

# TEST DATA OF MGFS102405

Regulated DC Power Supply  
December 13, 2016

Approved by : Takayuki Fukuda Design Manager

Prepared by : Takaaki Sekiguchi Design Engineer

**COSEL CO.,LTD.**

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Model		MGFS102405																																																																																
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Model	MGFS102405				
Item	Input Power (by Load Current)				
Object					

Temperature      25°C  
Testing Circuitry    Figure A

### 1.Graph

- △— Input Volt. 9V
- - - □ - - Input Volt. 12V
- · · \* · · Input Volt. 18V
- · · ○ · · Input Volt. 24V
- - ◇ - - Input Volt. 36V

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

### 2.Values

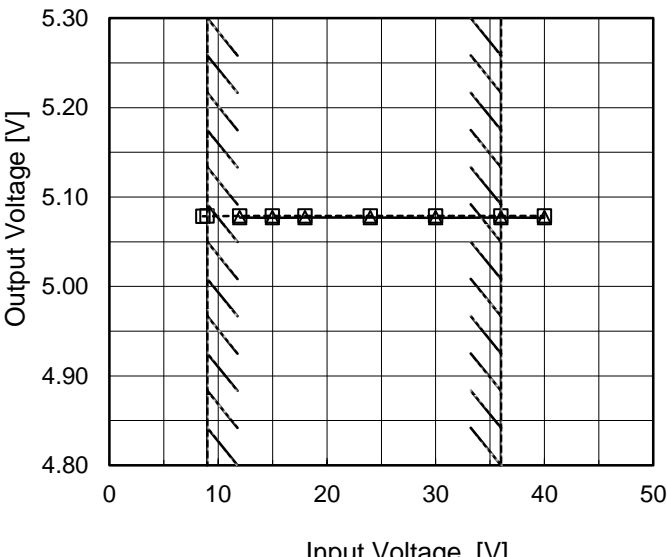
Load Current [A]	Input Power [W]				
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.0	0.32	0.36	0.42	0.50	0.15
0.4	2.43	2.47	2.52	2.57	2.70
0.8	4.64	4.64	4.69	4.71	4.83
1.2	6.95	6.89	6.87	6.91	7.04
1.6	9.34	9.20	9.12	9.10	9.21
1.8	10.61	10.39	10.27	10.24	10.33
2.0	- ※	11.58	11.42	11.38	11.45
2.2	- ※	12.79	12.57	12.52	12.55
--	-	-	-	-	-
--	-	-	-	-	-
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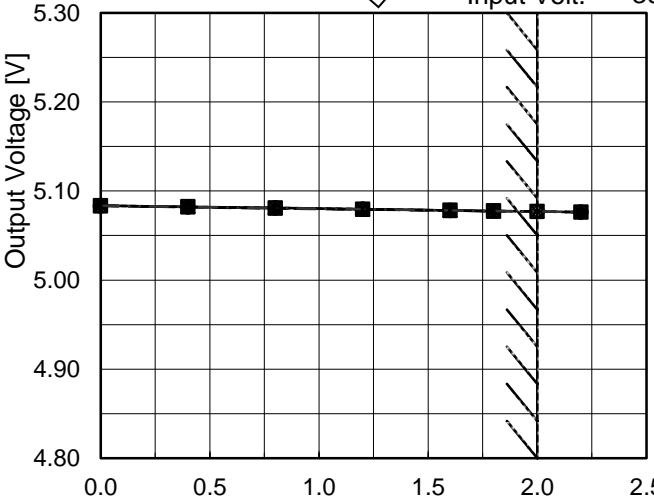
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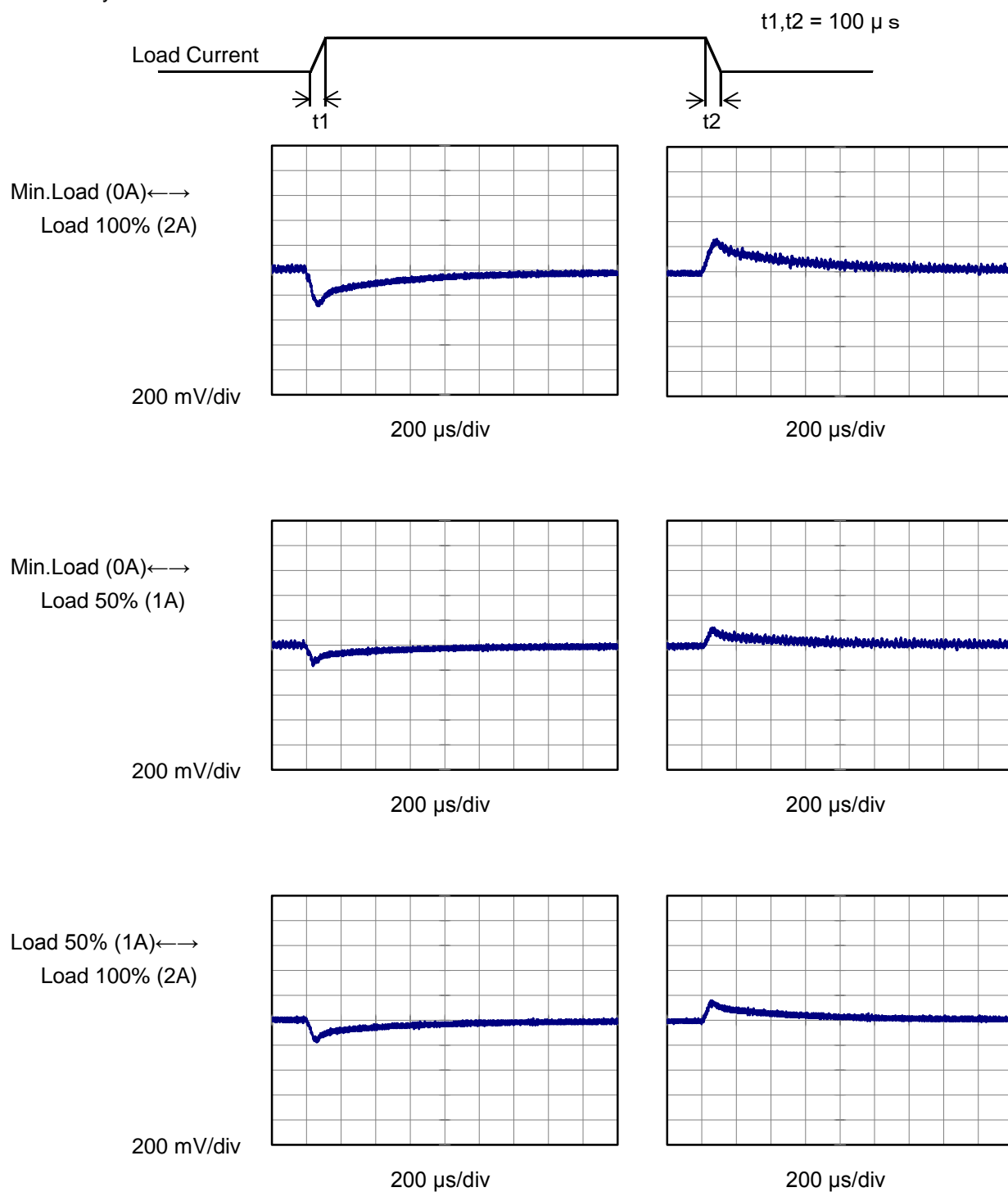
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1.Graph		<div><div><div>—△—</div><div>Input Volt.</div><div>9V</div></div><div><div>---□---</div><div>Input Volt.</div><div>12V</div></div><div><div>-·-·*·-·-</div><div>Input Volt.</div><div>18V</div></div><div><div>-·-·○-·-·</div><div>Input Volt.</div><div>24V</div></div><div><div>---◇---</div><div>Input Volt.</div><div>36V</div></div></div> <div></div> <div>Note: Slanted line shows the range of the rated load current.</div>		2.Values		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="5">Output Voltage [V]</th></tr><tr><th>Input Volt. 9[V]</th><th>Input Volt. 12[V]</th><th>Input Volt. 18[V]</th><th>Input Volt. 24[V]</th><th>Input Volt. 36[V]</th></tr><tr><td>0.0</td><td>5.084</td><td>5.084</td><td>5.083</td><td>5.083</td><td>5.083</td></tr><tr><td>0.4</td><td>5.082</td><td>5.082</td><td>5.082</td><td>5.082</td><td>5.082</td></tr><tr><td>0.8</td><td>5.081</td><td>5.081</td><td>5.081</td><td>5.081</td><td>5.081</td></tr><tr><td>1.2</td><td>5.080</td><td>5.080</td><td>5.080</td><td>5.079</td><td>5.079</td></tr><tr><td>1.6</td><td>5.078</td><td>5.078</td><td>5.078</td><td>5.078</td><td>5.078</td></tr><tr><td>1.8</td><td>5.077</td><td>5.078</td><td>5.078</td><td>5.078</td><td>5.078</td></tr><tr><td>2.0</td><td>- ※</td><td>5.077</td><td>5.077</td><td>5.077</td><td>5.077</td></tr><tr><td>2.2</td><td>- ※</td><td>5.076</td><td>5.076</td><td>5.076</td><td>5.076</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr></table>		Load Current [A]	Output Voltage [V]					Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	0.0	5.084	5.084	5.083	5.083	5.083	0.4	5.082	5.082	5.082	5.082	5.082	0.8	5.081	5.081	5.081	5.081	5.081	1.2	5.080	5.080	5.080	5.079	5.079	1.6	5.078	5.078	5.078	5.078	5.078	1.8	5.077	5.078	5.078	5.078	5.078	2.0	- ※	5.077	5.077	5.077	5.077	2.2	- ※	5.076	5.076	5.076	5.076	--	-	-	-	-	-	--	-	-	-	-	-	--	-	-	-	-	-
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				※ Maximum output current at minimum input Voltage is 80% of rated load current. Refer to instruction manuals for details of input derating.																																																																																

BC-11071

**COSEL**


Model	MGFS102405	Temperature	25°C
Item	Dynamic Load Response	Testing Circuitry	Figure A
Object	+5V2A		

Input Volt. 24 V  
Cycle 100 ms

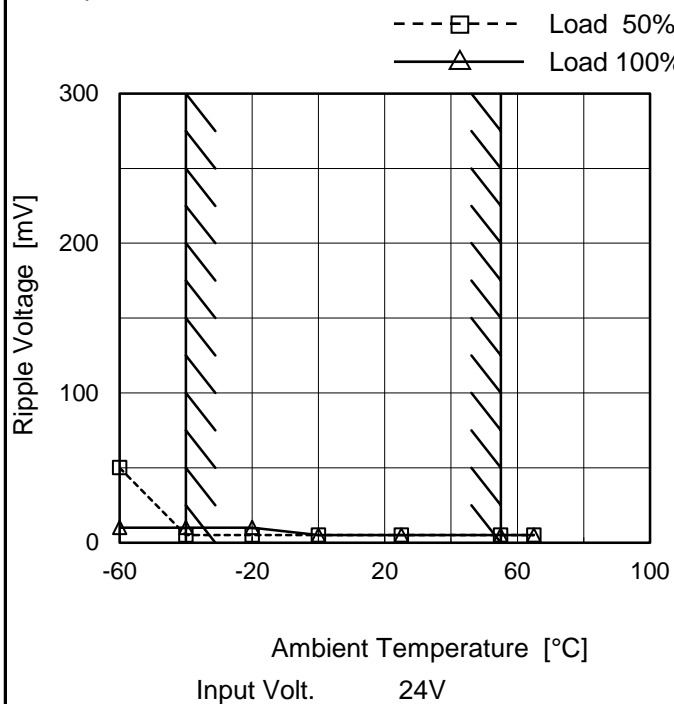


Model		MGFS102405																																							
Item		Ripple Voltage (by Load Current)																																							
Object		+5V2A																																							
1.Graph		2.Values																																							
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<p>Measured by 100 MHz Oscilloscope.</p> <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>Ripple [mVp-p]</p> <p>Fig.Complex Ripple Wave Form</p>																																									

Model		MGFS102405																																							
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Object		+5V2A																																							
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Model	MGFS102405
Item	Ripple Voltage (by Ambient Temp.)
Object	+5V2A

## 1.Graph

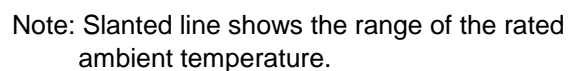


Measured by 100 MHz Oscilloscope.

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

## 2.Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	50	10
-40	5	10
-20	5	10
0	5	5
25	5	5
55	5	5
65	5	5
--	-	-
--	-	-
--	-	-
--	-	-

Testing Circuitry Figure A

Ambient Temperature [°C]	Output Voltage [V]				
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
-60	5.074	5.074	5.074	5.074	5.074
-40	5.075	5.075	5.076	5.075	5.075
-20	5.075	5.075	5.075	5.075	5.075
0	5.076	5.076	5.076	5.076	5.076
25	5.077	5.077	5.077	5.077	5.077
55	5.078	5.078	5.079	5.078	5.078
65	5.078	5.078	5.078	5.078	5.078
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

Note: In case of Input Volt. 9V, Load 80%.  
Other case Load 100%.

**COSEL**

		Testing Circuitry Figure A
Model	MGFS102405	
Item	Output Voltage Accuracy	
Object	+5V2A	

### 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 : -40 - 55°C

Input Voltage : 12 - 36V

Load Current : 0 - 2A

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

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

### 2. Values

Item	Temperature [°C]	Input Voltage[V]	Output		Output Voltage Accuracy	
			Current[A]	Voltage[V]	Value [mV]	Ratio [%]
Maximum Voltage	55	36	0	5.085	±6	±0.1
Minimum Voltage	0	12	2	5.074		

**COSEL**

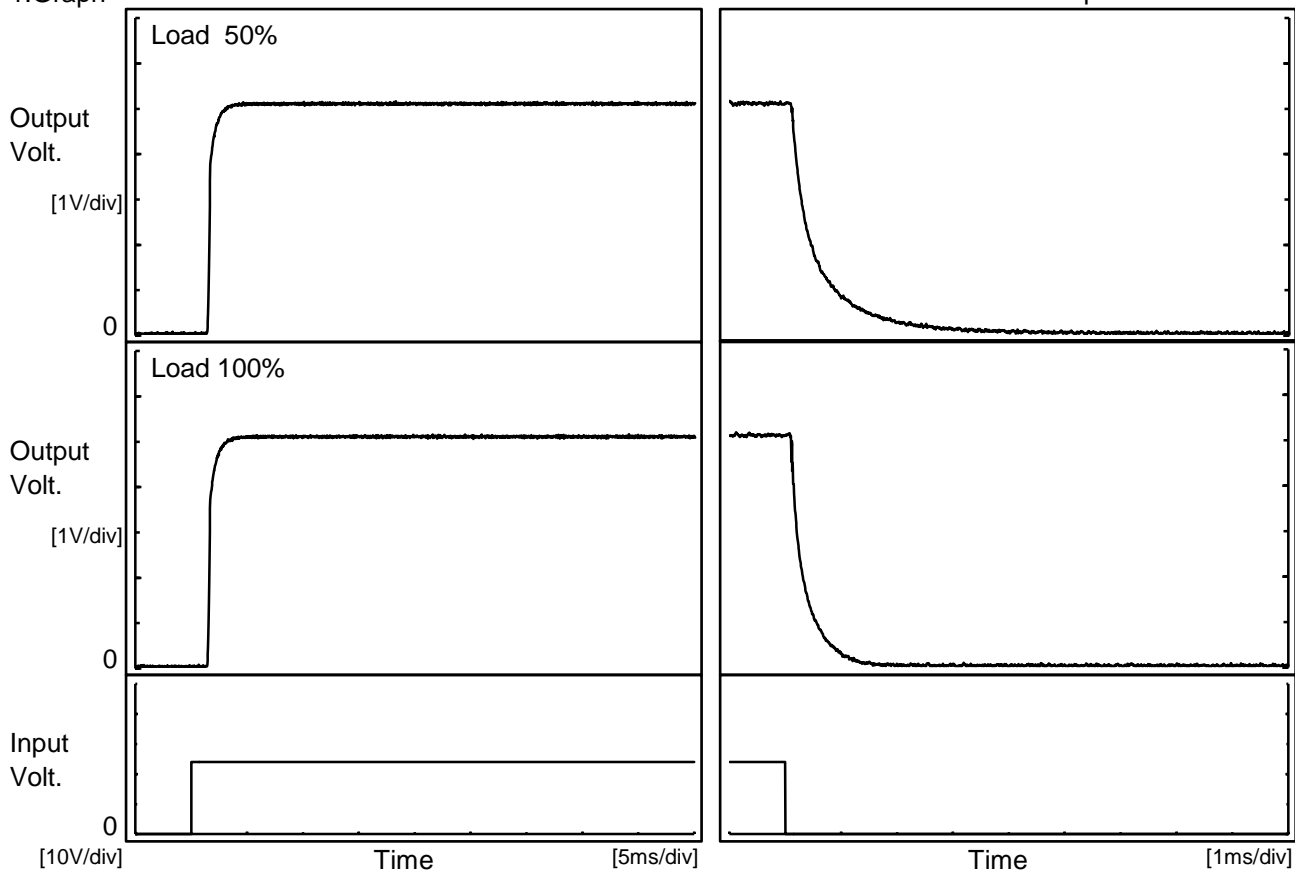
Model	MGFS102405		
Item	Time Lapse Drift	Temperature	25°C
		Testing Circuitry	Figure A
Object	+5V2A		
1.Graph		2.Values	
<div><div><div>Output Voltage [V]</div><div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><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**

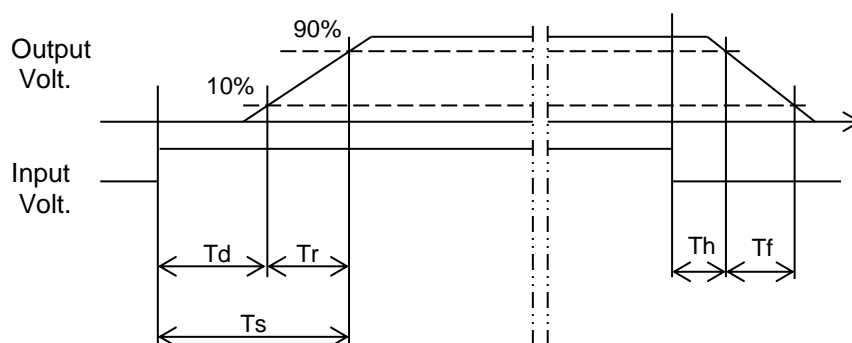
Model	MGFS102405	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	+5V2A		

# 1.Graph



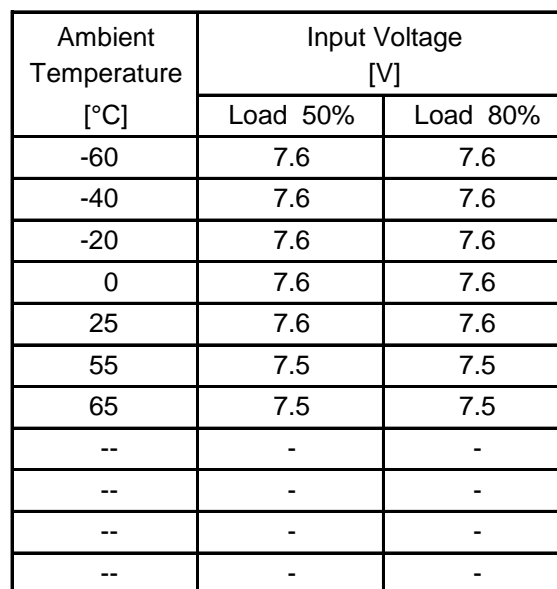
# 2.Values

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	1.5	0.7	2.2	0.1	1.3
100 %	1.5	0.7	2.2	0.1	0.7



Testing Circuitry Figure A

## 2.Values



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

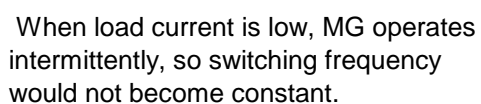
Model		MGFS102405		Temperature 25°C																																																																																				
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1.Graph		<div><div><div></div>Input Volt. 9V</div><div><div></div>Input Volt. 12V</div><div><div></div>Input Volt. 18V</div><div><div></div>Input Volt. 24V</div><div><div></div>Input Volt. 36V</div></div> <div>Load Current [A]</div>		2.Values																																																																																				
		<table><tr><th rowspan="2">Output Voltage [V]</th><th colspan="5">Load Current [A]</th></tr><tr><th>Input Volt. 9[V]</th><th>Input Volt. 12[V]</th><th>Input Volt. 18[V]</th><th>Input Volt. 24[V]</th><th>Input Volt. 36[V]</th></tr><tr><td>4.75</td><td>2.238</td><td>2.575</td><td>2.723</td><td>2.649</td><td>2.630</td></tr><tr><td>4.50</td><td>2.324</td><td>2.654</td><td>2.798</td><td>2.710</td><td>2.677</td></tr><tr><td>4.00</td><td>2.513</td><td>2.833</td><td>2.970</td><td>2.838</td><td>2.771</td></tr><tr><td>3.50</td><td>2.735</td><td>3.040</td><td>3.151</td><td>2.978</td><td>2.867</td></tr><tr><td>3.00</td><td>2.986</td><td>3.282</td><td>3.325</td><td>3.121</td><td>2.964</td></tr><tr><td>2.50</td><td>3.257</td><td>3.537</td><td>3.476</td><td>3.230</td><td>3.052</td></tr><tr><td>2.00</td><td>3.386</td><td>3.659</td><td>3.592</td><td>3.347</td><td>3.145</td></tr><tr><td>1.50</td><td>3.560</td><td>3.867</td><td>3.775</td><td>3.480</td><td>3.263</td></tr><tr><td>1.00</td><td>3.745</td><td>4.133</td><td>4.003</td><td>3.657</td><td>3.399</td></tr><tr><td>0.50</td><td>4.095</td><td>4.379</td><td>4.284</td><td>3.853</td><td>3.547</td></tr><tr><td>0.00</td><td>4.500</td><td>4.466</td><td>4.028</td><td>3.626</td><td>3.589</td></tr><tr><td>--</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr></table>				Output Voltage [V]	Load Current [A]					Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	4.75	2.238	2.575	2.723	2.649	2.630	4.50	2.324	2.654	2.798	2.710	2.677	4.00	2.513	2.833	2.970	2.838	2.771	3.50	2.735	3.040	3.151	2.978	2.867	3.00	2.986	3.282	3.325	3.121	2.964	2.50	3.257	3.537	3.476	3.230	3.052	2.00	3.386	3.659	3.592	3.347	3.145	1.50	3.560	3.867	3.775	3.480	3.263	1.00	3.745	4.133	4.003	3.657	3.399	0.50	4.095	4.379	4.284	3.853	3.547	0.00	4.500	4.466	4.028	3.626	3.589	--	-	-	-	-	-
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Note: Slanted line shows the range of the rated load current.

Maximum output current at minimum input Voltage is 80% of rated load current.

Refer to instruction manuals for details of input derating.

Temperature	25°C
Testing Circuitry	Figure A



Load Current [A]	Input Current [A]				
	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
0.0	661	758	897	980	1160
0.4	429	530	680	767	856
0.8	292	377	502	584	674
1.2	219	291	397	469	554
1.6	175	235	328	393	471
1.8	159	216	304	365	440
2.0	- ※	197	280	338	409
2.2	- ※	182	260	315	384
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

※ Maximum output current at minimum input Voltage is 80% of rated load current. Refer to instruction manuals for details of input derating.

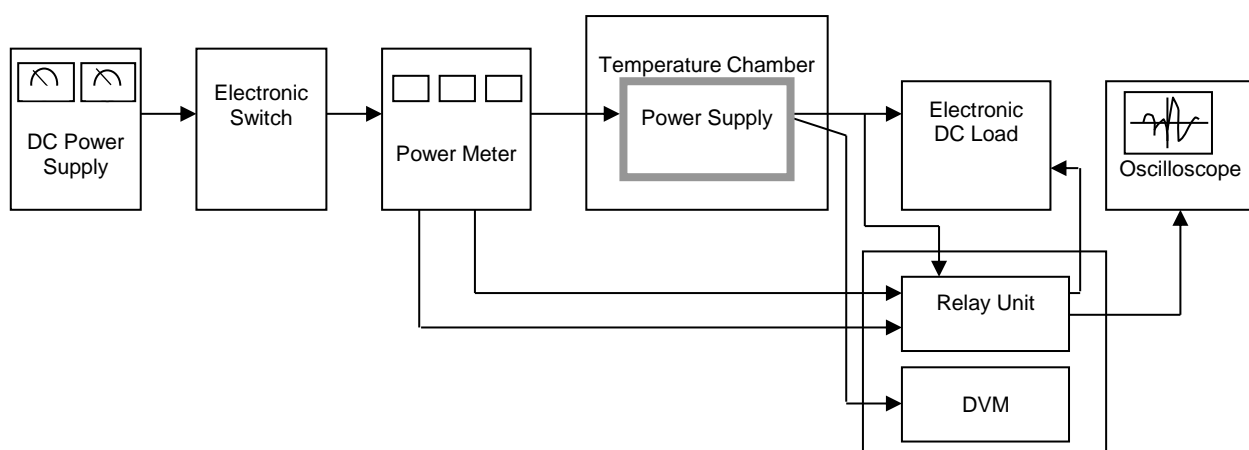


Figure A

Data Acquisition/Control Unit

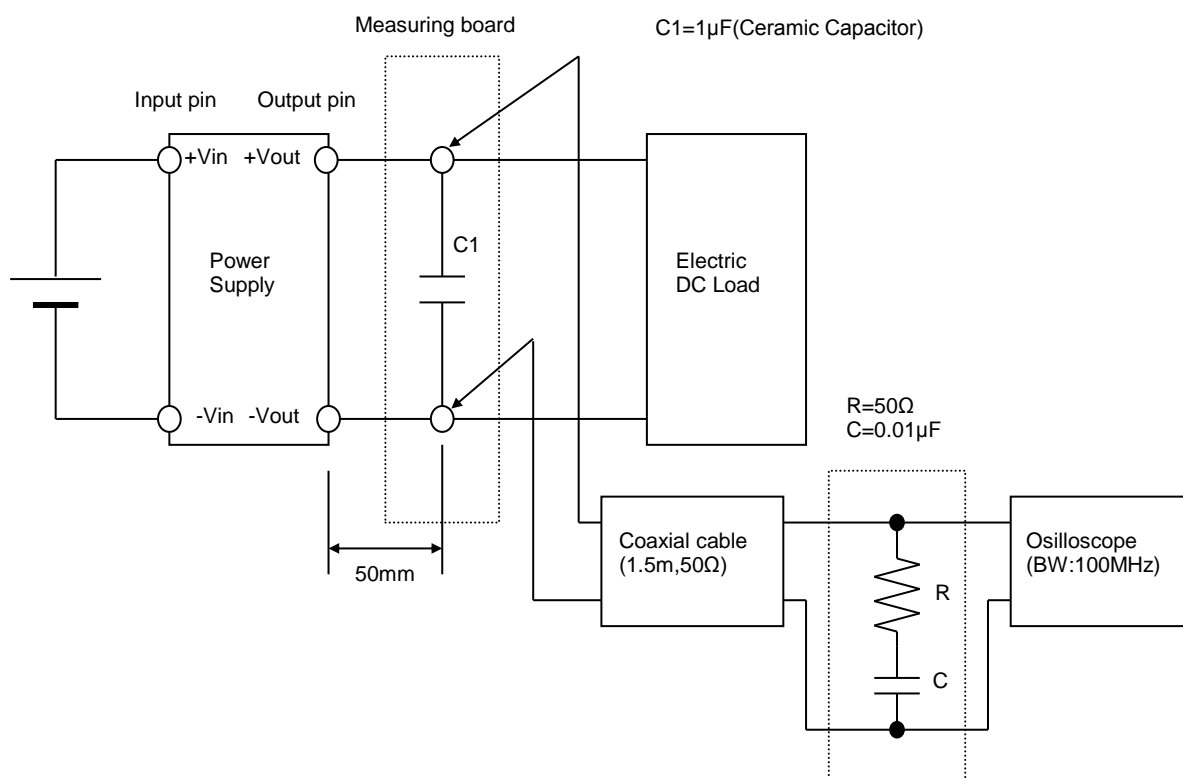


Figure B (Ripple and Ripple noise Characteristic)