



# TEST DATA OF LCA30S-15

(100V INPUT)

Regulated DC Power Supply

Date : Aug. 4. 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

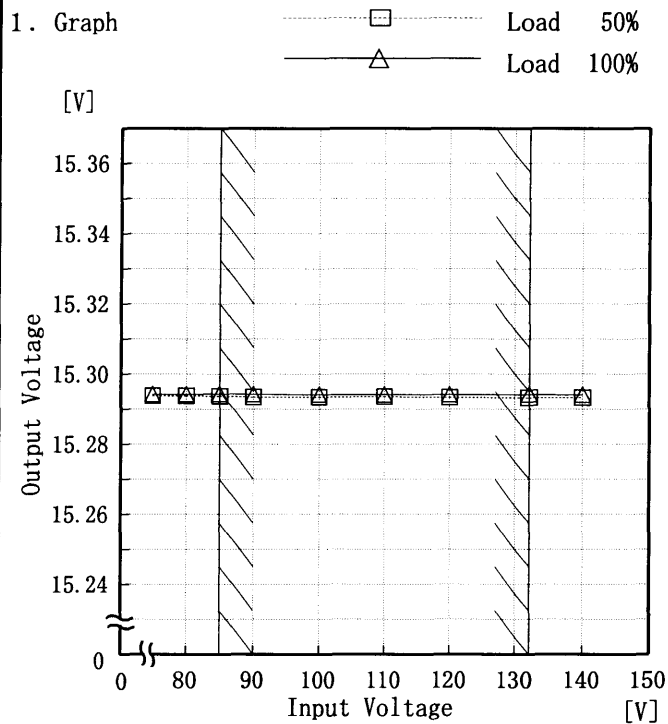
1. Line Regulation . . . . .	1
静的入力変動	
2. Input Current (by Load Current) . . . . .	2
入力電流 (負荷特性)	
3. Input Power (by Load Current) . . . . .	3
入力電力 (負荷特性)	
4. Efficiency (by Input Voltage) . . . . .	4
効率 (入力電圧特性)	
5. Efficiency (by Load Current) . . . . .	5
効率 (負荷特性)	
6. Hold-Up Time . . . . .	6
出力保持時間	
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 )



Model	LCA30S-15
Item	Line Regulation 静的入力変動
Object	+15.0V2A

Temperature 25°C  
Testing Circuitry Figure A



2. Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
75	15.294	15.294
80	15.294	15.294
85	15.294	15.294
90	15.294	15.294
100	15.294	15.294
110	15.294	15.294
120	15.293	15.294
132	15.293	15.294
140	15.293	15.294

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。



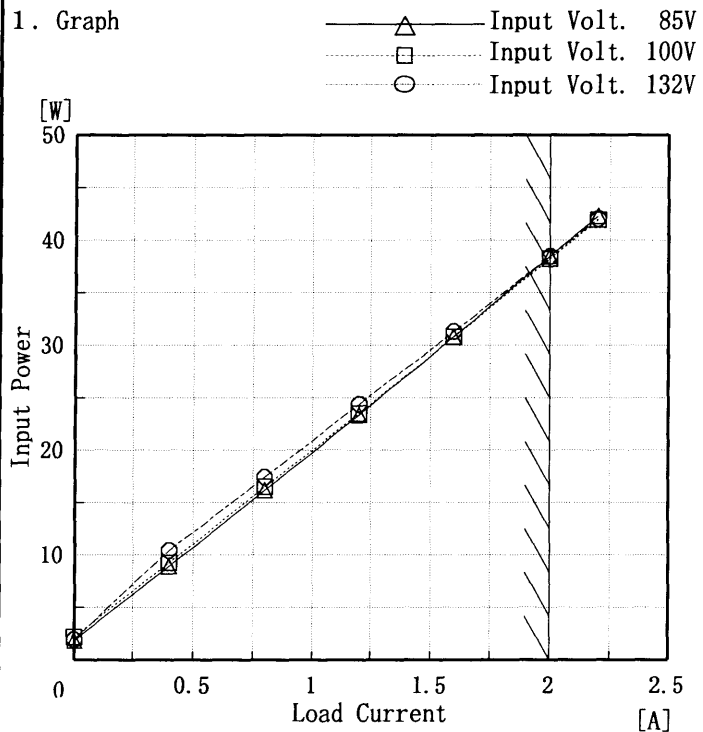
Model		LCA30S-15		Temperature		25°C																																																								
Item		Input Current (by Load Current) 入力電流 (負荷特性)		Testing Circuitry		Figure A																																																								
Output		—————																																																												
1. Graph				2. Values																																																										
<p> <span style="display: inline-block; width: 10px; border-bottom: 1px solid black; margin-right: 5px;"></span> <span style="display: inline-block; width: 10px; border-bottom: 1px dashed black; margin-right: 5px;"></span> <span style="display: inline-block; width: 10px; border-bottom: 1px dotted black; margin-right: 5px;"></span>  <span style="display: inline-block; width: 10px; border-bottom: 1px solid black; margin-right: 5px;"></span> Input Volt. 85V  <span style="display: inline-block; width: 10px; border-bottom: 1px dashed black; margin-right: 5px;"></span> Input Volt. 100V  <span style="display: inline-block; width: 10px; border-bottom: 1px dotted black; margin-right: 5px;"></span> Input Volt. 132V                 </p>				<table border="1"> <thead> <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> </thead> <tbody> <tr><td>0.0</td><td>0.053</td><td>0.057</td><td>0.046</td></tr> <tr><td>0.4</td><td>0.195</td><td>0.180</td><td>0.165</td></tr> <tr><td>0.8</td><td>0.331</td><td>0.300</td><td>0.259</td></tr> <tr><td>1.2</td><td>0.467</td><td>0.416</td><td>0.352</td></tr> <tr><td>1.6</td><td>0.606</td><td>0.536</td><td>0.444</td></tr> <tr><td>2.0</td><td>0.746</td><td>0.657</td><td>0.539</td></tr> <tr><td>2.2</td><td>0.815</td><td>0.717</td><td>0.586</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> </tbody> </table>				Load Current [A]	Input Current [A]			Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]	0.0	0.053	0.057	0.046	0.4	0.195	0.180	0.165	0.8	0.331	0.300	0.259	1.2	0.467	0.416	0.352	1.6	0.606	0.536	0.444	2.0	0.746	0.657	0.539	2.2	0.815	0.717	0.586	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Load Current [A]	Input Current [A]																																																													
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]																																																											
0.0	0.053	0.057	0.046																																																											
0.4	0.195	0.180	0.165																																																											
0.8	0.331	0.300	0.259																																																											
1.2	0.467	0.416	0.352																																																											
1.6	0.606	0.536	0.444																																																											
2.0	0.746	0.657	0.539																																																											
2.2	0.815	0.717	0.586																																																											
—	—	—	—																																																											
—	—	—	—																																																											
—	—	—	—																																																											
—	—	—	—																																																											
—	—	—	—																																																											
<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>																																																														



Model	LCA30S-15
Item	Input Power (by Load Current) 入力電力 (負荷特性)
Output	—————

Temperature 25°C  
Testing Circuitry Figure A

1. Graph



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。

2. Values

Load Current [A]	Input Power [W]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.0	1.80	2.16	1.91
0.4	8.91	9.26	10.45
0.8	16.17	16.50	17.43
1.2	23.34	23.50	24.38
1.6	30.81	30.78	31.31
2.0	38.48	38.24	38.47
2.2	42.31	41.95	42.03
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

# COSEL

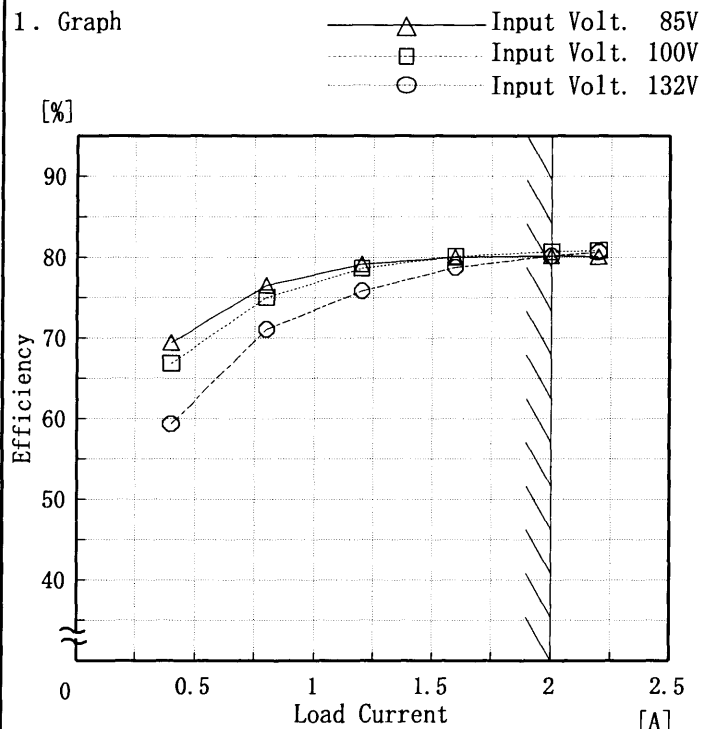
Model		LCA30S-15		Temperature	25°C																																
Item		Efficiency 効率		Testing Circuitry	Figure A																																
Object																																					
1. Graph			2. Values																																		
<p>Legend:          □ Load 50%          △ Load 100%</p>			<table border="1"> <thead> <tr> <th rowspan="2">Input Voltage [V]</th> <th colspan="2">Efficiency [%]</th> </tr> <tr> <th>Load 50%</th> <th>Load 100%</th> </tr> </thead> <tbody> <tr><td>75</td><td>78.8</td><td>79.3</td></tr> <tr><td>80</td><td>78.6</td><td>79.9</td></tr> <tr><td>85</td><td>78.4</td><td>80.3</td></tr> <tr><td>90</td><td>78.1</td><td>80.5</td></tr> <tr><td>100</td><td>77.3</td><td>81.0</td></tr> <tr><td>110</td><td>76.3</td><td>81.0</td></tr> <tr><td>120</td><td>75.1</td><td>80.7</td></tr> <tr><td>132</td><td>73.6</td><td>80.3</td></tr> <tr><td>140</td><td>72.7</td><td>80.0</td></tr> </tbody> </table>			Input Voltage [V]	Efficiency [%]		Load 50%	Load 100%	75	78.8	79.3	80	78.6	79.9	85	78.4	80.3	90	78.1	80.5	100	77.3	81.0	110	76.3	81.0	120	75.1	80.7	132	73.6	80.3	140	72.7	80.0
Input Voltage [V]	Efficiency [%]																																				
	Load 50%	Load 100%																																			
75	78.8	79.3																																			
80	78.6	79.9																																			
85	78.4	80.3																																			
90	78.1	80.5																																			
100	77.3	81.0																																			
110	76.3	81.0																																			
120	75.1	80.7																																			
132	73.6	80.3																																			
140	72.7	80.0																																			
<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>																																					



Model	LCA30S-15
Item	Efficiency (by Load Current) 効率 (負荷電流特性)
Output	—————

Temperature 25°C  
Testing Circuitry Figure A

1. Graph



2. Values

Load Current [A]	Efficiency [%]		
	Input Volt. 85 [V]	Input Volt. 100 [V]	Input Volt. 132 [V]
0.4	69.4	66.9	59.4
0.8	76.5	75.0	71.1
1.2	79.1	78.7	75.8
1.6	80.0	80.1	78.8
2.0	80.2	80.7	80.2
2.2	80.1	80.8	80.7
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

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。



Model		LCA30S-15		Temperature	25°C																																
Item		Hold-Up Time 出力保持時間		Testing Circuitry	Figure A																																
Object		+15.0V2A																																			
1. Graph			.....□..... Load 50% ————△——— Load 100%	2. Values																																	
			<table border="1"> <thead> <tr> <th rowspan="2">Input Voltage [V]</th> <th colspan="2">Hold-Up Time [mS]</th> </tr> <tr> <th>Load 50%</th> <th>Load 100%</th> </tr> </thead> <tbody> <tr><td>75</td><td>42</td><td>18</td></tr> <tr><td>80</td><td>48</td><td>21</td></tr> <tr><td>85</td><td>54</td><td>24</td></tr> <tr><td>90</td><td>61</td><td>28</td></tr> <tr><td>100</td><td>76</td><td>36</td></tr> <tr><td>110</td><td>93</td><td>44</td></tr> <tr><td>120</td><td>111</td><td>54</td></tr> <tr><td>132</td><td>135</td><td>67</td></tr> <tr><td>140</td><td>152</td><td>77</td></tr> </tbody> </table>			Input Voltage [V]	Hold-Up Time [mS]		Load 50%	Load 100%	75	42	18	80	48	21	85	54	24	90	61	28	100	76	36	110	93	44	120	111	54	132	135	67	140	152	77
Input Voltage [V]	Hold-Up Time [mS]																																				
	Load 50%	Load 100%																																			
75	42	18																																			
80	48	21																																			
85	54	24																																			
90	61	28																																			
100	76	36																																			
110	93	44																																			
120	111	54																																			
132	135	67																																			
140	152	77																																			
<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 input voltage.</p> <p>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。</p>																																					





Model		LCA30S-15		Temperature		25°C																																																				
Item		Instantaneous Interruption Compensation 瞬時停電保障		Testing Circuitry		Figure A																																																				
Object		+15.0V2A																																																								
1. Graph				2. Values																																																						
<p> <input type="checkbox"/> —△— Input Volt. 85 V  <input type="checkbox"/> - - -□- - - Input Volt. 100 V  <input type="checkbox"/> - - -○- - - Input Volt. 132 V                 </p> <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.                 </p> <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。                      (注)斜線は定格負荷電流範囲を示す。                 </p>				<table border="1"> <thead> <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> </thead> <tbody> <tr><td>0.0</td><td>—</td><td>—</td><td>—</td></tr> <tr><td>0.4</td><td>127</td><td>177</td><td>306</td></tr> <tr><td>0.8</td><td>65</td><td>92</td><td>166</td></tr> <tr><td>1.2</td><td>39</td><td>57</td><td>110</td></tr> <tr><td>1.6</td><td>23</td><td>40</td><td>80</td></tr> <tr><td>2.0</td><td>14</td><td>28</td><td>60</td></tr> <tr><td>2.2</td><td>11</td><td>22</td><td>52</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> </tbody> </table>				Load Current [A]	Time [mS]			Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]	0.0	—	—	—	0.4	127	177	306	0.8	65	92	166	1.2	39	57	110	1.6	23	40	80	2.0	14	28	60	2.2	11	22	52	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Load Current [A]	Time [mS]																																																									
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]																																																							
0.0	—	—	—																																																							
0.4	127	177	306																																																							
0.8	65	92	166																																																							
1.2	39	57	110																																																							
1.6	23	40	80																																																							
2.0	14	28	60																																																							
2.2	11	22	52																																																							
—	—	—	—																																																							
—	—	—	—																																																							
—	—	—	—																																																							
—	—	—	—																																																							



Model		LCA30S-15		Temperature		25°C																																																
Item		Load Regulation 静的負荷変動		Testing Circuitry		Figure A																																																
Object		+15.0V2A		2. Values																																																		
1. Graph		<p> <input type="checkbox"/> △ Input Volt. 85 V  <input type="checkbox"/> □ Input Volt. 100 V  <input type="checkbox"/> ○ Input Volt. 132 V                 </p>																																																				
				<table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="3">Output Voltage [V]</th> </tr> <tr> <th>Input Volt. 85[V]</th> <th>Input Volt. 100[V]</th> <th>Input Volt. 132[V]</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>15.292</td><td>15.292</td><td>15.289</td></tr> <tr><td>0.4</td><td>15.291</td><td>15.291</td><td>15.291</td></tr> <tr><td>0.8</td><td>15.292</td><td>15.292</td><td>15.292</td></tr> <tr><td>1.2</td><td>15.292</td><td>15.292</td><td>15.292</td></tr> <tr><td>1.6</td><td>15.293</td><td>15.293</td><td>15.293</td></tr> <tr><td>2.0</td><td>15.293</td><td>15.293</td><td>15.293</td></tr> <tr><td>2.2</td><td>15.293</td><td>15.293</td><td>15.294</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> </tbody> </table>				Load Current [A]	Output Voltage [V]			Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]	0.0	15.292	15.292	15.289	0.4	15.291	15.291	15.291	0.8	15.292	15.292	15.292	1.2	15.292	15.292	15.292	1.6	15.293	15.293	15.293	2.0	15.293	15.293	15.293	2.2	15.293	15.293	15.294	—	—	—	—	—	—	—	—	—	—	—	—
Load Current [A]	Output Voltage [V]																																																					
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]																																																			
0.0	15.292	15.292	15.289																																																			
0.4	15.291	15.291	15.291																																																			
0.8	15.292	15.292	15.292																																																			
1.2	15.292	15.292	15.292																																																			
1.6	15.293	15.293	15.293																																																			
2.0	15.293	15.293	15.293																																																			
2.2	15.293	15.293	15.294																																																			
—	—	—	—																																																			
—	—	—	—																																																			
—	—	—	—																																																			
		<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>																																																				



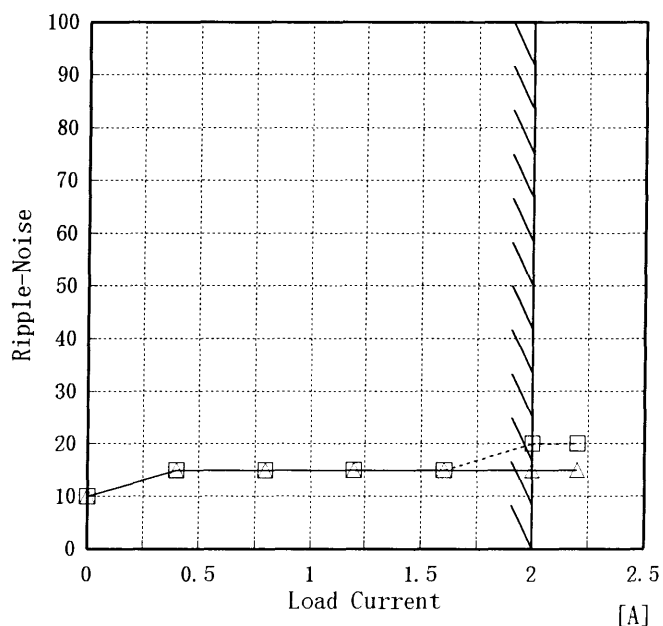
Model		LCA30S-15																																							
Item		Ripple Voltage (by Load Current) リップル電圧 (負荷電流特性)																																							
Object		+15.0V2A																																							
1. Graph		2. Values																																							
<p>-----□----- Input Volt. 85V                  -----△----- Input Volt. 132V</p>		<table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th>Input Volt. 85 [V]</th> <th>Input Volt. 132 [V]</th> </tr> <tr> <th>Ripple Output Volt. [mV]</th> <th>Ripple Output Volt. [mV]</th> </tr> </thead> <tbody> <tr><td>0.00</td><td>5</td><td>5</td></tr> <tr><td>0.40</td><td>10</td><td>10</td></tr> <tr><td>0.80</td><td>10</td><td>10</td></tr> <tr><td>1.20</td><td>10</td><td>10</td></tr> <tr><td>1.60</td><td>10</td><td>10</td></tr> <tr><td>2.00</td><td>15</td><td>10</td></tr> <tr><td>2.20</td><td>15</td><td>10</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> </tbody> </table>		Load Current [A]	Input Volt. 85 [V]	Input Volt. 132 [V]	Ripple Output Volt. [mV]	Ripple Output Volt. [mV]	0.00	5	5	0.40	10	10	0.80	10	10	1.20	10	10	1.60	10	10	2.00	15	10	2.20	15	10	—	—	—	—	—	—	—	—	—	—	—	—
Load Current [A]	Input Volt. 85 [V]	Input Volt. 132 [V]																																							
	Ripple Output Volt. [mV]	Ripple Output Volt. [mV]																																							
0.00	5	5																																							
0.40	10	10																																							
0.80	10	10																																							
1.20	10	10																																							
1.60	10	10																																							
2.00	15	10																																							
2.20	15	10																																							
—	—	—																																							
—	—	—																																							
—	—	—																																							
—	—	—																																							
<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> <p>T1: Due to AC Input Line                  入力商用周期                  T2: Due to Switching                  スイッチング周期</p>																																									
<p>Fig. Complex Ripple Wave Form                  図 リップル波形詳細図</p>																																									



Model	LCA30S-15	Temperature	25°C
Item	Ripple-Noise リップルノイズ	Testing Circuitry	Figure A

Object +15.0V2A

1. Graph  
 [mV]  
 -----□----- Input Volt. 85V  
 -----△----- Input Volt. 132V



2. Values

Load current [A]	Input Volt. 85 [V]	Input Volt. 132 [V]
	Ripple-Noise [mV]	Ripple-Noise [mV]
0.00	10	10
0.40	15	15
0.80	15	15
1.20	15	15
1.60	15	15
2.00	20	15
2.20	20	15
—	—	—
—	—	—
—	—	—
—	—	—

Ripple-Noise is shown as p-p in the figure below.  
 Note: Slanted line shows the range of the rated load current.

リップルノイズは、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。

T1: Due to AC Input Line  
 入力商用周期  
 T2: Due to Switching  
 スイッチング周期

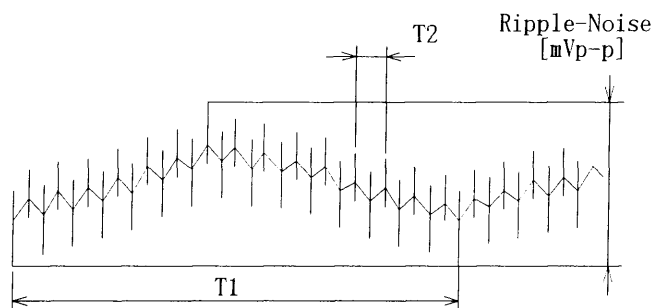


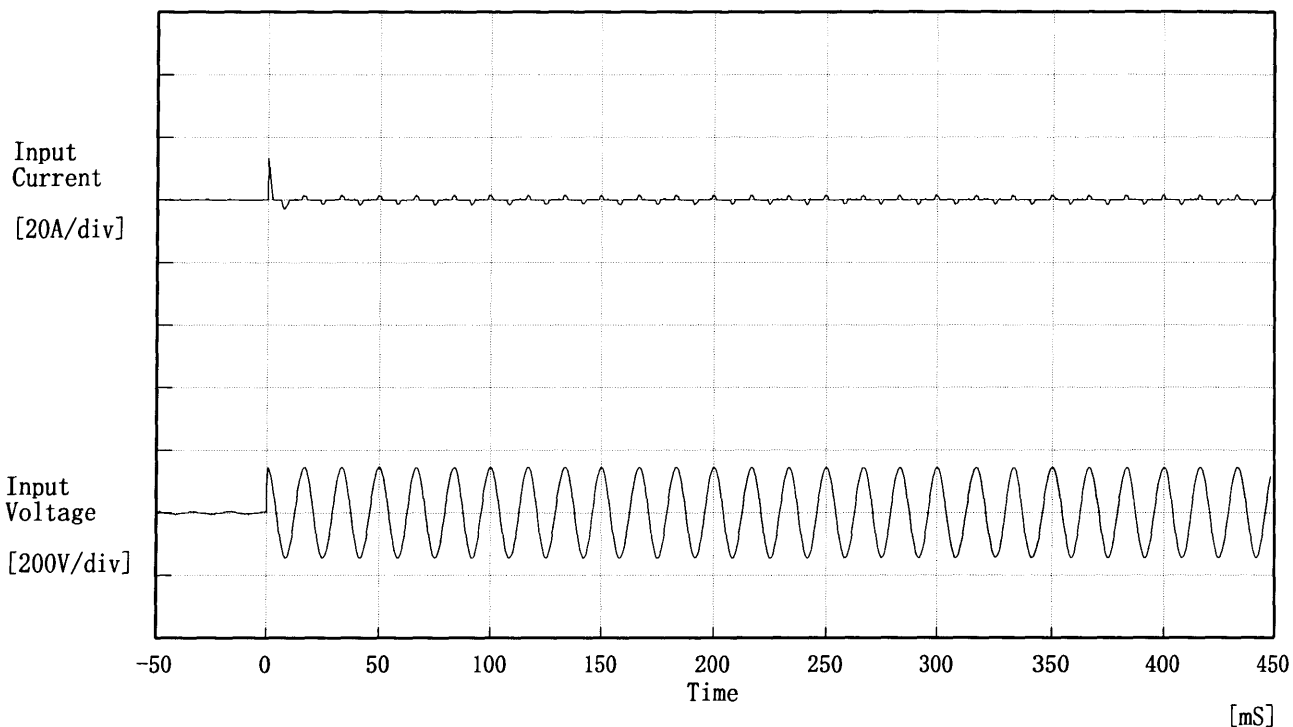
Fig. Complex Ripple Wave Form  
 図 リップル波形詳細図



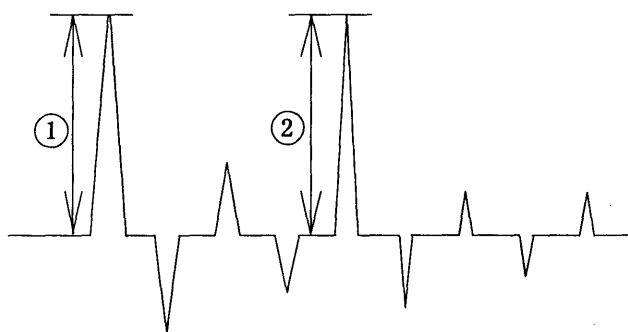
<p>Model LCA30S-15</p> <p>Item Overcurrent Protection 過電流保護</p> <p>Object +15.0V2A</p>		<p>Temperature 25°C</p> <p>Testing Circuitry Figure A</p>																																																							
<p>1. Graph</p> <p>[V]</p> <p>Output Voltage</p> <p>20.0</p> <p>15.0</p> <p>10.0</p> <p>5.0</p> <p>0.0</p> <p>0 1 2 3</p> <p>Load Current [A]</p> <p>                     Input Volt. 85 V                      Input Volt. 100 V                      Input Volt. 132 V                 </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>		<p>2. Values</p> <table border="1"> <thead> <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> </thead> <tbody> <tr><td>15.00</td><td>2.27</td><td>2.34</td><td>2.49</td></tr> <tr><td>14.25</td><td>2.30</td><td>2.37</td><td>2.50</td></tr> <tr><td>13.50</td><td>2.32</td><td>2.38</td><td>2.51</td></tr> <tr><td>12.00</td><td>2.36</td><td>2.41</td><td>2.54</td></tr> <tr><td>10.50</td><td>2.39</td><td>2.43</td><td>2.55</td></tr> <tr><td>9.00</td><td>2.40</td><td>2.44</td><td>2.54</td></tr> <tr><td>7.50</td><td>2.39</td><td>2.43</td><td>2.53</td></tr> <tr><td>6.00</td><td>2.36</td><td>2.39</td><td>2.48</td></tr> <tr><td>4.50</td><td>2.29</td><td>2.32</td><td>2.40</td></tr> <tr><td>3.00</td><td>2.16</td><td>2.19</td><td>2.27</td></tr> <tr><td>1.50</td><td>1.93</td><td>1.96</td><td>2.04</td></tr> <tr><td>0.00</td><td>1.62</td><td>1.64</td><td>1.71</td></tr> </tbody> </table>	Output Voltage [V]	Load Current [A]			Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]	15.00	2.27	2.34	2.49	14.25	2.30	2.37	2.50	13.50	2.32	2.38	2.51	12.00	2.36	2.41	2.54	10.50	2.39	2.43	2.55	9.00	2.40	2.44	2.54	7.50	2.39	2.43	2.53	6.00	2.36	2.39	2.48	4.50	2.29	2.32	2.40	3.00	2.16	2.19	2.27	1.50	1.93	1.96	2.04	0.00	1.62	1.64	1.71
Output Voltage [V]	Load Current [A]																																																								
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]																																																						
15.00	2.27	2.34	2.49																																																						
14.25	2.30	2.37	2.50																																																						
13.50	2.32	2.38	2.51																																																						
12.00	2.36	2.41	2.54																																																						
10.50	2.39	2.43	2.55																																																						
9.00	2.40	2.44	2.54																																																						
7.50	2.39	2.43	2.53																																																						
6.00	2.36	2.39	2.48																																																						
4.50	2.29	2.32	2.40																																																						
3.00	2.16	2.19	2.27																																																						
1.50	1.93	1.96	2.04																																																						
0.00	1.62	1.64	1.71																																																						



Model		LCA30S-15	Temperature		25°C
Item		Inrush Current 突入電流	Testing Circuitry		Figure A
Object		_____			



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



# COSEL

Model	LCA30S-15	Temperature	25°C
Item	Dynamic Load Responce 動的負荷変動	Testing Circuitry	Figure A
Object	+15V2A		

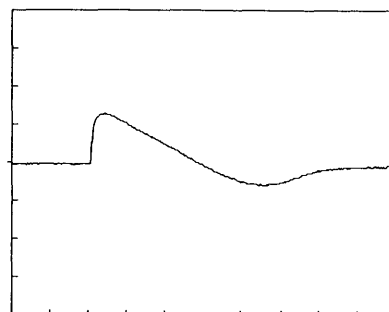
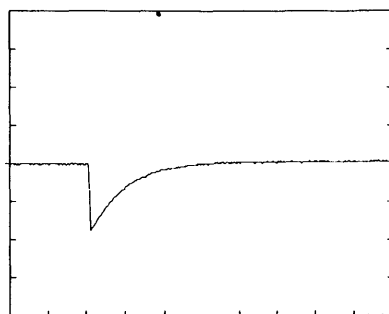
Input Volt. 100 V

Cycle 1000 mS



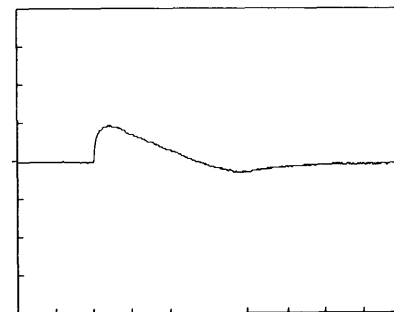
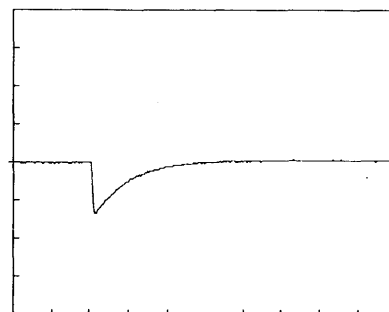
Load 0% ↔

Load 100 %



Load 0% ↔

Load 50 %



200 mV/div

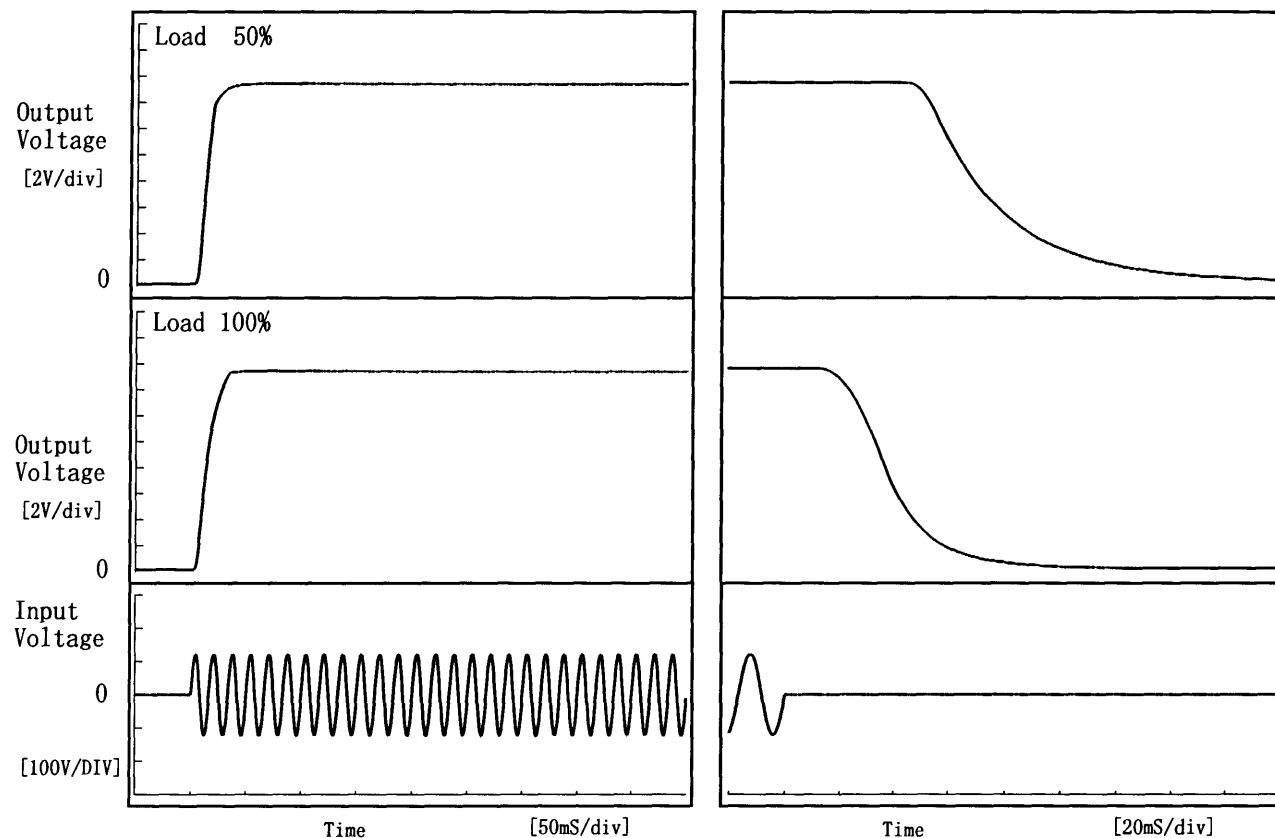
10 mS/div

# COSEL

Model	LCA30S-15	Temperature	25°C
Item	Rise and Fall Time 立上り、立下り時間	Testing Circuitry	Figure A
Object	+15.0V2A		

1. Graph

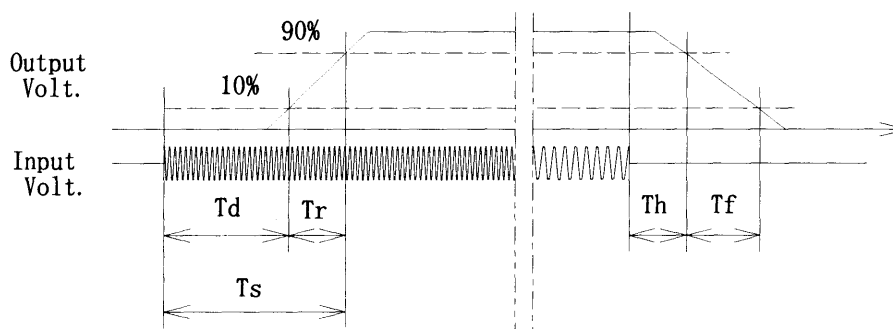
Input Volt. 85 V



2. Values

[mS]

Load \ Time	T d	T r	T s	T h	T f
50 %	6.0	12.8	18.8	54.7	65.5
100 %	6.0	19.3	25.3	24.6	38.6





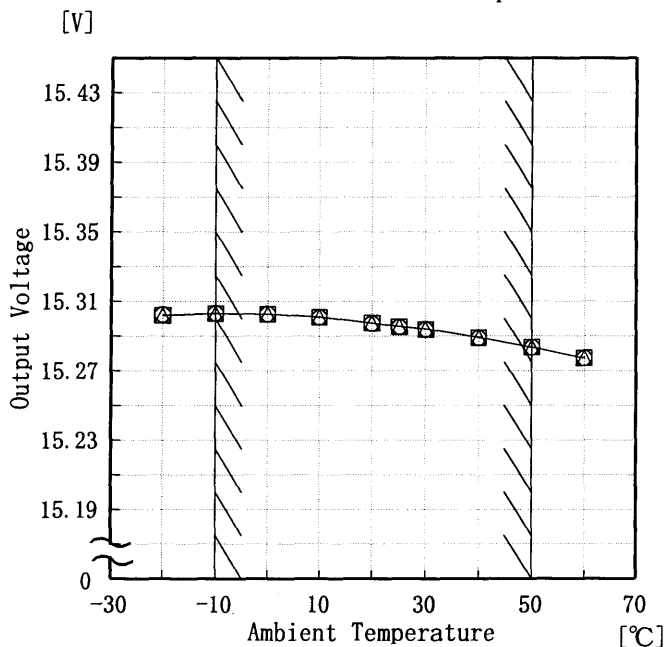


Model	LCA30S-15
Item	Ambient Temperature Drift 周囲温度変動
Object	+15.0V2A

Testing Circuitry Figure A

1. Graph

—△— Input Volt. 85V  
 - - -□- - - Input Volt. 100V  
 - - -○- - - Input Volt. 132V



Load 100%

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

(注) 斜線は定格周囲温度範囲を示す。

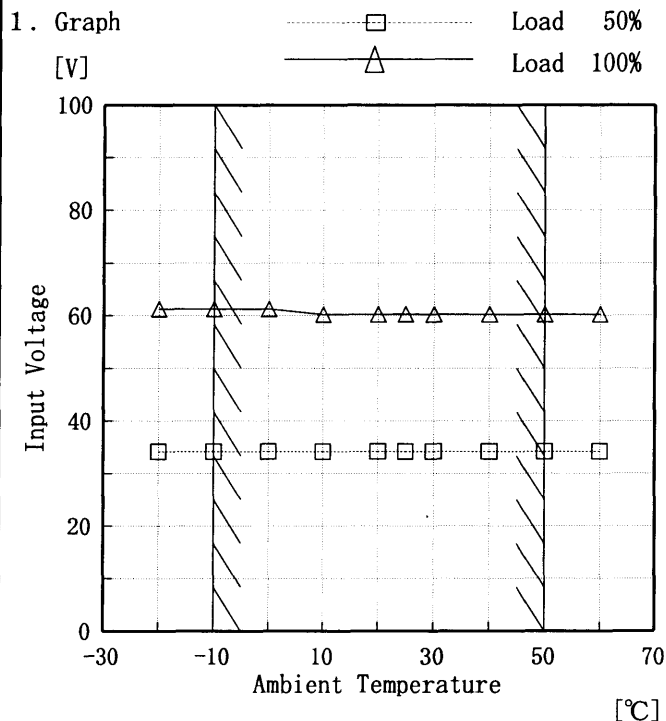
2. Values

Temperature [°C]	Output Voltage [V]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
-20	15.302	15.302	15.302
-10	15.303	15.303	15.303
0	15.303	15.303	15.303
10	15.301	15.301	15.301
20	15.297	15.297	15.297
25	15.295	15.295	15.295
30	15.294	15.294	15.294
40	15.289	15.289	15.289
50	15.284	15.283	15.284
60	15.277	15.277	15.277
—	—	—	—



Model	LCA30S-15
Item	Minimum Input Voltage for Regulated Output Voltage 最低レギュレーション電圧
Object	+15.0V2A

Testing Circuitry Figure A



2. Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-20	34	61
-10	34	61
0	34	61
10	34	60
20	34	60
25	34	60
30	34	60
40	34	60
50	34	60
60	34	60
—	—	—

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

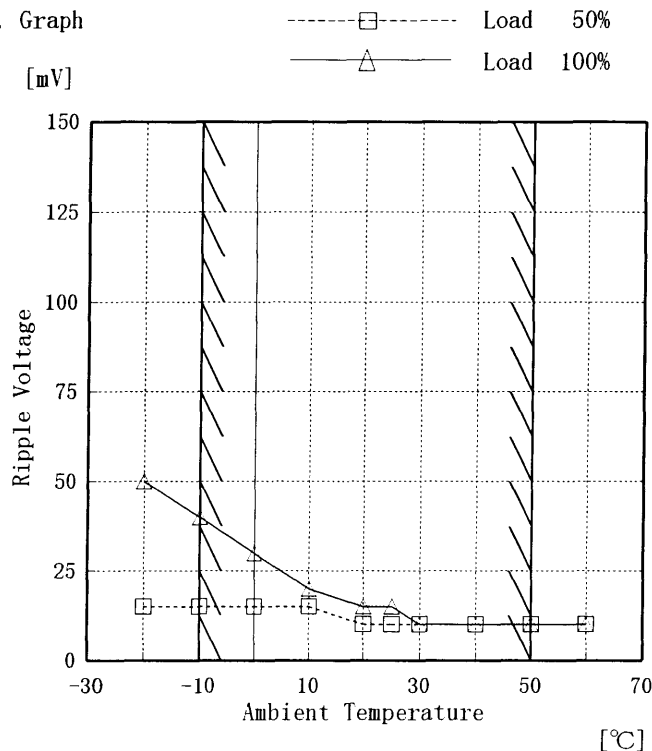
(注) 斜線は定格周囲温度範囲を示す。



Model	LCA30S-15	Testing Circuitry Figure A
Item	Ripple Voltage (by Ambient Temp.) リップル電圧 (周囲温度特性)	

Object +15.0V2A

1. Graph



Input Volt. 100 V

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

(注)斜線は定格周囲温度範囲を示す。

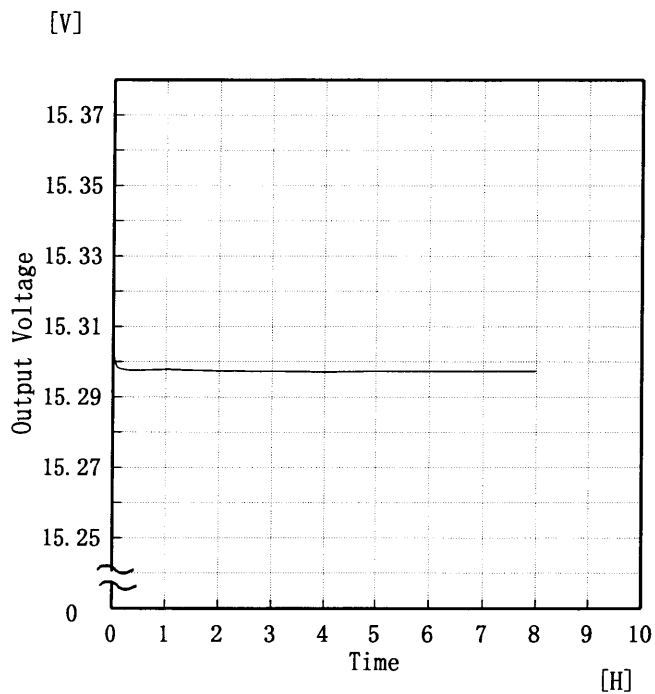
2. Values

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



Model	LCA30S-15	Temperature	25°C
Item	Time Lapse Drift 経時ドリフト	Testing Circuitry	Figure A
Object	+15.0V2A		

1. Graph



Input Volt. 100V  
Load 100%

2. Values

Time since start [H]	Output Voltage [V]
0.0	15.305
0.5	15.298
1.0	15.298
2.0	15.297
3.0	15.297
4.0	15.297
5.0	15.297
6.0	15.297
7.0	15.297
8.0	15.297



<b>COSEL</b>		
Model	LCA30S-15	
Item	Output Voltage Accuracy 定電圧精度	Testing Circuitry Figure A
Object	+15.0V2A	

**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 °C

Input Voltage : 85~132 V

Load Current : 0~2 A

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

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

**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 °C

入力電圧 85~132 V

負荷電流 0~2 A

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

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

Item	Temperature [°C]	Input Voltage [V]	Output Current [A]	Output Voltage [V]	Output Voltage Accuracy [mV]	Output Voltage Accuracy(Ration) [%]
Maximum Voltage	-10	85	2	15.304	±12	±0.1
Minimum Voltage	50	132	0	15.282		



<b>COSEL</b>		
Model	LCA30S-15	
Item	Condensation 結露特性	Testing Circuitry Figure A
Object	+15.0V2A	

1. Condensation test

Testing procedure is as follows.

- ① Keeping and cooling the unit in a tank at -10°C 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°C 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°C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°C、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

Item	Data	Testing Conditions
Output Voltage [V]	15.292	Input Volt. :100V, Load Current:2A
Line Regulation [mV]	2	Input Volt. :85~132V, Load Current:2A
Load Regulation [mV]	5	Input Volt. :100V, Load Current:0~2A



Model		LCA30S-15	Temperature	25°C
Item		Leakage Current 漏洩電流	Testing Circuitry	Figure B
Object		_____		

1. Results

Standards	Leakage Current [mA]		
	Input Volt. 85 [V]	Input Volt. 100 [V]	Input Volt. 132 [V]
(A) DENTORI	0.09	0.10	0.14
(B) IEC60950	0.09	0.11	0.14

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 of 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。



Model		LCA30S-15	Temperature		25°C
Item		Line Noise Tolerance 入力雑音耐量	Testing Circuitry		Figure C
Object		+15.0V2A			

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	LCA30S-15	Temperature	25°C
Item	Conducted Emission 雑音端子電圧	Testing Circuitry	Figure D
Object	_____		

1. Graph

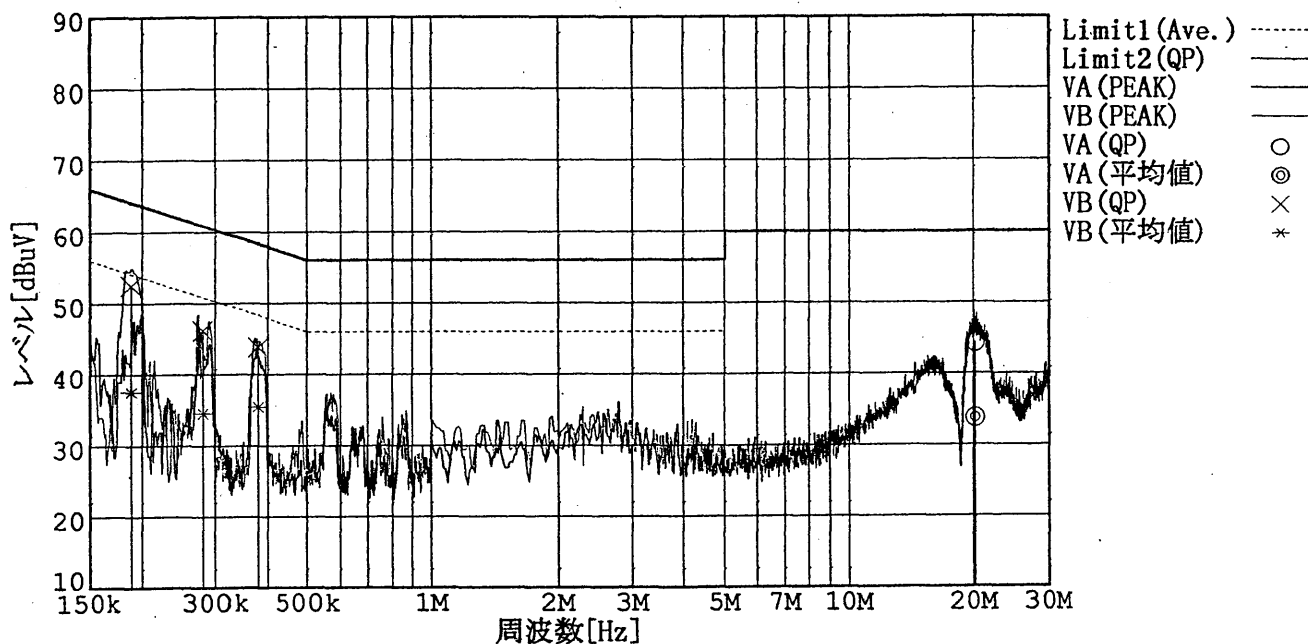
Remarks

Input Volt. 100 V (VCCI Class B)  
120 V (FCC Class B)

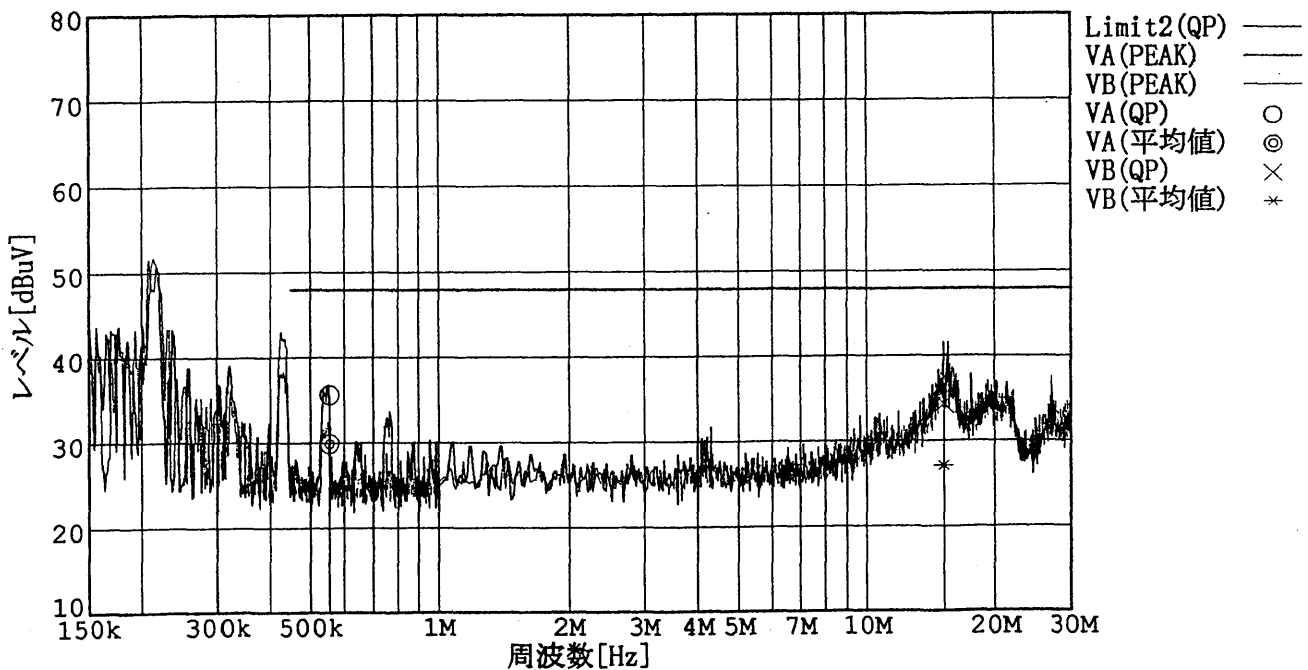
Load 100 %

規格 1: [VCCI] Class B(平均値)

規格 2: [VCCI] Class B(QP)



規格 2: [FCC Part15] Class B



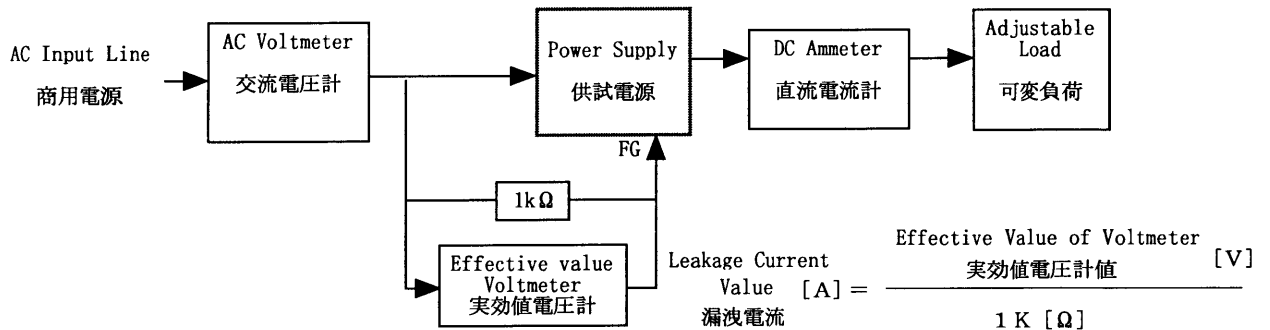
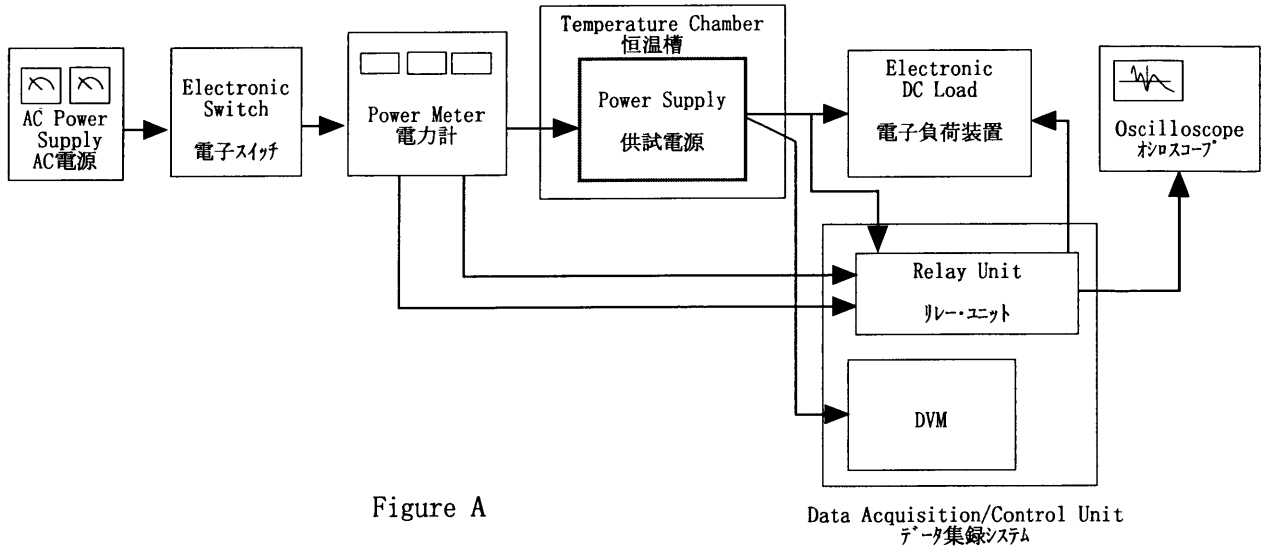


Figure B (DENTORI)

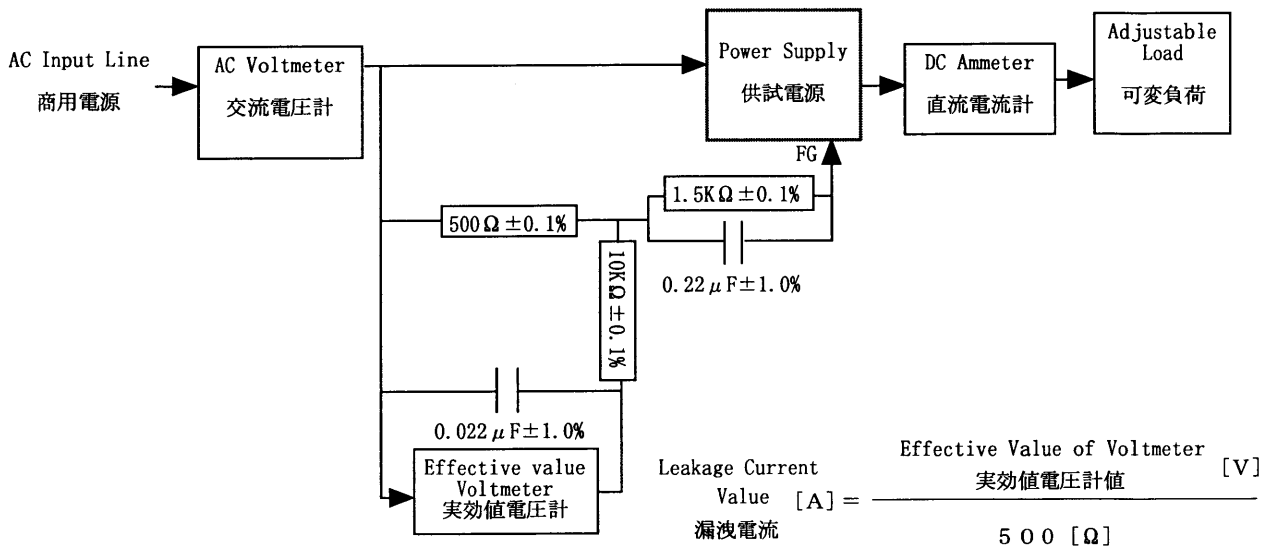


Figure B (IEC 60950)

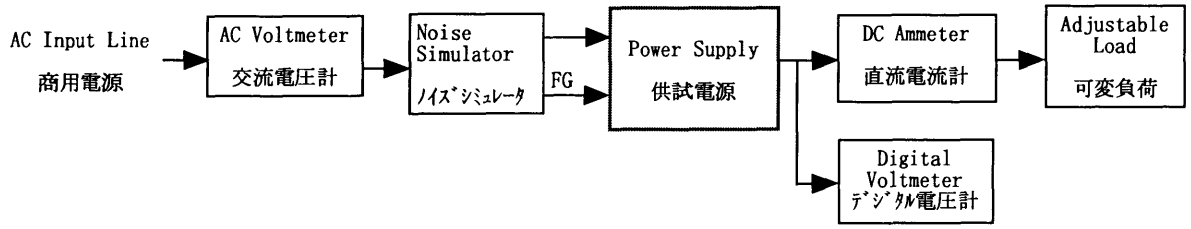


Figure C

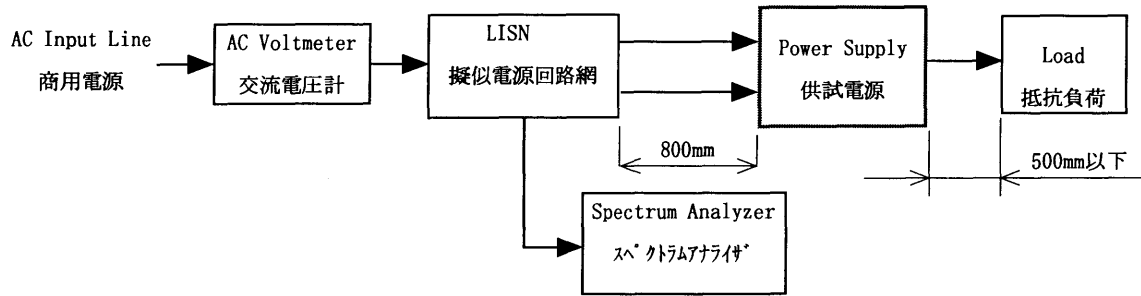


Figure D

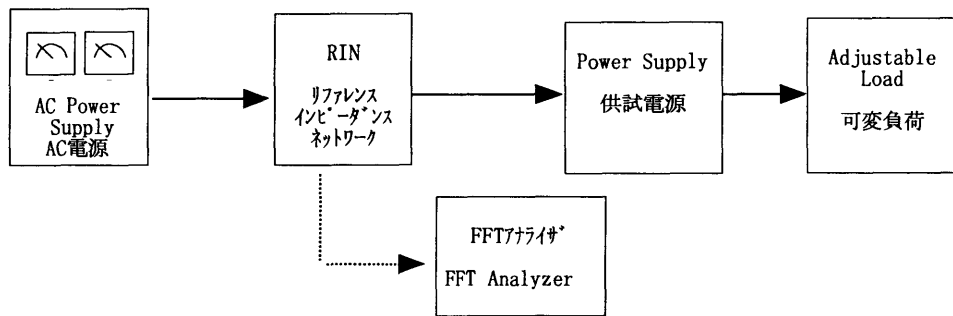


Figure E