



TEST DATA OF CQS48018-50

Regulated DC Power Supply
Sep.4, 2003

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COSEL CO.,LTD.

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Model

CQS48018-50

Item

Input Current (by Input Voltage)

Object

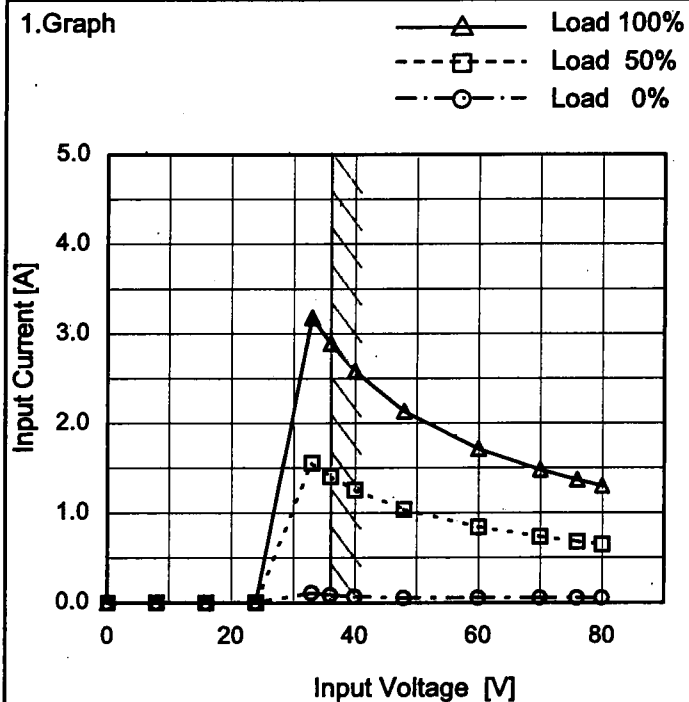
Temperature

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	0.107	1.560	3.180
36	0.084	1.408	2.890
40	0.066	1.256	2.584
48	0.050	1.038	2.132
60	0.049	0.841	1.713
70	0.050	0.731	1.479
76	0.051	0.678	1.367
80	0.051	0.647	1.302
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

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Model CQS48018-50

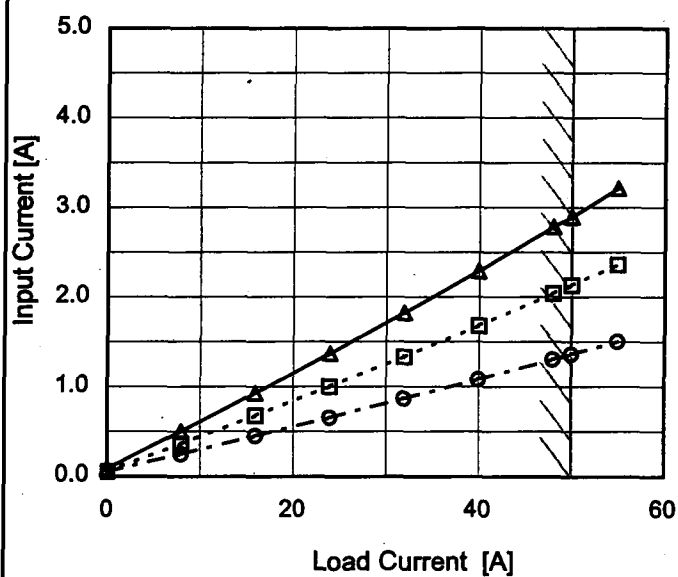
Item Input Current (by Load Current)

Object _____

Temperature 25°C
Testing Circuitry Figure A

1. Graph

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

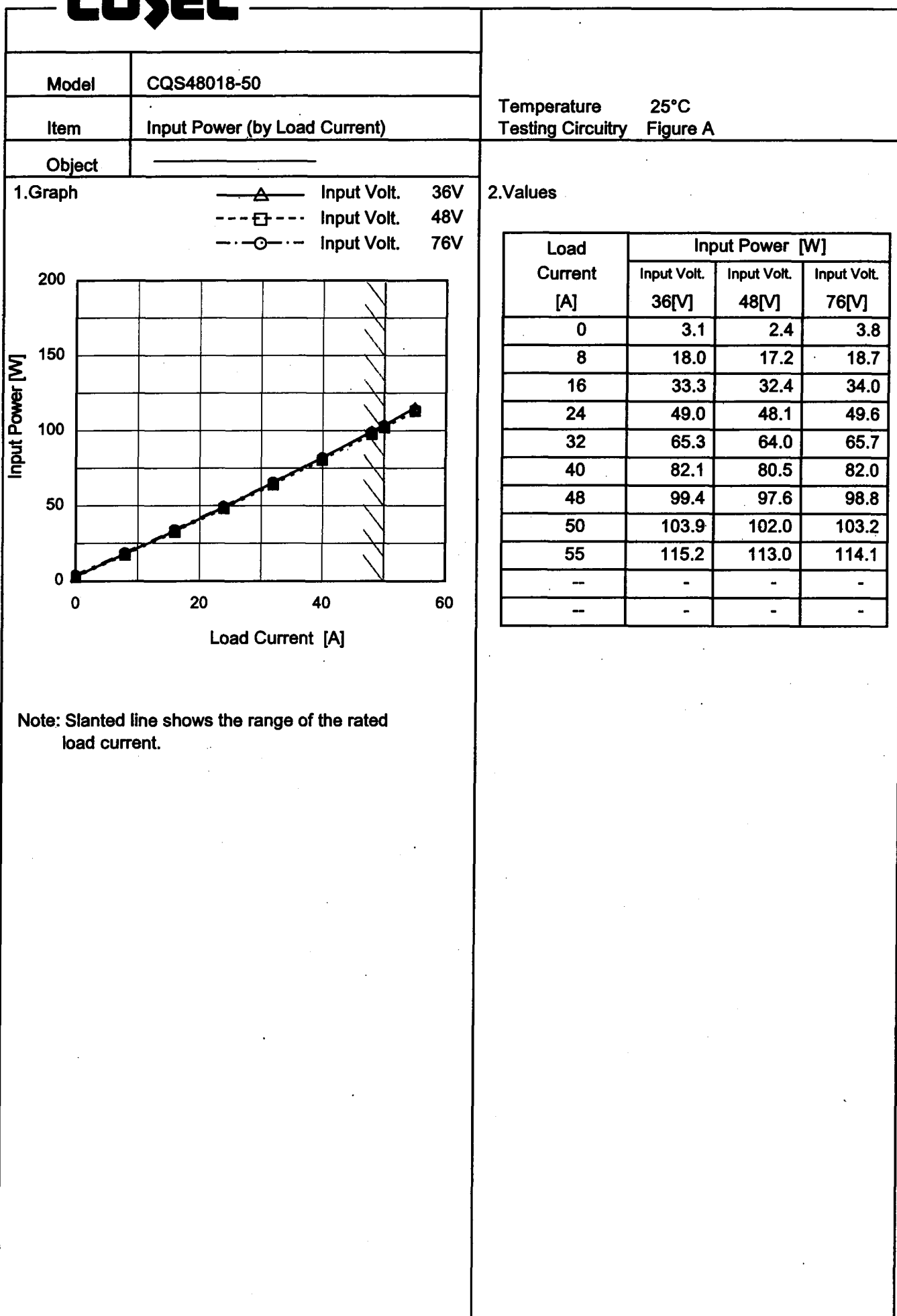


Note: Slanted line shows the range of the rated load current.

2. Values

Load Current [A]	Input Current [A]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0	0.085	0.051	0.051
8	0.500	0.358	0.246
16	0.926	0.675	0.447
24	1.367	1.001	0.654
32	1.826	1.334	0.865
40	2.292	1.680	1.082
48	2.784	2.040	1.304
50	2.894	2.132	1.361
55	3.216	2.364	1.505
--	-	-	-
--	-	-	-

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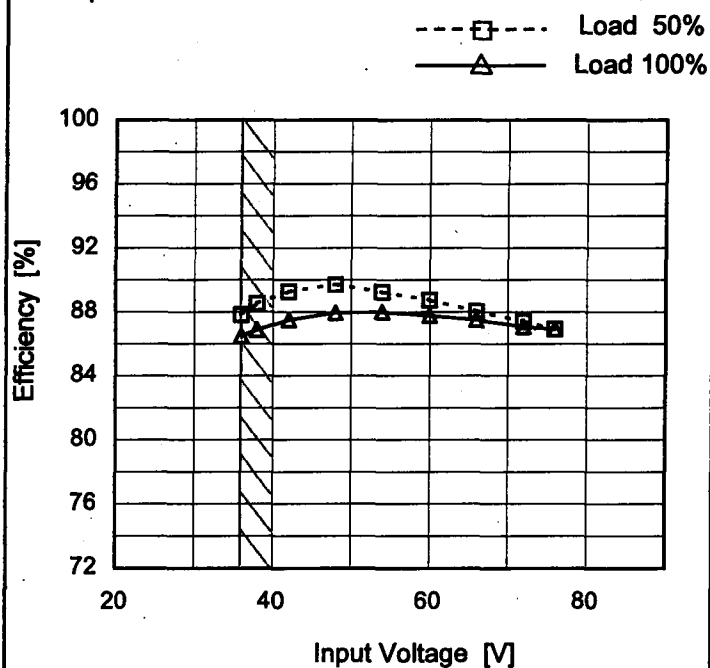


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Model CQS48018-50

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%
36	87.8	86.5
38	88.5	86.9
42	89.3	87.5
48	89.7	87.9
54	89.2	88.0
60	88.8	87.8
66	88.0	87.5
72	87.4	87.1
76	86.9	86.9

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Model		CQS48018-50	
Item		Efficiency (by Load Current)	
Object			

1.Graph

—△—

Input Volt.

36V

---□---

Input Volt.

48V

---○---

Input Volt.

76V

Efficiency [%]

100

92

84

76

68

60

52

44

0

20

40

60

Load Current [A]

0

20

40

60

2.Values

Load Current [A]	Efficiency [%]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
0	-	-	-
8	79.8	83.4	76.9
16	86.4	88.5	84.5
24	87.9	89.7	86.8
32	87.9	89.8	87.5
40	87.5	89.2	87.5
48	86.7	88.3	87.2
50	86.4	88.0	87.0
55	85.7	87.4	86.5
--	-	-	-
--	-	-	-

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

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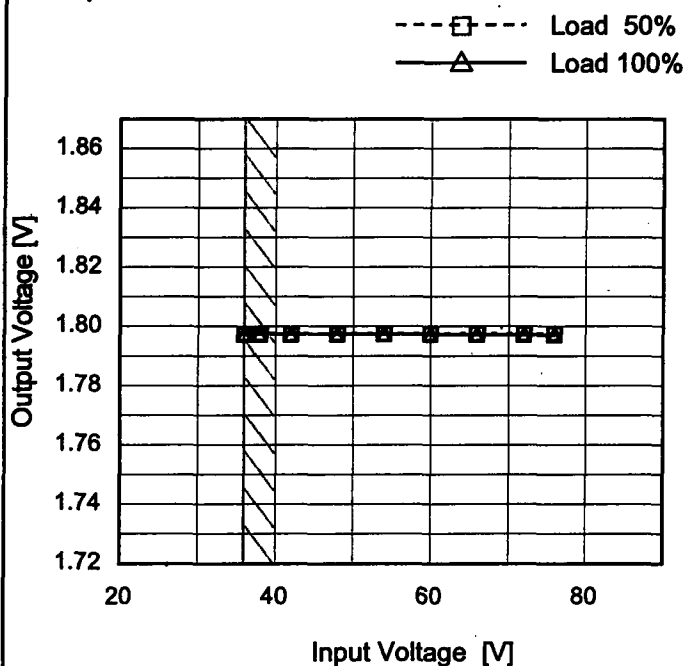
Model CQS48018-50

Item Line Regulation

Object +1.8V50A

Temperature 25°C
Testing Circuitry Figure A

1. Graph

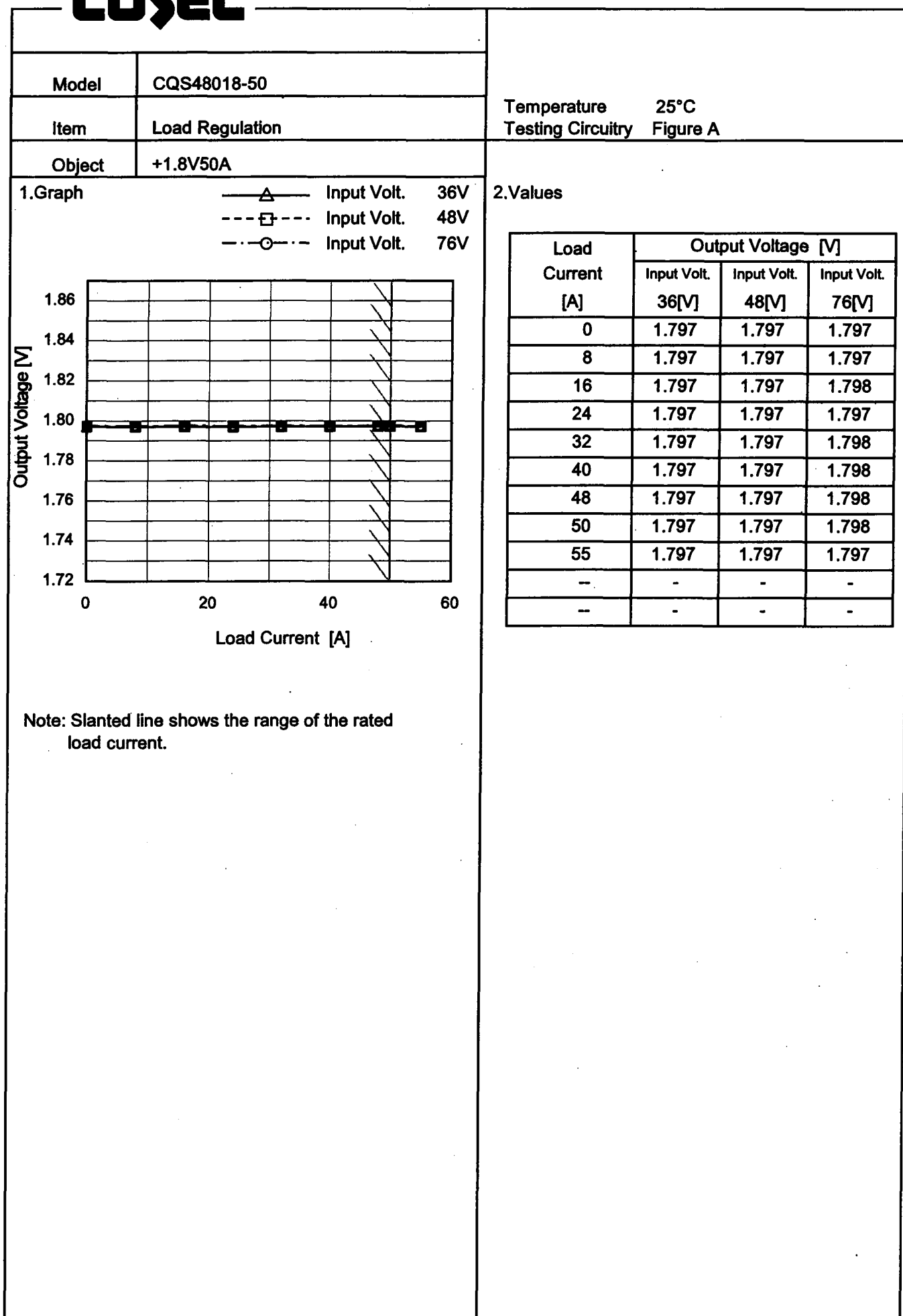


Note: Slanted line shows the range of the rated input voltage.

2. Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
36	1.797	1.798
38	1.797	1.798
42	1.797	1.797
48	1.798	1.797
54	1.798	1.797
60	1.798	1.797
66	1.798	1.797
72	1.798	1.797
76	1.798	1.797

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Model	CQS48018-50	Temperature	25°C
Item	Dynamic Load Response	Testing Circuitry	Figure A
Object	+1.8V50A		

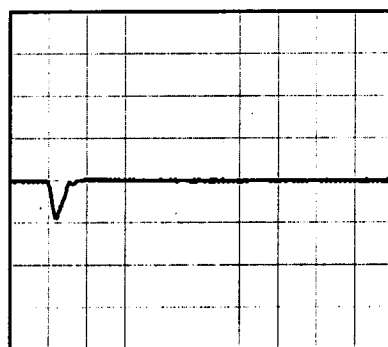
Input Volt. 48 V
Cycle 10 ms

Load Current

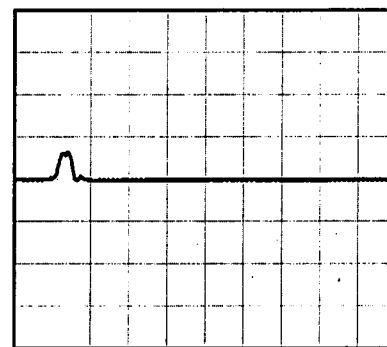
1A/ μ s

Min. Load (0A) \longleftrightarrow
Load 100% (50A)

100 mV/div



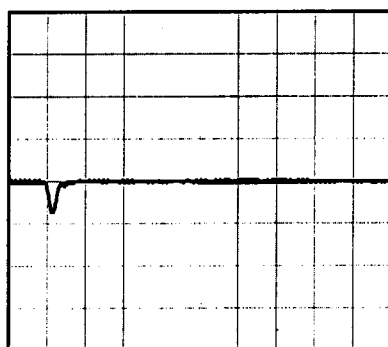
100 μ s/div



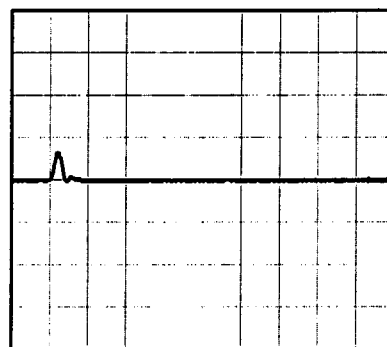
100 μ s/div

Min. Load (0A) \longleftrightarrow
Load 50% (25A)

100 mV/div



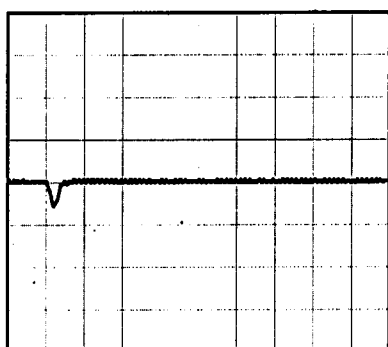
100 μ s/div



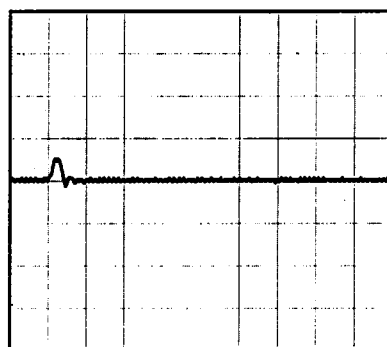
100 μ s/div

Load 50% (25A) \longleftrightarrow
Load 100% (50A)

100 mV/div



100 μ s/div



100 μ s/div

COSEL

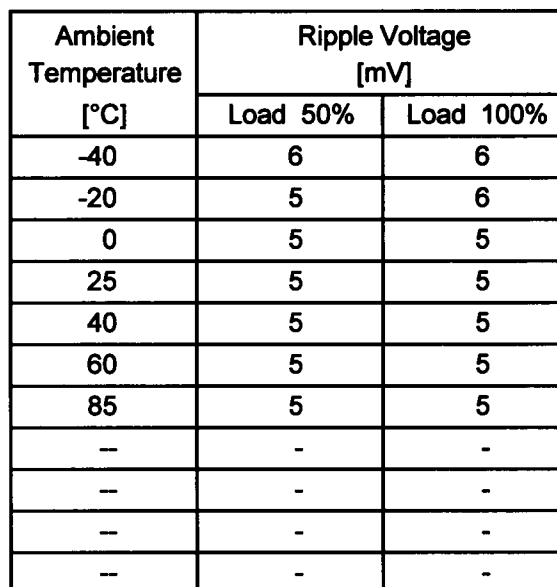
Model		CQS48018-50	Temperature 25°C																																							
Item		Ripple Voltage (by Load Current)	Testing Circuitry Figure B																																							
Object		+1.8V50A																																								
1.Graph			2.Values																																							
<div><div><div>—△— Input Volt. 36V</div><div>-·-○-·- Input Volt. 76V</div></div><p>Ripple Voltage [mV]</p><p>Load Current [A]</p></div>			<table><tr><th rowspan="2">Load Current [A]</th><th colspan="2">Ripple Voltage [mV]</th></tr><tr><th>Input Volt. 36 [V]</th><th>Input Volt. 76 [V]</th></tr><tr><td>0</td><td>5</td><td>5</td></tr><tr><td>8</td><td>5</td><td>5</td></tr><tr><td>16</td><td>5</td><td>5</td></tr><tr><td>24</td><td>5</td><td>5</td></tr><tr><td>32</td><td>5</td><td>5</td></tr><tr><td>40</td><td>5</td><td>5</td></tr><tr><td>48</td><td>5</td><td>6</td></tr><tr><td>50</td><td>5</td><td>6</td></tr><tr><td>55</td><td>5</td><td>6</td></tr><tr><td>—</td><td>-</td><td>-</td></tr><tr><td>—</td><td>-</td><td>-</td></tr></table>		Load Current [A]	Ripple Voltage [mV]		Input Volt. 36 [V]	Input Volt. 76 [V]	0	5	5	8	5	5	16	5	5	24	5	5	32	5	5	40	5	5	48	5	6	50	5	6	55	5	6	—	-	-	—	-	-
Load Current [A]	Ripple Voltage [mV]																																									
	Input Volt. 36 [V]	Input Volt. 76 [V]																																								
0	5	5																																								
8	5	5																																								
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48	5	6																																								
50	5	6																																								
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<p>Measured by 100 MHz Oscilloscope.</p> <p>Ripple Voltage is shown as p-p in the figure below.</p> <p>Note: Slanted line shows the range of the rated load current.</p>																																										
<div><p>Ripple [mVp-p]</p><p>Fig.Complex Ripple Wave Form</p></div>																																										

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Model		CQS48018-50	Temperature Testing Circuitry	25°C Figure B
Item		Ripple-Noise		
Object		+1.8V50A		
1.Graph				
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Testing Circuitry Figure B

2.Values



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

COSEL

Model

CQS48018-50

Item

Ambient Temperature Drift

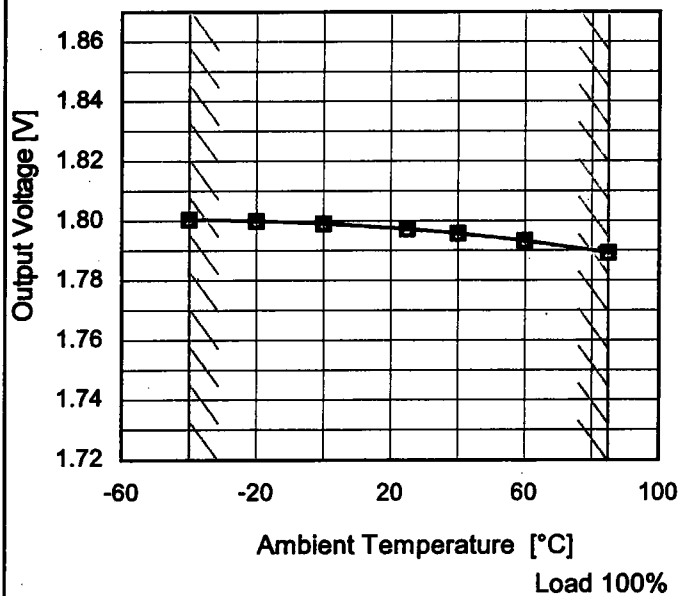
Object

+1.8V50A

Testing Circuitry Figure A

1. Graph

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



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	1.801	1.801	1.800
-20	1.800	1.800	1.800
0	1.799	1.799	1.799
25	1.797	1.797	1.797
40	1.796	1.796	1.796
60	1.793	1.793	1.793
85	1.789	1.789	1.789
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-



Model		CQS48018-50	Testing Circuitry Figure A
Item		Output Voltage Accuracy	
Object		+1.8V50A	

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 - 50A

* Output Voltage Accuracy = $\pm(\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

* 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	-40	48	0	1.801	±6	±0.3
Minimum Voltage	85	76	50	1.789		

COSEL

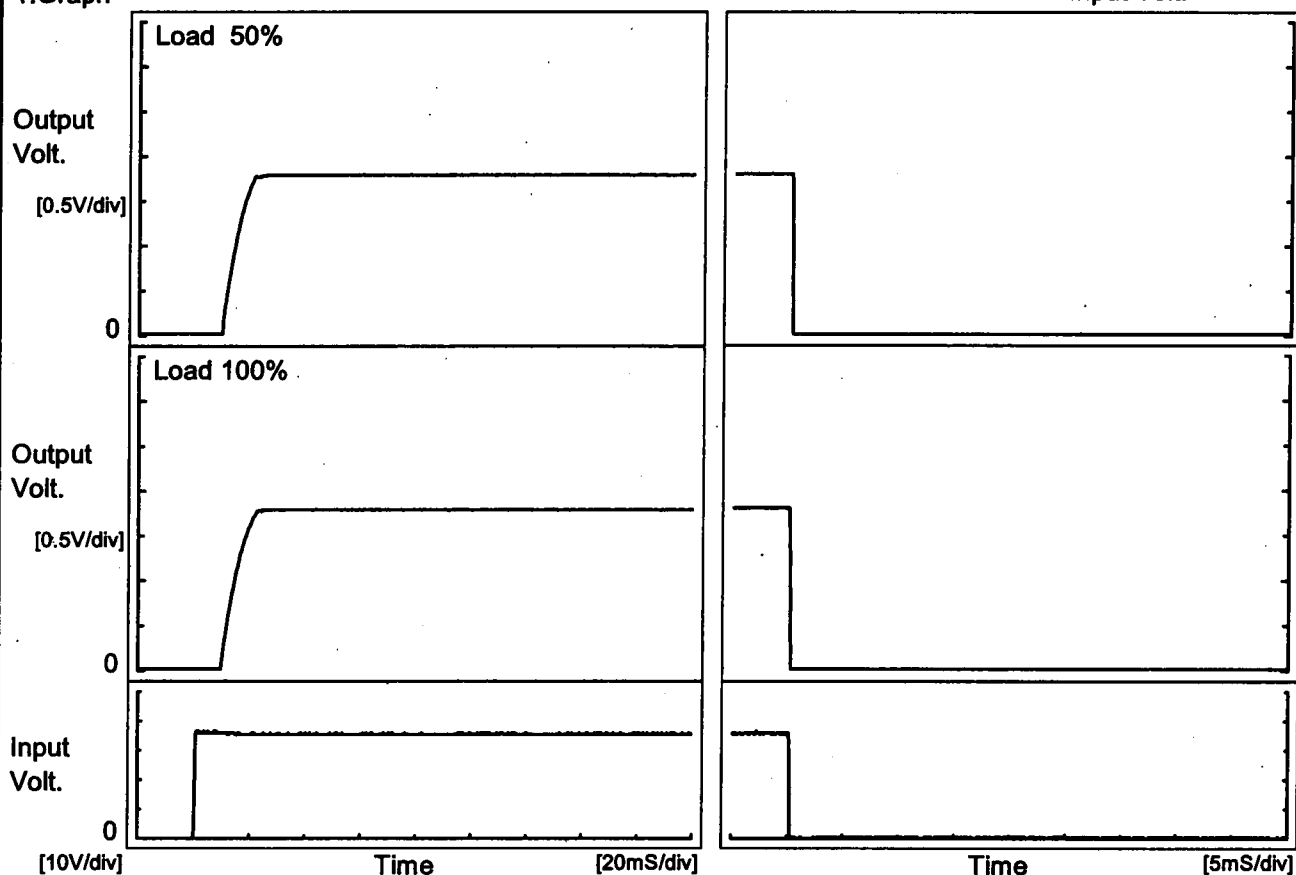
Model	CQS48018-50	Temperature 25°C Testing Circuitry Figure A																							
Item	Time Lapse Drift																								
Object	+1.8V50A																								
1.Graph		2.Values																							
<div><div><div>1.86</div><div>1.84</div><div>1.82</div><div>1.80</div><div>1.78</div><div>1.76</div><div>1.74</div><div>1.72</div></div><div><div>0</div><div>2</div><div>4</div><div>6</div><div>8</div><div>10</div></div></div> <div><div>Output Voltage [V]</div><div>Time [H]</div><div>Input Volt. 48V</div><div>Load 100%</div></div>		<table><tr><th>Time since start [H]</th><th>Output Voltage [V]</th></tr><tr><td>0.0</td><td>1.798</td></tr><tr><td>0.5</td><td>1.797</td></tr><tr><td>1.0</td><td>1.797</td></tr><tr><td>2.0</td><td>1.797</td></tr><tr><td>3.0</td><td>1.797</td></tr><tr><td>4.0</td><td>1.797</td></tr><tr><td>5.0</td><td>1.797</td></tr><tr><td>6.0</td><td>1.797</td></tr><tr><td>7.0</td><td>1.797</td></tr><tr><td>8.0</td><td>1.797</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	1.798	0.5	1.797	1.0	1.797	2.0	1.797	3.0	1.797	4.0	1.797	5.0	1.797	6.0	1.797	7.0	1.797	8.0	1.797
Time since start [H]	Output Voltage [V]																								
0.0	1.798																								
0.5	1.797																								
1.0	1.797																								
2.0	1.797																								
3.0	1.797																								
4.0	1.797																								
5.0	1.797																								
6.0	1.797																								
7.0	1.797																								
8.0	1.797																								

COSEL

Model	CQS48018-50	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	+1.8V50A		

1.Graph

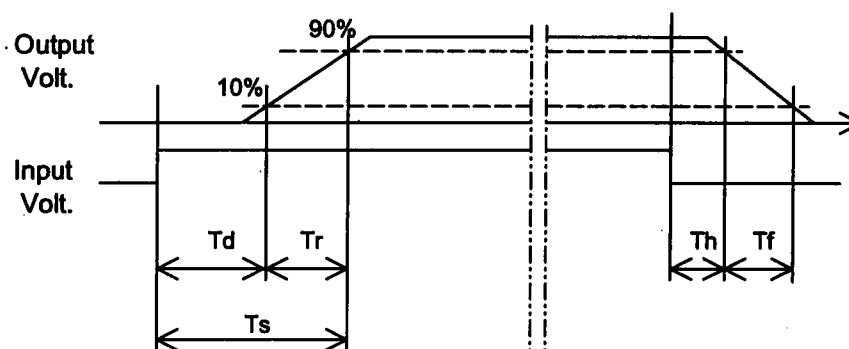
Input Volt. 36 V



2.Values

[mS]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	10.0	9.8	19.8	0.2	0.1
100 %	10.0	10.5	20.5	0.2	0.1



COSEL

Model

CQS48018-50

Item

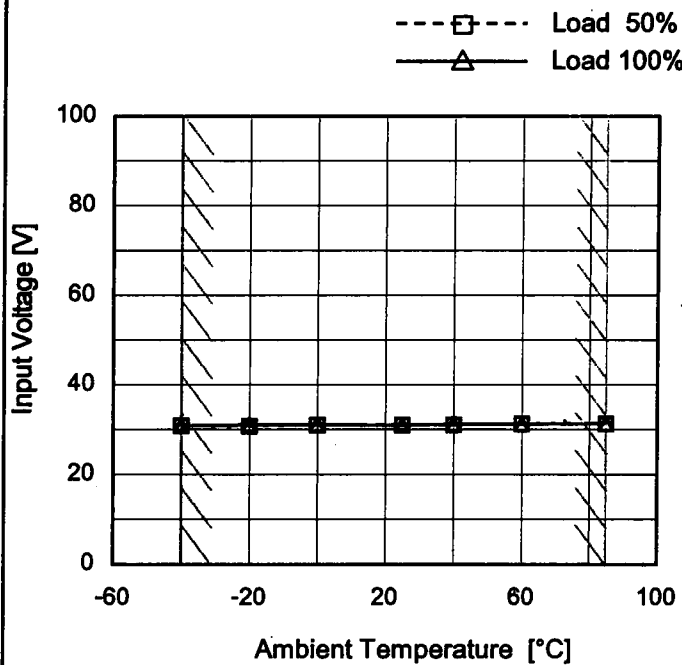
Minimum Input Voltage
for Regulated Output Voltage

Object

+1.8V50A

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	30.9	30.9
-20	30.9	31.1
0	31.1	31.1
25	31.1	31.1
40	31.2	31.3
60	31.4	31.3
85	31.4	31.5
—	—	—
—	—	—
—	—	—
—	—	—

COSEL

Model

CQS48018-50

Item

Overcurrent Protection

Object

+1.8V50A

Temperature

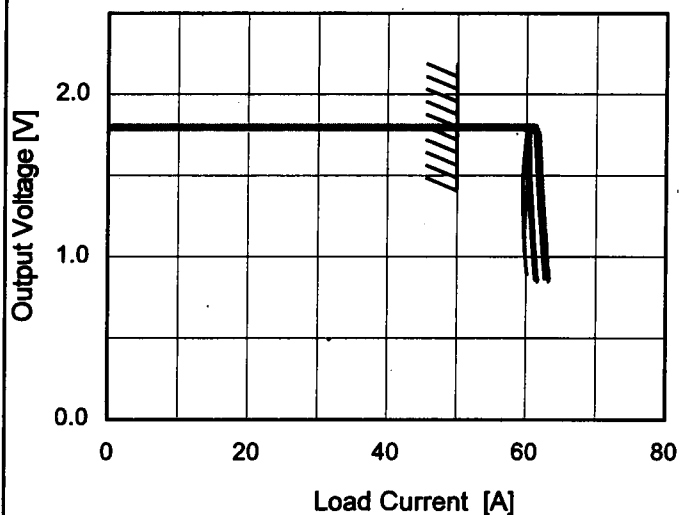
25°C

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

Output Voltage [V]	Load Current [A]		
	Input Volt. 36[V]	Input Volt. 48[V]	Input Volt. 76[V]
1.80	53.38	53.45	53.44
1.71	59.90	60.36	61.69
1.62	59.79	60.39	61.82
1.44	59.52	60.53	62.03
1.26	59.62	60.81	62.34
1.08	59.79	61.06	62.70
0.90	60.19	61.43	62.96
0.72	0.00	0.00	0.00
0.54	0.00	0.00	0.00
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

CQS48018-50

Item

Overvoltage Protection

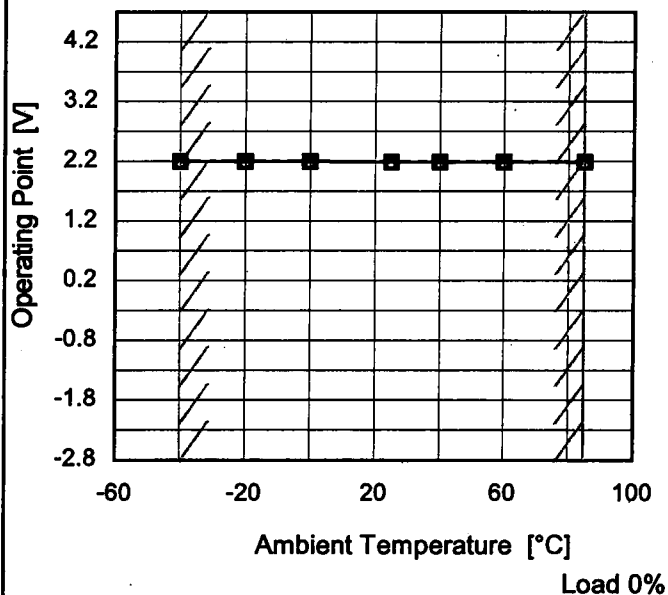
Object

+1.8V50A

Testing Circuitry Figure A

1.Graph

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



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	2.20	2.20	2.20
-20	2.20	2.20	2.20
0	2.20	2.20	2.20
25	2.19	2.19	2.19
40	2.19	2.19	2.19
60	2.19	2.19	2.19
85	2.19	2.19	2.19
--	-	-	-
--	-	-	-
--	-	-	-
--	-	-	-

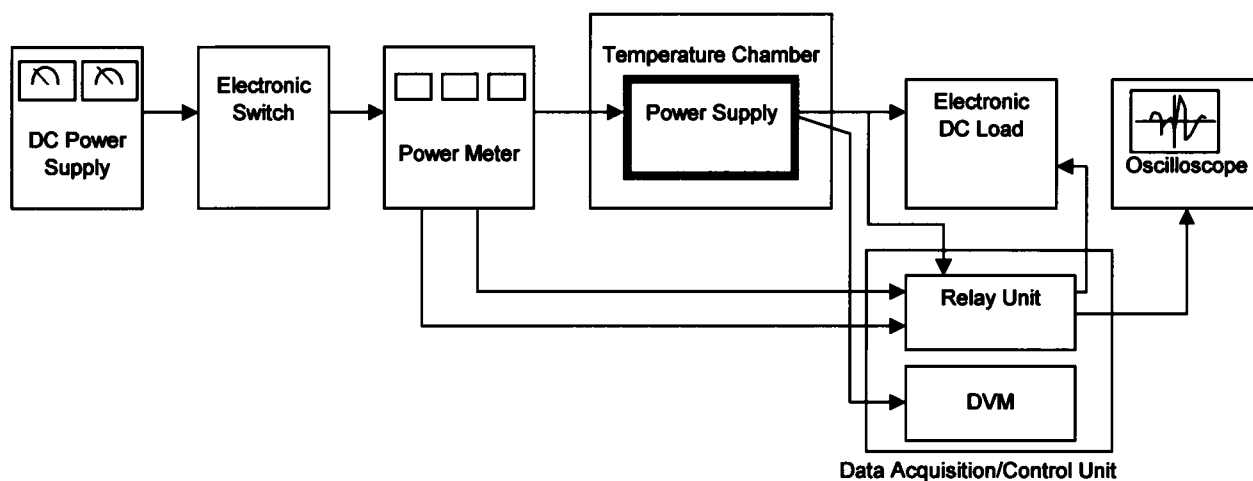


Figure A

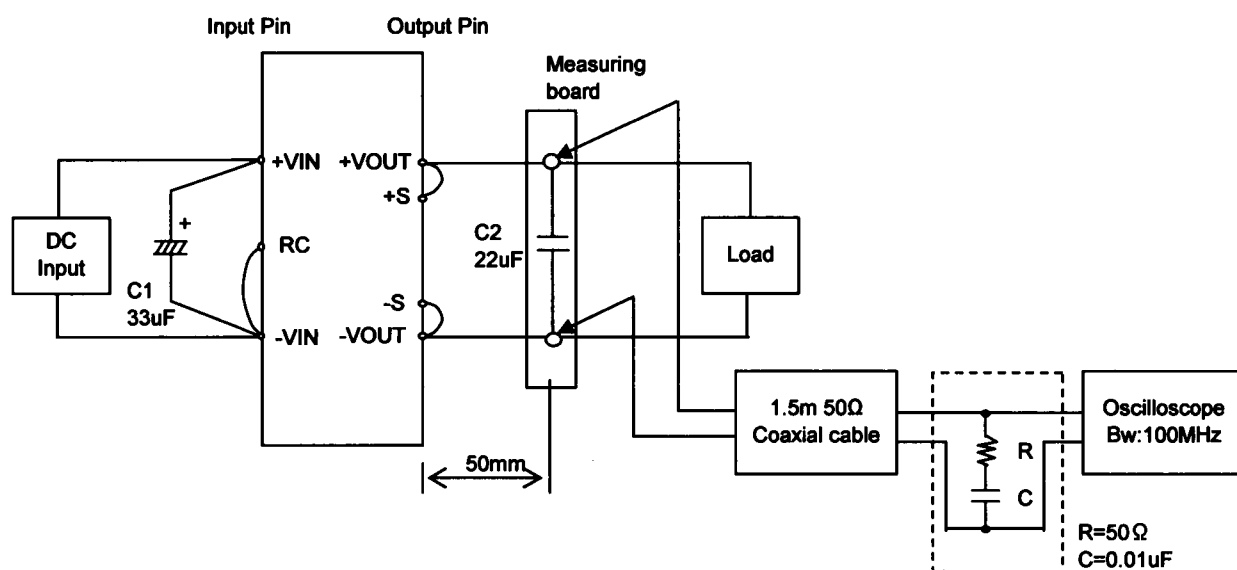


Figure B