

TEST DATA OF SUCS1R54805

Regulated DC Power Supply
Sep 28, 2004

Approved by : Tetsuo Sugimori
Tetsuo Sugimori Design Manager

Prepared by : Masahiro Shima
Masahiro Shima Design Engineer

COSEL CO.,LTD.

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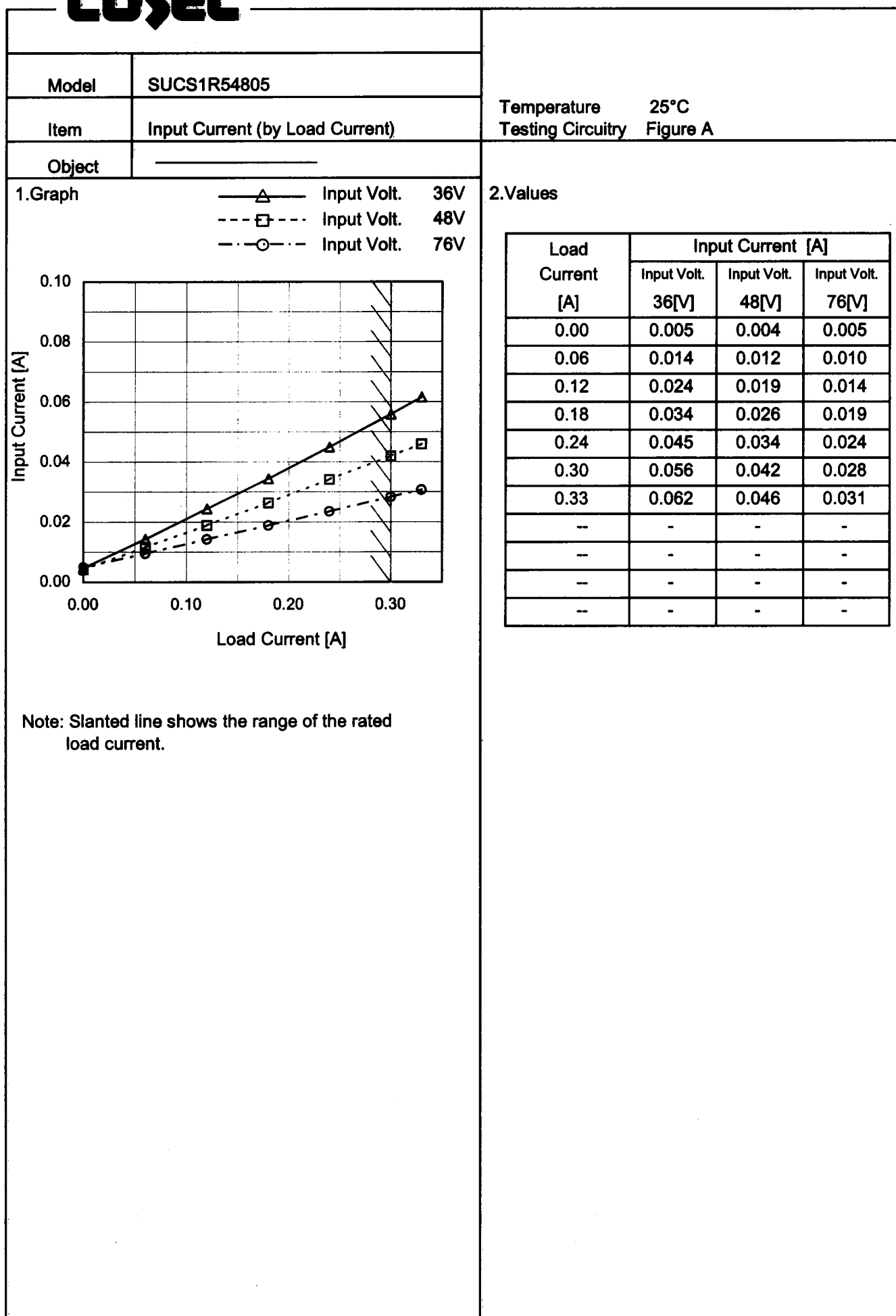
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Model		SUCS1R54805																																																																								
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Model		SUCS1R54805		Temperature 25°C																																	
Item		Efficiency (by Input Voltage)		Testing Circuitry Figure A																																	
Object																																					
1.Graph				2.Values																																	
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Input Voltage [V]	Efficiency [%]																																				
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80	58.4	69.3																																			

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Model		SUCS1R54805	
Item		Line Regulation	
Object		+5V0.3A	

1.Graph

□

Load 50%

△

Load 100%

Output Voltage [V]

5.06

5.04

5.02

5.00

4.98

4.96

4.94

4.92

4.90

20

40

60

80

Input Voltage [V]

Input Voltage [V]	Output Voltage [V] (Load 50%)	Output Voltage [V] (Load 100%)
33	4.977	4.976
36	4.977	4.976
40	4.977	4.976
48	4.977	4.976
55	4.977	4.976
60	4.977	4.976
70	4.977	4.976
76	4.977	4.976
80	4.978	4.976

2.Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
33	4.977	4.976
36	4.977	4.976
40	4.977	4.976
48	4.977	4.976
55	4.977	4.976
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76	4.977	4.976
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Note: Slanted line shows the range of the rated input voltage.

Temperature 25°C
Testing Circuitry Figure A



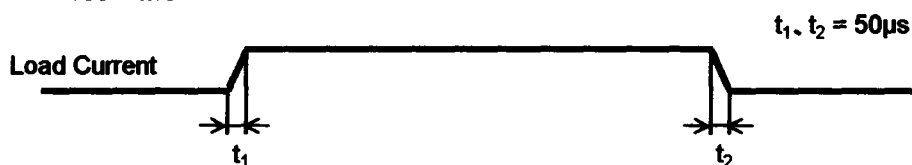
Load Current [A]	Output Voltage [V]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.00	4.978	4.979	4.979
0.06	4.978	4.978	4.978
0.12	4.978	4.978	4.978
0.18	4.978	4.978	4.978
0.24	4.977	4.977	4.977
0.30	4.976	4.977	4.977
0.33	4.976	4.977	4.977
—	-	-	-
—	-	-	-
—	-	-	-
—	-	-	-

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Model	SUCS1R54805	Temperature	25°C
Item	Dynamic Load Response	Testing Circuitry	Figure A
Object	+5V0.3A		

Input Volt. 48 V
Cycle 100 mS



Min. Load (0A) \longleftrightarrow
Load 100% (0.3A)

100mV/div



200µs/div



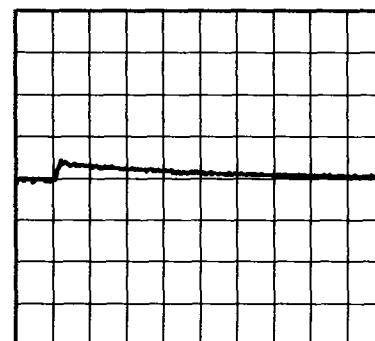
200µs/div

Min. Load (0A) \longleftrightarrow
Load 50% (0.15A)

100mV/div



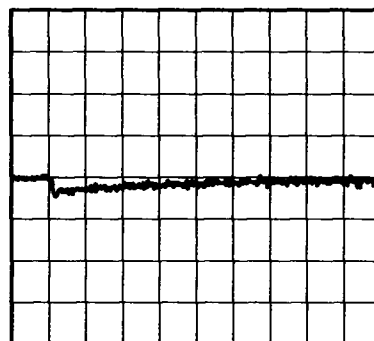
200µs/div



200µs/div

Load 50% (0.15A) \longleftrightarrow
Load 100% (0.3A)

100mV/div



200µs/div



200µs/div

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Model	SUCS1R54805	Temperature 25°C Testing Circuitry Figure B																																							
Item	Ripple Voltage (by Load Current)																																								
Object	+5V0.3A																																								
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 [mV]</p> <p>Load Current [A]</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>2</td><td>2</td></tr><tr><td>0.06</td><td>2</td><td>2</td></tr><tr><td>0.12</td><td>3</td><td>3</td></tr><tr><td>0.18</td><td>4</td><td>3</td></tr><tr><td>0.24</td><td>5</td><td>3</td></tr><tr><td>0.30</td><td>7</td><td>4</td></tr><tr><td>0.33</td><td>8</td><td>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>		Load Current [A]	Ripple Voltage [mV]		Input Volt. 36 [V]	Input Volt. 76 [V]	0.00	2	2	0.06	2	2	0.12	3	3	0.18	4	3	0.24	5	3	0.30	7	4	0.33	8	4	—	—	—	—	—	—	—	—	—	—	—	—
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<p>Measured by 100 MHz Oscilloscope. Ripple Voltage is shown as p-p in the figure below. Note: Slanted line shows the range of the rated load current.</p>																																									
<p>Ripple [mVp-p]</p> <p>Fig.Complex Ripple Wave Form</p>																																									

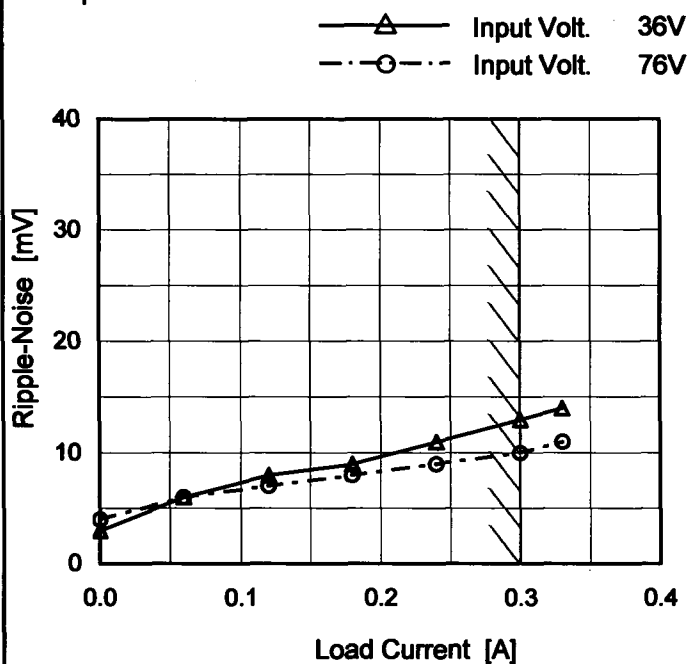
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Model SUCS1R54805

Item Ripple-Noise

Object +5V0.3A

Temperature 25°C
Testing Circuitry Figure B

1. Graph


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.

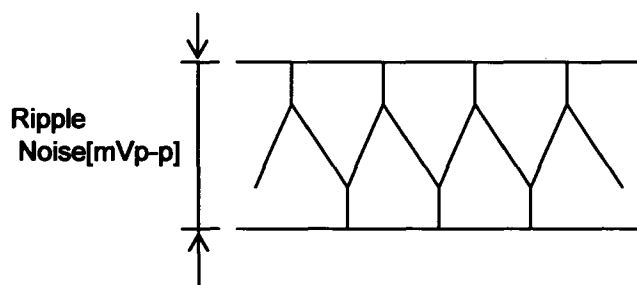


Fig.Complex Ripple Noise Wave Form

2. Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 36 [V]	Input Volt. 76 [V]
0.00	3	4
0.06	6	6
0.12	8	7
0.18	9	8
0.24	11	9
0.30	13	10
0.33	14	11
—	—	—
—	—	—
—	—	—
—	—	—

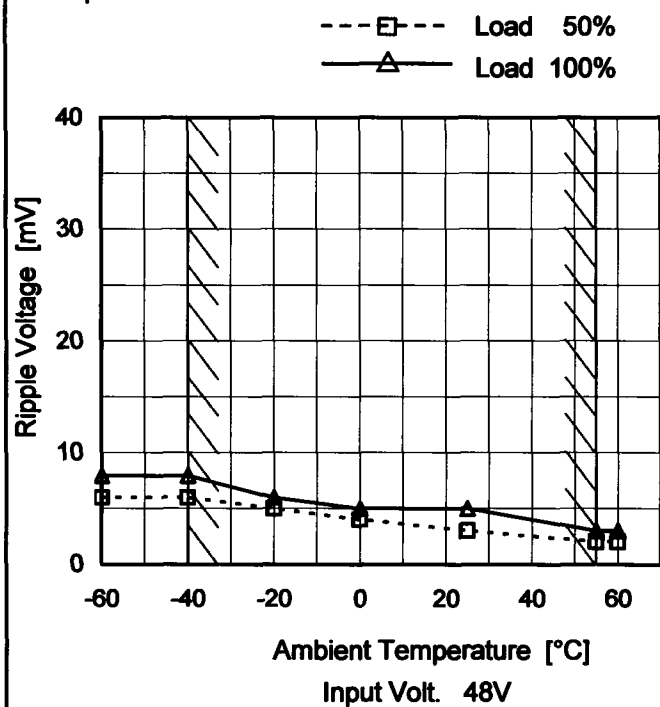
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Model SUCS1R54805

Item Ripple Voltage (by Ambient Temp.)

Object +5V0.3A

Testing Circuitry Figure B

1. Graph


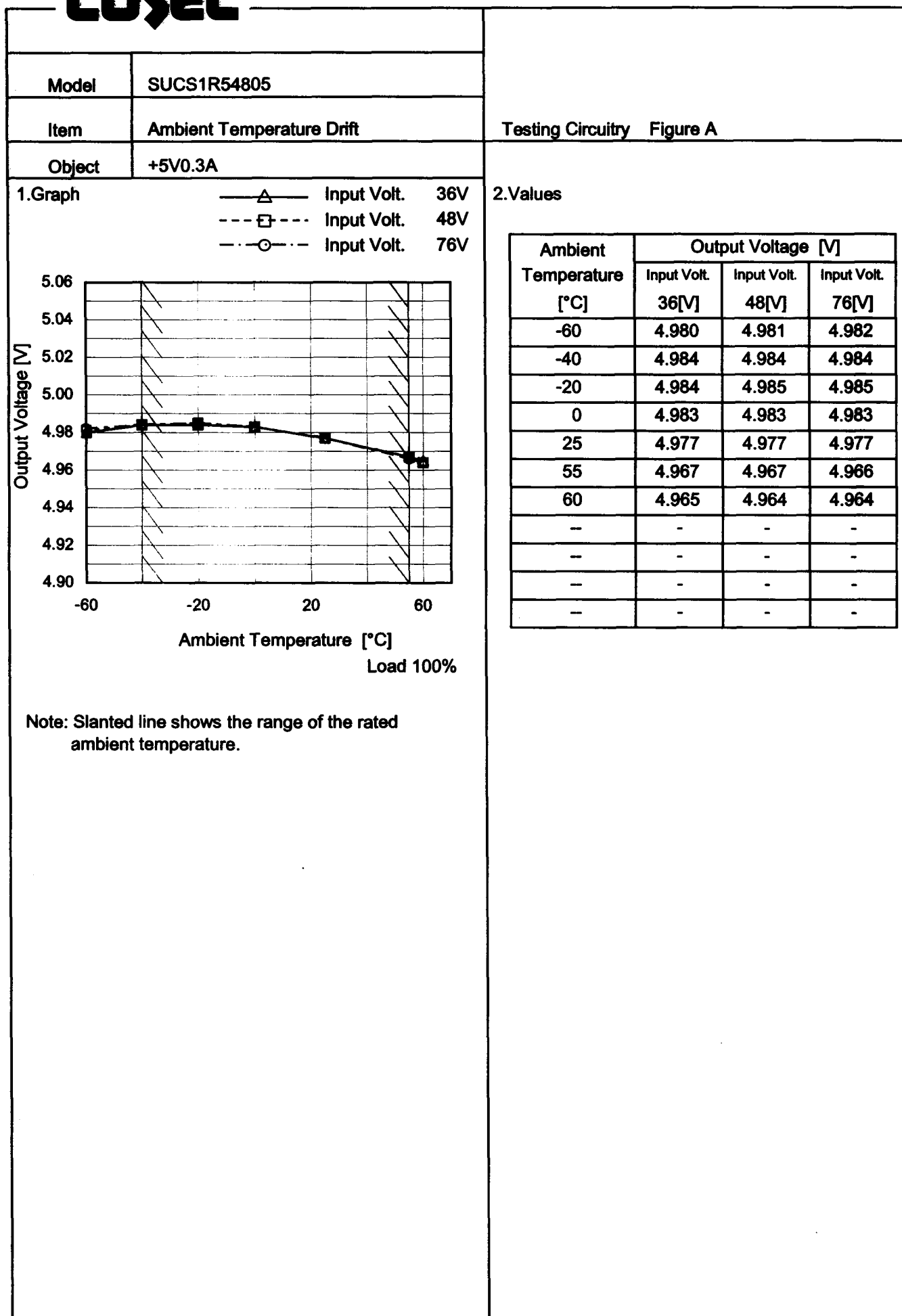
Measured by 100 MHz Oscilloscope.

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

2. Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	6	8
-40	6	8
-20	5	6
0	4	5
25	3	5
55	2	3
60	2	3
—	—	—
—	—	—
—	—	—
—	—	—

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		Testing Circuitry Figure A
Model	SUCS1R54805	
Item	Output Voltage Accuracy	
Object	+5V0.3A	

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 - 0.3A

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

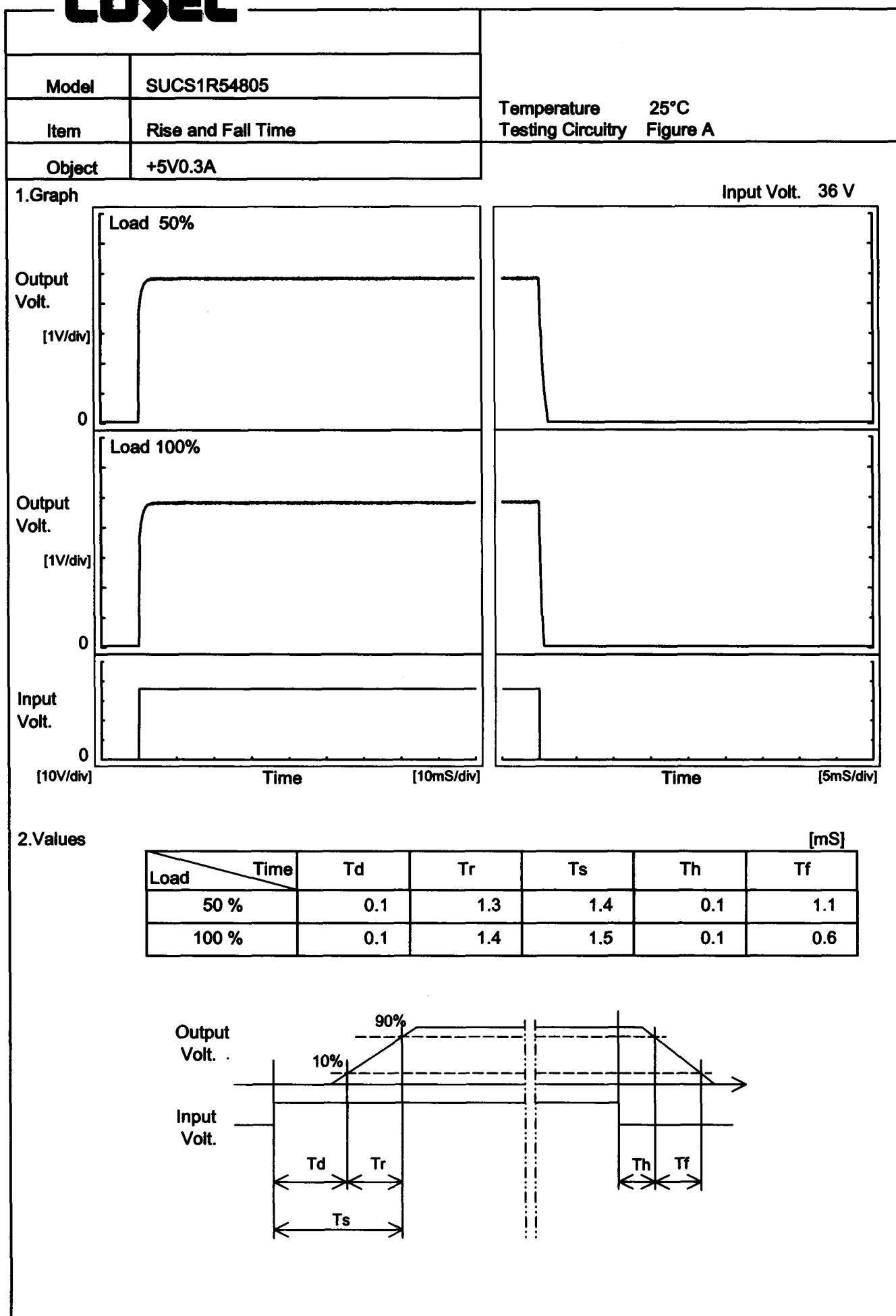
* Output Voltage Accuracy (Ratio) = $\frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$

2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ratio [%]
Maximum Voltage	-20	76	0	4.987	±11	±0.2
Minimum Voltage	55	76	0.3	4.966		

COSEL

Model		SUCS1R54805	
Item		Time Lapse Drift	
Object		+5V0.3A	
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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COSEL

COSEL

Model		SUCS1R54805	
Item		Minimum Input Voltage for Regulated Output Voltage	
Object		+5V0.3A	

1.Graph

---□---

Load 50%

—△—

Load 100%

Input Voltage [V]

30

20

10

0

-60

-20

20

60

Ambient Temperature [°C]

2.Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	20.3	20.4
-40	19.6	20.3
-20	19.3	20.7
0	18.4	21.0
25	17.7	21.4
55	16.9	21.6
60	16.9	21.6
—	-	-
—	-	-
—	-	-
—	-	-

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

COSEL

Model	SUCS1R54805																																																									
Item	Overcurrent Protection	Temperature	25°C																																																							
Object	+5V0.3A	Testing Circuitry	Figure A																																																							
1.Graph		2.Values																																																								
<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>5.00</td><td>0.30</td><td>0.30</td><td>0.30</td></tr><tr><td>4.75</td><td>0.51</td><td>0.50</td><td>0.47</td></tr><tr><td>4.50</td><td>0.53</td><td>0.52</td><td>0.48</td></tr><tr><td>4.00</td><td>0.56</td><td>0.55</td><td>0.51</td></tr><tr><td>3.50</td><td>0.60</td><td>0.58</td><td>0.54</td></tr><tr><td>3.00</td><td>0.64</td><td>0.62</td><td>0.57</td></tr><tr><td>2.50</td><td>0.68</td><td>0.65</td><td>0.60</td></tr><tr><td>2.00</td><td>0.72</td><td>0.68</td><td>0.63</td></tr><tr><td>1.50</td><td>0.76</td><td>0.71</td><td>0.65</td></tr><tr><td>1.00</td><td>0.79</td><td>0.72</td><td>0.66</td></tr><tr><td>0.50</td><td>0.79</td><td>0.71</td><td>0.67</td></tr><tr><td>0.00</td><td>0.80</td><td>0.72</td><td>0.71</td></tr></table>		Output Voltage [V]	Load Current [A]			Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]	5.00	0.30	0.30	0.30	4.75	0.51	0.50	0.47	4.50	0.53	0.52	0.48	4.00	0.56	0.55	0.51	3.50	0.60	0.58	0.54	3.00	0.64	0.62	0.57	2.50	0.68	0.65	0.60	2.00	0.72	0.68	0.63	1.50	0.76	0.71	0.65	1.00	0.79	0.72	0.66	0.50	0.79	0.71	0.67	0.00	0.80	0.72	0.71
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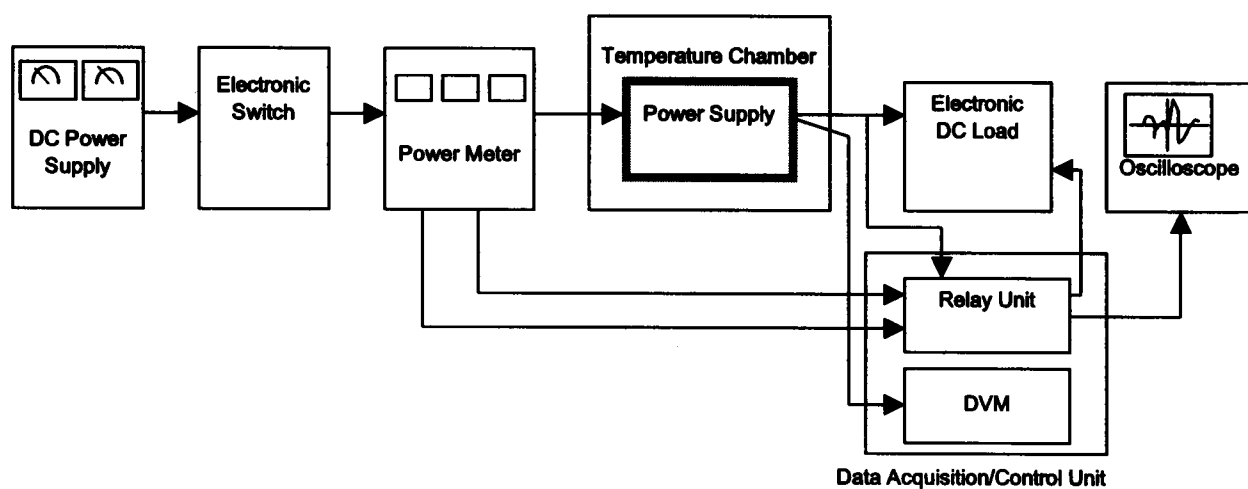


Figure A

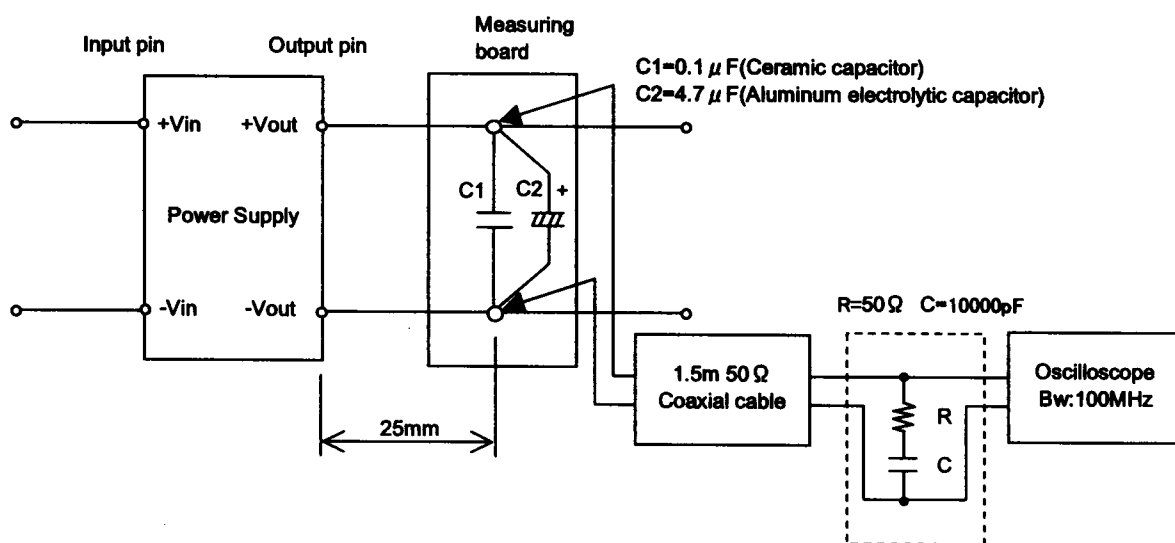


Figure B (Ripple and Ripple noise Characteristic)