参考資料

COSEL

TEST DATA OF DHS250B48

Regulated DC Power Supply
November 17, 2009

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COSEL CO.,LTD.

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

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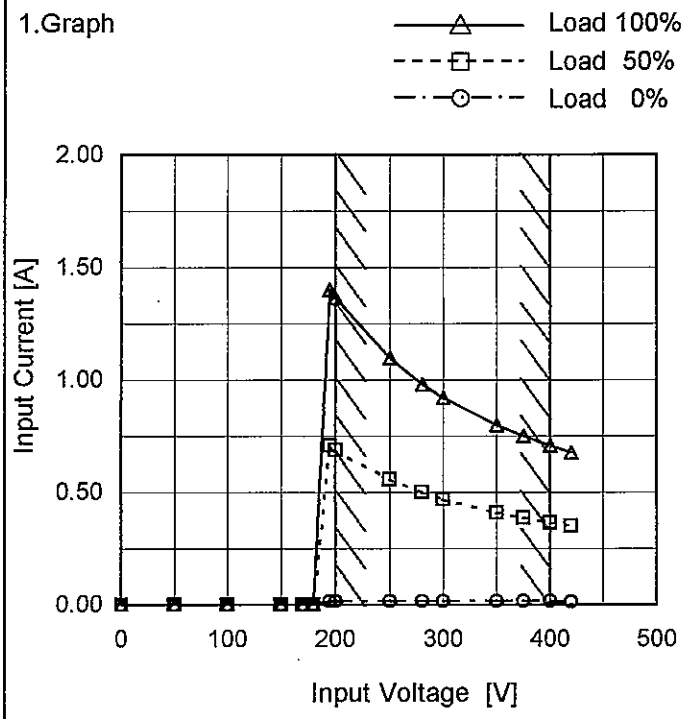


Note: Slanted line shows the range of the rated input voltage.

2.Values

Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0	0.000	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	0.000	0.000	0.000
180	0.000	0.000	0.000
195	0.018	0.706	1.400
200	0.018	0.688	1.363
250	0.017	0.557	1.096
280	0.017	0.500	0.980
300	0.017	0.470	0.921
350	0.017	0.409	0.798
375	0.017	0.385	0.749
400	0.017	0.364	0.706
420	0.013	0.349	0.675
--	-	-	-
--	-	-	-
--	-	-	-

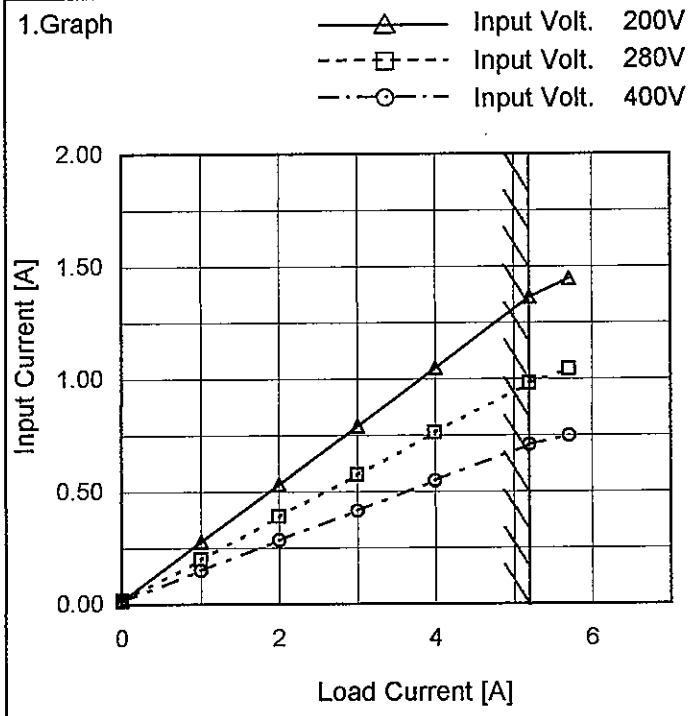
BC-10383

COSEL

Model	DHS250B48
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	0.017	0.016	0.013
1.0	0.277	0.198	0.151
2.0	0.532	0.389	0.285
3.0	0.789	0.573	0.415
4.0	1.047	0.760	0.547
5.2	1.363	0.980	0.706
5.7	1.447	1.043	0.748
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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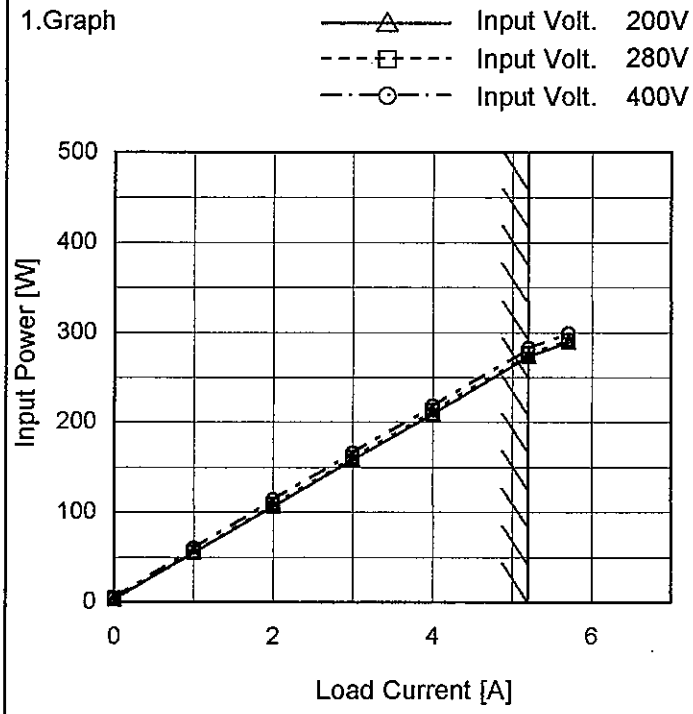
COSEL

Model	DHS250B48
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

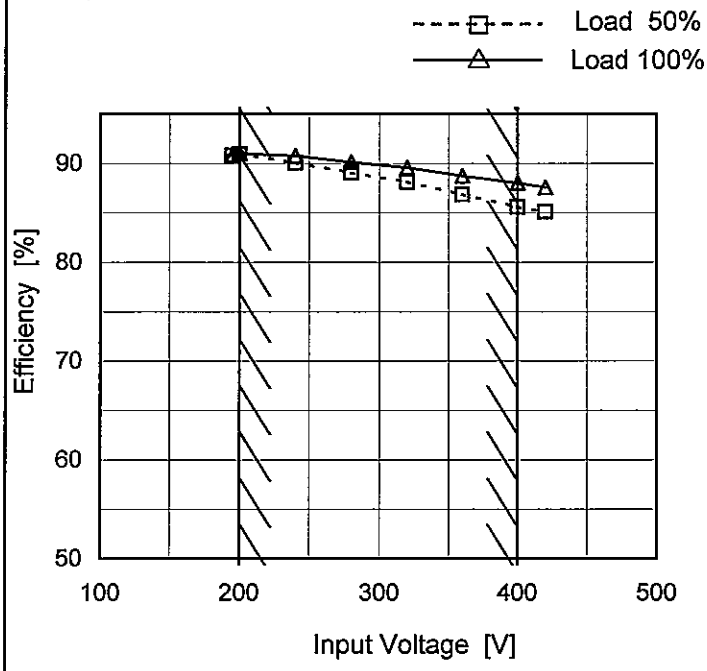
Load Current [A]	Input Power [W]		
	Input Volt. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
0.0	3.5	4.6	5.2
1.0	55.5	55.4	60.5
2.0	106.7	109.0	114.0
3.0	158.1	160.7	166.3
4.0	209.3	212.9	218.8
5.2	273.2	276.0	282.8
5.7	289.4	291.2	299.2
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	DHS250B48
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

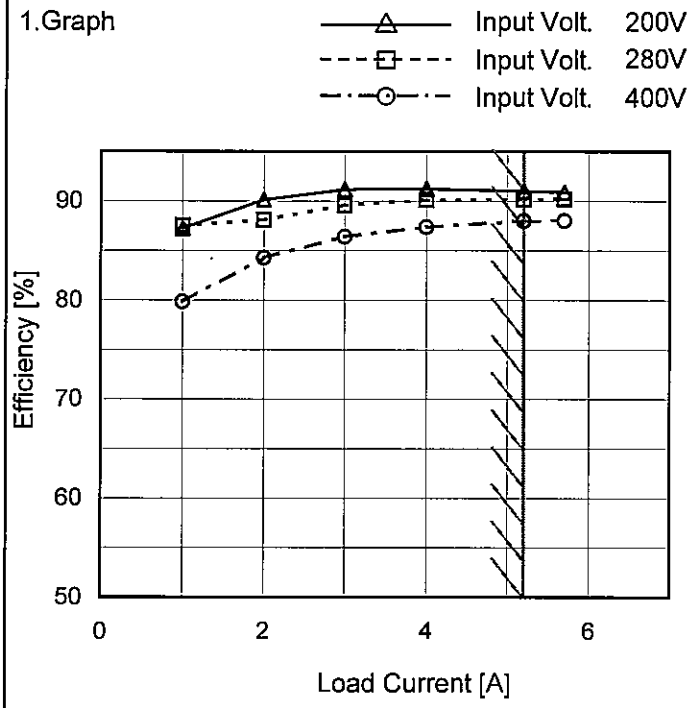
Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
195	90.8	90.8
200	90.9	91.0
240	90.1	90.8
280	89.1	90.2
320	88.1	89.6
360	86.9	88.7
400	85.6	88.0
420	85.1	87.6
--	-	-

COSEL

Model	DHS250B48
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	-	-	-
1.0	87.2	87.5	79.8
2.0	90.1	88.1	84.3
3.0	91.1	89.6	86.4
4.0	91.2	90.1	87.4
5.2	91.0	90.2	88.0
5.7	90.9	90.2	88.0
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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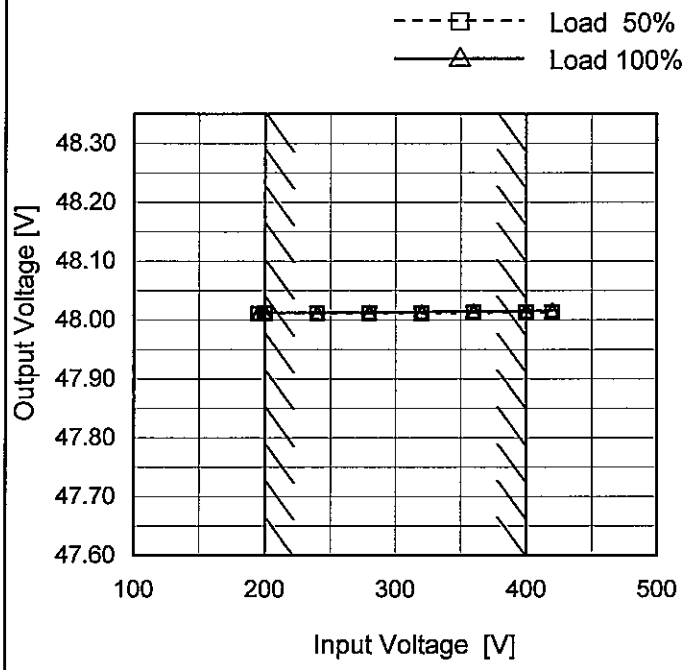
Model	DHS250B48
Item	Line Regulation
Object	+48V5.2A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

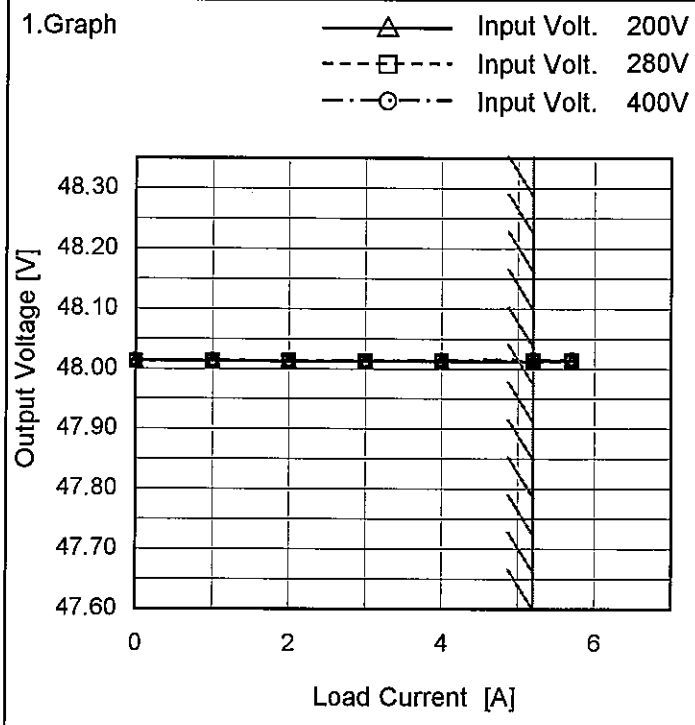
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
195	48.011	48.011
200	48.011	48.012
240	48.011	48.012
280	48.011	48.013
320	48.011	48.014
360	48.012	48.015
400	48.013	48.015
420	48.013	48.016
--	-	-

COSEL

Model	DHS250B48
Item	Load Regulation
Object	+48V5.2A

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	48.013	48.013	48.014
1.0	48.013	48.013	48.014
2.0	48.012	48.013	48.014
3.0	48.012	48.013	48.014
4.0	48.012	48.013	48.014
5.2	48.012	48.013	48.015
5.7	48.013	48.014	48.015
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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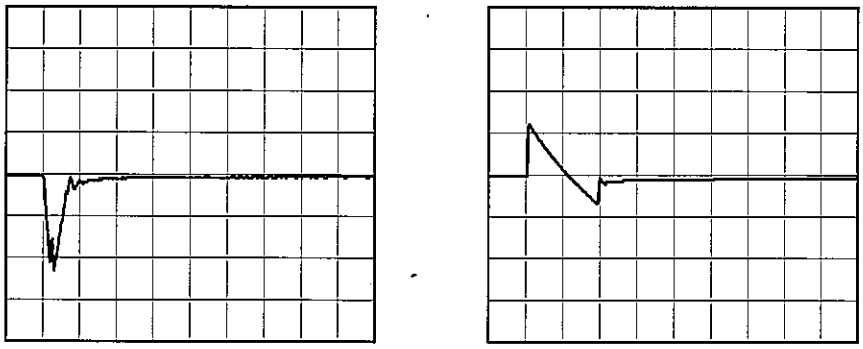
Model	DHS250B48
Item	Dynamic Load Response
Object	+48V5.2A

Temperature 25°C
Testing Circuitry Figure A

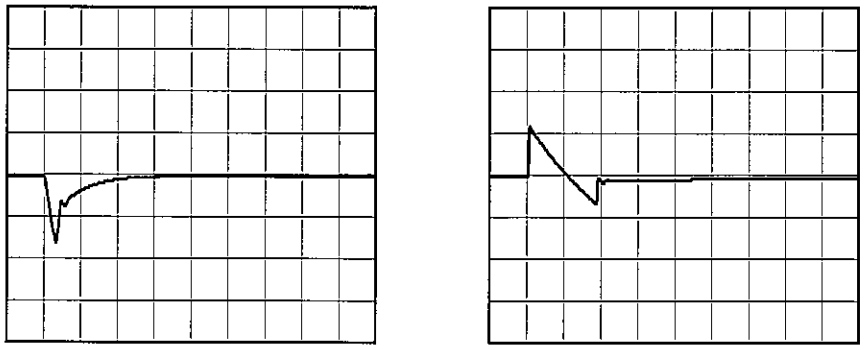
Input Volt. 280 V
Cycle 1000 mS

Load Current
5.2A/50 μs

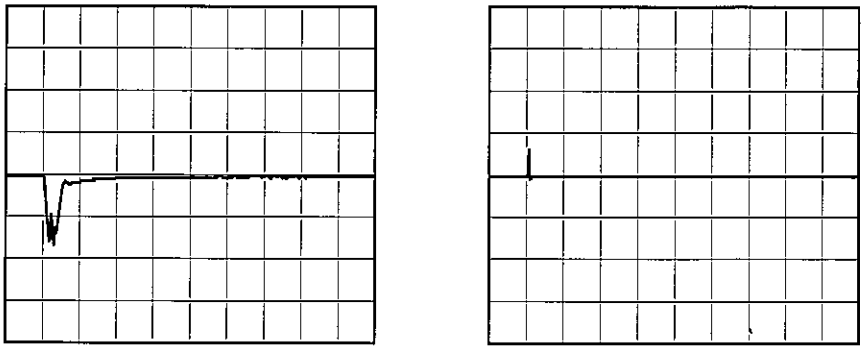
Min. Load (0A) ⟷
Load 100% (5.2A)



Min. Load (0A) ⟷
Load 50% (2.6A)



Load 10% (0.52A) ⟷
Load 100% (5.2A)



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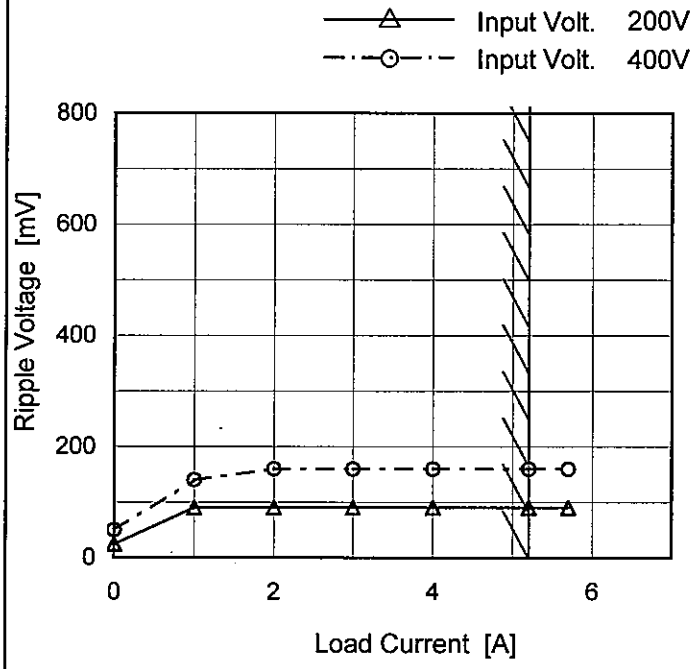
Model	DHS250B48
Item	Ripple Voltage (by Load Current)
Object	+48V5.2A

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]

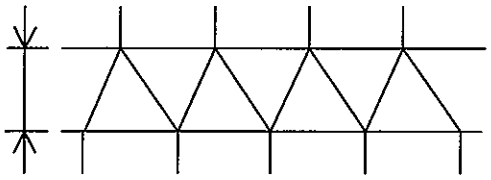


Fig.Complex Ripple Wave Form

2.Values

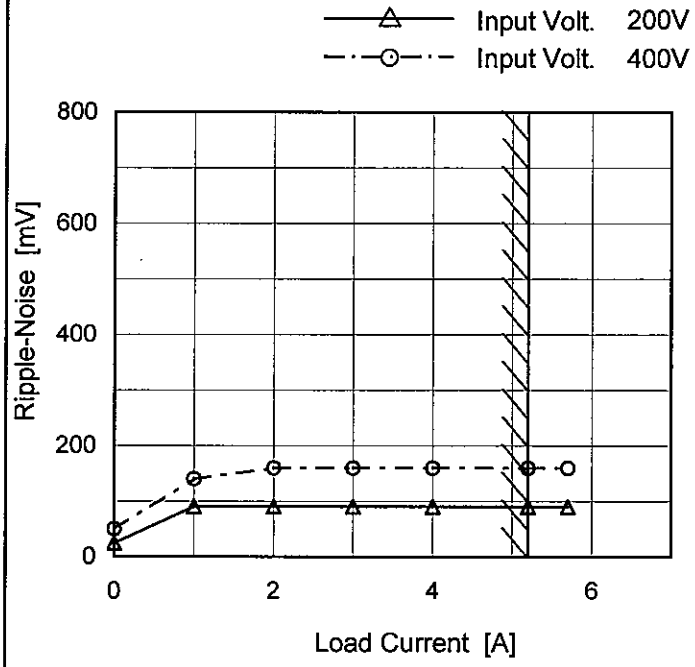
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 200 [V]	Input Volt. 400 [V]
0.0	25	50
1.0	90	140
2.0	90	160
3.0	90	160
4.0	90	160
5.2	90	160
5.7	90	160
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	DHS250B48
Item	Ripple-Noise
Object	+48V5.2A

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.

2.Values

Load Current [A]	Ripple-Noise [mV] Input Volt. 200 [V]	Ripple-Noise [mV] Input Volt. 400 [V]
0.0	25	50
1.0	90	140
2.0	90	160
3.0	90	160
4.0	90	160
5.2	90	160
5.7	90	160
--	-	-
--	-	-
--	-	-
--	-	-

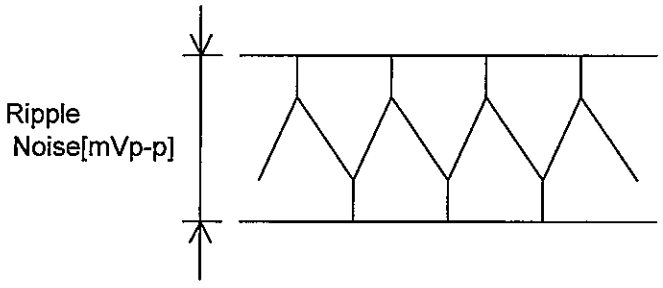


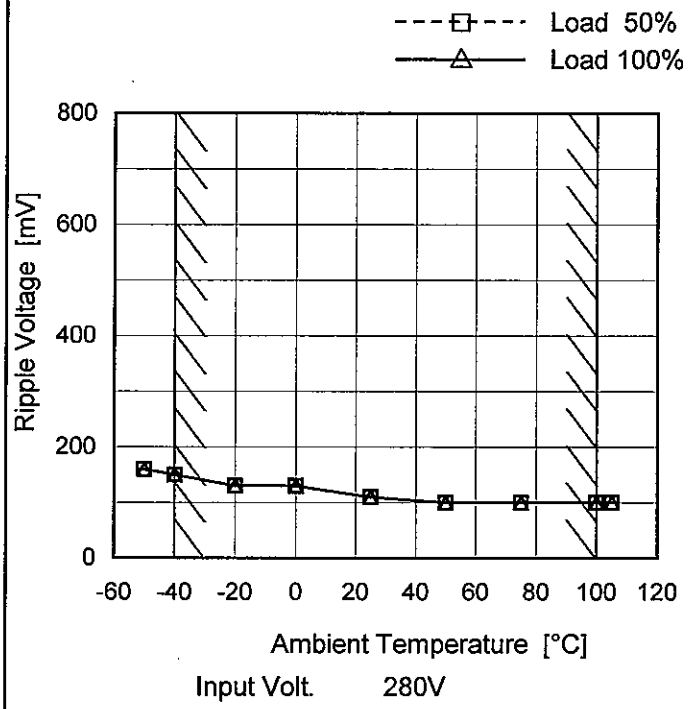
Fig.Complex Ripple Noise Wave Form

COSEL

Model	DHS250B48
Item	Ripple Voltage (by Ambient Temp.)
Object	+48V5.2A

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

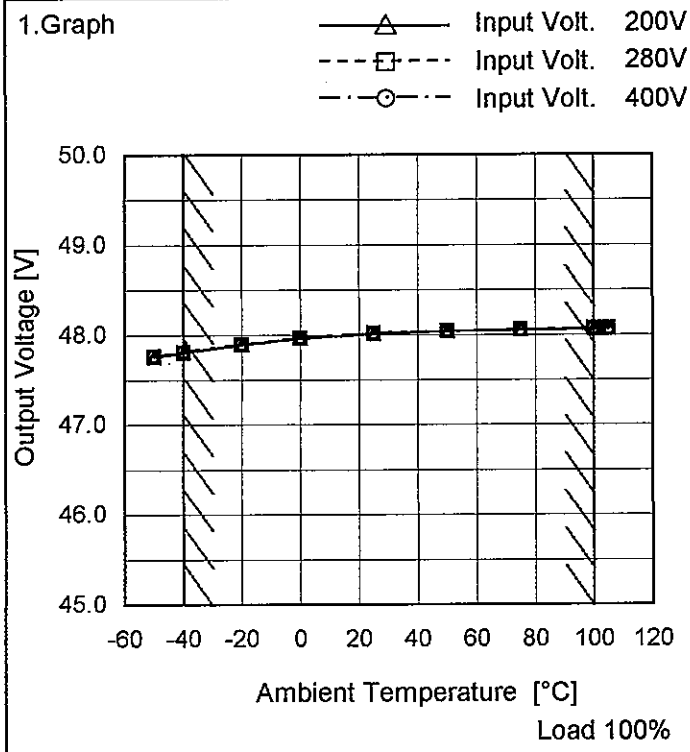
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-50	160	160
-40	150	150
-20	130	130
0	130	130
25	110	110
50	100	100
75	100	100
100	100	100
105	100	100
--	-	-
--	-	-

COSEL

Model	DHS250B48
Item	Ambient Temperature Drift
Object	+48V5.2A

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	47.753	47.759	47.768
-40	47.804	47.807	47.815
-20	47.891	47.894	47.898
0	47.962	47.964	47.967
25	48.014	48.015	48.017
50	48.042	48.043	48.043
75	48.052	48.053	48.052
100	48.064	48.065	48.066
105	48.066	48.067	48.068
--	-	-	-
--	-	-	-

COSEL

Model	DHS250B48	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+48V5.2A	

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 - 5.2A

* 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

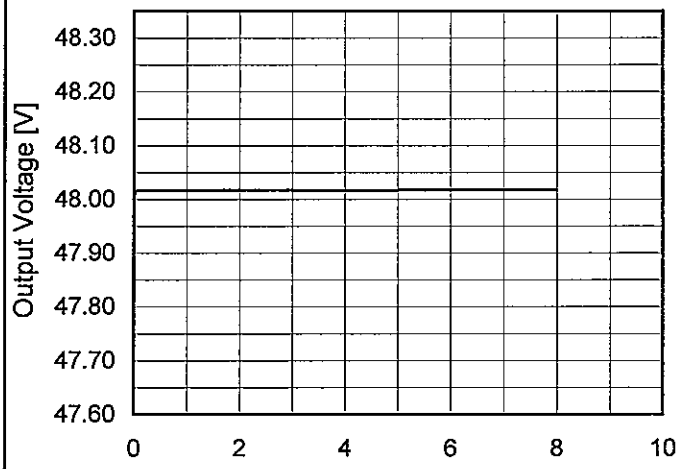
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	100	400	5.2	48.066	±131	±0.3
Minimum Voltage	-40	200	5.2	47.804		

COSEL

Model	DHS250B48
Item	Time Lapse Drift
Object	+48V5.2A

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	48.004
0.5	48.017
1.0	48.017
2.0	48.017
3.0	48.017
4.0	48.017
5.0	48.017
6.0	48.017
7.0	48.017
8.0	48.017

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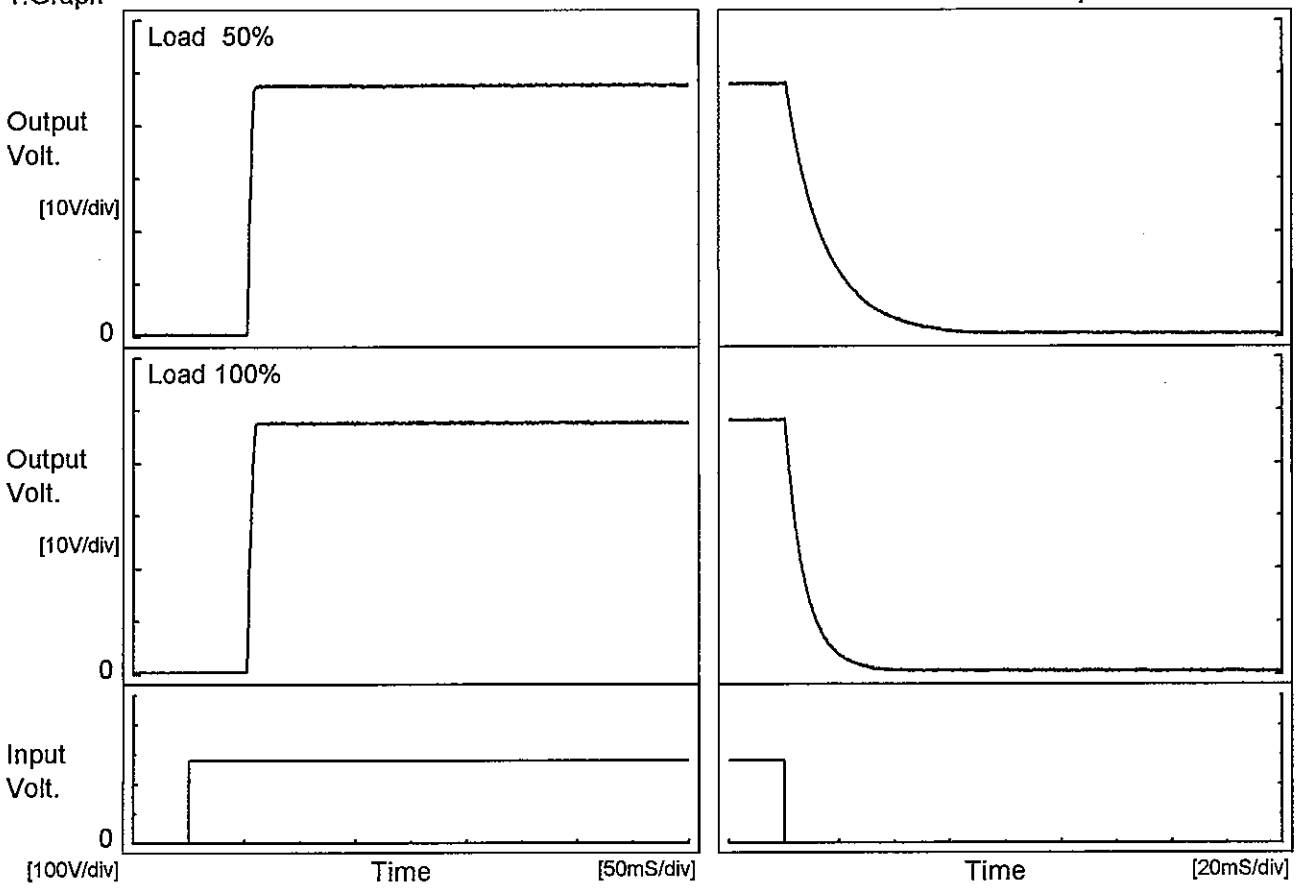
Model	DHS250B48
Item	Rise and Fall Time
Object	+48V5.2A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

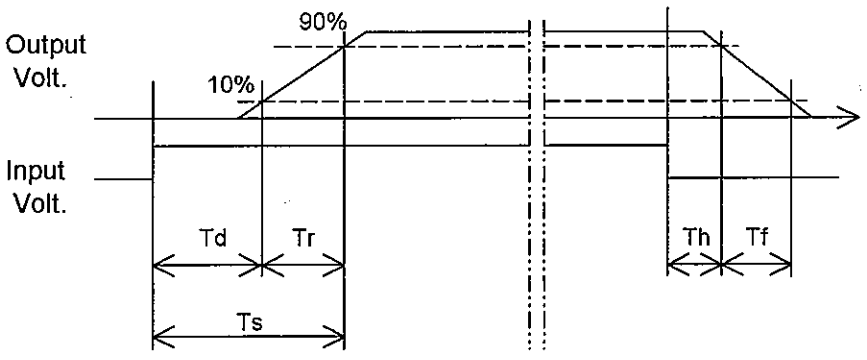
Input Volt. 280 V



2.Values

[mS]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	53.3	4.5	57.8	1.7	31.6
100 %	53.3	6.0	59.3	1.1	15.8



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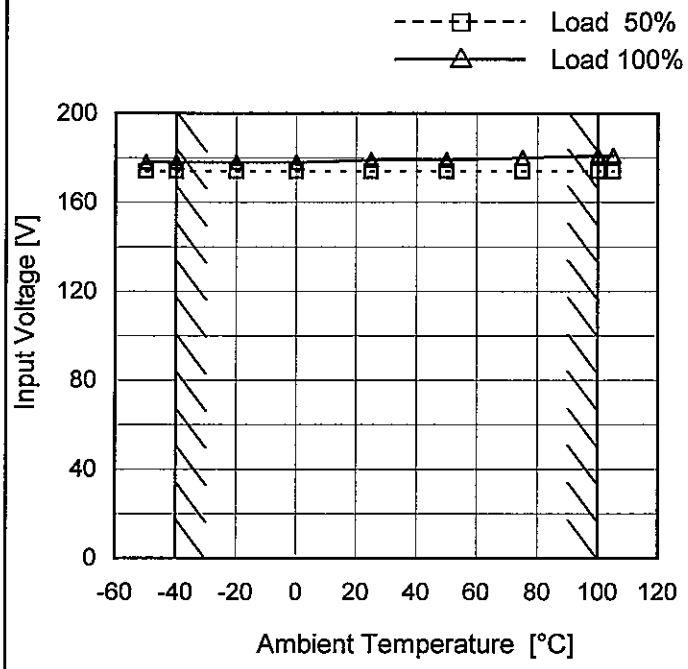
Model	DHS250B48
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+48V5.2A

Testing Circuitry Figure A

1.Graph



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

2.Values

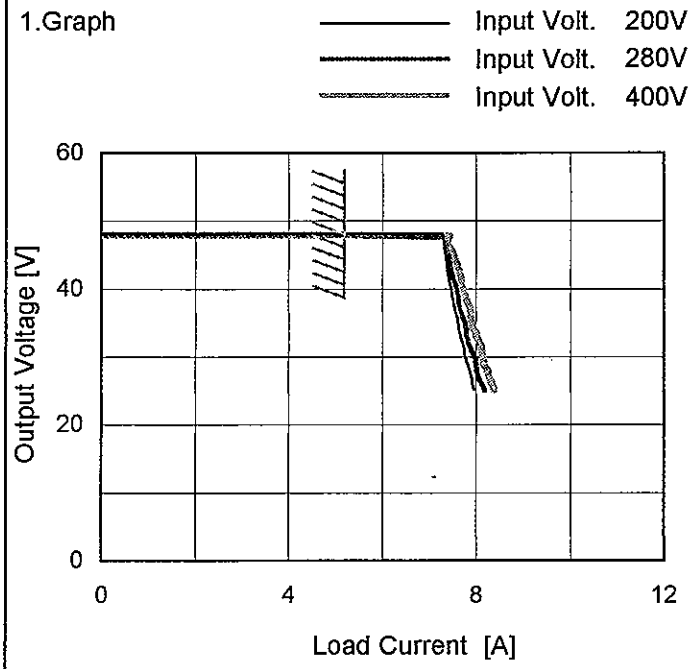
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-50	174	178
-40	174	178
-20	174	178
0	174	178
25	174	179
50	174	179
75	174	180
100	174	181
105	174	181
--	-	-
--	-	-

COSEL

Model	DHS250B48
Item	Overcurrent Protection
Object	+48V5.2A

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 25V to 0V.

2.Values

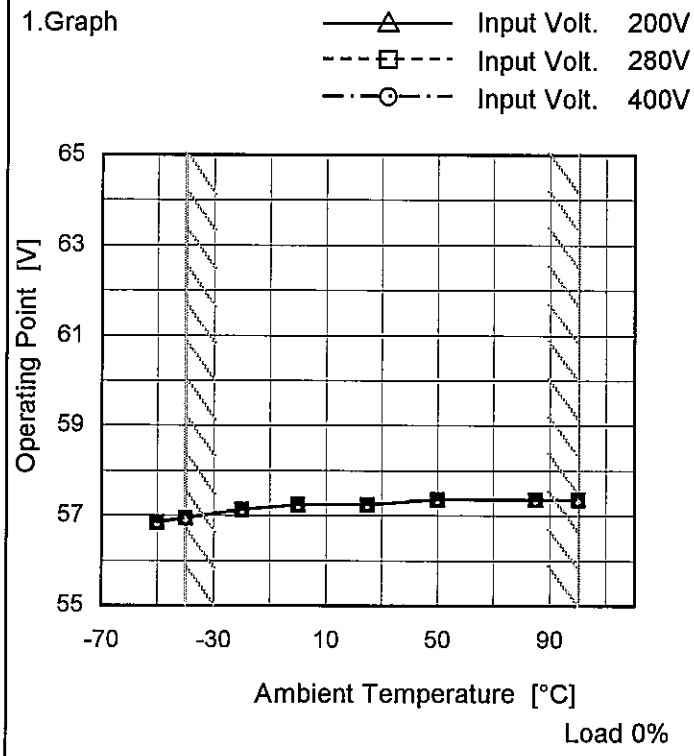
Output Voltage [V]	Load Current [A]		
	Input Volt. 200[V]	Input Volt. 280[V]	Input Volt. 400[V]
48.0	5.22	5.22	5.23
45.6	7.33	7.38	7.48
43.2	7.39	7.46	7.62
38.4	7.50	7.62	7.79
33.6	7.63	7.81	7.99
28.8	7.81	8.01	8.15
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	DHS250B48
Item	Overvoltage Protection
Object	+48V5.2A

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	56.84	56.84	56.84
-40	56.95	56.95	56.95
-20	57.13	57.13	57.13
0	57.25	57.25	57.25
25	57.25	57.25	57.25
50	57.36	57.36	57.36
85	57.36	57.36	57.36
100	57.36	57.36	57.36
--	-	-	-
--	-	-	-
--	-	-	-

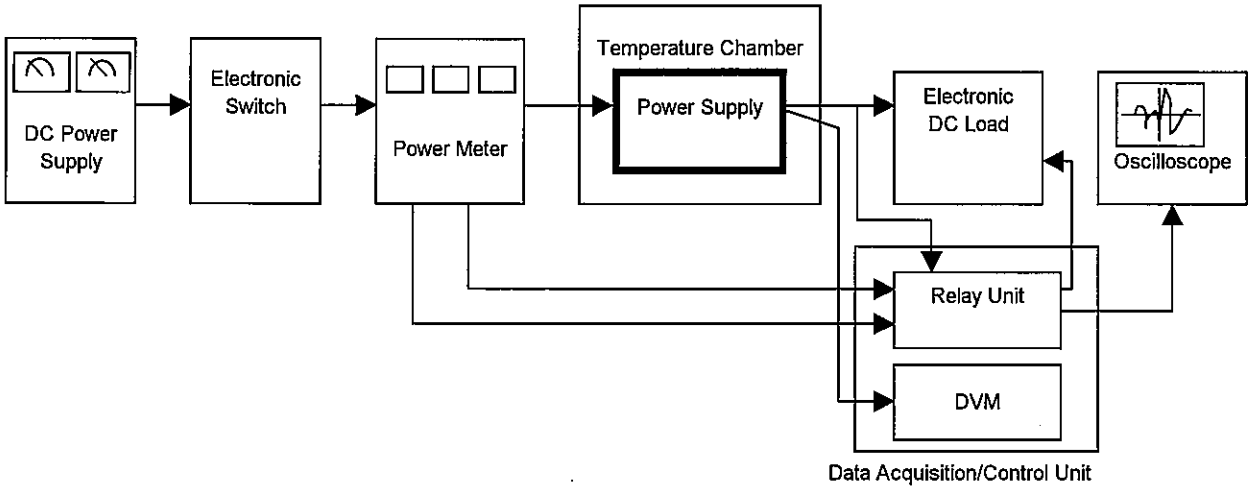
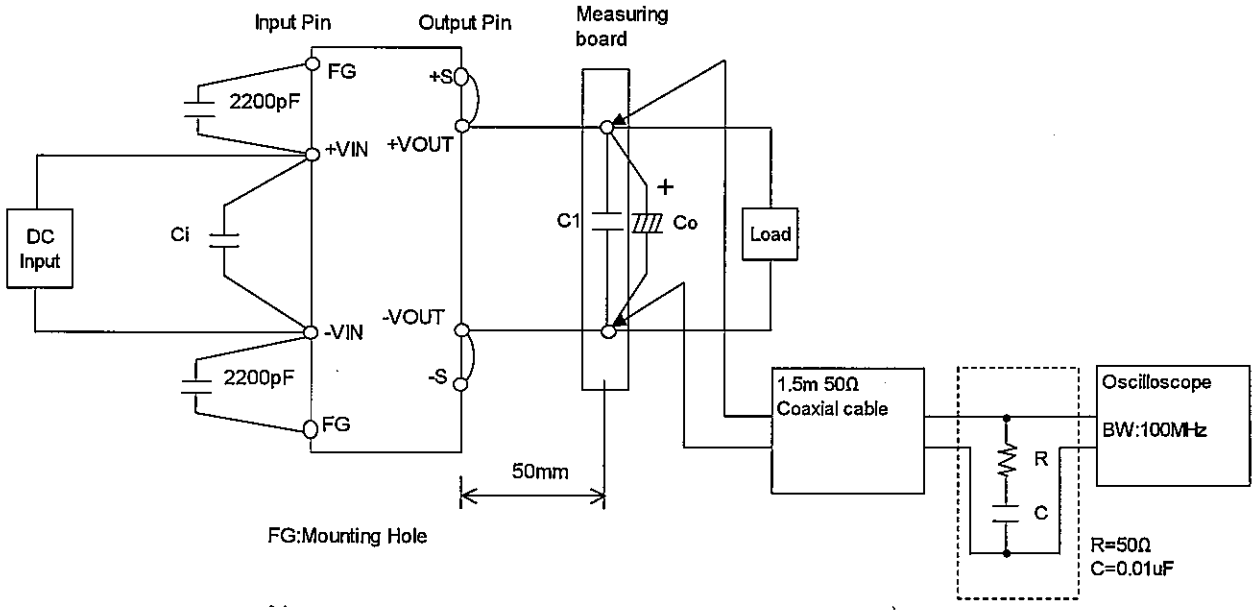


Figure A



C1	
DHS250B24	4.7μF
DHS250B28	4.7μF
DHS250B48	2.2μF
Others	10μF

Co	
DHS250B03	2200μF
DHS250B05	2200μF
DHS250B07	2200μF
DHS250B12	1000μF
DHS250B15	1000μF
DHS250B24	470μF
DHS250B28	470μF
DHS250B48	330μF

Figure B