



TEST DATA OF MGS34805

Regulated DC Power Supply
August 19, 2016

Approved by : Takayuki Fukuda
Takayuki Fukuda Design Manager

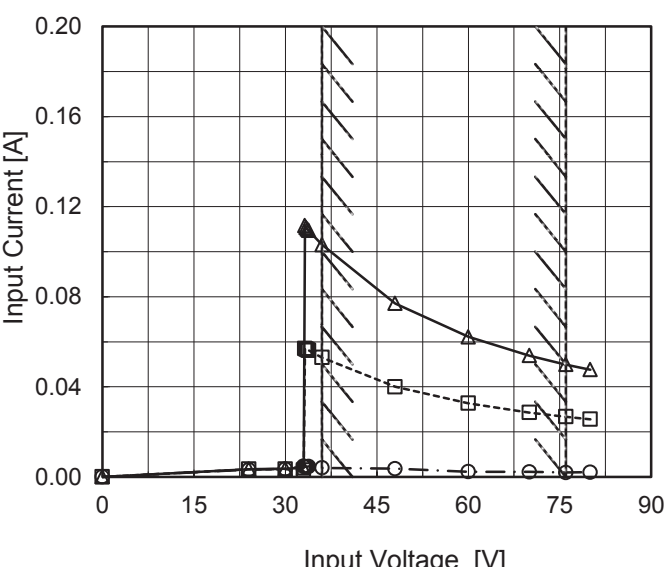
Prepared by : Shohei Mukaide
Shohei Mukaide Design Engineer

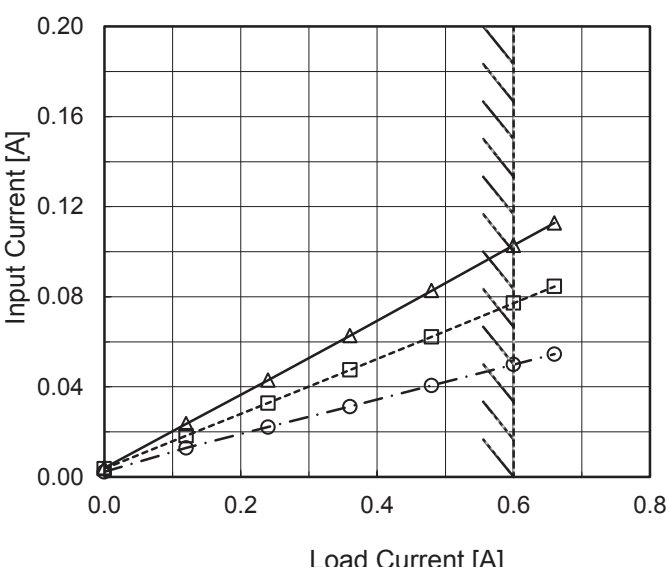
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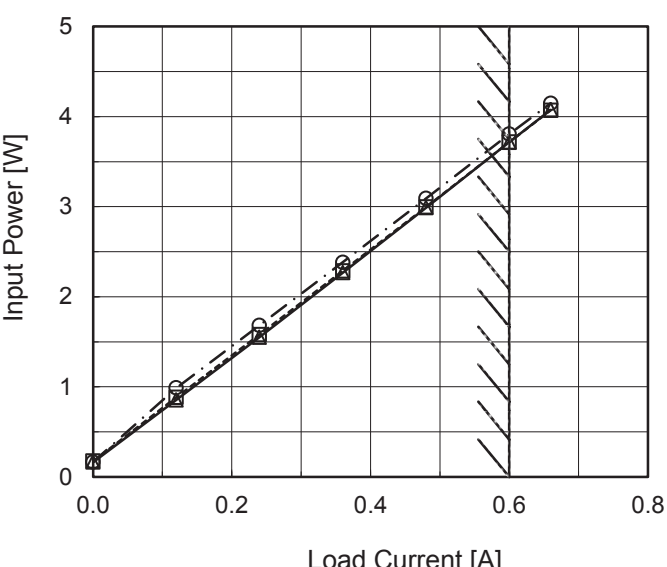
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Model		MGS34805	Temperature25°C																																																																																
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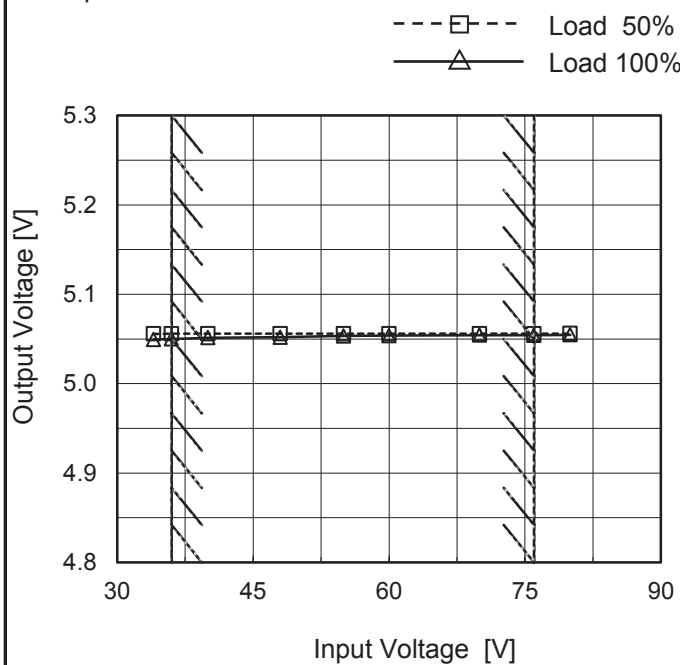
Model MGS34805

Item Line Regulation

Object +5V0.6A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

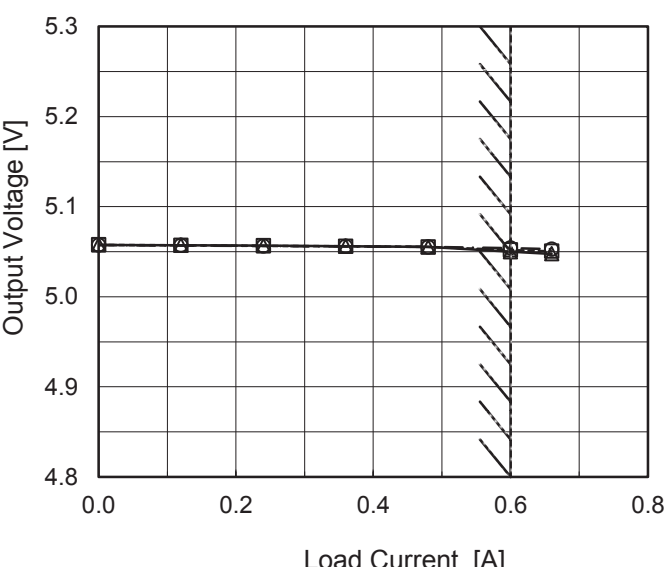


Note: Slanted line shows the range of the rated input voltage.

2.Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
34	5.056	5.050
36	5.056	5.050
40	5.056	5.051
48	5.056	5.052
55	5.056	5.053
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Note: Slanted line shows the range of the rated load current.



Model	MGS34805	Temperature 25°C Testing Circuitry Figure A
Item	Dynamic Load Response	
Object	+5V0.6A	

Input Volt. 48 V
Cycle 100 ms



Min.Load (0A) ←→
Load 100% (0.6A)

200 mV/div

100 μs /div

200 μs /div

Min.Load (0A) ←→
Load 50% (0.3A)

200 mV/div

100 μs /div

200 μs /div

Load 50% (0.3A) ←→
Load 100% (0.6A)

200 mV/div

100 μs /div

200 μs /div

COSEL

Model		MGS34805	Temperature 25°C Testing Circuitry Figure B
Item		Ripple Voltage (by Load Current)	
Object		+5V0.6A	
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> 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COSEL

Model		MGS34805	
Item		Ripple-Noise	
Object		+5V0.6A	
1.Graph		2.Values	

</

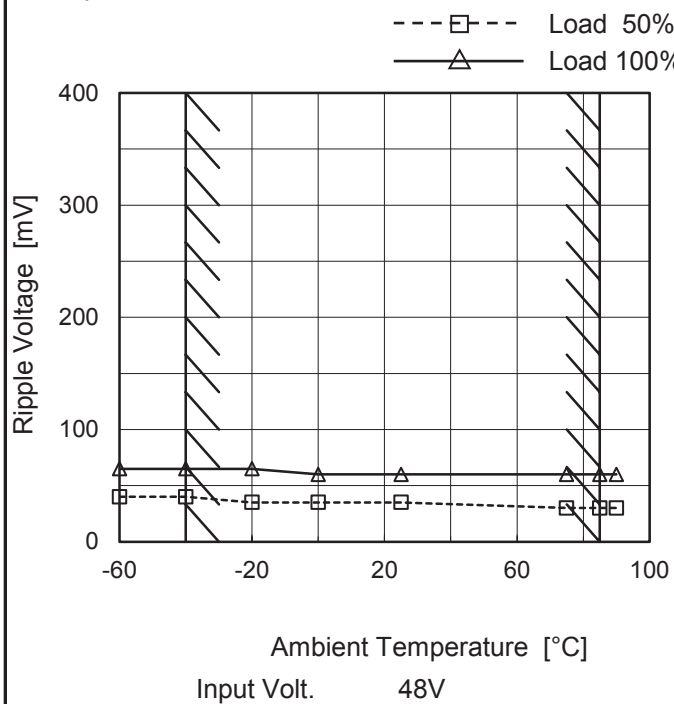
Model MGS34805

Item Ripple Voltage (by Ambient Temp.)

Object +5V0.6A

Testing Circuitry Figure B

1.Graph



Measured by 100 MHz Oscilloscope.

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

2.Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	40	65
-40	40	65
-20	35	65
0	35	60
25	35	60
75	30	60
85	30	60
90	30	60
--	-	-
--	-	-
--	-	-

Model		MGS34805	Testing Circuitry Figure A																																																			
Item		Ambient Temperature Drift																																																				
Object		+5V0.6A																																																				
1.Graph		<div><div><div>—△—</div><div>Input Volt.</div><div>36V</div></div><div><div>---□---</div><div>Input Volt.</div><div>48V</div></div><div><div>-·-○-·-</div><div>Input Volt.</div><div>76V</div></div></div> <p>Output Voltage [V]</p> <p>Ambient Temperature [°C]</p> <p>Load 100%</p> <p>Note: Slanted line shows the range of the rated ambient temperature.</p>	2.Values																																																			
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Model		MGS34805	Testing Circuitry Figure A
Item		Output Voltage Accuracy	
Object		+5V0.6A	

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 - 85°C

Input Voltage : 36 - 76V

Load Current : 0 - 0.6A

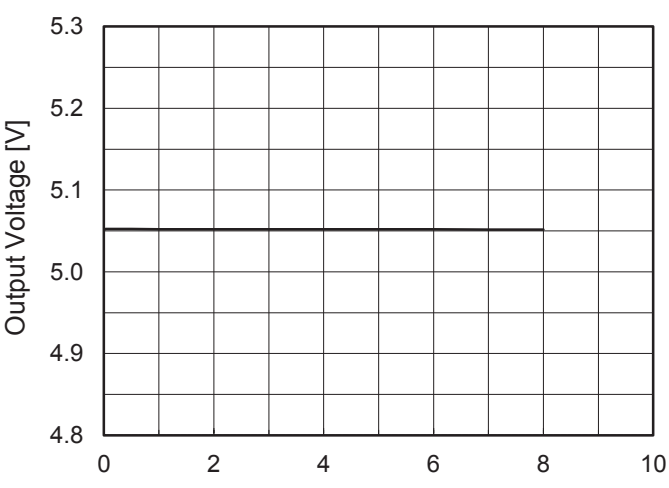
* Output Voltage Accuracy = $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

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

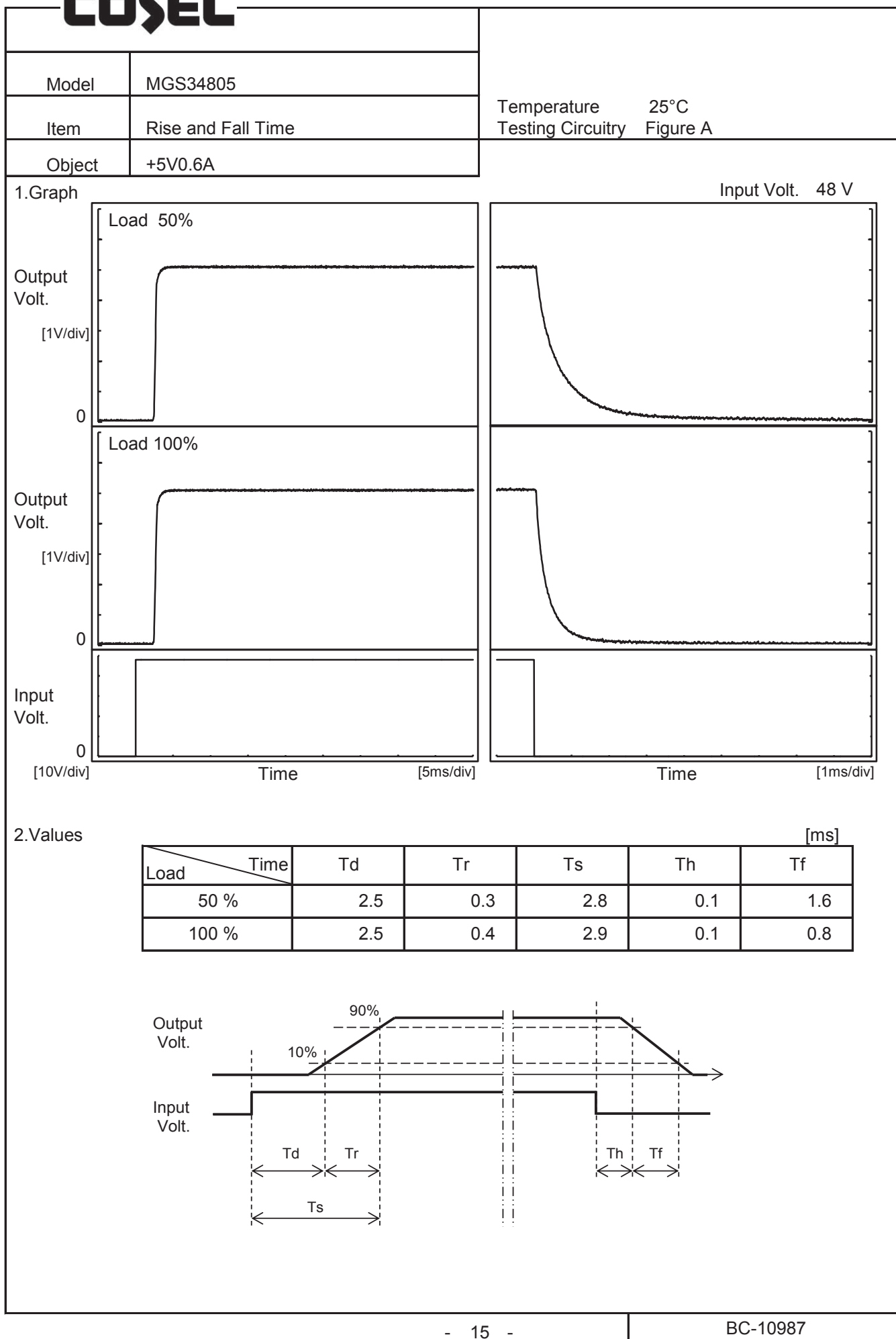
2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ratio [%]
Maximum Voltage	75	76	0	5.060	±16	±0.3
Minimum Voltage	-40	36	0.6	5.028		

COSEL

Model	MGS34805																								
Item	Time Lapse Drift	Temperature	25°C																						
Object	+5V0.6A	Testing Circuitry	Figure A																						
1.Graph		2.Values																							
<div><p>Output Voltage [V]</p><p>Time [H]</p><p>Input Volt. 48V</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>5.051</td></tr><tr><td>0.5</td><td>5.052</td></tr><tr><td>1.0</td><td>5.052</td></tr><tr><td>2.0</td><td>5.052</td></tr><tr><td>3.0</td><td>5.052</td></tr><tr><td>4.0</td><td>5.052</td></tr><tr><td>5.0</td><td>5.052</td></tr><tr><td>6.0</td><td>5.052</td></tr><tr><td>7.0</td><td>5.052</td></tr><tr><td>8.0</td><td>5.052</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	5.051	0.5	5.052	1.0	5.052	2.0	5.052	3.0	5.052	4.0	5.052	5.0	5.052	6.0	5.052	7.0	5.052	8.0	5.052
Time since start [H]	Output Voltage [V]																								
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8.0	5.052																								

COSEL



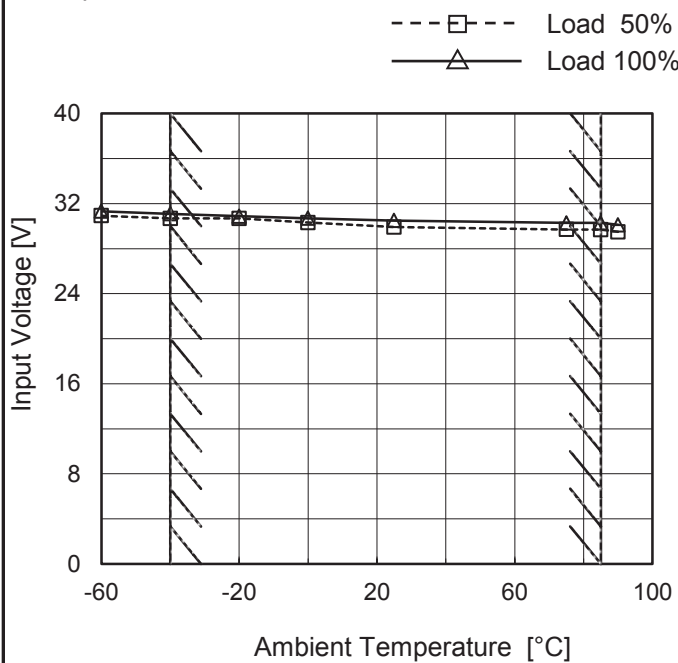
Model MGS34805

Item Minimum Input Voltage
for Regulated Output Voltage

Object +5V0.6A

Testing Circuitry Figure A

1. Graph



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

2. Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	31.0	31.4
-40	30.7	31.1
-20	30.7	30.9
0	30.4	30.7
25	30.0	30.5
75	29.7	30.3
85	29.7	30.3
90	29.5	30.2
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COSEL

Model		MGS34805	Temperature		25°C																																																							
Item		Overcurrent Protection	Testing Circuitry		Figure A																																																							
Object		+5V0.6A																																																										
1.Graph			2.Values																																																									
<div><div><div></div><div>Input Volt.</div><div>36V</div></div><div><div></div><div>Input Volt.</div><div>48V</div></div><div><div></div><div>Input Volt.</div><div>76V</div></div></div> <p>Note: Slanted line shows the range of the rated load current.</p>			<table><tr><th rowspan="2">Output Voltage [V]</th><th colspan="3">Load Current [A]</th></tr><tr><th>Input Volt. 36[V]</th><th>Input Volt. 48[V]</th><th>Input Volt. 76[V]</th></tr><tr><td>5.00</td><td>0.62</td><td>0.62</td><td>0.62</td></tr><tr><td>4.75</td><td>0.76</td><td>0.75</td><td>0.78</td></tr><tr><td>4.50</td><td>0.78</td><td>0.77</td><td>0.79</td></tr><tr><td>4.00</td><td>0.83</td><td>0.81</td><td>0.83</td></tr><tr><td>3.50</td><td>0.89</td><td>0.86</td><td>0.87</td></tr><tr><td>3.00</td><td>0.95</td><td>0.92</td><td>0.92</td></tr><tr><td>2.50</td><td>1.02</td><td>0.98</td><td>0.98</td></tr><tr><td>2.00</td><td>1.09</td><td>1.04</td><td>1.03</td></tr><tr><td>1.50</td><td>1.17</td><td>1.12</td><td>1.10</td></tr><tr><td>1.00</td><td>1.26</td><td>1.19</td><td>1.16</td></tr><tr><td>0.50</td><td>1.33</td><td>1.25</td><td>1.19</td></tr><tr><td>0.00</td><td>1.32</td><td>1.20</td><td>1.14</td></tr></table>			Output Voltage [V]	Load Current [A]			Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]	5.00	0.62	0.62	0.62	4.75	0.76	0.75	0.78	4.50	0.78	0.77	0.79	4.00	0.83	0.81	0.83	3.50	0.89	0.86	0.87	3.00	0.95	0.92	0.92	2.50	1.02	0.98	0.98	2.00	1.09	1.04	1.03	1.50	1.17	1.12	1.10	1.00	1.26	1.19	1.16	0.50	1.33	1.25	1.19	0.00	1.32	1.20	1.14
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COSEL

Model		MGS34805		Temperature 25°C																																																				
Item		Switching Frequency (by Load Current)		Testing Circuitry Figure A																																																				
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1.Graph		<div><div><div>—△—</div><div>Input Volt.</div><div>36V</div></div><div><div>---□---</div><div>Input Volt.</div><div>48V</div></div><div><div>-·-○-·-</div><div>Input Volt.</div><div>76V</div></div></div> <div><div>Switching Frequency [kHz]</div><div><div>10000</div><div>1000</div><div>100</div></div><div><div>0.0</div><div>0.2</div><div>0.4</div><div>0.6</div><div>0.8</div></div><div>Load Current [A]</div></div> <div>Note: Slanted line shows the range of the rated load current.</div> <div>-When load current is low, MG operates intermittently, so switching frequency would not become constant.</div>		2.Values																																																				
		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Frequency [kHz]</th></tr><tr><th>Input Volt. 36[V]</th><th>Input Volt. 48[V]</th><th>Input Volt. 76[V]</th></tr><tr><td>0.00</td><td>609</td><td>628</td><td>668</td></tr><tr><td>0.12</td><td>463</td><td>510</td><td>562</td></tr><tr><td>0.24</td><td>373</td><td>421</td><td>480</td></tr><tr><td>0.36</td><td>311</td><td>357</td><td>415</td></tr><tr><td>0.48</td><td>267</td><td>310</td><td>366</td></tr><tr><td>0.60</td><td>234</td><td>274</td><td>328</td></tr><tr><td>0.66</td><td>220</td><td>259</td><td>312</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr></table>				Load Current [A]	Frequency [kHz]			Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]	0.00	609	628	668	0.12	463	510	562	0.24	373	421	480	0.36	311	357	415	0.48	267	310	366	0.60	234	274	328	0.66	220	259	312	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
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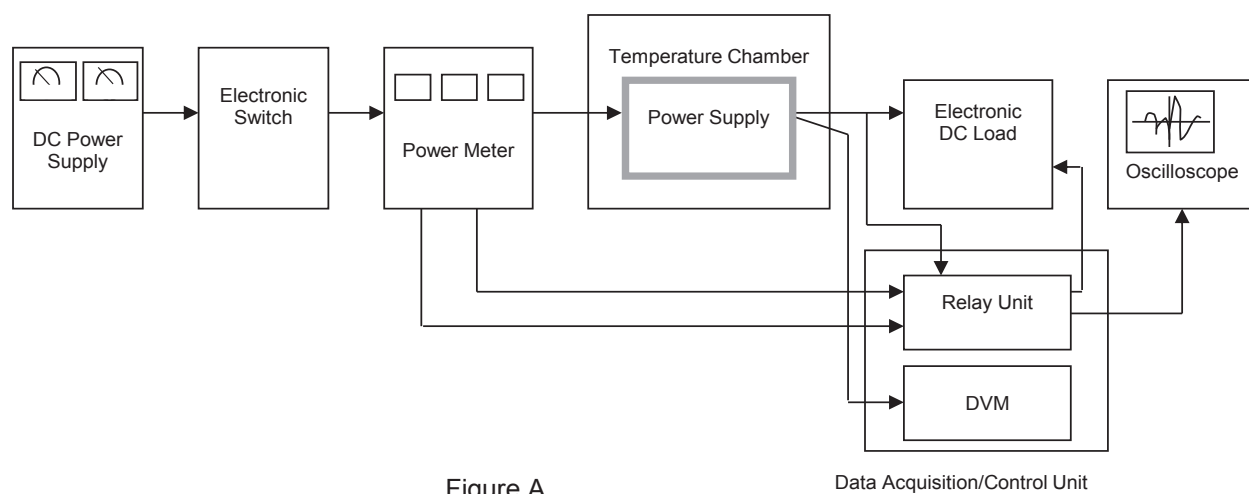


Figure A

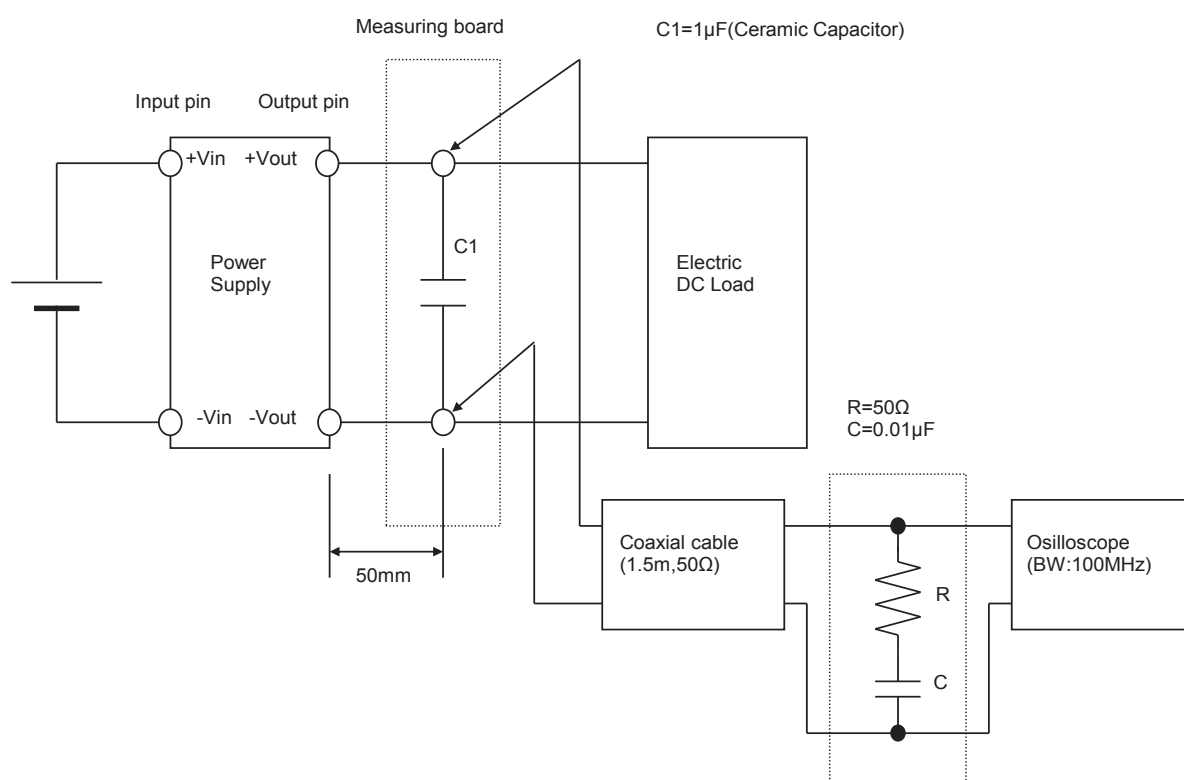


Figure B (Ripple and Ripple noise Characteristic)