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参考資料

TEST DATA OF STMGFS30483R3

Regulated DC Power Supply
February 2, 2013

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COSEL CO.,LTD.

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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.Ripple Voltage (by Load Current) ・・・・・・・・・・・・・・・・・・・・・・ 8
9.Ripple-Noise ・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・ 9
10.Ripple Voltage (by Ambient Temperature) ・・・・・・・・・・・・・・・・・ 10
11.Ambient Temperature Drift ・・・・・・・・・・・・・・・・・・・・・・・・ 11
12.Output Voltage Accuracy ・・・・・・・・・・・・・・・・・・・・・・・・・ 12
13.Time Lapse Drift ・・・・・・・・・・・・・・・・・・・・・・・・・・・・・ 13
14.Rise and Fall Time ・・・・・・・・・・・・・・・・・・・・・・・・・・・・ 14
15.Minimum Input Voltage for Regulated Output Voltage ・・・・・・・・・・・ 15
16.Overcurrent Protection ・・・・・・・・・・・・・・・・・・・・・・・・・・ 16
17.Overvoltage Protection ・・・・・・・・・・・・・・・・・・・・・・・・・・ 17
18.Figure of Testing Circuitry ・・・・・・・・・・・・・・・・・・・・・・・・ 18
(Final Page 18)

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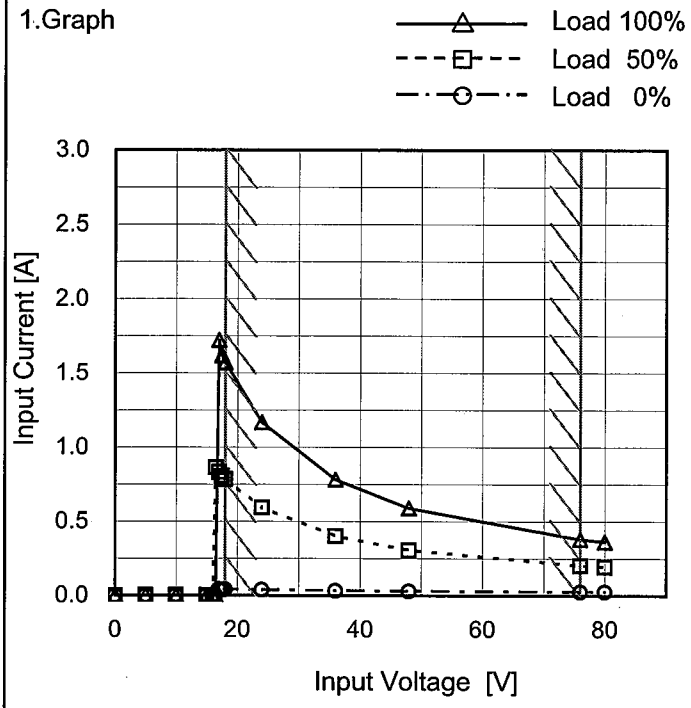
Model	STMGFS30483R3
Item	Input Current (by Input Voltage)
Object	————————

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	0.000	0.000	0.000
5.0	0.002	0.002	0.002
10.0	0.002	0.002	0.002
15.0	0.002	0.002	0.002
16.0	0.002	0.002	0.002
16.5	0.002	0.864	0.002
17.0	0.042	0.832	1.721
17.5	0.042	0.806	1.619
18.0	0.042	0.784	1.570
24.0	0.038	0.592	1.169
36.0	0.032	0.400	0.782
48.0	0.029	0.306	0.590
76.0	0.026	0.202	0.382
80.0	0.025	0.193	0.364
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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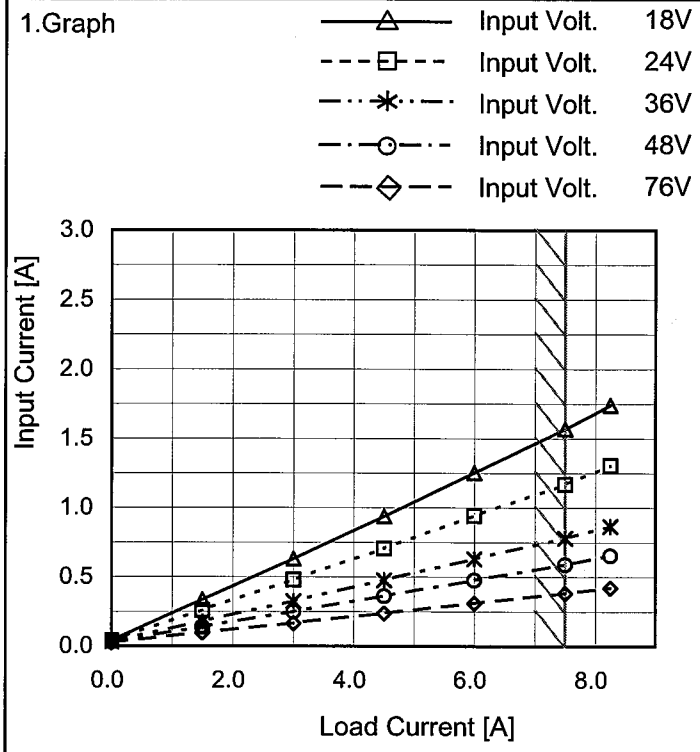
Model	STMGFS30483R3
Item	Input Current (by Load Current)
Object	――――――

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. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.00	0.042	0.038	0.032	0.029	0.026
1.50	0.336	0.257	0.178	0.139	0.096
3.00	0.631	0.479	0.326	0.249	0.166
4.50	0.938	0.705	0.477	0.362	0.238
6.00	1.255	0.943	0.631	0.478	0.311
7.50	1.570	1.169	0.782	0.590	0.382
8.25	1.741	1.305	0.867	0.654	0.422
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

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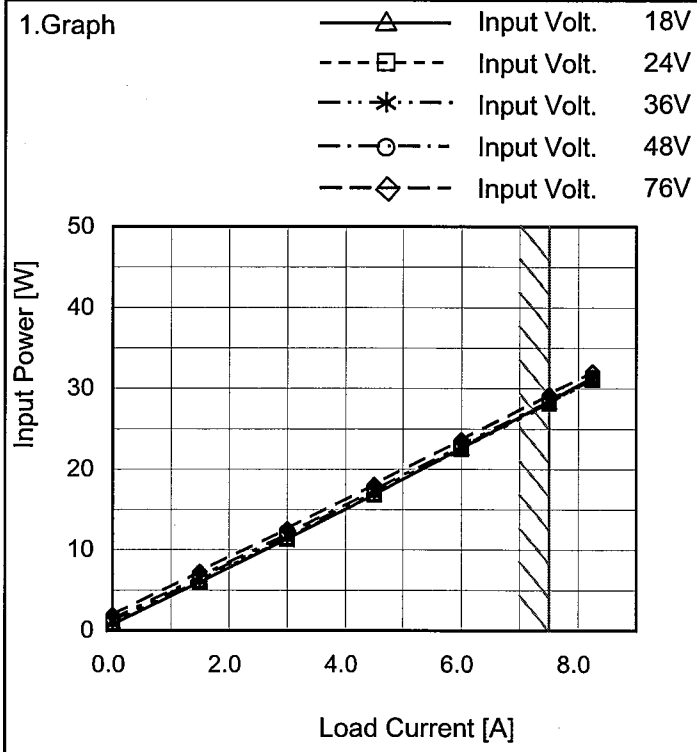
Model	STMGFS30483R3
Item	Input Power (by Load Current)
Object	———————

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. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.00	0.77	0.92	1.17	1.39	1.94
1.50	6.02	6.16	6.42	6.66	7.28
3.00	11.35	11.45	11.72	11.96	12.60
4.50	16.88	16.92	17.13	17.37	18.07
6.00	22.59	22.47	22.67	22.91	23.62
7.50	28.41	28.20	28.29	28.52	29.24
8.25	31.42	31.10	31.16	31.36	32.06
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

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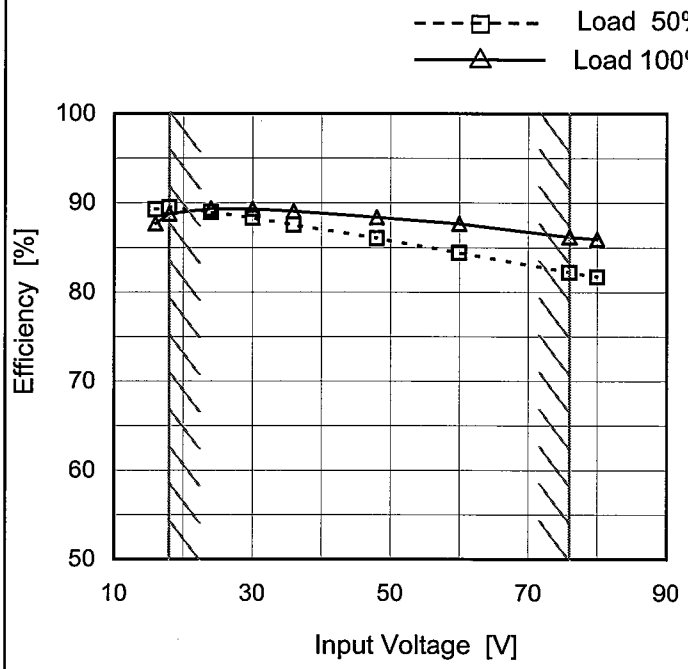
Model	STMGFS30483R3
Item	Efficiency (by Input Voltage)
Object	————————

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%
16	89.3	87.7
18	89.5	88.8
24	89.0	89.4
30	88.3	89.3
36	87.5	89.1
48	86.0	88.4
60	84.4	87.7
76	82.2	86.2
80	81.7	86.0

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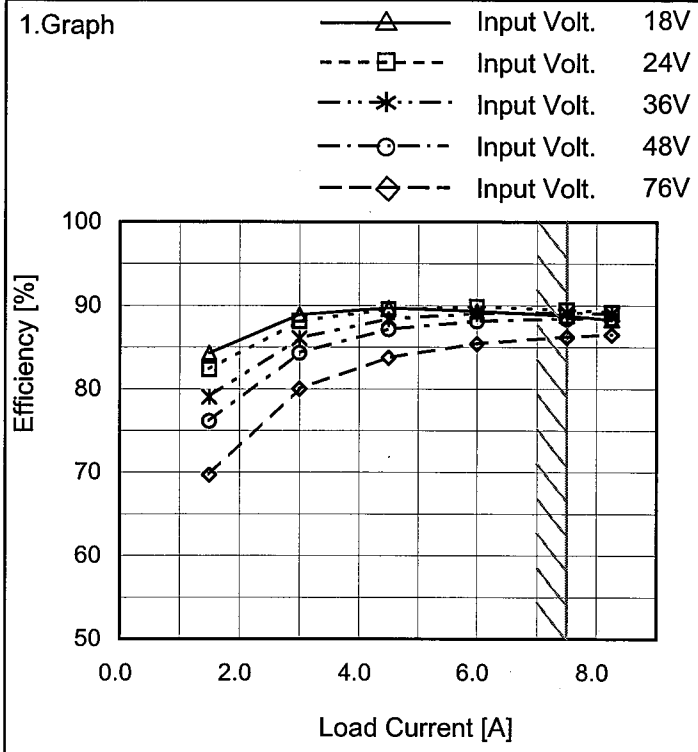
Model	STMGFS30483R3
Item	Efficiency (by Load Current)
Object	――――――

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. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.00	-	-	-	-	-
1.50	84.3	82.4	79.1	76.1	69.7
3.00	88.9	88.1	86.1	84.3	80.0
4.50	89.7	89.5	88.4	87.2	83.8
6.00	89.3	89.8	89.0	88.1	85.4
7.50	88.8	89.4	89.1	88.4	86.2
8.25	88.3	89.2	89.0	88.4	86.5
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

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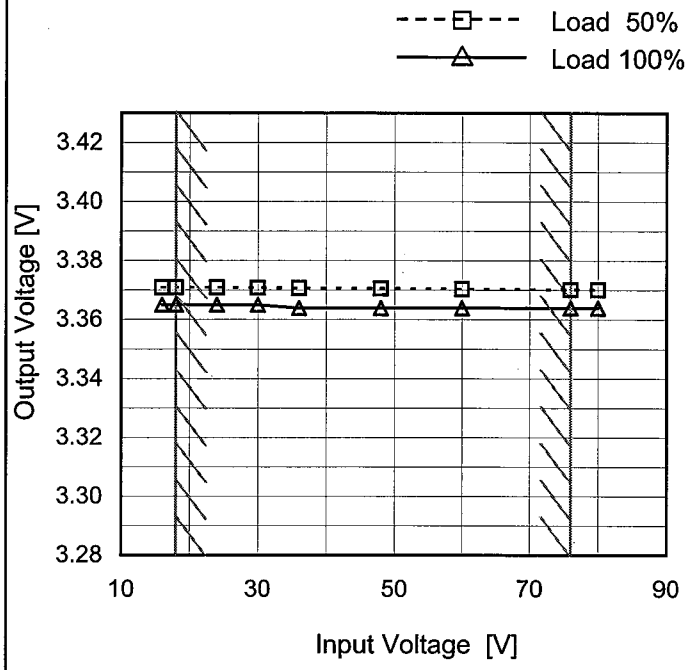
Model	STMGFS30483R3
Item	Line Regulation
Object	+3.3V7.5A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

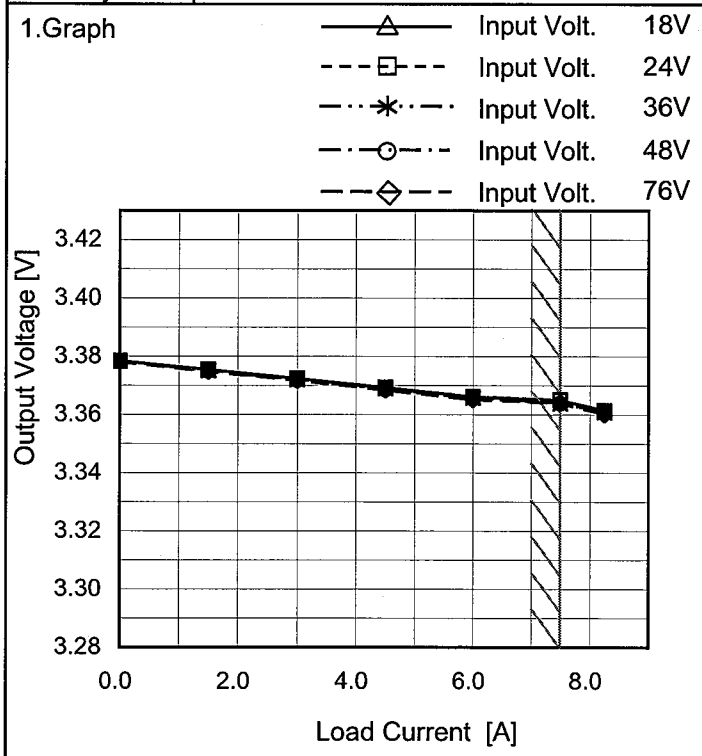
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
16	3.371	3.365
18	3.371	3.365
24	3.371	3.365
30	3.371	3.365
36	3.371	3.364
48	3.371	3.364
60	3.370	3.364
76	3.370	3.364
80	3.370	3.364

COSEL

Model	STMGFS30483R3
Item	Load Regulation
Object	+3.3V7.5A

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. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.00	3.379	3.378	3.378	3.378	3.378
1.50	3.376	3.375	3.375	3.375	3.375
3.00	3.372	3.372	3.372	3.372	3.372
4.50	3.369	3.369	3.369	3.369	3.368
6.00	3.366	3.366	3.366	3.366	3.365
7.50	3.365	3.365	3.364	3.364	3.364
8.25	3.362	3.361	3.361	3.361	3.360
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

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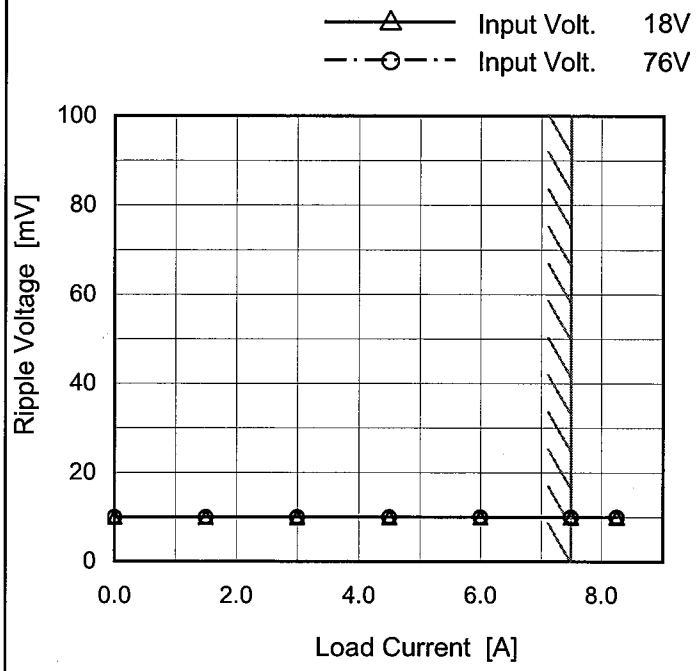
Model	STMGFS30483R3
Item	Ripple Voltage (by Load Current)
Object	+5V7.5A

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.

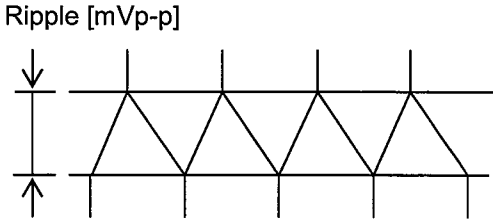


Fig.Complex Ripple Wave Form

2.Values

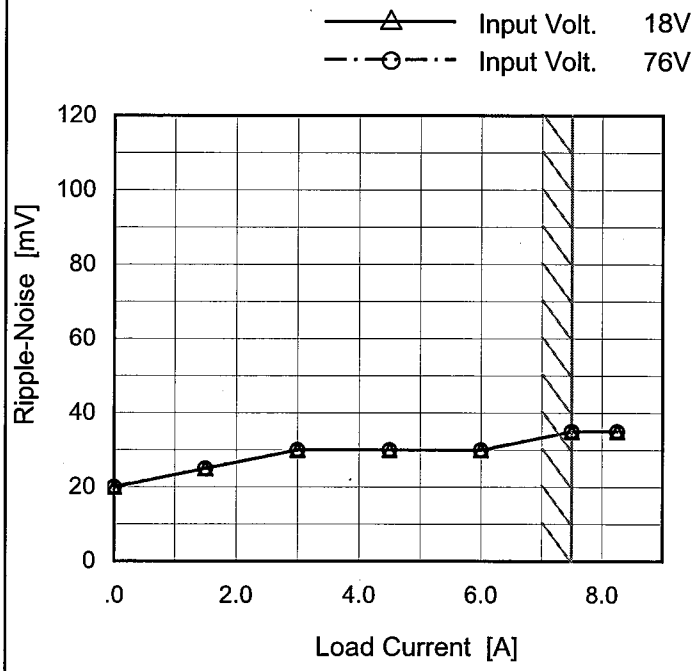
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 18 [V]	Input Volt. 76 [V]
0.00	10	10
1.50	10	10
3.00	10	10
4.50	10	10
6.00	10	10
7.50	10	10
8.25	10	10
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	STMGFS30483R3
Item	Ripple-Noise
Object	+5V7.5A

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.

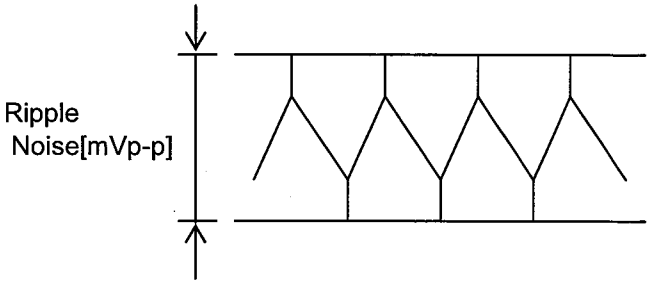


Fig.Complex Ripple Noise Wave Form

2.Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 18 [V]	Input Volt. 76 [V]
0.00	20	20
1.50	25	25
3.00	30	30
4.50	30	30
6.00	30	30
7.50	35	35
8.25	35	35
--	-	-
--	-	-
--	-	-
--	-	-

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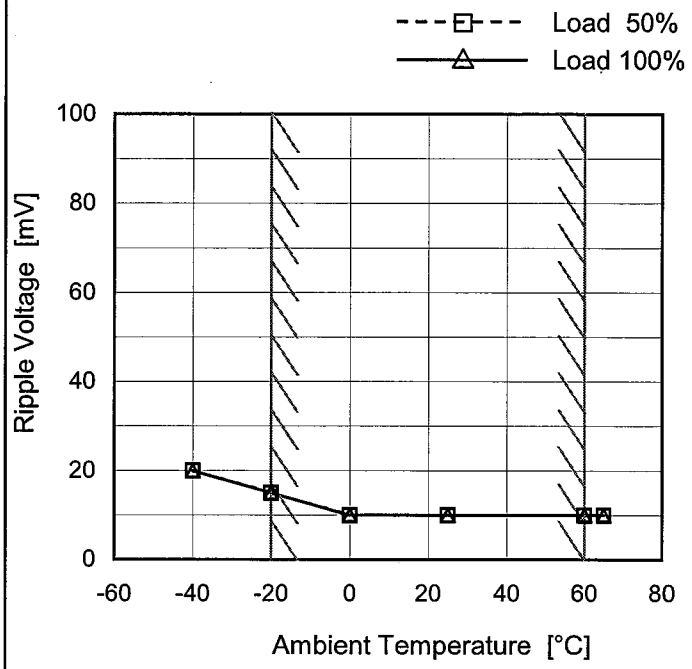
Model	STMGFS30483R3
Item	Ripple Voltage (by Ambient Temp.)
Object	+5V7.5A

Testing Circuitry Figure B

1.Graph



Input Volt. 48V

Measured by 100 MHz Oscilloscope.

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

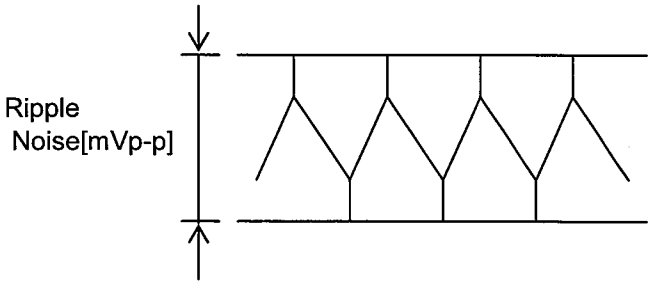


Fig.Complex Ripple Noise Wave Form

2.Values

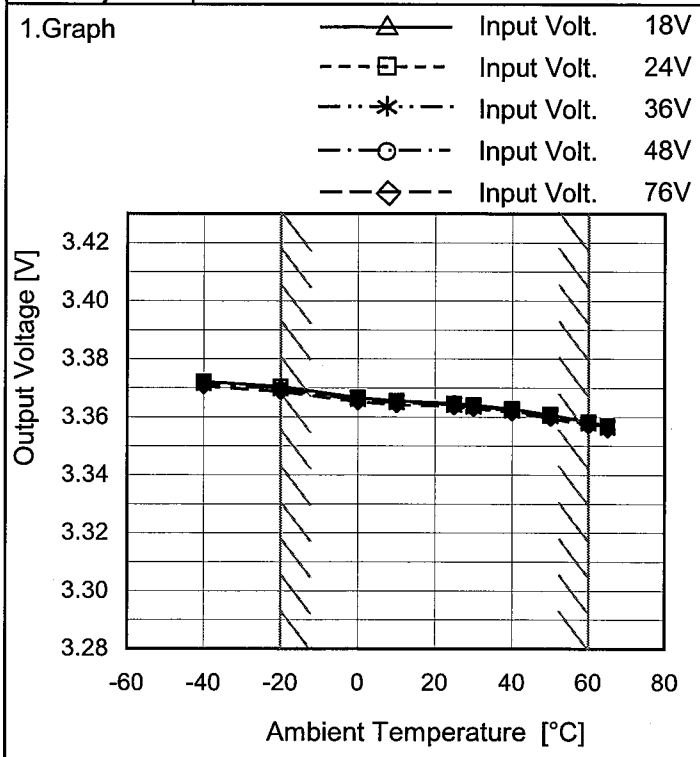
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-40	20	20
-20	15	15
0	10	10
25	10	10
60	10	10
65	10	10
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	STMGFS30483R3
Item	Ambient Temperature Drift
Object	+3.3V7.5A

Testing Circuitry Figure A

1.Graph



Load 100%

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]	Input Volt. 48[V]	Input Volt. 76[V]
-40	3.372	3.372	3.372	3.371	3.371
-20	3.371	3.370	3.370	3.370	3.369
0	3.367	3.367	3.366	3.366	3.365
10	3.366	3.366	3.365	3.365	3.364
25	3.365	3.365	3.364	3.364	3.364
30	3.364	3.364	3.364	3.364	3.363
40	3.363	3.363	3.362	3.362	3.362
50	3.361	3.361	3.361	3.360	3.360
60	3.358	3.358	3.358	3.358	3.357
65	3.357	3.357	3.357	3.356	3.356
--	-	-	-	-	-

COSEL

Model	STMGFS30483R3	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+3.3V7.5A	

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 : -20 - 60°C
Input Voltage : 18 - 76V
Load Current : 0 - 7.5A

* 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	-20	18	0	3.384	±14	±0.4
Minimum Voltage	60	76	7.5	3.357		

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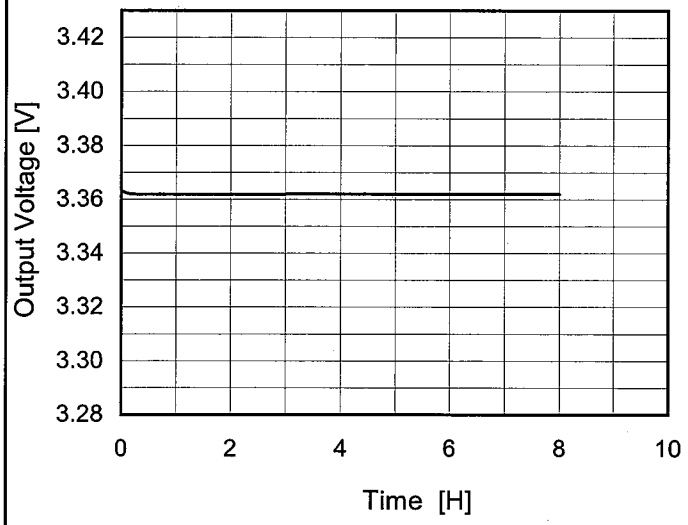
Model	STMGFS30483R3
Item	Time Lapse Drift
Object	+3.3V7.5A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Input Volt. 48V
Load 100%

2.Values

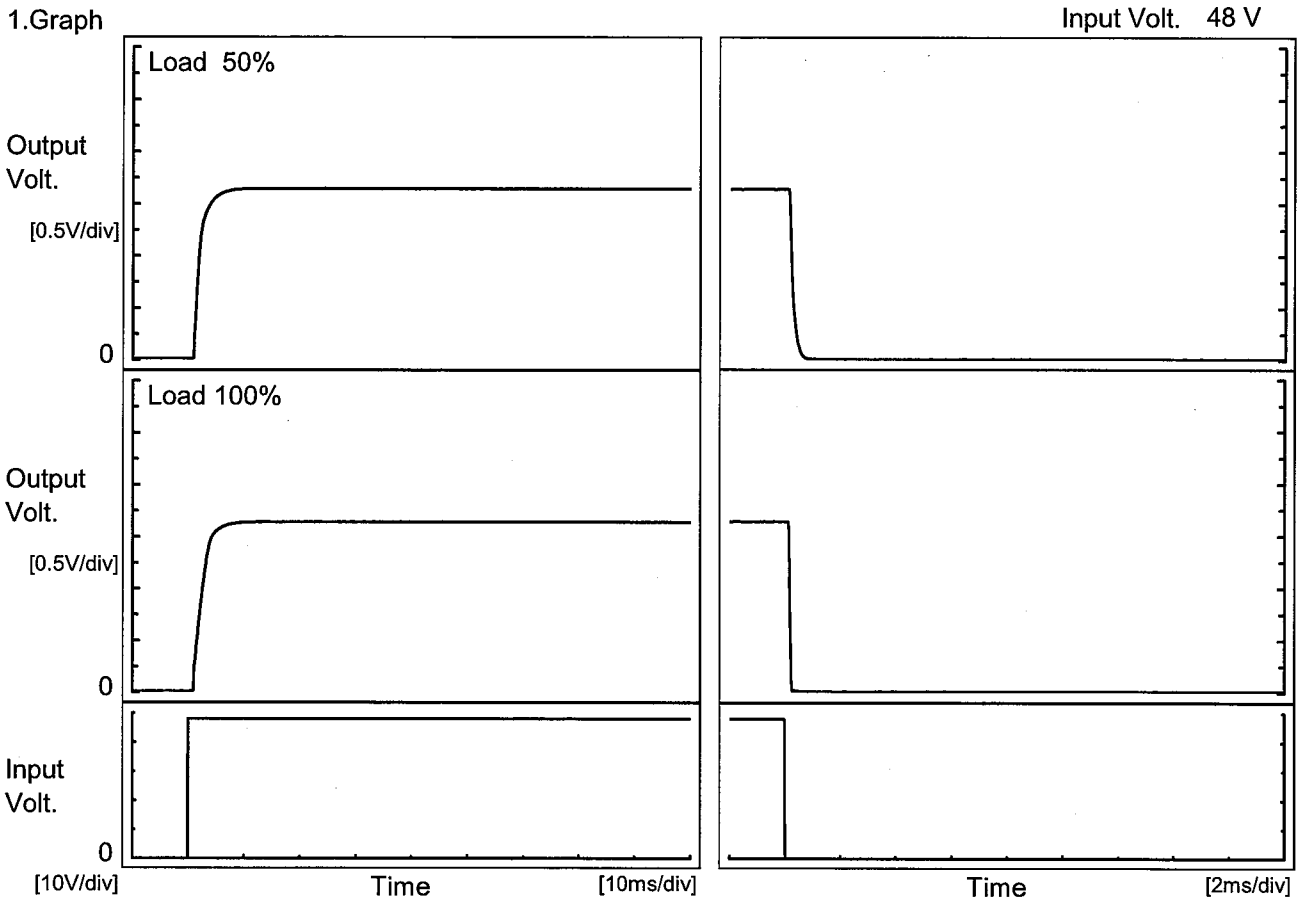
Time since start [H]	Output Voltage [V]
0.0	3.363
0.5	3.362
1.0	3.362
2.0	3.362
3.0	3.362
4.0	3.362
5.0	3.362
6.0	3.362
7.0	3.362
8.0	3.362

COSEL

Model	STMGFS30483R3
Item	Rise and Fall Time
Object	+3.3V7.5A

Temperature 25°C
Testing Circuitry Figure A

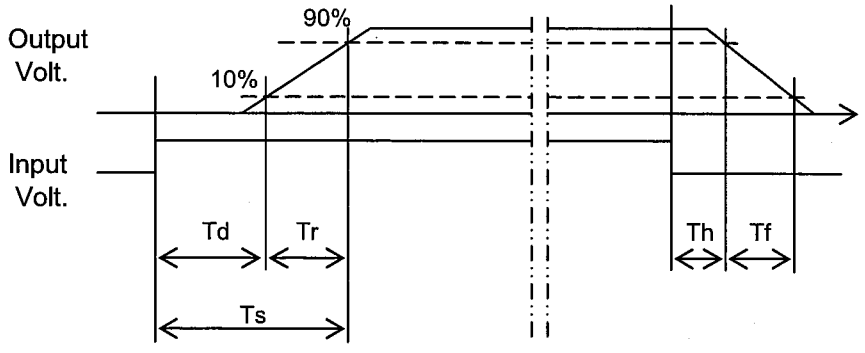
1.Graph



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	1.1	2.9	4.0	0.2	0.3
100 %	1.1	3.2	4.3	0.1	0.1

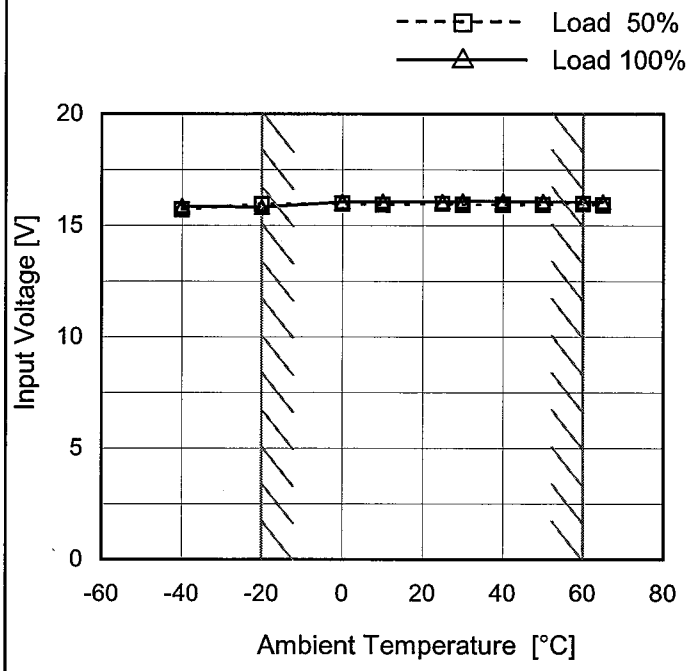


COSEL

Model	STMGFS30483R3
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+3.3V7.5A

Testing Circuitry Figure A

1.Graph



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

2.Values

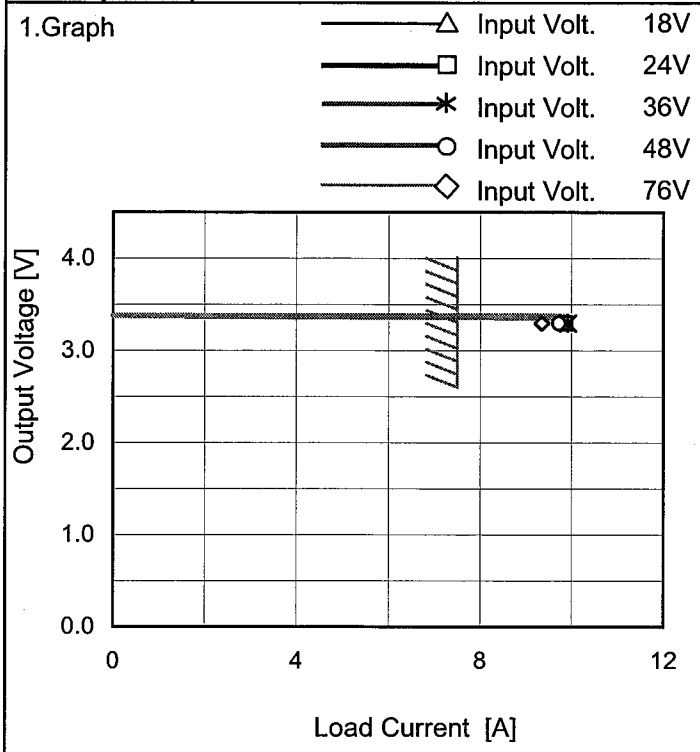
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-40	15.8	15.9
-20	16.0	15.9
0	16.0	16.1
10	16.0	16.1
25	16.0	16.1
30	16.0	16.1
40	16.0	16.1
50	16.0	16.1
60	16.0	16.1
65	16.0	16.1
--	-	-

COSEL

Model	STMGFS30483R3
Item	Overcurrent Protection
Object	+3.3V7.5A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

Intermittent operation occurs when overcurrent protection is activated.

2.Values

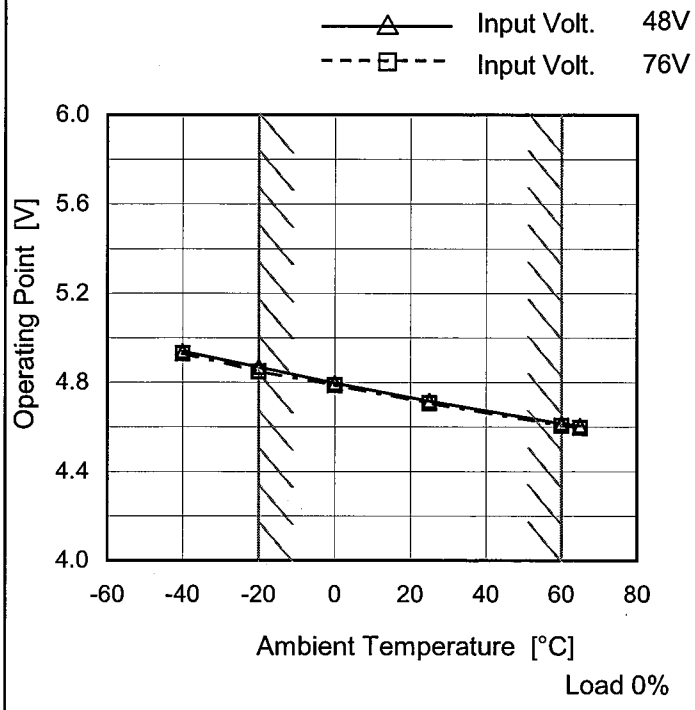
Output Voltage [V]	Load Current [A]				
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
3.30	9.849	9.864	9.921	9.717	9.353
3.14	-	-	-	-	-
2.97	-	-	-	-	-
2.64	-	-	-	-	-
2.31	-	-	-	-	-
1.98	-	-	-	-	-
1.65	-	-	-	-	-
1.32	-	-	-	-	-
0.99	-	-	-	-	-
0.66	-	-	-	-	-
0.33	-	-	-	-	-
0.00	-	-	-	-	-

COSEL

Model	STMGFS30483R3
Item	Overvoltage Protection
Object	+3.3V7.5A

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. 76[V]
-40	4.94	4.93
-20	4.87	4.85
0	4.80	4.79
25	4.72	4.71
60	4.62	4.61
65	4.61	4.60
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

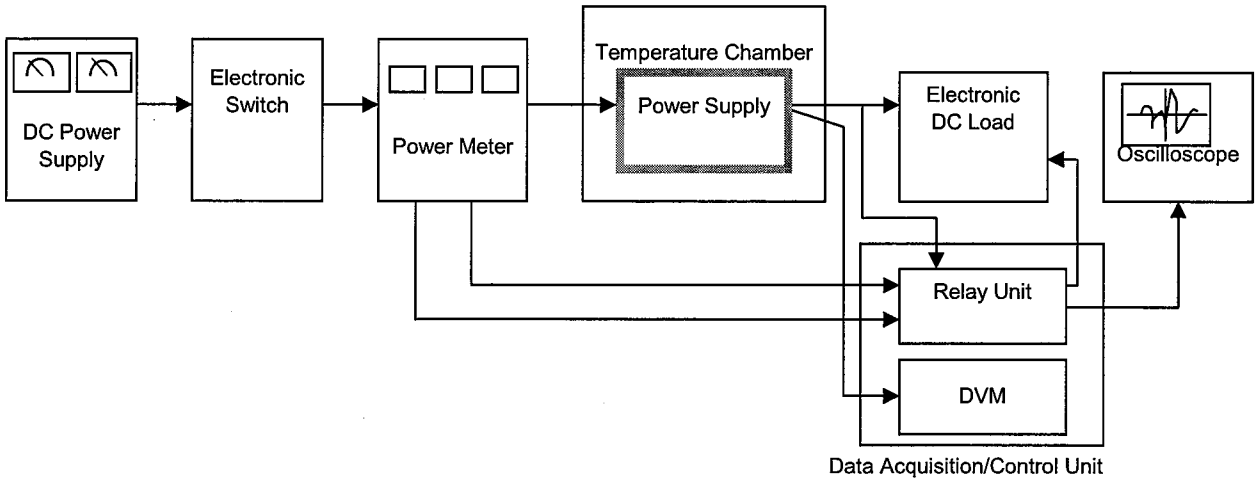


Figure A

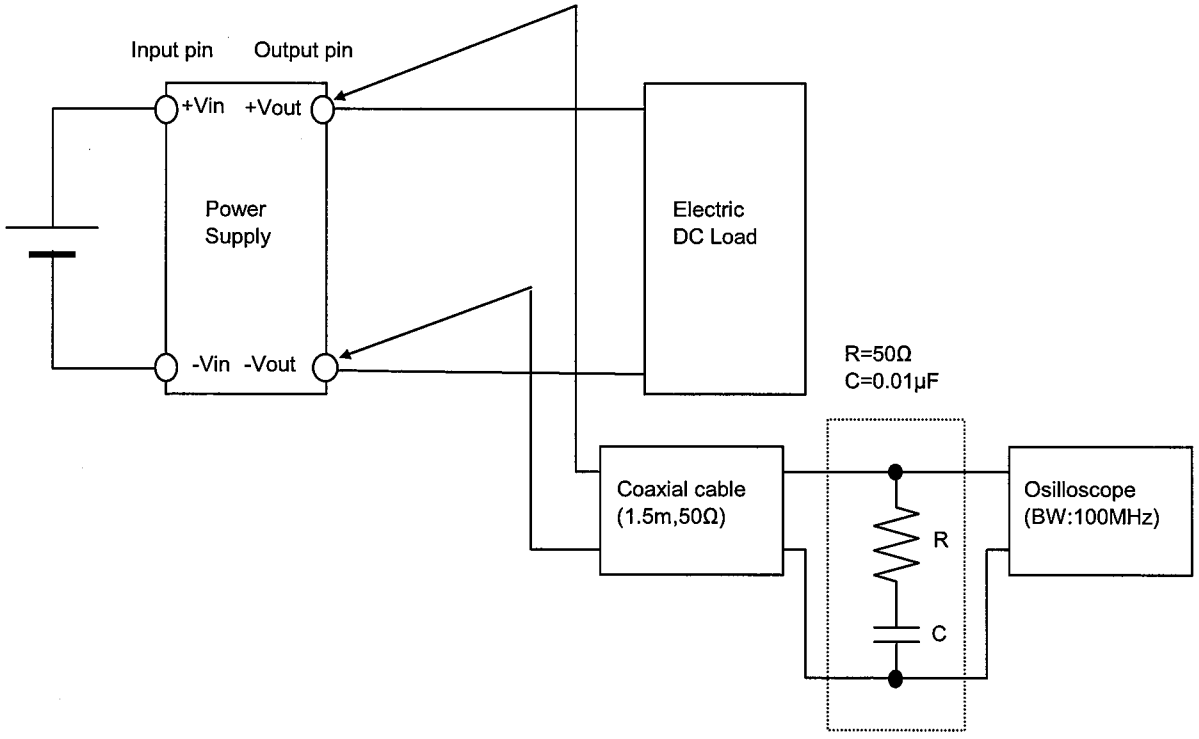


Figure B (Ripple and Ripple noise Characteristic)