COSEL

参考資料

TEST DATA OF DHS100B03

Regulated DC Power Supply
May 22, 2009

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COSEL CO.,LTD.

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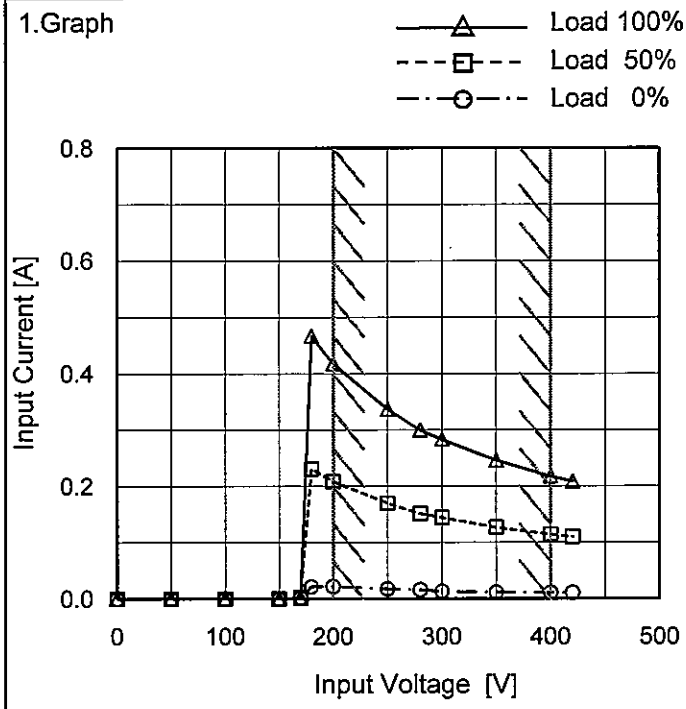
COSEL

Model	DHS100B03
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	0.000	0.000	0.000
100	0.000	0.000	0.000
150	0.000	0.000	0.000
170	0.002	0.002	0.002
180	0.022	0.231	0.467
200	0.022	0.208	0.418
250	0.018	0.170	0.337
280	0.016	0.151	0.300
300	0.013	0.144	0.284
350	0.012	0.127	0.246
400	0.011	0.115	0.218
420	0.011	0.110	0.209
---	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

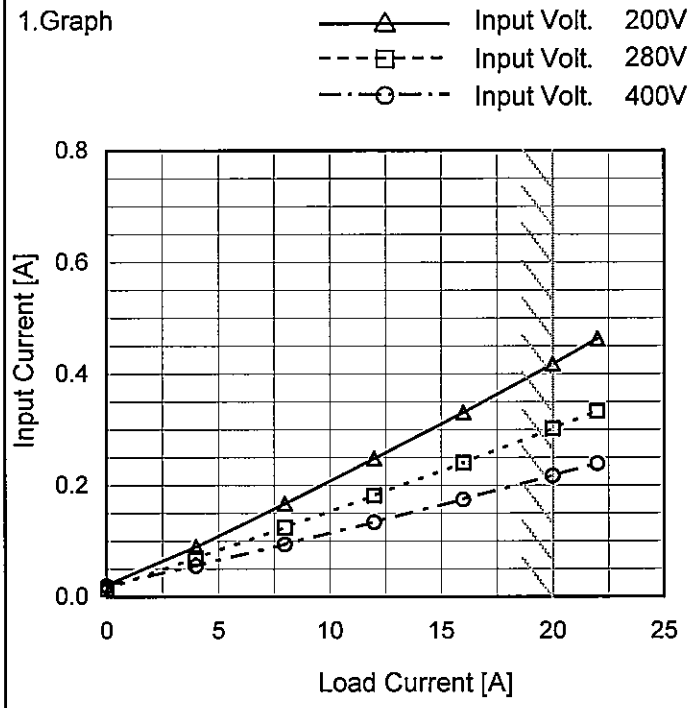
BC-10334

COSEL

Model	DHS100B03
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	0.022	0.015	0.020
4	0.090	0.069	0.056
8	0.167	0.124	0.094
12	0.248	0.182	0.134
16	0.331	0.241	0.175
20	0.418	0.302	0.218
22	0.463	0.333	0.239
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

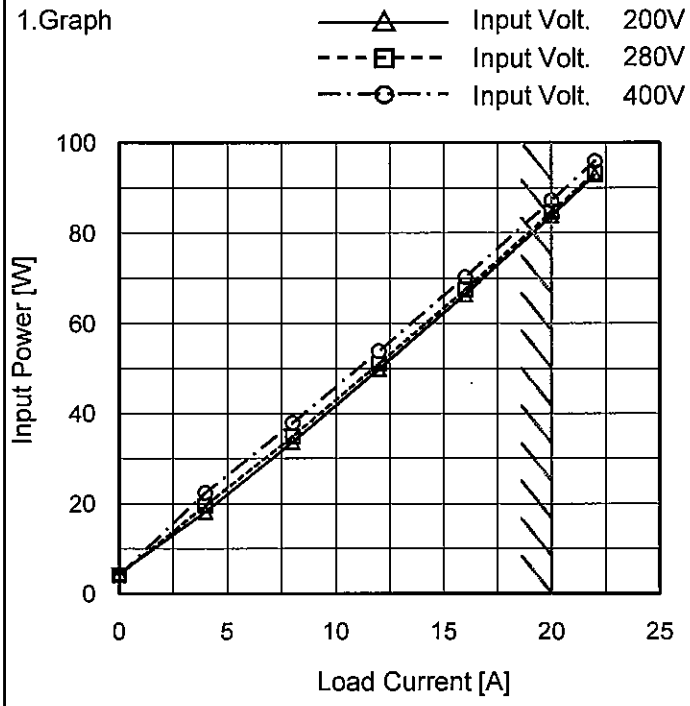
BC-10334

COSEL

Model	DHS100B03
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

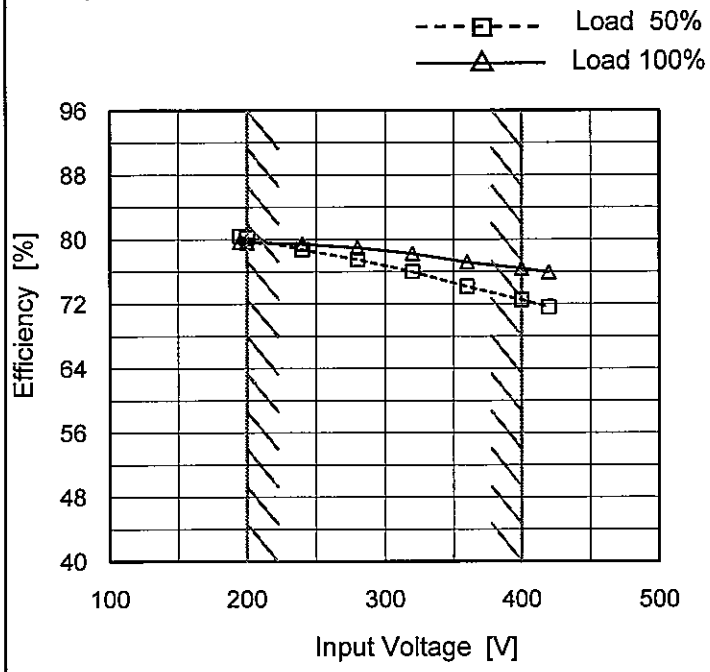
Load Current [A]	Input Power [W]		
	Input Volt. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
0	4.40	4.10	4.16
4	18.10	19.50	22.40
8	33.60	34.90	37.90
12	49.80	51.00	53.80
16	66.40	67.40	70.20
20	83.80	84.60	87.20
22	92.90	93.30	95.90
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	DHS100B03
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

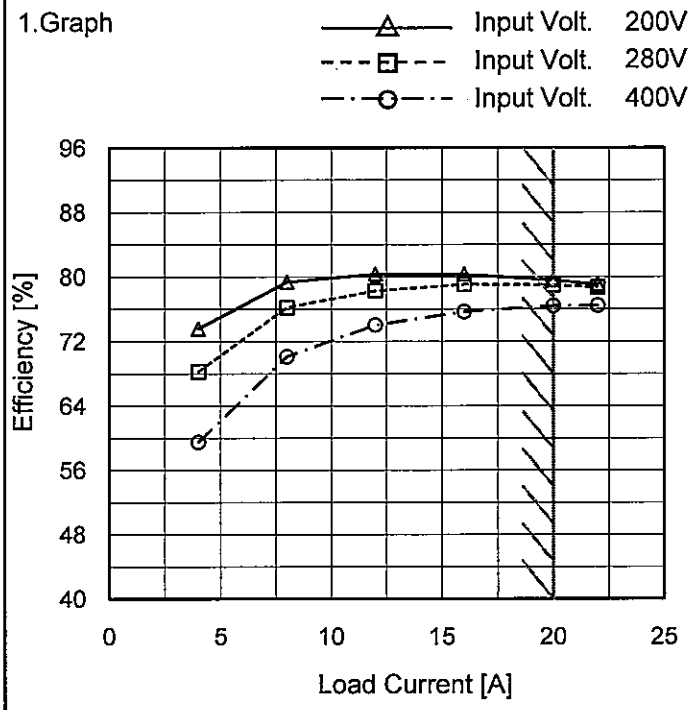
Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
195	80.4	79.7
200	80.2	79.6
240	78.8	79.4
280	77.5	79.0
320	76.0	78.3
360	74.1	77.2
400	72.5	76.4
420	71.6	75.9
---	-	-

COSEL

Model	DHS100B03
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

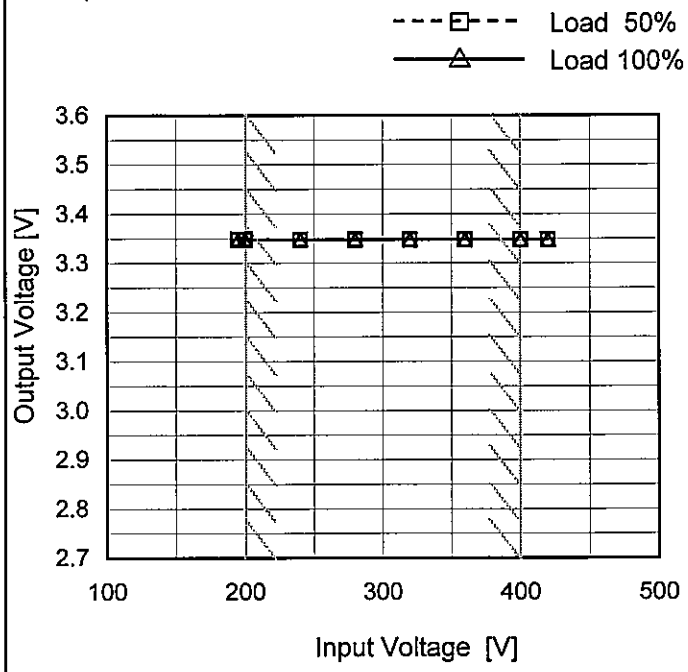
Load Current [A]	Efficiency [%]		
	Input Volt. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
0	-	-	-
4	73.6	68.2	59.5
8	79.4	76.2	70.1
12	80.4	78.3	74.0
16	80.3	79.1	75.7
20	79.6	79.0	76.4
22	79.1	78.7	76.5
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	DHS100B03
Item	Line Regulation
Object	+3.3V20A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

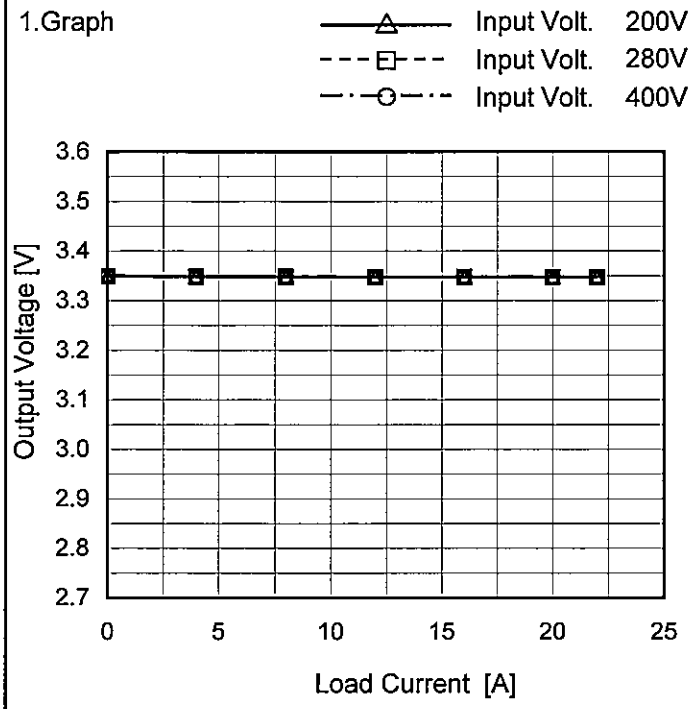
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
195	3.348	3.348
200	3.348	3.348
240	3.348	3.348
280	3.348	3.348
320	3.348	3.348
360	3.348	3.348
400	3.348	3.348
420	3.348	3.348
--	-	-

COSEL

Model	DHS100B03
Item	Load Regulation
Object	+3.3V20A

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	3.350	3.350	3.350
4	3.348	3.348	3.349
8	3.348	3.348	3.348
12	3.348	3.348	3.348
16	3.348	3.348	3.348
20	3.348	3.348	3.347
22	3.348	3.347	3.347
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	DHS100B03
Item	Dynamic Load Response
Object	+3.3V20A

Temperature 25°C
Testing Circuitry Figure A

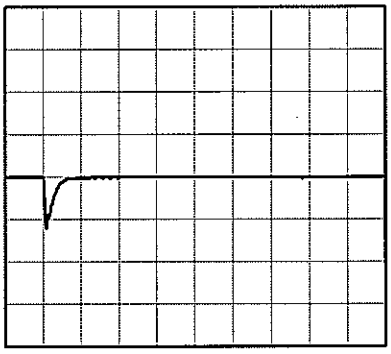
Input Volt. 280 V
Cycle 1000 ms

Load Current

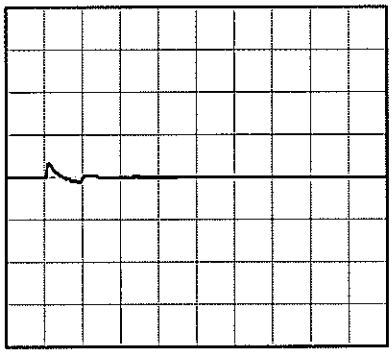
20A / 20μs

Min. Load (0A) ⟷
Load 100% (20A)

500mV/div



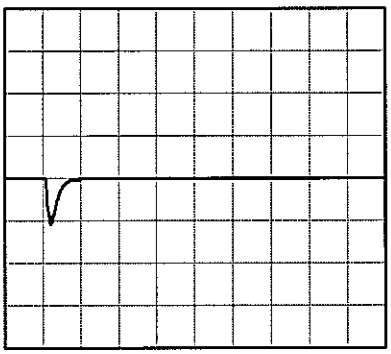
500 μs/div



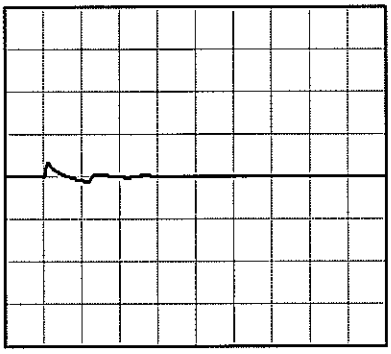
5 ms/div

Min. Load (0A) ⟷
Load 50% (10A)

500mV/div



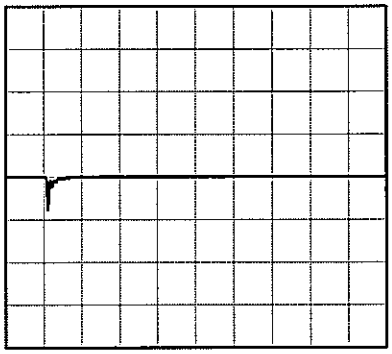
500 μs/div



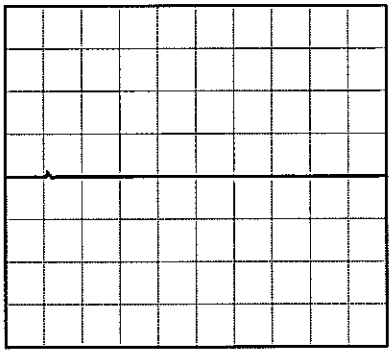
5 ms/div

Load 10% (2A) ⟷
Load 100% (20A)

500mV/div



500 μs/div



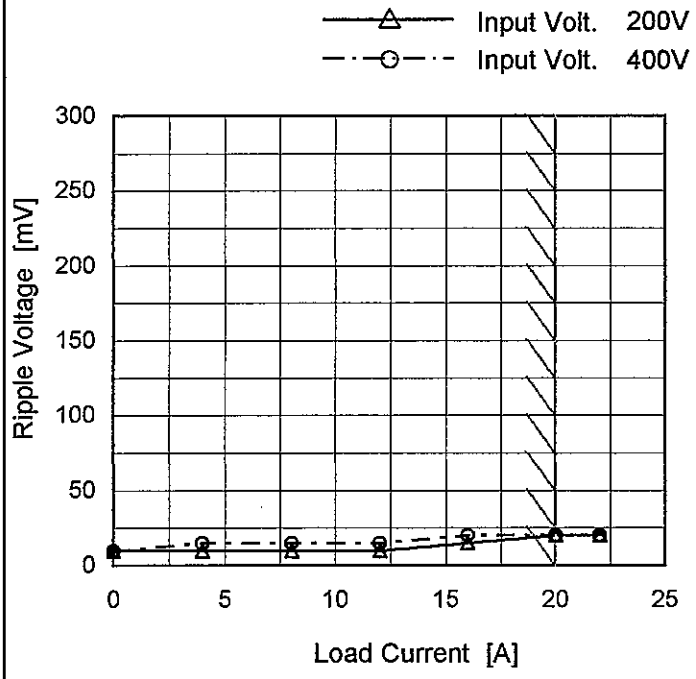
5 ms/div

COSEL

Model	DHS100B03
Item	Ripple Voltage (by Load Current)
Object	+3.3V20A

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]

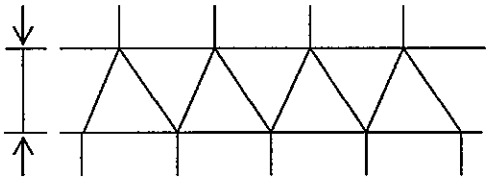


Fig.Complex Ripple Wave Form

2.Values

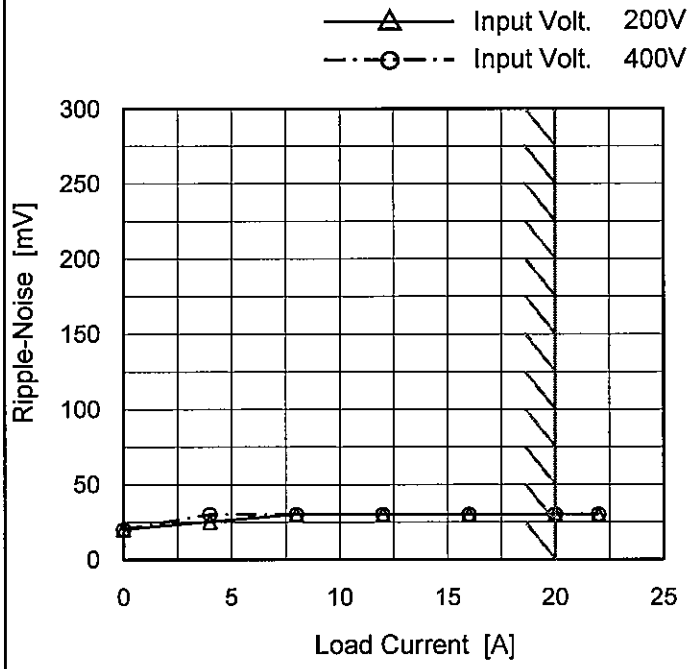
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 200 [V]	Input Volt. 400 [V]
0	10	10
4	10	15
8	10	15
12	10	15
16	15	20
20	20	20
22	20	20
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	DHS100B03
Item	Ripple-Noise
Object	+3.3V20A

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.

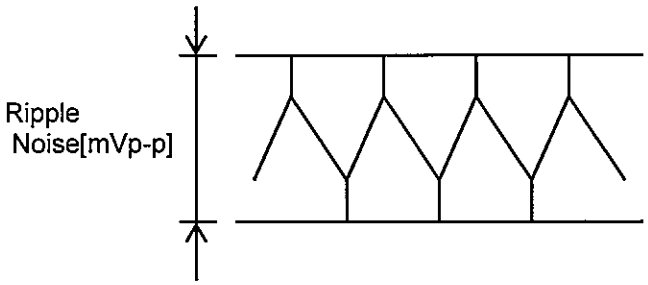


Fig.Complex Ripple Noise Wave Form

2.Values

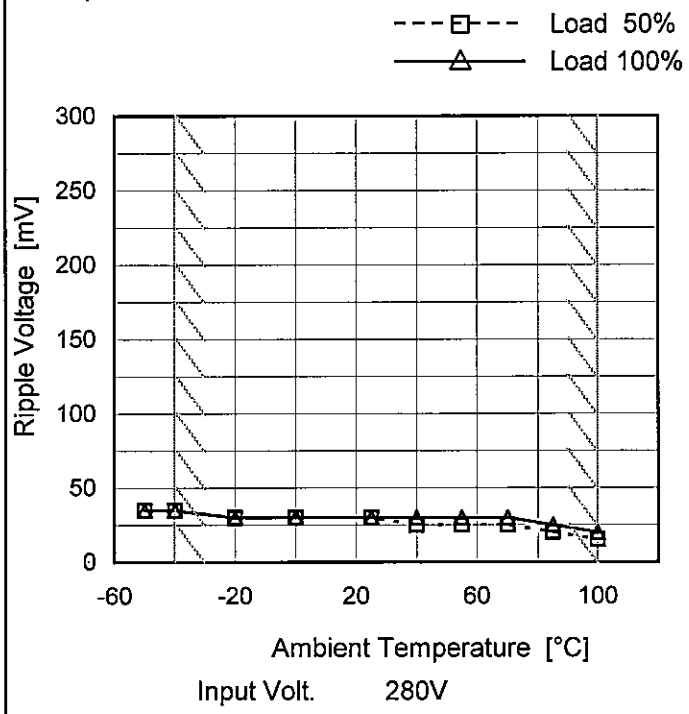
Load Current [A]	Ripple-Noise [mV] Input Volt. 200 [V]	Ripple-Noise [mV] Input Volt. 400 [V]
0	20	20
4	25	30
8	30	30
12	30	30
16	30	30
20	30	30
22	30	30
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	DHS100B03
Item	Ripple Voltage (by Ambient Temp.)
Object	+3.3V20A

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

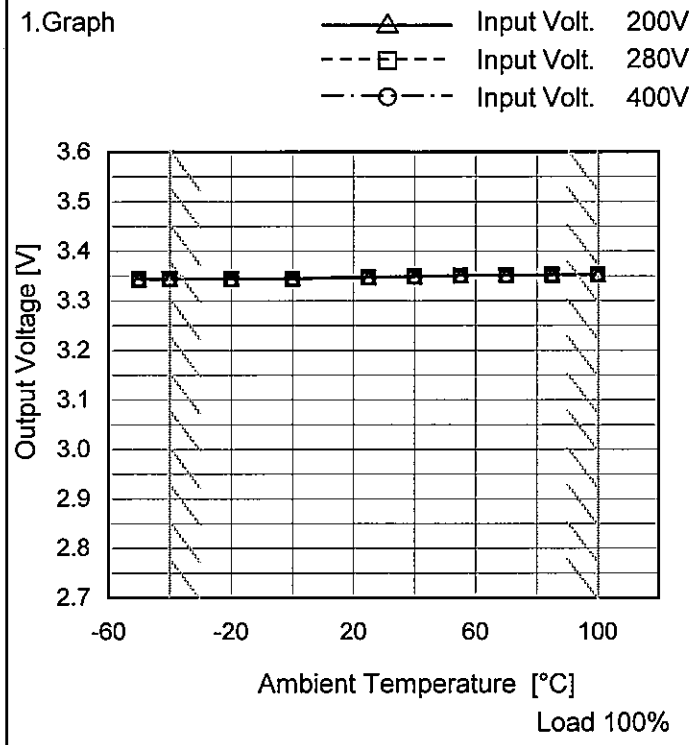
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-50	35	35
-40	35	35
-20	30	30
0	30	30
25	30	30
40	25	30
55	25	30
70	25	30
85	20	25
100	15	20
--	-	-

COSEL

Model	DHS100B03
Item	Ambient Temperature Drift
Object	+3.3V20A

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]
-50	3.343	3.343	3.343
-40	3.344	3.344	3.343
-20	3.344	3.344	3.343
0	3.344	3.344	3.344
25	3.347	3.347	3.347
40	3.349	3.349	3.349
55	3.351	3.351	3.350
70	3.352	3.352	3.351
85	3.353	3.352	3.352
100	3.353	3.353	3.353
--	-	-	-

COSEL

Model	DHS100B03	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+3.3V20A	

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 - 100°C
Input Voltage : 200 - 400V
Load Current : 0 - 20A

* 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

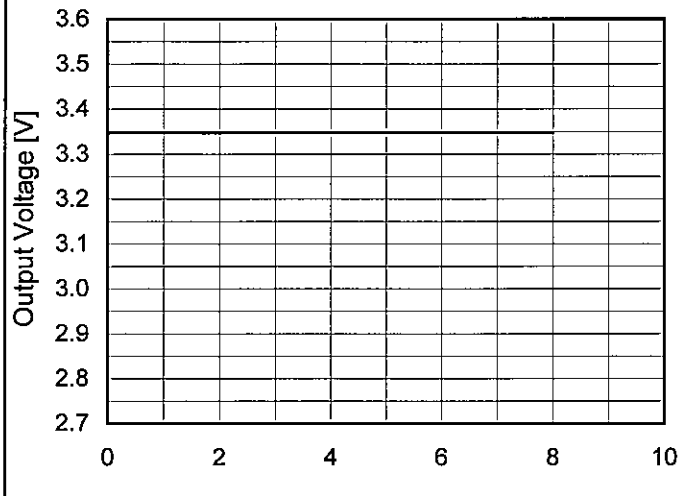
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	100	200	0	3.356	±7	±0.2
Minimum Voltage	-40	200	20	3.343		

COSEL

Model	DHS100B03
Item	Time Lapse Drift
Object	+3.3V20A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Input Volt. 280V
Load 100%

2.Values

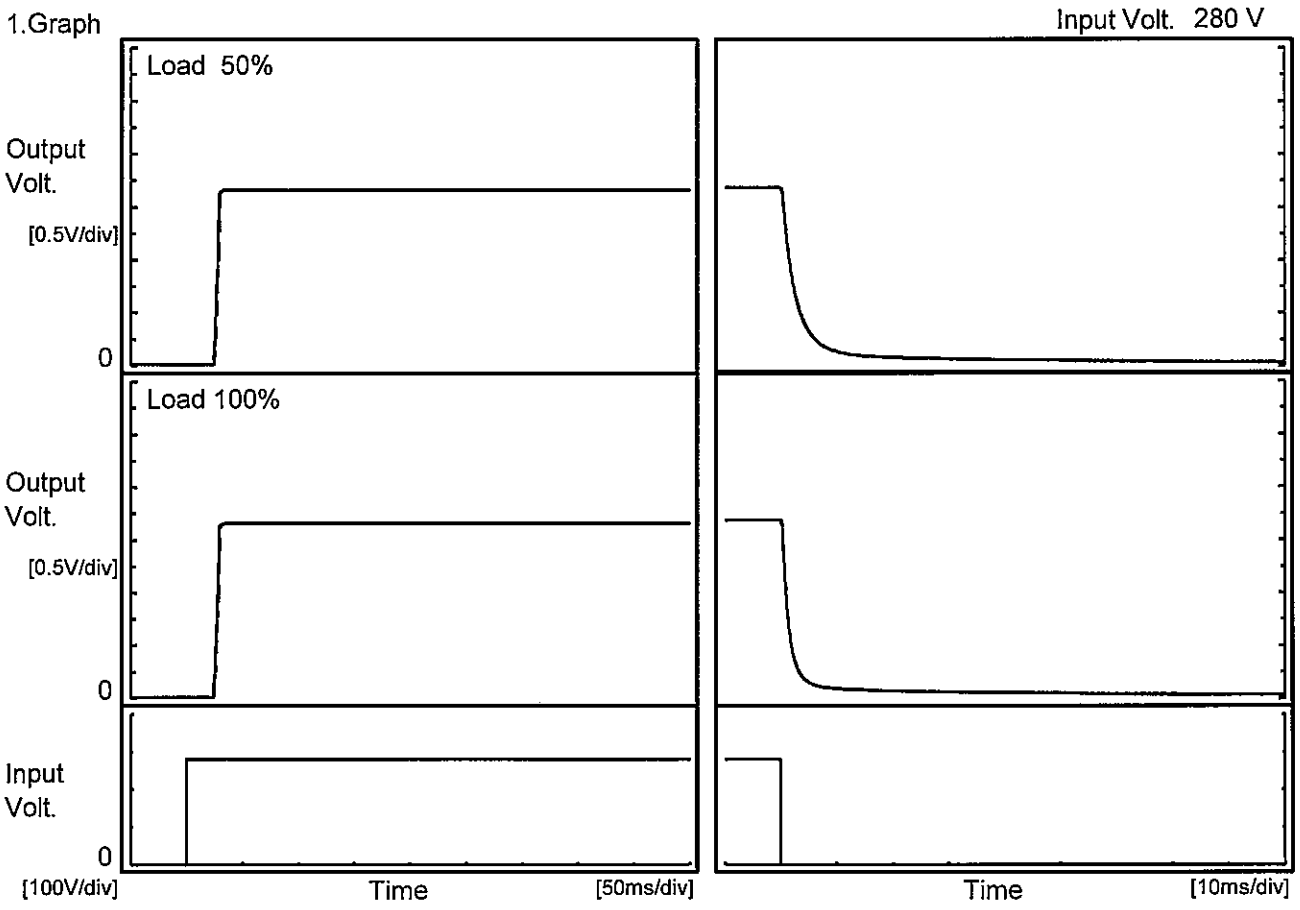
Time since start [H]	Output Voltage [V]
0.0	3.348
0.5	3.348
1.0	3.348
2.0	3.348
3.0	3.348
4.0	3.348
5.0	3.348
6.0	3.348
7.0	3.348
8.0	3.348

COSEL

Model	DHS100B03
Item	Rise and Fall Time
Object	+3.3V20A

Temperature 25°C
Testing Circuitry Figure A

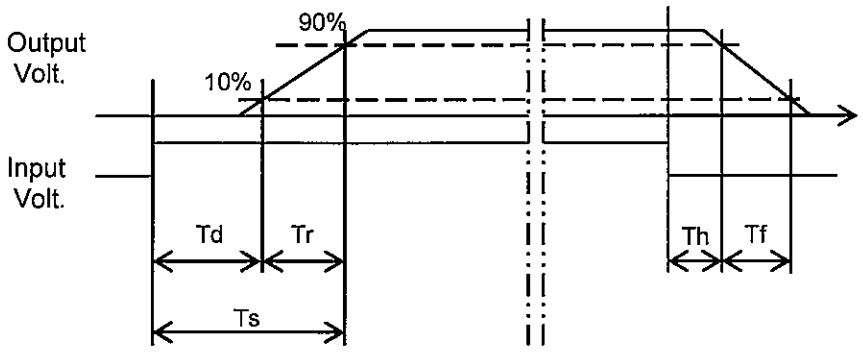
1.Graph



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	24.8	4.0	28.8	0.5	7.6
100 %	24.8	4.3	29.1	0.5	4.0

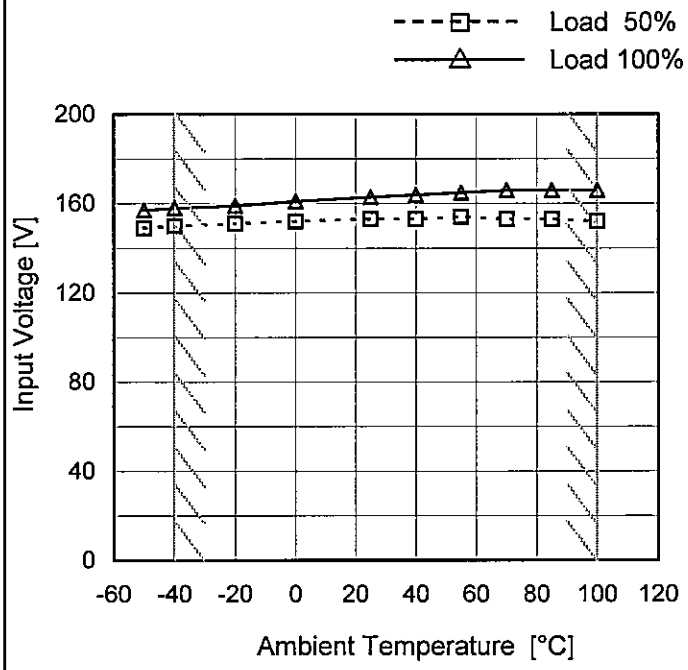


COSEL

Model	DHS100B03
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+3.3V20A

Testing Circuitry Figure A

1.Graph



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

2.Values

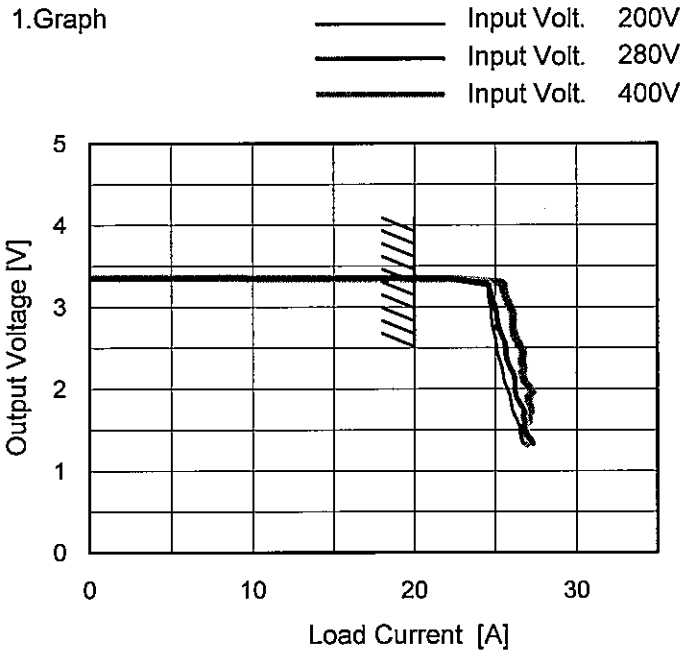
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-50	149	157
-40	150	158
-20	151	159
0	152	161
25	153	163
40	153	164
55	154	165
70	153	166
85	153	166
100	152	166
--	-	-

COSEL

Model	DHS100B03
Item	Overcurrent Protection
Object	+3.3V20A

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 1.32V to 0V.

2.Values

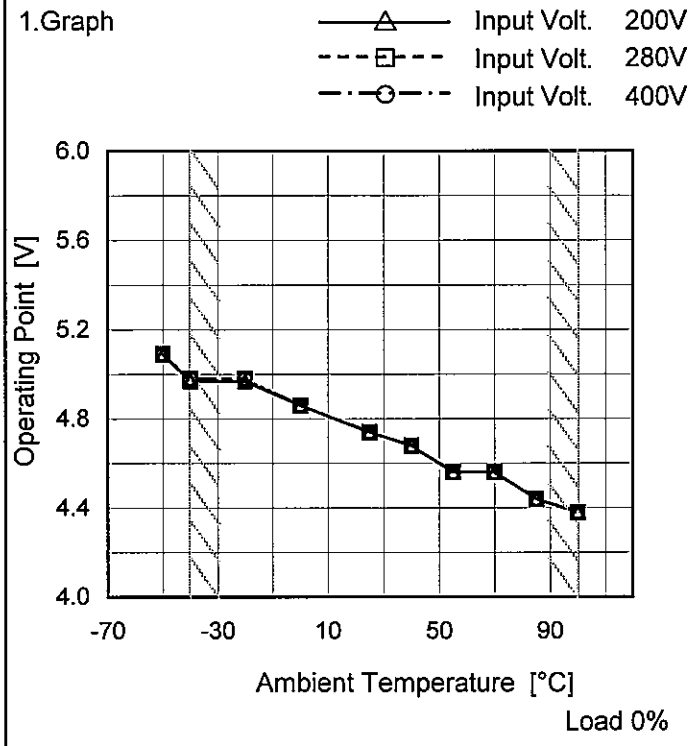
Output Voltage [V]	Load Current [A]		
	Input Volt. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
3.30	20.02	20.28	20.22
3.14	24.59	24.75	25.60
2.97	24.71	24.97	25.96
2.64	24.96	25.42	26.20
2.31	25.30	25.74	26.68
1.98	25.73	26.21	27.18
1.65	26.22	26.71	27.04
1.32	26.74	27.33	26.96
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	DHS100B03
Item	Overvoltage Protection
Object	+3.3V20A

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. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
-50	5.09	5.09	5.09
-40	4.97	4.98	4.98
-20	4.97	4.98	4.98
0	4.86	4.86	4.86
25	4.74	4.74	4.74
40	4.68	4.68	4.68
55	4.56	4.56	4.56
70	4.56	4.56	4.56
85	4.44	4.44	4.44
100	4.38	4.38	4.38
--	-	-	-

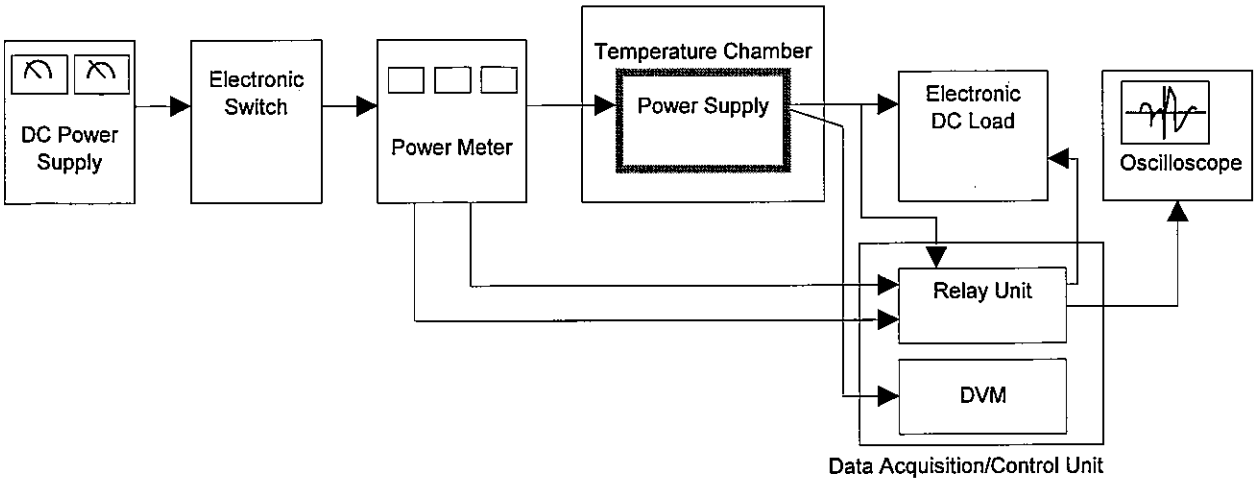
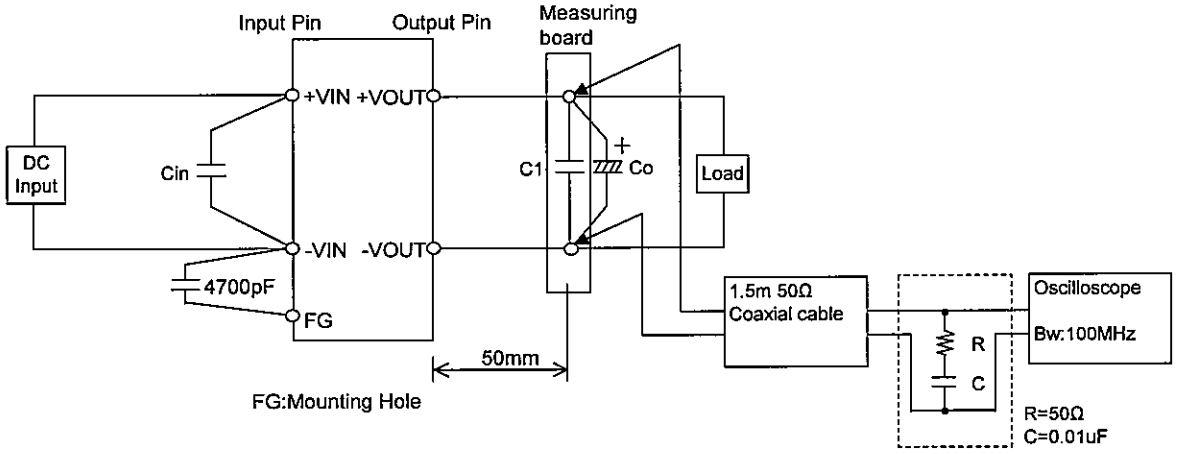


Figure A



C1 : DHS100B24 4.7uF
DHS100B28 4.7uF
Others 10uF

Co : DHS100B03 2200uF
DHS100B05 2200uF
DHS100B12 470uF
DHS100B15 470uF
DHS100B24 220uF
DHS100B28 220uF

Figure B