

TEST DATA OF MUS1R50515

Regulated DC Power Supply
February 4, 2025

Approved by : Kenichi Tsukada
Design Manager

Prepared by : Soichiro Kawaguchi
Design Engineer

COSEL CO.,LTD.

CONTENTS

1.Input Current (by Load Current)	1
2.Efficiency (by Load Current)	2
3.Line Regulation	3
4.Load Regulation	4
5.Ripple-Noise	4
6.Dynamic Load Response	5
7.Rise and Fall Time	6
8.Overcurrent Protection	7
9.Ambient Temperature Drift	8
10.Minimum Input Voltage for Regulated Output Voltage	8
11.Figure of Testing Circuitry	9

(Final Page 9)

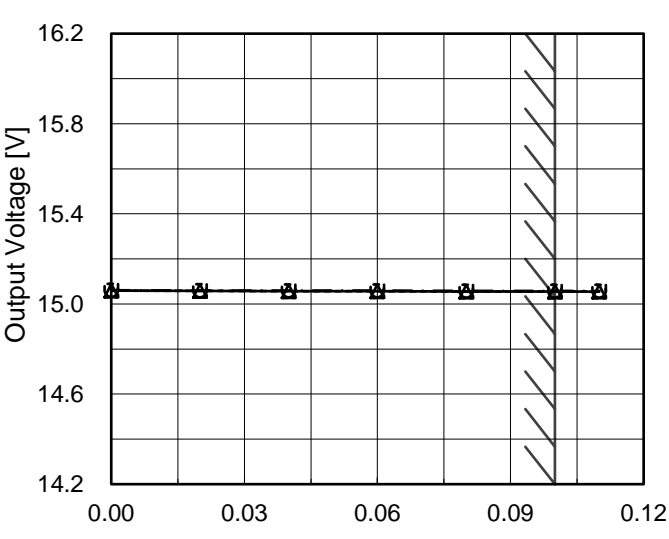
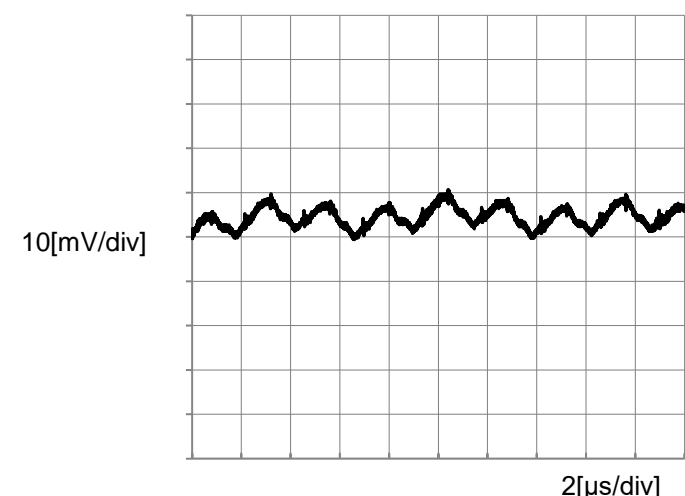
Model		MUS1R50515	Temperature 25°C																																																				
Item		Input Current (by Load Current)	Testing Circuitry Figure A																																																				
Object		_____																																																					
1.Graph		<div><div>—△—</div>Input Volt. 4.5V</div> <div><div>---□---</div>Input Volt. 5V</div> <div><div>-·-○-·-</div>Input Volt. 9V</div> <p>Note: Slanted line shows the range of the rated load current.</p>	2.Values																																																				
			<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>0.021</td><td>0.020</td><td>0.016</td></tr><tr><td>0.02</td><td>0.091</td><td>0.081</td><td>0.053</td></tr><tr><td>0.04</td><td>0.165</td><td>0.147</td><td>0.089</td></tr><tr><td>0.06</td><td>0.240</td><td>0.213</td><td>0.124</td></tr><tr><td>0.08</td><td>0.318</td><td>0.286</td><td>0.164</td></tr><tr><td>0.10</td><td>0.398</td><td>0.357</td><td>0.199</td></tr><tr><td>0.11</td><td>0.439</td><td>0.393</td><td>0.220</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	0.021	0.020	0.016	0.02	0.091	0.081	0.053	0.04	0.165	0.147	0.089	0.06	0.240	0.213	0.124	0.08	0.318	0.286	0.164	0.10	0.398	0.357	0.199	0.11	0.439	0.393	0.220	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Input Current [A]																																																						
	Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]																																																				
0.00	0.021	0.020	0.016																																																				
0.02	0.091	0.081	0.053																																																				
0.04	0.165	0.147	0.089																																																				
0.06	0.240	0.213	0.124																																																				
0.08	0.318	0.286	0.164																																																				
0.10	0.398	0.357	0.199																																																				
0.11	0.439	0.393	0.220																																																				
--	-	-	-																																																				
--	-	-	-																																																				
--	-	-	-																																																				
--	-	-	-																																																				

Model		MUS1R50515	Temperature 25°C																																																				
Item		Efficiency (by Load Current)	Testing Circuitry Figure A																																																				
Object																																																							
1.Graph		<div><div>—△—</div>Input Volt. 4.5V</div> <div><div>---□---</div>Input Volt. 5V</div> <div><div>---○---</div>Input Volt. 9V</div> <table><thead><tr><th>Load Current [A]</th><th>4.5V Efficiency [%]</th><th>5V Efficiency [%]</th><th>9V Efficiency [%]</th></tr></thead><tbody><tr><td>0.00</td><td>-</td><td>-</td><td>-</td></tr><tr><td>0.02</td><td>71.6</td><td>72.2</td><td>60.8</td></tr><tr><td>0.04</td><td>79.5</td><td>80.1</td><td>73.6</td></tr><tr><td>0.06</td><td>82.7</td><td>83.7</td><td>79.8</td></tr><tr><td>0.08</td><td>83.8</td><td>83.8</td><td>80.7</td></tr><tr><td>0.10</td><td>84.3</td><td>84.3</td><td>83.4</td></tr><tr><td>0.11</td><td>84.3</td><td>84.5</td><td>82.8</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> <p>Efficiency [%]</p> <p>Load Current [A]</p>	Load Current [A]	4.5V Efficiency [%]	5V Efficiency [%]	9V Efficiency [%]	0.00	-	-	-	0.02	71.6	72.2	60.8	0.04	79.5	80.1	73.6	0.06	82.7	83.7	79.8	0.08	83.8	83.8	80.7	0.10	84.3	84.3	83.4	0.11	84.3	84.5	82.8	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-	2.Values				
Load Current [A]	4.5V Efficiency [%]	5V Efficiency [%]	9V Efficiency [%]																																																				
0.00	-	-	-																																																				
0.02	71.6	72.2	60.8																																																				
0.04	79.5	80.1	73.6																																																				
0.06	82.7	83.7	79.8																																																				
0.08	83.8	83.8	80.7																																																				
0.10	84.3	84.3	83.4																																																				
0.11	84.3	84.5	82.8																																																				
--	-	-	-																																																				
--	-	-	-																																																				
--	-	-	-																																																				
--	-	-	-																																																				
			<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>0.02</td><td>71.6</td><td>72.2</td><td>60.8</td></tr><tr><td>0.04</td><td>79.5</td><td>80.1</td><td>73.6</td></tr><tr><td>0.06</td><td>82.7</td><td>83.7</td><td>79.8</td></tr><tr><td>0.08</td><td>83.8</td><td>83.8</td><td>80.7</td></tr><tr><td>0.10</td><td>84.3</td><td>84.3</td><td>83.4</td></tr><tr><td>0.11</td><td>84.3</td><td>84.5</td><td>82.8</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	-	-	-	0.02	71.6	72.2	60.8	0.04	79.5	80.1	73.6	0.06	82.7	83.7	79.8	0.08	83.8	83.8	80.7	0.10	84.3	84.3	83.4	0.11	84.3	84.5	82.8	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Efficiency [%]																																																						
	Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]																																																				
0.00	-	-	-																																																				
0.02	71.6	72.2	60.8																																																				
0.04	79.5	80.1	73.6																																																				
0.06	82.7	83.7	79.8																																																				
0.08	83.8	83.8	80.7																																																				
0.10	84.3	84.3	83.4																																																				
0.11	84.3	84.5	82.8																																																				
--	-	-	-																																																				
--	-	-	-																																																				
--	-	-	-																																																				
--	-	-	-																																																				
		Note: Slanted line shows the range of the rated load current.																																																					

COSEL

<div>LOREL</div>																																			
Model	MUS1R50515																																		
Item	Line Regulation	Temperature	25°C																																
Object	+15V0.1A	Testing Circuitry	Figure A																																
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> <div><div><div>Output Voltage [V]</div><div><div><div>16.2</div><div>15.8</div><div>15.4</div><div>15.0</div><div>14.6</div><div>14.2</div></div><div><div><div>3</div><div>5</div><div>7</div><div>9</div><div>11</div></div></div></div><div><div><div>15.054</div><div>15.055</div><div>15.056</div><div>15.057</div><div>15.058</div><div>15.058</div><div>15.058</div><div>15.058</div><div>15.058</div><div>15.058</div></div><div><div><div>15.055</div><div>15.056</div><div>15.057</div><div>15.058</div><div>15.059</div><div>15.059</div><div>15.059</div><div>15.059</div><div>15.059</div><div>15.059</div></div></div></div></div></div> <div>Note: Slanted line shows the range of the rated input voltage.</div>		<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>15.054</td><td>15.055</td></tr><tr><td>4.5</td><td>15.055</td><td>15.056</td></tr><tr><td>5.0</td><td>15.056</td><td>15.057</td></tr><tr><td>6.0</td><td>15.057</td><td>15.058</td></tr><tr><td>7.0</td><td>15.058</td><td>15.059</td></tr><tr><td>8.0</td><td>15.058</td><td>15.059</td></tr><tr><td>9.0</td><td>15.058</td><td>15.059</td></tr><tr><td>10.0</td><td>15.058</td><td>15.059</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></table>		Input Voltage [V]	Output Voltage [V]		Load 50%	Load 100%	4.0	15.054	15.055	4.5	15.055	15.056	5.0	15.056	15.057	6.0	15.057	15.058	7.0	15.058	15.059	8.0	15.058	15.059	9.0	15.058	15.059	10.0	15.058	15.059	--	-	-
Input Voltage [V]	Output Voltage [V]																																		
	Load 50%	Load 100%																																	
4.0	15.054	15.055																																	
4.5	15.055	15.056																																	
5.0	15.056	15.057																																	
6.0	15.057	15.058																																	
7.0	15.058	15.059																																	
8.0	15.058	15.059																																	
9.0	15.058	15.059																																	
10.0	15.058	15.059																																	
--	-	-																																	
		</																																	

COSEL

Model	MUS1R50515																																																					
Item	Load Regulation	Temperature	25°C																																																			
Object	+15V0.1A	Testing Circuitry	Figure A																																																			
1.Graph		2.Values																																																				
<div><div><div><div></div><div></div><div></div></div><div><div></div><div></div><div></div></div><div><div></div><div></div><div></div></div></div><div><div>Input Volt.</div><div>4.5V</div></div><div><div>Input Volt.</div><div>5V</div></div><div><div>Input Volt.</div><div>9V</div></div></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>15.059</td><td>15.059</td><td>15.061</td></tr><tr><td>0.02</td><td>15.058</td><td>15.058</td><td>15.060</td></tr><tr><td>0.04</td><td>15.057</td><td>15.057</td><td>15.059</td></tr><tr><td>0.06</td><td>15.056</td><td>15.056</td><td>15.059</td></tr><tr><td>0.08</td><td>15.056</td><td>15.056</td><td>15.058</td></tr><tr><td>0.10</td><td>15.055</td><td>15.055</td><td>15.058</td></tr><tr><td>0.11</td><td>15.055</td><td>15.055</td><td>15.058</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	15.059	15.059	15.061	0.02	15.058	15.058	15.060	0.04	15.057	15.057	15.059	0.06	15.056	15.056	15.059	0.08	15.056	15.056	15.058	0.10	15.055	15.055	15.058	0.11	15.055	15.055	15.058	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Load Current [A]	Output Voltage [V]																																																					
	Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]																																																			
0.00	15.059	15.059	15.061																																																			
0.02	15.058	15.058	15.060																																																			
0.04	15.057	15.057	15.059																																																			
0.06	15.056	15.056	15.059																																																			
0.08	15.056	15.056	15.058																																																			
0.10	15.055	15.055	15.058																																																			
0.11	15.055	15.055	15.058																																																			
--	--	--	--																																																			
--	--	--	--																																																			
--	--	--	--																																																			
--	--	--	--																																																			
Item	Ripple-Noise	Temperature	25°C																																																			
Object	+15V0.1A	Testing Circuitry	Figure B																																																			
1.Graph																																																						
<div><div><div>Input Voltage</div><div>5V</div></div><div><div>Load</div><div>100%</div></div></div> 																																																						

-

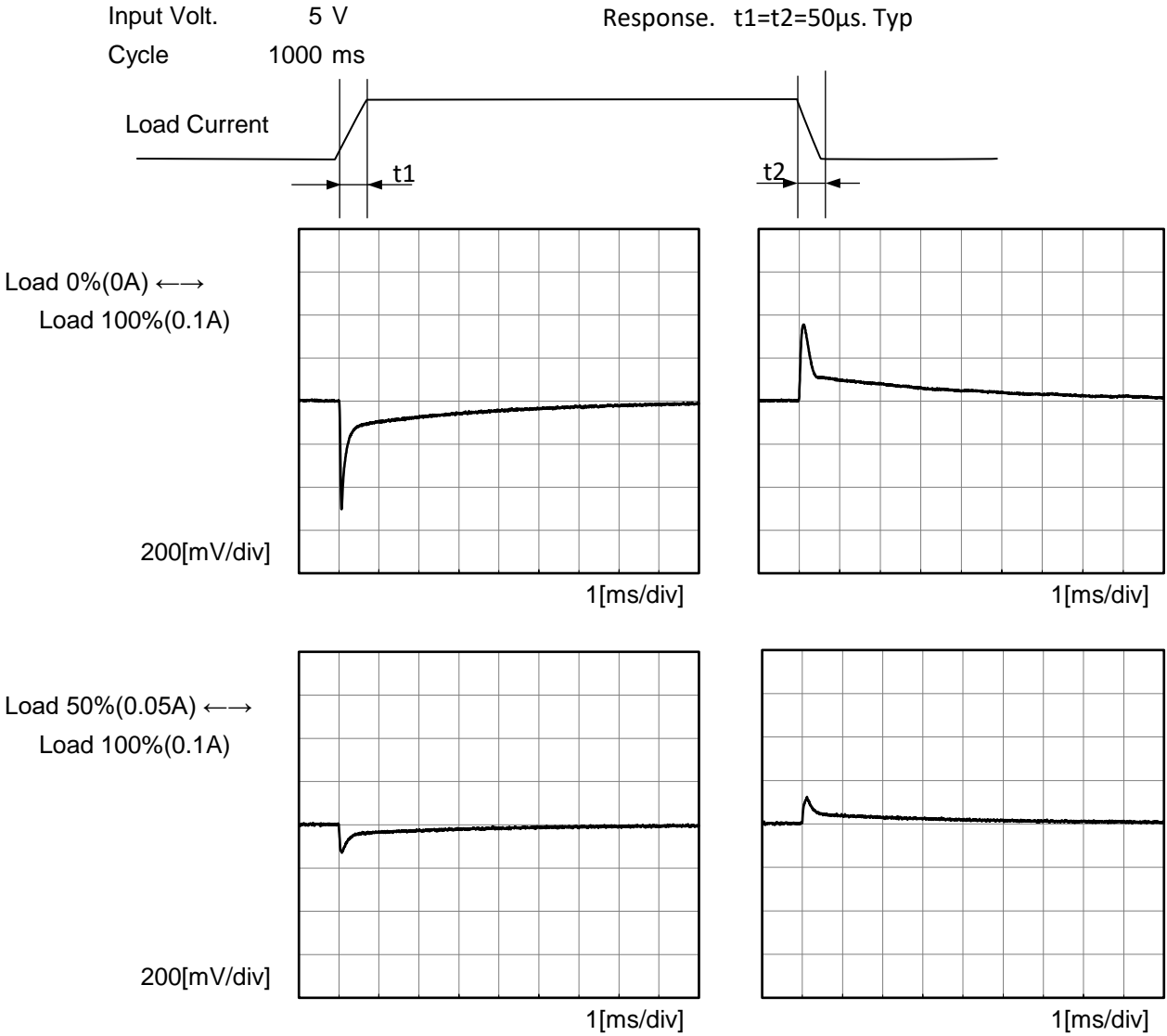
4

-

BC-12036



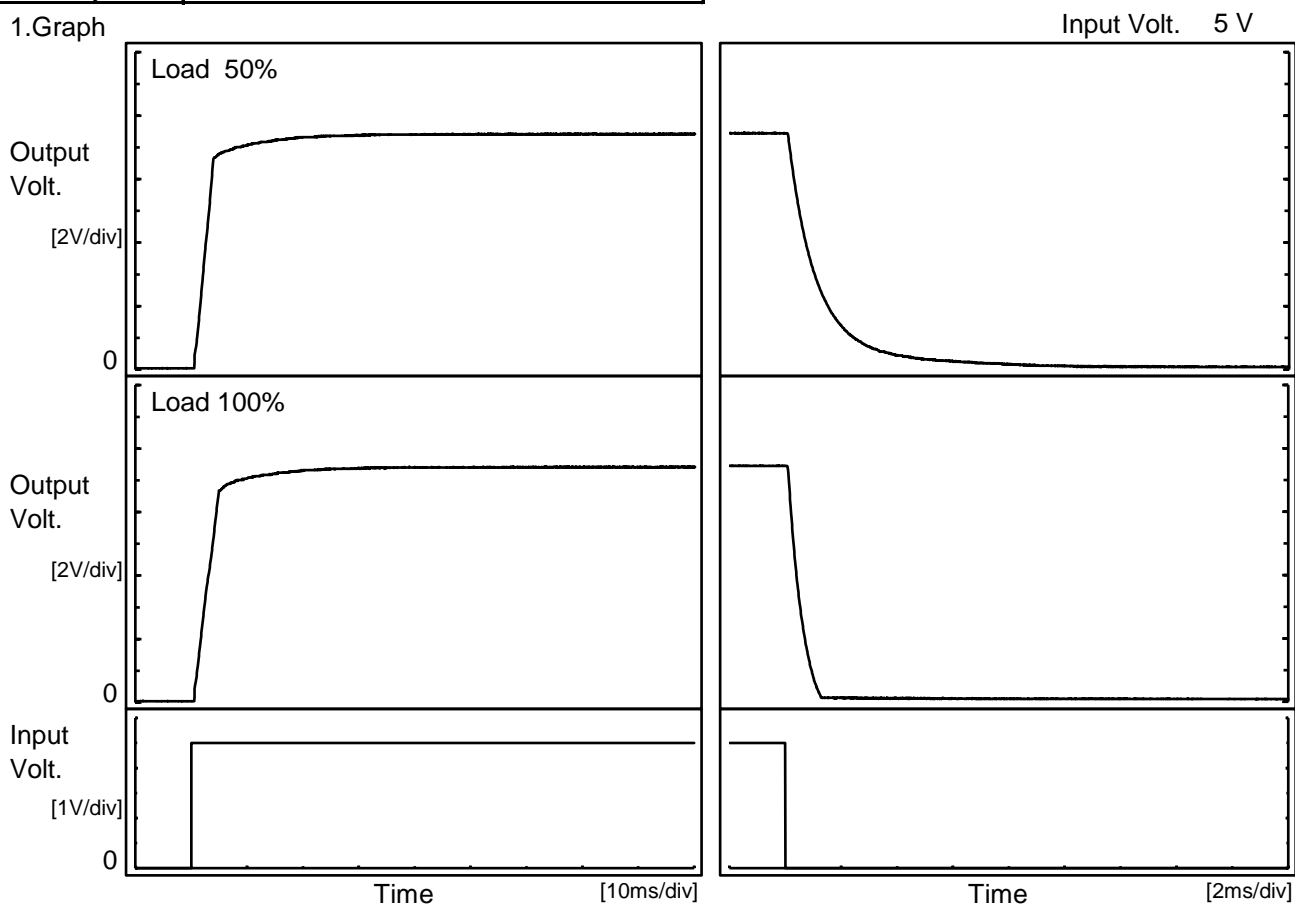
Model		MUS1R50515	Temperature 25°C Testing Circuitry Figure A
Item		Dynamic Load Response	
Object		+15V0.1A	



COSEL

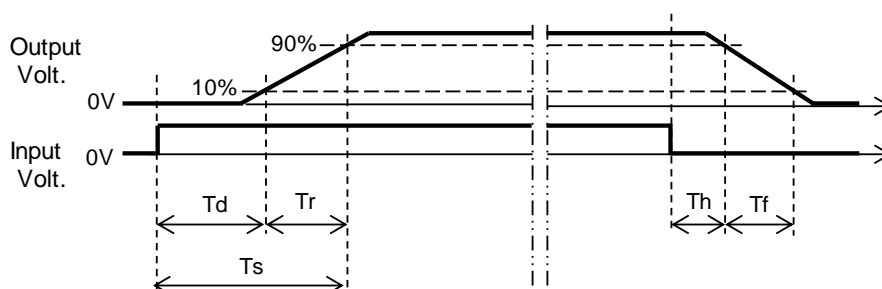
Model	MUS1R50515	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	+15V0.1A		

1.Graph



2.Values

		[ms]				
Load	Time	Td	Tr	Ts	Th	Tf
50 %		0.9	4.1	5.0	0.2	2.6
100 %		1.0	4.8	5.8	0.1	0.9



COSEL

COSEL																																																										
Model	MUS1R50515																																																									
Item	Overcurrent Protection	Temperature	25°C																																																							
Object	+15V0.1A	Testing Circuitry	Figure A																																																							
1.Graph		2.Values																																																								
<div><div><div></div><div>Input Volt. 4.5V</div></div><div><div></div><div>Input Volt. 5V</div></div><div><div></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>14.25</td><td>0.16</td><td>0.17</td><td>0.19</td></tr><tr><td>13.50</td><td>0.17</td><td>0.17</td><td>0.19</td></tr><tr><td>12.00</td><td>0.18</td><td>0.19</td><td>0.21</td></tr><tr><td>10.50</td><td>0.20</td><td>0.20</td><td>0.23</td></tr><tr><td>9.00</td><td>0.21</td><td>0.22</td><td>0.25</td></tr><tr><td>7.50</td><td>0.23</td><td>0.24</td><td>0.27</td></tr><tr><td>6.00</td><td>0.25</td><td>0.26</td><td>0.29</td></tr><tr><td>4.50</td><td>0.28</td><td>0.29</td><td>0.32</td></tr><tr><td>3.00</td><td>0.31</td><td>0.32</td><td>0.34</td></tr><tr><td>1.50</td><td>0.35</td><td>0.35</td><td>0.37</td></tr><tr><td>0.00</td><td>0.40</td><td>0.40</td><td>0.45</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr></table>		Output Voltage [V]	Load Current [A]			Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]	14.25	0.16	0.17	0.19	13.50	0.17	0.17	0.19	12.00	0.18	0.19	0.21	10.50	0.20	0.20	0.23	9.00	0.21	0.22	0.25	7.50	0.23	0.24	0.27	6.00	0.25	0.26	0.29	4.50	0.28	0.29	0.32	3.00	0.31	0.32	0.34	1.50	0.35	0.35	0.37	0.00	0.40	0.40	0.45	--	-	-	-
Output Voltage [V]	Load Current [A]																																																									
	Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]																																																							
14.25	0.16	0.17	0.19																																																							
13.50	0.17	0.17	0.19																																																							
12.00	0.18	0.19	0.21																																																							
10.50	0.20	0.20	0.23																																																							
9.00	0.21	0.22	0.25																																																							
7.50	0.23	0.24	0.27																																																							
6.00	0.25	0.26	0.29																																																							
4.50	0.28	0.29	0.32																																																							
3.00	0.31	0.32	0.34																																																							
1.50	0.35	0.35	0.37																																																							
0.00	0.40	0.40	0.45																																																							
--	-	-	-																																																							

COSEL

		Testing Circuitry Figure A	
Model	MUS1R50515		
Item	Ambient Temperature Drift		
Object	+15V0.1A		
1.Values Load 100%			
Ambient Temperature[°C]	Output Voltage [V]		
	Input Volt. 4.5V	Input Volt. 5V	Input Volt. 9V
-40	14.925	14.927	14.931
25	15.054	15.055	15.057
85	15.114	15.115	15.118
		Testing Circuitry Figure A	
Item	Minimum Input Voltage for Regulated Output Voltage		
Object	+15V0.1A		
1.Values			
Ambient Temperature[°C]	Input Voltage [V]		
	Load 50%	Load 100%	
-40	3.1	3.0	
25	3.1	3.0	
85	3.1	3.0	

- 8 -

BC-12036

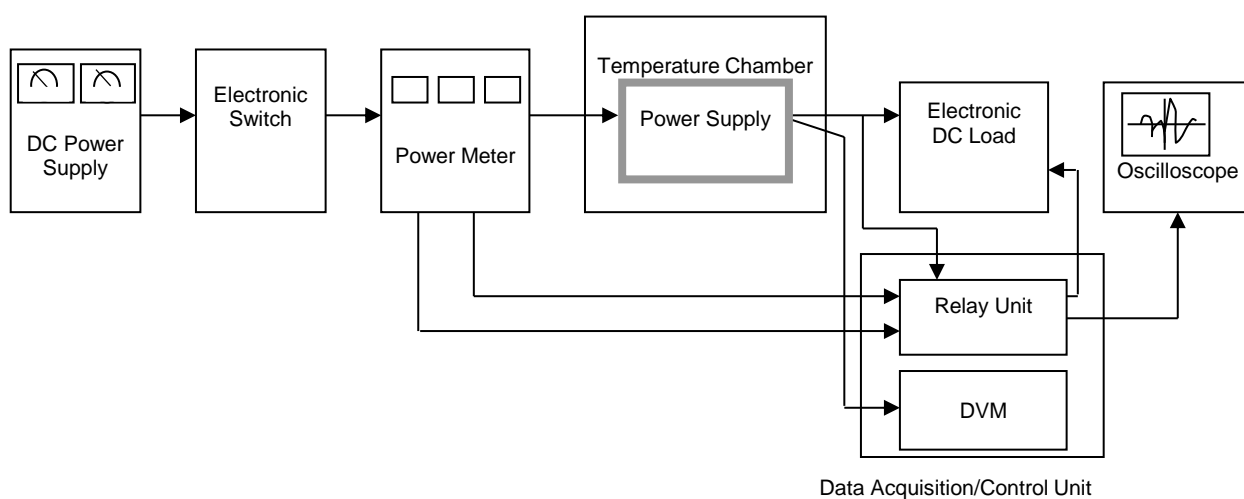


Figure A

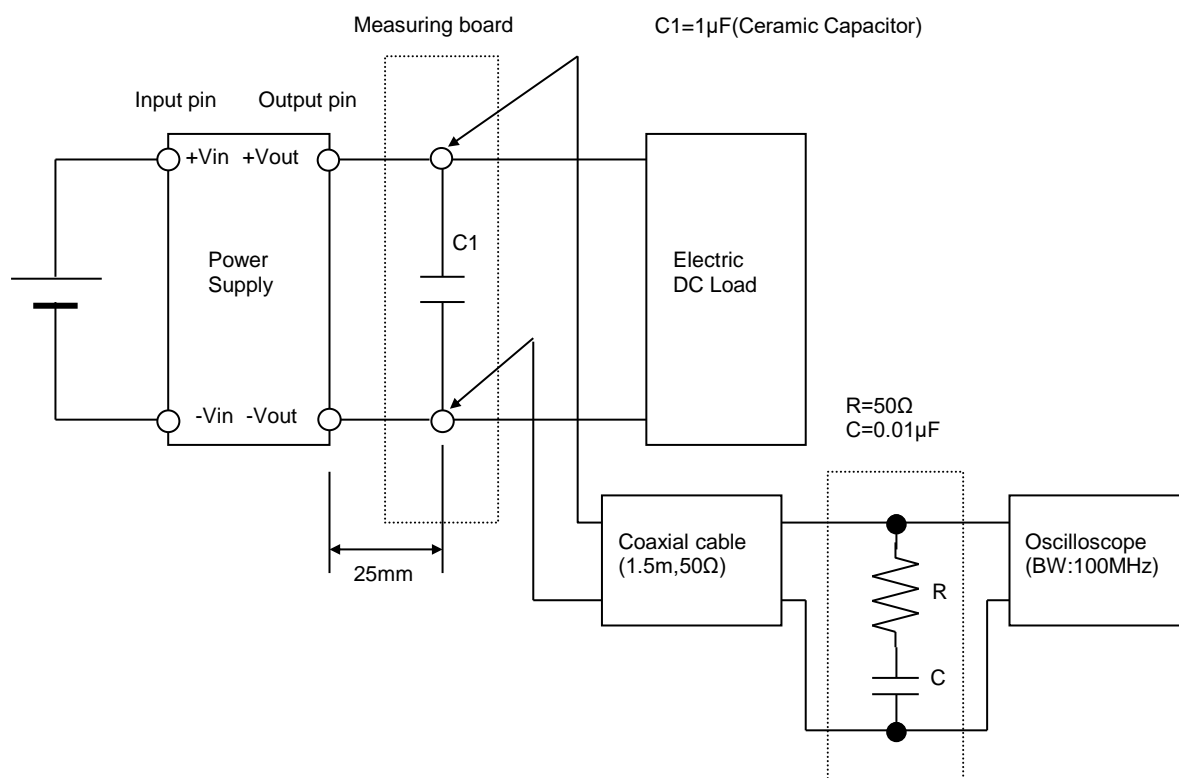


Figure B