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参考資料

TEST DATA OF STMGFS302405

Regulated DC Power Supply
February 1, 2013

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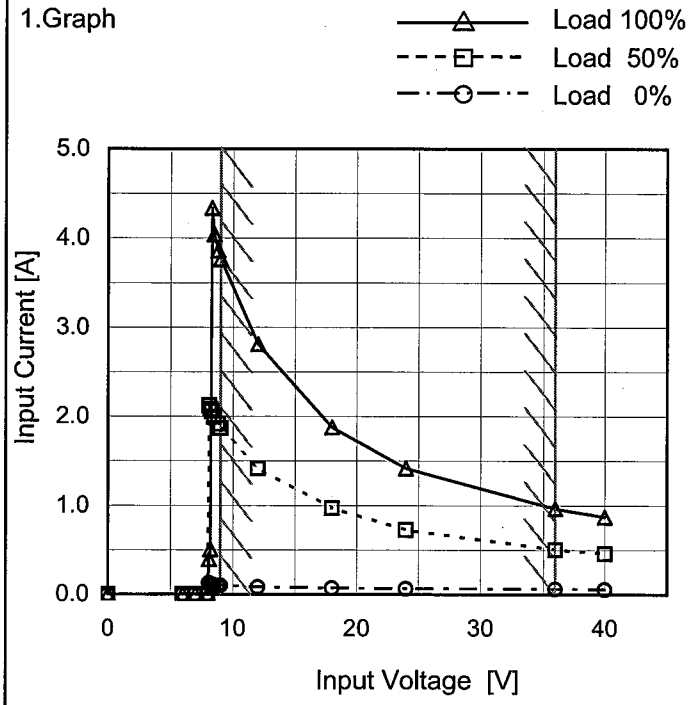
COSEL

Model	STMGFS302405
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
6.0	0.002	0.002	0.002
7.0	0.002	0.002	0.002
8.0	0.002	0.002	0.002
8.1	0.129	2.125	0.394
8.2	0.121	2.085	0.507
8.3	0.116	2.057	4.340
8.5	0.109	1.993	4.044
8.8	0.101	1.915	3.861
9.0	0.099	1.869	3.766
12.0	0.083	1.414	2.813
18.0	0.071	0.971	1.879
24.0	0.065	0.726	1.419
36.0	0.059	0.504	0.965
40.0	0.059	0.461	0.873
--	-	-	-
--	-	-	-
--	-	-	-

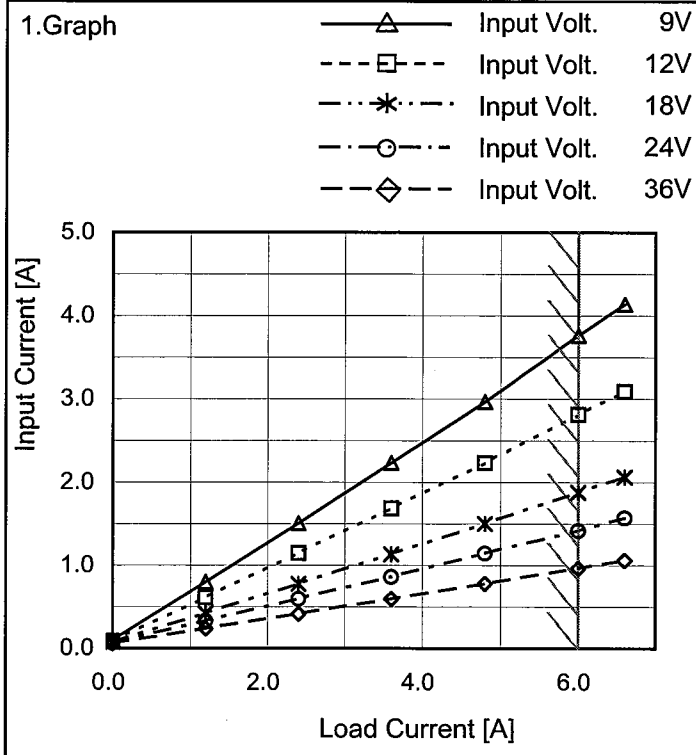
BC - 10719

COSEL

Model	STMGFS302405
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]
0.0	0.099	0.083	0.071	0.065	0.059
1.2	0.800	0.611	0.423	0.329	0.238
2.4	1.508	1.145	0.777	0.596	0.416
3.6	2.231	1.684	1.133	0.861	0.596
4.8	2.966	2.233	1.503	1.144	0.780
6.0	3.766	2.813	1.879	1.419	0.965
6.6	4.137	3.088	2.066	1.571	1.062
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

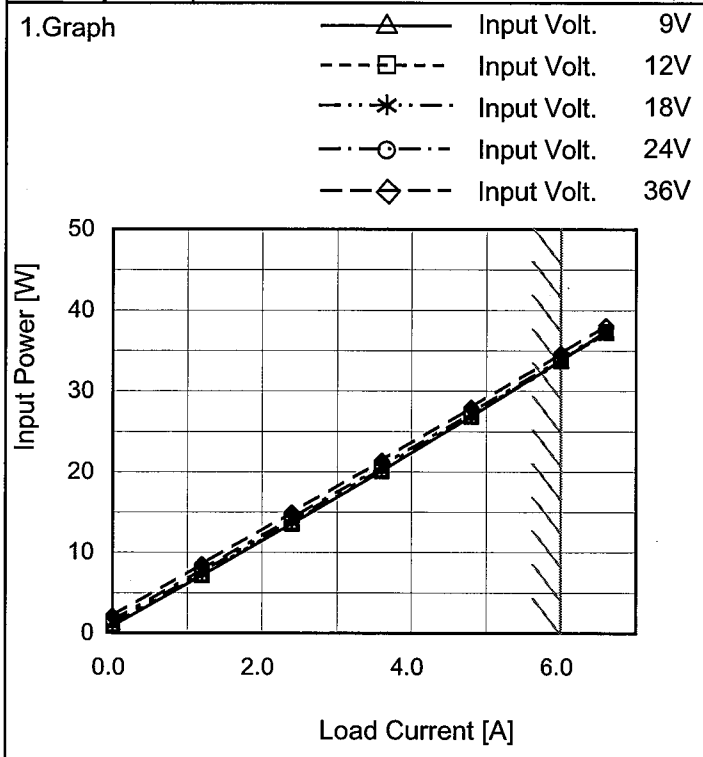
BC - 10719

COSEL

Model	STMGFS302405
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

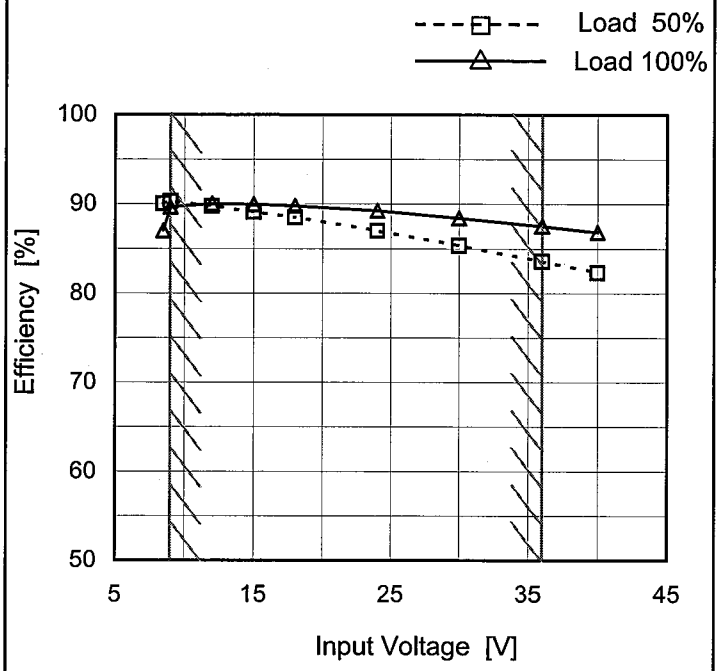
Load Current [A]	Input Power [W]				
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.0	0.91	1.01	1.28	1.54	2.13
1.2	7.16	7.28	7.58	7.87	8.55
2.4	13.59	13.68	13.96	14.25	14.96
3.6	20.13	20.20	20.43	20.70	21.41
4.8	26.87	26.89	27.05	27.30	27.97
6.0	33.83	33.74	33.80	34.03	34.69
6.6	37.40	37.24	37.26	37.43	38.12
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

COSEL

Model	STMGFS302405
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

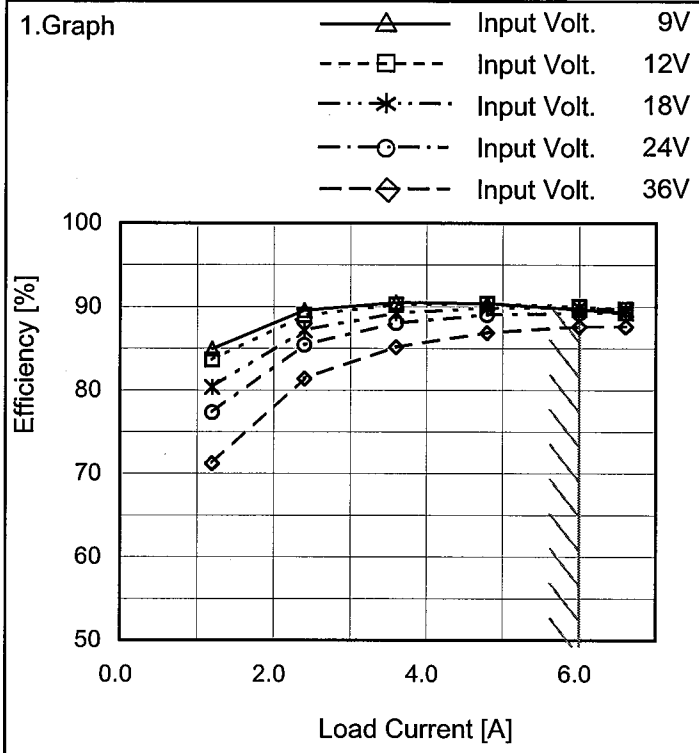
Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
8.5	90.1	87.0
9.0	90.3	89.7
12.0	89.8	90.0
15.0	89.1	90.0
18.0	88.5	89.8
24.0	87.0	89.2
30.0	85.4	88.4
36.0	83.6	87.5
40.0	82.3	86.8

COSEL

Model	STMGFS302405
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]
0.0	-	-	-	-	-
1.2	85.0	83.6	80.4	77.3	71.2
2.4	89.6	89.0	87.2	85.4	81.4
3.6	90.5	90.2	89.2	88.0	85.1
4.8	90.4	90.4	89.8	89.0	86.9
6.0	89.7	90.0	89.8	89.2	87.6
6.6	89.3	89.7	89.6	89.2	87.6
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

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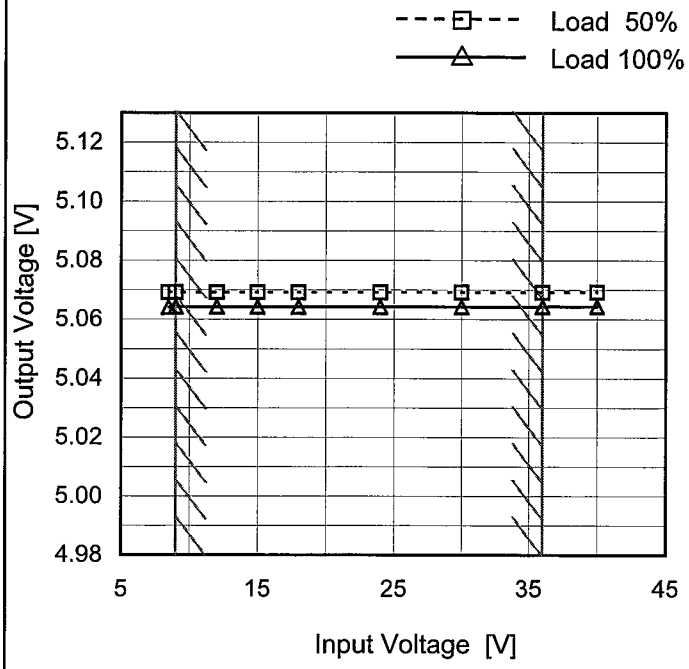
Model	STMGFS302405
Item	Line Regulation
Object	+5V6A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

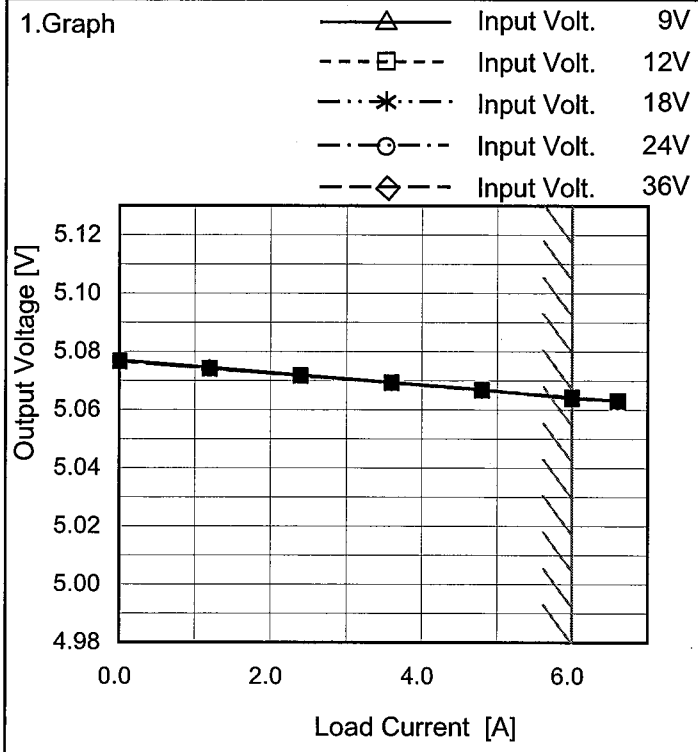
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
8.5	5.069	5.064
9.0	5.069	5.064
12.0	5.069	5.064
15.0	5.069	5.064
18.0	5.069	5.064
24.0	5.069	5.064
30.0	5.069	5.064
36.0	5.069	5.064
40.0	5.069	5.064

COSEL

Model	STMGFS302405
Item	Load Regulation
Object	+5V6A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

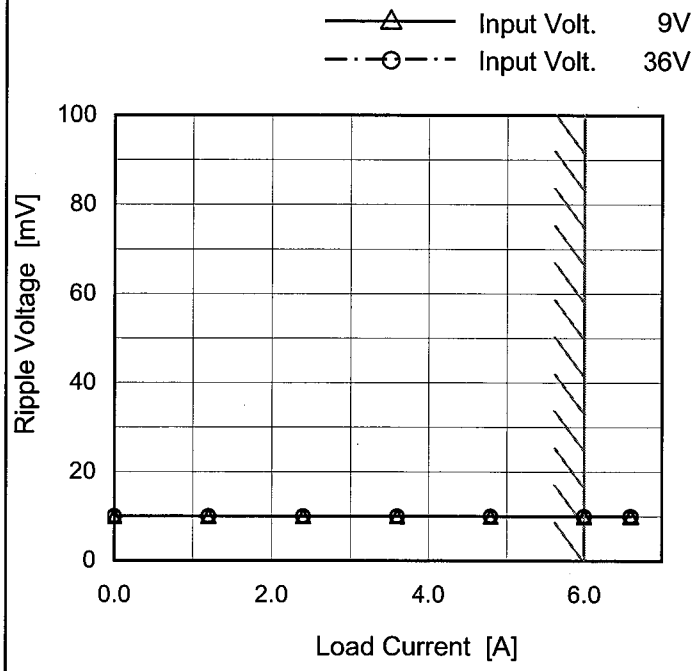
Load Current [A]	Output Voltage [V]				
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.0	5.077	5.077	5.077	5.077	5.077
1.2	5.075	5.074	5.074	5.074	5.074
2.4	5.072	5.072	5.072	5.072	5.072
3.6	5.070	5.069	5.069	5.069	5.069
4.8	5.067	5.067	5.067	5.067	5.067
6.0	5.064	5.064	5.064	5.064	5.064
6.6	5.063	5.063	5.063	5.063	5.063
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

COSEL

Model	STMGFS302405
Item	Ripple Voltage (by Load Current)
Object	+5V6A

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]

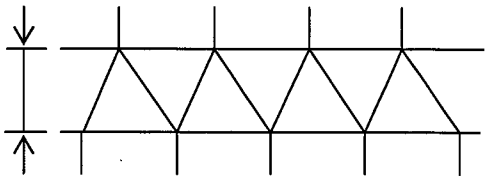


Fig.Complex Ripple Wave Form

2.Values

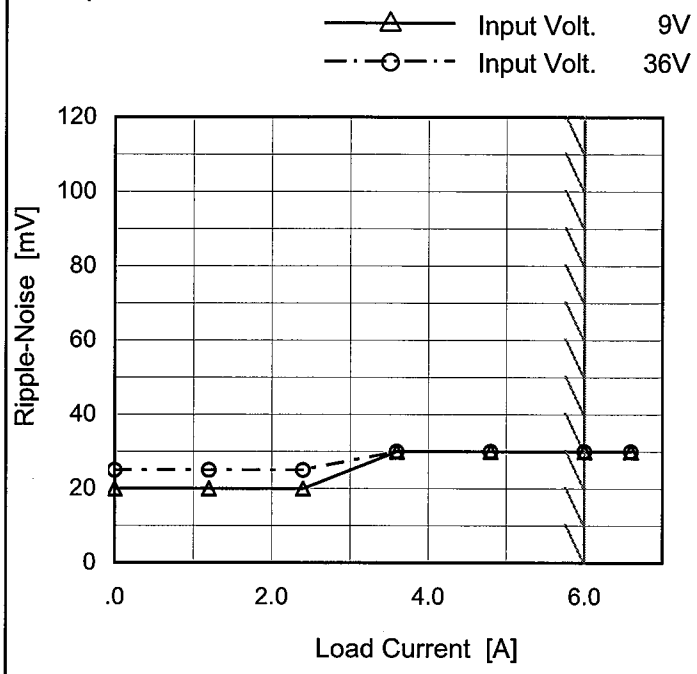
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 9 [V]	Input Volt. 36 [V]
0.0	10	10
1.2	10	10
2.4	10	10
3.6	10	10
4.8	10	10
6.0	10	10
6.6	10	10
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	STMGFS302405
Item	Ripple-Noise
Object	+5V6A

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.

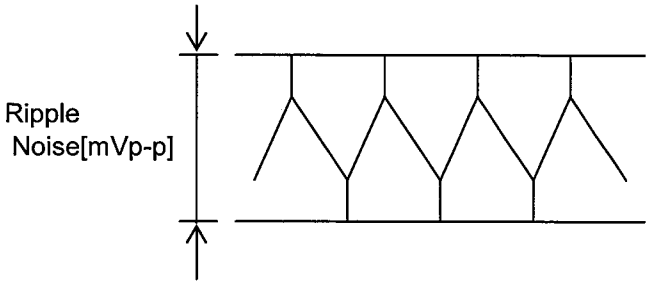


Fig.Complex Ripple Noise Wave Form

2.Values

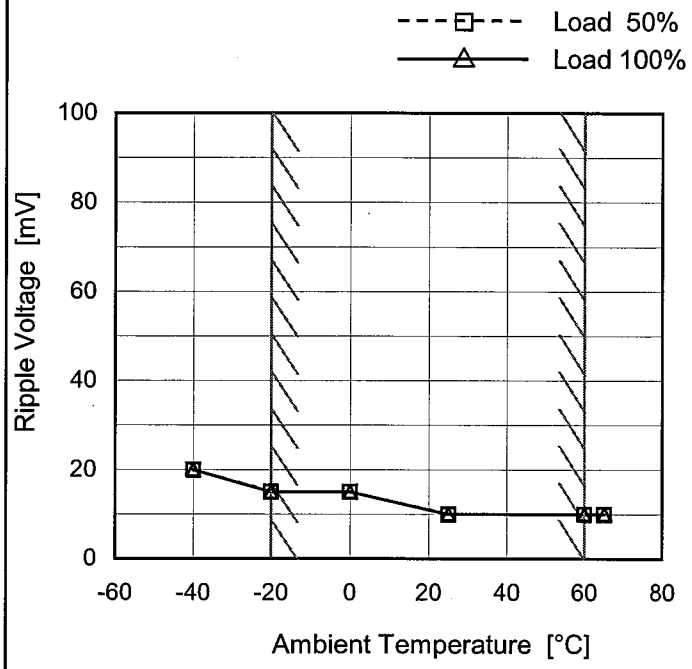
Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 9 [V]	Input Volt. 36 [V]
0.0	20	25
1.2	20	25
2.4	20	25
3.6	30	30
4.8	30	30
6.0	30	30
6.6	30	30
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	STMGFS302405
Item	Ripple Voltage (by Ambient Temp.)
Object	+5V6A

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	20	20
-20	15	15
0	15	15
25	10	10
60	10	10
65	10	10
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

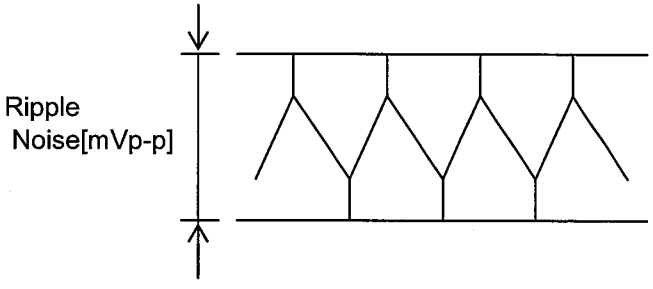


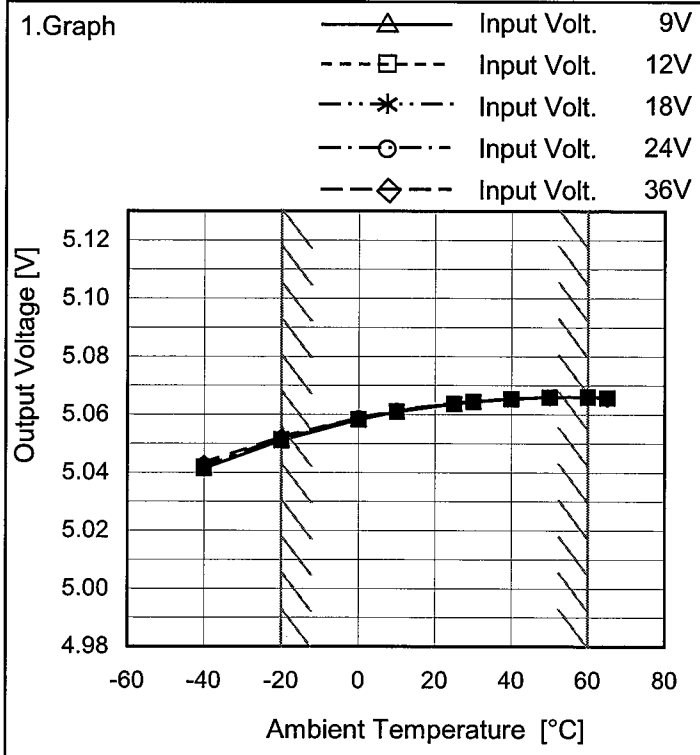
Fig.Complex Ripple Noise Wave Form

COSEL

Model	STMGFS302405
Item	Ambient Temperature Drift
Object	+5V6A

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	5.041	5.042	5.042	5.043	5.043
-20	5.051	5.051	5.052	5.052	5.052
0	5.058	5.058	5.058	5.059	5.059
10	5.061	5.061	5.061	5.061	5.061
25	5.064	5.064	5.064	5.064	5.064
30	5.064	5.064	5.064	5.065	5.065
40	5.065	5.065	5.065	5.065	5.065
50	5.066	5.066	5.066	5.066	5.066
60	5.066	5.066	5.066	5.066	5.066
65	5.066	5.066	5.066	5.066	5.065
---	-	-	-	-	-

-

COSEL

Model	STMGFS302405	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+5V6A	

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 - 6A

* 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

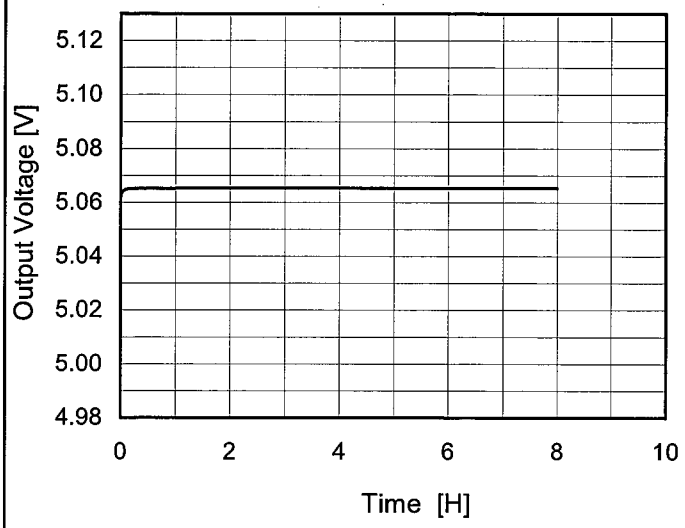
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	60	9	0	5.080	±15	±0.3
Minimum Voltage	-20	9	6	5.051		

COSEL

Model	STMGFS302405
Item	Time Lapse Drift
Object	+5V6A

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	5.062
0.5	5.065
1.0	5.065
2.0	5.065
3.0	5.065
4.0	5.065
5.0	5.065
6.0	5.065
7.0	5.065
8.0	5.065

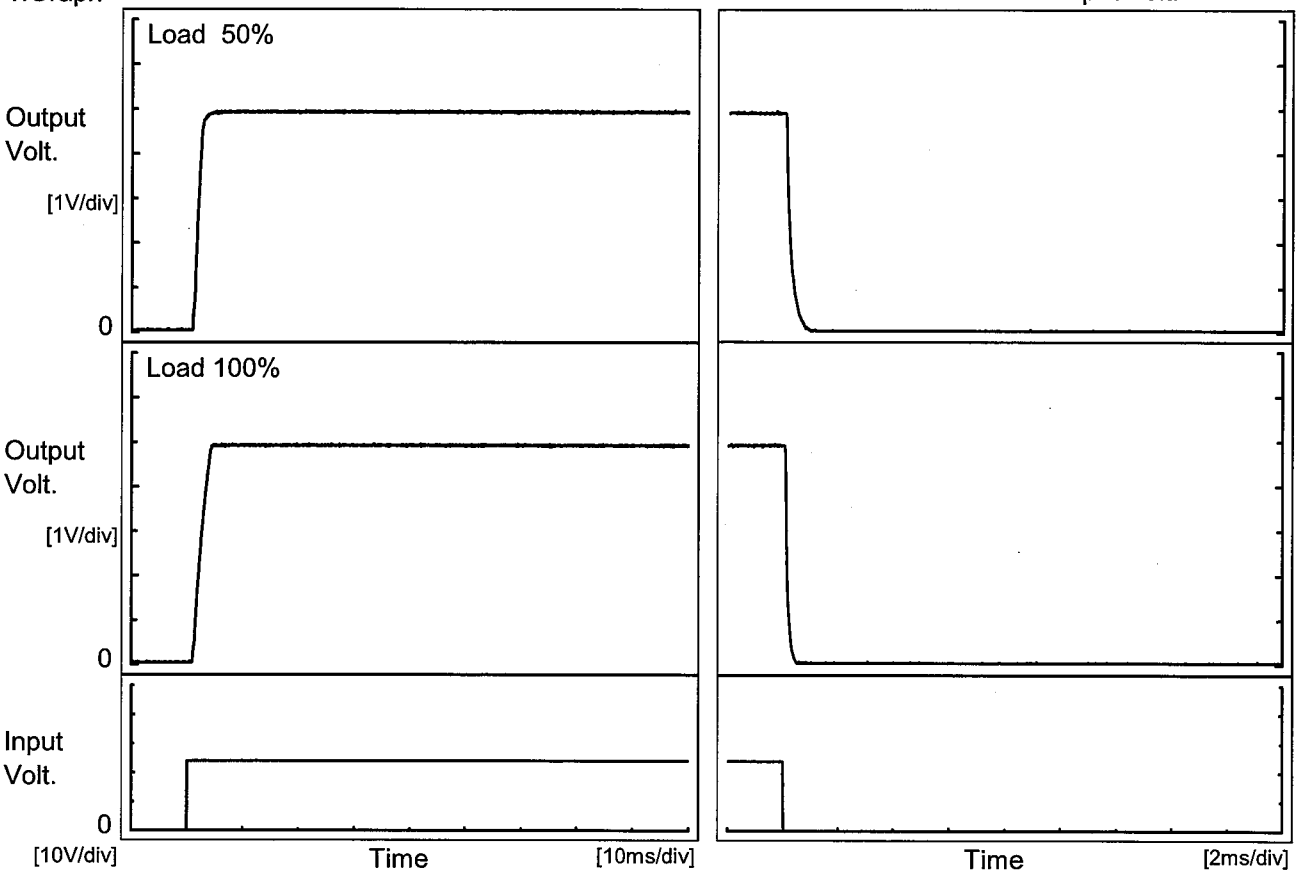
COSEL

Model	STMGFS302405
Item	Rise and Fall Time
Object	+5V6A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

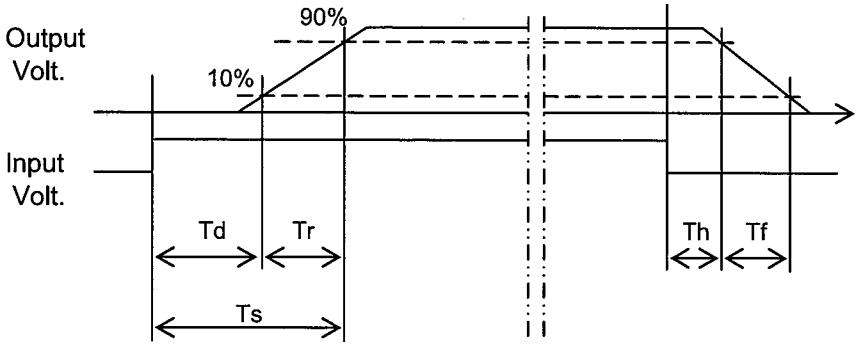
Input Volt. 24 V



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	1.3	1.5	2.8	0.1	0.4
100 %	1.4	2.6	4.0	0.1	0.2



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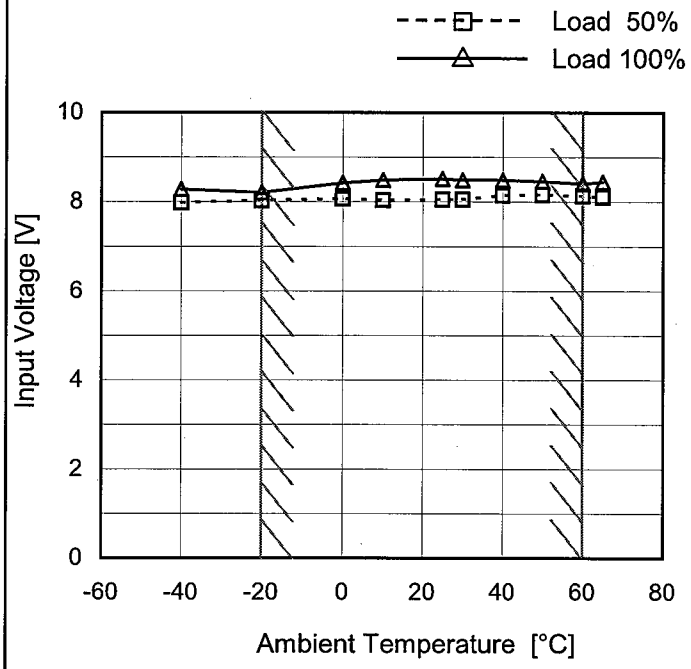
COSEL

Model	STMGFS302405
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+5V6A

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	8.3
-20	8.1	8.3
0	8.1	8.5
10	8.1	8.5
25	8.1	8.6
30	8.1	8.5
40	8.2	8.5
50	8.2	8.5
60	8.2	8.5
65	8.1	8.5
--	-	-

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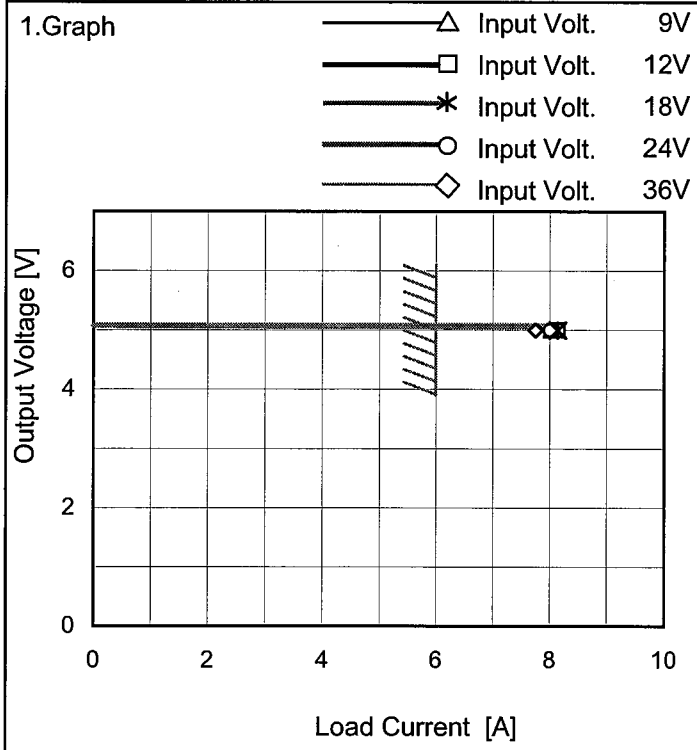
COSEL

Model	STMGFS302405
Item	Overcurrent Protection
Object	+5V6A

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

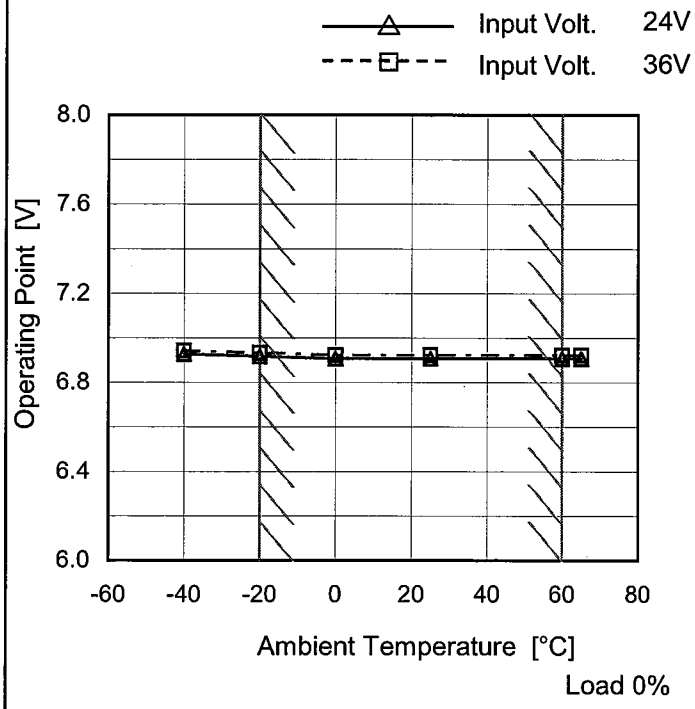
Output Voltage [V]	Load Current [A]				
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
5.00	8.011	8.143	8.143	8.014	7.751
4.75	-	-	-	-	-
4.50	-	-	-	-	-
4.00	-	-	-	-	-
3.50	-	-	-	-	-
3.00	-	-	-	-	-
2.50	-	-	-	-	-
2.00	-	-	-	-	-
1.50	-	-	-	-	-
1.00	-	-	-	-	-
0.50	-	-	-	-	-
0.00	-	-	-	-	-

COSEL

Model	STMGFS302405
Item	Overvoltage Protection
Object	+5V6A

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. 24[V]	Input Volt. 36[V]
-40	6.93	6.94
-20	6.92	6.93
0	6.91	6.92
25	6.91	6.92
60	6.91	6.92
65	6.91	6.92
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

-

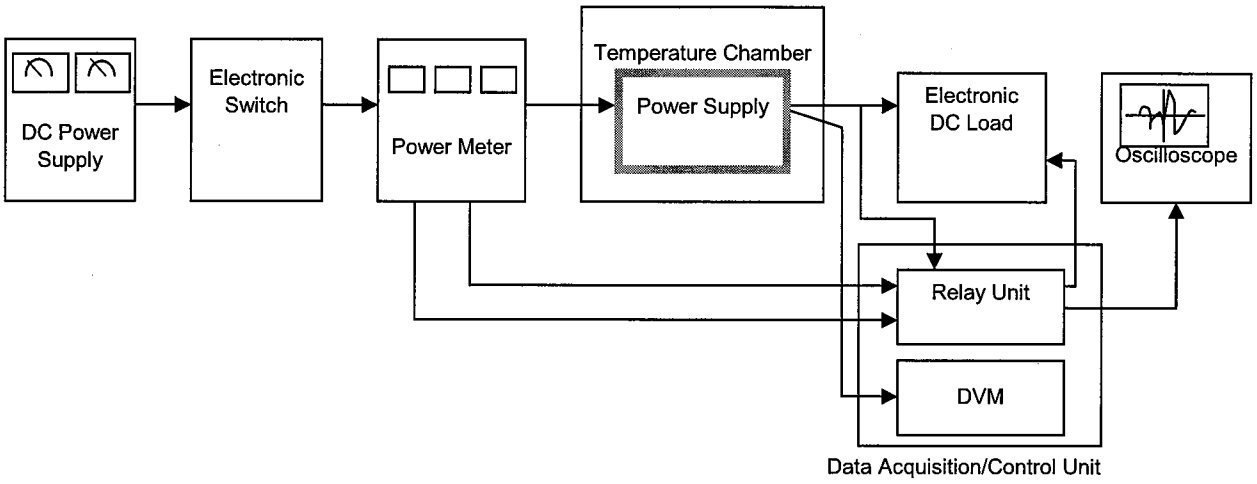


Figure A

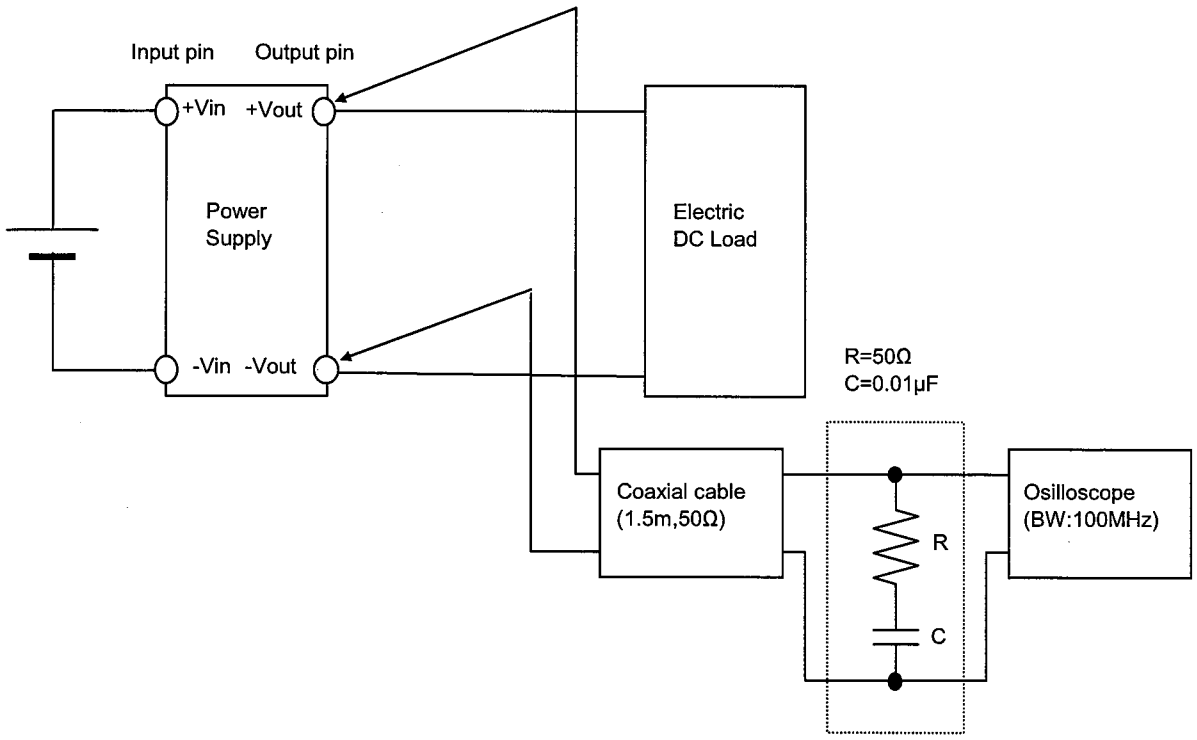


Figure B（Ripple and Ripple noise Characteristic）