

TEST DATA OF LEP150F-36

(AC200V INPUT)

Regulated DC Power Supply
Apr.16. 2003

Approved by : D. Ishibashi
D. ishibashi Design Manager

Prepared by : M. Hamaguchi
M. hamaguchi 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. Power Factor (by Input Voltage)	6
力率 (入力電圧特性)	
7. Power Factor (by Load Current)	7
力率 (負荷特性)	
8. Hold-Up Time	8
出力保持時間	
9. Instantaneous Interruption Compensation	9
瞬時停電保障	
10. Load Regulation	10
静的負荷変動	
11. Ripple Voltage (by Load Current)	11
リップル電圧 (負荷特性)	
12. Ripple-Noise	12
リップルノイズ	
13. Overcurrent Protection	13
過電流保護	
14. Overvoltage Protection	14
過電圧保護	
15. Inrush Current	15
突入電流	
16. Dynamic Load Response	16
動的負荷変動	
17. Rise and Fall Time	17
立上り、立下り時間	
18. Ambient Temperature Drift	18
周囲温度変動	
19. Minimum Input Voltage for Regulated Output Voltage	19
最低レギュレーション電圧	
20. Ripple Voltage (by Ambient Temperature)	20
リップル電圧 (周囲温度特性)	
21. Time Lapse Drift	21
経時ドリフト	
22. Output Voltage Accuracy	22
定電圧精度	
23. Harmonic Current	23
高調波電流	
24. Leakage Current	25
漏洩電流	
25. Line Noise Tolerance	26
入力雑音耐量	
26. Conducted Emission	27
雑音端子電圧	
27. Figure of Testing Circuitry	28
測定回路図	

(Final Page 29)

COSEL

Model		LEP150F-36	
Item		Line Regulation 静的入力変動	
Object		+36V4.2A	

1. Graph

---□---

Load 50%

—△—

Load 100%

Output Voltage [V]

<

COSEL

Model		LEP150F-36		Temperature		25℃																																																				
Item		Input Current (by Load Current) 入力電流（負荷特性）		Testing Circuitry		Figure A																																																				
Object																																																										
1. Graph		<div>—△— Input Volt. 170V</div> <div>---□--- Input Volt. 200V</div> <div>---○--- Input Volt. 264V</div>		2. Values																																																						
<div><div>Input Current [A]</div><div><div>Load Current [A]</div></div></div>				<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Input Current [A]</th></tr><tr><th>Input Volt. 170[V]</th><th>Input Volt. 200[V]</th><th>Input Volt. 264[V]</th></tr><tr><td>0.00</td><td>0.098</td><td>0.095</td><td>0.097</td></tr><tr><td>0.80</td><td>0.281</td><td>0.256</td><td>0.228</td></tr><tr><td>1.60</td><td>0.462</td><td>0.408</td><td>0.345</td></tr><tr><td>2.40</td><td>0.646</td><td>0.563</td><td>0.462</td></tr><tr><td>3.20</td><td>0.837</td><td>0.722</td><td>0.582</td></tr><tr><td>4.00</td><td>1.026</td><td>0.882</td><td>0.703</td></tr><tr><td>4.20</td><td>1.072</td><td>0.922</td><td>0.733</td></tr><tr><td>4.62</td><td>1.174</td><td>1.006</td><td>0.797</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. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]	0.00	0.098	0.095	0.097	0.80	0.281	0.256	0.228	1.60	0.462	0.408	0.345	2.40	0.646	0.563	0.462	3.20	0.837	0.722	0.582	4.00	1.026	0.882	0.703	4.20	1.072	0.922	0.733	4.62	1.174	1.006	0.797	--	--	--	--	--	--	--	--	--	--	--	--
Load Current [A]	Input Current [A]																																																									
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]																																																							
0.00	0.098	0.095	0.097																																																							
0.80	0.281	0.256	0.228																																																							
1.60	0.462	0.408	0.345																																																							
2.40	0.646	0.563	0.462																																																							
3.20	0.837	0.722	0.582																																																							
4.00	1.026	0.882	0.703																																																							
4.20	1.072	0.922	0.733																																																							
4.62	1.174	1.006	0.797																																																							
--	--	--	--																																																							
--	--	--	--																																																							
--	--	--	--																																																							
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		LEP150F-36		Temperature		25℃																																																				
Item		Input Power (by Load Current) 入力電力（負荷特性）		Testing Circuitry		Figure A																																																				
Object																																																										
1. Graph				2. Values																																																						
<div><div><div>—△—</div><div>Input Volt. 170V</div></div><div><div>---□---</div><div>Input Volt. 200V</div></div><div><div>---○---</div><div>Input Volt. 264V</div></div></div> <div>Input Power [W]</div> <div>Load Current [A]</div>				<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Input Power [W]</th></tr><tr><th>Input Volt. 170[V]</th><th>Input Volt. 200[V]</th><th>Input Volt. 264[V]</th></tr><tr><td>0.00</td><td>8.2</td><td>8.0</td><td>8.0</td></tr><tr><td>0.80</td><td>40.1</td><td>40.1</td><td>40.2</td></tr><tr><td>1.60</td><td>71.6</td><td>71.2</td><td>71.0</td></tr><tr><td>2.40</td><td>103.1</td><td>102.7</td><td>102.1</td></tr><tr><td>3.20</td><td>134.9</td><td>134.2</td><td>133.4</td></tr><tr><td>4.00</td><td>167.0</td><td>166.3</td><td>164.8</td></tr><tr><td>4.20</td><td>175.1</td><td>174.1</td><td>172.6</td></tr><tr><td>4.62</td><td>192.2</td><td>191.0</td><td>189.4</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. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]	0.00	8.2	8.0	8.0	0.80	40.1	40.1	40.2	1.60	71.6	71.2	71.0	2.40	103.1	102.7	102.1	3.20	134.9	134.2	133.4	4.00	167.0	166.3	164.8	4.20	175.1	174.1	172.6	4.62	192.2	191.0	189.4	--	--	--	--	--	--	--	--	--	--	--	--
Load Current [A]	Input Power [W]																																																									
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]																																																							
0.00	8.2	8.0	8.0																																																							
0.80	40.1	40.1	40.2																																																							
1.60	71.6	71.2	71.0																																																							
2.40	103.1	102.7	102.1																																																							
3.20	134.9	134.2	133.4																																																							
4.00	167.0	166.3	164.8																																																							
4.20	175.1	174.1	172.6																																																							
4.62	192.2	191.0	189.4																																																							
--	--	--	--																																																							
--	--	--	--																																																							
--	--	--	--																																																							
<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>																																																										

COSEL

Model		LEP150F-36	
Item		Efficiency (by Input Voltage) 効率 (入力電圧特性)	
Object			

1. Graph

<

COSEL

Model		LEP150F-36	
Item		Efficiency (by Load Current) 効率 (負荷特性)	
Object			

1. Graph

—△—

Input Volt. 170V

---□---

Input Volt. 200V

---○---

Input Volt. 264V

Efficiency [%]

100

92

84

76

68

60

52

44

Load Current [A]	170V Efficiency [%]	200V Efficiency [%]	264V Efficiency [%]
0.00	—	—	—
0.80	67.0	67.0	66.7
1.60	77.5	78.0	78.2
2.40	81.7	82.0	82.5
3.20	83.7	84.1	84.7
4.00	84.8	85.1	85.9
4.20	85.0	85.5	86.2
4.62	85.3	85.8	86.5
--	—	—	—
--	—	—	—
--	—	—	—

0.01.02.03.04.05.0

Load Current [A]

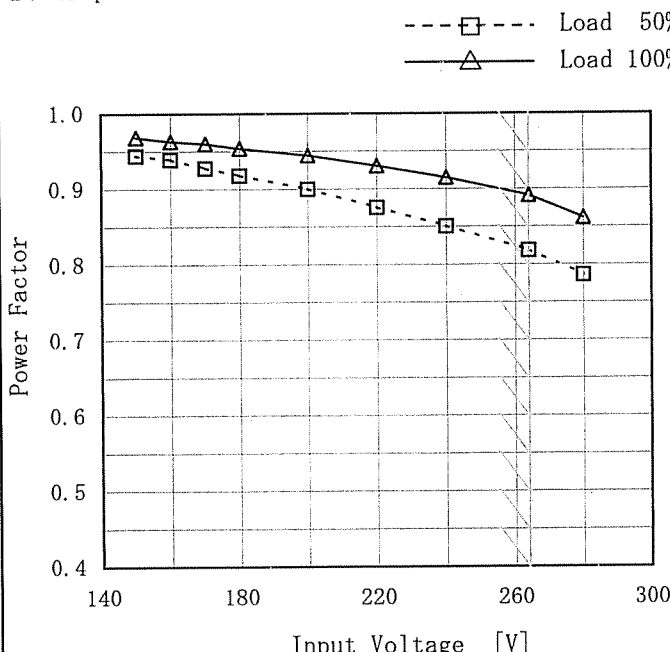
2. Values

Load Current [A]	Efficiency [%]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
0.00	—	—	—
0.80	67.0	67.0	66.7
1.60	77.5	78.0	78.2
2.40	81.7	82.0	82.5
3.20	83.7	84.1	84.7
4.00	84.8	85.1	85.9
4.20	85.0	85.5	86.2
4.62	85.3	85.8	86.5
--	—	—	—
--	—	—	—
--	—	—	—

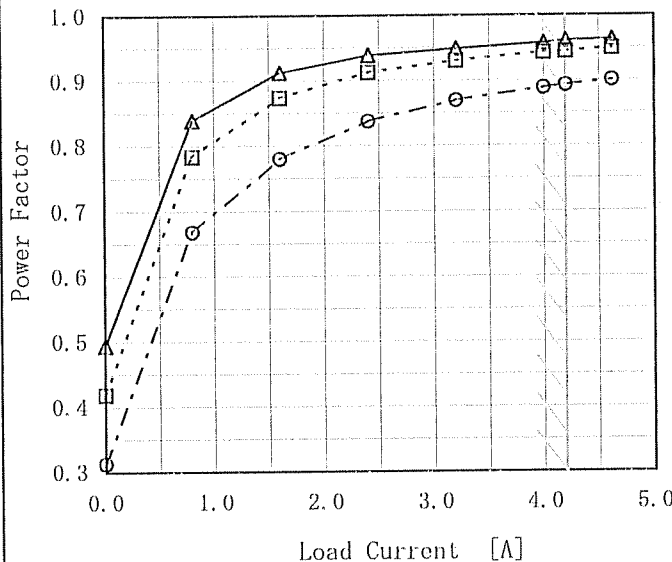
Note: Slanted line shows the range of the rated load current.

(注) 斜線は定格負荷電流範囲を示す。

COSEL

Model		LEP150F-36		Temperature25℃ Testing CircuitryFigure A																																
Item		Power Factor (by Input Voltage) 力率 (入力電圧特性)																																		
Object																																				
1. Graph																																				
<div><div><div>Power Factor</div><div>1.0 0.9 0.8 0.7 0.6 0.5 0.4</div></div><div><div>140180220260300</div><div>Input Voltage [V]</div></div><div><div>---□--- Load 50%</div><div>—△— Load 100%</div></div></div>																																				
2. Values																																				
<table><tr><th rowspan="2">Input Voltage [V]</th><th colspan="2">Power Factor</th></tr><tr><th>Load 50%</th><th>Load 100%</th></tr><tr><td>150</td><td>0.944</td><td>0.969</td></tr><tr><td>160</td><td>0.939</td><td>0.963</td></tr><tr><td>170</td><td>0.928</td><td>0.960</td></tr><tr><td>180</td><td>0.918</td><td>0.954</td></tr><tr><td>200</td><td>0.900</td><td>0.945</td></tr><tr><td>220</td><td>0.875</td><td>0.931</td></tr><tr><td>240</td><td>0.850</td><td>0.915</td></tr><tr><td>264</td><td>0.819</td><td>0.891</td></tr><tr><td>280</td><td>0.786</td><td>0.862</td></tr></table>					Input Voltage [V]	Power Factor		Load 50%	Load 100%	150	0.944	0.969	160	0.939	0.963	170	0.928	0.960	180	0.918	0.954	200	0.900	0.945	220	0.875	0.931	240	0.850	0.915	264	0.819	0.891	280	0.786	0.862
Input Voltage [V]	Power Factor																																			
	Load 50%	Load 100%																																		
150	0.944	0.969																																		
160	0.939	0.963																																		
170	0.928	0.960																																		
180	0.918	0.954																																		
200	0.900	0.945																																		
220	0.875	0.931																																		
240	0.850	0.915																																		
264	0.819	0.891																																		
280	0.786	0.862																																		
<div>Note: Slanted line shows the range of the rated input voltage.</div> <div>(注) 斜線は定格入力電圧範囲を示す。</div>																																				

COSEL

Model		LEP150F-36		Temperature Testing Circuitry	25°C Figure A																																																	
Item		Power Factor (by Load Current) 力率 (負荷特性)																																																				
Object																																																						
1. Graph		<div>—△— Input Volt. 170V</div> <div>---□--- Input Volt. 200V</div> <div>---○--- Input Volt. 264V</div> 		2. Values																																																		
		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Power Factor</th></tr><tr><th>Input Volt. 170[V]</th><th>Input Volt. 200[V]</th><th>Input Volt. 264[V]</th></tr><tr><td>0.00</td><td>0.494</td><td>0.419</td><td>0.313</td></tr><tr><td>0.80</td><td>0.839</td><td>0.783</td><td>0.668</td></tr><tr><td>1.60</td><td>0.912</td><td>0.874</td><td>0.779</td></tr><tr><td>2.40</td><td>0.939</td><td>0.912</td><td>0.837</td></tr><tr><td>3.20</td><td>0.949</td><td>0.930</td><td>0.869</td></tr><tr><td>4.00</td><td>0.958</td><td>0.943</td><td>0.888</td></tr><tr><td>4.20</td><td>0.961</td><td>0.944</td><td>0.892</td></tr><tr><td>4.62</td><td>0.963</td><td>0.949</td><td>0.900</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]	Power Factor			Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]	0.00	0.494	0.419	0.313	0.80	0.839	0.783	0.668	1.60	0.912	0.874	0.779	2.40	0.939	0.912	0.837	3.20	0.949	0.930	0.869	4.00	0.958	0.943	0.888	4.20	0.961	0.944	0.892	4.62	0.963	0.949	0.900	--	--	--	--	--	--	--	--	--	--	--
Load Current [A]	Power Factor																																																					
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]																																																			
0.00	0.494	0.419	0.313																																																			
0.80	0.839	0.783	0.668																																																			
1.60	0.912	0.874	0.779																																																			
2.40	0.939	0.912	0.837																																																			
3.20	0.949	0.930	0.869																																																			
4.00	0.958	0.943	0.888																																																			
4.20	0.961	0.944	0.892																																																			
4.62	0.963	0.949	0.900																																																			
--	--	--	--																																																			
--	--	--	--																																																			
--	--	--	--																																																			
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	LEP150F-36																																		
Item	Hold-Up Time 出力保持時間	Temperature	25℃																																
		Testing Circuitry	Figure A																																
Object	+36V4.2A																																		
1. Graph		2. Values																																	
<div><div>---□--- Load 50%</div><div>—△— Load 100%</div></div> <div>Hold-Up Time [mS]</div> <div>Input Voltage [V]</div>		<table><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><tr><td>150</td><td>83</td><td>41</td></tr><tr><td>160</td><td>84</td><td>41</td></tr><tr><td>170</td><td>85</td><td>42</td></tr><tr><td>180</td><td>85</td><td>42</td></tr><tr><td>200</td><td>86</td><td>43</td></tr><tr><td>220</td><td>87</td><td>44</td></tr><tr><td>240</td><td>88</td><td>44</td></tr><tr><td>264</td><td>88</td><td>44</td></tr><tr><td>280</td><td>89</td><td>45</td></tr></table>		Input Voltage [V]	Hold-Up Time [mS]		Load 50%	Load 100%	150	83	41	160	84	41	170	85	42	180	85	42	200	86	43	220	87	44	240	88	44	264	88	44	280	89	45
Input Voltage [V]	Hold-Up Time [mS]																																		
	Load 50%	Load 100%																																	
150	83	41																																	
160	84	41																																	
170	85	42																																	
180	85	42																																	
200	86	43																																	
220	87	44																																	
240	88	44																																	
264	88	44																																	
280	89	45																																	
<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範囲を保持しているところまでの時間。</p> <p>(注) 斜線は定格入力電圧範囲を示す。</p>																																			

COSEL

Model		LEP150F-36		Temperature		25℃																																																				
Item		Instantaneous Interruption Compensation 瞬時停電保障		Testing Circuitry		Figure A																																																				
Object		+36V4.2A																																																								
1. Graph				2. Values																																																						
<div><div>—△—</div>Input Volt. 170V</div> <div><div>---□---</div>Input Volt. 200V</div> <div><div>-·-○-·-</div>Input Volt. 264V</div> <p>Instantaneous Compensation Time [mS]</p> <p>Load Current [A]</p>				<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Time [mS]</th></tr><tr><th>Input Volt. 170[V]</th><th>Input Volt. 200[V]</th><th>Input Volt. 264[V]</th></tr><tr><td>0.00</td><td>—</td><td>—</td><td>—</td></tr><tr><td>0.80</td><td>205</td><td>205</td><td>211</td></tr><tr><td>1.60</td><td>106</td><td>113</td><td>114</td></tr><tr><td>2.40</td><td>65</td><td>72</td><td>78</td></tr><tr><td>3.20</td><td>51</td><td>55</td><td>59</td></tr><tr><td>4.00</td><td>43</td><td>46</td><td>47</td></tr><tr><td>4.20</td><td>40</td><td>43</td><td>45</td></tr><tr><td>4.62</td><td>38</td><td>39</td><td>45</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]	Time [mS]			Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]	0.00	—	—	—	0.80	205	205	211	1.60	106	113	114	2.40	65	72	78	3.20	51	55	59	4.00	43	46	47	4.20	40	43	45	4.62	38	39	45	--	—	—	—	--	—	—	—	--	—	—	—
Load Current [A]	Time [mS]																																																									
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]																																																							
0.00	—	—	—																																																							
0.80	205	205	211																																																							
1.60	106	113	114																																																							
2.40	65	72	78																																																							
3.20	51	55	59																																																							
4.00	43	46	47																																																							
4.20	40	43	45																																																							
4.62	38	39	45																																																							
--	—	—	—																																																							
--	—	—	—																																																							
--	—	—	—																																																							
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。																																																										

BC-0875

COSEL

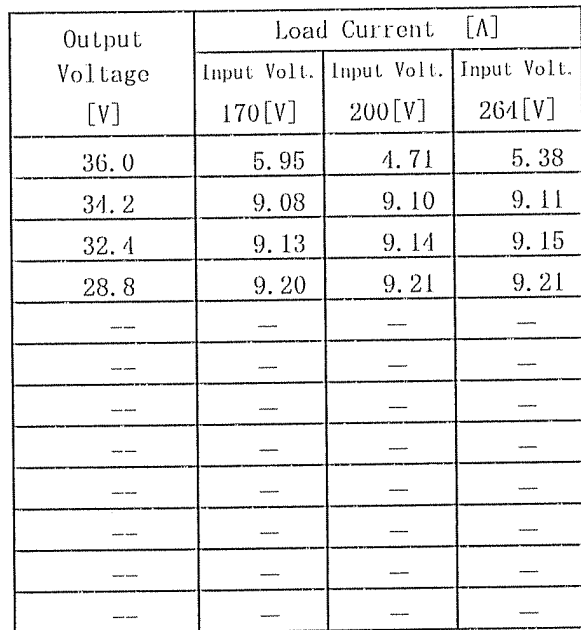
Model	LEP150F-36																																																																												
Item	Ripple Voltage (by Load Current) リップル電圧 (負荷特性)	Temperature	25℃																																																																										
Object	+36V4.2A	Testing Circuitry	Figure A																																																																										
1. Graph		2. Values																																																																											
<div><div>—△— Input Volt. 170V</div><div>- - -○- - Input Volt. 264V</div><div><table><thead><tr><th>Load Current [A]</th><th>Input Volt. 170 [V] [mV]</th><th>Input Volt. 264 [V] [mV]</th></tr></thead><tbody><tr><td>0.00</td><td>15</td><td>15</td></tr><tr><td>0.80</td><td>25</td><td>25</td></tr><tr><td>1.60</td><td>25</td><td>25</td></tr><tr><td>2.40</td><td>30</td><td>30</td></tr><tr><td>3.20</td><td>30</td><td>30</td></tr><tr><td>4.00</td><td>35</td><td>35</td></tr><tr><td>4.20</td><td>35</td><td>35</td></tr><tr><td>4.62</td><td>40</td><td>40</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></div></div>		Load Current [A]	Input Volt. 170 [V] [mV]	Input Volt. 264 [V] [mV]	0.00	15	15	0.80	25	25	1.60	25	25	2.40	30	30	3.20	30	30	4.00	35	35	4.20	35	35	4.62	40	40	--	--	--	--	--	--	--	--	--	<table><thead><tr><th rowspan="2">Load Current [A]</th><th colspan="2">Ripple Voltage [mV]</th></tr><tr><th>Input Volt. 170 [V]</th><th>Input Volt. 264 [V]</th></tr></thead><tbody><tr><td>0.00</td><td>15</td><td>15</td></tr><tr><td>0.80</td><td>25</td><td>25</td></tr><tr><td>1.60</td><td>25</td><td>25</td></tr><tr><td>2.40</td><td>30</td><td>30</td></tr><tr><td>3.20</td><td>30</td><td>30</td></tr><tr><td>4.00</td><td>35</td><td>35</td></tr><tr><td>4.20</td><td>35</td><td>35</td></tr><tr><td>4.62</td><td>40</td><td>40</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]	Ripple Voltage [mV]		Input Volt. 170 [V]	Input Volt. 264 [V]	0.00	15	15	0.80	25	25	1.60	25	25	2.40	30	30	3.20	30	30	4.00	35	35	4.20	35	35	4.62	40	40	--	--	--	--	--	--	--	--	--
Load Current [A]	Input Volt. 170 [V] [mV]	Input Volt. 264 [V] [mV]																																																																											
0.00	15	15																																																																											
0.80	25	25																																																																											
1.60	25	25																																																																											
2.40	30	30																																																																											
3.20	30	30																																																																											
4.00	35	35																																																																											
4.20	35	35																																																																											
4.62	40	40																																																																											
--	--	--																																																																											
--	--	--																																																																											
--	--	--																																																																											
Load Current [A]	Ripple Voltage [mV]																																																																												
	Input Volt. 170 [V]	Input Volt. 264 [V]																																																																											
0.00	15	15																																																																											
0.80	25	25																																																																											
1.60	25	25																																																																											
2.40	30	30																																																																											
3.20	30	30																																																																											
4.00	35	35																																																																											
4.20	35	35																																																																											
4.62	40	40																																																																											
--	--	--																																																																											
--	--	--																																																																											
--	--	--																																																																											
<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。</p> <p>(注) 斜線は定格負荷電流範囲を示す。</p> <div><div>T1: Due to AC Input Line 入力商用周期</div><div>T2: Due to Switching スイッチング周期</div><div></div></div>																																																																													
<p>Fig. Complex Ripple Wave Form</p> <p>図 リップル波形詳細図</p>																																																																													

COSEL

Model	LEP150F-36	Temperature	25°C																																						
Item	Ripple-Noise リップルノイズ	Testing Circuitry	Figure A																																						
Object	+36V4.2A																																								
1. Graph		2. Values																																							
<div><div>—△— Input Volt. 170V - -○- - Input Volt. 264V</div><div>Ripple-Noise [mV]</div><div>Load Current [A]</div></div> <div><p>Ripple-Noise is shown as p-p in the figure below. Note: Slanted line shows the range of the rated load current.</p><p>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。</p><div><div>T1: Due to AC Input Line 入力商用周期</div><div>T2: Due to Switching スイッチング周期</div><div>Ripple-Noise [mVp-p]</div></div><div><p>Fig. Complex Ripple Wave Form 図 リップル波形詳細図</p></div></div>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="2">Ripple-Noise [mV]</th></tr><tr><th>Input Volt. 170 [V]</th><th>Input Volt. 264 [V]</th></tr><tr><td>0.00</td><td>30</td><td>30</td></tr><tr><td>0.80</td><td>45</td><td>45</td></tr><tr><td>1.60</td><td>60</td><td>50</td></tr><tr><td>2.40</td><td>65</td><td>55</td></tr><tr><td>3.20</td><td>70</td><td>65</td></tr><tr><td>4.00</td><td>70</td><td>70</td></tr><tr><td>4.20</td><td>70</td><td>70</td></tr><tr><td>4.62</td><td>75</td><td>75</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-Noise [mV]		Input Volt. 170 [V]	Input Volt. 264 [V]	0.00	30	30	0.80	45	45	1.60	60	50	2.40	65	55	3.20	70	65	4.00	70	70	4.20	70	70	4.62	75	75	--	--	--	--	--	--	--	--	--
Load Current [A]	Ripple-Noise [mV]																																								
	Input Volt. 170 [V]	Input Volt. 264 [V]																																							
0.00	30	30																																							
0.80	45	45																																							
1.60	60	50																																							
2.40	65	55																																							
3.20	70	65																																							
4.00	70	70																																							
4.20	70	70																																							
4.62	75	75																																							
--	--	--																																							
--	--	--																																							
--	--	--																																							

Temperature	25°C
Testing Circuitry	Figure A

2. Values



(注) 斜線は定格負荷電流範囲を示す。

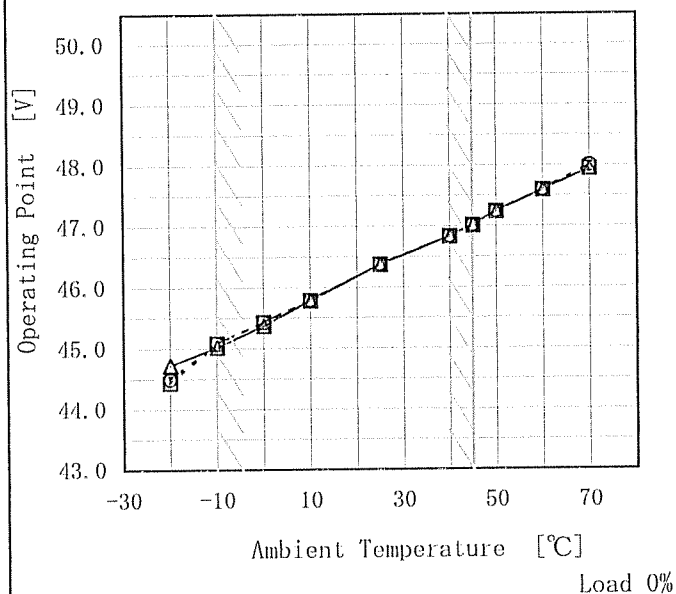
Intermittent operation occurs when the output voltage is from 28V to 0V.
28V~0V間は、間欠モードとなる。

COSEL

Model	LEP150F-36
Item	Overvoltage Protection 過電圧保護
Object	+36V/1.2A

1. Graph

—△— Input Volt. 170V
 ---□--- Input Volt. 200V
 -·-○-·- Input Volt. 264V



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。

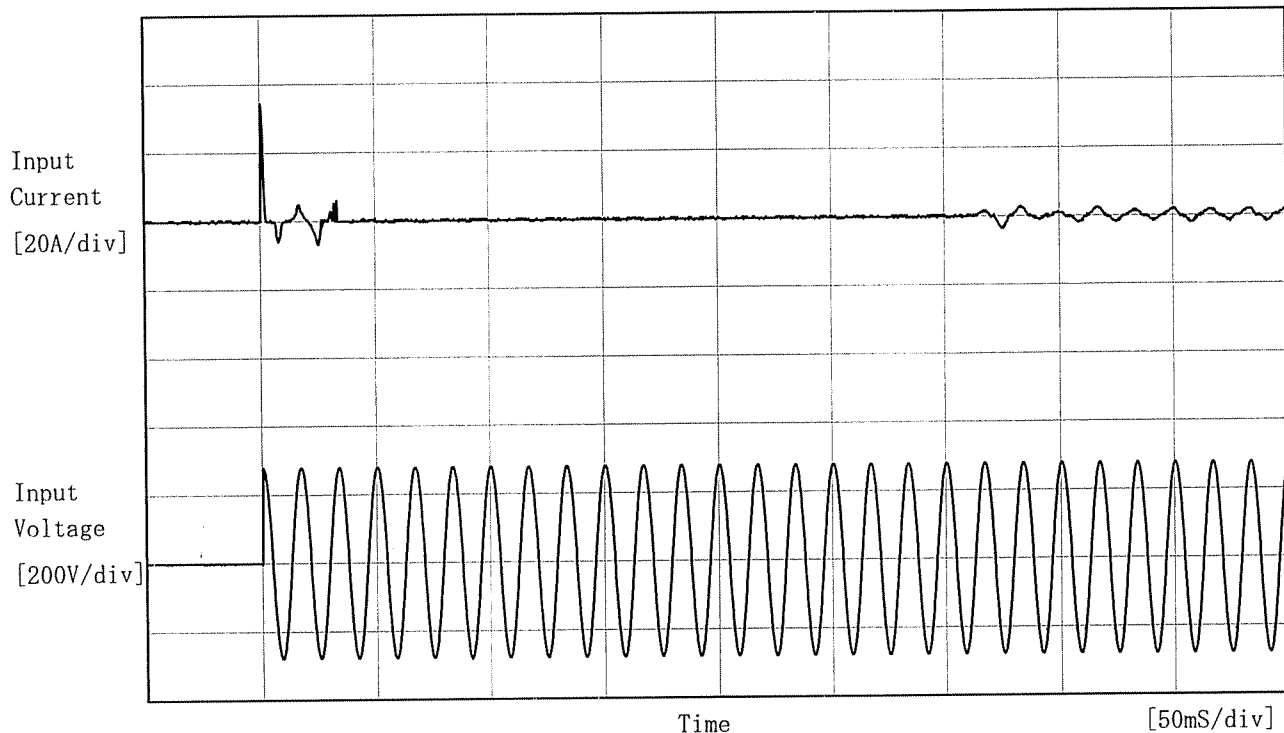
Testing Circuitry Figure A

2. Values

Ambient Temperature [°C]	Operating Point [V]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
-20	44.74	44.45	44.51
-10	45.04	45.10	45.10
0	45.39	45.45	45.45
10	45.80	45.80	45.80
25	46.39	46.39	46.39
40	46.85	46.85	46.85
45	47.03	47.03	47.03
50	47.26	47.26	47.26
60	47.61	47.61	47.61
70	47.96	47.96	48.02
--	—	—	—

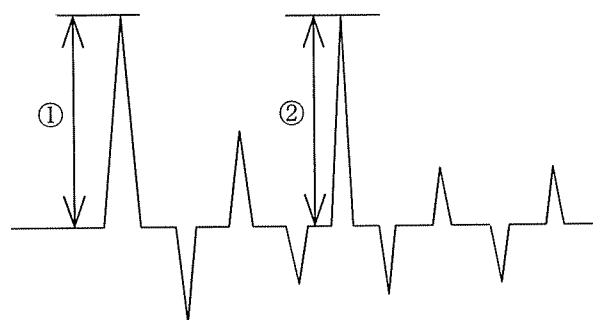
COSEL

Model	LEP150F-36	Temperature	25°C
Item	Inrush Current 突入電流	Testing Circuitry	Figure A
Object	_____		



Input Voltage 200 V
 Frequency 60 Hz
 Load 100 %
 Inrush Current

- ① 34.3 [A]
- ② 3.7 [A]



COSEL

Model	LEP150F-36	Temperature 25°C Testing Circuitry Figure A
Item	Dynamic Load Response 動的負荷変動	
Object	+36V/1.2A	

Input Volt. 200 V
Cycle 1000 ms

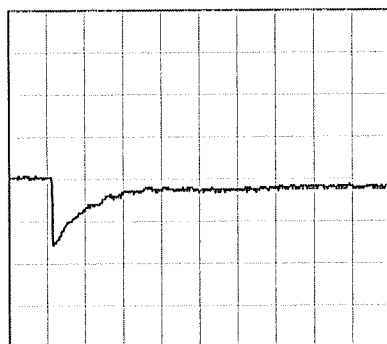
Load Current



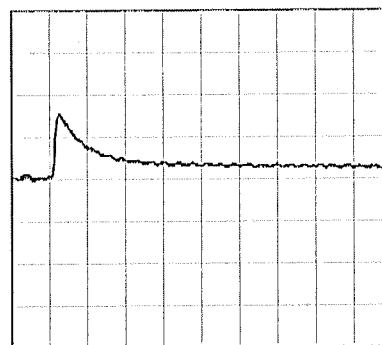
Min. Load (0A) \longleftrightarrow

Load 100% (1.2A)

100 mV/div



10 ms/div

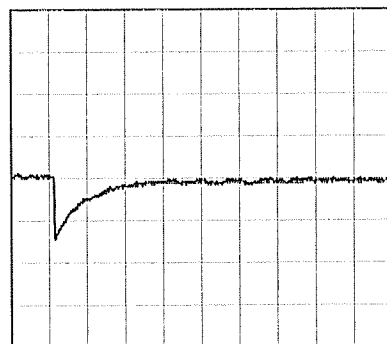


10 ms/div

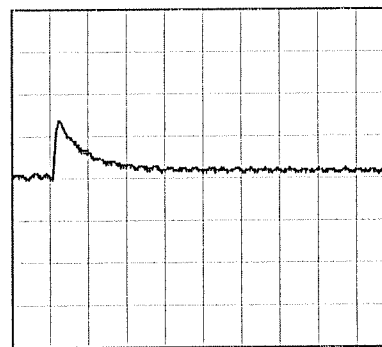
Min. Load (0A) \longleftrightarrow

Load 50% (2.1A)

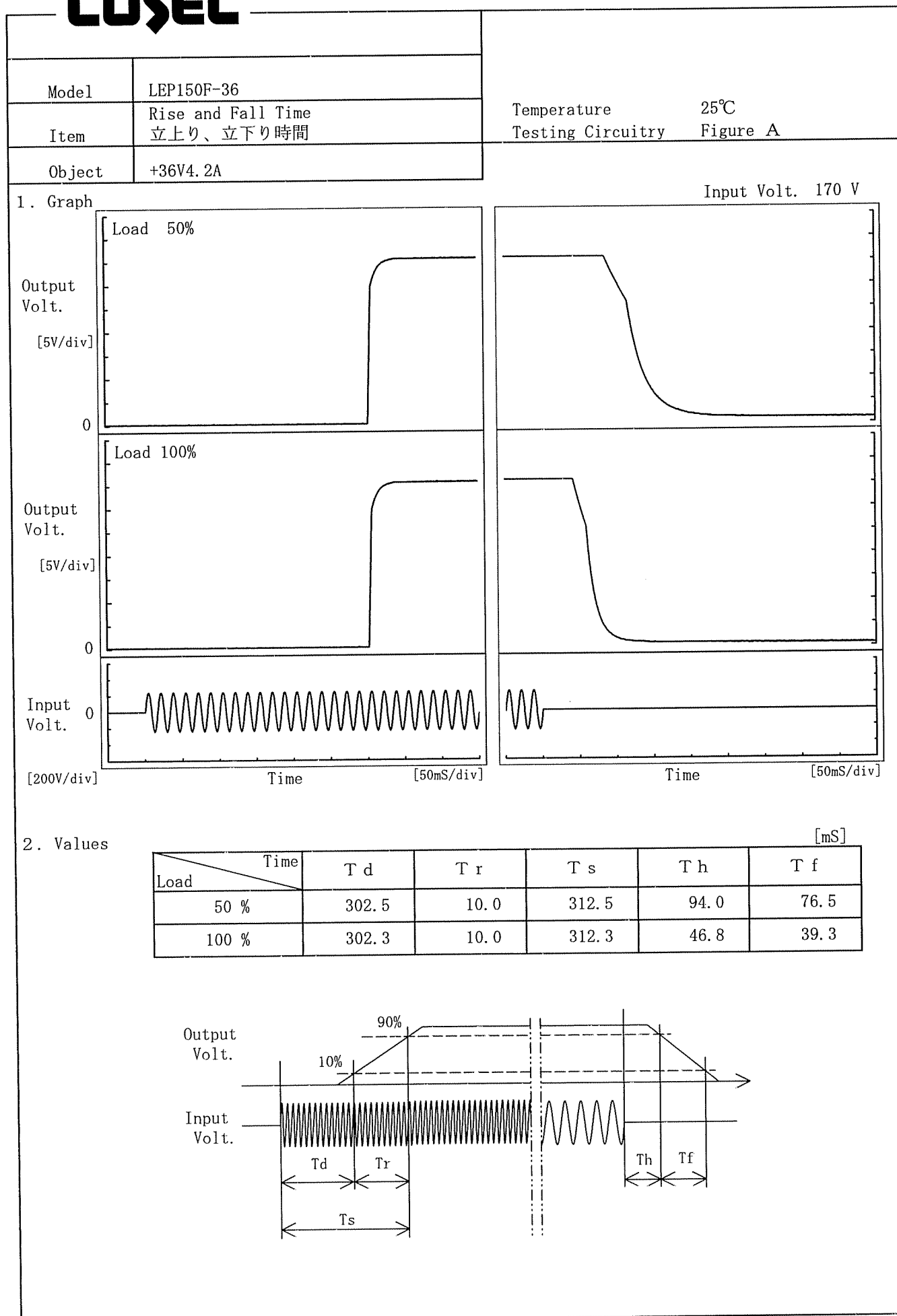
100 mV/div



10 ms/div



10 ms/div

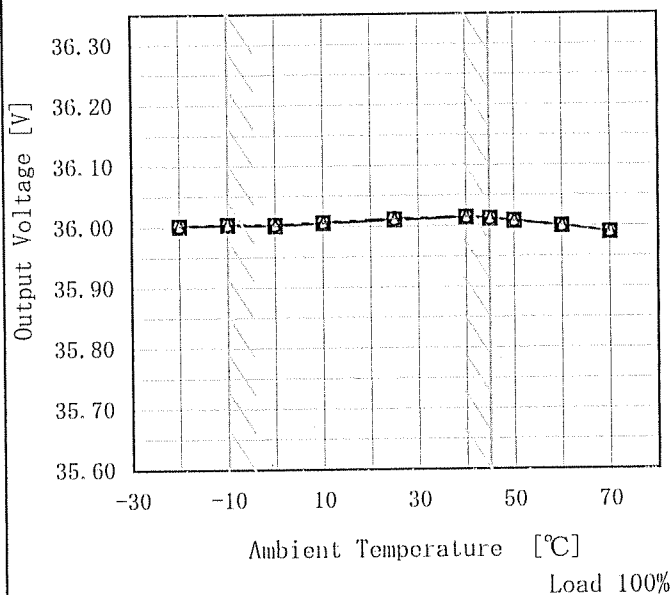
COSEL

COSEL

Model	LEP150F-36
Item	Ambient Temperature Drift 周囲温度変動
Object	+36V4.2A

1. Graph

—△— Input Volt. 170V
 ---□--- Input Volt. 200V
 ---○--- Input Volt. 264V



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。

Testing Circuitry Figure A

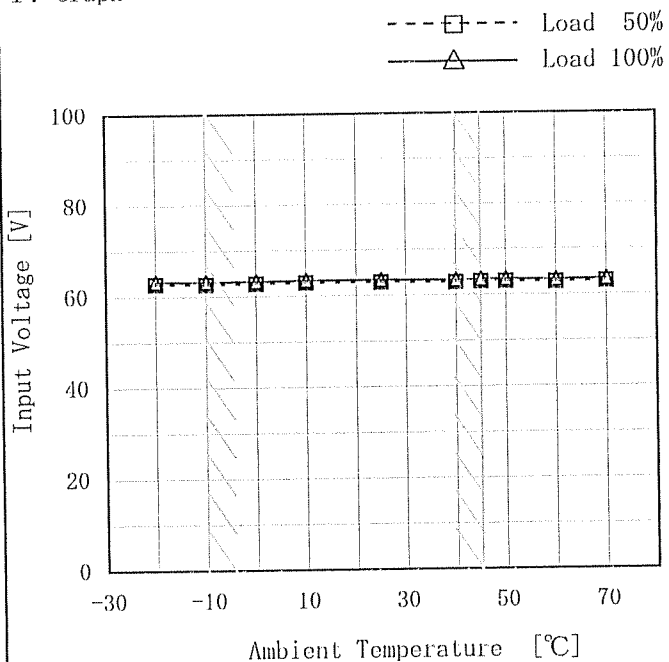
2. Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
-20	36.001	36.001	36.002
-10	36.003	36.004	36.004
0	36.002	36.003	36.003
10	36.006	36.007	36.007
25	36.011	36.011	36.012
40	36.014	36.014	36.015
45	36.012	36.012	36.012
50	36.008	36.008	36.008
60	36.000	36.000	36.000
70	35.989	35.990	35.990
--	—	—	—

COSEL

Model	LEP150F-36
Item	Minimum Input Voltage for Regulated Output Voltage 最低レギュレーション電圧
Object	+36V/1.2A

1. Graph



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。

Testing Circuitry Figure A

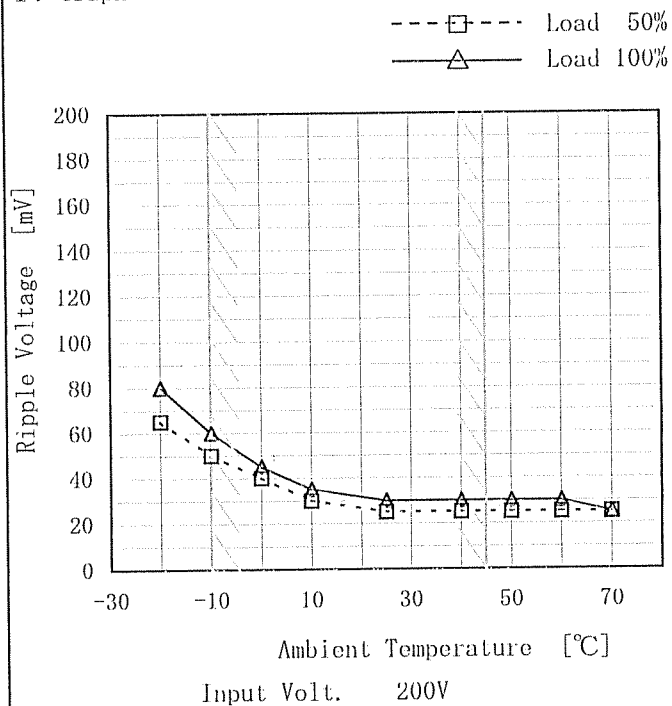
2. Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-20	63	64
-10	63	64
0	63	64
10	63	64
25	63	64
40	63	64
45	63	64
50	63	64
60	63	64
70	63	64
--	—	—

COSEL

Model	LEP150F-36
Item	Ripple Voltage (by Ambient Temp.) リップル電圧 (周囲温度特性)
Object	+36V4.2A

1. Graph



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

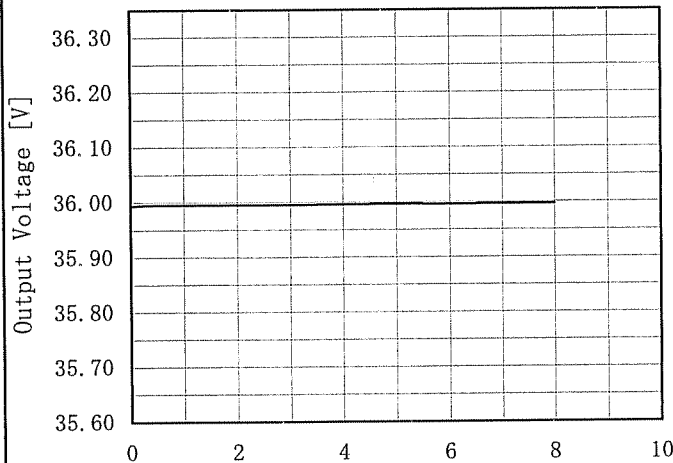
(注) 斜線は定格周囲温度範囲を示す。

Testing Circuitry Figure A

2. Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-20	65	80
-10	50	60
0	40	45
10	30	35
25	25	30
40	25	30
50	25	30
60	25	30
70	25	25
--	—	—
--	—	—

COSEL

Model	LEP150F-36																								
Item	Time Lapse Drift 経時ドリフト	Temperature	25℃																						
Object	+36V4.2A	Testing Circuitry	Figure A																						
1. Graph		2. Values																							
<div><p>Output Voltage [V]</p><p>Time [H]</p><p>Input Volt. 200V</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>35.989</td></tr><tr><td>0.5</td><td>35.995</td></tr><tr><td>1.0</td><td>35.995</td></tr><tr><td>2.0</td><td>35.996</td></tr><tr><td>3.0</td><td>35.996</td></tr><tr><td>4.0</td><td>35.996</td></tr><tr><td>5.0</td><td>35.997</td></tr><tr><td>6.0</td><td>35.996</td></tr><tr><td>7.0</td><td>35.997</td></tr><tr><td>8.0</td><td>35.997</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	35.989	0.5	35.995	1.0	35.995	2.0	35.996	3.0	35.996	4.0	35.996	5.0	35.997	6.0	35.996	7.0	35.997	8.0	35.997
Time since start [H]	Output Voltage [V]																								
0.0	35.989																								
0.5	35.995																								
1.0	35.995																								
2.0	35.996																								
3.0	35.996																								
4.0	35.996																								
5.0	35.997																								
6.0	35.996																								
7.0	35.997																								
8.0	35.997																								



Model		LEP150F-36	Testing Circuitry Figure A
Item		Output Voltage Accuracy 定電圧精度	
Object		+36V4.2A	

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 : -10 ~ 45°C

Input Voltage : 170 ~ 264V

Load Current : 0 ~ 4.2A

* 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 : -10 ~ 45°C

入力電圧 : 170 ~ 264V

負荷電流 : 0 ~ 4.2A

* 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	45	170	0	36.055	±45	±0.1
Minimum Voltage	-10	170	4.2	35.965		

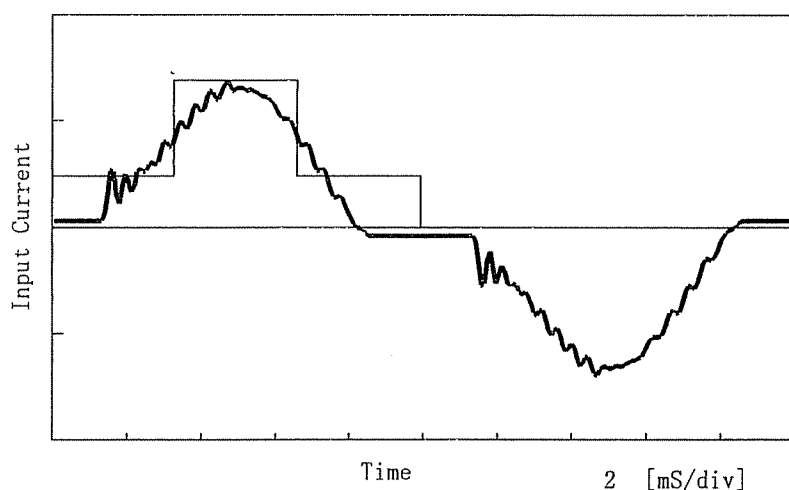
COSEL

Model	LEP150F-36	Temperature 25°C Testing Circuitry Figure E
Item	Harmonic Current 高調波電流	
Object		

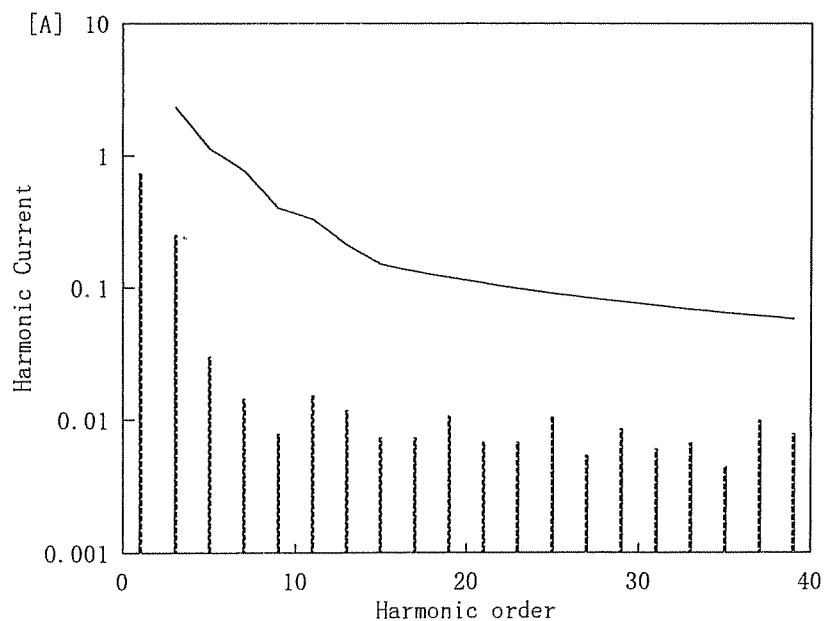
1. Input Current Waveform

— Input Current
 — Envelope of the input current to classify equipment as Class D
 クラスDの機器を決定するための入力電流包絡線

1 A/div



2. Harmonic Current



— Harmonic Current
 高調波電流
 — Limits for Class A equipment
 クラスAの機器に対する限度値

Conditions	Values
Input Voltage [V]	230.9
Input Current [A]	0.788
Active Power [W]	168.1
Apparent Power [VA]	181.9
Frequency [Hz]	50
Power Factor	0.924
Output Power [W]	151.2

Harmonics order 高調波次数	Limits 限度値 [A]	Values 測定値 [A]
1	—	0.74350
2	—	0.00040
3	2.29104	0.25200
4	—	0.00010
5	1.13556	0.03020
6	—	0.00000
7	0.76700	0.01450
8	—	0.00000
9	0.39844	0.00780
10	—	0.00010
11	0.32871	0.01520
12	—	0.00010
13	0.20918	0.01180
14	—	0.00030
15	0.14942	0.00730
16	—	0.00000
17	0.13184	0.00730
18	—	0.00000
19	0.11796	0.01070
20	—	0.00010
21	0.10673	0.00680
22	—	0.00000
23	0.09744	0.00680
24	—	0.00010
25	0.08965	0.01040
26	—	0.00000
27	0.08301	0.00540
28	—	0.00010
29	0.07728	0.00860
30	—	0.00030
31	0.07230	0.00600
32	—	0.00010
33	0.06792	0.00670
34	—	0.00000
35	0.06404	0.00450
36	—	0.00000
37	0.06057	0.00990
38	—	0.00010
39	0.05747	0.00780
40	—	0.00040

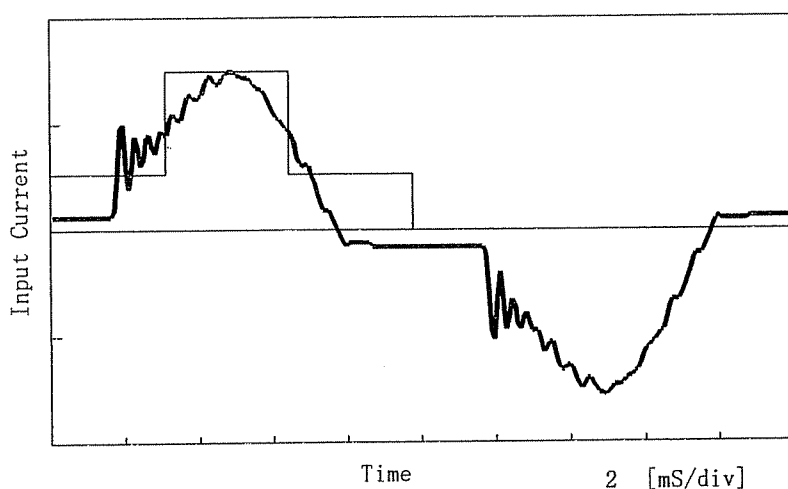
COSEL

Model	LEP150F-3G	Temperature	25°C
Item	Harmonic Current 高調波電流	Testing Circuitry	Figure E
Object			

1. Input Current Waveform

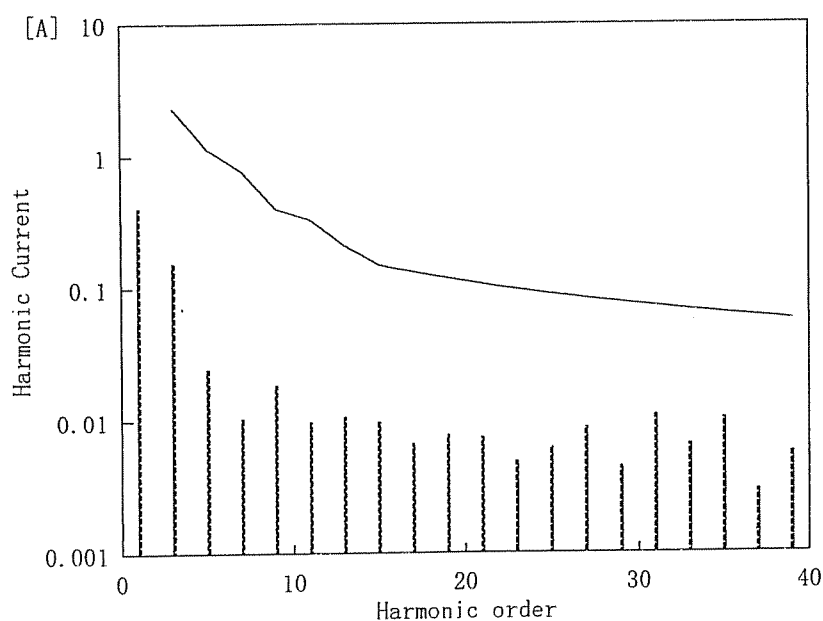
— Input Current
— Envelope of the input current to classify equipment as Class D
クラスDの機器を決定するための入力電流包絡線

0.5 A/div



Conditions	Values
Input Voltage [V]	231
Input Current [A]	0.437
Active Power [W]	88.8
Apparent Power [VA]	101.1
Frequency [Hz]	50
Power Factor	0.878
Output Power [W]	75.6

2. Harmonic Current



— Harmonic Current
高調波電流
— Limits for Class A equipment
クラスAの機器に対する限度値

Harmonics order 高調波次数	Limits 限度値 [A]	Values 測定値 [A]
1	—	0.40510
2	—	0.00050
3	2.29004	0.15550
4	—	0.00010
5	1.13506	0.02490
6	—	0.00000
7	0.76667	0.01050
8	—	0.00010
9	0.39827	0.01880
10	—	0.00010
11	0.32857	0.00980
12	—	0.00010
13	0.20909	0.01080
14	—	0.00010
15	0.14935	0.00980
16	—	0.00000
17	0.13178	0.00670
18	—	0.00000
19	0.11791	0.00780
20	—	0.00010
21	0.10668	0.00750
22	—	0.00010
23	0.09740	0.00490
24	—	0.00010
25	0.08961	0.00630
26	—	0.00000
27	0.08297	0.00890
28	—	0.00010
29	0.07725	0.00450
30	—	0.00000
31	0.07227	0.01110
32	—	0.00000
33	0.06789	0.00660
34	—	0.00010
35	0.06401	0.01040
36	—	0.00010
37	0.06055	0.00300
38	—	0.00010
39	0.05744	0.00580
40	—	0.00010



Model	LEP150F-36	Temperature 25°C Testing Circuitry Figure B
Item	Leakage Current 漏洩電流	
Object	_____	

1. Results

Standards	Leakage Current [mA]		
	Input Volt.	Input Volt.	Input Volt.
	85 [V]	100 [V]	132 [V]
(A) DEN-AN	—	—	—
(B) IEC60950	—	—	—

Standards	Leakage Current [mA]		
	Input Volt.	Input Volt.	Input Volt.
	170 [V]	230 [V]	264 [V]
(B) IEC60950	0.32	0.44	0.51

2. Condition

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

交流入力の高相について測定し、その大きい方を漏洩電流測定値とする。



Model	LEP150P-36	Temperature 25°C Testing Circuitry Figure C
Item	Line Noise Tolerance 入力雑音耐量	
Object	+36V4.2A	

1. Conditions

- Input Voltage : 200 V
- Pulse Voltage : 2000 V
- Pulse Cycle : 10 mS
- Pulse Input Duration : 1 min. or more
- Load : 100 %

2. Results

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

COSEL

Model	LEP150F-36	Temperature 25°C Testing Circuitry Figure D
Item	Conducted Emission 雑音端子電圧	
Object		

1. Graph

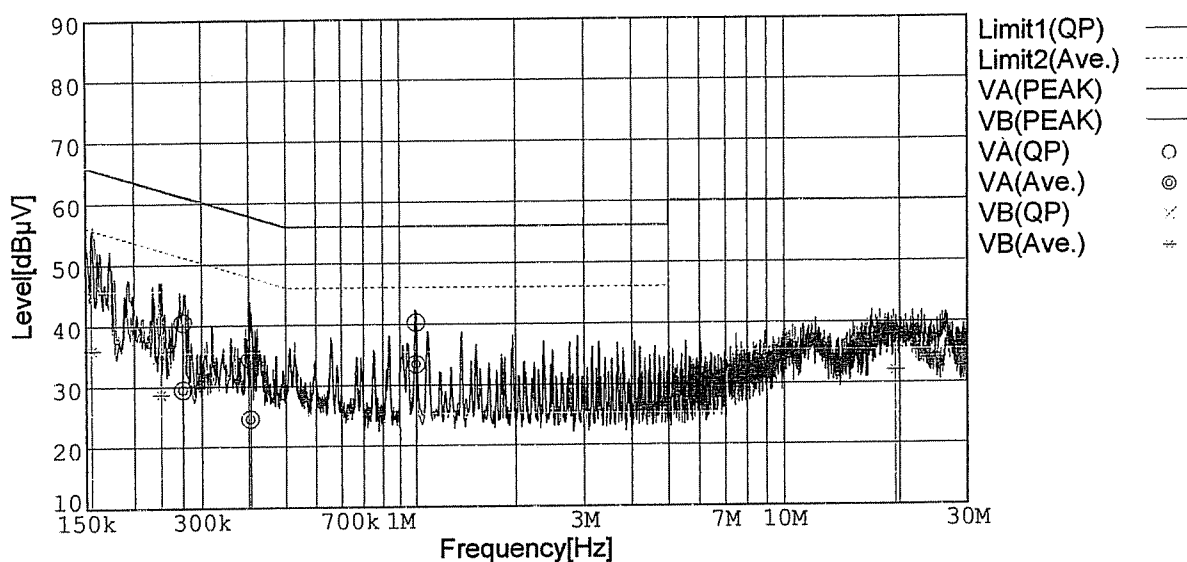
Remarks

Input Volt. 230V (CISPR Pub22 Class B)

Load 100%

Limit1:[CISPR Pub22] Class B(QP)

Limit2:[CISPR Pub22] Class B(Ave.)



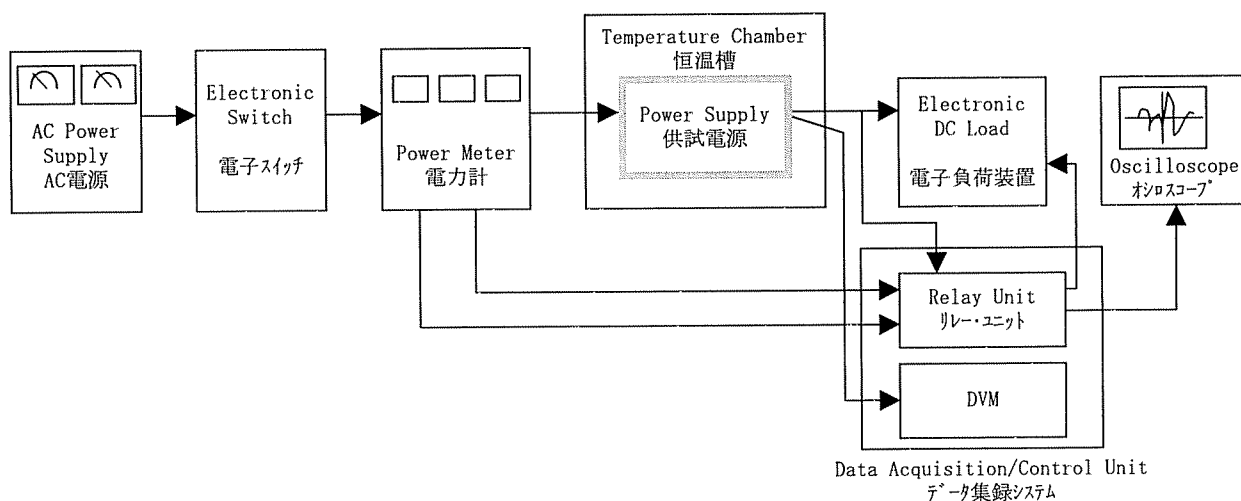


Figure A

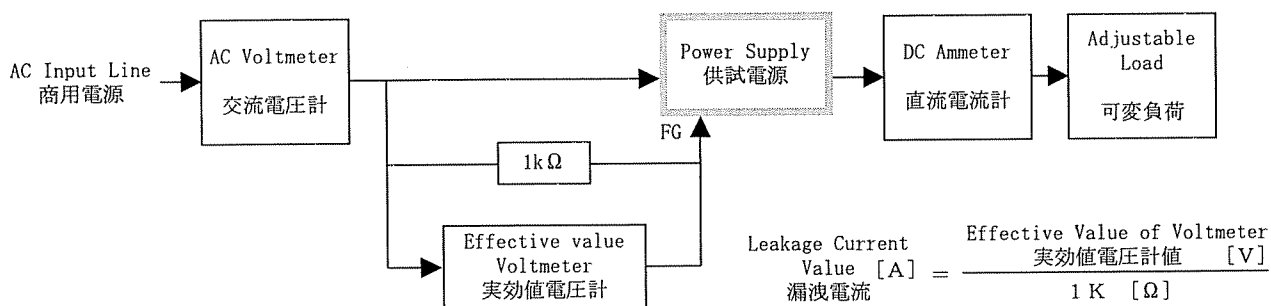


Figure B (DEN-AN)

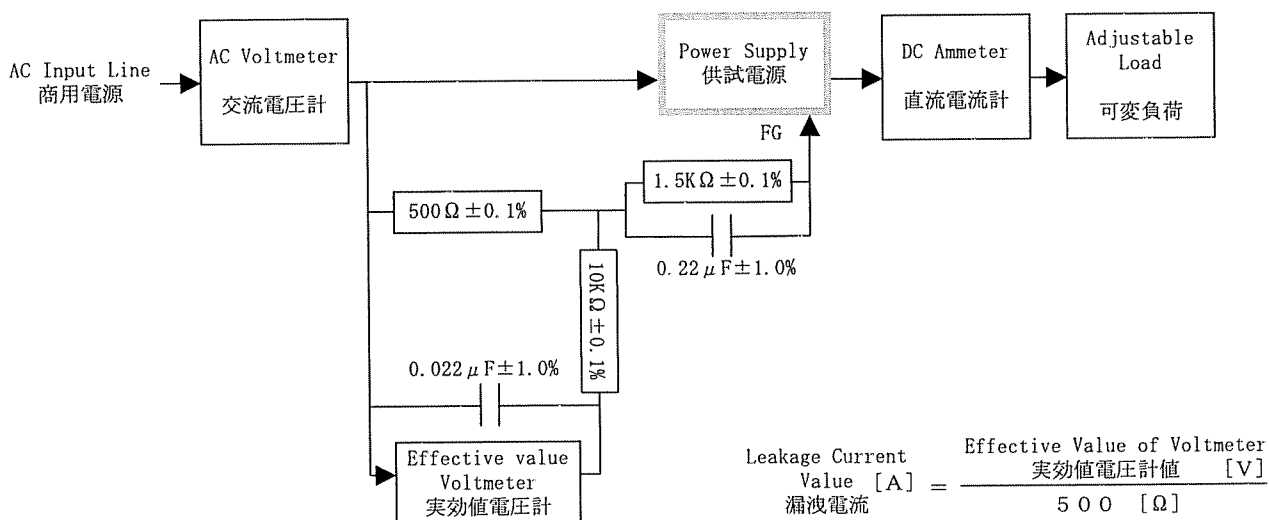


Figure B (IEC60950)

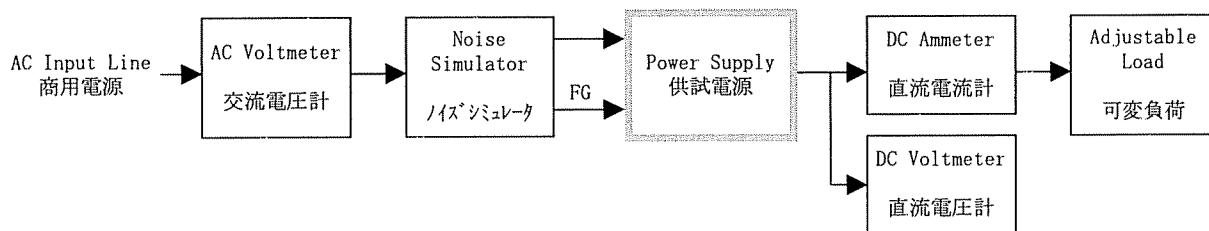


Figure C

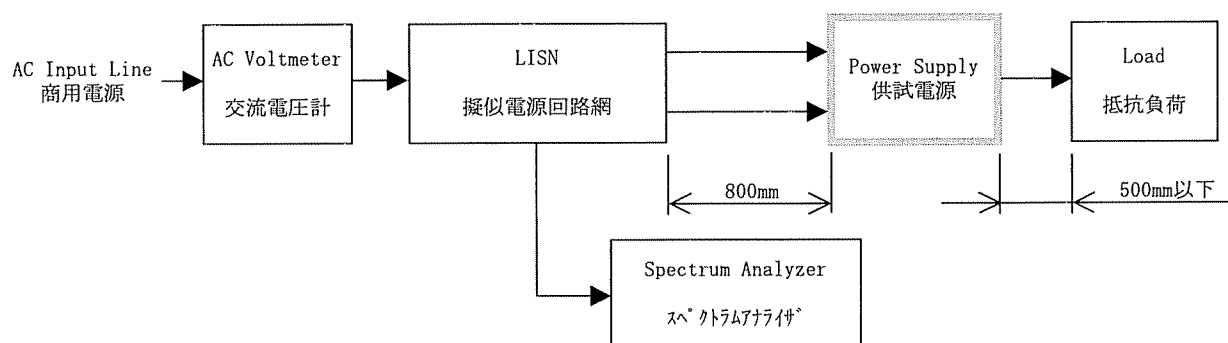


Figure D

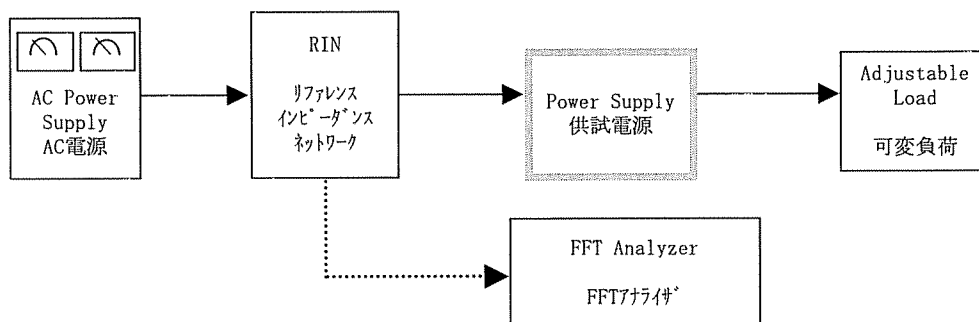


Figure E