参考資料

COSEL

TEST DATA OF CHS3004824

Regulated DC Power Supply
September 26, 2019

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COSEL CO.,LTD.

参考資料

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参考資料

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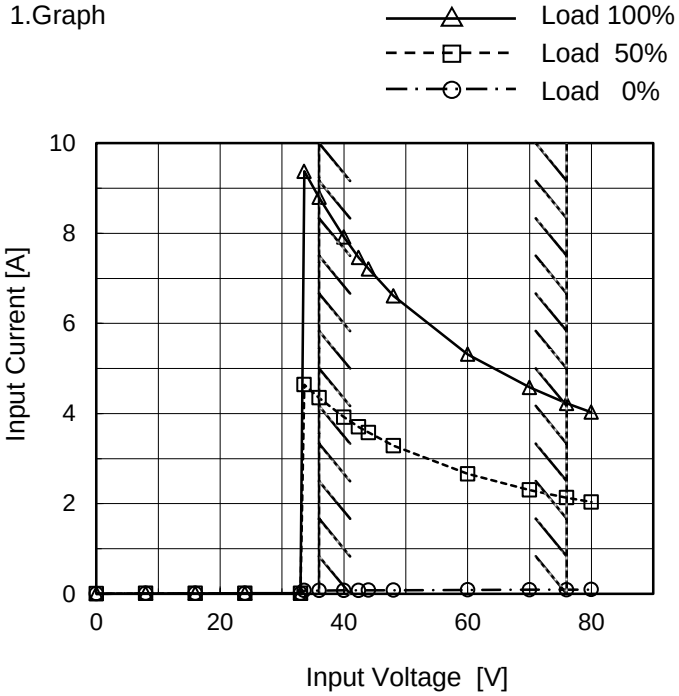
Model	CHS3004824
Item	Input Current (by Input Voltage)
Object	――――――――

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
8.0	0.008	0.008	0.008
16.0	0.009	0.009	0.009
24.0	0.009	0.009	0.010
33.0	0.010	0.010	0.010
33.6	0.071	4.641	9.378
36.0	0.072	4.347	8.796
40.0	0.075	3.918	7.915
42.4	0.076	3.701	7.462
44.0	0.078	3.579	7.209
48.0	0.080	3.288	6.611
60.0	0.086	2.660	5.316
70.0	0.089	2.301	4.578
76.0	0.091	2.134	4.224
80.0	0.092	2.035	4.028
--	-	-	-
--	-	-	-
--	-	-	-

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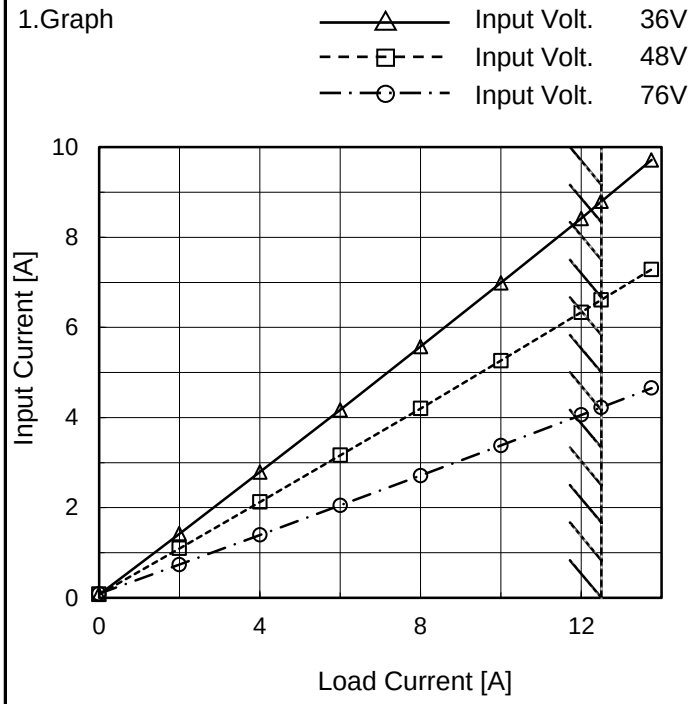
COSEL

Model	CHS3004824
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

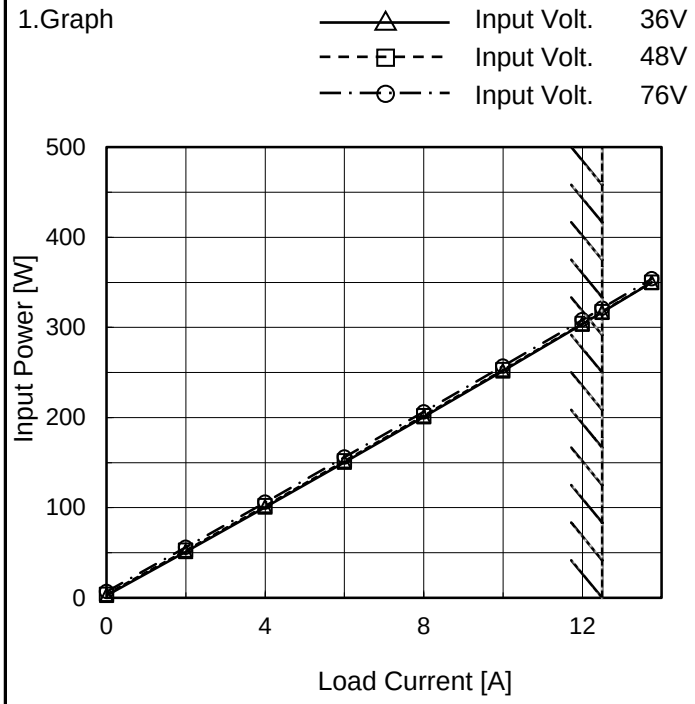
Load Current [A]	Input Current [A]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.00	0.072	0.080	0.091
2.00	1.423	1.094	0.737
4.00	2.789	2.125	1.392
6.00	4.168	3.162	2.050
8.00	5.574	4.201	2.712
10.00	6.987	5.261	3.378
12.00	8.417	6.334	4.057
12.50	8.796	6.611	4.224
13.75	9.715	7.288	4.655
--	-	-	-
--	-	-	-

COSEL

Model	CHS3004824
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]
0.00	2.6	3.8	6.9
2.00	51.3	52.6	56.0
4.00	100.5	102.1	105.9
6.00	150.2	151.8	156.0
8.00	200.7	201.9	206.3
10.00	251.8	252.9	257.1
12.00	303.5	304.3	308.4
12.50	316.8	317.4	321.4
13.75	349.8	350.1	353.9
--	-	-	-
--	-	-	-

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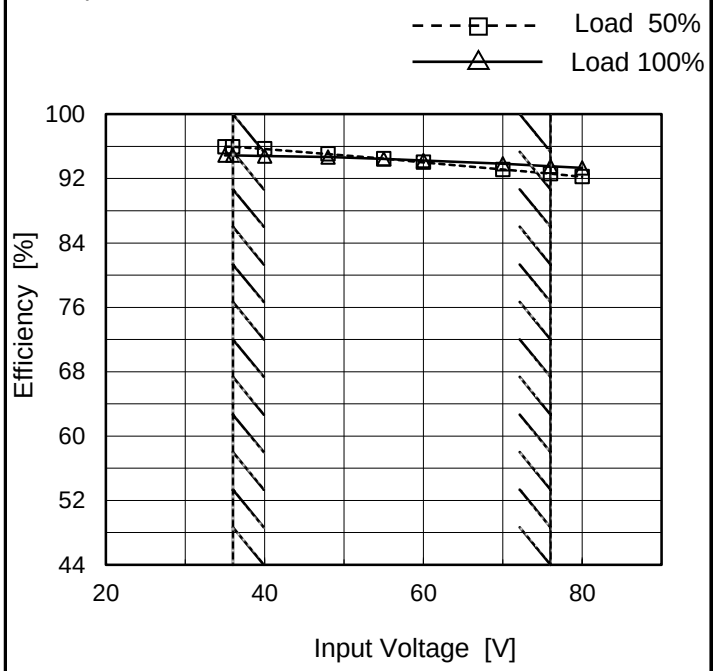
COSEL

Model	CHS3004824
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

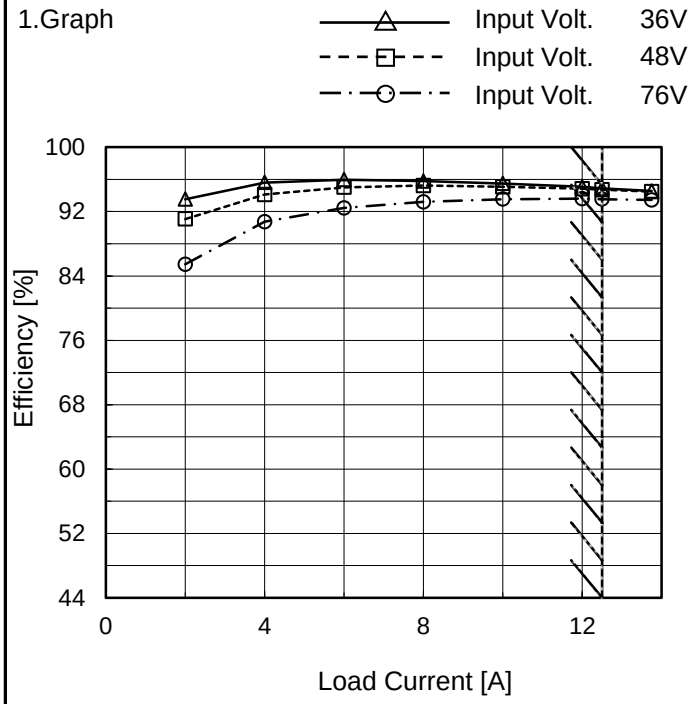
Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
35	96.0	94.9
36	96.0	94.9
40	95.7	94.8
48	95.1	94.7
55	94.5	94.4
60	94.0	94.2
70	93.1	93.8
76	92.6	93.5
80	92.2	93.3

COSEL

Model	CHS3004824
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

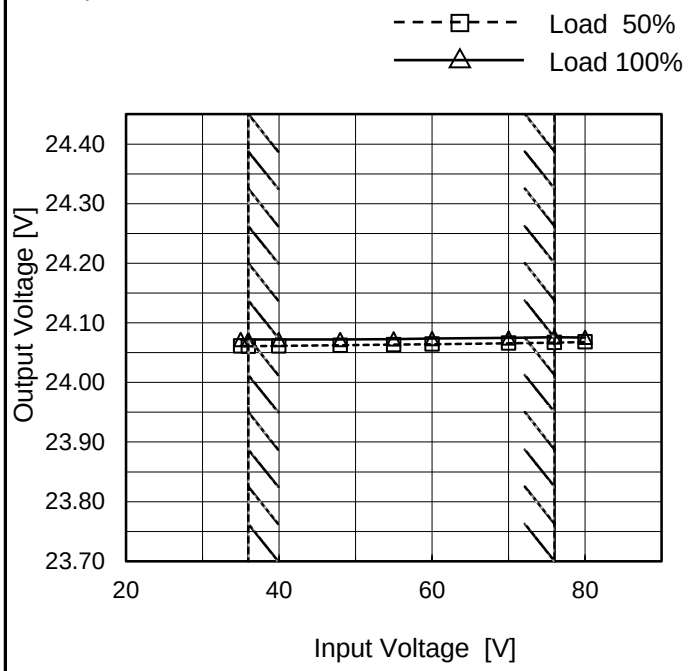
Load Current [A]	Efficiency [%]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0.00	-	-	-
2.00	93.5	91.1	85.4
4.00	95.6	94.1	90.7
6.00	96.0	95.0	92.4
8.00	95.8	95.2	93.2
10.00	95.5	95.1	93.5
12.00	95.1	94.8	93.6
12.50	94.9	94.7	93.5
13.75	94.6	94.5	93.4
--	-	-	-
--	-	-	-

COSEL

Model	CHS3004824
Item	Line Regulation
Object	+24V12.5A

Temperature 25°C
Testing Circuitry Figure A

1.Graph



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

2.Values

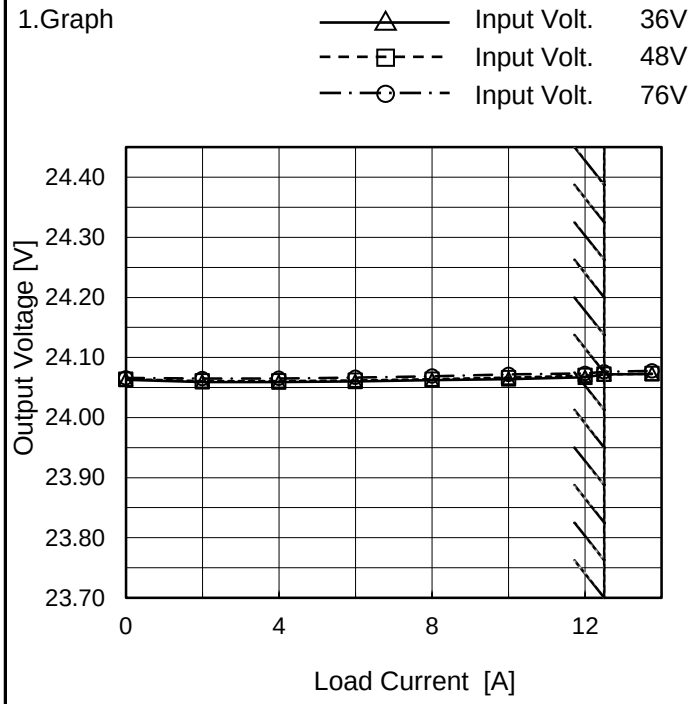
Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
35	24.061	24.072
36	24.061	24.072
40	24.061	24.072
48	24.062	24.072
55	24.063	24.073
60	24.064	24.074
70	24.066	24.075
76	24.067	24.076
80	24.068	24.076

COSEL

Model	CHS3004824
Item	Load Regulation
Object	+24V12.5A

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]
0.00	24.063	24.064	24.066
2.00	24.059	24.061	24.065
4.00	24.059	24.061	24.065
6.00	24.060	24.062	24.067
8.00	24.062	24.064	24.069
10.00	24.064	24.066	24.072
12.00	24.067	24.070	24.073
12.50	24.072	24.072	24.076
13.75	24.073	24.073	24.078
--	-	-	-
--	-	-	-

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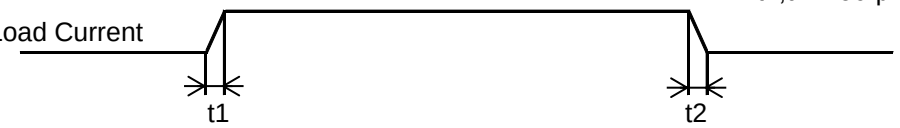
Model	CHS3004824		
Item	Dynamic Load Response	Temperature	25°C
		Testing Circuitry	Figure A
Object	+24V12.5A		

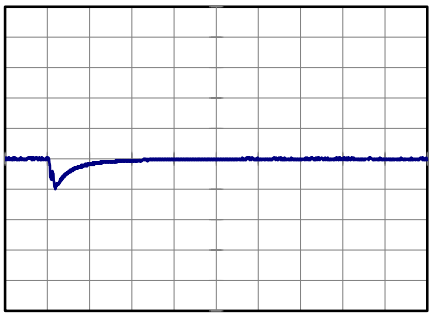
Input Volt. 48 V
Cycle 10 ms

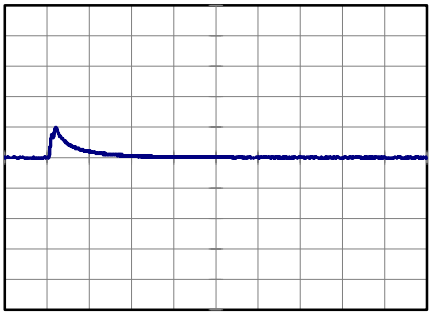
t1,t2 = 50 μs

Load Current



Min.Load (0A)←→
Load 100% (12.5A)



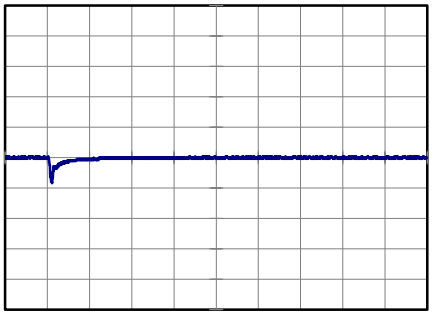


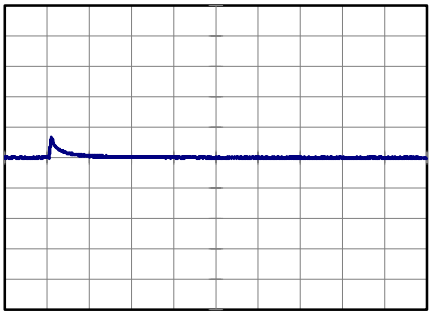
1 V/div

400 us/div

400 us/div

Min.Load (0A)←→
Load 50% (6.25A)



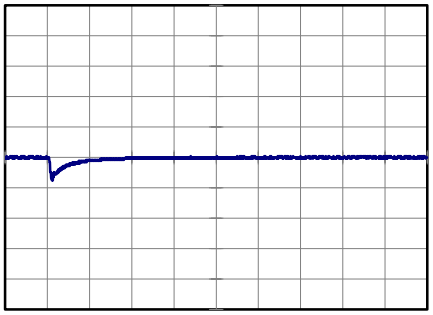


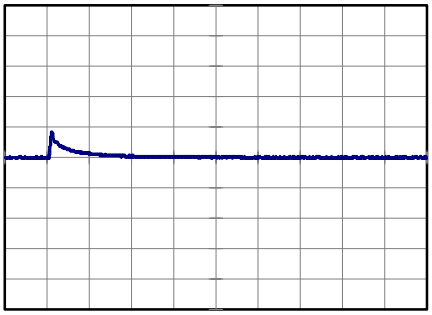
1 V/div

400 us/div

400 us/div

Load 50% (6.25A)←→
Load 100% (12.5A)





1 V/div

400 us/div

400 us/div

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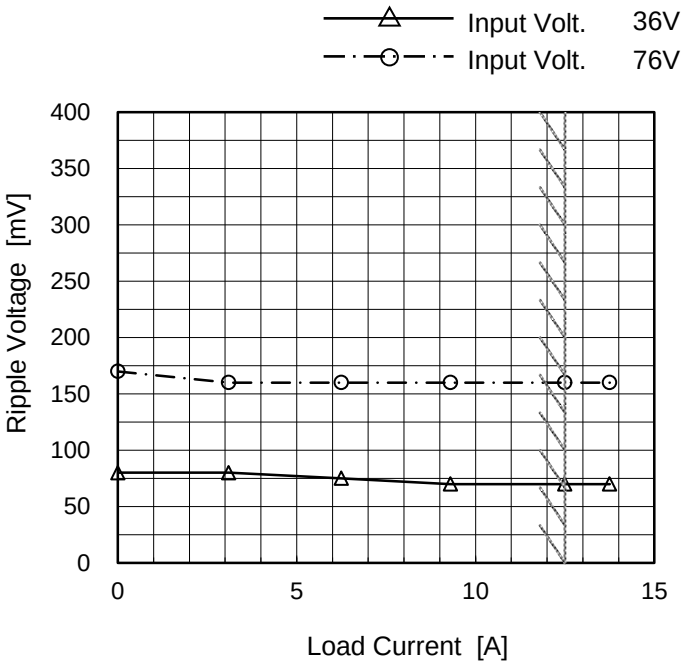
Model	CHS3004824
Item	Ripple Voltage (by Load Current)
Object	+24V12.5A

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.

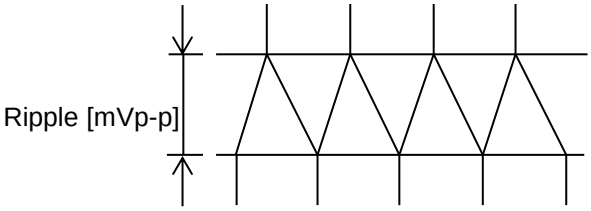


Fig.Complex Ripple Wave Form

2.Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 36 [V]	Input Volt. 76 [V]
0.00	80	170
3.10	80	160
6.25	75	160
9.30	70	160
12.50	70	160
13.75	70	160
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

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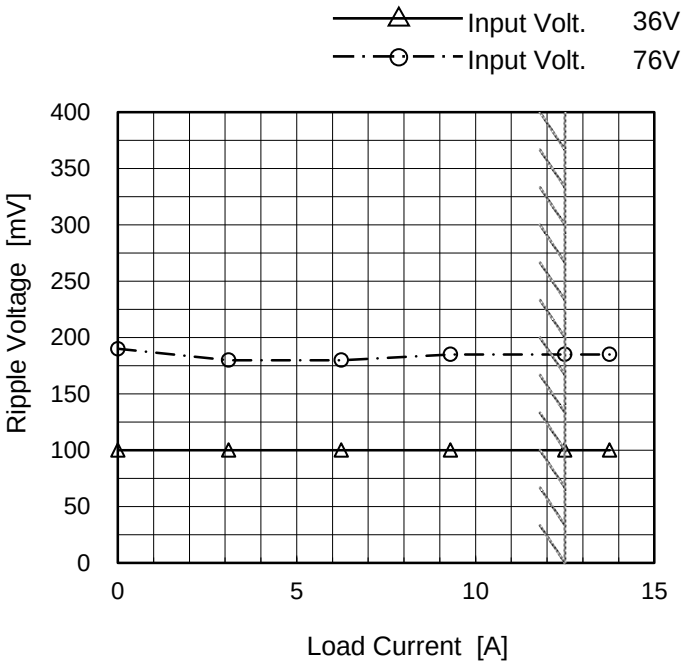
Model	CHS3004824
Item	Ripple-Noise
Object	+24V12.5A

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.

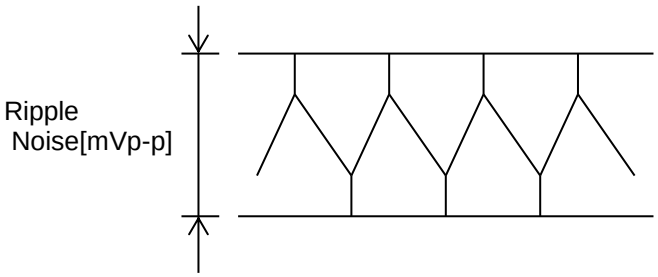


Fig.Complex Ripple Noise Wave Form

2.Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 36 [V]	Input Volt. 76 [V]
0.00	100	190
3.10	100	180
6.25	100	180
9.30	100	185
12.50	100	185
13.75	100	185
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

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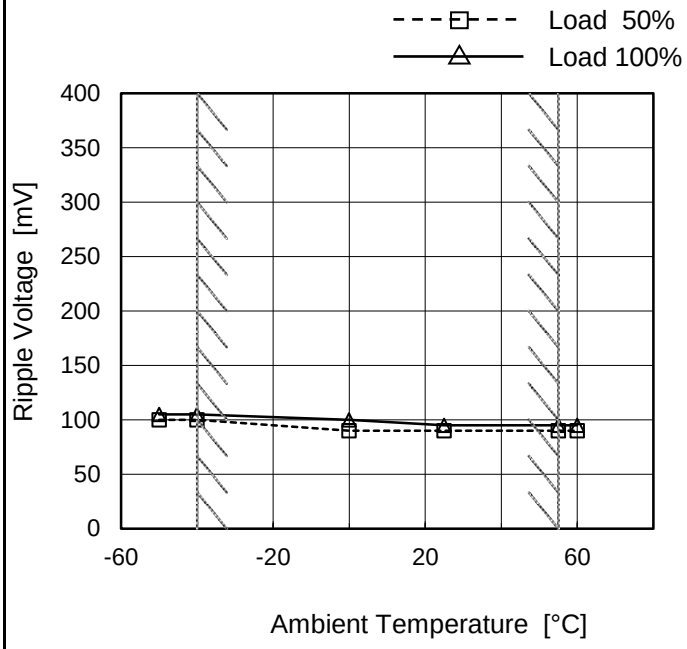
COSEL

Model	CHS3004824
Item	Ripple Voltage (by Ambient Temp.)
Object	+24V12.5A

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%
-50	100	105
-40	100	105
0	90	100
25	90	95
55	90	95
60	90	95
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

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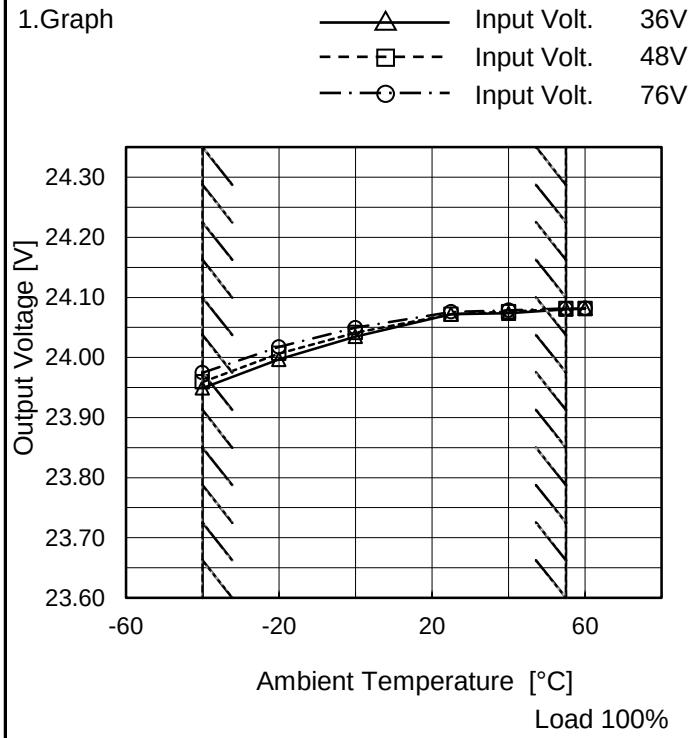
COSEL

Model	CHS3004824
Item	Ambient Temperature Drift
Object	+24V12.5A

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	23.949	23.959	23.975
-20	23.997	24.007	24.018
0	24.035	24.041	24.050
25	24.072	24.072	24.076
40	24.073	24.076	24.079
55	24.080	24.081	24.082
60	24.081	24.081	24.082
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	CHS3004824	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+24V12.5A	

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 - 12.5A

* 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

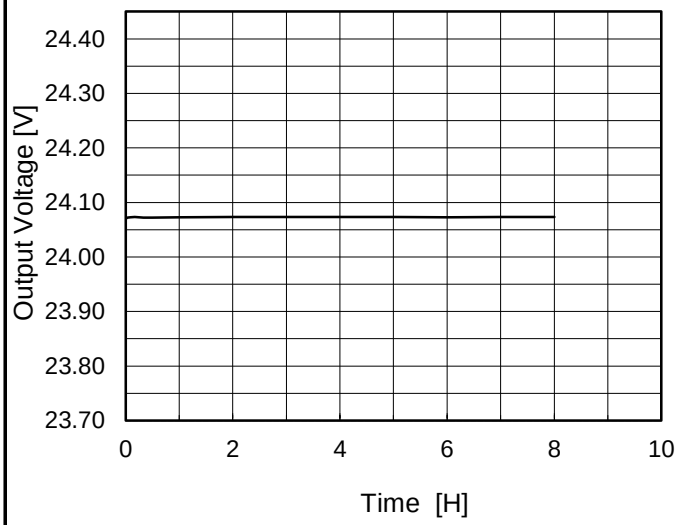
Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ratio [%]
Maximum Voltage	55	76	12.5	24.082	±74	±0.3
Minimum Voltage	-40	48	0	23.934		

COSEL

Model	CHS3004824
Item	Time Lapse Drift
Object	+24V12.5A

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	24.072
0.5	24.072
1.0	24.073
2.0	24.074
3.0	24.073
4.0	24.074
5.0	24.074
6.0	24.073
7.0	24.073
8.0	24.073

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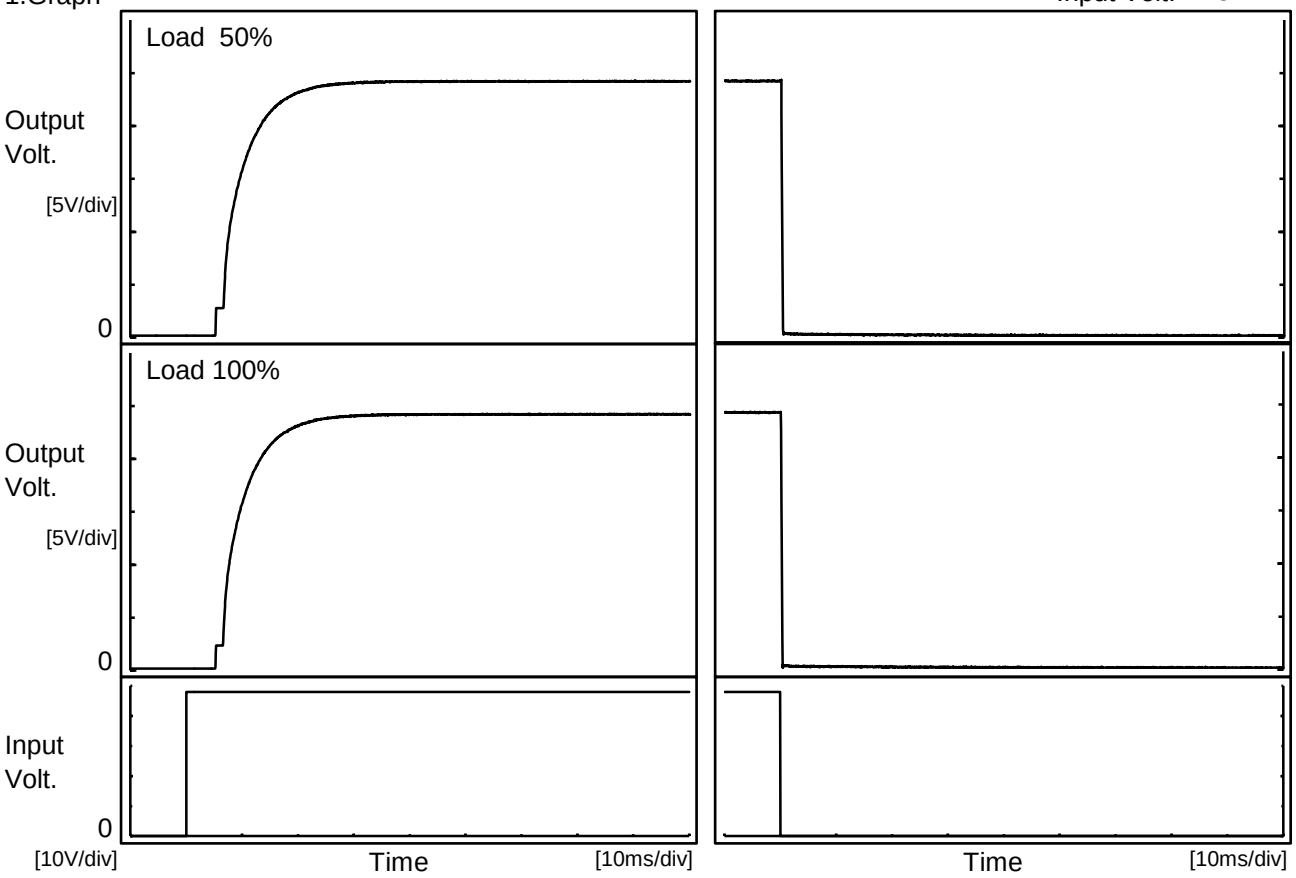
Model	CHS3004824
Item	Rise and Fall Time
Object	+24V12.5A

Temperature 25°C
Testing Circuitry Figure A

1.Graph

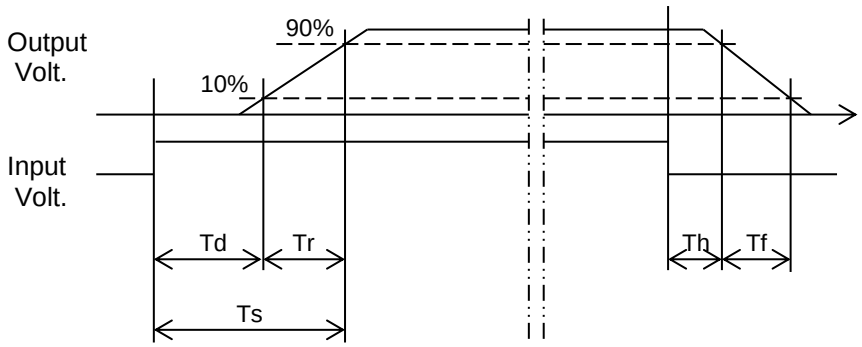
Input Volt. 48 V



2.Values

[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	5.3	10.6	15.9	0.2	0.3
100 %	5.3	10.7	16.0	0.2	0.2



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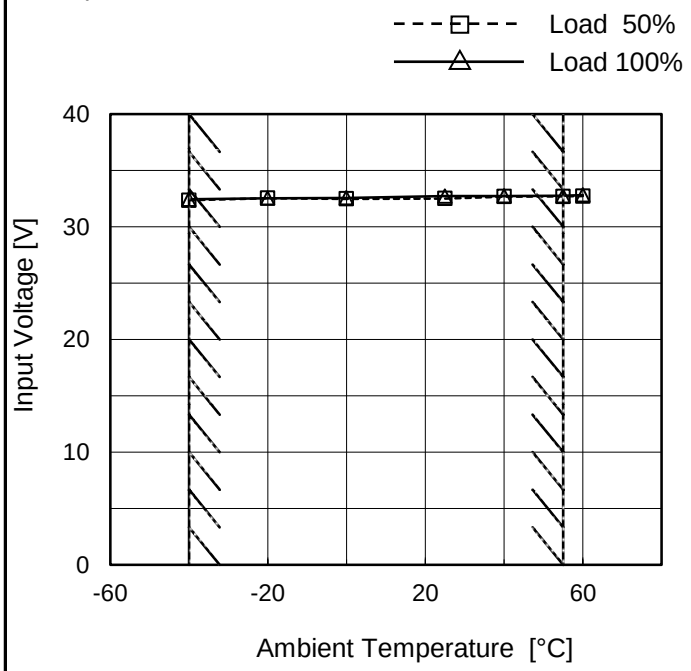
Model	CHS3004824
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+24V12.5A

Testing Circuitry Figure A

1.Graph



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

2.Values

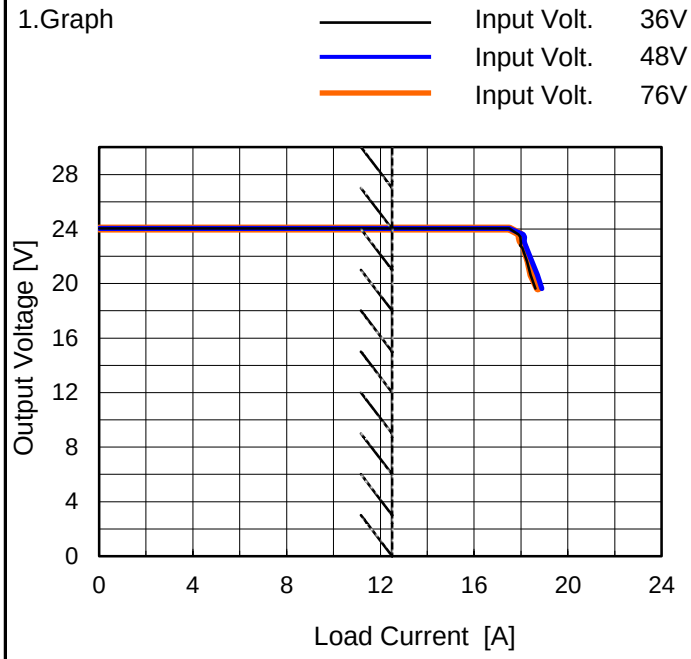
Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-40	32.4	32.5
-20	32.6	32.6
0	32.5	32.6
25	32.6	32.8
40	32.7	32.8
55	32.7	32.8
60	32.8	32.9
--	-	-
--	-	-
--	-	-
--	-	-

COSEL

Model	CHS3004824
Item	Overcurrent Protection
Object	+24V12.5A

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]
22.80	17.96	18.16	18.14
21.60	18.27	18.46	18.32
20.40	18.41	18.69	18.44
19.68	18.62	18.88	18.71
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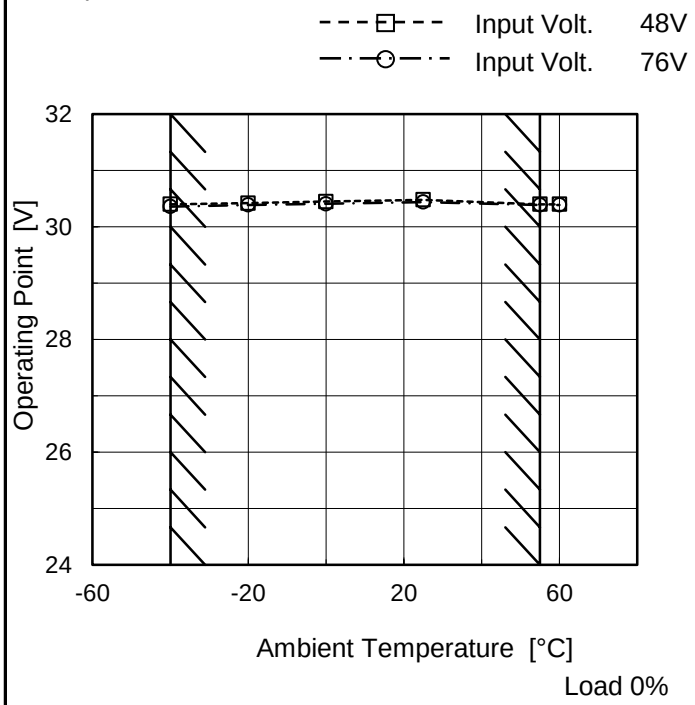
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

COSEL

Model	CHS3004824
Item	Overvoltage Protection
Object	+24V12.5A

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. 48[V]	Input Volt. 76[V]
-40	30.40	30.36
-20	30.42	30.39
0	30.45	30.41
25	30.48	30.44
55	30.40	30.39
60	30.40	30.39
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--	-	-
--	-	-
--	-	-

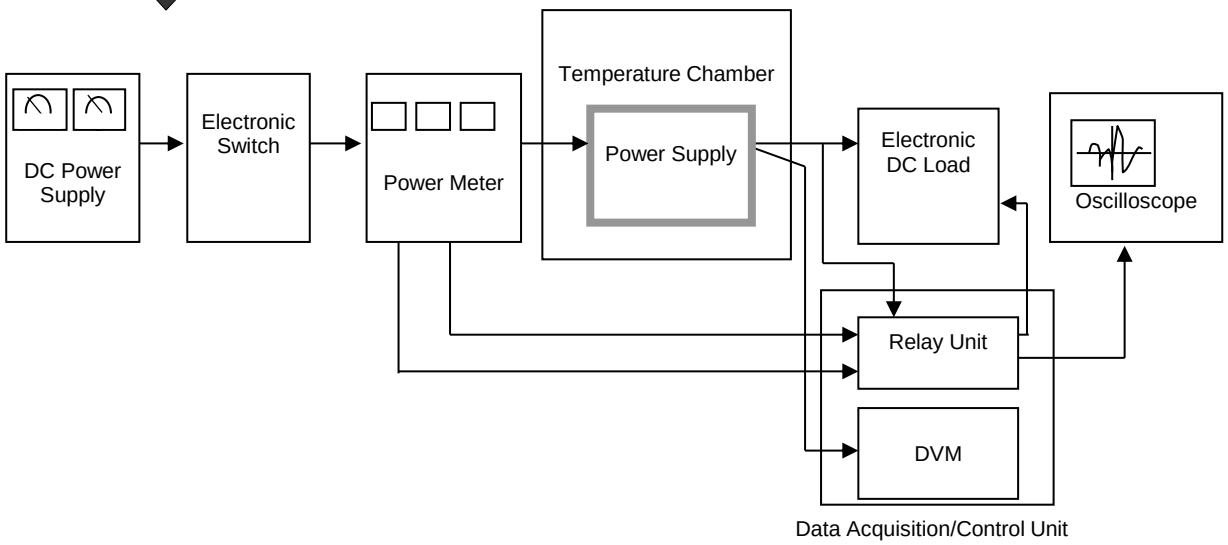

Figure A

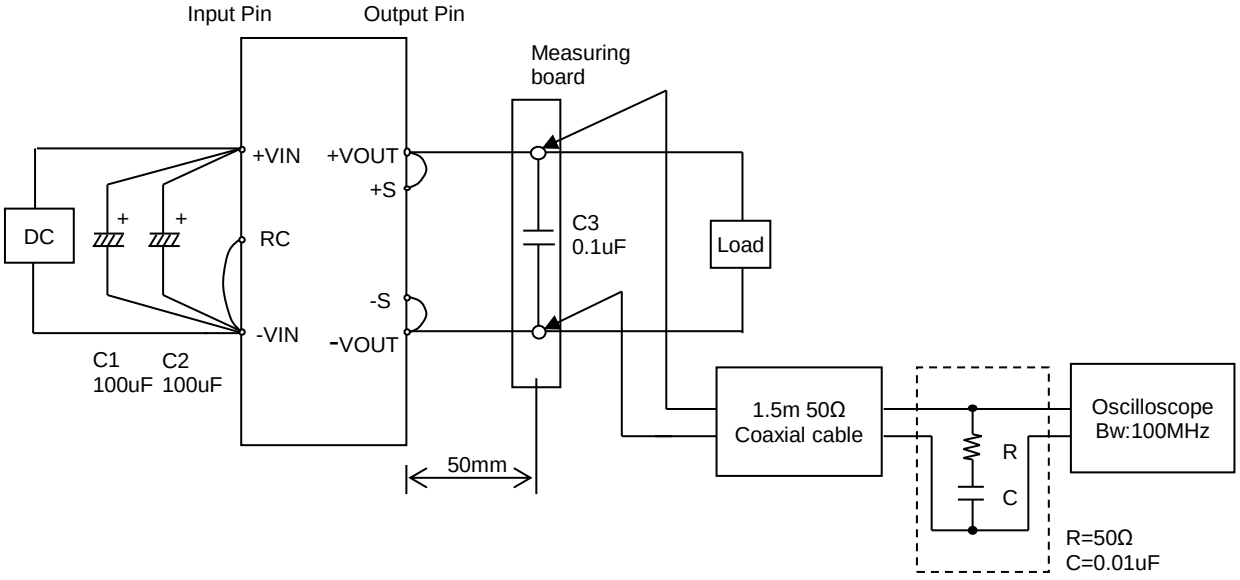

Figure B