

TEST DATA OF DHS100A15

Regulated DC Power Supply
April 5, 2010

Approved by : Tatsuya Mano
Tatsuya Mano Design Manager

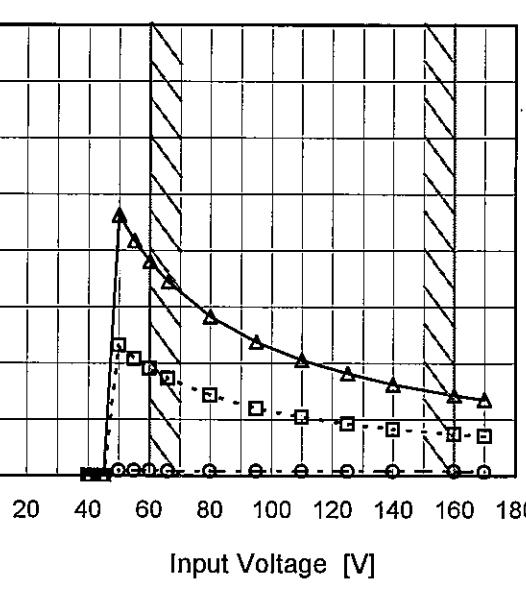
Prepared by : Tetsuro Hirata
Tetsuro Hirata Design Engineer

COSEL CO.,LTD.

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Model	DHS100A15	Temperature 25°C Testing Circuitry Figure A																																																																																	
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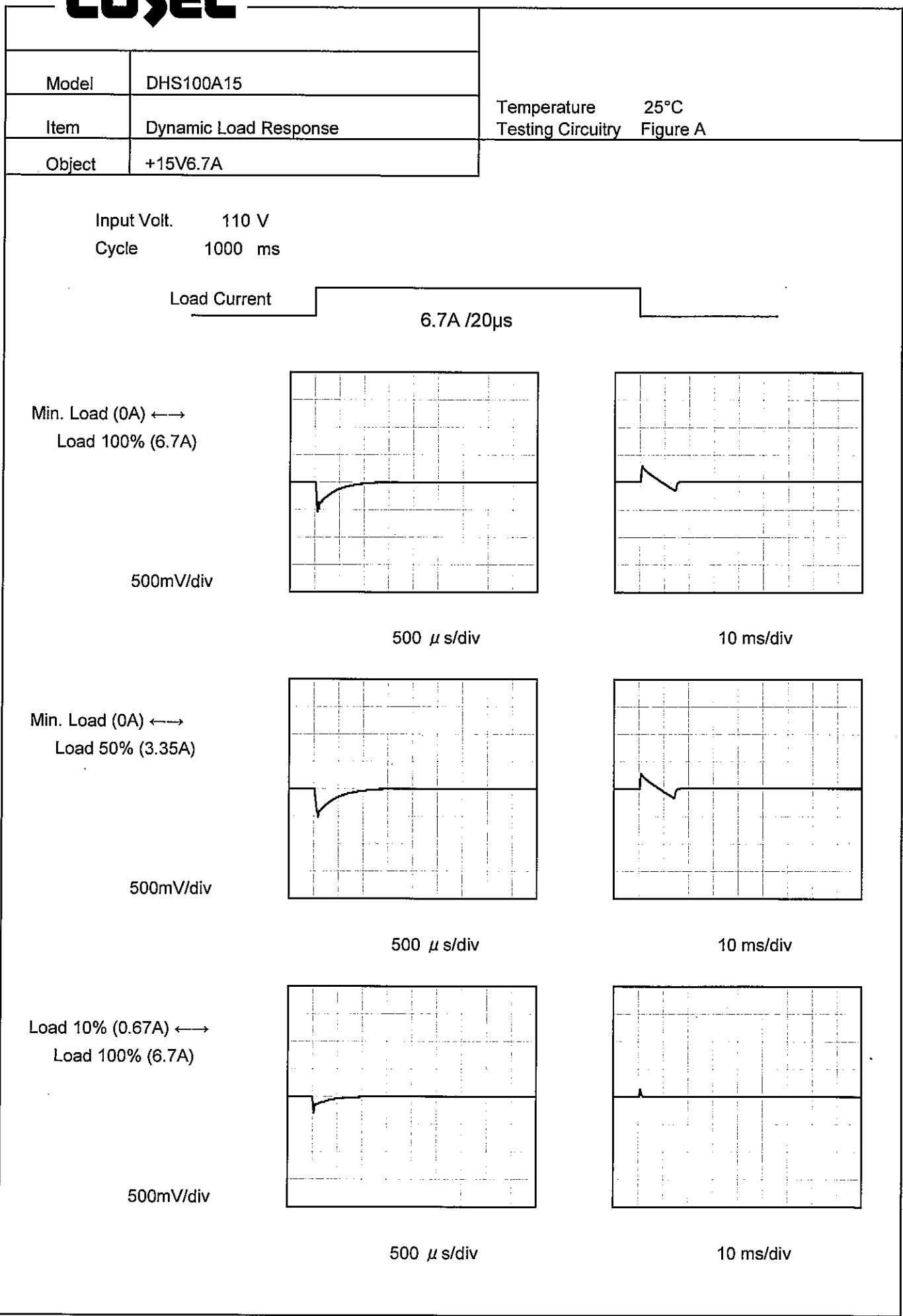
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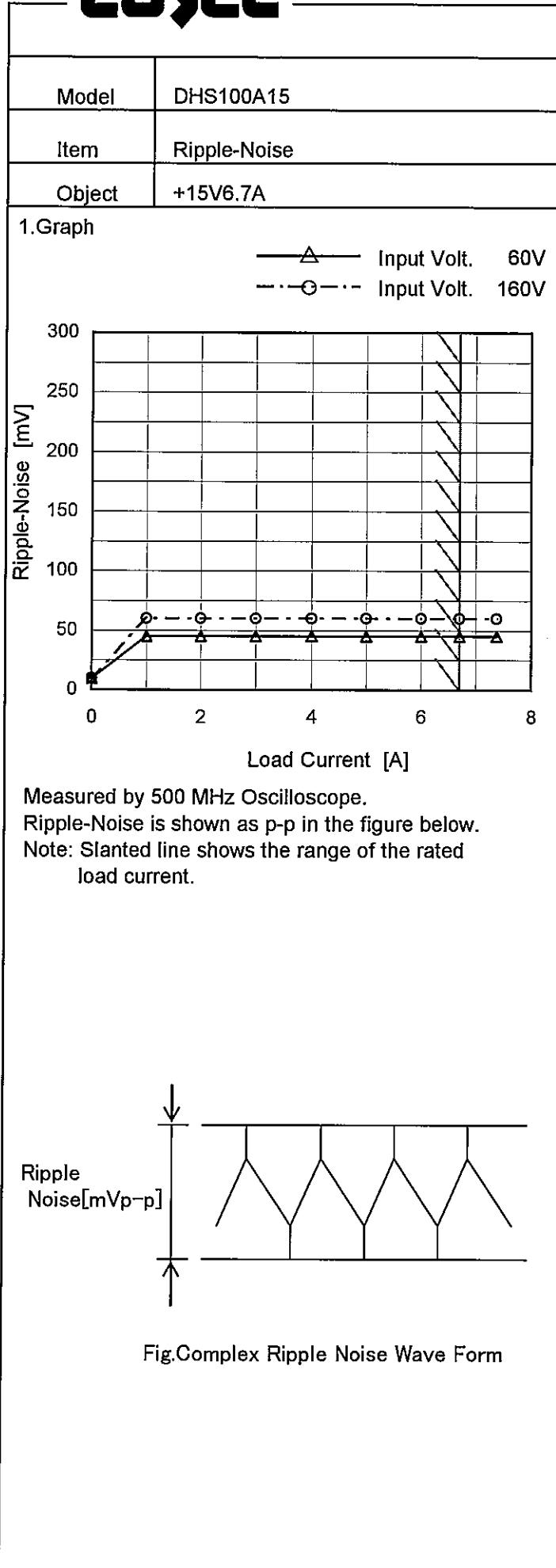
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Model	DHS100A15																																							
Item	Ripple Voltage (by Load Current)	Temperature 25°C Testing Circuitry Figure B																																						
Object	+15V6.7A																																							
1.Graph																																								
<p>Graph showing Ripple Voltage [mV] vs Load Current [A]. The Y-axis ranges from 0 to 300 mV, and the X-axis ranges from 0 to 8 A. Two sets of data points are shown: solid triangles for 60V and dashed circles for 160V. A slanted line indicates the rated load current range.</p> <table border="1"> <thead> <tr> <th>Load Current [A]</th> <th>Ripple Voltage [mV] (60V)</th> <th>Ripple Voltage [mV] (160V)</th> </tr> </thead> <tbody> <tr><td>0.00</td><td>10</td><td>10</td></tr> <tr><td>1.00</td><td>45</td><td>60</td></tr> <tr><td>2.00</td><td>45</td><td>60</td></tr> <tr><td>3.00</td><td>45</td><td>60</td></tr> <tr><td>4.00</td><td>45</td><td>60</td></tr> <tr><td>5.00</td><td>45</td><td>60</td></tr> <tr><td>6.00</td><td>45</td><td>60</td></tr> <tr><td>6.70</td><td>45</td><td>60</td></tr> <tr><td>7.37</td><td>45</td><td>60</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> <tr><td>--</td><td>-</td><td>-</td></tr> </tbody> </table>		Load Current [A]	Ripple Voltage [mV] (60V)	Ripple Voltage [mV] (160V)	0.00	10	10	1.00	45	60	2.00	45	60	3.00	45	60	4.00	45	60	5.00	45	60	6.00	45	60	6.70	45	60	7.37	45	60	--	-	-	--	-	-			
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Temperature 25°C
Testing Circuitry Figure B

2.Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 60 [V]	Input Volt. 160 [V]
0.00	10	10
1.00	45	60
2.00	45	60
3.00	45	60
4.00	45	60
5.00	45	60
6.00	45	60
6.70	45	60
7.37	45	60
--	-	-
--	-	-

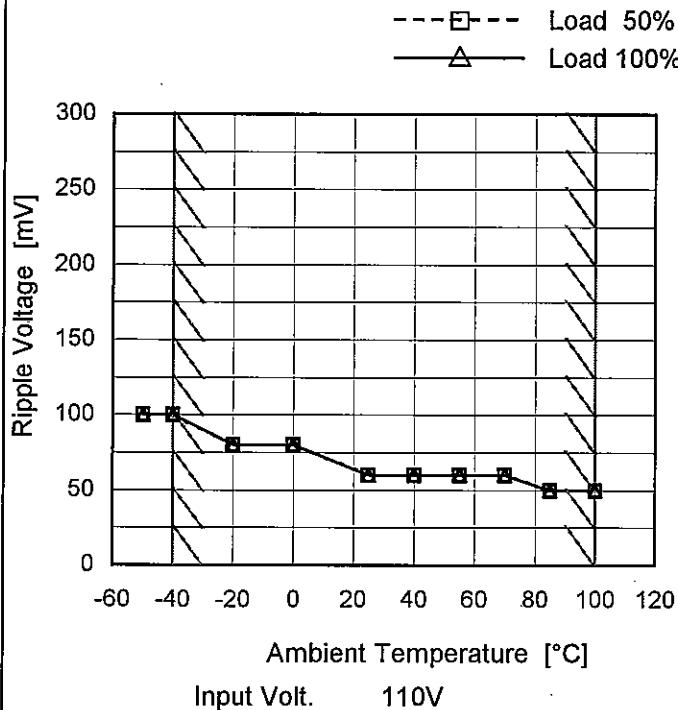
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Model DHS100A15

Item Ripple Voltage (by Ambient Temp.)

Object +15V6.7A

1. Graph



Measured by 500 MHz Oscilloscope.
Note: Slanted line shows the range of the rated ambient temperature.

Ripple [mVp-p]

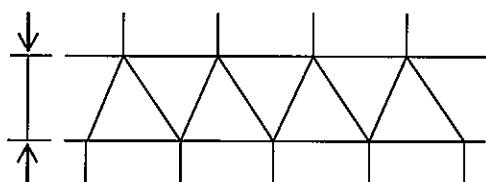


Fig.Complex Ripple Wave Form

Testing Circuitry Figure B

2. Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-50	100	100
-40	100	100
-20	80	80
0	80	80
25	60	60
40	60	60
55	60	60
70	60	60
85	50	50
100	50	50
...	-	-

<p>Model DHS100A15</p> <p>Item Ambient Temperature Drift</p> <p>Object +15V6.7A</p>	Testing Circuitry Figure A																																																					
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Note: Slanted line shows the range of the rated ambient temperature.



Model	DHS100A15	Testing Circuitry Figure A
Item	Output Voltage Accuracy	
Object	+15V6.7A	

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 - 100°C

Input Voltage : 60 - 160V

Load Current : 0 - 6.7A

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

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

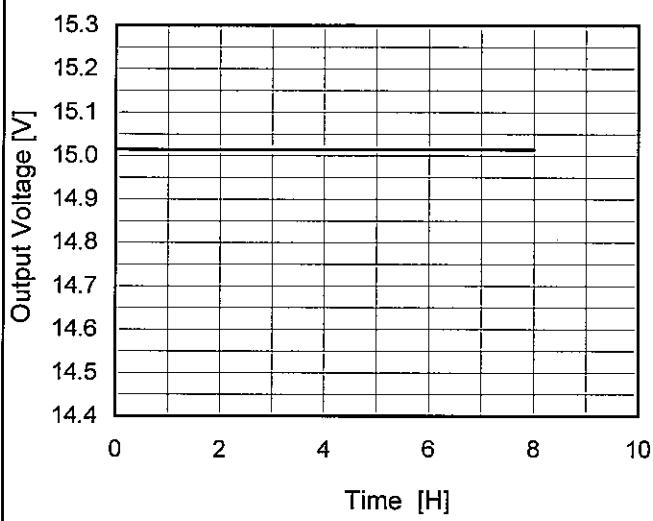
2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	70	160	0	15.032	± 43	± 0.3
Minimum Voltage	-40	60	6.7	14.946		

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Model	DHS100A15
Item	Time Lapse Drift
Object	+15V6.7A

1. Graph


 Temperature 25°C
 Testing Circuitry Figure A

2. Values

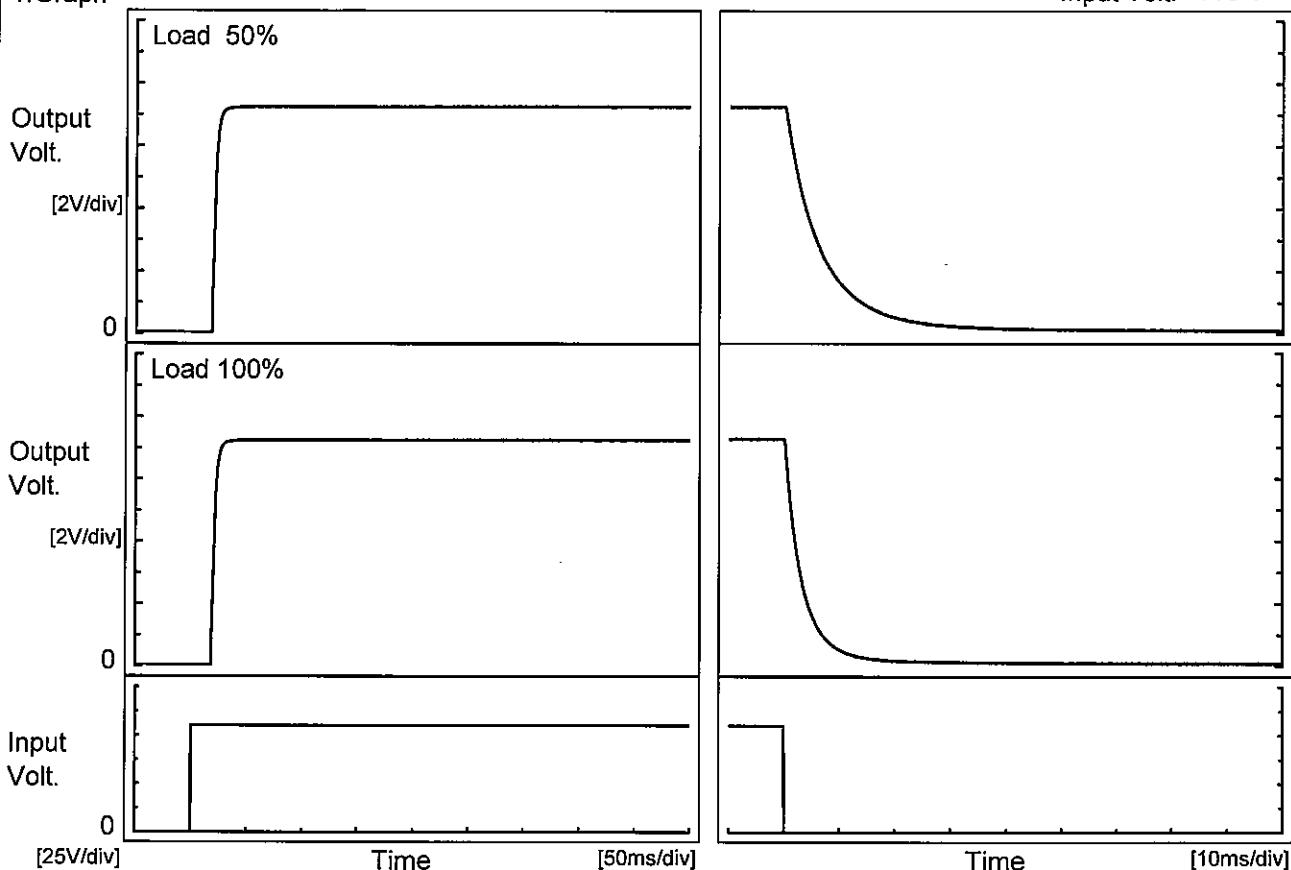
Time since start [H]	Output Voltage [V]
0.0	15.014
0.5	15.014
1.0	15.014
2.0	15.014
3.0	15.014
4.0	15.014
5.0	15.014
6.0	15.014
7.0	15.014
8.0	15.014

COSEL

Model	DHS100A15
Item	Rise and Fall Time
Object	+15V6.7A

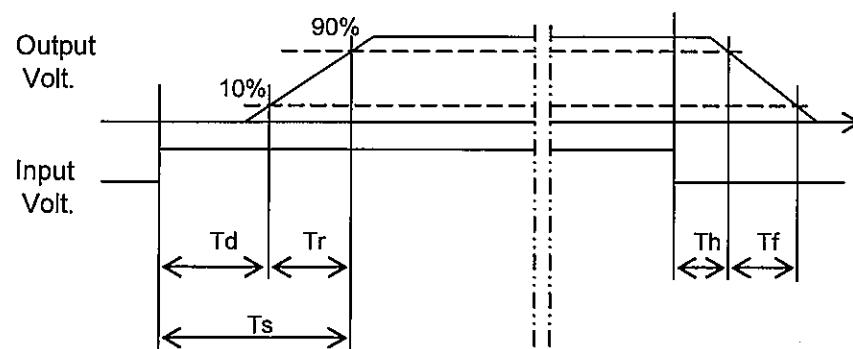
Temperature 25°C
Testing Circuitry Figure A

1. Graph



2. Values

Load	Time	Td	Tr	Ts	Th	Tf	[ms]
50 %		18.8	7.3	26.1	0.5	15.6	
100 %		18.8	7.3	26.1	0.3	7.6	





<p>Model DHS100A15</p> <p>Item Minimum Input Voltage for Regulated Output Voltage</p> <p>Object +15V6.7A</p>	Testing Circuitry Figure A																																						
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Note: Slanted line shows the range of the rated ambient temperature.																																							

COSSEL

Model	DHS100A15
Item	Overcurrent Protection
Object	+15V6.7A

1. Graph

Output Voltage [V]	Input Volt. 60V	Input Volt. 110V	Input Volt. 160V
0	0	0	0
4	15.0	14.3	13.5
8	12.0	10.5	9.0
12	-	-	-
16	-	-	-
20	-	-	-

Output Voltage [V]

Load Current [A]

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

Intermittent operation occurs when the output voltage is from 8V to 0V.

Temperature	25°C
Testing Circuitry	Figure A

2. Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 60[V]	Input Volt. 110[V]	Input Volt. 160[V]
15.0	6.70	6.72	6.72
14.3	8.43	8.81	9.18
13.5	8.52	8.87	9.27
12.0	8.60	9.04	9.41
10.5	8.69	9.13	9.39
9.0	8.81	9.41	9.35
--	-	-	-
--	-	-	-
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Model	DHS100A15	Testing Circuitry Figure A																																																					
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Object	+15V6.7A																																																						
1.Graph	<p>Operating Point [V]</p> <p>Ambient Temperature [°C]</p> <p>Load 0%</p> <p>Legend:</p> <ul style="list-style-type: none"> Input Volt. 60V Input Volt. 110V Input Volt. 160V 	2.Values																																																					
		<table border="1"> <thead> <tr> <th rowspan="2">Ambient Temperature [°C]</th> <th colspan="3">Operating Point [V]</th> </tr> <tr> <th>Input Volt. 60[V]</th> <th>Input Volt. 110[V]</th> <th>Input Volt. 160[V]</th> </tr> </thead> <tbody> <tr> <td>-50</td> <td>18.34</td> <td>18.34</td> <td>18.34</td> </tr> <tr> <td>-40</td> <td>18.41</td> <td>18.41</td> <td>18.48</td> </tr> <tr> <td>-20</td> <td>18.69</td> <td>18.69</td> <td>18.69</td> </tr> <tr> <td>0</td> <td>18.97</td> <td>18.97</td> <td>18.97</td> </tr> <tr> <td>25</td> <td>19.25</td> <td>19.25</td> <td>19.32</td> </tr> <tr> <td>40</td> <td>19.46</td> <td>19.46</td> <td>19.46</td> </tr> <tr> <td>55</td> <td>19.67</td> <td>19.67</td> <td>19.67</td> </tr> <tr> <td>70</td> <td>19.88</td> <td>19.88</td> <td>19.88</td> </tr> <tr> <td>85</td> <td>20.02</td> <td>20.02</td> <td>20.02</td> </tr> <tr> <td>100</td> <td>20.23</td> <td>20.23</td> <td>20.23</td> </tr> <tr> <td>--</td> <td>-</td> <td>-</td> <td>-</td> </tr> </tbody> </table>			Ambient Temperature [°C]	Operating Point [V]			Input Volt. 60[V]	Input Volt. 110[V]	Input Volt. 160[V]	-50	18.34	18.34	18.34	-40	18.41	18.41	18.48	-20	18.69	18.69	18.69	0	18.97	18.97	18.97	25	19.25	19.25	19.32	40	19.46	19.46	19.46	55	19.67	19.67	19.67	70	19.88	19.88	19.88	85	20.02	20.02	20.02	100	20.23	20.23	20.23	--	-	-	-
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Note: Slanted line shows the range of the rated ambient temperature.

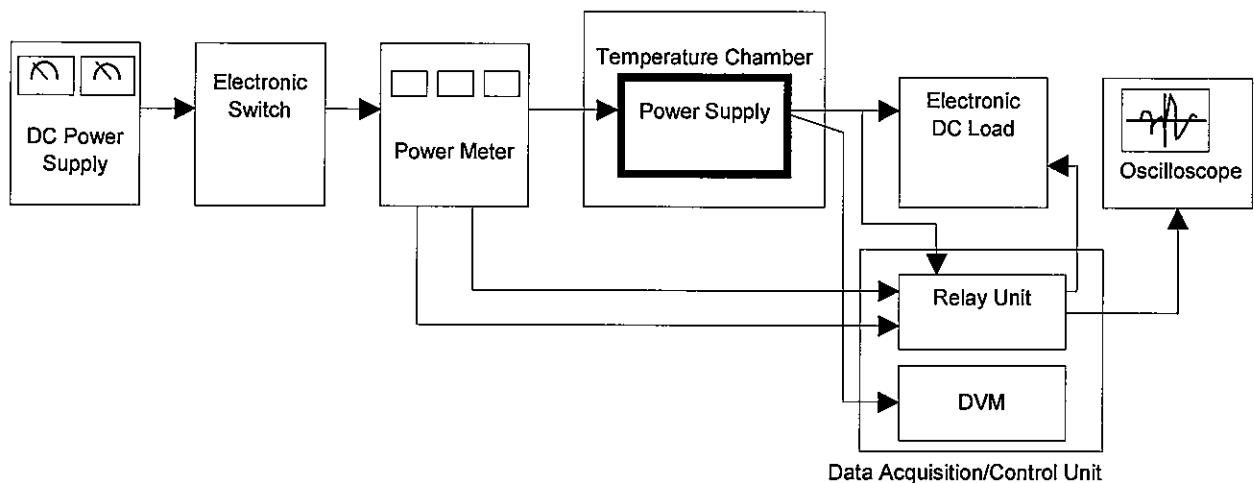
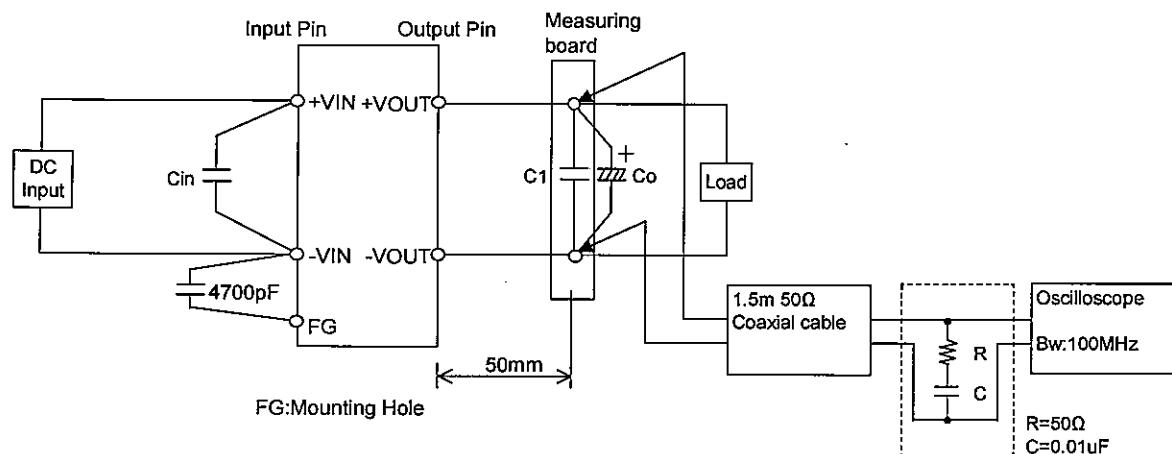


Figure A



C1 : DHS100A24 4.7 μF
 Others 10 μF
 Co : DHS100A05 2200 μF
 DHS100A12 470 μF
 DHS100A15 470 μF
 DHS100A24 220 μF

Figure B