



TEST DATA OF DBS150A24

(DC110V INPUT)

Regulated DC Power Supply
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COSEL CO.,LTD.

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ModelDBS150A24

ItemLine Regulation
静の入力変動

Object+24V6.3A

1. Graph

---□---Load 50%

—△—Load 100%

Output Voltage [V]

24.60

24.50

24.40

24.30

24.20

24.10

24.00

23.90

50

70

90

110

130

150

170

Input Voltage [V]

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

(注) 斜線は定格入力電圧範囲を示す。

Temperature25℃

Testing CircuitryFigure A

2. Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
60	24.268	24.263
66	24.268	24.263
80	24.268	24.262
95	24.267	24.261
110	24.266	24.259
125	24.266	24.258
145	24.265	24.257
160	24.264	24.255
170	24.263	24.254

COSEL

Model		DBS150A24	
Item	Input Current (by Input Voltage) 入力電流 (入力電圧特性)		
Object			

1. Graph

△

—

Load 100%

□

Load 50%

○

-·-

Load 0%

Input Current [A]

5.0

4.0

3.0

2.0

1.0

0.0

0

20

40

60

80

100

120

140

160

180

Input Voltage [V]

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

(注) 斜線は定格入力電圧範囲を示す。

2. Values

Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0	0.000	0.000	0.000
20	0.000	0.000	0.000
40	0.015	0.015	0.015
59	0.045	1.476	2.964
60	0.044	1.448	2.900
66	0.040	1.319	2.633
80	0.035	1.097	2.174
100	0.027	0.891	1.743
110	0.026	0.816	1.591
130	0.023	0.703	1.354
150	0.022	0.620	1.182
160	0.021	0.588	1.121
170	0.020	0.558	1.055
--	--	--	--
--	--	--	--
--	--	--	--

COSEL

Model		DBS150A24		Temperature		25℃	
Item		Input Current (by Load Current) 入力電流 (負荷特性)		Testing Circuitry		Figure A	
Object							
1. Graph		<div><div>—△—</div>Input Volt. 66V</div> <div><div>---□---</div>Input Volt. 110V</div> <div><div>---○---</div>Input Volt. 160V</div>		2. Values			
<div><div><div>Input Current [A]</div><div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></di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COSEL

Model		DBS150A24	
Item		Input Power (by Load Current) 入力電力 (負荷特性)	
Object			

1. Graph

—△—

Input Volt. 66V

---□---

Input Volt. 110V

-·-○-·-

Input Volt. 160V

Input Power [W]

500

400

300

200

100

0

0

2

4

6

Load Current [A]

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

(注) 斜線は定格負荷電流範囲を示す。

Temperature	25℃
Testing Circuitry	Figure A

2. Values

Load Current [A]	Input Power [W]		
	Input Volt. 66[V]	Input Volt. 110[V]	Input Volt. 160[V]
0.00	2.7	3.0	3.3
1.26	37.4	39.3	41.8
2.52	70.3	73.3	77.1
3.78	103.9	106.3	110.4
5.04	138.6	140.1	144.1
6.30	174.0	175.0	178.7
6.93	192.3	192.5	196.3
--	--	--	--
--	--	--	--
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COSEL

Model		DBS150A24																																	
Item		Efficiency (by Input Voltage) 効率 (入力電圧特性)																																	
Object																																			
1. Graph		2. Values																																	
<div><div><div>---□--- Load 50%</div><div>—△— Load 100%</div></div><p>Efficiency [%]</p><p>Input Voltage [V]</p></div> <div><p>Note: Slanted line shows the range of the rated input voltage.</p><p>(注) 斜線は定格入力電圧範囲を示す。</p></div>		<table><tr><th rowspan="2">Input Voltage [V]</th><th colspan="2">Efficiency [%]</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr><tr><td>60</td><td>87.5</td><td>87.1</td></tr><tr><td>66</td><td>87.4</td><td>87.4</td></tr><tr><td>80</td><td>86.6</td><td>87.4</td></tr><tr><td>95</td><td>85.8</td><td>87.4</td></tr><tr><td>110</td><td>84.8</td><td>87.0</td></tr><tr><td>125</td><td>83.9</td><td>86.5</td></tr><tr><td>145</td><td>82.2</td><td>85.8</td></tr><tr><td>160</td><td>81.0</td><td>85.2</td></tr><tr><td>170</td><td>80.3</td><td>84.7</td></tr></table>		Input Voltage [V]	Efficiency [%]		Load 50%	Load 100%	60	87.5	87.1	66	87.4	87.4	80	86.6	87.4	95	85.8	87.4	110	84.8	87.0	125	83.9	86.5	145	82.2	85.8	160	81.0	85.2	170	80.3	84.7
Input Voltage [V]	Efficiency [%]																																		
	Load 50%	Load 100%																																	
60	87.5	87.1																																	
66	87.4	87.4																																	
80	86.6	87.4																																	
95	85.8	87.4																																	
110	84.8	87.0																																	
125	83.9	86.5																																	
145	82.2	85.8																																	
160	81.0	85.2																																	
170	80.3	84.7																																	

COSEL

Model		DBS150A24	
Item		Efficiency (by Load Current) 効率 (負荷特性)	
Object			

1. Graph

—△—

Input Volt. 66V

---□---

Input Volt. 110V

-○-

Input Volt. 160V

Efficiency [%]

92

84

76

68

60

52

44

0

2

4

6

Load Current [A]

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

(注) 斜線は定格負荷電流範囲を示す。

Load Current [A]	Efficiency [%]		
	Input Volt. 66[V]	Input Volt. 110[V]	Input Volt. 160[V]
0.00	—	—	—
1.26	80.7	76.8	72.1
2.52	86.3	82.8	78.7
3.78	87.7	85.8	82.6
5.04	87.8	86.8	84.4
6.30	87.5	86.9	85.1
6.93	87.1	87.0	85.3
--	—	—	—
--	—	—	—
--	—	—	—
--	—	—	—

2. Values

COSEL

Model		DBS150A24	
Item		Load Regulation 静的負荷変動	
Object		+24V6.3A	
1. Graph		2. Values	

—△—

Input Volt. 66V

---□---

Input Volt. 110V

---○---

Input Volt. 160V

Output Voltage [V]

24.60

24.50

24.40

24.30

24.20

24.10

24.00

23.90

0

2

4

6

Load Current [A]

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

(注) 斜線は定格負荷電流範囲を示す。

Load Current [A]	Output Voltage [V]		
	Input Volt. 66[V]	Input Volt. 110[V]	Input Volt. 160[V]
0.00	24.276	24.275	24.274
1.26	24.274	24.274	24.272
2.52	24.271	24.270	24.269
3.78	24.269	24.267	24.264
5.04	24.268	24.265	24.261
6.30	24.268	24.263	24.259
6.93	24.267	24.263	24.258
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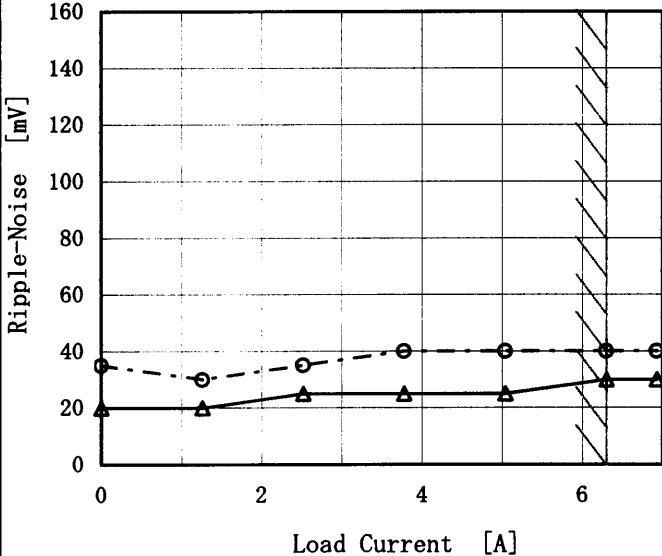
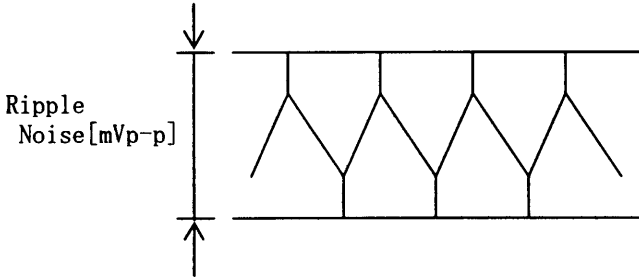
— 7 —

BC-3467

COSEL

Model	DBS150A24																																								
Item	Ripple Voltage (by Load Current) リップル電圧 (負荷特性)	Temperature	25℃																																						
Object	+24V6.3A	Testing Circuitry	Figure A																																						
1. Graph		2. Values																																							
<div><div>—△— Input Volt. 66V</div><div>- -○- - Input Volt. 160V</div></div> <p>Ripple Voltage [mV]</p> <p>Load Current [A]</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> <p>リップル電圧は、下図 p - p 値で示される。 (注) 斜線は定格負荷電流範囲を示す。</p> <div><p>Ripple [mVp-p]</p></div> <p>Fig. Complex Ripple Wave Form 図 リップル波形詳細図</p>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="2">Ripple Voltage [mV]</th></tr><tr><th>Input Volt. 66 [V]</th><th>Input Volt. 160 [V]</th></tr><tr><td>0.00</td><td>10</td><td>15</td></tr><tr><td>1.26</td><td>10</td><td>10</td></tr><tr><td>2.52</td><td>10</td><td>15</td></tr><tr><td>3.78</td><td>10</td><td>15</td></tr><tr><td>5.04</td><td>10</td><td>15</td></tr><tr><td>6.30</td><td>10</td><td>15</td></tr><tr><td>6.93</td><td>10</td><td>15</td></tr><tr><td>--</td><td>--</td><td>--</td></tr><tr><td>--</td><td>--</td><td>--</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. 66 [V]	Input Volt. 160 [V]	0.00	10	15	1.26	10	10	2.52	10	15	3.78	10	15	5.04	10	15	6.30	10	15	6.93	10	15	--	--	--	--	--	--	--	--	--	--	--	--
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COSEL

Model DBS150A24		Temperature 25°C Testing Circuitry Figure A																																			
Item	Ripple-Noise リップルノイズ																																				
Object	+24V6.3A																																				
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COSEL

Model		DBS150A24		Temperature		25℃																																																												
Item		Overcurrent Protection 過電流保護		Testing Circuitry		Figure A																																																												
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<div><div><div></div><div></div><div></div></div><div>Input Volt. 66V Input Volt. 110V Input Volt. 160V</div></div> <p>Output Voltage [V]</p> <p>Load Current [A]</p> <p>Note: Slanted line shows the range of the rated load current. (注) 斜線は定格負荷電流範囲を示す。</p> <p>Intermittent operation occurs when the output voltage is from 14.7V to 0V. 14.7V～0V間は、間欠モードとなる。</p>				<table><tr><th rowspan="2">Output Voltage [V]</th><th colspan="3">Load Current [A]</th></tr><tr><th>Input Volt. 66[V]</th><th>Input Volt. 110[V]</th><th>Input Volt. 160[V]</th></tr><tr><td>24.0</td><td>7.99</td><td>7.79</td><td>7.99</td></tr><tr><td>22.8</td><td>8.00</td><td>7.86</td><td>8.17</td></tr><tr><td>21.6</td><td>8.01</td><td>7.92</td><td>8.31</td></tr><tr><td>19.2</td><td>8.06</td><td>8.08</td><td>8.42</td></tr><tr><td>16.8</td><td>8.16</td><td>8.21</td><td>8.63</td></tr><tr><td>--</td><td>--</td><td>--</td><td>--</td></tr><tr><td>--</td><td>--</td><td>--</td><td>--</td></tr><tr><td>--</td><td>--</td><td>--</td><td>--</td></tr><tr><td>--</td><td>--</td><td>--</td><td>--</td></tr><tr><td>--</td><td>--</td><td>--</td><td>--</td></tr><tr><td>--</td><td>--</td><td>--</td><td>--</td></tr><tr><td>--</td><td>--</td><td>--</td><td>--</td></tr><tr><td>--</td><td>--</td><td>--</td><td>--</td></tr></table>				Output Voltage [V]	Load Current [A]			Input Volt. 66[V]	Input Volt. 110[V]	Input Volt. 160[V]	24.0	7.99	7.79	7.99	22.8	8.00	7.86	8.17	21.6	8.01	7.92	8.31	19.2	8.06	8.08	8.42	16.8	8.16	8.21	8.63	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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COSEL

Model		DBS150A24
Item		Overvoltage Protection 過電圧保護
Object		+24V6.3A

1. Graph

—△—

Input Volt. 66V

---□---

Input Volt. 110V

---○---

Input Volt. 160V

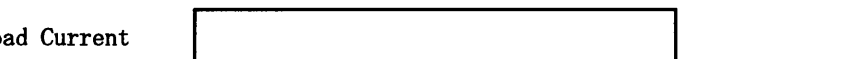
Operating Point [V]

COSEL

Model	DBS150A24	Temperature 25°C Testing Circuitry Figure A
Item	Dynamic Load Response 動的負荷変動	
Object	+24V6.3A	

Input Volt. 110 V
Cycle 1000 ms

Load Current



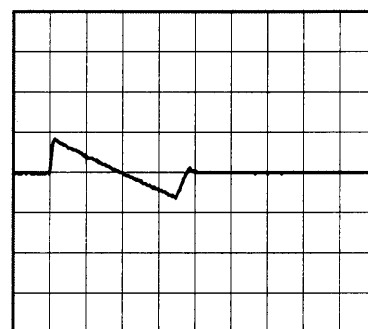
Min. Load (0A) ←→

Load 100% (6.3A)

500 mV/div



5 ms/div

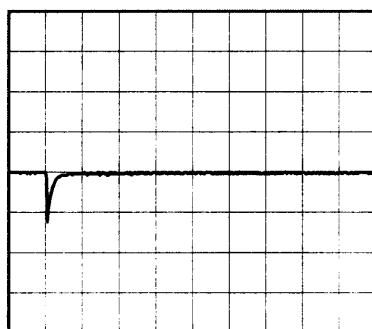


5 ms/div

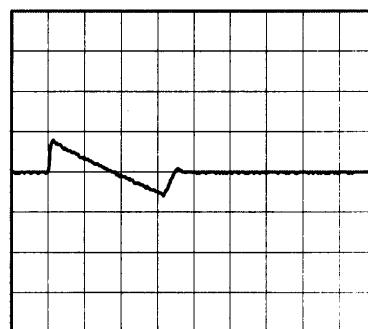
Min. Load (0A) ←→

Load 50% (3.15A)

500 mV/div



5 ms/div

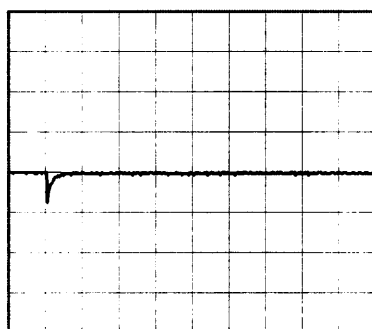


5 ms/div

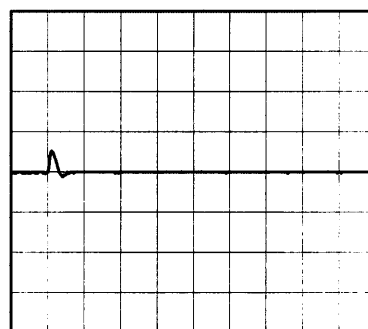
Load 10% (0.63A) ←→

Load 100% (6.3A)

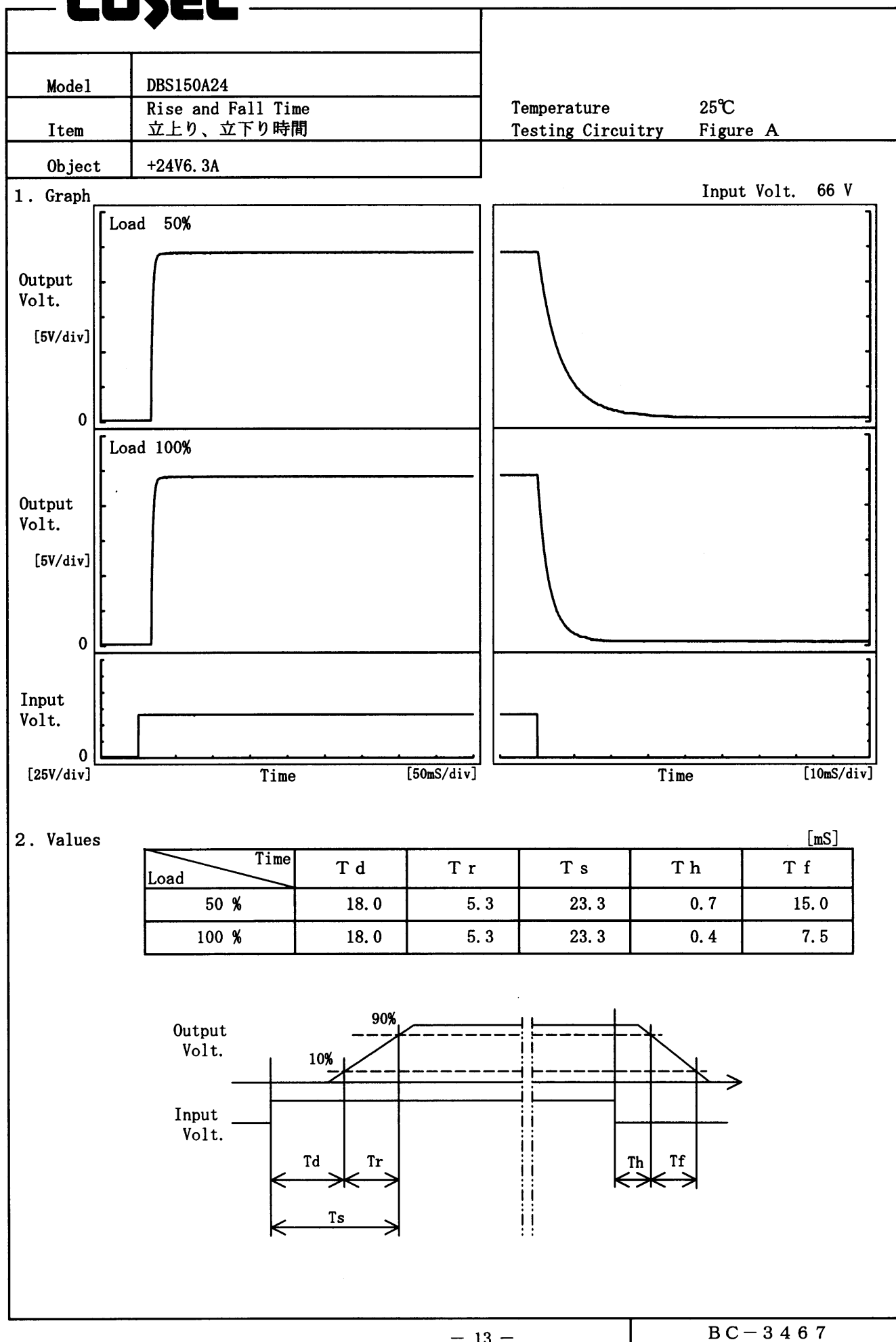
500 mV/div



5 ms/div

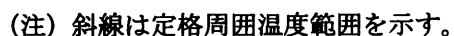


5 ms/div

COSEL

Testing Circuitry Figure A

2. Values

BC-3467

COSEL

Model		DBS150A24	
Item		Minimum Input Voltage for Regulated Output Voltage 最低レギュレーション電圧	
Object		+24V6.3A	

1. Graph

<

COSEL

Model		DBS150A24	
Item		Ripple Voltage (by Ambient Temp.) リップル電圧 (周囲温度特性)	
Object		+24V6.3A	

1. Graph

---□---

Load 50%

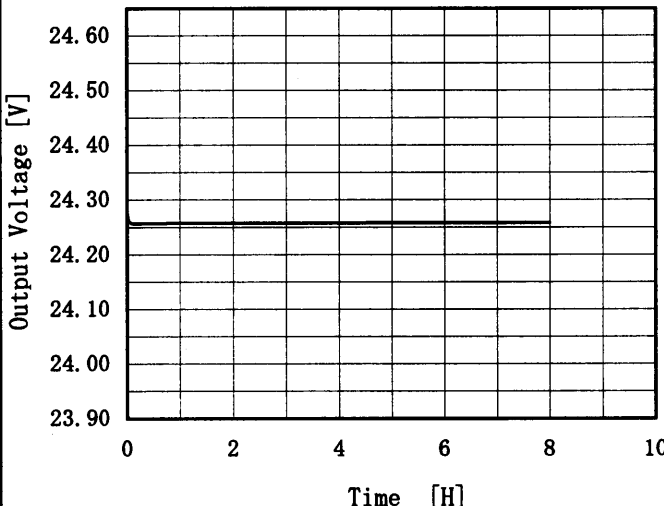
—△—

Load 100%

Ripple Voltage [mV]

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COSEL

Model	DBS150A24																								
Item	Time Lapse Drift 経時ドリフト	Temperature	25℃																						
Object	+24V6.3A	Testing Circuitry	Figure A																						
1. Graph		2. Values																							
<div><p>Output Voltage [V]</p><p>Time [H]</p><p>Input Volt. 110V</p><p>Load 100%</p></div>		<table><tr><th>Time since start [H]</th><th>Output Voltage [V]</th></tr><tr><td>0.0</td><td>24.277</td></tr><tr><td>0.5</td><td>24.257</td></tr><tr><td>1.0</td><td>24.258</td></tr><tr><td>2.0</td><td>24.258</td></tr><tr><td>3.0</td><td>24.258</td></tr><tr><td>4.0</td><td>24.258</td></tr><tr><td>5.0</td><td>24.258</td></tr><tr><td>6.0</td><td>24.259</td></tr><tr><td>7.0</td><td>24.259</td></tr><tr><td>8.0</td><td>24.259</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	24.277	0.5	24.257	1.0	24.258	2.0	24.258	3.0	24.258	4.0	24.258	5.0	24.258	6.0	24.259	7.0	24.259	8.0	24.259
Time since start [H]	Output Voltage [V]																								
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Model		DBS150A24	Testing Circuitry Figure A
Item		Output Voltage Accuracy 定電圧精度	
Object		+24V6.3A	

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 : -20 ~ 85°C

Input Voltage : 66 ~ 160V

Load Current : 0 ~ 6.3A

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

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

1. 定電圧精度

周囲温度、入力電圧、負荷電流を下記仕様内で、任意に変動させたときの出力電圧の変動をいう。

周囲温度 : -20 ~ 85°C

入力電圧 : 66 ~ 160V

負荷電流 : 0 ~ 6.3A

* 定電圧精度(変動値) = $\pm (\text{出力電圧の最高値} - \text{出力電圧の最低値}) / 2$

* 定電圧精度(変動率) = $\frac{\text{変動値}}{\text{定格出力電圧}} \times 100$

2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	-20	66	0	24.302	±51	±0.2
Minimum Voltage	85	160	6.3	24.200		

COSEL

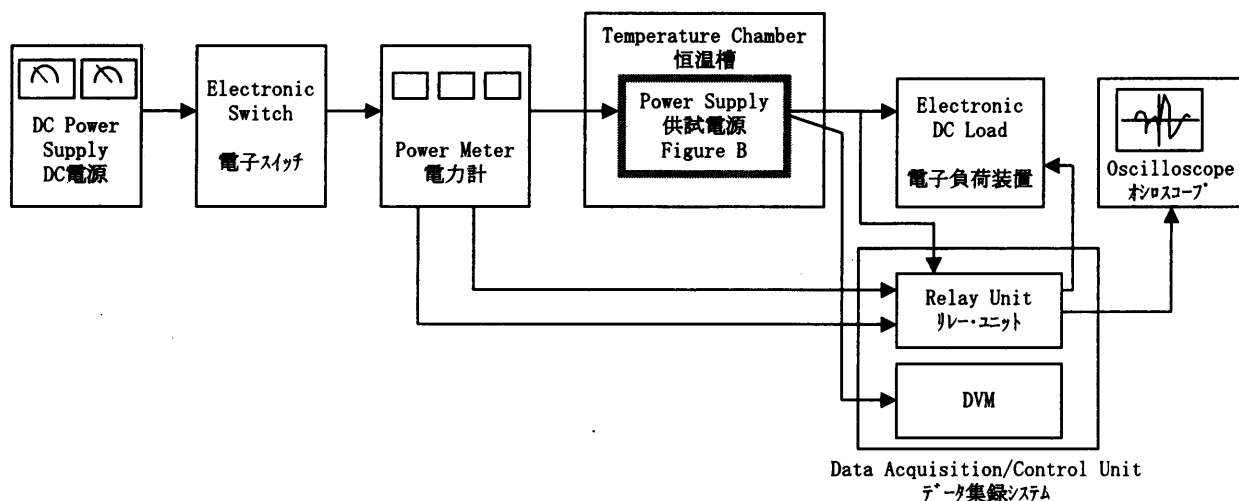
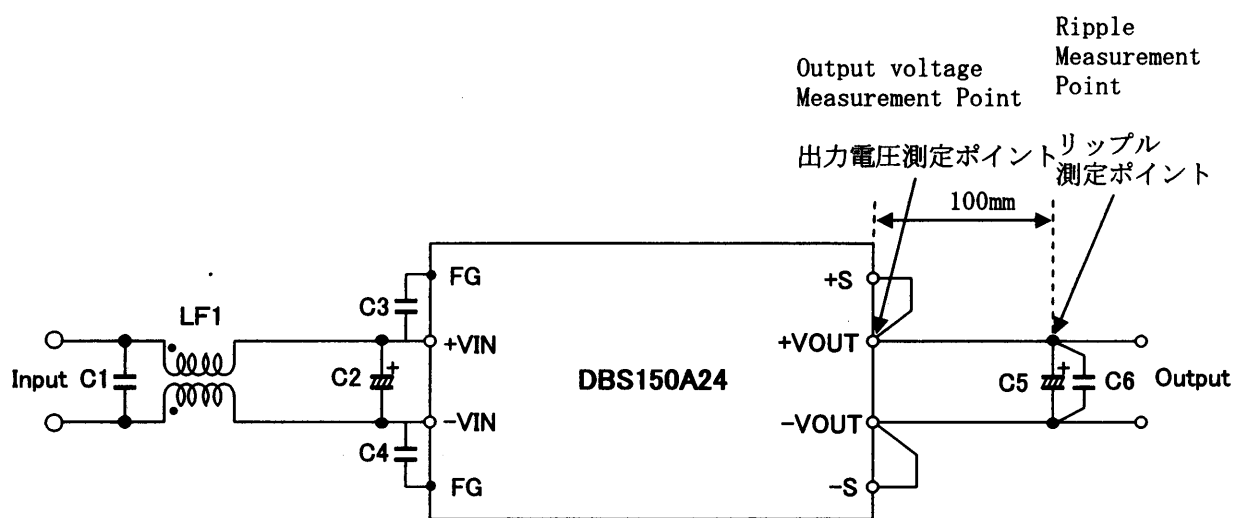


Figure A

Figure B (General Electric Characteristic)
一般電気特性

- C1 : 0.1 μ F 250V Film capacitor
- C2 : 47 μ F 250V Electric capacitor
- C3、C4 : 2200pF 250V Ceramic capacitor
- C5 : 470 μ F 35V Electric capacitor
- C6 : 0.1 μ F 50V Film capacitor
- LF1 : 1mH 3A Common mode Choke Coil