



TEST DATA OF LCA15S-24 (100V INPUT)

Regulated DC Power Supply

Date : June 17. 1999

Approved by : *H. Yamaguchi*
Design Manager

Prepared by : *S. Taniguchi*
Design Engineer

コーセル株式会社
COSEL CO., LTD.

CONTENTS

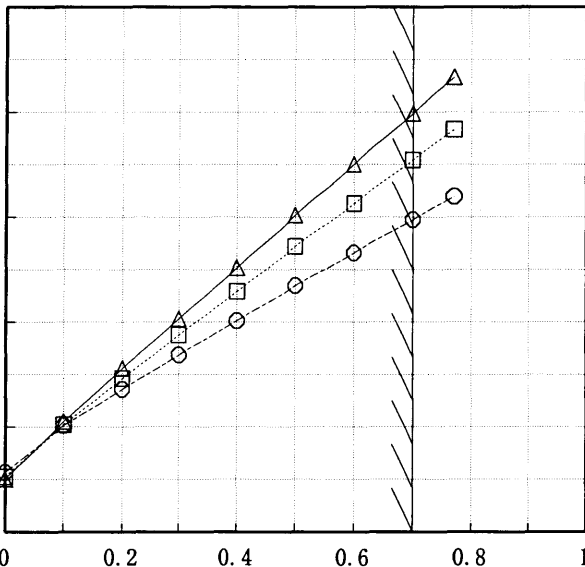
1. Line Regulation	1
静的入力変動	
2. Input Current (by Load Current)	2
入力電流 (負荷特性)	
3. Input Power (by Load Current)	3
入力電力 (負荷特性)	
4. Efficiency (by Input Voltage)	4
効率 (入力電圧特性)	
5. Efficiency (by Load Current)	5
効率 (負荷特性)	
6. Hold-Up Time	6
出力保持時間	
7. Instantaneous Interruption Compensation	7
瞬時停電保障	
8. Load Regulation	8
静的負荷変動	
9. Ripple Voltage (by Load Current)	9
リップル電圧 (負荷特性)	
10. Ripple-Noise	10
リップルノイズ	
11. Overcurrent Protection	11
過電流保護	
12. Inrush Current	12
突入電流	
13. Dynamic Load Responce	13
動的負荷変動	
14. Rise and Fall Time	14
立上り、立下がり時間	
15. Ambient Temperature Drift	15
周囲温度変動	
16. Minimum Input Voltage for Regulated Output Voltage	16
最低レギュレーション電圧	
17. Ripple Voltage (by Ambient Temperature)	17
リップル電圧 (周囲温度特性)	
18. Time Lapse Drift	18
経時ドリフト	
19. Output Voltage Accuracy	19
定電圧精度	
20. Condensation	20
結露特性	
21. Leakage Current	21
漏洩電流	
22. Line Noise Tolerance	22
入力雑音耐量	
23. Conducted Emission	23
雑音端子電圧	
24. Figure of Testing Circuitry	24
測定回路図	

(Final Page 25)

COSEL

Model		LCA15S-24		Temperature		25℃																													
Item		Line Regulation 静的入力変動		Testing Circuitry		Figure A																													
Object		+24.0V0.7A																																	
1. Graph				2. Values																															
<div><div><div>□</div><div>Load 50%</div></div><div><div>△</div><div>Load 100%</div></div></div> <div><div>Output Voltage [V]</div><div><div><div>23.99</div><div>23.97</div><div>23.95</div><div>23.93</div><div>23.91</div><div>23.89</div><div>23.87</div><div>0</div></div><div><div>0</div><div>80</div><div>90</div><div>100</div><div>110</div><div>120</div><div>130</div><div>140</div><div>150</div></div><div>Input Voltage [V]</div></div><div><div>Note: Slanted line shows the range of the rated input voltage.</div><div><div>(注) 斜線は定格入力電圧範囲を示す。</div></div></div></div> <div><table><tr><th rowspan="2">Input Voltage [V]</th><th colspan="2">Output Voltage [V]</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr><tr><td>75</td><td>23.930</td><td>23.927</td></tr><tr><td>80</td><td>23.929</td><td>23.926</td></tr><tr><td>85</td><td>23.927</td><td>23.925</td></tr><tr><td>90</td><td>23.926</td><td>23.924</td></tr><tr><td>100</td><td>23.922</td><td>23.921</td></tr><tr><td>110</td><td>23.918</td><td>23.917</td></tr><tr><td>120</td><td>23.914</td><td>23.914</td></tr><tr><td>132</td><td>23.908</td><td>23.909</td></tr><tr><td>140</td><td>23.904</td><td>23.906</td></tr></table></div>				Input Voltage [V]	Output Voltage [V]		Load 50%	Load 100%	75	23.930	23.927	80	23.929	23.926	85	23.927	23.925	90	23.926	23.924	100	23.922	23.921	110	23.918	23.917	120	23.914	23.914	132	23.908	23.909	140	23.904	23.906
Input Voltage [V]	Output Voltage [V]																																		
	Load 50%	Load 100%																																	
75	23.930	23.927																																	
80	23.929	23.926																																	
85	23.927	23.925																																	
90	23.926	23.924																																	
100	23.922	23.921																																	
110	23.918	23.917																																	
120	23.914	23.914																																	
132	23.908	23.909																																	
140	23.904	23.906																																	

COSEL

Model		LCA15S-24		Temperature 25℃																																																								
Item		Input Current (by Load Current) 入力電流 (負荷特性)		Testing Circuitry Figure A																																																								
Output		_____																																																										
1. Graph				2. Values																																																								
<div><div><div>—△—</div><div>Input Volt. 85V</div></div><div><div>—□—</div><div>Input Volt. 100V</div></div><div><div>—○—</div><div>Input Volt. 132V</div></div></div> <div><div><div>[A]</div><div>0.5</div><div>0.4</div><div>0.3</div><div>0.2</div><div>0.1</div><div>0</div></div><div></div><div><div>Input Current</div><div>Load Current</div><div>[A]</div></div></div> <div>Note: Slanted line shows the range of the rated load current</div> <div>(注)斜線は定格負荷電流範囲を示す。</div>				<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Input Current [A]</th></tr><tr><th>Input Volt. 85[V]</th><th>Input Volt. 100[V]</th><th>Input Volt. 132[V]</th></tr><tr><td>0.00</td><td>0.050</td><td>0.052</td><td>0.057</td></tr><tr><td>0.10</td><td>0.105</td><td>0.102</td><td>0.101</td></tr><tr><td>0.20</td><td>0.156</td><td>0.146</td><td>0.136</td></tr><tr><td>0.30</td><td>0.203</td><td>0.188</td><td>0.169</td></tr><tr><td>0.40</td><td>0.252</td><td>0.229</td><td>0.201</td></tr><tr><td>0.50</td><td>0.302</td><td>0.272</td><td>0.235</td></tr><tr><td>0.60</td><td>0.350</td><td>0.313</td><td>0.266</td></tr><tr><td>0.70</td><td>0.399</td><td>0.354</td><td>0.298</td></tr><tr><td>0.77</td><td>0.433</td><td>0.384</td><td>0.320</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>		Load Current [A]	Input Current [A]			Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]	0.00	0.050	0.052	0.057	0.10	0.105	0.102	0.101	0.20	0.156	0.146	0.136	0.30	0.203	0.188	0.169	0.40	0.252	0.229	0.201	0.50	0.302	0.272	0.235	0.60	0.350	0.313	0.266	0.70	0.399	0.354	0.298	0.77	0.433	0.384	0.320	—	—	—	—	—	—	—	—	—	—	—	—
Load Current [A]	Input Current [A]																																																											
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]																																																									
0.00	0.050	0.052	0.057																																																									
0.10	0.105	0.102	0.101																																																									
0.20	0.156	0.146	0.136																																																									
0.30	0.203	0.188	0.169																																																									
0.40	0.252	0.229	0.201																																																									
0.50	0.302	0.272	0.235																																																									
0.60	0.350	0.313	0.266																																																									
0.70	0.399	0.354	0.298																																																									
0.77	0.433	0.384	0.320																																																									
—	—	—	—																																																									
—	—	—	—																																																									
—	—	—	—																																																									

COSEL

Model		LCA15S-24		Temperature		25℃																																																								
Item		Input Power (by Load Current) 入力電力（負荷特性）		Testing Circuitry		Figure A																																																								
Output		_____																																																												
1. Graph				2. Values																																																										
<div><div><div>—△—</div><div>Input Volt. 85V</div></div><div><div>—□—</div><div>Input Volt. 100V</div></div><div><div>—○—</div><div>Input Volt. 132V</div></div></div> <p>Input Power [W]</p> <p>Load Current [A]</p> <p>Note: Slanted line shows the range of the rated load current</p> <p>(注) 斜線は定格負荷電流範囲を示す。</p>				<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Input Power [W]</th></tr><tr><th>Input Volt. 85 [V]</th><th>Input Volt. 100 [V]</th><th>Input Volt. 132 [V]</th></tr><tr><td>0.00</td><td>1.93</td><td>2.32</td><td>3.21</td></tr><tr><td>0.10</td><td>4.75</td><td>5.22</td><td>6.47</td></tr><tr><td>0.20</td><td>7.52</td><td>7.96</td><td>9.11</td></tr><tr><td>0.30</td><td>10.16</td><td>10.57</td><td>11.68</td></tr><tr><td>0.40</td><td>12.93</td><td>13.27</td><td>14.31</td></tr><tr><td>0.50</td><td>15.86</td><td>16.09</td><td>17.00</td></tr><tr><td>0.60</td><td>18.73</td><td>18.84</td><td>19.60</td></tr><tr><td>0.70</td><td>21.65</td><td>21.66</td><td>22.23</td></tr><tr><td>0.77</td><td>23.73</td><td>23.66</td><td>24.11</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>				Load Current [A]	Input Power [W]			Input Volt. 85 [V]	Input Volt. 100 [V]	Input Volt. 132 [V]	0.00	1.93	2.32	3.21	0.10	4.75	5.22	6.47	0.20	7.52	7.96	9.11	0.30	10.16	10.57	11.68	0.40	12.93	13.27	14.31	0.50	15.86	16.09	17.00	0.60	18.73	18.84	19.60	0.70	21.65	21.66	22.23	0.77	23.73	23.66	24.11	—	—	—	—	—	—	—	—	—	—	—	—
Load Current [A]	Input Power [W]																																																													
	Input Volt. 85 [V]	Input Volt. 100 [V]	Input Volt. 132 [V]																																																											
0.00	1.93	2.32	3.21																																																											
0.10	4.75	5.22	6.47																																																											
0.20	7.52	7.96	9.11																																																											
0.30	10.16	10.57	11.68																																																											
0.40	12.93	13.27	14.31																																																											
0.50	15.86	16.09	17.00																																																											
0.60	18.73	18.84	19.60																																																											
0.70	21.65	21.66	22.23																																																											
0.77	23.73	23.66	24.11																																																											
—	—	—	—																																																											
—	—	—	—																																																											
—	—	—	—																																																											

COSEL

Model		LCA15S-24	
Item	Efficiency 効率	Temperature	25℃
		Testing Circuitry	Figure A
Object			
1. Graph		2. Values	

-----□----- Load 50%

-----△----- Load 100%

Efficiency [%]

<

COSEL

Model	LCA15S-24																																																									
Item	Efficiency (by Load Current) 効率 (負荷電流特性)	Temperature	25°C																																																							
Output	—	Testing Circuitry	Figure A																																																							
<div>1. Graph</div> <div> <div> <div>△</div> <div>Input Volt. 85V</div> </div> <div> <div>□</div> <div>Input Volt. 100V</div> </div> <div> <div>○</div> <div>Input Volt. 132V</div> </div> </div> <div> <p>Efficiency [%]</p> <p>Load Current [A]</p> <p>Note: Slanted line shows the range of the rated load current</p> <p>(注) 斜線は定格負荷電流範囲を示す。</p> </div> <div>2. Values</div> <table> <tr> <th rowspan="2">Load Current [A]</th><th colspan="3">Efficiency [%]</th></tr> <tr> <th>Input Volt. 85[V]</th><th>Input Volt. 100[V]</th><th>Input Volt. 132[V]</th></tr> <tr><td>0.10</td><td>53.8</td><td>48.8</td><td>39.6</td></tr> <tr><td>0.20</td><td>65.8</td><td>62.5</td><td>54.9</td></tr> <tr><td>0.30</td><td>72.0</td><td>69.2</td><td>62.9</td></tr> <tr><td>0.40</td><td>75.1</td><td>73.4</td><td>68.1</td></tr> <tr><td>0.50</td><td>77.0</td><td>76.0</td><td>71.8</td></tr> <tr><td>0.60</td><td>77.6</td><td>77.3</td><td>74.3</td></tr> <tr><td>0.70</td><td>78.1</td><td>78.1</td><td>76.2</td></tr> <tr><td>0.77</td><td>78.3</td><td>78.4</td><td>77.0</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>				Load Current [A]	Efficiency [%]			Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]	0.10	53.8	48.8	39.6	0.20	65.8	62.5	54.9	0.30	72.0	69.2	62.9	0.40	75.1	73.4	68.1	0.50	77.0	76.0	71.8	0.60	77.6	77.3	74.3	0.70	78.1	78.1	76.2	0.77	78.3	78.4	77.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Load Current [A]	Efficiency [%]																																																									
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]																																																							
0.10	53.8	48.8	39.6																																																							
0.20	65.8	62.5	54.9																																																							
0.30	72.0	69.2	62.9																																																							
0.40	75.1	73.4	68.1																																																							
0.50	77.0	76.0	71.8																																																							
0.60	77.6	77.3	74.3																																																							
0.70	78.1	78.1	76.2																																																							
0.77	78.3	78.4	77.0																																																							
—	—	—	—																																																							
—	—	—	—																																																							
—	—	—	—																																																							
—	—	—	—																																																							

COSEL

Model		LCA15S-24	
Item		Hold-Up Time 出力保持時間	
Object		+24.0V0.7A	

1. Graph

-----□-----

Load 50%

-----△-----

Load 100%

Hold-Up Time

[mS]

1000

100

10

1

0

80

90

100

110

120

130

140

150

Input Voltage

[V]

This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.

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

出力保持時間とは、入力電圧断から出力電圧が、定電圧精度の規格範囲を保持しているところまでの時間。

(注)斜線は定格入力電圧範囲を示す。

Input Voltage [V]	Hold-Up Time [mS]	
	Load 50%	Load 100%
75	40	12
80	46	14
85	52	18
90	59	21
100	73	28
110	89	36
120	105	45
132	127	56
140	142	64

2. Values

This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.

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

出力保持時間とは、入力電圧断から出力電圧が、定電圧精度の規格範囲を保持しているところまでの時間。

(注)斜線は定格入力電圧範囲を示す。

COSEL

Model		LCA15S-24		Temperature		25℃																																																				
Item		Instantaneous Interruption Compensation 瞬時停電保障		Testing Circuitry		Figure A																																																				
Object		+24.0V0.7A																																																								
1. Graph				2. Values																																																						
<div><div><div>—△—</div><div>—□—</div><div>—○—</div></div><div>Input Volt. 85 V Input Volt. 100 V Input Volt. 132 V</div></div> <div><div><div>[mS]</div><div>1000</div><div>100</div><div>10</div><div>1</div></div><div><div>Instantaneous Compensation Time</div><div>0</div><div>0.2</div><div>0.4</div><div>0.6</div><div>0.8</div><div>1</div></div><div><div>[A]</div></div></div> <div><p>This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.</p><p>Note:Slanted line shows the range of the rated load current.</p></div>				<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Time [mS]</th></tr><tr><th>Input Volt. 85[V]</th><th>Input Volt. 100[V]</th><th>Input Volt. 132[V]</th></tr><tr><td>0.00</td><td>—</td><td>—</td><td>—</td></tr><tr><td>0.10</td><td>111</td><td>152</td><td>250</td></tr><tr><td>0.20</td><td>80</td><td>111</td><td>189</td></tr><tr><td>0.30</td><td>58</td><td>82</td><td>147</td></tr><tr><td>0.40</td><td>39</td><td>56</td><td>106</td></tr><tr><td>0.50</td><td>28</td><td>43</td><td>82</td></tr><tr><td>0.60</td><td>20</td><td>31</td><td>67</td></tr><tr><td>0.70</td><td>13</td><td>22</td><td>54</td></tr><tr><td>0.77</td><td>5</td><td>20</td><td>47</td></tr><tr><td>—</td><td>—</td><td>—</td><td>—</td></tr><tr><td>—</td><td>—</td><td>—</td><td>—</td></tr></table>				Load Current [A]	Time [mS]			Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]	0.00	—	—	—	0.10	111	152	250	0.20	80	111	189	0.30	58	82	147	0.40	39	56	106	0.50	28	43	82	0.60	20	31	67	0.70	13	22	54	0.77	5	20	47	—	—	—	—	—	—	—	—
Load Current [A]	Time [mS]																																																									
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]																																																							
0.00	—	—	—																																																							
0.10	111	152	250																																																							
0.20	80	111	189																																																							
0.30	58	82	147																																																							
0.40	39	56	106																																																							
0.50	28	43	82																																																							
0.60	20	31	67																																																							
0.70	13	22	54																																																							
0.77	5	20	47																																																							
—	—	—	—																																																							
—	—	—	—																																																							
<p>瞬時停電保障時間とは、出力電圧が定電圧精度の規格範囲を保持している瞬時停電時間をいう。</p> <p>(注)斜線は定格負荷電流範囲を示す。</p>																																																										

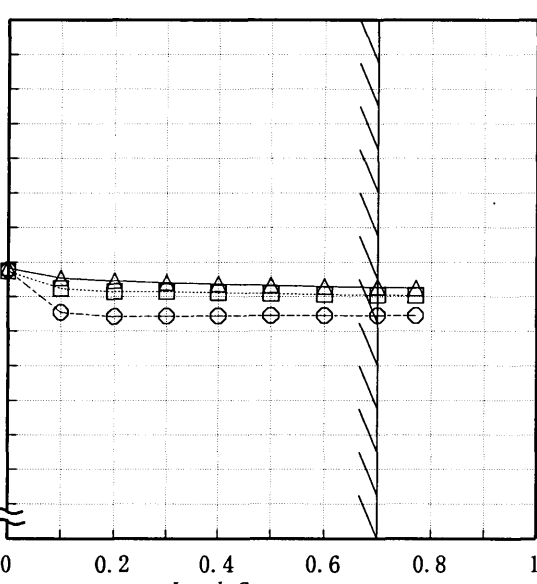
This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.

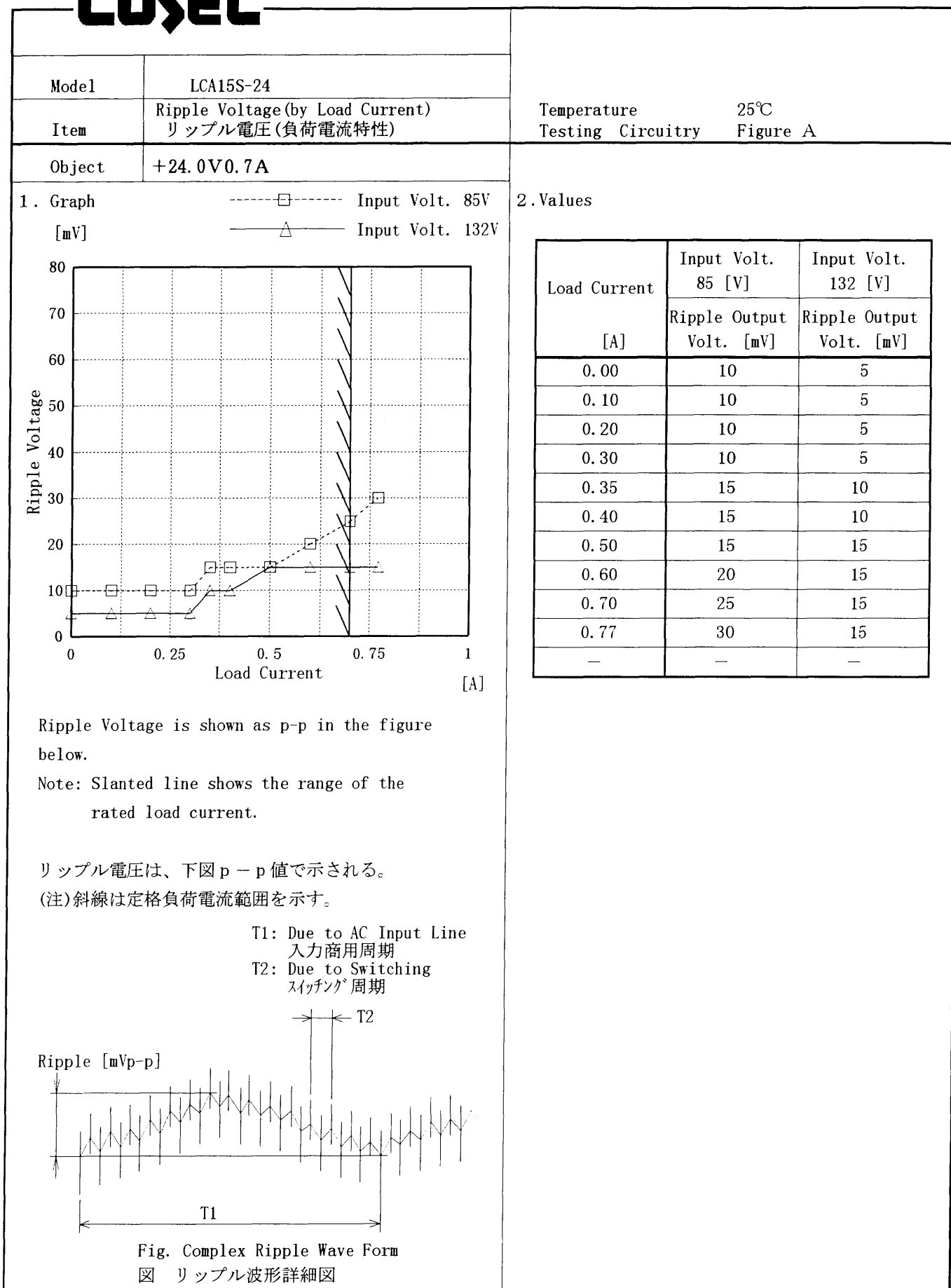
Note: Slanted line shows the range of the rated load current.

瞬時停電保障時間とは、出力電圧が定電圧精度の規格範囲を保持している瞬時停電時間をいう。

(注) 斜線は定格負荷電流範囲を示す。

COSEL

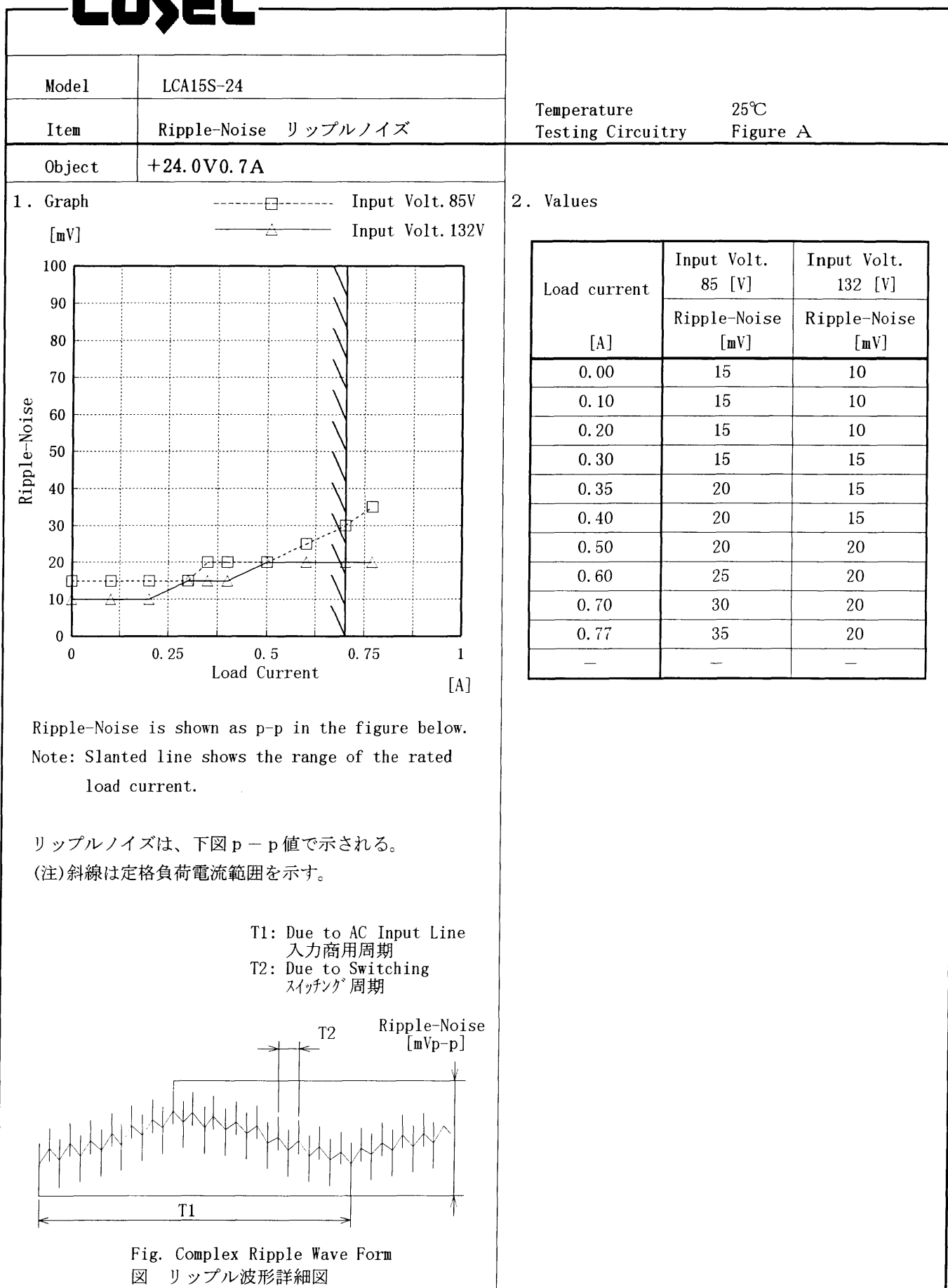
Model		LCA15S-24		Temperature		25℃																																																
Item		Load Regulation 静的負荷変動		Testing Circuitry		Figure A																																																
Object		+24.0V0.7A																																																				
1. Graph				2. Values																																																		
<div><div><div>△</div><div>□</div><div>○</div></div><div>Input Volt. 85 V</div><div>Input Volt. 100 V</div><div>Input Volt. 132 V</div></div> <div><div><div>Output Voltage</div><div>[V]</div><div>24.06</div><div>24.02</div><div>23.98</div><div>23.94</div><div>23.90</div><div>23.86</div><div>23.82</div><div>0</div></div><div><div>0</div><div>0.2</div><div>0.4</div><div>0.6</div><div>0.8</div><div>1</div></div><div><div>Load Current</div><div>[A]</div></div></div>  <div>Note: Slanted line shows the range of the rated load current.</div> <div>(注)斜線は定格負荷電流範囲を示す。</div>				<table><tr><th rowspan="2">Load Current</th><th colspan="3">Output Voltage</th></tr><tr><th>Input Volt. 85[V]</th><th>Input Volt. 100[V]</th><th>Input Volt. 132[V]</th></tr><tr><td>0.00</td><td>23.937</td><td>23.935</td><td>23.935</td></tr><tr><td>0.10</td><td>23.931</td><td>23.925</td><td>23.911</td></tr><tr><td>0.20</td><td>23.929</td><td>23.923</td><td>23.909</td></tr><tr><td>0.30</td><td>23.928</td><td>23.923</td><td>23.909</td></tr><tr><td>0.40</td><td>23.927</td><td>23.922</td><td>23.909</td></tr><tr><td>0.50</td><td>23.927</td><td>23.922</td><td>23.909</td></tr><tr><td>0.60</td><td>23.926</td><td>23.921</td><td>23.909</td></tr><tr><td>0.70</td><td>23.926</td><td>23.921</td><td>23.909</td></tr><tr><td>0.77</td><td>23.925</td><td>23.921</td><td>23.909</td></tr><tr><td>—</td><td>—</td><td>—</td><td>—</td></tr></table>				Load Current	Output Voltage			Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]	0.00	23.937	23.935	23.935	0.10	23.931	23.925	23.911	0.20	23.929	23.923	23.909	0.30	23.928	23.923	23.909	0.40	23.927	23.922	23.909	0.50	23.927	23.922	23.909	0.60	23.926	23.921	23.909	0.70	23.926	23.921	23.909	0.77	23.925	23.921	23.909	—	—	—	—
Load Current	Output Voltage																																																					
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]																																																			
0.00	23.937	23.935	23.935																																																			
0.10	23.931	23.925	23.911																																																			
0.20	23.929	23.923	23.909																																																			
0.30	23.928	23.923	23.909																																																			
0.40	23.927	23.922	23.909																																																			
0.50	23.927	23.922	23.909																																																			
0.60	23.926	23.921	23.909																																																			
0.70	23.926	23.921	23.909																																																			
0.77	23.925	23.921	23.909																																																			
—	—	—	—																																																			

COSEL

2. Values

Load Current [A]	Input Volt. 85 [V]	Input Volt. 132 [V]
	Ripple Output Volt. [mV]	Ripple Output Volt. [mV]
0.00	10	5
0.10	10	5
0.20	10	5
0.30	10	5
0.35	15	10
0.40	15	10
0.50	15	15
0.60	20	15
0.70	25	15
0.77	30	15
—	—	—

COSEL



2. Values

Load current [A]	Input Volt. 85 [V]	Input Volt. 132 [V]
	Ripple-Noise [mV]	Ripple-Noise [mV]
0.00	15	10
0.10	15	10
0.20	15	10
0.30	15	15
0.35	20	15
0.40	20	15
0.50	20	20
0.60	25	20
0.70	30	20
0.77	35	20
—	—	—

COSEL

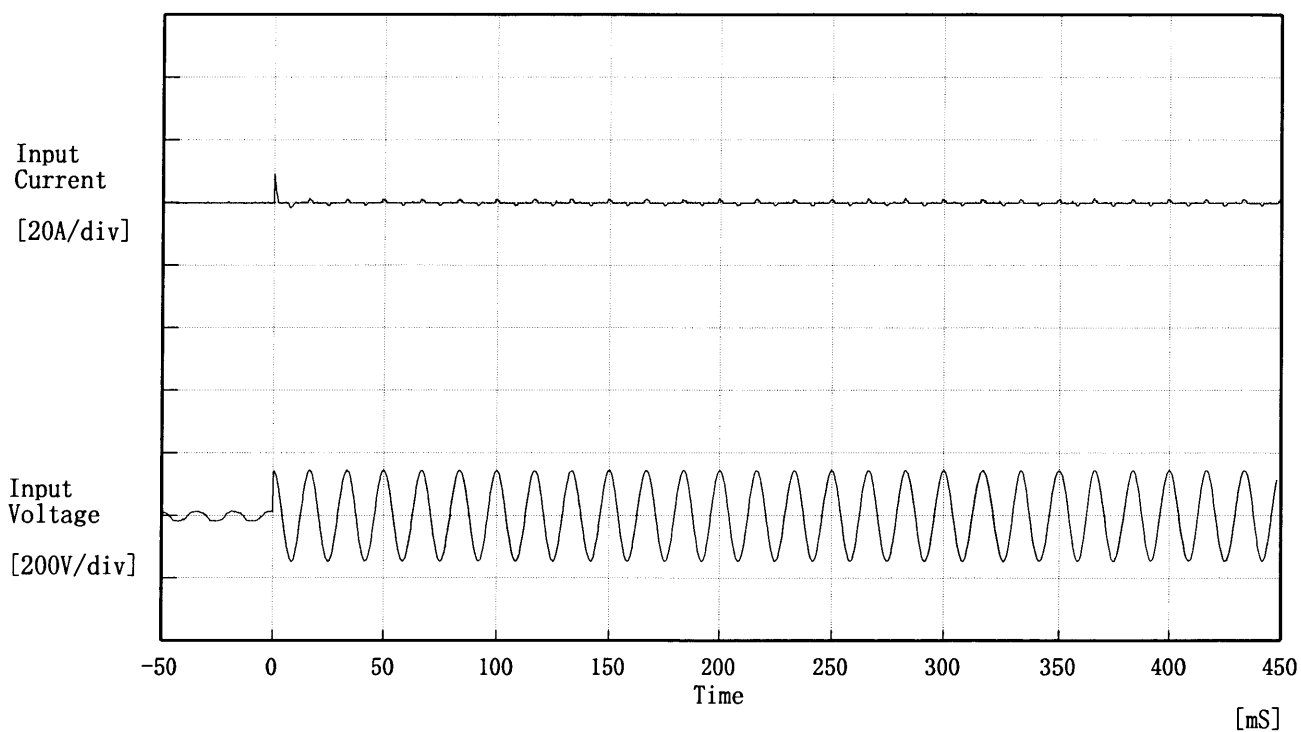
Model		LCA15S-24		Temperature25℃ Testing CircuitryFigure A																																																								
Item		Overcurrent Protection 過電流保護																																																										
Object		+24.0V0.7A																																																										
1. Graph				2. Values																																																								
<div><div><div></div><div></div><div></div></div><div><div>Input Volt. 85 V</div><div>Input Volt. 100 V</div><div>Input Volt. 132 V</div></div></div> <div><div>[V]</div><div>40.0</div><div>30.0</div><div>20.0</div><div>10.0</div><div>0.0</div></div> <div><div>Output Voltage</div><div></div></div> <div><div>0</div><div>0.2</div><div>0.4</div><div>0.6</div><div>0.8</div><div>1</div><div>1.2</div></div> <div><div>Load Current</div><div>[A]</div></div>				<table><tr><th rowspan="2">Output Voltage [V]</th><th colspan="3">Load Current [A]</th></tr><tr><th>Input Volt. 85[V]</th><th>Input Volt. 100[V]</th><th>Input Volt. 132[V]</th></tr><tr><td>24.00</td><td>0.90</td><td>0.97</td><td>0.95</td></tr><tr><td>22.80</td><td>0.91</td><td>0.97</td><td>0.95</td></tr><tr><td>21.60</td><td>0.92</td><td>0.98</td><td>0.95</td></tr><tr><td>19.20</td><td>0.93</td><td>0.98</td><td>0.95</td></tr><tr><td>16.80</td><td>0.93</td><td>0.97</td><td>0.94</td></tr><tr><td>14.40</td><td>0.93</td><td>0.95</td><td>0.92</td></tr><tr><td>12.00</td><td>0.91</td><td>0.93</td><td>0.90</td></tr><tr><td>9.60</td><td>0.88</td><td>0.89</td><td>0.87</td></tr><tr><td>7.20</td><td>0.83</td><td>0.84</td><td>0.83</td></tr><tr><td>4.80</td><td>0.76</td><td>0.76</td><td>0.77</td></tr><tr><td>2.40</td><td>0.64</td><td>0.65</td><td>0.67</td></tr><tr><td>0.00</td><td>0.75</td><td>0.86</td><td>0.99</td></tr></table>		Output Voltage [V]	Load Current [A]			Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]	24.00	0.90	0.97	0.95	22.80	0.91	0.97	0.95	21.60	0.92	0.98	0.95	19.20	0.93	0.98	0.95	16.80	0.93	0.97	0.94	14.40	0.93	0.95	0.92	12.00	0.91	0.93	0.90	9.60	0.88	0.89	0.87	7.20	0.83	0.84	0.83	4.80	0.76	0.76	0.77	2.40	0.64	0.65	0.67	0.00	0.75	0.86	0.99
Output Voltage [V]	Load Current [A]																																																											
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]																																																									
24.00	0.90	0.97	0.95																																																									
22.80	0.91	0.97	0.95																																																									
21.60	0.92	0.98	0.95																																																									
19.20	0.93	0.98	0.95																																																									
16.80	0.93	0.97	0.94																																																									
14.40	0.93	0.95	0.92																																																									
12.00	0.91	0.93	0.90																																																									
9.60	0.88	0.89	0.87																																																									
7.20	0.83	0.84	0.83																																																									
4.80	0.76	0.76	0.77																																																									
2.40	0.64	0.65	0.67																																																									
0.00	0.75	0.86	0.99																																																									
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。																																																												

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

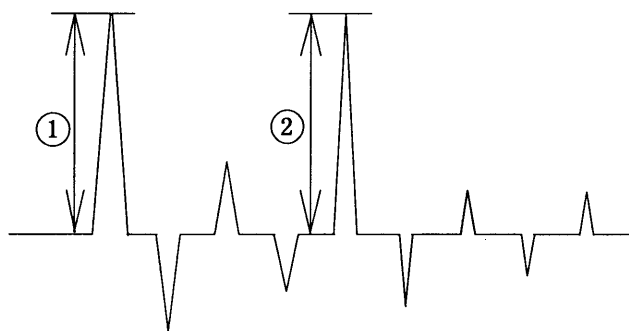
(注)斜線は定格負荷電流範囲を示す。

COSEL

Model	LCA15S-24	Temperature 25°C Testing Circuitry Figure A
Item	Inrush Current 突入電流	
Object	_____	



Input Voltage 100 V
Frequency 60 Hz
Load 100 %
Inrush Current
① 9.02 [A]
② 1.42 [A]



COSEL

Model	LCA15S-24	Temperature 25°C Testing Circuitry Figure A
Item	Dynamic Load Response 動的負荷変動	
Object	+24.0V0.7A	

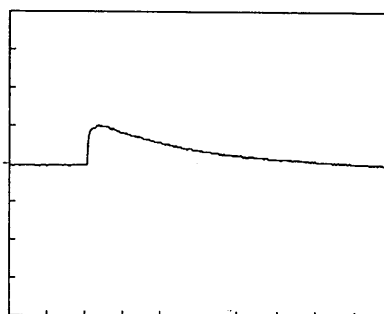
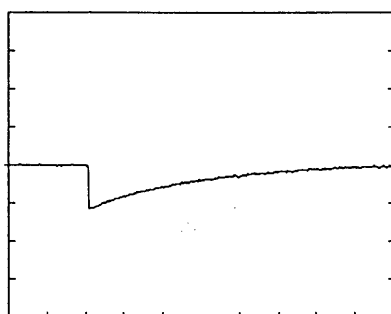
Input Volt. 100 V

Cycle 1000 mS

Load Current

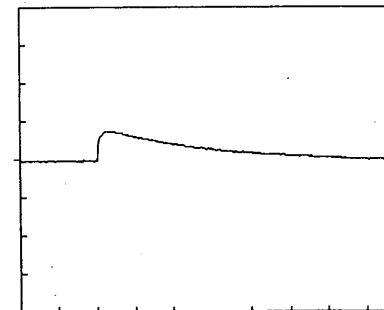
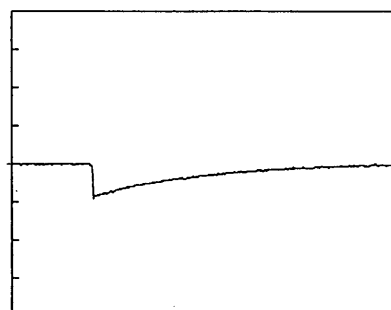
Load 0% ↔

Load 100 %



Load 0% ↔

Load 50 %



200 mV/div

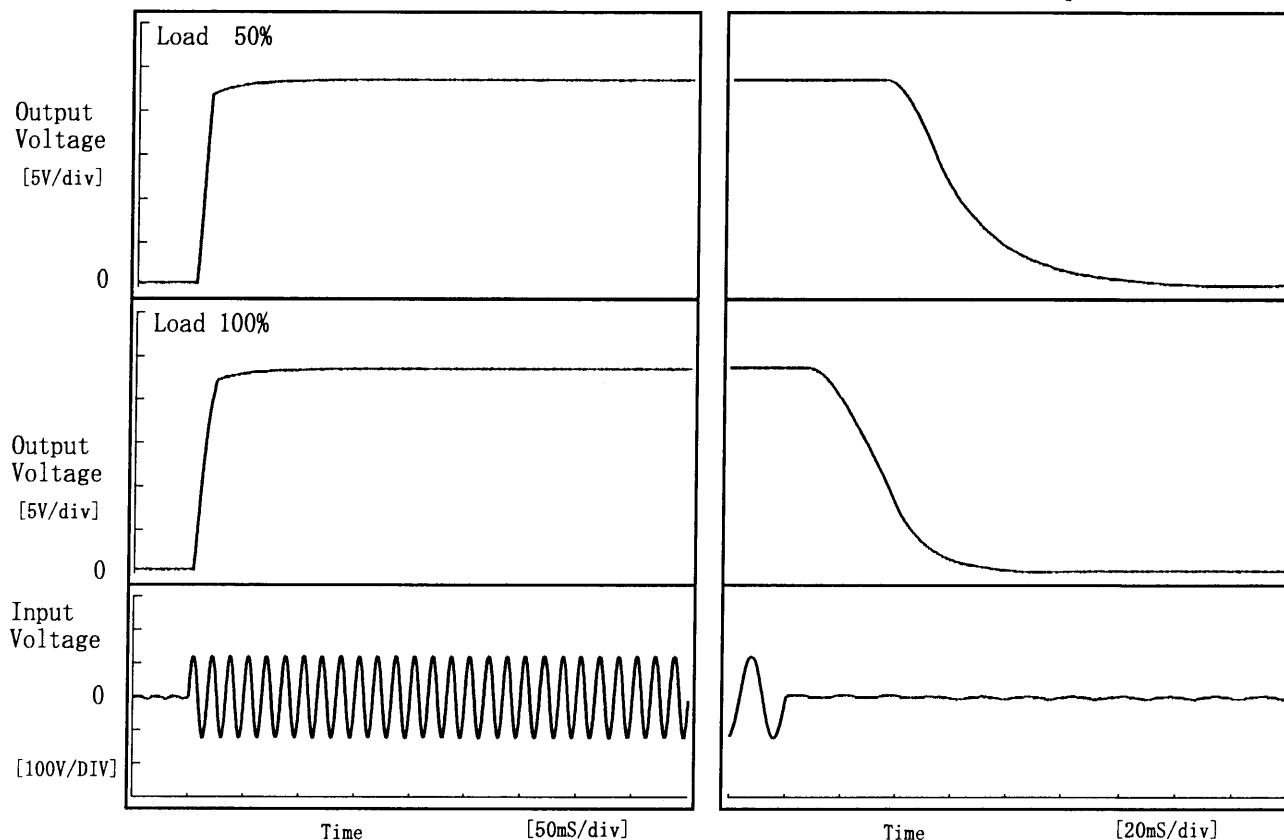
10 mS/div

COSEL

Model	LCA15S-24	Temperature	25°C
Item	Rise and Fall Time 立上り、立下り時間	Testing Circuitry	Figure A
Object	+24.0V0.7A		

1. Graph

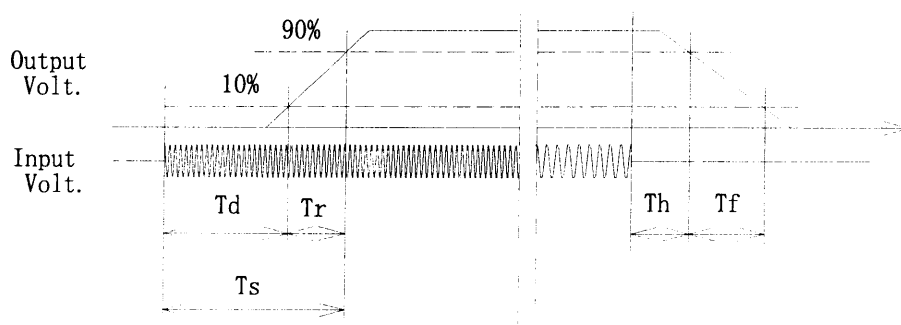
Input Volt. 85 V



2. Values

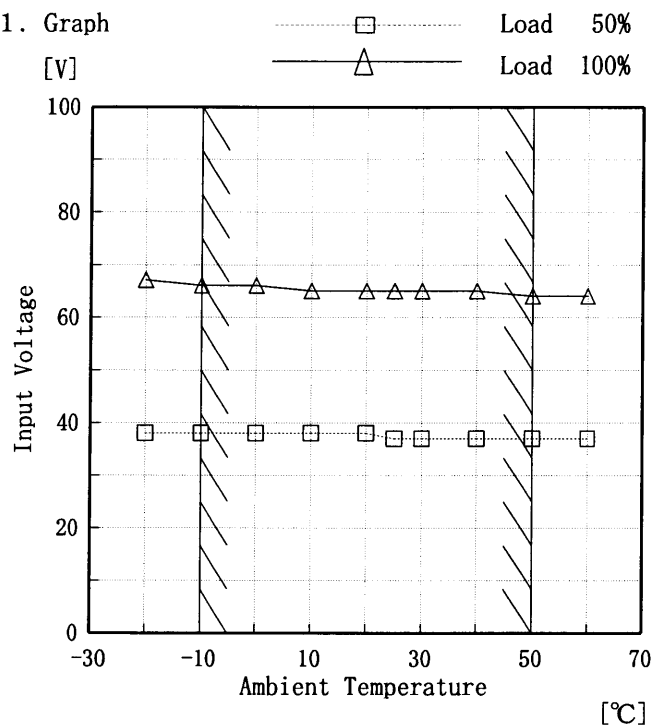
[mS]

Load \ Time	T d	T r	T s	T h	T f
50 %	4.8	11.3	16.0	42.6	51.3
100 %	4.8	17.5	22.3	16.2	38.2



Model	LCA15S-24
Item	Minimum Input Voltage for Regulated Output Voltage 最低レギュレーション電圧
Object	+24.0V0.7A

1. Graph



(注) 斜線は定格周囲温度範囲を示す。

Testing Circuitry Figure A

2. Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-20	38	67
-10	38	66
0	38	66
10	38	65
20	38	65
25	37	65
30	37	65
40	37	65
50	37	64
60	37	64
—	—	—

COSEL

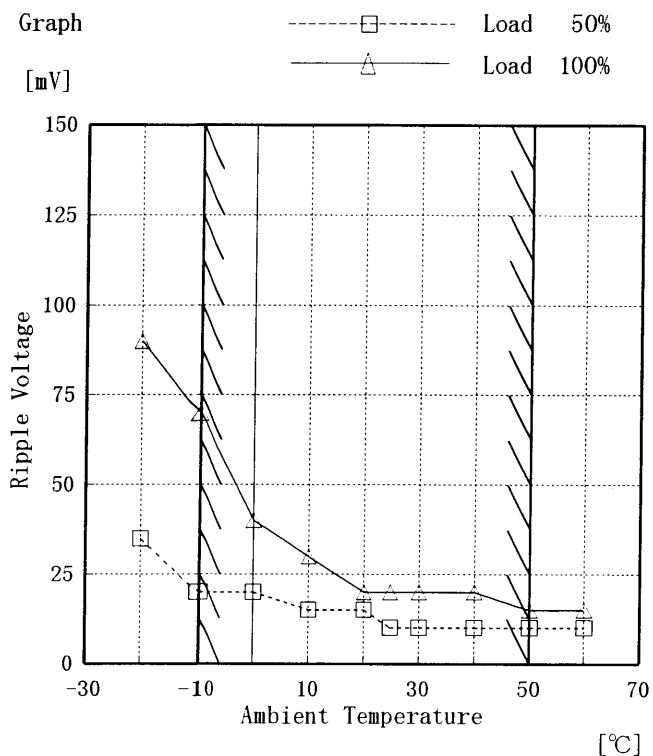
Model LCA15S-24

Item Ripple Voltage (by Ambient Temp.)
リップル電圧 (周囲温度特性)

Object +24.0V0.7A

Testing Circuitry Figure A

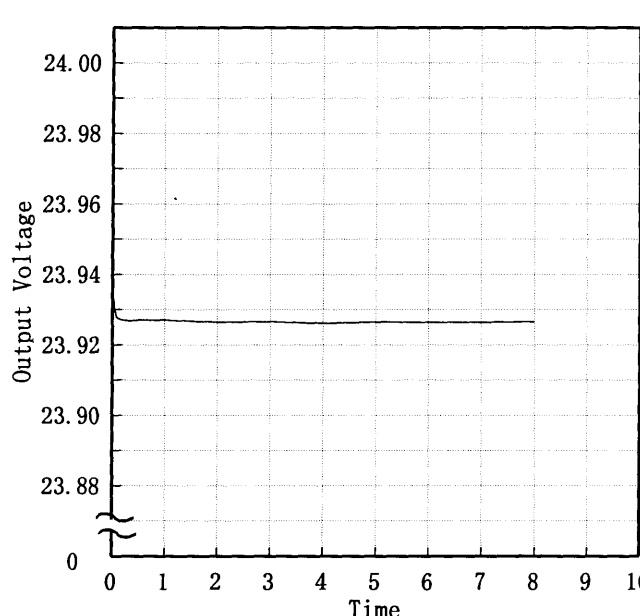
1. Graph



2. Values

Ambient Temp. [°C]	Load 50%	Load 100%
	Ripple Output Volt. [mV]	Ripple Output Volt. [mV]
-20	35	90
-10	20	70
0	20	40
10	15	30
20	15	20
25	10	20
30	10	20
40	10	20
50	10	15
60	10	15
—	—	—

COSEL

COSEL																									
Model	LCA15S-24	Temperature 25℃ Testing Circuitry Figure A																							
Item	Time Lapse Drift 経時ドリフト																								
Object	+24.0V0.7A																								
1. Graph		2.Values																							
<div>[V]</div> <div></div> <div>Output Voltage [V]</div> <div>Time [H]</div> <div>Input Volt. 100V</div> <div>Load 100%</div>		<table><tr><th>Time since start [H]</th><th>Output Voltage [V]</th></tr><tr><td>0.0</td><td>23.942</td></tr><tr><td>0.5</td><td>23.927</td></tr><tr><td>1.0</td><td>23.927</td></tr><tr><td>2.0</td><td>23.927</td></tr><tr><td>3.0</td><td>23.927</td></tr><tr><td>4.0</td><td>23.926</td></tr><tr><td>5.0</td><td>23.926</td></tr><tr><td>6.0</td><td>23.926</td></tr><tr><td>7.0</td><td>23.926</td></tr><tr><td>8.0</td><td>23.927</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	23.942	0.5	23.927	1.0	23.927	2.0	23.927	3.0	23.927	4.0	23.926	5.0	23.926	6.0	23.926	7.0	23.926	8.0	23.927
Time since start [H]	Output Voltage [V]																								
0.0	23.942																								
0.5	23.927																								
1.0	23.927																								
2.0	23.927																								
3.0	23.927																								
4.0	23.926																								
5.0	23.926																								
6.0	23.926																								
7.0	23.926																								
8.0	23.927																								



Model		LCA15S-24	Testing Circuitry Figure A
Item		Output Voltage Accuracy 定電圧精度	
Object		+24.0V0.7A	

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 -10~50 ℃

Input Voltage : 85~132 V

Load Current : 0~0.7 A

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

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

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 -10~50 ℃

入力電圧 85~132 V

負荷電流 0~0.7 A

* 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) = $\frac{\text{変動値}}{\text{定格出力電圧}} \times 100$

Item	Temperature [℃]	Input Voltage [V]	Output Current [A]	Output Voltage [V]	Output Voltage Accuracy [mV]	Output Voltage Accuracy(Ration) [%]
Maximum Voltage	-10	85	0.0	23.988	±63	±0.3
Minimum Voltage	50	132	0.7	23.863		



		Testing Circuitry Figure A												
Model	LCA15S-24													
Item	Condensation 結露特性													
Object	+24.0V0.7A													
1. Condensation test														
Testing procedure is as follows.														
① Keeping and cooling the unit in a tank at -10℃ for an hour with the input off.														
② Taking it out of the tank and dewing itself in a room where the temperature is 25℃ and the humidity is 40%RH.														
③ Testing electrical characteristics of the unit to confirm there be no fault.														
1. 結露特性試験														
入力を切った状態で、恒温槽で－10℃に冷却しておき、約1時間後に恒温槽から取り出し、室温25℃、湿度40%RHの状態におき結露させ、その電気的特性の測定を行い、異常のないことを確認する。														
2. Values														
<table><tr><td>Item</td><td>Data</td><td>Testing Conditions</td></tr><tr><td>Output Voltage [V]</td><td>23.91</td><td>Input Volt.:100V, Load Current:0.7A</td></tr><tr><td>Line Regulation [mV]</td><td>20</td><td>Input Volt.:85～132V, Load Current:0.7A</td></tr><tr><td>Load Regulation [mV]</td><td>28</td><td>Input Volt.:100V, Load Current:0～0.7A</td></tr></table>			Item	Data	Testing Conditions	Output Voltage [V]	23.91	Input Volt.:100V, Load Current:0.7A	Line Regulation [mV]	20	Input Volt.:85～132V, Load Current:0.7A	Load Regulation [mV]	28	Input Volt.:100V, Load Current:0～0.7A
Item	Data	Testing Conditions												
Output Voltage [V]	23.91	Input Volt.:100V, Load Current:0.7A												
Line Regulation [mV]	20	Input Volt.:85～132V, Load Current:0.7A												
Load Regulation [mV]	28	Input Volt.:100V, Load Current:0～0.7A												
		BC-4033												

COSEL

LOVEL

Model	LCA15S-24
Item	Leakage Current 漏洩電流
Object	_____

Temperature25℃
Testing CircuitryFigure B

1. Results

Standards	Leakage Current [mA]		
	Input Volt. 85 [V]	Input Volt. 100 [V]	Input Volt. 132 [V]
(A) DENTORI	0.08	0.08	0.11
(B) IEC60950	0.08	0.09	0.11

Standards	Leakage Current [mA]		
	Input Volt. 170 [V]	Input Volt. 230 [V]	Input Volt. 264 [V]
(B) IEC60950	—	—	—

2. Condition

Leakage current value is concluded after measuring both phases of AC input and by choosing the larger one.

交流入力 の両相について測定し、その大きい方を漏洩電流測定値とする。

- 21 -

BC-4033

COSEL

Model	LCA15S-24	Temperature 25°C Testing Circuitry Figure C
Item	Line Noise Tolerance 入力雑音耐量	
Object	+24.0V0.7A	

1. Results

Pulse Width [nS]	MODE	No protection failure should occur 保護回路の誤動作がない	DC-like Regulation of Output Voltage 出力電圧の直流的変動
50	COMMON	OK	no fluctuation
	NORMAL	OK	no fluctuation
1000	COMMON	OK	no fluctuation
	NORMAL	OK	no fluctuation

2. Conditions

Input Voltage : 100 V
 Pulse Voltage : 2000 V
 Pulse Cycle : 10 mS
 Pulse Input Duration : 1 min. or more
 Load : 100 %

COSEL

Model	LCA15S-24	Temperature	25°C
Item	Conducted Emission 雑音端子電圧	Testing Circuitry	Figure D
Object			

1. Graph

Remarks

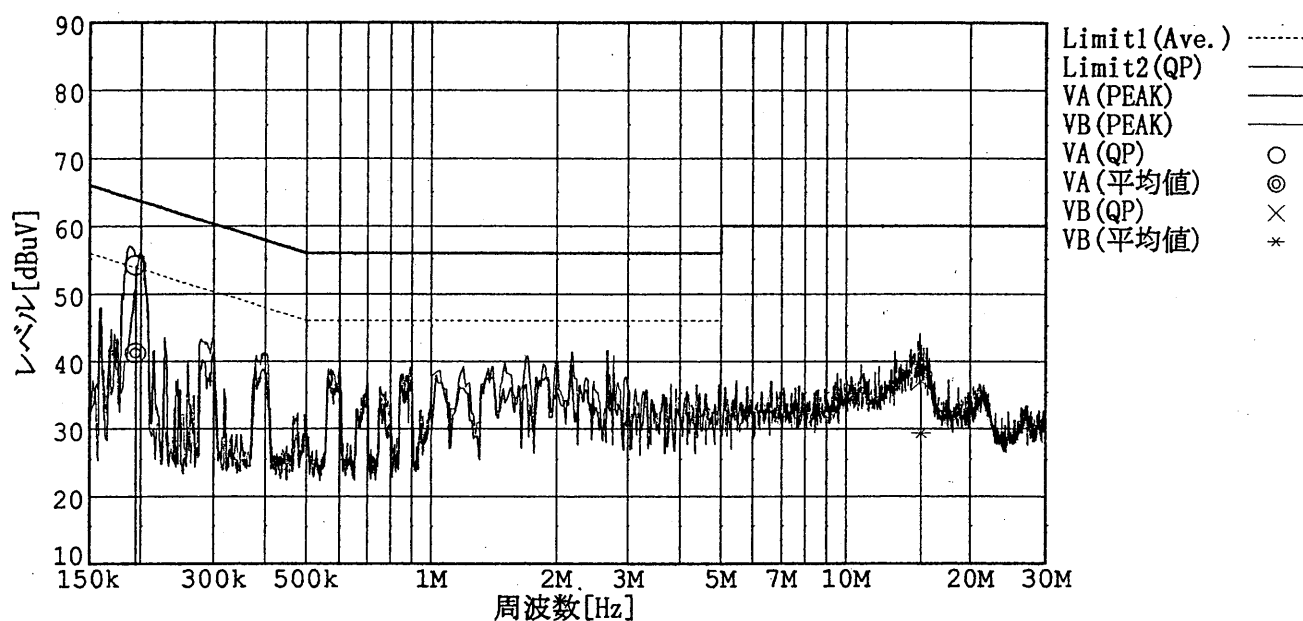
Input Volt. 100 V (VCCI Class B)

120 V (FCC Class B)

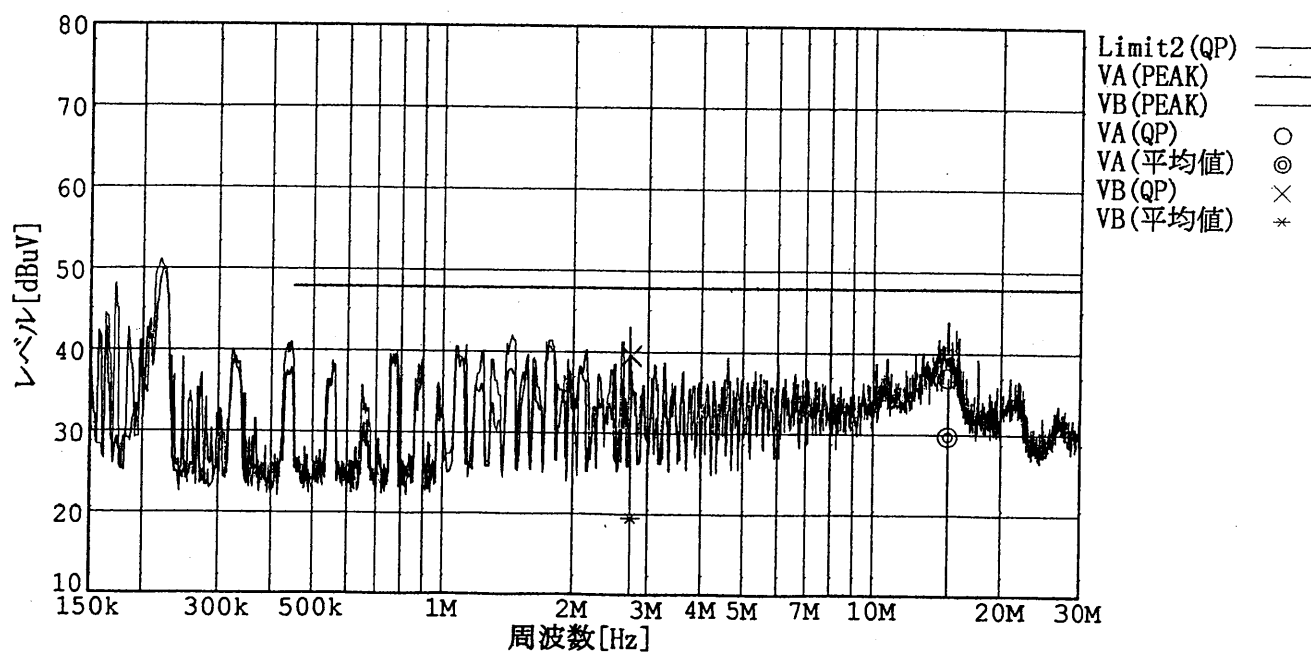
Load 100 %

規格 1 : [VCCI] Class B(平均値)

規格 2 : [VCCI] Class B(QP)



規格 2 : [FCC Part15] Class B



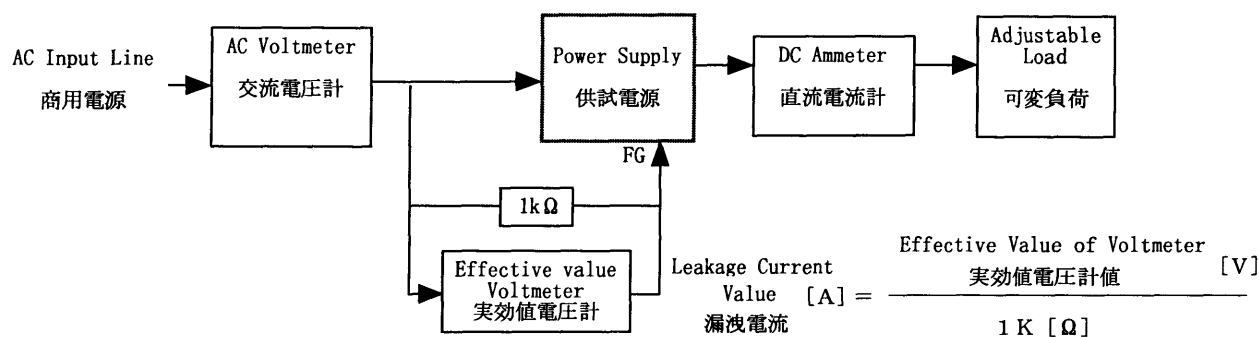
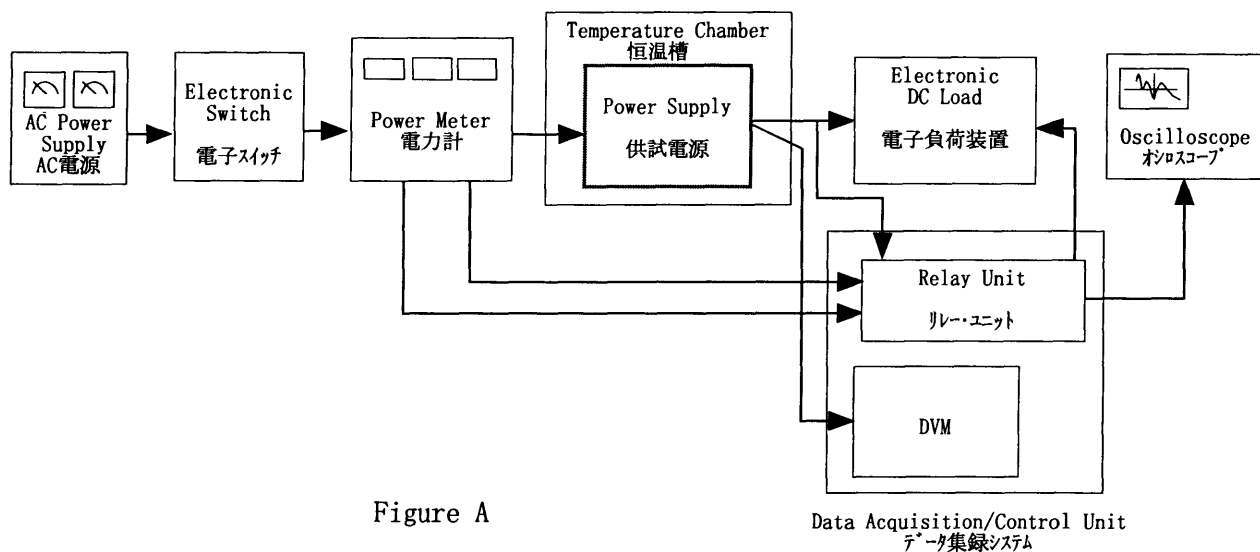


Figure B (DENTORI)

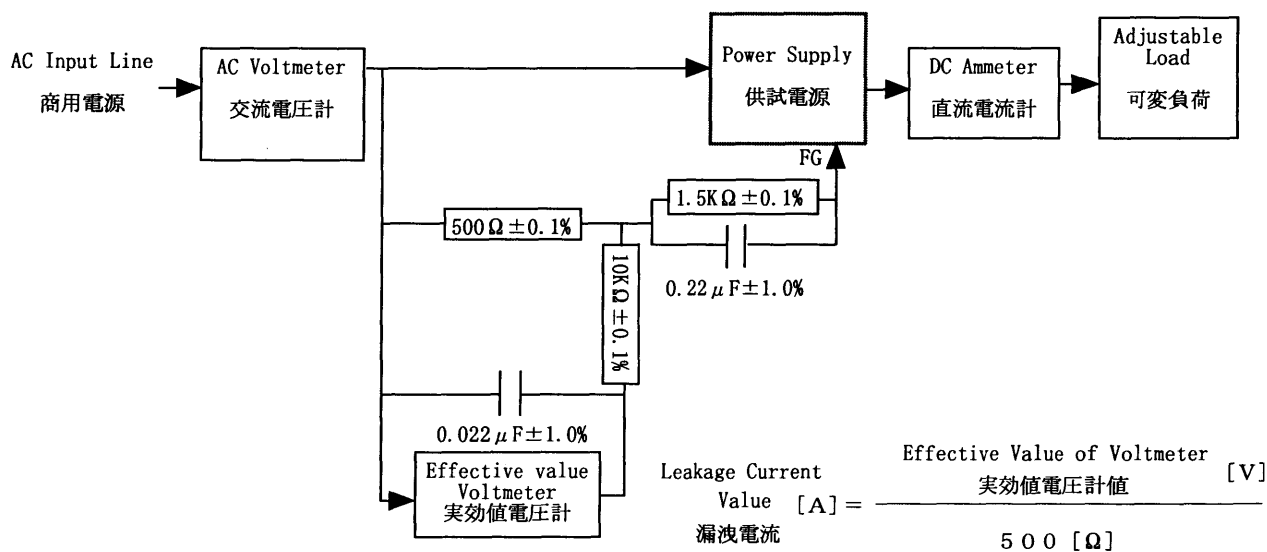


Figure B (IEC 60950)

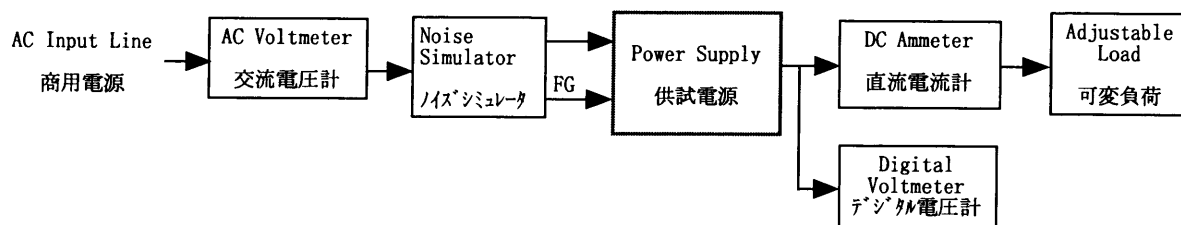


Figure C

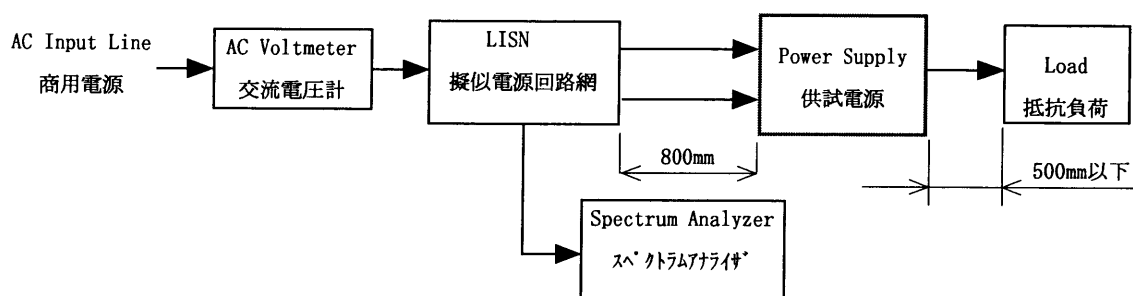


Figure D

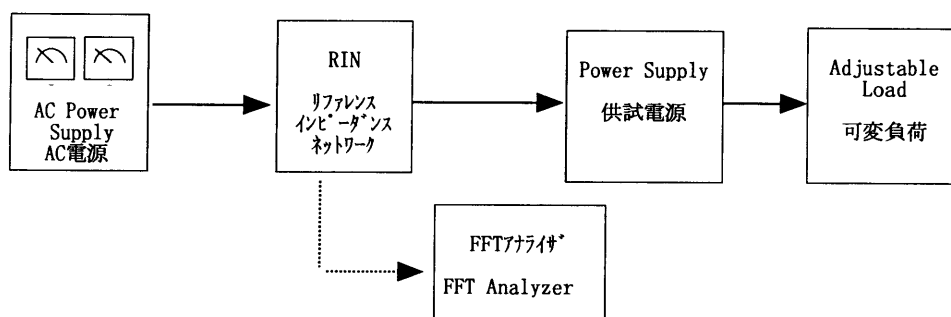


Figure E