参考資料

COSEL

TEST DATA OF CHS3002432

Regulated DC Power Supply
July 23, 2019

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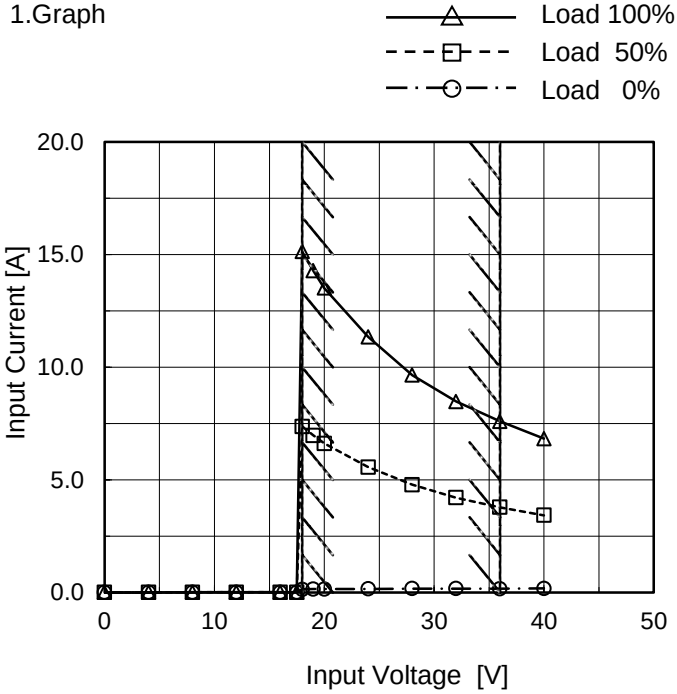
Model	CHS3002432
Item	Input Current (by Input Voltage)
Object	————————

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

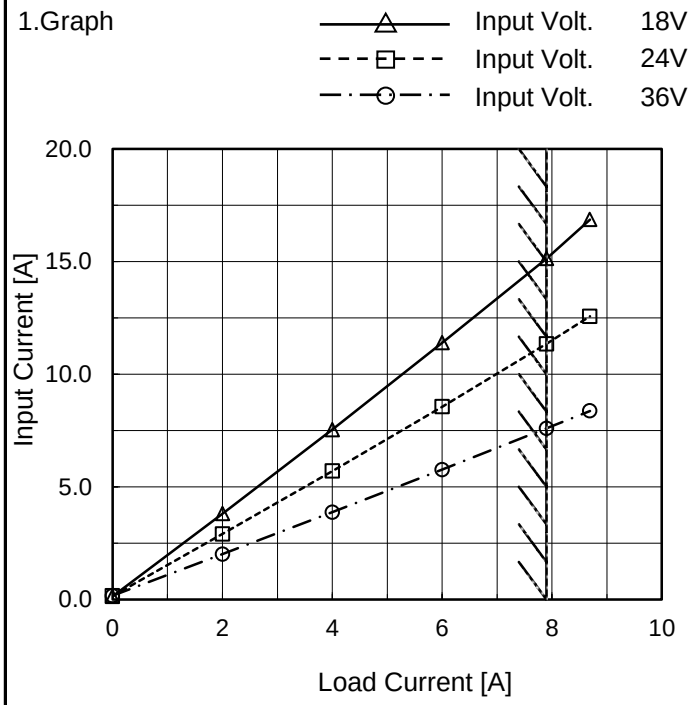
Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0.0	0.000	0.000	0.000
4.0	0.002	0.002	0.002
8.0	0.009	0.009	0.009
12.0	0.009	0.009	0.009
16.0	0.010	0.010	0.010
17.5	0.010	0.010	0.010
18.0	0.138	7.367	15.135
19.0	0.149	6.968	14.284
20.0	0.153	6.615	13.519
24.0	0.154	5.564	11.350
28.0	0.169	4.783	9.648
32.0	0.173	4.207	8.479
36.0	0.167	3.782	7.594
40.0	0.179	3.424	6.826
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	CHS3002432
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]
0.00	0.138	0.154	0.167
2.00	3.806	2.909	2.014
4.00	7.543	5.700	3.874
6.00	11.397	8.554	5.760
7.90	15.135	11.350	7.594
8.69	16.870	12.567	8.372
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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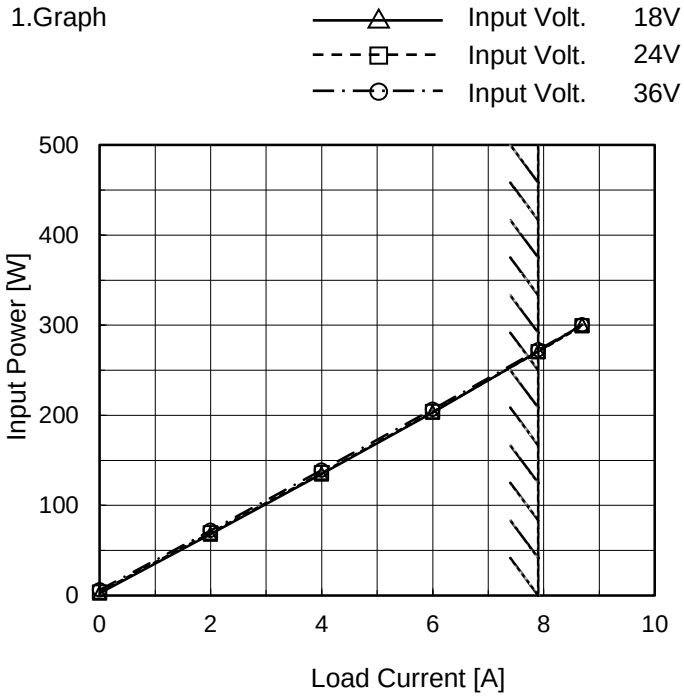
Model	CHS3002432
Item	Input Power (by Load Current)
Object	————————

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]
0.00	2.5	3.7	6.0
2.00	68.1	69.5	72.1
4.00	134.8	136.1	139.0
6.00	203.3	204.0	206.7
7.90	271.0	270.6	272.4
8.69	300.4	299.1	300.4
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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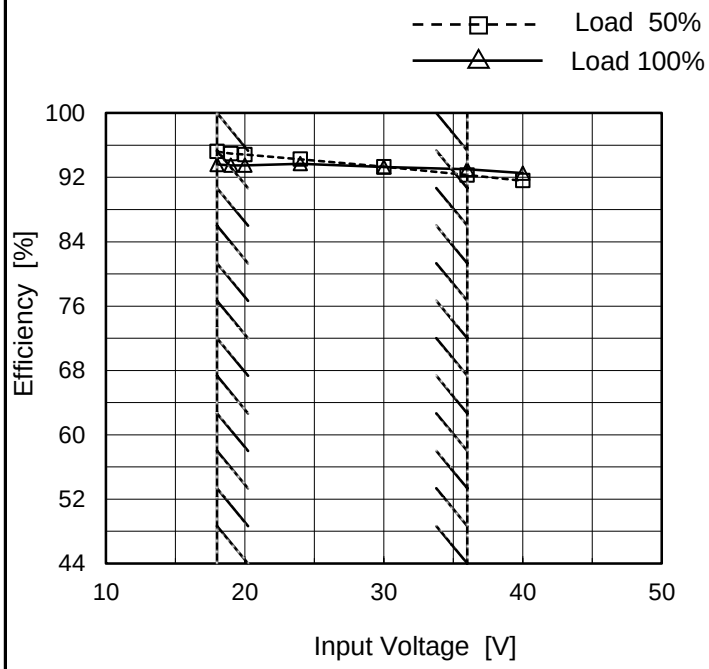
COSEL

Model	CHS3002432
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

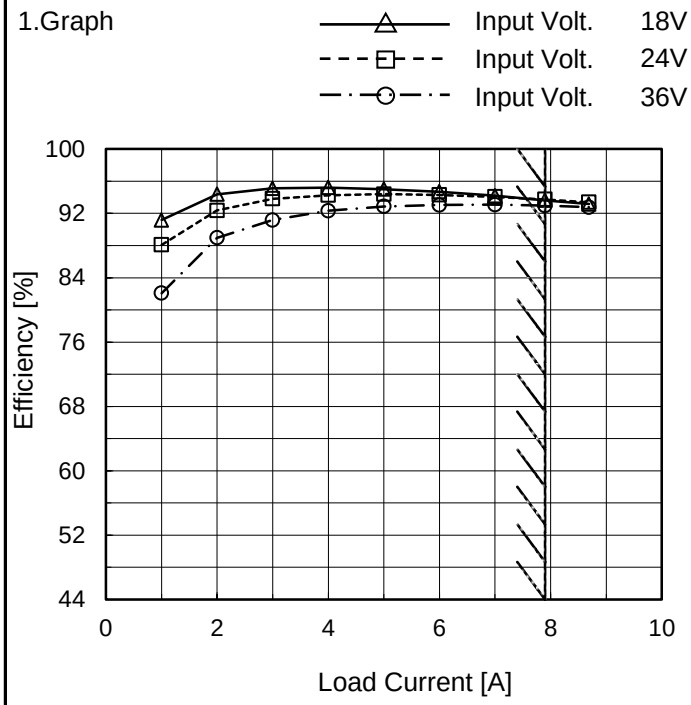
Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
17	-	-
18	95.2	93.6
19	94.9	93.5
20	94.8	93.5
24	94.3	93.7
30	93.3	93.3
36	92.3	93.0
40	91.6	92.5
--	-	-

COSEL

Model	CHS3002432
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

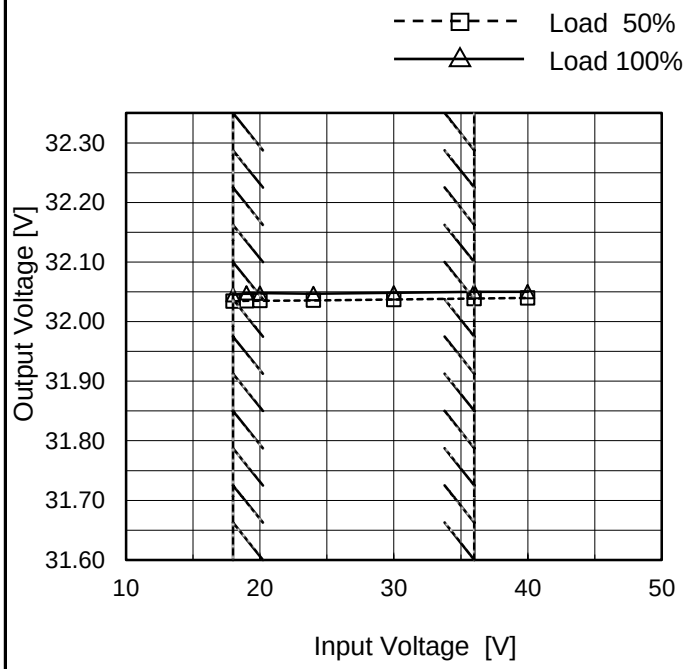
Load Current [A]	Efficiency [%]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.00	-	-	-
1.00	91.2	88.1	82.1
2.00	94.4	92.4	89.0
3.00	95.1	93.8	91.2
4.00	95.2	94.3	92.3
5.00	95.0	94.4	92.9
6.00	94.7	94.3	93.0
7.00	94.2	94.1	93.1
7.90	93.6	93.7	93.0
8.69	93.2	93.4	92.8
--	-	-	-

COSEL

Model	CHS3002432
Item	Line Regulation
Object	+32V7.9A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

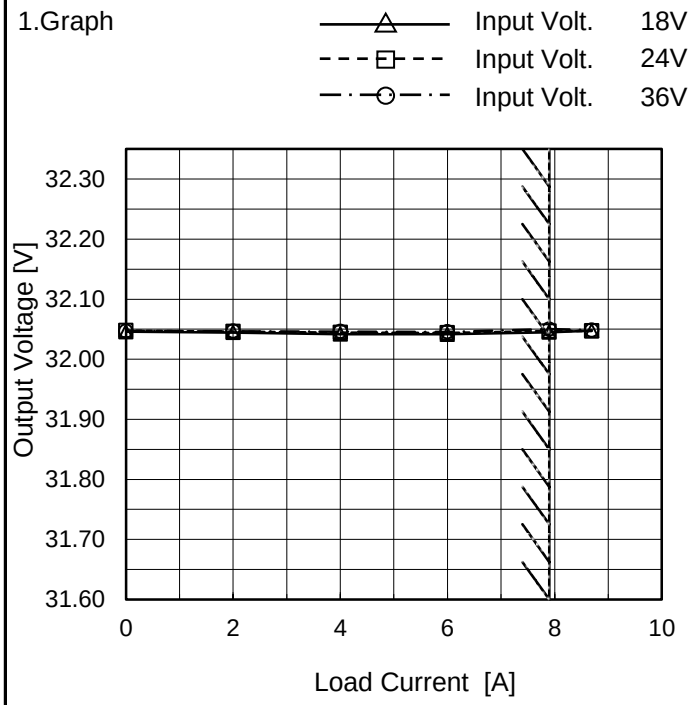
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
17	0.000	0.000
18	32.034	32.045
19	32.035	32.048
20	32.035	32.048
24	32.036	32.047
30	32.037	32.048
36	32.039	32.050
40	32.040	32.050
--	-	-

COSEL

Model	CHS3002432
Item	Load Regulation
Object	+32V7.9A

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]
0.00	32.046	32.048	32.047
2.00	32.044	32.046	32.047
4.00	32.042	32.044	32.046
6.00	32.042	32.044	32.046
7.90	32.045	32.047	32.050
8.69	32.047	32.047	32.049
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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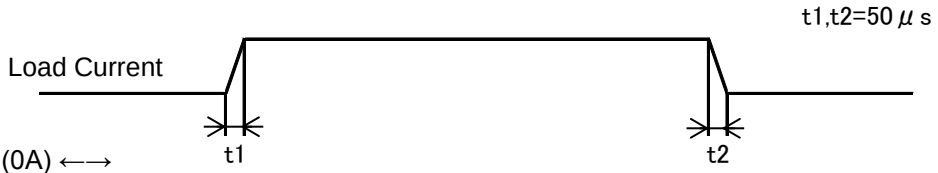
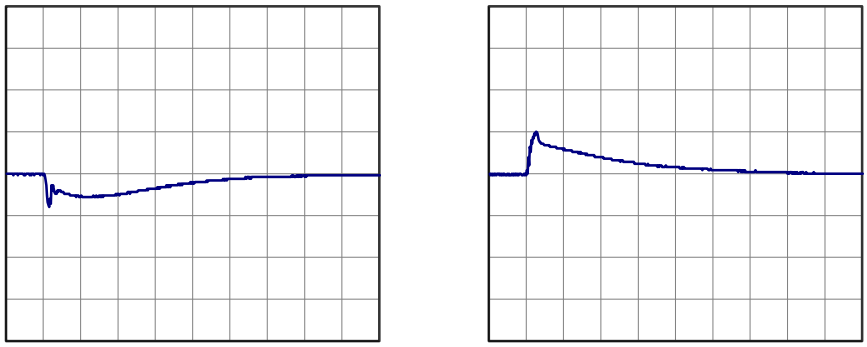
Model	CHS3002432		
Item	Dynamic Load Response	Temperature Testing Circuitry	25℃ Figure A
Object	+32V7.9A		

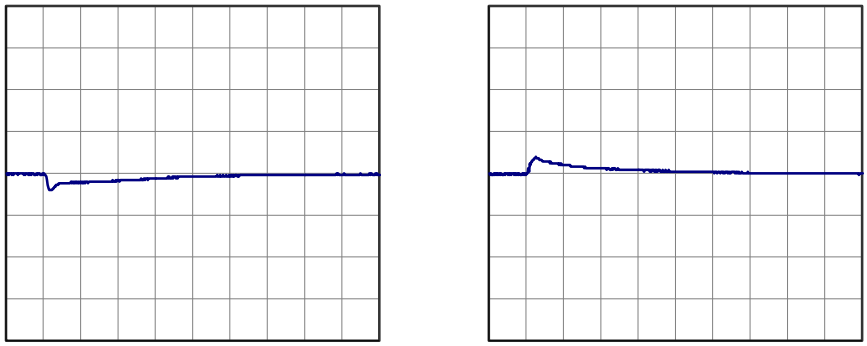
Input Volt. 24 V
Cycle 5 ms



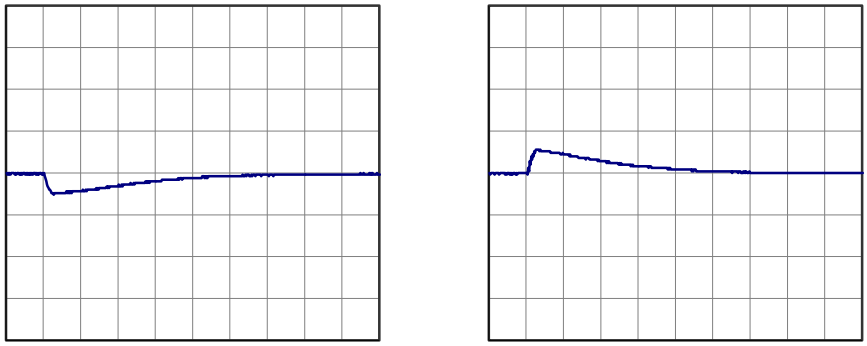
Min. Load (0A) ←→
Load 100% (7.9A)



Min. Load (0A) ←→
Load 50% (3.95A)



Load 50% (3.95A) ←→
Load 100% (7.9A)



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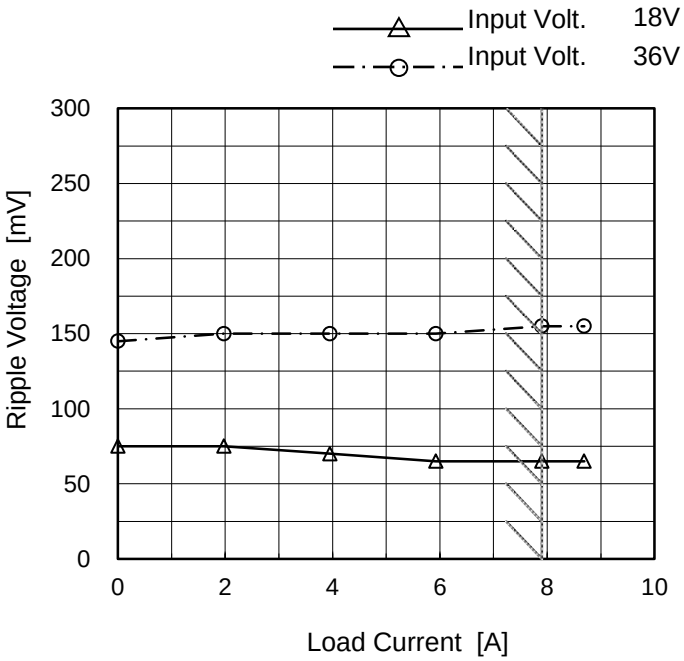
Model	CHS3002432
Item	Ripple Voltage (by Load Current)
Object	+32V7.9A

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.

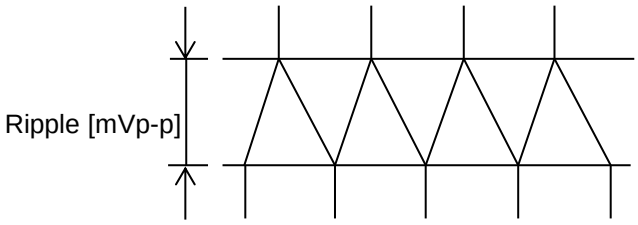


Fig.Complex Ripple Wave Form

2.Values

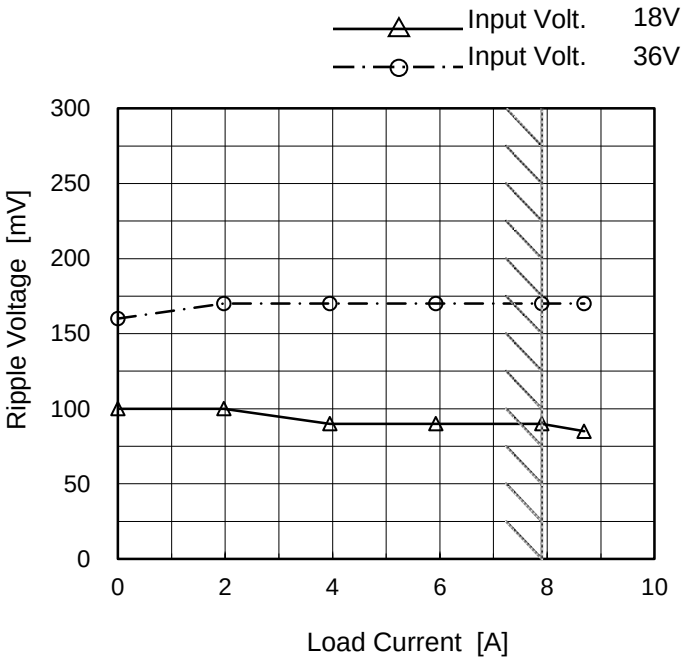
Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 18 [V]	Input Volt. 36 [V]
0.000	75	145
1.975	75	150
3.950	70	150
5.925	65	150
7.900	65	155
8.690	65	155
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	CHS3002432
Item	Ripple-Noise
Object	+32V7.9A

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.

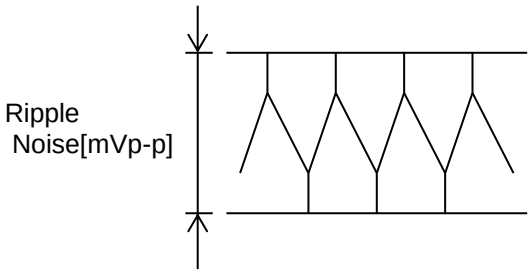


Fig.Complex Ripple Noise Wave Form

2.Values

Load Current [A]	Ripple-Noise [mV] Input Volt. 18 [V]	Ripple-Noise [mV] Input Volt. 36 [V]
0.000	100	160
1.975	100	170
3.950	90	170
5.925	90	170
7.900	90	170
8.690	85	170
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

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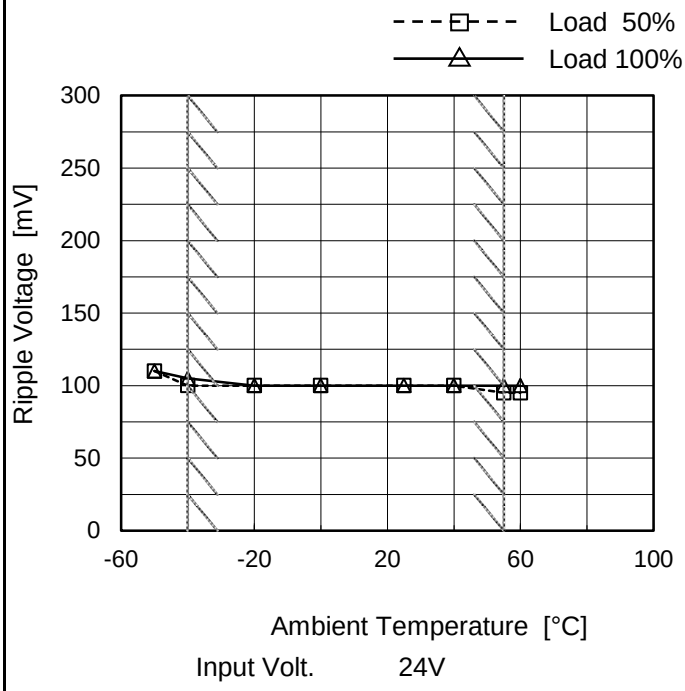
Model	CHS3002432
Item	Ripple Voltage (by Ambient Temp.)
Object	+32V7.9A

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

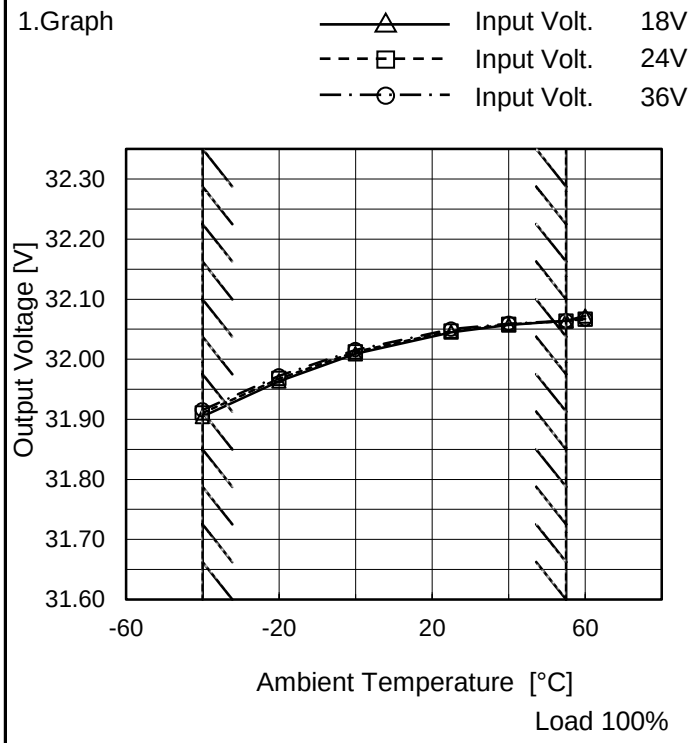
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-50	110	110
-40	100	105
-20	100	100
0	100	100
25	100	100
40	100	100
55	95	100
60	95	100
--	-	-
--	-	-
--	-	-

COSEL

Model	CHS3002432
Item	Ambient Temperature Drift
Object	+32V7.9A

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]
-40	31.905	31.910	31.916
-20	31.963	31.968	31.972
0	32.009	32.012	32.016
25	32.045	32.047	32.050
40	32.057	32.058	32.059
55	32.064	32.063	32.064
60	32.072	32.066	32.067
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

Model	CHS3002432	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+32V7.9A	

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 - 7.9A

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

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

2.Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ratio [%]
Maximum Voltage	55	18	7.9	32.064	±86	±0.3
Minimum Voltage	-40	36	0	31.893		

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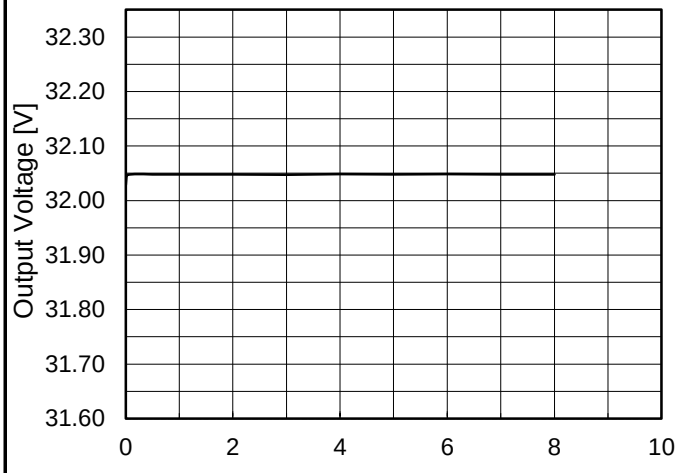
Model	CHS3002432
Item	Time Lapse Drift
Object	+32V7.9A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



Input Volt. 24V
Load 100%

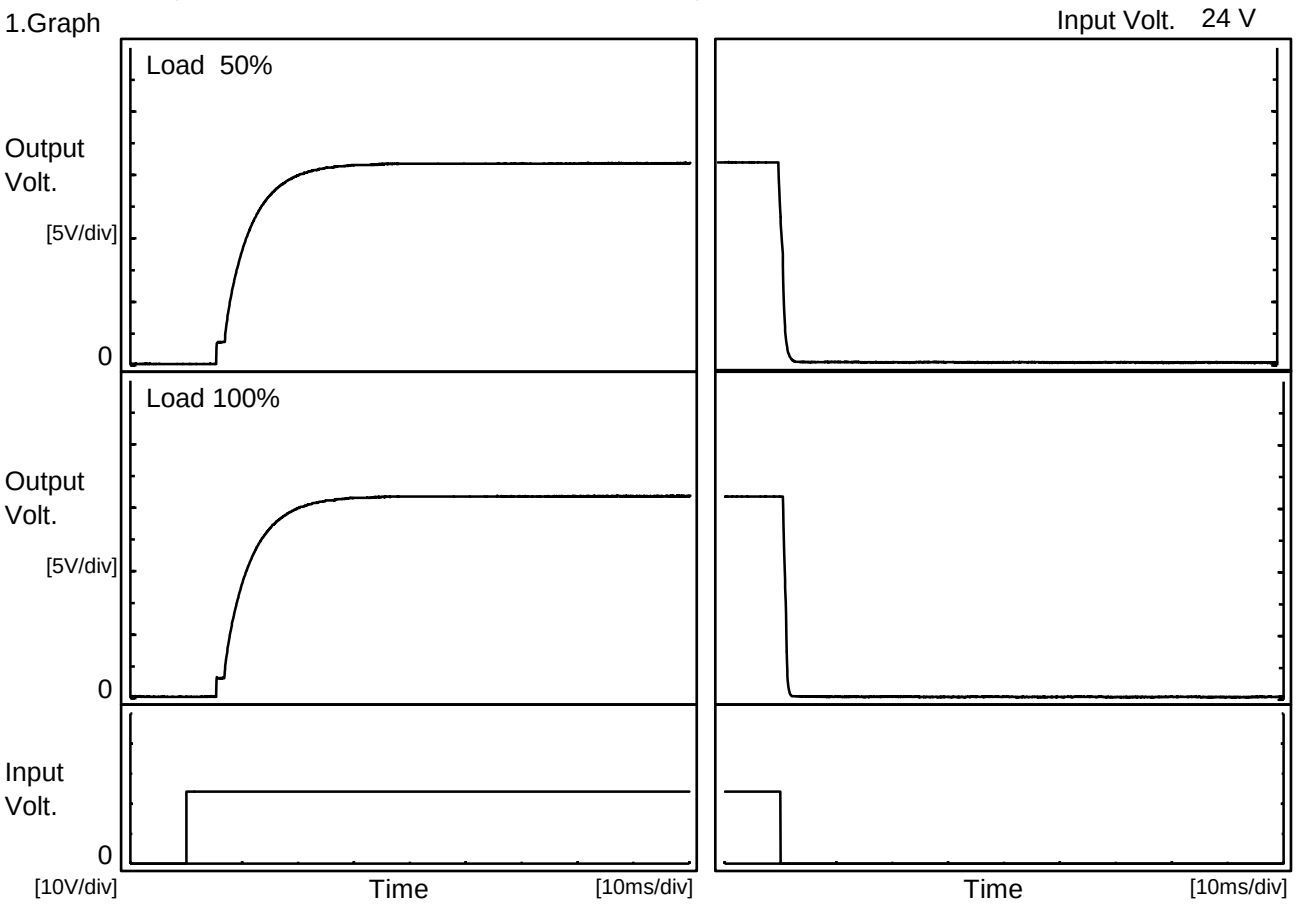
2.Values

Time since start [H]	Output Voltage [V]
0.0	32.028
0.5	32.048
1.0	32.048
2.0	32.048
3.0	32.047
4.0	32.049
5.0	32.048
6.0	32.048
7.0	32.048
8.0	32.048

COSEL

Model	CHS3002432	
Item	Rise and Fall Time	Temperature 25°C Testing Circuitry Figure A
Object	+32V7.9A	

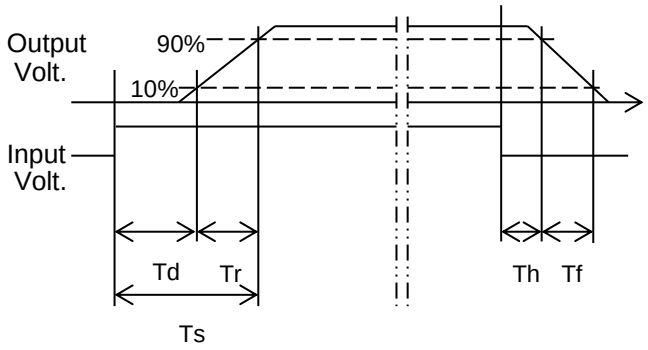
1.Graph



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	5.5	12.5	18.0	1.0	1.3
100 %	6.8	11.2	18.0	0.5	0.8



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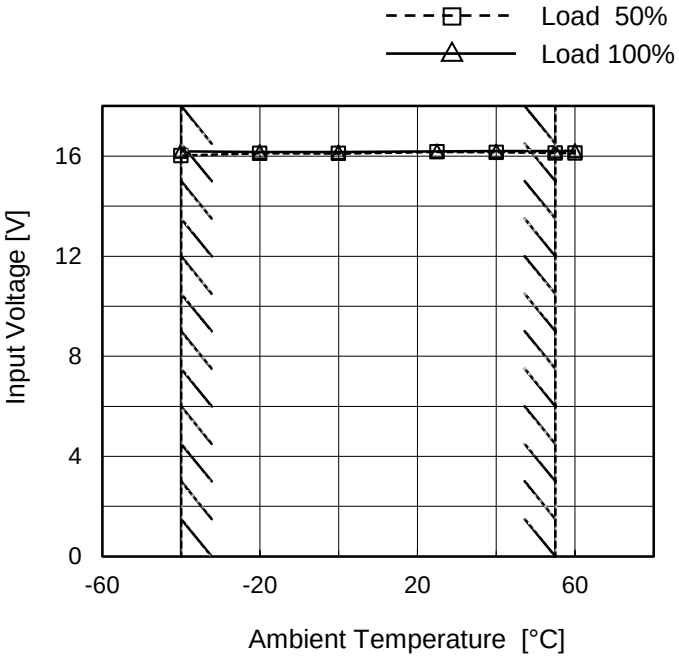
Model	CHS3002432
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+32V7.9A

Testing Circuitry Figure A

1.Graph



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

2.Values

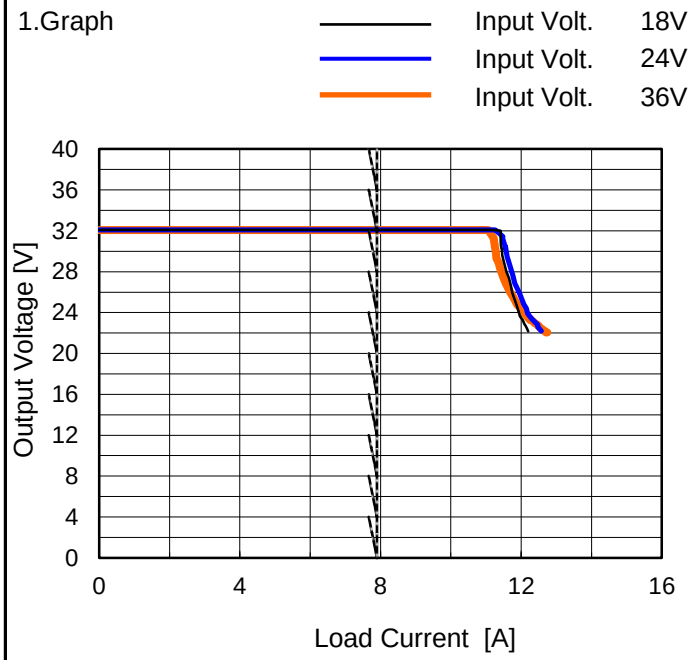
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-40	16.03	16.20
-20	16.11	16.17
0	16.10	16.16
25	16.17	16.19
40	16.15	16.20
55	16.13	16.20
60	16.12	16.21
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	CHS3002432
Item	Overcurrent Protection
Object	+32V7.9A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

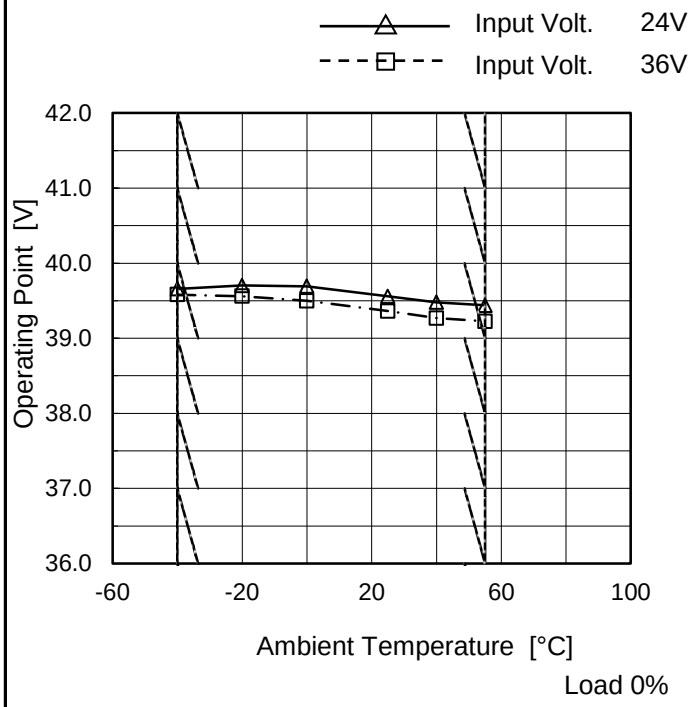
Output Voltage [V]	Load Current [A]		
	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
32.0	11.17	11.27	11.07
30.4	11.43	11.55	11.25
28.8	11.54	11.60	11.36
27.2	11.65	11.77	11.50
25.6	11.74	11.96	11.78
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	CHS3002432
Item	Overvoltage Protection
Object	+32V7.9A

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	39.7	39.6
-20	39.7	39.6
0	39.7	39.5
25	39.6	39.4
40	39.5	39.3
55	39.4	39.2
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

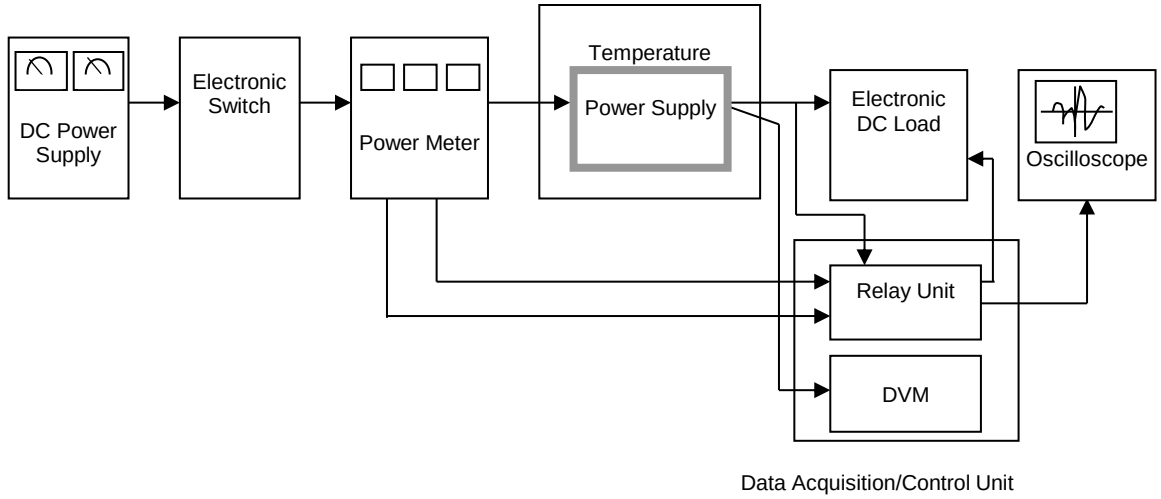


Figure A

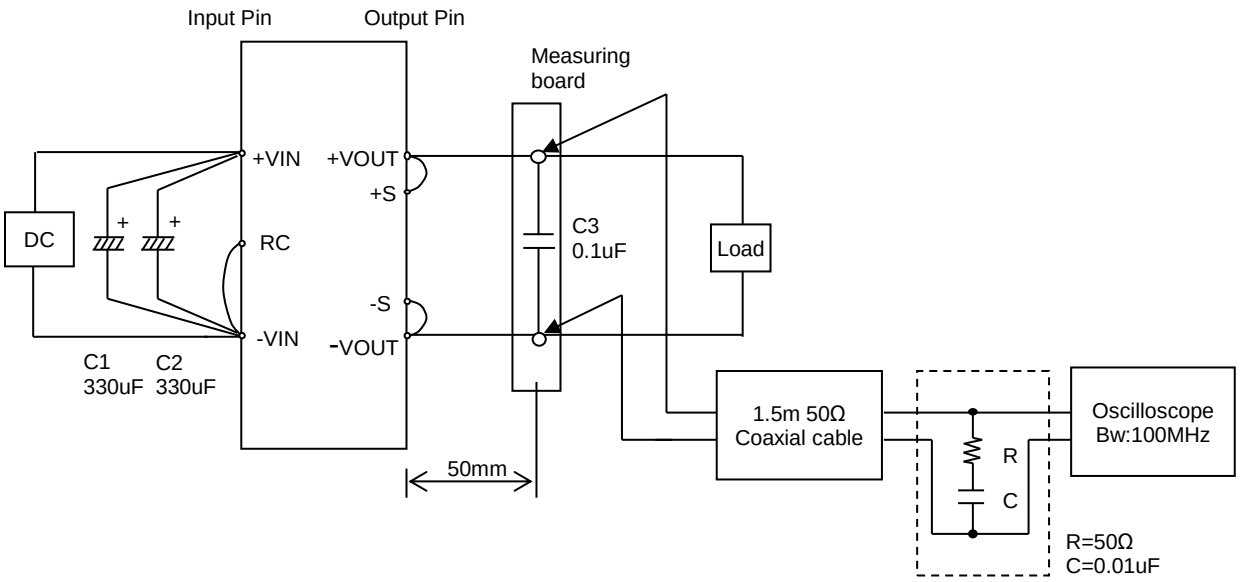


Figure B