参考資料

COSEL

TEST DATA OF SFS10481R2

Regulated DC Power Supply
Jan.22. 2004

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COSEL CO.,LTD.

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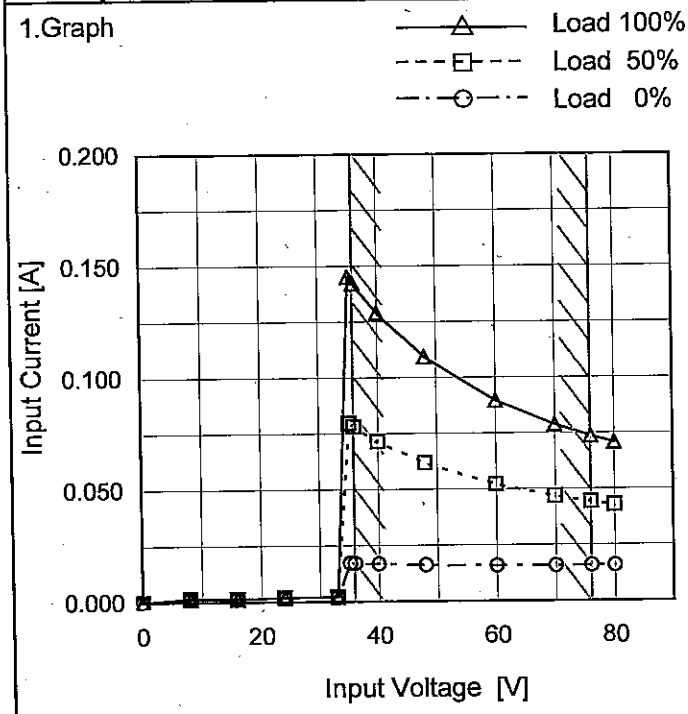
COSEL

Model	SFS10481R2
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
8	0.002	0.002	0.002
16	0.002	0.002	0.002
24	0.002	0.002	0.002
33	0.002	0.002	0.002
35	0.017	0.080	0.145
36	0.017	0.078	0.142
40	0.017	0.072	0.129
48	0.016	0.062	0.109
60	0.016	0.052	0.090
70	0.016	0.047	0.079
76	0.016	0.044	0.074
80	0.016	0.043	0.071
--	-	-	-
--	-	-	-
--	-	-	-

BC-3544

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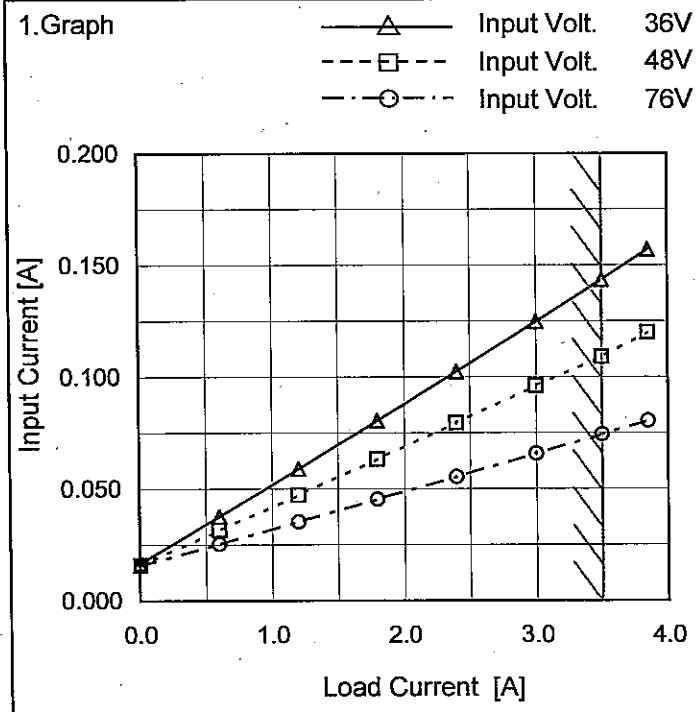
Model	SFS10481R2
Item	Input Current (by Load Current)
Object	———————

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	0.017	0.016	0.016
0.60	0.038	0.032	0.026
1.20	0.059	0.047	0.035
1.80	0.081	0.063	0.045
2.40	0.103	0.080	0.056
3.00	0.125	0.096	0.066
3.50	0.144	0.109	0.074
3.85	0.157	0.120	0.081
--	-	-	-
--	-	-	-
--	-	-	-

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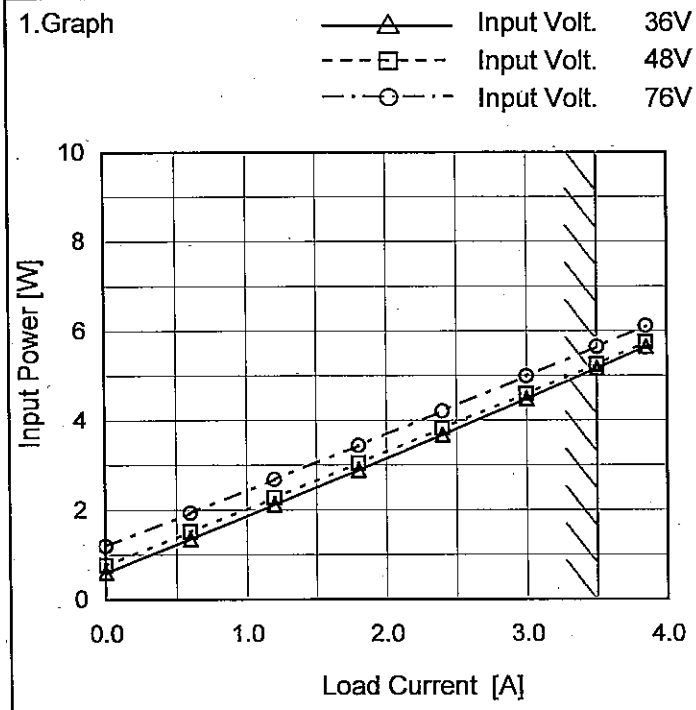
Model	SFS10481R2
Item	Input Power (by Load Current)
Object	————————

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	0.60	0.77	1.20
0.60	1.35	1.51	1.93
1.20	2.12	2.28	2.69
1.80	2.89	3.05	3.44
2.40	3.68	3.83	4.21
3.00	4.49	4.60	4.99
3.50	5.16	5.25	5.65
3.85	5.64	5.75	6.11
--	-	-	-
--	-	-	-
--	-	-	-

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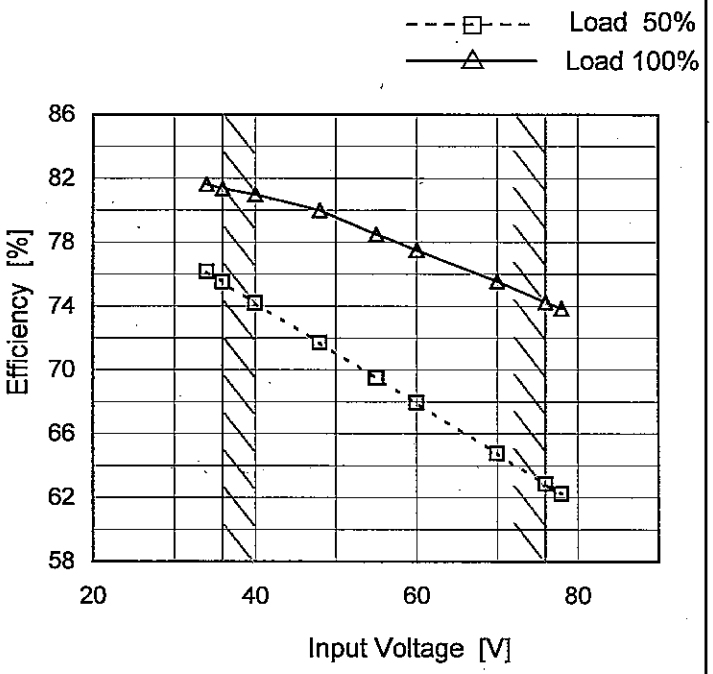
Model	SFS10481R2
Item	Efficiency (by Input Voltage)
Object	

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	76.2	81.6
36	75.5	81.4
40	74.2	81.0
48	71.7	80.0
55	69.5	78.5
60	68.0	77.5
70	64.8	75.6
76	62.9	74.2
78	62.2	73.8

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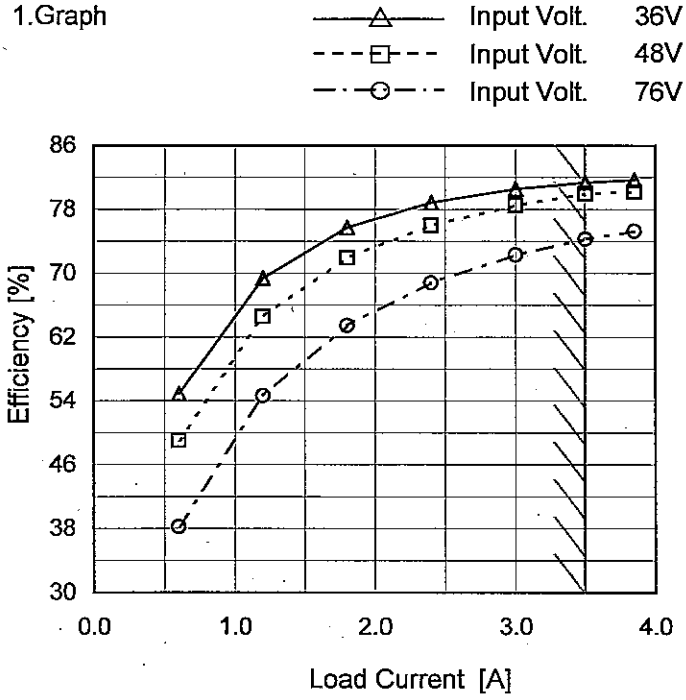
Model	SFS10481R2
Item	Efficiency (by Load Current)
Object	————————

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	-	-	-
0.60	54.9	49.1	38.3
1.20	69.4	64.6	54.7
1.80	75.7	72.0	63.5
2.40	78.9	76.0	68.8
3.00	80.6	78.5	72.3
3.50	81.4	80.0	74.3
3.85	81.7	80.2	75.3
—	-	-	-
—	-	-	-
—	-	-	-

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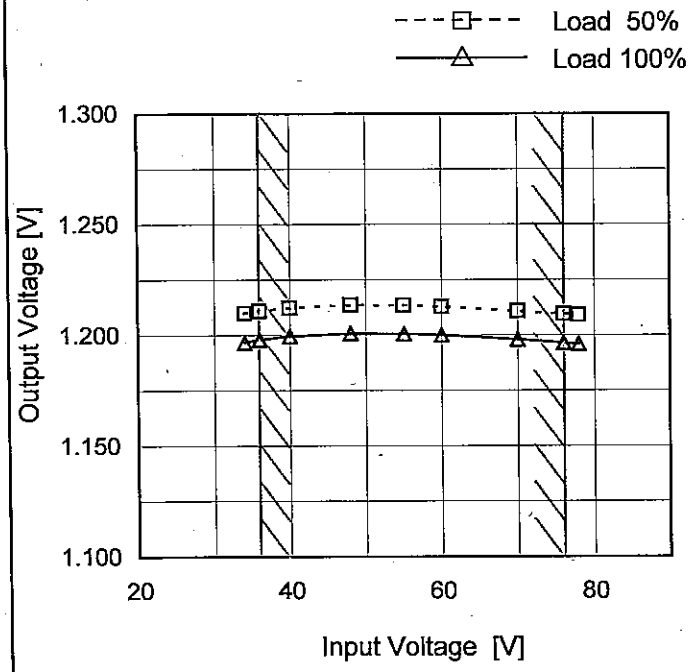
Model	SFS10481R2
Item	Line Regulation
Object	+1.2V3.5A

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	1.210	1.197
36	1.211	1.198
40	1.212	1.200
48	1.214	1.201
55	1.214	1.201
60	1.213	1.200
70	1.211	1.198
76	1.210	1.197
78	1.209	1.196

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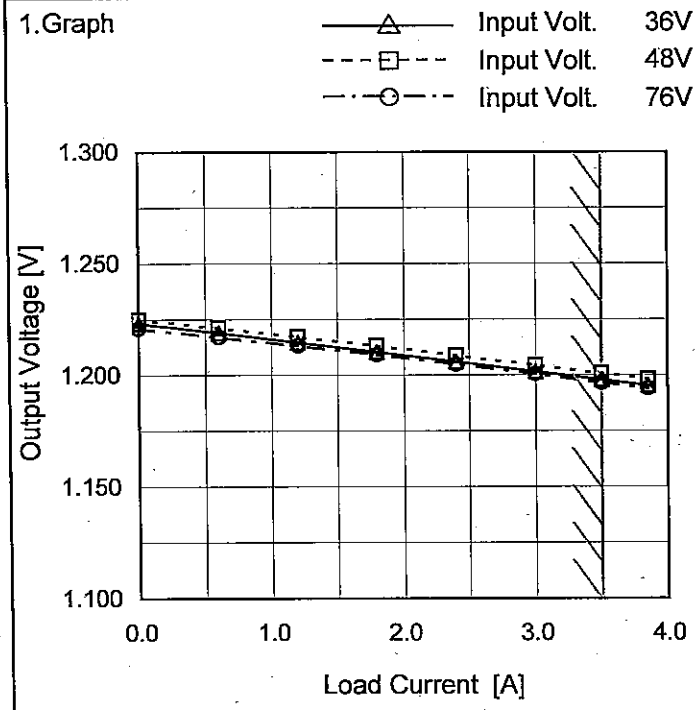
Model	SFS10481R2
Item	Load Regulation
Object	+1.2V3.5A

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	1.223	1.225	1.221
0.60	1.219	1.221	1.217
1.20	1.215	1.217	1.213
1.80	1.210	1.213	1.209
2.40	1.206	1.209	1.205
3.00	1.202	1.205	1.201
3.50	1.198	1.201	1.197
3.85	1.195	1.198	1.194
---	-	-	-
---	-	-	-
---	-	-	-

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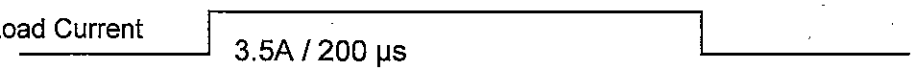
Model	SFS10481R2
Item	Dynamic Load Response
Object	+1.2V3.5A

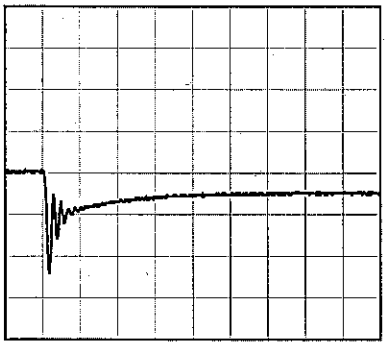
Temperature 25°C
Testing Circuitry Figure A

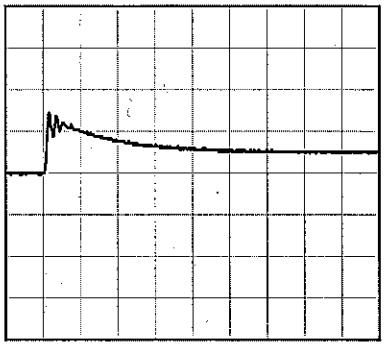
Input Volt. 48 V
Cycle 1000 mS

Load Current

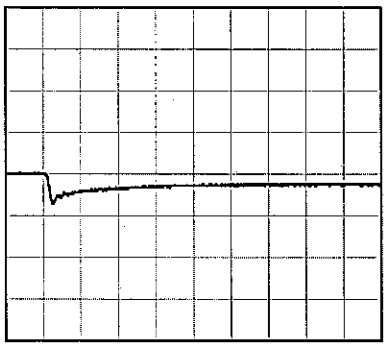


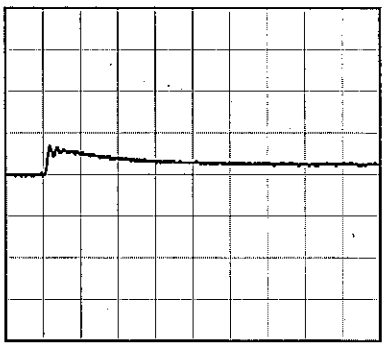
Min. Load (0A) ⟷ Load 100% (3.5A)



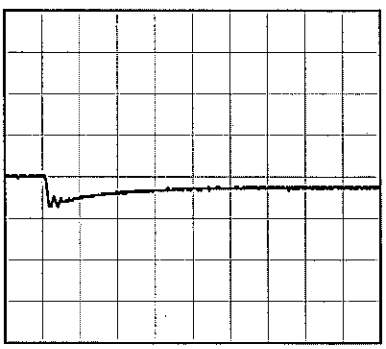


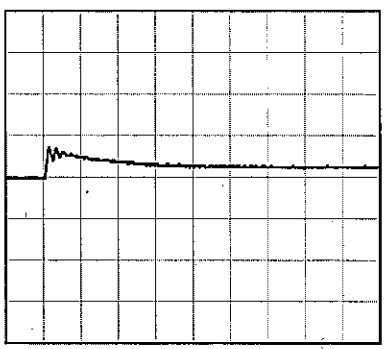
Min. Load (0A) ⟷ Load 50% (1.75A)





Load 50% (1.75A) ⟷ Load 100% (3.5A)





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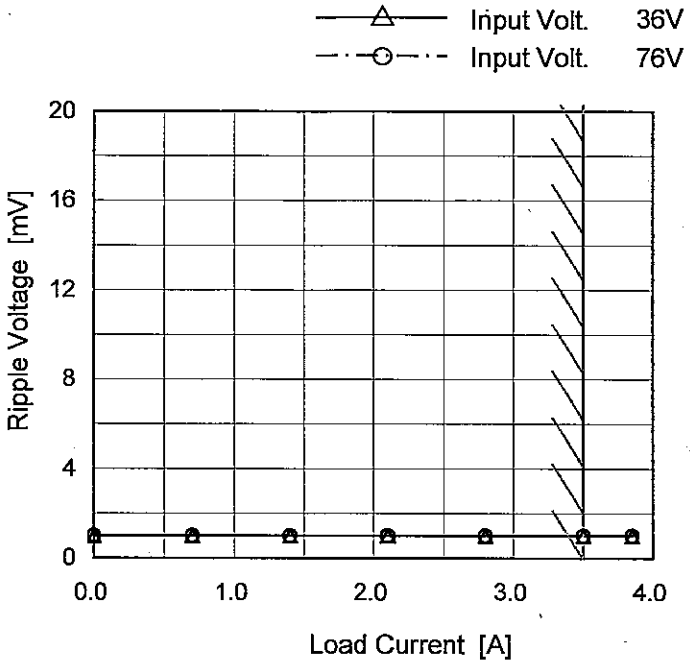
Model	SFS10481R2
Item	Ripple Voltage (by Load Current)
Object	+1.2V3.5A

Temperature 25°C
Testing Circuitry Figure C

1.Graph



Measured by 100MHz Ossiloscope.
Ripple Voltage is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated load current.

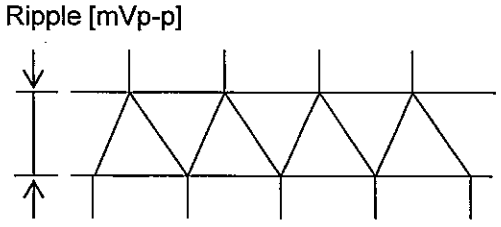


Fig.Complex Ripple Wave Form

2.Values

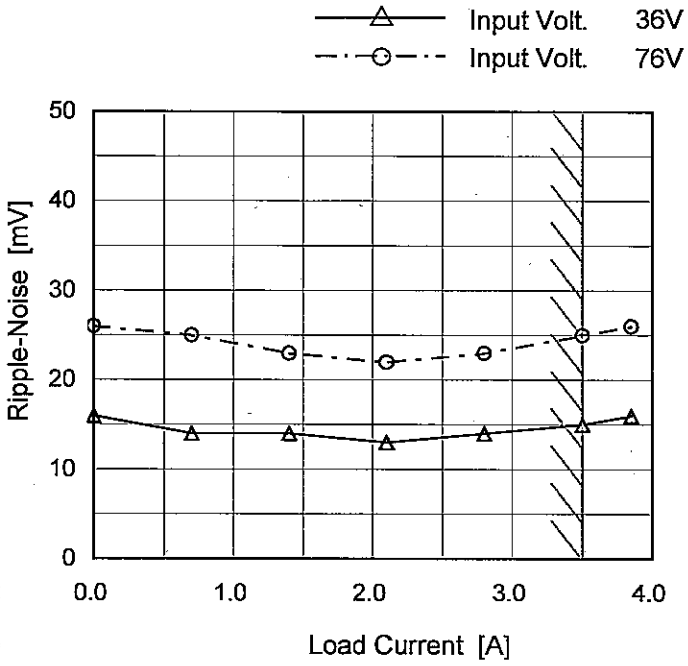
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 36 [V]	Input Volt. 76 [V]
0.00	1	1
0.70	1	1
1.40	1	1
2.10	1	1
2.80	1	1
3.50	1	1
3.85	1	1
---	-	-
---	-	-
---	-	-
---	-	-

COSEL

Model	SFS10481R2
Item	Ripple-Noise
Object	+1.2V3.5A

Temperature 25°C
Testing Circuitry Figure C

1.Graph



Measured by 100MHz Ossiloscope.
Ripple-Noise is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated load current.

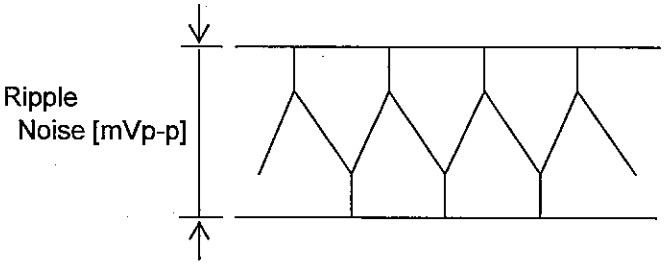


Fig.Complex Ripple Wave Form

2.Values

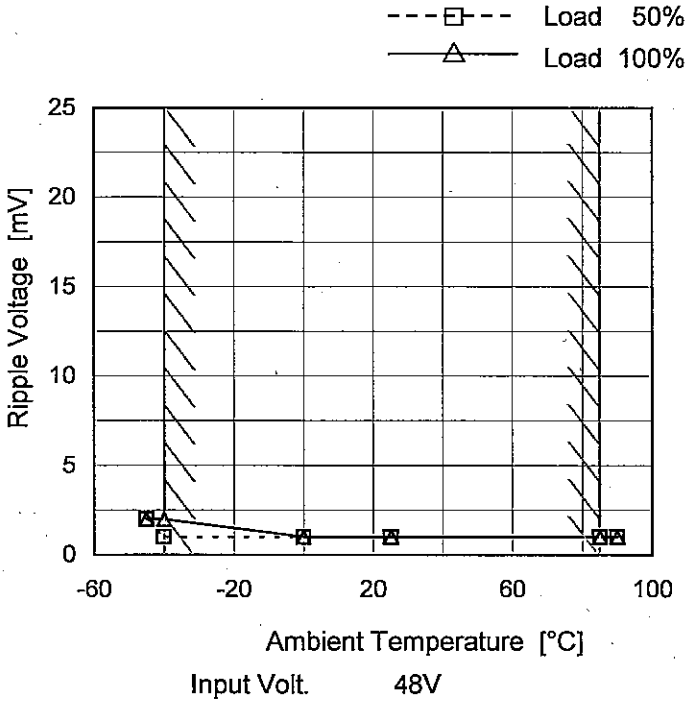
Load Current [A]	Ripple-Noise [mV] Input Volt. 36 [V]	Ripple-Noise [mV] Input Volt. 76 [V]
0.00	16	26
0.70	14	25
1.40	14	23
2.10	13	22
2.80	14	23
3.50	15	25
3.85	16	26
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SFS10481R2
Item	Ripple Voltage (by Ambient Temp.)
Object	+1.2V3.5A

Testing Circuitry Figure C

1.Graph



Input Volt. 48V

Measured by 100MHz Ossiloscope.
Note: Slanted line shows the range of the rated ambient temperature.

2.Values

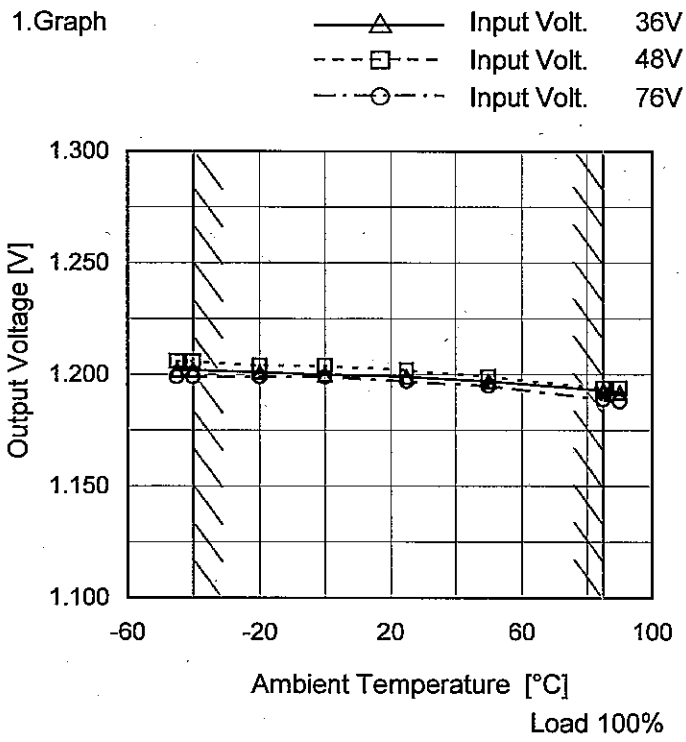
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-45	2	2
-40	1	2
0	1	1
25	1	1
85	1	1
90	1	1
—	-	-
—	-	-
—	-	-
—	-	-
—	-	-

COSEL

Model	SFS10481R2
Item	Ambient Temperature Drift
Object	+1.2V3.5A

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]
-45	1.202	1.206	1.199
-40	1.202	1.206	1.199
-20	1.201	1.204	1.199
0	1.200	1.204	1.199
25	1.199	1.202	1.197
50	1.197	1.199	1.195
85	1.193	1.194	1.189
90	1.192	1.194	1.188
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SFS10481R2	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+1.2V3.5A	

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 - 3.5A

* 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	85	48	0	1.231	±21	±1.8
Minimum Voltage	85	76	3.5	1.189		

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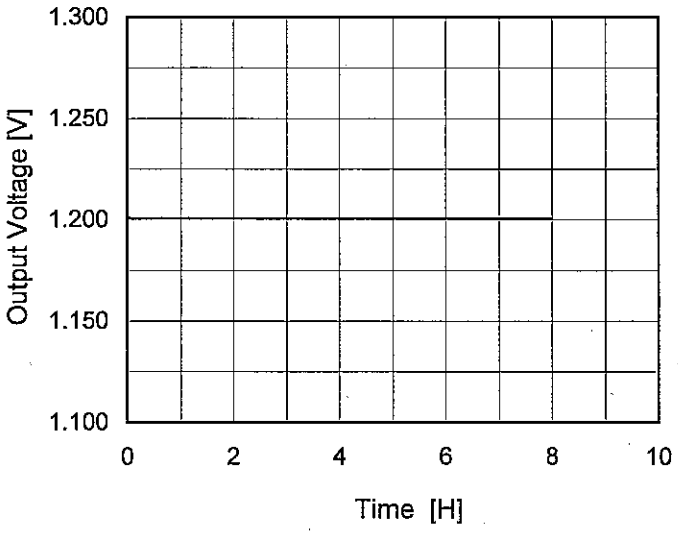
Model	SFS10481R2
Item	Time Lapse Drift
Object	+1.2V3.5A

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	1.202
0.5	1.201
1.0	1.201
2.0	1.201
3.0	1.201
4.0	1.201
5.0	1.201
6.0	1.201
7.0	1.201
8.0	1.201

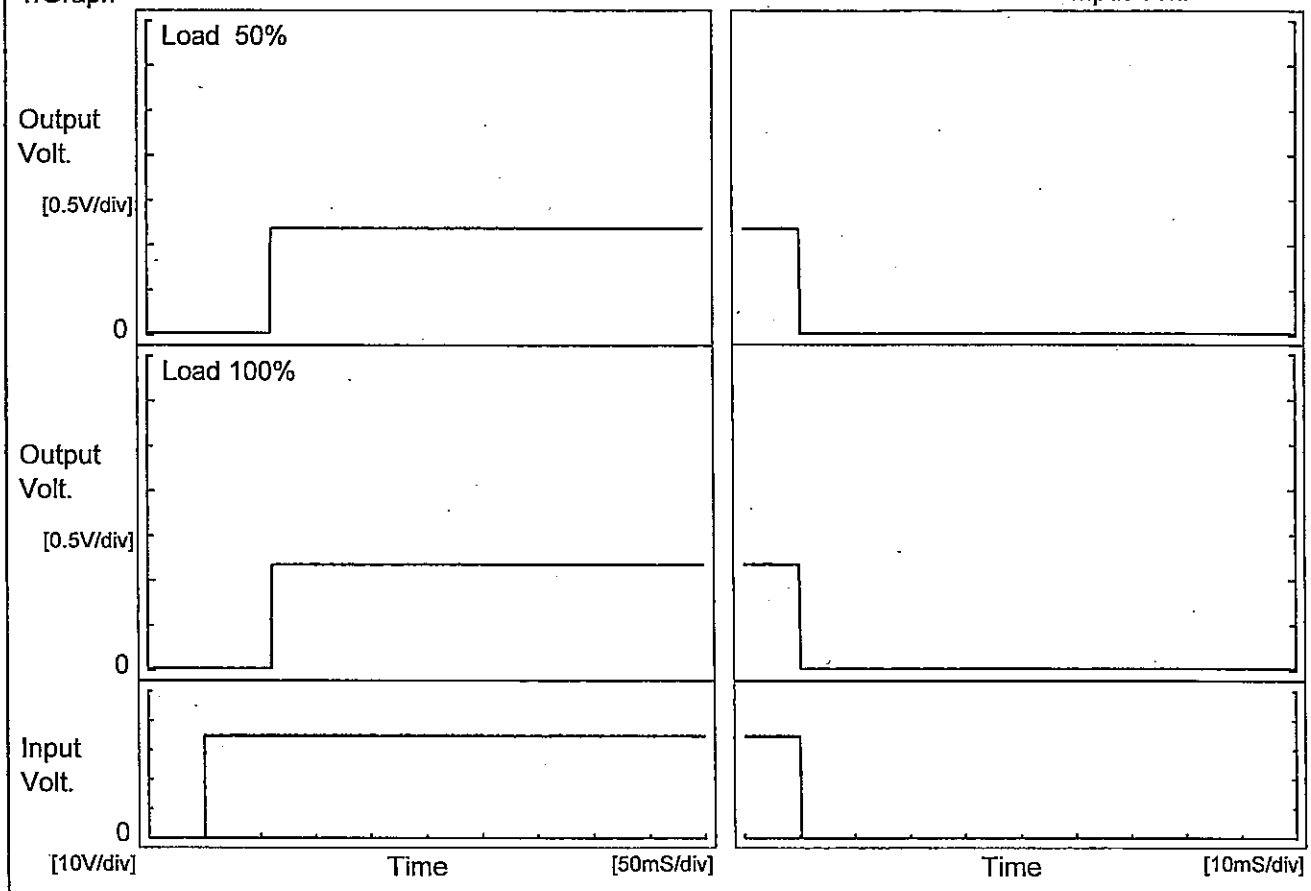
COSEL

Model	SFS10481R2
Item	Rise and Fall Time
Object	+1.2V3.5A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

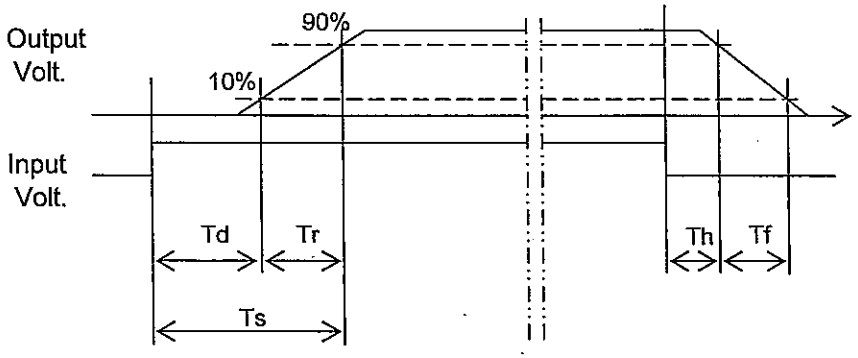
Input Volt. 36 V



2.Values

[mS]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	60.3	0.8	61.1	0.1	0.2
100 %	60.3	0.9	61.2	0.1	0.2



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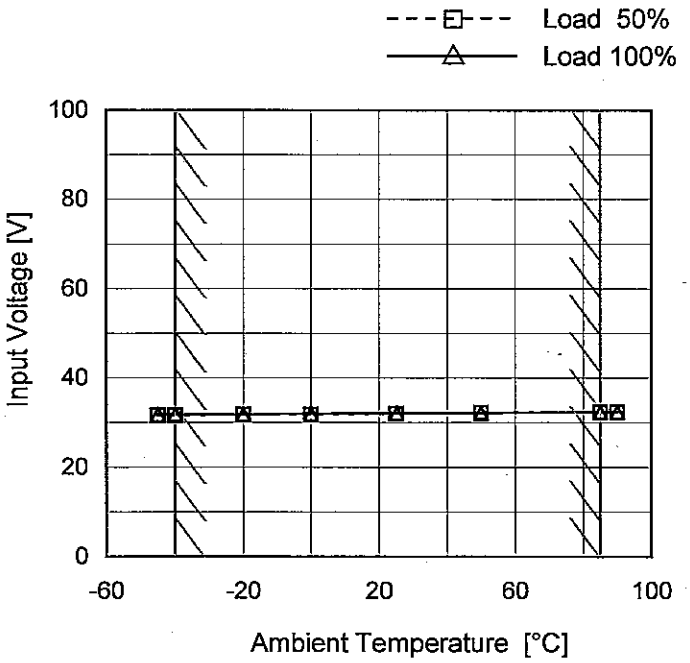
Model	SFS10481R2
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+1.2V3.5A

Testing Circuitry Figure A

1.Graph



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

2.Values

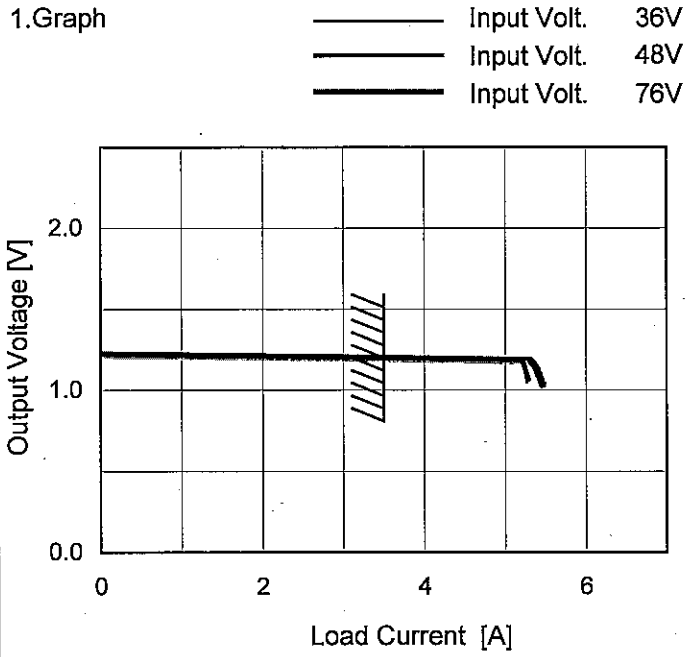
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-45	31.7	31.8
-40	31.7	31.9
-20	31.9	31.8
0	31.9	32.1
25	32.1	32.2
50	32.3	32.3
85	32.5	32.4
90	32.5	32.4
—	-	-
—	-	-
—	-	-

COSEL

Model	SFS10481R2
Item	Overcurrent Protection
Object	+1.2V3.5A

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 than1.08V ,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]
1.20	3.57	3.68	3.57
1.14	5.25	5.26	5.38
1.08	5.27	5.29	5.42
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

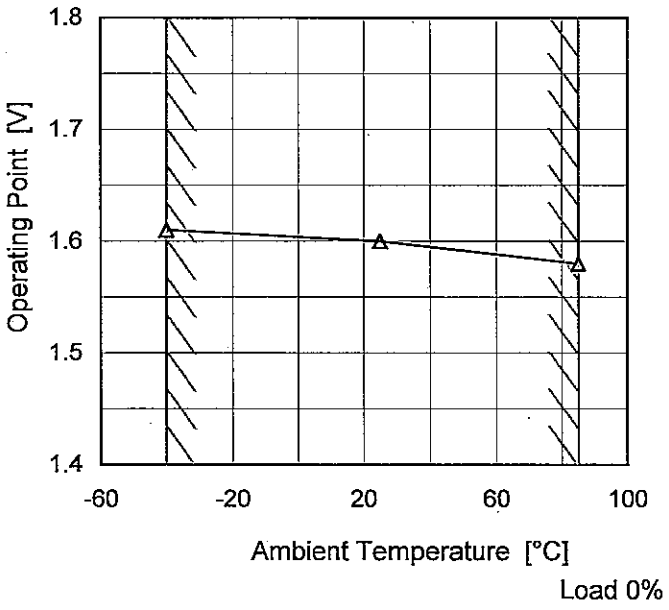
COSEL

Model	SFS10481R2
Item	Overvoltage Protection
Object	+1.2V3.5A

Testing Circuitry Figure A

1.Graph

△ Input Volt. 48V



Load 0%

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	1.61	-	-
25	1.60	-	-
85	1.58	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

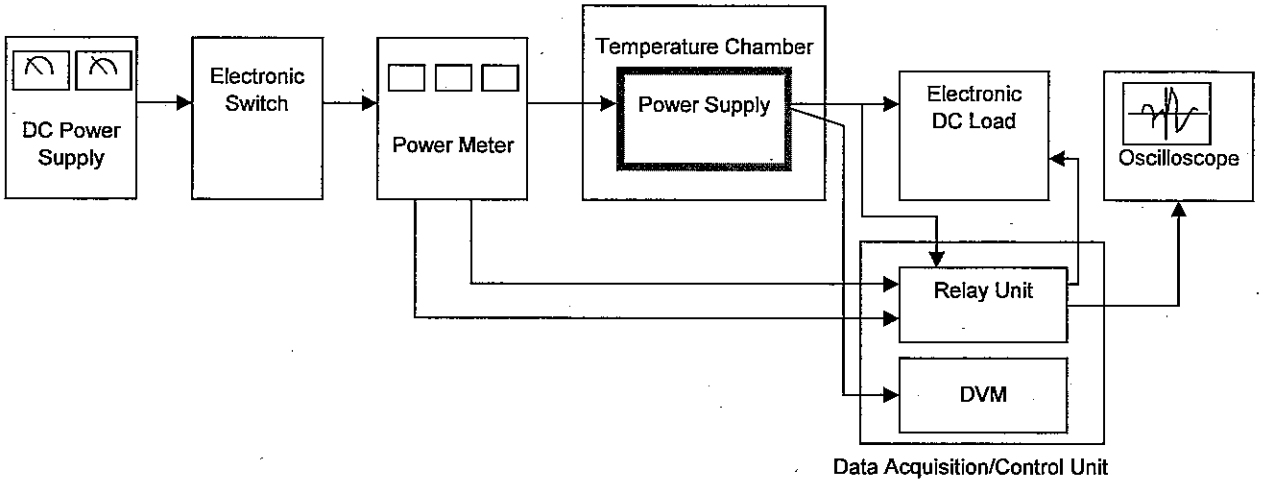


Figure A

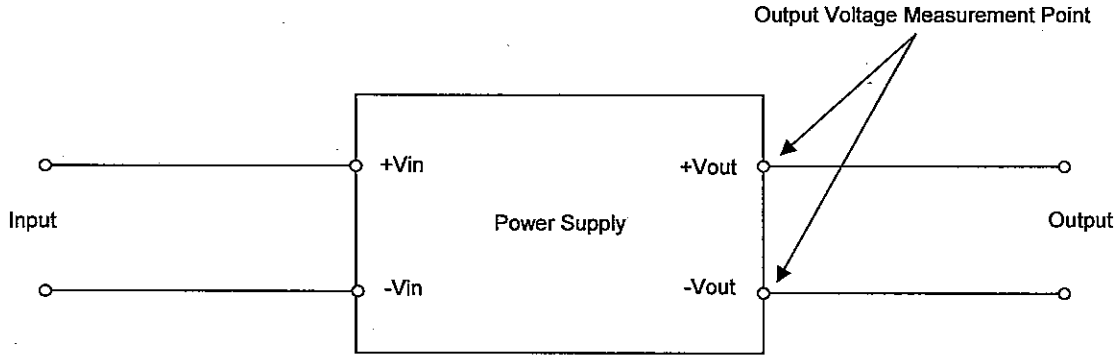


Figure B (General Electric Characteristic)

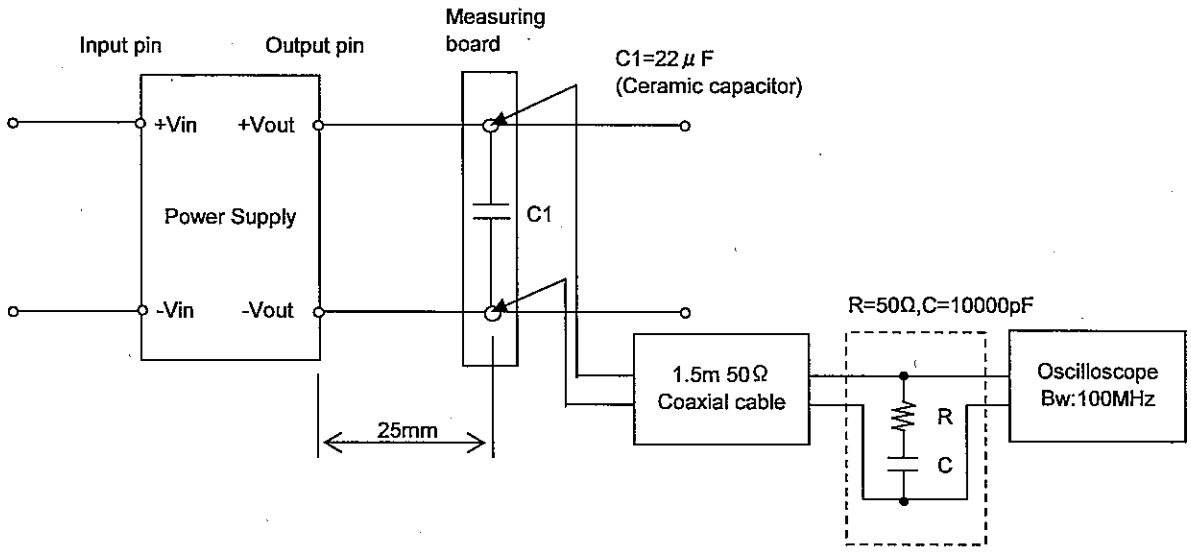


Figure C (Ripple and Ripple noise Characteristic)