

# TEST DATA OF SUTS30505

Regulated DC Power Supply  
February 12, 2009

Approved by : Kazunari Asano  
Kazunari Asano Design Manager

Prepared by : Sho Saito  
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**COSEL CO.,LTD.**

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Object	+5V0.6A	Testing Circuitry	Figure A
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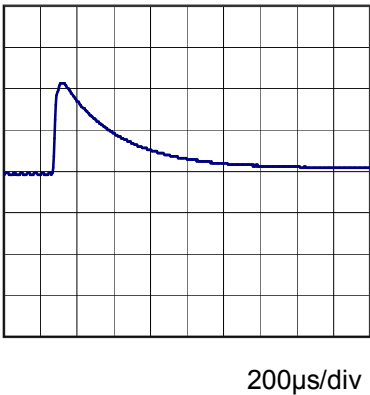
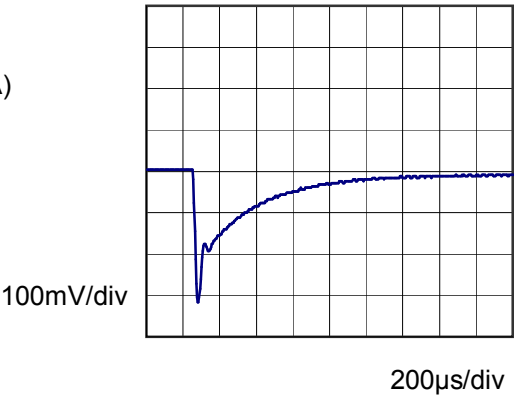


Model		SUTS30505	Temperature 25°C Testing Circuitry Figure A
Item		Dynamic Load Response	
Object		+5V0.6A	

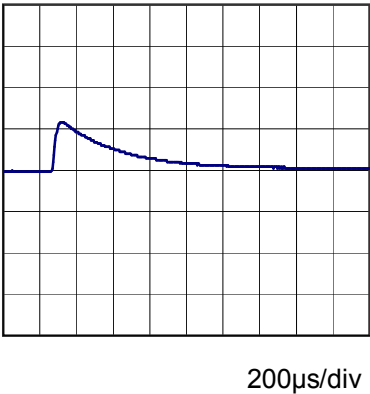
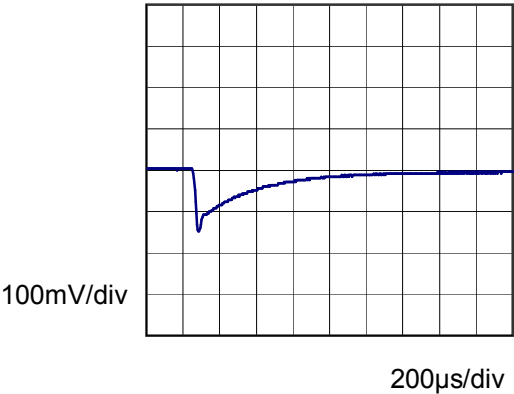
Input Volt. 5 V  
Cycle 100 mS



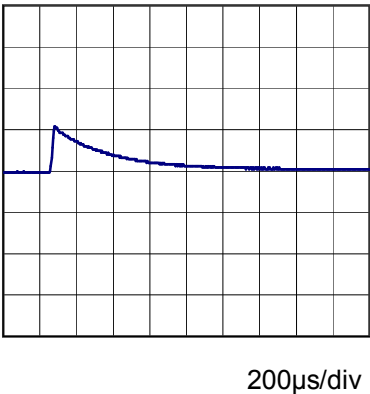
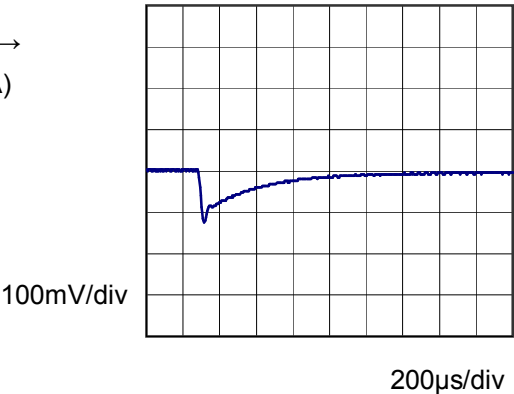
Min. Load (0A)  $\longleftrightarrow$   
Load 100% (0.6A)



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



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



Model	SUTS30505																																								
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>9V</div></div><div><div>-·-○-·-</div><div>Input Volt.</div><div>18V</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. 9 [V]</th><th>Input Volt. 18 [V]</th></tr><tr><td>0.00</td><td>3</td><td>3</td></tr><tr><td>0.12</td><td>3</td><td>3</td></tr><tr><td>0.24</td><td>6</td><td>4</td></tr><tr><td>0.36</td><td>9</td><td>6</td></tr><tr><td>0.48</td><td>13</td><td>7</td></tr><tr><td>0.60</td><td>19</td><td>8</td></tr><tr><td>0.66</td><td>21</td><td>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>		Load Current [A]	Ripple Voltage [mV]		Input Volt. 9 [V]	Input Volt. 18 [V]	0.00	3	3	0.12	3	3	0.24	6	4	0.36	9	6	0.48	13	7	0.60	19	8	0.66	21	9	--	-	-	--	-	-	--	-	-	--	-	-
Load Current [A]	Ripple Voltage [mV]																																								
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0.66	21	9																																							
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<p>Ripple [mVp-p]</p> <p>Fig.Complex Ripple Wave Form</p>																																									

Model	SUTS30505																																								
Item	Ripple-Noise	Temperature	25°C																																						
		Testing Circuitry	Figure B																																						
Object	+5V0.6A																																								
1.Graph		2.Values																																							
<div><div><div>—△— Input Volt. 9V</div><div>- -○- - Input Volt. 18V</div></div><p>Measured by 100 MHz Oscilloscope. Ripple-Noise is shown as p-p in the figure below. Note: Slanted line shows the range of the rated load current.</p></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. 18 [V]</th></tr><tr><td>0.00</td><td>4</td><td>4</td></tr><tr><td>0.12</td><td>12</td><td>10</td></tr><tr><td>0.24</td><td>19</td><td>15</td></tr><tr><td>0.36</td><td>26</td><td>21</td></tr><tr><td>0.48</td><td>33</td><td>25</td></tr><tr><td>0.60</td><td>40</td><td>29</td></tr><tr><td>0.66</td><td>44</td><td>32</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-Noise [mV]		Input Volt. 9 [V]	Input Volt. 18 [V]	0.00	4	4	0.12	12	10	0.24	19	15	0.36	26	21	0.48	33	25	0.60	40	29	0.66	44	32	--	-	-	--	-	-	--	-	-	--	-	-
Load Current [A]	Ripple-Noise [mV]																																								
	Input Volt. 9 [V]	Input Volt. 18 [V]																																							
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Model	SUTS30505																																								
Item	Ripple Voltage (by Ambient Temp.)	Testing Circuitry    Figure B																																							
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<div><div><div>---□---</div><div>Load 50%</div></div><div><div>—△—</div><div>Load 100%</div></div></div> <p>Ripple Voltage [mV]</p> <p>Ambient Temperature [°C]</p> <p>Input Volt.      12V</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>12</td><td>19</td></tr><tr><td>-40</td><td>11</td><td>18</td></tr><tr><td>-20</td><td>11</td><td>15</td></tr><tr><td>0</td><td>8</td><td>16</td></tr><tr><td>25</td><td>6</td><td>16</td></tr><tr><td>55</td><td>5</td><td>16</td></tr><tr><td>60</td><td>5</td><td>16</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	12	19	-40	11	18	-20	11	15	0	8	16	25	6	16	55	5	16	60	5	16	--	-	-	--	-	-	--	-	-	--	-	-
Ambient Temperature [°C]	Ripple Voltage [mV]																																								
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Object	+5V0.6A																																																					
1.Graph		2.Values																																																				
<div><div><div>—△—</div><div>Input Volt.</div><div>4.5V</div></div><div><div>---□---</div><div>Input Volt.</div><div>5V</div></div><div><div>---○---</div><div>Input Volt.</div><div>9V</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. 4.5[V]</th><th>Input Volt. 5[V]</th><th>Input Volt. 9[V]</th></tr><tr><td>-60</td><td>5.023</td><td>5.024</td><td>5.024</td></tr><tr><td>-40</td><td>5.034</td><td>5.035</td><td>5.035</td></tr><tr><td>-20</td><td>5.044</td><td>5.044</td><td>5.044</td></tr><tr><td>0</td><td>5.051</td><td>5.052</td><td>5.052</td></tr><tr><td>25</td><td>5.058</td><td>5.058</td><td>5.058</td></tr><tr><td>55</td><td>5.062</td><td>5.062</td><td>5.062</td></tr><tr><td>60</td><td>5.062</td><td>5.062</td><td>5.062</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. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]	-60	5.023	5.024	5.024	-40	5.034	5.035	5.035	-20	5.044	5.044	5.044	0	5.051	5.052	5.052	25	5.058	5.058	5.058	55	5.062	5.062	5.062	60	5.062	5.062	5.062	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
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Model		Testing Circuitry    Figure A
SUTS30505		
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 : 4.5 - 9V

Load Current : 0 - 0.6A

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

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

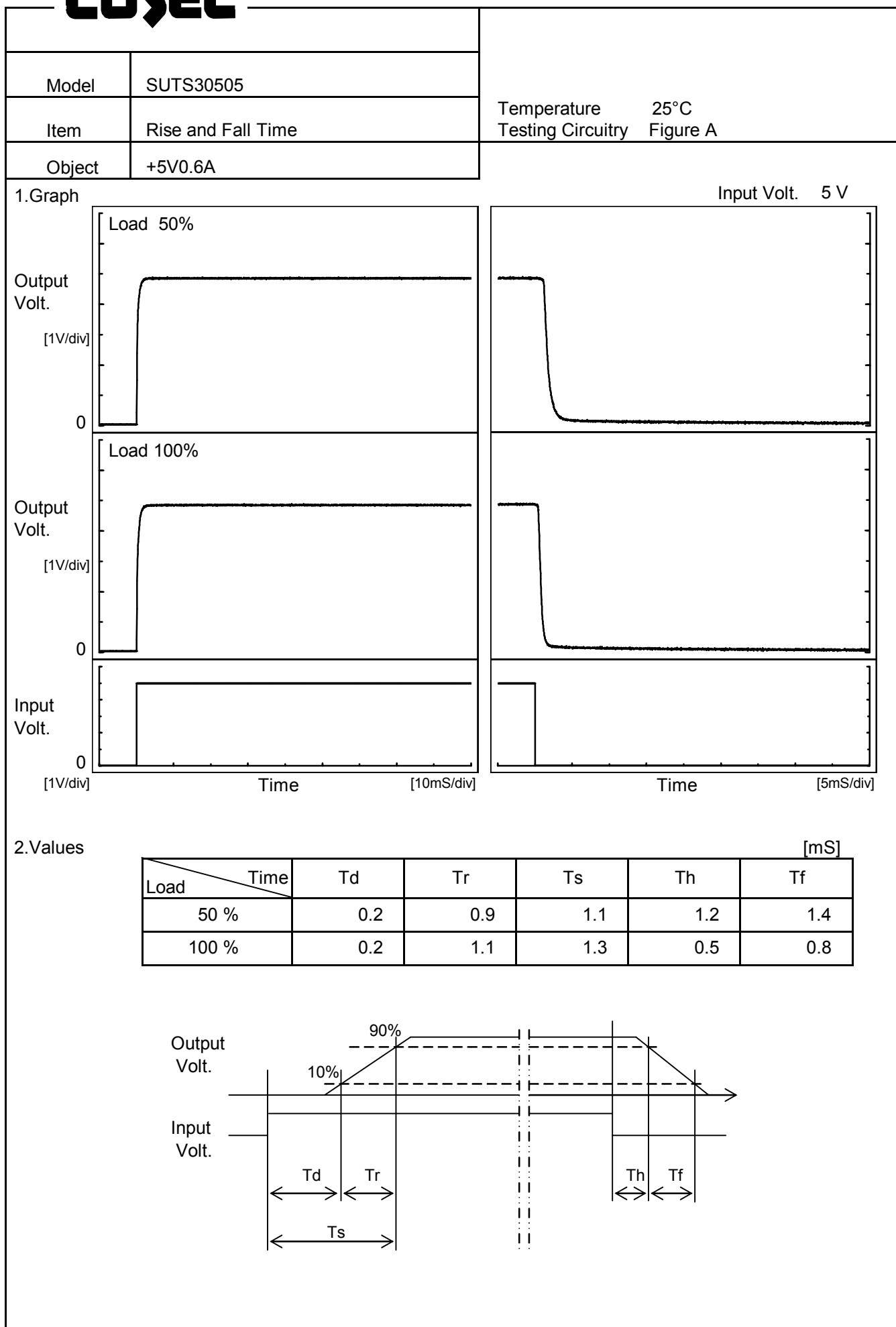
### 2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	55	9	0	5.068	±17	±0.3
Minimum Voltage	-40	4.5	0.6	5.034		



Model	SUTS30505		
Item	Time Lapse Drift	Temperature	25°C
		Testing Circuitry	Figure A
Object	+5V0.6A		
1.Graph		2.Values	
<div><div><div>Output Voltage [V]</div><div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></di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Model	SUTS30505	Testing Circuitry    Figure A																																							
Item	Minimum Input Voltage for Regulated Output Voltage																																								
Object	+5V0.6A																																								
1.Graph		2.Values																																							
<div><div><div>---□---</div><div>Load 50%</div></div><div><div>—△—</div><div>Load 100%</div></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>-60</td><td>2.4</td><td>3.0</td></tr><tr><td>-40</td><td>2.3</td><td>3.0</td></tr><tr><td>-20</td><td>2.3</td><td>3.0</td></tr><tr><td>0</td><td>2.3</td><td>3.0</td></tr><tr><td>25</td><td>2.3</td><td>3.1</td></tr><tr><td>55</td><td>2.4</td><td>3.2</td></tr><tr><td>60</td><td>2.4</td><td>3.2</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	2.4	3.0	-40	2.3	3.0	-20	2.3	3.0	0	2.3	3.0	25	2.3	3.1	55	2.4	3.2	60	2.4	3.2	--	-	-	--	-	-	--	-	-	--	-	-
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Model	SUTS30505																																																									
Item	Overcurrent Protection	Temperature	25°C																																																							
		Testing Circuitry	Figure A																																																							
Object	+5V0.6A																																																									
1.Graph		2.Values																																																								
<div><div><div></div><div></div><div></div></div><div><div>Input Volt. 4.5V</div><div>Input Volt. 5V</div><div>Input Volt. 9V</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. 4.5[V]</th><th>Input Volt. 5[V]</th><th>Input Volt. 9[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>0.92</td><td>0.94</td><td>0.88</td></tr><tr><td>4.50</td><td>0.94</td><td>0.96</td><td>0.89</td></tr><tr><td>4.00</td><td>0.97</td><td>0.99</td><td>0.90</td></tr><tr><td>3.50</td><td>1.00</td><td>1.02</td><td>0.91</td></tr><tr><td>3.00</td><td>1.04</td><td>1.05</td><td>0.92</td></tr><tr><td>2.50</td><td>1.06</td><td>1.07</td><td>0.92</td></tr><tr><td>2.00</td><td>1.09</td><td>1.08</td><td>0.91</td></tr><tr><td>1.50</td><td>1.08</td><td>1.07</td><td>0.89</td></tr><tr><td>1.00</td><td>1.04</td><td>1.02</td><td>0.85</td></tr><tr><td>0.50</td><td>0.97</td><td>0.93</td><td>0.78</td></tr><tr><td>0.00</td><td>1.03</td><td>1.08</td><td>1.01</td></tr></table>		Output Voltage [V]	Load Current [A]			Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]	5.00	0.62	0.62	0.62	4.75	0.92	0.94	0.88	4.50	0.94	0.96	0.89	4.00	0.97	0.99	0.90	3.50	1.00	1.02	0.91	3.00	1.04	1.05	0.92	2.50	1.06	1.07	0.92	2.00	1.09	1.08	0.91	1.50	1.08	1.07	0.89	1.00	1.04	1.02	0.85	0.50	0.97	0.93	0.78	0.00	1.03	1.08	1.01
Output Voltage [V]	Load Current [A]																																																									
	Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]																																																							
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Figure A

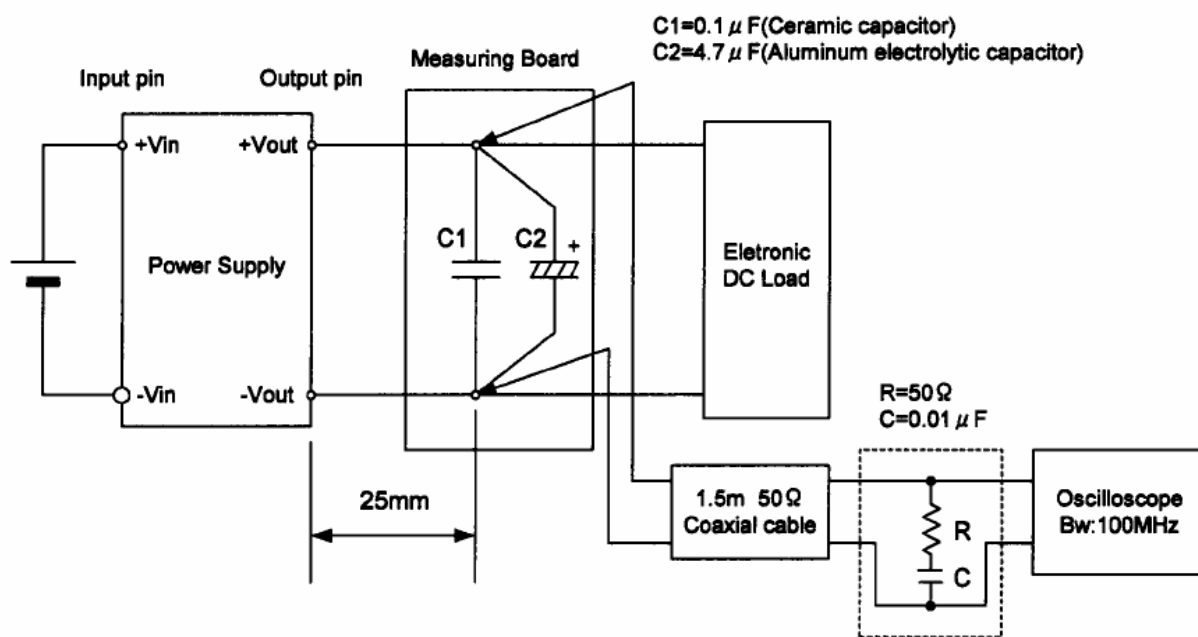


Figure B (Ripple and Ripple noise Characteristic)