



TEST DATA OF R25A-12

(100V INPUT)

Regulated DC Power Supply

Date : Nov. 4. 1998

Approved by : H. Goto
Design Manager

Prepared by : H. Ishikawa
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 Responce	16
動的負荷変動	
17. Rise and Fall Time	17
立上り、立下がり時間	
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. Oscillator Frequency	23
発振周波数	
24. Condensation	24
結露特性	
25. Leakage Current	25
漏洩電流	
26. Line Noise Tolerance	26
入力雑音耐量	
27. Conducted Emission	27
雑音端子電圧	
28. Figure of Testing Circuitry	28
測定回路図	

(Final Page 29)

COSEL

Model		R25A-12	
Item		Line Regulation 静的入力変動	
Object		+12.0V2.10A	
1. Graph		2. Values	

-----□-----

Load 50%

——△——

Load 100%

Output Voltage [V]

Input Voltage [V]

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

(注)斜線は定格入力電圧範囲を示す。

Input Voltage [V]	Load 50%	Load 100%
	Output Volt. [V]	Output Volt. [V]
75	12.046	12.042
80	12.046	12.042
85	12.046	12.042
90	12.046	12.042
100	12.046	12.042
110	12.046	12.042
120	12.046	12.042
132	12.046	12.042
140	12.046	12.042

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。

COSEL

Model		R25A-12	
Item		Input Current (by Load Current) 入力電流 (負荷特性)	
Output			

1. Graph

—△— Input Volt. 85V

- - □ - - Input Volt. 100V

- - ○ - - Input Volt. 132V

Input Current [A]

Load Current [A]

2. Values

Load Current [A]	Input Current [A]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.00	0.056	0.058	0.049
0.40	0.170	0.158	0.147
0.80	0.277	0.251	0.219
1.20	0.383	0.343	0.291
1.60	0.491	0.436	0.362
2.00	0.601	0.529	0.435
2.10	0.629	0.554	0.454
2.31	0.686	0.603	0.492
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

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 R25A-12		Temperature 25°C	
Item	Input Power (by Load Current) 入力電力 (負荷特性)	Testing Circuitry Figure A	
Output	—		

1. Graph

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

Input Power [W]

Load Current [A]

2. Values

Load Current [A]	Input Power [W]		
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
0.00	2.17	2.59	2.63
0.40	7.81	8.18	9.34
0.80	13.46	13.79	14.80
1.20	19.26	19.43	20.25
1.60	25.26	25.26	25.80
2.00	31.40	31.22	31.50
2.10	32.97	32.75	33.00
2.31	36.25	35.92	36.00
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

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		R25A-12																															
Item	Efficiency (by Input Voltage) 効率 (入力電圧特性)		Temperature 25℃ Testing Circuitry Figure A																														
Object																																	
1. Graph																																	
<div><div>-----□----- Load 50%</div><div>-----△----- Load 100%</div></div> <div>Efficiency [%]</div> <div>Input Voltage [V]</div>																																	
Note: Slanted line shows the range of the rated input voltage.																																	
(注) 斜線は定格入力電圧範囲を示す。																																	
2. Values																																	
<table><tr><th>Input Voltage [V]</th><th>Load 50% Efficiency [%]</th><th>Load 100% Efficiency [%]</th></tr><tr><td>75</td><td>74.9</td><td>75.9</td></tr><tr><td>80</td><td>74.5</td><td>76.6</td></tr><tr><td>85</td><td>74.4</td><td>77.0</td></tr><tr><td>90</td><td>74.1</td><td>77.3</td></tr><tr><td>100</td><td>73.3</td><td>77.5</td></tr><tr><td>110</td><td>72.3</td><td>77.5</td></tr><tr><td>120</td><td>71.2</td><td>77.3</td></tr><tr><td>132</td><td>69.5</td><td>77.0</td></tr><tr><td>140</td><td>68.6</td><td>76.6</td></tr></table>				Input Voltage [V]	Load 50% Efficiency [%]	Load 100% Efficiency [%]	75	74.9	75.9	80	74.5	76.6	85	74.4	77.0	90	74.1	77.3	100	73.3	77.5	110	72.3	77.5	120	71.2	77.3	132	69.5	77.0	140	68.6	76.6
Input Voltage [V]	Load 50% Efficiency [%]	Load 100% Efficiency [%]																															
75	74.9	75.9																															
80	74.5	76.6																															
85	74.4	77.0																															
90	74.1	77.3																															
100	73.3	77.5																															
110	72.3	77.5																															
120	71.2	77.3																															
132	69.5	77.0																															
140	68.6	76.6																															

COSEL

Model		R25A-12		Temperature		25℃																																																								
Item		Efficiency (by Load Current) 効率 (負荷電流特性)		Testing Circuitry		Figure A																																																								
Output		_____																																																												
1. Graph				2. Values																																																										
<div><div><div>—△—</div><div>---□---</div><div>---○---</div></div><div><div>Input Volt. 85V</div><div>Input Volt. 100V</div><div>Input Volt. 132V</div></div></div> <div><div>Efficiency [%]</div><div><div>Load Current [A]</div><div>00.511.522.5</div></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></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>0.40</td><td>62.1</td><td>59.2</td><td>51.9</td></tr><tr><td>0.80</td><td>71.8</td><td>70.1</td><td>65.3</td></tr><tr><td>1.20</td><td>75.2</td><td>74.5</td><td>71.5</td></tr><tr><td>1.60</td><td>76.5</td><td>76.5</td><td>74.9</td></tr><tr><td>2.00</td><td>76.9</td><td>77.3</td><td>76.6</td></tr><tr><td>2.10</td><td>76.9</td><td>77.4</td><td>76.9</td></tr><tr><td>2.31</td><td>76.9</td><td>77.6</td><td>77.4</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><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]	0.40	62.1	59.2	51.9	0.80	71.8	70.1	65.3	1.20	75.2	74.5	71.5	1.60	76.5	76.5	74.9	2.00	76.9	77.3	76.6	2.10	76.9	77.4	76.9	2.31	76.9	77.6	77.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Load Current [A]	Efficiency [%]																																																													
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]																																																											
0.40	62.1	59.2	51.9																																																											
0.80	71.8	70.1	65.3																																																											
1.20	75.2	74.5	71.5																																																											
1.60	76.5	76.5	74.9																																																											
2.00	76.9	77.3	76.6																																																											
2.10	76.9	77.4	76.9																																																											
2.31	76.9	77.6	77.4																																																											
—	—	—	—																																																											
—	—	—	—																																																											
—	—	—	—																																																											
—	—	—	—																																																											
—	—	—	—																																																											

COSEL

Model R25A-12		Temperature 25°C Testing Circuitry Figure A																																
Item	Power Factor (by Input Voltage) 力率 (入力電圧特性)																																	
Object																																		
1. Graph <div> <div>□ load 50%</div> <div>△ load 100%</div> </div>		2. Values																																
<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>		<table> <tr> <th rowspan="2">Input Voltage [V]</th><th>load 50%</th><th>load 100%</th></tr> <tr> <th>Power Factor</th><th>Power Factor</th></tr> <tr><td>75</td><td>0.60</td><td>0.64</td></tr> <tr><td>80</td><td>0.59</td><td>0.63</td></tr> <tr><td>85</td><td>0.58</td><td>0.62</td></tr> <tr><td>90</td><td>0.57</td><td>0.61</td></tr> <tr><td>100</td><td>0.56</td><td>0.59</td></tr> <tr><td>110</td><td>0.54</td><td>0.58</td></tr> <tr><td>120</td><td>0.53</td><td>0.56</td></tr> <tr><td>132</td><td>0.52</td><td>0.55</td></tr> <tr><td>140</td><td>0.51</td><td>0.54</td></tr> </table>	Input Voltage [V]	load 50%	load 100%	Power Factor	Power Factor	75	0.60	0.64	80	0.59	0.63	85	0.58	0.62	90	0.57	0.61	100	0.56	0.59	110	0.54	0.58	120	0.53	0.56	132	0.52	0.55	140	0.51	0.54
Input Voltage [V]	load 50%	load 100%																																
	Power Factor	Power Factor																																
75	0.60	0.64																																
80	0.59	0.63																																
85	0.58	0.62																																
90	0.57	0.61																																
100	0.56	0.59																																
110	0.54	0.58																																
120	0.53	0.56																																
132	0.52	0.55																																
140	0.51	0.54																																

COSEL

Model		R25A-12		Temperature		25℃	
Item		Power Factor (by Load Current) 力率 (負荷電流特性)		Testing Circuitry		Figure A	
Output		_____					
1. Graph				2. Values			
<div><div>—△—</div>Input Volt. 85V</div>							
<div><div>- - -□- - -</div>Input Volt. 100V</div>							
<div><div>- - -○- - -</div>Input Volt. 132V</div>							
Load Current	Power Factor						
	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]				
0.00	0.45	0.44	0.40				
0.40	0.54	0.52	0.48				
0.80	0.57	0.55	0.51				
1.20	0.59	0.57	0.53				
1.60	0.60	0.58	0.54				
2.00	0.62	0.59	0.55				
2.10	0.62	0.59	0.55				
2.31	0.62	0.60	0.55				
—	—	—	—				
—	—	—	—				
—	—	—	—				
—	—	—	—				
<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

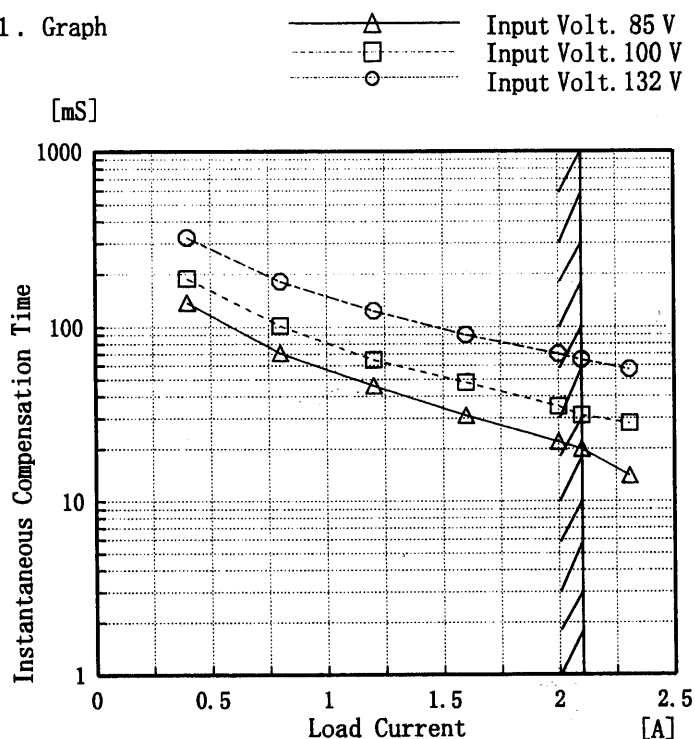
Model R25A-12		Temperature 25°C Testing Circuitry Figure A																																
Item	Hold-Up Time 出力保持時間																																	
Object	+12.0V2.10A																																	
<p>1. Graph</p> <p>—△— Load 50% - -□- - Load 100%</p> <p>[mS]</p> <p>Hold-Up Time</p> <p>Input Voltage [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.</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。</p> <p>(注) 斜線は定格入力電圧範囲を示す。</p>		<p>2. Values</p> <table border="1"> <thead> <tr> <th rowspan="2">Input Voltage [V]</th><th>Load 50%</th><th>Load 100%</th></tr> <tr> <th>Hold-Up Time [mS]</th><th>Hold-Up Time [mS]</th></tr> </thead> <tbody> <tr><td>75</td><td>46</td><td>19</td></tr> <tr><td>80</td><td>52</td><td>22</td></tr> <tr><td>85</td><td>60</td><td>26</td></tr> <tr><td>90</td><td>68</td><td>30</td></tr> <tr><td>100</td><td>85</td><td>38</td></tr> <tr><td>110</td><td>103</td><td>48</td></tr> <tr><td>120</td><td>124</td><td>58</td></tr> <tr><td>132</td><td>151</td><td>72</td></tr> <tr><td>140</td><td>170</td><td>82</td></tr> </tbody> </table>	Input Voltage [V]	Load 50%	Load 100%	Hold-Up Time [mS]	Hold-Up Time [mS]	75	46	19	80	52	22	85	60	26	90	68	30	100	85	38	110	103	48	120	124	58	132	151	72	140	170	82
Input Voltage [V]	Load 50%	Load 100%																																
	Hold-Up Time [mS]	Hold-Up Time [mS]																																
75	46	19																																
80	52	22																																
85	60	26																																
90	68	30																																
100	85	38																																
110	103	48																																
120	124	58																																
132	151	72																																
140	170	82																																

COSEL

Model	R25A-12
Item	Instantaneous Interruption Compensation 瞬時停電保障
Object	+12.0V2.10A

Testing Circuitry Figure A

1. Graph



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。

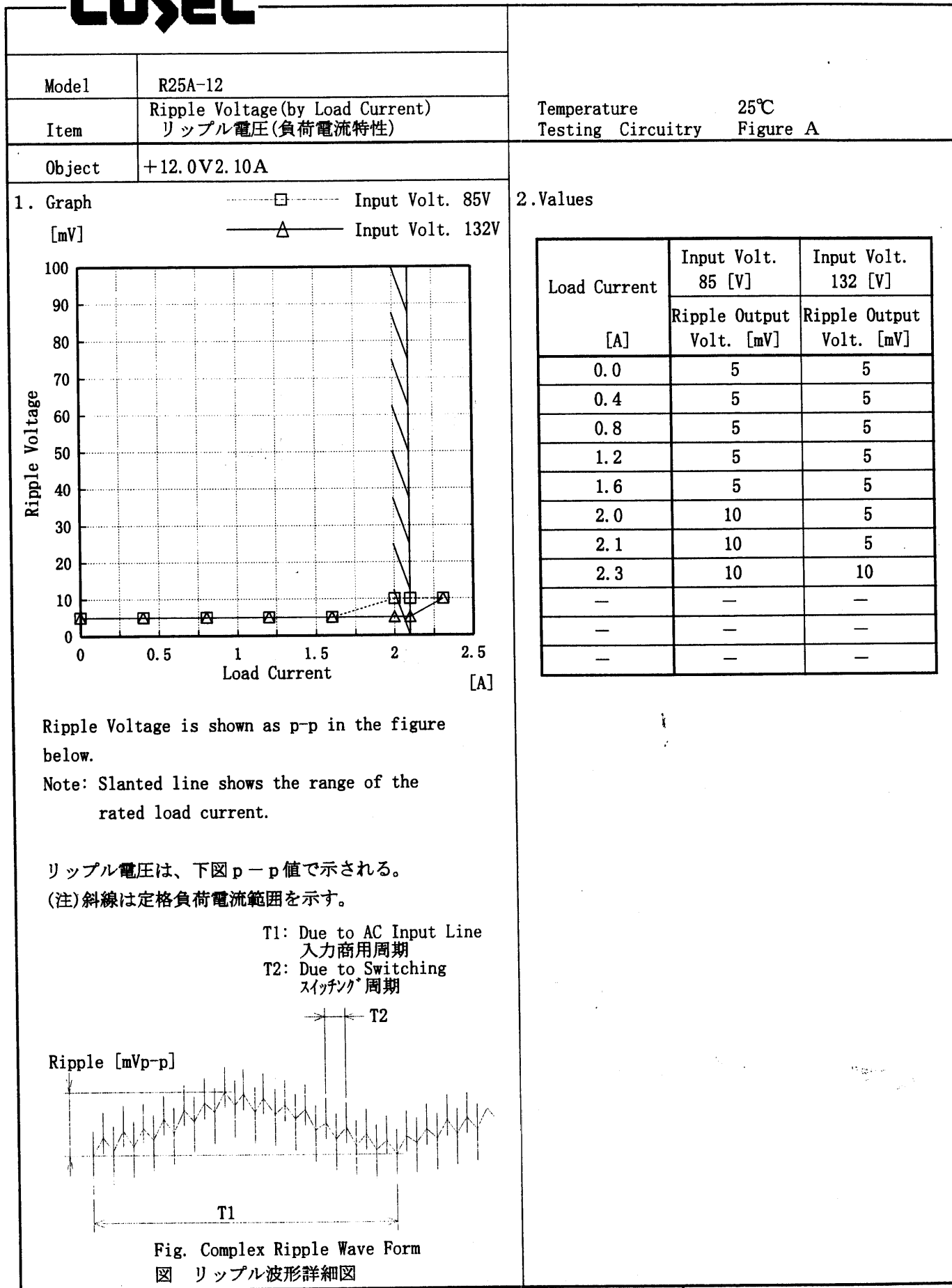
(注) 斜線は定格負荷電流範囲を示す。

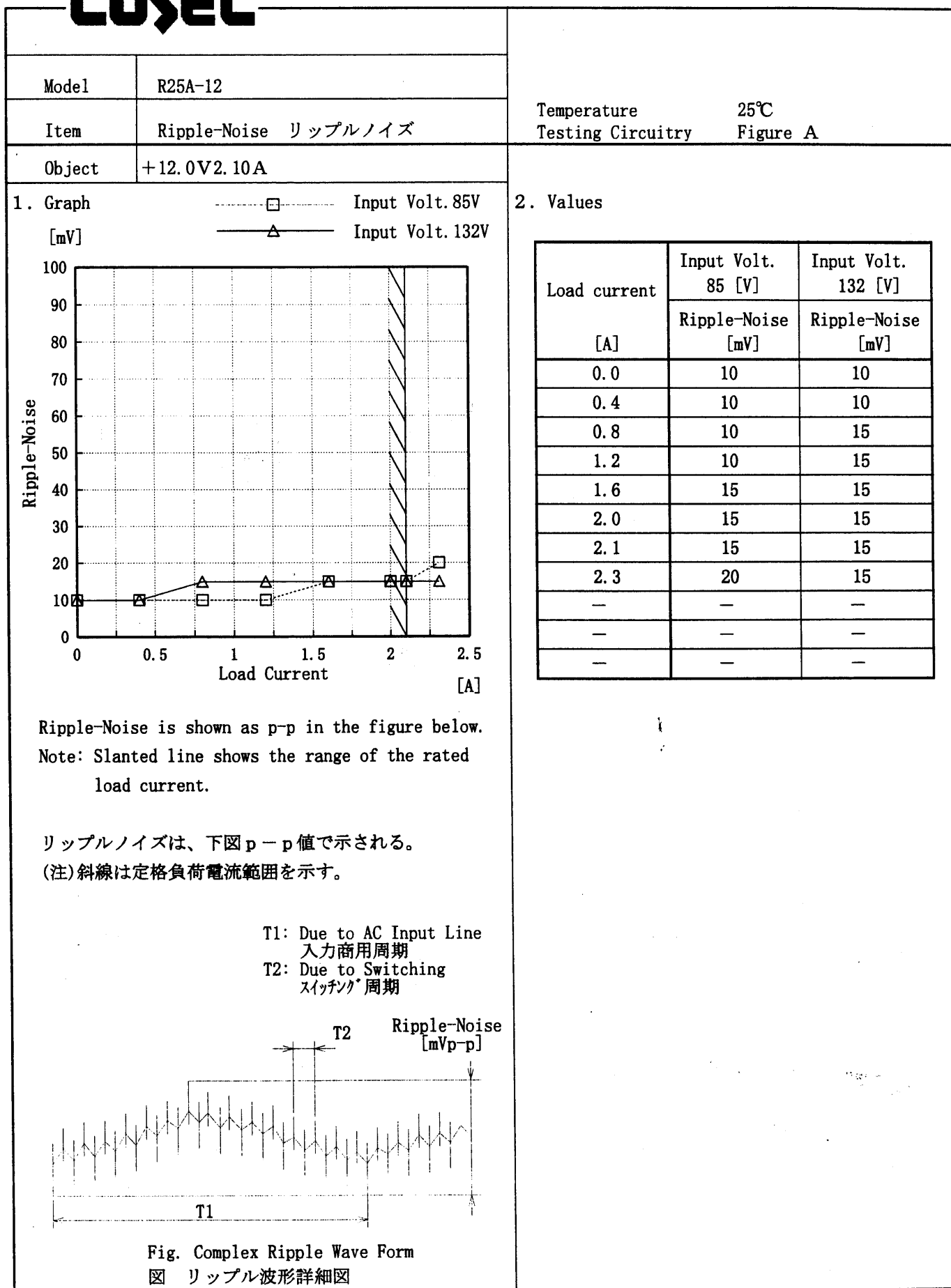
2. Values

Load Current [A]	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
	Time [mS]		
0.00	—	—	—
0.40	138	190	324
0.80	71	102	182
1.20	46	65	124
1.60	31	48	90
2.00	22	35	70
2.10	20	31	65
2.31	14	28	57
—	—	—	—
—	—	—	—
—	—	—	—

COSEL

Model R25A-12		Temperature 25°C																																																
Item	Load Regulation 静的負荷変動	Testing Circuitry Figure A																																																
Object	+12.0V2.10A																																																	
1. Graph <div style="display: flex; align-items: center; margin-top: 10px;"> <div style="margin-right: 10px;"> —△— Input Volt. 85V - - -□- - Input Volt. 100V - - -○- - Input Volt. 132V </div> </div>		2. Values <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th rowspan="2">Load Current [A]</th><th>Input Volt. 85[V]</th><th>Input Volt. 100[V]</th><th>Input Volt. 132[V]</th></tr> <tr> <th>Output Volt. [V]</th><th>Output Volt. [V]</th><th>Output Volt. [V]</th></tr> </thead> <tbody> <tr><td>0.00</td><td>12.052</td><td>12.052</td><td>12.051</td></tr> <tr><td>0.40</td><td>12.050</td><td>12.050</td><td>12.050</td></tr> <tr><td>0.80</td><td>12.049</td><td>12.048</td><td>12.048</td></tr> <tr><td>1.20</td><td>12.047</td><td>12.047</td><td>12.047</td></tr> <tr><td>1.60</td><td>12.046</td><td>12.046</td><td>12.046</td></tr> <tr><td>2.00</td><td>12.044</td><td>12.044</td><td>12.044</td></tr> <tr><td>2.10</td><td>12.044</td><td>12.044</td><td>12.044</td></tr> <tr><td>2.31</td><td>12.043</td><td>12.043</td><td>12.043</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 Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]	Output Volt. [V]	Output Volt. [V]	Output Volt. [V]	0.00	12.052	12.052	12.051	0.40	12.050	12.050	12.050	0.80	12.049	12.048	12.048	1.20	12.047	12.047	12.047	1.60	12.046	12.046	12.046	2.00	12.044	12.044	12.044	2.10	12.044	12.044	12.044	2.31	12.043	12.043	12.043	—	—	—	—	—	—	—	—
Load Current [A]	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]																																															
	Output Volt. [V]	Output Volt. [V]	Output Volt. [V]																																															
0.00	12.052	12.052	12.051																																															
0.40	12.050	12.050	12.050																																															
0.80	12.049	12.048	12.048																																															
1.20	12.047	12.047	12.047																																															
1.60	12.046	12.046	12.046																																															
2.00	12.044	12.044	12.044																																															
2.10	12.044	12.044	12.044																																															
2.31	12.043	12.043	12.043																																															
—	—	—	—																																															
—	—	—	—																																															
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

COSEL

COSEL

Model R25A-12		Temperature 25°C Testing Circuitry Figure A																																																								
Item	Overcurrent Protection 過電流保護																																																									
Object	+12.0V2.10A																																																									
1. Graph		2. Values																																																								
<div> <div>----- Input Volt. 85 V</div> <div>----- Input Volt. 100 V</div> <div>----- Input Volt. 132 V</div> </div> <div> <div>[V]</div> <div>20.0</div> <div>15.0</div> <div>10.0</div> <div>5.0</div> <div>0.0</div> <div>Output Voltage</div> </div> <div> <div>0</div> <div>1</div> <div>2</div> <div>3</div> <div>4</div> <div>Load Current</div> <div>[A]</div> </div>		<table> <tr> <th rowspan="2">Output Voltage [V]</th><th>Input Volt. 85[V]</th><th>Input Volt. 100[V]</th><th>Input Volt. 132[V]</th></tr> <tr> <th>Load Current [A]</th><th>Load Current [A]</th><th>Load Current [A]</th></tr> <tr><td>12.00</td><td>2.86</td><td>2.81</td><td>2.79</td></tr> <tr><td>11.40</td><td>2.86</td><td>2.81</td><td>2.79</td></tr> <tr><td>10.80</td><td>2.86</td><td>2.81</td><td>2.78</td></tr> <tr><td>9.60</td><td>2.85</td><td>2.79</td><td>2.76</td></tr> <tr><td>8.40</td><td>2.82</td><td>2.76</td><td>2.72</td></tr> <tr><td>7.20</td><td>2.77</td><td>2.70</td><td>2.67</td></tr> <tr><td>6.00</td><td>2.70</td><td>2.63</td><td>2.60</td></tr> <tr><td>4.80</td><td>2.60</td><td>2.53</td><td>2.51</td></tr> <tr><td>3.60</td><td>2.44</td><td>2.38</td><td>2.38</td></tr> <tr><td>2.40</td><td>2.24</td><td>2.20</td><td>2.20</td></tr> <tr><td>1.20</td><td>1.96</td><td>1.93</td><td>1.95</td></tr> <tr><td>0.00</td><td>1.74</td><td>1.72</td><td>1.75</td></tr> </table>		Output Voltage [V]	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]	Load Current [A]	Load Current [A]	Load Current [A]	12.00	2.86	2.81	2.79	11.40	2.86	2.81	2.79	10.80	2.86	2.81	2.78	9.60	2.85	2.79	2.76	8.40	2.82	2.76	2.72	7.20	2.77	2.70	2.67	6.00	2.70	2.63	2.60	4.80	2.60	2.53	2.51	3.60	2.44	2.38	2.38	2.40	2.24	2.20	2.20	1.20	1.96	1.93	1.95	0.00	1.74	1.72	1.75
Output Voltage [V]	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]																																																							
	Load Current [A]	Load Current [A]	Load Current [A]																																																							
12.00	2.86	2.81	2.79																																																							
11.40	2.86	2.81	2.79																																																							
10.80	2.86	2.81	2.78																																																							
9.60	2.85	2.79	2.76																																																							
8.40	2.82	2.76	2.72																																																							
7.20	2.77	2.70	2.67																																																							
6.00	2.70	2.63	2.60																																																							
4.80	2.60	2.53	2.51																																																							
3.60	2.44	2.38	2.38																																																							
2.40	2.24	2.20	2.20																																																							
1.20	1.96	1.93	1.95																																																							
0.00	1.74	1.72	1.75																																																							
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

R25A-12

Item

Overvoltage Protection
過電圧保護

Object

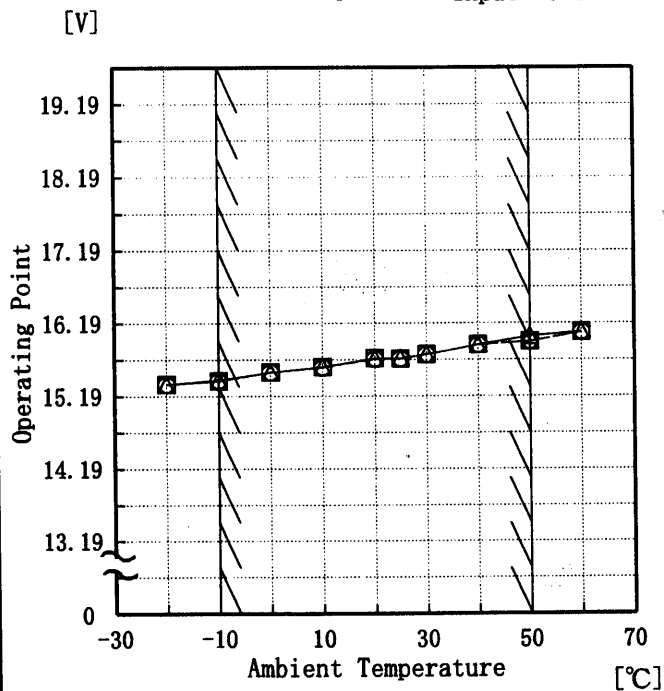
+12.0V2.10A

Testing Circuitry

Figure A

1. Graph

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



2. Values

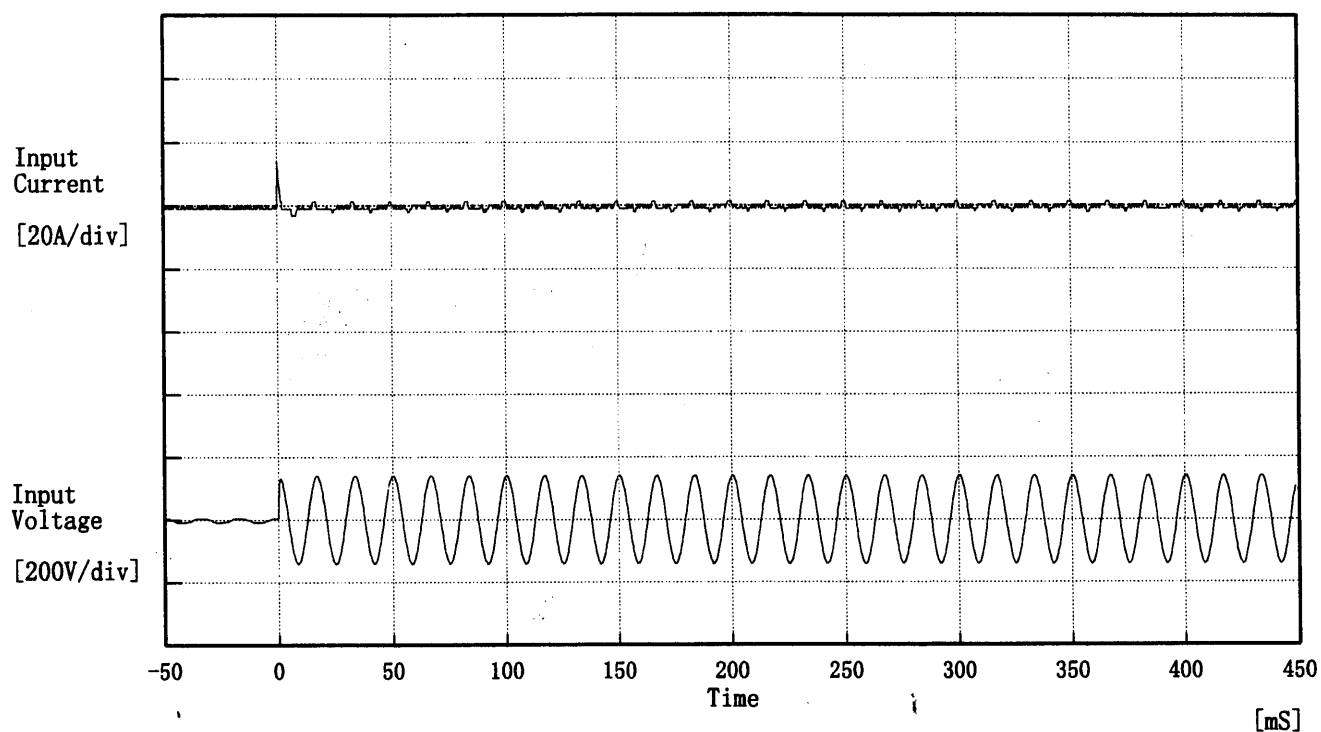
Ambient Temp.	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
[°C]	Operating Point [V]		
-20	15.4	15.4	15.4
-10	15.4	15.4	15.4
0	15.5	15.5	15.5
10	15.6	15.6	15.6
20	15.7	15.7	15.7
25	15.7	15.7	15.7
30	15.8	15.8	15.8
40	15.9	15.9	15.9
50	16.0	15.9	15.9
60	16.1	16.1	16.1
—	—	—	—

COSEL

Model R25A-12

Item Inrush Current 突入電流

Object

Temperature 25°C
Testing Circuitry Figure A

Input Voltage 100 V

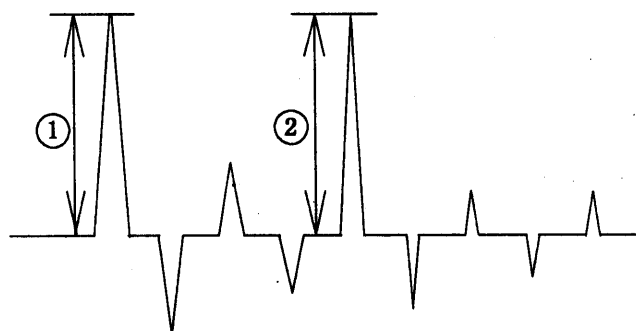
Frequency 60 Hz

Load 100 %

Inrush Current

① 13.60 [A]

② 2.10 [A]



COSEL

Model	R25A-12	Temperature 25°C Testing Circuitry Figure A
Item	Dynamic Load Responce 動的負荷変動	
Object	+12.0V 2.10A	

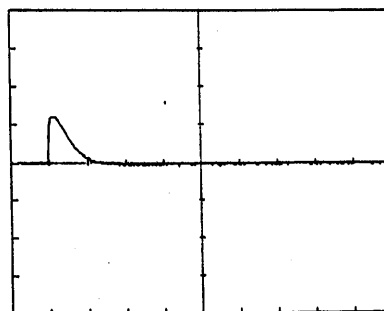
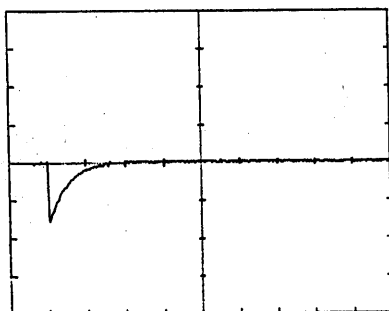
Input Volt. 100 V

Cycle 1000 mS

Load Current

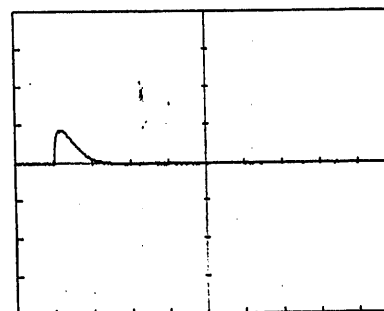
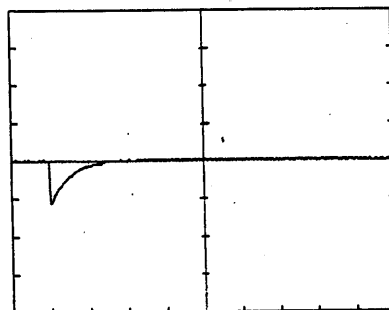
Load 0% ↔

Load 100 %



Load 0% ↔

Load 50 %



200 mV/div

20 mS/div

COSEL

Model

R25A-12

Item

Rise and Fall Time 立上り、立下り時間

Temperature

25°C

Testing Circuitry

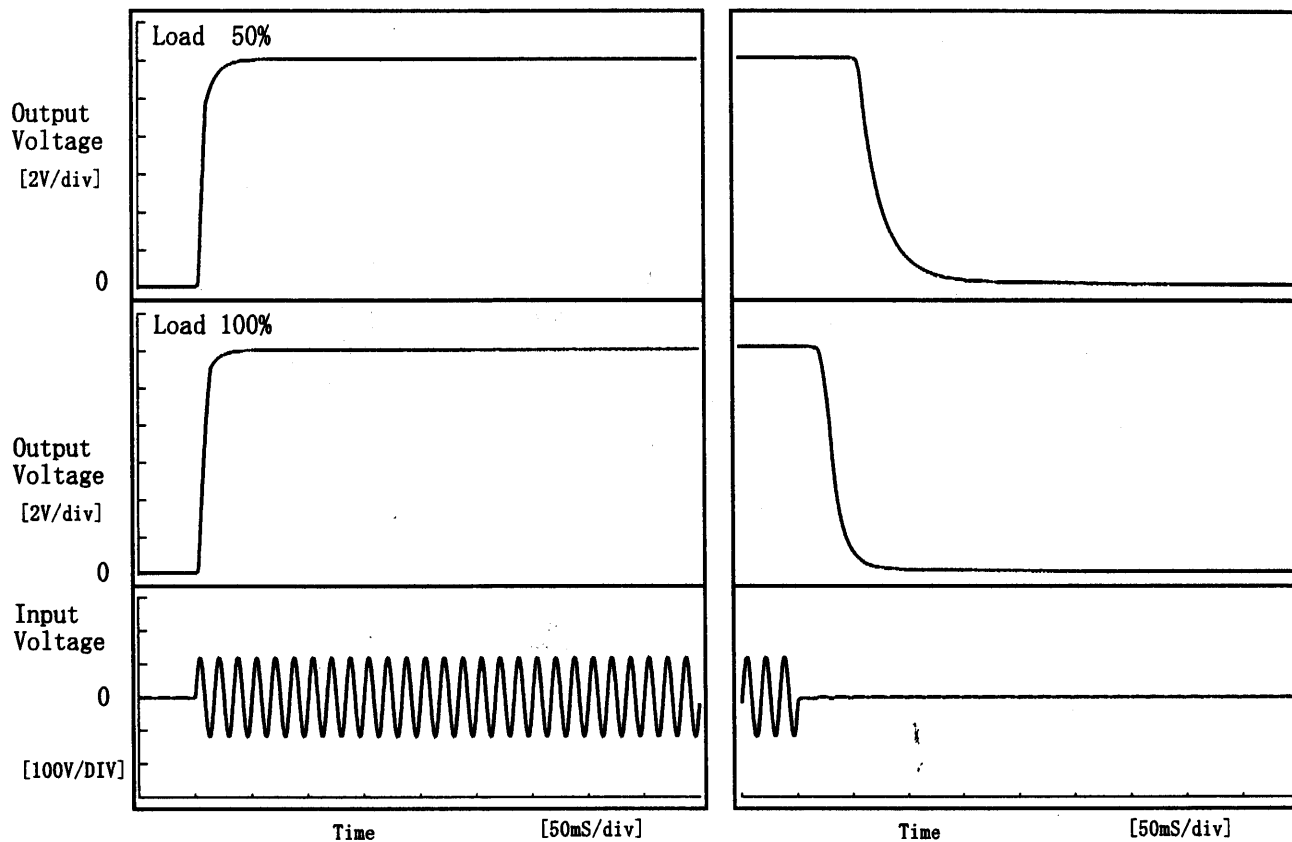
Figure A

Object

+12.0V2.10A

1. Graph

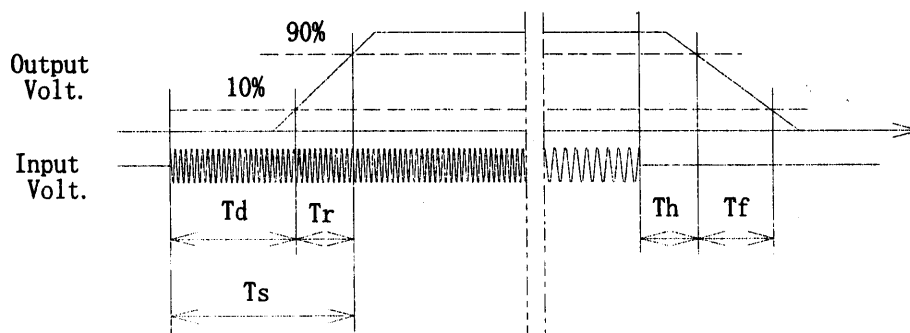
Input Volt. 85 V



2. Values

[mS]

Load \ Time	T d	T r	T s	T h	T f
50 %	4.3	12.5	16.8	60.3	48.8
100 %	4.3	10.3	14.5	25.8	26.5



COSEL

Model		R25A-12
Item		Ambient Temperature Drift 周囲温度変動
Object		+12.0V2.10A

1. Graph

—△—

Input Volt. 85V

- - -□- - -

Input Volt. 100V

- - -○- - -

Input Volt. 132V

Output Voltage

[V]

12.18

12.14

12.10

12.06

12.02

11.98

11.94

0

-30

-10

10

30

50

70

Ambient Temperature

[°C]

Load

100%

Ambient Temperature [°C]	Output Voltage [V] (85V)	Output Voltage [V] (100V)	Output Voltage [V] (132V)
-20	12.054	12.054	12.055
-10	12.052	12.052	12.052
0	12.049	12.049	12.049
10	12.046	12.046	12.046
20	12.043	12.043	12.043
25	12.041	12.041	12.041
30	12.042	12.042	12.042
40	12.038	12.038	12.038
50	12.032	12.032	12.032
60	12.024	12.024	12.023

2. Values

Temperature	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
[°C]	Output Volt. [V]	Output Volt. [V]	Output Volt. [V]
-20	12.054	12.054	12.055
-10	12.052	12.052	12.052
0	12.049	12.049	12.049
10	12.046	12.046	12.046
20	12.043	12.043	12.043
25	12.041	12.041	12.041
30	12.042	12.042	12.042
40	12.038	12.038	12.038
50	12.032	12.032	12.032
60	12.024	12.024	12.023
—	—	—	—

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。

COSEL

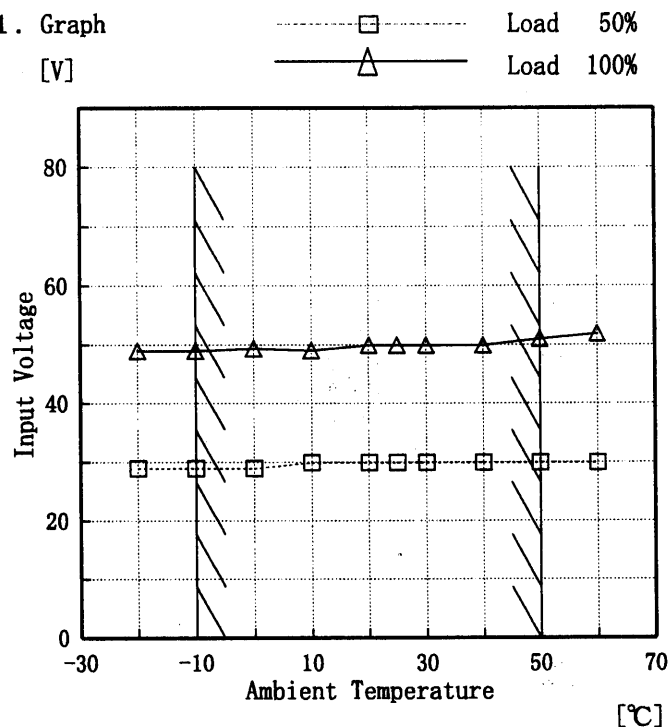
Model R25A-12

Item Minimum Input Voltage for Regulated Output Voltage
最低レギュレーション電圧

Object +12.0V2.10A

Testing Circuitry Figure A

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。

2. Values

Ambient Temp.	Load 50%	Load 100%
Input Volt. [V]	Input Volt. [V]	Input Volt. [V]
[°C]		
-20	29	49
-10	29	49
0	29	49
10	30	49
20	30	50
25	30	50
30	30	50
40	30	50
50	30	51
60	30	52
—	—	—

COSEL

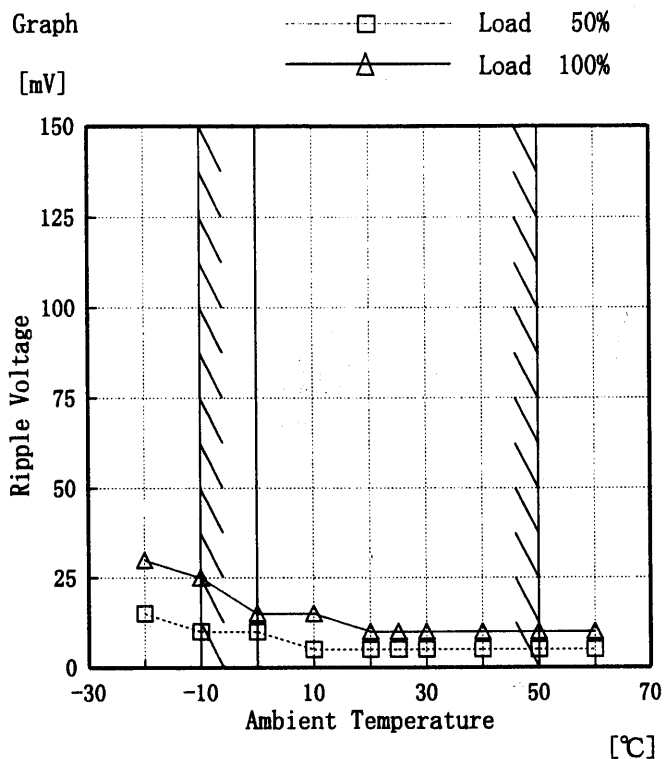
Model R25A-12

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

Object +12.0V2.10A

Testing Circuitry Figure A

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。

2. Values

Ambient Temp. [°C]	Load 50%	Load 100%
	Ripple Output Volt. [mV]	Ripple Output Volt. [mV]
-20	15	30
-10	10	25
0	10	15
10	5	15
20	5	10
25	5	10
30	5	10
40	5	10
50	5	10
60	5	10
—	—	—

COSEL

Model

R25A-12

Item

Time Lapse Drift 経時ドリフト

Object

+12.0V2.10A

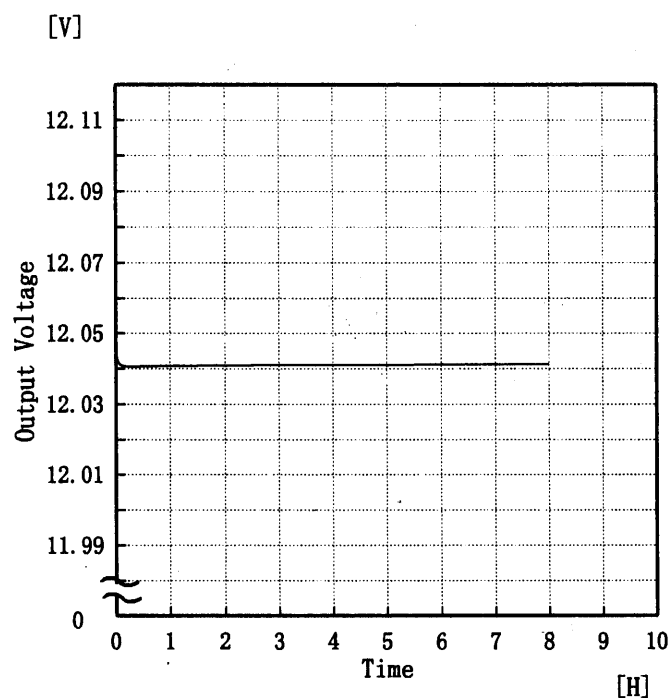
Temperature

25 °C

Testing Circuitry

Figure A

1. Graph



Input Volt. 100V

Load 100%

2. Values

Time since start [H]	Output Voltage [V]
0.0	12.047
0.5	12.041
1.0	12.041
2.0	12.041
3.0	12.041
4.0	12.041
5.0	12.041
6.0	12.041
7.0	12.041
8.0	12.041

COSEL

Model		R25A-12	Testing Circuitry Figure A
Item		Output Voltage Accuracy 定電圧精度	
Object		+12.0V2.10A	

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 : 0.00~2.10 A

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

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

定電圧精度

周囲温度、入力電圧、負荷を下記仕様内で、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 : 0.00~2.10 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 [°C]	Input Voltage [V]	Output Current [A]	Output Voltage [V]	Output Voltage Accuracy [mV]	Output Voltage Accuracy(Ration) [%]
Maximum Voltage	-10	100	0.00	12.059	±15	±0.2
Minimum Voltage	50	132	2.10	12.031		

COSEL

Model		R25A-12	
Item		Oscillator Frequency 発振周波数	
Object		+12.0V2.10A	

1. Graph

△

—

Input Volt. 85 V

□

- - -

Input Volt. 100 V

○

- - -

Input Volt. 132 V

[KHz]

1000

100

10

0

0.5

1

1.5

2

2.5

Load Current

[A]

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

(注)斜線は定格負荷電流範囲を示す。

2. Values

Load Current [A]	Input Volt. 85[V]	Input Volt. 100[V]	Input Volt. 132[V]
	Oscillator Frequency [KHz]		
0.40	220	240	260
0.80	160	170	195
1.20	125	140	155
1.60	100	110	130
2.00	80	95	110
2.10	75	90	105
2.31	65	80	95
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

COSEL

Model		R25A-12	Testing Circuitry Figure A
Item		Condensation 結露特性	
Object		+12.0V2.1A	

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]	12.205	Input Volt.: 100V, Load Current:2.1A
Line Regulation [mV]	1	Input Volt.: 85~132V, Load Current:2.1A
Load Regulation [mV]	5	Input Volt.: 100V, Load Current:0.0~2.1A

COSEL

Model	R25A-12	Testing Circuitry Figure A
Item	Leakage Current 漏洩電流	
Object	_____	

1. Results

Standards	Leakage Current [mA]		
	Input Volt. 85 [V]	Input Volt. 100 [V]	Input Volt. 132 [V]
(A) DENTORI	0.32	0.40	0.44
(B) U L	0.22	0.30	0.34
(C) C S A	0.22	0.30	0.34

Standards	Leakage Current [mA]		
	Input Volt. 170 [V]	Input Volt. 220 [V]	Input Volt. 264 [V]
(D) V D E	—	—	—

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。

COSEL

Model		R25A-12	Testing Circuitry Figure C
Item		Line Noise Tolerance 入力雑音耐量	
Object		+12.0V2.10A	

1. Results

Pulse Width [n S]	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 regulation
	NORMAL	OK	no regulation
1000	COMMON	OK	no regulation
	NORMAL	OK	no regulation

Conditions

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

COSEL

Model	R25A-12
Item	Conducted Emission 雑音端子電圧
Object	

Testing Circuitry Figure D

1. Graph

Remarks

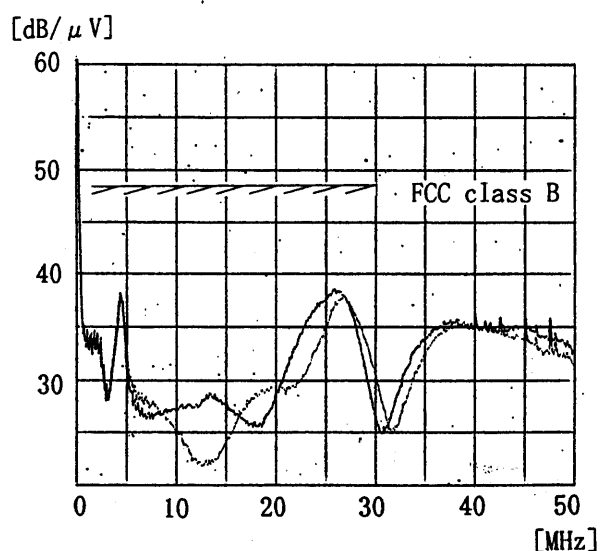
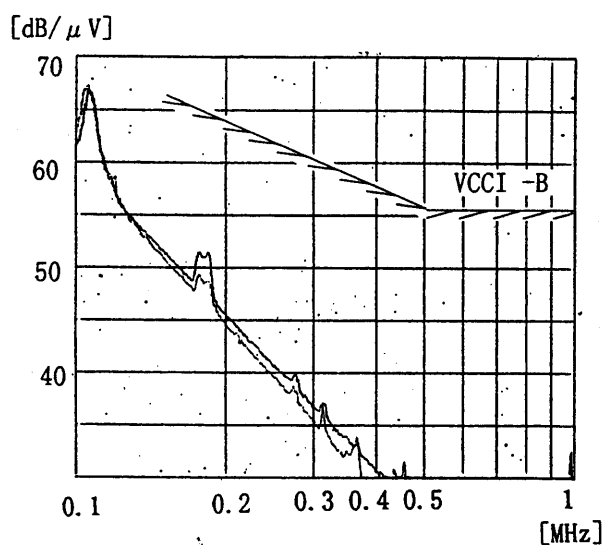
Input Volt. 100 V (VCCI -B)
120 V (FCC class B)

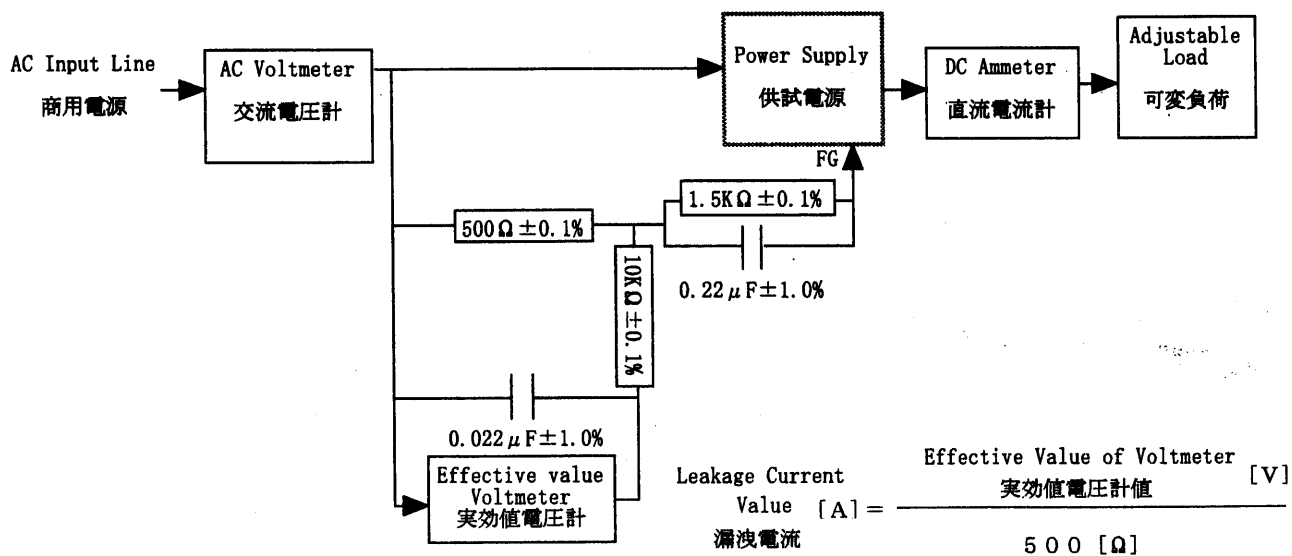
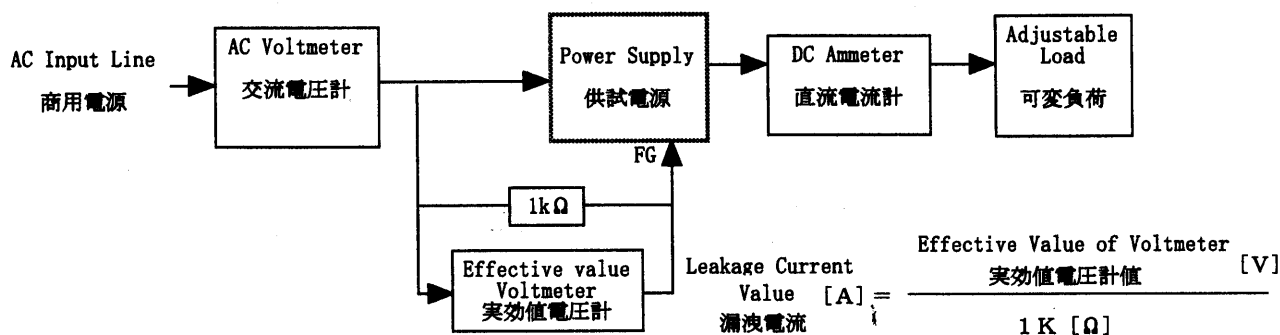
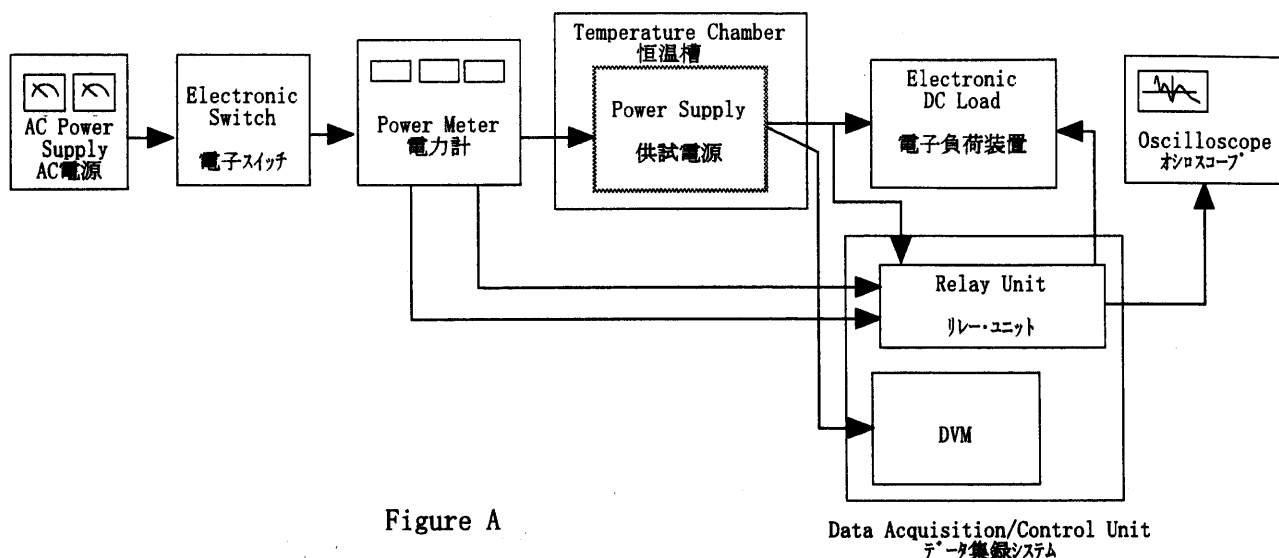
Load 100 %

Note: Slanted line shows the range of Tolerance.

(注) 斜線は許容値を示す。

NO	Standards	Standards Complied	Frequency [MHz]	Tolerance [dB/μV]
1	FCC class A		0.45~1.6	60
			1.6~30	69.5
2	FCC class B	○	0.45~30	48
3	VCCI -A		0.15~0.5	79
			0.5~30	73
4	VCCI -B	○	0.15~0.5	66~56
			0.5~5	56
			5~30	60
5	CISPR Pub. 22 class A (EN55022)		0.15~0.5	79
			0.5~30	73
6	CISPR Pub. 22 class B (EN55022)		0.15~0.5	66~56
			0.5~5	56
			5~30	60





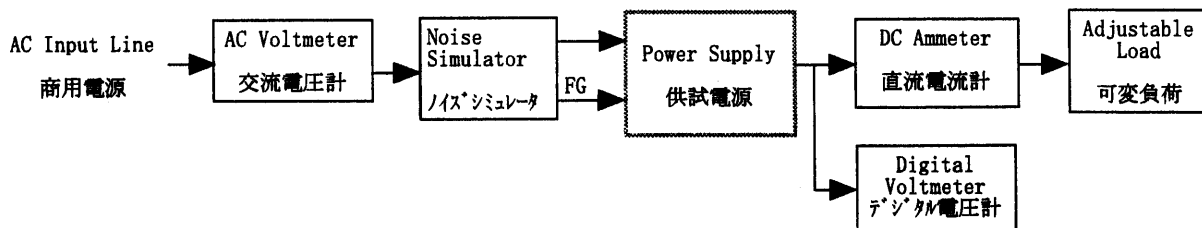


Figure C

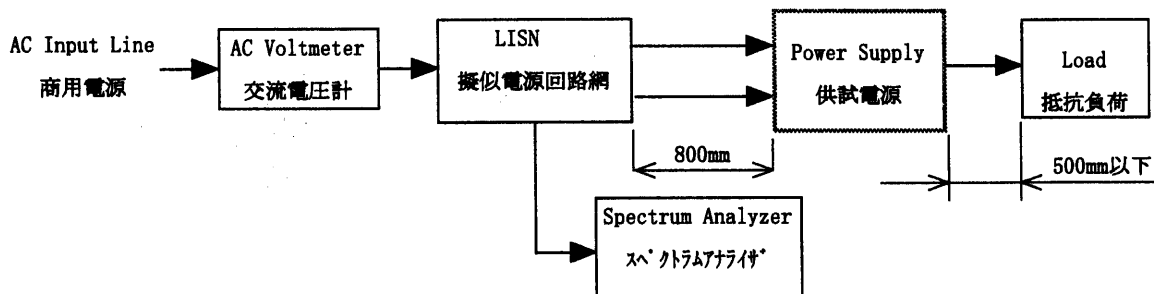


Figure D

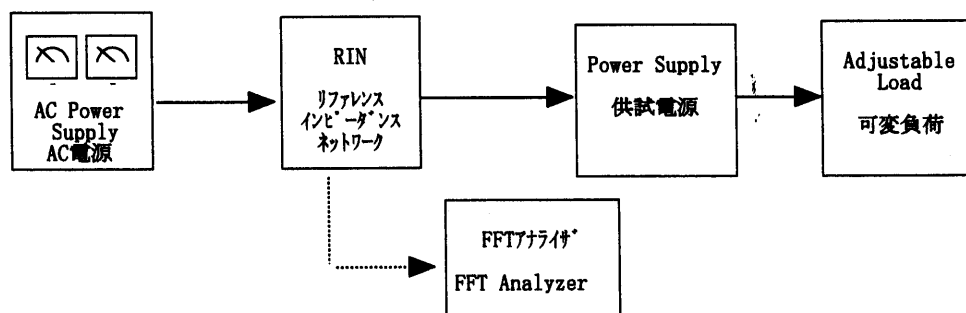


Figure E