



TEST DATA OF CHS2004805

Regulated DC Power Supply
September 29, 2011

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Model		CHS2004805		Temperature	25°C
Item		Input Current (by Input Voltage)		Testing Circuitry	Figure A
Object		_____			
1.Graph			—△— Load 100% - - □ - - Load 50% - - ○ - - Load 0%	2.Values	
Input Current [A] 	Input Voltage [V]		Input Current [A]		
			Load 0%	Load 50%	Load 100%
	0.0		0.000	0.000	0.000
	8.0		0.000	0.000	0.000
	16.0		0.000	0.000	0.000
	24.0		0.000	0.000	0.000
	33.0		0.000	0.000	0.000
	34.6		0.000	0.000	0.000
	35.2	0.055	2.956	6.000	
	36.0	0.055	2.892	5.880	
	40.0	0.057	2.614	5.280	
	48.0	0.060	2.190	4.398	
60.0	0.064	1.769	3.532		
70.0	0.068	1.534	3.044		
76.0	0.070	1.422	2.818		
80.0	0.072	1.359	2.684		
--	-	-	-		
--	-	-	-		
--	-	-	-		
--	-	-	-		

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



Model		CHS2004805		Temperature		25°C																																																				
Item		Input Current (by Load Current)		Testing Circuitry		Figure A																																																				
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<p> \triangle Input Volt. 36V \square Input Volt. 48V \circ Input Volt. 76V </p> <p style="text-align: center;">Input Current [A]</p> <p style="text-align: center;">Load Current [A]</p>				<table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="3">Input Current [A]</th> </tr> <tr> <th>Input Volt. 36[V]</th> <th>Input Volt. 48[V]</th> <th>Input Volt. 76[V]</th> </tr> </thead> <tbody> <tr><td>0</td><td>0.055</td><td>0.060</td><td>0.070</td></tr> <tr><td>8</td><td>1.186</td><td>0.908</td><td>0.608</td></tr> <tr><td>16</td><td>2.332</td><td>1.764</td><td>1.156</td></tr> <tr><td>24</td><td>3.492</td><td>2.634</td><td>1.704</td></tr> <tr><td>32</td><td>4.680</td><td>3.514</td><td>2.258</td></tr> <tr><td>40</td><td>5.880</td><td>4.398</td><td>2.818</td></tr> <tr><td>44</td><td>6.520</td><td>4.870</td><td>3.114</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]	Input Current [A]			Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]	0	0.055	0.060	0.070	8	1.186	0.908	0.608	16	2.332	1.764	1.156	24	3.492	2.634	1.704	32	4.680	3.514	2.258	40	5.880	4.398	2.818	44	6.520	4.870	3.114	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
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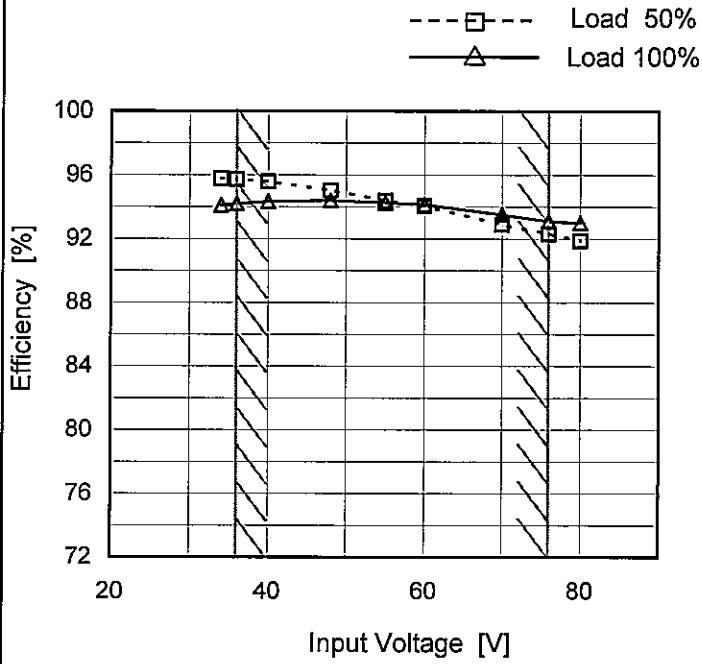


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Model	CHS2004805	
Item	Efficiency (by Input Voltage)	Temperature 25°C Testing Circuitry Figure A
Object	_____	

1. Graph



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

2. Values

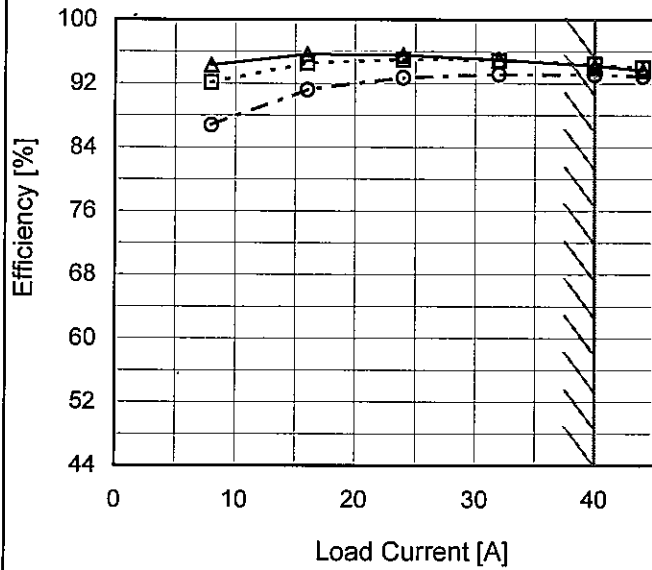
Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
34	95.8	94.1
36	95.7	94.2
40	95.6	94.4
48	95.0	94.4
55	94.4	94.3
60	94.0	94.1
70	92.9	93.5
76	92.3	93.1
80	91.9	93.0



Model	CHS2004805	Temperature	25°C
Item	Efficiency (by Load Current)	Testing Circuitry	Figure A
Object	_____		

1. Graph

- △— Input Volt. 36V
- - □ - - Input Volt. 48V
- · ○ · - - Input Volt. 76V



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

2. Values

Load Current [A]	Efficiency [%]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0	-	-	-
8	94.3	92.1	86.8
16	95.6	94.5	91.2
24	95.5	95.0	92.7
32	95.0	94.9	93.1
40	94.2	94.4	93.1
44	93.6	93.9	92.9
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-



<p>Model CHS2004805</p>		<p>Temperature 25°C Testing Circuitry Figure A</p>																																
<p>Item Line Regulation</p>																																		
<p>Object +5V40A</p>																																		
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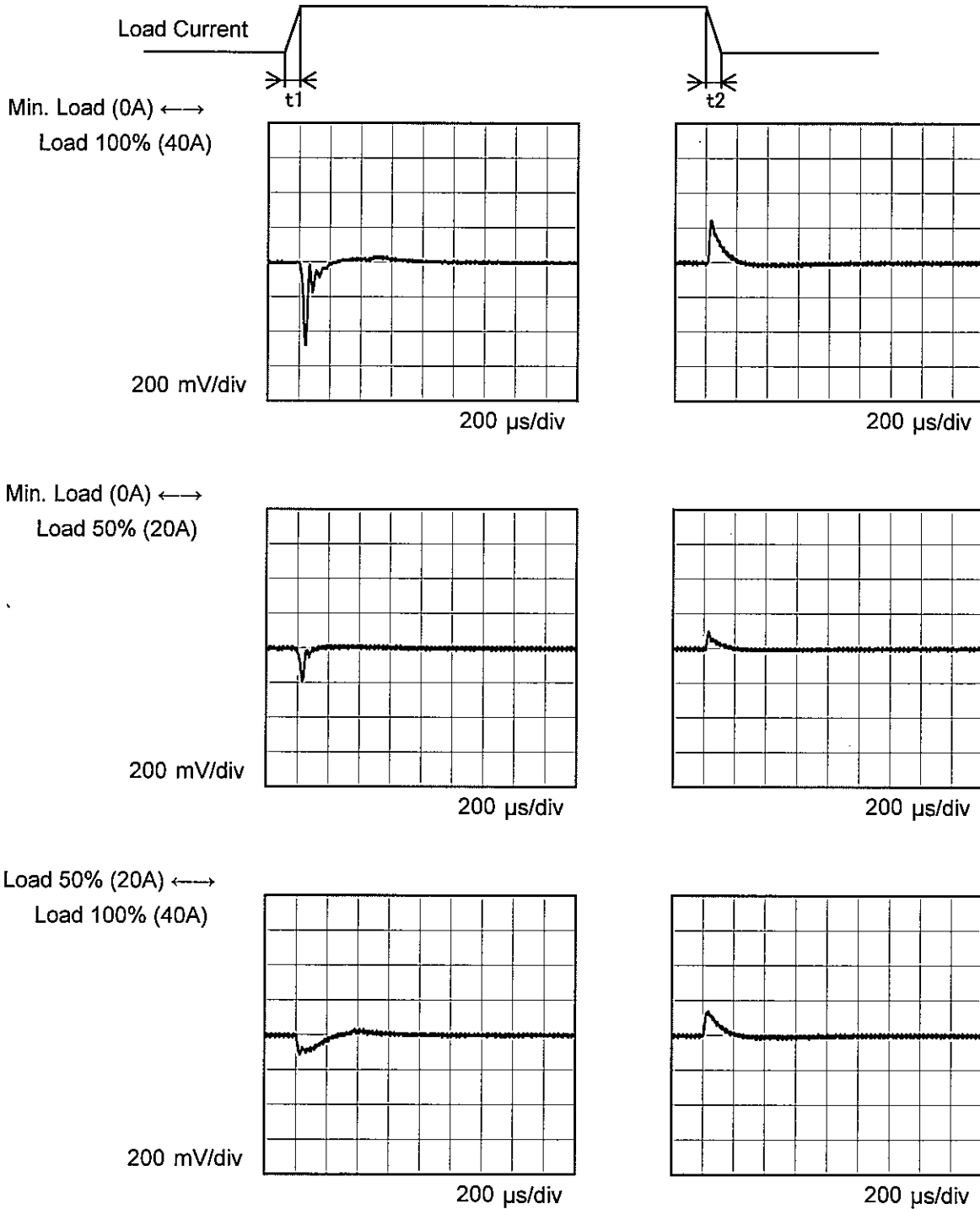
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Model	CHS2004805	Temperature	25°C
Item	Dynamic Load Response	Testing Circuitry	Figure A
Object	+5V40A		

Input Volt. 48 V
Cycle 5 ms

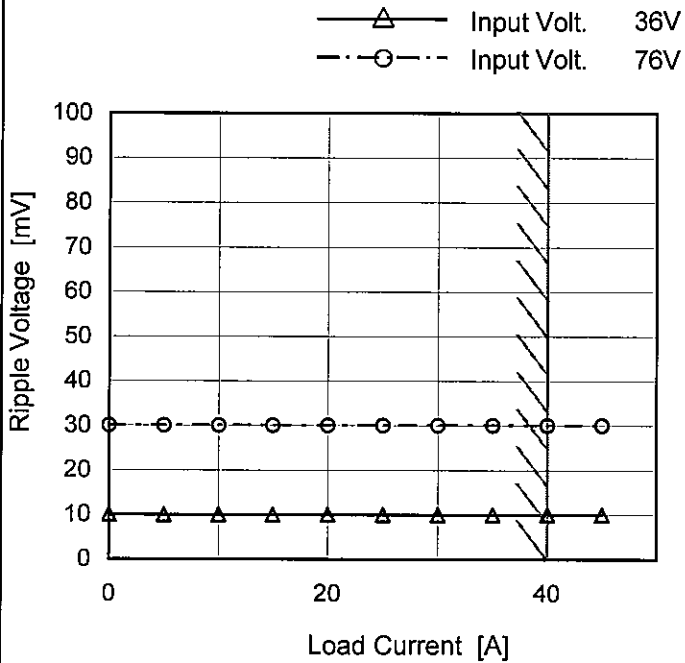
$t_1, t_2 = 50 \mu S$





Model	CHS2004805	Temperature	25°C
Item	Ripple Voltage (by Load Current)	Testing Circuitry	Figure B
Object	+5V40A		

1. Graph



2. Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 36[V]	Input Volt. 76[V]
0	10	30
5	10	30
10	10	30
15	10	30
20	10	30
25	10	30
30	10	30
35	10	30
40	10	30
45	10	30
--	-	-

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.

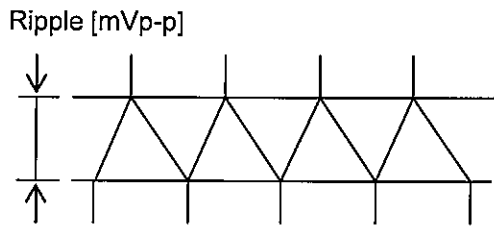
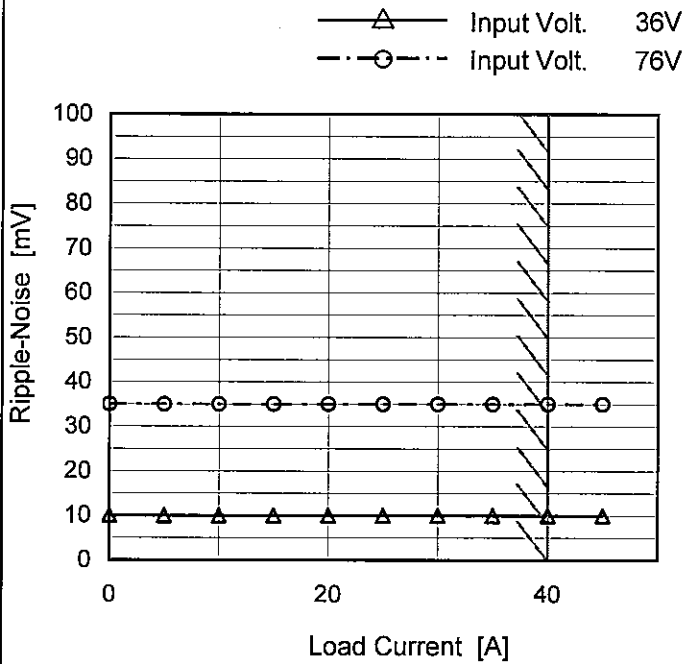


Fig. Complex Ripple Wave Form



Model	CHS2004805	Temperature	25°C
Item	Ripple-Noise	Testing Circuitry	Figure B
Object	+5V40A		

1. Graph



2. Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 36[V]	Input Volt. 76 [V]
0	10	35
5	10	35
10	10	35
15	10	35
20	10	35
25	10	35
30	10	35
35	10	35
40	10	35
45	10	35
--	-	-

Measured by 100 MHz Oscilloscope.
 Ripple-Noise is shown as p-p in the figure below.
 Note: Slanted line shows the range of the rated load current.

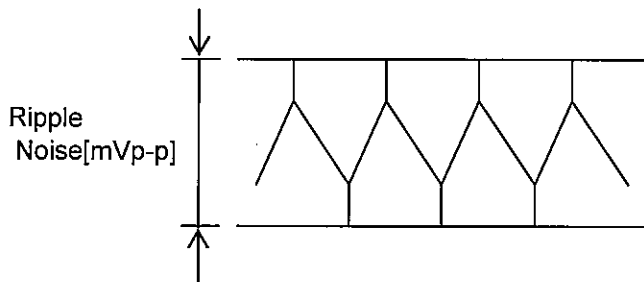


Fig. Complex Ripple Noise Wave Form



<p>Model CHS2004805</p> <p>Item Ripple Voltage (by Ambient Temp.)</p> <p>Object +5V40A</p>		<p>Testing Circuitry Figure A</p>																																						
<p>1. Graph</p> <div style="text-align: right;"> <p>---□--- Load 50%</p> <p>—△— Load 100%</p> </div> <p style="text-align: center;">Ambient Temperature [°C]</p> <p style="text-align: center;">Input Volt. 48V</p>		<p>2. Values</p> <table border="1"> <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>-40</td><td>30</td><td>30</td></tr> <tr><td>-20</td><td>25</td><td>25</td></tr> <tr><td>0</td><td>25</td><td>25</td></tr> <tr><td>25</td><td>20</td><td>20</td></tr> <tr><td>40</td><td>20</td><td>20</td></tr> <tr><td>50</td><td>20</td><td>20</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> </tbody> </table>	Ambient Temperature [°C]	Ripple Voltage [mV]		Load 50%	Load 100%	-40	30	30	-20	25	25	0	25	25	25	20	20	40	20	20	50	20	20	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-
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0	4.996	4.996	4.995																																																		
25	4.990	4.990	4.990																																																		
40	4.988	4.987	4.987																																																		
50	4.986	4.986	4.986																																																		
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<p>Note: Slanted line shows the range of the rated ambient temperature.</p>																																																					



COSEL		
Model	CHS2004805	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+5V40A	

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 - 50°C

Input Voltage : 36 - 76V

Load Current : 0 - 40A

* 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	-40	76	0	5.009	±12	±0.2
Minimum Voltage	50	36	0	4.985		

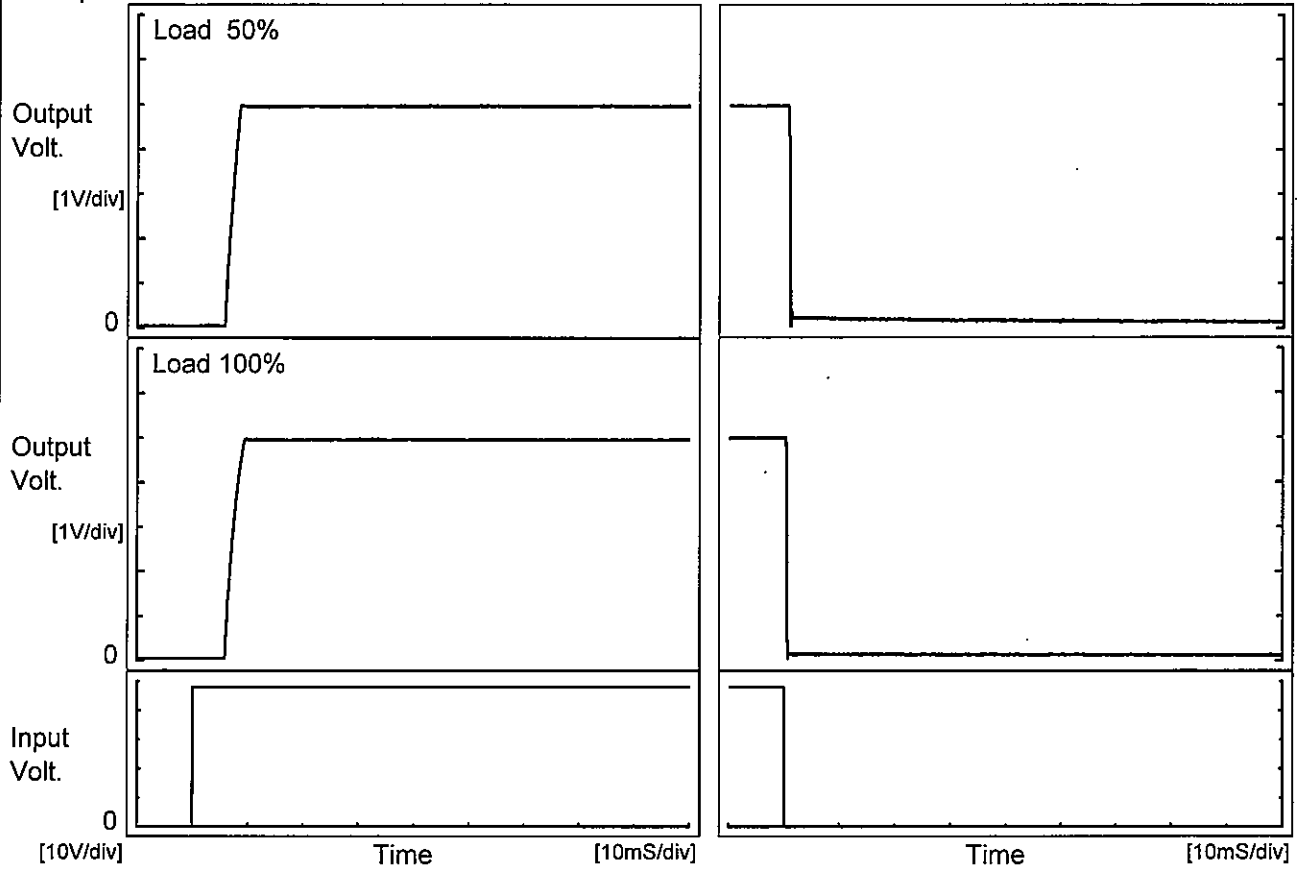


COSEL																									
Model	CHS2004805	Temperature	25°C																						
Item	Time Lapse Drift	Testing Circuitry	Figure A																						
Object	+5V40A																								
<p>1. Graph</p> <p style="text-align: center;">Time [H]</p> <p>Input Volt. 48V Load 100%</p>		<p>2. Values</p> <table border="1"> <thead> <tr> <th>Time since start [H]</th> <th>Output Voltage [V]</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>4.990</td></tr> <tr><td>0.5</td><td>4.989</td></tr> <tr><td>1.0</td><td>4.989</td></tr> <tr><td>2.0</td><td>4.989</td></tr> <tr><td>3.0</td><td>4.989</td></tr> <tr><td>4.0</td><td>4.989</td></tr> <tr><td>5.0</td><td>4.989</td></tr> <tr><td>6.0</td><td>4.989</td></tr> <tr><td>7.0</td><td>4.989</td></tr> <tr><td>8.0</td><td>4.989</td></tr> </tbody> </table>		Time since start [H]	Output Voltage [V]	0.0	4.990	0.5	4.989	1.0	4.989	2.0	4.989	3.0	4.989	4.0	4.989	5.0	4.989	6.0	4.989	7.0	4.989	8.0	4.989
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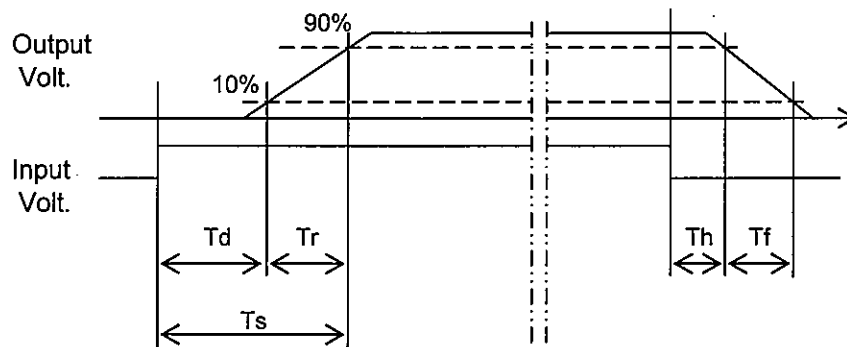
Model	CHS2004805	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	+5V40A		

1. Graph



2. Values

Load	Time	[mS]				
		Td	Tr	Ts	Th	Tf
50 %		6.1	2.2	8.3	0.8	0.3
100 %		6.0	2.8	8.8	0.4	0.1

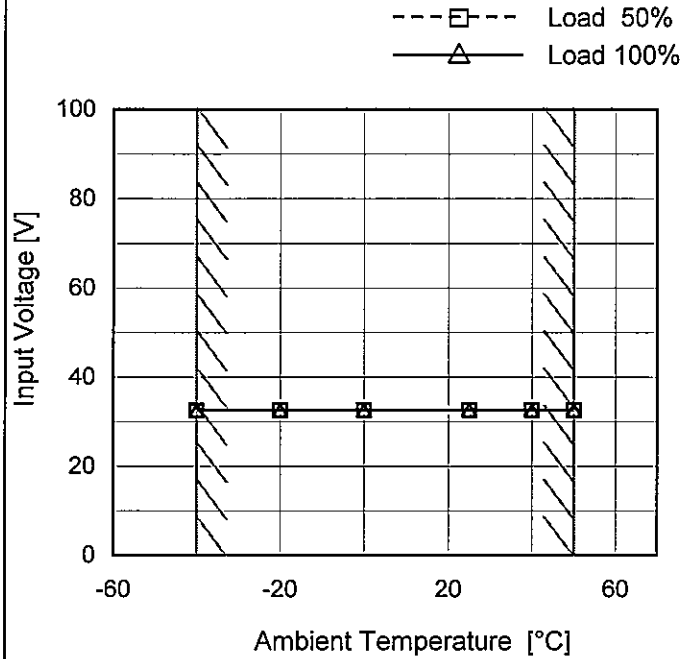




Model	CHS2004805
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+5V40A

Testing Circuitry Figure A

1. Graph



Note: Slanted line shows the range of the rated ambient temperature.

2. Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-40	32.5	32.7
-20	32.7	32.7
0	32.7	32.7
25	32.7	32.7
40	32.7	32.7
50	32.7	32.6
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

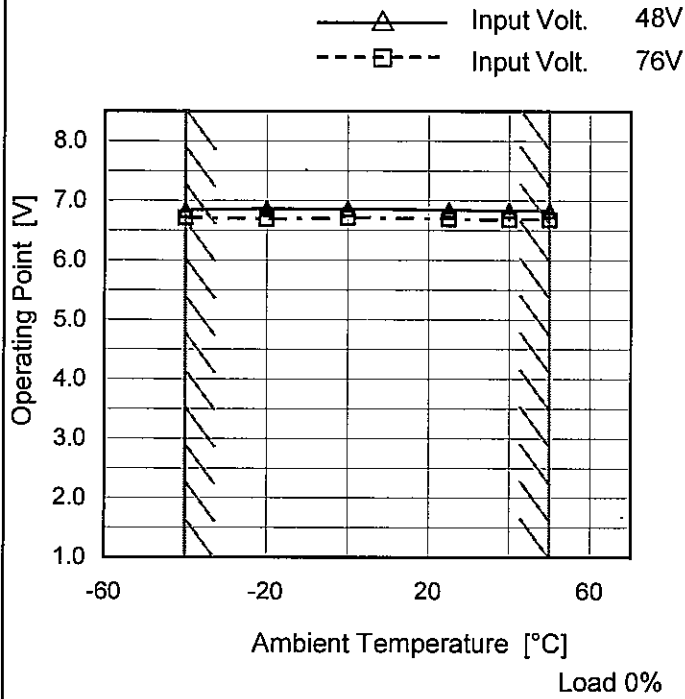


<p>Model CHS2004805</p>		<p>Temperature 25°C</p>																																																								
<p>Item Overcurrent Protection</p>		<p>Testing Circuitry Figure A</p>																																																								
<p>Object +5V40A</p>																																																										
<p>1. Graph</p> <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <p>———— Input Volt. 36V</p> <p>———— Input Volt. 48V</p> <p>———— Input Volt. 76V</p> </div> </div> <p>Note: Slanted line shows the range of the rated load current.</p>		<p>2. Values</p> <table border="1"> <thead> <tr> <th rowspan="2">Output Voltage [V]</th> <th colspan="3">Load Current [A]</th> </tr> <tr> <th>Input Volt. 36[V]</th> <th>Input Volt. 48[V]</th> <th>Input Volt. 76[V]</th> </tr> </thead> <tbody> <tr> <td>5.00</td> <td>40.77</td> <td>40.75</td> <td>40.74</td> </tr> <tr> <td>4.75</td> <td>48.04</td> <td>48.28</td> <td>48.70</td> </tr> <tr> <td>4.50</td> <td>48.11</td> <td>48.26</td> <td>48.91</td> </tr> <tr> <td>4.00</td> <td>48.21</td> <td>48.40</td> <td>49.17</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> <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>		Output Voltage [V]	Load Current [A]			Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]	5.00	40.77	40.75	40.74	4.75	48.04	48.28	48.70	4.50	48.11	48.26	48.91	4.00	48.21	48.40	49.17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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Model	CHS2004805	Testing Circuitry Figure A
Item	Overvoltage Protection	
Object	+5V40A	

1. Graph



Note: Slanted line shows the range of the rated ambient temperature.

2. Values

Ambient Temperature [°C]	Operating Point [V]	
	Input Volt. 48[V]	Input Volt. 76[V]
-40	6.84	6.71
-20	6.86	6.69
0	6.86	6.71
25	6.84	6.69
40	6.83	6.68
50	6.83	6.68
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

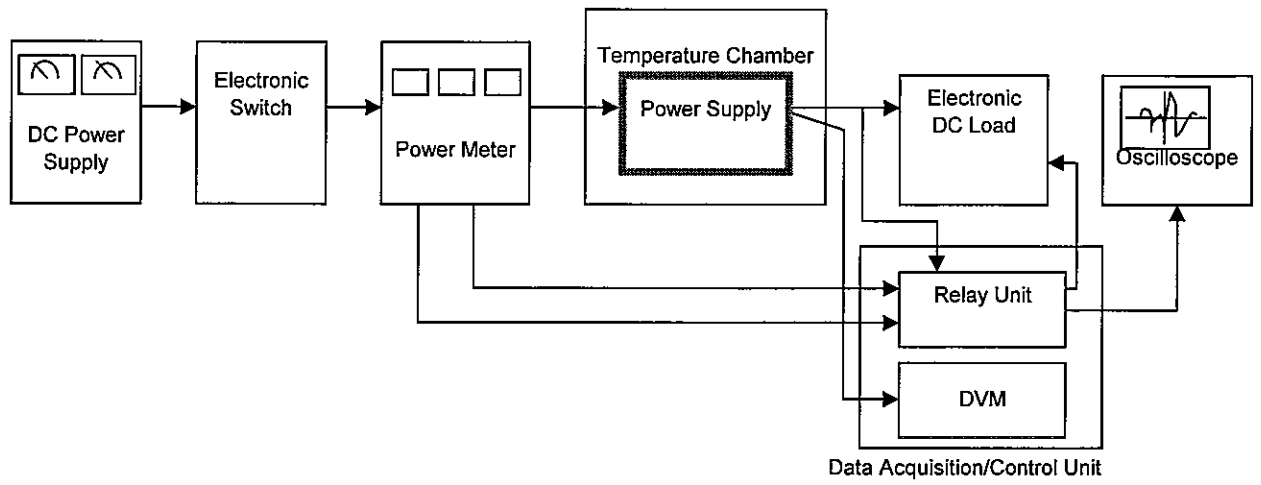


Figure A

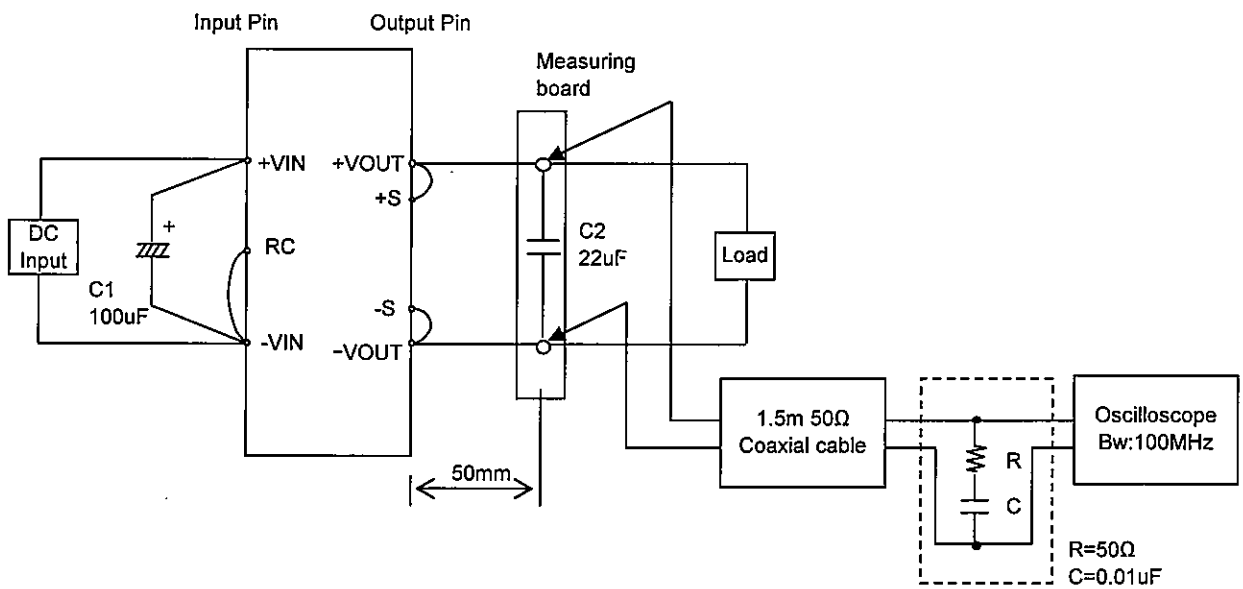


Figure B