

TEST DATA OF BRDS100

Regulated DC Power Supply
Oct 26, 2015

Approved by : Yoshimichi Hirokawa
Yoshimichi Hirokawa Design Manager

Prepared by : Shohei Mukaide
Shohei Mukaide 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)

Model

BRDS100

Item

Input Current (by Input Voltage)

Object

+1.2V100A

1.Graph

—△—

Load 100%

---□---

Load 50%

---○---

Load 0%

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	0.000	0.000	0.000
2.0	0.004	0.004	0.003
4.0	0.035	0.036	0.035
4.5	0.208	14.535	30.372
5.0	0.221	13.015	27.326
5.2	0.226	12.495	26.233
6.0	0.228	10.830	22.997
8.0	0.231	8.248	17.062
10.0	0.236	6.622	13.626
12.0	0.244	5.552	11.329
14.0	0.249	4.798	9.769
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

Model		BRDS100	
Item		Input Current (by Load Current)	
Object		+1.2V100A	
1.Graph		2.Values	

</

Model		BRDS100	
Item		Input Power (by Load Current)	
Object		+1.2V100A	
1.Graph		2.Values	

—△—

Input Volt.

4.5V

---□---

Input Volt.

12V

-·-○-·-

Input Volt.

14V

Input Power [W]

Load Current [A]

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

Load Current [A]	Input Power [W]		
	Input Volt. 4.5[V]	Input Volt. 12[V]	Input Volt. 14[V]
0	0.94	2.92	3.48
20	25.68	27.73	28.33
40	51.43	53.27	53.89
60	78.44	79.76	80.40
80	106.85	107.33	108.03
100	136.67	135.94	136.77
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

- 4 -

Model		BRDS100	
Item		Efficiency (by Load Current)	
Object		+1.2V100A	

1.Graph

—△—

Input Volt.

4.5V

---□---

Input Volt.

12V

---○---

Input Volt.

14V

Efficiency [%]

100

92

84

76

68

60

52

44

0

40

80

120

Load Current [A]

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

2.Values

Load Current [A]	Efficiency [%]		
	Input Volt. 4.5[V]	Input Volt. 12[V]	Input Volt. 14[V]
0	-	-	-
20	93.6	86.7	84.8
40	93.4	90.3	89.1
60	91.9	90.4	89.6
80	90.0	89.7	89.0
100	88.0	88.5	87.9
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-



Model		BRDS100	
Item		Line Regulation	
Object		+1.2V100A	

1.Graph

</

Model		BRDS100	
Item		Load Regulation	
Object		+1.2V100A	

1.Graph

—△—

Input Volt.

4.5V

---□---

Input Volt.

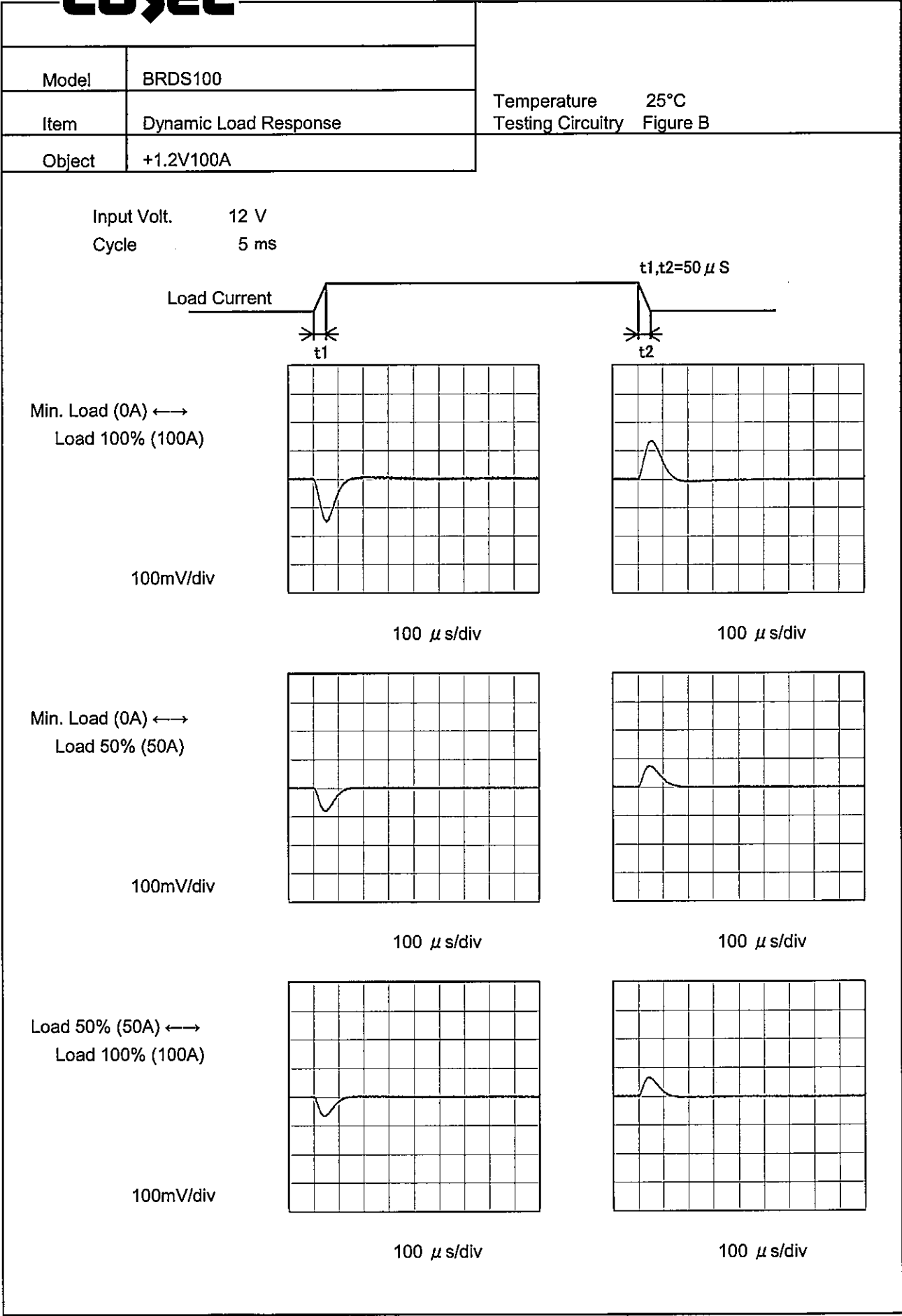
12V

---○---

Input Volt.

14V

Output Voltage [V]



Model	BRDS100																																						
Item	Ripple Voltage (by Load Current)	Temperature	25°C																																				
Object	+1.2V100A	Testing Circuitry	Figure C																																				
1.Graph		2.Values																																					
<div><div>—△— Input Volt. 5V</div><div>-·-○-- Input Volt. 12V</div><table><tr><th>Load Current [A]</th><th>5V Input [mV]</th><th>12V Input [mV]</th></tr><tr><td>0</td><td>1</td><td>1</td></tr><tr><td>20</td><td>2</td><td>2</td></tr><tr><td>40</td><td>2</td><td>2</td></tr><tr><td>60</td><td>3</td><td>2</td></tr><tr><td>80</td><td>3</td><td>2</td></tr><tr><td>100</td><td>4</td><td>2</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></table></div>		Load Current [A]	5V Input [mV]	12V Input [mV]	0	1	1	20	2	2	40	2	2	60	3	2	80	3	2	100	4	2	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-		
Load Current [A]	5V Input [mV]	12V Input [mV]																																					
0	1	1																																					
20	2	2																																					
40	2	2																																					
60	3	2																																					
80	3	2																																					
100	4	2																																					
--	-	-																																					
--	-	-																																					
--	-	-																																					
--	-	-																																					
--	-	-																																					
<p>Measured by 20 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><p>Ripple [mVp-p]</p><p>Fig.Complex Ripple Wave Form</p></div>																																							

Model		BRDS100	
Item		Ripple-Noise	
Object		+1.2V100A	
1.Graph		2.Values	

<

Model		BRDS100	Testing Circuitry Figure C
Item		Ripple Voltage (by Ambient Temp.)	
Object		+1.2V100A	
1.Graph			2.Values
<div><div>-----□----- Load 50%</div><div>-----△----- Load 100%</div><p>Ripple Voltage [mV]</p><p>Ambient Temperature [°C]</p><p>Input Volt. 12V</p></div>			
Measured by 20 MHz Oscilloscope. Note: Slanted line shows the range of the rated ambient temperature.			
<div>Ripple [mVp-p]</div> <p>Fig.Complex Ripple Wave Form</p>			



Model		BRDS100		Testing Circuitry Figure A																																																				
Item		Ambient Temperature Drift																																																						
Object		+1.2V100A																																																						
1.Graph		<div><div><div>—△—</div><div>Input Volt.</div><div>4.5V</div></div><div><div>---□---</div><div>Input Volt.</div><div>12V</div></div><div><div>-·-○-·-</div><div>Input Volt.</div><div>14V</div></div></div> <div>Output Voltage [V]</div> <div>Ambient Temperature [°C]</div> <div>Load 100%</div>		2.Values																																																				
				<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. 12[V]</th><th>Input Volt. 14[V]</th></tr><tr><td>-40</td><td>1.201</td><td>1.202</td><td>1.201</td></tr><tr><td>-20</td><td>1.201</td><td>1.202</td><td>1.201</td></tr><tr><td>0</td><td>1.201</td><td>1.202</td><td>1.201</td></tr><tr><td>25</td><td>1.201</td><td>1.202</td><td>1.201</td></tr><tr><td>60</td><td>1.201</td><td>1.201</td><td>1.200</td></tr><tr><td>85</td><td>1.200</td><td>1.201</td><td>1.199</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><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr></table>		Ambient Temperature [°C]	Output Voltage [V]			Input Volt. 4.5[V]	Input Volt. 12[V]	Input Volt. 14[V]	-40	1.201	1.202	1.201	-20	1.201	1.202	1.201	0	1.201	1.202	1.201	25	1.201	1.202	1.201	60	1.201	1.201	1.200	85	1.200	1.201	1.199	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
Ambient Temperature [°C]	Output Voltage [V]																																																							
	Input Volt. 4.5[V]	Input Volt. 12[V]	Input Volt. 14[V]																																																					
-40	1.201	1.202	1.201																																																					
-20	1.201	1.202	1.201																																																					
0	1.201	1.202	1.201																																																					
25	1.201	1.202	1.201																																																					
60	1.201	1.201	1.200																																																					
85	1.200	1.201	1.199																																																					
--	-	-	-																																																					
--	-	-	-																																																					
--	-	-	-																																																					
--	-	-	-																																																					
--	-	-	-																																																					
Note: Slanted line shows the range of the rated ambient temperature.																																																								

- 12 -

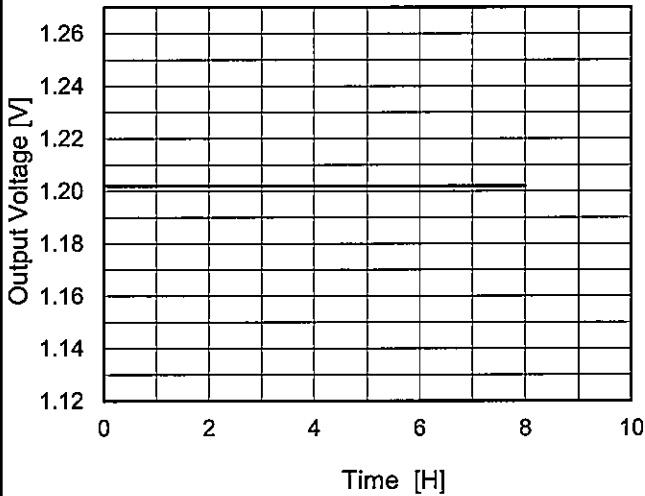
BC - 10912



Model	BRDS100
Item	Time Lapse Drift
Object	+1.2V100A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

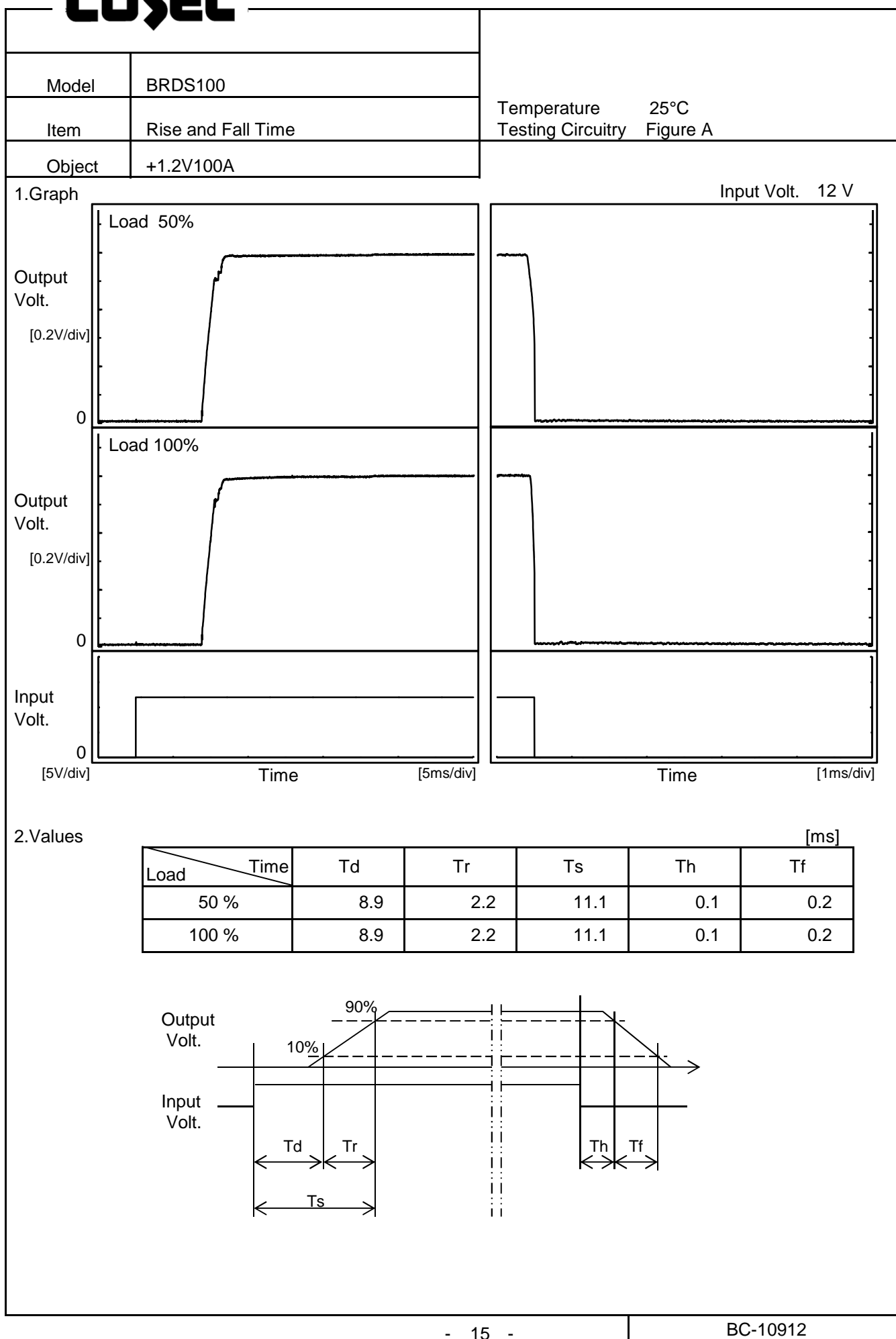


Input Volt. 12V
Load 100%

2.Values

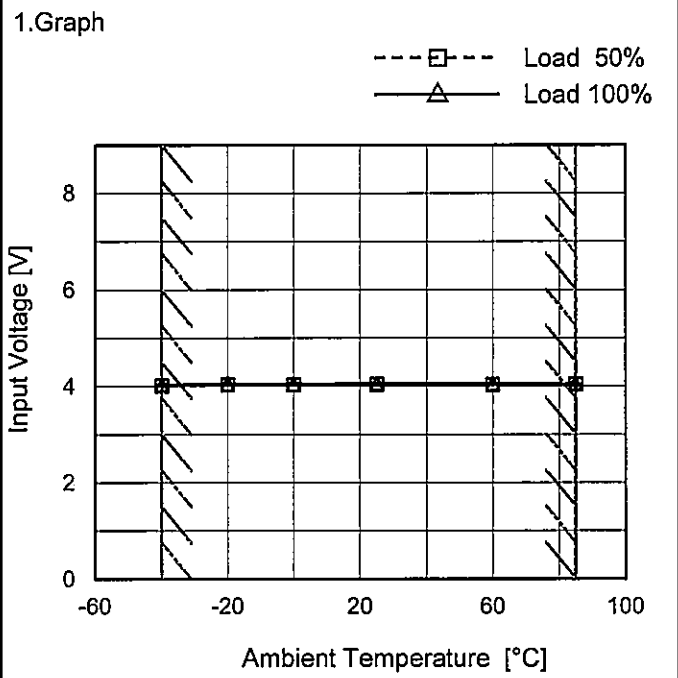
Time since start [H]	Output Voltage [V]
0.0	1.202
0.5	1.202
1.0	1.202
2.0	1.202
3.0	1.202
4.0	1.202
5.0	1.202
6.0	1.202
7.0	1.202
8.0	1.202

COSEL





Model	BRDS100
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+1.2V100A

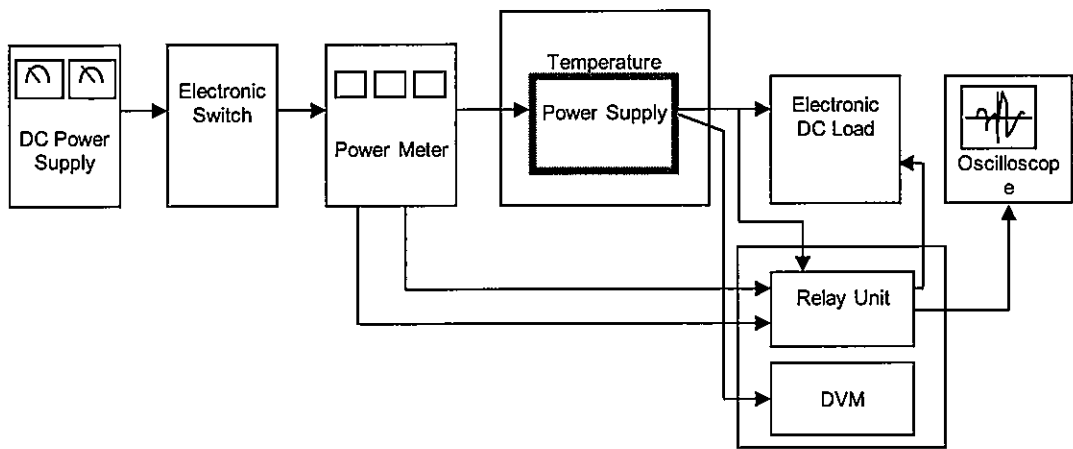


Testing Circuitry Figure A

2.Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-40	4.02	4.04
-20	4.03	4.06
0	4.04	4.05
25	4.04	4.06
60	4.04	4.06
85	4.04	4.06
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

BC - 10912



Data Acquisition/Control Unit

Figure A

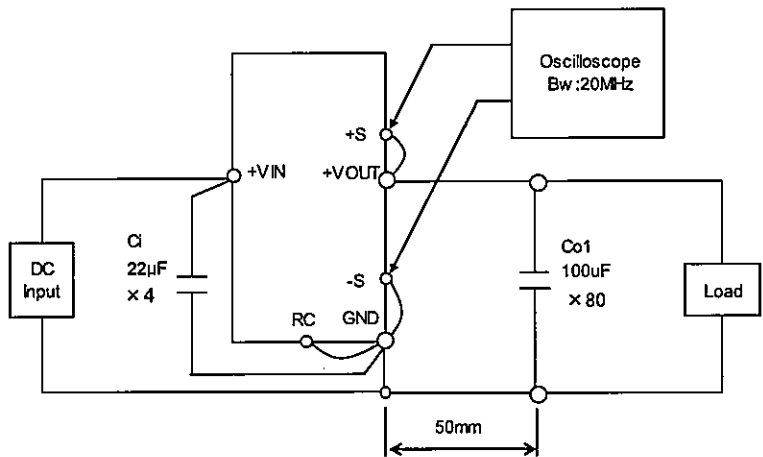


Figure B

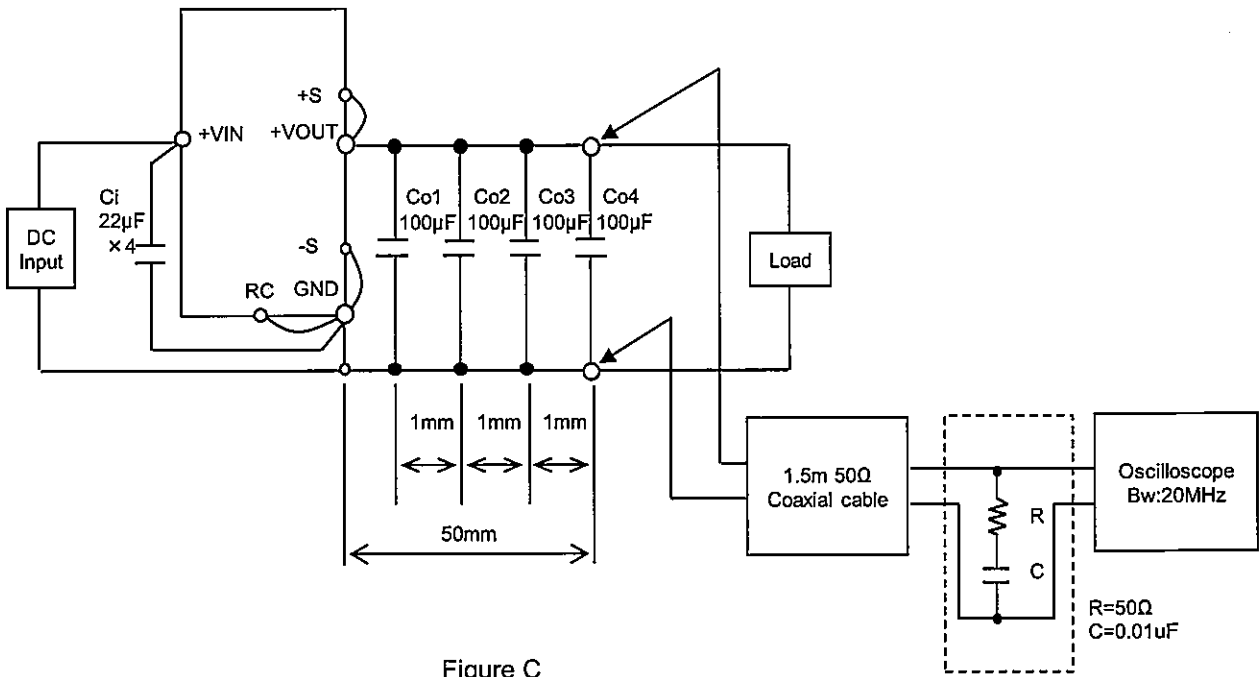


Figure C