COSEL

参考資料

TEST DATA OF SFLS15481R5

Regulated DC Power Supply
May 10, 2007

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Toshiyuki Tsuri Design Engineer

COSEL CO.,LTD.

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

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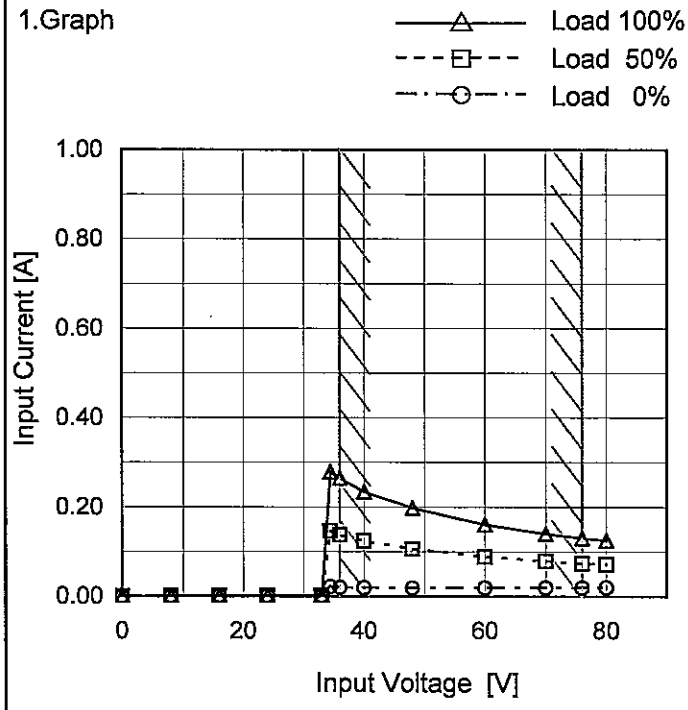
Testing Circuitry Figure A

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
8	0.001	0.001	0.001
16	0.001	0.001	0.001
24	0.001	0.001	0.001
33	0.002	0.002	0.002
34	0.022	0.146	0.279
36	0.020	0.138	0.265
40	0.019	0.124	0.234
48	0.019	0.107	0.198
60	0.020	0.089	0.161
70	0.020	0.079	0.140
76	0.020	0.074	0.131
80	0.020	0.072	0.125
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

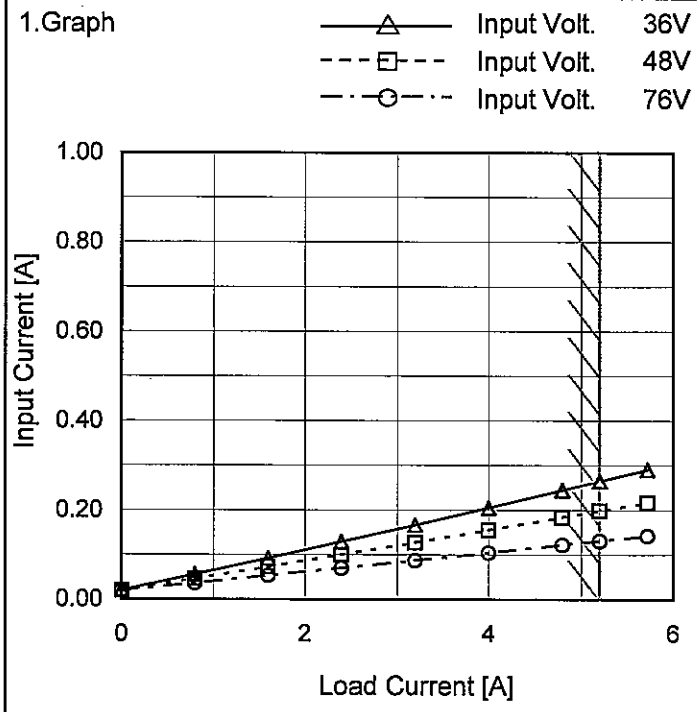
BC-10087

COSEL

Model	SFLS15481R5
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]
0.00	0.020	0.019	0.020
0.80	0.056	0.046	0.036
1.60	0.092	0.073	0.053
2.40	0.129	0.100	0.070
3.20	0.167	0.127	0.087
4.00	0.205	0.155	0.104
4.80	0.245	0.184	0.122
5.20	0.265	0.198	0.131
5.72	0.291	0.217	0.142
--	-	-	-
--	-	-	-

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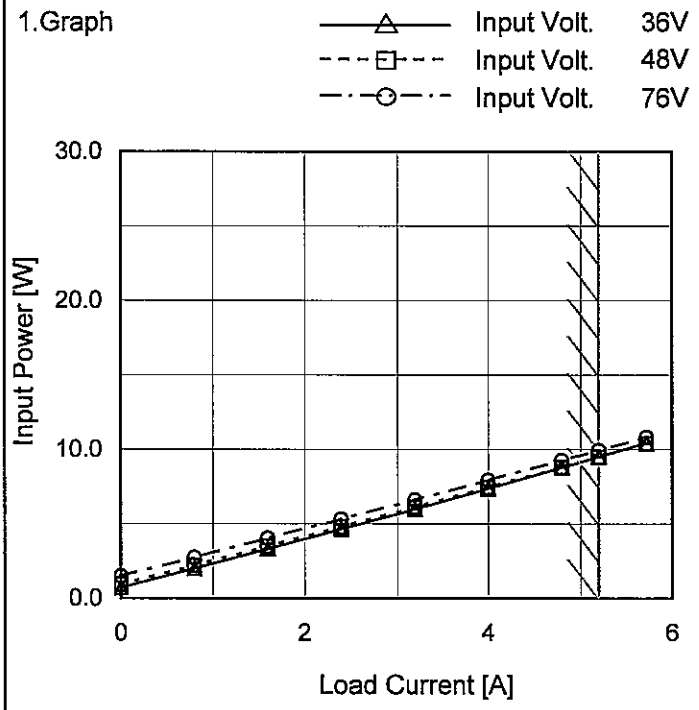
Model	SFLS15481R5
Item	Input Power (by Load Current)
Object	———————

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]
0.00	0.72	0.92	1.49
0.80	2.01	2.20	2.75
1.60	3.31	3.50	4.03
2.40	4.64	4.80	5.32
3.20	5.99	6.11	6.61
4.00	7.38	7.46	7.93
4.80	8.80	8.81	9.27
5.20	9.52	9.49	9.94
5.72	10.46	10.39	10.82
--	-	-	-
--	-	-	-

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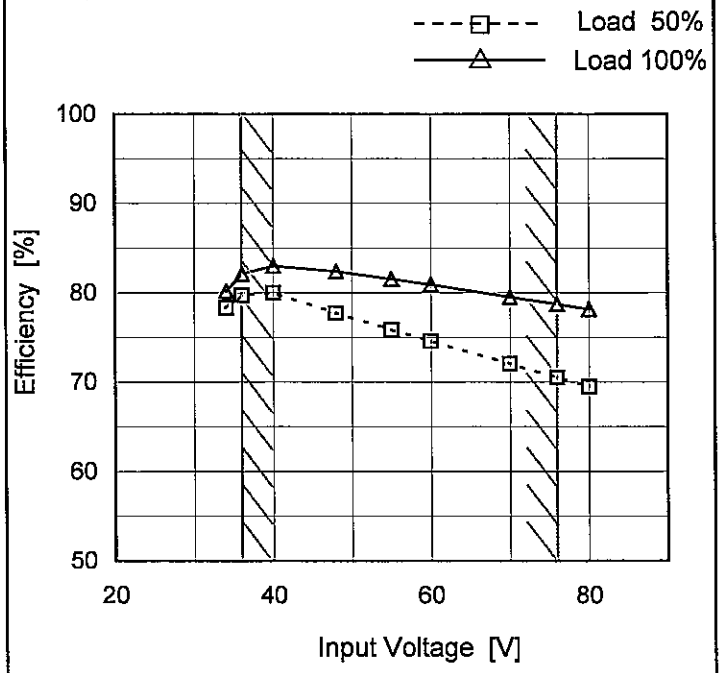
Model	SFLS15481R5
Item	Efficiency (by Input Voltage)
Object	———————

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	78.3	80.2
36	79.8	82.1
40	80.0	83.0
48	77.7	82.4
55	75.9	81.5
60	74.6	80.9
70	72.1	79.5
76	70.5	78.7
80	69.5	78.2

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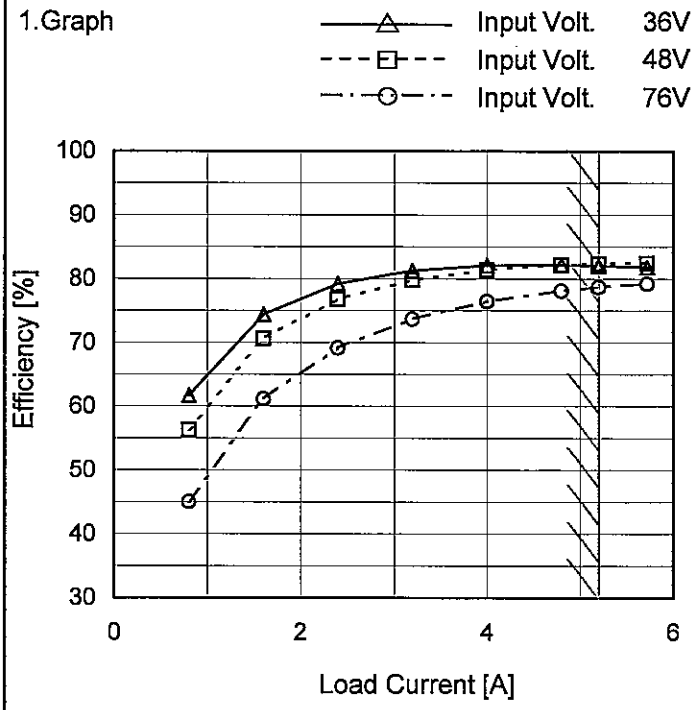
Model	SFLS15481R5
Item	Efficiency (by Load Current)
Object	———————

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]
0.00	-	-	-
0.80	61.7	56.3	45.0
1.60	74.4	70.6	61.2
2.40	79.2	76.8	69.2
3.20	81.3	79.8	73.7
4.00	82.1	81.4	76.4
4.80	82.2	82.2	78.1
5.20	82.1	82.4	78.7
5.72	81.9	82.5	79.2
--	-	-	-
--	-	-	-

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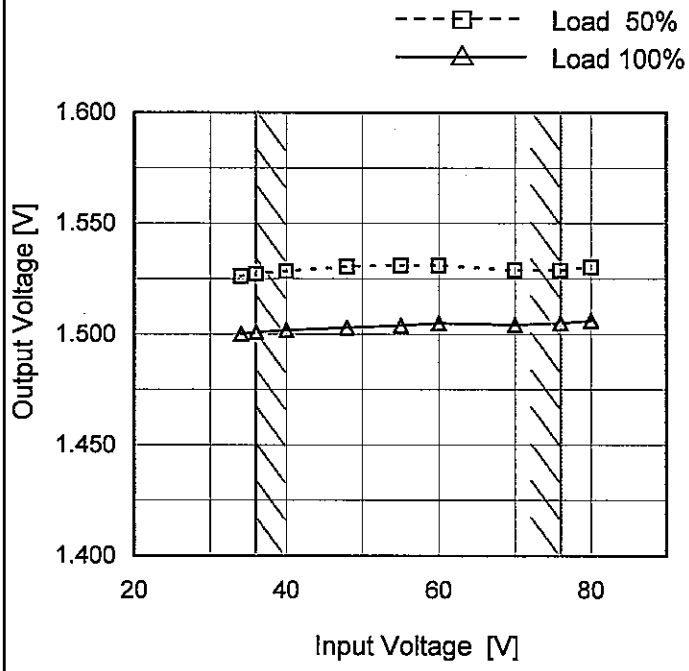
Model	SFLS15481R5
Item	Line Regulation
Object	+1.5V5.2A

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%
34	1.526	1.500
36	1.527	1.501
40	1.528	1.502
48	1.531	1.503
55	1.531	1.504
60	1.531	1.505
70	1.529	1.504
76	1.529	1.505
80	1.530	1.506

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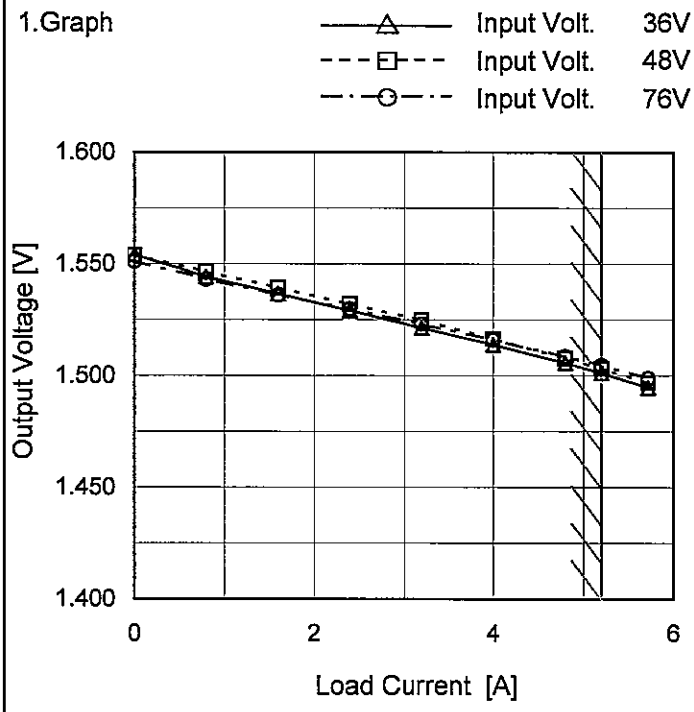
Model	SFLS15481R5
Item	Load Regulation
Object	+1.5V5.2A

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. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.00	1.554	1.554	1.551
0.80	1.544	1.546	1.543
1.60	1.537	1.539	1.536
2.40	1.529	1.532	1.530
3.20	1.521	1.525	1.523
4.00	1.514	1.517	1.516
4.80	1.506	1.508	1.509
5.20	1.501	1.503	1.505
5.72	1.495	1.497	1.499
--	-	-	-
--	-	-	-

COSEL

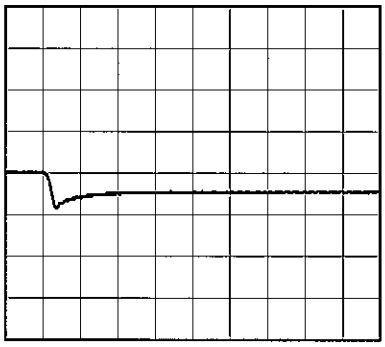
Model	SFLS15481R5
Item	Dynamic Load Response
Object	+1.5V5.2A

Temperature 25°C
Testing Circuitry Figure A

Input Volt. 48 V
Cycle 1000 mS

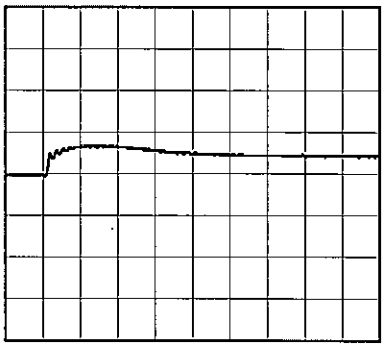
Load Current
5.2A / 200 μ sec

Min. Load (0A) ⟷
Load 100% (5.2A)



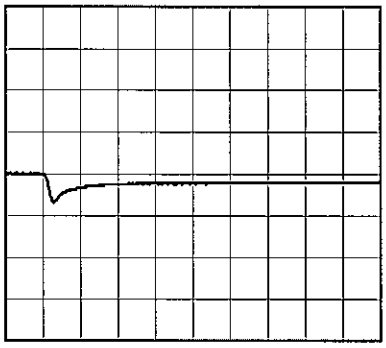
100mV/div

200 μs/div



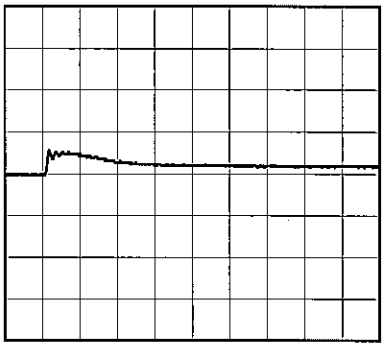
200 μs/div

Min. Load (0A) ⟷
Load 50% (2.6A)



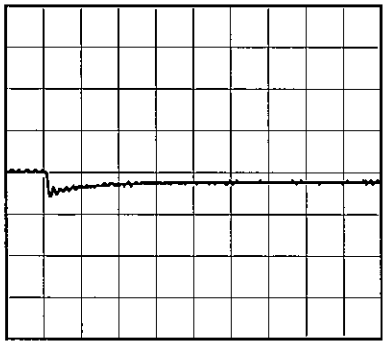
100mV/div

200 μs/div



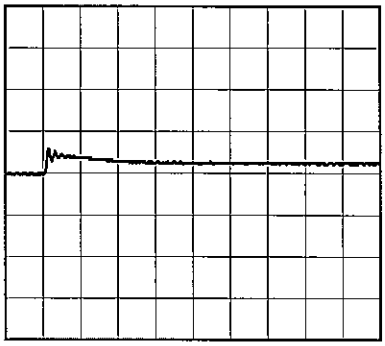
200 μs/div

Load 50% (2.6A) ⟷
Load 100% (5.2A)



100mV/div

200 μs/div



200 μs/div

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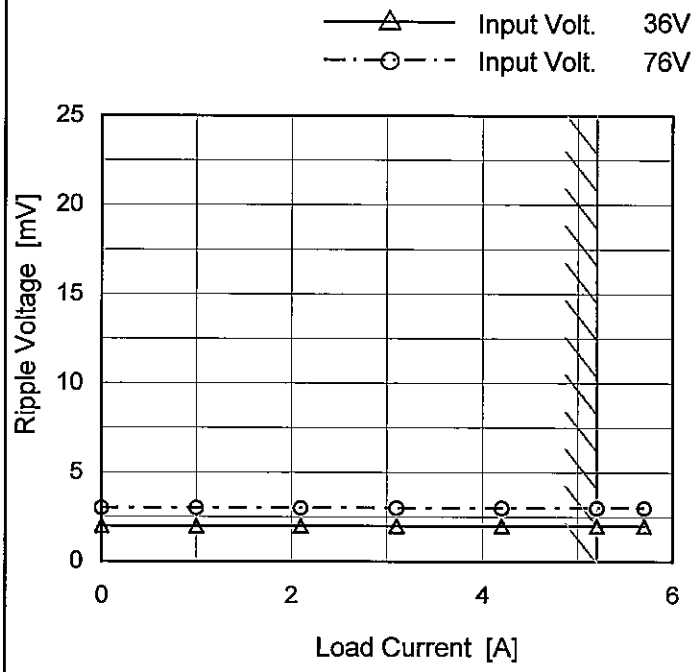
Model	SFLS15481R5
Item	Ripple Voltage (by Load Current)
Object	+1.5V5.2A

Temperature 25°C
Testing Circuitry Figure C

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]

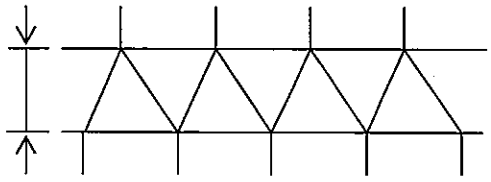


Fig.Complex Ripple Wave Form

2.Values

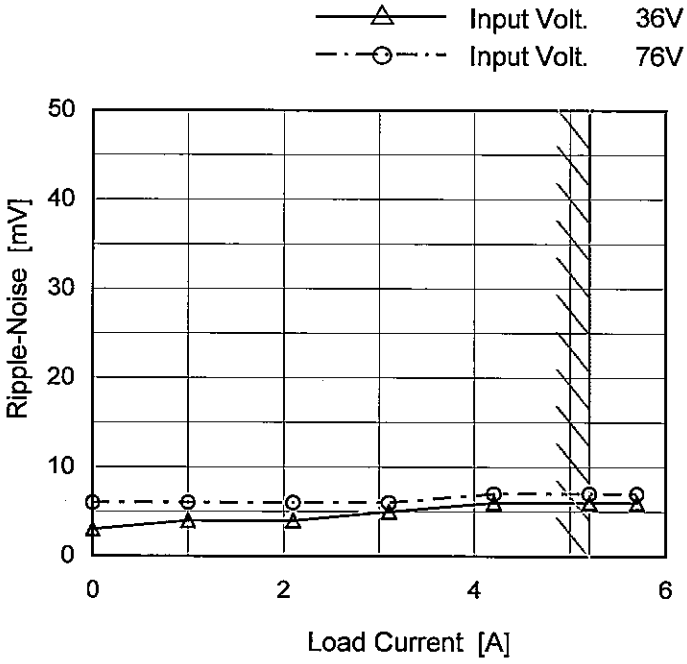
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 36 [V]	Input Volt. 76 [V]
0.0	2	3
1.0	2	3
2.1	2	3
3.1	2	3
4.2	2	3
5.2	2	3
5.7	2	3
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SFLS15481R5
Item	Ripple-Noise
Object	+1.5V5.2A

Temperature 25°C
Testing Circuitry Figure C

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.

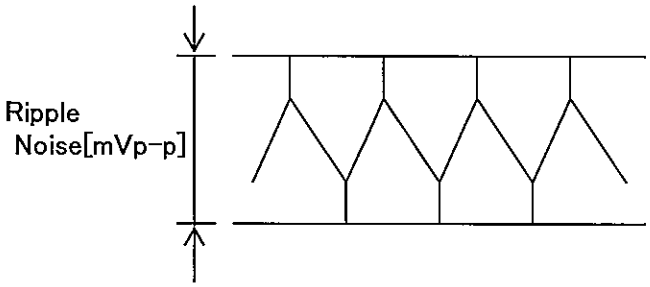


Fig.Complex Ripple Noise Wave Form

2.Values

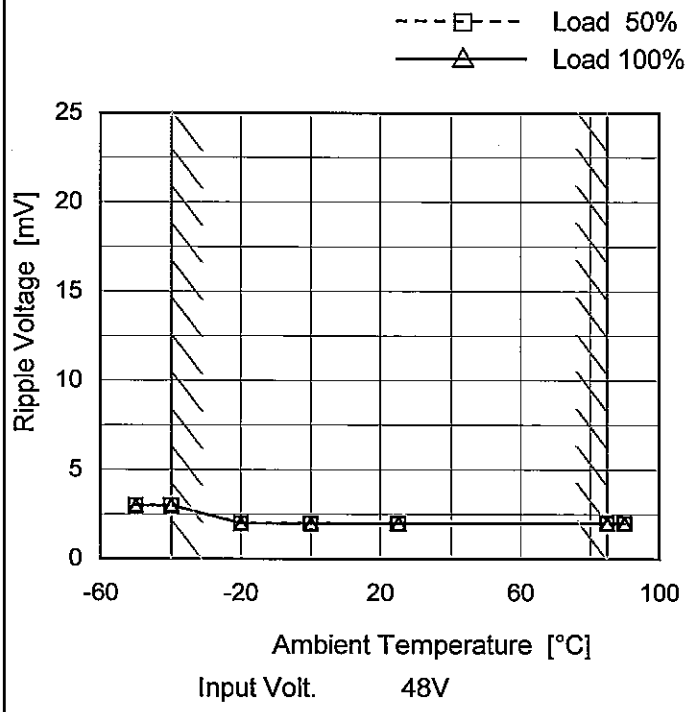
Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 36 [V]	Input Volt. 76 [V]
0.0	3	6
1.0	4	6
2.1	4	6
3.1	5	6
4.2	6	7
5.2	6	7
5.7	6	7
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SFLS15481R5
Item	Ripple Voltage (by Ambient Temp.)
Object	+1.5V5.2A

Testing Circuitry Figure C

1.Graph



Input Volt. 48V

Measured by 100 MHz Oscilloscope.

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

2.Values

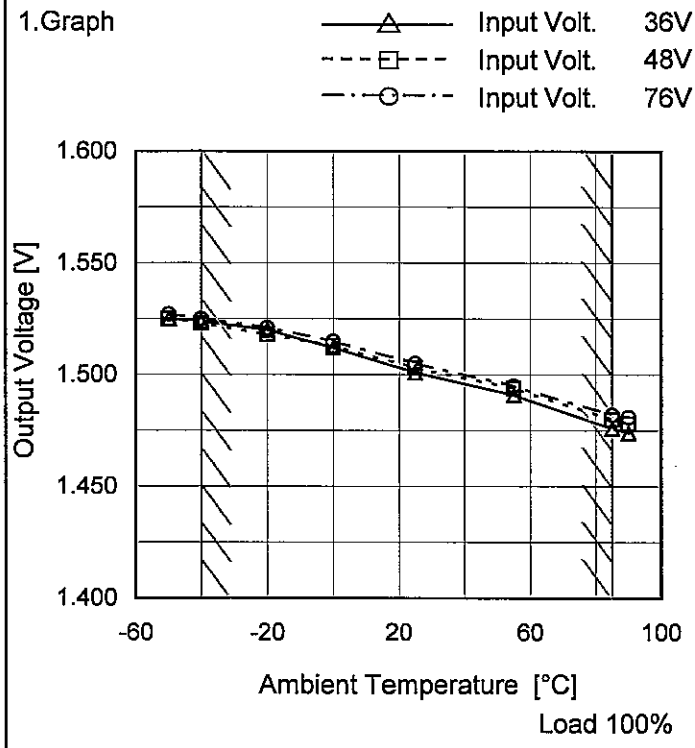
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-50	3	3
-40	3	3
-20	2	2
0	2	2
25	2	2
85	2	2
90	2	2
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SFLS15481R5
Item	Ambient Temperature Drift
Object	+1.5V5.2A

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. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
-50	1.525	1.525	1.527
-40	1.524	1.523	1.525
-20	1.520	1.518	1.521
0	1.512	1.513	1.515
25	1.501	1.503	1.505
55	1.491	1.494	1.495
85	1.476	1.480	1.482
90	1.474	1.478	1.481
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SFLS15481R5	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+1.5V5.2A	

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 - 85°C
Input Voltage : 36 - 76V
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

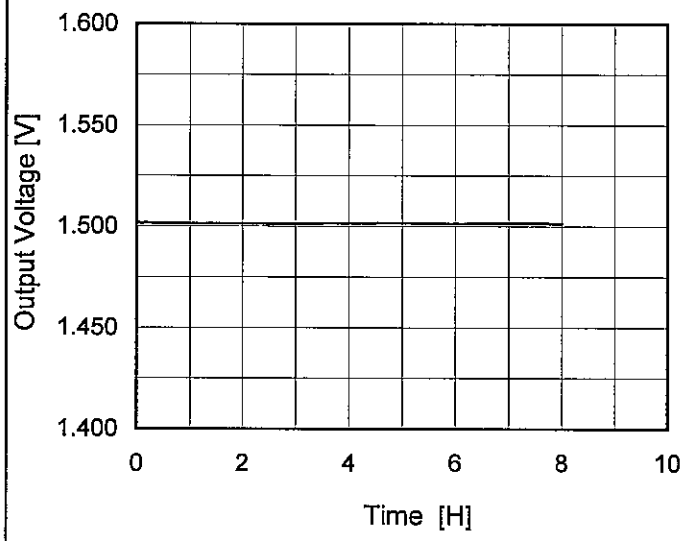
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	25	36	0	1.555	±40	±2.7
Minimum Voltage	85	36	5.2	1.476		

COSEL

Model	SFLS15481R5
Item	Time Lapse Drift
Object	+1.5V5.2A

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	1.502
0.5	1.502
1.0	1.502
2.0	1.502
3.0	1.502
4.0	1.502
5.0	1.502
6.0	1.502
7.0	1.502
8.0	1.502

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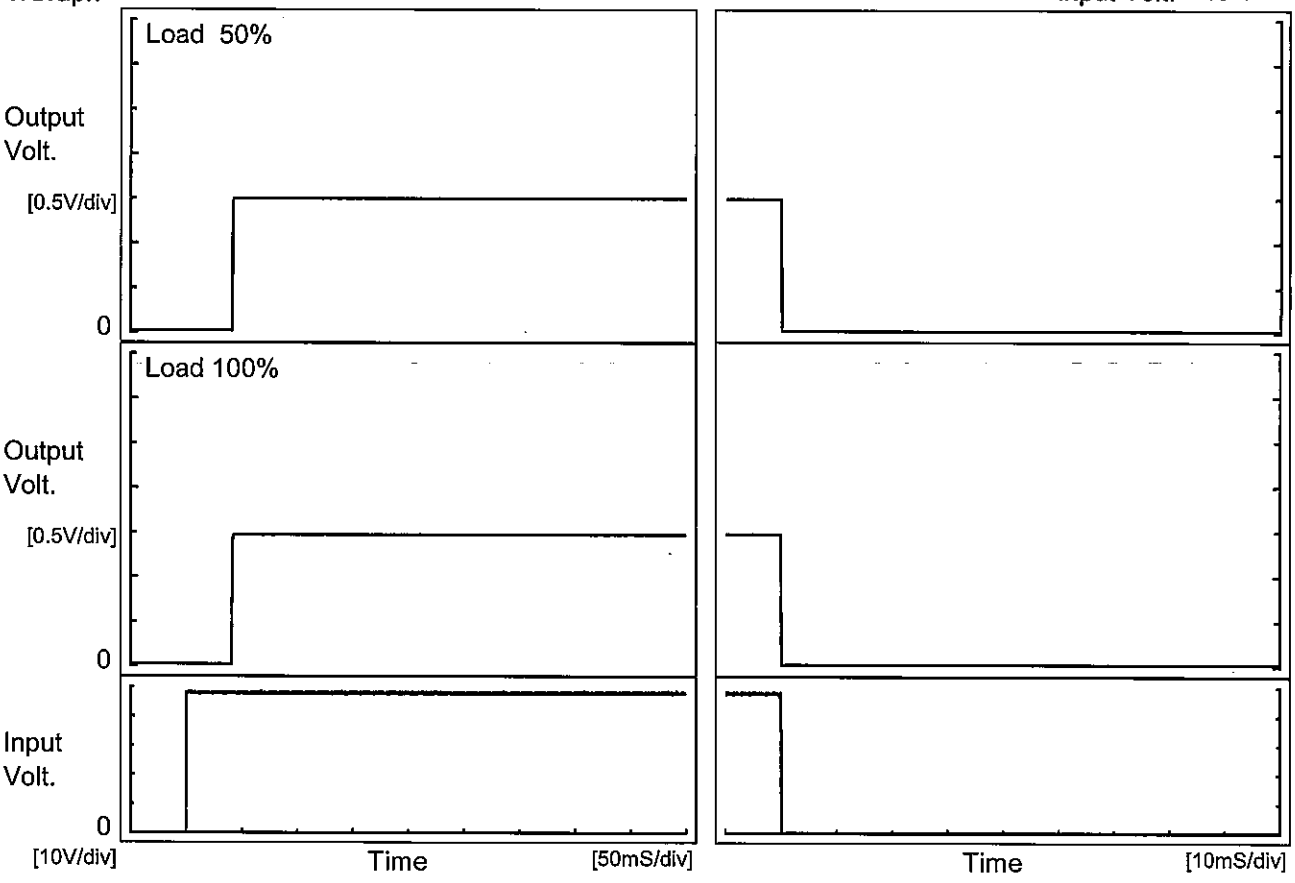
Model	SFLS15481R5
Item	Rise and Fall Time
Object	+1.5V5.2A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

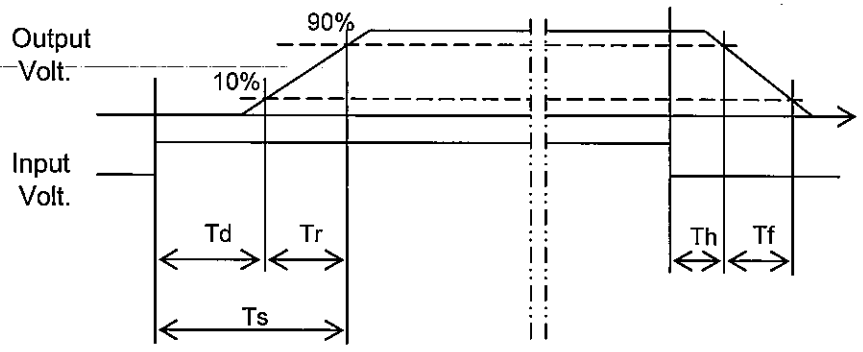
Input Volt. 48 V



2.Values

[mS]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	41.3	0.4	41.7	0.0	0.1
100 %	41.0	0.5	41.5	0.0	0.1

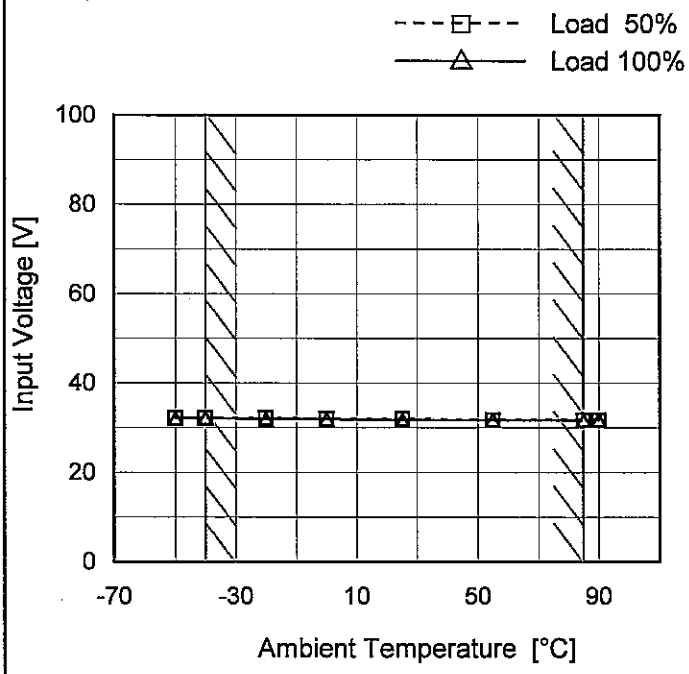


COSEL

Model	SFLS15481R5
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+1.5V5.2A

Testing Circuitry Figure A

1.Graph



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

2.Values

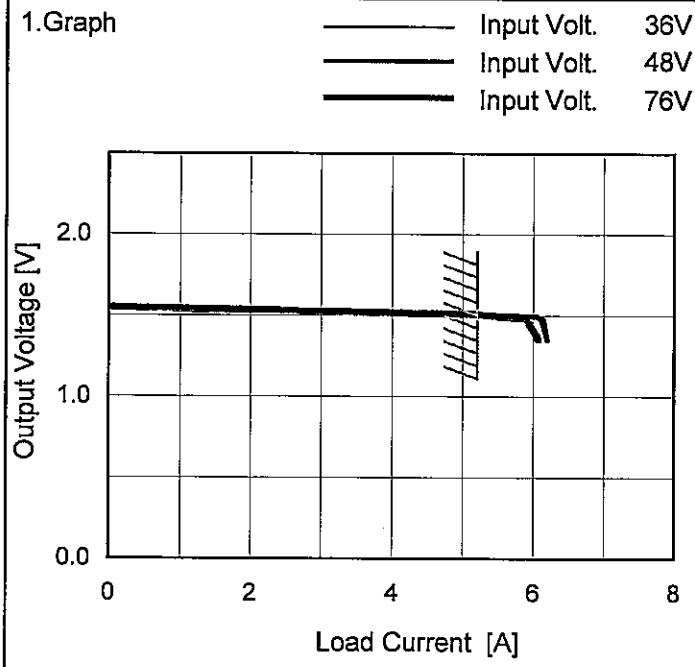
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-50	32.2	32.2
-40	32.3	32.2
-20	32.3	32.0
0	32.1	32.0
25	32.1	31.8
55	31.8	31.8
85	31.8	31.8
90	31.8	31.8
--	-	-
--	-	-
--	-	-

COSEL

Model	SFLS15481R5
Item	Overcurrent Protection
Object	+1.5V5.2A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

When the output voltage fell to less than 1.40V ,the unit shuts off the output by operating low voltage protection .

2.Values

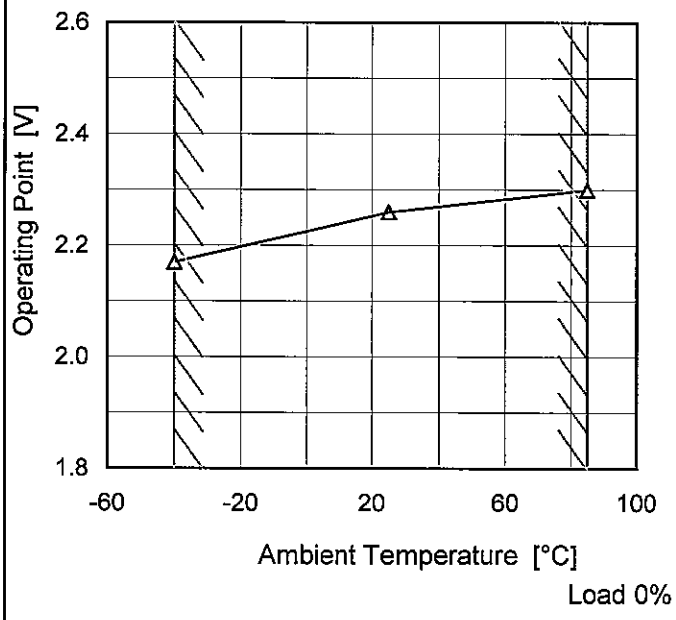
Output Voltage [V]	Load Current [A] Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
1.50	5.25	5.25	5.26
1.43	6.18	6.15	5.98
1.35	6.21	6.20	6.07
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SFLS15481R5
Item	Overvoltage Protection
Object	+1.5V5.2A

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. 48[V]	Input Volt.	Input Volt.
-40	2.17	-	-
25	2.26	-	-
85	2.30	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

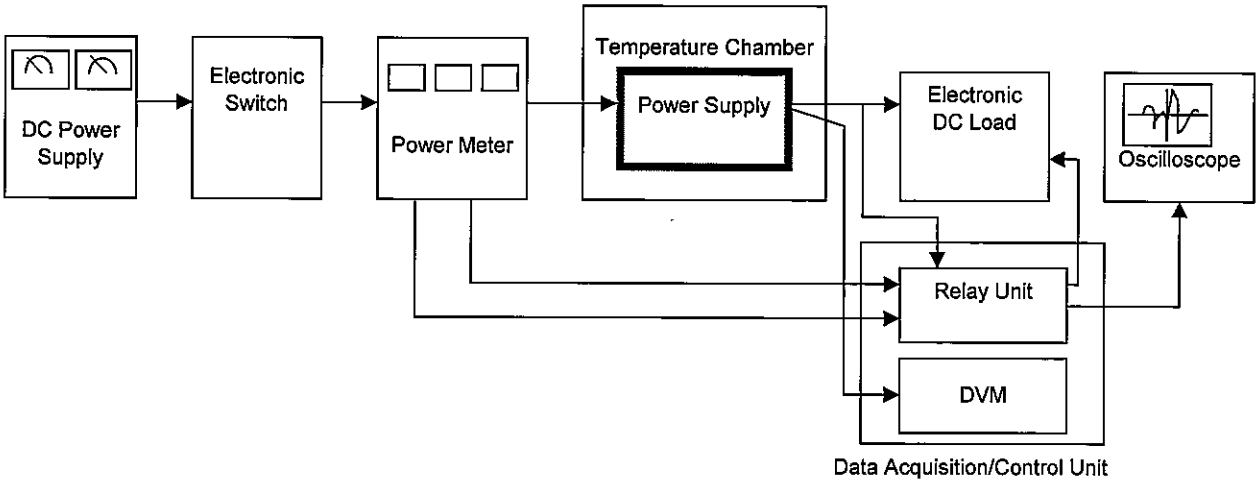


Figure A

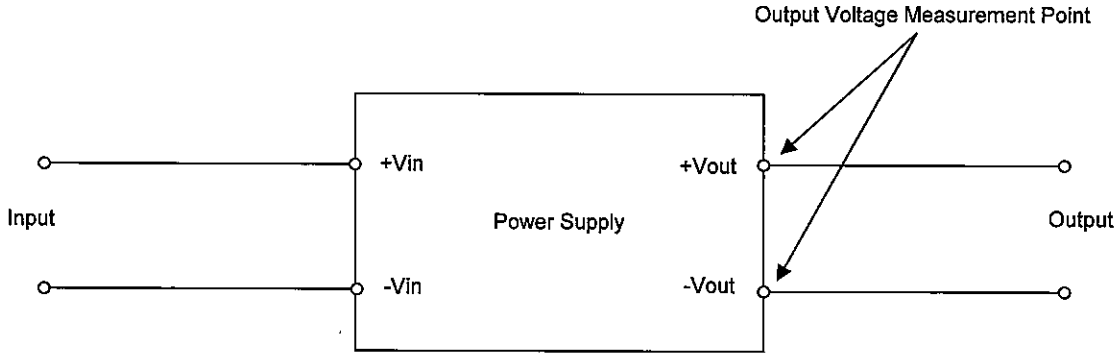


Figure B (General Electric Characteristic)

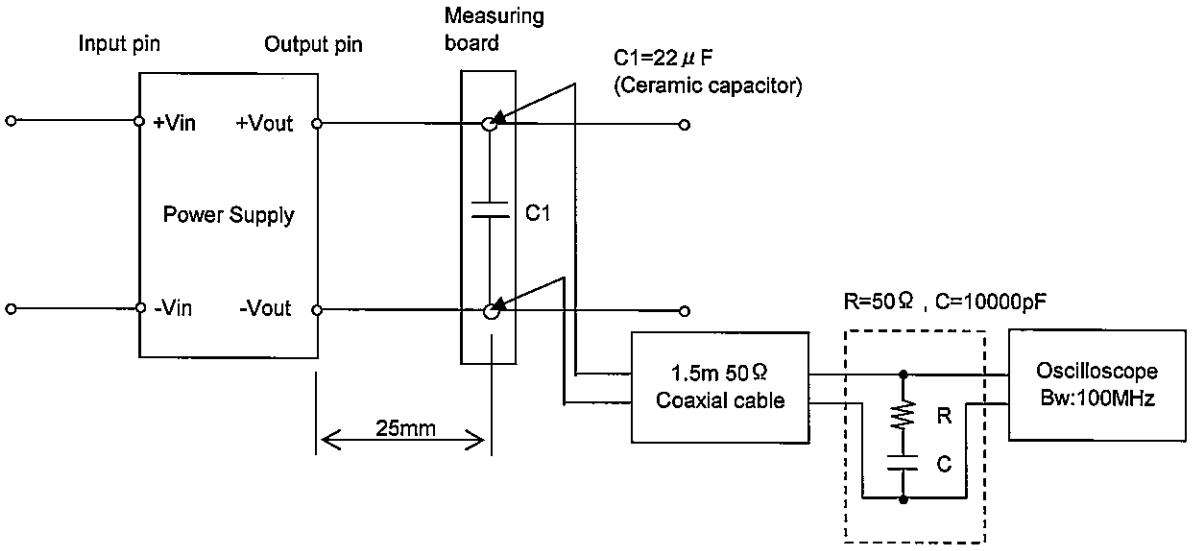


Figure C (Ripple and Ripple noise Characteristic)