



TEST DATA OF CHS604805

Regulated DC Power Supply
September 25, 2014

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Yoshimichi Hirokawa Design Manager

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COSEL CO.,LTD.

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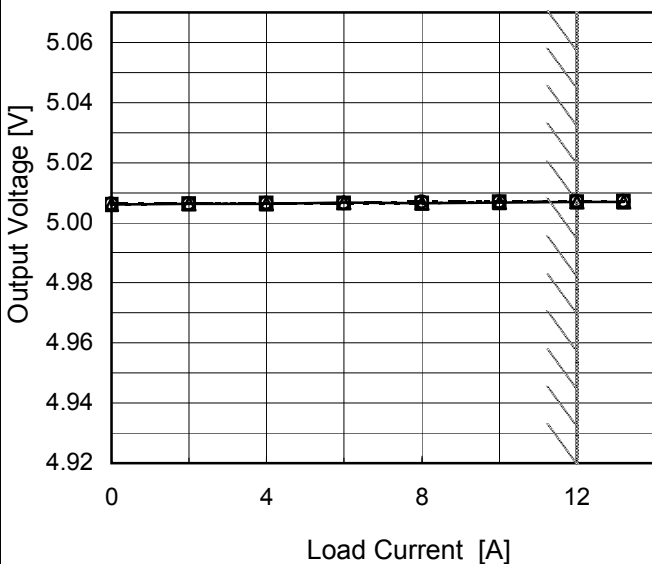
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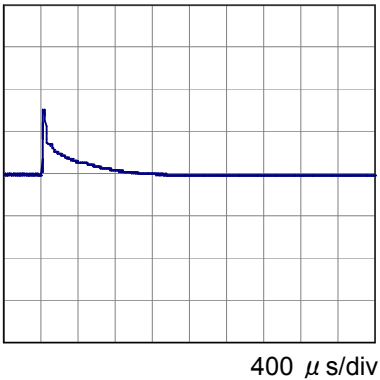
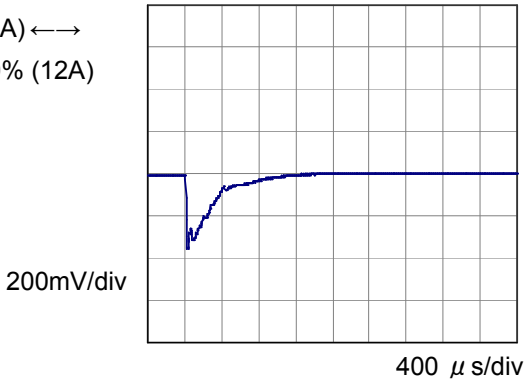


Model	CHS604805		
Item	Dynamic Load Response	Temperature	25°C
Object	+5V12A	Testing Circuitry	Figure A

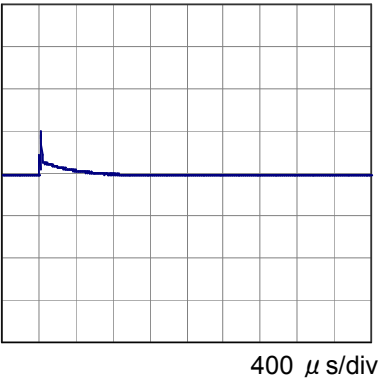
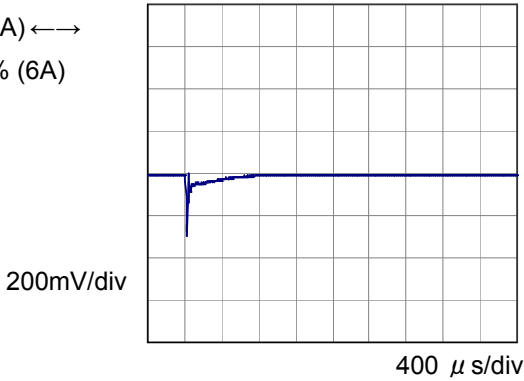
Input Volt. 48 V
Cycle 10 ms



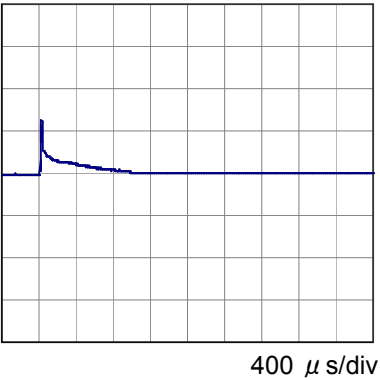
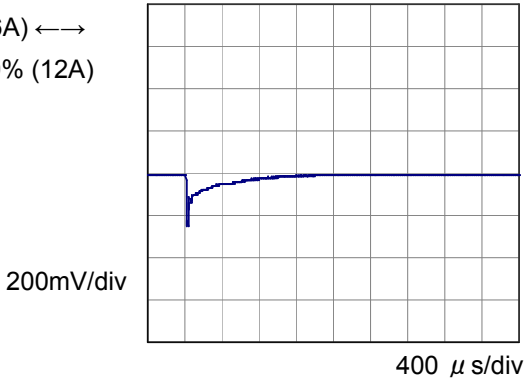
Min. Load (0A) \longleftrightarrow
Load 100% (12A)



Min. Load (0A) \longleftrightarrow
Load 50% (6A)



Load 50% (6A) \longleftrightarrow
Load 100% (12A)

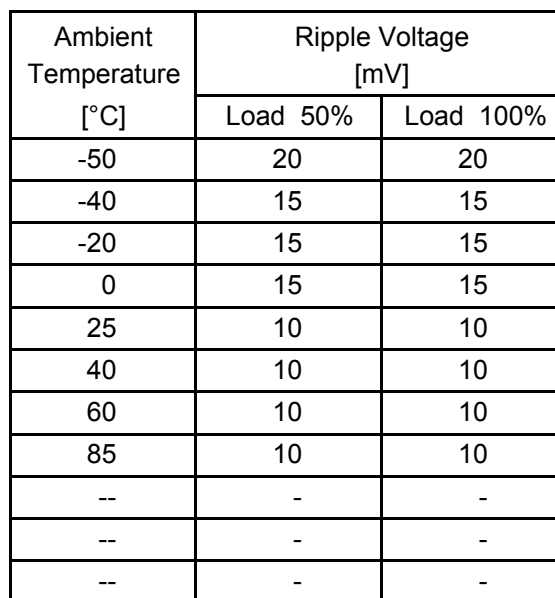


Model		CHS604805		Temperature 25°C																																							
Item		Ripple Voltage (by Load Current)		Testing Circuitry Figure B																																							
Object		+5V12A																																									
1.Graph				2.Values																																							
<div><div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div>Input Volt.</div><div>36V</div></div><div><div>Input Volt.</div><div>76V</div></div></div><div><p>Ripple Voltage [mV]</p><p>Load Current [A]</p></div></div>				<table><tr><th rowspan="2">Load Current [A]</th><th colspan="2">Ripple Voltage [mV]</th></tr><tr><th>Input Volt. 36 [V]</th><th>Input Volt. 76 [V]</th></tr><tr><td>0.0</td><td>10</td><td>15</td></tr><tr><td>2.0</td><td>10</td><td>15</td></tr><tr><td>4.0</td><td>10</td><td>15</td></tr><tr><td>6.0</td><td>10</td><td>15</td></tr><tr><td>8.0</td><td>10</td><td>15</td></tr><tr><td>10.0</td><td>10</td><td>15</td></tr><tr><td>12.0</td><td>10</td><td>15</td></tr><tr><td>13.2</td><td>10</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></table>		Load Current [A]	Ripple Voltage [mV]		Input Volt. 36 [V]	Input Volt. 76 [V]	0.0	10	15	2.0	10	15	4.0	10	15	6.0	10	15	8.0	10	15	10.0	10	15	12.0	10	15	13.2	10	15	--	-	-	--	-	-	--	-	-
Load Current [A]	Ripple Voltage [mV]																																										
	Input Volt. 36 [V]	Input Volt. 76 [V]																																									
0.0	10	15																																									
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<p>Measured by 100 MHz Oscilloscope.</p> <p>Ripple Voltage 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><div></div></div><div><div></div><div></div></div></div><div><p>Ripple [mVp-p]</p><p>Fig.Complex Ripple Wave Form</p></div></div>																																											

Model		CHS604805	Temperature Testing Circuitry	25°C Figure B
Item		Ripple-Noise		
Object		+5V12A		
1.Graph			2.Values	
<div><div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><d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Testing Circuitry Figure B

2.Values



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

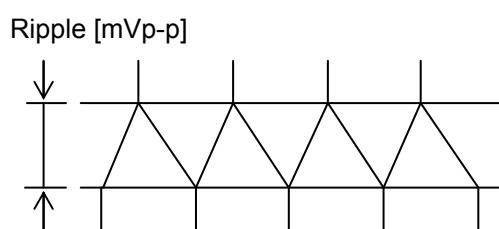


Fig.Complex Ripple Wave Form

Model		CHS604805		Testing Circuitry Figure A
Item		Ambient Temperature Drift		
Object		+5V12A		
1.Graph				
		—△—	Input Volt. 36V	2.Values
		---□---	Input Volt. 48V	
		-·-○-·-	Input Volt. 76V	
<div><div><div>Output Voltage [V]</div><div><div><div>Ambient Temperature [°C]</div><div>Load 100%</div></div></div></div></div>				
<div>Note: Slanted line shows the range of the rated ambient temperature.</div>				



Model		CHS604805	Testing Circuitry Figure A
Item		Output Voltage Accuracy	
Object		+5V12A	

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

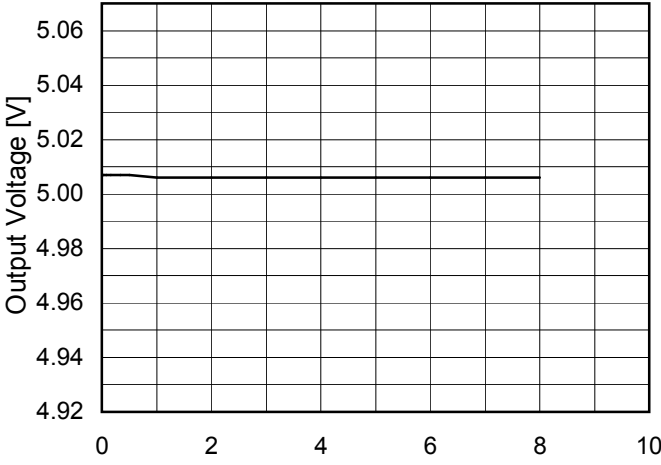
Load Current : 0 - 12A

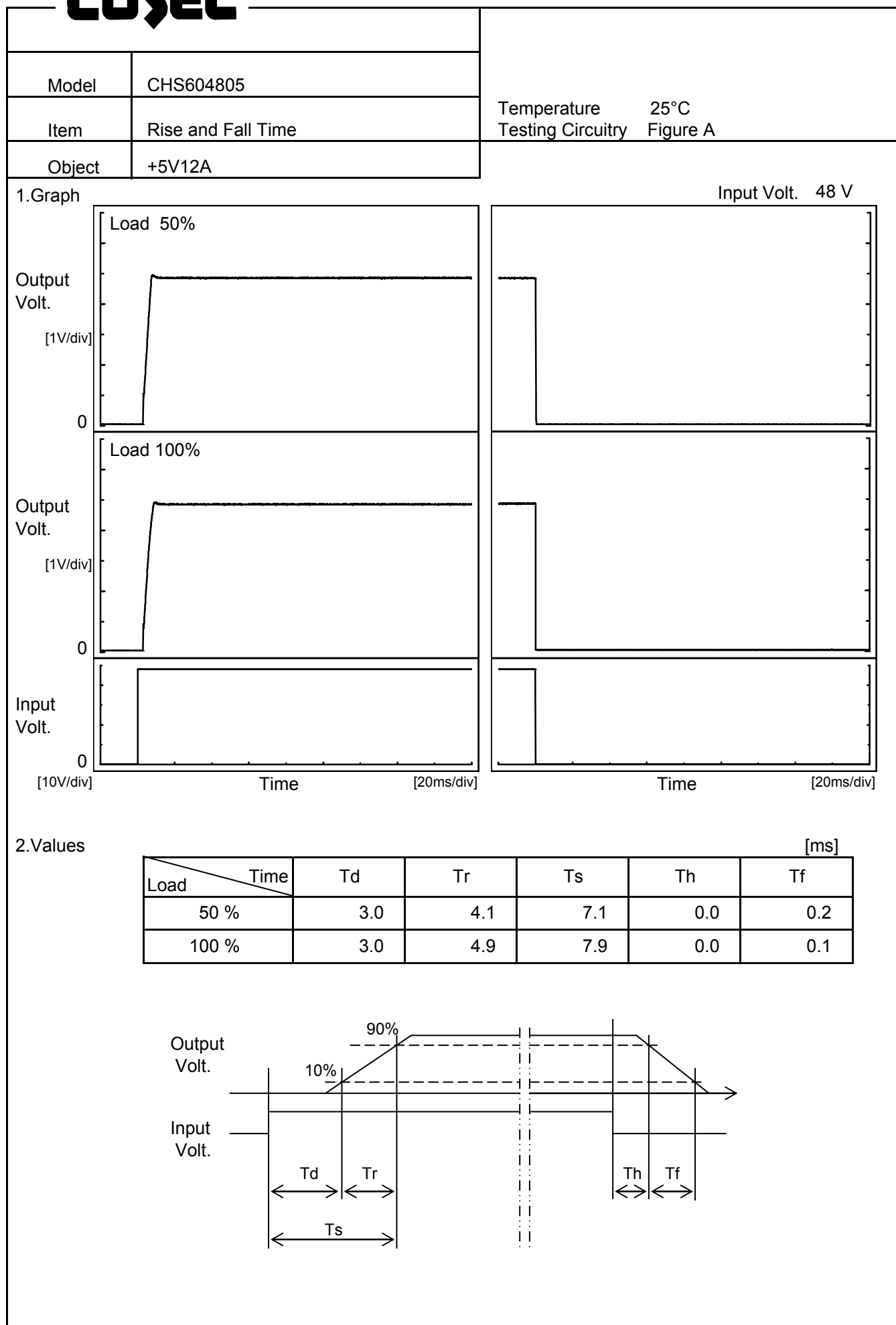
* Output Voltage Accuracy = $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

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

2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	-40	76	12	5.009	±2	±0.1
Minimum Voltage	0	36	0	5.006		

Model	CHS604805																								
Item	Time Lapse Drift	Temperature	25°C																						
		Testing Circuitry	Figure A																						
Object	+5V12A																								
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>5.007</td></tr><tr><td>0.5</td><td>5.007</td></tr><tr><td>1.0</td><td>5.006</td></tr><tr><td>2.0</td><td>5.006</td></tr><tr><td>3.0</td><td>5.006</td></tr><tr><td>4.0</td><td>5.006</td></tr><tr><td>5.0</td><td>5.006</td></tr><tr><td>6.0</td><td>5.006</td></tr><tr><td>7.0</td><td>5.006</td></tr><tr><td>8.0</td><td>5.006</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	5.007	0.5	5.007	1.0	5.006	2.0	5.006	3.0	5.006	4.0	5.006	5.0	5.006	6.0	5.006	7.0	5.006	8.0	5.006
Time since start [H]	Output Voltage [V]																								
0.0	5.007																								
0.5	5.007																								
1.0	5.006																								
2.0	5.006																								
3.0	5.006																								
4.0	5.006																								
5.0	5.006																								
6.0	5.006																								
7.0	5.006																								
8.0	5.006																								



Model	CHS604805																																								
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<div><div>---□--- Load 50%</div><div>—△— Load 100%</div></div> <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">Input Voltage [V]</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr><tr><td>-40</td><td>31.6</td><td>31.7</td></tr><tr><td>-20</td><td>31.7</td><td>31.8</td></tr><tr><td>0</td><td>31.8</td><td>31.9</td></tr><tr><td>25</td><td>32.0</td><td>32.1</td></tr><tr><td>40</td><td>32.1</td><td>32.2</td></tr><tr><td>60</td><td>32.1</td><td>32.2</td></tr><tr><td>85</td><td>32.3</td><td>32.4</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]	Input Voltage [V]		Load 50%	Load 100%	-40	31.6	31.7	-20	31.7	31.8	0	31.8	31.9	25	32.0	32.1	40	32.1	32.2	60	32.1	32.2	85	32.3	32.4	--	-	-	--	-	-	--	-	-	--	-	-
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Model	CHS604805																																																													
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<div><div><div></div>Input Volt.36V</div><div><div></div>Input Volt.48V</div><div><div></div>Input Volt.76V</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>4.75</td><td>14.24</td><td>14.20</td><td>14.26</td></tr><tr><td>4.50</td><td>14.30</td><td>14.31</td><td>14.38</td></tr><tr><td>4.00</td><td>14.39</td><td>14.61</td><td>14.86</td></tr><tr><td>3.50</td><td>14.65</td><td>14.95</td><td>15.46</td></tr><tr><td>3.30</td><td>14.77</td><td>15.14</td><td>15.72</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><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>		Output Voltage [V]	Load Current [A]			Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]	4.75	14.24	14.20	14.26	4.50	14.30	14.31	14.38	4.00	14.39	14.61	14.86	3.50	14.65	14.95	15.46	3.30	14.77	15.14	15.72	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
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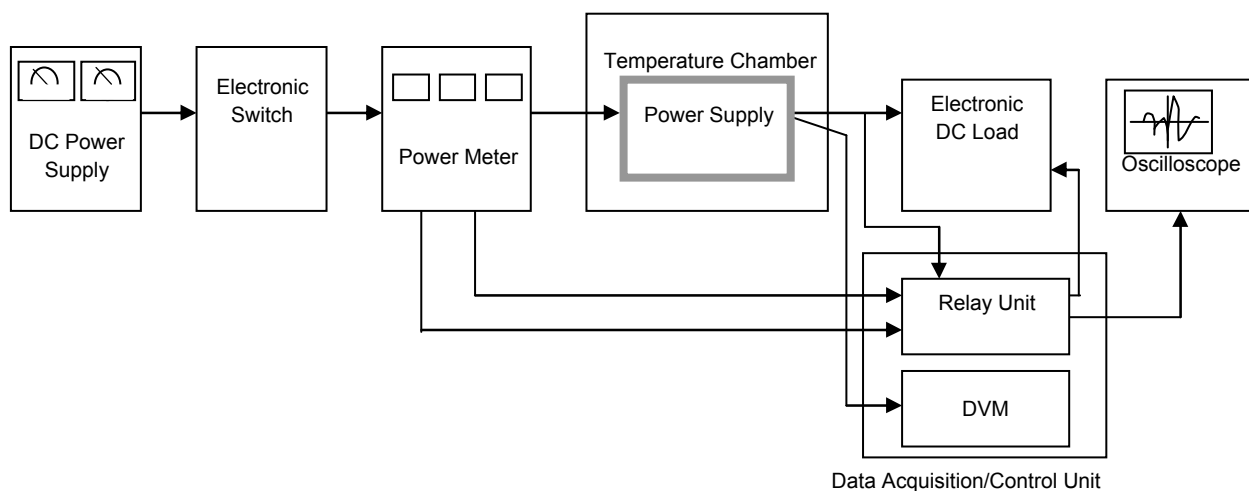


Figure A

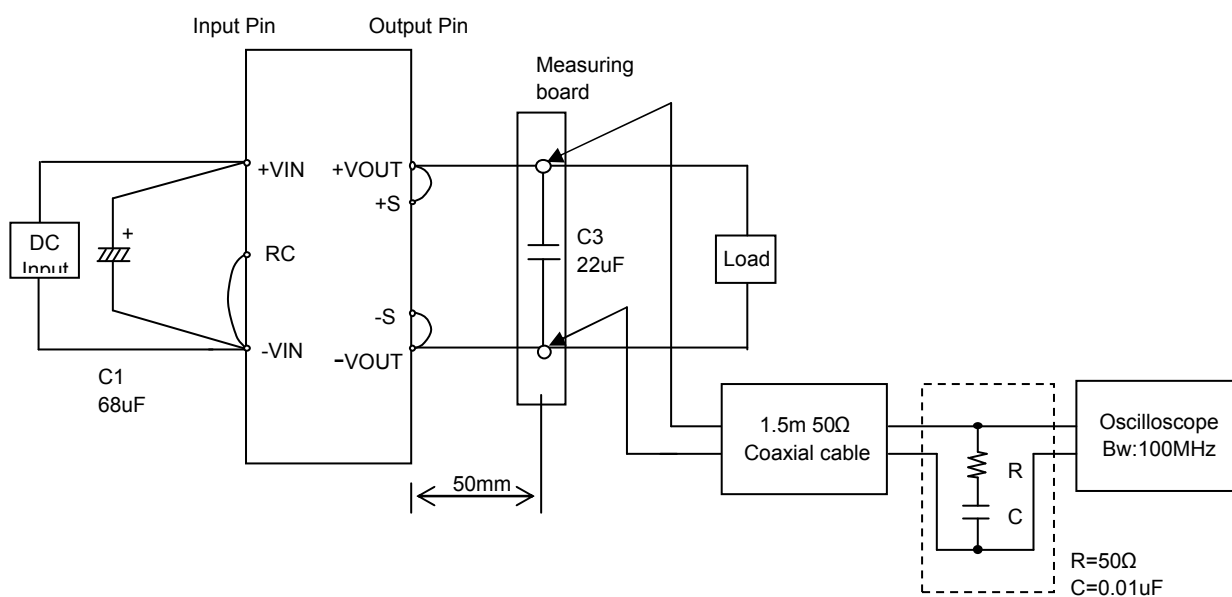


Figure B