COSEL

参考資料

TEST DATA OF STMGFS304815

Regulated DC Power Supply
February 2, 2013

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COSEL CO.,LTD.

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Object	————————

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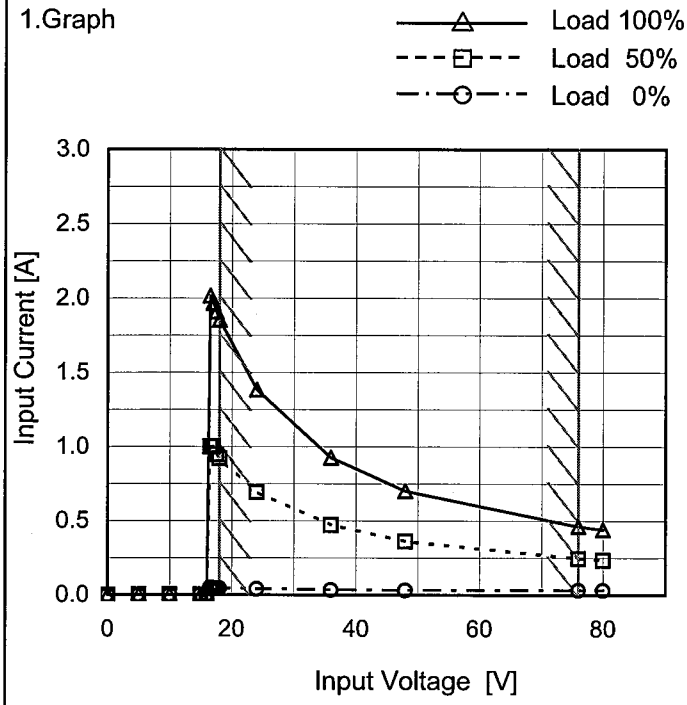


Note: Slanted line shows the range of the rated input voltage.

2.Values

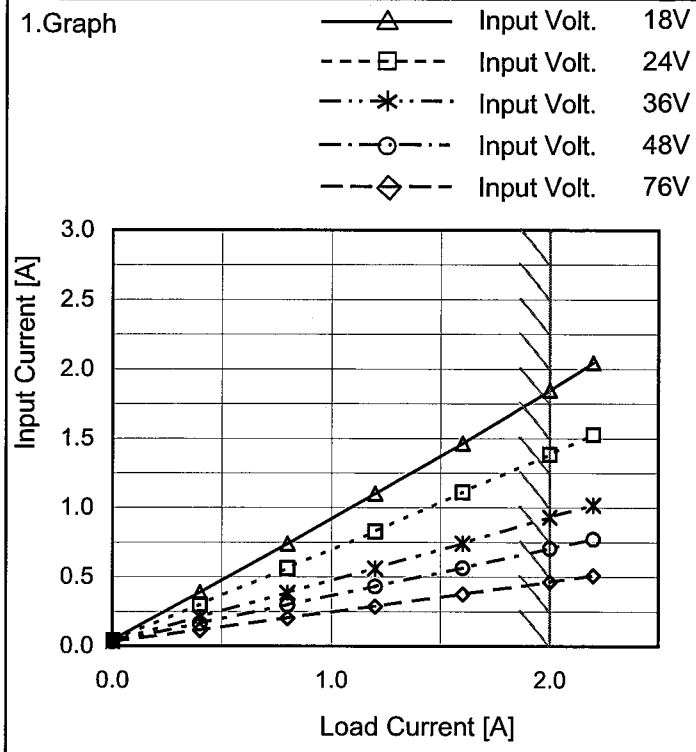
Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0.0	0.000	0.000	0.000
5.0	0.002	0.001	0.001
10.0	0.002	0.002	0.002
15.0	0.002	0.002	0.002
16.0	0.002	0.002	0.002
16.5	0.050	1.001	2.018
17.0	0.048	1.001	1.968
17.5	0.046	0.946	1.909
18.0	0.046	0.920	1.847
24.0	0.041	0.693	1.383
36.0	0.035	0.471	0.931
48.0	0.033	0.362	0.705
76.0	0.033	0.245	0.464
80.0	0.033	0.235	0.443
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	STMGFS304815
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

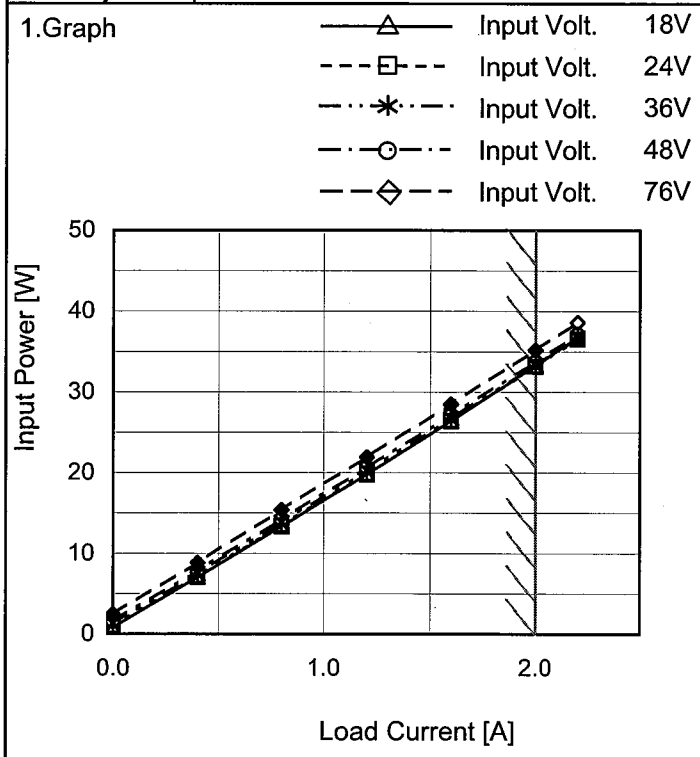
Load Current [A]	Input Current [A]				
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.0	0.046	0.041	0.035	0.033	0.032
0.4	0.390	0.301	0.209	0.164	0.116
0.8	0.741	0.563	0.386	0.297	0.203
1.2	1.102	0.828	0.563	0.431	0.289
1.6	1.465	1.111	0.742	0.566	0.376
2.0	1.847	1.383	0.931	0.705	0.464
2.2	2.044	1.527	1.019	0.773	0.509
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

COSEL

Model	STMGFS304815
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]
0.0	0.85	0.99	1.28	1.59	2.44
0.4	7.04	7.19	7.51	7.85	8.85
0.8	13.34	13.48	13.84	14.23	15.40
1.2	19.82	19.89	20.22	20.62	21.93
1.6	26.44	26.45	26.73	27.13	28.50
2.0	33.26	33.16	33.34	33.74	35.22
2.2	36.77	36.58	36.74	37.14	38.65
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

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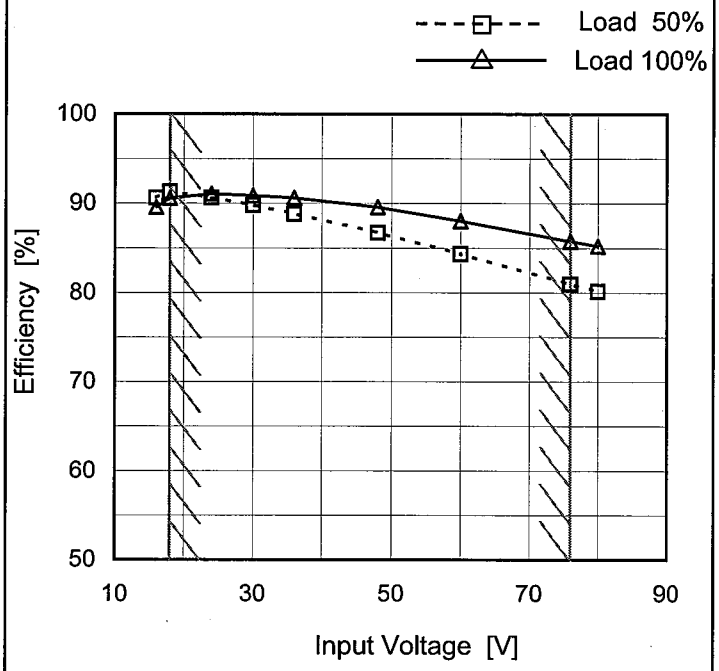
Model	STMGFS304815
Item	Efficiency (by Input Voltage)
Object	————————

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	90.6	89.6
18	91.3	90.6
24	90.6	91.1
30	89.8	90.9
36	88.8	90.6
48	86.7	89.6
60	84.3	88.0
76	81.0	85.8
80	80.1	85.2

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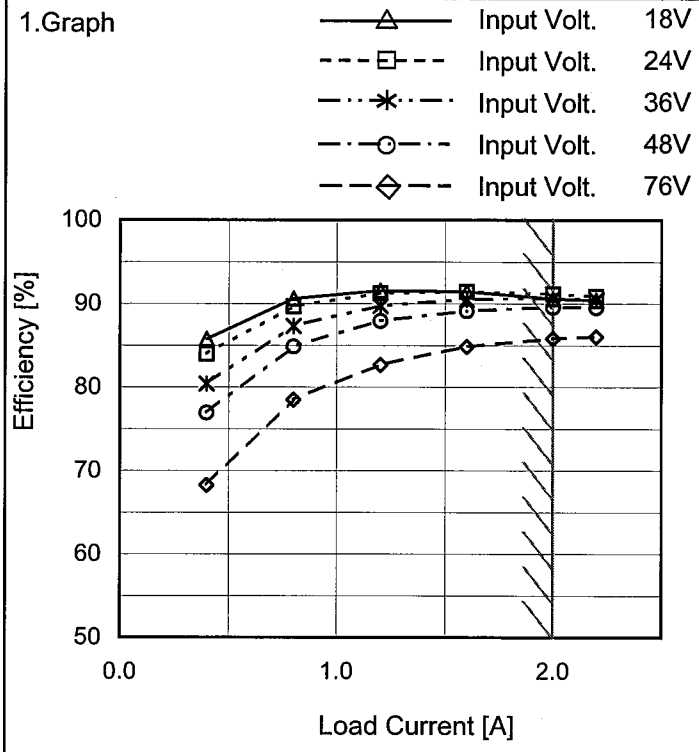
Model	STMGFS304815
Item	Efficiency (by Load Current)
Object	———————

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]
0.0	-	-	-	-	-
0.4	85.8	84.0	80.4	76.9	68.3
0.8	90.6	89.6	87.3	84.9	78.5
1.2	91.6	91.2	89.7	87.9	82.7
1.6	91.5	91.4	90.5	89.1	84.8
2.0	90.6	91.1	90.6	89.6	85.8
2.2	90.4	90.9	90.5	89.5	86.0
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

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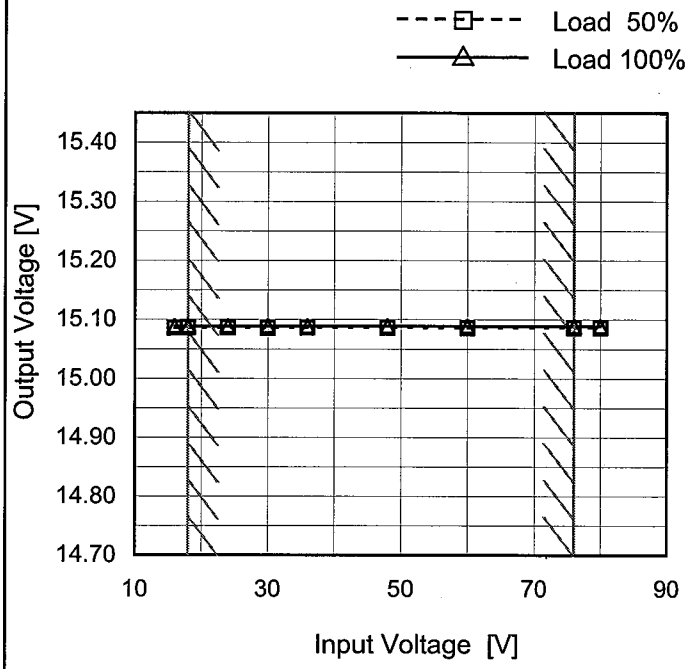
Model	STMGFS304815
Item	Line Regulation
Object	+15V2A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

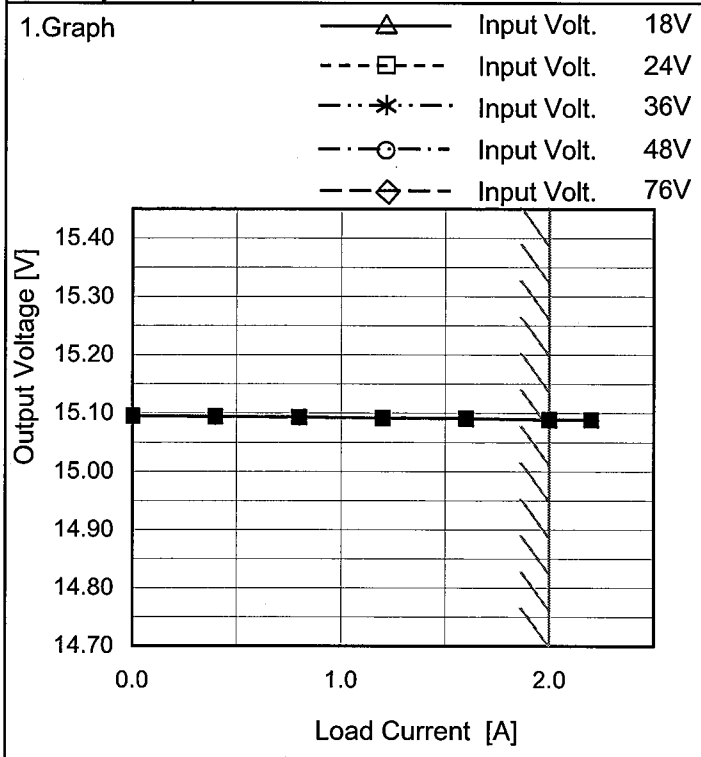
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
16	15.086	15.089
18	15.086	15.089
24	15.086	15.089
30	15.086	15.089
36	15.086	15.089
48	15.086	15.089
60	15.086	15.089
76	15.086	15.089
80	15.086	15.089

COSEL

Model	STMGFS304815
Item	Load Regulation
Object	+15V2A

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]
0.0	15.096	15.095	15.095	15.095	15.095
0.4	15.095	15.094	15.094	15.094	15.094
0.8	15.094	15.093	15.093	15.093	15.093
1.2	15.092	15.092	15.091	15.092	15.091
1.6	15.091	15.091	15.091	15.090	15.090
2.0	15.089	15.089	15.089	15.089	15.089
2.2	15.089	15.089	15.089	15.088	15.089
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

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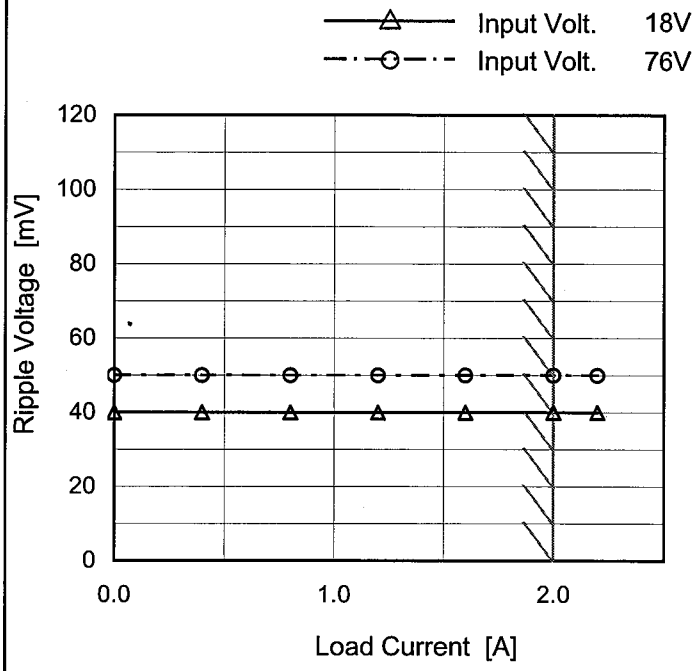
Model	STMGFS304815
Item	Ripple Voltage (by Load Current)
Object	+15V2A

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]

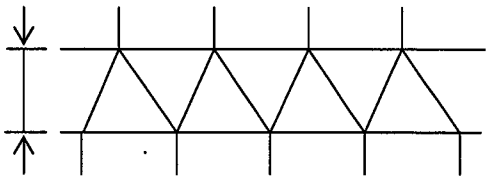


Fig.Complex Ripple Wave Form

2.Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 18 [V]	Input Volt. 76 [V]
0.0	40	50
0.4	40	50
0.8	40	50
1.2	40	50
1.6	40	50
2.0	40	50
2.2	40	50
--	-	-
--	-	-
--	-	-
--	-	-

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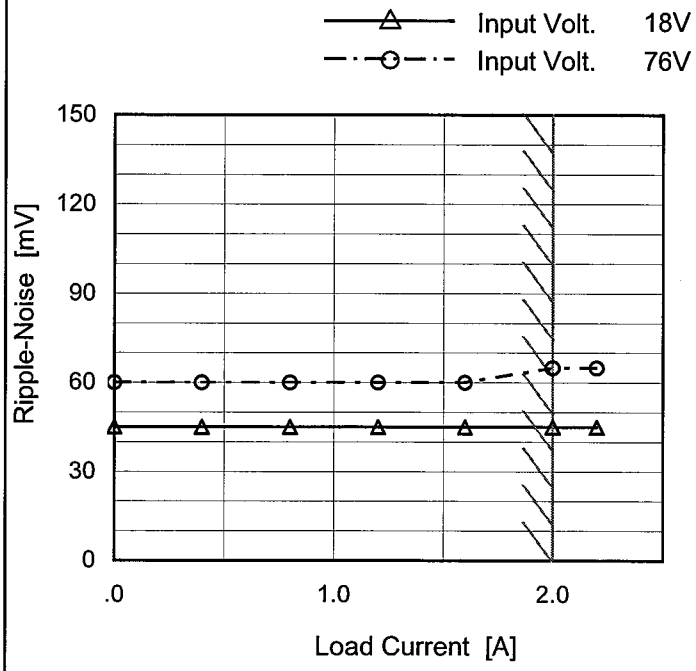
Model	STMGFS304815
Item	Ripple-Noise
Object	+15V2A

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.

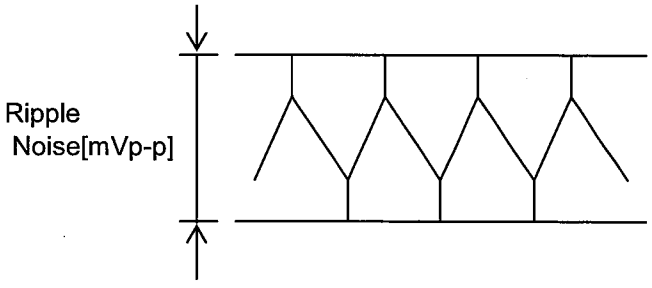


Fig.Complex Ripple Noise Wave Form

2.Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 18 [V]	Input Volt. 76 [V]
0.0	45	60
0.4	45	60
0.8	45	60
1.2	45	60
1.6	45	60
2.0	45	65
2.2	45	65
--	-	-
--	-	-
--	-	-
--	-	-

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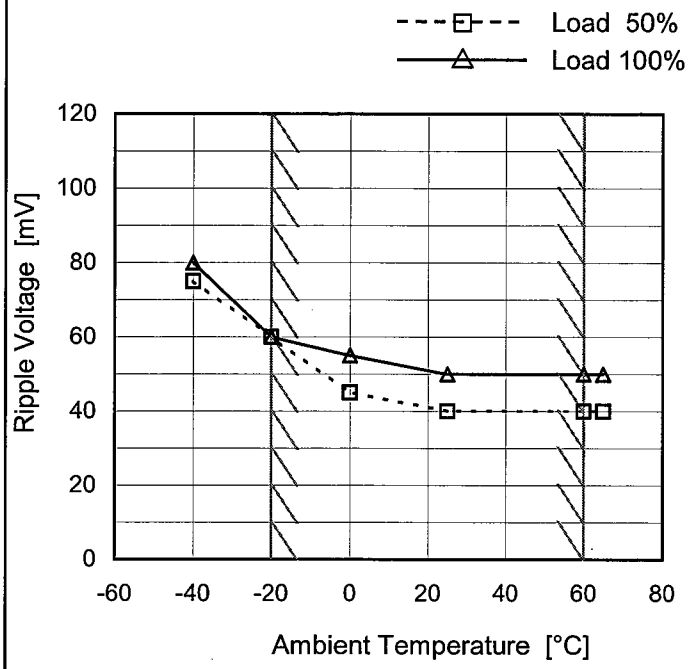
Model	STMGFS304815
Item	Ripple Voltage (by Ambient Temp.)
Object	+15V2A

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.

2.Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-40	75	80
-20	60	60
0	45	55
25	40	50
60	40	50
65	40	50
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

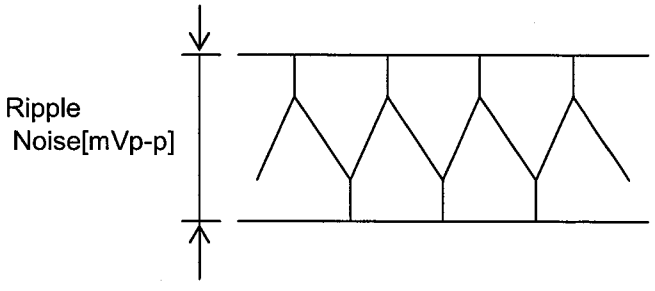


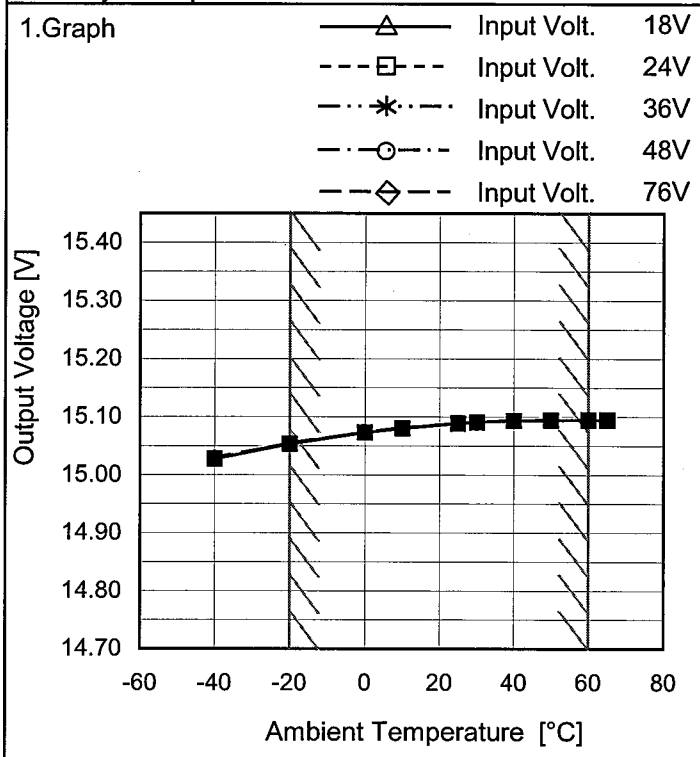
Fig.Complex Ripple Noise Wave Form

COSEL

Model	STMGFS304815
Item	Ambient Temperature Drift
Object	+15V2A

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	15.028	15.028	15.028	15.029	15.030
-20	15.053	15.054	15.054	15.054	15.054
0	15.073	15.073	15.073	15.073	15.073
10	15.080	15.080	15.080	15.081	15.081
25	15.089	15.089	15.089	15.089	15.089
30	15.091	15.091	15.091	15.091	15.091
40	15.094	15.094	15.094	15.094	15.094
50	15.095	15.095	15.095	15.095	15.094
60	15.095	15.095	15.095	15.095	15.094
65	15.095	15.095	15.095	15.095	15.094
--	-	-	-	-	-

COSEL

Model	STMGFS304815	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+15V2A	

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 - 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

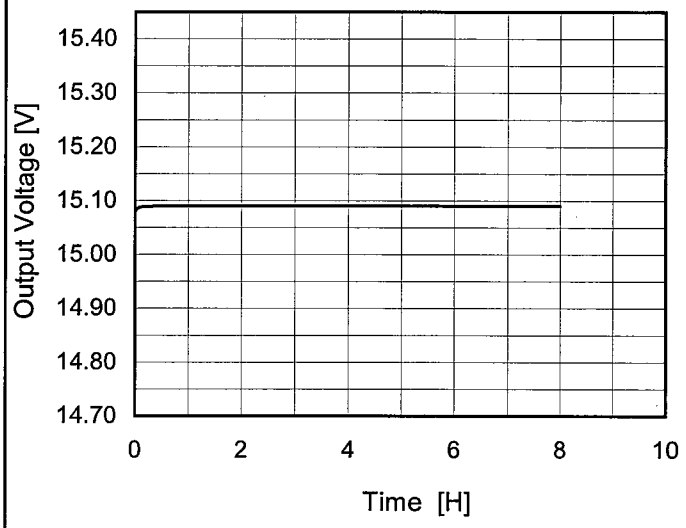
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	60	18	0	15.103	±25	±0.2
Minimum Voltage	-20	18	2	15.053		

COSEL

Model	STMGFS304815
Item	Time Lapse Drift
Object	+15V2A

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	15.081
0.5	15.090
1.0	15.090
2.0	15.091
3.0	15.091
4.0	15.091
5.0	15.090
6.0	15.091
7.0	15.090
8.0	15.091

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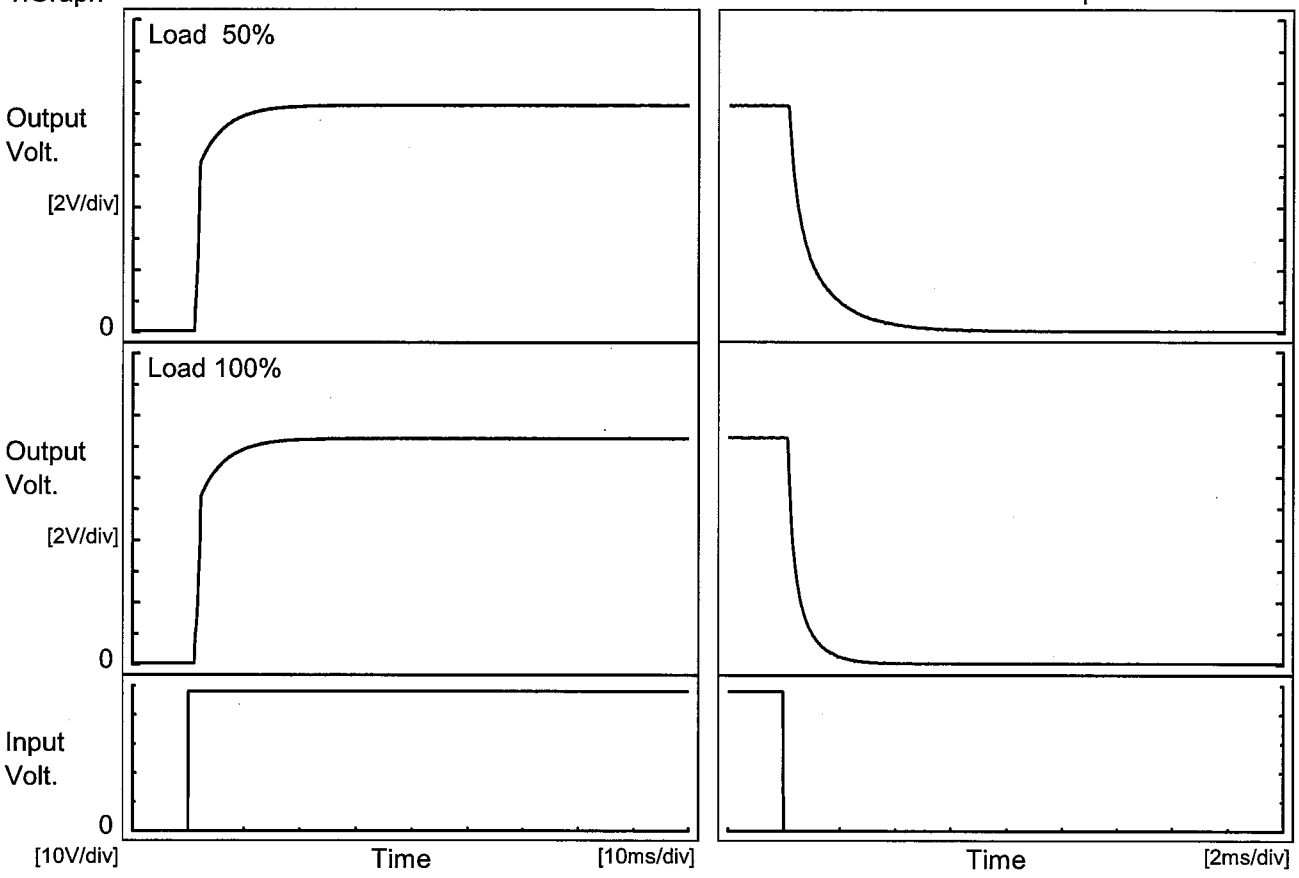
Model	STMGFS304815
Item	Rise and Fall Time
Object	+15V2A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

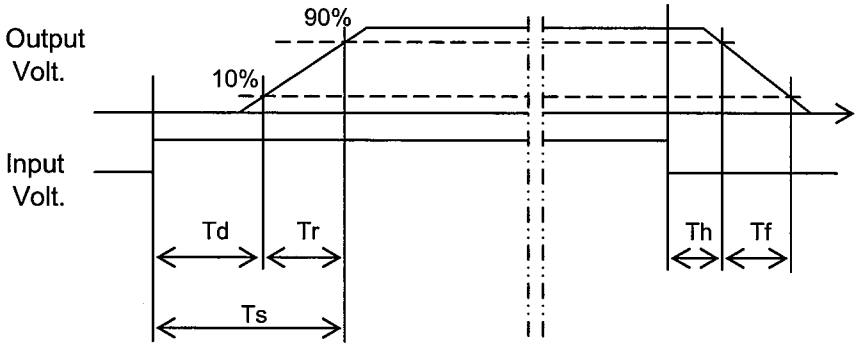
Input Volt. 48 V



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	1.3	7.1	8.4	0.2	2.1
100 %	1.3	7.2	8.5	0.2	1.0

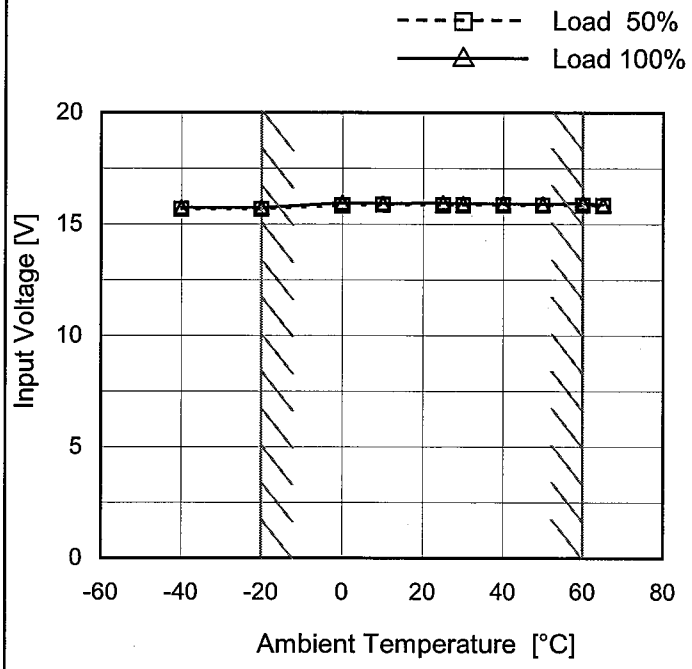


COSEL

Model	STMGFS304815
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+15V2A

Testing Circuitry Figure A

1.Graph



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

2.Values

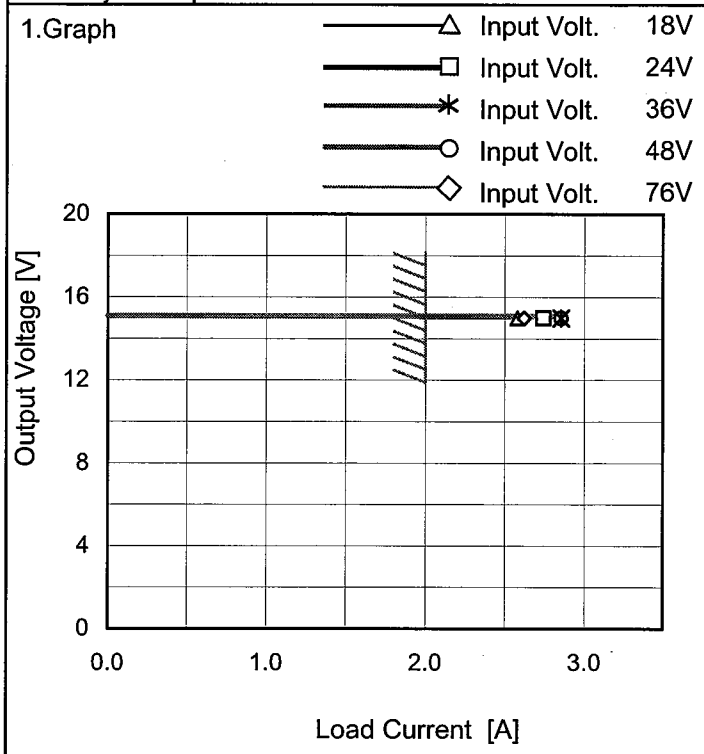
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-40	15.7	15.8
-20	15.7	15.8
0	15.9	16.0
10	15.9	16.0
25	15.9	16.0
30	15.9	16.0
40	15.9	16.0
50	15.9	16.0
60	15.9	16.0
65	15.9	15.9
--	-	-

COSEL

Model	STMGFS304815
Item	Overcurrent Protection
Object	+15V2A

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

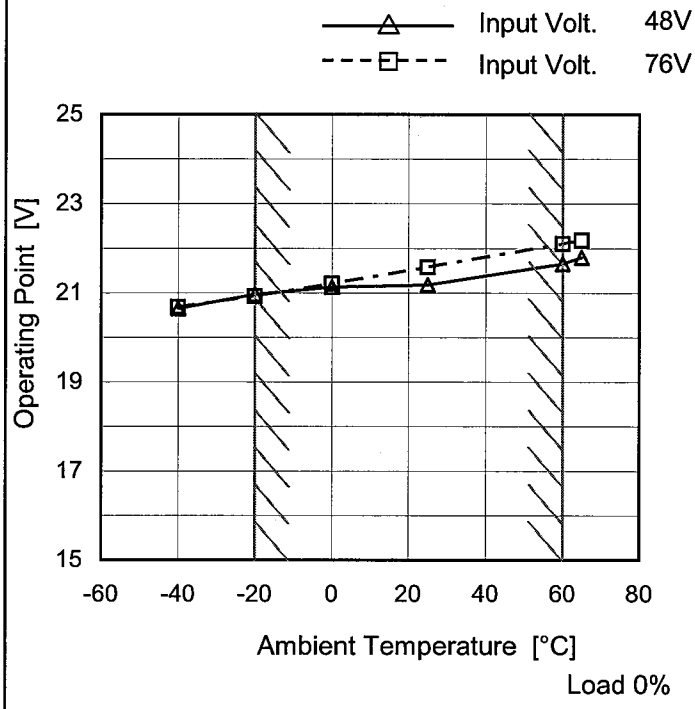
Output Voltage [V]	Load Current [A]				
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
15.0	2.578	2.742	2.855	2.856	2.622
14.3	-	-	-	-	-
13.5	-	-	-	-	-
12.0	-	-	-	-	-
10.5	-	-	-	-	-
9.0	-	-	-	-	-
7.5	-	-	-	-	-
6.0	-	-	-	-	-
4.5	-	-	-	-	-
3.0	-	-	-	-	-
1.5	-	-	-	-	-
0.0	-	-	-	-	-

COSEL

Model	STMGFS304815
Item	Overvoltage Protection
Object	+15V2A

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	20.65	20.68
-20	20.97	20.93
0	21.14	21.21
25	21.19	21.58
60	21.66	22.11
65	21.80	22.19
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

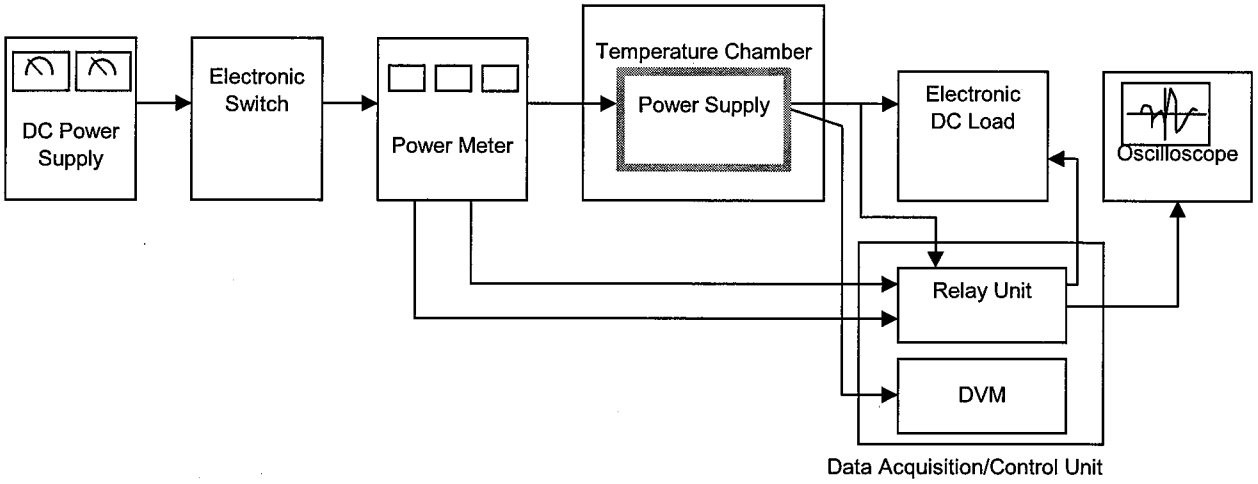


Figure A

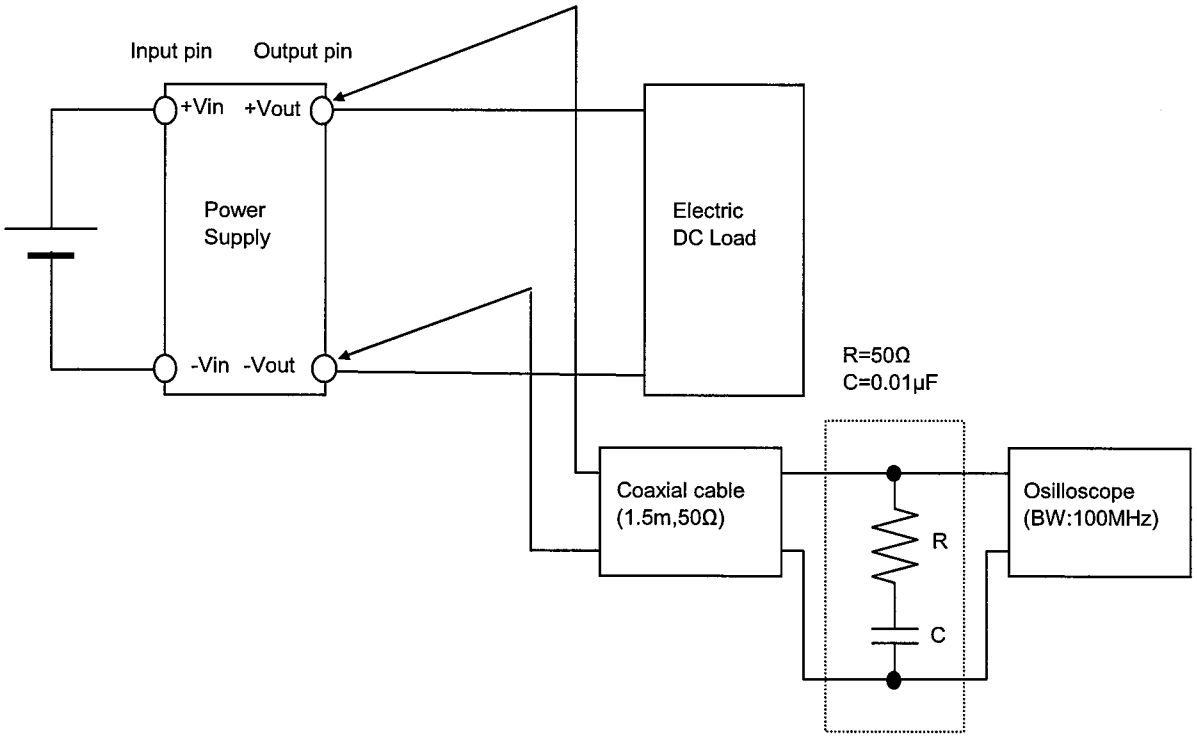


Figure B（Ripple and Ripple noise Characteristic）