

# TEST DATA OF G1-5

Regulated DC Power Supply  
July 23, 2010

Approved by : Eiyoshi Wakamatsu  
Eiyoshi Wakamatsu Design Manager

Prepared by : Satoshi Kinoshita  
Satoshi Kinoshita Design Engineer

**COSEL CO.,LTD.**

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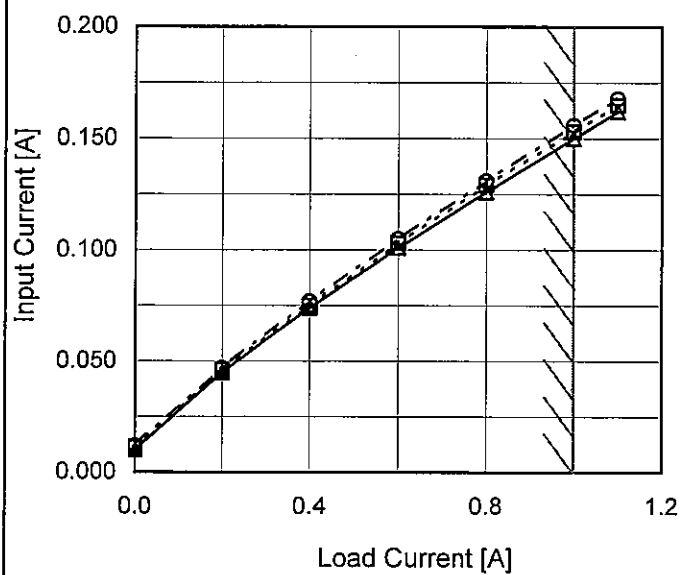
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Model	G1-5
Item	Input Current (by Load Current)
Object	

Temperature 25°C  
Testing Circuitry Figure A

1. Graph

—△— Input Volt. 90V  
 ---□--- Input Volt. 100V  
 -·-○-·- Input Volt. 110V



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

2. Values

Load Current [A]	Input Current [A]		
	Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
0.0	0.010	0.011	0.012
0.2	0.045	0.046	0.047
0.4	0.074	0.075	0.077
0.6	0.101	0.103	0.105
0.8	0.126	0.129	0.131
1.0	0.150	0.153	0.156
1.1	0.162	0.165	0.168
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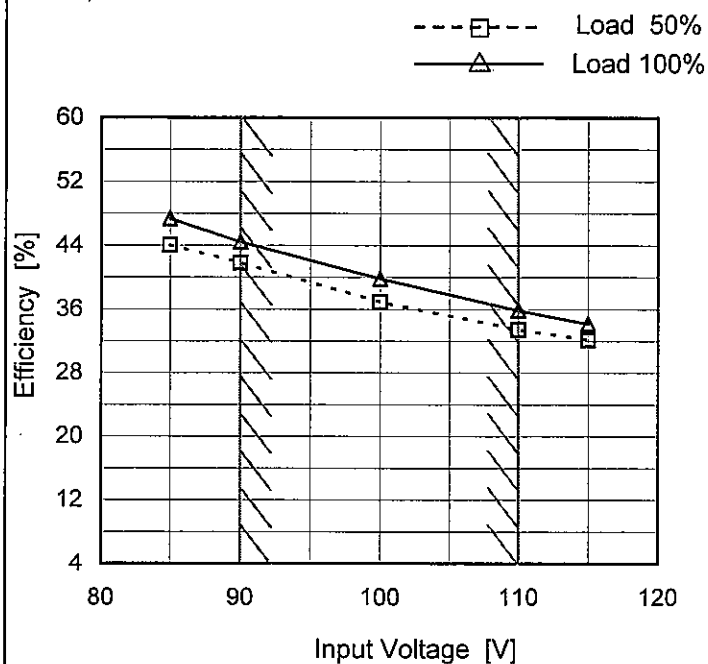
Model		G1-5		Temperature Testing Circuitry	25°C Figure A																																																			
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# COSEL

Model	G1-5
Item	Efficiency (by Input Voltage)
Object	

Temperature 25°C  
Testing Circuitry Figure A

## 1. Graph



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

## 2. Values

Input Voltage [V]	Efficiency [%]	
	Load 50%	Load 100%
85	44.0	47.4
90	41.8	44.4
100	36.9	39.8
110	33.5	35.9
115	32.2	34.2
--	-	-
--	-	-
--	-	-
--	-	-

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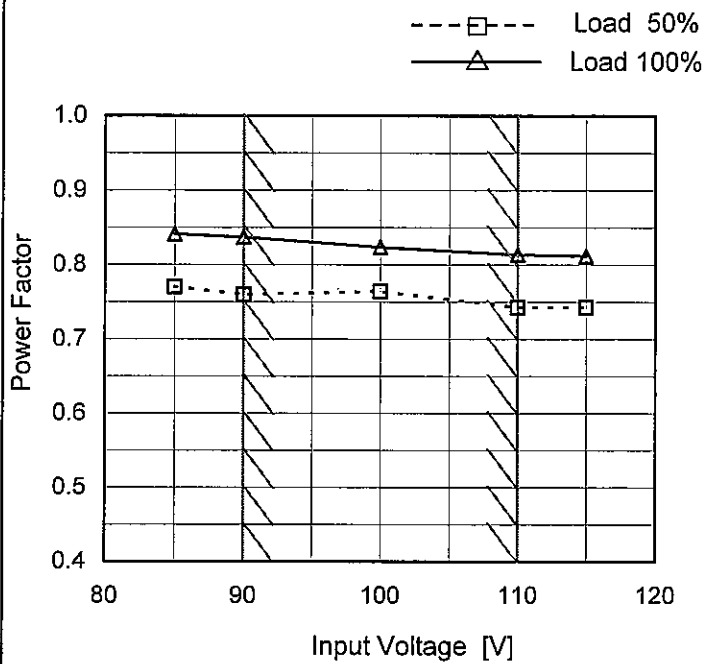
Model G1-5

Item Power Factor (by Input Voltage)

Object

Temperature 25°C  
Testing Circuitry Figure A

## 1. Graph



## 2. Values

Input Voltage [V]	Power Factor	
	Load 50%	Load 100%
85	0.770	0.841
90	0.759	0.837
100	0.764	0.824
110	0.743	0.814
115	0.743	0.812
--	-	-
--	-	-
--	-	-
--	-	-

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Model	G1-5																																																					
Item	Power Factor (by Load Current)	Temperature	25°C																																																			
Object	_____	Testing Circuitry	Figure A																																																			
1.Graph		2.Values																																																				
<div><div><div>—△— Input Volt. 90V</div><div>- - -□- - - Input Volt. 100V</div><div>- · -○- · - Input Volt. 110V</div></div><div>Power Factor</div><div>Load Current [A]</div></div>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="3">Power Factor</th></tr><tr><th>Input Volt. 90[V]</th><th>Input Volt. 100[V]</th><th>Input Volt. 110[V]</th></tr><tr><td>0.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>0.2</td><td>0.700</td><td>0.684</td><td>0.673</td></tr><tr><td>0.4</td><td>0.758</td><td>0.747</td><td>0.729</td></tr><tr><td>0.6</td><td>0.786</td><td>0.777</td><td>0.765</td></tr><tr><td>0.8</td><td>0.814</td><td>0.798</td><td>0.792</td></tr><tr><td>1.0</td><td>0.837</td><td>0.824</td><td>0.814</td></tr><tr><td>1.1</td><td>0.842</td><td>0.836</td><td>0.827</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]	Power Factor			Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]	0.0	-	-	-	0.2	0.700	0.684	0.673	0.4	0.758	0.747	0.729	0.6	0.786	0.777	0.765	0.8	0.814	0.798	0.792	1.0	0.837	0.824	0.814	1.1	0.842	0.836	0.827	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
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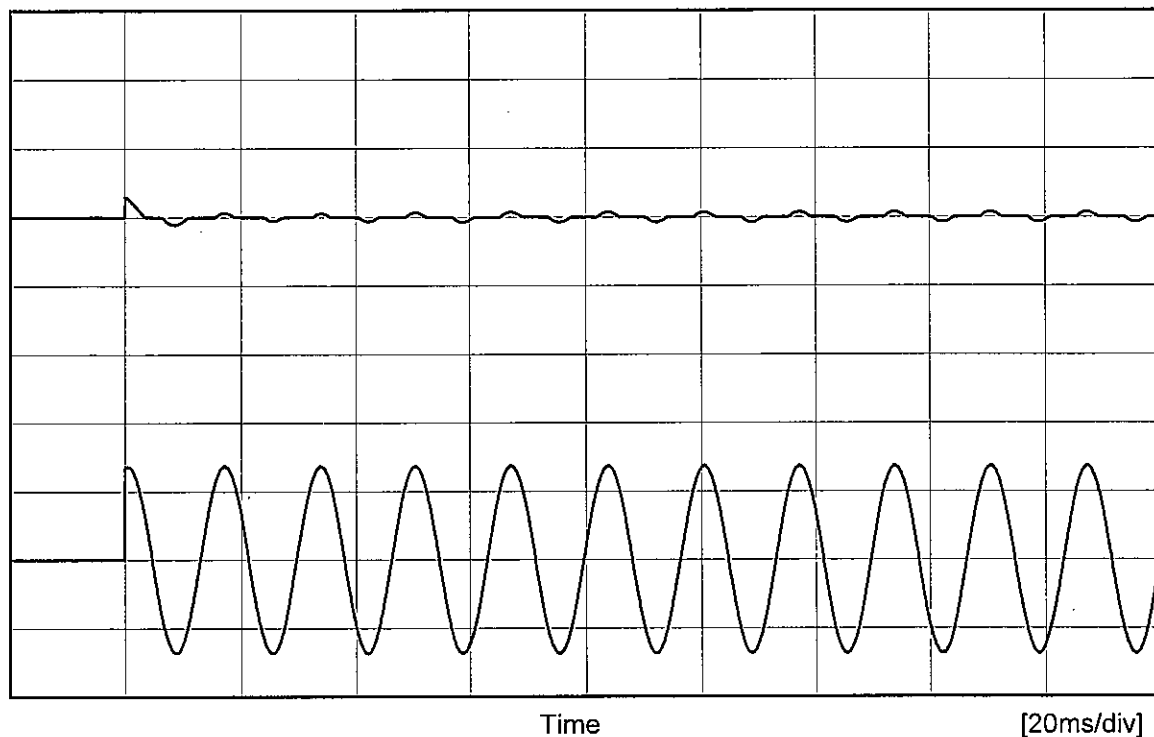


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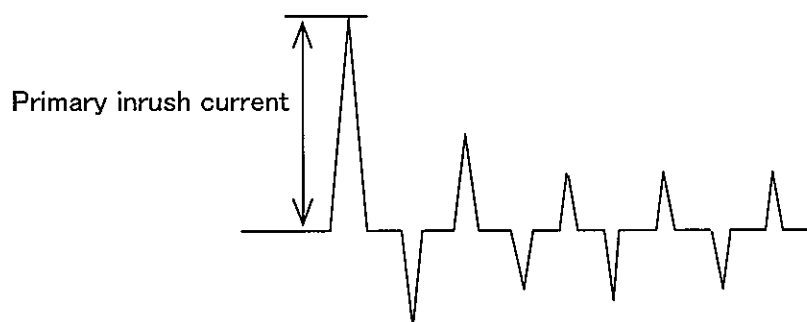
Model	G1-5	Temperature 25°C Testing Circuitry Figure A
Item	Inrush Current	
Object		

Input  
Current  
[5A/div]

Input  
Voltage  
[100V/div]



Input Voltage	100 V
Frequency	60 Hz
Load	100 %
Primary inrush current	1.5 A



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Model	G1-5																																																																
Item	Line Regulation	Temperature	25°C																																																														
Object	+5V1A	Testing Circuitry	Figure A																																																														
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Object	+5V1A	Testing Circuitry	Figure A																																																			
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Model	G1-5	Temperature Testing Circuitry	25°C Figure A
Item	Dynamic Load Response		
Object	+5V1A		

Input Volt. 100 V  
Cycle 1000 ms

Load Current

Min. Load (0A) ←→  
Load 100% (1A)

50 mV/div

100  $\mu$ s/div

100  $\mu$ s/div

Load 50% (0.5A) ←→  
Load 100% (1A)

50 mV/div

100  $\mu$ s/div

100  $\mu$ s/div

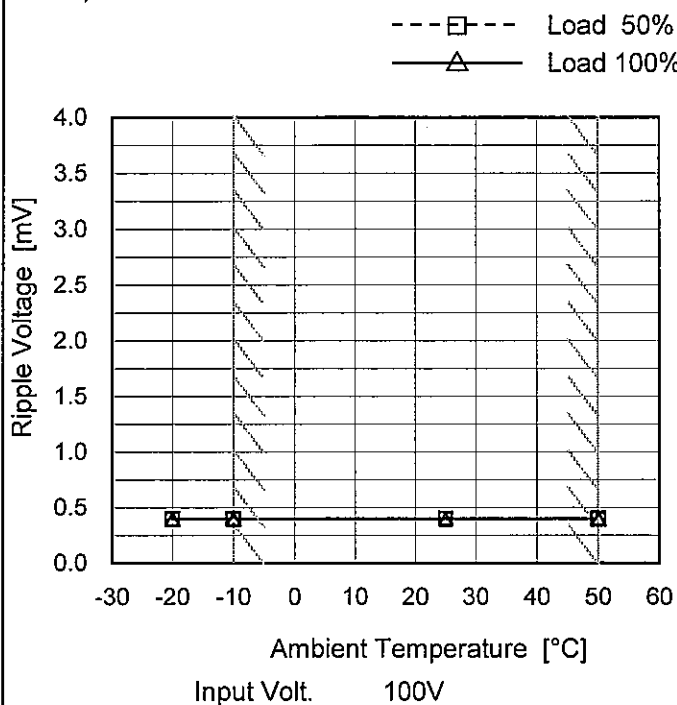
# COSEL

Model	G1-5																																											
Item	Ripple Voltage (by Load Current)	Temperature	25°C																																									
Object	+5V1A	Testing Circuitry	Figure A																																									
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<div><div><div><div></div><div>—△—</div><div>Input Volt. 90V</div></div><div><div></div><div>-·-○--</div><div>Input Volt. 110V</div></div></div><div><div><div><div>4.0</div><div>3.5</div><div>3.0</div><div>2.5</div><div>2.0</div><div>1.5</div><div>1.0</div><div>0.5</div><div>0.0</div></div><div><div>Ripple Voltage [mV]</div></div></div><div><div><div>0.0</div><div>0.5</div><div>1.0</div></div><div><div>Load Current [A]</div></div></div></div></div> <table><tr><th rowspan="2">Load Current [A]</th><th colspan="2">Ripple Voltage [mV]</th></tr><tr><th>Input Volt. 90 [V]</th><th>Input Volt. 110 [V]</th></tr><tr><td>0.0</td><td>0.4</td><td>0.4</td></tr><tr><td>0.5</td><td>0.4</td><td>0.4</td></tr><tr><td>1.0</td><td>0.4</td><td>0.4</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><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><tr><td>--</td><td>-</td><td>-</td></tr></table>		Load Current [A]	Ripple Voltage [mV]		Input Volt. 90 [V]	Input Volt. 110 [V]	0.0	0.4	0.4	0.5	0.4	0.4	1.0	0.4	0.4	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-	--	-	-		
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Measured by 20 MHz Oscilloscope. Note: Slanted line shows the range of the rated load current.																																												

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Model	G1-5
Item	Ripple Voltage (by Ambient Temp.)
Object	+5V1A

## 1. Graph



Measured by 20 MHz Oscilloscope.

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

## Testing Circuitry Figure A

## 2. Values

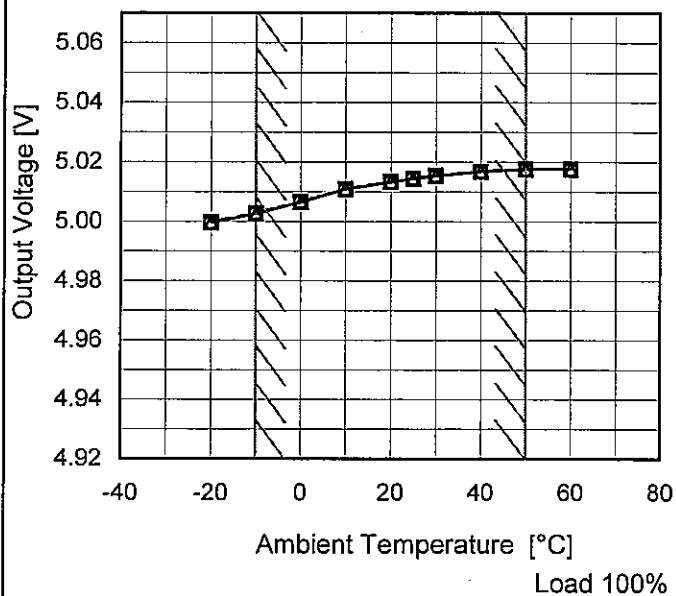
Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-20	0.4	0.4
-10	0.4	0.4
25	0.4	0.4
50	0.4	0.4
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-
--	-	-

# COSEL

Model	G1-5
Item	Ambient Temperature Drift
Object	+5V1A

1. Graph

—△— Input Volt. 90V  
 ---□--- Input Volt. 100V  
 -○- Input Volt. 110V



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

Testing Circuitry Figure A

2. Values

Ambient Temperature [°C]	Output Voltage [V]		
	Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
-20	5.000	5.000	5.000
-10	5.003	5.003	5.003
0	5.007	5.007	5.007
10	5.011	5.011	5.011
20	5.013	5.013	5.013
25	5.014	5.014	5.015
30	5.015	5.016	5.015
40	5.017	5.017	5.017
50	5.018	5.018	5.018
60	5.018	5.018	5.018
--	-	-	-

**COSEL**

		Testing Circuitry Figure A
Model	G1-5	
Item	Output Voltage Accuracy	
Object	+5V1A	

## 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 - 50°C

Input Voltage : 90 - 110V

Load Current : 0 - 1A

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

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

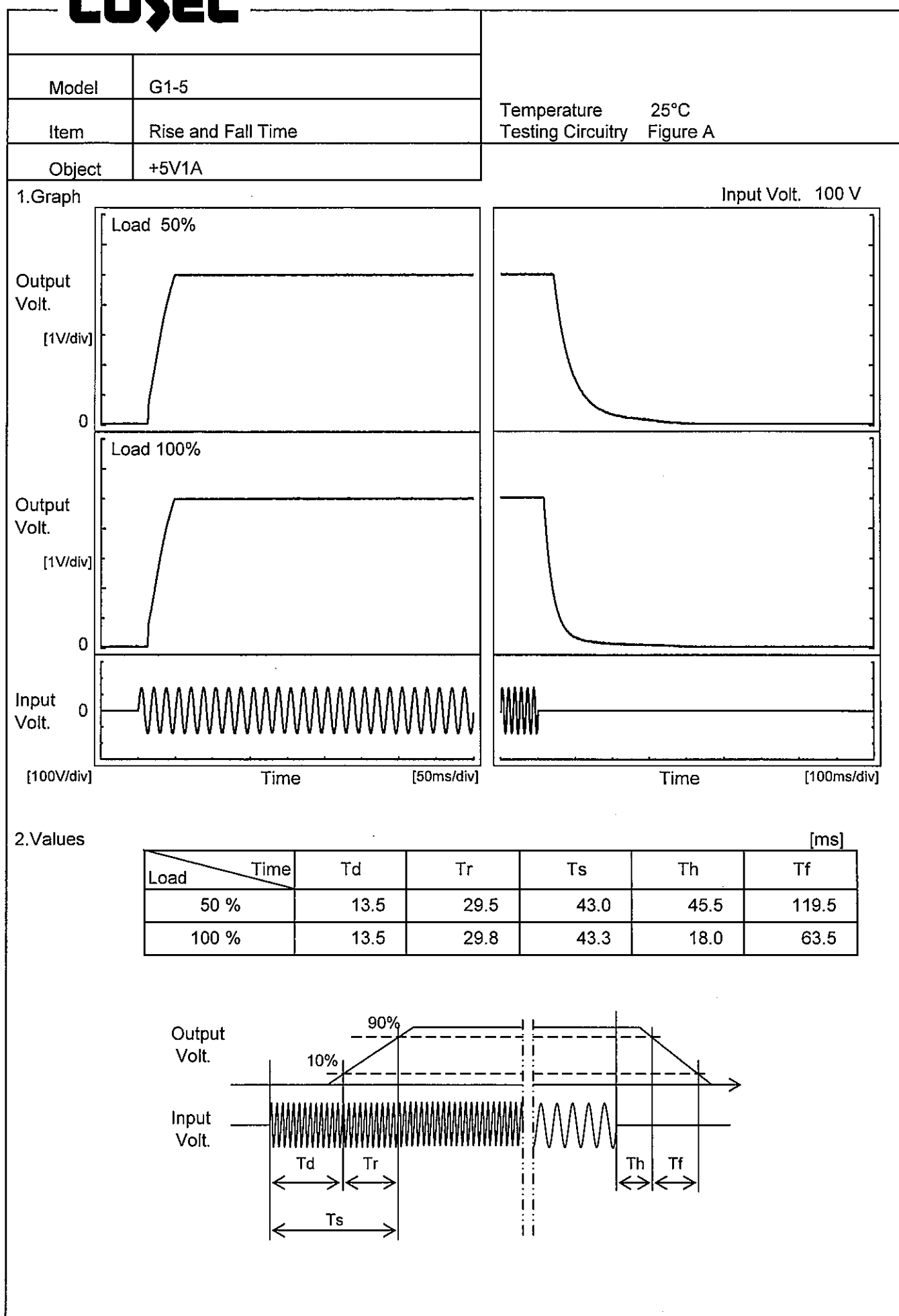
## 2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ration [%]
Maximum Voltage	50	110	0	5.020	±9	±0.2
Minimum Voltage	-10	90	1	5.003		



# COSEL

Model	G1-5		
Item	Time Lapse Drift	Temperature	25°C
		Testing Circuitry	Figure A
Object	+5V1A		
1.Graph		2.Values	
<div><div><div>Output Voltage [V]</div><div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></di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**COSEL**

# COSEL

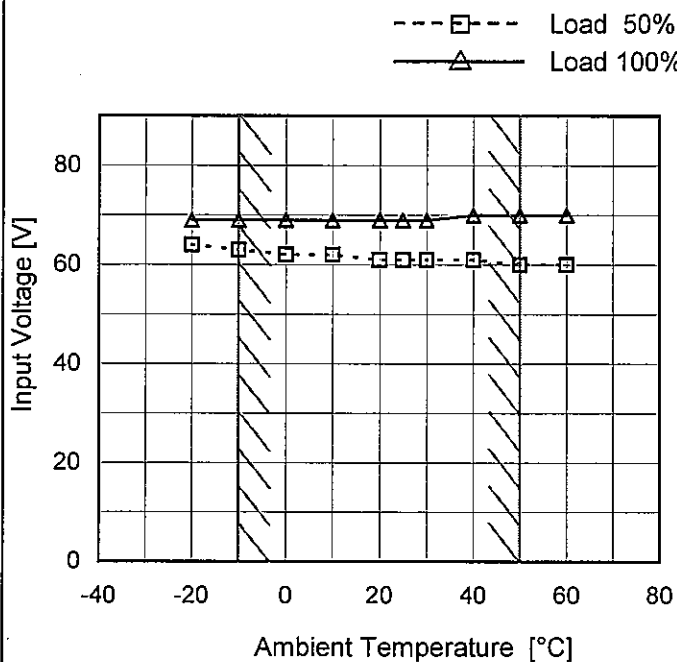
Model	G1-5																																
Item	Hold-Up Time	Temperature	25°C																														
		Testing Circuitry	Figure A																														
Object	+5V1A																																
1.Graph		2.Values																															
<div><div><div>---□---</div><div>Load 50%</div></div><div><div>—△—</div><div>Load 100%</div></div></div> <p>The graph shows Hold-Up Time [ms] on a logarithmic y-axis (1 to 1000) versus Input Voltage [V] on a linear x-axis (80 to 120). Two data series are plotted: Load 50% (dashed line with square markers) and Load 100% (solid line with triangle markers). A slanted shaded region indicates the rated input voltage range from approximately 85V to 115V.</p> <table border="1"><thead><tr><th>Input Voltage [V]</th><th>Load 50% [ms]</th><th>Load 100% [ms]</th></tr></thead><tbody><tr><td>85</td><td>26</td><td>8</td></tr><tr><td>90</td><td>31</td><td>11</td></tr><tr><td>100</td><td>41</td><td>16</td></tr><tr><td>110</td><td>52</td><td>21</td></tr><tr><td>115</td><td>57</td><td>23</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>		Input Voltage [V]	Load 50% [ms]	Load 100% [ms]	85	26	8	90	31	11	100	41	16	110	52	21	115	57	23	--	-	-	--	-	-	--	-	-	--	-	-		
Input Voltage [V]	Load 50% [ms]	Load 100% [ms]																															
85	26	8																															
90	31	11																															
100	41	16																															
110	52	21																															
115	57	23																															
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--	-	-																															
<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>																																	

Model	G1-5																																																					
Item	Instantaneous Interruption Compensation	Temperature	25°C																																																			
Object	+5V1A	Testing Circuitry	Figure A																																																			
1.Graph		2.Values																																																				
<div><div>—△—</div><div>Input Volt.</div><div>90V</div></div> <div><div>---□---</div><div>Input Volt.</div><div>100V</div></div> <div><div>-·-○-·-</div><div>Input Volt.</div><div>110V</div></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. 90[V]</th><th>Input Volt. 100[V]</th><th>Input Volt. 110[V]</th></tr><tr><td>0.0</td><td>-</td><td>-</td><td>-</td></tr><tr><td>0.2</td><td>90</td><td>116</td><td>141</td></tr><tr><td>0.4</td><td>41</td><td>54</td><td>67</td></tr><tr><td>0.6</td><td>23</td><td>33</td><td>40</td></tr><tr><td>0.8</td><td>16</td><td>22</td><td>23</td></tr><tr><td>1.0</td><td>5</td><td>16</td><td>21</td></tr><tr><td>1.1</td><td>5</td><td>6</td><td>18</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]	Time [ms]			Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]	0.0	-	-	-	0.2	90	116	141	0.4	41	54	67	0.6	23	33	40	0.8	16	22	23	1.0	5	16	21	1.1	5	6	18	--	-	-	-	--	-	-	-	--	-	-	-	--	-	-	-
Load Current [A]	Time [ms]																																																					
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Note: Slanted line shows the range of the rated load current.																																																						

Model	G1-5
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+5V1A

Testing Circuitry Figure A

1. Graph



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

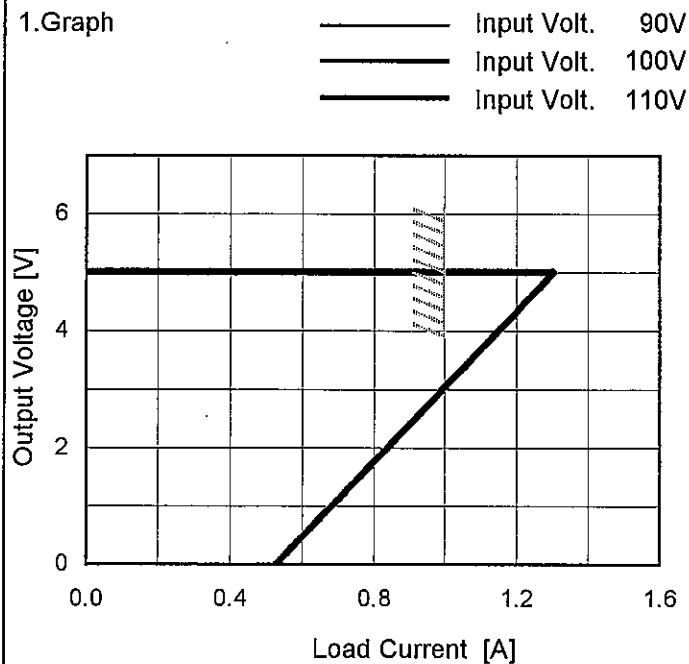
2. Values

Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-20	64	69
-10	63	69
0	62	69
10	62	69
20	61	69
25	61	69
30	61	69
40	61	70
50	60	70
60	60	70
--	-	-

Model	G1-5
Item	Overcurrent Protection
Object	+5V1A

Temperature 25°C  
Testing Circuitry Figure A

## 1. Graph



## 2. Values

Output Voltage [V]	Load Current [A]		
	Input Volt. 90[V]	Input Volt. 100[V]	Input Volt. 110[V]
5.00	1.30	1.30	1.30
4.75	1.26	1.26	1.26
4.50	1.21	1.21	1.21
4.00	1.16	1.16	1.16
3.50	1.08	1.08	1.08
3.00	0.98	0.98	0.98
2.50	0.91	0.91	0.91
2.00	0.84	0.84	0.84
1.50	0.75	0.75	0.75
1.00	0.69	0.69	0.69
0.50	0.61	0.61	0.61
0.00	0.53	0.53	0.53

**COSEL**

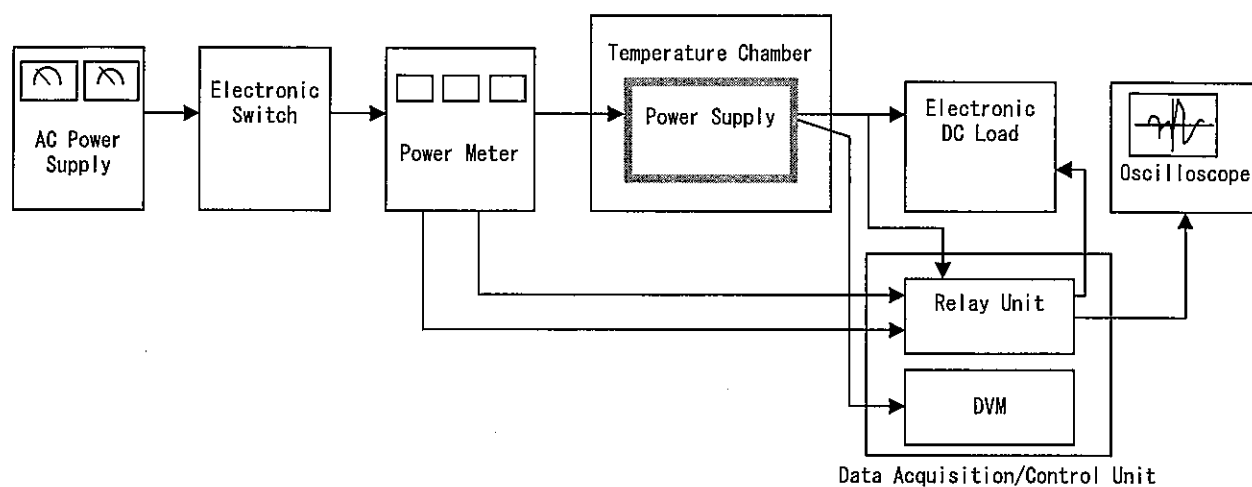


Figure A