

TEST DATA OF SUTS34805

Regulated DC Power Supply
February 23, 2009

Approved by : Kazunari Asano
Kazunari Asano Design Manager

Prepared by : Sho Saito
Sho Saito Design Engineer

COSEL CO.,LTD.

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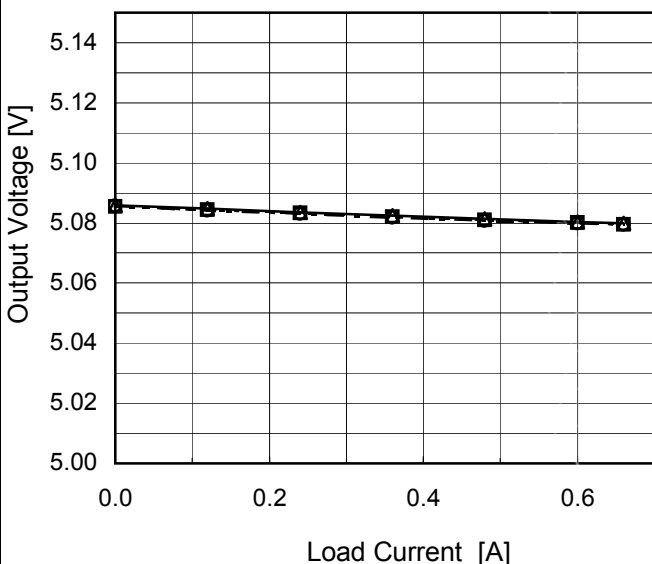
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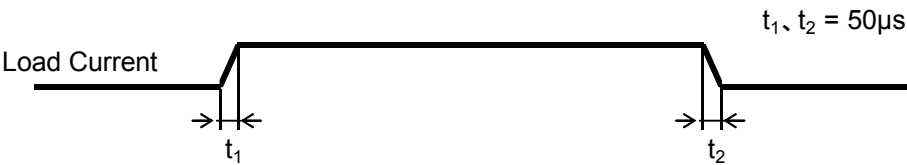
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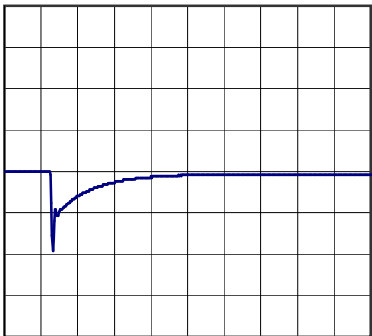
Model	SUTS34805	Temperature 25°C Testing Circuitry Figure A
Item	Dynamic Load Response	
Object	+5V0.6A	

Input Volt. 48 V
Cycle 100 mS

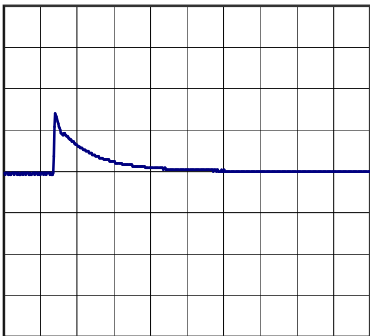


Min. Load (0A) \longleftrightarrow
Load 100% (0.6A)

200mV/div



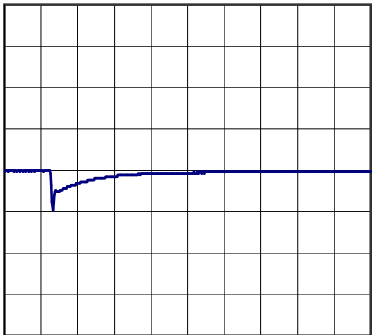
500µs/div



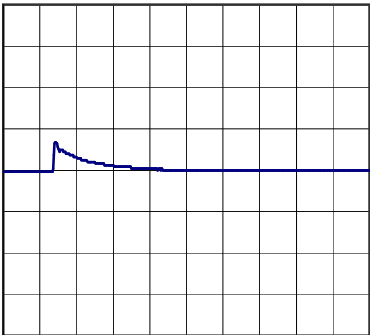
500µs/div

Min. Load (0A) \longleftrightarrow
Load 50% (0.3A)

200mV/div



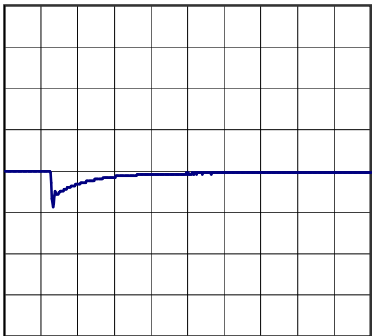
500µs/div



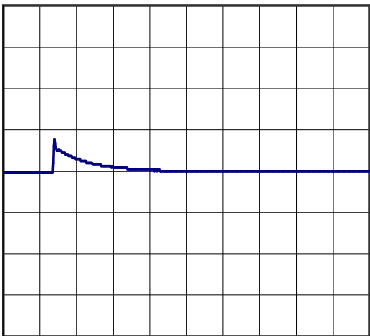
500µs/div

Load 50% (0.3A) \longleftrightarrow
Load 100% (0.6A)

200mV/div



500µs/div



500µs/div

Model	SUTS34805																																								
Item	Ripple Voltage (by Load Current)	Temperature	25°C																																						
		Testing Circuitry	Figure B																																						
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>76V</div></div></div> <p>Ripple Voltage is shown as p-p in the figure below. Note: Slanted line shows the range of the rated load current.</p>		<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>0.00</td><td>5</td><td>4</td></tr><tr><td>0.12</td><td>5</td><td>4</td></tr><tr><td>0.24</td><td>9</td><td>6</td></tr><tr><td>0.36</td><td>12</td><td>8</td></tr><tr><td>0.48</td><td>16</td><td>10</td></tr><tr><td>0.60</td><td>21</td><td>11</td></tr><tr><td>0.66</td><td>24</td><td>12</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. 36 [V]	Input Volt. 76 [V]	0.00	5	4	0.12	5	4	0.24	9	6	0.36	12	8	0.48	16	10	0.60	21	11	0.66	24	12	--	-	-	--	-	-	--	-	-	--	-	-
Load Current [A]	Ripple Voltage [mV]																																								
	Input Volt. 36 [V]	Input Volt. 76 [V]																																							
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<p>Ripple [mVp-p]</p> <p>Fig.Complex Ripple Wave Form</p>																																									

Model	SUTS34805																																								
Item	Ripple-Noise	Temperature	25°C																																						
		Testing Circuitry	Figure B																																						
Object	+5V0.6A																																								
1.Graph		2.Values																																							
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Load Current [A]	Ripple-Noise [mV]																																								
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Model	SUTS34805																																								
Item	Ripple Voltage (by Ambient Temp.)	Testing Circuitry Figure B																																							
Object	+5V0.6A																																								
1.Graph		2.Values																																							
<div><div>---□--- Load 50%</div><div>—△— Load 100%</div></div> <p>Ripple Voltage [mV]</p> <p>Ambient Temperature [°C]</p> <p>Input Volt. 48V</p>		<table><tr><th rowspan="2">Ambient Temperature [°C]</th><th colspan="2">Ripple Voltage [mV]</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr><tr><td>-60</td><td>14</td><td>27</td></tr><tr><td>-40</td><td>14</td><td>27</td></tr><tr><td>-20</td><td>12</td><td>25</td></tr><tr><td>0</td><td>10</td><td>22</td></tr><tr><td>25</td><td>9</td><td>18</td></tr><tr><td>55</td><td>8</td><td>13</td></tr><tr><td>60</td><td>8</td><td>13</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]	Ripple Voltage [mV]		Load 50%	Load 100%	-60	14	27	-40	14	27	-20	12	25	0	10	22	25	9	18	55	8	13	60	8	13	--	-	-	--	-	-	--	-	-	--	-	-
Ambient Temperature [°C]	Ripple Voltage [mV]																																								
	Load 50%	Load 100%																																							
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Model	SUTS34805																																																					
Item	Ambient Temperature Drift	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>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>		<table><tr><th rowspan="2">Ambient Temperature [°C]</th><th colspan="3">Output Voltage [V]</th></tr><tr><th>Input Volt. 36[V]</th><th>Input Volt. 48[V]</th><th>Input Volt. 76[V]</th></tr><tr><td>-60</td><td>5.034</td><td>5.035</td><td>5.036</td></tr><tr><td>-40</td><td>5.048</td><td>5.049</td><td>5.049</td></tr><tr><td>-20</td><td>5.060</td><td>5.061</td><td>5.061</td></tr><tr><td>0</td><td>5.070</td><td>5.070</td><td>5.071</td></tr><tr><td>25</td><td>5.079</td><td>5.079</td><td>5.079</td></tr><tr><td>55</td><td>5.085</td><td>5.085</td><td>5.085</td></tr><tr><td>60</td><td>5.086</td><td>5.086</td><td>5.086</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>		Ambient Temperature [°C]	Output Voltage [V]			Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]	-60	5.034	5.035	5.036	-40	5.048	5.049	5.049	-20	5.060	5.061	5.061	0	5.070	5.070	5.071	25	5.079	5.079	5.079	55	5.085	5.085	5.085	60	5.086	5.086	5.086	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
Ambient Temperature [°C]	Output Voltage [V]																																																					
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Model		SUTS34805	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 - 55°C

Input Voltage : 36 - 76V

Load Current : 0 - 0.6A

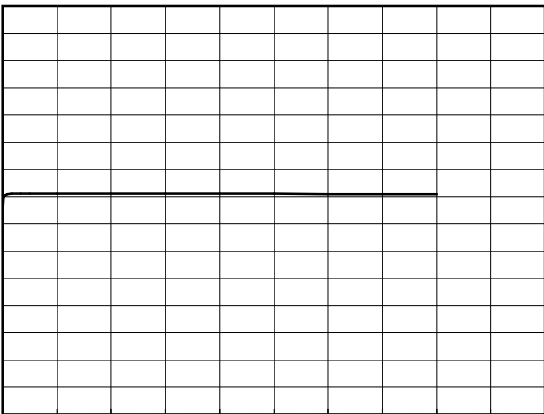
* Output Voltage Accuracy = $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

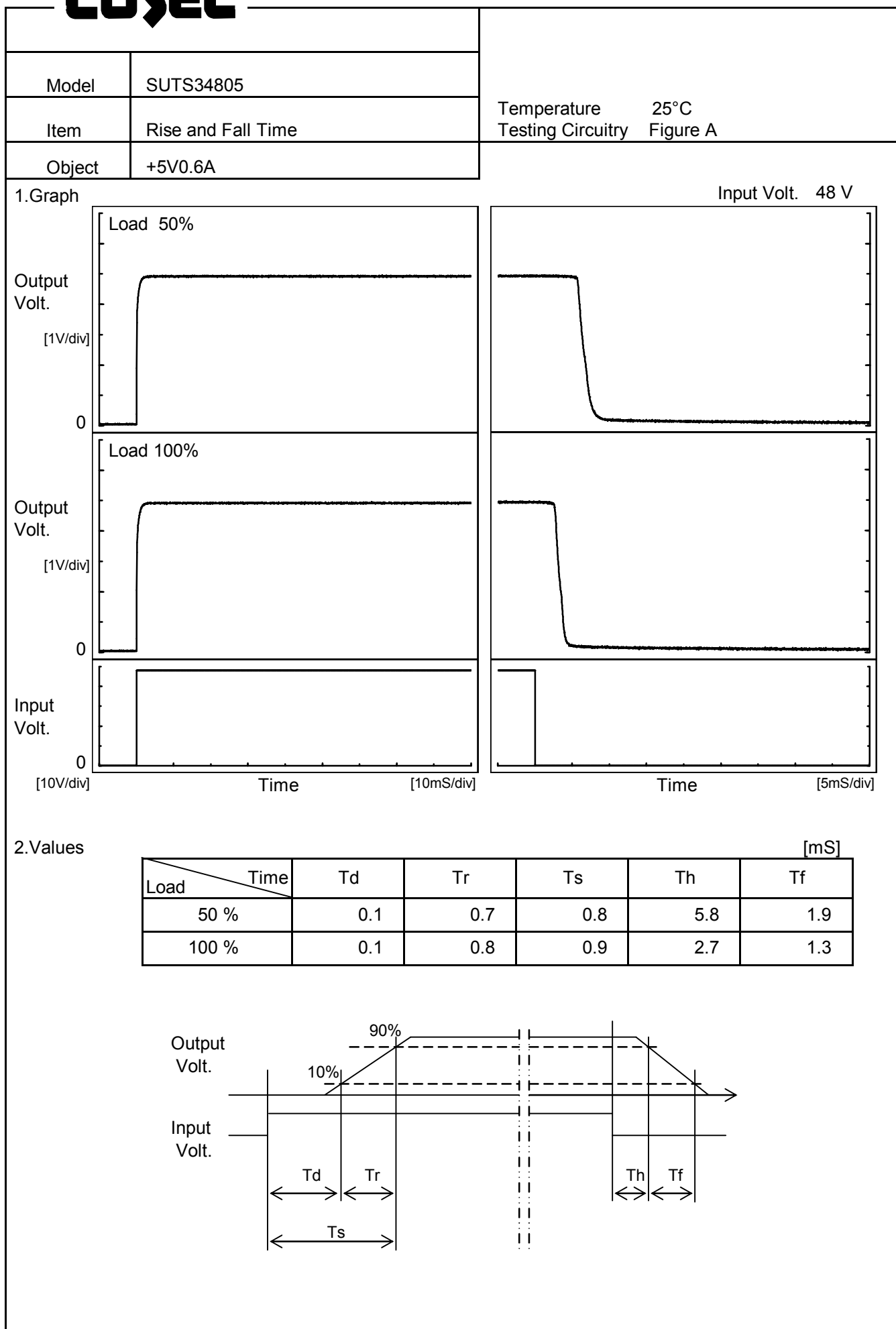
* Output Voltage Accuracy (Ratio) = $\frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$

2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ratio [%]
Maximum Voltage	55	76	0	5.091	±22	±0.4
Minimum Voltage	-40	36	0.6	5.048		



Model	SUTS34805																								
Item	Time Lapse Drift	Temperature	25°C																						
		Testing Circuitry	Figure A																						
Object	+5V0.6A																								
1.Graph		2.Values																							
<div><div><div>5.14</div><div>5.12</div><div>5.10</div><div>5.08</div><div>5.06</div><div>5.04</div><div>5.02</div><div>5.00</div></div><div></div><div><div>0</div><div>2</div><div>4</div><div>6</div><div>8</div><div>10</div></div><div>Time [H]</div></div> <div><div>Input Volt.</div><div>48V</div><div>Load</div><div>100%</div></div>		<table><tr><th>Time since start [H]</th><th>Output Voltage [V]</th></tr><tr><td>0.0</td><td>5.076</td></tr><tr><td>0.5</td><td>5.081</td></tr><tr><td>1.0</td><td>5.081</td></tr><tr><td>2.0</td><td>5.081</td></tr><tr><td>3.0</td><td>5.081</td></tr><tr><td>4.0</td><td>5.081</td></tr><tr><td>5.0</td><td>5.081</td></tr><tr><td>6.0</td><td>5.081</td></tr><tr><td>7.0</td><td>5.081</td></tr><tr><td>8.0</td><td>5.081</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	5.076	0.5	5.081	1.0	5.081	2.0	5.081	3.0	5.081	4.0	5.081	5.0	5.081	6.0	5.081	7.0	5.081	8.0	5.081
Time since start [H]	Output Voltage [V]																								
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8.0	5.081																								



		Testing Circuitry Figure A																																						
Model	SUTS34805																																							
Item	Minimum Input Voltage for Regulated Output Voltage																																							
Object	+5V0.6A																																							
1.Graph		2.Values																																						
<div><div>---□--- Load 50%</div><div>—△— Load 100%</div></div> <p>Input Voltage [V]</p> <p>Ambient Temperature [°C]</p>																																								
Note: Slanted line shows the range of the rated ambient temperature.																																								
		<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>-60</td><td>18.1</td><td>20.9</td></tr><tr><td>-40</td><td>17.7</td><td>20.7</td></tr><tr><td>-20</td><td>17.3</td><td>20.9</td></tr><tr><td>0</td><td>16.7</td><td>20.9</td></tr><tr><td>25</td><td>16.3</td><td>21.3</td></tr><tr><td>55</td><td>16.5</td><td>21.9</td></tr><tr><td>60</td><td>16.7</td><td>21.9</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%	-60	18.1	20.9	-40	17.7	20.7	-20	17.3	20.9	0	16.7	20.9	25	16.3	21.3	55	16.5	21.9	60	16.7	21.9	--	-	-	--	-	-	--	-	-	--	-	-
Ambient Temperature [°C]	Input Voltage [V]																																							
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Model	SUTS34805																																																									
Item	Overcurrent Protection	Temperature	25°C																																																							
Object	+5V0.6A	Testing Circuitry	Figure A																																																							
1.Graph		2.Values																																																								
<div><div><div></div><div></div><div></div></div><div><div>Input Volt. 36V</div><div>Input Volt. 48V</div><div>Input Volt. 76V</div></div><p>Note: Slanted line shows the range of the rated load current.</p></div>		<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>1.03</td><td>1.10</td><td>1.07</td></tr><tr><td>4.50</td><td>1.05</td><td>1.12</td><td>1.08</td></tr><tr><td>4.00</td><td>1.12</td><td>1.18</td><td>1.12</td></tr><tr><td>3.50</td><td>1.19</td><td>1.24</td><td>1.16</td></tr><tr><td>3.00</td><td>1.27</td><td>1.30</td><td>1.19</td></tr><tr><td>2.50</td><td>1.36</td><td>1.36</td><td>1.21</td></tr><tr><td>2.00</td><td>1.44</td><td>1.41</td><td>1.22</td></tr><tr><td>1.50</td><td>1.52</td><td>1.44</td><td>1.21</td></tr><tr><td>1.00</td><td>1.58</td><td>1.43</td><td>1.16</td></tr><tr><td>0.50</td><td>1.59</td><td>1.34</td><td>1.08</td></tr><tr><td>0.00</td><td>2.50</td><td>1.67</td><td>1.13</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	1.03	1.10	1.07	4.50	1.05	1.12	1.08	4.00	1.12	1.18	1.12	3.50	1.19	1.24	1.16	3.00	1.27	1.30	1.19	2.50	1.36	1.36	1.21	2.00	1.44	1.41	1.22	1.50	1.52	1.44	1.21	1.00	1.58	1.43	1.16	0.50	1.59	1.34	1.08	0.00	2.50	1.67	1.13
Output Voltage [V]	Load Current [A]																																																									
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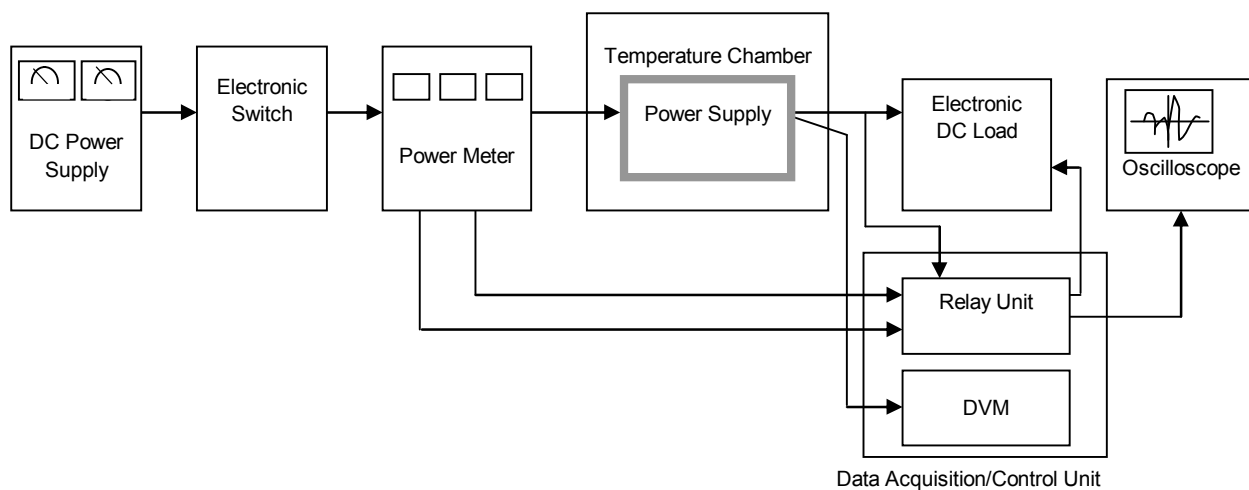


Figure A

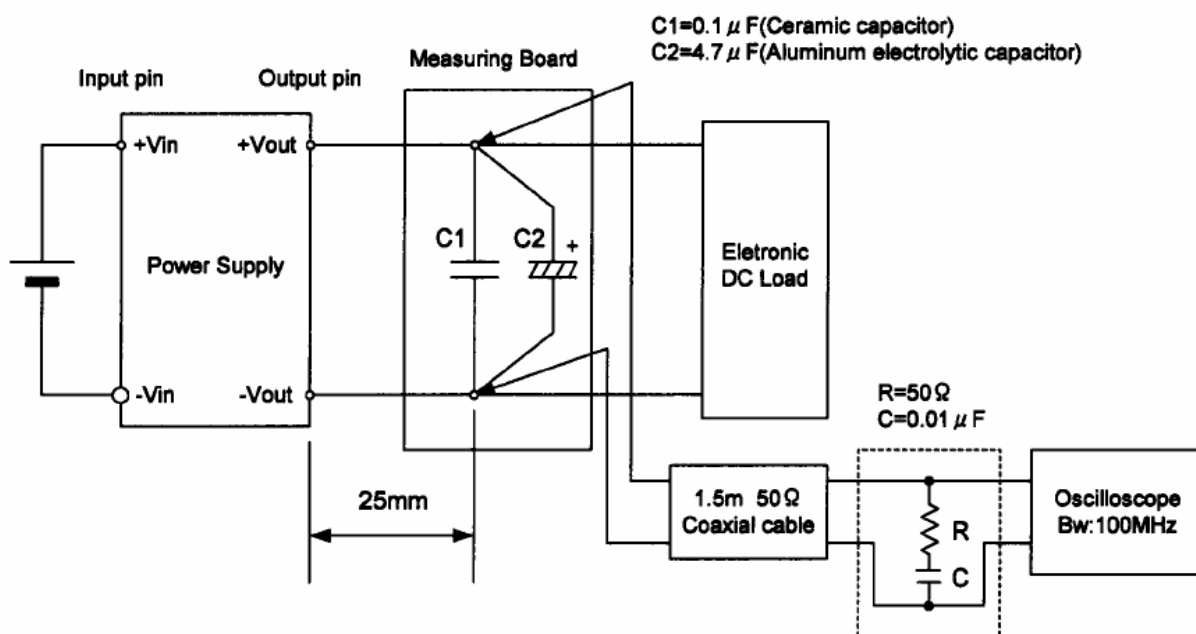


Figure B (Ripple and Ripple noise Characteristic)