参考資料

COSEL

TEST DATA OF CES48018-30

Regulated DC Power Supply
Jul.18. 2003

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COSEL CO.,LTD.

参考資料

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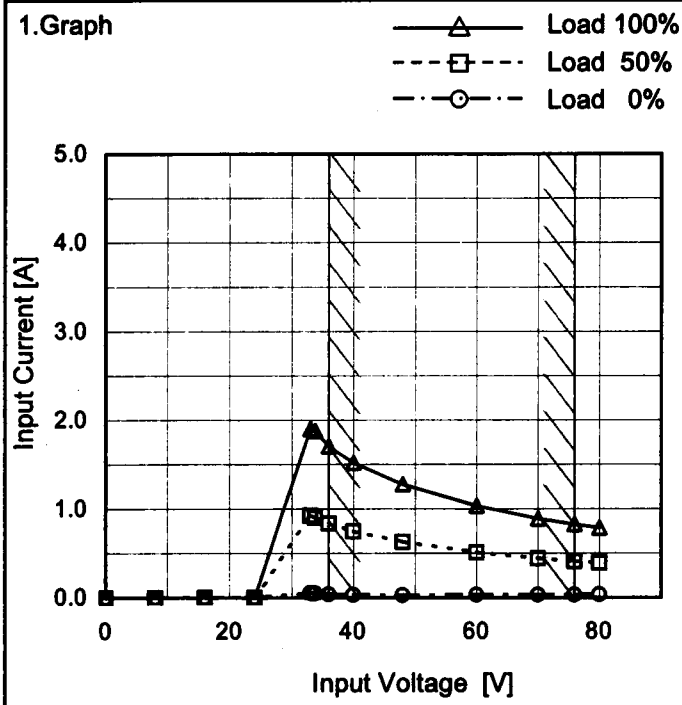
参考資料

COSEL

Model	CES48018-30
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
33	0.054	0.928	1.904
34	0.050	0.901	1.881
36	0.041	0.838	1.706
40	0.032	0.747	1.524
48	0.030	0.628	1.279
60	0.032	0.509	1.035
70	0.033	0.442	0.891
76	0.034	0.410	0.825
80	0.034	0.392	0.788
--	-	-	-
--	-	-	-
--	-	-	-

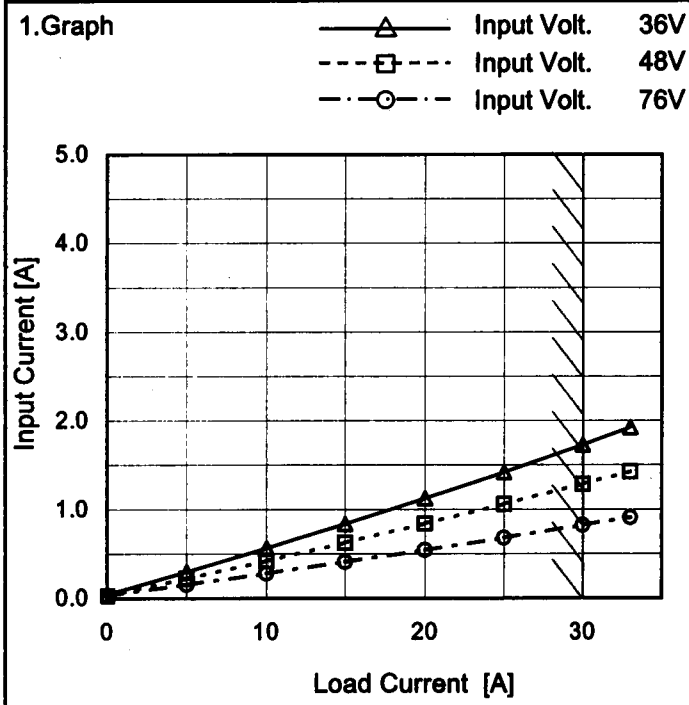
BC-3505

COSEL

Model	CES48018-30
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

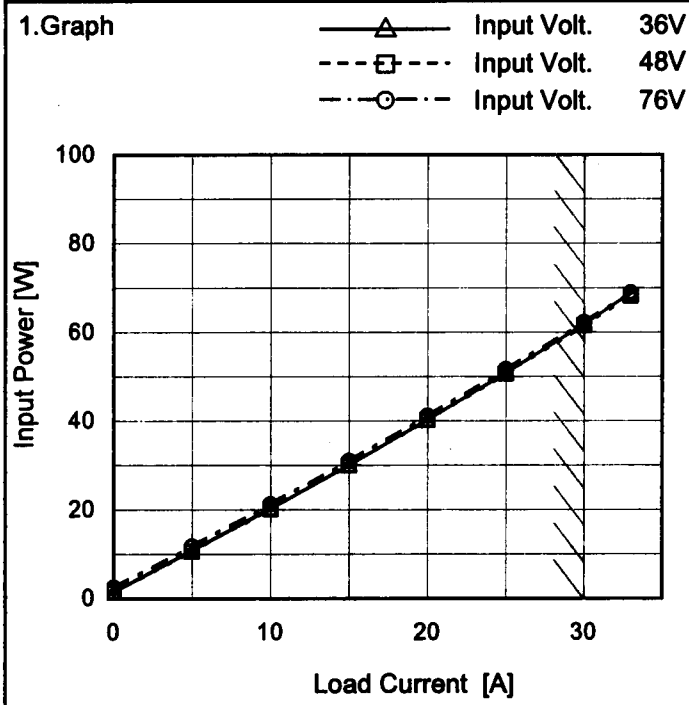
Load Current [A]	Input Current [A]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0	0.041	0.030	0.033
5	0.299	0.222	0.155
10	0.564	0.421	0.280
15	0.838	0.626	0.409
20	1.123	0.840	0.542
25	1.419	1.059	0.680
30	1.728	1.286	0.821
33	1.924	1.426	0.909
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	CES48018-30
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

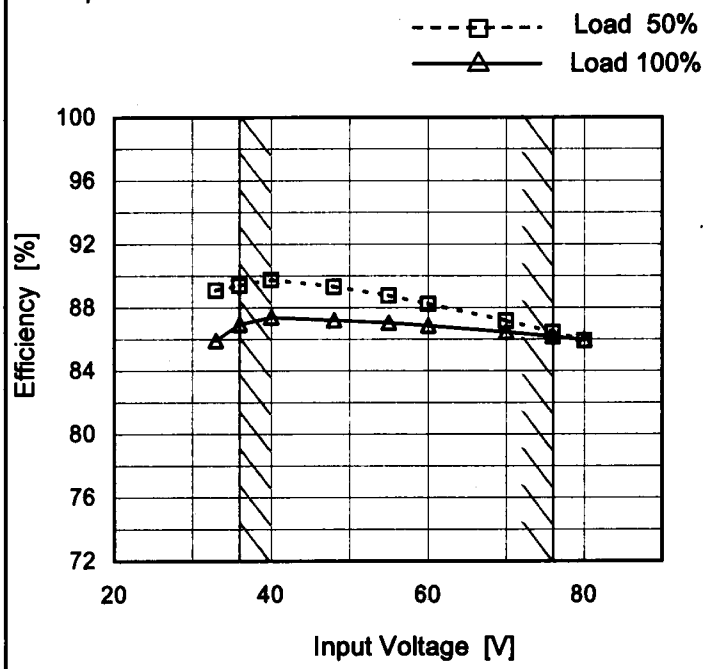
Load Current [A]	Input Power [W]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0	1.49	1.42	2.54
5	10.77	10.66	11.76
10	20.28	20.19	21.26
15	30.11	30.02	31.07
20	40.32	40.26	41.19
25	50.89	50.73	51.68
30	61.88	61.55	62.31
33	68.88	68.25	68.99
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	CES48018-30
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	89.1	85.9
36	89.4	87.0
40	89.8	87.4
48	89.3	87.2
55	88.8	87.1
60	88.2	86.9
70	87.2	86.5
76	86.4	86.2
80	85.9	86.0

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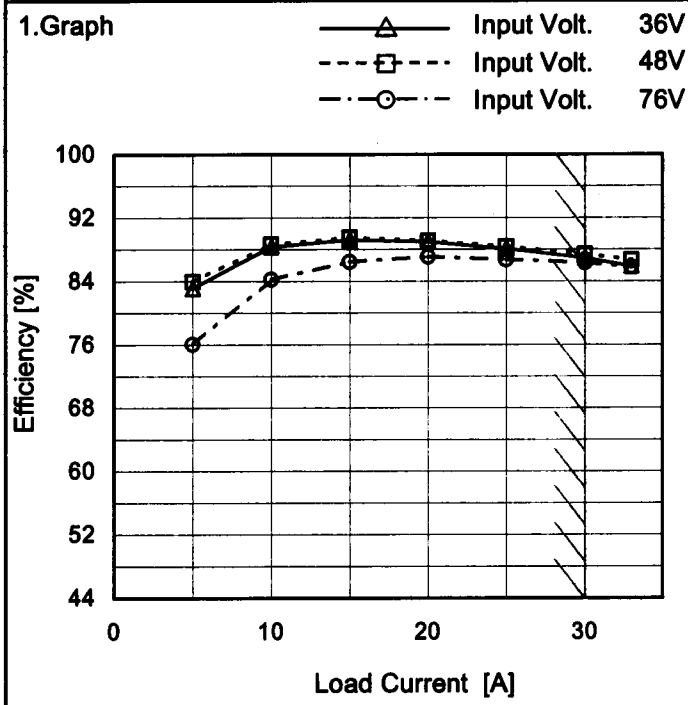
Model	CES48018-30
Item	Efficiency (by Load Current)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

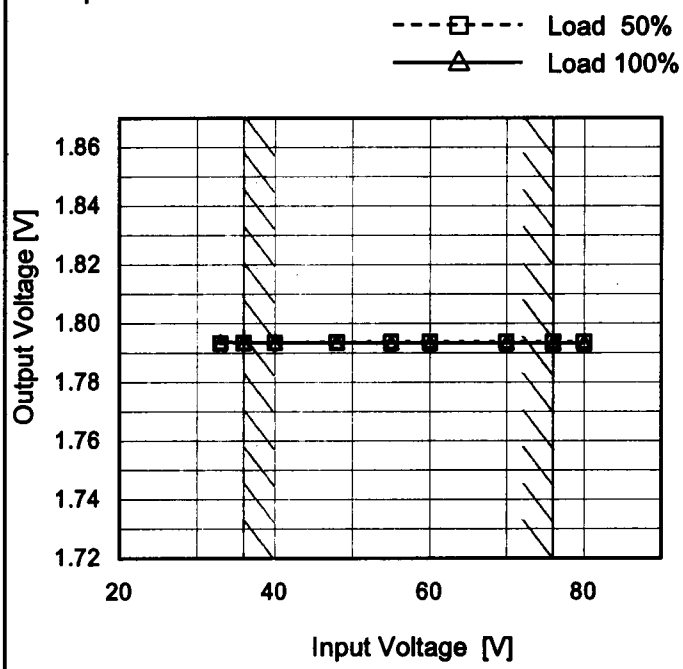
Load Current [A]	Efficiency [%]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0	-	-	-
5	83.1	84.0	76.1
10	88.3	88.7	84.2
15	89.2	89.5	86.5
20	89.0	89.1	87.1
25	88.1	88.4	86.7
30	86.9	87.4	86.3
33	85.9	86.7	85.7
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	CES48018-30
Item	Line Regulation
Object	+1.8V30A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

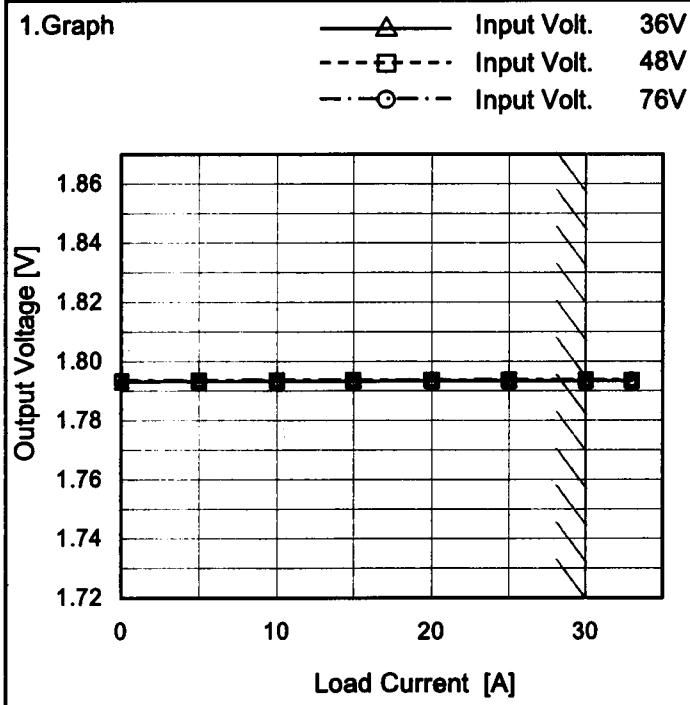
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
33	1.793	1.794
36	1.793	1.794
40	1.794	1.794
48	1.794	1.794
55	1.794	1.793
60	1.794	1.793
70	1.794	1.793
76	1.794	1.793
80	1.794	1.793

COSEL

Model	CES48018-30
Item	Load Regulation
Object	+1.8V30A

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	1.793	1.793	1.794
5	1.793	1.794	1.794
10	1.793	1.794	1.794
15	1.793	1.794	1.794
20	1.794	1.794	1.794
25	1.794	1.794	1.794
30	1.794	1.794	1.794
33	1.794	1.794	1.794
--	-	-	-
--	-	-	-
--	-	-	-

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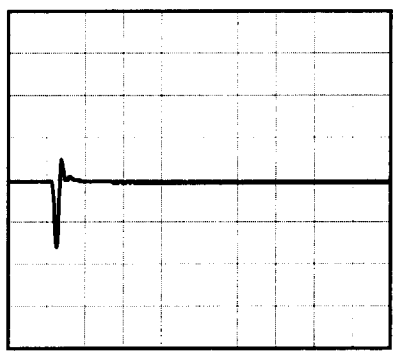
Model	CES48018-30		
Item	Dynamic Load Response	Temperature	25°C
		Testing Circuitry	Figure A
Object	+1.8V30A		

Input Volt. 48 V
Cycle 10 ms

Load Current

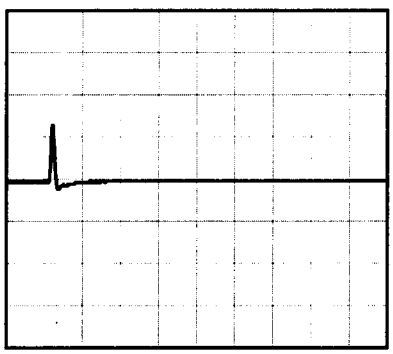
1.1A/μs

Min. Load (0A) ⟷
Load 100% (30A)



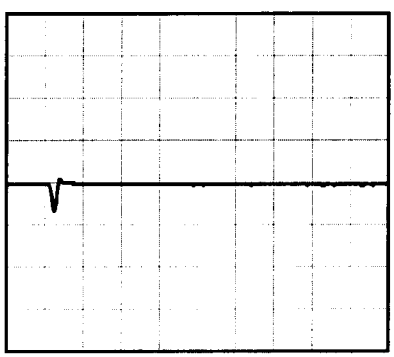
200 mV/div

200 μs/div



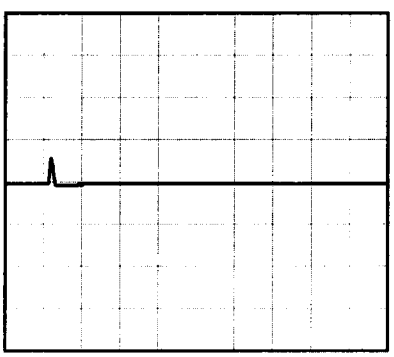
200 μs/div

Min. Load (0A) ⟷
Load 50% (15A)



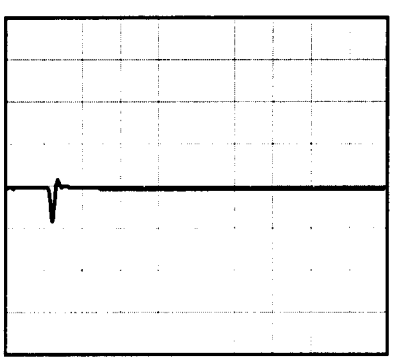
200 mV/div

200 μs/div



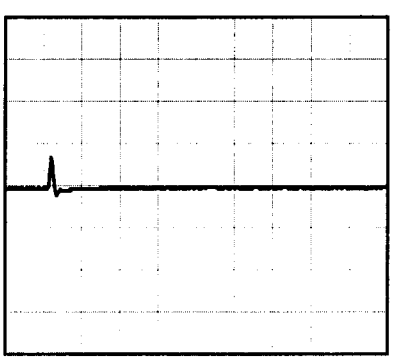
200 μs/div

Load 50% (15A) ⟷
Load 100% (30A)



200 mV/div

200 μs/div



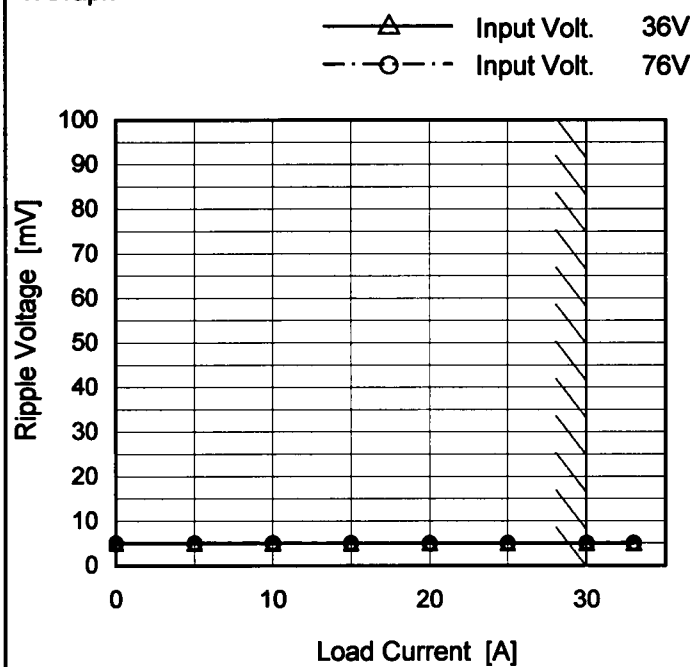
200 μs/div

COSEL

Model	CES48018-30
Item	Ripple Voltage (by Load Current)
Object	+1.8V30A

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]

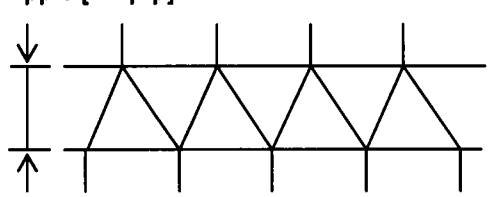


Fig.Complex Ripple Wave Form

2.Values

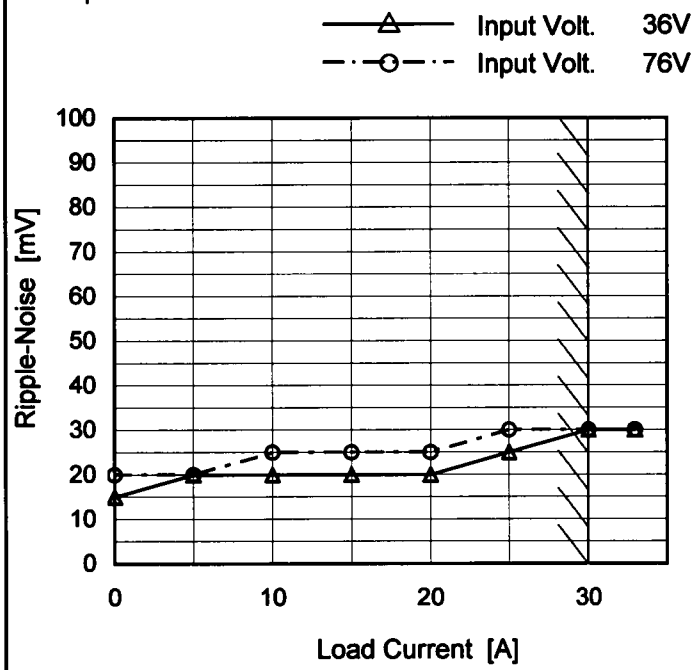
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 36 [V]	Input Volt. 76 [V]
0	5	5
5	5	5
10	5	5
15	5	5
20	5	5
25	5	5
30	5	5
33	5	5
--	-	-
--	-	-
--	-	-

COSEL

Model	CES48018-30
Item	Ripple-Noise
Object	+1.8V30A

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.

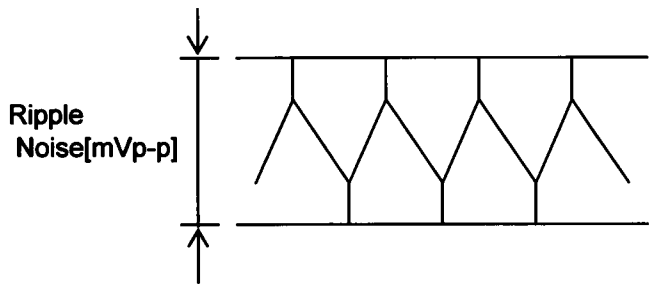


Fig.Complex Ripple Noise Wave Form

2.Values

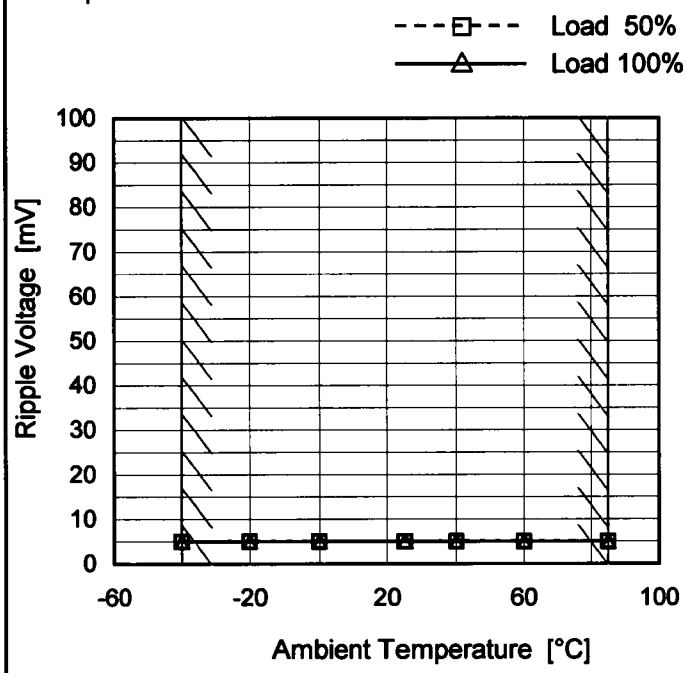
Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 36 [V]	Input Volt. 76 [V]
0	15	20
5	20	20
10	20	25
15	20	25
20	20	25
25	25	30
30	30	30
33	30	30
--	-	-
--	-	-
--	-	-

COSEL

Model	CES48018-30
Item	Ripple Voltage (by Ambient Temp.)
Object	+1.8V30A

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

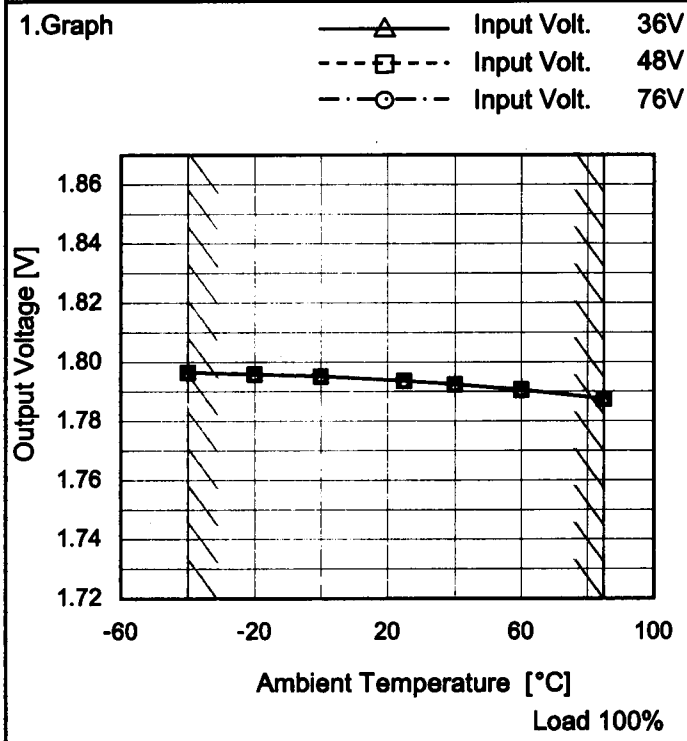
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-40	5	5
-20	5	5
0	5	5
25	5	5
40	5	5
60	5	5
85	5	5
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	CES48018-30
Item	Ambient Temperature Drift
Object	+1.8V30A

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	1.797	1.797	1.797
-20	1.796	1.796	1.796
0	1.795	1.795	1.795
25	1.794	1.794	1.794
40	1.793	1.792	1.792
60	1.791	1.791	1.791
85	1.788	1.788	1.788
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	CES48018-30	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+1.8V30A	

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 - 30A

* 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

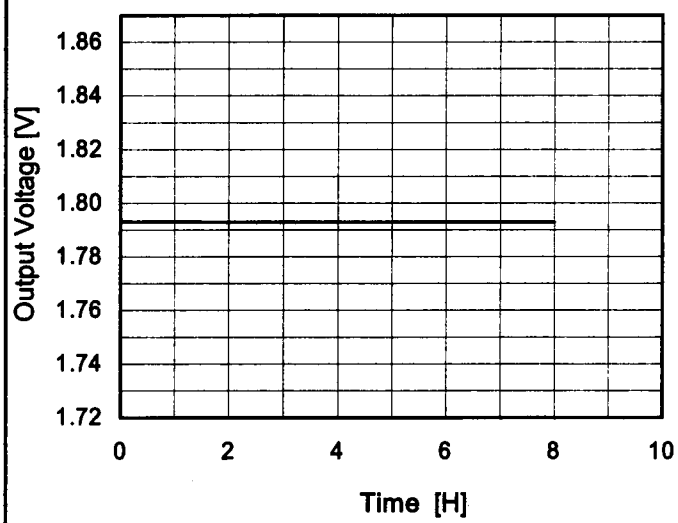
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	-40	76	0	1.797	±5	±0.3
Minimum Voltage	85	76	30	1.788		

COSEL

Model	CES48018-30
Item	Time Lapse Drift
Object	+1.8V30A

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	1.794
0.5	1.793
1.0	1.793
2.0	1.793
3.0	1.793
4.0	1.793
5.0	1.793
6.0	1.793
7.0	1.793
8.0	1.793

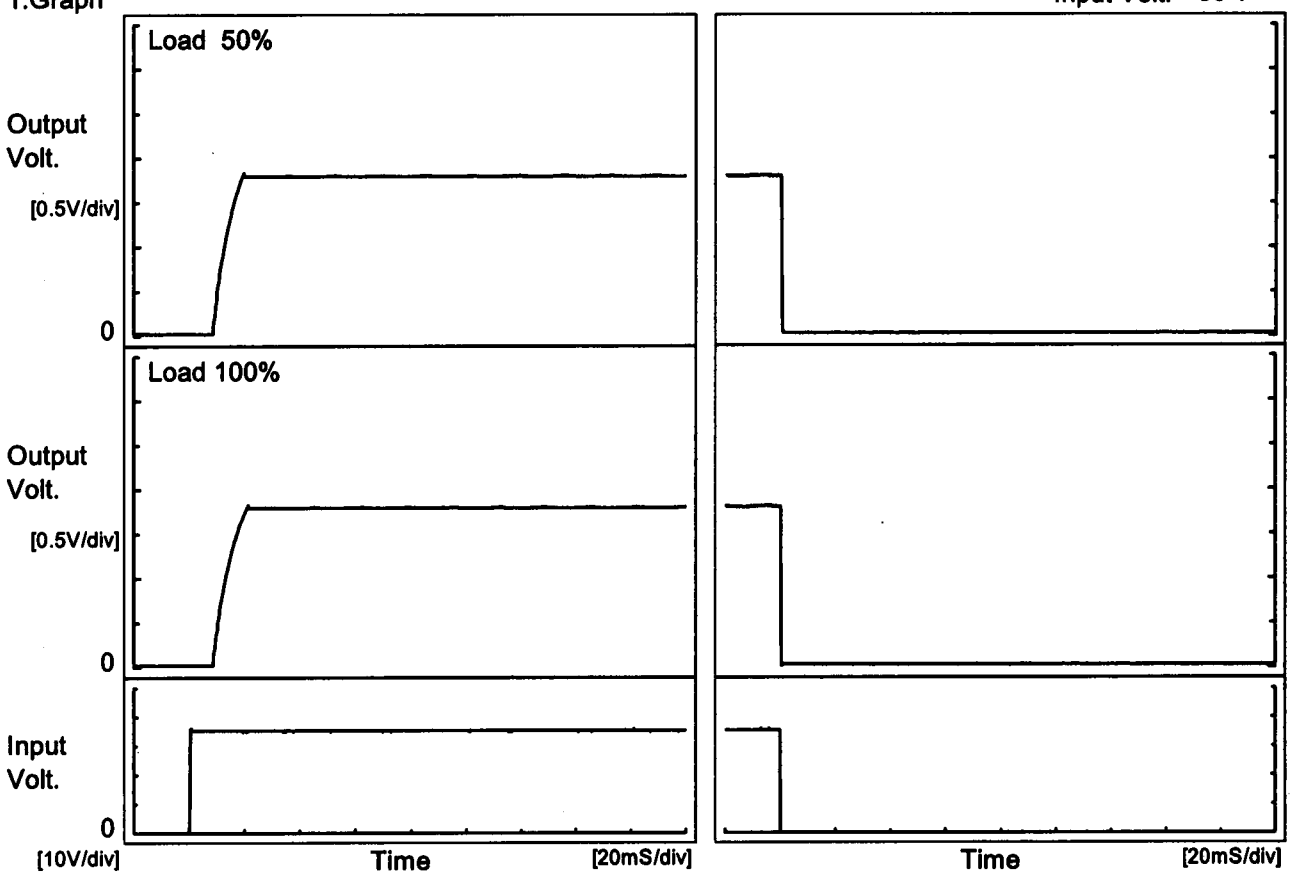
COSEL

Model	CES48018-30
Item	Rise and Fall Time
Object	+1.8V30A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

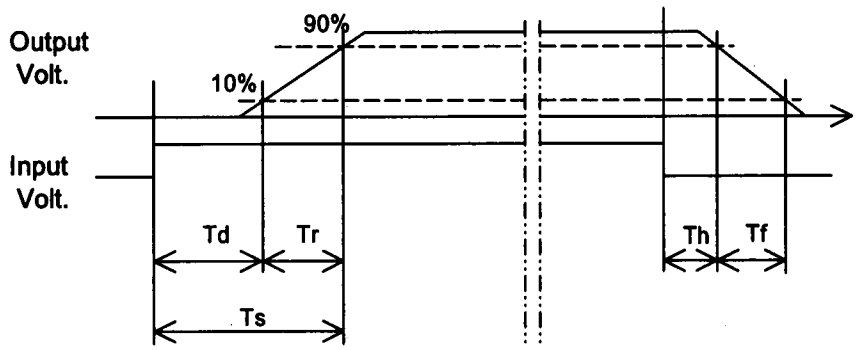
Input Volt. 36 V



2.Values

[mS]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	9.3	8.5	17.8	0.2	0.3
100 %	9.3	9.6	18.9	0.2	0.2

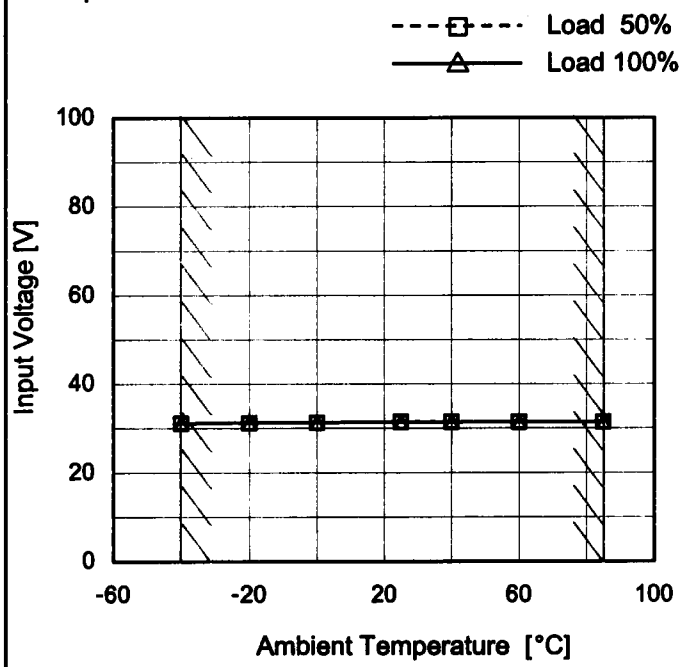


COSEL

Model	CES48018-30
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+1.8V30A

Testing Circuitry Figure A

1.Graph



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

2.Values

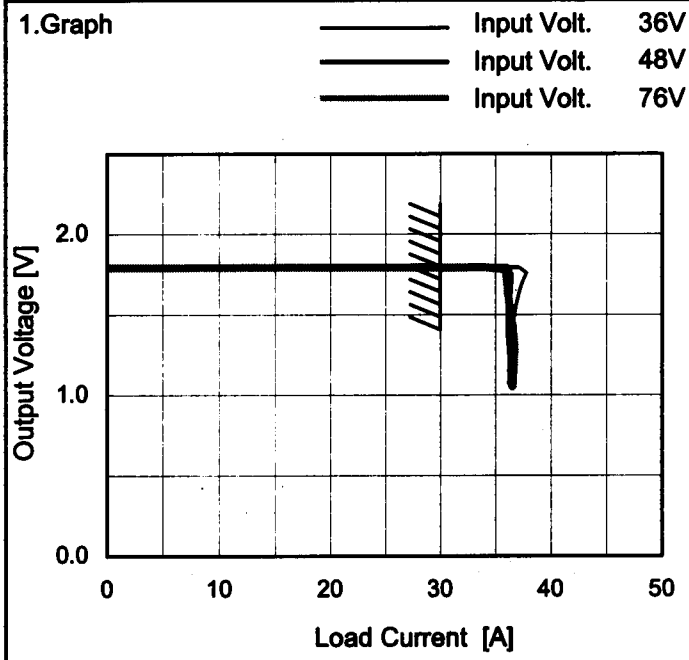
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-40	31.2	31.2
-20	31.3	31.3
0	31.3	31.3
25	31.5	31.5
40	31.5	31.5
60	31.5	31.5
85	31.5	31.5
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	CES48018-30
Item	Overcurrent Protection
Object	+1.8V30A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

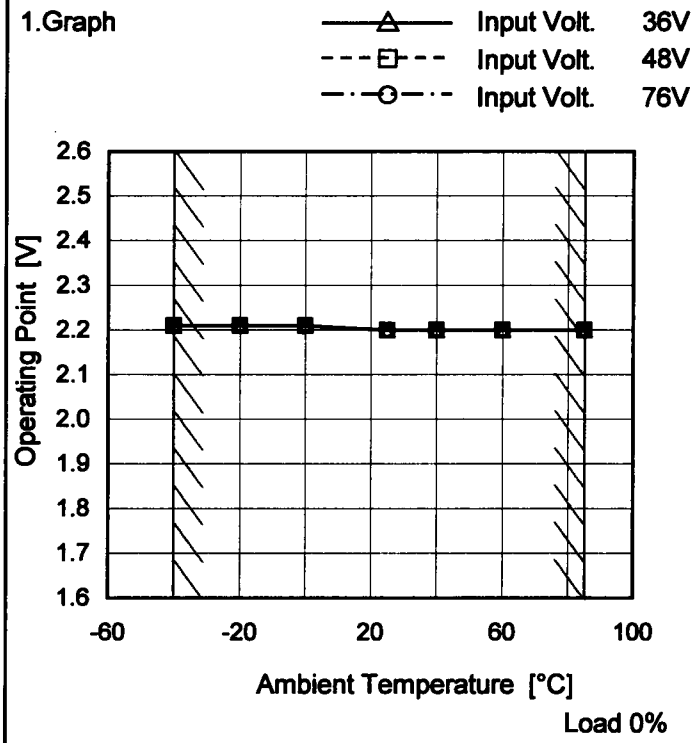
Output Voltage [V]	Load Current [A]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
1.80	31.08	33.23	34.01
1.71	37.42	36.33	36.01
1.62	36.97	36.25	36.13
1.44	36.55	36.16	36.49
1.26	36.25	36.31	36.67
1.08	36.20	36.33	36.56
0.90	36.20	36.33	36.52
0.72	36.20	36.33	36.52
0.54	0.00	36.33	36.52
0.36	0.00	0.00	0.00
0.18	0.00	0.00	0.00
0.00	0.00	0.00	0.00

COSEL

Model	CES48018-30
Item	Overvoltage Protection
Object	+1.8V30A

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	2.21	2.21	2.21
-20	2.21	2.21	2.21
0	2.21	2.21	2.21
25	2.20	2.20	2.20
40	2.20	2.20	2.20
60	2.20	2.20	2.20
85	2.20	2.20	2.20
–	-	-	-
–	-	-	-
–	-	-	-
–	-	-	-

COSEL

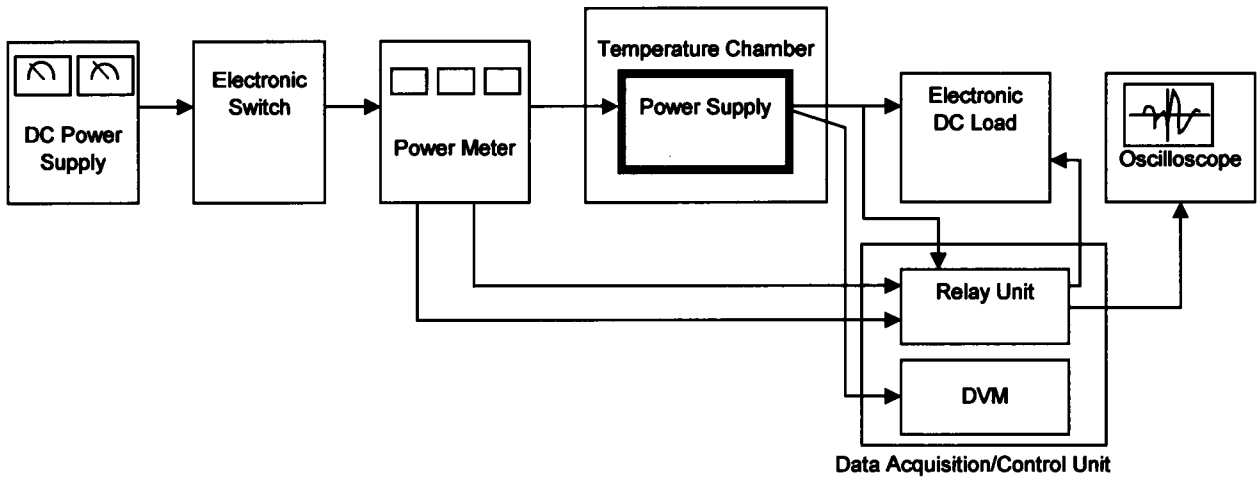


Figure A

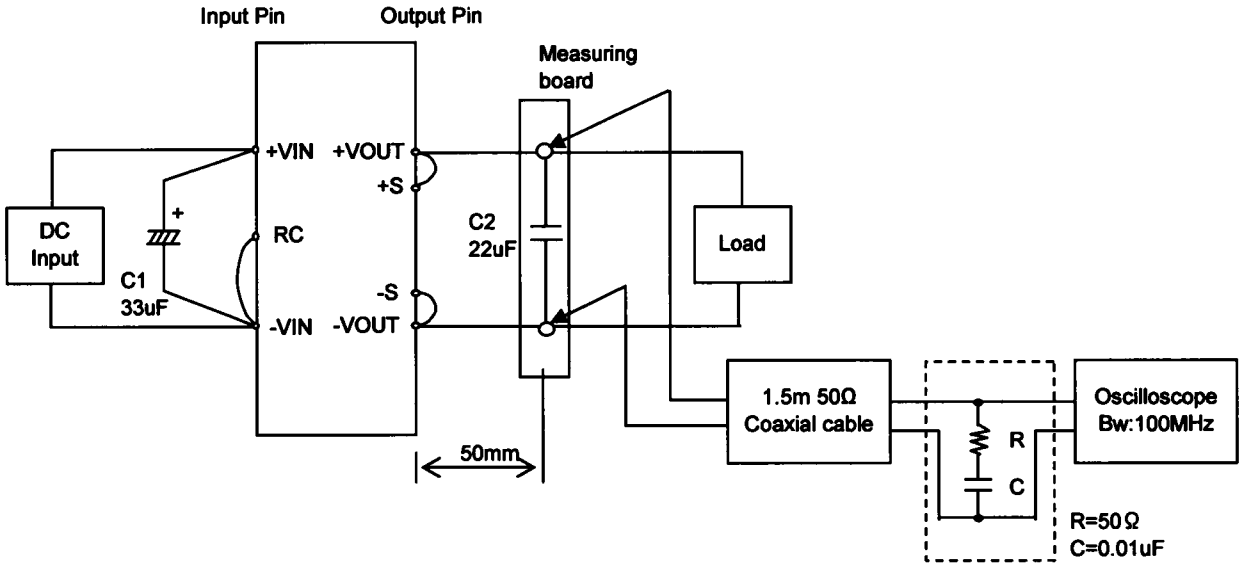


Figure B