



TEST DATA OF SFS152412/SFCS152412

Regulated DC Power Supply
May.28. 2007

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COSEL CO.,LTD.

CONTENTS

1. Input Current (by Input Voltage)	1
2. Input Current (by Load Current)	2
3. Input Power (by Load Current)	3
4. Efficiency (by Input Voltage)	4
5. Efficiency (by Load Current)	5
6. Line Regulation	6
7. Load Regulation	7
8. Dynamic Load Response	8
9. Ripple Voltage (by Load Current)	9
10. Ripple-Noise	10
11. Ripple Voltage (by Ambient Temperature)	11
12. Ambient Temperature Drift	12
13. Output Voltage Accuracy	13
14. Time Lapse Drift	14
15. Rise and Fall Time	15
16. Minimum Input Voltage for Regulated Output Voltage	16
17. Overcurrent Protection	17
18. Overvoltage Protection	18
19. Figure of Testing Circuitry	19

(Final Page 19)

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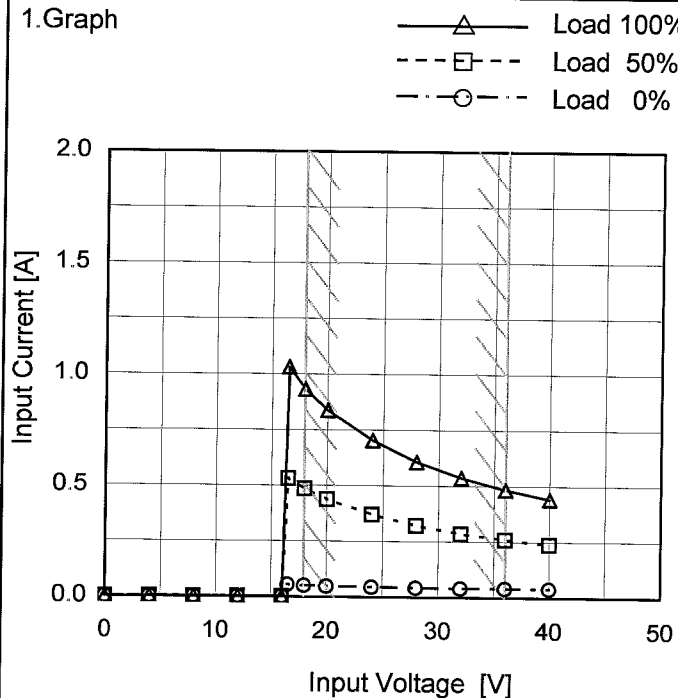
Model SFS152412/SFCS152412

Item Input Current (by Input Voltage)

Object

Temperature 25°C
Testing Circuitry Figure A

1. Graph



2. Values

Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0	0.000	0.000	0.000
4	0.001	0.001	0.001
8	0.001	0.001	0.001
12	0.002	0.002	0.002
16	0.002	0.002	0.002
17	0.054	0.532	1.031
18	0.051	0.485	0.933
20	0.047	0.438	0.838
24	0.045	0.371	0.704
28	0.042	0.322	0.608
32	0.040	0.286	0.537
36	0.041	0.259	0.484
40	0.039	0.239	0.442
--	-	-	-
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Model		SFS152412/SFCS152412		Temperature Testing Circuitry	25°C Figure A																																																			
Item		Input Current (by Load Current)																																																						
Object																																																								
1.Graph				2.Values																																																				
<div><div><div>—△—</div><div>Input Volt.</div><div>18V</div></div><div><div>---□---</div><div>Input Volt.</div><div>24V</div></div><div><div>-·-○-·-</div><div>Input Volt.</div><div>36V</div></div></div> <div><div><div><div>2.0</div><div>1.5</div><div>1.0</div><div>0.5</div><div>0.0</div></div><div><div>0.0</div><div>0.4</div><div>0.8</div><div>1.2</div></div></div><div><div>Input Current [A]</div><div>Load Current [A]</div></div></div> <div><div>Note: Slanted line shows the range of the rated load current.</div></div>				<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Input Current [A]</th></tr><tr><th>Input Volt. 18[V]</th><th>Input Volt. 24[V]</th><th>Input Volt. 36[V]</th></tr><tr><td>0.00</td><td>0.051</td><td>0.045</td><td>0.041</td></tr><tr><td>0.20</td><td>0.189</td><td>0.150</td><td>0.111</td></tr><tr><td>0.40</td><td>0.328</td><td>0.254</td><td>0.182</td></tr><tr><td>0.60</td><td>0.470</td><td>0.359</td><td>0.252</td></tr><tr><td>0.80</td><td>0.609</td><td>0.465</td><td>0.323</td></tr><tr><td>1.00</td><td>0.753</td><td>0.569</td><td>0.394</td></tr><tr><td>1.20</td><td>0.894</td><td>0.676</td><td>0.466</td></tr><tr><td>1.25</td><td>0.933</td><td>0.704</td><td>0.484</td></tr><tr><td>1.30</td><td>0.967</td><td>0.730</td><td>0.501</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td></tr></table>		Load Current [A]	Input Current [A]			Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	0.00	0.051	0.045	0.041	0.20	0.189	0.150	0.111	0.40	0.328	0.254	0.182	0.60	0.470	0.359	0.252	0.80	0.609	0.465	0.323	1.00	0.753	0.569	0.394	1.20	0.894	0.676	0.466	1.25	0.933	0.704	0.484	1.30	0.967	0.730	0.501	--	-	-	-	--	-	-	-
Load Current [A]	Input Current [A]																																																							
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Model SFS152412/SFCS152412

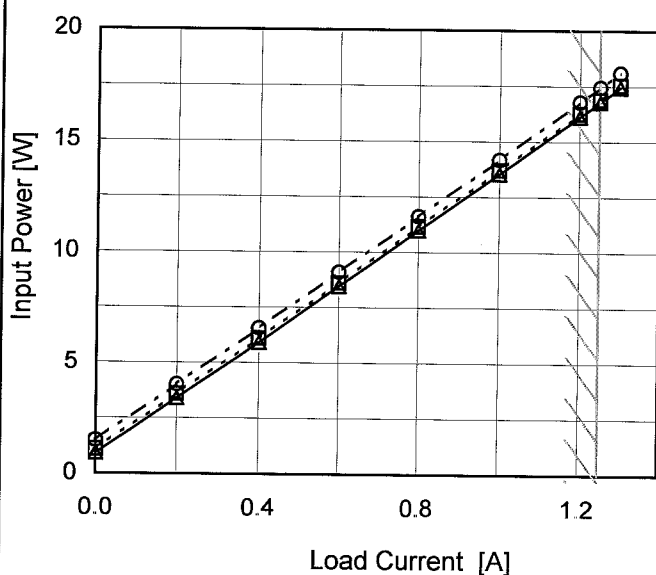
Item Input Power (by Load Current)

Object

Temperature 25°C
Testing Circuitry Figure A

1. Graph

—△— Input Volt. 18V
---□--- Input Volt. 24V
-·-○-·- Input Volt. 36V



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

2. Values

Load Current [A]	Input Power [W]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.00	0.92	1.09	1.50
0.20	3.41	3.59	4.03
0.40	5.92	6.10	6.57
0.60	8.46	8.61	9.10
0.80	10.99	11.17	11.63
1.00	13.55	13.70	14.18
1.20	16.13	16.26	16.80
1.25	16.80	16.90	17.45
1.30	17.45	17.54	18.10
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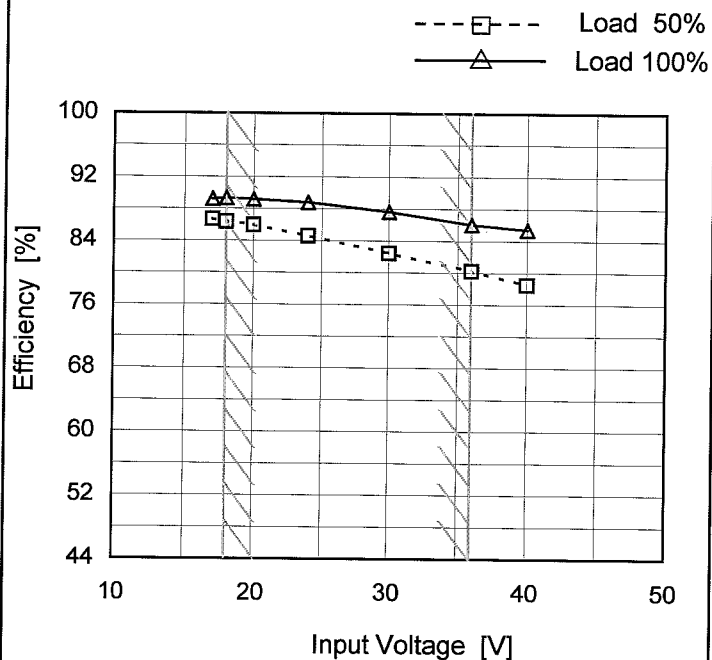
Model SFS152412/SFCS152412

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%
17	86.7	89.2
18	86.4	89.3
20	86.0	89.2
24	84.6	88.8
30	82.5	87.6
36	80.2	86.1
40	78.5	85.4
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Model

SFS152412/SFCS152412

Item

Efficiency (by Load Current)

Object

Temperature

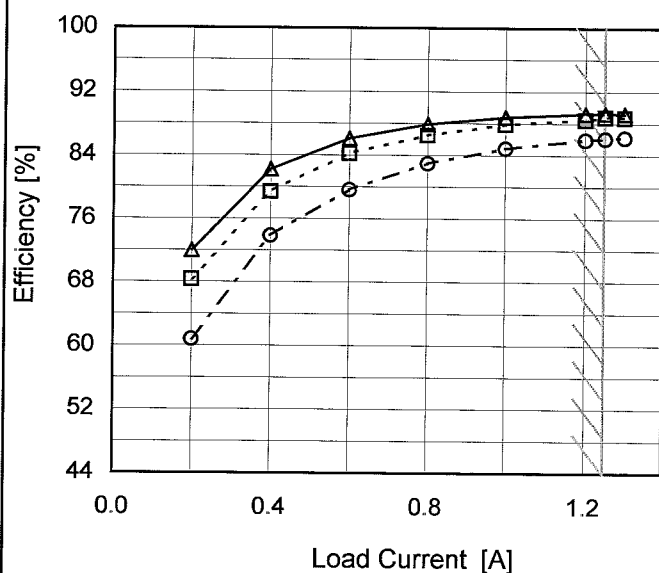
25°C

Testing Circuitry

Figure A

1. Graph

—△— Input Volt. 18V
 - - □ - - Input Volt. 24V
 - - ○ - - Input Volt. 36V



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

2. Values

Load Current [A]	Efficiency [%]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.00	-	-	-
0.20	72.0	68.3	60.8
0.40	82.2	79.4	73.9
0.60	86.1	84.2	79.6
0.80	87.9	86.5	83.0
1.00	88.8	87.9	84.9
1.20	89.2	88.5	85.9
1.25	89.3	88.8	86.1
1.30	89.2	88.8	86.3
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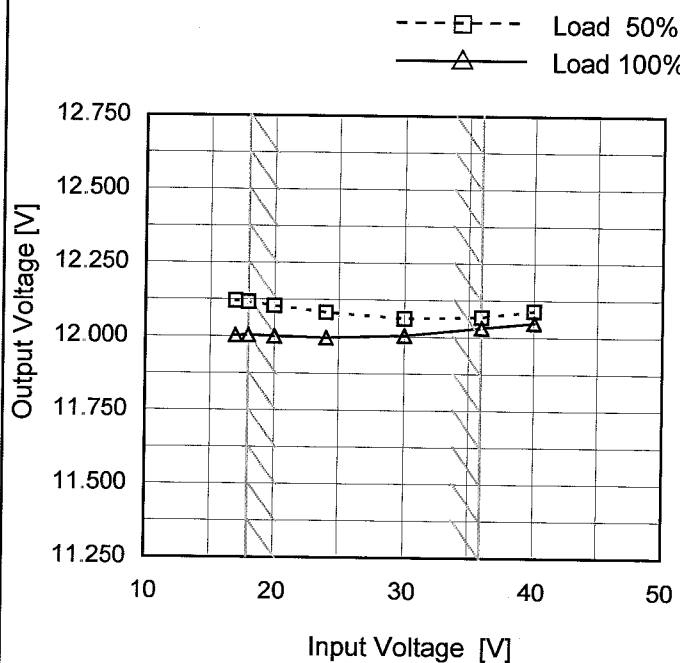
Model SFS152412/SFCS152412

Item Line Regulation

Object +12V1.25A

Temperature 25°C
Testing Circuitry Figure A

1. Graph



2. Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
17	12.121	12.003
18	12.117	12.005
20	12.104	12.001
24	12.082	11.997
30	12.062	12.005
36	12.068	12.032
40	12.089	12.049
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Model SFS152412/SFCS152412

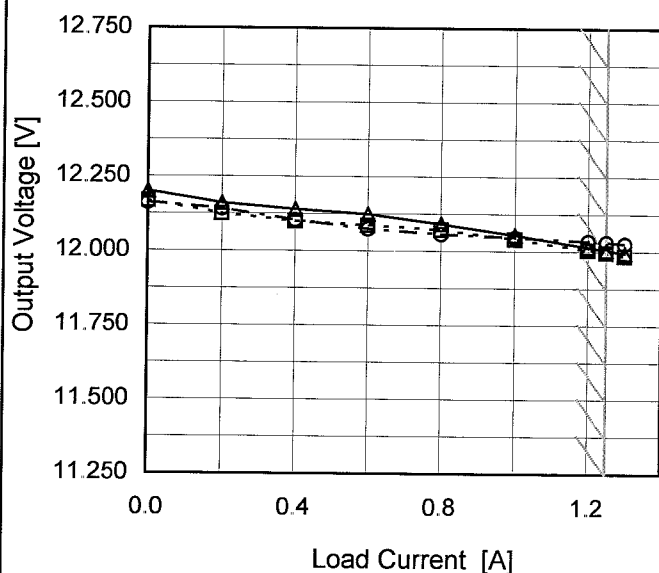
Item Load Regulation

Object +12V1.25A

Temperature 25°C
Testing Circuitry Figure A

1. Graph

—△— Input Volt. 18V
---□--- Input Volt. 24V
- -○- - Input Volt. 36V



2. Values

Load Current [A]	Output Voltage [V]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.00	12.200	12.168	12.161
0.20	12.161	12.125	12.141
0.40	12.140	12.100	12.103
0.60	12.124	12.086	12.075
0.80	12.091	12.072	12.058
1.00	12.055	12.041	12.046
1.20	12.015	12.006	12.034
1.25	12.005	11.997	12.032
1.30	11.995	11.987	12.026
--	-	-	-
--	-	-	-



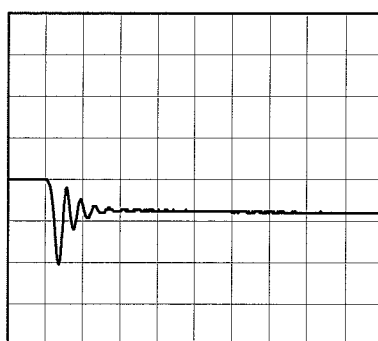
Model	SFS152412/SFCS152412	Temperature	25°C
Item	Dynamic Load Response	Testing Circuitry	Figure A
Object	+12V1.25A		

Input Volt. 24 V
Cycle 1000 mS

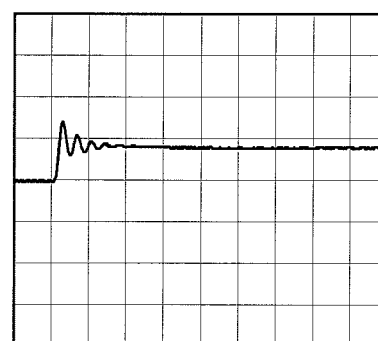
Load Current 1.25A / 200 μ s

Min. Load (0A) \longleftrightarrow
Load 100% (1.25A)

200mV/div



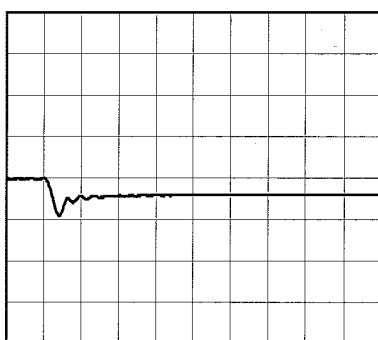
200 μ s/div



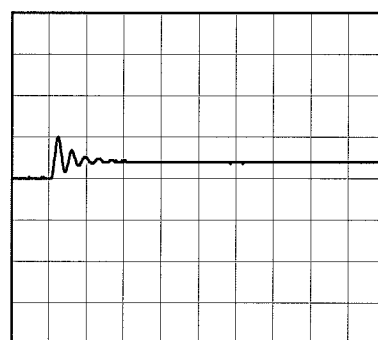
200 μ s/div

Min. Load (0A) \longleftrightarrow
Load 50% (0.625A)

200mV/div



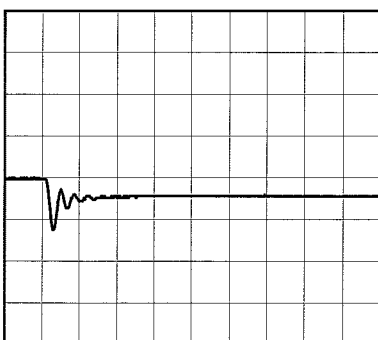
200 μ s/div



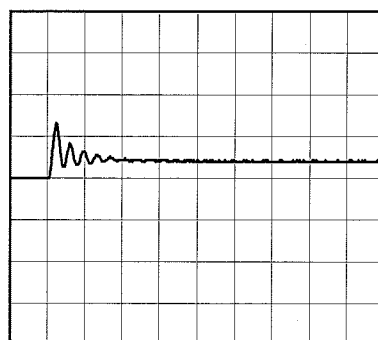
200 μ s/div

Load 50% (0.625A) \longleftrightarrow
Load 100% (1.25A)

200mV/div



200 μ s/div



200 μ s/div

Model		SFS152412/SFCS152412																																							
Item		Ripple Voltage (by Load Current)																																							
Object		+12V1.25A																																							
1.Graph		2.Values																																							
<div><div><div><div><div></div><div></div></div><div>Input Volt.</div><div>18V</div></div><div><div><div></div><div></div></div><div>Input Volt.</div><div>36V</div></div></div><div><p>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.</p></div></div>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="2">Ripple Voltage [mV]</th></tr><tr><th>Input Volt. 18 [V]</th><th>Input Volt. 36 [V]</th></tr><tr><td>0.00</td><td>14</td><td>23</td></tr><tr><td>0.30</td><td>15</td><td>23</td></tr><tr><td>0.50</td><td>16</td><td>24</td></tr><tr><td>0.80</td><td>16</td><td>24</td></tr><tr><td>1.00</td><td>17</td><td>25</td></tr><tr><td>1.25</td><td>19</td><td>26</td></tr><tr><td>1.40</td><td>19</td><td>26</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td></tr></table>		Load Current [A]	Ripple Voltage [mV]		Input Volt. 18 [V]	Input Volt. 36 [V]	0.00	14	23	0.30	15	23	0.50	16	24	0.80	16	24	1.00	17	25	1.25	19	26	1.40	19	26	--	-	-	--	-	-	--	-	-	--	-	-
Load Current [A]	Ripple Voltage [mV]																																								
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<div><div><div><div></div><div></div></div><div>Ripple [mVp-p]</div></div><div><p>Fig.Complex Ripple Wave Form</p></div></div>																																									

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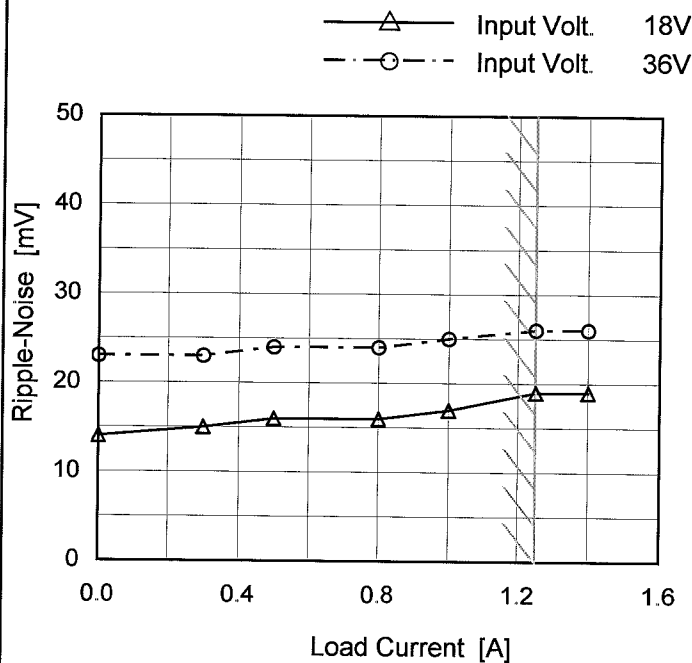
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BC-10060

Model	SFS152412/SFCS152412
Item	Ripple-Noise
Object	+12V1.25A

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.

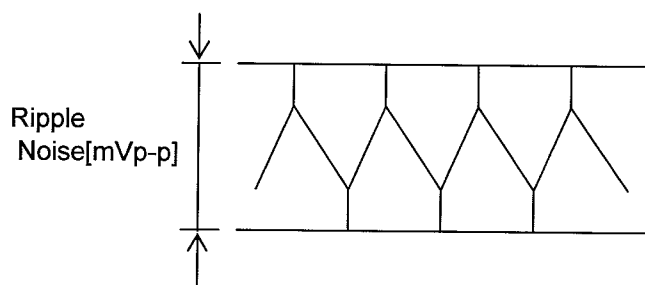


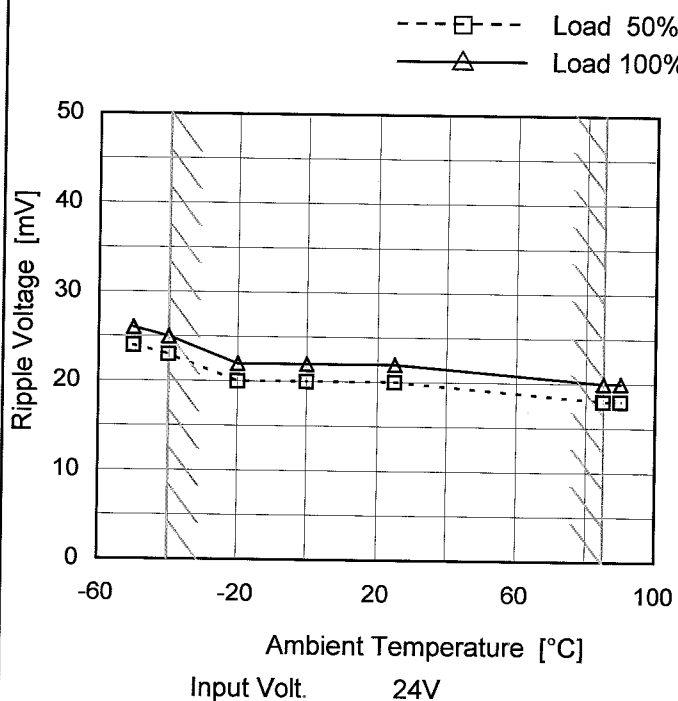
Fig. Complex Ripple Noise Wave Form

2. Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 18 [V]	Input Volt. 36 [V]
0.00	14	23
0.30	15	23
0.50	16	24
0.80	16	24
1.00	17	25
1.25	19	26
1.40	19	26
--	-	-
--	-	-
--	-	-
--	-	-

Model	SFS152412/SFCS152412
Item	Ripple Voltage (by Ambient Temp.)
Object	+12V1.25A

1. Graph



Measured by 100 MHz Oscilloscope.

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

Testing Circuitry Figure C

2. Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-50	24	26
-40	23	25
-20	20	22
0	20	22
25	20	22
85	18	20
90	18	20
--	-	-
--	-	-
--	-	-
--	-	-

Model SFS152412/SFCS152412

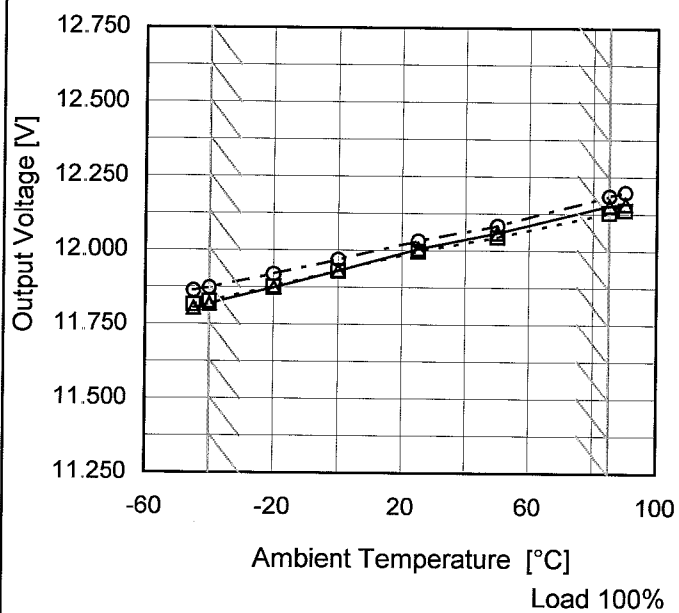
Item Ambient Temperature Drift

Object +12V1.25A

Testing Circuitry Figure A

1. Graph

—△— Input Volt. 18V
 ---□--- Input Volt. 24V
 - - -○- - - Input Volt. 36V



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

2. Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
-45	11.805	11.816	11.863
-40	11.819	11.827	11.873
-20	11.874	11.877	11.919
0	11.931	11.931	11.969
25	12.005	11.997	12.032
50	12.060	12.045	12.084
85	12.154	12.129	12.185
90	12.160	12.138	12.198
--	-	-	-
--	-	-	-
--	-	-	-



		Testing Circuitry Figure A
Model	SFS152412/SFCS152412	
Item	Output Voltage Accuracy	
Object	+12V1.25A	

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 : 18 - 36V

Load Current : 0 - 1.25A

* Output Voltage Accuracy = $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

* Output Voltage Accuracy (Ratio) = $\frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$

2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ratio [%]
Maximum Voltage	85	18	0	12.387	±284	±2.4
Minimum Voltage	-40	18	1.25	11.819		

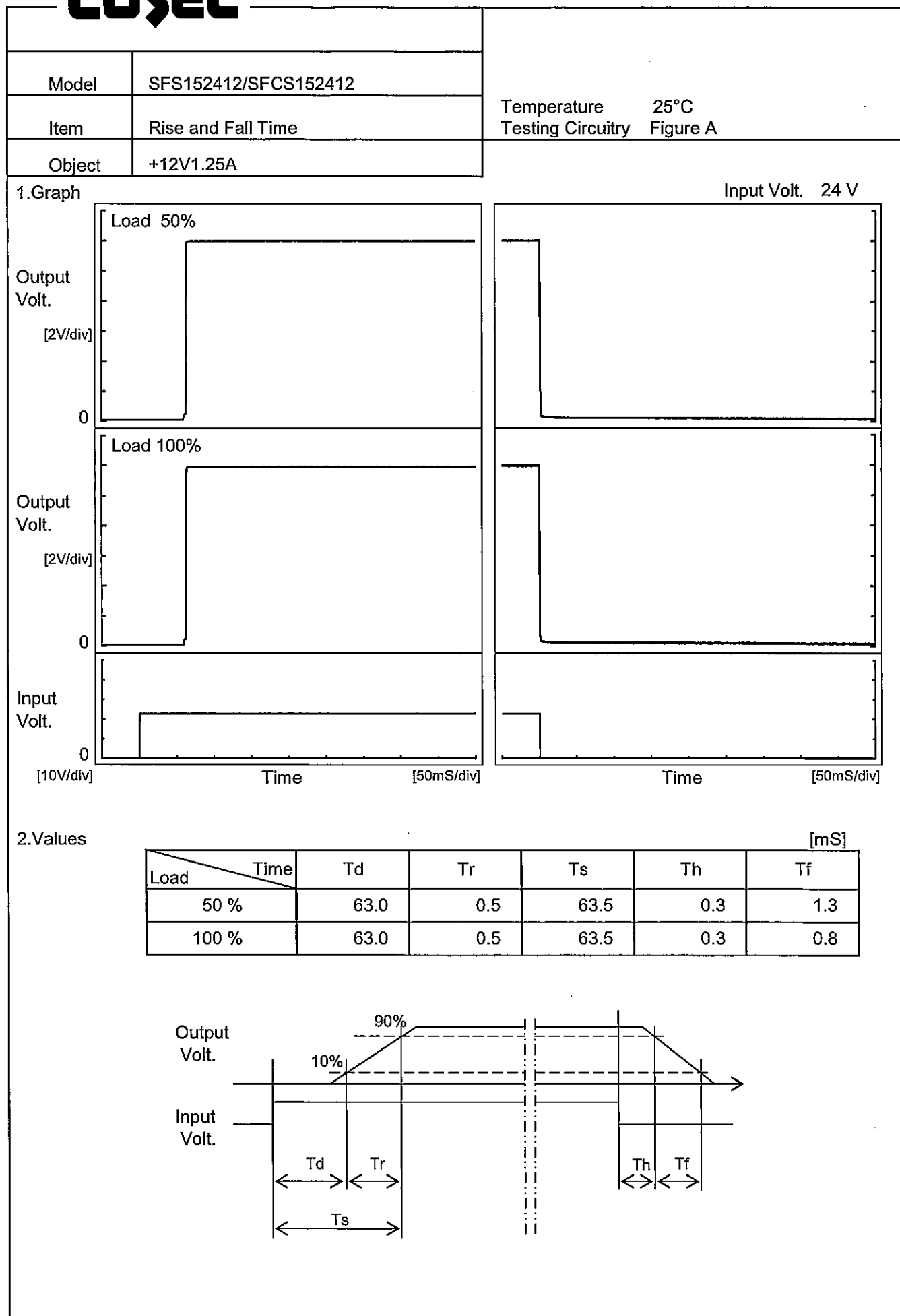
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Model	SFS152412/SFCS152412																								
Item	Time Lapse Drift	Temperature	25°C																						
Object	+12V1.25A	Testing Circuitry	Figure A																						
1.Graph		2.Values																							
<div><div><div>12.750</div><div>12.500</div><div>12.250</div><div>12.000</div><div>11.750</div><div>11.500</div><div>11.250</div></div><div><div>0</div><div>2</div><div>4</div><div>6</div><div>8</div><div>10</div></div><div><div>Output Voltage [V]</div><div>Time [H]</div></div><div><div>Input Volt.</div><div>24V</div></div><div><div>Load</div><div>100%</div></div></div>		<table><tr><th>Time since start [H]</th><th>Output Voltage [V]</th></tr><tr><td>0.0</td><td>11.979</td></tr><tr><td>0.5</td><td>11.997</td></tr><tr><td>1.0</td><td>11.997</td></tr><tr><td>2.0</td><td>11.997</td></tr><tr><td>3.0</td><td>11.997</td></tr><tr><td>4.0</td><td>11.997</td></tr><tr><td>5.0</td><td>11.997</td></tr><tr><td>6.0</td><td>11.997</td></tr><tr><td>7.0</td><td>11.997</td></tr><tr><td>8.0</td><td>11.997</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	11.979	0.5	11.997	1.0	11.997	2.0	11.997	3.0	11.997	4.0	11.997	5.0	11.997	6.0	11.997	7.0	11.997	8.0	11.997
Time since start [H]	Output Voltage [V]																								
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8.0	11.997																								

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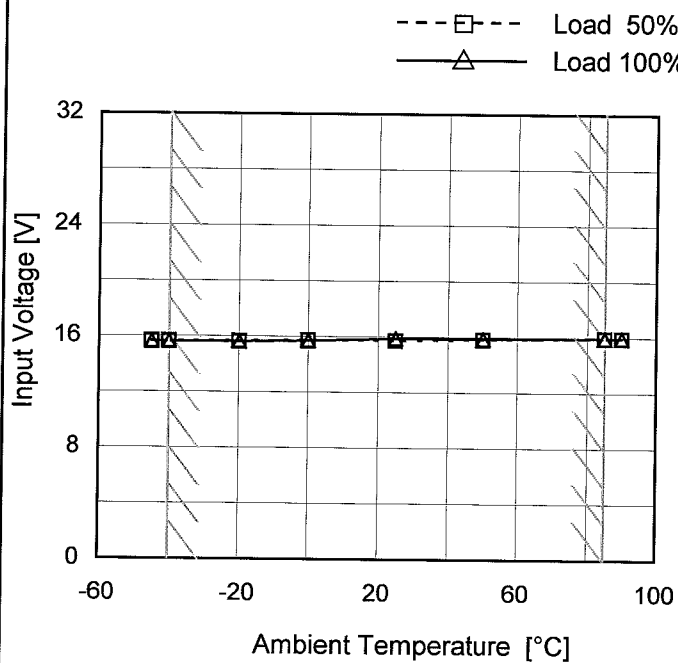
BC-10060

COSEL



Model	SFS152412/SFCS152412
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+12V1.25A

1. Graph



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

Testing Circuitry Figure A

2. Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-45	15.7	15.7
-40	15.7	15.7
-20	15.7	15.7
0	15.8	15.7
25	15.8	15.9
50	15.9	15.9
85	16.0	16.0
90	16.0	16.0
--	-	-
--	-	-
--	-	-

- 17 -

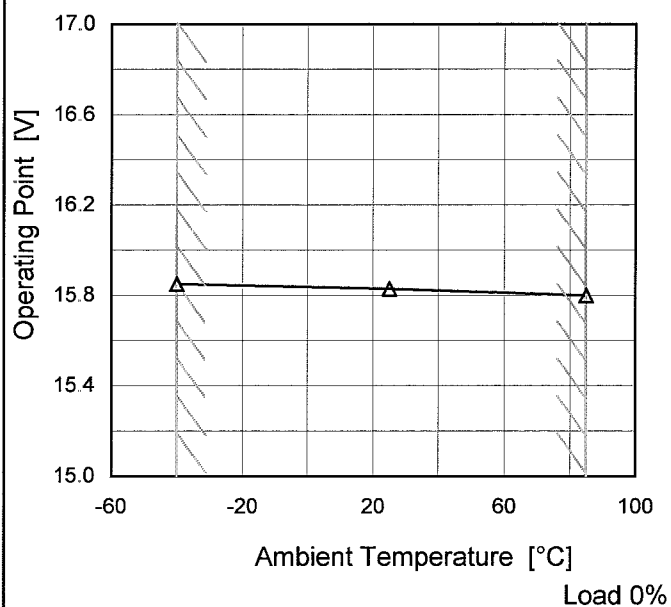
Model SFS152412/SFCS152412

Item Overvoltage Protection

Object +12V1.25A

Testing Circuitry Figure A

1. Graph —△— Input Volt. 24V



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

2. Values

Ambient Temperature [°C]	Operating Point [V]		
	Input Volt. 24[V]	Input Volt.	Input Volt.
-40	15.85	-	-
25	15.83	-	-
85	15.80	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
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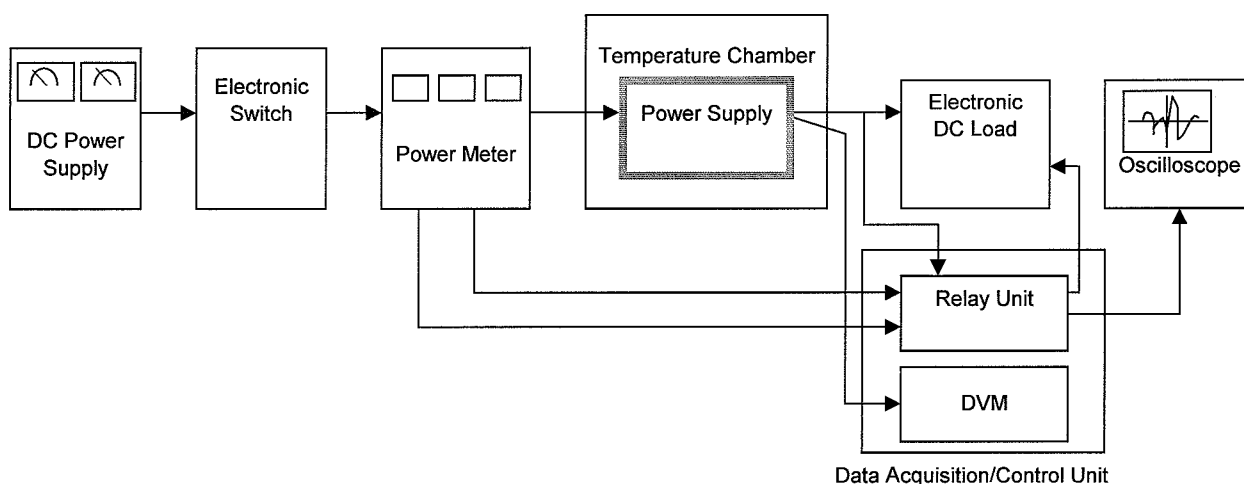


Figure A

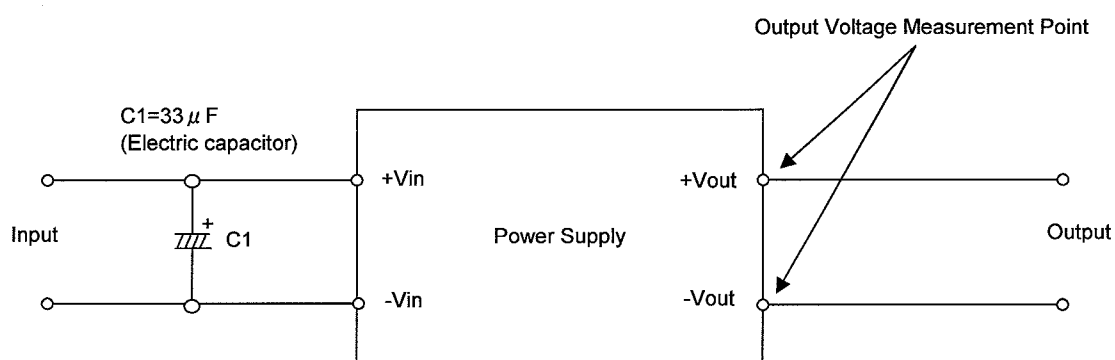


Figure B (General Electric Characteristic)

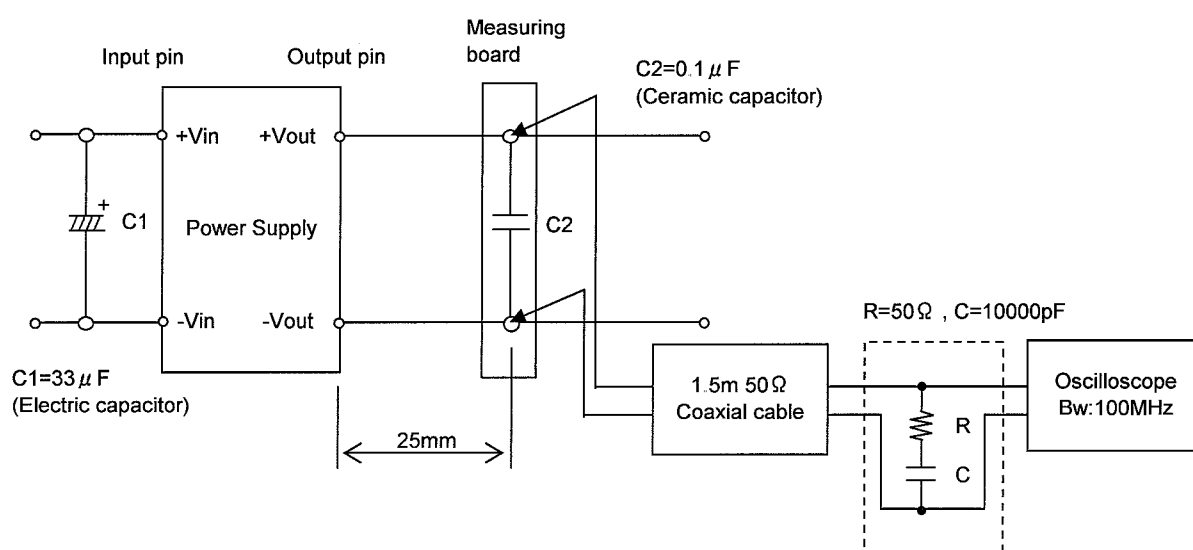


Figure C (Ripple and Ripple noise Characteristic)