COSEL

参考資料

TEST DATA OF DHS100B05

Regulated DC Power Supply
May 22, 2009

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COSEL CO.,LTD.

参考資料

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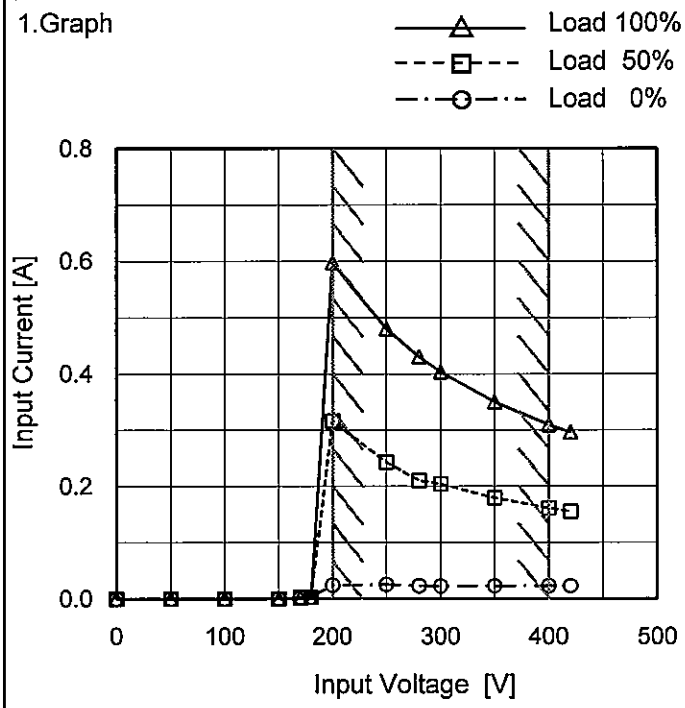
Model	DHS100B05
Item	Input Current (by Input Voltage)
Object	――――――

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	0.003	0.003	0.003
200	0.024	0.316	0.597
250	0.025	0.243	0.480
280	0.023	0.210	0.430
300	0.022	0.204	0.403
350	0.023	0.179	0.350
400	0.023	0.161	0.309
420	0.023	0.155	0.296
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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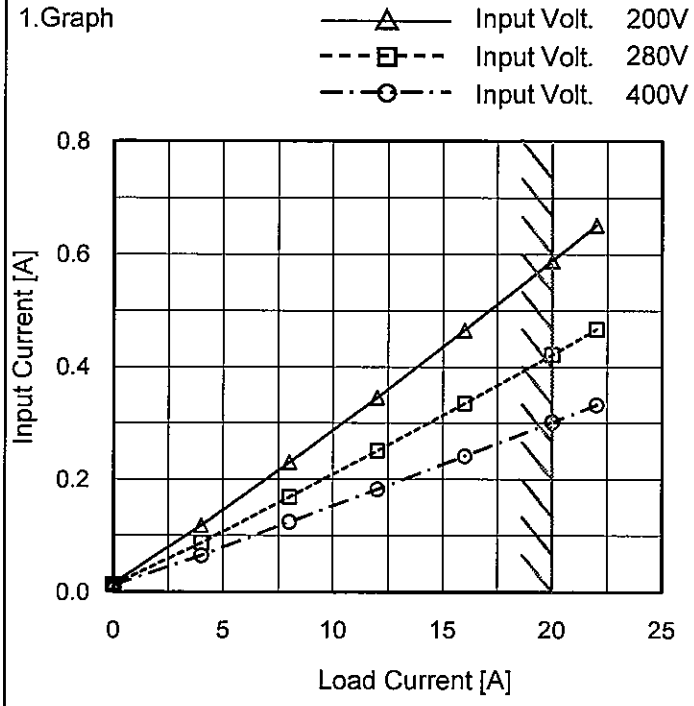
Model	DHS100B05
Item	Input Current (by Load Current)
Object	――――――

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	0.016	0.013	0.012
4	0.118	0.087	0.065
8	0.231	0.169	0.125
12	0.346	0.251	0.183
16	0.465	0.335	0.242
20	0.588	0.421	0.302
22	0.651	0.467	0.333
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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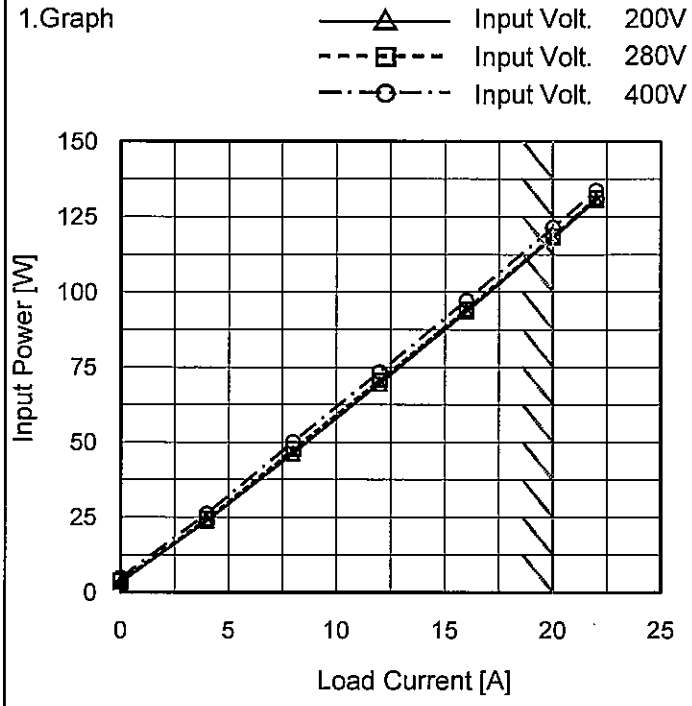
Model	DHS100B05
Item	Input Power (by Load Current)
Object	————————

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	3.3	3.8	4.8
4	23.8	24.5	26.2
8	46.3	47.6	50.1
12	69.5	70.6	73.4
16	93.5	94.2	97.2
20	118.1	118.4	121.4
22	130.6	131.3	133.7
---	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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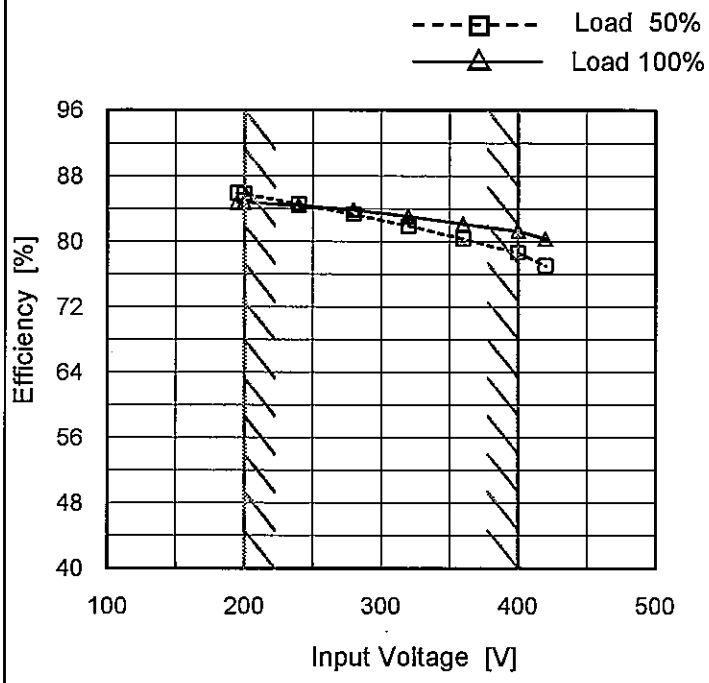
Model	DHS100B05
Item	Efficiency (by Input Voltage)
Object	――――――――――

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	85.9	84.8
200	85.8	84.7
240	84.6	84.4
280	83.3	83.8
320	81.9	83.0
360	80.3	82.1
400	78.6	81.3
420	77.0	80.3
--	-	-

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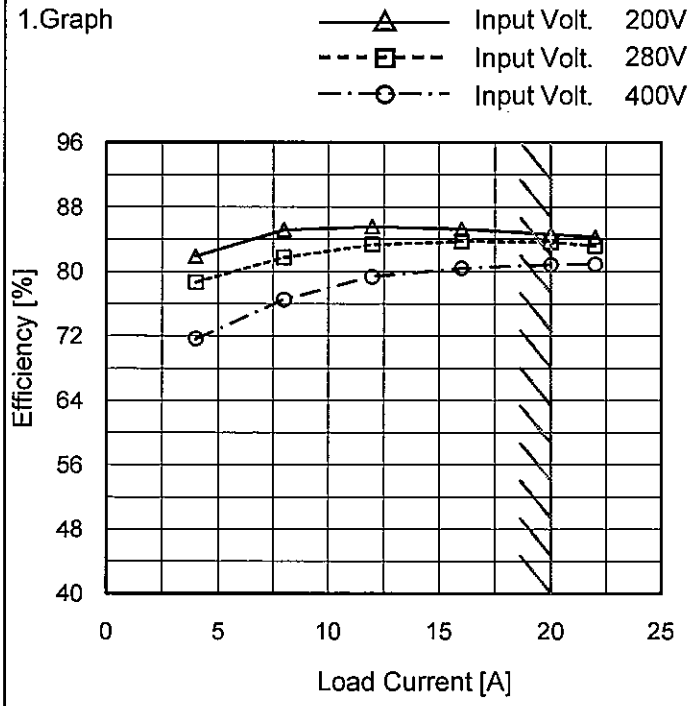
Model	DHS100B05
Item	Efficiency (by Load Current)
Object	――――――

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	81.9	78.7	71.7
8	85.2	81.8	76.5
12	85.6	83.3	79.4
16	85.3	83.8	80.4
20	84.7	83.7	80.9
22	84.3	83.2	80.9
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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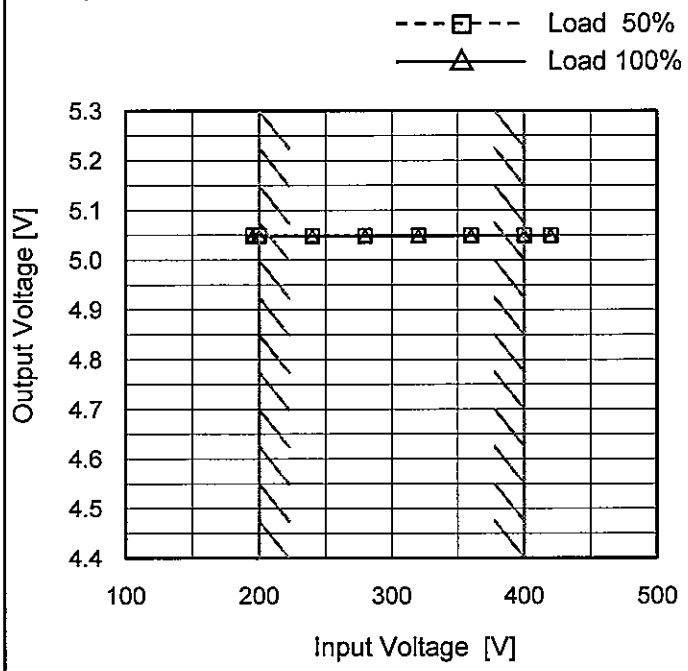
Model	DHS100B05
Item	Line Regulation
Object	+5V20A

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	5.050	5.048
200	5.050	5.048
240	5.050	5.048
280	5.050	5.048
320	5.050	5.049
360	5.050	5.049
400	5.050	5.049
420	5.050	5.049
--	-	-

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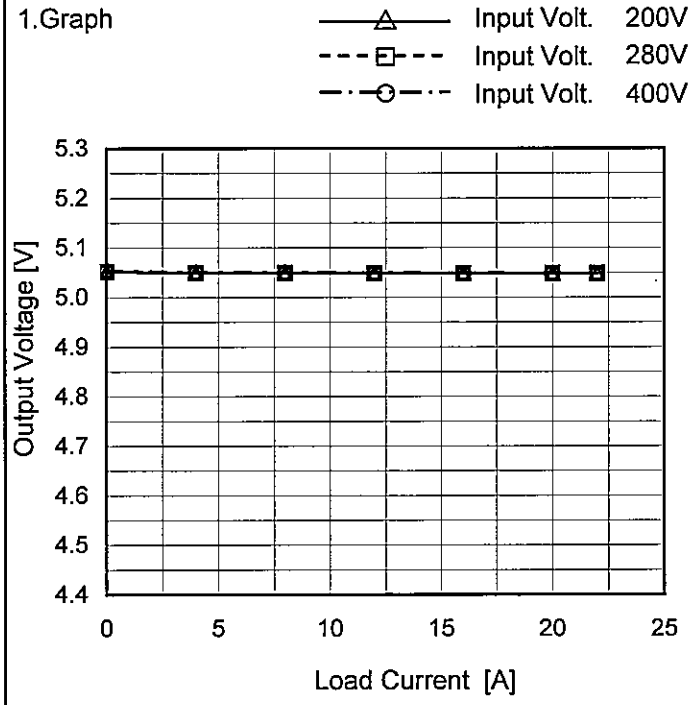
COSEL

Model	DHS100B05
Item	Load Regulation
Object	+5V20A

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	5.052	5.052	5.053
4	5.050	5.050	5.051
8	5.049	5.050	5.050
12	5.049	5.049	5.050
16	5.048	5.049	5.049
20	5.048	5.048	5.049
22	5.048	5.048	5.049
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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Model	DHS100B05	Temperature 25°C
Item	Dynamic Load Response	Testing Circuitry Figure A
Object	+5V20A	

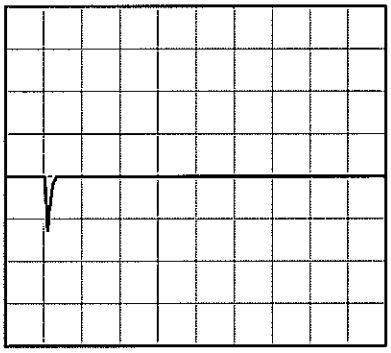
Input Volt. 280 V
Cycle 1000 ms

Load Current

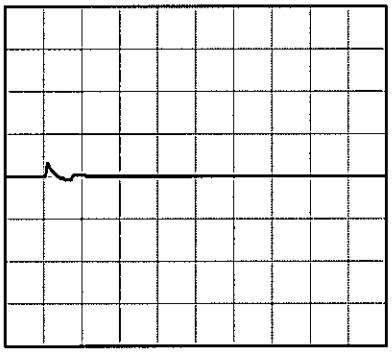
20A / 20μs

Min. Load (0A) ⟷
Load 100% (20A)

500mV/div



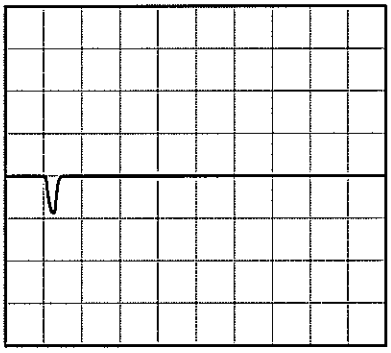
500 μs/div



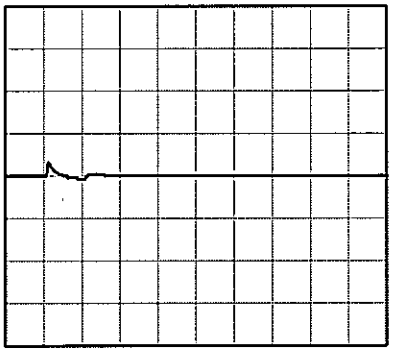
5 ms/div

Min. Load (0A) ⟷
Load 50% (10A)

500mV/div



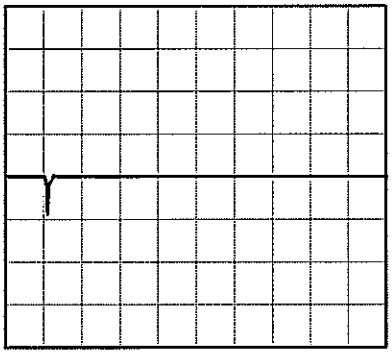
500 μs/div



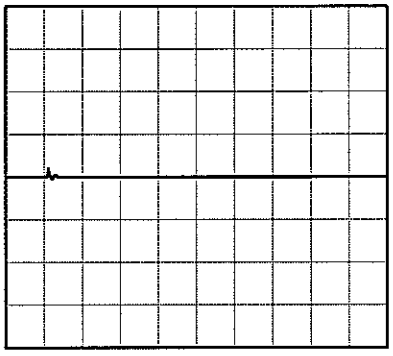
5 ms/div

Load 10% (2A) ⟷
Load 100% (20A)

500mV/div



500 μs/div



5 ms/div

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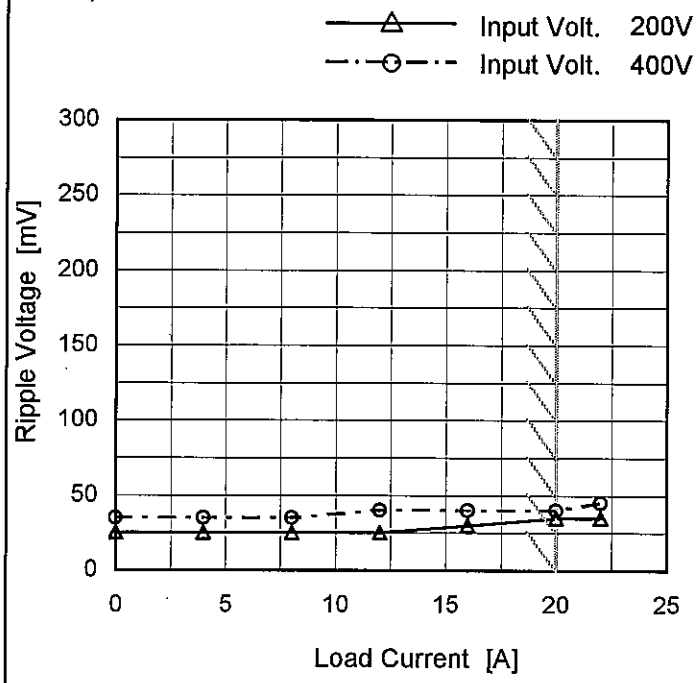
Model	DHS100B05
Item	Ripple Voltage (by Load Current)
Object	+5V20A

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]

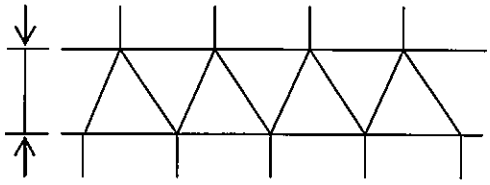


Fig.Complex Ripple Wave Form

2.Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 200 [V]	Input Volt. 400 [V]
0	25	35
4	25	35
8	25	35
12	25	40
16	30	40
20	35	40
22	35	45
--	-	-
--	-	-
--	-	-
--	-	-

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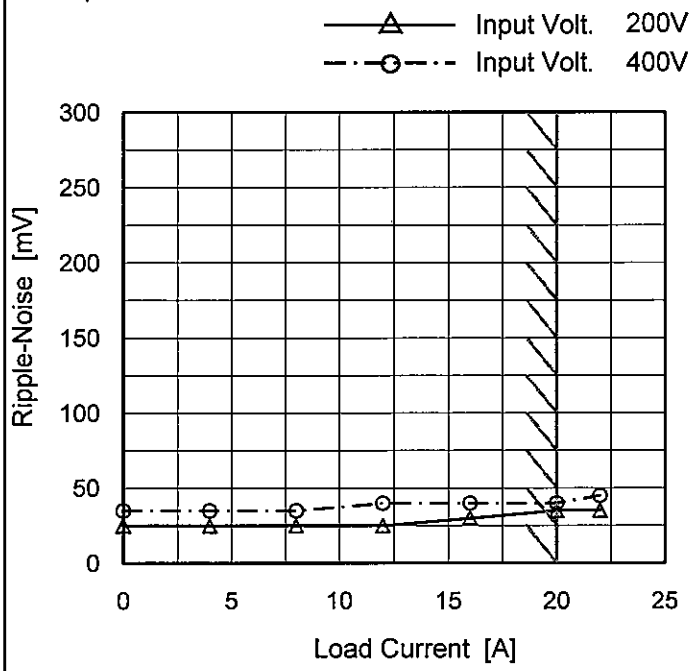
Model	DHS100B05
Item	Ripple-Noise
Object	+5V20A

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.

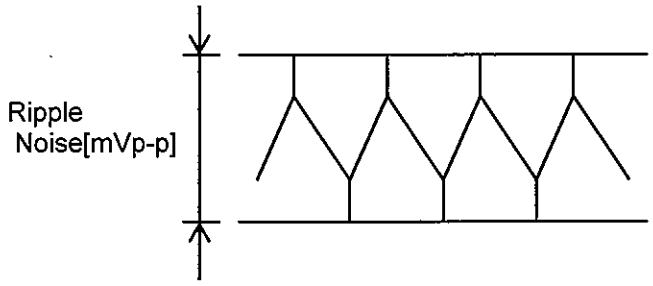


Fig.Complex Ripple Noise Wave Form

2.Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 200 [V]	Input Volt. 400 [V]
0	25	35
4	25	35
8	25	35
12	25	40
16	30	40
20	35	40
22	35	45
--	-	-
--	-	-
--	-	-
--	-	-

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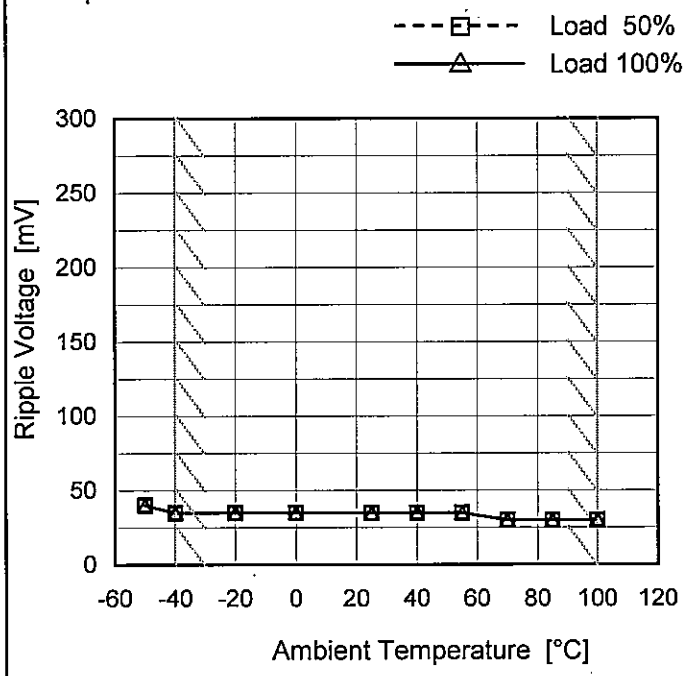
Model	DHS100B05
Item	Ripple Voltage (by Ambient Temp.)
Object	+5V20A

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	40	40
-40	35	35
-20	35	35
0	35	35
25	35	35
40	35	35
55	35	35
70	30	30
85	30	30
100	30	30
--	-	-

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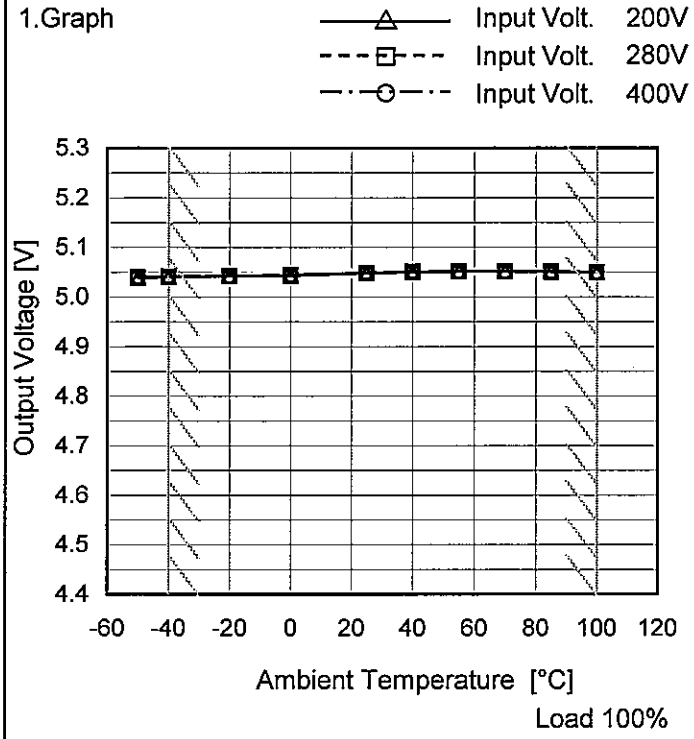
Model	DHS100B05
Item	Ambient Temperature Drift
Object	+5V20A

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	5.039	5.039	5.040
-40	5.041	5.041	5.041
-20	5.043	5.042	5.042
0	5.044	5.044	5.044
25	5.048	5.049	5.049
40	5.050	5.051	5.051
55	5.052	5.052	5.052
70	5.052	5.052	5.052
85	5.051	5.051	5.051
100	5.050	5.050	5.050
---	-	-	-

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Model	DHS100B05	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+5V20A	

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	70	200	0	5.058	±9	±0.2
Minimum Voltage	-40	200	20	5.041		

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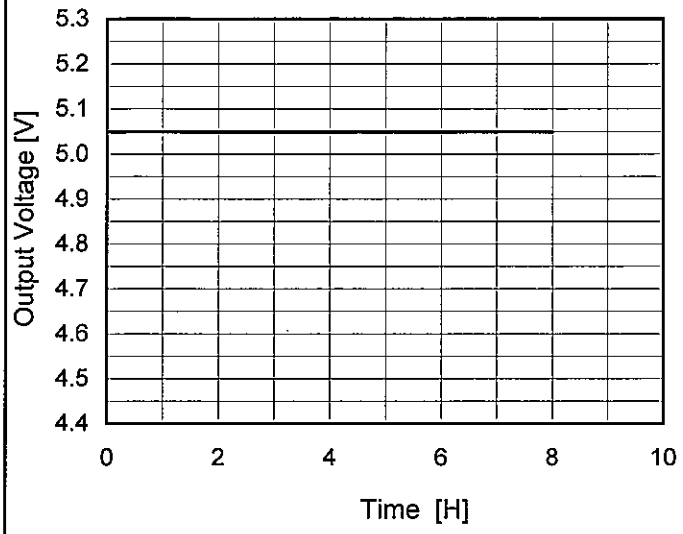
Model	DHS100B05
Item	Time Lapse Drift
Object	+5V20A

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	5.049
0.5	5.049
1.0	5.049
2.0	5.049
3.0	5.049
4.0	5.049
5.0	5.049
6.0	5.049
7.0	5.049
8.0	5.049

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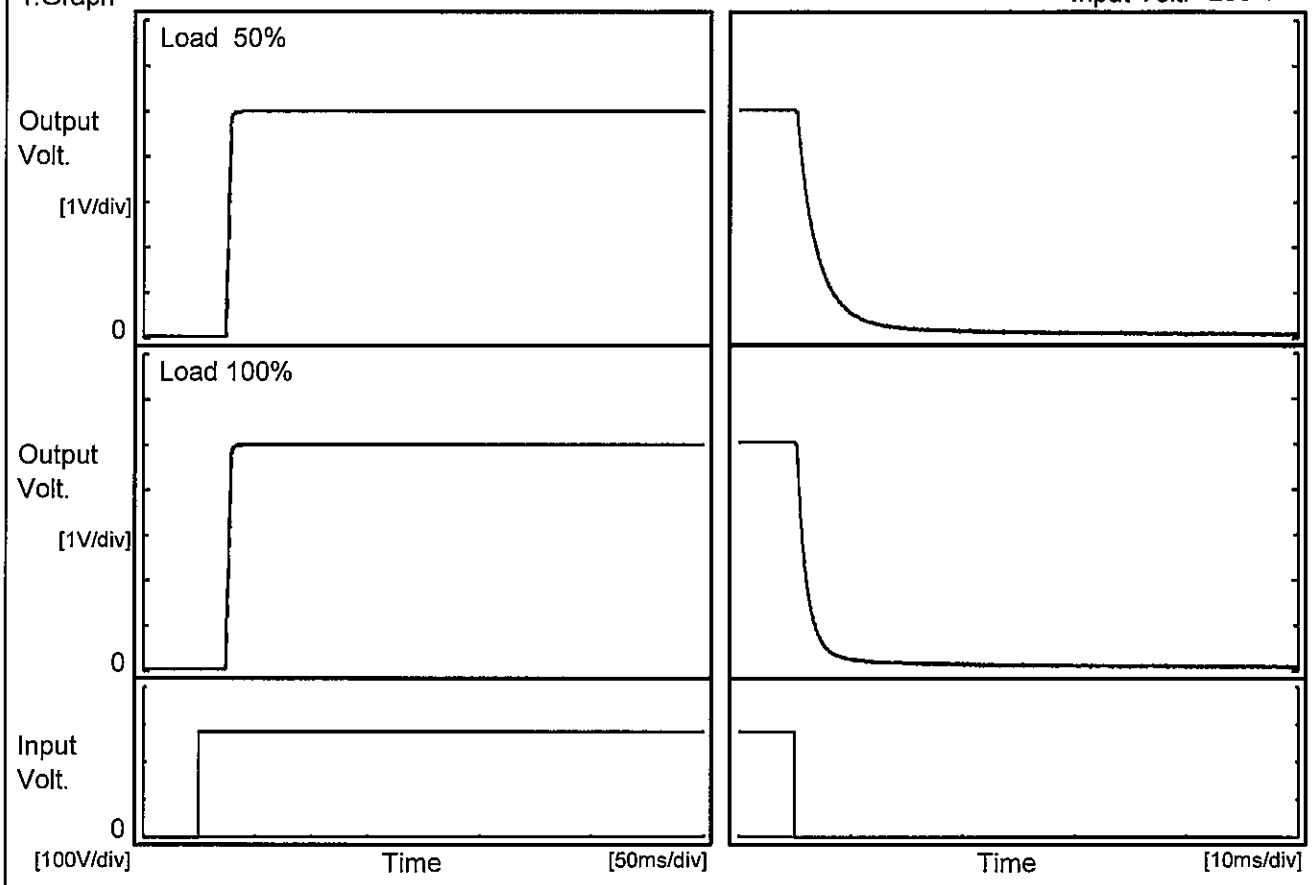
Model	DHS100B05
Item	Rise and Fall Time
Object	+5V20A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

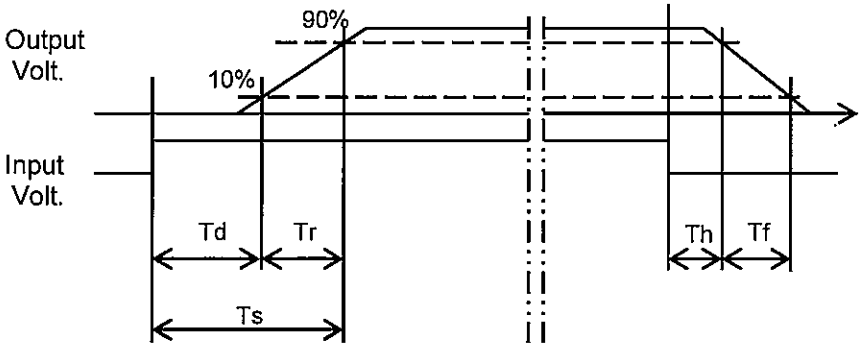
Input Volt. 280 V



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	24.3	3.8	28.1	0.7	9.7
100 %	24.3	4.3	28.6	0.6	4.8



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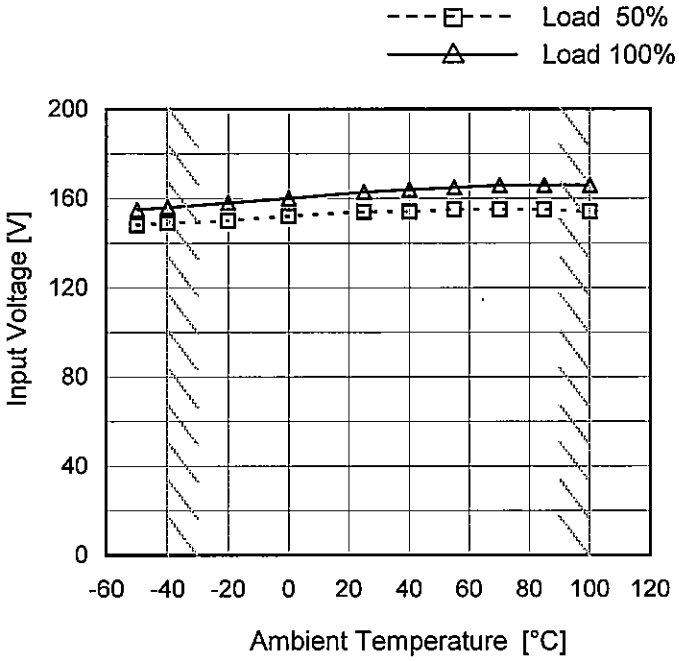
Model	DHS100B05
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+5V20A

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	148	155
-40	149	156
-20	150	158
0	152	160
25	154	163
40	154	164
55	155	165
70	155	166
85	155	166
100	154	166
--	-	-

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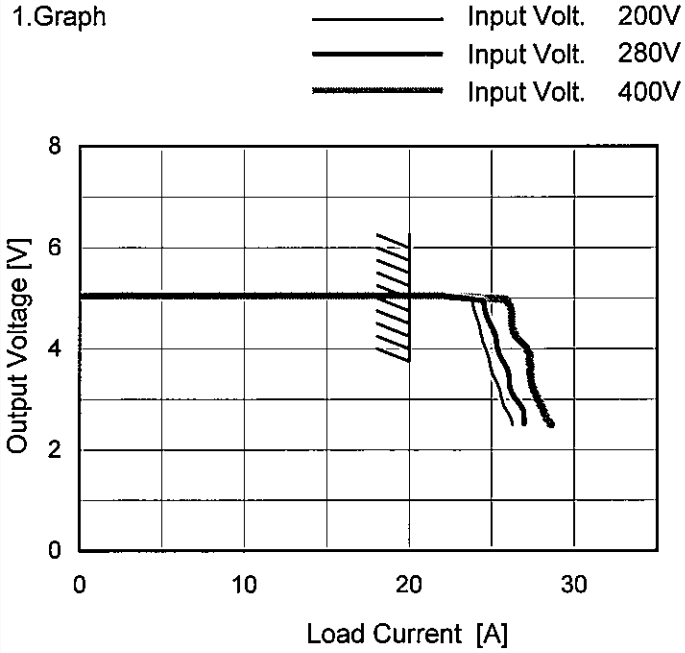
Model	DHS100B05
Item	Overcurrent Protection
Object	+5V20A

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 2.5V to 0V.

2.Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
5.00	20.20	20.18	20.18
4.75	23.95	24.61	26.21
4.50	24.18	24.86	26.25
4.00	24.63	25.35	27.09
3.50	25.06	26.06	27.35
3.00	25.62	26.51	27.82
2.50	26.30	27.00	28.62
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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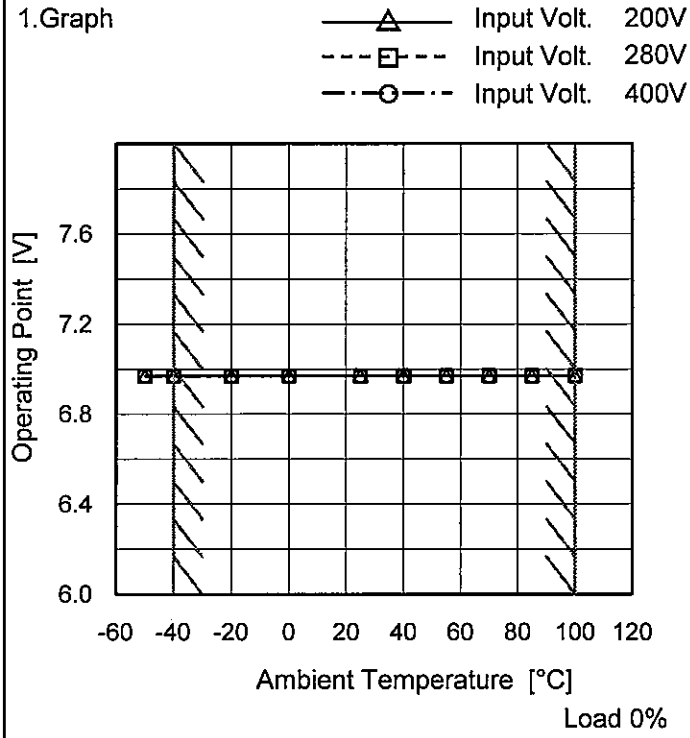
Model	DHS100B05
Item	Overvoltage Protection
Object	+5V20A

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	6.97	6.97	6.97
-40	6.97	6.97	6.97
-20	6.97	6.97	6.97
0	6.97	6.97	6.97
25	6.97	6.97	6.97
40	6.97	6.97	6.97
55	6.97	6.97	6.97
70	6.97	6.97	6.97
85	6.97	6.97	6.97
100	6.97	6.97	6.97
--	-	-	-

COSEL

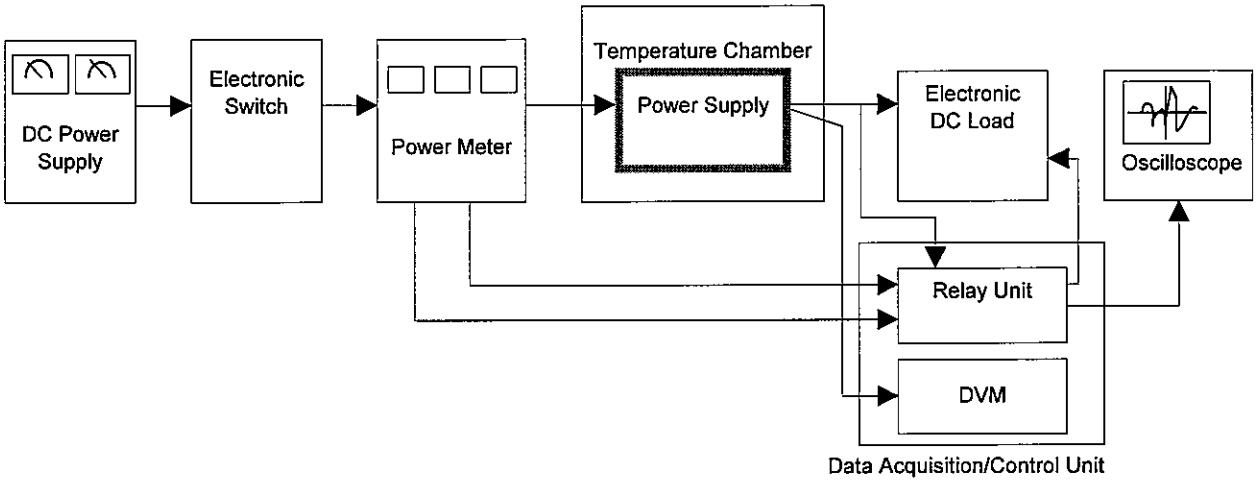
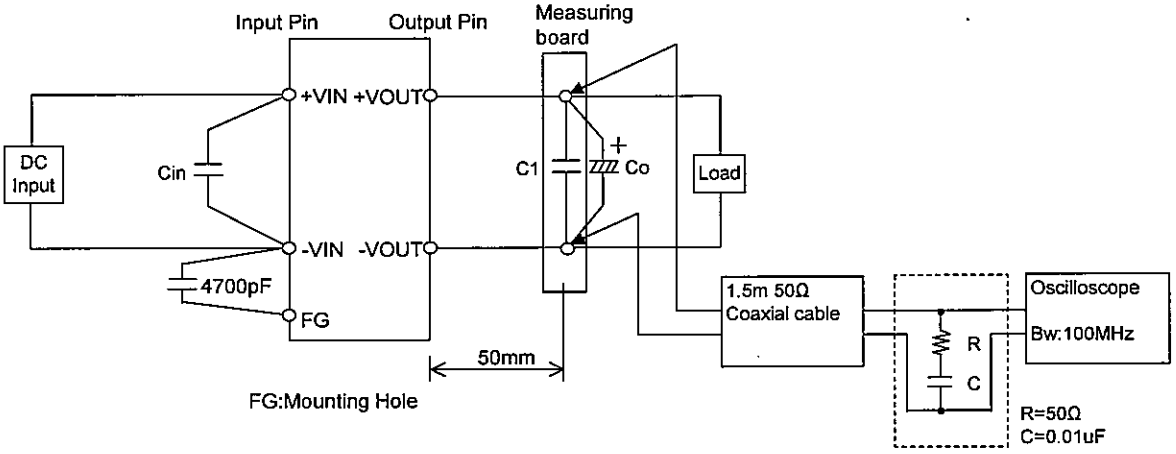


Figure A



C1 : DHS100B24 4.7uF
DHS100B28 4.7uF
Others 10uF

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

Figure B