

TEST DATA OF SUTS3053R3

Regulated DC Power Supply
February 12, 2009

Approved by : Kazunari Asano
Kazunari Asano Design Manager

Prepared by : Sho Saito
Sho Saito Design Engineer

COSEL CO.,LTD.

CONTENTS

1.Input Current (by Input Voltage)	1
2.Input Current (by Load Current)	2
3.Input Power (by Load Current)	3
4.Efficiency (by Input Voltage)	4
5.Efficiency (by Load Current)	5
6.Line Regulation	6
7.Load Regulation	7
8.Dynamic Load Response	8
9.Ripple Voltage (by Load Current)	9
10.Ripple-Noise	10
11.Ripple Voltage (by Ambient Temperature)	11
12.Ambient Temperatu Kazunari Asano	12
13.Output Voltage Accuracy	13
14.Time Lapse Drift	14
15.Rise and Fall Time	15
16.Minimum Input Volt: Sho Saito	16
17.Overcurrent Protection	17
18.Figure of Testing Circuitry	18

(Final Page 18)

Model

SUTS3053R3

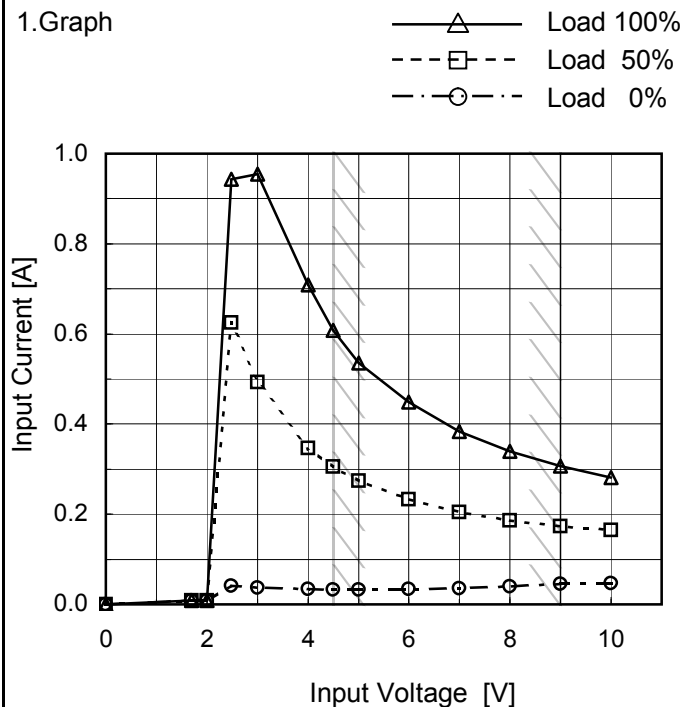
Item

Input Current (by Input Voltage)

Object

Temperature
Testing Circuitry25°C
Figure A

1.Graph



2.Values

Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0.00	0.000	0.000	0.000
1.70	0.009	0.009	0.009
2.00	0.009	0.009	0.009
2.49	0.041	0.626	0.943
3.00	0.037	0.493	0.954
4.00	0.033	0.347	0.709
4.50	0.032	0.306	0.608
5.00	0.033	0.275	0.535
6.00	0.034	0.233	0.448
7.00	0.036	0.205	0.384
8.00	0.040	0.186	0.339
9.00	0.046	0.174	0.306
10.00	0.047	0.165	0.281
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

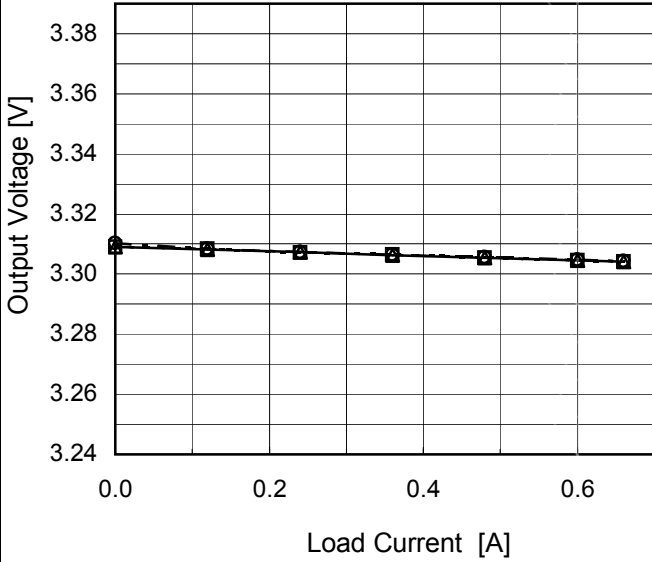
Model	SUTS3053R3																																																					
Item	Input Current (by Load Current)	Temperature	25°C																																																			
Object		Testing Circuitry	Figure A																																																			
1.Graph		2.Values																																																				
<div><div>—△—</div>Input Volt. 4.5V</div> <div><div>---□---</div>Input Volt. 5V</div> <div><div>-·-○-·-</div>Input Volt. 9V</div> <p>Input Current [A]</p> <p>Load Current [A]</p> <p>Note: Slanted line shows the range of the rated load current.</p>																																																						
		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Input 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>0.00</td><td>0.033</td><td>0.032</td><td>0.047</td></tr><tr><td>0.12</td><td>0.139</td><td>0.128</td><td>0.098</td></tr><tr><td>0.24</td><td>0.248</td><td>0.225</td><td>0.149</td></tr><tr><td>0.36</td><td>0.357</td><td>0.321</td><td>0.199</td></tr><tr><td>0.48</td><td>0.479</td><td>0.426</td><td>0.252</td></tr><tr><td>0.60</td><td>0.595</td><td>0.526</td><td>0.307</td></tr><tr><td>0.66</td><td>0.660</td><td>0.583</td><td>0.330</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]	Input Current [A]			Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]	0.00	0.033	0.032	0.047	0.12	0.139	0.128	0.098	0.24	0.248	0.225	0.149	0.36	0.357	0.321	0.199	0.48	0.479	0.426	0.252	0.60	0.595	0.526	0.307	0.66	0.660	0.583	0.330	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Input Current [A]																																																					
	Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]																																																			
0.00	0.033	0.032	0.047																																																			
0.12	0.139	0.128	0.098																																																			
0.24	0.248	0.225	0.149																																																			
0.36	0.357	0.321	0.199																																																			
0.48	0.479	0.426	0.252																																																			
0.60	0.595	0.526	0.307																																																			
0.66	0.660	0.583	0.330																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			

Model	SUTS3053R3																																																					
Item	Input Power (by Load Current)	Temperature	25°C																																																			
		Testing Circuitry	Figure A																																																			
Object	_____																																																					
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> <div>Input Power [W]</div> <div>Load Current [A]</div> <div>Note: Slanted line shows the range of the rated load current.</div>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Input Power [W]</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>0.00</td><td>0.14</td><td>0.16</td><td>0.41</td></tr><tr><td>0.12</td><td>0.61</td><td>0.63</td><td>0.87</td></tr><tr><td>0.24</td><td>1.09</td><td>1.11</td><td>1.32</td></tr><tr><td>0.36</td><td>1.60</td><td>1.60</td><td>1.78</td></tr><tr><td>0.48</td><td>2.12</td><td>2.11</td><td>2.25</td></tr><tr><td>0.60</td><td>2.65</td><td>2.63</td><td>2.73</td></tr><tr><td>0.66</td><td>2.93</td><td>2.90</td><td>2.97</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]	Input Power [W]			Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]	0.00	0.14	0.16	0.41	0.12	0.61	0.63	0.87	0.24	1.09	1.11	1.32	0.36	1.60	1.60	1.78	0.48	2.12	2.11	2.25	0.60	2.65	2.63	2.73	0.66	2.93	2.90	2.97	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Input Power [W]																																																					
	Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]																																																			
0.00	0.14	0.16	0.41																																																			
0.12	0.61	0.63	0.87																																																			
0.24	1.09	1.11	1.32																																																			
0.36	1.60	1.60	1.78																																																			
0.48	2.12	2.11	2.25																																																			
0.60	2.65	2.63	2.73																																																			
0.66	2.93	2.90	2.97																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			

Model	SUTS3053R3																																		
Item	Efficiency (by Input Voltage)	Temperature	25°C																																
		Testing Circuitry	Figure A																																
Object																																			
1.Graph		2.Values																																	
<div><div><div>---</div><div>□</div><div>---</div></div><div>Load 50%</div></div> <div><div>—</div><div>△</div><div>—</div></div> <div>Load 100%</div> <table><thead><tr><th rowspan="2">Input Voltage [V]</th><th colspan="2">Efficiency [%]</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr></thead><tbody><tr><td>4.0</td><td>73.8</td><td>73.4</td></tr><tr><td>4.5</td><td>73.9</td><td>74.7</td></tr><tr><td>5.0</td><td>73.4</td><td>75.4</td></tr><tr><td>6.0</td><td>72.0</td><td>75.7</td></tr><tr><td>7.0</td><td>69.8</td><td>75.3</td></tr><tr><td>8.0</td><td>67.4</td><td>74.2</td></tr><tr><td>9.0</td><td>64.5</td><td>72.9</td></tr><tr><td>9.5</td><td>62.9</td><td>72.2</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></tbody></table>		Input Voltage [V]	Efficiency [%]		Load 50%	Load 100%	4.0	73.8	73.4	4.5	73.9	74.7	5.0	73.4	75.4	6.0	72.0	75.7	7.0	69.8	75.3	8.0	67.4	74.2	9.0	64.5	72.9	9.5	62.9	72.2	--	-	-		
Input Voltage [V]	Efficiency [%]																																		
	Load 50%	Load 100%																																	
4.0	73.8	73.4																																	
4.5	73.9	74.7																																	
5.0	73.4	75.4																																	
6.0	72.0	75.7																																	
7.0	69.8	75.3																																	
8.0	67.4	74.2																																	
9.0	64.5	72.9																																	
9.5	62.9	72.2																																	
--	-	-																																	
Note: Slanted line shows the range of the rated input voltage.																																			

Model	SUTS3053R3																																																					
Item	Efficiency (by Load Current)	Temperature	25°C																																																			
		Testing Circuitry	Figure A																																																			
Object	_____																																																					
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> <table><thead><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Efficiency [%]</th></tr><tr><th>Input Volt. 4.5[V]</th><th>Input Volt. 5[V]</th><th>Input Volt. 9[V]</th></tr></thead><tbody><tr><td>0.00</td><td>-</td><td>-</td><td>-</td></tr><tr><td>0.12</td><td>64.7</td><td>62.9</td><td>45.5</td></tr><tr><td>0.24</td><td>72.6</td><td>71.6</td><td>60.2</td></tr><tr><td>0.36</td><td>74.5</td><td>74.4</td><td>67.0</td></tr><tr><td>0.48</td><td>75.1</td><td>75.4</td><td>70.6</td></tr><tr><td>0.60</td><td>74.9</td><td>75.6</td><td>72.7</td></tr><tr><td>0.66</td><td>74.6</td><td>75.4</td><td>73.5</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></tbody></table>		Load Current [A]	Efficiency [%]			Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]	0.00	-	-	-	0.12	64.7	62.9	45.5	0.24	72.6	71.6	60.2	0.36	74.5	74.4	67.0	0.48	75.1	75.4	70.6	0.60	74.9	75.6	72.7	0.66	74.6	75.4	73.5	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-		
Load Current [A]	Efficiency [%]																																																					
	Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]																																																			
0.00	-	-	-																																																			
0.12	64.7	62.9	45.5																																																			
0.24	72.6	71.6	60.2																																																			
0.36	74.5	74.4	67.0																																																			
0.48	75.1	75.4	70.6																																																			
0.60	74.9	75.6	72.7																																																			
0.66	74.6	75.4	73.5																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			
Note: Slanted line shows the range of the rated load current.																																																						

Model	SUTS3053R3																																																							
Item	Line Regulation	Temperature	25°C																																																					
Object	+3.3V0.6A	Testing Circuitry	Figure A																																																					
1.Graph		2.Values																																																						
<div><div><div>---□---</div><div>Load 50%</div></div><div><div>—△—</div><div>Load 100%</div></div></div> <p>The graph plots Output Voltage [V] on the y-axis (ranging from 3.24 to 3.38) against Input Voltage [V] on the x-axis (ranging from 3 to 9). Two data series are shown: Load 50% (dashed line with square markers) and Load 100% (solid line with triangle markers). Both series show a constant output voltage of approximately 3.305V across the entire input voltage range. Shaded vertical bands indicate the rated input voltage range for each load condition: 4.0V to 5.0V for 50% load and 8.0V to 9.0V for 100% load.</p> <table border="1"><caption>Line Regulation Data</caption><thead><tr><th>Input Voltage [V]</th><th>Output Voltage [V] (Load 50%)</th><th>Output Voltage [V] (Load 100%)</th></tr></thead><tbody><tr><td>4.0</td><td>3.307</td><td>3.305</td></tr><tr><td>4.5</td><td>3.307</td><td>3.305</td></tr><tr><td>5.0</td><td>3.307</td><td>3.305</td></tr><tr><td>6.0</td><td>3.307</td><td>3.305</td></tr><tr><td>7.0</td><td>3.307</td><td>3.305</td></tr><tr><td>8.0</td><td>3.307</td><td>3.305</td></tr><tr><td>9.0</td><td>3.307</td><td>3.305</td></tr></tbody></table>		Input Voltage [V]	Output Voltage [V] (Load 50%)	Output Voltage [V] (Load 100%)	4.0	3.307	3.305	4.5	3.307	3.305	5.0	3.307	3.305	6.0	3.307	3.305	7.0	3.307	3.305	8.0	3.307	3.305	9.0	3.307	3.305	<table><tr><th rowspan="2">Input Voltage [V]</th><th colspan="2">Output Voltage [V]</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr><tr><td>4.0</td><td>3.307</td><td>3.305</td></tr><tr><td>4.5</td><td>3.307</td><td>3.305</td></tr><tr><td>5.0</td><td>3.307</td><td>3.305</td></tr><tr><td>6.0</td><td>3.307</td><td>3.305</td></tr><tr><td>7.0</td><td>3.307</td><td>3.305</td></tr><tr><td>8.0</td><td>3.307</td><td>3.305</td></tr><tr><td>9.0</td><td>3.307</td><td>3.305</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></table>		Input Voltage [V]	Output Voltage [V]		Load 50%	Load 100%	4.0	3.307	3.305	4.5	3.307	3.305	5.0	3.307	3.305	6.0	3.307	3.305	7.0	3.307	3.305	8.0	3.307	3.305	9.0	3.307	3.305	--	-	-
Input Voltage [V]	Output Voltage [V] (Load 50%)	Output Voltage [V] (Load 100%)																																																						
4.0	3.307	3.305																																																						
4.5	3.307	3.305																																																						
5.0	3.307	3.305																																																						
6.0	3.307	3.305																																																						
7.0	3.307	3.305																																																						
8.0	3.307	3.305																																																						
9.0	3.307	3.305																																																						
Input Voltage [V]	Output Voltage [V]																																																							
	Load 50%	Load 100%																																																						
4.0	3.307	3.305																																																						
4.5	3.307	3.305																																																						
5.0	3.307	3.305																																																						
6.0	3.307	3.305																																																						
7.0	3.307	3.305																																																						
8.0	3.307	3.305																																																						
9.0	3.307	3.305																																																						
--	-	-																																																						
Note: Slanted line shows the range of the rated input voltage.																																																								

Model	SUTS3053R3																																																					
Item	Load Regulation	Temperature	25°C																																																			
		Testing Circuitry	Figure A																																																			
Object	+3.3V0.6A																																																					
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> 		<table><tr><th rowspan="2">Load Current [A]</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>0.00</td><td>3.309</td><td>3.309</td><td>3.310</td></tr><tr><td>0.12</td><td>3.308</td><td>3.308</td><td>3.308</td></tr><tr><td>0.24</td><td>3.307</td><td>3.307</td><td>3.307</td></tr><tr><td>0.36</td><td>3.306</td><td>3.306</td><td>3.307</td></tr><tr><td>0.48</td><td>3.306</td><td>3.306</td><td>3.306</td></tr><tr><td>0.60</td><td>3.305</td><td>3.305</td><td>3.305</td></tr><tr><td>0.66</td><td>3.304</td><td>3.304</td><td>3.304</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]	Output Voltage [V]			Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]	0.00	3.309	3.309	3.310	0.12	3.308	3.308	3.308	0.24	3.307	3.307	3.307	0.36	3.306	3.306	3.307	0.48	3.306	3.306	3.306	0.60	3.305	3.305	3.305	0.66	3.304	3.304	3.304	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Output Voltage [V]																																																					
	Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]																																																			
0.00	3.309	3.309	3.310																																																			
0.12	3.308	3.308	3.308																																																			
0.24	3.307	3.307	3.307																																																			
0.36	3.306	3.306	3.307																																																			
0.48	3.306	3.306	3.306																																																			
0.60	3.305	3.305	3.305																																																			
0.66	3.304	3.304	3.304																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			
--	-	-	-																																																			
Note: Slanted line shows the range of the rated load current.																																																						



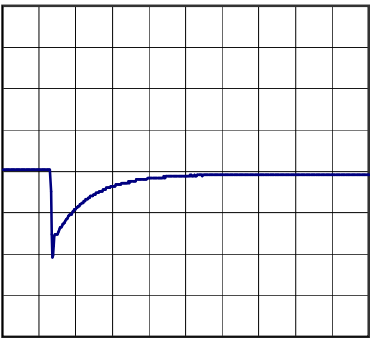
Model	SUTS3053R3	Temperature 25°C Testing Circuitry Figure A
Item	Dynamic Load Response	
Object	+3.3V0.6A	

Input Volt. 5 V
Cycle 100 mS



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

100mV/div



Sho Saito

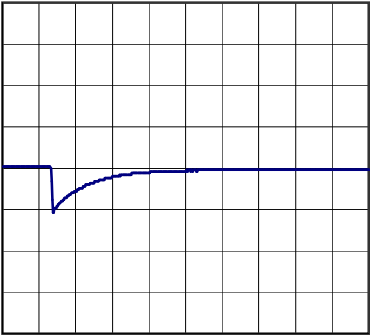
500µs/div



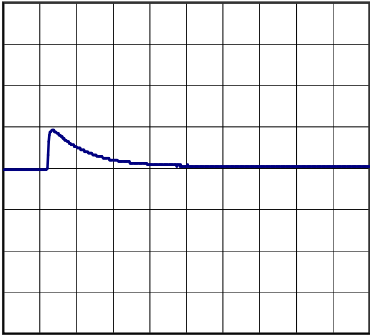
500µs/div

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

100mV/div



500µs/div



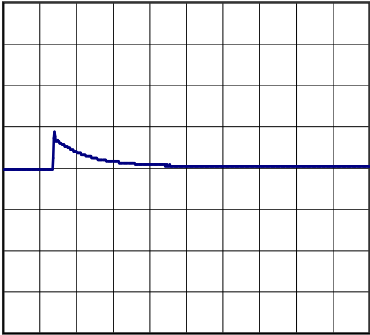
500µs/div

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

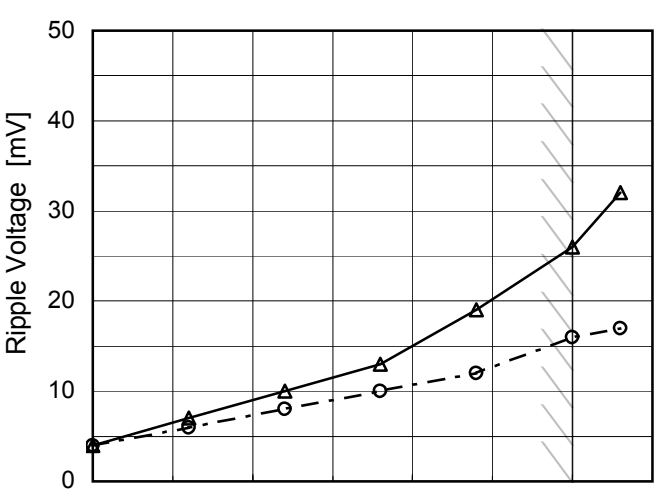
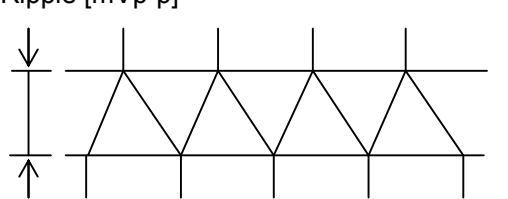
100mV/div

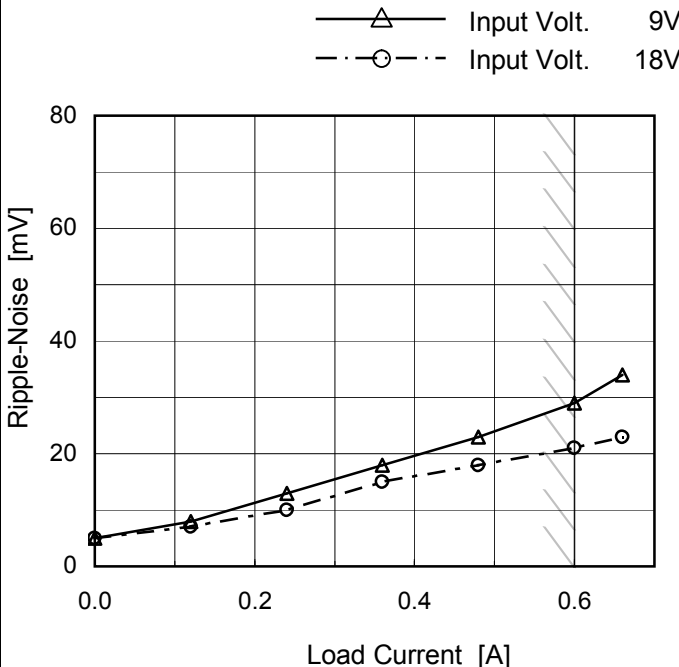
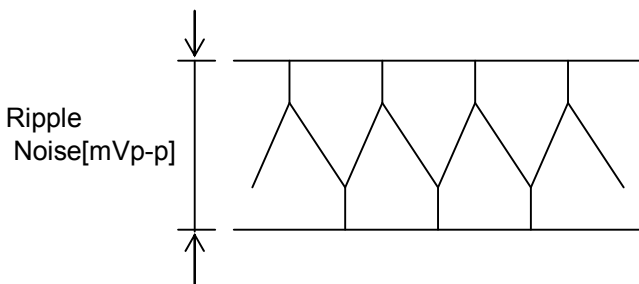


500µs/div



500µs/div

Model	SUTS3053R3																																								
Item	Ripple Voltage (by Load Current)	Temperature	25°C																																						
		Testing Circuitry	Figure B																																						
Object	+3.3V0.6A																																								
1.Graph		2.Values																																							
<div><div><div><div></div><div>—△—</div><div>Input Volt.</div><div>9V</div></div><div><div></div><div>-·-○-·-</div><div>Input Volt.</div><div>18V</div></div></div><div></div></div>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="2">Ripple Voltage [mV]</th></tr><tr><th>Input Volt. 4.5[V]</th><th>Input Volt. 9[V]</th></tr><tr><td>0.00</td><td>4</td><td>4</td></tr><tr><td>0.12</td><td>7</td><td>6</td></tr><tr><td>0.24</td><td>10</td><td>8</td></tr><tr><td>0.36</td><td>13</td><td>10</td></tr><tr><td>0.48</td><td>19</td><td>12</td></tr><tr><td>0.60</td><td>26</td><td>16</td></tr><tr><td>0.66</td><td>32</td><td>17</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. 4.5[V]	Input Volt. 9[V]	0.00	4	4	0.12	7	6	0.24	10	8	0.36	13	10	0.48	19	12	0.60	26	16	0.66	32	17	--	-	-	--	-	-	--	-	-	--	-	-
Load Current [A]	Ripple Voltage [mV]																																								
	Input Volt. 4.5[V]	Input Volt. 9[V]																																							
0.00	4	4																																							
0.12	7	6																																							
0.24	10	8																																							
0.36	13	10																																							
0.48	19	12																																							
0.60	26	16																																							
0.66	32	17																																							
--	-	-																																							
--	-	-																																							
--	-	-																																							
--	-	-																																							
<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>Ripple [mVp-p]</div><div></div></div><div>Fig.Complex Ripple Wave Form</div></div>																																									

Model	SUTS3053R3																																								
Item	Ripple-Noise	Temperature	25°C																																						
		Testing Circuitry	Figure B																																						
Object	+3.3V0.6A																																								
1.Graph		2.Values																																							
<div><div><div><div></div><div>Input Volt.</div><div>9V</div></div><div><div></div><div>Input Volt.</div><div>18V</div></div></div><div></div></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>5</td><td>5</td></tr><tr><td>0.12</td><td>8</td><td>7</td></tr><tr><td>0.24</td><td>13</td><td>10</td></tr><tr><td>0.36</td><td>18</td><td>15</td></tr><tr><td>0.48</td><td>23</td><td>18</td></tr><tr><td>0.60</td><td>29</td><td>21</td></tr><tr><td>0.66</td><td>34</td><td>23</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	5	5	0.12	8	7	0.24	13	10	0.36	18	15	0.48	23	18	0.60	29	21	0.66	34	23	--	-	-	--	-	-	--	-	-	--	-	-
Load Current [A]	Ripple-Noise [mV]																																								
	Input Volt. 9 [V]	Input Volt. 18 [V]																																							
0.00	5	5																																							
0.12	8	7																																							
0.24	13	10																																							
0.36	18	15																																							
0.48	23	18																																							
0.60	29	21																																							
0.66	34	23																																							
--	-	-																																							
--	-	-																																							
--	-	-																																							
--	-	-																																							
<div><div><div><div></div><div>Ripple Noise[mVp-p]</div></div><div></div></div><div>Fig.Complex Ripple Noise Wave Form</div></div>																																									

Model	SUTS3053R3																																								
Item	Ripple Voltage (by Ambient Temp.)	Testing Circuitry Figure B																																							
Object	+3.3V0.6A																																								
1.Graph		2.Values																																							
<div><div>---□--- Load 50%</div><div>—△— Load 100%</div></div> <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>11</td><td>24</td></tr><tr><td>-40</td><td>11</td><td>26</td></tr><tr><td>-20</td><td>10</td><td>22</td></tr><tr><td>0</td><td>8</td><td>20</td></tr><tr><td>25</td><td>8</td><td>19</td></tr><tr><td>55</td><td>6</td><td>13</td></tr><tr><td>60</td><td>6</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	11	24	-40	11	26	-20	10	22	0	8	20	25	8	19	55	6	13	60	6	13	--	-	-	--	-	-	--	-	-	--	-	-
Ambient Temperature [°C]	Ripple Voltage [mV]																																								
	Load 50%	Load 100%																																							
-60	11	24																																							
-40	11	26																																							
-20	10	22																																							
0	8	20																																							
25	8	19																																							
55	6	13																																							
60	6	13																																							
--	-	-																																							
--	-	-																																							
--	-	-																																							
--	-	-																																							
Measured by 100 MHz Oscilloscope. Note: Slanted line shows the range of the rated ambient temperature.																																									

Model	SUTS3053R3																																																						
Item	Ambient Temperature Drift	Testing Circuitry Figure A																																																					
Object	+3.3V0.6A																																																						
1.Graph		2.Values																																																					
<div><div>—△— Input Volt. 4.5V</div><div>---□--- Input Volt. 5V</div><div>-·-○-·- Input Volt. 9V</div></div> <div><p>Output Voltage [V]</p><p>Ambient Temperature [°C]</p><p>Load 100%</p></div>		<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>3.280</td><td>3.281</td><td>3.281</td></tr><tr><td>-40</td><td>3.289</td><td>3.289</td><td>3.290</td></tr><tr><td>-20</td><td>3.296</td><td>3.297</td><td>3.297</td></tr><tr><td>0</td><td>3.302</td><td>3.302</td><td>3.303</td></tr><tr><td>25</td><td>3.306</td><td>3.307</td><td>3.306</td></tr><tr><td>55</td><td>3.308</td><td>3.308</td><td>3.308</td></tr><tr><td>60</td><td>3.308</td><td>3.308</td><td>3.308</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	3.280	3.281	3.281	-40	3.289	3.289	3.290	-20	3.296	3.297	3.297	0	3.302	3.302	3.303	25	3.306	3.307	3.306	55	3.308	3.308	3.308	60	3.308	3.308	3.308	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
Ambient Temperature [°C]	Output Voltage [V]																																																						
	Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]																																																				
-60	3.280	3.281	3.281																																																				
-40	3.289	3.289	3.290																																																				
-20	3.296	3.297	3.297																																																				
0	3.302	3.302	3.303																																																				
25	3.306	3.307	3.306																																																				
55	3.308	3.308	3.308																																																				
60	3.308	3.308	3.308																																																				
--	-	-	-																																																				
--	-	-	-																																																				
--	-	-	-																																																				
--	-	-	-																																																				
Note: Slanted line shows the range of the rated ambient temperature.																																																							



Model		SUTS3053R3	Testing Circuitry Figure A
Item		Output Voltage Accuracy	
Object		+3.3V0.6A	

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

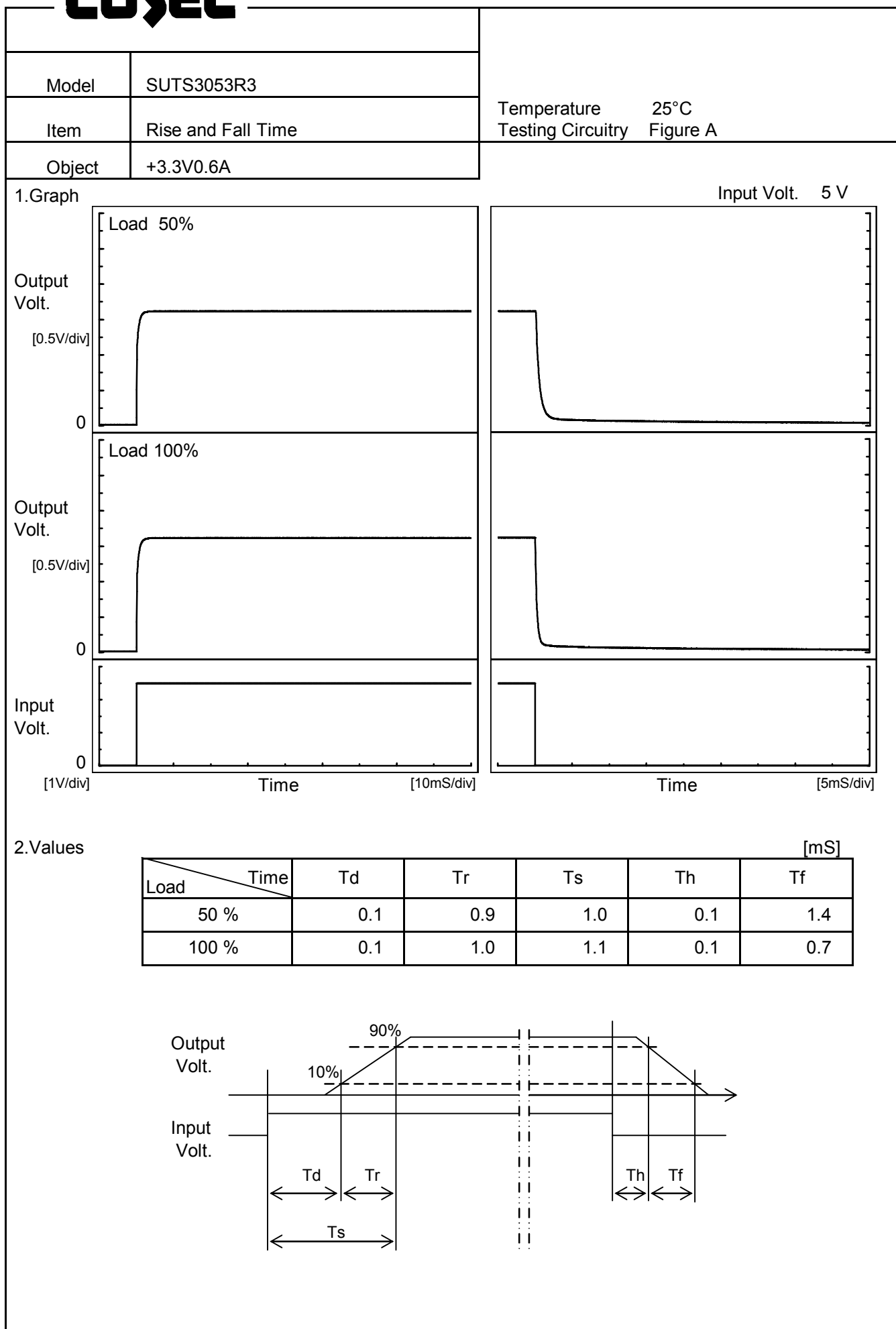
Kazunari Asano

2. Values

Item	Temperature [°C]	Sho Saito Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	55	9	0	3.313	±13	±0.4
Minimum Voltage	-40	4.5	0.6	3.287		



Model	SUTS3053R3		
Item	Time Lapse Drift	Temperature	25°C
		Testing Circuitry	Figure A
Object	+3.3V0.6A		
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><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div></div></div>			



Model	SUTS3053R3	Testing Circuitry Figure A																																					
Item	Minimum Input Voltage for Regulated Output Voltage																																						
Object	+3.3V0.6A																																						
1.Graph		2.Values																																					
<div><div><div>---□---</div><div>Load 50%</div></div><div><div>—△—</div><div>Load 100%</div></div></div> <table><thead><tr><th>Ambient Temperature [°C]</th><th>Load 50% [V]</th><th>Load 100% [V]</th></tr></thead><tbody><tr><td>-60</td><td>2.2</td><td>2.7</td></tr><tr><td>-40</td><td>2.2</td><td>2.8</td></tr><tr><td>-20</td><td>2.0</td><td>2.8</td></tr><tr><td>0</td><td>2.0</td><td>3.0</td></tr><tr><td>25</td><td>2.0</td><td>3.1</td></tr><tr><td>55</td><td>2.1</td><td>3.2</td></tr><tr><td>60</td><td>2.1</td><td>3.3</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></tbody></table>		Ambient Temperature [°C]	Load 50% [V]	Load 100% [V]	-60	2.2	2.7	-40	2.2	2.8	-20	2.0	2.8	0	2.0	3.0	25	2.0	3.1	55	2.1	3.2	60	2.1	3.3	--	-	-	--	-	-	--	-	-	--	-	-		
Ambient Temperature [°C]	Load 50% [V]	Load 100% [V]																																					
-60	2.2	2.7																																					
-40	2.2	2.8																																					
-20	2.0	2.8																																					
0	2.0	3.0																																					
25	2.0	3.1																																					
55	2.1	3.2																																					
60	2.1	3.3																																					
--	-	-																																					
--	-	-																																					
--	-	-																																					
--	-	-																																					
Note: Slanted line shows the range of the rated ambient temperature.																																							

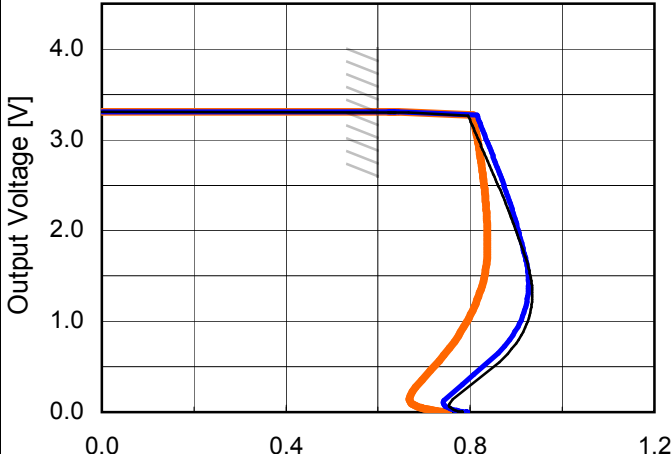
Model	SUTS3053R3																																																									
Item	Overcurrent Protection	Temperature	25°C																																																							
Object	+3.3V0.6A	Testing Circuitry	Figure A																																																							
1.Graph		2.Values																																																								
<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></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. 4.5[V]</th><th>Input Volt. 5[V]</th><th>Input Volt. 9[V]</th></tr><tr><td>3.30</td><td>0.62</td><td>0.62</td><td>0.62</td></tr><tr><td>3.14</td><td>0.81</td><td>0.82</td><td>0.81</td></tr><tr><td>2.97</td><td>0.82</td><td>0.84</td><td>0.82</td></tr><tr><td>2.64</td><td>0.85</td><td>0.86</td><td>0.83</td></tr><tr><td>2.31</td><td>0.88</td><td>0.89</td><td>0.83</td></tr><tr><td>1.98</td><td>0.90</td><td>0.91</td><td>0.84</td></tr><tr><td>1.65</td><td>0.92</td><td>0.92</td><td>0.84</td></tr><tr><td>1.32</td><td>0.93</td><td>0.93</td><td>0.82</td></tr><tr><td>0.99</td><td>0.92</td><td>0.91</td><td>0.79</td></tr><tr><td>0.66</td><td>0.89</td><td>0.87</td><td>0.76</td></tr><tr><td>0.33</td><td>0.86</td><td>0.81</td><td>0.69</td></tr><tr><td>0.00</td><td>0.78</td><td>0.79</td><td>0.75</td></tr></table>		Output Voltage [V]	Load Current [A]			Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]	3.30	0.62	0.62	0.62	3.14	0.81	0.82	0.81	2.97	0.82	0.84	0.82	2.64	0.85	0.86	0.83	2.31	0.88	0.89	0.83	1.98	0.90	0.91	0.84	1.65	0.92	0.92	0.84	1.32	0.93	0.93	0.82	0.99	0.92	0.91	0.79	0.66	0.89	0.87	0.76	0.33	0.86	0.81	0.69	0.00	0.78	0.79	0.75
Output Voltage [V]	Load Current [A]																																																									
	Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]																																																							
3.30	0.62	0.62	0.62																																																							
3.14	0.81	0.82	0.81																																																							
2.97	0.82	0.84	0.82																																																							
2.64	0.85	0.86	0.83																																																							
2.31	0.88	0.89	0.83																																																							
1.98	0.90	0.91	0.84																																																							
1.65	0.92	0.92	0.84																																																							
1.32	0.93	0.93	0.82																																																							
0.99	0.92	0.91	0.79																																																							
0.66	0.89	0.87	0.76																																																							
0.33	0.86	0.81	0.69																																																							
0.00	0.78	0.79	0.75																																																							



Figure A

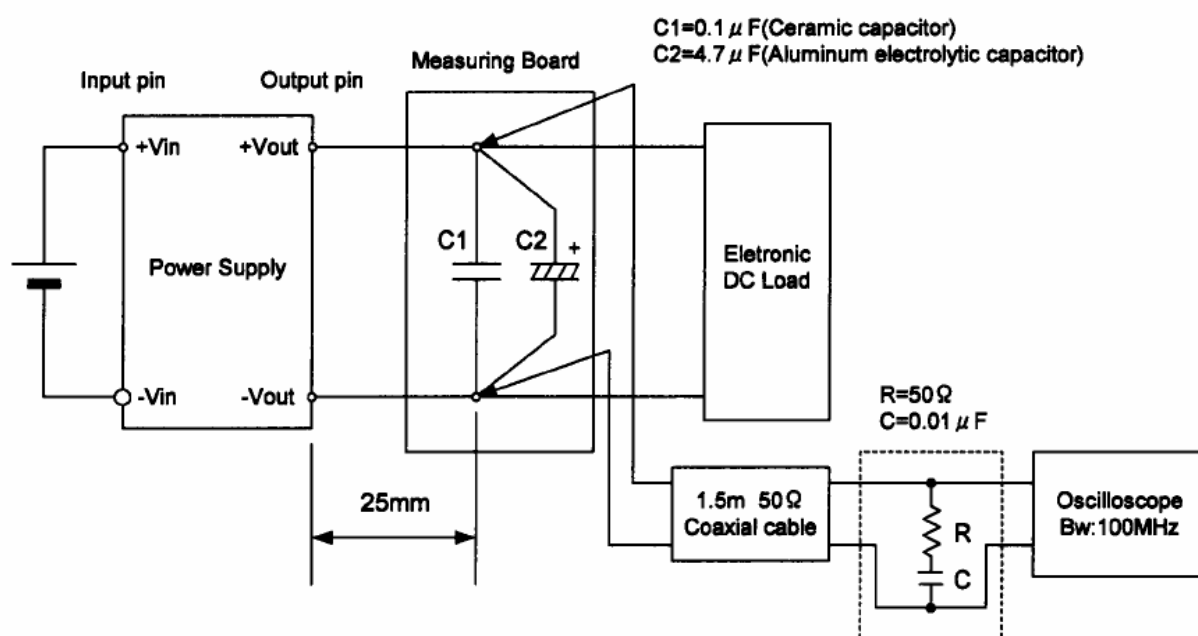


Figure B (Ripple and Ripple noise Characteristic)