COSEL

参考資料

TEST DATA OF SUTS102405

Regulated DC Power Supply
February 12, 2009

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COSEL CO.,LTD.

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Model	SUTS102405
Item	Input Current (by Input Voltage)
Object	————————

Temperature 25°C
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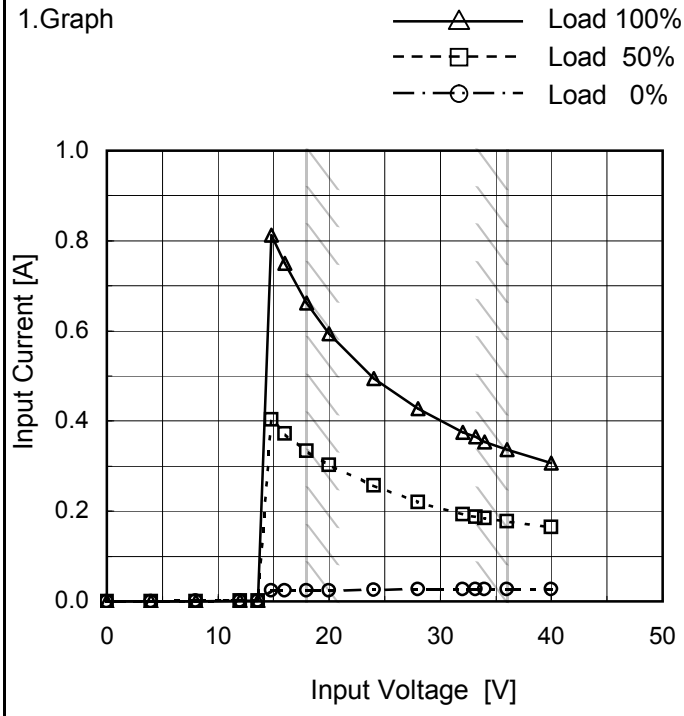

Note: Slanted line shows the range of the rated input voltage.

2.Values

Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0.0	0.000	0.000	0.000
4.0	0.000	0.000	0.000
8.0	0.001	0.000	0.000
12.0	0.001	0.001	0.001
13.6	0.001	0.001	0.001
14.8	0.025	0.403	0.812
16.0	0.024	0.372	0.750
18.0	0.024	0.334	0.662
20.0	0.025	0.302	0.594
24.0	0.025	0.257	0.495
28.0	0.026	0.220	0.427
32.0	0.027	0.193	0.375
33.2	0.026	0.187	0.365
34.0	0.028	0.184	0.354
36.0	0.027	0.177	0.337
40.0	0.027	0.164	0.307
--	-	-	-
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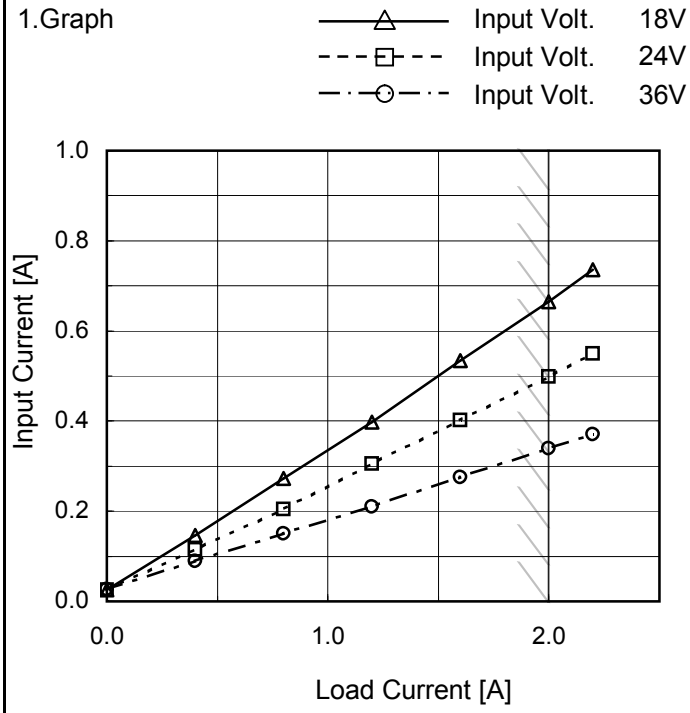
COSEL

Model	SUTS102405
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]
0.0	0.025	0.025	0.027
0.4	0.147	0.115	0.089
0.8	0.273	0.205	0.150
1.2	0.398	0.306	0.210
1.6	0.534	0.401	0.276
2.0	0.664	0.498	0.339
2.2	0.735	0.550	0.371
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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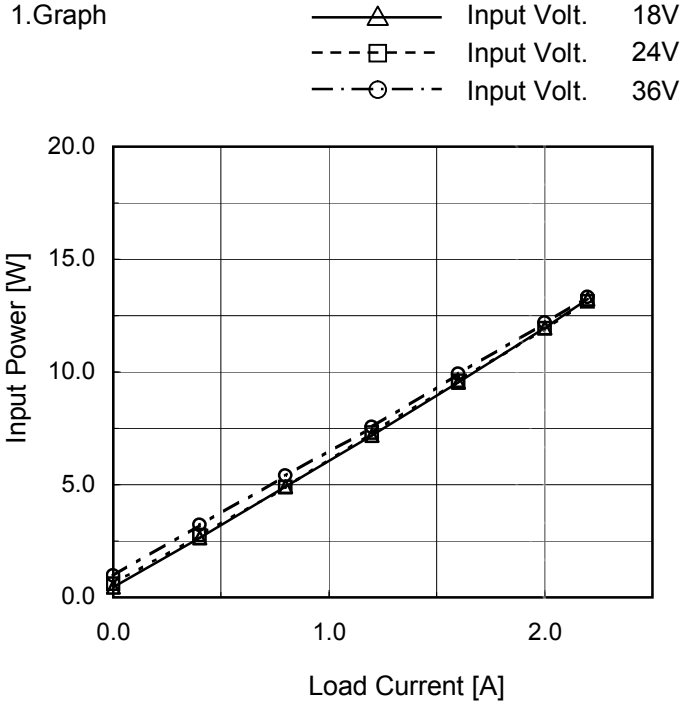
Model	SUTS102405
Item	Input Power (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

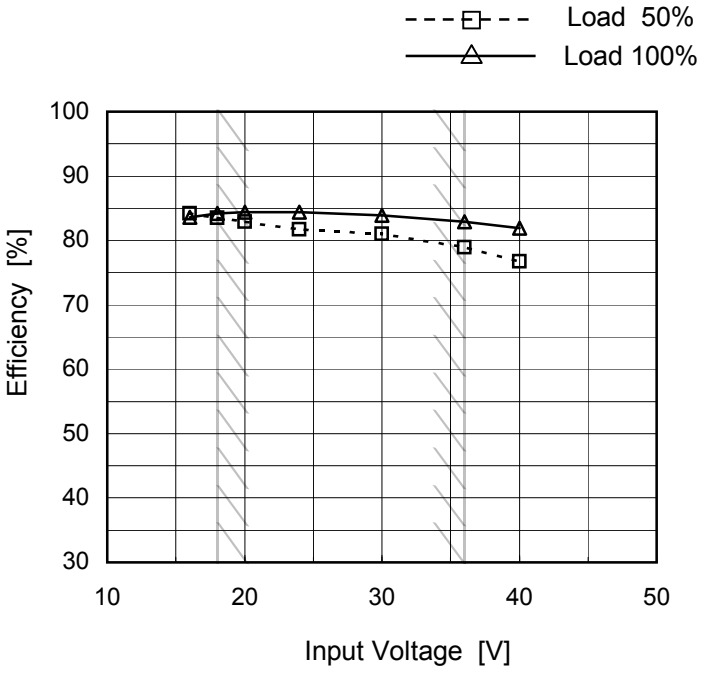
Load Current [A]	Input Power [W]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.0	0.45	0.60	0.96
0.4	2.63	2.75	3.21
0.8	4.91	4.90	5.40
1.2	7.18	7.31	7.54
1.6	9.53	9.60	9.92
2.0	11.96	11.94	12.17
2.2	13.23	13.12	13.32
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SUTS102405
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	84.2	83.6
18	83.5	84.2
20	82.9	84.4
24	81.8	84.4
30	81.0	83.9
36	79.0	82.9
40	76.7	81.9
--	-	-
--	-	-

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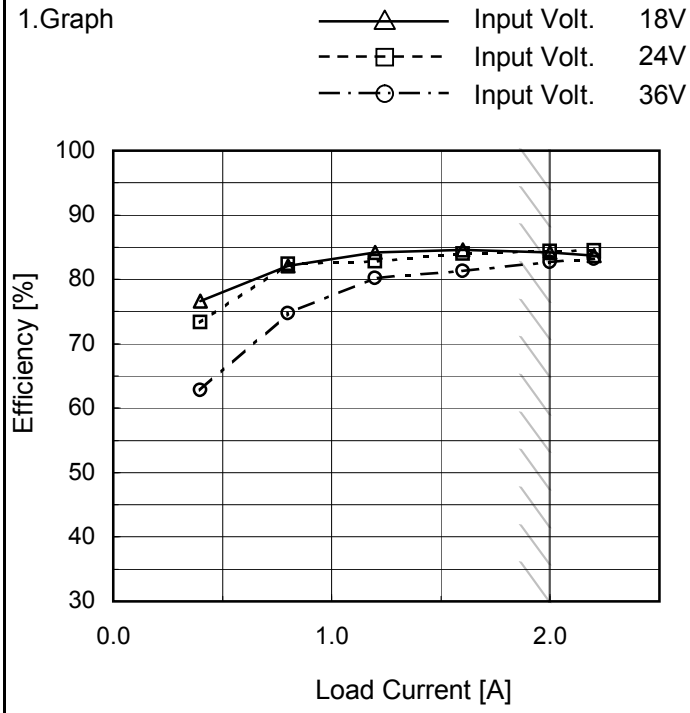
Model	SUTS102405
Item	Efficiency (by Load Current)
Object	————————

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]
0.0	-	-	-
0.4	76.6	73.4	62.8
0.8	82.1	82.4	74.7
1.2	84.2	82.8	80.2
1.6	84.6	84.0	81.3
2.0	84.2	84.3	82.7
2.2	83.7	84.4	83.2
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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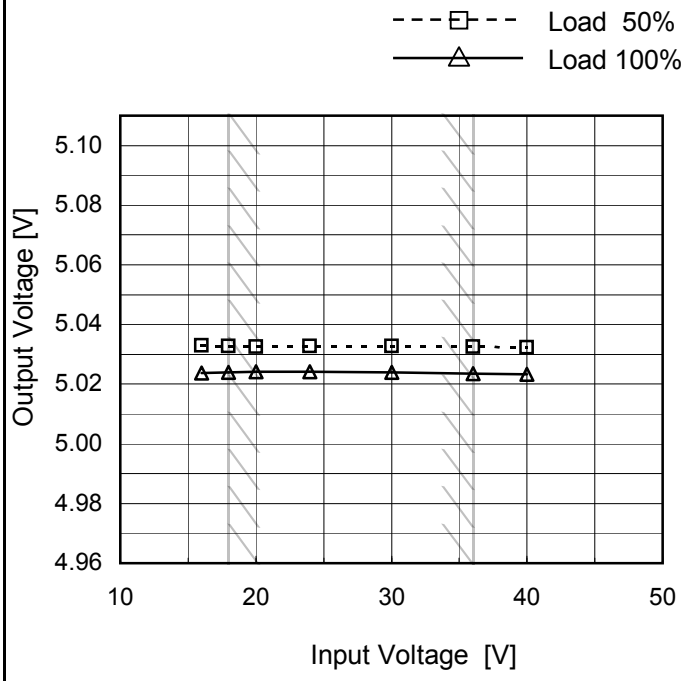
Model	SUTS102405
Item	Line Regulation
Object	+5V2A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

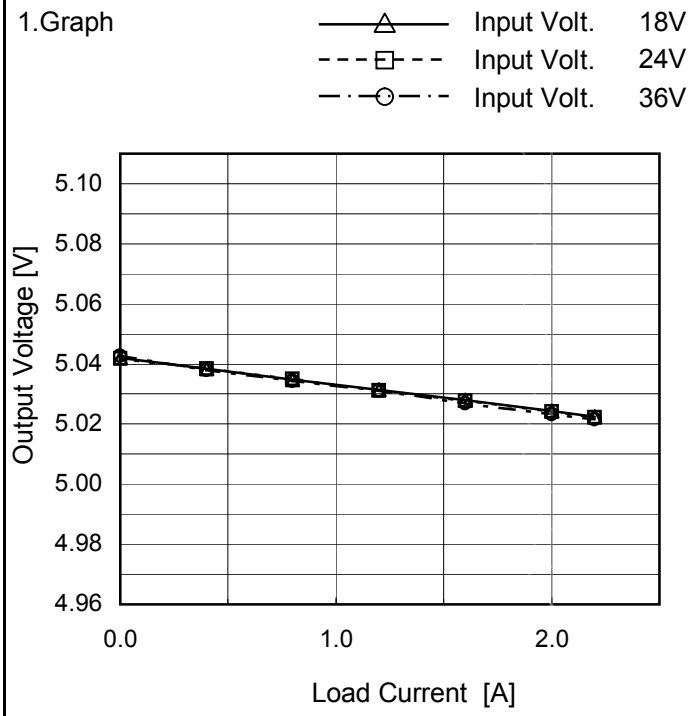
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
16	5.033	5.024
18	5.033	5.024
20	5.033	5.024
24	5.033	5.024
30	5.033	5.024
36	5.033	5.024
40	5.032	5.023
--	-	-
--	-	-

COSEL

Model	SUTS102405
Item	Load Regulation
Object	+5V2A

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]
0.0	5.042	5.042	5.043
0.4	5.038	5.038	5.038
0.8	5.035	5.035	5.034
1.2	5.031	5.031	5.031
1.6	5.028	5.028	5.027
2.0	5.024	5.024	5.023
2.2	5.023	5.022	5.022
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

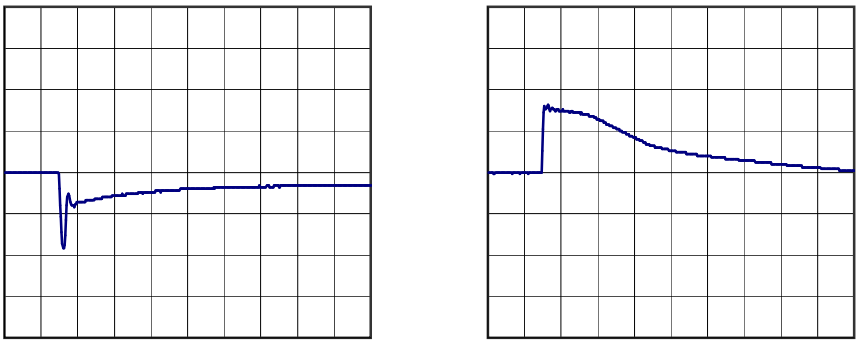
COSEL

Model	SUTS102405
Item	Dynamic Load Response
Object	+5V2A

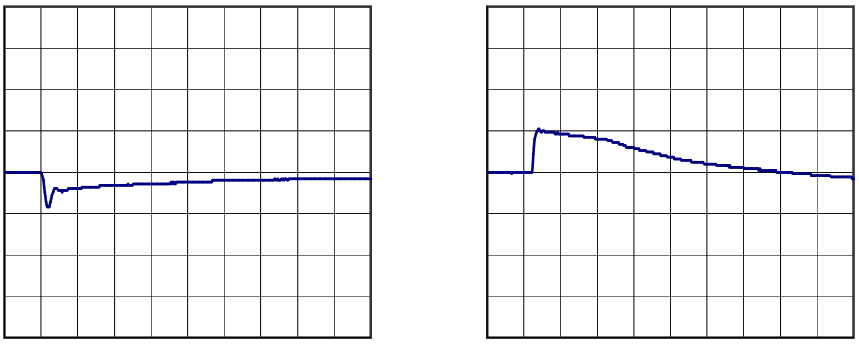
Temperature 25°C
Testing Circuitry Figure A

Input Volt. 24 V
Cycle 100 mS

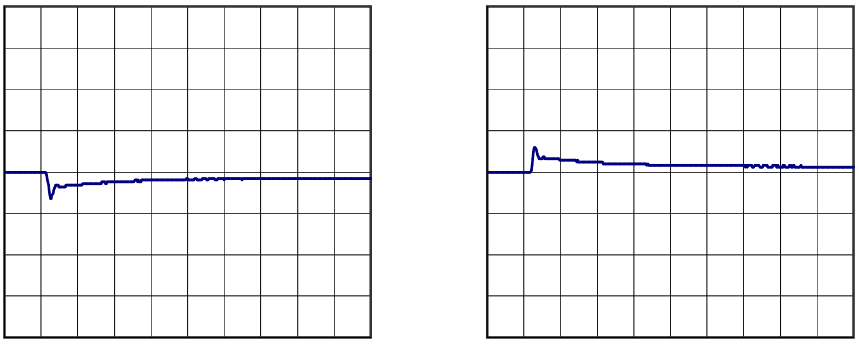
Min. Load (0A) ⟷ Load 100% (2A)



Min. Load (0A) ⟷ Load 50% (1A)



Load 50% (1A) ⟷ Load 100% (2A)



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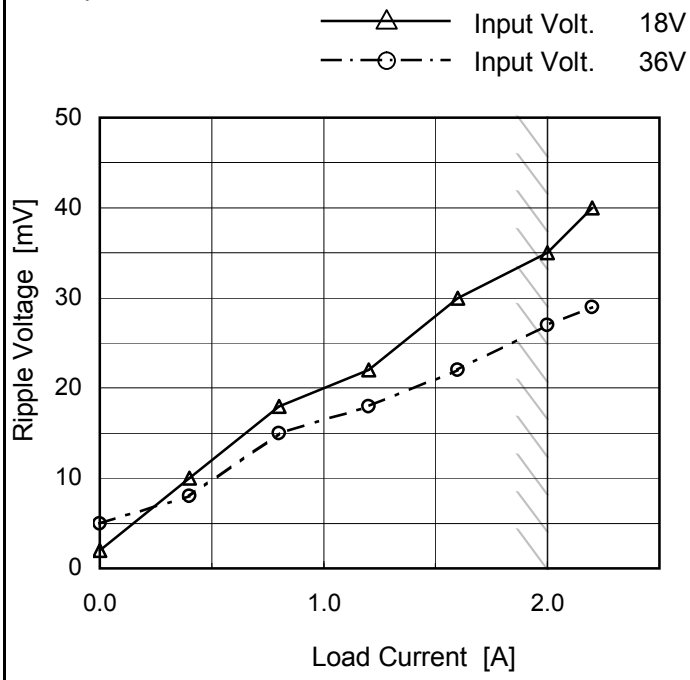
Model	SUTS102405
Item	Ripple Voltage (by Load Current)
Object	+5V2A

Temperature 25°C
Testing Circuitry Figure B

1.Graph



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]

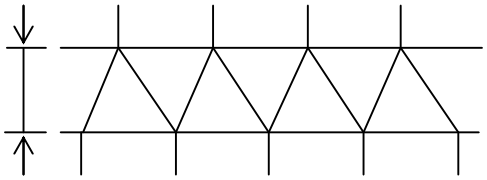


Fig.Complex Ripple Wave Form

2.Values

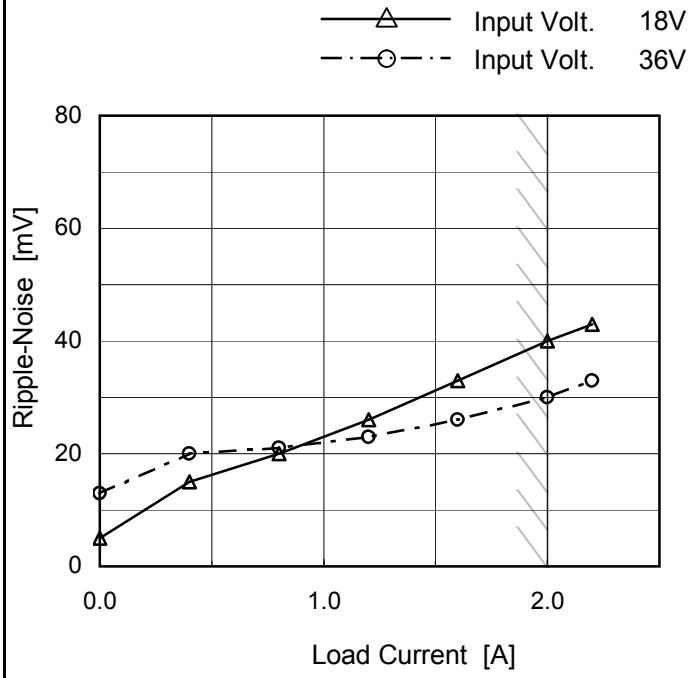
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 18 [V]	Input Volt. 36 [V]
0.0	2	5
0.4	10	8
0.8	14	14
1.2	18	16
1.6	21	17
2.0	26	19
2.2	29	20
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SUTS102405
Item	Ripple-Noise
Object	+5V2A

Temperature 25°C
Testing Circuitry Figure B

1.Graph



Measured by 150 MHz Oscilloscope.
Ripple-Noise is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated load current.

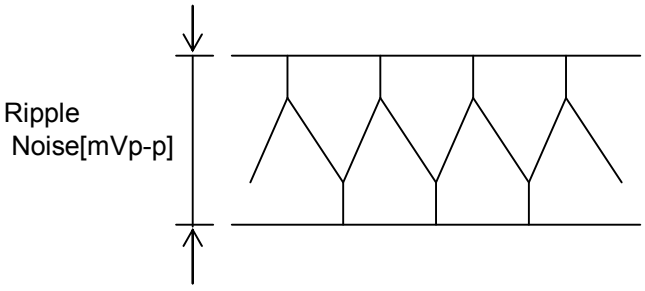


Fig.Complex Ripple Noise Wave Form

2.Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 18 [V]	Input Volt. 36 [V]
0.0	5	13
0.4	15	20
0.8	20	21
1.2	26	23
1.6	33	26
2.0	40	30
2.2	43	33
--	-	-
--	-	-
--	-	-
--	-	-

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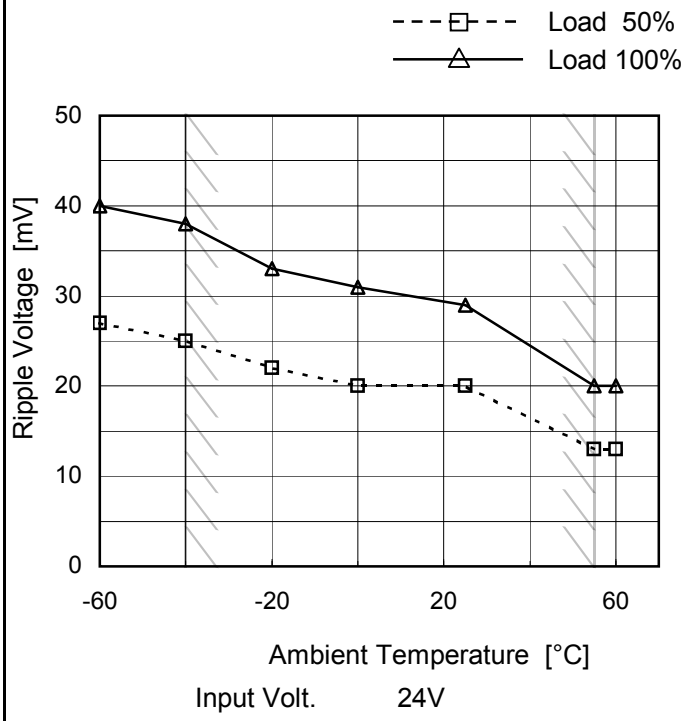
Model	SUTS102405
Item	Ripple Voltage (by Ambient Temp.)
Object	+5V2A

Testing Circuitry Figure B

1.Graph



Input Volt. 24V

Measured by 150 MHz Oscilloscope.

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

2.Values

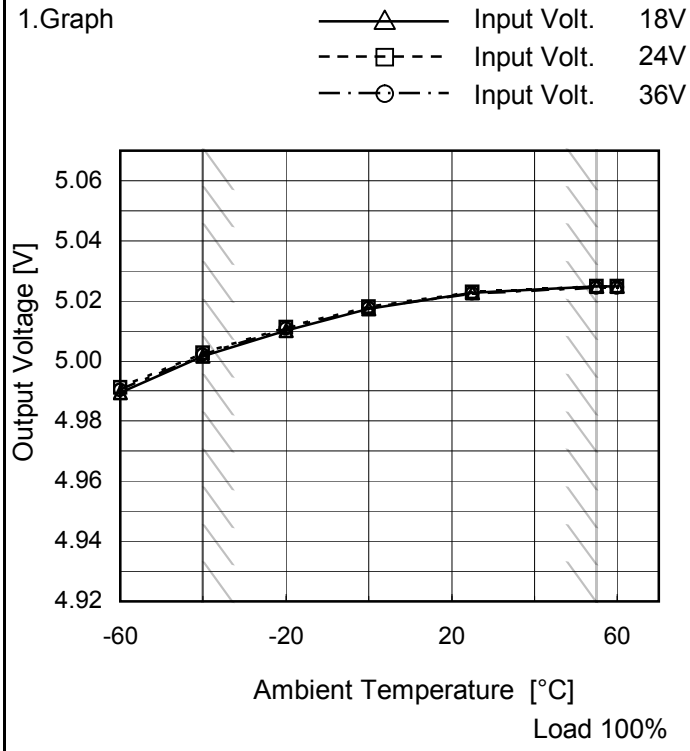
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	27	40
-40	25	38
-20	22	33
0	20	31
25	20	29
55	13	20
60	13	20
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SUTS102405
Item	Ambient Temperature Drift
Object	+5V2A

Testing Circuitry Figure A

1.Graph



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]
-60	4.989	4.991	4.990
-40	5.002	5.003	5.002
-20	5.010	5.011	5.011
0	5.017	5.018	5.018
25	5.023	5.023	5.023
55	5.025	5.025	5.024
60	5.025	5.025	5.024
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	SUTS102405	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+5V2A	

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 - 55°C
Input Voltage : 18 - 36V
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

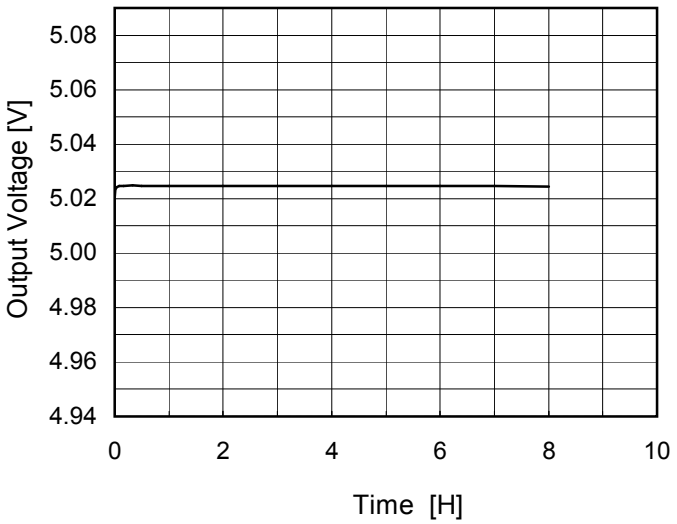
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	55	36	0	5.044	±21	±0.4
Minimum Voltage	-40	18	2	5.002		

COSEL

Model	SUTS102405
Item	Time Lapse Drift
Object	+5V2A

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	5.020
0.5	5.025
1.0	5.025
2.0	5.025
3.0	5.025
4.0	5.025
5.0	5.025
6.0	5.025
7.0	5.025
8.0	5.025

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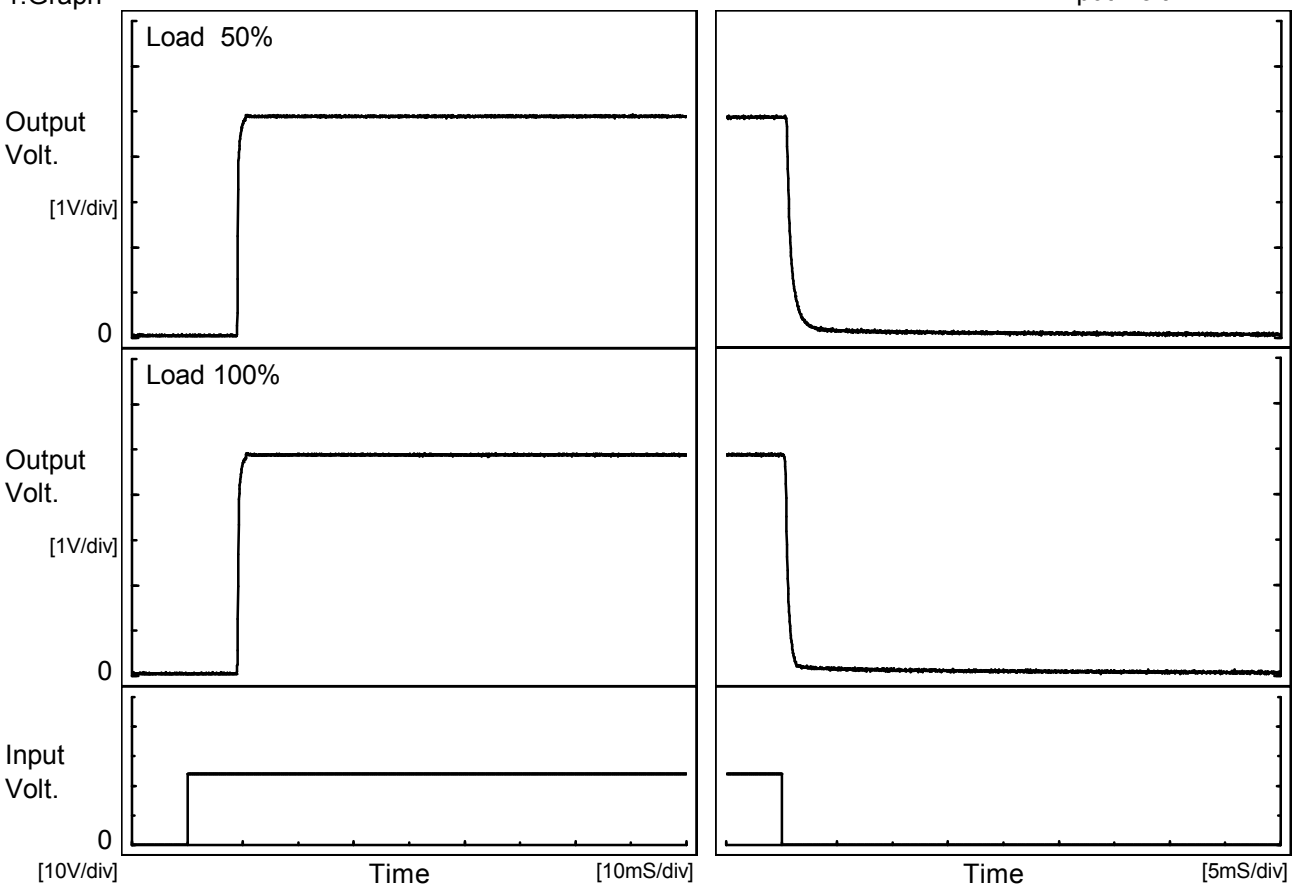
Model	SUTS102405
Item	Rise and Fall Time
Object	+5V2A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

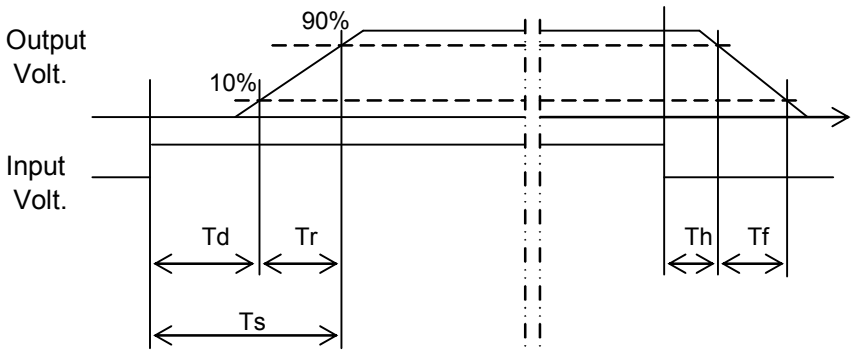
Input Volt. 24 V



2.Values

[mS]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	9.0	0.7	9.7	0.4	1.2
100 %	9.1	0.7	9.8	0.3	0.7



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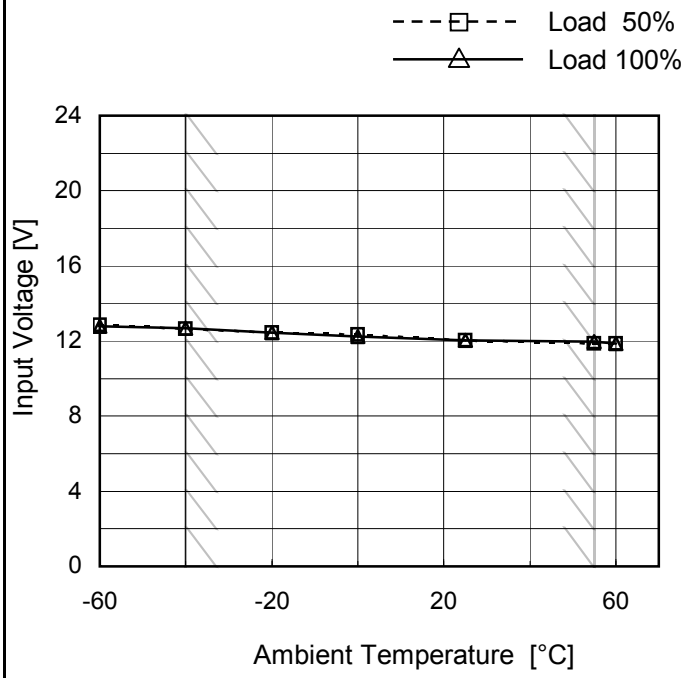
Model	SUTS102405
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+5V2A

Testing Circuitry Figure A

1.Graph



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

2.Values

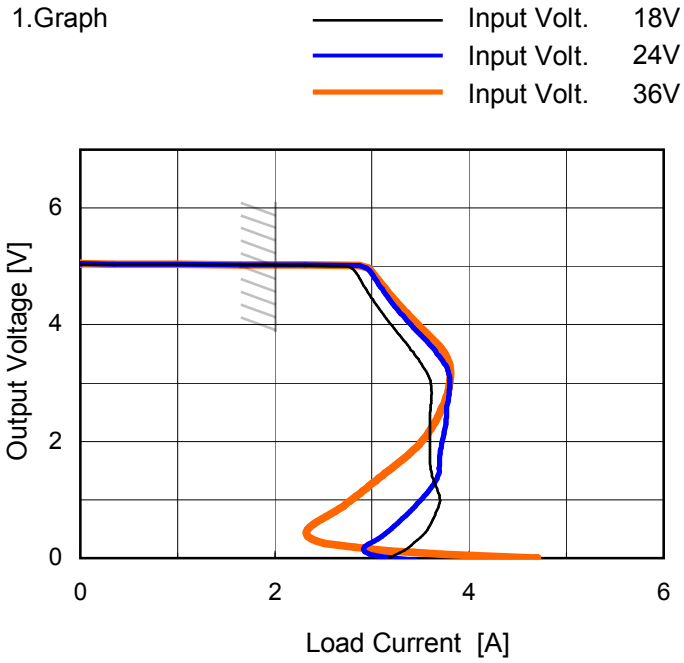
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	12.9	12.8
-40	12.7	12.7
-20	12.5	12.5
0	12.4	12.3
25	12.1	12.1
55	11.9	12.0
60	11.9	11.9
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	SUTS102405
Item	Overcurrent Protection
Object	+5V2A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
5.00	2.33	2.32	2.31
4.75	2.88	3.04	3.06
4.50	2.98	3.14	3.18
4.00	3.19	3.38	3.45
3.50	3.42	3.67	3.75
3.00	3.60	3.80	3.80
2.50	3.60	3.77	3.71
2.00	3.60	3.73	3.53
1.50	3.60	3.69	3.17
1.00	3.70	3.52	2.81
0.50	3.58	3.20	2.37
0.00	3.18	3.42	4.69

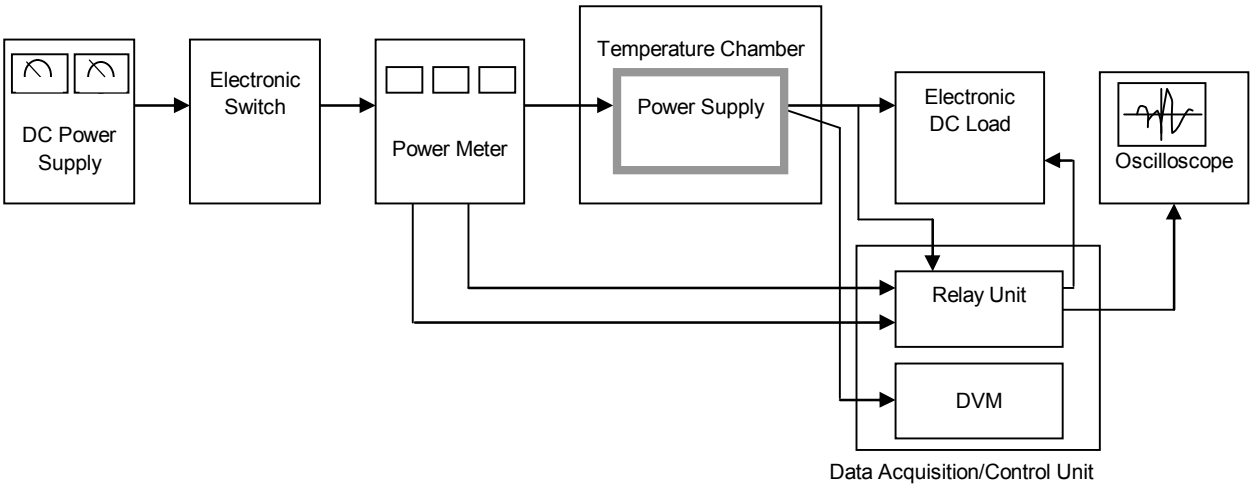


Figure A

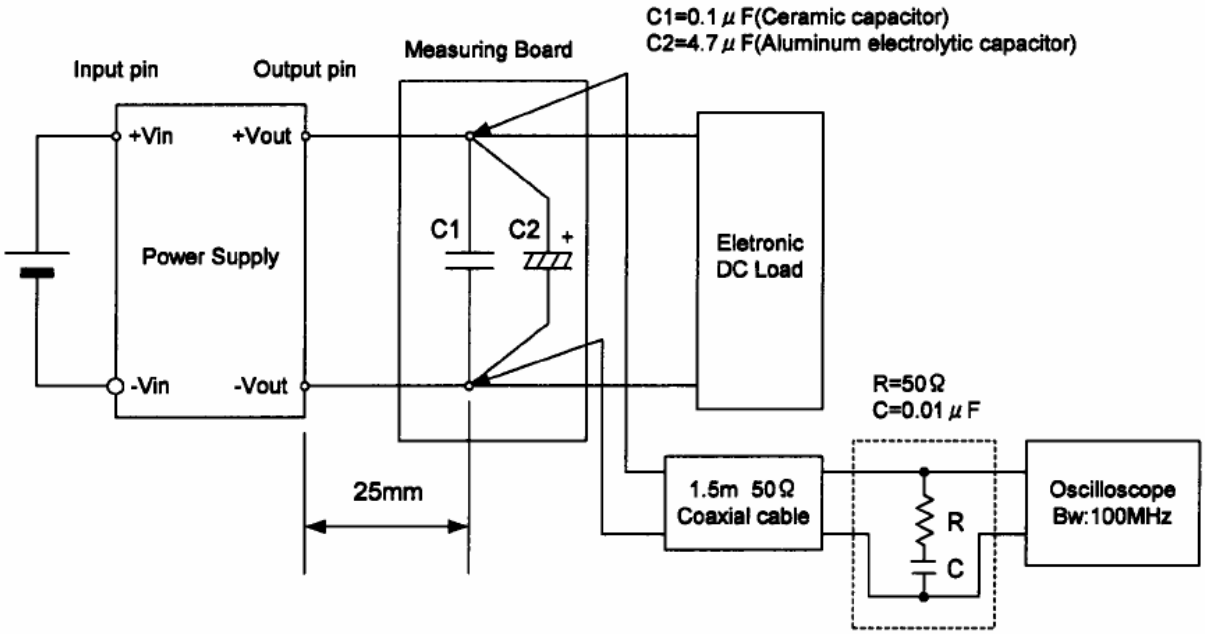


Figure B (Ripple and Ripple noise Characteristic)