

TEST DATA OF MGFS32405

Regulated DC Power Supply
January 6, 2017

Approved by : Takayuki Fukuda Design Manager

Prepared by : Takaaki Sekiguchi Design Engineer

COSEL CO.,LTD.

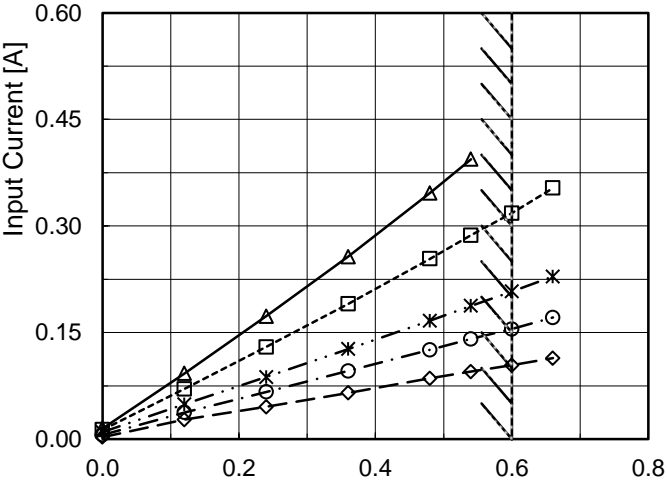
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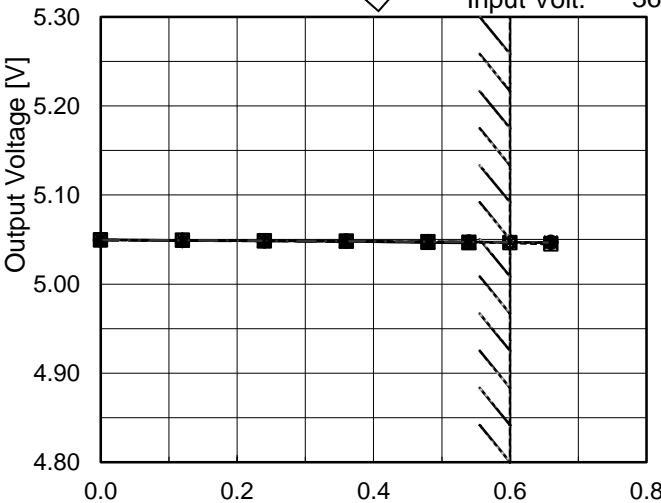
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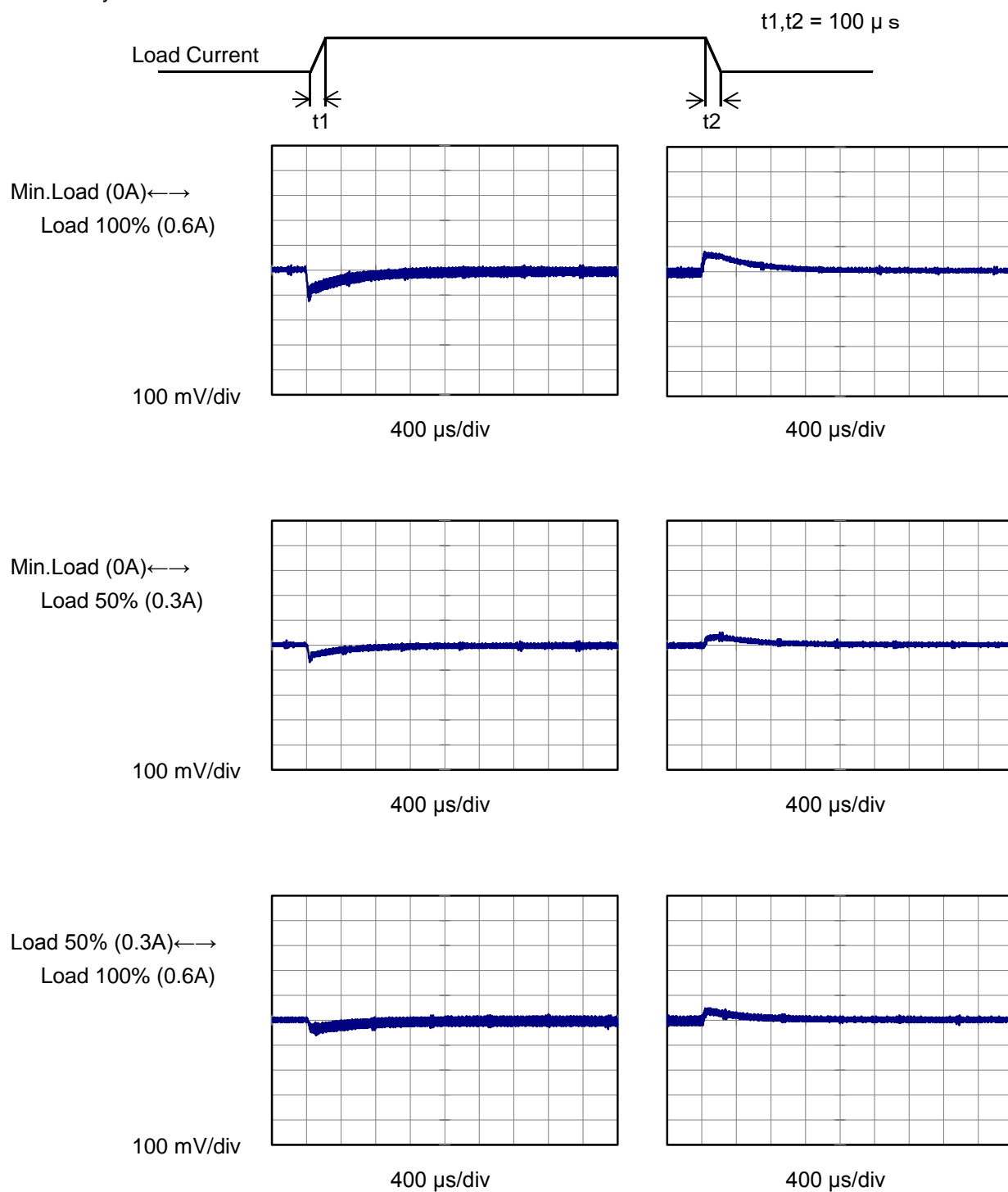
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1.Graph		<div><div><div>—△—</div><div>Input Volt.</div><div>9V</div></div><div><div>---□---</div><div>Input Volt.</div><div>12V</div></div><div><div>-·-*·-·-</div><div>Input Volt.</div><div>18V</div></div><div><div>-·-○-·-</div><div>Input Volt.</div><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																																																																														
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BC-10999

COSEL

Model	MGFS32405	Temperature 25°C Testing Circuitry Figure A
Item	Dynamic Load Response	
Object	+5V0.6A	

Input Volt. 24 V
Cycle 100 ms

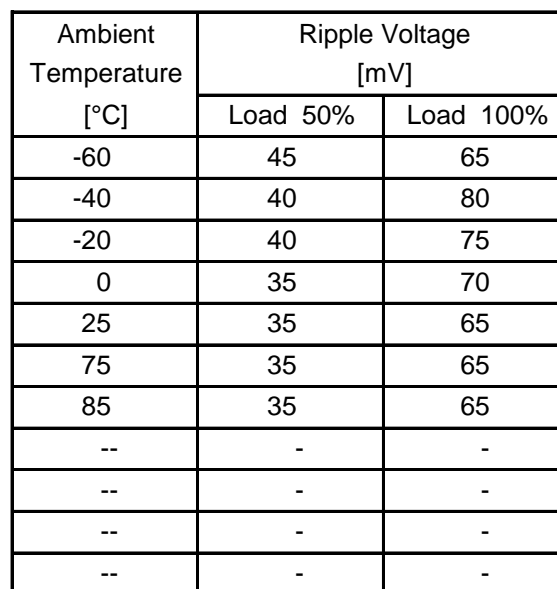


COSEL																																									
Model	MGFS32405																																								
Item	Ripple Voltage (by Load Current)	Temperature	25°C																																						
		Testing Circuitry	Figure B																																						
Object	+5V0.6A																																								
1.Graph		2.Values																																							
<div><div><div>—△—</div><div>Input Volt.</div><div>12V</div></div><div><div>- -○- -</div><div>Input Volt.</div><div>36V</div></div></div> <p>Ripple Voltage [mV]</p> <p>Load Current [A]</p>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="2">Ripple Voltage [mV]</th></tr><tr><th>Input Volt. 12 [V]</th><th>Input Volt. 36 [V]</th></tr><tr><td>0.00</td><td>10</td><td>10</td></tr><tr><td>0.12</td><td>10</td><td>25</td></tr><tr><td>0.24</td><td>25</td><td>20</td></tr><tr><td>0.36</td><td>35</td><td>15</td></tr><tr><td>0.48</td><td>50</td><td>20</td></tr><tr><td>0.54</td><td>60</td><td>20</td></tr><tr><td>0.60</td><td>65</td><td>25</td></tr><tr><td>0.66</td><td>85</td><td>35</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. 12 [V]	Input Volt. 36 [V]	0.00	10	10	0.12	10	25	0.24	25	20	0.36	35	15	0.48	50	20	0.54	60	20	0.60	65	25	0.66	85	35	--	-	-	--	-	-	--	-	-
Load Current [A]	Ripple Voltage [mV]																																								
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<p>Ripple [mVp-p]</p> <p>Fig.Complex Ripple Wave Form</p>																																									

Model		MGFS32405																																							
Item		Ripple-Noise																																							
Object		+5V0.6A																																							
1.Graph		2.Values																																							
<div><div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div>Input Volt.</div><div>12V</div></div><div><div>Input Volt.</div><div>36V</div></div></div><p>Ripple Voltage [mV]</p><p>Load Current [A]</p></div>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="2">Ripple-Noise [mV]</th></tr><tr><th>Input Volt. 12 [V]</th><th>Input Volt. 36 [V]</th></tr><tr><td>0.00</td><td>10</td><td>10</td></tr><tr><td>0.12</td><td>10</td><td>25</td></tr><tr><td>0.24</td><td>30</td><td>20</td></tr><tr><td>0.36</td><td>40</td><td>20</td></tr><tr><td>0.48</td><td>55</td><td>20</td></tr><tr><td>0.54</td><td>60</td><td>25</td></tr><tr><td>0.60</td><td>70</td><td>30</td></tr><tr><td>0.66</td><td>95</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></table>		Load Current [A]	Ripple-Noise [mV]		Input Volt. 12 [V]	Input Volt. 36 [V]	0.00	10	10	0.12	10	25	0.24	30	20	0.36	40	20	0.48	55	20	0.54	60	25	0.60	70	30	0.66	95	40	--	-	-	--	-	-	--	-	-
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Testing Circuitry Figure B

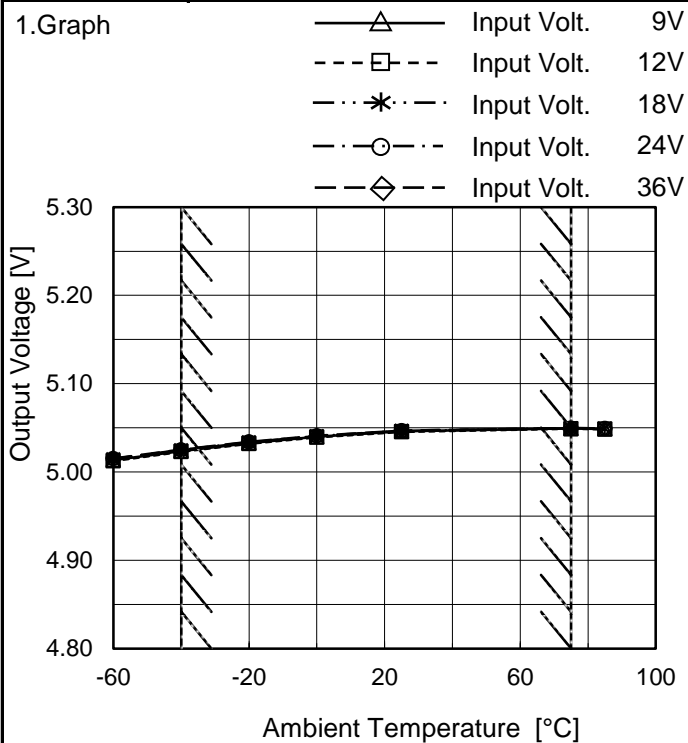
2.Values



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

COSEL

Model	MGFS32405
Item	Ambient Temperature Drift
Object	+5V0.6A



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. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]
-60	5.013	5.013	5.014	5.015	5.015
-40	5.024	5.023	5.025	5.025	5.025
-20	5.033	5.032	5.034	5.034	5.034
0	5.040	5.039	5.041	5.041	5.041
25	5.046	5.046	5.047	5.047	5.047
75	5.049	5.049	5.050	5.050	5.050
85	5.049	5.048	5.049	5.049	5.049
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

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



Model		MGFS32405	Testing Circuitry Figure A
Item		Output Voltage Accuracy	
Object		+5V0.6A	

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 - 75°C

Input Voltage : 12 - 36V

Load Current : 0 - 0.6A

* 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	70	36	0	5.052	±15	±0.3
Minimum Voltage	-40	12	0.6	5.023		

COSEL

Model		MGFS32405		Temperature 25°C Testing Circuitry Figure A																							
Item		Time Lapse Drift																									
Object		+5V0.6A																									
1.Graph				2.Values																							
<div><div><div>5.30</div><div>5.20</div><div>5.10</div><div>5.00</div><div>4.90</div><div>4.80</div></div><div><div>0</div><div>2</div><div>4</div><div>6</div><div>8</div><div>10</div></div><div><div>Output Voltage [V]</div><div>Time [H]</div></div><div><div>Input Volt. 24V</div><div>Load 100%</div></div></div>				<table><tr><th>Time since start [H]</th><th>Output Voltage [V]</th></tr><tr><td>0.0</td><td>5.046</td></tr><tr><td>0.5</td><td>5.048</td></tr><tr><td>1.0</td><td>5.047</td></tr><tr><td>2.0</td><td>5.047</td></tr><tr><td>3.0</td><td>5.047</td></tr><tr><td>4.0</td><td>5.047</td></tr><tr><td>5.0</td><td>5.047</td></tr><tr><td>6.0</td><td>5.047</td></tr><tr><td>7.0</td><td>5.047</td></tr><tr><td>8.0</td><td>5.047</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	5.046	0.5	5.048	1.0	5.047	2.0	5.047	3.0	5.047	4.0	5.047	5.0	5.047	6.0	5.047	7.0	5.047	8.0	5.047
Time since start [H]	Output Voltage [V]																										
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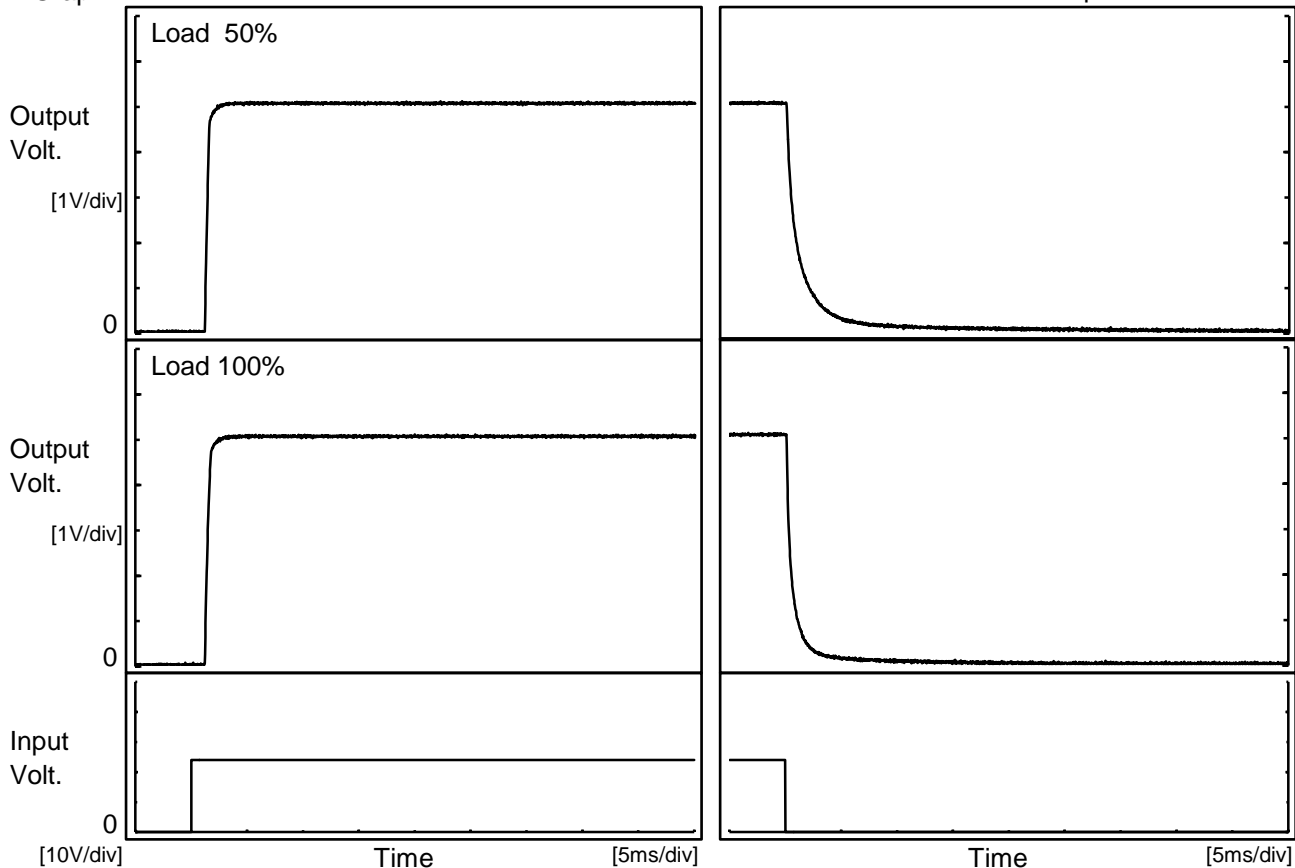
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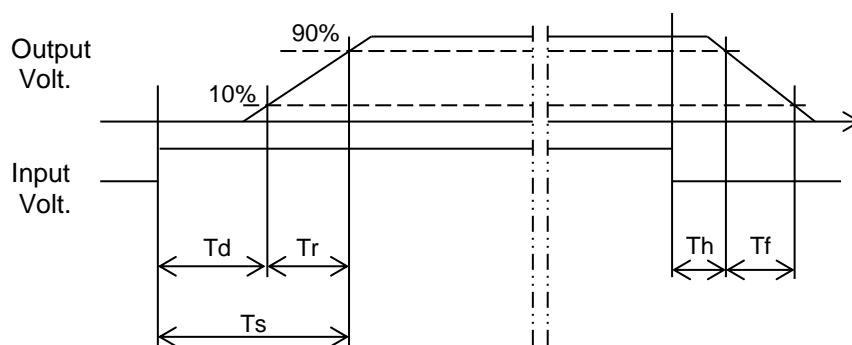
Model	MGFS32405	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	+5V0.6A		

1.Graph



2.Values

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	1.3	0.4	1.7	0.2	3.4
100 %	1.3	0.5	1.8	0.1	1.7



Model	MGFS32405																																							
Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A																																						
Object	+5V0.6A																																							
1.Graph		2.Values																																						
<div> <div>---□---</div>Load 50% <div>—△—</div>Load 80% </div> <p style="text-align: center;">Ambient Temperature [°C]</p>		<table border="1"> <thead> <tr> <th rowspan="2">Ambient Temperature [°C]</th><th colspan="2">Input Voltage [V]</th></tr> <tr> <th>Load 50%</th><th>Load 80%</th></tr> </thead> <tbody> <tr><td>-60</td><td>7.4</td><td>7.5</td></tr> <tr><td>-40</td><td>7.4</td><td>7.4</td></tr> <tr><td>-20</td><td>7.4</td><td>7.4</td></tr> <tr><td>0</td><td>7.4</td><td>7.4</td></tr> <tr><td>25</td><td>7.3</td><td>7.4</td></tr> <tr><td>75</td><td>7.3</td><td>7.4</td></tr> <tr><td>85</td><td>7.3</td><td>7.4</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> </tbody> </table>	Ambient Temperature [°C]	Input Voltage [V]		Load 50%	Load 80%	-60	7.4	7.5	-40	7.4	7.4	-20	7.4	7.4	0	7.4	7.4	25	7.3	7.4	75	7.3	7.4	85	7.3	7.4	--	-	-	--	-	-	--	-	-	--	-	-
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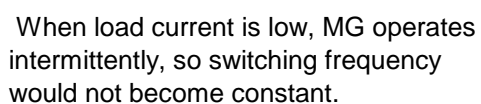
Model		MGFS32405		Temperature 25°C	
Item		Overcurrent Protection		Testing Circuitry Figure A	
Object		+5V0.6A			
1.Graph		<div><div><div></div>Input Volt. 9V</div><div><div></div>Input Volt. 12V</div><div><div></div>Input Volt. 18V</div><div><div></div>Input Volt. 24V</div><div><div></div>Input Volt. 36V</div></div> <div>Output Voltage [V]</div> <div>Load Current [A]</div>			
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.					
2.Values					

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



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

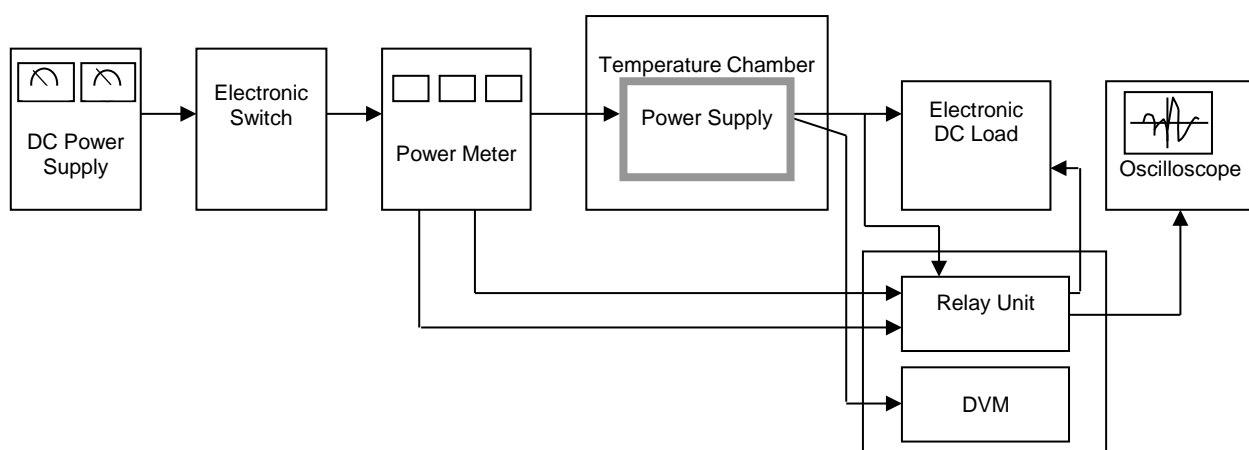


Figure A

Data Acquisition/Control Unit

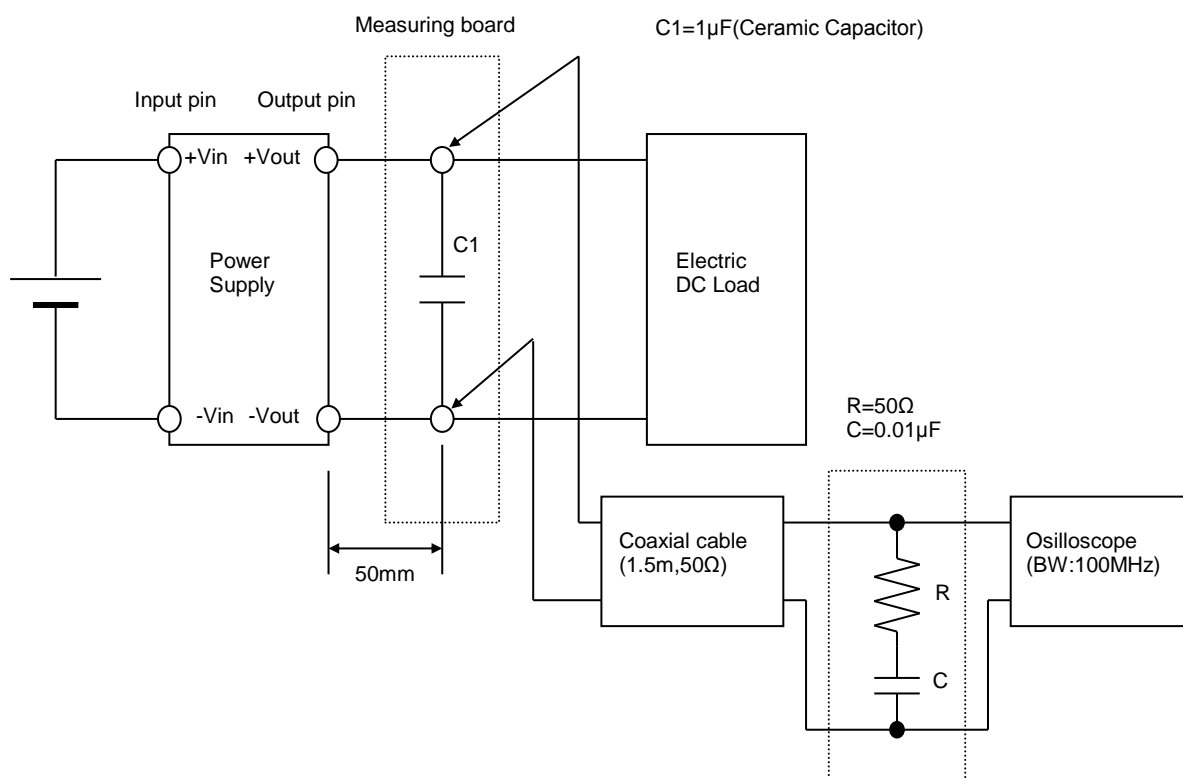


Figure B (Ripple and Ripple noise Characteristic)