参考資料

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TEST DATA OF SUS34805

Regulated DC Power Supply
Mar 7, 2005

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Object	———————

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Testing Circuitry   Figure A

1.Graph

——△—— Load 100%
---🔲--- Load 50%
—·—🔘—·— Load 0%

Input Current [A] vs Input Voltage [V]

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
8.0	0.000	0.000	0.000
16.0	0.000	0.000	0.000
19.2	0.000	0.000	0.000
21.6	0.007	0.092	0.175
24.0	0.007	0.082	0.165
33.0	0.006	0.060	0.117
36.0	0.006	0.055	0.107
40.0	0.006	0.050	0.096
48.0	0.006	0.042	0.080
60.0	0.006	0.035	0.064
70.0	0.006	0.031	0.056
76.0	0.007	0.029	0.052
80.0	0.007	0.028	0.050
84.8	0.008	0.027	0.048
88.0	0.008	0.027	0.046
--	-	-	-
--	-	-	-

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Model	SUS34805
Item	Input Current (by Load Current)
Object	
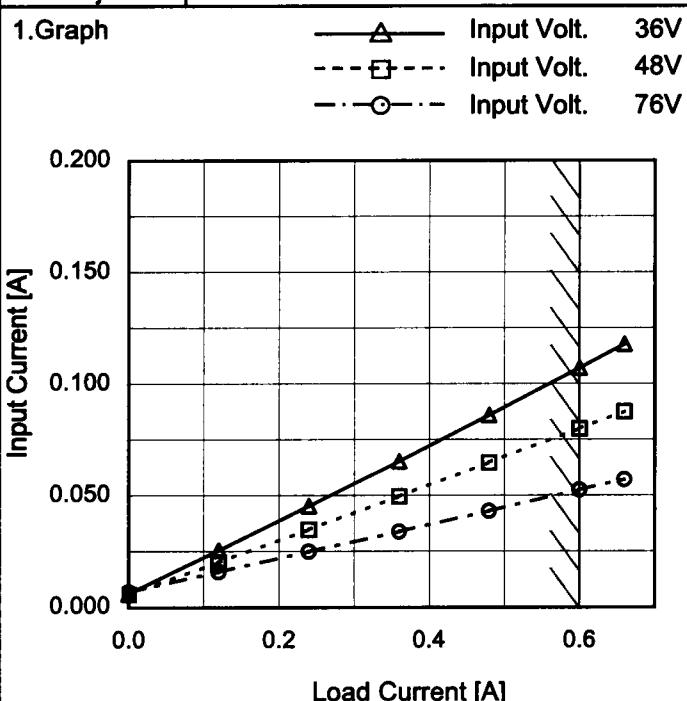
Temperature 25°C
Testing Circuitry Figure A

1.Graph

—△— Input Volt. 36V
- - -□- - - Input Volt. 48V
— · —○— · — Input Volt. 76V

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

2.Values

Load Current [A]	Input Current [A]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.00	0.006	0.006	0.007
0.12	0.025	0.020	0.016
0.24	0.045	0.035	0.025
0.36	0.065	0.050	0.034
0.48	0.086	0.065	0.043
0.60	0.107	0.080	0.052
0.66	0.118	0.088	0.057
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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参考資料

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Model	SUS34805
Item	Input Power (by Load Current)
Object	

Temperature 25°C
Testing Circuitry Figure A

1.Graph

——△—— Input Volt. 36V
---☐--- Input Volt. 48V
—·—○—·— Input Volt. 76V

Load Current [A]

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

2.Values

Load Current [A]	Input Power [W]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.00	0.22	0.27	0.52
0.12	0.92	0.97	1.20
0.24	1.63	1.67	1.89
0.36	2.35	2.38	2.58
0.48	3.09	3.11	3.28
0.60	3.85	3.84	3.99
0.66	4.24	4.21	4.35
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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Model	SUS34805
Item	Efficiency (by Input Voltage)
Object	
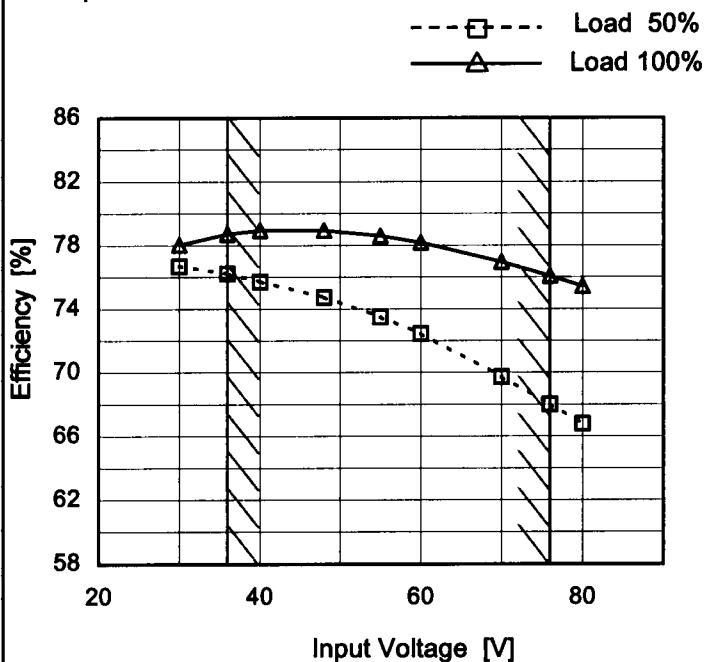
Temperature   25°C
Testing Circuitry   Figure A

1.Graph

```
--- □ ---    Load  50%
——— △ ———    Load 100%
```


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

2.Values

Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
30	76.7	78.0
36	76.2	78.7
40	75.7	78.9
48	74.7	78.9
55	73.5	78.6
60	72.4	78.2
70	69.7	76.9
76	68.0	76.1
80	66.8	75.4

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Model	SUS34805
Item	Efficiency (by Load Current)
Object	

Temperature 25°C
Testing Circuitry Figure A

1.Graph

———△——— Input Volt. 36V
- - -☐- - - Input Volt. 48V
—·—○—·— Input Volt. 76V

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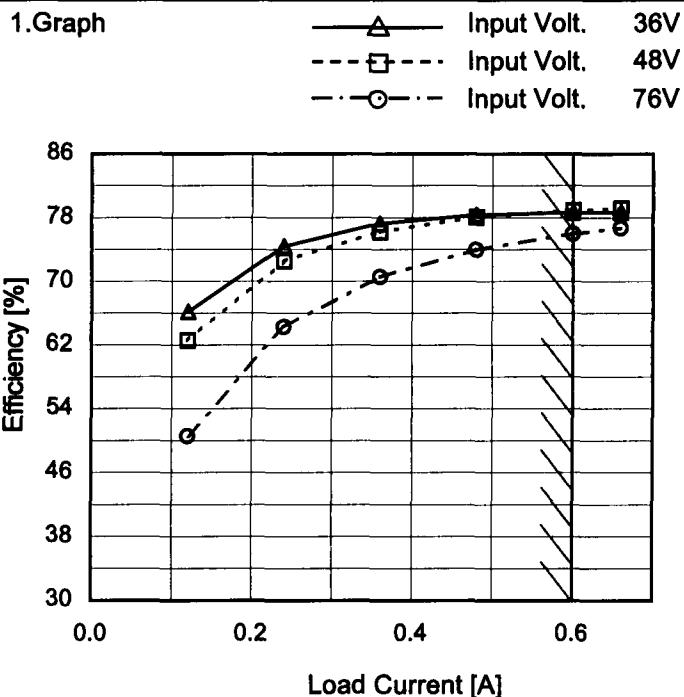
2.Values

Load Current [A]	Efficiency [%]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.00	-	-	-
0.12	66.2	62.6	50.6
0.24	74.4	72.5	64.3
0.36	77.3	76.2	70.6
0.48	78.4	78.1	74.0
0.60	78.7	78.9	76.0
0.66	78.7	79.2	76.7
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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Model	SUS34805
Item	Line Regulation
Object	+5V0.6A
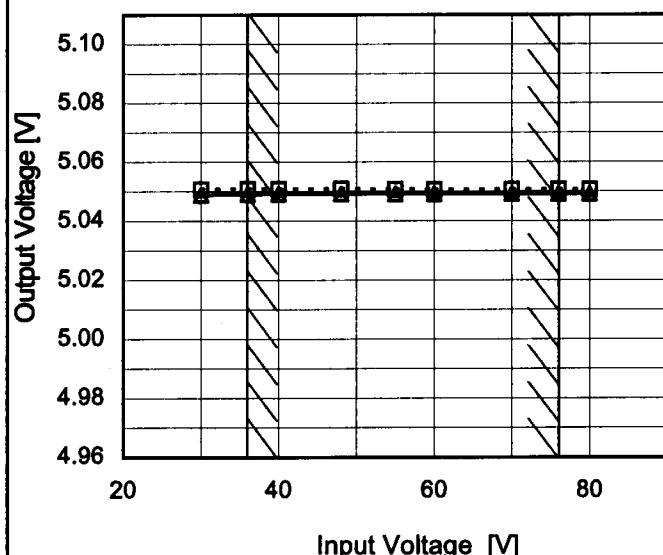
Temperature 25°C
Testing Circuitry Figure A

1.Graph

--- ⊡ --- Load 50%
——— △ ——— Load 100%

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

2.Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
30	5.051	5.049
36	5.051	5.049
40	5.051	5.049
48	5.051	5.049
55	5.051	5.049
60	5.051	5.049
70	5.051	5.049
76	5.051	5.049
80	5.051	5.049

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Model	SUS34805
Item	Load Regulation
Object	+5V0.6A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

—△— Input Volt. 36V
- - -□- - - Input Volt. 48V
—·—○—·— Input Volt. 76V

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

2.Values

Load Current [A]	Output Voltage [V]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.00	5.053	5.053	5.053
0.12	5.052	5.052	5.052
0.24	5.051	5.051	5.051
0.36	5.050	5.050	5.050
0.48	5.050	5.050	5.050
0.60	5.049	5.049	5.049
0.66	5.049	5.049	5.049
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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Model	SUS34805		
Item	Dynamic Load Response	Temperature	25°C
		Testing Circuitry	Figure A
Object	+5V0.6A		

Input Volt.   48   V
Cycle   100   mS

t_1、t_2 = 50μs

Load Current

t_1 t_2

Min. Load (0A) ←→
Load 100% (0.6A)

100mV/div

200μs/div   200μs/div

Min. Load (0A) ←→
Load 50% (0.3A)

100mV/div

200μs/div   200μs/div

Load 50% (0.3A) ←→
Load 100% (0.6A)

100mV/div

200μs/div   200μs/div

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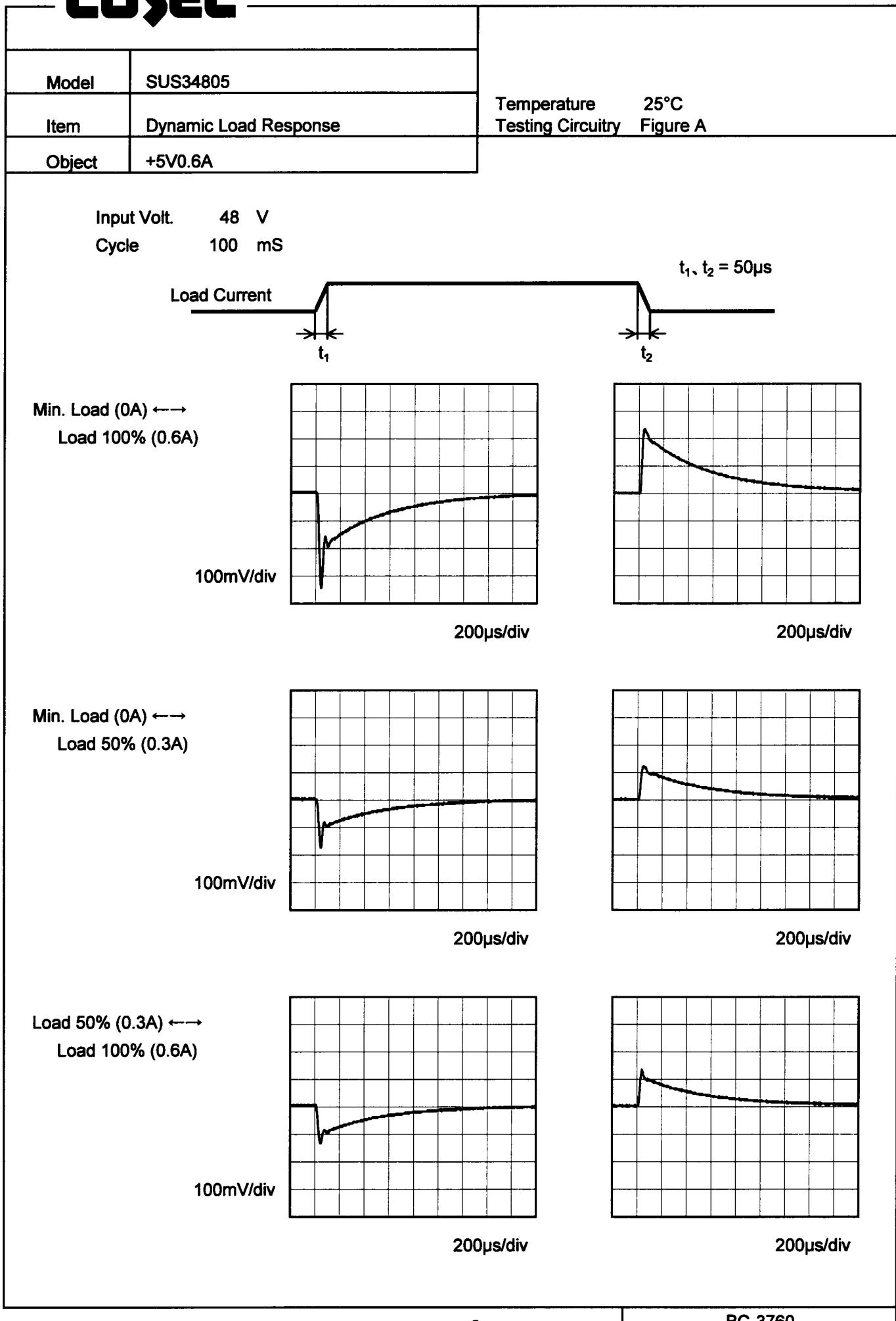
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Model	SUS34805
Item	Ripple Voltage (by Load Current)
Object	+5V0.6A

Temperature   25°C
Testing Circuitry   Figure B

1.Graph

——△—— Input Volt.   36V
—·—○—·— Input Volt.   76V

Ripple Voltage [mV] vs Load Current [A]

Load Current [A]

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.
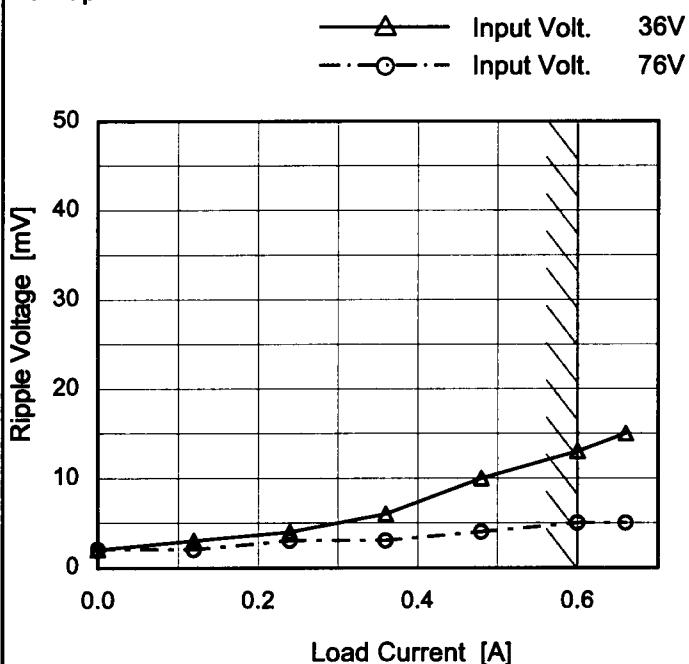
2.Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 36 [V]	Input Volt. 76 [V]
0.00	2	2
0.12	3	2
0.24	4	3
0.36	6	3
0.48	10	4
0.60	13	5
0.66	15	5
--	-	-
--	-	-
--	-	-
--	-	-

Ripple [mVp-p]
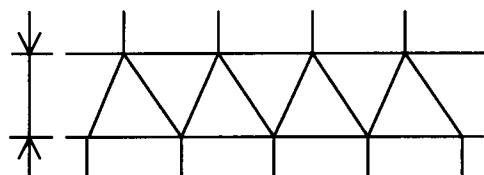
Fig.Complex Ripple Wave Form

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Model	SUS34805
Item	Ripple-Noise
Object	+5V0.6A

Temperature 25°C
Testing Circuitry Figure B

1.Graph

⎯△⎯ Input Volt. 36V
⎯··⎯○⎯·· Input Volt. 76V

Ripple-Noise [mV] vs Load Current [A]
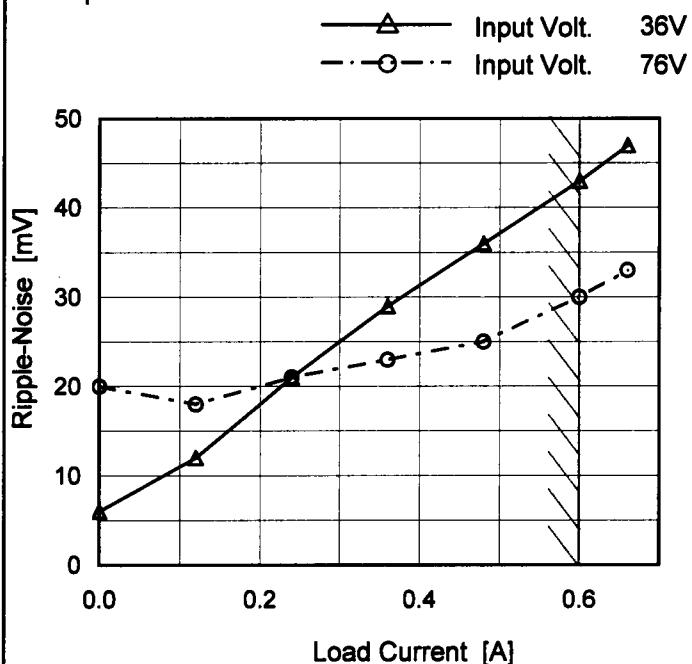
Measured by 100 MHz Oscilloscope.
Ripple-Noise is shown as p-p in the figure below.
Note: Slanted line shows the range of the rated
load current.

2.Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 36 [V]	Input Volt. 76 [V]
0.00	6	20
0.12	12	18
0.24	21	21
0.36	29	23
0.48	36	25
0.60	43	30
0.66	47	33
--	-	-
--	-	-
--	-	-
--	-	-
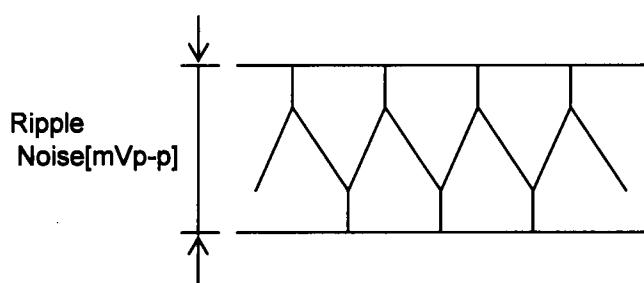
Ripple
Noise[mVp-p]

Fig.Complex Ripple Noise Wave Form

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Model	SUS34805
Item	Ripple Voltage (by Ambient Temp.)
Object	+5V0.6A

Testing Circuitry   Figure B

1.Graph

- - -☐- - - Load 50%
———△——— Load 100%

Ambient Temperature [°C]
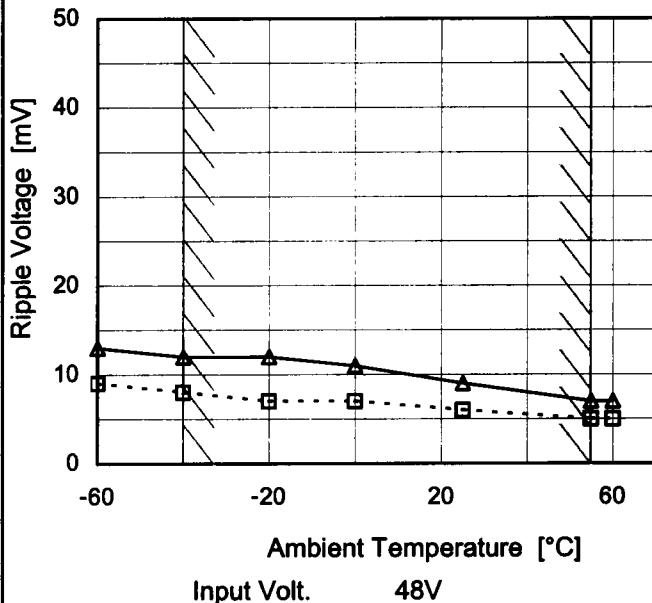
Input Volt.   48V

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%
-60	9	13
-40	8	12
-20	7	12
0	7	11
25	6	9
55	5	7
60	5	7
--	-	-
--	-	-
--	-	-
--	-	-

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Model	SUS34805
Item	Ambient Temperature Drift
Object	+5V0.6A

Testing Circuitry   Figure A

1.Graph

———△——— Input Volt.   36V
- - -☐- - - Input Volt.   48V
—·—○—·— Input Volt.   76V

Ambient Temperature [°C]

Load 100%

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

2.Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
-60	5.017	5.018	5.019
-40	5.028	5.029	5.029
-20	5.037	5.038	5.038
0	5.044	5.044	5.044
25	5.049	5.049	5.049
55	5.051	5.051	5.051
60	5.050	5.050	5.050
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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Model	SUS34805		
Item	Output Voltage Accuracy	Testing Circuitry	Figure A
Object	+5V0.6A		

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 : 36 - 76V

Load Current : 0 - 0.6A

* Output Voltage Accuracy = ±(Maximum of Output Voltage - Minimum of Output Voltage) / 2

* Output Voltage Accuracy (Ration) = $\dfrac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}}$ × 100

2.Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	55	76	0	5.055	±14	±0.3
Minimum Voltage	-40	36	0.6	5.028		

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Model	SUS34805
Item	Time Lapse Drift
Object	+5V0.6A

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	5.048
0.5	5.049
1.0	5.049
2.0	5.049
3.0	5.049
4.0	5.049
5.0	5.049
6.0	5.049
7.0	5.049
8.0	5.049

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参考資料

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Model	SUS34805
Item	Rise and Fall Time
Object	+5V0.6A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

Input Volt. 48 V

Load 50%

Output Volt.
[1V/div]

0

Load 100%

Output Volt.
[1V/div]

0

Input Volt.

0
[10V/div]   Time   [10mS/div]   Time   [5mS/div]
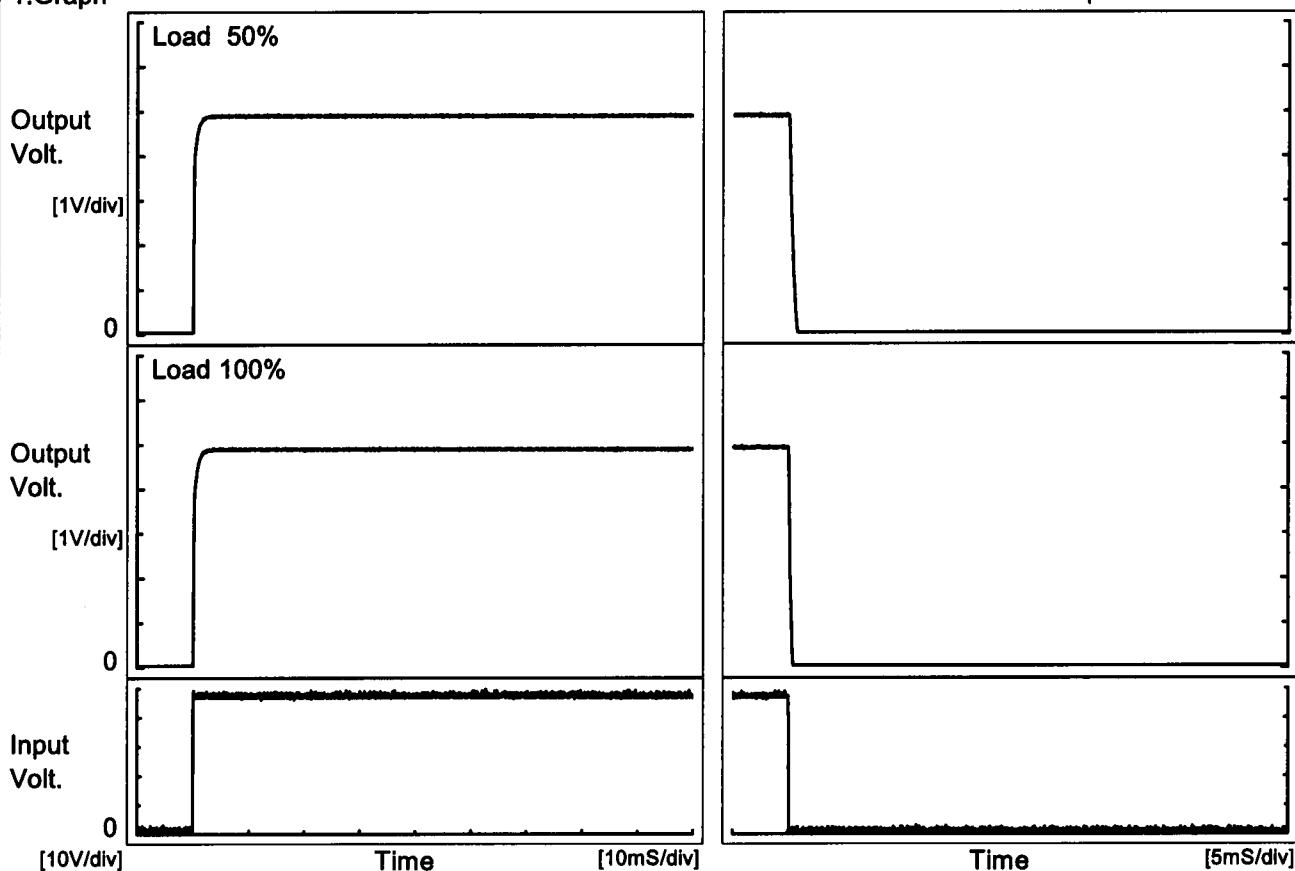
2.Values

[mS]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	0.1	0.8	0.9	0.1	0.6
100 %	0.1	0.9	1.0	0.1	0.3

Output Volt.
90%
10%

Input Volt.

Td Tr   Th Tf

Ts

- 15 -

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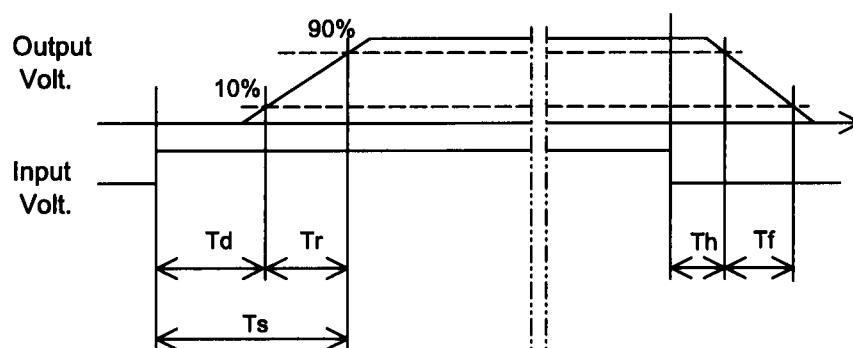
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Model	SUS34805
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+5V0.6A
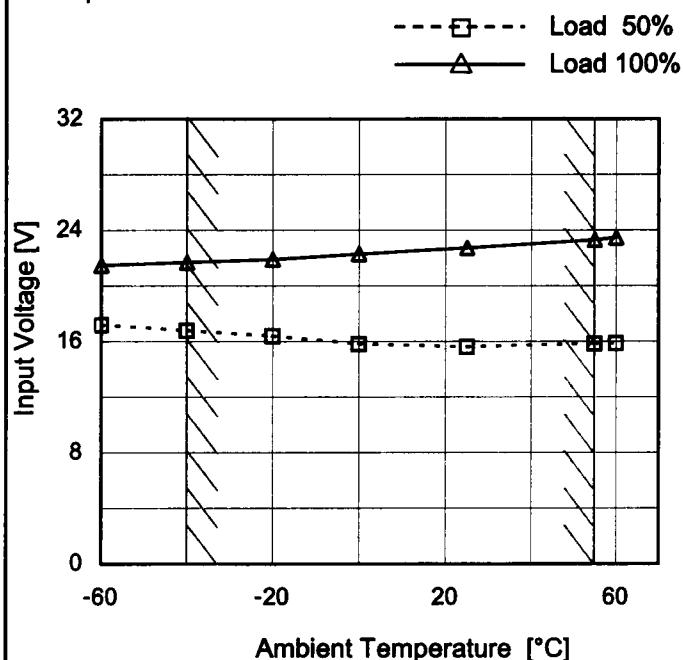
Testing Circuitry   Figure A

1.Graph

--- □ --- Load 50%
——△—— Load 100%

Input Voltage [V] vs Ambient Temperature [°C]

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

2.Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-60	17.2	21.5
-40	16.8	21.7
-20	16.4	22.0
0	15.9	22.3
25	15.7	22.8
55	15.9	23.4
60	15.9	23.5
--	-	-
--	-	-
--	-	-
--	-	-

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Model	SUS34805
Item	Overcurrent Protection
Object	+5V0.6A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

———————— Input Volt. 36V
———————— Input Volt. 48V
———————— Input Volt. 76V

Output Voltage [V] vs Load Current [A]

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

2.Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
5.00	0.60	0.60	0.60
4.75	0.92	0.98	0.96
4.50	0.95	1.00	0.98
4.00	1.02	1.06	1.02
3.50	1.08	1.12	1.05
3.00	1.16	1.18	1.09
2.50	1.24	1.23	1.11
2.00	1.32	1.28	1.13
1.50	1.39	1.32	1.13
1.00	1.45	1.31	1.09
0.50	1.44	1.22	1.00
0.00	1.89	1.36	1.05

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Figure A

C1=0.1μF(Ceramic capacitor)
C2=4.7μF(Aluminum electrolytic capacitor)

Figure B (Ripple and Ripple noise Characteristic)

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