

TEST DATA OF SUS1R50512

Regulated DC Power Supply
Sep 13, 2004

Approved by : Tetsuo Sugimori
Tetsuo Sugimori Design Manager

Prepared by : Masahiro Shima
Masahiro Shima 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 Temperature Drift	12
13.Output Voltage Accuracy	13
14.Time Lapse Drift	14
15.Rise and Fall Time	15
16.Minimum Input Voltage for Regulated Output Voltage	16
17.Overcurrent Protection	17
18.Figure of Testing Circuitry	18

(Final Page 18)

COSEL

Model		SUS1R50512	
Item		Input Current (by Input Voltage)	
Object			

1.Graph

—△—

Load 100%

---□---

Load 50%

---○---

Load 0%

Input Voltage [V]	Load 0% [A]	Load 50% [A]	Load 100% [A]
0	0.000	0.000	0.000
1.7	0.000	0.000	0.000
2.0	0.000	0.000	0.000
2.3	0.060	0.002	0.002
3.0	0.052	0.431	0.812
3.3	0.050	0.359	0.810
4.0	0.046	0.282	0.600
4.5	0.044	0.250	0.491
5.0	0.043	0.226	0.430
6.0	0.040	0.191	0.348
7.0	0.037	0.167	0.300
8.0	0.035	0.150	0.263
9.0	0.034	0.136	0.237
10.0	0.034	0.126	0.216
--	-	-	-
--	-	-	-

Note: Slanted line shows the range of the rated input voltage.

2.Values

Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0	0.000	0.000	0.000
1.7	0.000	0.000	0.000
2.0	0.000	0.000	0.000
2.3	0.060	0.002	0.002
3.0	0.052	0.431	0.812
3.3	0.050	0.359	0.810
4.0	0.046	0.282	0.600
4.5	0.044	0.250	0.491
5.0	0.043	0.226	0.430
6.0	0.040	0.191	0.348
7.0	0.037	0.167	0.300
8.0	0.035	0.150	0.263
9.0	0.034	0.136	0.237
10.0	0.034	0.126	0.216
--	-	-	-
--	-	-	-

COSEL

Model		SUS1R50512	
Item		Input Current (by Load Current)	
Object			

1.Graph

△

—

Input Volt.

4.5V

□

- - -

Input Volt.

5V

○

- · -

Input Volt.

9V

Input Current [A]

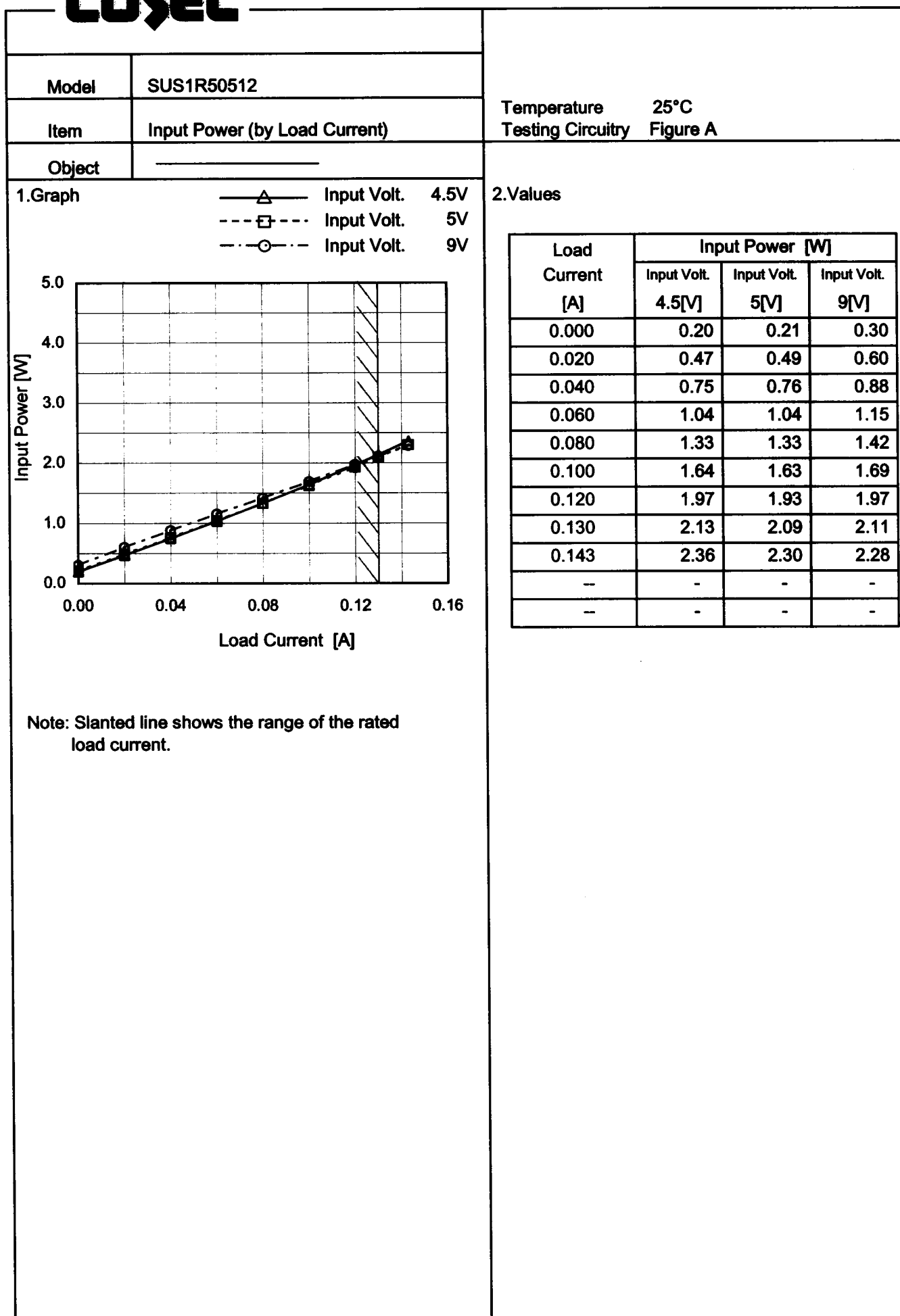
Load Current [A]

2.Values

Load Current [A]	Input Current [A]		
	Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]
0.000	0.044	0.043	0.034
0.020	0.105	0.098	0.067
0.040	0.169	0.153	0.097
0.060	0.235	0.212	0.128
0.080	0.298	0.267	0.158
0.100	0.371	0.330	0.188
0.120	0.439	0.387	0.220
0.130	0.477	0.420	0.235
0.143	0.532	0.466	0.255
-	-	-	-
-	-	-	-

Note: Slanted line shows the range of the rated load current.

COSEL



COSEL

Model		SUS1R50512																																	
Item		Efficiency (by Input Voltage)																																	
Object																																			
1.Graph		2.Values																																	
<div><div><div><div><div></div><div></div></div><div></div></div><div>Load 50%</div></div><div><div><div><div></div><div></div></div><div></div></div><div>Load 100%</div></div></div> <div><div><div><div><div></div><div></div></div><div></div></div><div></div></div><div>Efficiency [%]</div></div> <div><div><div><div><div></div><div></div></div><div></div></div><div></div></div><div>Input Voltage [V]</div></div> <div><div>Note: Slanted line shows the range of the rated input voltage.</div></div>		<table><tr><th rowspan="2">Input Voltage [V]</th><th colspan="2">Efficiency [%]</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr><tr><td>4.0</td><td>70.1</td><td>68.7</td></tr><tr><td>4.5</td><td>70.3</td><td>72.3</td></tr><tr><td>5.0</td><td>70.0</td><td>74.0</td></tr><tr><td>6.0</td><td>68.8</td><td>75.1</td></tr><tr><td>7.0</td><td>67.5</td><td>75.1</td></tr><tr><td>8.0</td><td>65.6</td><td>74.6</td></tr><tr><td>9.0</td><td>64.0</td><td>73.6</td></tr><tr><td>10.0</td><td>62.1</td><td>72.5</td></tr><tr><td>—</td><td>-</td><td>-</td></tr></table>		Input Voltage [V]	Efficiency [%]		Load 50%	Load 100%	4.0	70.1	68.7	4.5	70.3	72.3	5.0	70.0	74.0	6.0	68.8	75.1	7.0	67.5	75.1	8.0	65.6	74.6	9.0	64.0	73.6	10.0	62.1	72.5	—	-	-
Input Voltage [V]	Efficiency [%]																																		
	Load 50%	Load 100%																																	
4.0	70.1	68.7																																	
4.5	70.3	72.3																																	
5.0	70.0	74.0																																	
6.0	68.8	75.1																																	
7.0	67.5	75.1																																	
8.0	65.6	74.6																																	
9.0	64.0	73.6																																	
10.0	62.1	72.5																																	
—	-	-																																	

COSEL

Model		SUS1R50512	
Item		Efficiency (by Load Current)	
Object			

1.Graph

—△—

Input Volt.

4.5V

- - □ - -

Input Volt.

5V

- - ○ - -

Input Volt.

9V

Efficiency [%]

80

70

60

50

40

30

0.00

0.04

0.08

0.12

0.16

Load Current [A]

Note: Slanted line shows the range of the rated load current.

Load Current [A]	Efficiency [%]		
	Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]
0.000	-	-	-
0.020	51.6	49.9	40.4
0.040	64.2	63.2	54.6
0.060	69.3	68.9	62.2
0.080	71.7	71.9	67.3
0.100	72.6	73.3	70.4
0.120	72.8	74.0	72.5
0.130	72.5	74.1	73.4
0.143	72.0	73.9	74.5
-	-	-	-
-	-	-	-

COSEL

Model		SUS1R50512	
Item		Line Regulation	
Object		+12V0.13A	

1.Graph

□

Load 50%

△

Load 100%

Output Voltage [V]

12.20

12.10

12.00

11.90

11.80

11.70

11.60

11.50

3

5

7

9

11

Input Voltage [V]

3

5

7

9

11

Note: Slanted line shows the range of the rated input voltage.

2.Values

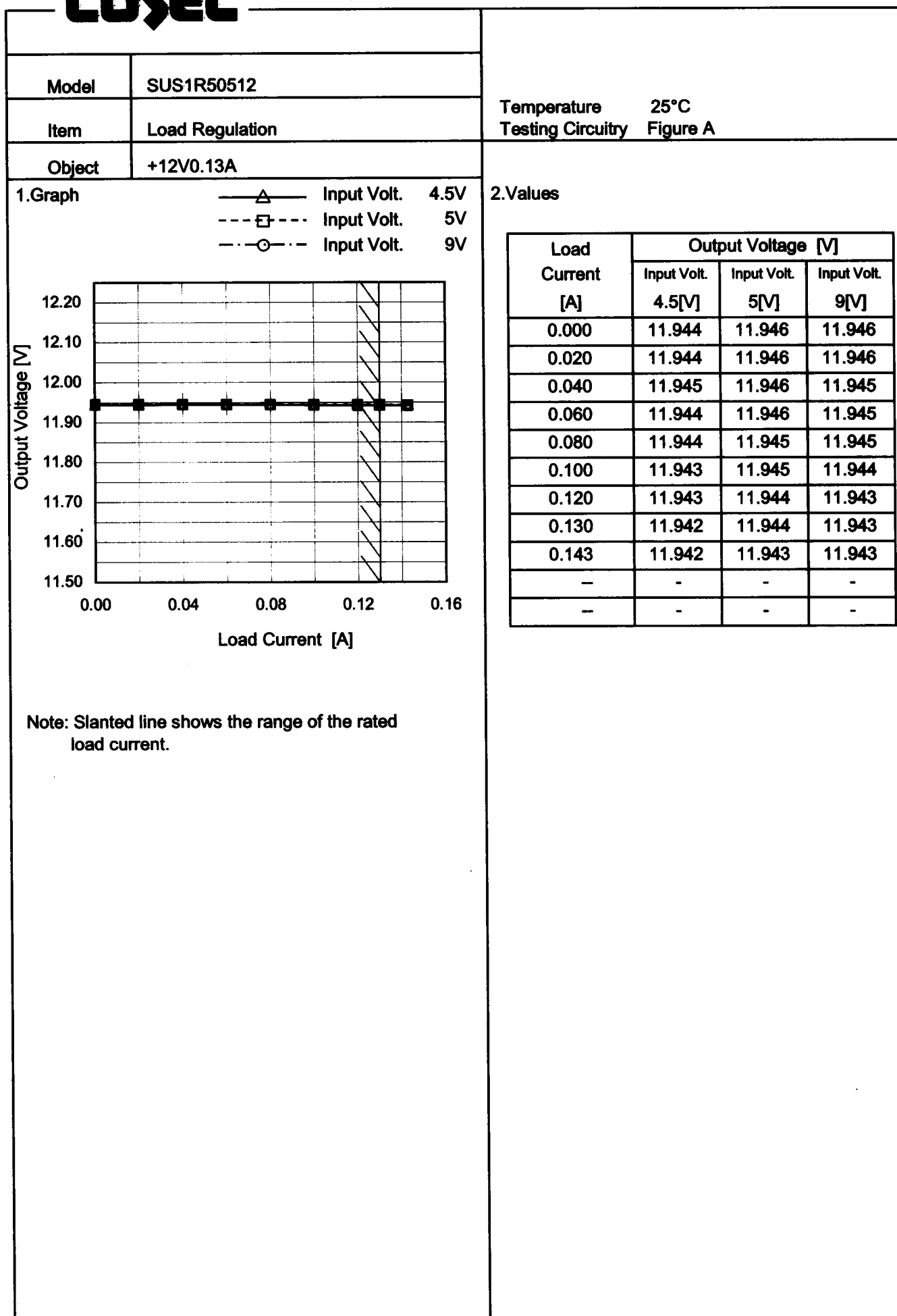
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
4.0	11.943	11.942
4.5	11.944	11.941
5.0	11.945	11.941
6.0	11.945	11.941
7.0	11.945	11.941
8.0	11.945	11.941
9.0	11.945	11.941
10.0	11.945	11.941
—	-	-

-

6

-

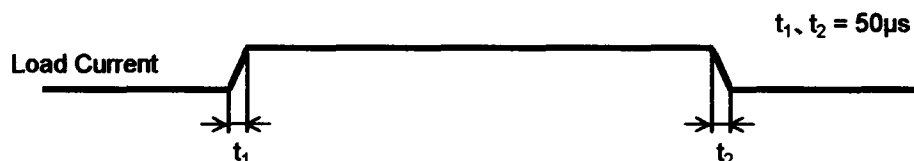
BC-3621

COSEL

COSEL

Model	SUS1R50512	Temperature	25°C
Item	Dynamic Load Response	Testing Circuitry	Figure A
Object	+12V0.13A		

Input Volt. 5 V
Cycle 100 mS



Min. Load (0A) \longleftrightarrow
Load 100% (0.13A)

100mV/div



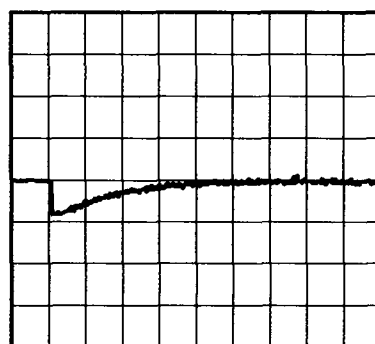
2ms/div



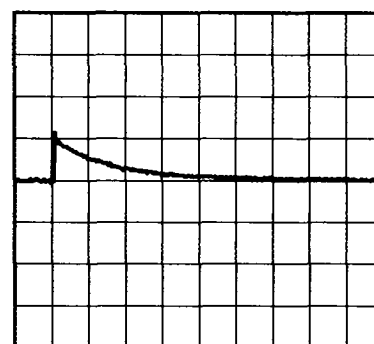
2ms/div

Min. Load (0A) \longleftrightarrow
Load 50% (0.065A)

100mV/div



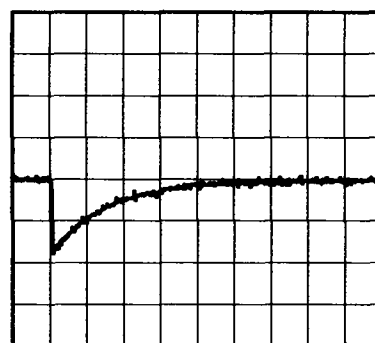
2ms/div



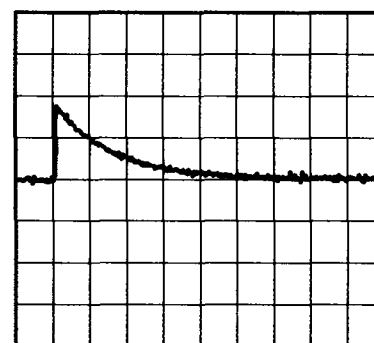
2ms/div

Load 50% (0.065A) \longleftrightarrow
Load 100% (0.13A)

100mV/div

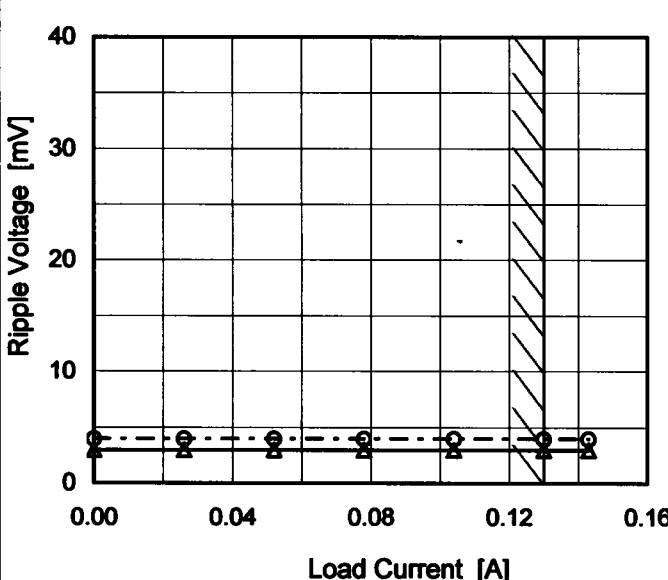
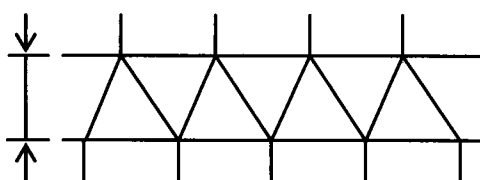


2ms/div



2ms/div

COSEL

Model	SUS1R50512																																								
Item	Ripple Voltage (by Load Current)	Temperature	25°C																																						
Object	+12V0.13A	Testing Circuitry	Figure B																																						
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></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>0.000</td><td>3</td><td>4</td></tr><tr><td>0.026</td><td>3</td><td>4</td></tr><tr><td>0.052</td><td>3</td><td>4</td></tr><tr><td>0.078</td><td>3</td><td>4</td></tr><tr><td>0.104</td><td>3</td><td>4</td></tr><tr><td>0.130</td><td>3</td><td>4</td></tr><tr><td>0.143</td><td>3</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. 4.5 [V]	Input Volt. 9 [V]	0.000	3	4	0.026	3	4	0.052	3	4	0.078	3	4	0.104	3	4	0.130	3	4	0.143	3	4	—	—	—	—	—	—	—	—	—	—	—	—
Load Current [A]	Ripple Voltage [mV]																																								
	Input Volt. 4.5 [V]	Input Volt. 9 [V]																																							
0.000	3	4																																							
0.026	3	4																																							
0.052	3	4																																							
0.078	3	4																																							
0.104	3	4																																							
0.130	3	4																																							
0.143	3	4																																							
—	—	—																																							
—	—	—																																							
—	—	—																																							
—	—	—																																							
<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>																																									
<div><div><div>Ripple [mVp-p]</div><div></div></div><div>Fig.Complex Ripple Wave Form</div></div>																																									

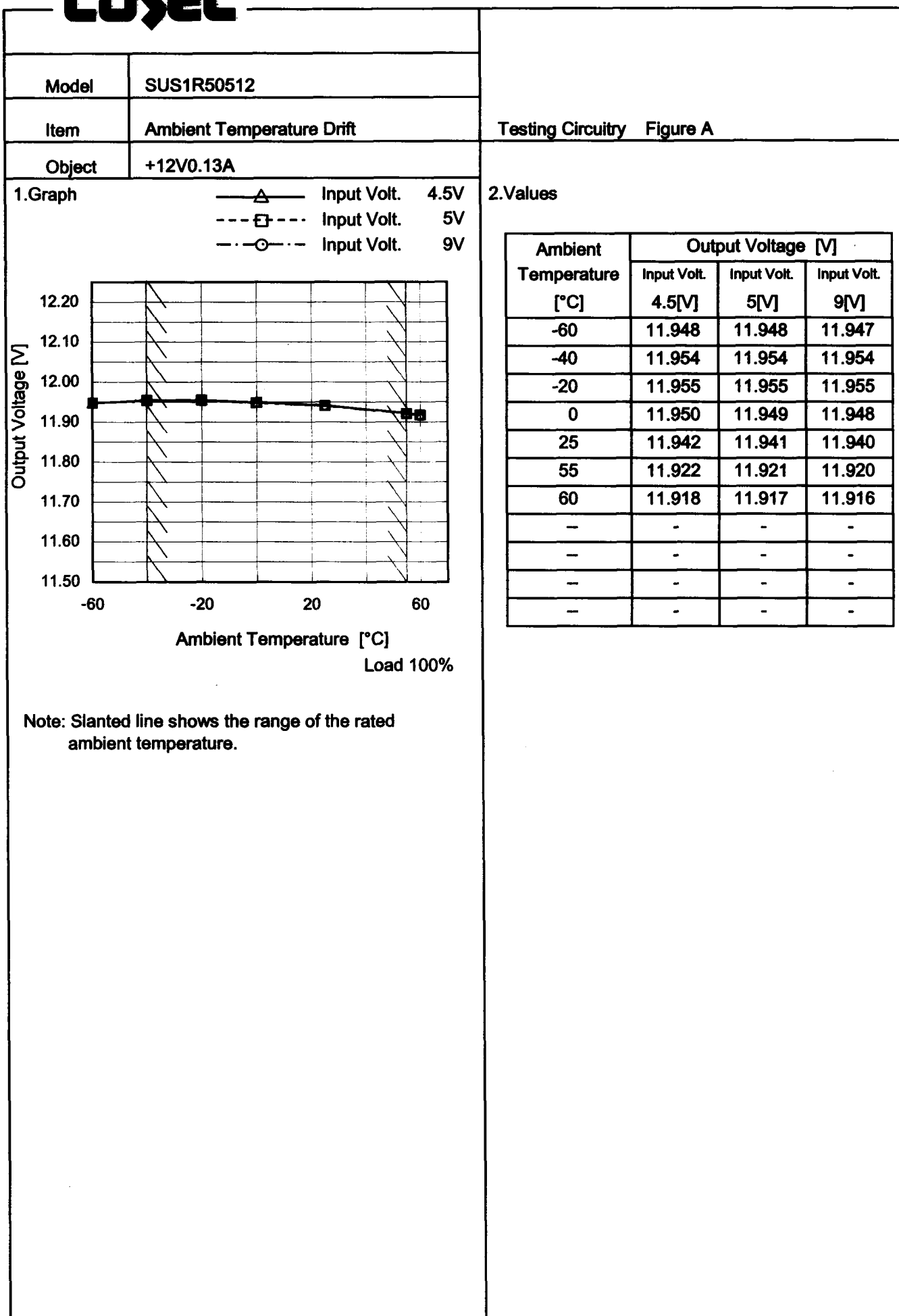
COSEL

Model	SUS1R50512	Temperature	25°C																																						
Item	Ripple-Noise	Testing Circuitry	Figure B																																						
Object	+12V0.13A																																								
1.Graph		2.Values																																							
<div><div><div><div></div><div>—△—</div><div>Input Volt. 4.5V</div></div><div><div>-·-○-·-</div><div>Input Volt. 9V</div></div></div><div><div><div><div>40</div><div>30</div><div>20</div><div>10</div><div>0</div></div><div><div>Ripple-Noise [mV]</div></div><div><div>0.00</div><div>0.04</div><div>0.08</div><div>0.12</div><div>0.16</div></div><div><div>Load Current [A]</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. 4.5 [V]</th><th>Input Volt. 9 [V]</th></tr><tr><td>0.000</td><td>6</td><td>6</td></tr><tr><td>0.026</td><td>7</td><td>7</td></tr><tr><td>0.052</td><td>7</td><td>7</td></tr><tr><td>0.078</td><td>8</td><td>8</td></tr><tr><td>0.104</td><td>8</td><td>8</td></tr><tr><td>0.130</td><td>8</td><td>8</td></tr><tr><td>0.143</td><td>8</td><td>8</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. 4.5 [V]	Input Volt. 9 [V]	0.000	6	6	0.026	7	7	0.052	7	7	0.078	8	8	0.104	8	8	0.130	8	8	0.143	8	8	-	-	-	-	-	-	-	-	-	-	-	-
Load Current [A]	Ripple-Noise [mV]																																								
	Input Volt. 4.5 [V]	Input Volt. 9 [V]																																							
0.000	6	6																																							
0.026	7	7																																							
0.052	7	7																																							
0.078	8	8																																							
0.104	8	8																																							
0.130	8	8																																							
0.143	8	8																																							
-	-	-																																							
-	-	-																																							
-	-	-																																							
-	-	-																																							
<div><div>Measured by 100 MHz Oscilloscope.</div><div>Ripple-Noise 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><div><div><div></div><div>Ripple Noise[mVp-p]</div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div></div></div>																																									

COSEL

Model		SUS1R50512																																																																													
Item		Ripple Voltage (by Ambient Temp.)																																																																													
Object		+12V0.13A																																																																													
1.Graph		2.Values																																																																													
<div><div><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></div></div> <table><thead><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></thead><tbody><tr><td>-60</td><td>6</td><td>6</td></tr><tr><td>-40</td><td>6</td><td>6</td></tr><tr><td>-20</td><td>5</td><td>5</td></tr><tr><td>0</td><td>4</td><td>4</td></tr><tr><td>25</td><td>3</td><td>3</td></tr><tr><td>55</td><td>3</td><td>3</td></tr><tr><td>60</td><td>3</td><td>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> <p>Ambient Temperature [°C]</p> <p>Input Volt. 5V</p>		Ambient Temperature [°C]	Ripple Voltage [mV]		Load 50%	Load 100%	-60	6	6	-40	6	6	-20	5	5	0	4	4	25	3	3	55	3	3	60	3	3	—	-	-	—	-	-	—	-	-	—	-	-	<table><thead><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></thead><tbody><tr><td>-60</td><td>6</td><td>6</td></tr><tr><td>-40</td><td>6</td><td>6</td></tr><tr><td>-20</td><td>5</td><td>5</td></tr><tr><td>0</td><td>4</td><td>4</td></tr><tr><td>25</td><td>3</td><td>3</td></tr><tr><td>55</td><td>3</td><td>3</td></tr><tr><td>60</td><td>3</td><td>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]	Ripple Voltage [mV]		Load 50%	Load 100%	-60	6	6	-40	6	6	-20	5	5	0	4	4	25	3	3	55	3	3	60	3	3	—	-	-	—	-	-	—	-	-	—	-	-
Ambient Temperature [°C]	Ripple Voltage [mV]																																																																														
	Load 50%	Load 100%																																																																													
-60	6	6																																																																													
-40	6	6																																																																													
-20	5	5																																																																													
0	4	4																																																																													
25	3	3																																																																													
55	3	3																																																																													
60	3	3																																																																													
—	-	-																																																																													
—	-	-																																																																													
—	-	-																																																																													
—	-	-																																																																													
Ambient Temperature [°C]	Ripple Voltage [mV]																																																																														
	Load 50%	Load 100%																																																																													
-60	6	6																																																																													
-40	6	6																																																																													
-20	5	5																																																																													
0	4	4																																																																													
25	3	3																																																																													
55	3	3																																																																													
60	3	3																																																																													
—	-	-																																																																													
—	-	-																																																																													
—	-	-																																																																													
—	-	-																																																																													
Measured by 100 MHz Oscilloscope.																																																																															
Note: Slanted line shows the range of the rated ambient temperature.																																																																															

COSEL





Model		SUS1R50512	Testing Circuitry Figure A
Item		Output Voltage Accuracy	
Object		+12V0.13A	

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 - 0.13A

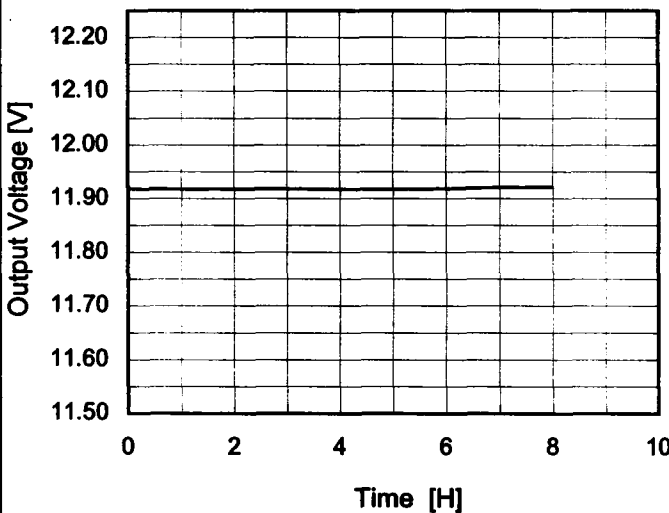
* Output Voltage Accuracy = $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

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

2. Values

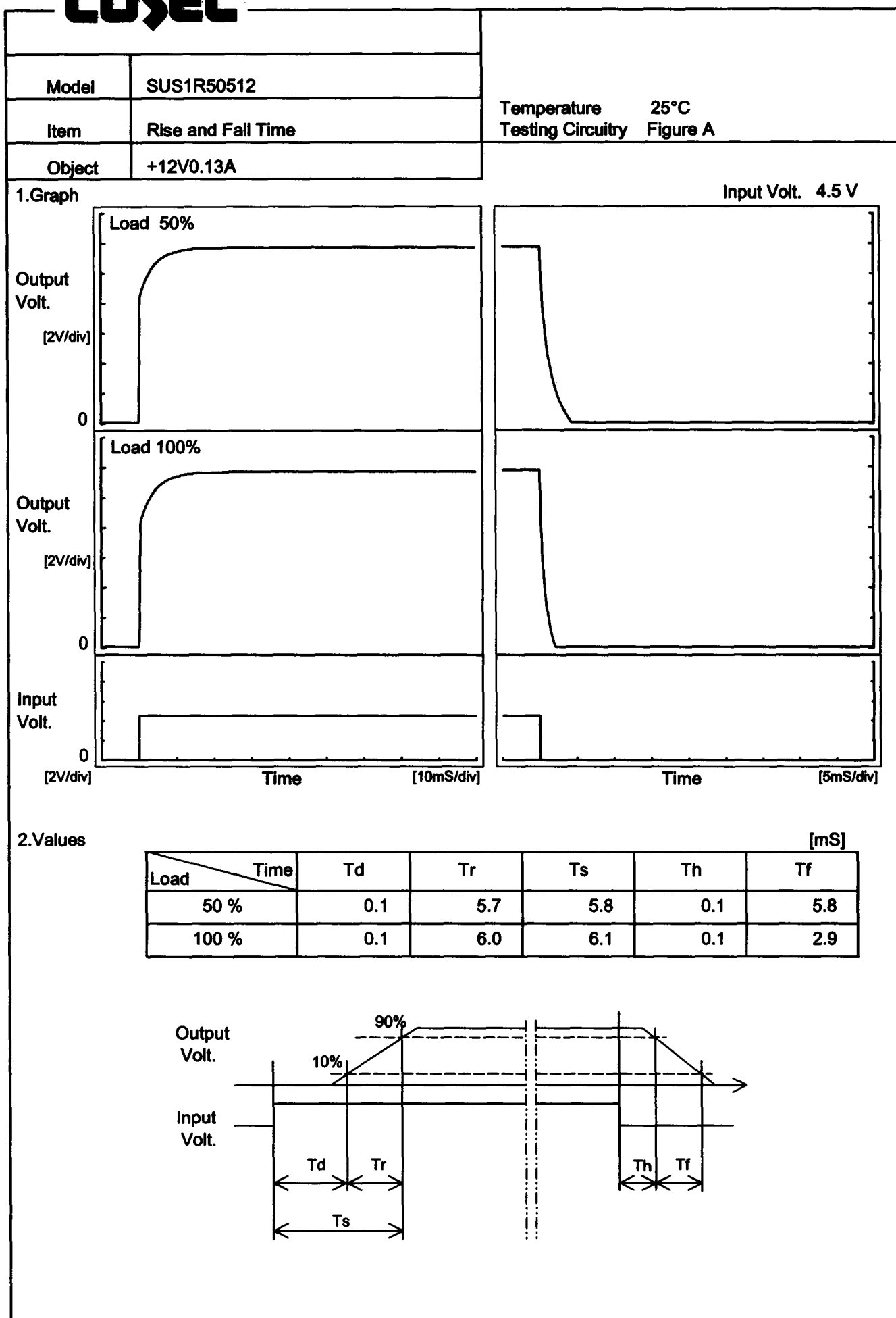
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	-20	5	0	11.959	±20	±0.2
Minimum Voltage	55	9	0.13	11.920		

COSEL

Model	SUS1R50512																								
Item	Time Lapse Drift	Temperature	25°C																						
		Testing Circuitry	Figure A																						
Object	+12V0.13A																								
1.Graph		2.Values																							
<div><p>Output Voltage [V]</p><p>Time [H]</p><p>Input Volt. 5V</p><p>Load 100%</p></div>		<table><tr><th>Time since start [H]</th><th>Output Voltage [V]</th></tr><tr><td>0.0</td><td>11.926</td></tr><tr><td>0.5</td><td>11.918</td></tr><tr><td>1.0</td><td>11.918</td></tr><tr><td>2.0</td><td>11.918</td></tr><tr><td>3.0</td><td>11.918</td></tr><tr><td>4.0</td><td>11.918</td></tr><tr><td>5.0</td><td>11.918</td></tr><tr><td>6.0</td><td>11.919</td></tr><tr><td>7.0</td><td>11.922</td></tr><tr><td>8.0</td><td>11.922</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	11.926	0.5	11.918	1.0	11.918	2.0	11.918	3.0	11.918	4.0	11.918	5.0	11.918	6.0	11.919	7.0	11.922	8.0	11.922
Time since start [H]	Output Voltage [V]																								
0.0	11.926																								
0.5	11.918																								
1.0	11.918																								
2.0	11.918																								
3.0	11.918																								
4.0	11.918																								
5.0	11.918																								
6.0	11.919																								
7.0	11.922																								
8.0	11.922																								

- 14 -

BC-3621

COSEL

Testing Circuitry Figure A

2.Values



Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	2.2	2.9
-40	2.1	2.9
-20	2.1	3.0
0	2.2	3.1
25	2.3	3.2
55	2.3	3.3
60	2.3	3.3
--	-	-
--	-	-
--	-	-
--	-	-

Temperature 25°C
Testing Circuitry Figure A



Output Voltage [V]	Load Current [A]		
	Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]
12.0	0.13	0.13	0.13
11.4	0.20	0.21	0.21
10.8	0.20	0.22	0.21
9.6	0.22	0.23	0.22
8.4	0.23	0.25	0.22
7.2	0.25	0.26	0.23
6.0	0.26	0.28	0.23
4.8	0.28	0.29	0.23
3.6	0.29	0.30	0.23
2.4	0.29	0.30	0.22
1.2	0.27	0.28	0.20
0.0	0.27	0.30	0.22

Note: Slanted line shows the range of the rated load current.

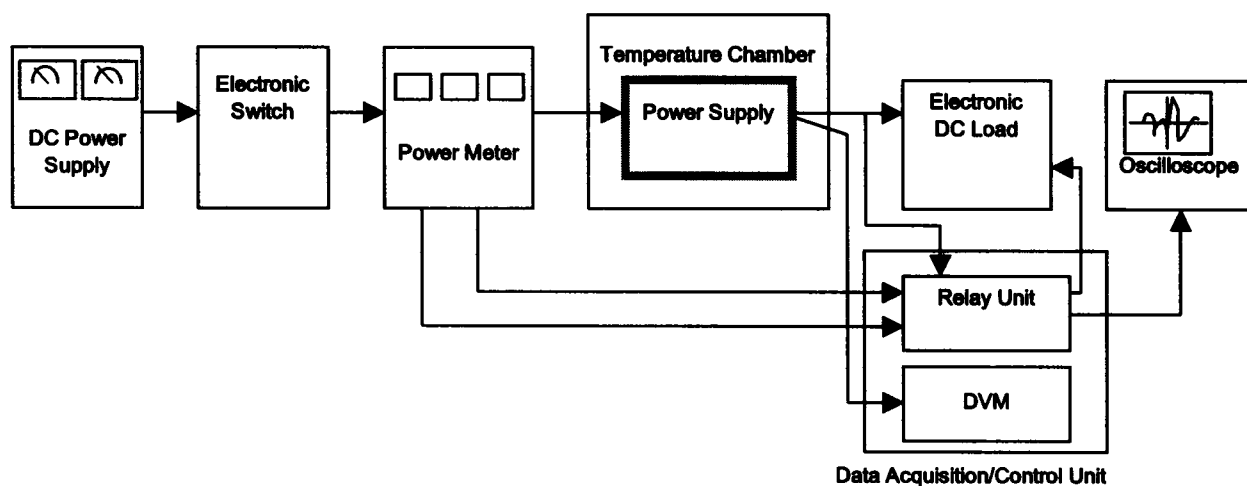


Figure A

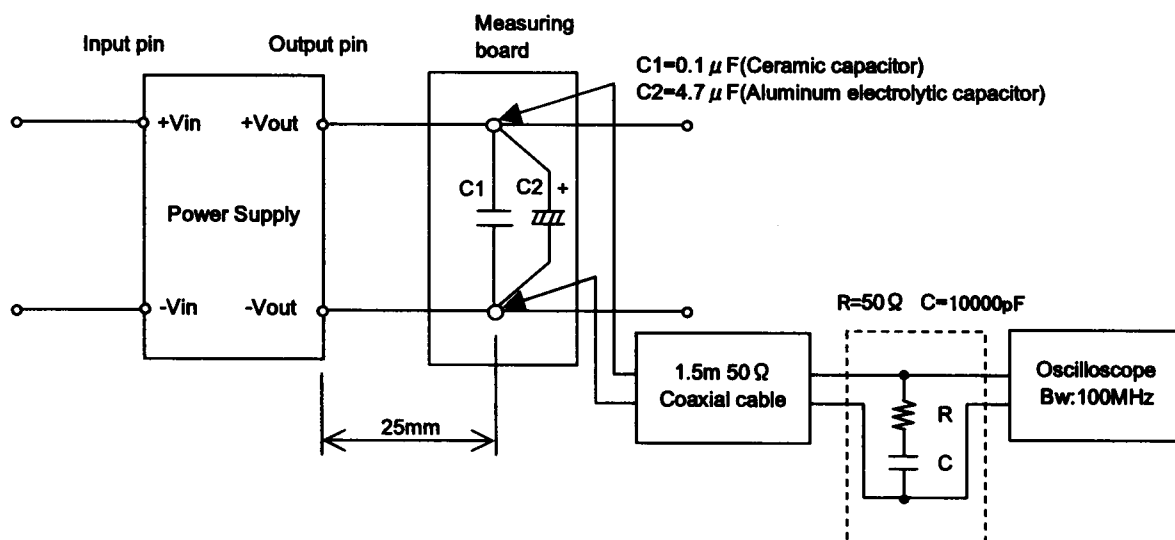


Figure B (Ripple and Ripple noise Characteristic)