

TEST DATA OF SUTS60512

Regulated DC Power Supply
March 5, 2009

Approved by : Kazunari Asano
Kazunari Asano Design Manager

Prepared by : Sho Saito
Sho Saito Design Engineer

COSEL CO.,LTD.

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Model		SUTS60512		Temperature 25°C																																																																																
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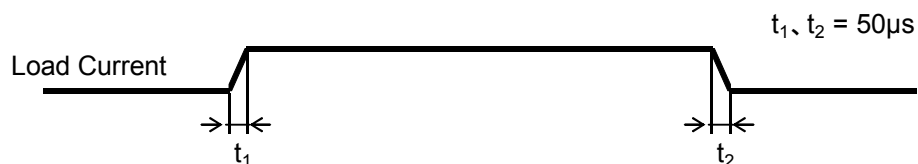
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<div><div><div>—△—</div><div>Input Volt.</div><div>4.5V</div></div><div><div>---□---</div><div>Input Volt.</div><div>5V</div></div><div><div>-·-○-·-</div><div>Input Volt.</div><div>9V</div></div></div> <div><p>Output Voltage [V]</p><p>Load Current [A]</p></div> <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">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>12.041</td><td>12.041</td><td>12.041</td></tr><tr><td>0.10</td><td>12.039</td><td>12.040</td><td>12.039</td></tr><tr><td>0.20</td><td>12.038</td><td>12.038</td><td>12.038</td></tr><tr><td>0.30</td><td>12.037</td><td>12.037</td><td>12.036</td></tr><tr><td>0.40</td><td>12.036</td><td>12.036</td><td>12.035</td></tr><tr><td>0.50</td><td>12.034</td><td>12.035</td><td>12.033</td></tr><tr><td>0.55</td><td>12.033</td><td>12.034</td><td>12.032</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	12.041	12.041	12.041	0.10	12.039	12.040	12.039	0.20	12.038	12.038	12.038	0.30	12.037	12.037	12.036	0.40	12.036	12.036	12.035	0.50	12.034	12.035	12.033	0.55	12.033	12.034	12.032	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Output Voltage [V]																																																					
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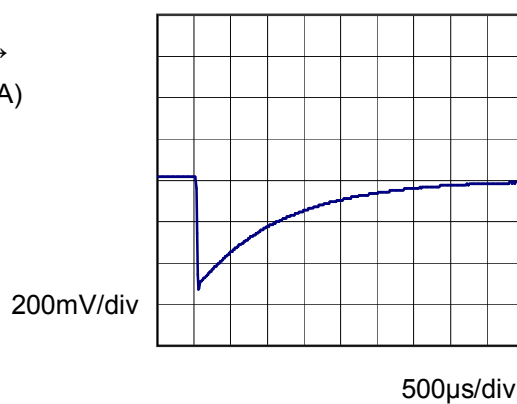


Model	SUTS60512	Temperature 25°C Testing Circuitry Figure A
Item	Dynamic Load Response	
Object	+12V0.5A	

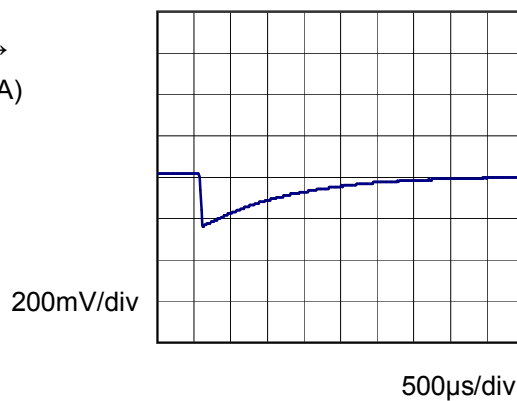
Input Volt. 5 V
Cycle 100 mS



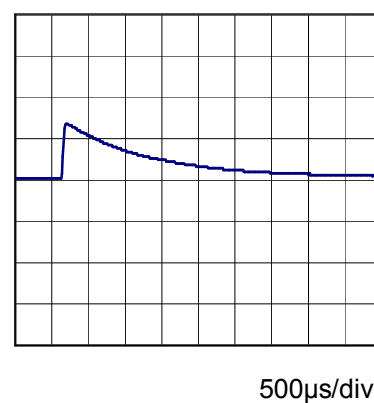
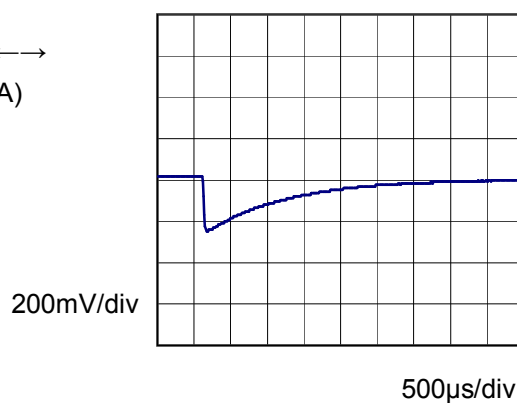
Min. Load (0A) \longleftrightarrow
Load 100% (0.5A)



Min. Load (0A) \longleftrightarrow
Load 50% (0.25A)



Load 50% (0.25A) \longleftrightarrow
Load 100% (0.5A)




Model	SUTS60512																																								
Item	Ripple Voltage (by Load Current)	Temperature	25°C																																						
		Testing Circuitry	Figure B																																						
Object	+12V0.5A																																								
1.Graph		2.Values																																							
<div><div><div><div></div><div>Input Volt.</div><div>4.5V</div></div><div><div></div><div>Input Volt.</div><div>9V</div></div></div><div>Ripple Voltage [mV]</div><div>Load Current [A]</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>6</td><td>7</td></tr><tr><td>0.10</td><td>6</td><td>7</td></tr><tr><td>0.20</td><td>6</td><td>8</td></tr><tr><td>0.30</td><td>6</td><td>8</td></tr><tr><td>0.40</td><td>7</td><td>9</td></tr><tr><td>0.50</td><td>8</td><td>9</td></tr><tr><td>0.55</td><td>8</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. 4.5 [V]	Input Volt. 9 [V]	0.00	6	7	0.10	6	7	0.20	6	8	0.30	6	8	0.40	7	9	0.50	8	9	0.55	8	9	--	-	-	--	-	-	--	-	-	--	-	-
Load Current [A]	Ripple Voltage [mV]																																								
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<div>Measured by 100 MHz Oscilloscope.</div> <div>Ripple Voltage is shown as p-p in the figure below.</div> <div>Note: Slanted line shows the range of the rated load current.</div>																																									
<div><div>Ripple [mVp-p]</div><div>Fig.Complex Ripple Wave Form</div></div>																																									

Model	SUTS60512																																								
Item	Ripple-Noise	Temperature	25°C																																						
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Object	+12V0.5A																																								
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Load Current [A]	Ripple-Noise [mV]																																								
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<div><div><div><div></div><div></div></div><div>Ripple Noise[mVp-p]</div></div><p>Fig.Complex Ripple Noise Wave Form</p></div>																																									

Model		SUTS60512
Item		Ripple Voltage (by Ambient Temp.)
Object		+12V0.5A
1.Graph		2.Values

Model	SUTS60512																																																						
Item	Ambient Temperature Drift	Testing Circuitry Figure A																																																					
Object	+12V0.5A																																																						
1.Graph		2.Values																																																					
<div><div>—△— Input Volt. 4.5V</div><div>---□--- Input Volt. 5V</div><div>-·-○-·- Input Volt. 9V</div></div> <p>Output Voltage [V]</p> <p>Ambient Temperature [°C]</p> <p>Load 100%</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>11.977</td><td>11.981</td><td>11.980</td></tr><tr><td>-40</td><td>11.997</td><td>12.000</td><td>11.999</td></tr><tr><td>-20</td><td>12.012</td><td>12.014</td><td>12.013</td></tr><tr><td>0</td><td>12.024</td><td>12.026</td><td>12.024</td></tr><tr><td>25</td><td>12.033</td><td>12.034</td><td>12.033</td></tr><tr><td>55</td><td>12.037</td><td>12.037</td><td>12.035</td></tr><tr><td>60</td><td>12.037</td><td>12.037</td><td>12.035</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	11.977	11.981	11.980	-40	11.997	12.000	11.999	-20	12.012	12.014	12.013	0	12.024	12.026	12.024	25	12.033	12.034	12.033	55	12.037	12.037	12.035	60	12.037	12.037	12.035	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
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Note: Slanted line shows the range of the rated ambient temperature.																																																							



		
Model	SUTS60512	
Item	Output Voltage Accuracy	
Object	+12V0.5A	

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 - 0.5A

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

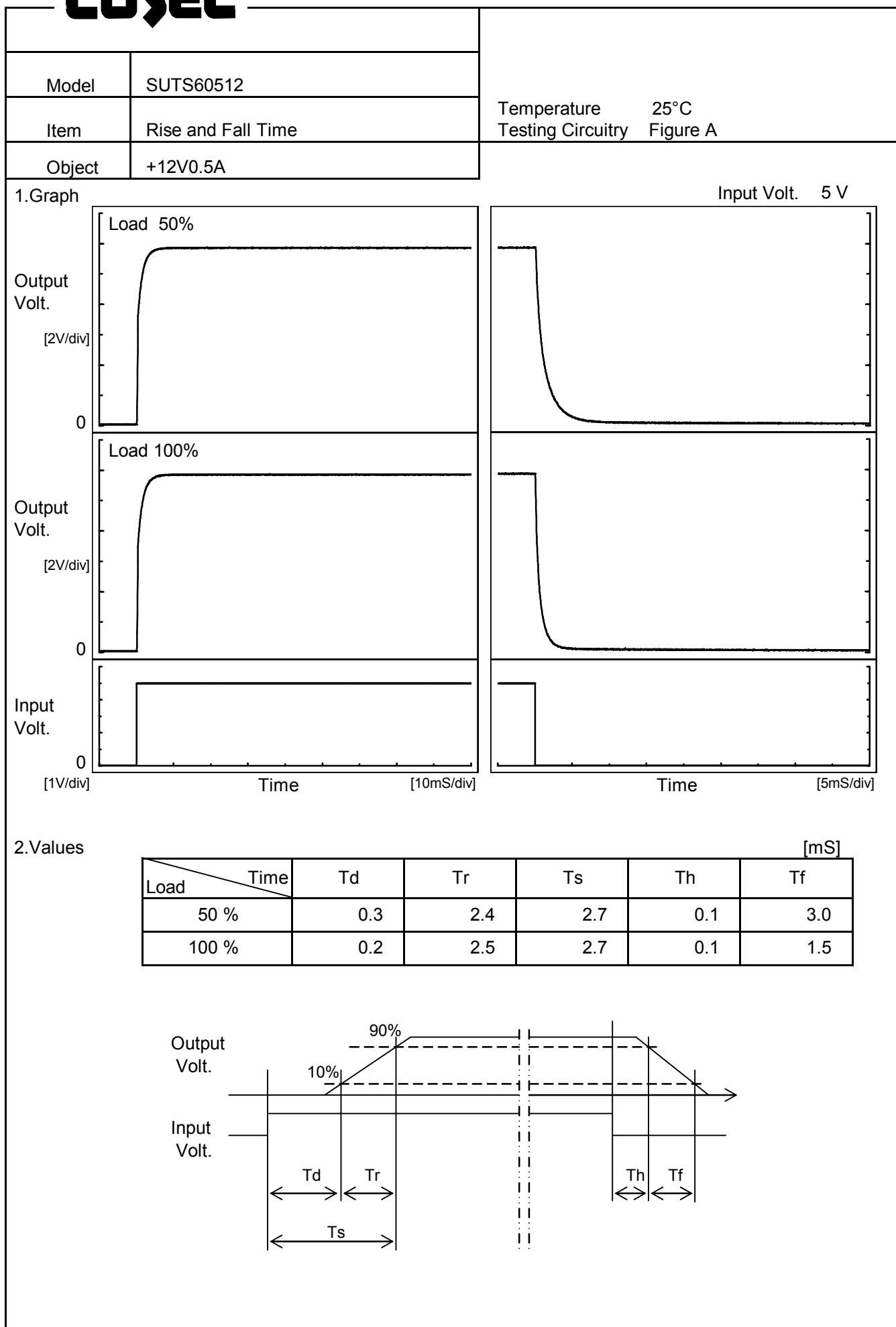
* Output Voltage Accuracy (Ratio) = $\frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$

2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ratio [%]
Maximum Voltage	55	5	0	12.044	±24	±0.2
Minimum Voltage	-40	4.5	0.5	11.997		



Model	SUTS60512		
Item	Time Lapse Drift	Temperature	25°C
		Testing Circuitry	Figure A
Object	+12V0.5A		
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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Figure A

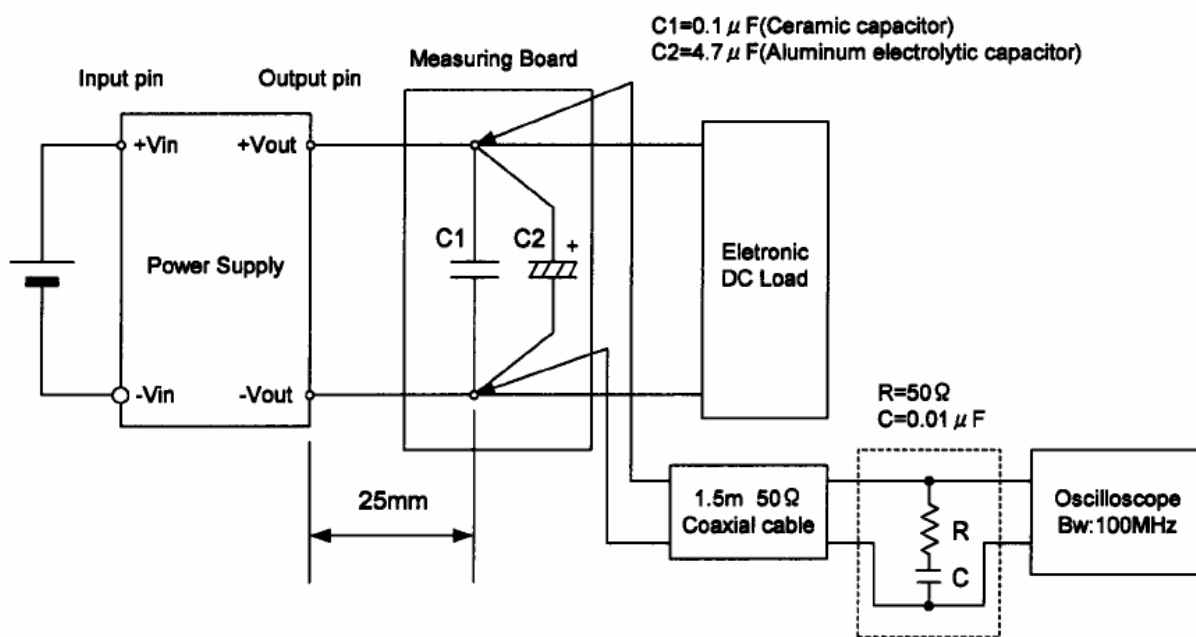


Figure B (Ripple and Ripple noise Characteristic)