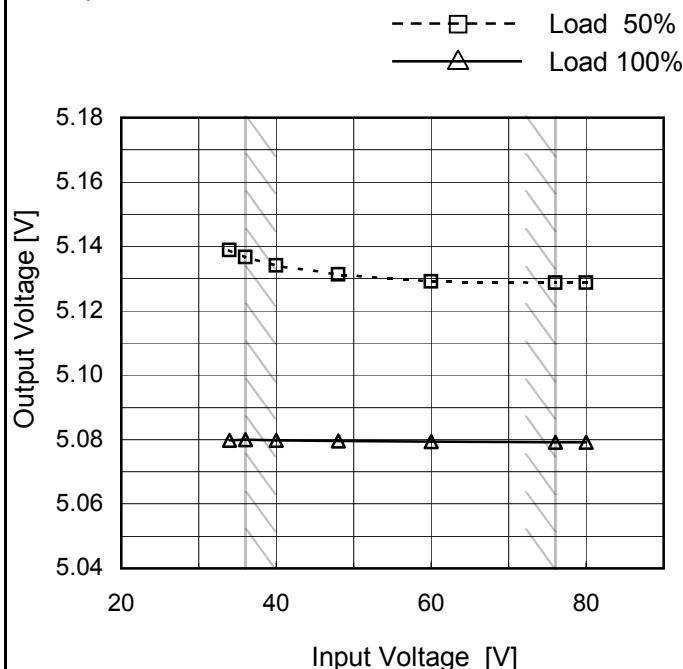
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Model	MGW154805
Item	Line Regulation
Object	+5V1.5A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



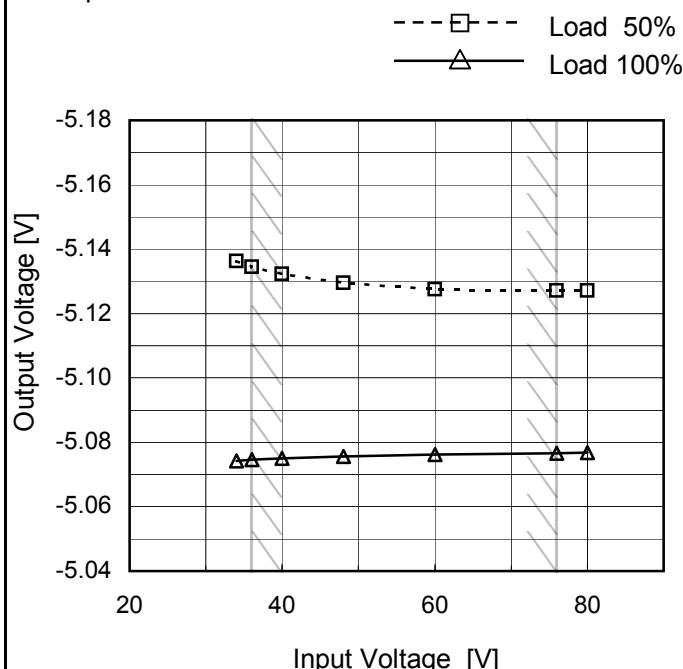
2.Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
34	5.139	5.080
36	5.137	5.080
40	5.134	5.080
48	5.131	5.080
60	5.129	5.079
76	5.129	5.079
80	5.129	5.079
--	-	-
--	-	-

-5V: Rated output current

Object -5V1.5A

1.Graph



2.Values

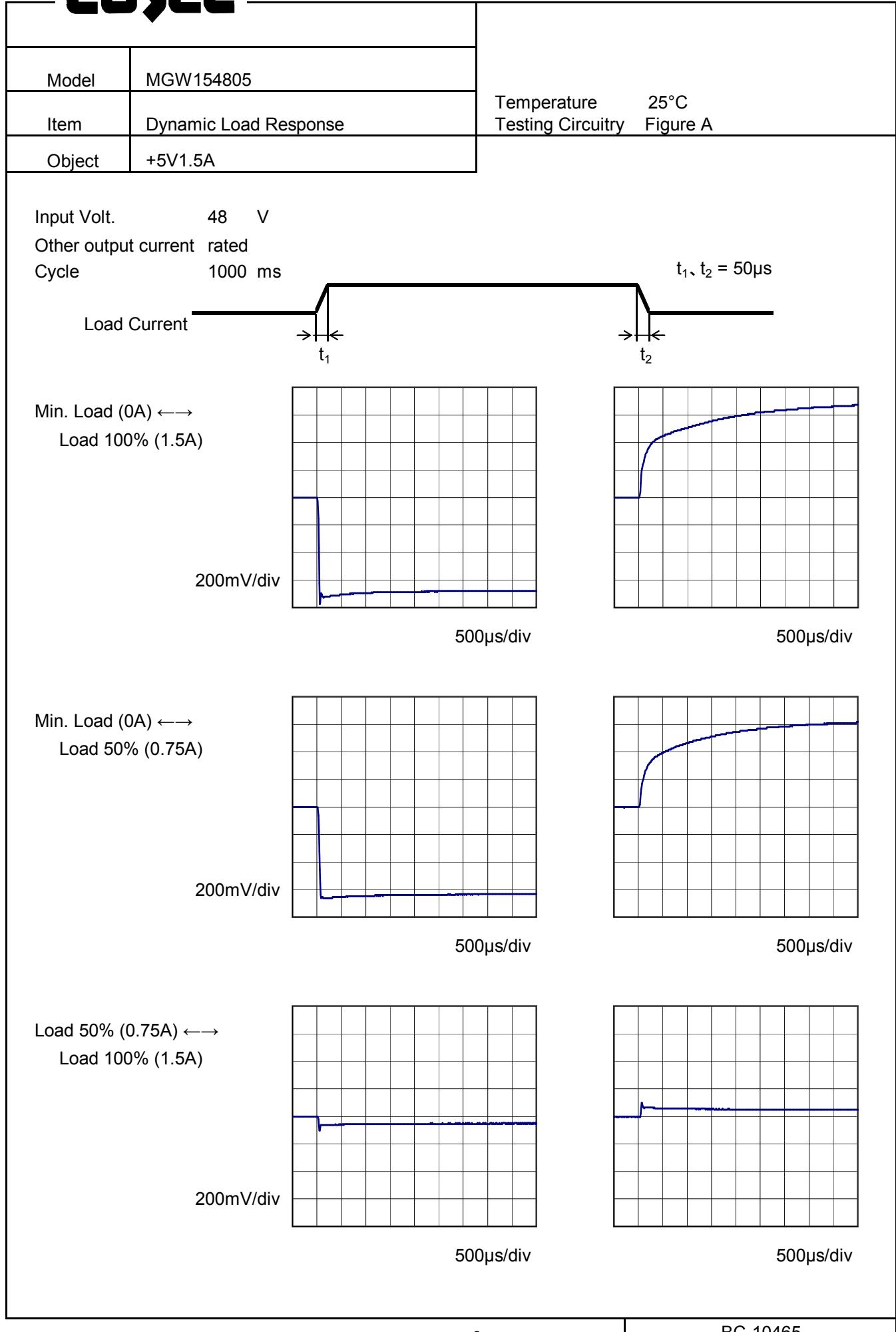
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
34	-5.136	-5.074
36	-5.135	-5.075
40	-5.132	-5.075
48	-5.130	-5.076
60	-5.128	-5.076
76	-5.127	-5.077
80	-5.127	-5.077
--	-	-
--	-	-

+5V: Rated output current

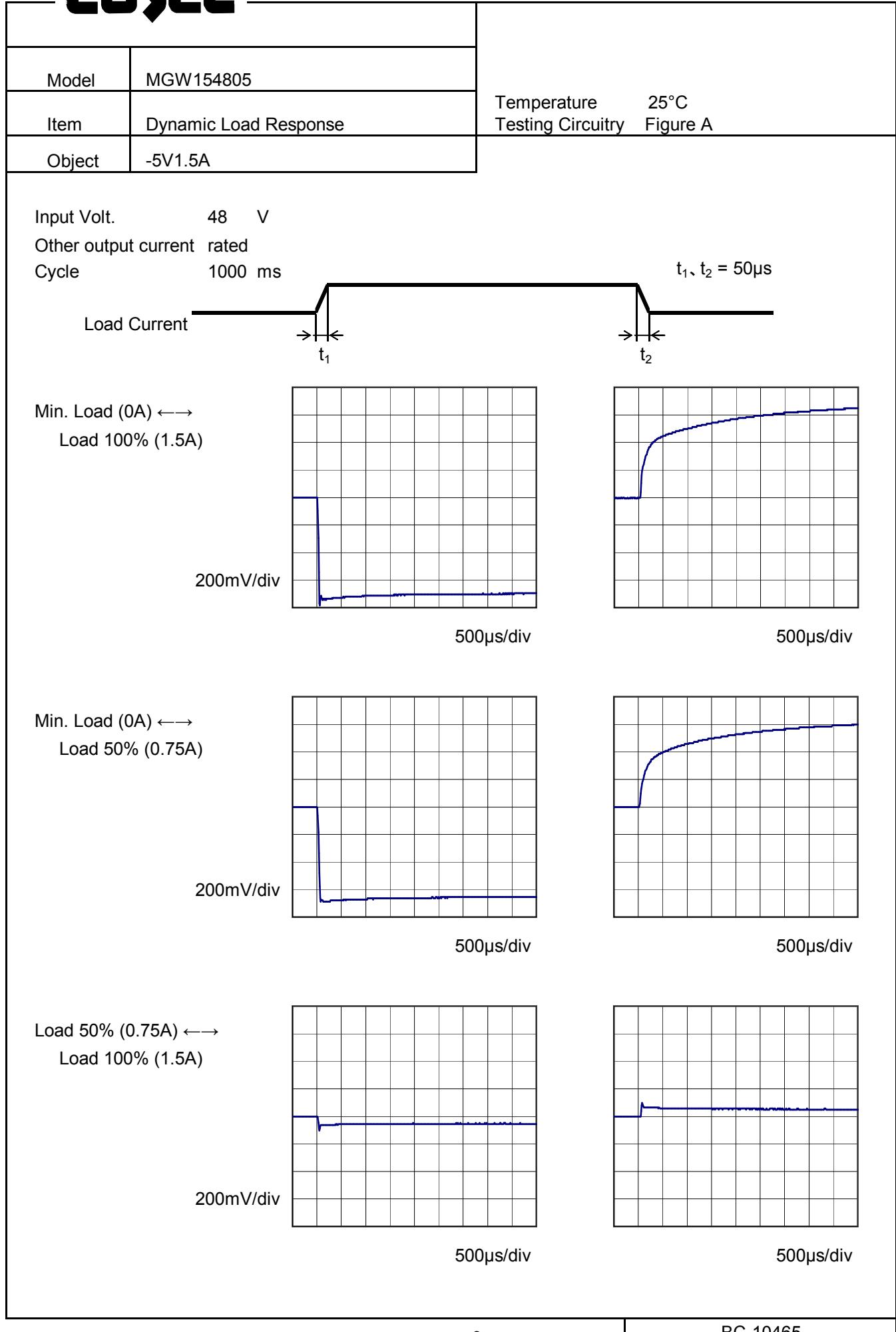
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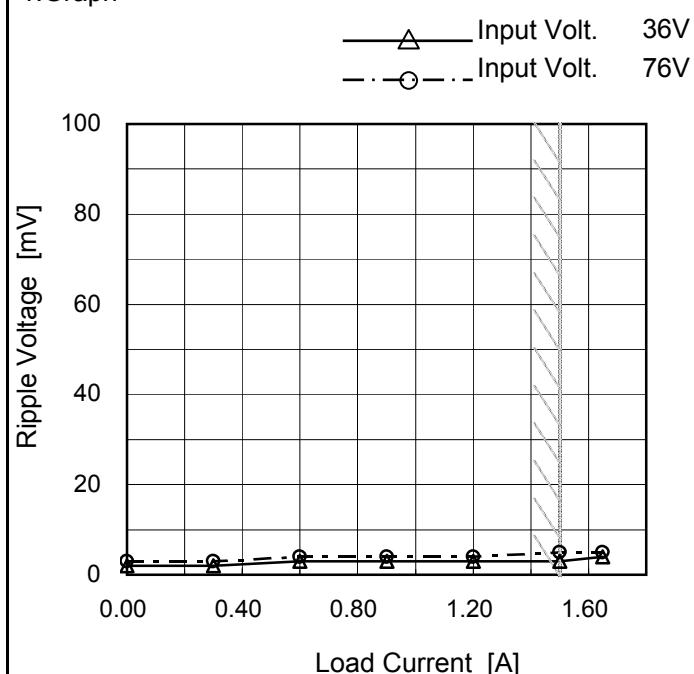
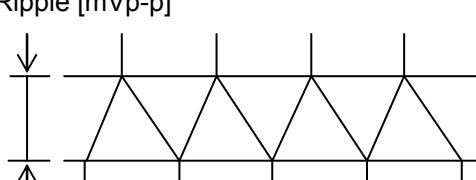
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COSEL



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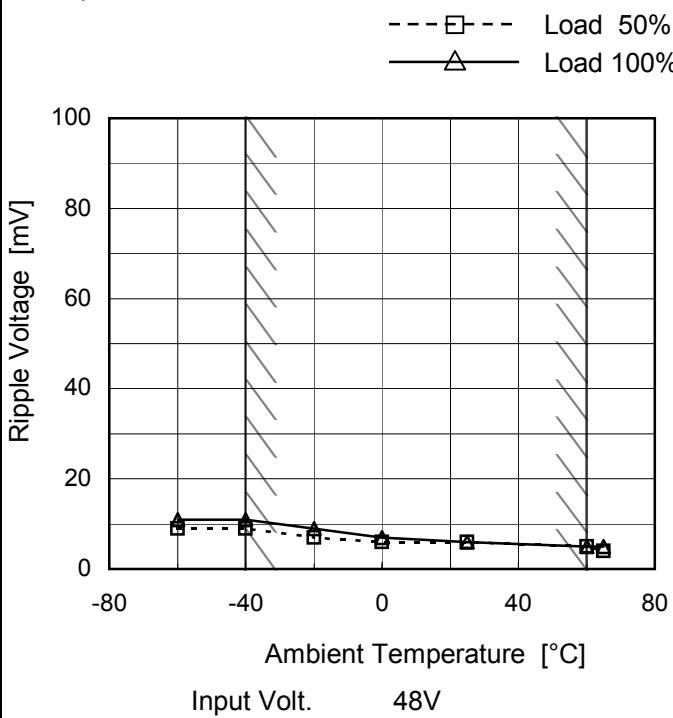
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Model	MGW154805
Item	Ripple Voltage (by Ambient Temp.)
Object	+5V1.5A

Testing Circuitry Figure B

1.Graph

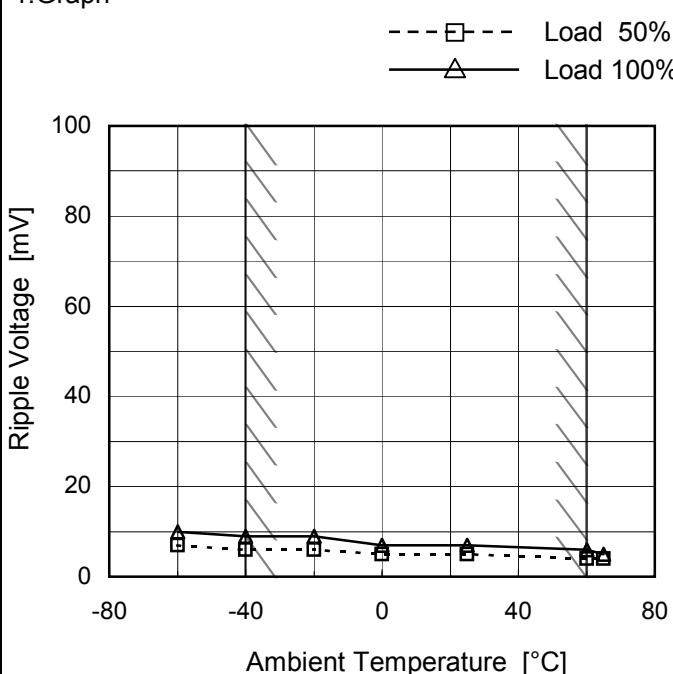


2.Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	9	11
-40	9	11
-20	7	9
0	6	7
25	6	6
60	5	5
65	4	5
--	-	-
--	-	-
--	-	-
--	-	-

-5V: Rated output current

1.Graph



2.Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	7	10
-40	6	9
-20	6	9
0	5	7
25	5	7
60	4	6
65	4	5
--	-	-
--	-	-
--	-	-
--	-	-

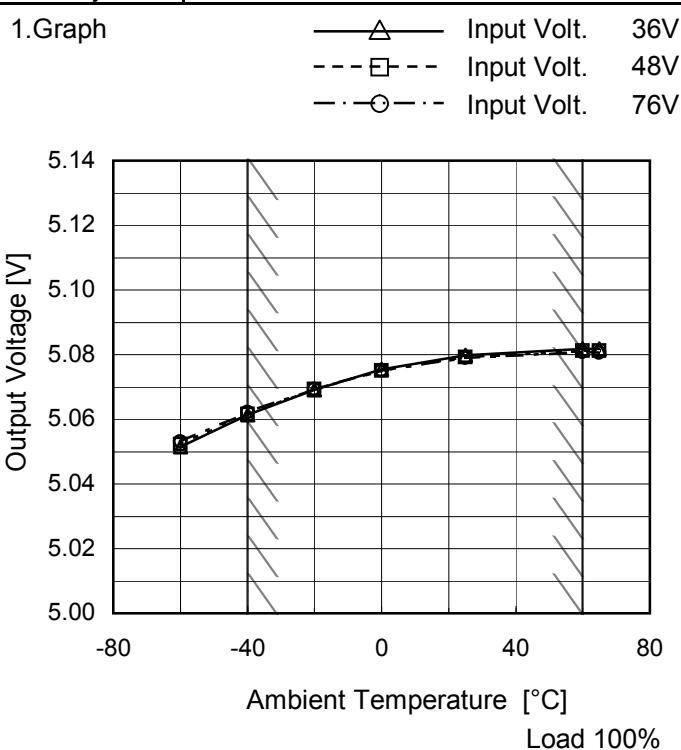
+5V: Rated output current

Measured by 100 MHz Oscilloscope.

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

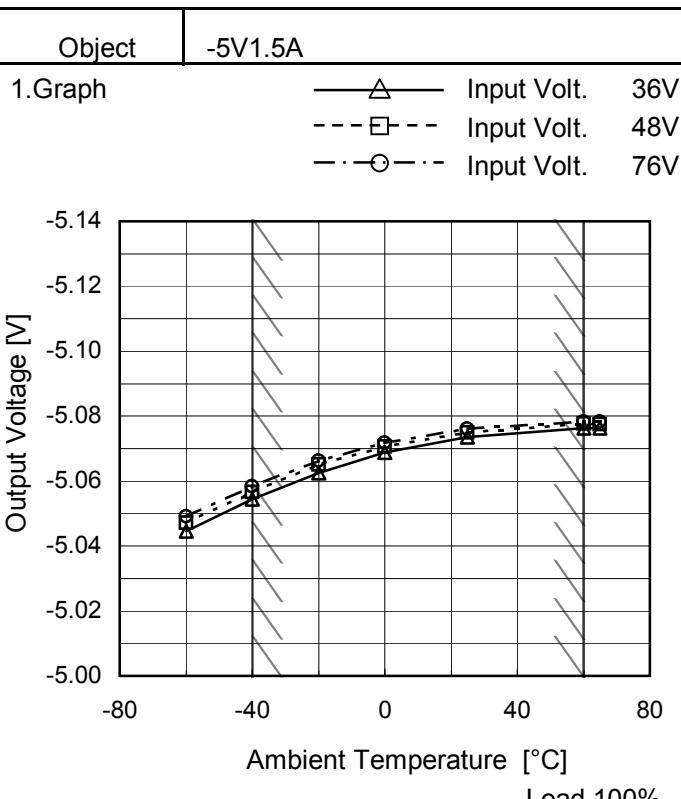
Model	MGW154805
Item	Ambient Temperature Drift
Object	+5V1.5A

Testing Circuitry Figure A



2.Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
-60	5.051	5.052	5.053
-40	5.061	5.062	5.062
-20	5.069	5.069	5.069
0	5.075	5.075	5.075
25	5.080	5.079	5.079
60	5.082	5.081	5.081
65	5.082	5.081	5.081
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-



2.Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
-60	-5.045	-5.047	-5.049
-40	-5.054	-5.057	-5.058
-20	-5.063	-5.065	-5.066
0	-5.069	-5.071	-5.072
25	-5.074	-5.075	-5.076
60	-5.076	-5.078	-5.078
65	-5.076	-5.078	-5.078
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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



Model	MGW154805	
Item	Output Voltage Accuracy	Testing Circuitry Figure A

1. Output Voltage Accuracy

This is defined as the value of the output voltage, regulation load, ambient temperature and input voltage varied at random in the range as specified below.

Temperature : -40 - 60°C

Input Voltage : 36 - 76V

Load Current (AVR 1) : 0 - 1.5A (AVR 2) : 0 - 1.5A

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

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

2. Values

Object		+5V1.5A		Output		Output Voltage Accuracy	
Item	Temperature [°C]	Input Voltage[V]	Output		Value [mV]	Ration [%]	
			Current[A]	Voltage[V]			
Maximum Voltage	25	36	0	5.886	± 413	± 8.3	
Minimum Voltage	-40	36	1.5	5.061			

Object		-5V1.5A		Output		Output Voltage Accuracy	
Item	Temperature [°C]	Input Voltage[V]	Output		Value [mV]	Ration [%]	
			Current[A]	Voltage[V]			
Maximum Voltage	-20	36	0	-5.851	± 399	± 8.0	
Minimum Voltage	-40	36	1.5	-5.054			

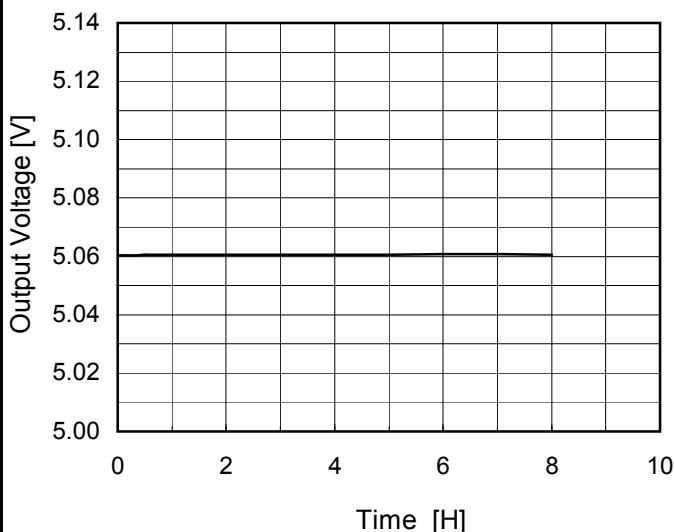
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Model	MGW154805
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Item	Time Lapse Drift
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Object	+5V1.5A
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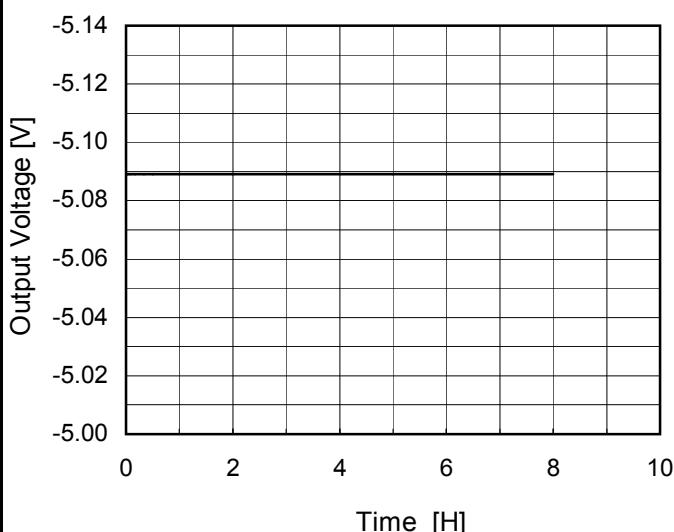
1.Graph



Input Volt. 48V
Load 100%

Object	-5V1.5A
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1.Graph



Input Volt. 48V
Load 100%

Temperature	25°C
Testing Circuitry	Figure A

2.Values

Time since start [H]	Output Voltage [V]
0.0	5.060
0.5	5.061
1.0	5.061
2.0	5.061
3.0	5.061
4.0	5.061
5.0	5.061
6.0	5.061
7.0	5.061
8.0	5.061

2.Values

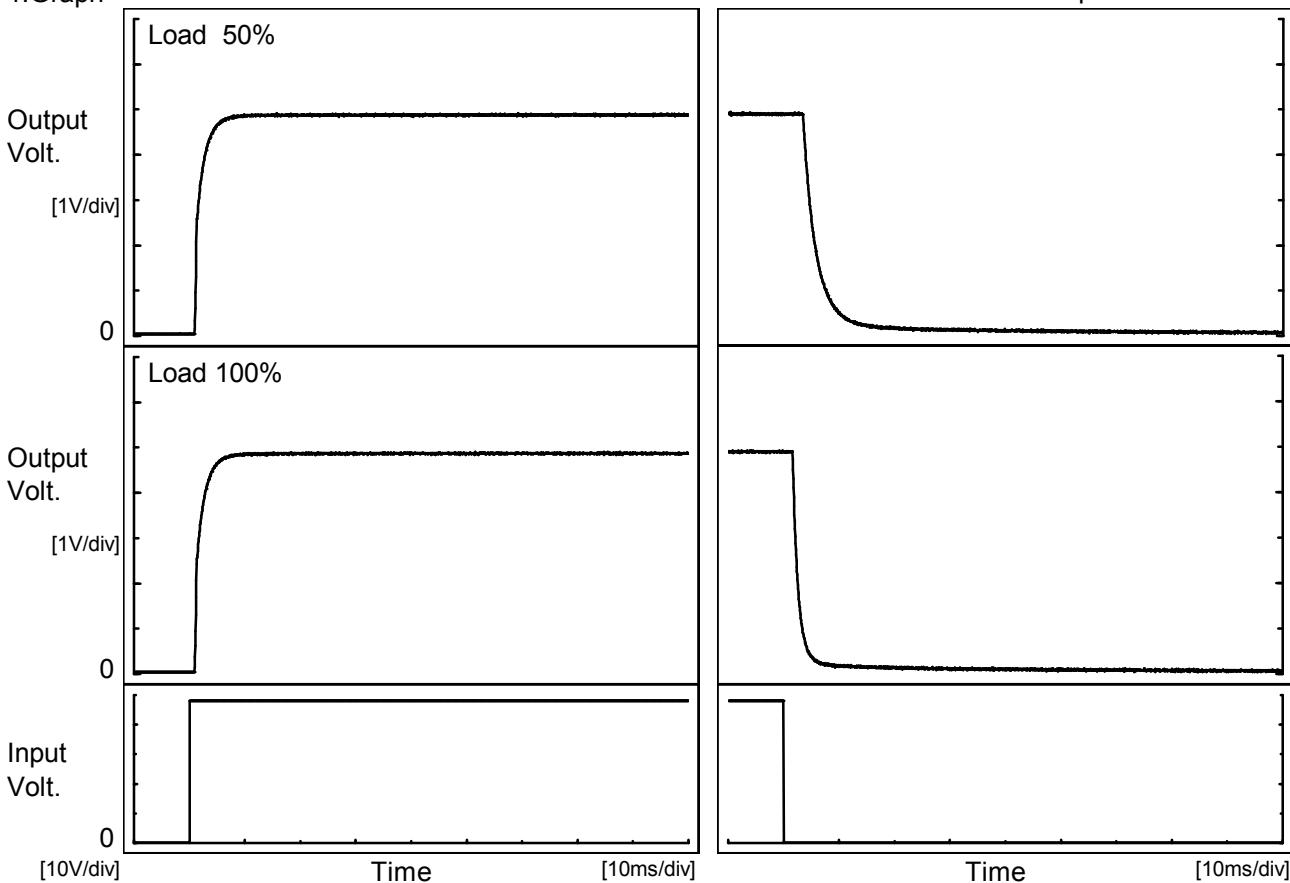
Time since start [H]	Output Voltage [V]
0.0	-5.089
0.5	-5.089
1.0	-5.089
2.0	-5.089
3.0	-5.089
4.0	-5.089
5.0	-5.089
6.0	-5.089
7.0	-5.089
8.0	-5.089

COSEL

Model	MGW154805
Item	Rise and Fall Time
Object	+5V1.5A

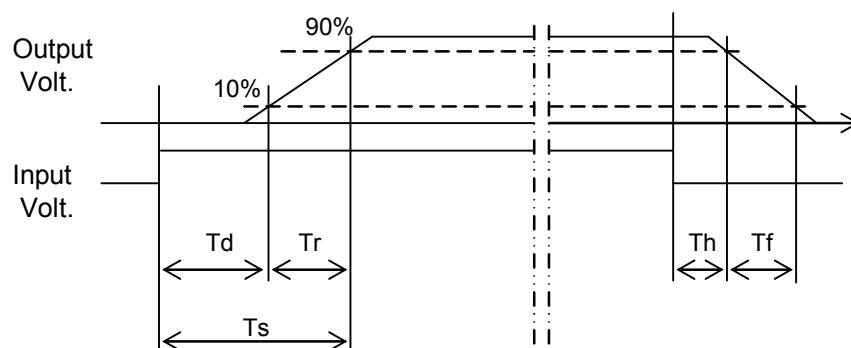
Temperature 25°C
Testing Circuitry Figure A

1. Graph



2. Values

Load	Time	Td	Tr	Ts	Th	Tf	[ms]
50 %		1.1	3.3	4.4	3.5	6.1	
100 %		1.1	3.4	4.5	1.7	2.5	

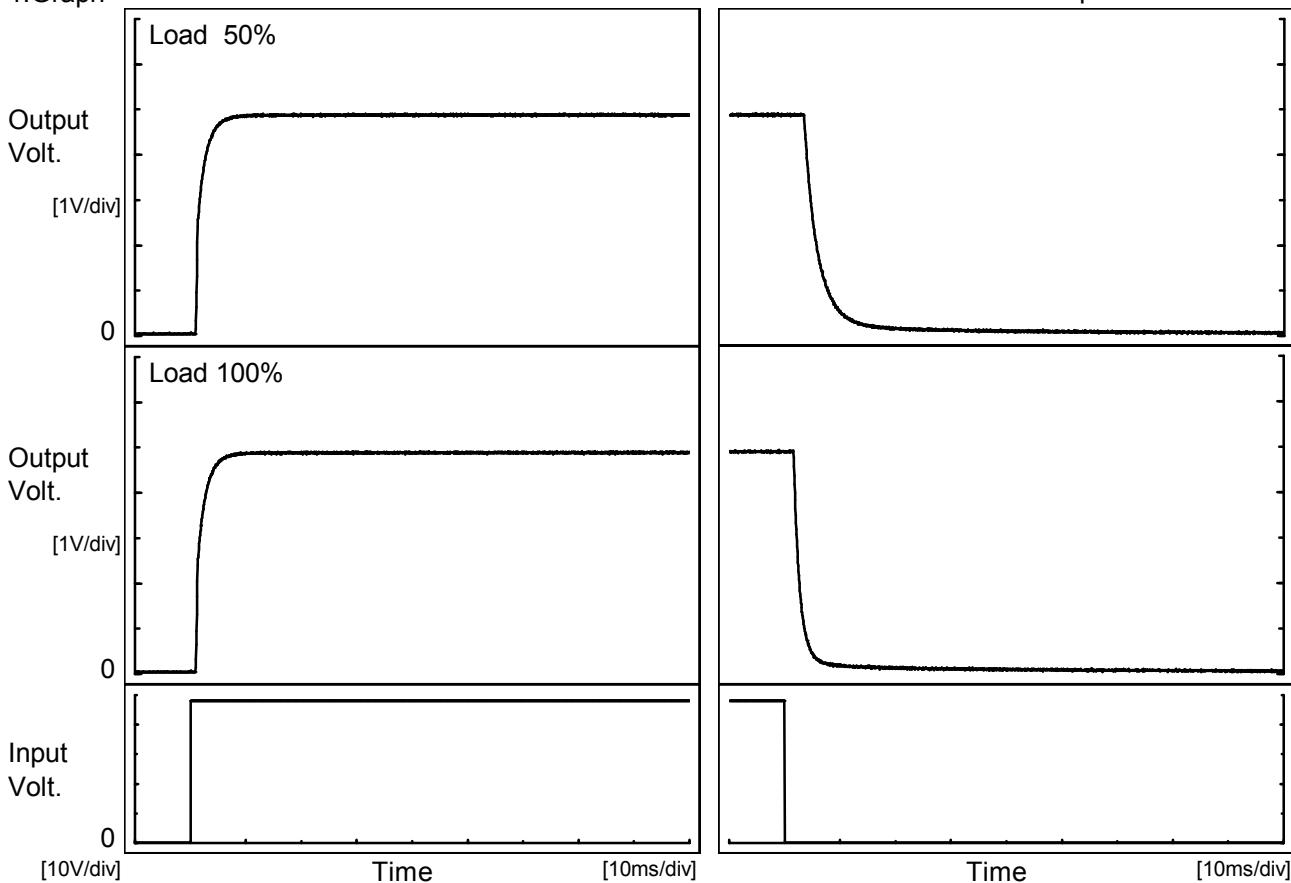


COSEL

Model	MGW154805
Item	Rise and Fall Time
Object	-5V1.5A

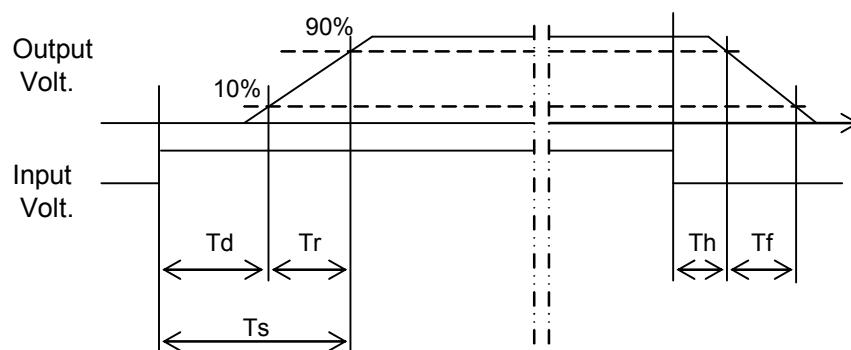
Temperature 25°C
Testing Circuitry Figure A

1. Graph



2. Values

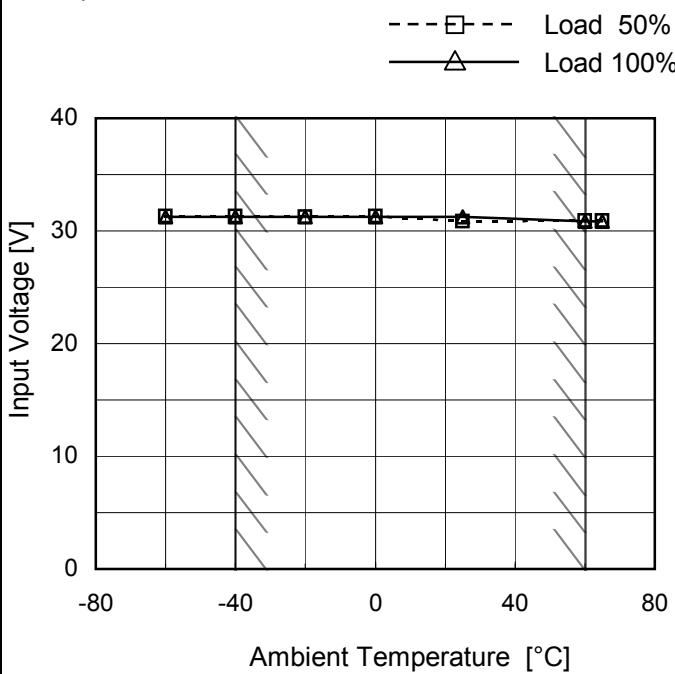
Load	Time	Td	Tr	Ts	Th	Tf	[ms]
50 %		1.1	3.3	4.4	3.6	6.3	
100 %		1.1	3.2	4.3	1.7	2.8	



Model	MGW154805
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+5V1.5A

Testing Circuitry Figure A

1.Graph

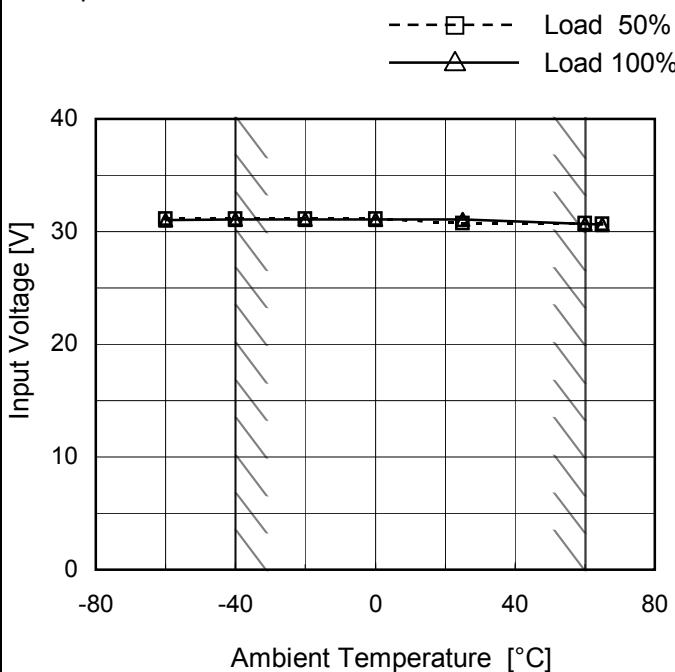


2.Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	31.3	31.3
-40	31.4	31.3
-20	31.3	31.3
0	31.4	31.3
25	30.9	31.3
60	30.9	30.9
65	30.9	30.9
--	-	-
--	-	-
--	-	-
--	-	-

Object	-5V1.5A
--------	---------

1.Graph



2.Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	31.2	31.1
-40	31.2	31.1
-20	31.2	31.1
0	31.2	31.1
25	30.8	31.1
60	30.8	30.7
65	30.7	30.7
--	-	-
--	-	-
--	-	-
--	-	-

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

Model	MGW154805	Temperature Testing Circuitry 25°C Figure A																																																							
Item	Overcurrent Protection																																																								
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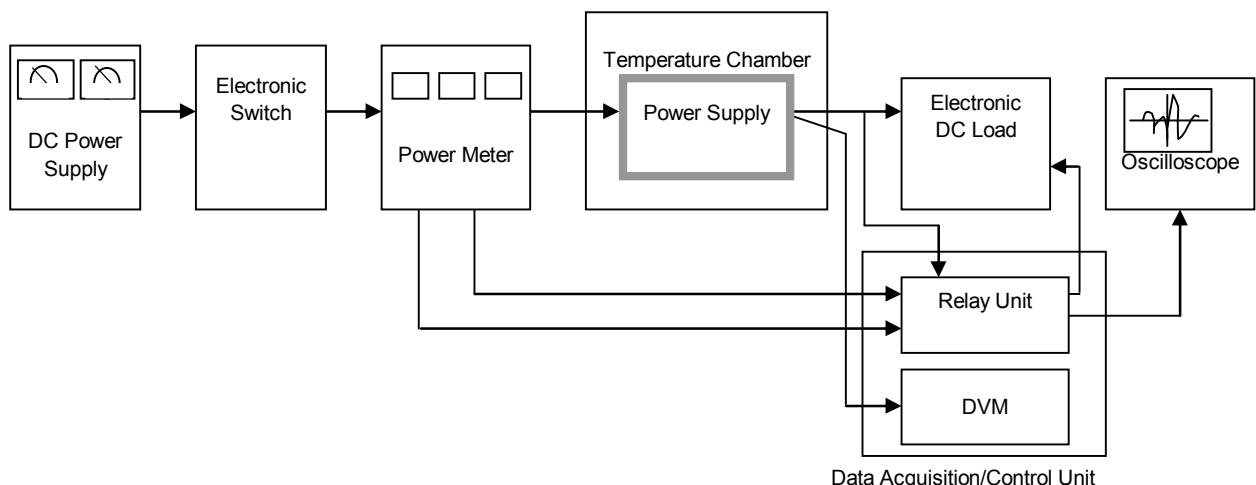


Figure A

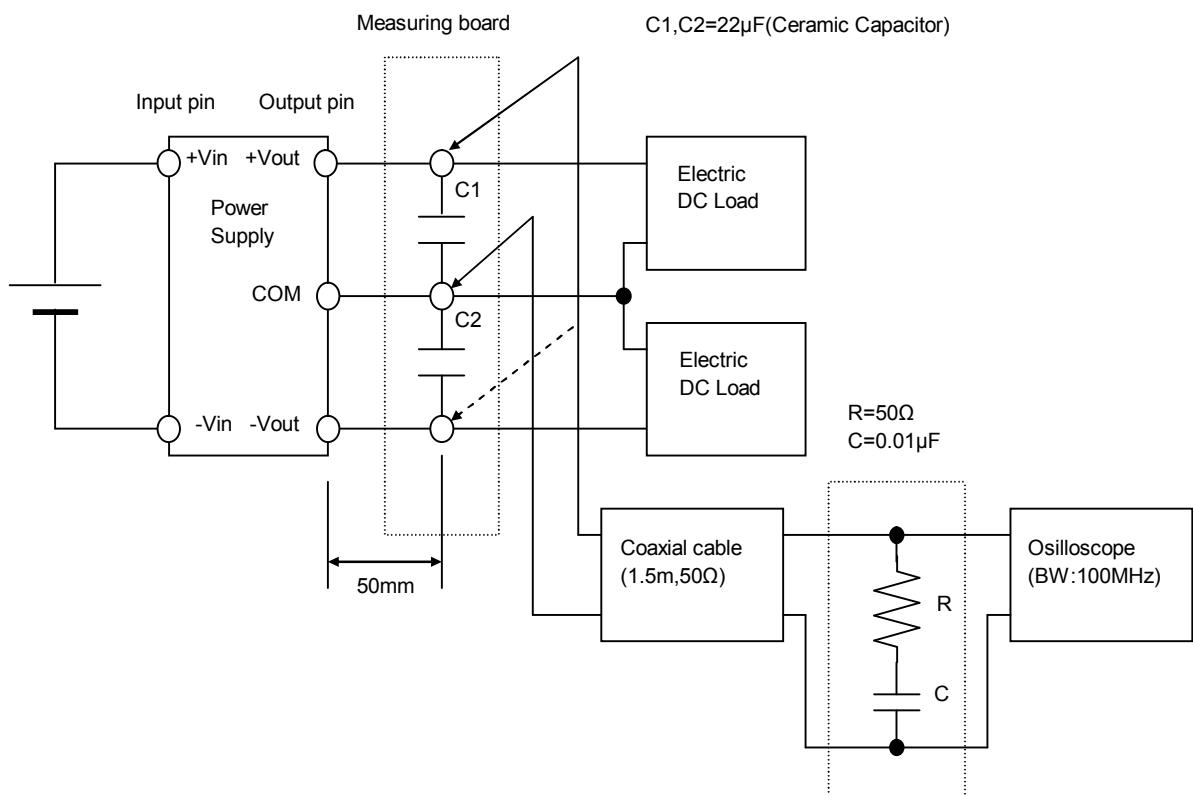


Figure B (Ripple and Ripple noise Characteristic)