参考資料

COSEL

TEST DATA OF CHS2004812

Regulated DC Power Supply
September 29, 2011

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COSEL CO.,LTD.

参考資料

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参考資料

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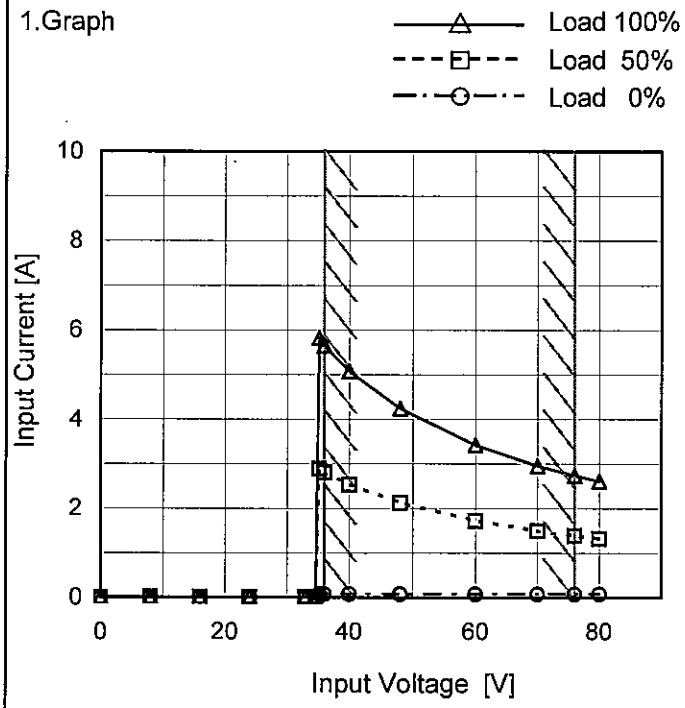
Model	CHS2004812
Item	Input Current (by Input Voltage)
Object	――――――

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	0.004	0.004	0.004
16.0	0.005	0.005	0.005
24.0	0.005	0.006	0.005
33.0	0.006	0.006	0.006
34.6	0.006	0.006	0.006
35.2	0.069	2.890	5.820
36.0	0.069	2.802	5.650
40.0	0.069	2.533	5.070
48.0	0.071	2.126	4.240
60.0	0.073	1.724	3.416
70.0	0.074	1.497	2.956
76.0	0.075	1.389	2.734
80.0	0.075	1.325	2.605
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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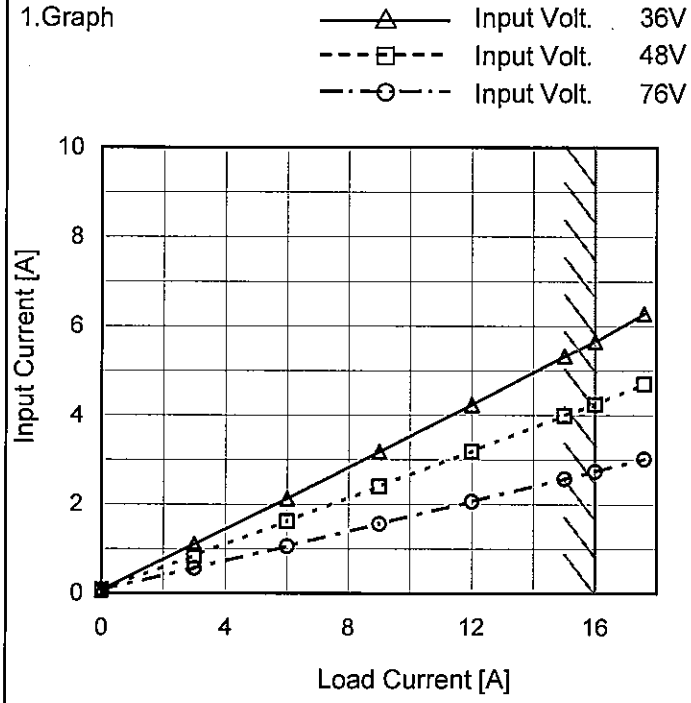
Model	CHS2004812
Item	Input Current (by Load Current)
Object	――――――

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	0.069	0.071	0.075
3.0	1.097	0.837	0.558
6.0	2.126	1.618	1.057
9.0	3.172	2.398	1.561
12.0	4.228	3.192	2.064
15.0	5.320	3.995	2.572
16.0	5.650	4.240	2.734
17.6	6.270	4.700	3.018
--	-	-	-
--	-	-	-
--	-	-	-

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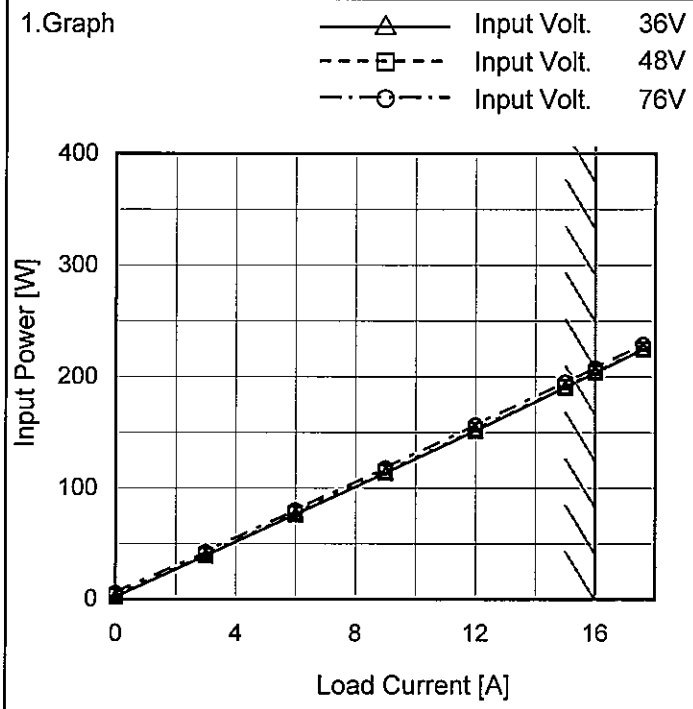
Model	CHS2004812
Item	Input Power (by Load Current)
Object	――――――

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]
0.0	2.4	3.3	5.6
3.0	39.3	40.0	42.4
6.0	76.3	77.4	80.2
9.0	113.8	114.7	118.2
12.0	151.8	152.6	156.6
15.0	190.6	191.0	195.1
16.0	203.8	204.0	207.9
17.6	224.8	224.9	228.9
--	-	-	-
--	-	-	-
--	-	-	-

参考資料

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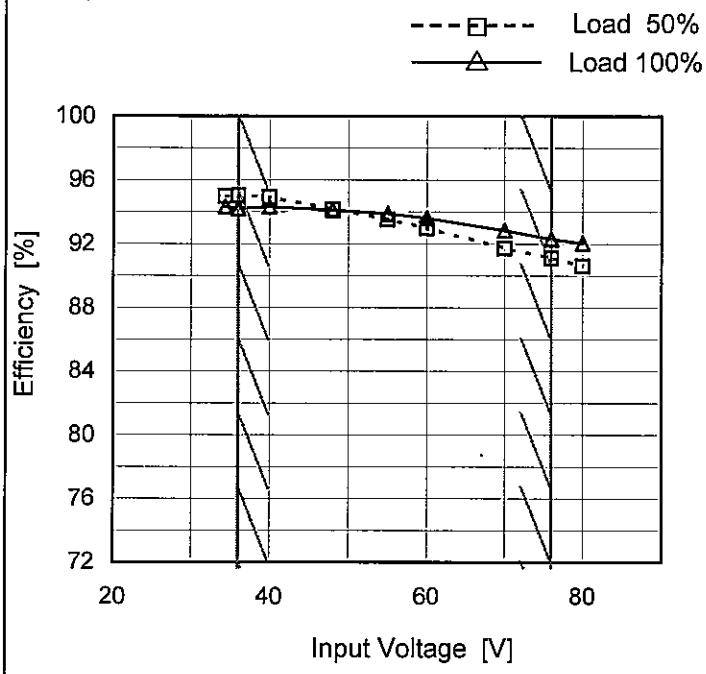
Model	CHS2004812
Item	Efficiency (by Input Voltage)
Object	――――――

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%
34.4	95.0	94.3
36.0	95.0	94.2
40.0	94.9	94.3
48.0	94.2	94.1
55.0	93.5	93.9
60.0	93.0	93.6
70.0	91.7	92.8
76.0	91.1	92.3
80.0	90.6	92.0

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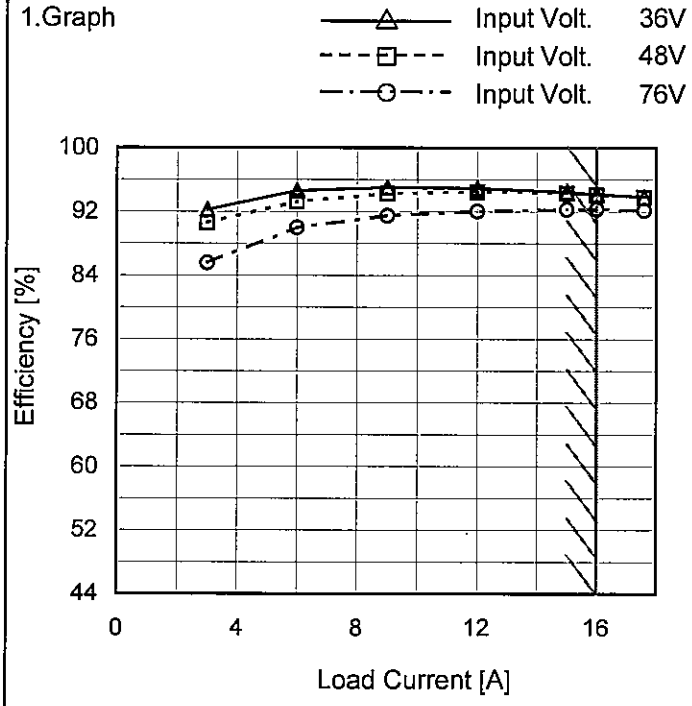
Model	CHS2004812
Item	Efficiency (by Load Current)
Object	————————

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]
0.0	-	-	-
3.0	92.2	90.6	85.5
6.0	94.6	93.3	90.0
9.0	95.0	94.3	91.5
12.0	94.9	94.5	92.0
15.0	94.5	94.3	92.3
16.0	94.2	94.1	92.3
17.6	93.8	93.8	92.1
--	-	-	-
--	-	-	-
--	-	-	-

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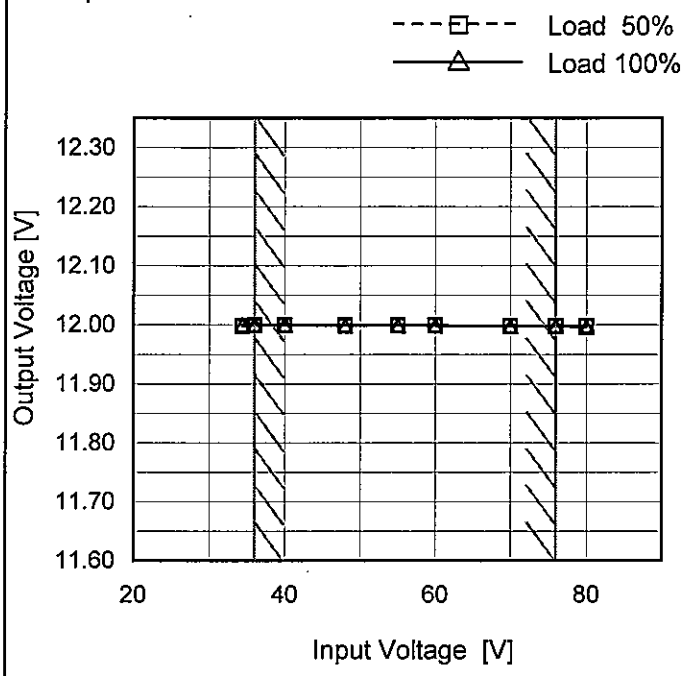
Model	CHS2004812
Item	Line Regulation
Object	+12V16A

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%
34.4	11.997	12.000
36.0	11.999	12.000
40.0	11.999	12.000
48.0	11.999	11.999
55.0	11.999	11.999
60.0	11.999	11.999
70.0	11.998	11.998
76.0	11.998	11.998
80.0	11.998	11.997

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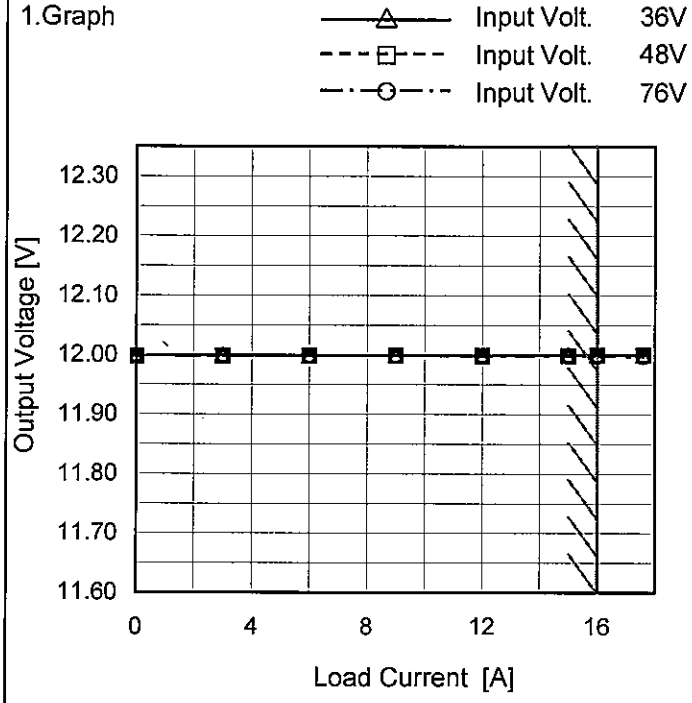
COSEL

Model	CHS2004812
Item	Load Regulation
Object	+12V16A

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]
0.0	11.998	11.998	11.998
3.0	11.999	11.998	11.998
6.0	11.999	11.998	11.998
9.0	11.999	11.999	11.998
12.0	11.999	11.999	11.998
15.0	12.000	11.999	11.998
16.0	12.000	11.999	11.998
17.6	12.000	11.999	11.997
--	-	-	-
--	-	-	-
--	-	-	-

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Model	CHS2004812	Temperature	25℃
Item	Dynamic Load Response	Testing Circuitry	Figure A
Object	+12V16A		

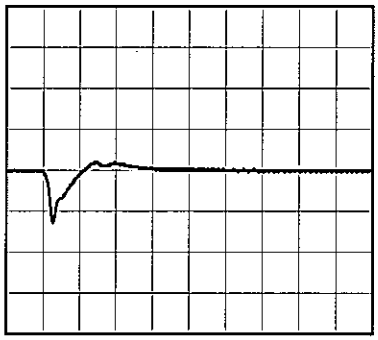
Input Volt. 48 V
Cycle 5 ms

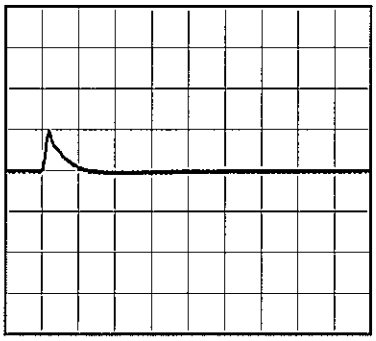
t1,t2=50 μ S

Load Current

t1 t2

Min. Load (0A) ⟷
Load 100% (16A)

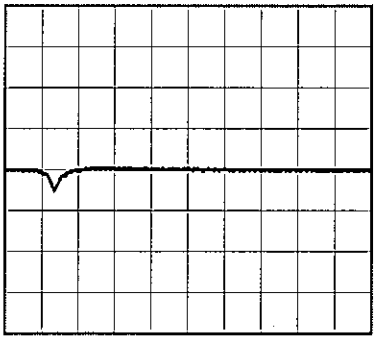


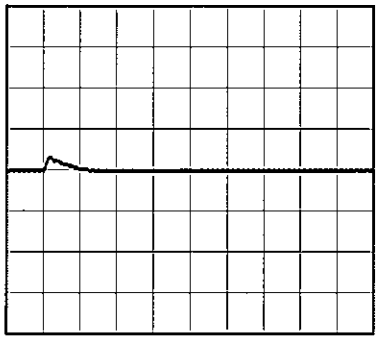


500 mV/div

200 μs/div 200 μs/div

Min. Load (0A) ⟷
Load 50% (8A)

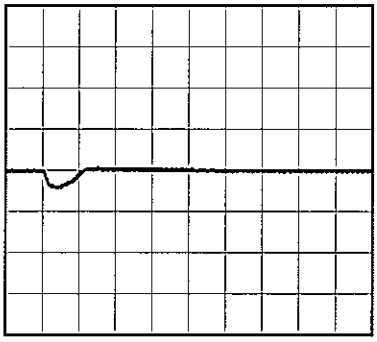


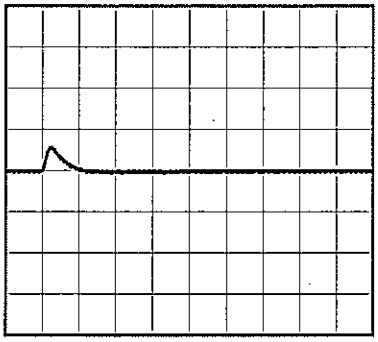


500 mV/div

200 μs/div 200 μs/div

Load 50% (8A) ⟷
Load 100% (16A)





500 mV/div

200 μs/div 200 μs/div

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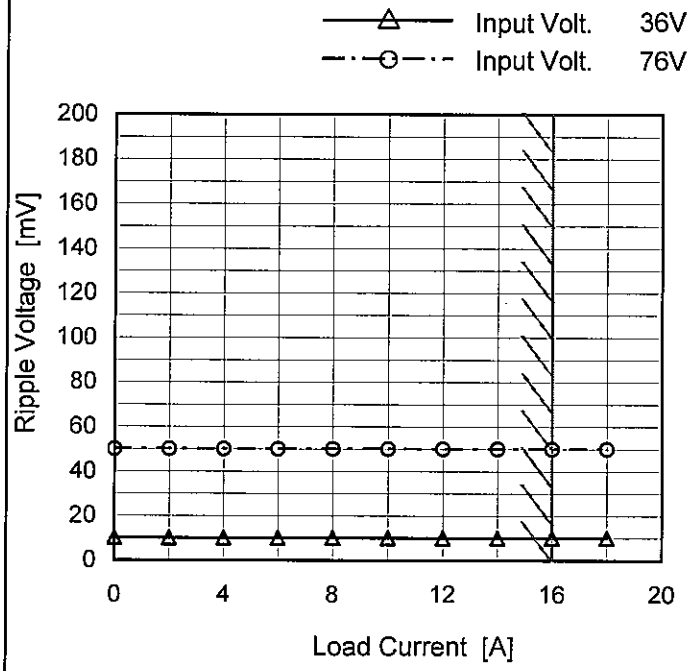
Model	CHS2004812
Item	Ripple Voltage (by Load Current)
Object	+12V16A

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.

Ripple [mVp-p]

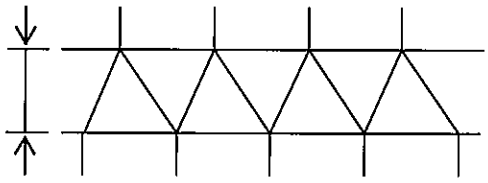


Fig.Complex Ripple Wave Form

2.Values

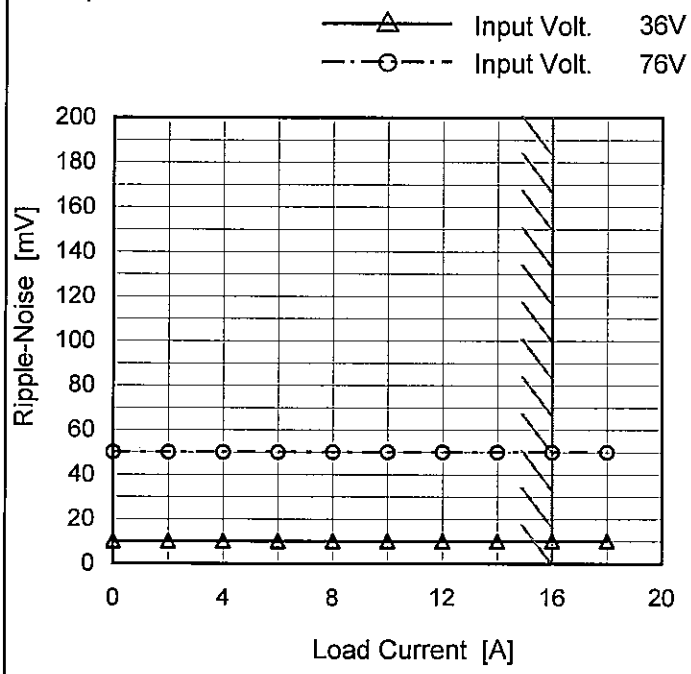
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 36 [V]	Input Volt. 76 [V]
0	10	50
2	10	50
4	10	50
6	10	50
8	10	50
10	10	50
12	10	50
14	10	50
16	10	50
18	10	50
--	-	-

COSEL

Model	CHS2004812
Item	Ripple-Noise
Object	+12V16A

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.

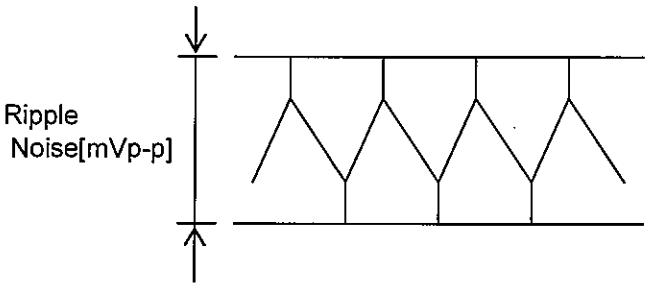


Fig.Complex Ripple Noise Wave Form

2.Values

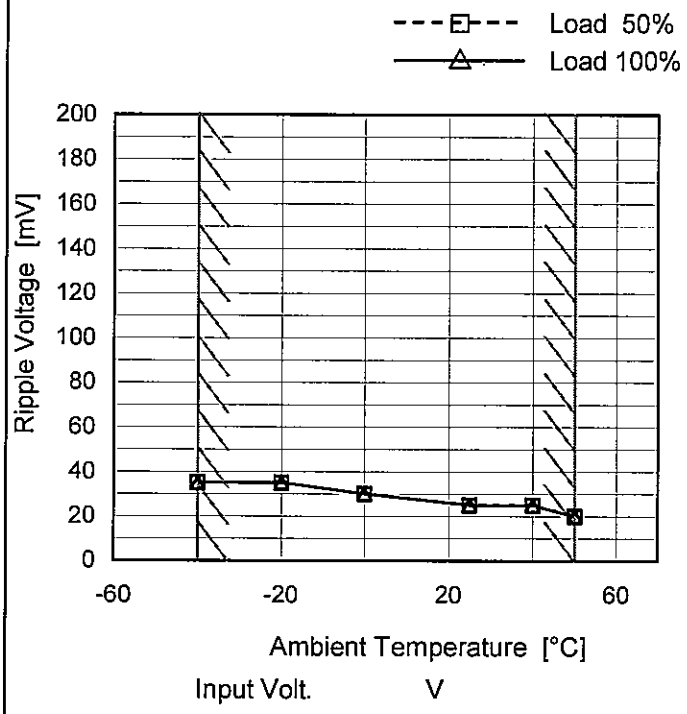
Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 36 [V]	Input Volt. 76 [V]
0	10	50
2	10	50
4	10	50
6	10	50
8	10	50
10	10	50
12	10	50
14	10	50
16	10	50
18	10	50
--	-	-

COSEL

Model	CHS2004812
Item	Ripple Voltage (by Ambient Temp.)
Object	+12V16A

Testing Circuitry Figure A

1.Graph



Measured by 100 MHz Oscilloscope.
Note: Slanted line shows the range of the rated ambient temperature.

Ripple [mVp-p]

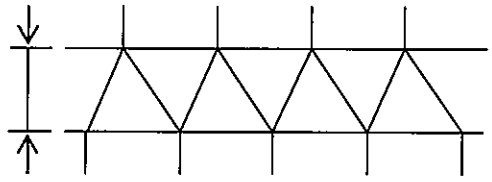


Fig.Complex Ripple Wave Form

2.Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-40	35	35
-20	35	35
0	30	30
25	25	25
40	25	25
50	20	20
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

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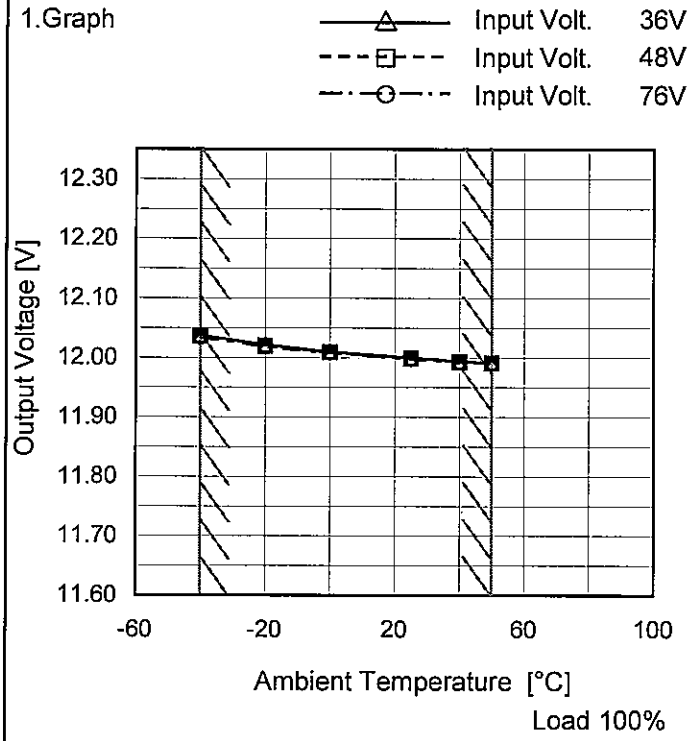
Model	CHS2004812
Item	Ambient Temperature Drift
Object	+12V16A

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	12.037	12.036	12.035
-20	12.021	12.020	12.018
0	12.010	12.009	12.008
25	12.000	11.999	11.998
40	11.994	11.993	11.992
50	11.991	11.991	11.991
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	CHS2004812	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+12V16A	

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 - 16A

* 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	12.039	±26	±0.2
Minimum Voltage	50	36	0	11.988		

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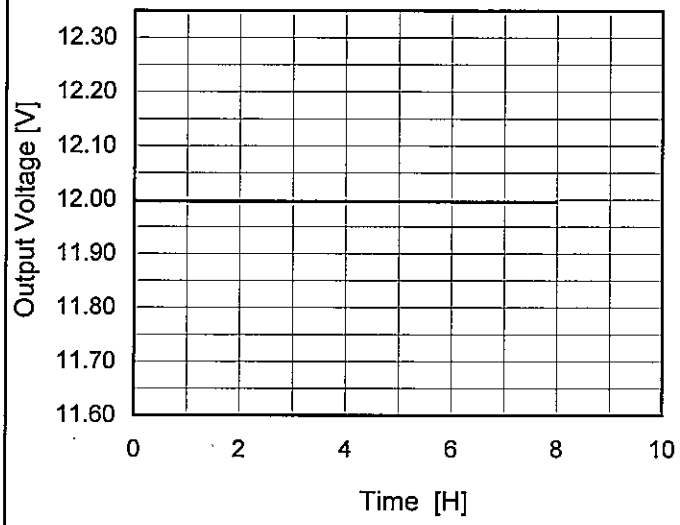
Model	CHS2004812
Item	Time Lapse Drift
Object	+12V16A

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	11.999
0.5	11.997
1.0	11.997
2.0	11.997
3.0	11.997
4.0	11.997
5.0	11.997
6.0	11.996
7.0	11.996
8.0	11.996

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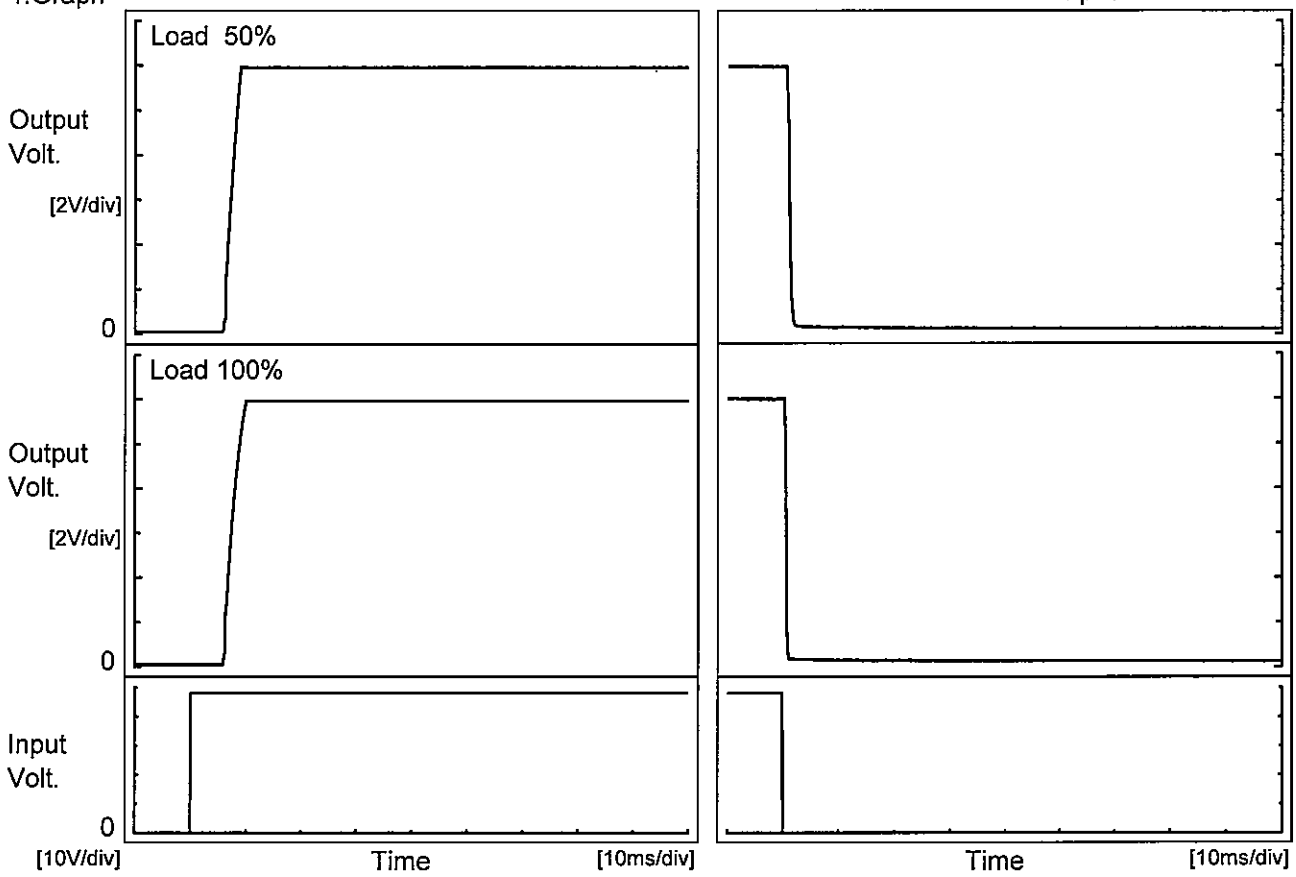
Model	CHS2004812
Item	Rise and Fall Time
Object	+12V16A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

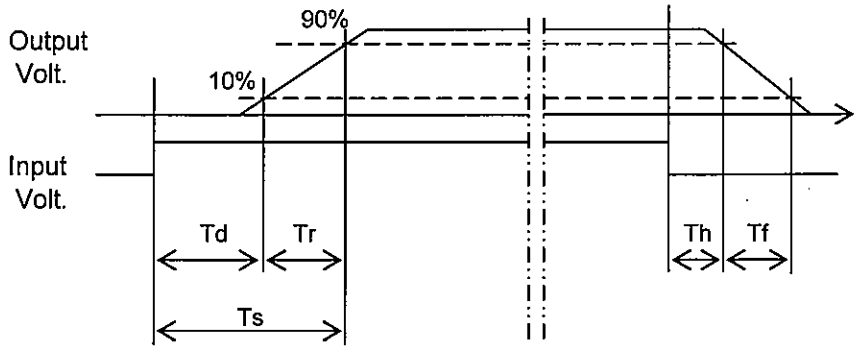
Input Volt. 48 V



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	6.3	2.4	8.7	0.8	0.9
100 %	6.3	3.1	9.4	0.4	0.4



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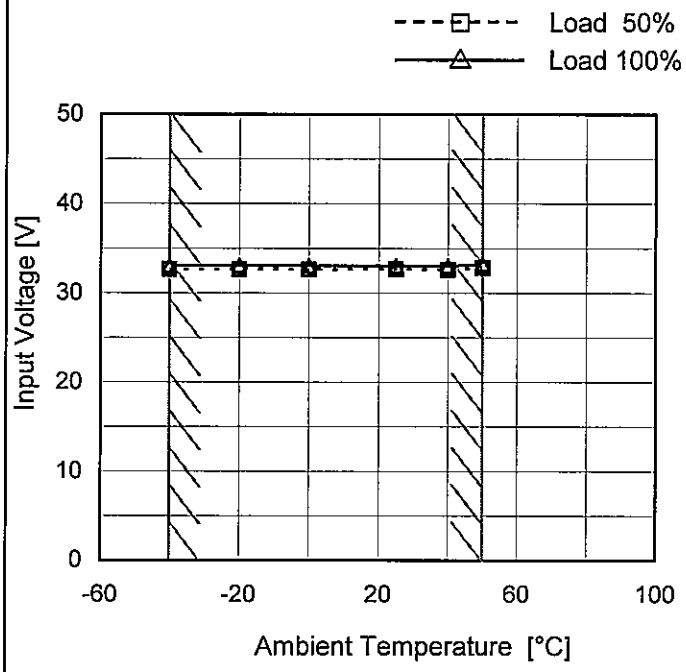
Model	CHS2004812
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+12V16A

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	32.7	33.1
-20	32.7	33.1
0	32.7	33.1
25	32.7	33.1
40	32.7	33.1
50	32.9	33.3
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

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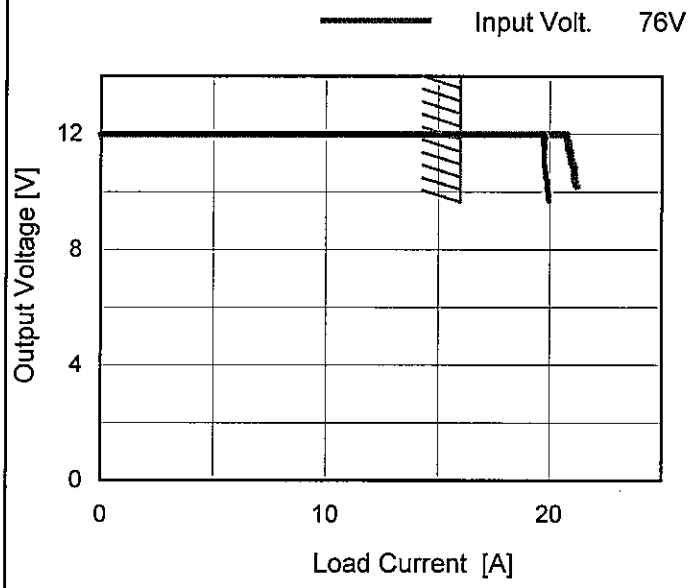
Model	CHS2004812
Item	Overcurrent Protection
Object	+12V16A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

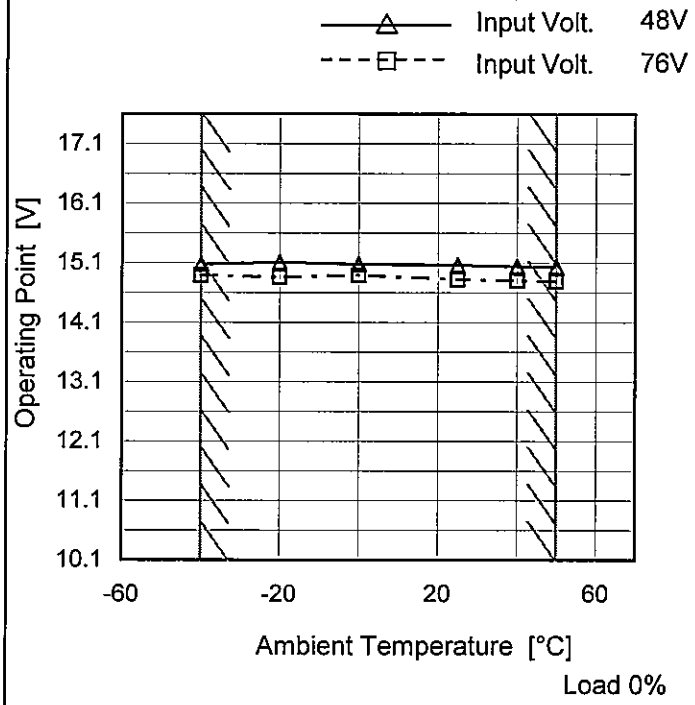
Output Voltage [V]	Load Current [A]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
11.4	19.67	19.74	20.90
10.8	19.82	19.76	21.10
9.6	19.99	19.97	21.22
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	CHS2004812
Item	Overvoltage Protection
Object	+12V16A

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	15.08	14.89
-20	15.11	14.86
0	15.08	14.89
25	15.06	14.82
40	15.04	14.80
50	15.03	14.79
--	-	-
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--	-	-
--	-	-

COSEL

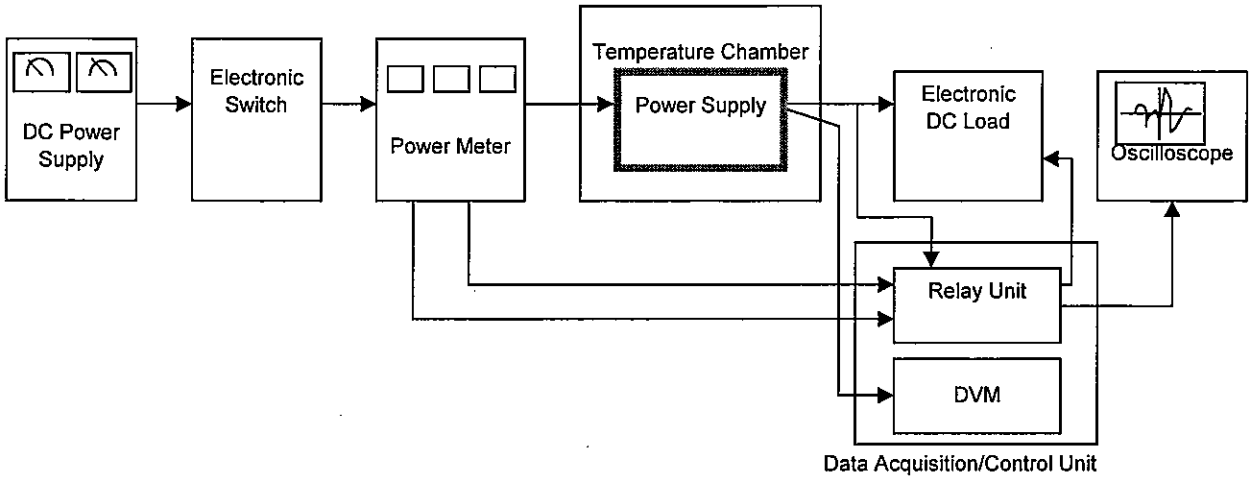

Figure A

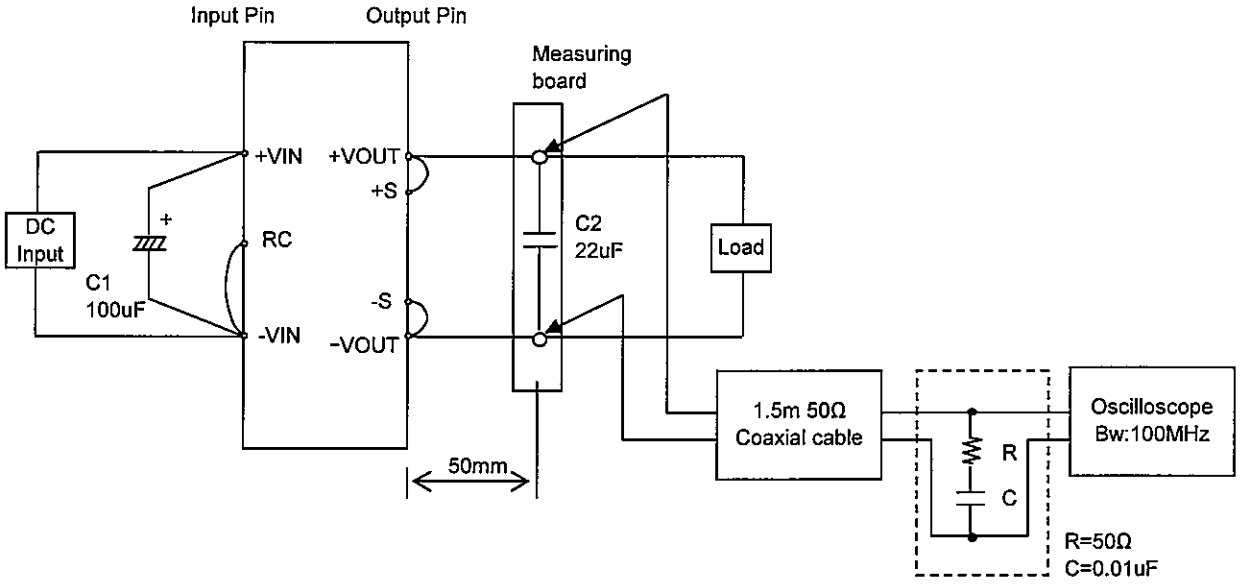

Figure B