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参考資料

TEST DATA OF CHS4004810

Regulated DC Power Supply
September 10, 2013

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CONTENTS

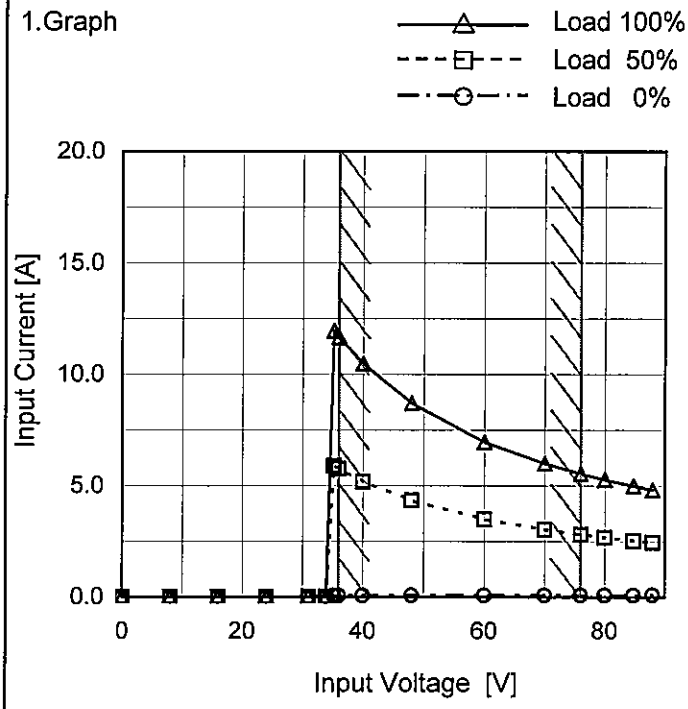
1.Input Current (by Input Voltage) ・・・・・・・・・・・・・・・・・・・・・・・・ 1
2.Input Current (by Load Current) ・・・・・・・・・・・・・・・・・・・・・・・ 2
3.Input Power (by Load Current) ・・・・・・・・・・・・・・・・・・・・・・・・ 3
4.Efficiency (by Input Voltage) ・・・・・・・・・・・・・・・・・・・・・・・・ 4
5.Efficiency (by Load Current) ・・・・・・・・・・・・・・・・・・・・・・・・ 5
6.Line 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.Overvoltage Protection ・・・・・・・・・・・・・・・・・・・・・・・・・・・ 18
19.Figure of Testing Circuitry ・・・・・・・・・・・・・・・・・・・・・・・・・ 19
(Final Page 19)

COSEL

Model	CHS4004810
Item	Input Current (by Input Voltage)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

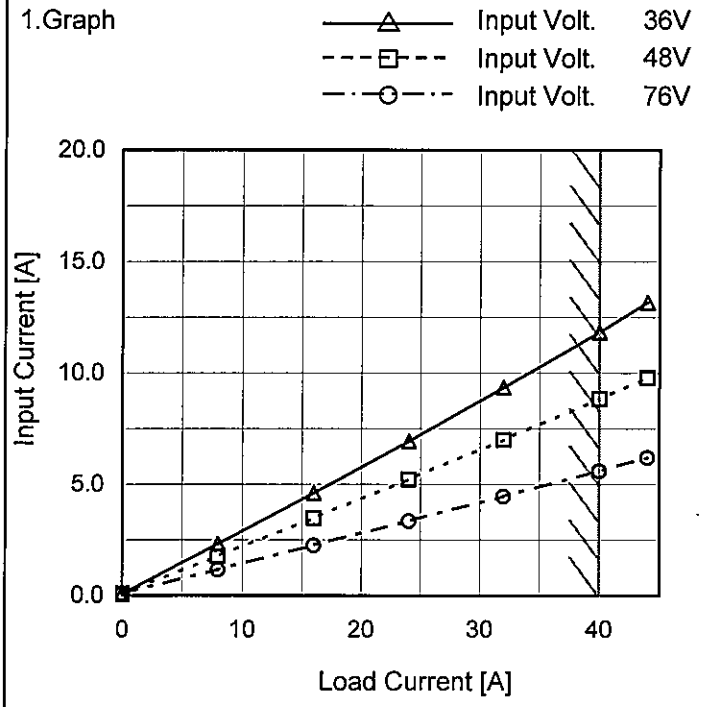
Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0.0	0.000	0.000	0.000
8.0	0.000	0.000	0.000
16.0	0.000	0.006	0.000
24.0	0.006	0.006	0.006
31.0	0.019	0.019	0.018
34.0	0.017	0.017	0.017
35.2	0.077	5.890	11.960
36.0	0.077	5.760	11.670
40.0	0.078	5.190	10.490
48.0	0.080	4.341	8.700
60.0	0.084	3.498	6.970
70.0	0.087	3.030	6.010
76.0	0.089	2.806	5.550
80.0	0.091	2.676	5.280
84.8	0.093	2.534	5.000
88.0	0.094	2.453	4.820
--	-	-	-
--	-	-	-

COSEL

Model	CHS4004810
Item	Input Current (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

Load Current [A]	Input Current [A]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0	0.077	0.080	0.089
8	2.322	1.769	1.170
16	4.610	3.478	2.256
24	6.940	5.210	3.350
32	9.350	7.000	4.460
40	11.670	8.700	5.550
44	13.180	9.790	6.210
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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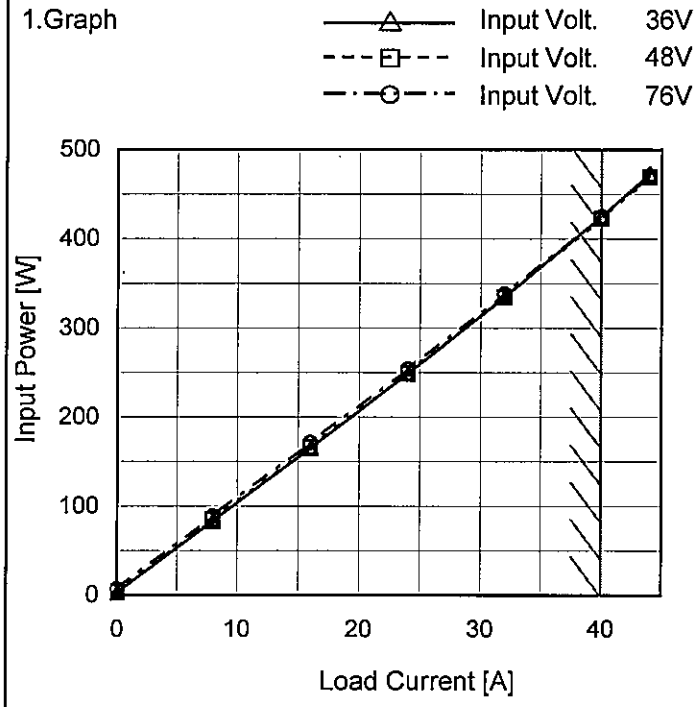
Model	CHS4004810
Item	Input Power (by Load Current)
Object	———————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

Load Current [A]	Input Power [W]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0	2.7	3.9	6.9
8	83.3	84.7	88.7
16	165.3	166.4	171.3
24	249.1	249.8	254.1
32	335.0	334.8	338.4
40	425.0	422.9	425.0
44	473.0	469.0	471.0
---	-	-	-
---	-	-	-
---	-	-	-
---	-	-	-

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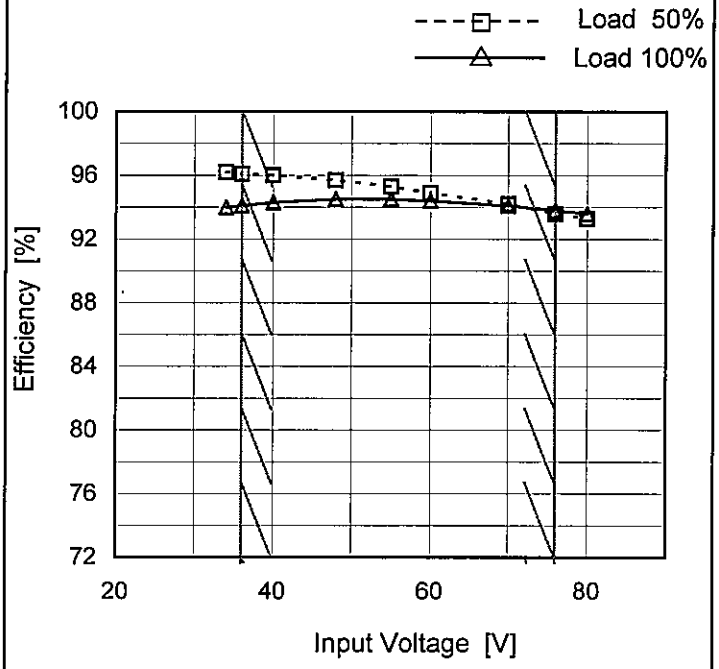
Model	CHS4004810
Item	Efficiency (by Input Voltage)
Object	———————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

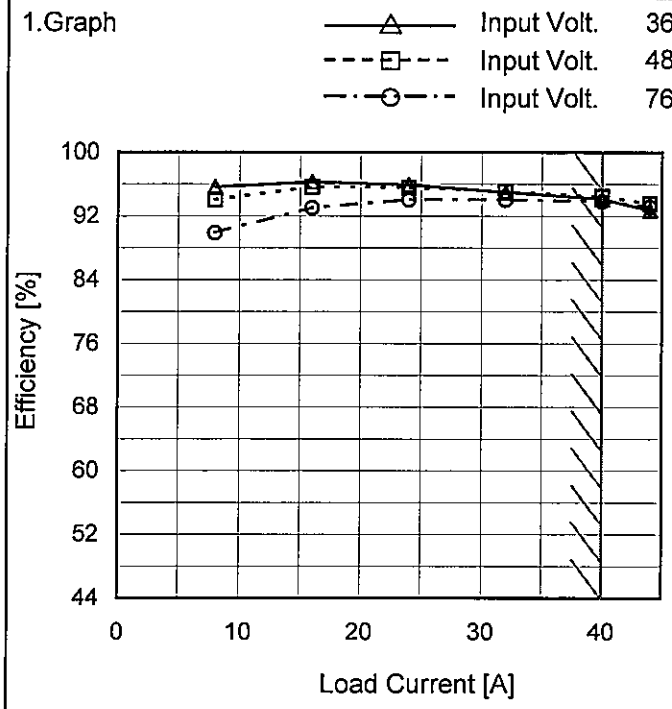
Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
34	96.2	94.0
36	96.1	94.1
40	96.0	94.3
48	95.7	94.5
55	95.3	94.5
60	94.9	94.4
70	94.2	94.1
76	93.6	93.8
80	93.3	93.6

COSEL

Model	CHS4004810
Item	Efficiency (by Load Current)
Object	———————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

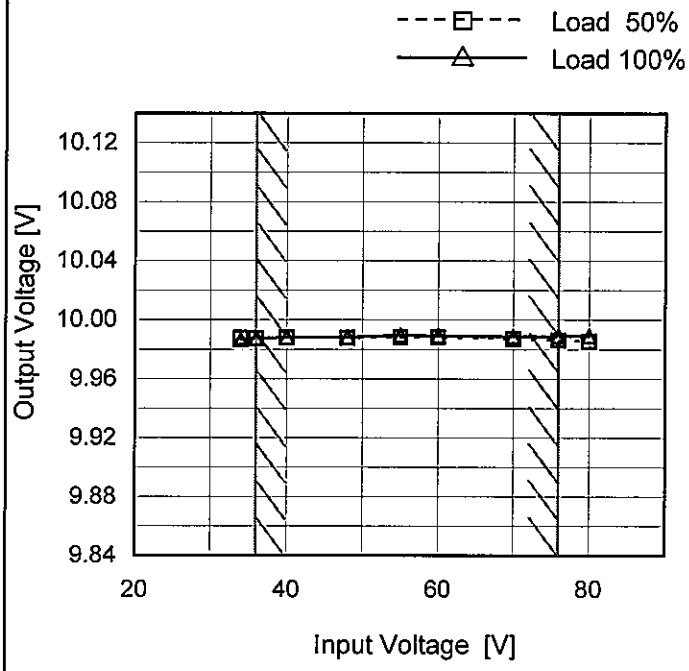
Load Current [A]	Efficiency [%]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0	-	-	-
8	95.6	94.1	89.9
16	96.3	95.6	93.0
24	95.9	95.6	94.0
32	95.0	95.1	94.1
40	94.2	94.5	93.8
44	92.8	93.6	93.1
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	CHS4004810
Item	Line Regulation
Object	+10V40A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

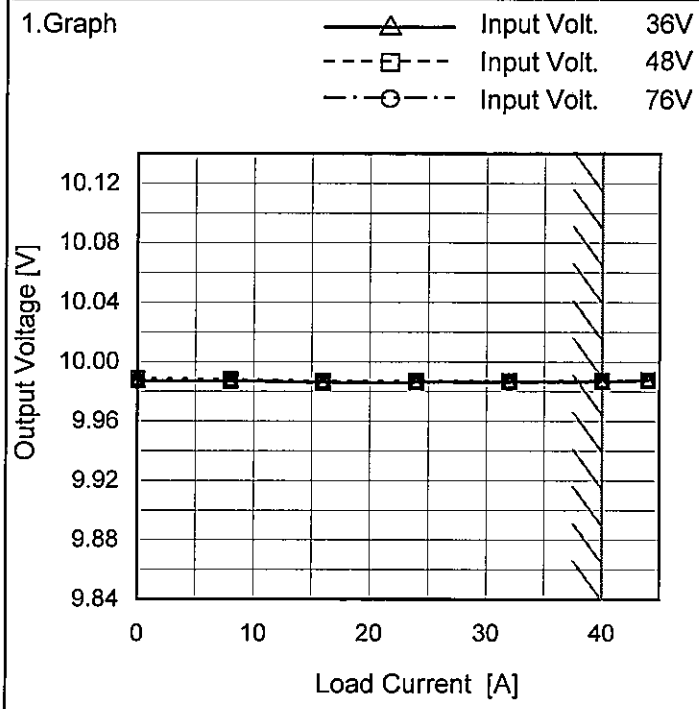
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
34	9.988	9.987
36	9.987	9.987
40	9.988	9.988
48	9.988	9.988
55	9.988	9.990
60	9.988	9.989
70	9.987	9.989
76	9.986	9.989
80	9.986	9.989

COSEL

Model	CHS4004810
Item	Load Regulation
Object	+10V40A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

Load Current [A]	Output Voltage [V]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0	9.987	9.989	9.987
8	9.987	9.988	9.987
16	9.986	9.987	9.986
24	9.986	9.987	9.986
32	9.987	9.987	9.986
40	9.987	9.987	9.986
44	9.988	9.988	9.987
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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Model	CHS4004810
Item	Dynamic Load Response
Object	+10V40A

Temperature 25℃
Testing Circuitry Figure A

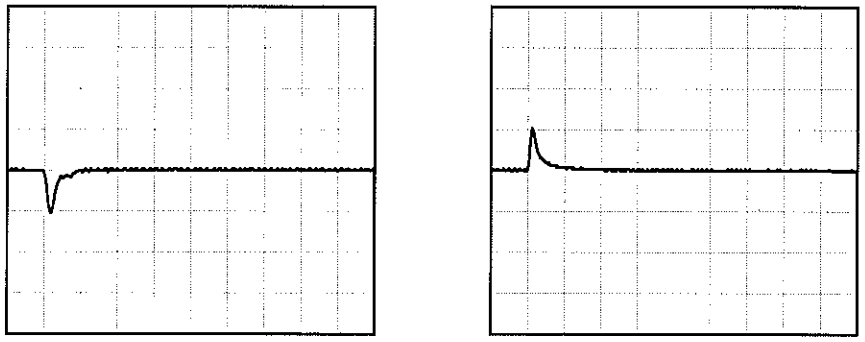
Input Volt. 48 V
Cycle 5 ms

t1,t2=50 μ S

Load Current

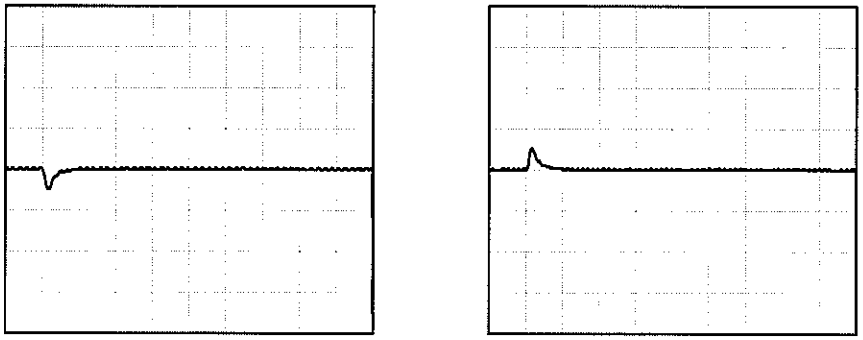
t1 t2

Min. Load (0A) ⟷
Load 100% (40A)



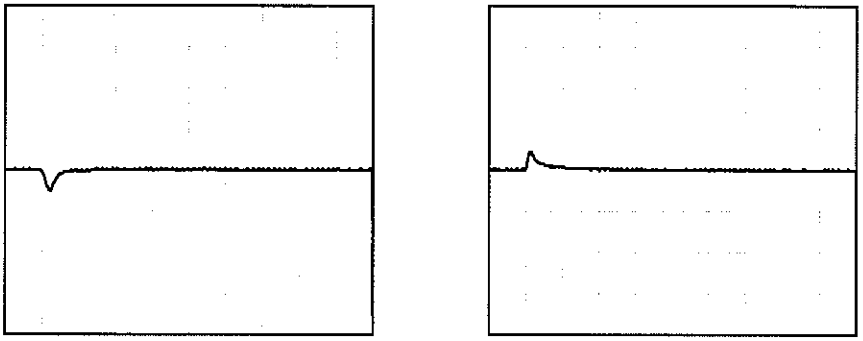
500 mV/div
200 μs/div
200 μs/div

Min. Load (0A) ⟷
Load 50% (20A)



500 mV/div
200 μs/div
200 μs/div

Load 50% (20A) ⟷
Load 100% (40A)



500 mV/div
200 μs/div
200 μs/div

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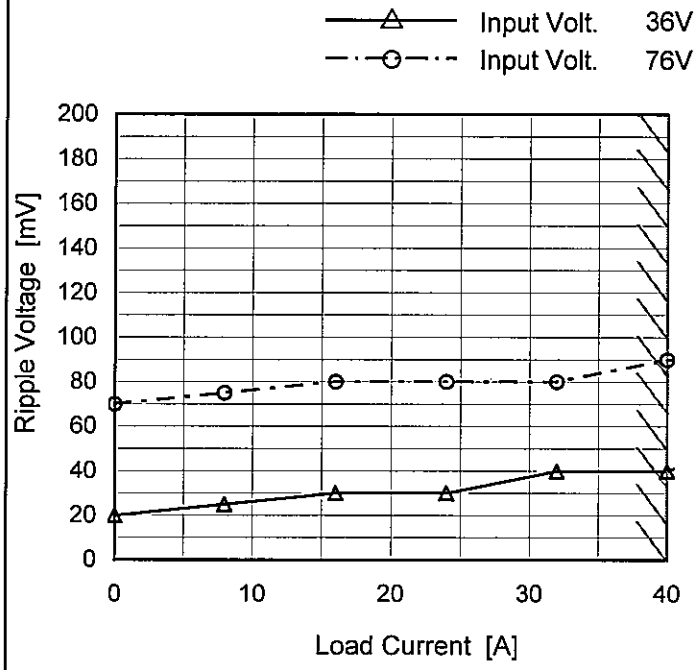
Model	CHS4004810
Item	Ripple Voltage (by Load Current)
Object	+10V40A

Temperature 25°C
Testing Circuitry Figure B

1.Graph



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.

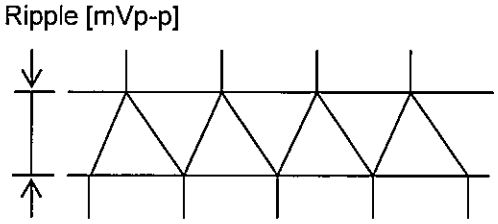


Fig.Complex Ripple Wave Form

2.Values

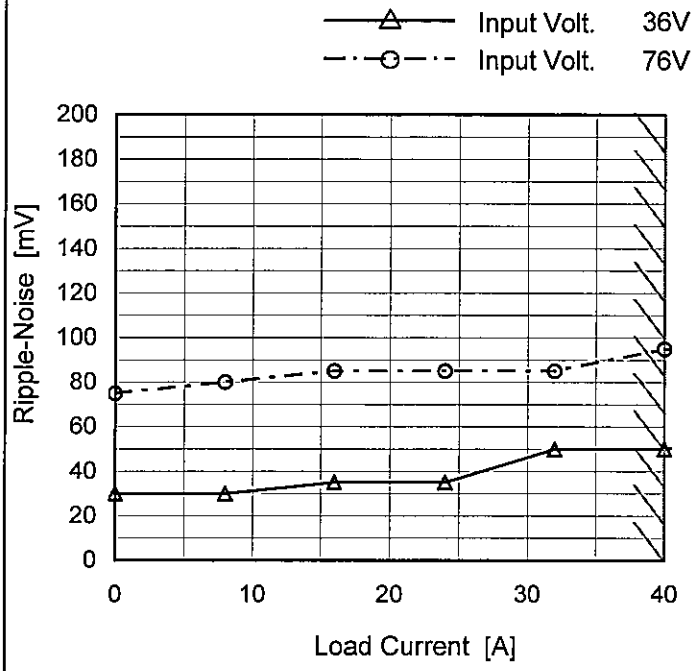
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 36 [V]	Input Volt. 76 [V]
0	20	70
8	25	75
16	30	80
24	30	80
32	40	80
40	40	90
44	50	90
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	CHS4004810
Item	Ripple-Noise
Object	+10V40A

Temperature 25°C
Testing Circuitry Figure B

1.Graph



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.

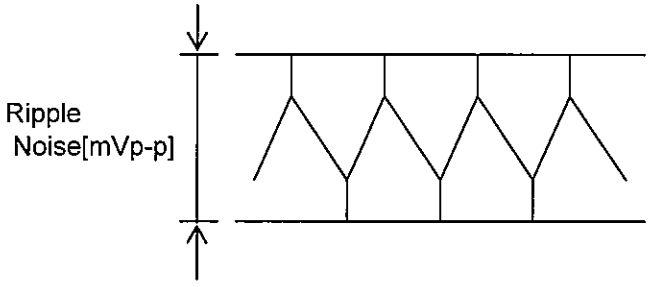


Fig.Complex Ripple Noise Wave Form

2.Values

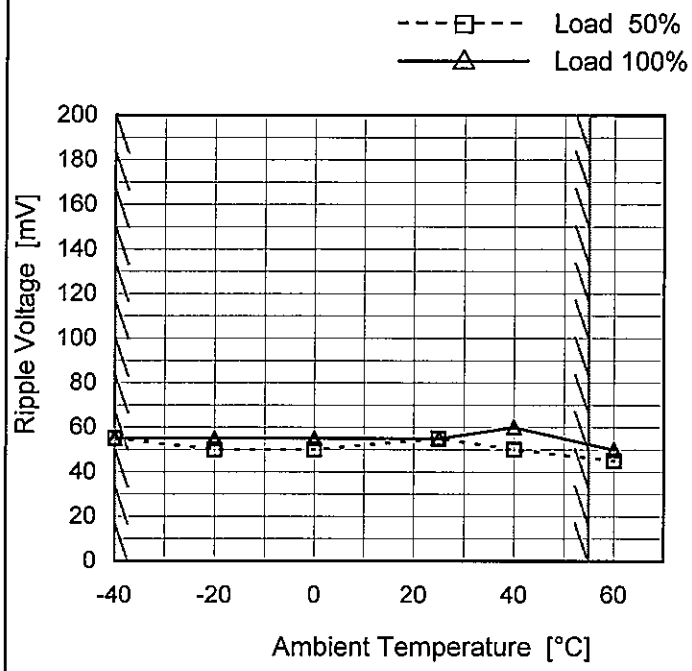
Load Current [A]	Ripple-Noise [mV] Input Volt. 36 [V]	Ripple-Noise [mV] Input Volt. 76 [V]
0	30	75
8	30	80
16	35	85
24	35	85
32	50	85
40	50	95
44	55	95
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	CHS4004810
Item	Ripple Voltage (by Ambient Temp.)
Object	+10V40A

Testing Circuitry Figure B

1.Graph



Input Volt. 48V

Measured by 100 MHz Oscilloscope.

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

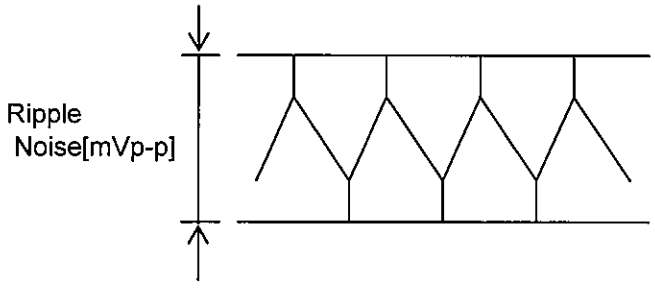


Fig.Complex Ripple Noise Wave Form

2.Values

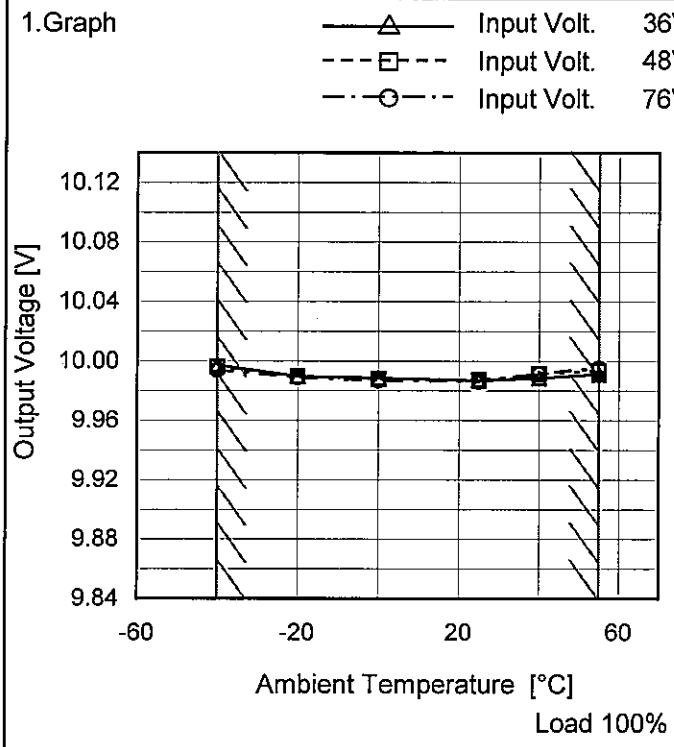
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-40	55	55
-20	50	55
0	50	55
25	55	55
40	50	60
60	45	50
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	CHS4004810
Item	Ambient Temperature Drift
Object	+10V40A

Testing Circuitry Figure A

1.Graph



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

2.Values

Ambient Temperature [°C]	Output Voltage [V] Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
-40	9.997	9.996	9.994
-20	9.990	9.990	9.989
0	9.989	9.988	9.987
25	9.987	9.987	9.986
40	9.989	9.991	9.992
55	9.991	9.993	9.995
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	CHS4004810	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+10V40A	

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 : 36 - 76V
Load Current : 0 - 40A

* Output Voltage Accuracy = ±(Maximum of Output Voltage - Minimum of Output Voltage) / 2

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

2.Values

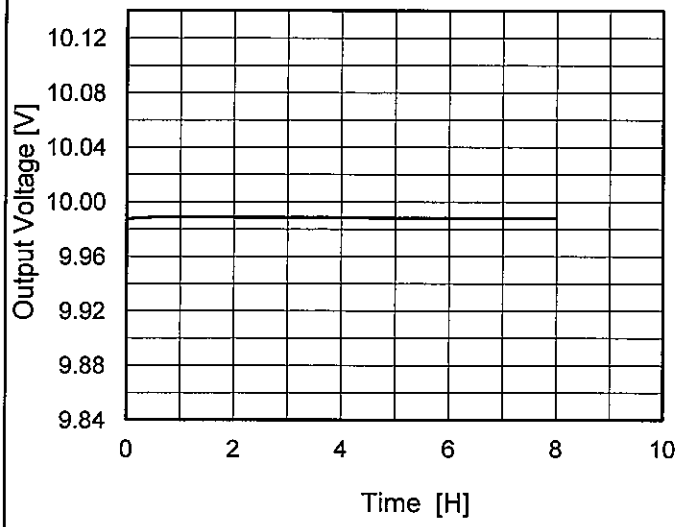
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	-40	76	0	10.001	±8	±0.1
Minimum Voltage	40	76	0	9.986		

COSEL

Model	CHS4004810
Item	Time Lapse Drift
Object	+10V40A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Input Volt. 48V
Load 100%

2.Values

Time since start [H]	Output Voltage [V]
0.0	9.987
0.5	9.989
1.0	9.989
2.0	9.989
3.0	9.989
4.0	9.989
5.0	9.988
6.0	9.988
7.0	9.988
8.0	9.988

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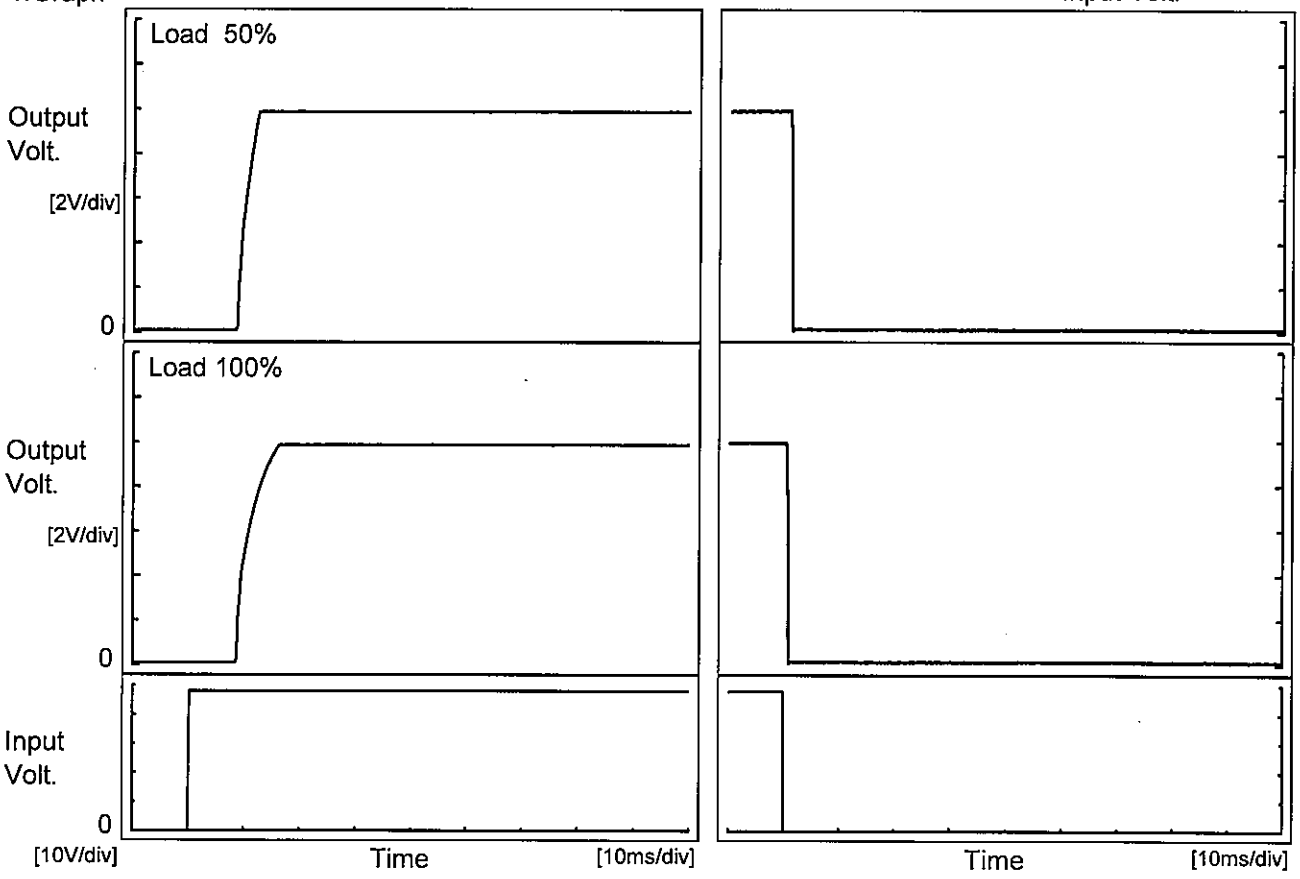
Model	CHS4004810
Item	Rise and Fall Time
Object	+10V40A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

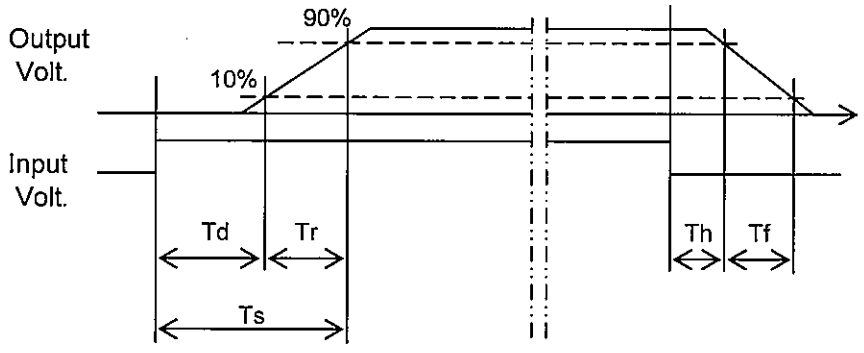
Input Volt. 48 V



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	9.0	3.0	12.0	1.2	0.2
100 %	9.0	5.8	14.8	0.6	0.3



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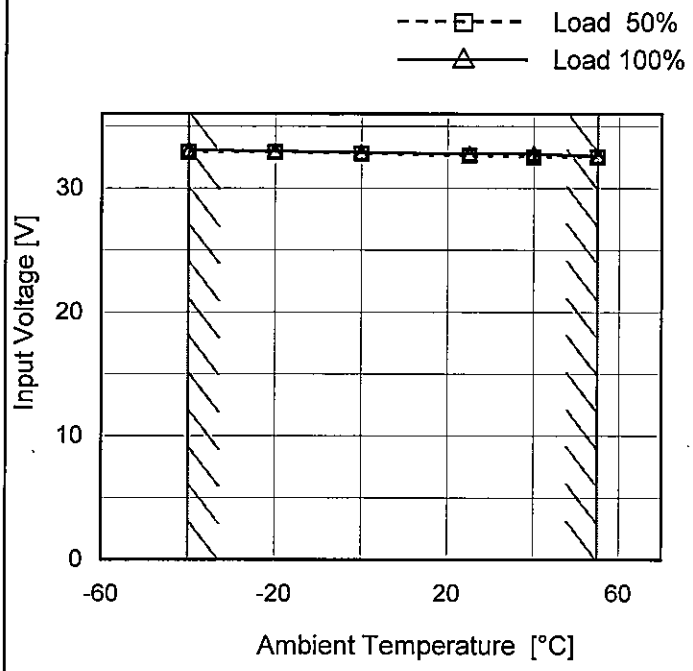
Model	CHS4004810
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+10V40A

Testing Circuitry Figure A

1.Graph



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

2.Values

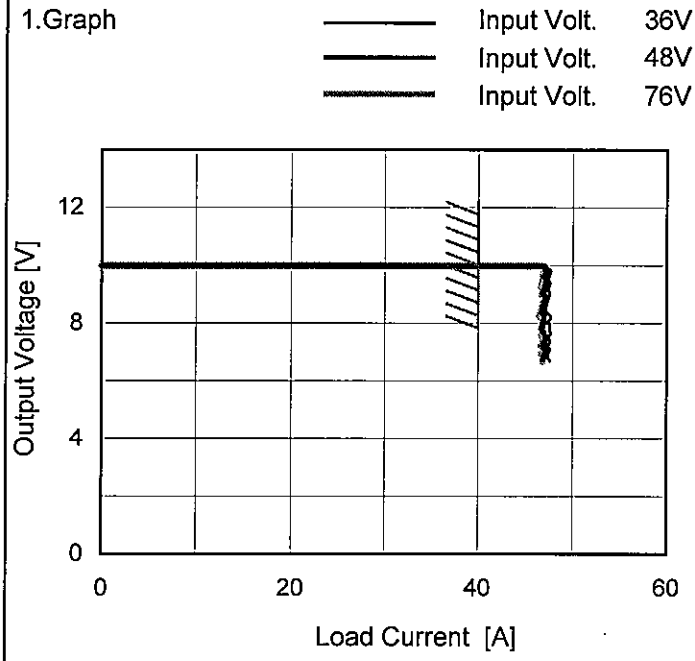
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-40	32.9	33.1
-20	32.9	33.0
0	32.8	32.9
25	32.6	32.8
40	32.5	32.8
55	32.5	32.6
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	CHS4004810
Item	Overcurrent Protection
Object	+10V40A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

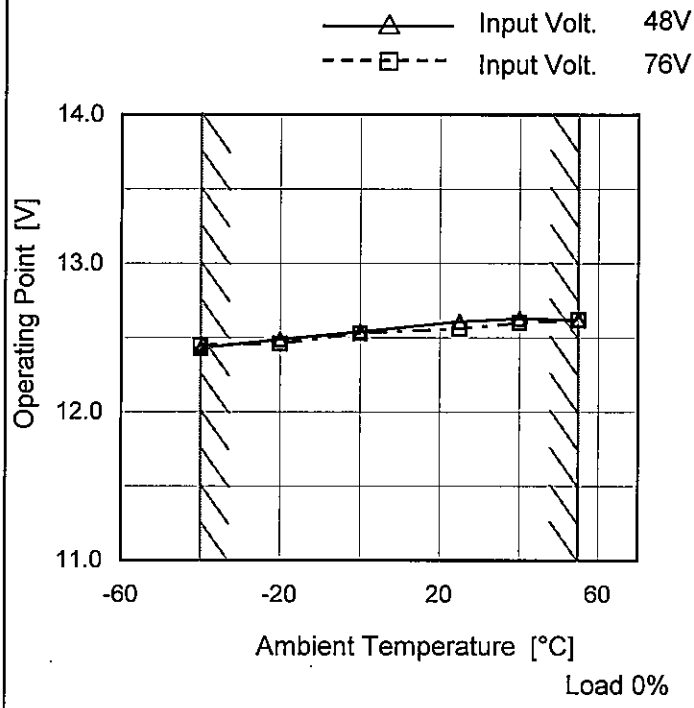
Output Voltage [V]	Load Current [A]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
9.5	47.46	47.21	46.94
9.0	47.64	46.90	46.81
8.0	47.13	46.95	46.55
7.0	47.01	46.72	46.81
6.7	47.64	46.90	46.91
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	CHS4004810
Item	Overvoltage Protection
Object	+10V40A

Testing Circuitry Figure A

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	12.43	12.45
-20	12.49	12.46
0	12.54	12.53
25	12.61	12.56
40	12.63	12.60
55	12.62	12.62
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

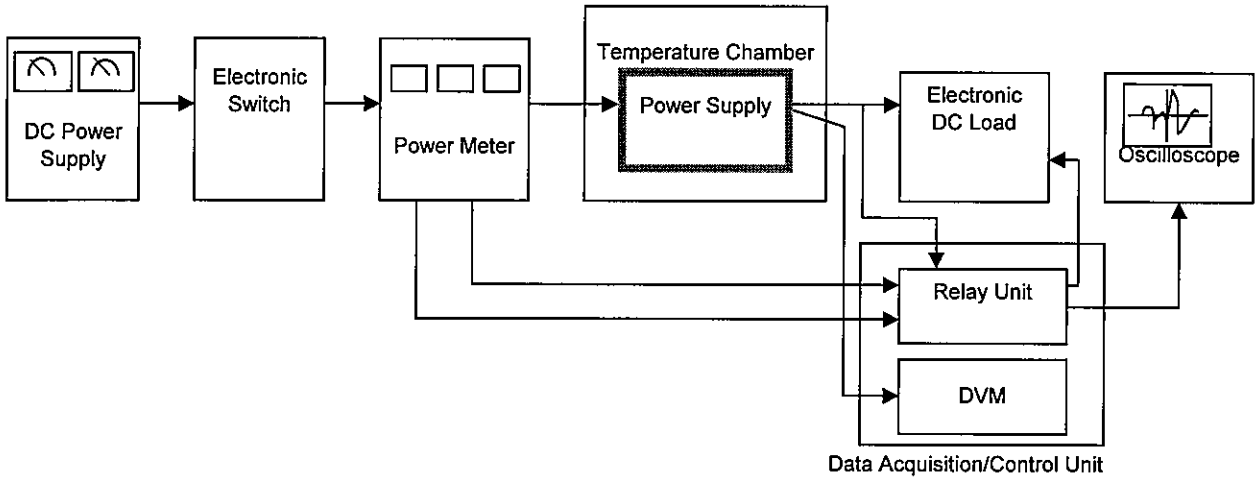


Figure A

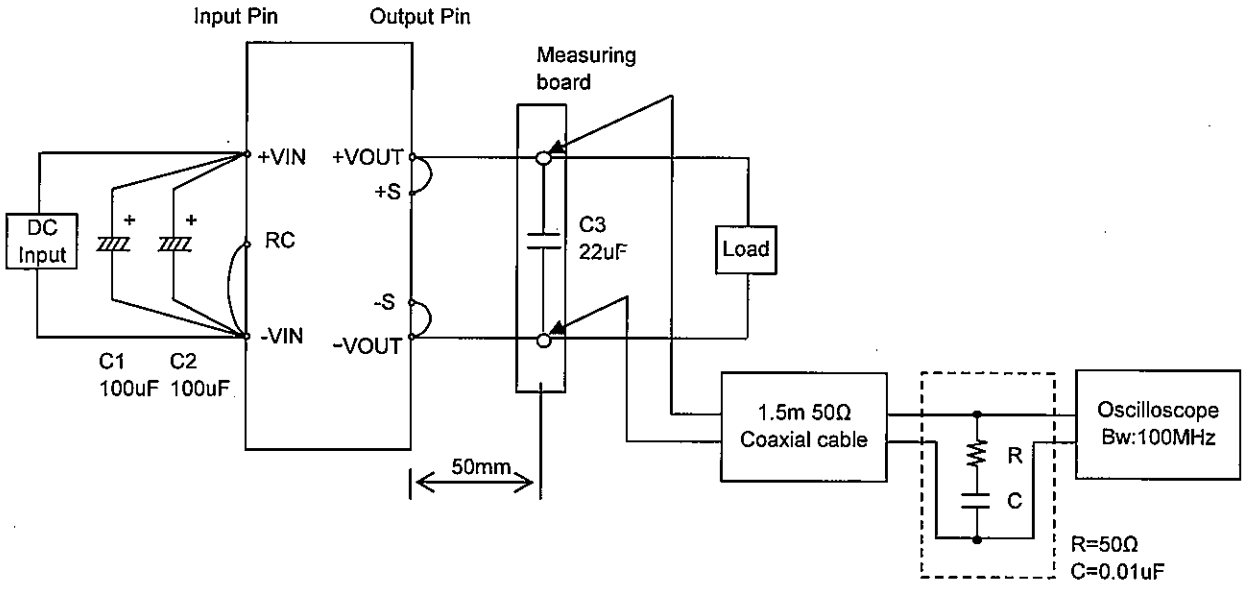


Figure B