COSEL

参考資料

TEST DATA OF CHS3804812H

Regulated DC Power Supply
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Hiroyuki Syoji Design Engineer

COSEL CO.,LTD.

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Object	————————

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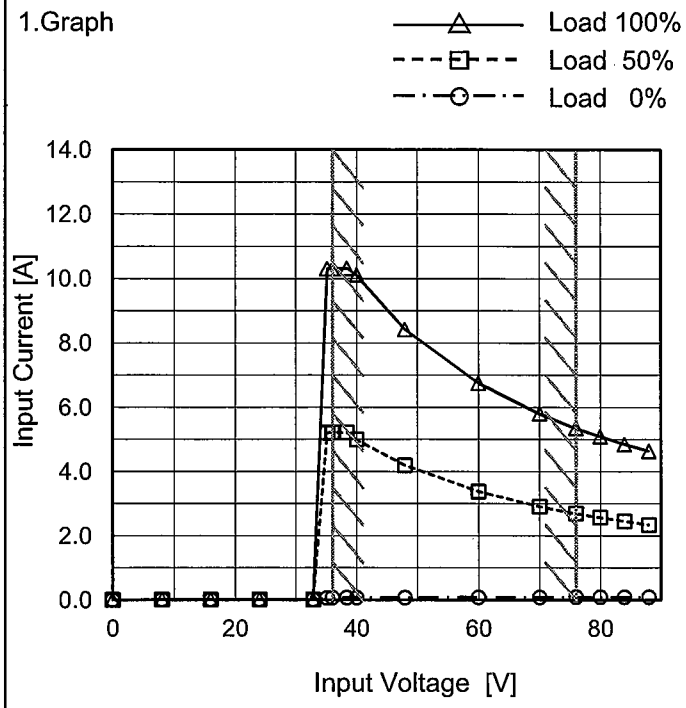

Note: Slanted line shows the range of the rated input voltage.

2.Values

Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0.0	0.000	0.000	0.000
8.0	0.009	0.009	0.009
16.0	0.009	0.009	0.009
24.0	0.010	0.010	0.010
33.0	0.010	0.010	0.010
35.2	0.067	5.210	10.309
36.0	0.070	5.218	10.314
38.4	0.077	5.213	10.322
40.0	0.075	4.995	10.117
48.0	0.076	4.193	8.421
60.0	0.084	3.376	6.748
70.0	0.088	2.912	5.802
76.0	0.089	2.696	5.351
80.0	0.089	2.567	5.090
84.0	0.090	2.451	4.852
88.0	0.090	2.346	4.641
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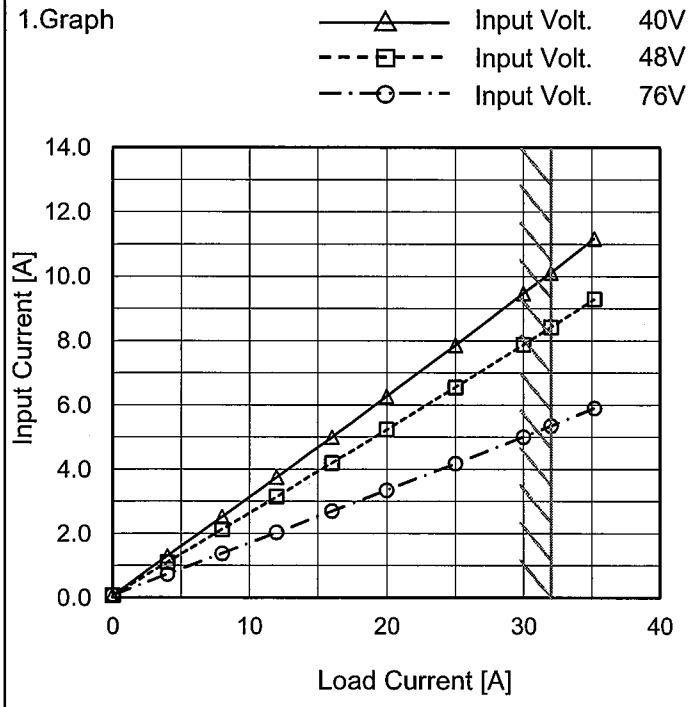
COSEL

Model	CHS3804812H
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. 40[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.0	0.075	0.076	0.089
4.0	1.300	1.099	0.733
8.0	2.519	2.123	1.377
12.0	3.752	3.143	2.030
16.0	4.995	4.193	2.696
20.0	6.272	5.234	3.350
25.0	7.859	6.549	4.178
30.0	9.474	7.880	5.012
32.0	10.117	8.421	5.351
35.2	11.176	9.293	5.903
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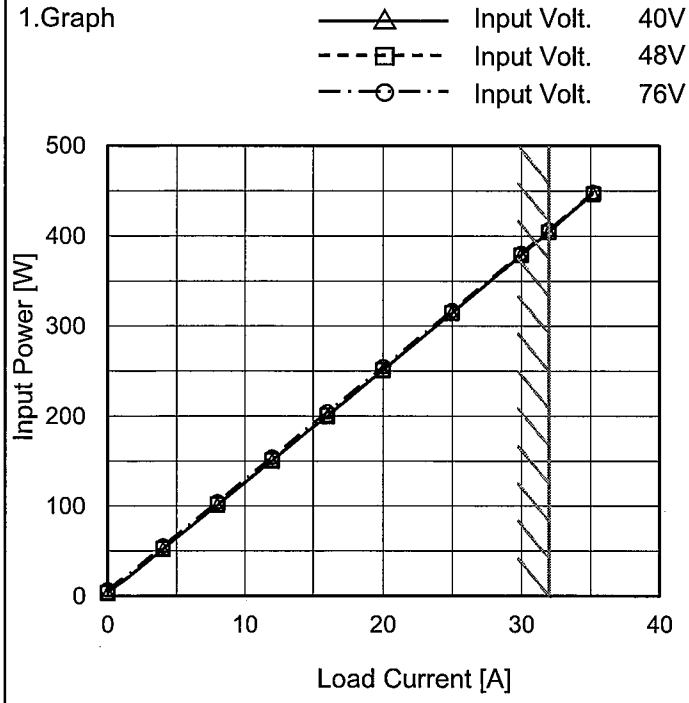
COSEL

Model	CHS3804812H
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. 40[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.0	3.0	3.7	6.7
4.0	52.1	52.7	55.7
8.0	101.0	101.9	104.7
12.0	150.1	151.0	154.3
16.0	199.8	201.1	204.8
20.0	251.1	251.3	254.7
25.0	314.9	314.6	317.5
30.0	379.5	378.7	381.1
32.0	404.7	404.4	406.8
35.2	447.5	446.7	448.5
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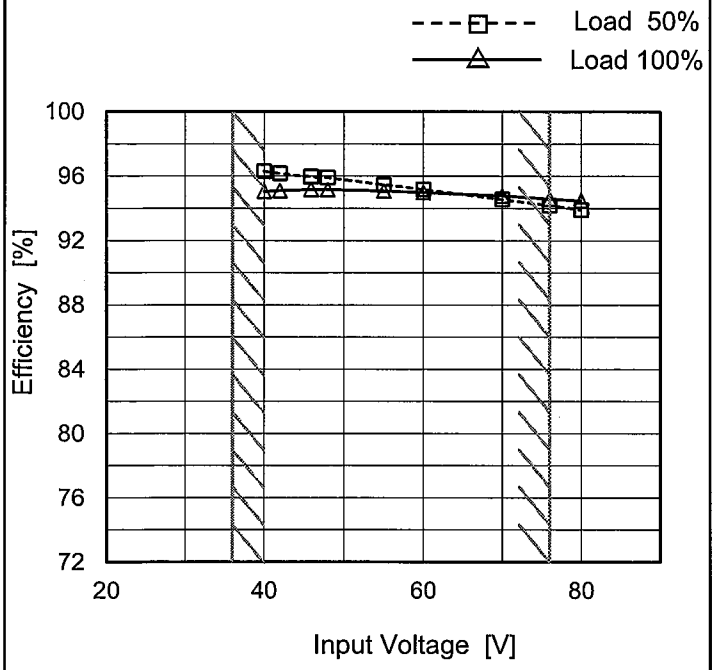
COSEL

Model	CHS3804812H
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%
40	96.3	95.1
42	96.2	95.1
46	96.0	95.2
48	95.9	95.2
55	95.5	95.1
60	95.2	95.0
70	94.6	94.8
76	94.2	94.6
80	93.9	94.5

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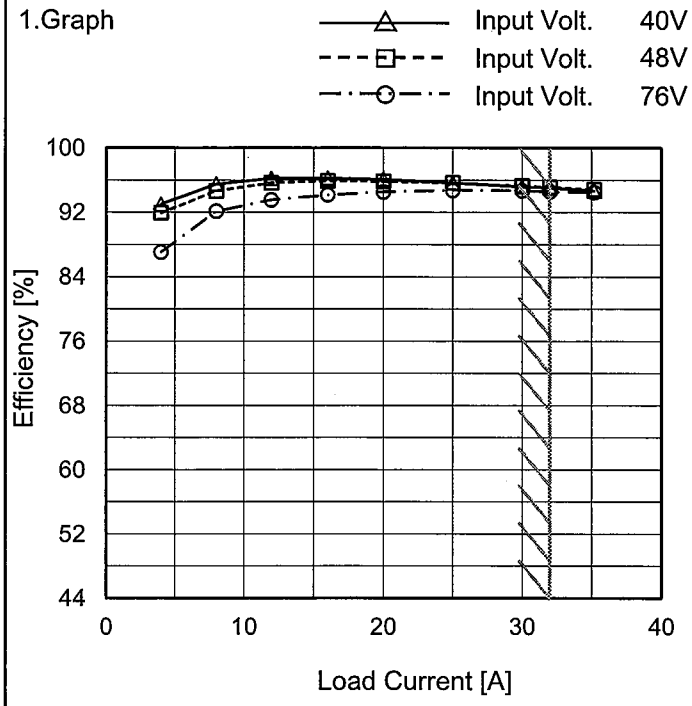
Model	CHS3804812H
Item	Efficiency (by Load Current)
Object	———————

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. 40[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.0	-	-	-
4.0	93.0	91.9	87.1
8.0	95.5	94.7	92.1
12.0	96.2	95.7	93.6
16.0	96.3	95.9	94.2
20.0	96.1	95.8	94.6
25.0	95.7	95.6	94.8
30.0	95.2	95.3	94.7
32.0	95.1	95.2	94.6
35.2	94.7	94.9	94.5
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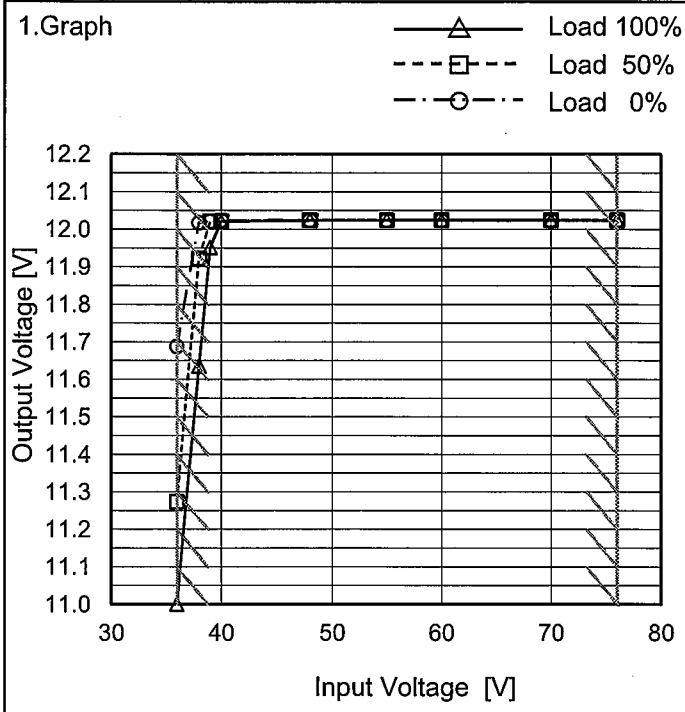
Model	CHS3804812H
Item	Line Regulation
Object	+12V32A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

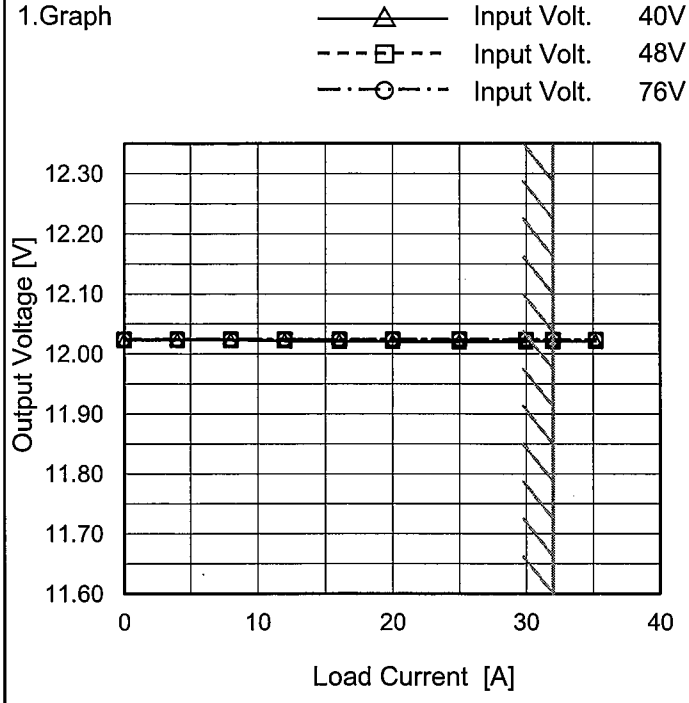
Input Voltage [V]	Output Voltage [V]		
	Load 0%	Load 50%	Load 100%
36	11.689	11.274	11.001
38	12.017	11.923	11.635
39	12.021	12.021	11.952
40	12.023	12.021	12.021
48	12.024	12.024	12.024
55	12.024	12.025	12.024
60	12.024	12.025	12.024
70	12.024	12.025	12.024
76	12.024	12.024	12.024

COSEL

Model	CHS3804812H
Item	Load Regulation
Object	+12V32A

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. 40[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.0	12.023	12.024	12.024
4.0	12.023	12.024	12.024
8.0	12.023	12.024	12.024
12.0	12.022	12.024	12.024
16.0	12.021	12.024	12.024
20.0	12.021	12.024	12.024
25.0	12.021	12.024	12.024
30.0	12.021	12.024	12.024
32.0	12.021	12.024	12.024
35.2	12.021	12.024	12.024
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COSEL

Model	CHS3804812H		
Item	Dynamic Load Response	Temperature Testing Circuitry	25℃ Figure A
Object	+12V32A		

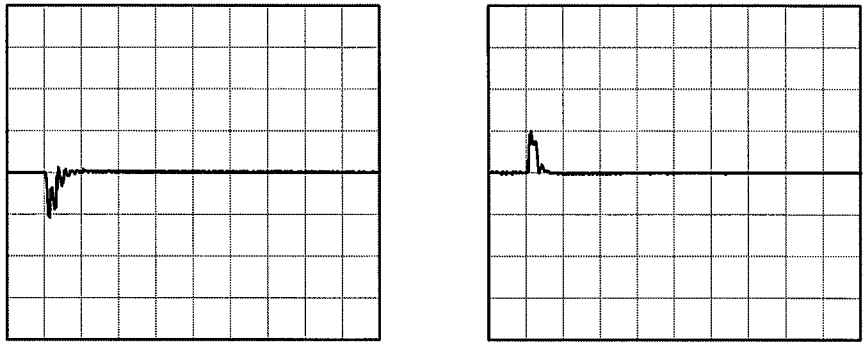
Input Volt. 48 V
Cycle 5 ms

t1,t2=50 μ S

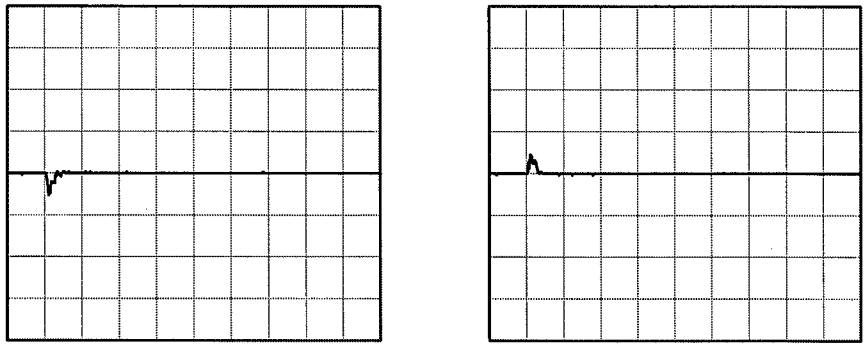
Load Current

t1 t2

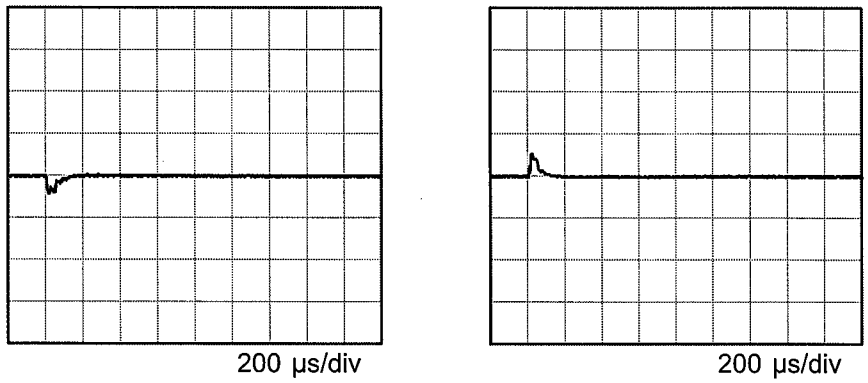
Min. Load (0A) ⟷
Load 100% (32A)



Min. Load (0A) ⟷
Load 50% (16A)



Load 50% (16A) ⟷
Load 100% (32A)

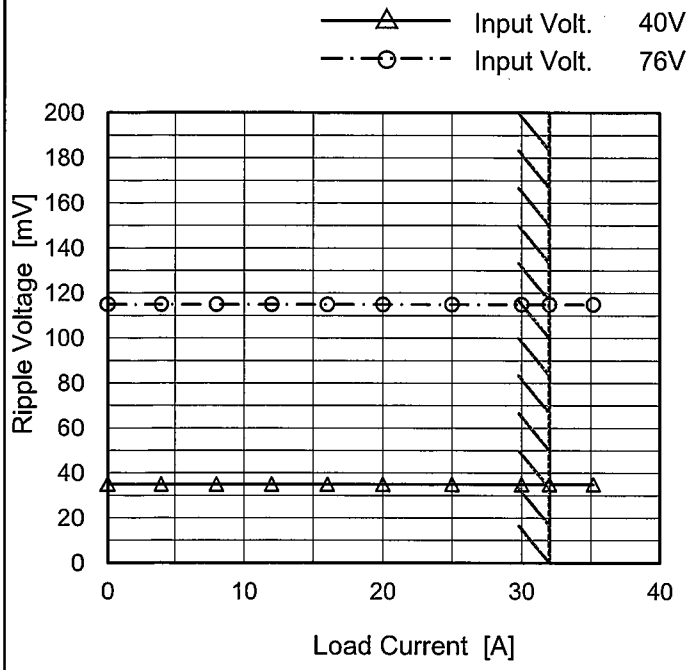


COSEL

Model	CHS3804812H
Item	Ripple Voltage (by Load Current)
Object	+12V32A

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.

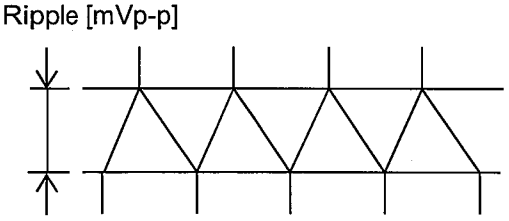


Fig.Complex Ripple Wave Form

2.Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 40 [V]	Input Volt. 76 [V]
0.0	35	115
4.0	35	115
8.0	35	115
12.0	35	115
16.0	35	115
20.0	35	115
25.0	35	115
30.0	35	115
32.0	35	115
35.2	35	115
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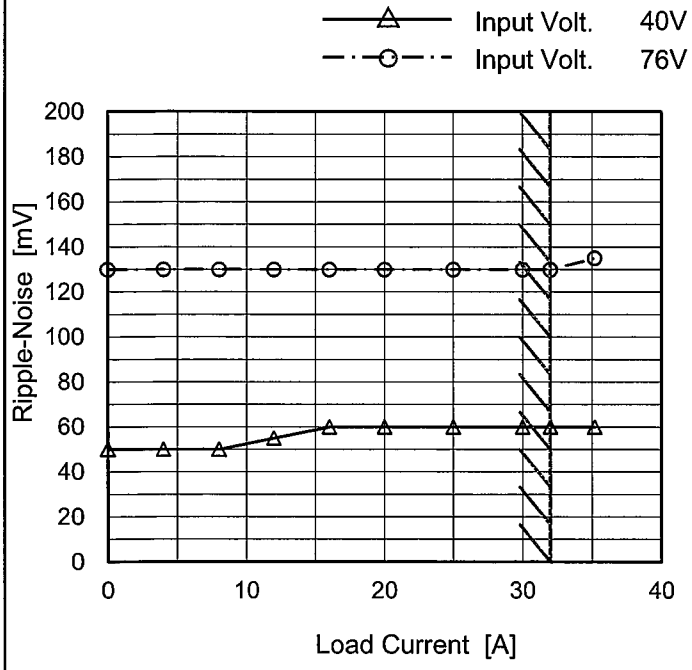
COSEL

Model	CHS3804812H
Item	Ripple-Noise
Object	+12V32A

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.

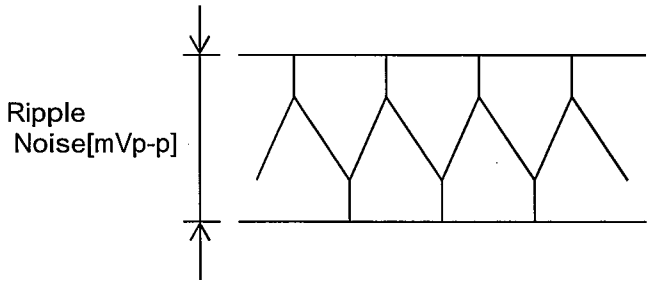


Fig.Complex Ripple Noise Wave Form

2.Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 40 [V]	Input Volt. 76 [V]
0.0	50	130
4.0	50	130
8.0	50	130
12.0	55	130
16.0	60	130
20.0	60	130
25.0	60	130
30.0	60	130
32.0	60	130
35.2	60	135
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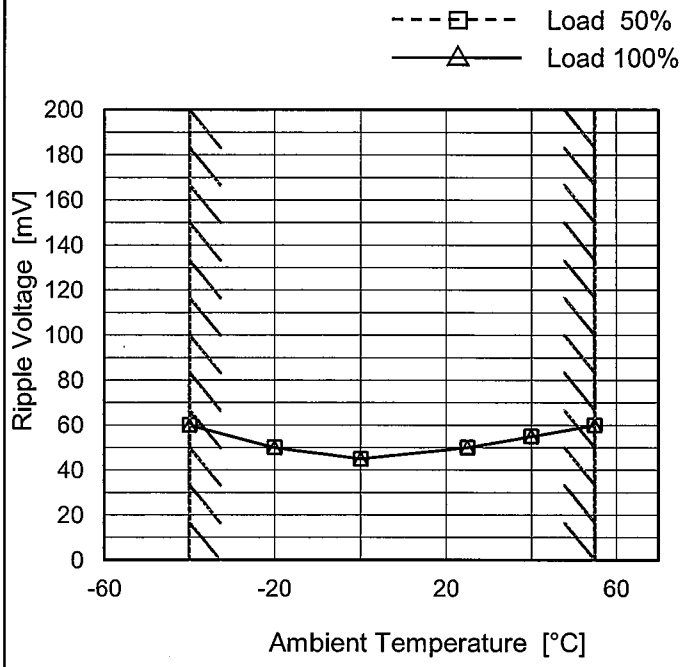
COSEL

Model	CHS3804812H
Item	Ripple Voltage (by Ambient Temp.)
Object	+12V32A

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.

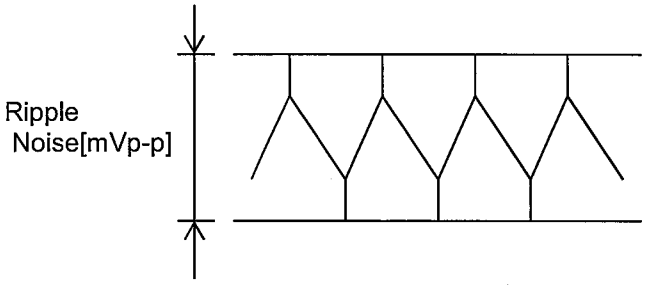


Fig.Complex Ripple Noise Wave Form

2.Values

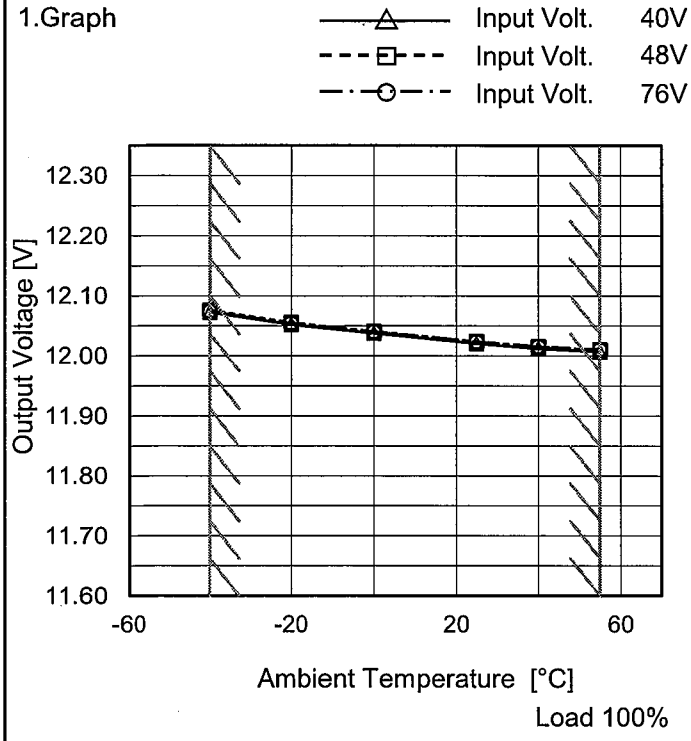
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-40	60	60
-20	50	50
0	45	45
25	50	50
40	55	55
55	60	60
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	CHS3804812H
Item	Ambient Temperature Drift
Object	+12V32A

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. 40[V]	Input Volt. 48[V]	Input Volt. 76[V]
-40	12.073	12.076	12.074
-20	12.053	12.056	12.055
0	12.038	12.041	12.041
25	12.021	12.024	12.024
40	12.013	12.016	12.016
55	12.007	12.010	12.011
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	CHS3804812H	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+12V32A	

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 - 32A

* 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

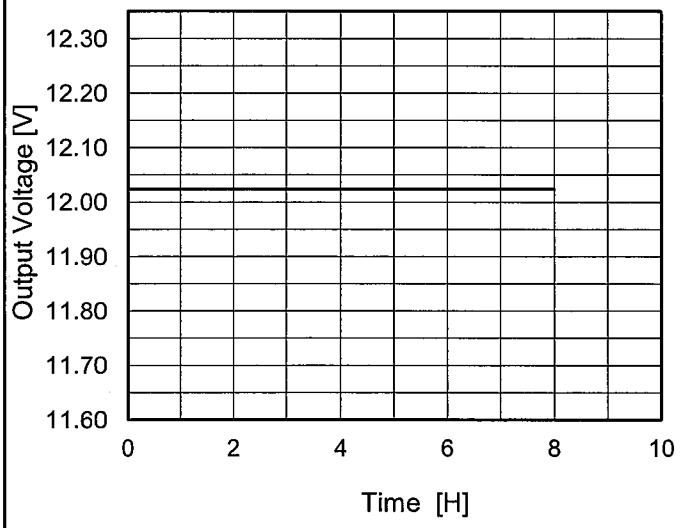
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	-40	48	32	12.076	±35	±0.3
Minimum Voltage	55	40	32	12.007		

COSEL

Model	CHS3804812H
Item	Time Lapse Drift
Object	+12V32A

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	12.024
0.5	12.024
1.0	12.024
2.0	12.024
3.0	12.024
4.0	12.024
5.0	12.024
6.0	12.024
7.0	12.024
8.0	12.024

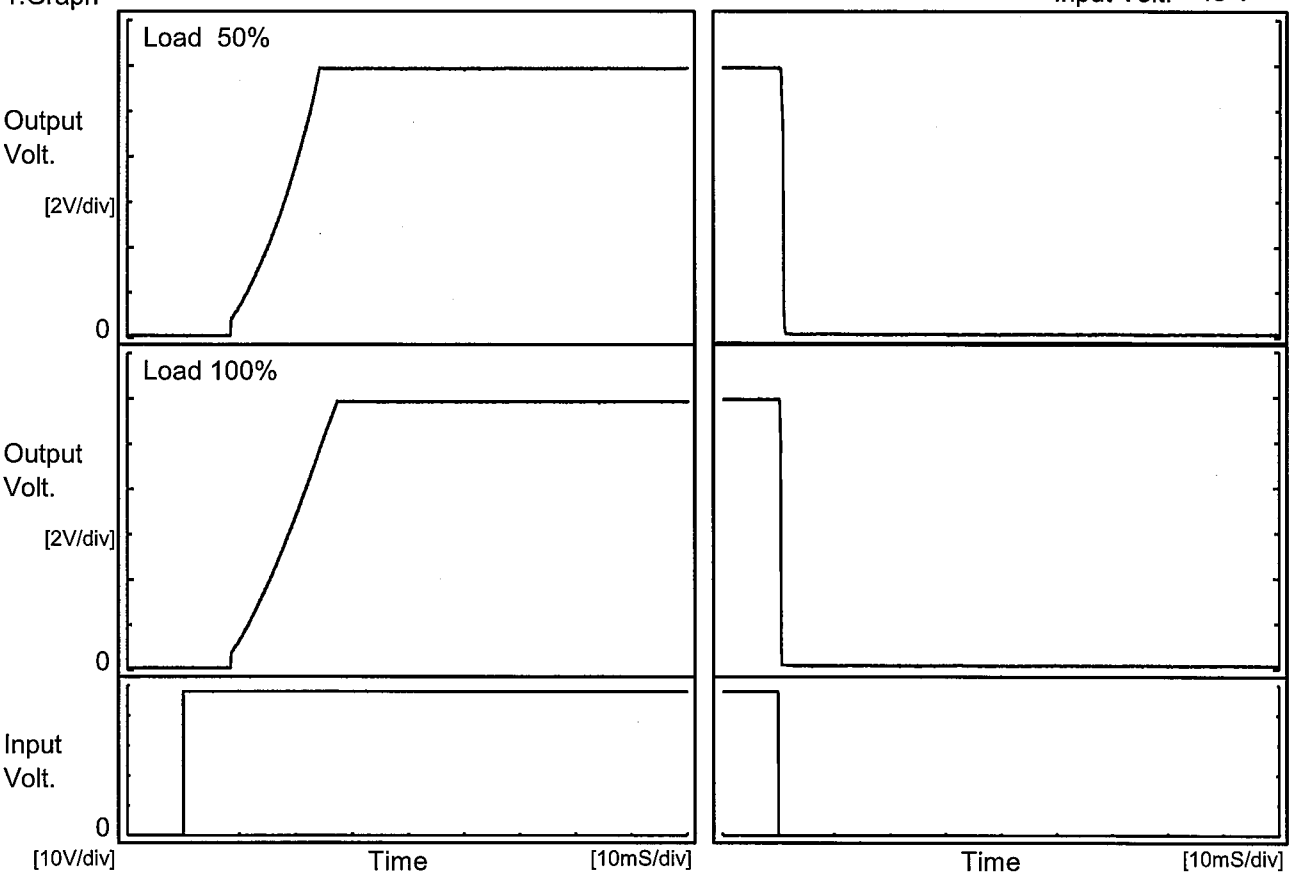
COSEL

Model	CHS3804812H
Item	Rise and Fall Time
Object	+12V32A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

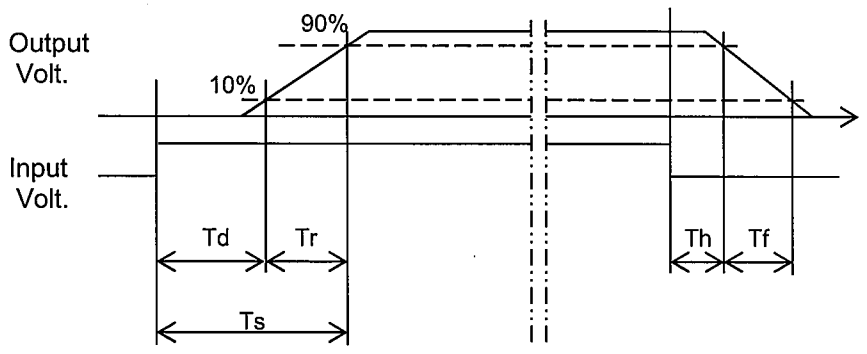
Input Volt. 48 V



2.Values

[mS]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	9.8	13.5	23.3	0.6	0.4
100 %	10.0	15.8	25.8	0.3	0.2

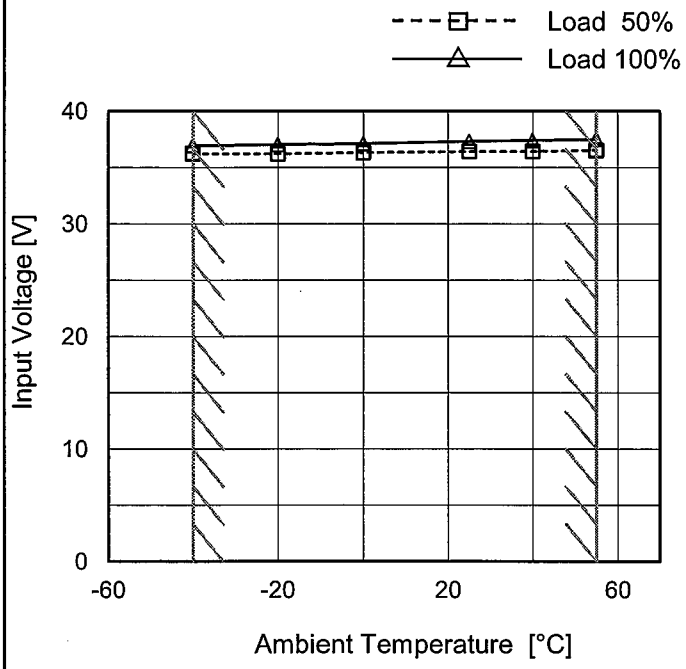


COSEL

Model	CHS3804812H
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+12V32A

Testing Circuitry Figure A

1.Graph



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

2.Values

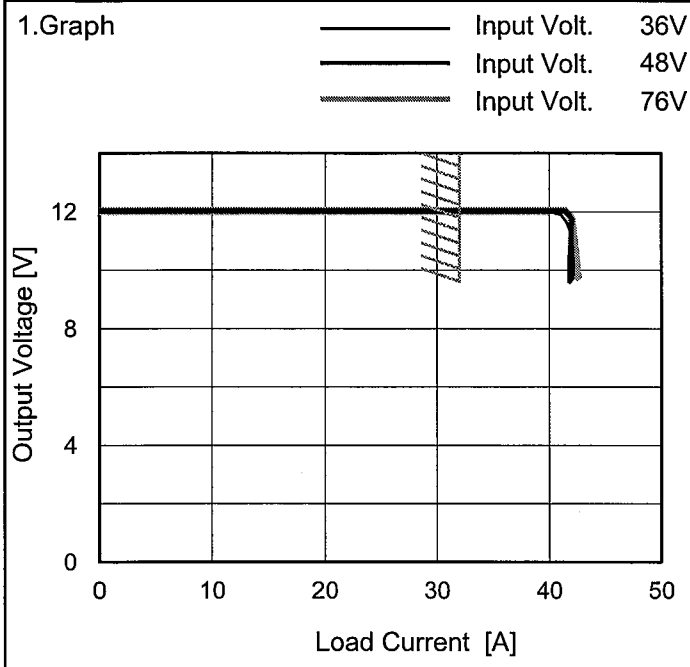
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-40	36.3	37.0
-20	36.3	37.1
0	36.4	37.2
25	36.5	37.4
40	36.5	37.5
55	36.6	37.6
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	CHS3804812H
Item	Overcurrent Protection
Object	+12V32A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

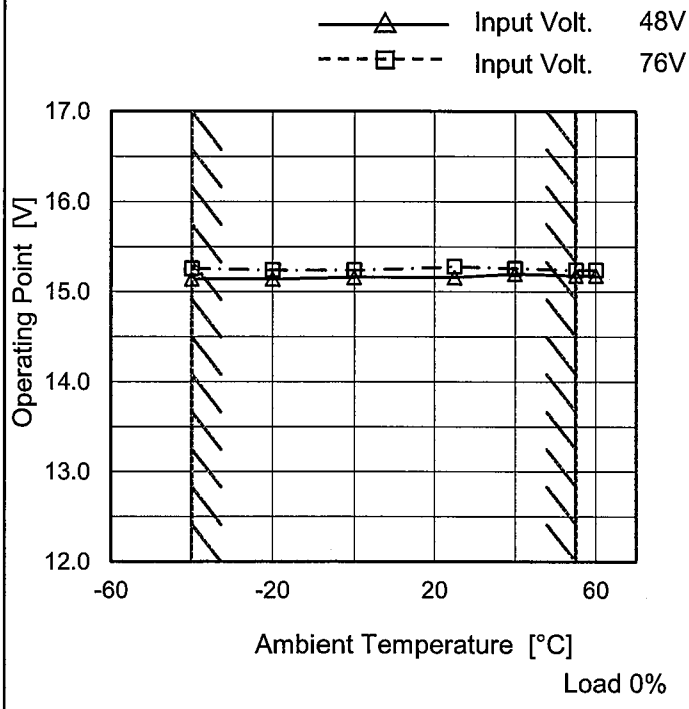
Output Voltage [V]	Load Current [A]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
11.4	41.92	41.98	42.10
10.8	42.08	41.93	42.21
9.6	42.15	41.84	42.55
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	CHS3804812H
Item	Overvoltage Protection
Object	+12V32A

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	15.14	15.26
-20	15.14	15.24
0	15.16	15.24
25	15.16	15.28
40	15.20	15.26
55	15.18	15.24
60	15.18	15.24
--	-	-
--	-	-
--	-	-
--	-	-

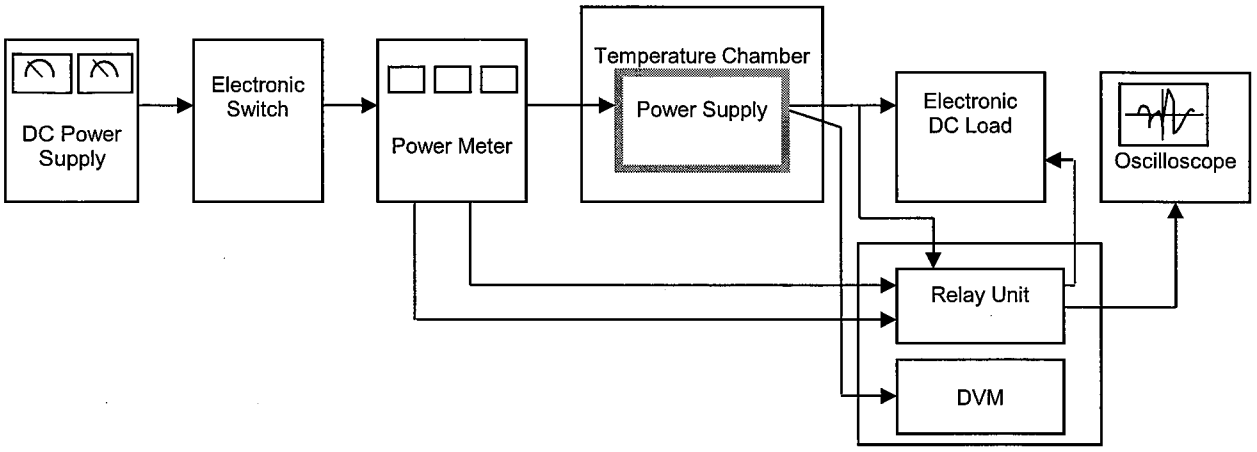


Figure A

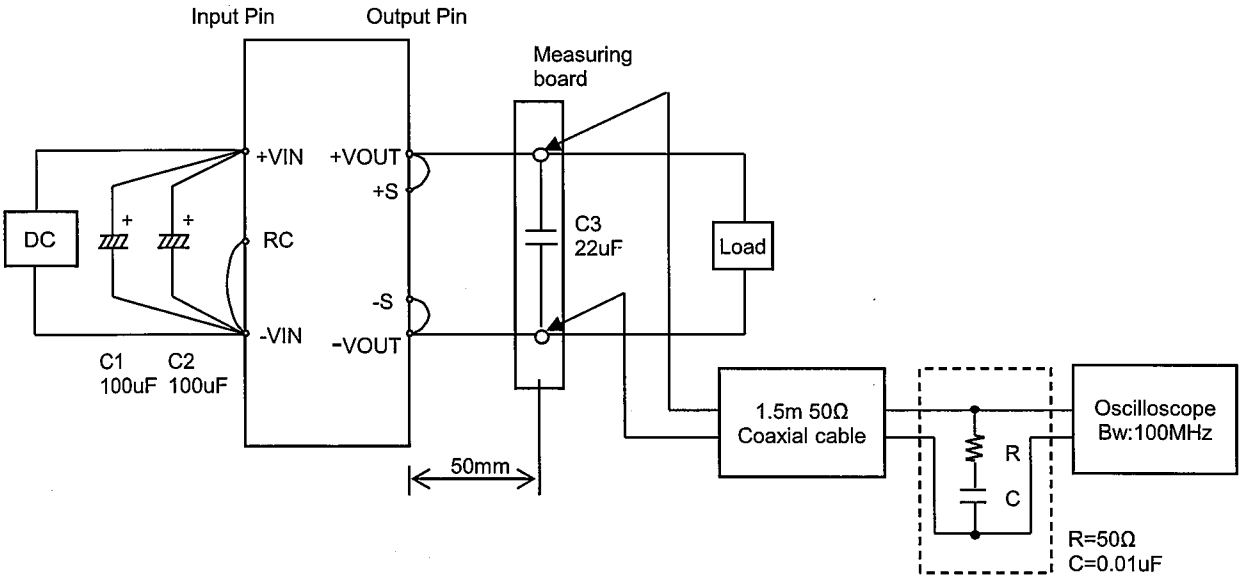


Figure B