参考資料

COSEL

TEST DATA OF CES48033-25

Regulated DC Power Supply
Jul.18. 2003

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COSEL CO.,LTD.

参考資料

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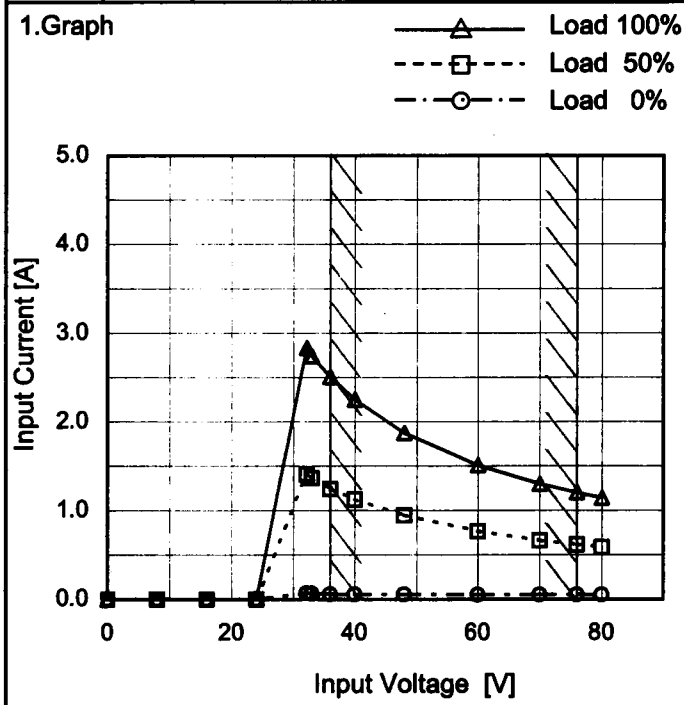
COSEL

Model	CES48033-25
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

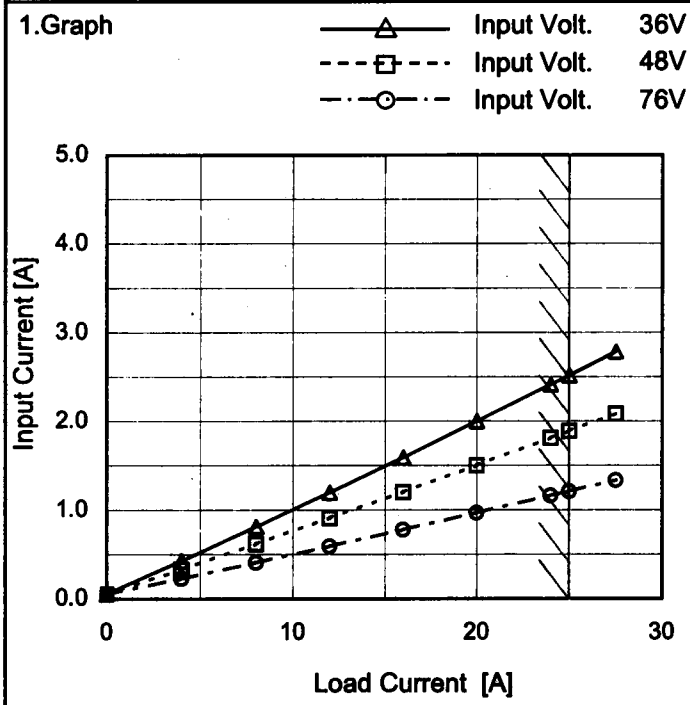
Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0	0.000	0.000	0.000
8	0.000	0.000	0.000
16	0.000	0.000	0.000
24	0.000	0.000	0.000
32	0.069	1.408	2.833
33	0.065	1.364	2.740
36	0.056	1.244	2.508
40	0.054	1.123	2.253
48	0.053	0.943	1.876
60	0.052	0.764	1.512
70	0.051	0.662	1.302
76	0.051	0.614	1.202
80	0.051	0.586	1.144
–	-	-	-
–	-	-	-
–	-	-	-

COSEL

Model	CES48033-25
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. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.0	0.055	0.051	0.050
4.0	0.429	0.332	0.227
8.0	0.810	0.617	0.407
12.0	1.196	0.907	0.590
16.0	1.590	1.201	0.776
20.0	1.999	1.503	0.966
24.0	2.412	1.812	1.159
25.0	2.516	1.890	1.208
27.5	2.782	2.085	1.331
--	-	-	-
--	-	-	-

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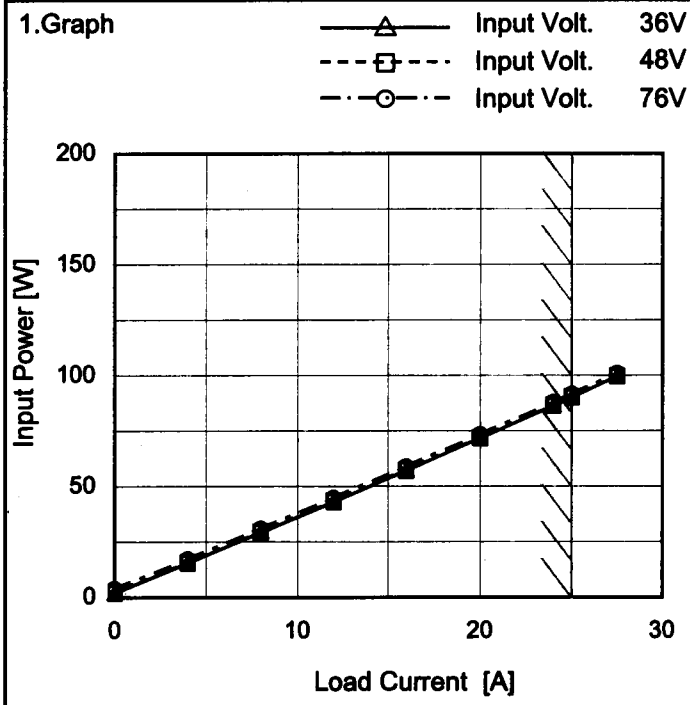
Model	CES48033-25
Item	Input Power (by Load Current)
Object	————————

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. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.0	2.0	2.5	3.8
4.0	15.4	15.9	17.3
8.0	29.1	29.6	30.9
12.0	43.0	43.5	44.8
16.0	57.1	57.6	59.0
20.0	71.7	72.0	73.4
24.0	86.4	86.7	88.0
25.0	90.1	90.5	91.7
27.5	99.5	99.8	101.0
--	-	-	-
--	-	-	-

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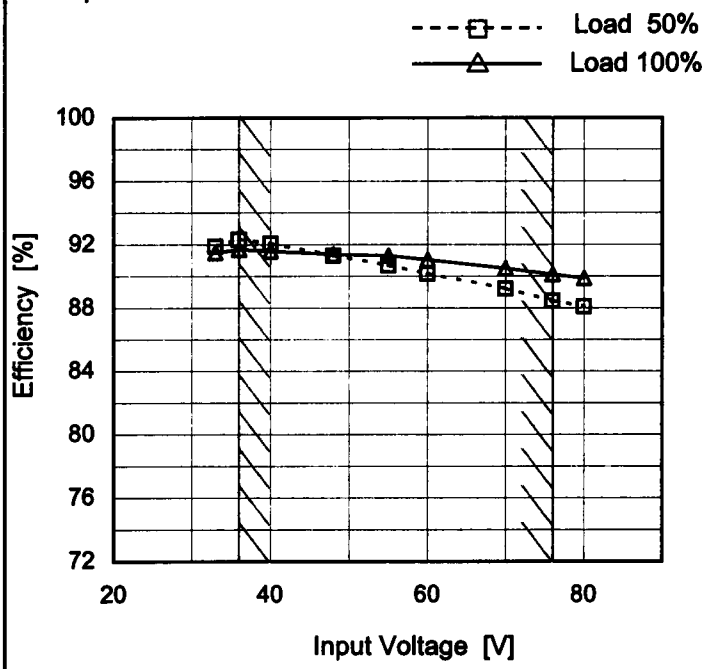
Model	CES48033-25
Item	Efficiency (by Input Voltage)
Object	――――――――――

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%
33	91.9	91.5
36	92.3	91.7
40	92.1	91.6
48	91.3	91.4
55	90.7	91.3
60	90.2	91.0
70	89.2	90.5
76	88.5	90.1
80	88.1	89.9

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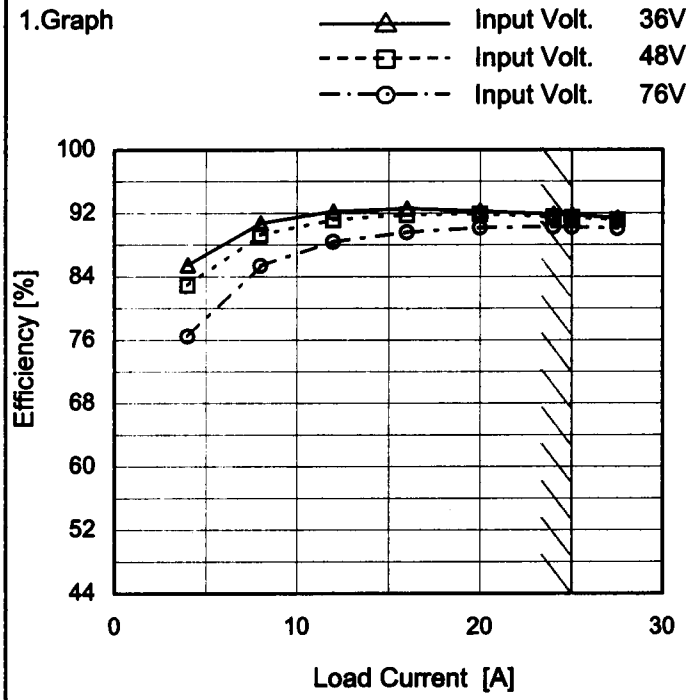
Model	CES48033-25
Item	Efficiency (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

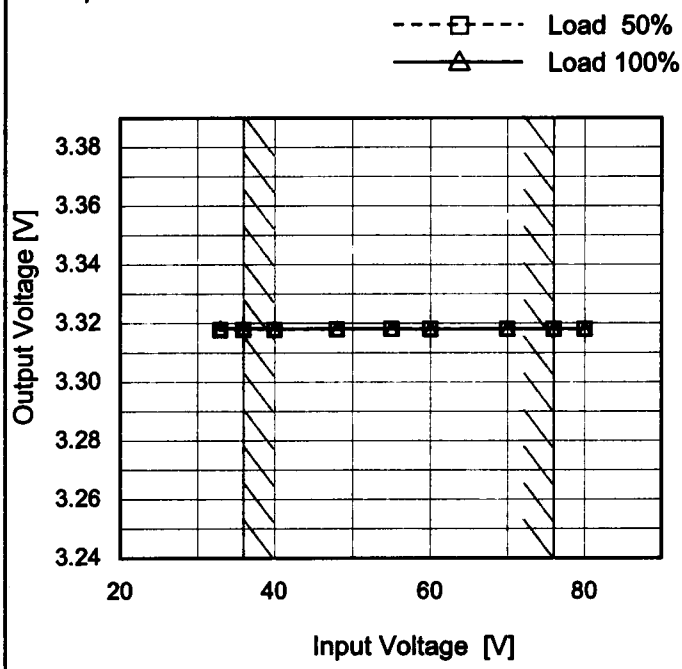
Load Current [A]	Efficiency [%]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.0	-	-	-
4.0	85.5	82.9	76.5
8.0	90.7	89.2	85.4
12.0	92.2	91.1	88.4
16.0	92.6	91.8	89.6
20.0	92.3	91.9	90.1
24.0	91.9	91.5	90.3
25.0	91.8	91.4	90.2
27.5	91.4	91.2	90.0
--	-	-	-
--	-	-	-

COSEL

Model	CES48033-25
Item	Line Regulation
Object	+3.3V25A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

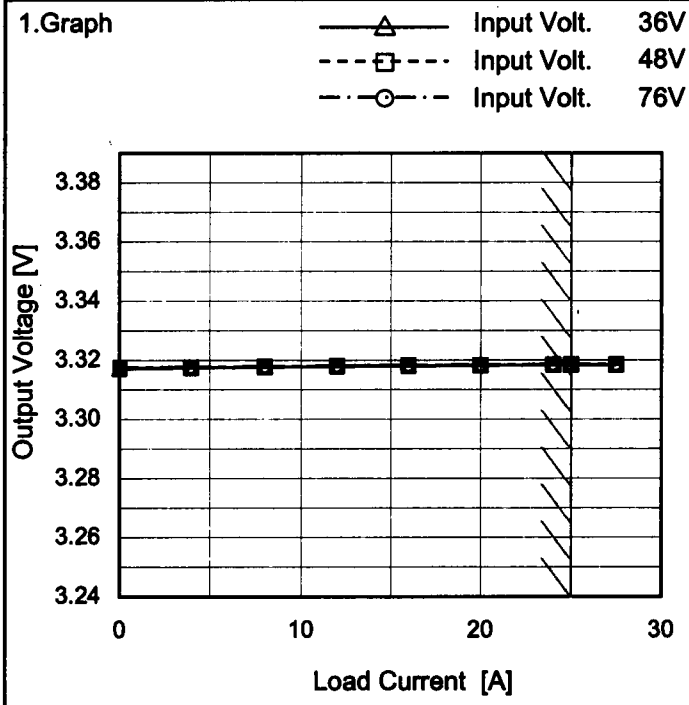
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
33	3.318	3.318
36	3.318	3.318
40	3.318	3.318
48	3.318	3.318
55	3.318	3.318
60	3.318	3.318
70	3.318	3.318
76	3.318	3.318
80	3.318	3.318

COSEL

Model	CES48033-25
Item	Load Regulation
Object	+3.3V25A

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. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.0	3.317	3.318	3.318
4.0	3.318	3.318	3.318
8.0	3.318	3.318	3.318
12.0	3.318	3.318	3.318
16.0	3.318	3.318	3.318
20.0	3.318	3.318	3.318
24.0	3.318	3.319	3.318
25.0	3.318	3.318	3.318
27.5	3.319	3.319	3.319
--	-	-	-
--	-	-	-

COSEL

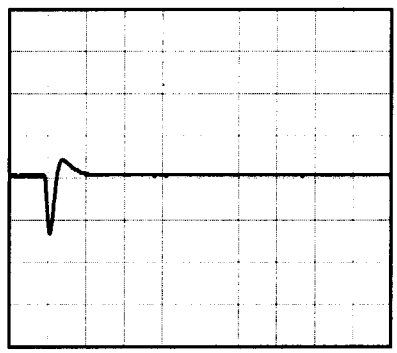
Model	CES48033-25		
Item	Dynamic Load Response	Temperature Testing Circuitry	25°C Figure A
Object	+3.3V25A		

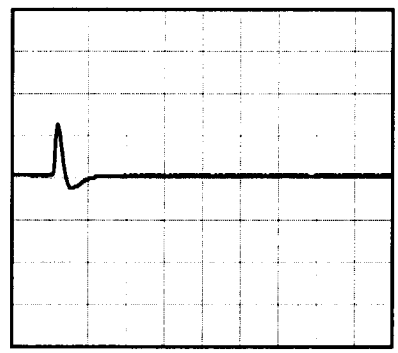
Input Volt. 48 V
Cycle 10 ms

Load Current

1.1A/μs

Min. Load (0A) ⟷
Load 100% (25A)



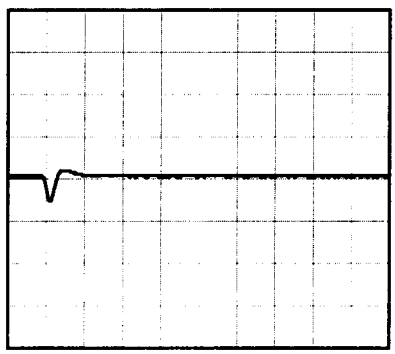


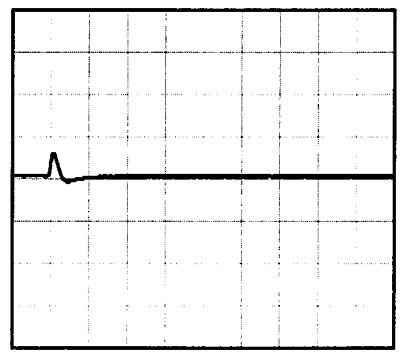
200 mV/div

200 μs/div

200 μs/div

Min. Load (0A) ⟷
Load 50% (12.5A)



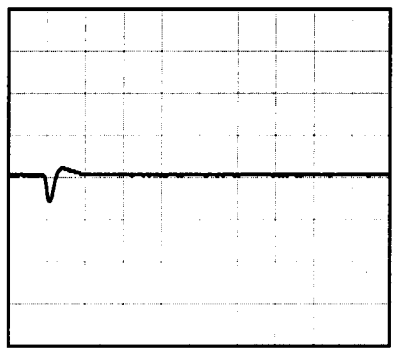


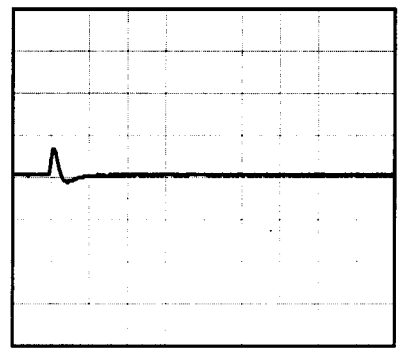
200 mV/div

200 μs/div

200 μs/div

Load 50% (12.5A) ⟷
Load 100% (25A)





200 mV/div

200 μs/div

200 μs/div

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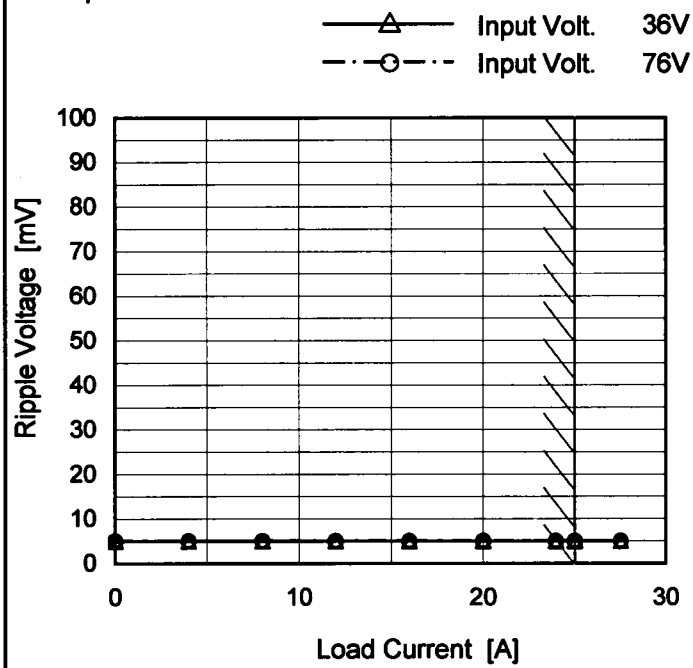
Model	CES48033-25
Item	Ripple Voltage (by Load Current)
Object	+3.3V25A

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]

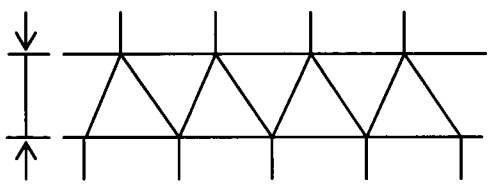


Fig.Complex Ripple Wave Form

2.Values

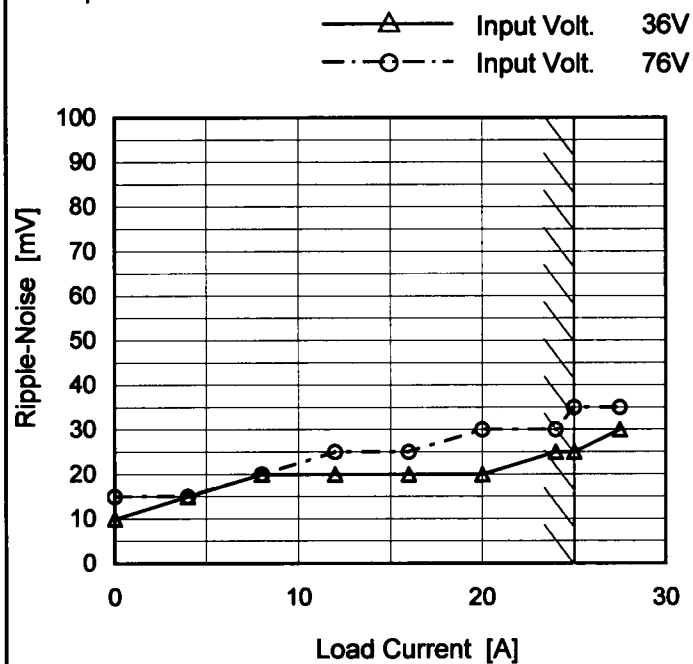
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 36 [V]	Input Volt. 76 [V]
0.0	5	5
4.0	5	5
8.0	5	5
12.0	5	5
16.0	5	5
20.0	5	5
24.0	5	5
25.0	5	5
27.5	5	5
--	-	-
--	-	-

COSEL

Model	CES48033-25
Item	Ripple-Noise
Object	+3.3V25A

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.

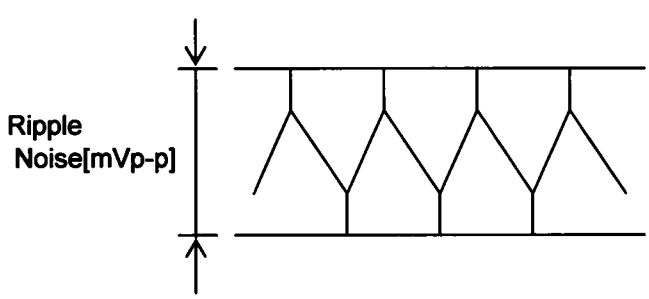


Fig.Complex Ripple Noise Wave Form

2.Values

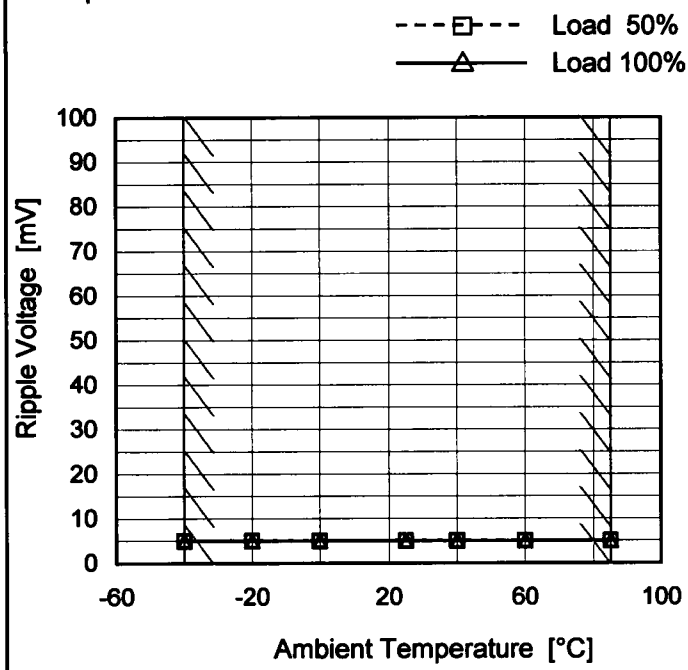
Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 36 [V]	Input Volt. 76 [V]
0.0	10	15
4.0	15	15
8.0	20	20
12.0	20	25
16.0	20	25
20.0	20	30
24.0	25	30
25.0	25	35
27.5	30	35
--	-	-
--	-	-

COSEL

Model	CES48033-25
Item	Ripple Voltage (by Ambient Temp.)
Object	+3.3V25A

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

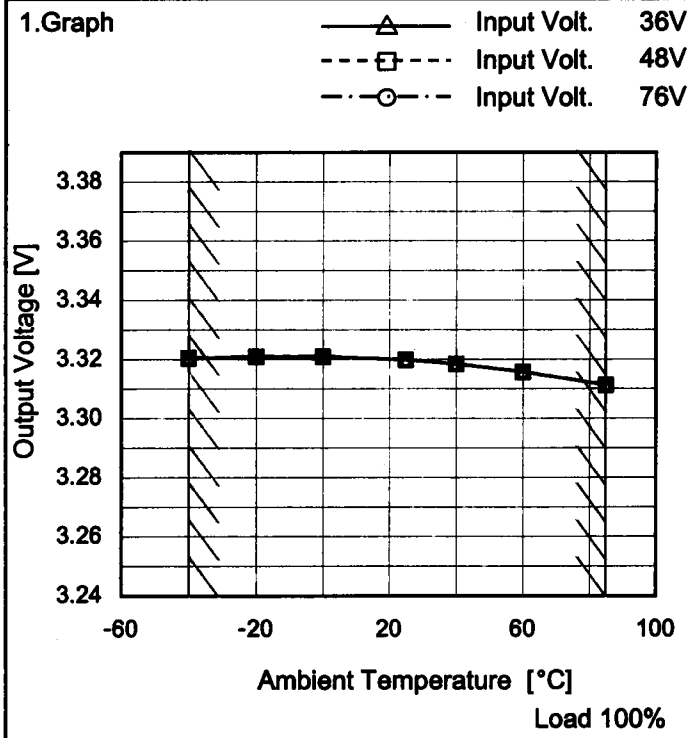
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-40	5	5
-20	5	5
0	5	5
25	5	5
40	5	5
60	5	5
85	5	5
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	CES48033-25
Item	Ambient Temperature Drift
Object	+3.3V25A

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. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
-40	3.320	3.321	3.321
-20	3.321	3.321	3.321
0	3.321	3.321	3.321
25	3.320	3.320	3.320
40	3.318	3.318	3.318
60	3.316	3.316	3.316
85	3.311	3.311	3.311
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	CES48033-25	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+3.3V25A	

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 - 85°C
Input Voltage : 36 - 76V
Load Current : 0 - 25A

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

* Output Voltage Accuracy (Ration) = $\frac{\text{Output Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$

2.Values

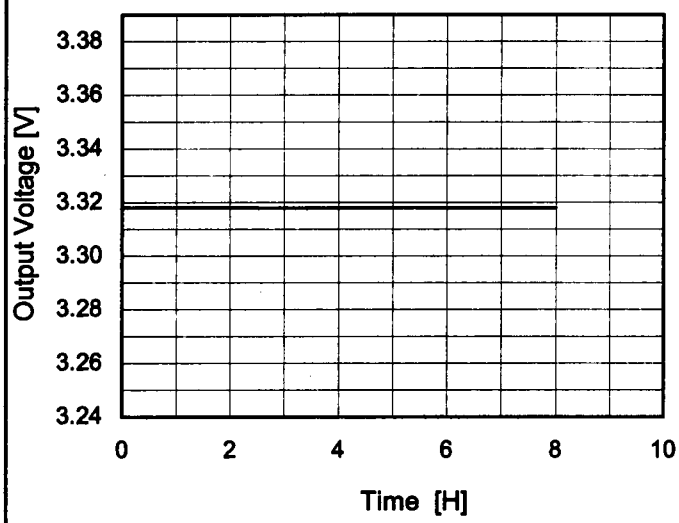
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	-40	76	25	3.320	±5	±0.2
Minimum Voltage	85	36	0	3.311		

COSEL

Model	CES48033-25
Item	Time Lapse Drift
Object	+3.3V25A

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	3.319
0.5	3.318
1.0	3.318
2.0	3.318
3.0	3.318
4.0	3.318
5.0	3.318
6.0	3.318
7.0	3.318
8.0	3.318

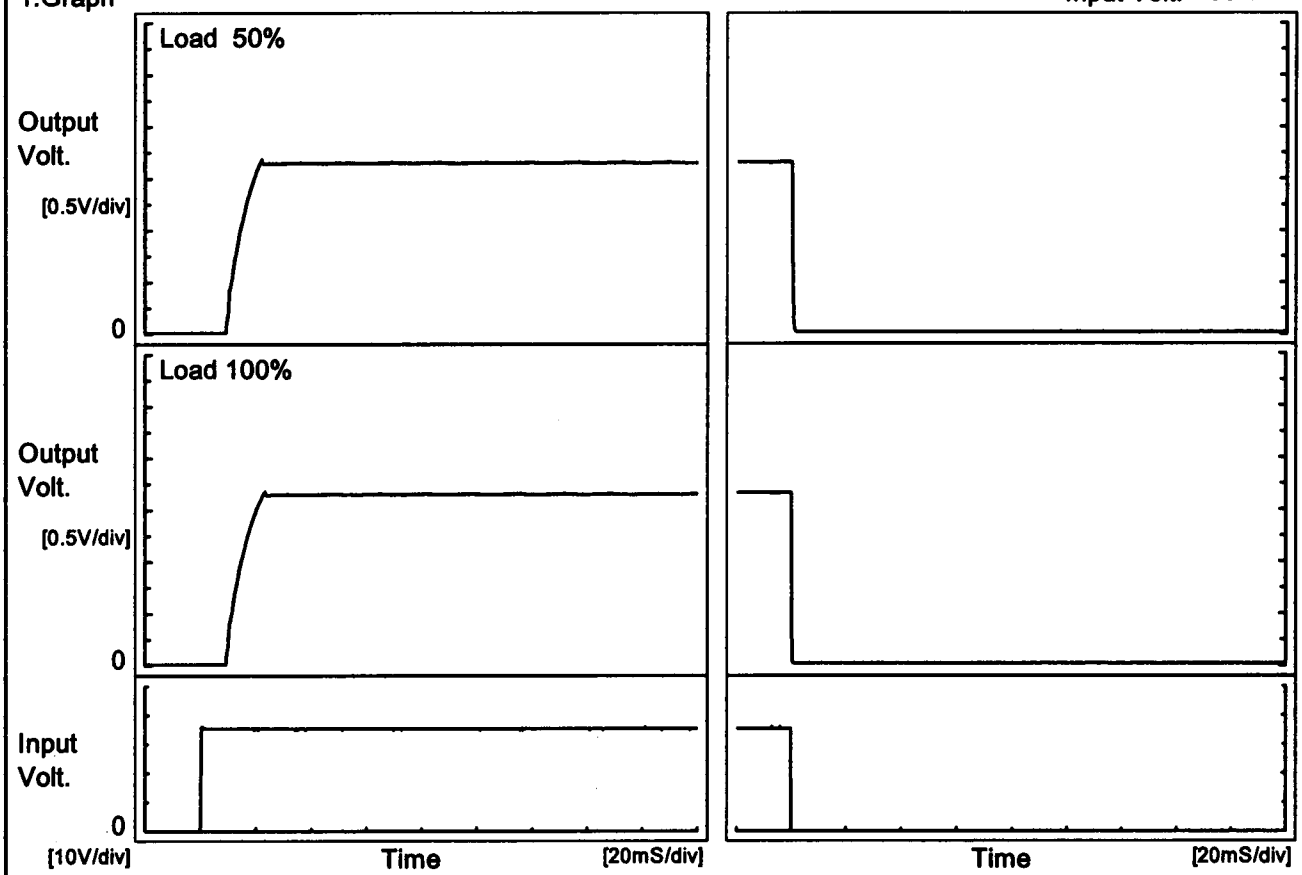
COSEL

Model	CES48033-25
Item	Rise and Fall Time
Object	+3.3V25A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

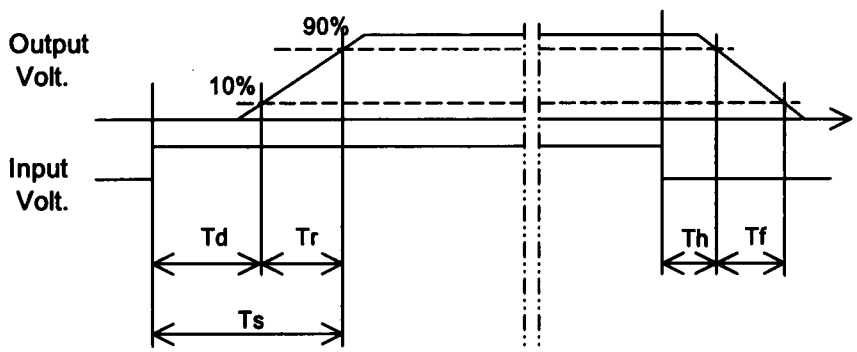
Input Volt. 36 V



2.Values

[mS]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	10.1	9.3	19.4	0.1	0.6
100 %	10.1	10.1	20.2	0.1	0.3

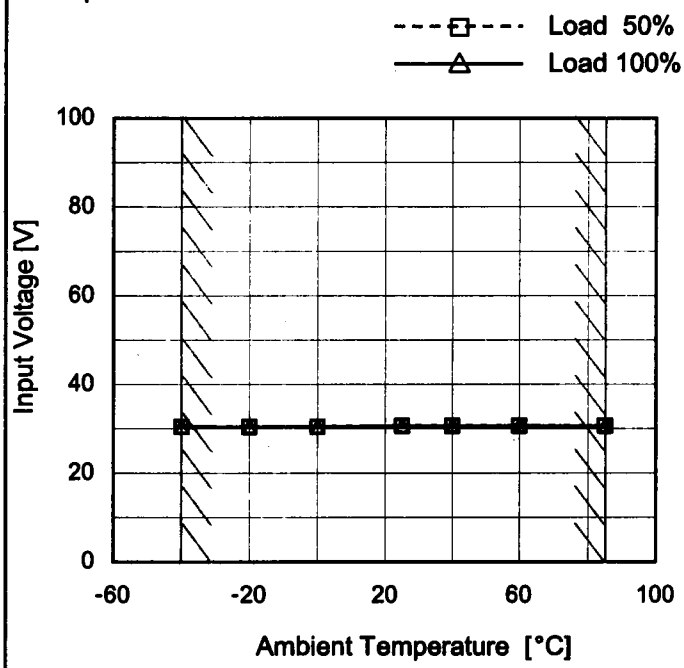


COSEL

Model	CES48033-25
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+3.3V25A

Testing Circuitry Figure A

1.Graph



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

2.Values

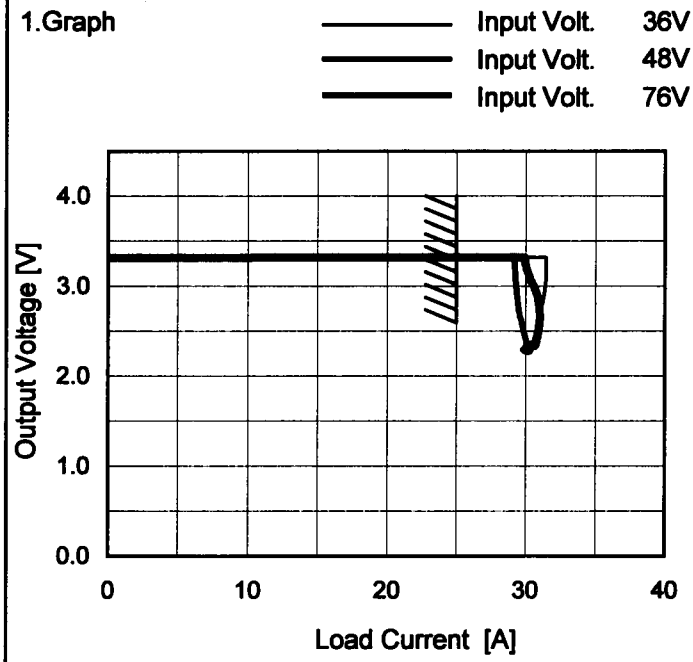
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-40	30.5	30.5
-20	30.5	30.5
0	30.5	30.5
25	30.7	30.7
40	30.7	30.7
60	30.7	30.7
85	30.7	30.7
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	CES48033-25
Item	Overcurrent Protection
Object	+3.3V25A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

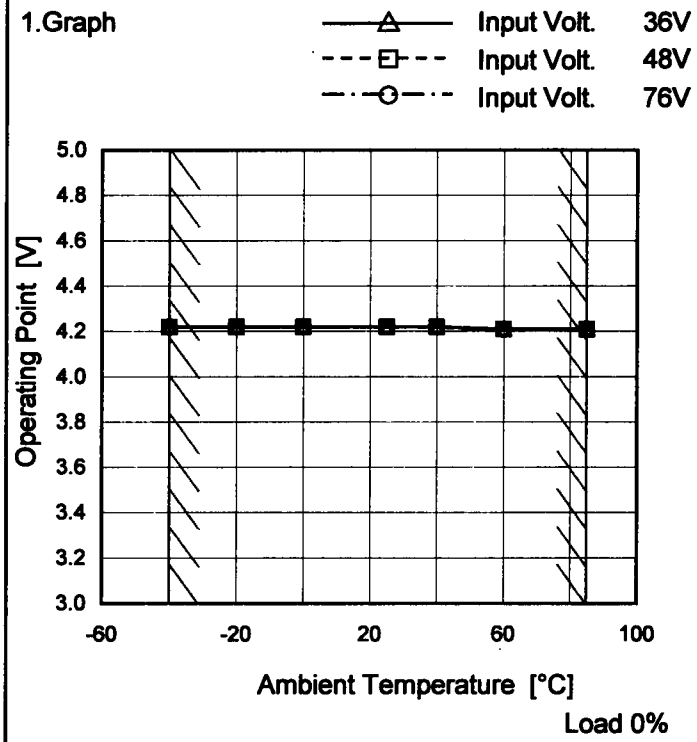
Output Voltage [V]	Load Current [A]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
3.30	27.08	25.00	26.60
3.16	31.46	29.23	30.23
2.97	31.40	29.33	30.69
2.64	30.92	29.66	31.03
2.31	30.42	30.09	30.27
1.98	30.47	30.03	29.89
1.65	30.47	30.03	29.89
1.32	30.47	30.03	29.89
0.99	30.47	30.03	29.89
0.66	30.47	30.03	29.89
0.33	30.47	30.03	29.89
0.00	30.47	30.02	29.89

COSEL

Model	CES48033-25
Item	Overvoltage Protection
Object	+3.3V25A

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. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
-40	4.22	4.22	4.22
-20	4.22	4.22	4.22
0	4.22	4.22	4.22
25	4.22	4.22	4.22
40	4.22	4.22	4.22
60	4.21	4.21	4.21
85	4.21	4.21	4.21
0	-	-	-
–	-	-	-
–	-	-	-
–	-	-	-

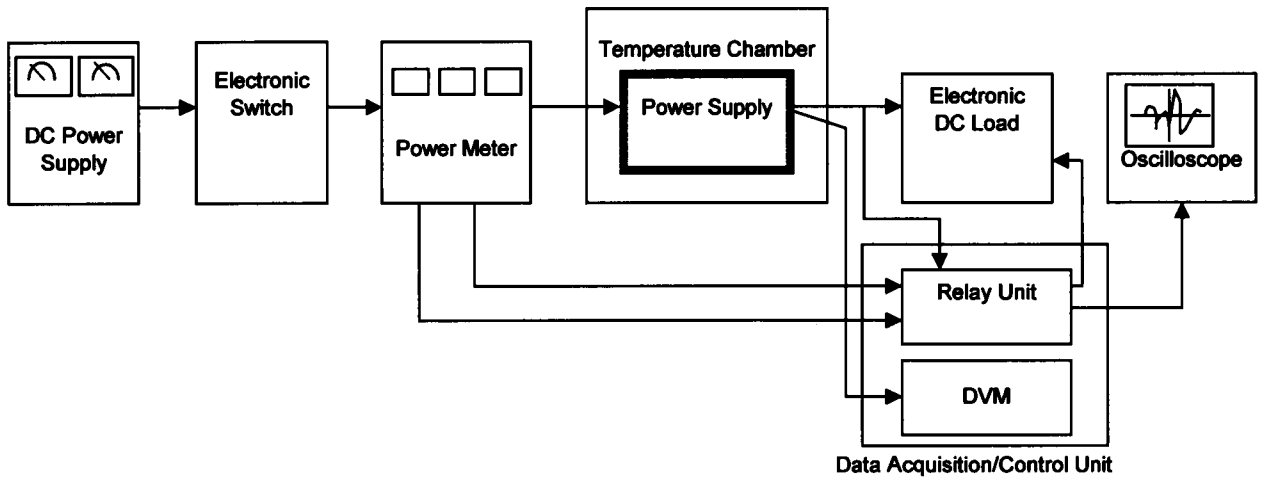


Figure A

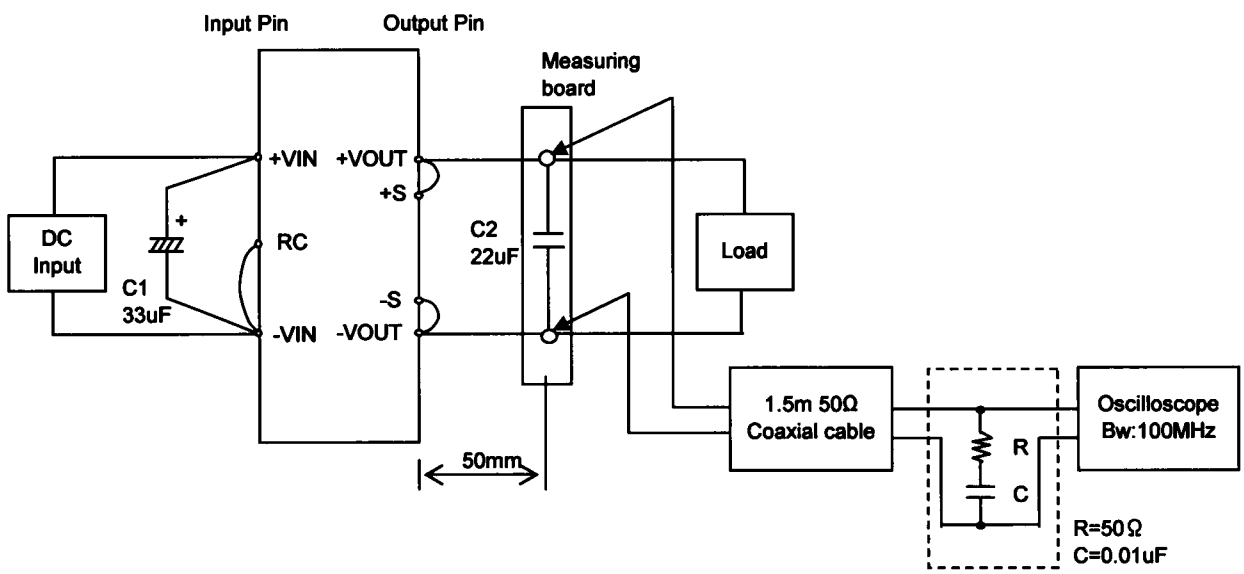


Figure B