COSEL

参考資料

TEST DATA OF SNDHS250B12

Regulated DC Power Supply
June 18, 2011

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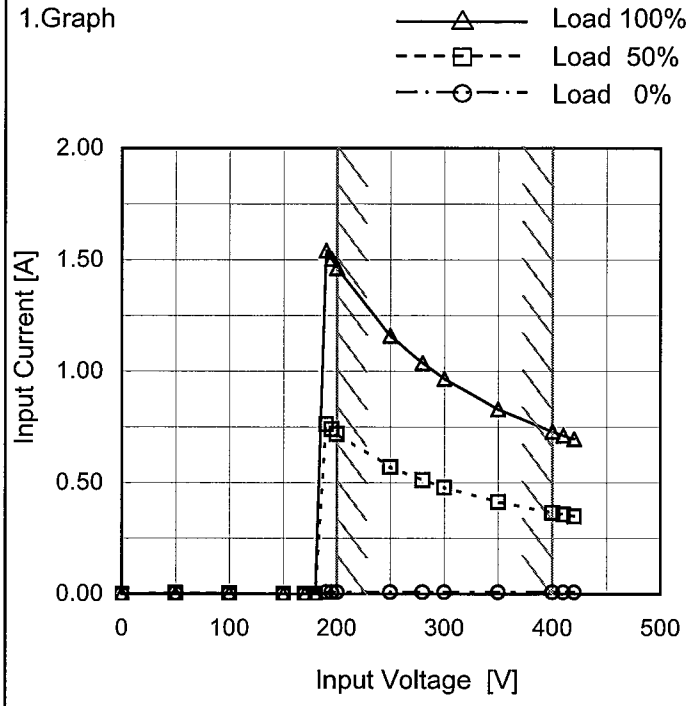
Model	SNDHS250B12
Item	Input Current (by Input Voltage)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

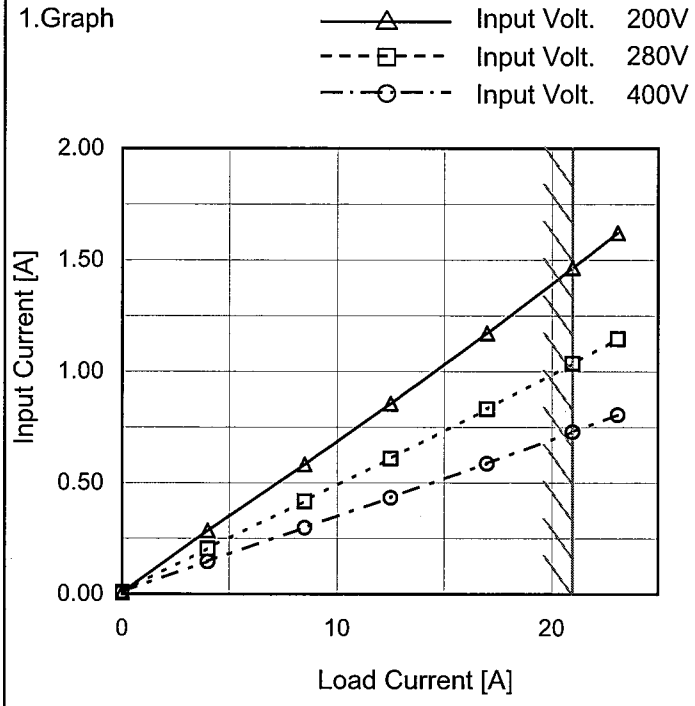
Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0	0.000	0.000	0.000
50	0.004	0.004	0.000
100	0.002	0.002	0.002
150	0.000	0.000	0.000
170	0.000	0.000	0.000
180	0.000	0.000	0.000
190	0.008	0.763	1.542
195	0.008	0.740	1.504
200	0.008	0.718	1.463
250	0.008	0.571	1.159
280	0.008	0.512	1.037
300	0.008	0.479	0.967
350	0.008	0.414	0.831
400	0.009	0.366	0.730
410	0.009	0.357	0.713
420	0.009	0.350	0.697
--	-	-	-
--	-	-	-

COSEL

Model	SNDHS250B12
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

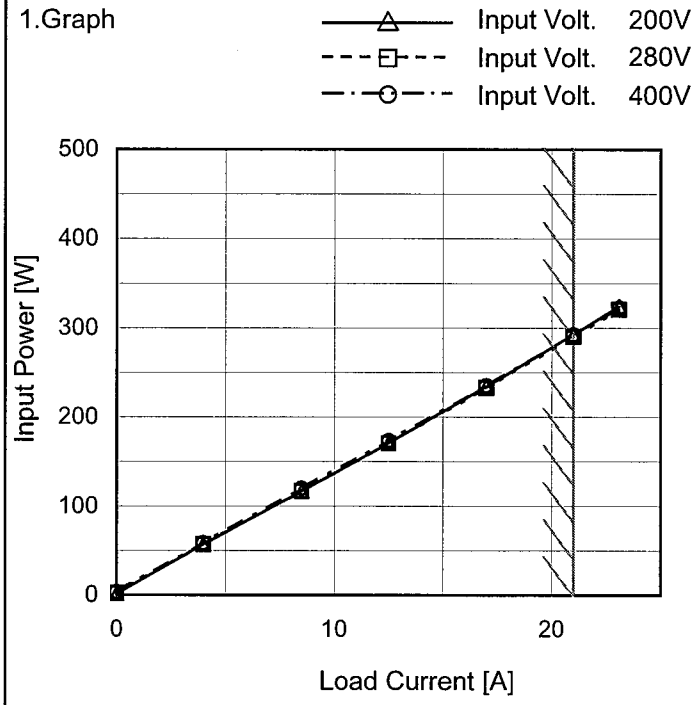
Load Current [A]	Input Current [A]		
	Input Volt. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
0.0	0.008	0.008	0.009
4.0	0.286	0.204	0.146
8.5	0.584	0.416	0.299
12.5	0.856	0.609	0.433
17.0	1.173	0.832	0.588
21.0	1.465	1.036	0.730
23.1	1.622	1.146	0.806
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SNDHS250B12
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. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
0.0	1.6	2.2	3.5
4.0	57.2	57.1	58.4
8.5	116.9	116.7	119.8
12.5	171.1	170.6	173.4
17.0	234.5	232.9	235.4
21.0	292.8	290.4	292.3
23.1	324.2	320.9	322.6
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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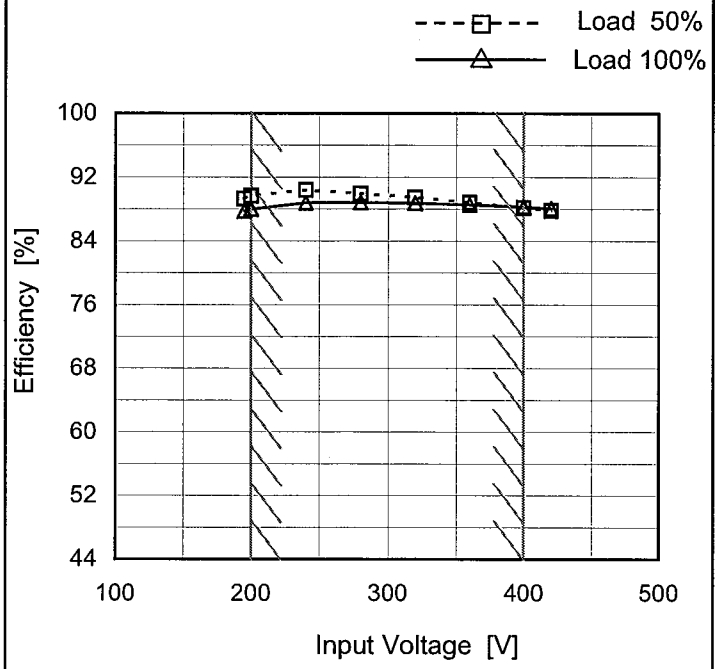
Model	SNDHS250B12
Item	Efficiency (by Input Voltage)
Object	———————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

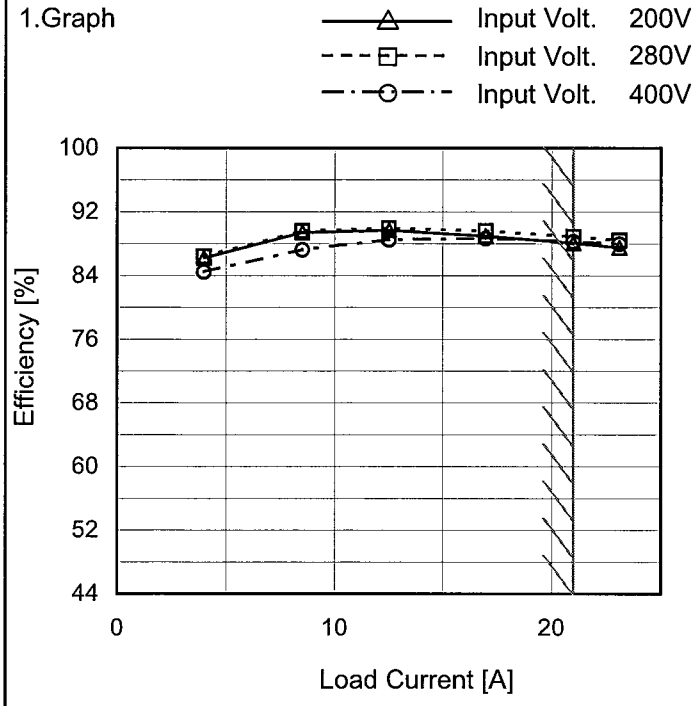
Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
195	89.3	87.8
200	89.6	88.0
240	90.4	88.8
280	90.0	88.8
320	89.5	88.8
360	88.8	88.6
400	88.2	88.3
420	87.8	88.1
--	-	-

COSEL

Model	SNDHS250B12
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. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
0.0	-	-	-
4.0	86.2	86.4	84.5
8.5	89.4	89.6	87.3
12.5	89.7	89.9	88.5
17.0	89.0	89.6	88.6
21.0	88.1	88.8	88.3
23.1	87.5	88.4	88.0
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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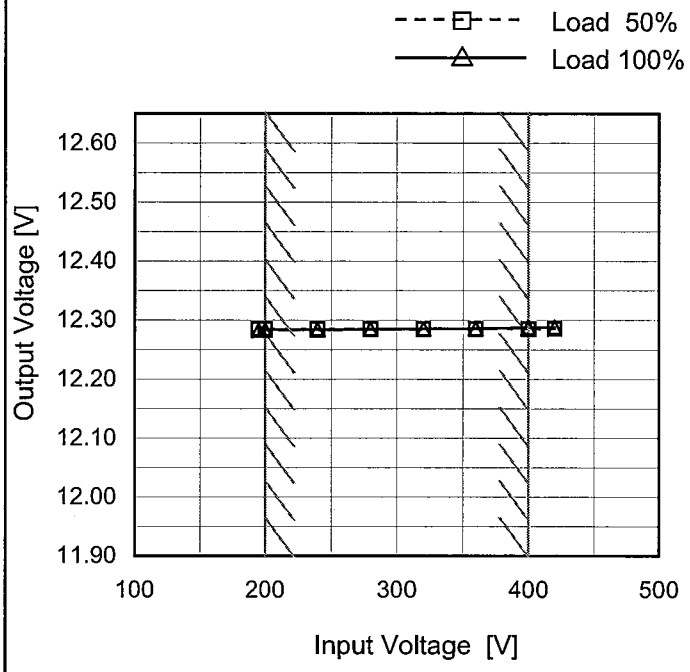
Model	SNDHS250B12
Item	Line Regulation
Object	+12V21A

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%
195	12.285	12.283
200	12.285	12.284
240	12.285	12.284
280	12.285	12.285
320	12.285	12.286
360	12.285	12.286
400	12.285	12.288
420	12.286	12.288
--	-	-

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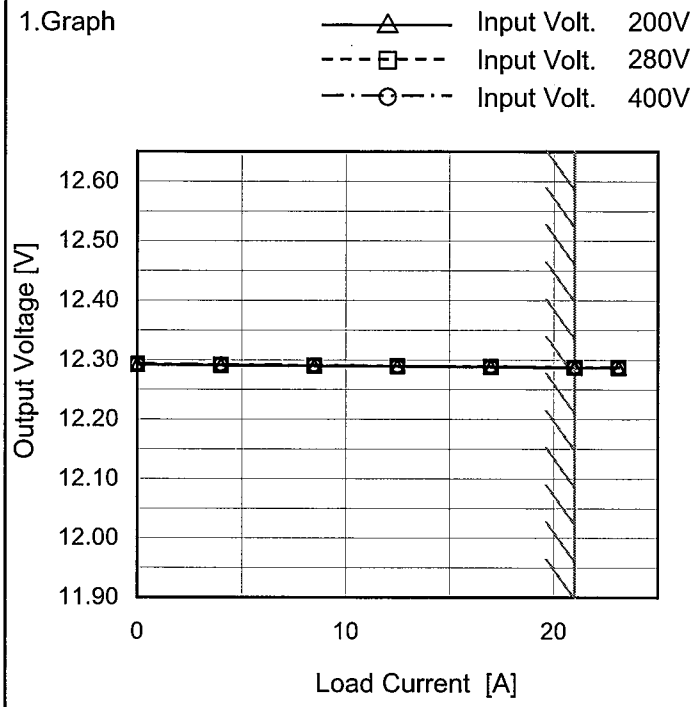
Model	SNDHS250B12
Item	Load Regulation
Object	+12V21A

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. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
0.0	12.292	12.293	12.294
4.0	12.291	12.292	12.292
8.5	12.290	12.290	12.291
12.5	12.289	12.290	12.290
17.0	12.288	12.288	12.289
21.0	12.287	12.288	12.288
23.1	12.287	12.287	12.288
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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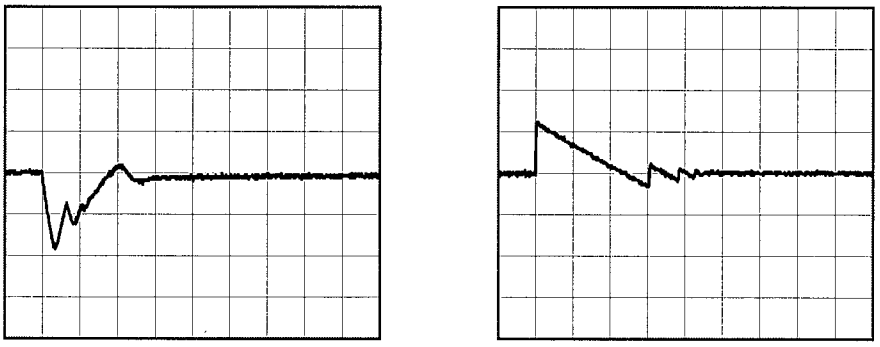
Model	SNDHS250B12
Item	Dynamic Load Response
Object	+12V21A

Temperature 25°C
Testing Circuitry Figure A

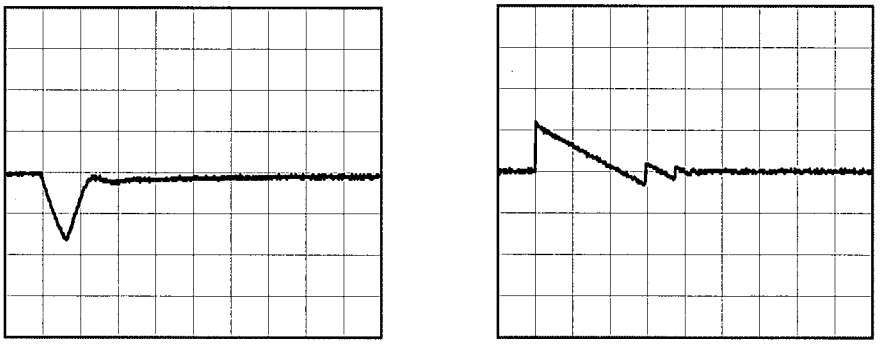
Input Volt. 280 V
Cycle 1000 ms

Load Current
21A/50 μs

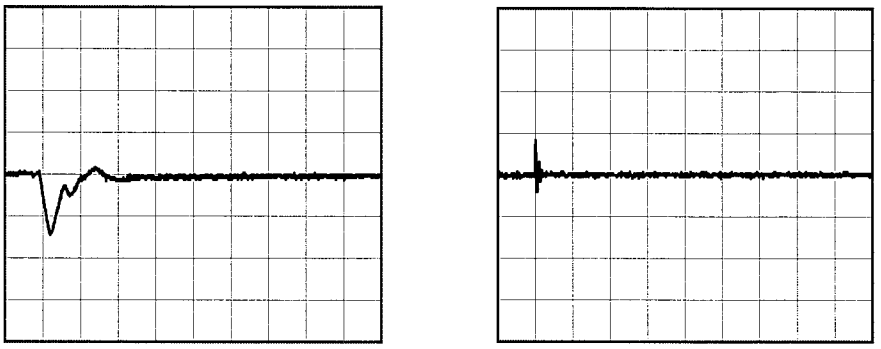
Min. Load (0A) ⟷
Load 100% (21A)



Min. Load (0A) ⟷
Load 50% (10.5A)



Load 10% (2.1A) ⟷
Load 100% (21A)



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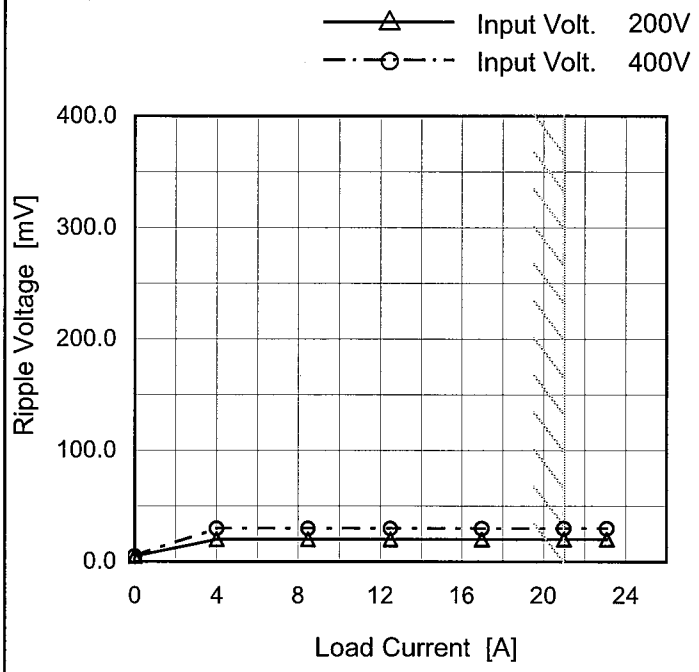
Model	SNDHS250B12
Item	Ripple Voltage (by Load Current)
Object	+12V21A

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]

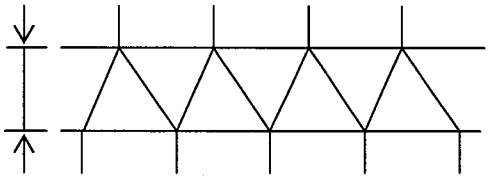


Fig.Complex Ripple Wave Form

2.Values

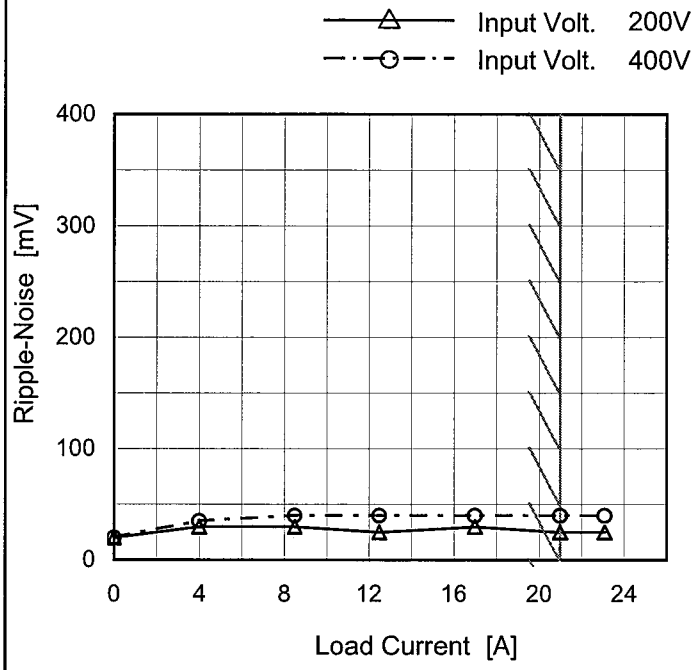
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 200 [V]	Input Volt. 400 [V]
0.0	5	5
4.0	20	30
8.5	20	30
12.5	20	30
17.0	20	30
21.0	20	30
23.1	20	30
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SNDHS250B12
Item	Ripple-Noise
Object	+12V21A

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.

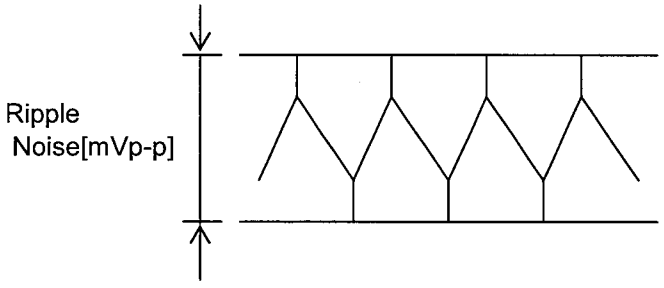


Fig.Complex Ripple Noise Wave Form

2.Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 200 [V]	Input Volt. 400 [V]
0.0	20	20
4.0	30	35
8.5	30	40
12.5	25	40
17.0	30	40
21.0	25	40
23.1	25	40
--	-	-
--	-	-
--	-	-
--	-	-

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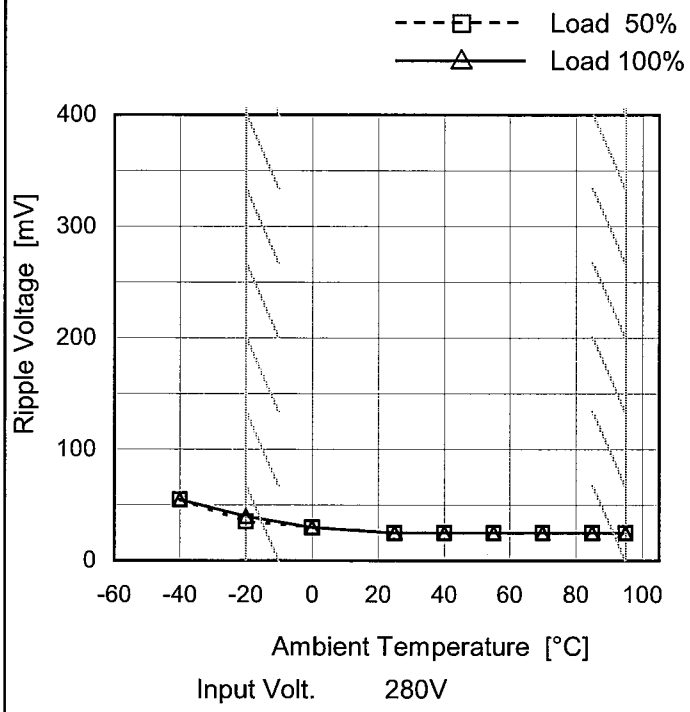
Model	DHS250B12
Item	Ripple Voltage (by Ambient Temp.)
Object	+12V21A

Testing Circuitry Figure B

1.Graph



Input Volt. 280V

Measured by 100 MHz Oscilloscope.

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

2.Values

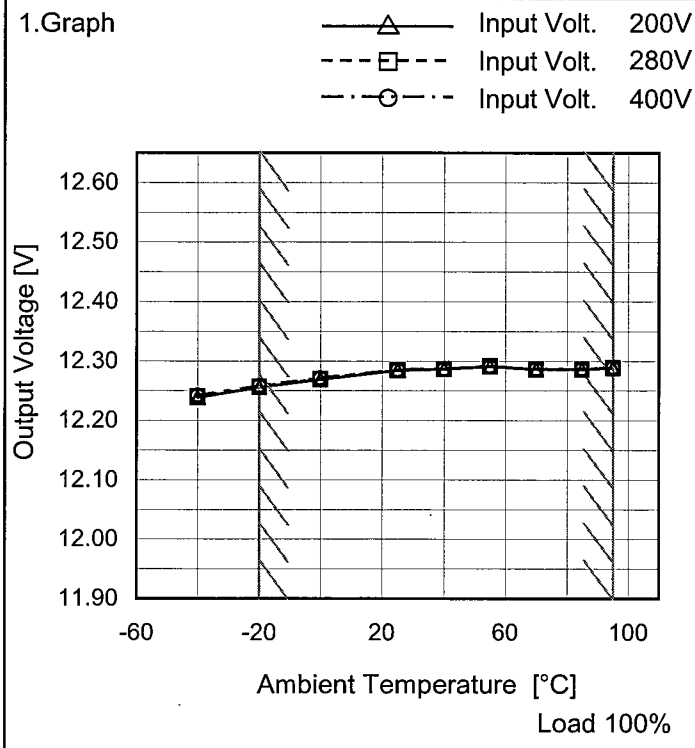
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-40	55	55
-20	35	40
0	30	30
25	25	25
40	25	25
55	25	25
70	25	25
85	25	25
95	25	25
--	-	-
--	-	-

COSEL

Model	SNDHS250B12
Item	Ambient Temperature Drift
Object	+12V21A

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. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
-40	12.239	12.241	12.242
-20	12.256	12.257	12.258
0	12.269	12.270	12.271
25	12.285	12.285	12.285
40	12.287	12.287	12.287
55	12.291	12.292	12.291
70	12.286	12.286	12.287
85	12.286	12.286	12.287
95	12.289	12.289	12.290
--	-	-	-
--	-	-	-

COSEL

Model	SNDHS250B12	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+12V21A	

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 : -20 - 95°C
Input Voltage : 200 - 400V
Load Current : 0 - 21A

* 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	55	200	0	12.297	±21	±0.2
Minimum Voltage	-20	200	21	12.256		

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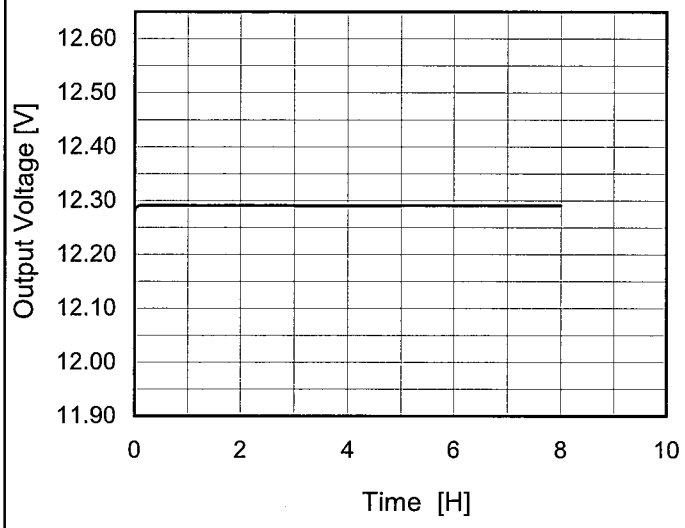
Model	SNDHS250B12
Item	Time Lapse Drift
Object	+12V21A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Input Volt. 280V
Load 100%

2.Values

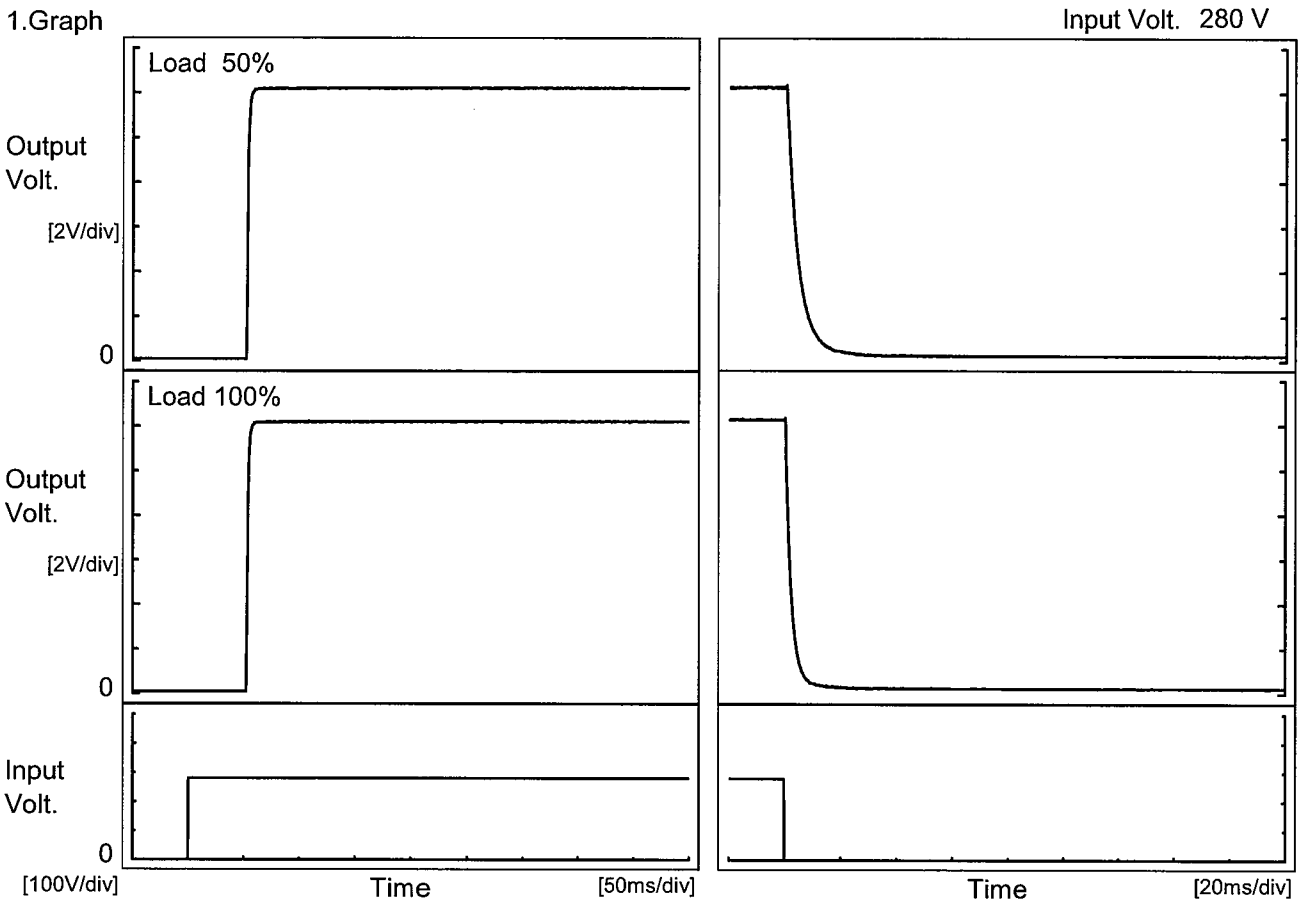
Time since start [H]	Output Voltage [V]
0.0	12.285
0.5	12.291
1.0	12.291
2.0	12.291
3.0	12.291
4.0	12.291
5.0	12.291
6.0	12.291
7.0	12.291
8.0	12.291

COSEL

Model	SNDHS250B12
Item	Rise and Fall Time
Object	+12V21A

Temperature 25°C
Testing Circuitry Figure A

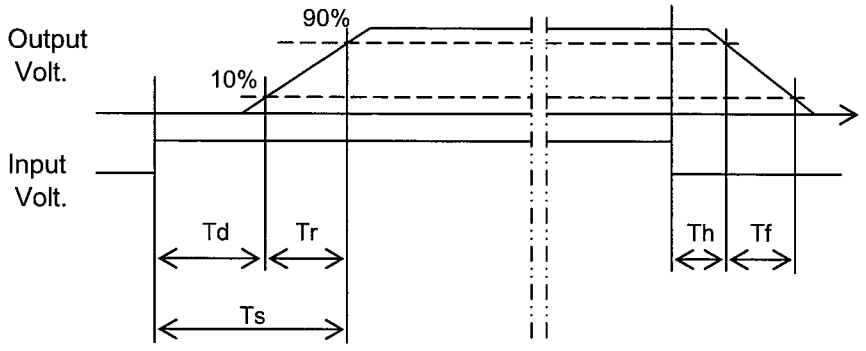
1.Graph



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	53.0	2.5	55.5	1.0	9.4
100 %	53.0	2.3	55.3	0.5	4.9



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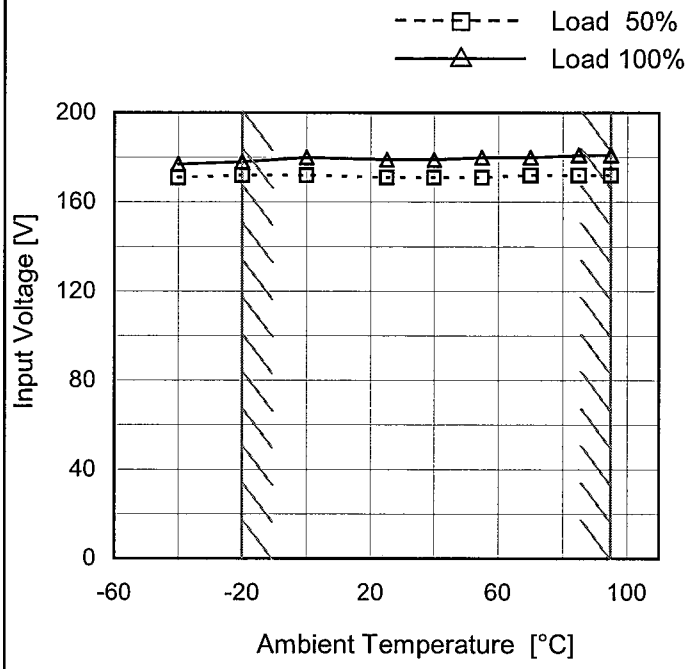
Model	SNDHS250B12
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+12V21A

Testing Circuitry Figure A

1.Graph



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

2.Values

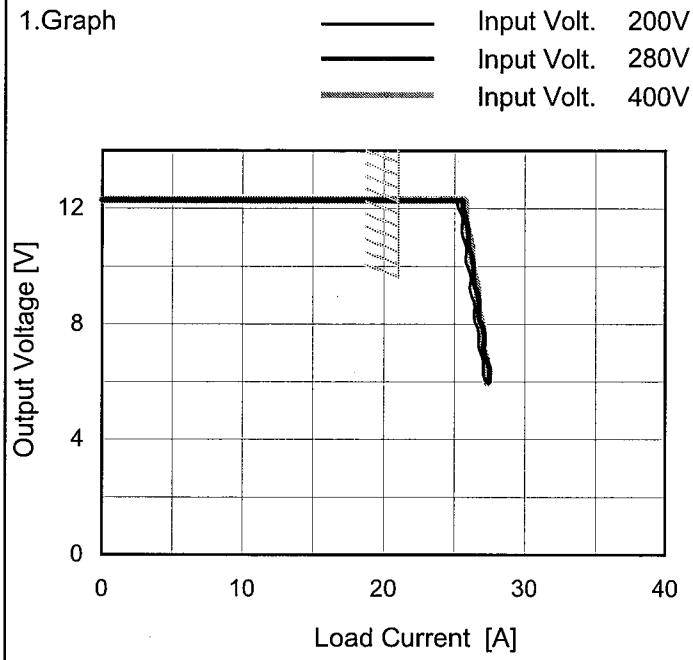
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-40	171	177
-20	172	178
0	172	180
25	171	179
40	171	179
55	171	180
70	172	180
85	172	181
95	172	181
--	-	-
--	-	-

COSEL

Model	SNDHS250B12
Item	Overcurrent Protection
Object	+12V21A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

Intermittent operation occurs when the output voltage is from 6V to 0V.

2.Values

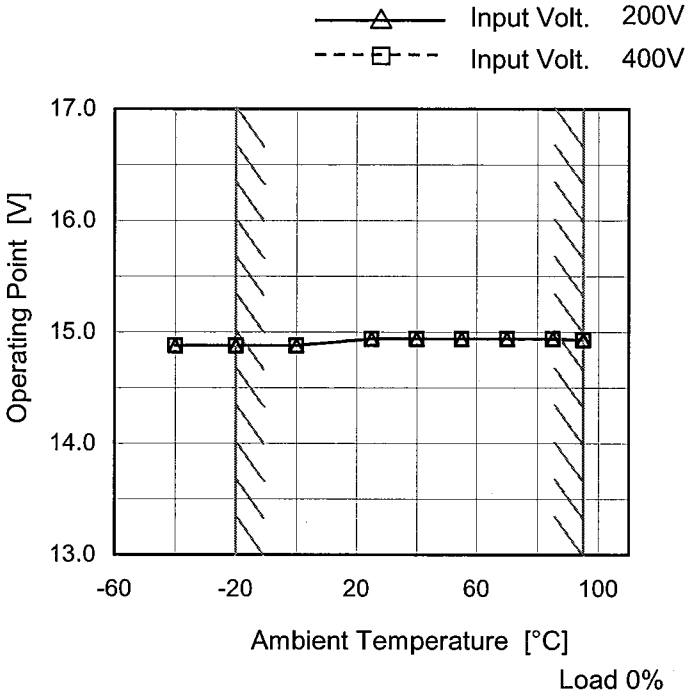
Output Voltage [V]	Load Current [A]		
	Input Volt. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
11.4	25.52	25.90	25.80
10.8	25.72	25.95	26.15
9.6	26.14	26.34	26.47
8.4	26.39	26.71	26.69
7.2	26.73	27.09	27.02
6.0	27.28	27.47	27.37
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SNDHS250B12
Item	Overvoltage Protection
Object	+12V21A

Testing Circuitry Figure A

1.Graph



Load 0%

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

2.Values

Ambient Temperature [°C]	Operating Point [V]	
	Input Volt. 200[V]	Input Volt. 400[V]
-40	14.88	14.88
-20	14.88	14.88
0	14.88	14.88
25	14.94	14.94
40	14.94	14.94
55	14.94	14.94
70	14.94	14.94
85	14.94	14.94
95	14.93	14.93
--	-	-
--	-	-

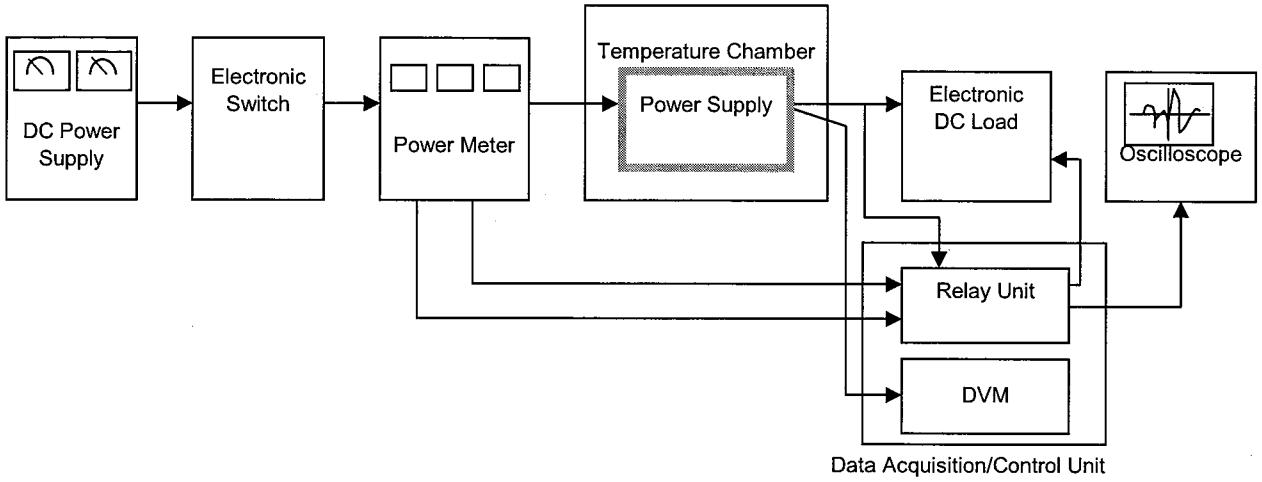


Figure A

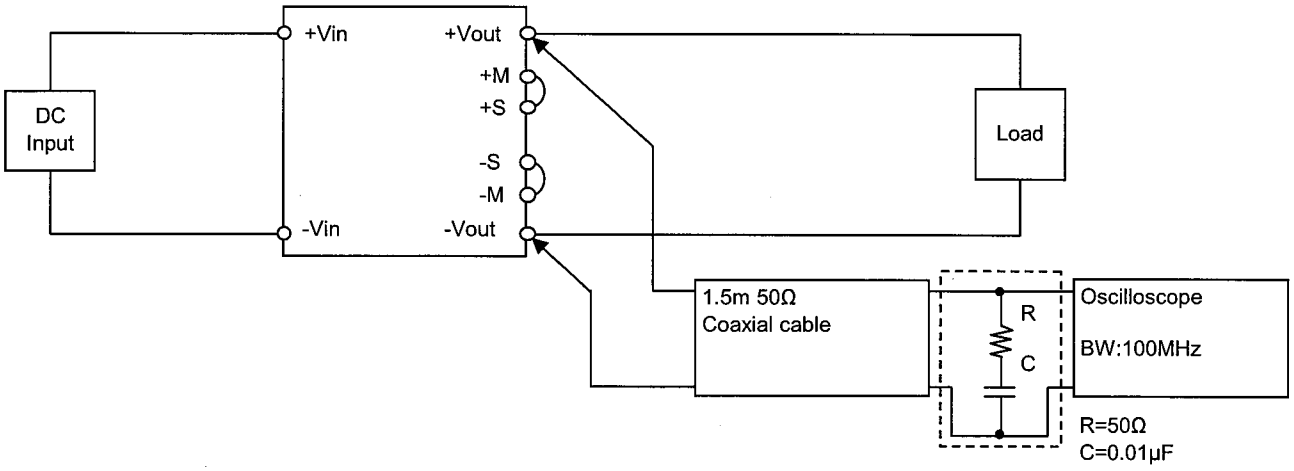


Figure B（Ripple and Ripple noise Characteristic）