COSEL

参考資料

TEST DATA OF STMGFS152412

Regulated DC Power Supply
January 28, 2013

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COSEL CO.,LTD.

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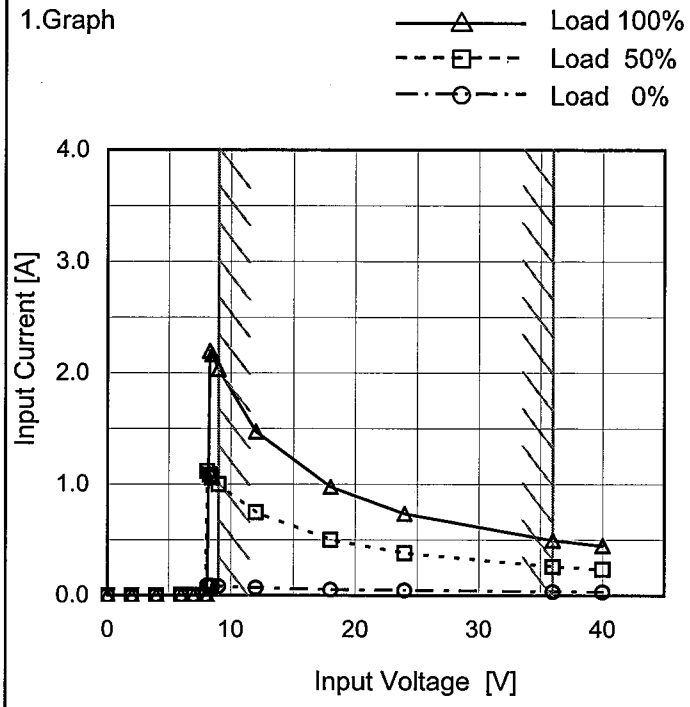

Note: Slanted line shows the range of the rated input voltage.

2.Values

Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0.0	0.000	0.000	0.000
2.0	0.001	0.000	0.000
4.0	0.002	0.001	0.001
6.0	0.002	0.002	0.002
7.0	0.002	0.002	0.002
8.0	0.002	0.002	0.003
8.1	0.089	1.117	0.002
8.3	0.088	1.087	2.198
8.5	0.086	1.059	2.166
9.0	0.082	0.999	2.034
12.0	0.068	0.748	1.475
18.0	0.053	0.499	0.976
24.0	0.045	0.380	0.736
36.0	0.035	0.259	0.497
40.0	0.033	0.236	0.447
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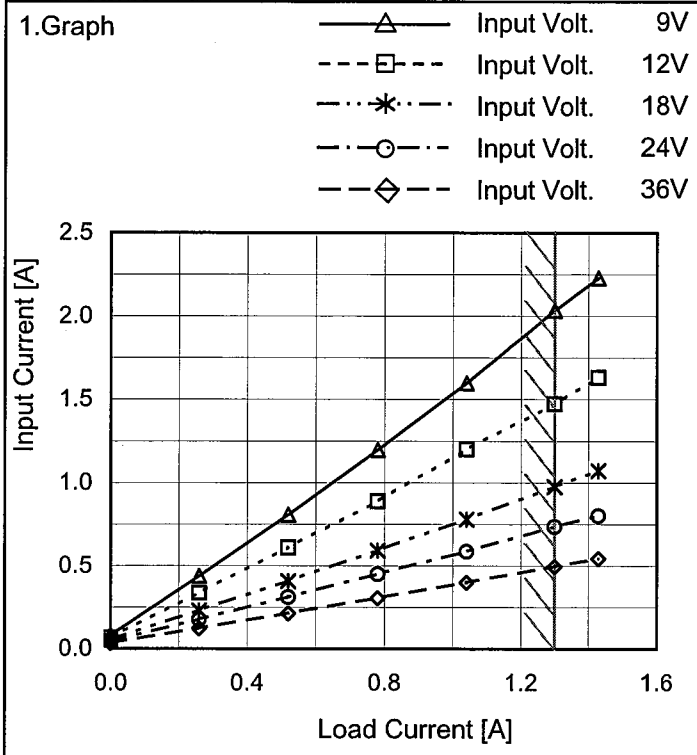
Model	STMGFS152412
Item	Input Current (by Load Current)
Object	————————

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. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.00	0.082	0.068	0.053	0.045	0.035
0.26	0.439	0.336	0.230	0.177	0.124
0.52	0.807	0.609	0.408	0.311	0.214
0.78	1.197	0.888	0.592	0.449	0.306
1.04	1.599	1.201	0.781	0.587	0.400
1.30	2.034	1.475	0.976	0.736	0.497
1.43	2.228	1.631	1.073	0.802	0.544
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--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

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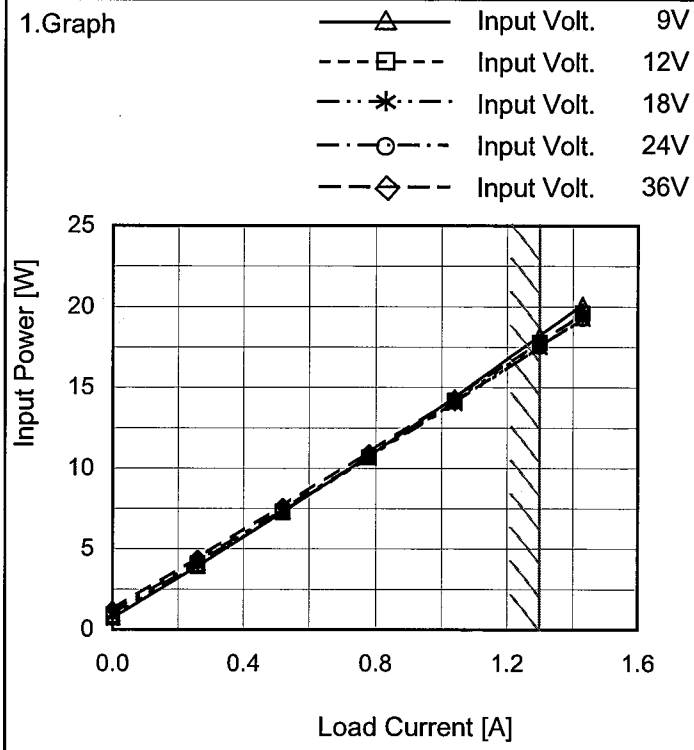
Model	STMGFS152412
Item	Input Power (by Load Current)
Object	———————

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. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.00	0.74	0.82	0.95	1.08	1.27
0.26	3.95	4.01	4.12	4.24	4.45
0.52	7.28	7.29	7.35	7.44	7.69
0.78	10.76	10.66	10.68	10.74	11.01
1.04	14.42	14.17	14.06	14.12	14.38
1.30	18.23	17.77	17.53	17.55	17.82
1.43	20.14	19.60	19.30	19.25	19.52
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--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

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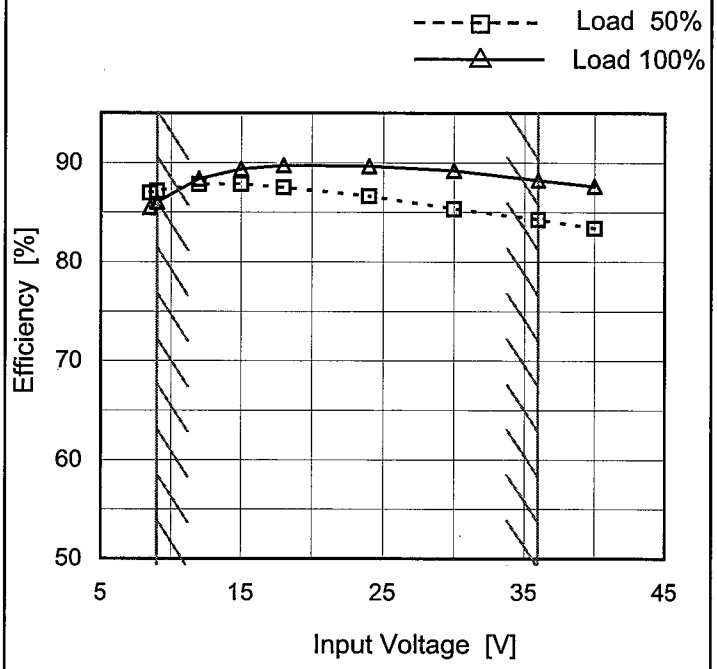
Model	STMGFS152412
Item	Efficiency (by Input Voltage)
Object	———————————

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%
8.5	87.0	85.5
9.0	87.2	86.1
12.0	87.8	88.4
15.0	87.8	89.4
18.0	87.5	89.7
24.0	86.6	89.7
30.0	85.3	89.2
36.0	84.3	88.3
40.0	83.4	87.6

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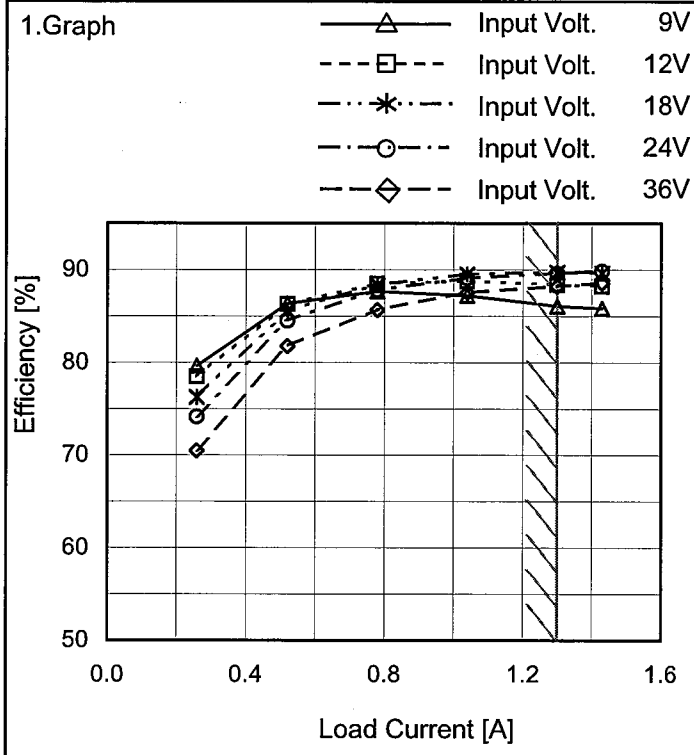
Model	STMGFS152412
Item	Efficiency (by Load Current)
Object	――――――

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. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.00	-	-	-	-	-
0.26	79.6	78.5	76.3	74.2	70.5
0.52	86.4	86.3	85.6	84.5	81.8
0.78	87.7	88.5	88.4	87.8	85.7
1.04	87.2	88.8	89.5	89.1	87.5
1.30	86.1	88.4	89.7	89.6	88.3
1.43	85.8	88.2	89.6	89.9	88.6
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

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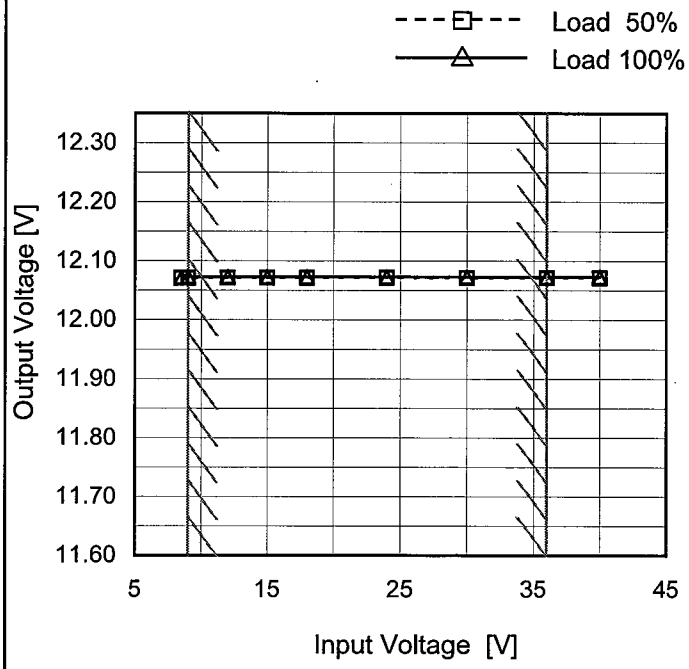
Model	STMGFS152412
Item	Line Regulation
Object	+12V1.3A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

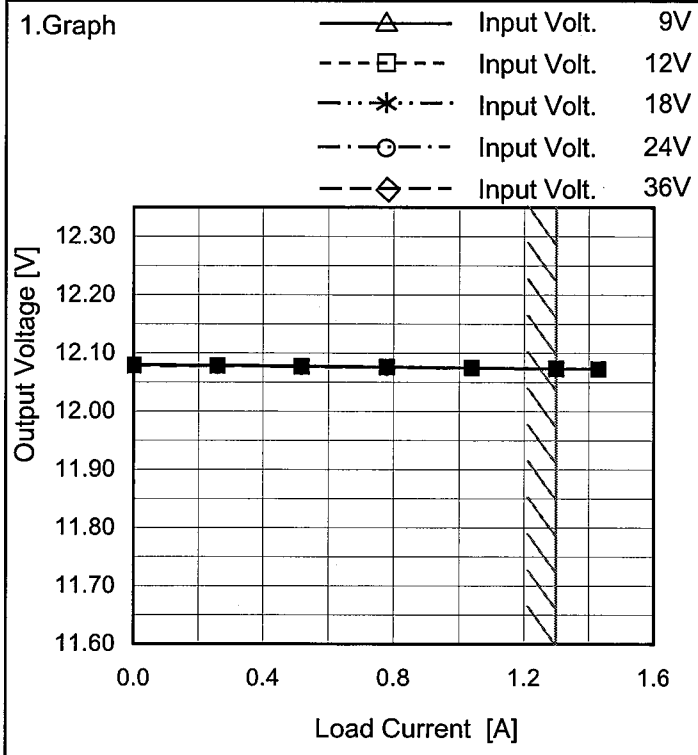
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
8.5	12.071	12.072
9.0	12.071	12.073
12.0	12.071	12.073
15.0	12.071	12.073
18.0	12.071	12.073
24.0	12.071	12.073
30.0	12.072	12.073
36.0	12.072	12.073
40.0	12.072	12.073

COSEL

Model	STMGFS152412
Item	Load Regulation
Object	+12V1.3A

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. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.00	12.080	12.079	12.079	12.078	12.078
0.26	12.079	12.078	12.078	12.078	12.077
0.52	12.078	12.077	12.077	12.076	12.076
0.78	12.076	12.076	12.076	12.075	12.075
1.04	12.075	12.075	12.075	12.074	12.074
1.30	12.074	12.074	12.073	12.073	12.073
1.43	12.073	12.073	12.073	12.072	12.073
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

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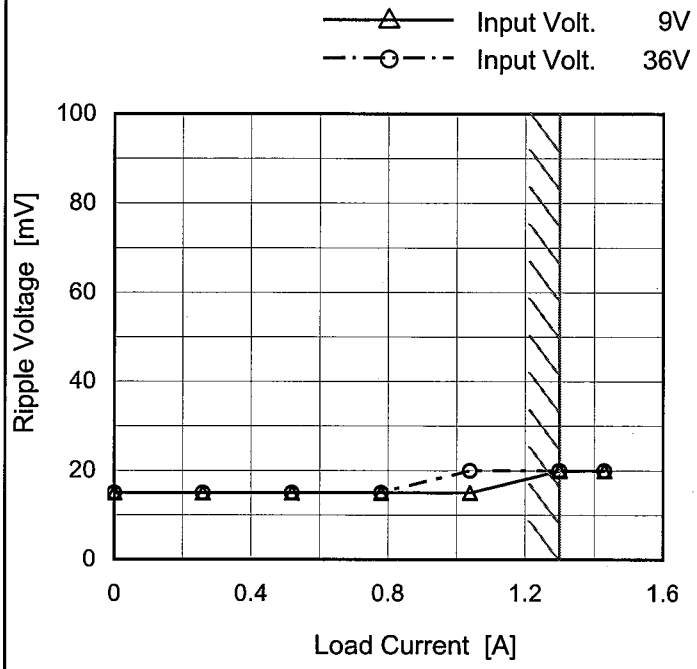
Model	STMGFS152412
Item	Ripple Voltage (by Load Current)
Object	+12V1.3A

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.

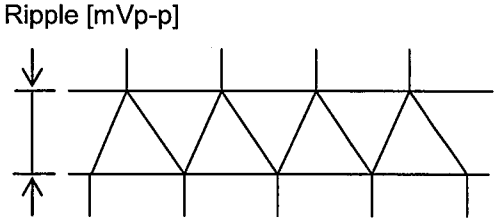


Fig.Complex Ripple Wave Form

2.Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 9 [V]	Input Volt. 36 [V]
0.00	15	15
0.26	15	15
0.52	15	15
0.78	15	15
1.04	15	20
1.30	20	20
1.43	20	20
--	-	-
--	-	-
--	-	-
--	-	-

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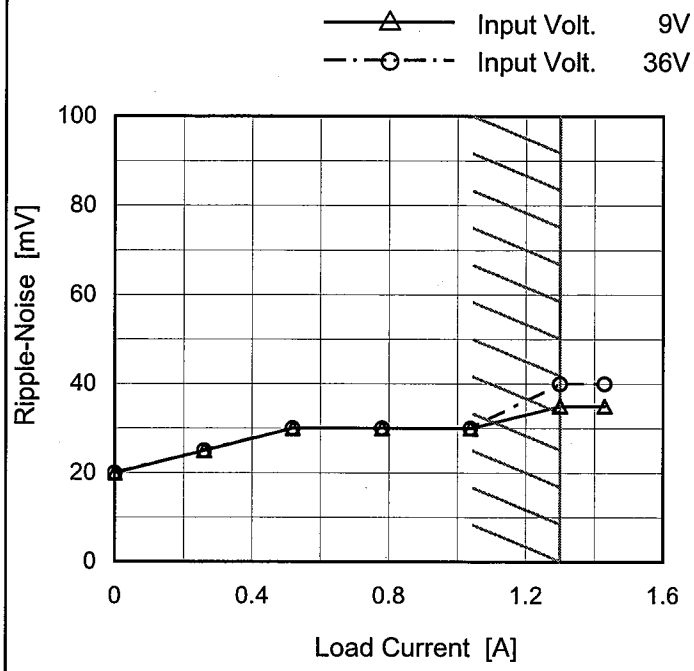
Model	STMGFS152412
Item	Ripple-Noise
Object	+12V1.3A

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.

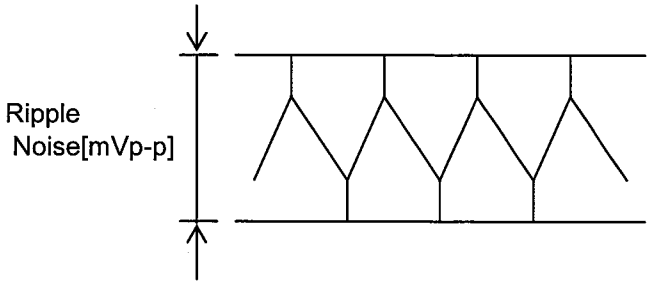


Fig.Complex Ripple Noise Wave Form

2.Values

Load Current [A]	Ripple-Noise [mV] Input Volt. 9 [V]	Ripple-Noise [mV] Input Volt. 36 [V]
0.00	20	20
0.26	25	25
0.52	30	30
0.78	30	30
1.04	30	30
1.30	35	40
1.43	35	40
--	-	-
--	-	-
--	-	-
--	-	-

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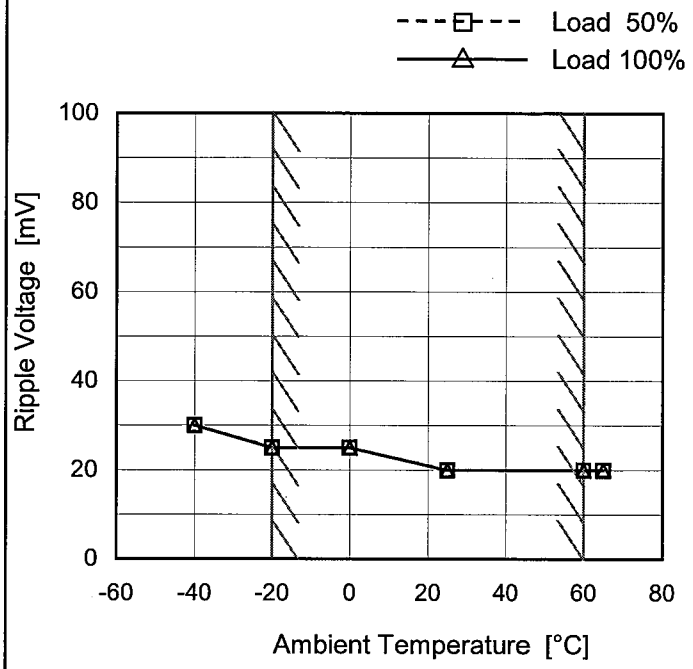
Model	STMGFS152412
Item	Ripple Voltage (by Ambient Temp.)
Object	+12V1.3A

Testing Circuitry Figure B

1.Graph



Input Volt. 24V

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	30	30
-20	25	25
0	25	25
25	20	20
60	20	20
65	20	20
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

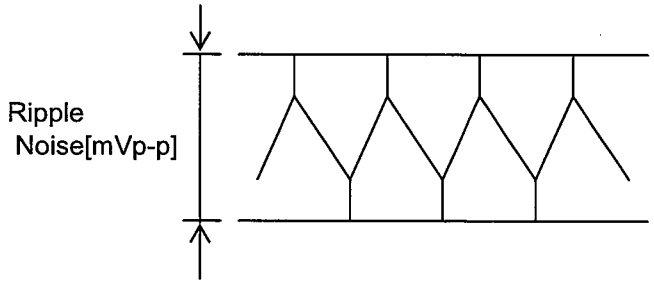


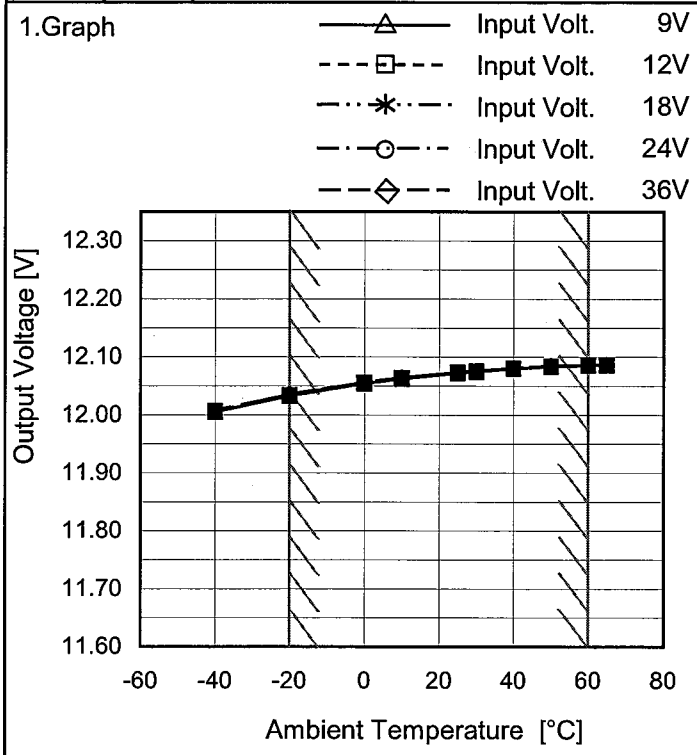
Fig.Complex Ripple Noise Wave Form

COSEL

Model	STMGFS152412
Item	Ambient Temperature Drift
Object	+12V1.3A

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. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
-40	12.005	12.006	12.007	12.007	12.008
-20	12.033	12.034	12.035	12.035	12.035
0	12.054	12.055	12.056	12.056	12.056
10	12.063	12.064	12.064	12.064	12.065
25	12.072	12.073	12.073	12.074	12.073
30	12.075	12.076	12.076	12.076	12.076
40	12.080	12.081	12.081	12.081	12.081
50	12.084	12.084	12.085	12.085	12.085
60	12.086	12.086	12.087	12.087	12.087
65	12.087	12.087	12.087	12.087	12.087
--	-	-	-	-	-

COSEL

Model	STMGFS152412	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+12V1.3A	

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 : 9 - 36V
Load Current : 0 - 1.3A

* 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

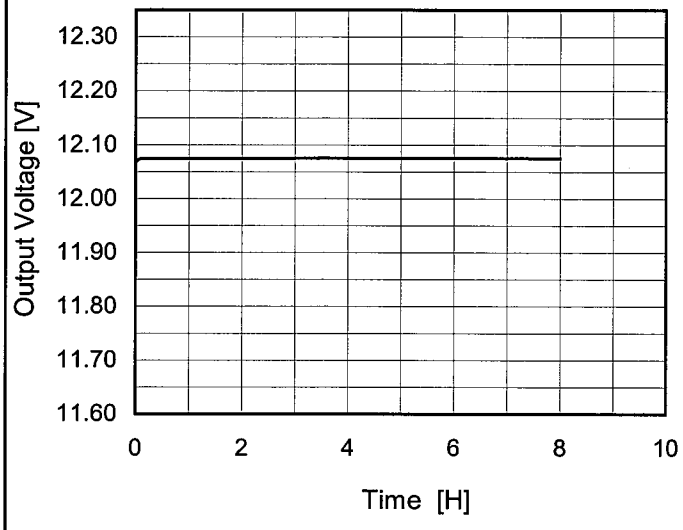
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	60	9	0	12.092	±30	±0.3
Minimum Voltage	-20	9	1.3	12.033		

COSEL

Model	STMGFS152412
Item	Time Lapse Drift
Object	+12V1.3A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Input Volt. 24V
Load 100%

2.Values

Time since start [H]	Output Voltage [V]
0.0	12.067
0.5	12.075
1.0	12.075
2.0	12.075
3.0	12.075
4.0	12.075
5.0	12.075
6.0	12.076
7.0	12.075
8.0	12.075

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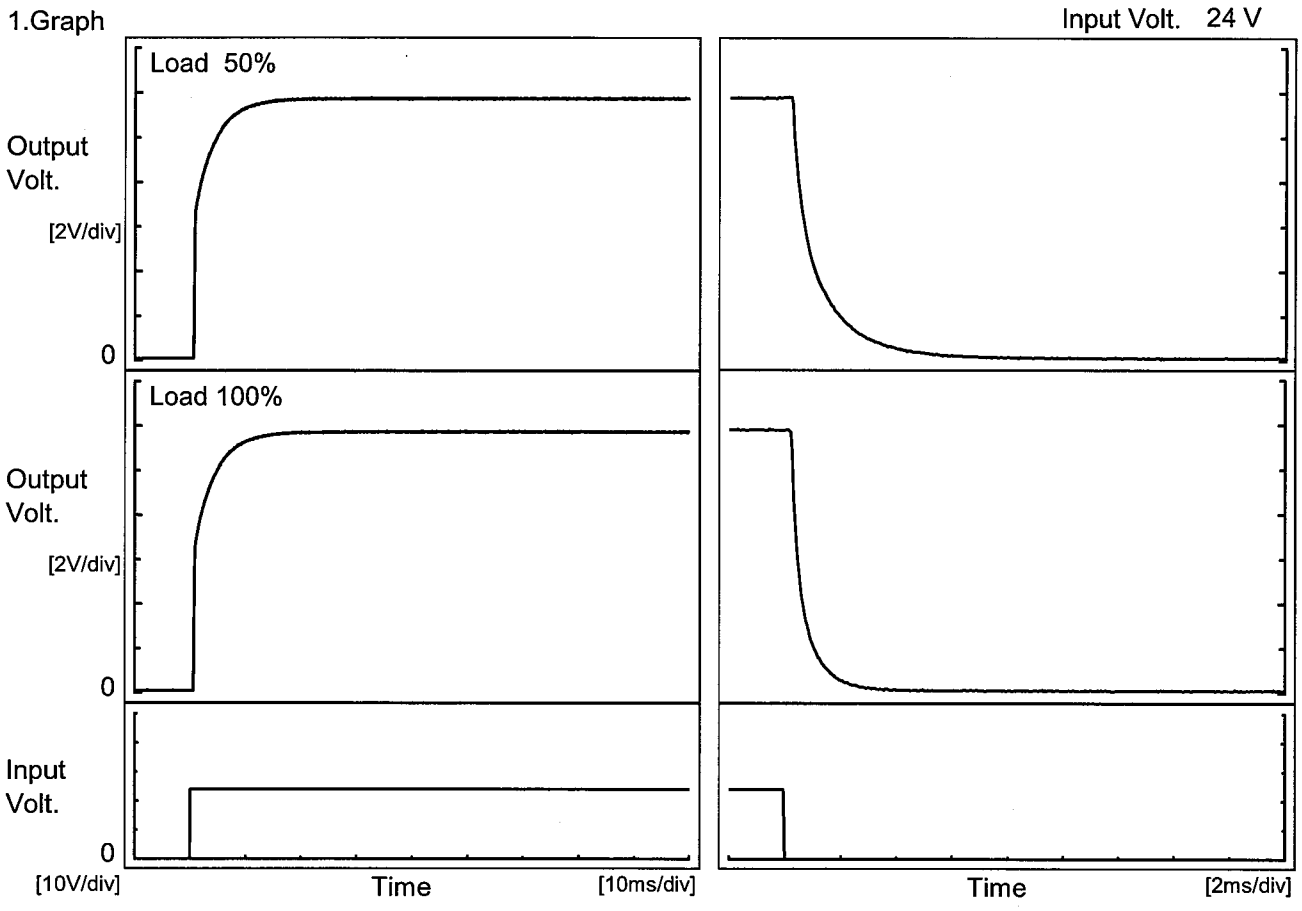
Model	STMGFS152412
Item	Rise and Fall Time
Object	+12V1.3A

Temperature 25°C
Testing Circuitry Figure A

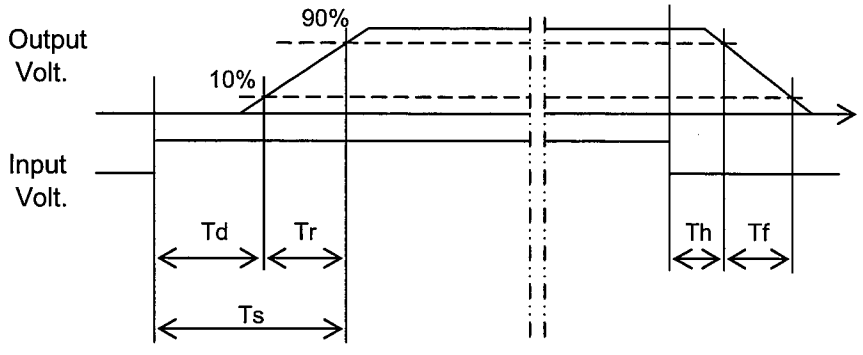
1.Graph



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	0.7	6.7	7.4	0.3	2.3
100 %	0.7	6.7	7.4	0.2	1.2



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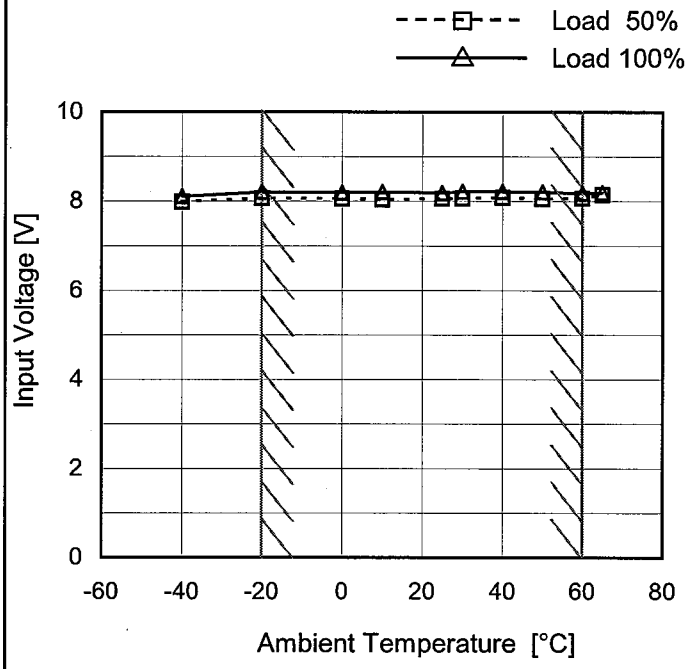
Model	STMGFS152412
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+12V1.3A

Testing Circuitry Figure A

1.Graph



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

2.Values

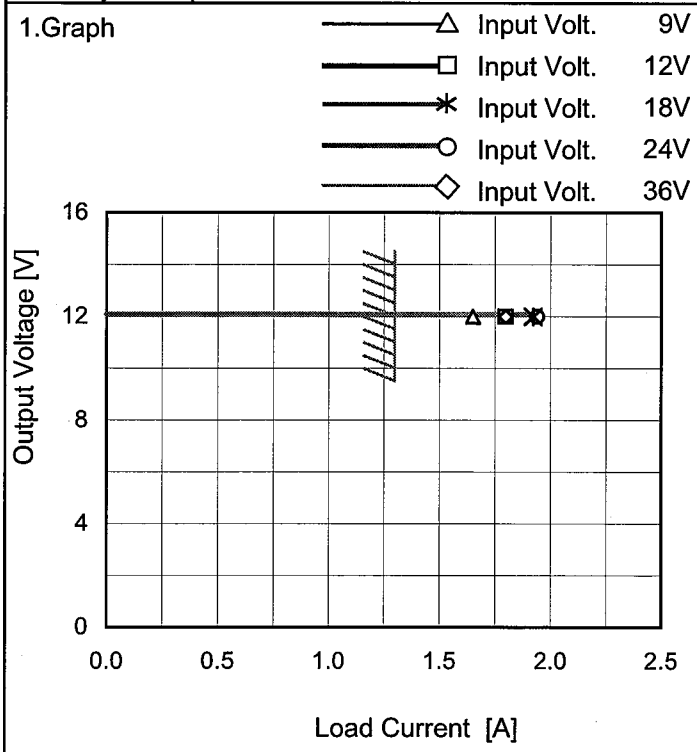
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-40	8.0	8.2
-20	8.1	8.3
0	8.1	8.2
10	8.1	8.3
25	8.1	8.2
30	8.1	8.3
40	8.1	8.3
50	8.1	8.3
60	8.1	8.2
65	8.2	8.2
--	-	-

COSEL

Model	STMGFS152412
Item	Overcurrent Protection
Object	+12V1.3A

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. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
12.0	1.652	1.798	1.921	1.939	1.799
11.4	-	-	-	-	-
10.8	-	-	-	-	-
9.6	-	-	-	-	-
8.4	-	-	-	-	-
7.2	-	-	-	-	-
6.0	-	-	-	-	-
4.8	-	-	-	-	-
3.6	-	-	-	-	-
2.4	-	-	-	-	-
1.2	-	-	-	-	-
0.0	-	-	-	-	-

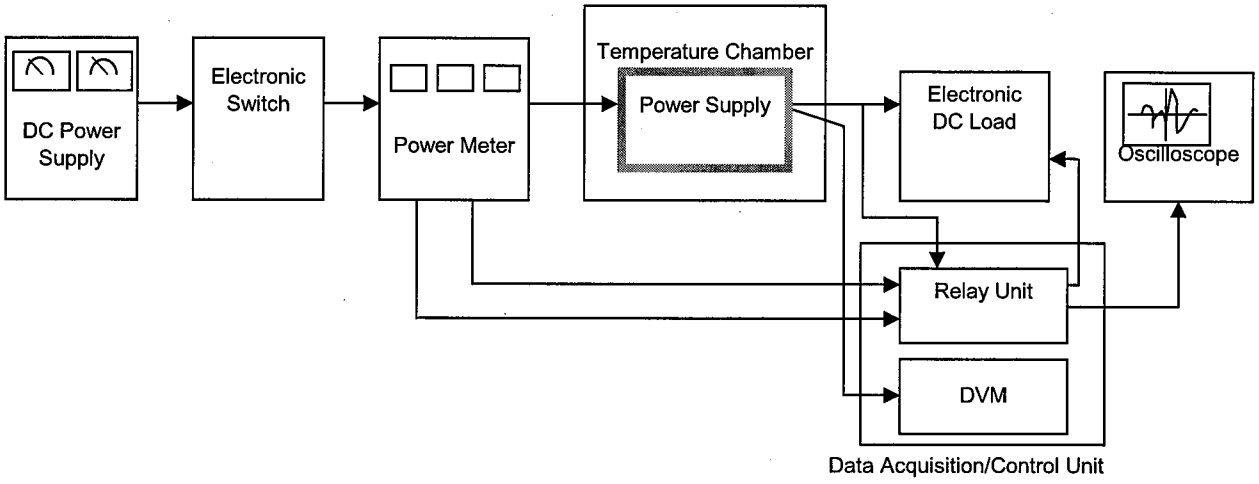


Figure A

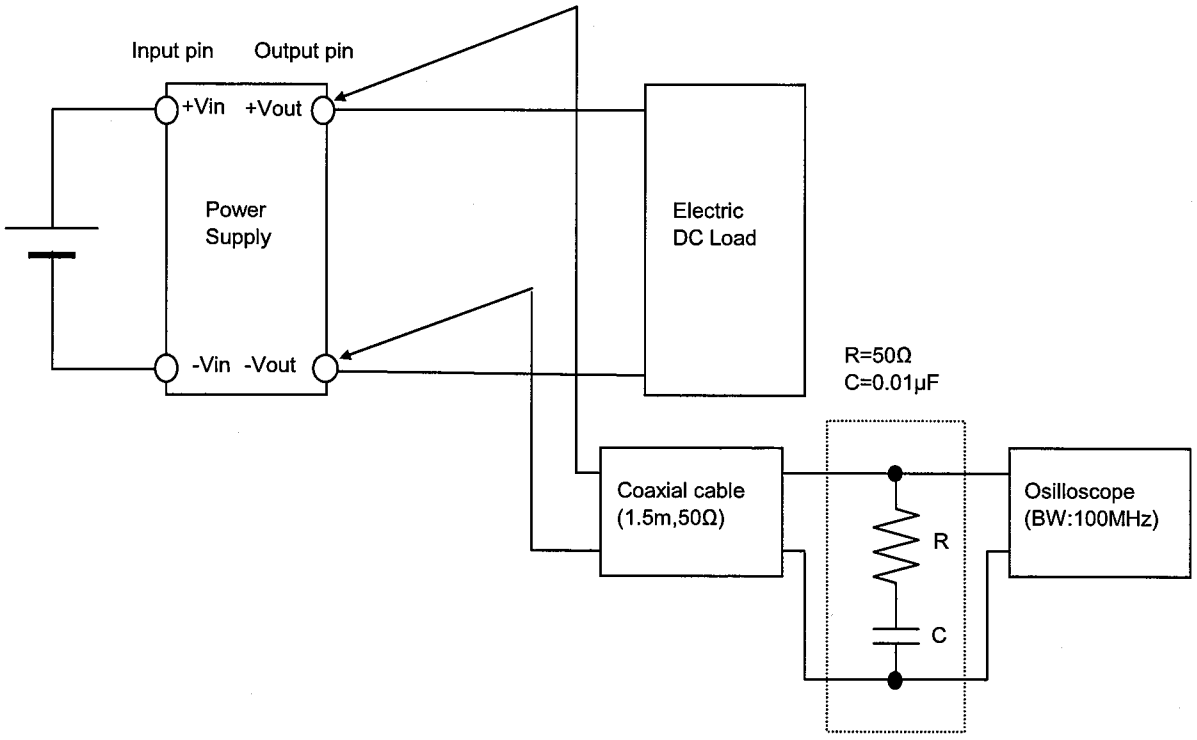


Figure B (Ripple and Ripple noise Characteristic)