

TEST DATA OF MGFS30243R3

Regulated DC Power Supply
November 19, 2010

Approved by : Kazunari Asano
Kazunari Asano Design Manager

Prepared by : Masashi Ueda
Masashi Ueda Design Engineer

COSEL CO.,LTD.

CONTENTS

1. Input Current (by Input Voltage)	1
2. Input Current (by Load Current)	2
3. Input Power (by Load Current)	3
4. Efficiency (by Input Voltage)	4
5. Efficiency (by Load Current)	5
6. Line Regulation	6
7. Load Regulation	7
8. Dynamic Load Response	8
9. Ripple Voltage (by Load Current)	9
10. Ripple-Noise	10
11. Ripple Voltage (by Ambient Temperature)	11
12. Ambient Temperature Drift	12
13. Output Voltage Accuracy	13
14. Time Lapse Drift	14
15. Rise and Fall Time	15
16. Minimum Input Voltage for Regulated Output Voltage	16
17. Overcurrent Protection	17
18. Overvoltage Protection	18
19. Figure of Testing Circuitry	19

(Final Page 19)



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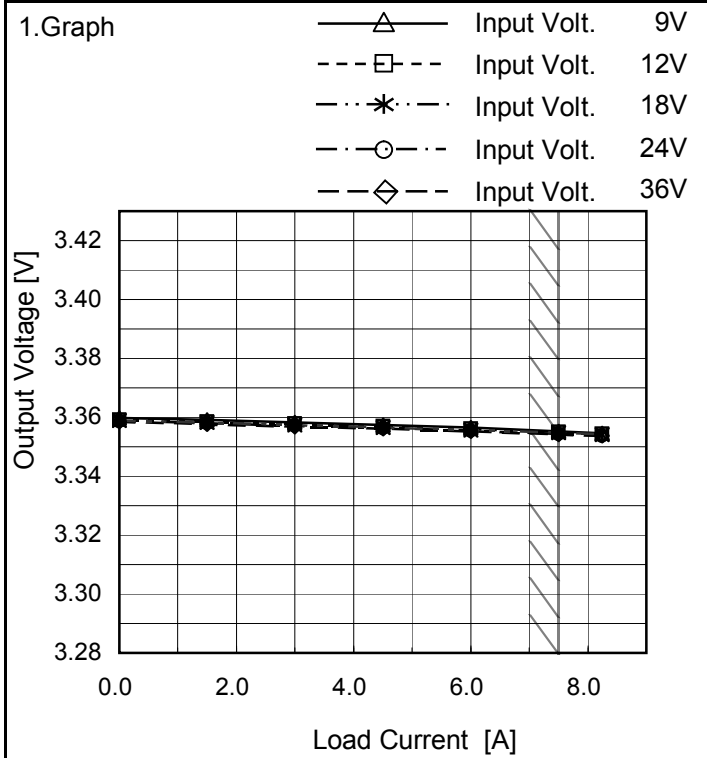


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<p>1.Graph</p> <div style="text-align: right;"> <p>---□--- Load 50%</p> <p>—△— Load 100%</p> </div> <p>Note: Slanted line shows the range of the rated input voltage.</p>		<p>2.Values</p> <table border="1"> <thead> <tr> <th rowspan="2">Input Voltage [V]</th> <th colspan="2">Output Voltage [V]</th> </tr> <tr> <th>Load 50%</th> <th>Load 100%</th> </tr> </thead> <tbody> <tr><td>8.5</td><td>3.358</td><td>3.356</td></tr> <tr><td>9.0</td><td>3.358</td><td>3.356</td></tr> <tr><td>12.0</td><td>3.358</td><td>3.356</td></tr> <tr><td>15.0</td><td>3.358</td><td>3.355</td></tr> <tr><td>18.0</td><td>3.358</td><td>3.355</td></tr> <tr><td>24.0</td><td>3.358</td><td>3.355</td></tr> <tr><td>30.0</td><td>3.358</td><td>3.355</td></tr> <tr><td>36.0</td><td>3.358</td><td>3.354</td></tr> <tr><td>40.0</td><td>3.358</td><td>3.354</td></tr> </tbody> </table>		Input Voltage [V]	Output Voltage [V]		Load 50%	Load 100%	8.5	3.358	3.356	9.0	3.358	3.356	12.0	3.358	3.356	15.0	3.358	3.355	18.0	3.358	3.355	24.0	3.358	3.355	30.0	3.358	3.355	36.0	3.358	3.354	40.0	3.358	3.354
Input Voltage [V]	Output Voltage [V]																																		
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36.0	3.358	3.354																																	
40.0	3.358	3.354																																	



Model	MGFS30243R3
Item	Load Regulation
Object	+3.3V7.5A

Temperature 25°C
Testing Circuitry Figure A



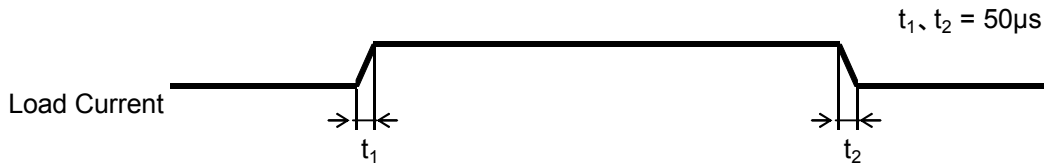
2. Values

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]
0.00	3.360	3.359	3.359	3.359	3.359
1.50	3.359	3.358	3.358	3.358	3.358
3.00	3.358	3.358	3.358	3.357	3.357
4.50	3.358	3.357	3.357	3.356	3.356
6.00	3.357	3.356	3.356	3.355	3.355
7.50	3.355	3.355	3.355	3.354	3.354
8.25	3.355	3.354	3.354	3.354	3.354
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-

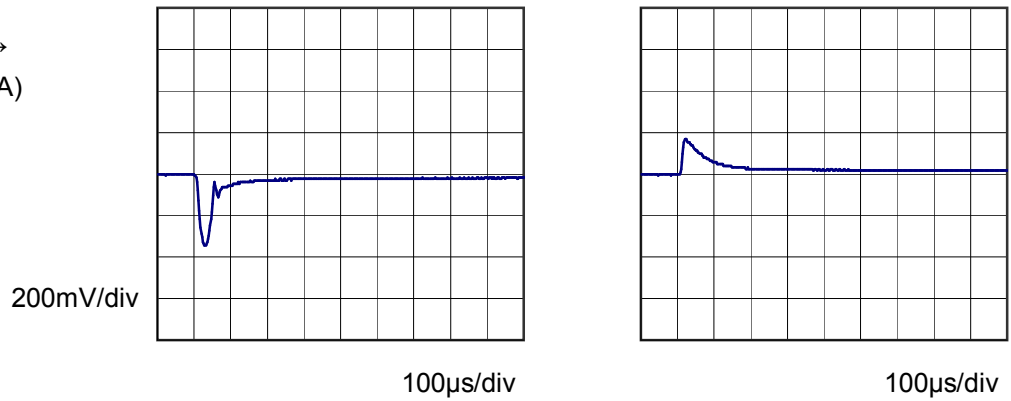


Model	MGFS30243R3	Temperature	25°C
Item	Dynamic Load Response	Testing Circuitry	Figure A
Object	+3.3V7.5A		

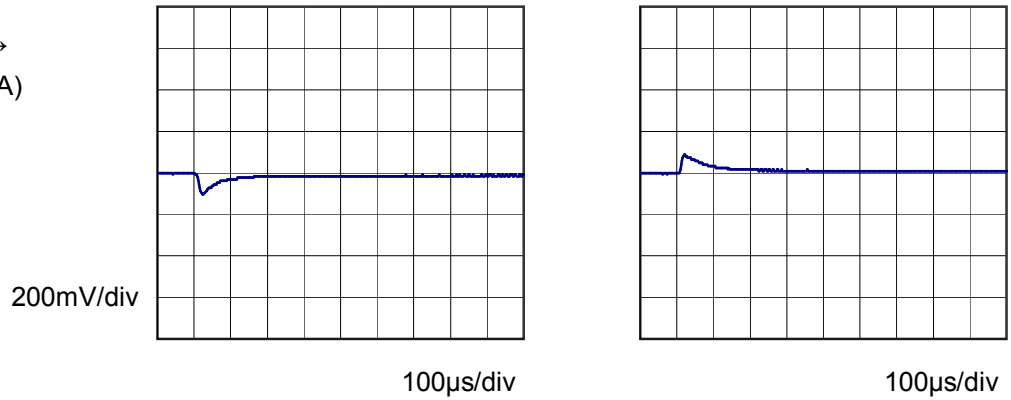
Input Volt. 24 V
 Cycle 1000 ms



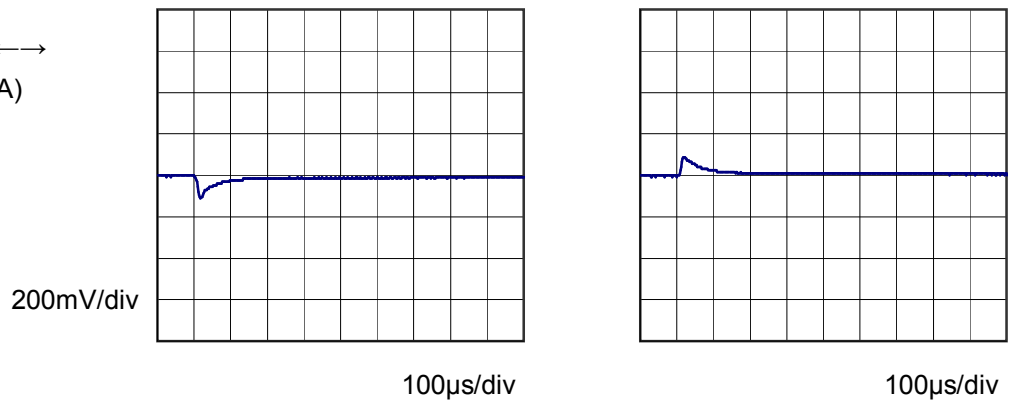
Min. Load (0A) ←→
 Load 100% (7.5A)



Min. Load (0A) ←→
 Load 50% (3.75A)



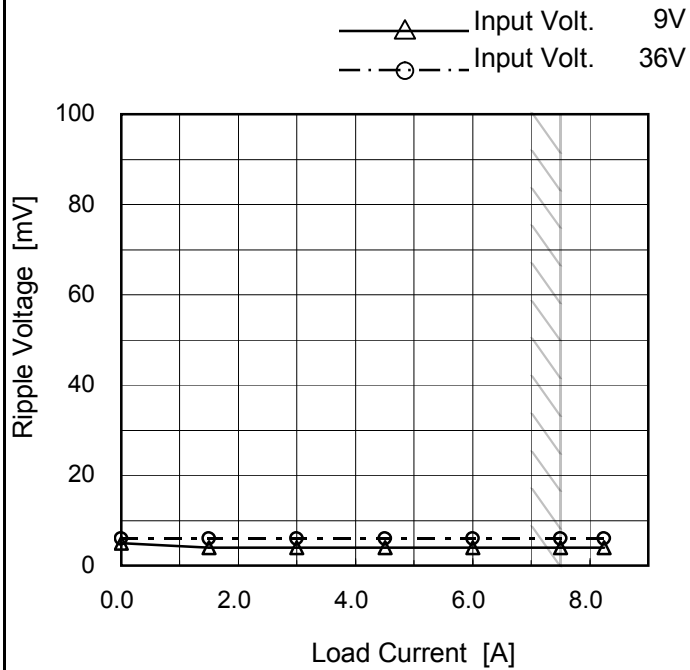
Load 50% (3.75A) ←→
 Load 100% (7.5A)





Model	MGFS30243R3	Temperature	25°C
Item	Ripple Voltage (by Load Current)	Testing Circuitry	Figure B
Object	+3.3V7.5A		

1.Graph



2.Values

Load Current [A]	Ripple Voltage [mV]	
	Input Volt. 9 [V]	Input Volt. 36 [V]
0.00	5	6
1.50	4	6
3.00	4	6
4.50	4	6
6.00	4	6
7.50	4	6
8.25	4	6
--	-	-
--	-	-
--	-	-
--	-	-

Ripple Voltage is shown as p-p in the figure below.
 Note: Slanted line shows the range of the rated load current.

Ripple [mVp-p]

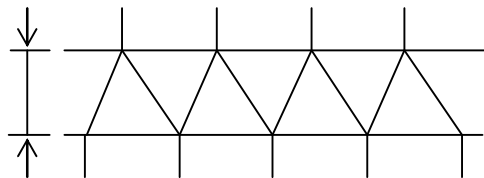
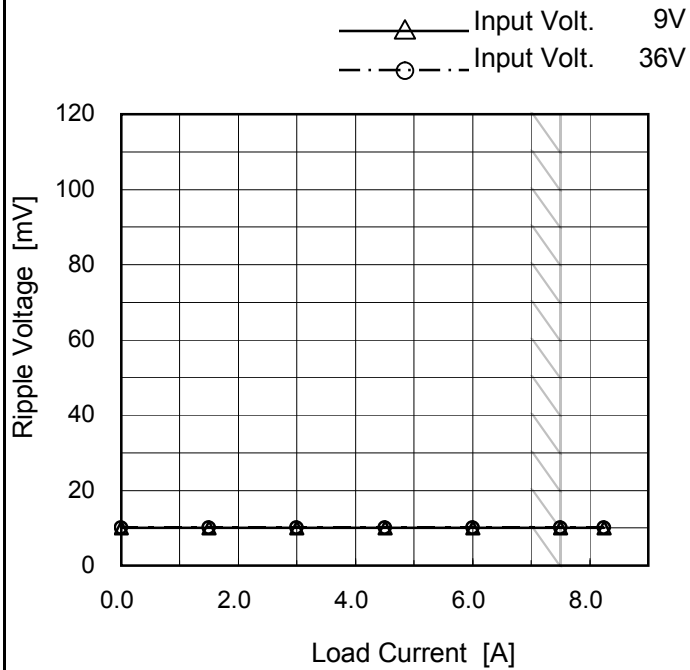


Fig.Complex Ripple Wave Form



Model	MGFS30243R3	Temperature	25°C
Item	Ripple-Noise	Testing Circuitry	Figure B
Object	+3.3V7.5A		

1.Graph



2.Values

Load Current [A]	Ripple-Noise [mV]	
	Input Volt. 9 [V]	Input Volt. 36 [V]
0.00	10	10
1.50	10	10
3.00	10	10
4.50	10	10
6.00	10	10
7.50	10	10
8.25	10	10
--	-	-
--	-	-
--	-	-
--	-	-

Ripple-Noise is shown as p-p in the figure below.
 Note: Slanted line shows the range of the rated load current.

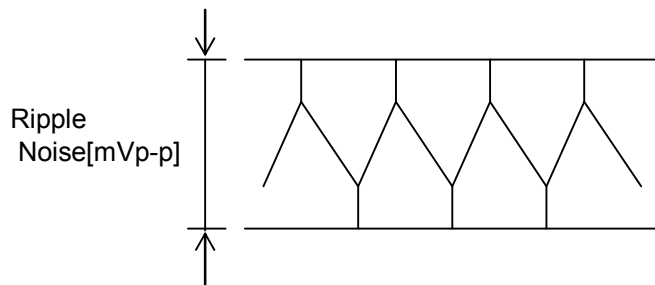


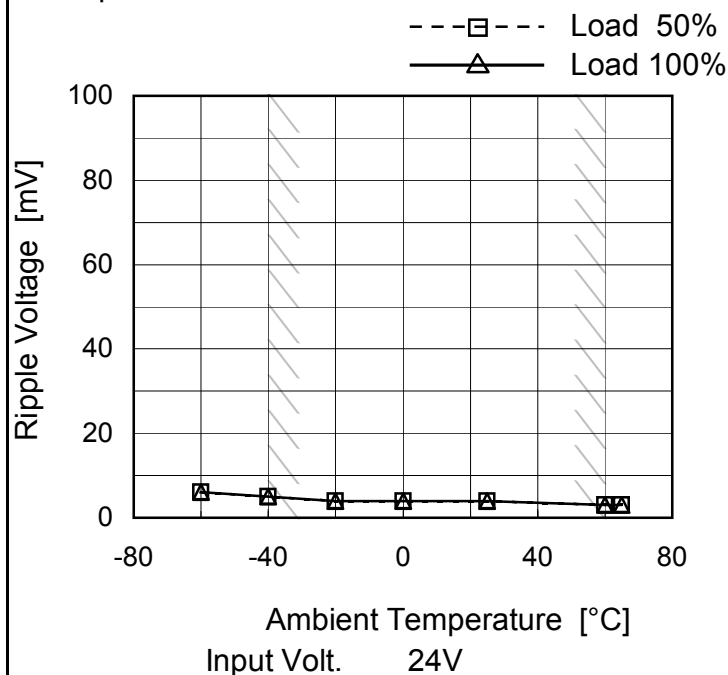
Fig.Complex Ripple Noise Wave Form



Model	MGFS30243R3
Item	Ripple Voltage (by Ambient Temp.)
Object	+3.3V7.5A

Testing Circuitry Figure B

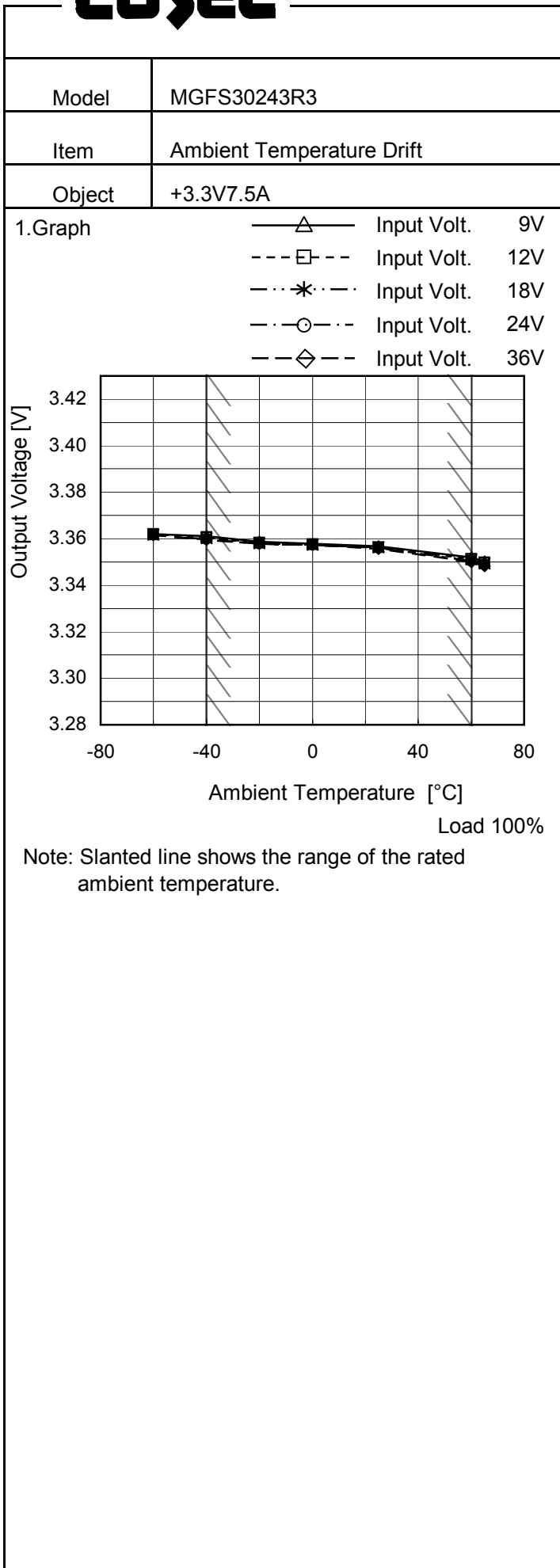
1.Graph



2.Values

Ambient Temperature [°C]	Ripple Voltage [mV]	
	Load 50%	Load 100%
-60	6	6
-40	5	5
-20	4	4
0	4	4
25	4	4
60	3	3
65	3	3
--	-	-
--	-	-
--	-	-
--	-	-

Measured by 100 MHz Oscilloscope.
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	3.362	3.362	3.362	3.362	3.362
-40	3.361	3.361	3.360	3.360	3.360
-20	3.359	3.358	3.358	3.358	3.358
0	3.358	3.358	3.358	3.357	3.357
25	3.357	3.356	3.356	3.356	3.356
60	3.352	3.351	3.351	3.351	3.350
65	3.350	3.350	3.349	3.349	3.348
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-
--	-	-	-	-	-



COSEL		
Model	MGFS30243R3	
Item	Output Voltage Accuracy	Testing Circuitry Figure A
Object	+3.3V7.5A	

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 - 60°C

Input Voltage : 9 - 36V

Load Current : 0 - 7.5A

* 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	-40	9	0	3.366	±8	±0.2
Minimum Voltage	60	36	7.5	3.350		



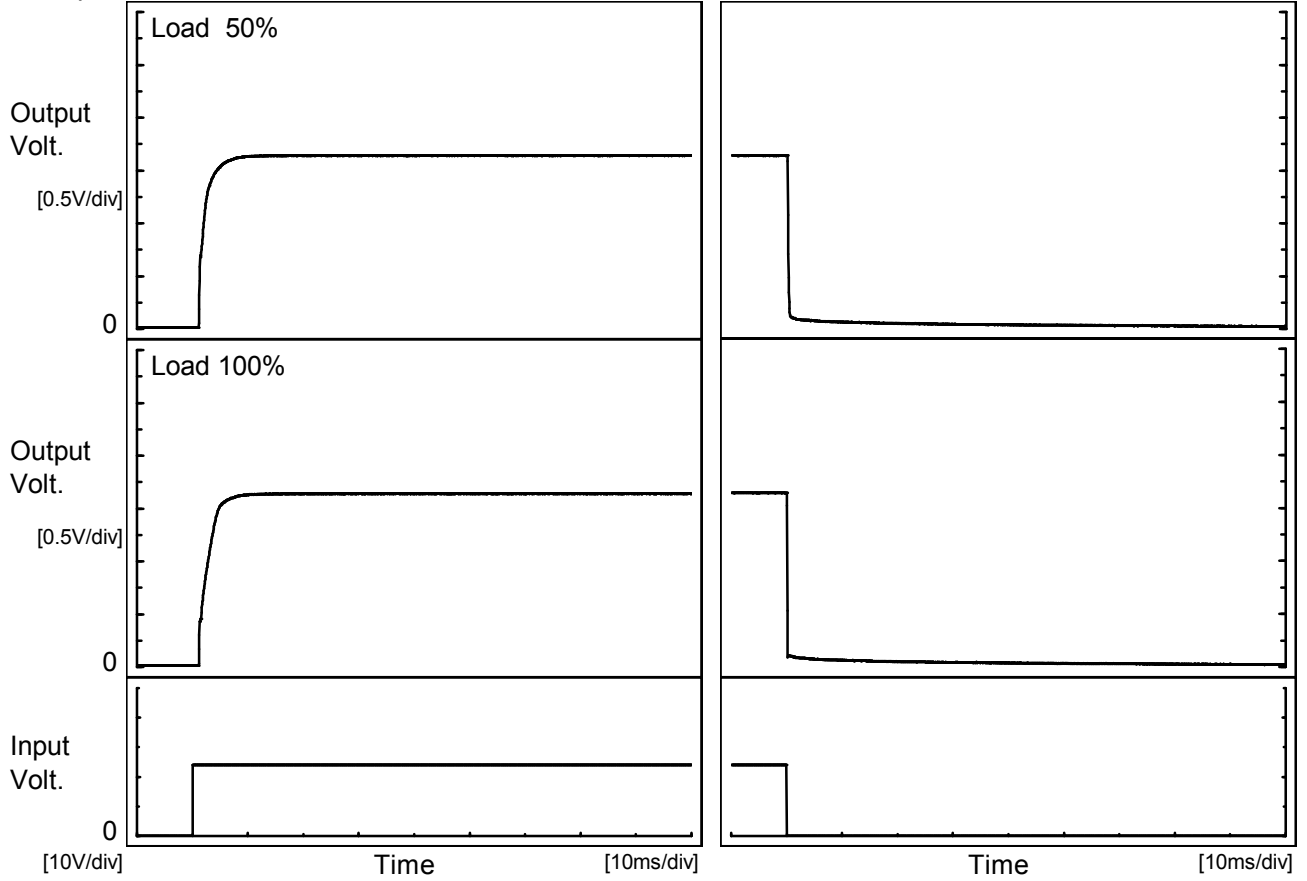
COSEL																								
Model	MGFS30243R3																							
Item	Time Lapse Drift	Temperature 25°C Testing Circuitry Figure A																						
Object	+3.3V7.5A																							
<p>1.Graph</p> <p style="text-align: center;">Time [H]</p> <p>Input Volt. 24V Load 100%</p>		<p>2.Values</p> <table border="1"> <thead> <tr> <th>Time since start [H]</th> <th>Output Voltage [V]</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>3.354</td></tr> <tr><td>0.5</td><td>3.353</td></tr> <tr><td>1.0</td><td>3.353</td></tr> <tr><td>2.0</td><td>3.353</td></tr> <tr><td>3.0</td><td>3.353</td></tr> <tr><td>4.0</td><td>3.353</td></tr> <tr><td>5.0</td><td>3.353</td></tr> <tr><td>6.0</td><td>3.353</td></tr> <tr><td>7.0</td><td>3.353</td></tr> <tr><td>8.0</td><td>3.353</td></tr> </tbody> </table>	Time since start [H]	Output Voltage [V]	0.0	3.354	0.5	3.353	1.0	3.353	2.0	3.353	3.0	3.353	4.0	3.353	5.0	3.353	6.0	3.353	7.0	3.353	8.0	3.353
Time since start [H]	Output Voltage [V]																							
0.0	3.354																							
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1.0	3.353																							
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3.0	3.353																							
4.0	3.353																							
5.0	3.353																							
6.0	3.353																							
7.0	3.353																							
8.0	3.353																							



Model		MGFS30243R3	Temperature	25°C
Item		Rise and Fall Time	Testing Circuitry	Figure A
Object		+3.3V7.5A		

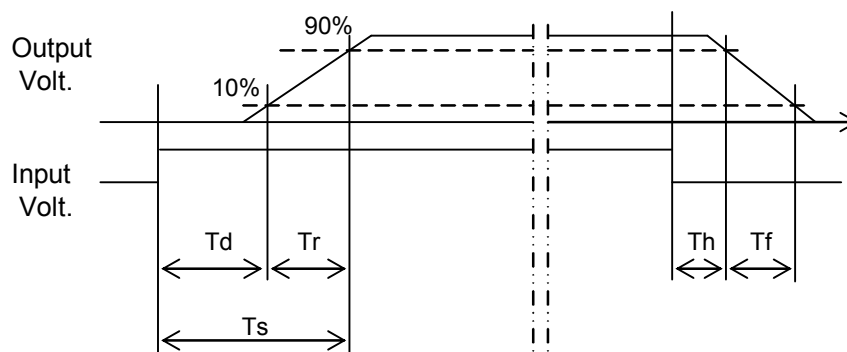
1. Graph

Input Volt. 24 V



2. Values

		[ms]				
Load \ Time	Time	Td	Tr	Ts	Th	Tf
50 %		1.2	3.2	4.4	0.1	0.3
100 %		1.3	3.5	4.8	0.1	0.1

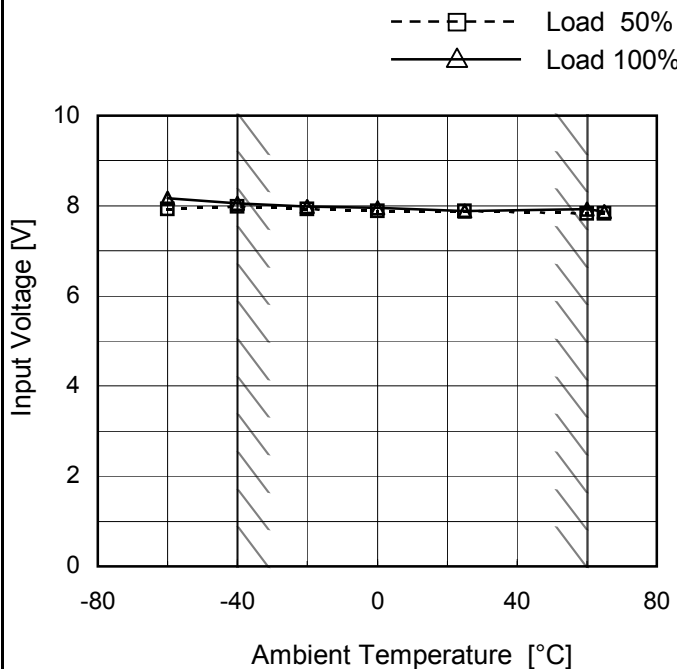




Model	MGFS30243R3
Item	Minimum Input Voltage for Regulated Output Voltage
Object	+3.3V7.5A

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%
-60	8.0	8.2
-40	8.0	8.1
-20	8.0	8.0
0	7.9	8.0
25	7.9	7.9
60	7.9	8.0
65	7.9	7.9
--	-	-
--	-	-
--	-	-
--	-	-



<p>Model MGFS30243R3</p>		<p>Temperature 25°C Testing Circuitry Figure A</p>																																																																																			
<p>Item Overcurrent Protection</p>																																																																																					
<p>Object +3.3V7.5A</p>																																																																																					
<p>1.Graph</p> <div style="display: flex; align-items: flex-start;"> <div style="margin-right: 20px;"> <p>—△ Input Volt. 9V</p> <p>—□ Input Volt. 12V</p> <p>—* Input Volt. 18V</p> <p>—○ Input Volt. 24V</p> <p>—◇ Input Volt. 36V</p> </div> </div>		<p>2.Values</p> <table border="1"> <thead> <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> </thead> <tbody> <tr><td>3.30</td><td>9.065</td><td>9.057</td><td>9.161</td><td>9.158</td><td>9.048</td></tr> <tr><td>3.14</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>2.97</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>2.64</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>2.31</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>1.98</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>1.65</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>1.32</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>0.99</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>0.66</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>0.33</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>0.00</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr> </tbody> </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]	3.30	9.065	9.057	9.161	9.158	9.048	3.14	-	-	-	-	-	2.97	-	-	-	-	-	2.64	-	-	-	-	-	2.31	-	-	-	-	-	1.98	-	-	-	-	-	1.65	-	-	-	-	-	1.32	-	-	-	-	-	0.99	-	-	-	-	-	0.66	-	-	-	-	-	0.33	-	-	-	-	-	0.00	-	-	-	-	-
Output Voltage [V]	Load Current [A]																																																																																				
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COSEL																																								
Model	MGFS30243R3																																							
Item	Overvoltage Protection	Testing Circuitry Figure A																																						
Object	+3.3V7.5A																																							
<p>1.Graph</p> <div style="text-align: right;"> <p>—△— Input Volt. 24V</p> <p>---□--- Input Volt. 36V</p> </div> <p style="text-align: center;">Ambient Temperature [°C]</p> <p style="text-align: right;">Load 0%</p> <p>Note: Slanted line shows the range of the rated ambient temperature.</p>		<p>2.Values</p> <table border="1"> <thead> <tr> <th rowspan="2">Ambient Temperature [°C]</th> <th colspan="2">Operating Point [V]</th> </tr> <tr> <th>Input Volt. 24[V]</th> <th>Input Volt. 36[V]</th> </tr> </thead> <tbody> <tr><td>-60</td><td>5.03</td><td>5.02</td></tr> <tr><td>-40</td><td>4.95</td><td>4.95</td></tr> <tr><td>-20</td><td>4.88</td><td>4.87</td></tr> <tr><td>0</td><td>4.81</td><td>4.81</td></tr> <tr><td>25</td><td>4.73</td><td>4.73</td></tr> <tr><td>60</td><td>4.63</td><td>4.62</td></tr> <tr><td>65</td><td>4.62</td><td>4.61</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]	Operating Point [V]		Input Volt. 24[V]	Input Volt. 36[V]	-60	5.03	5.02	-40	4.95	4.95	-20	4.88	4.87	0	4.81	4.81	25	4.73	4.73	60	4.63	4.62	65	4.62	4.61	--	-	-	--	-	-	--	-	-	--	-	-
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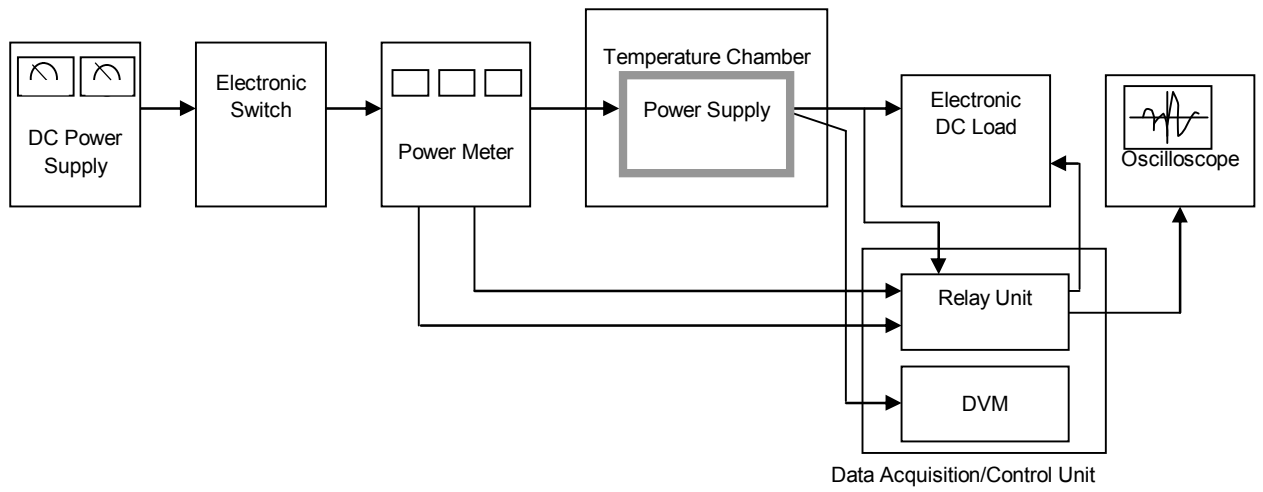


Figure A

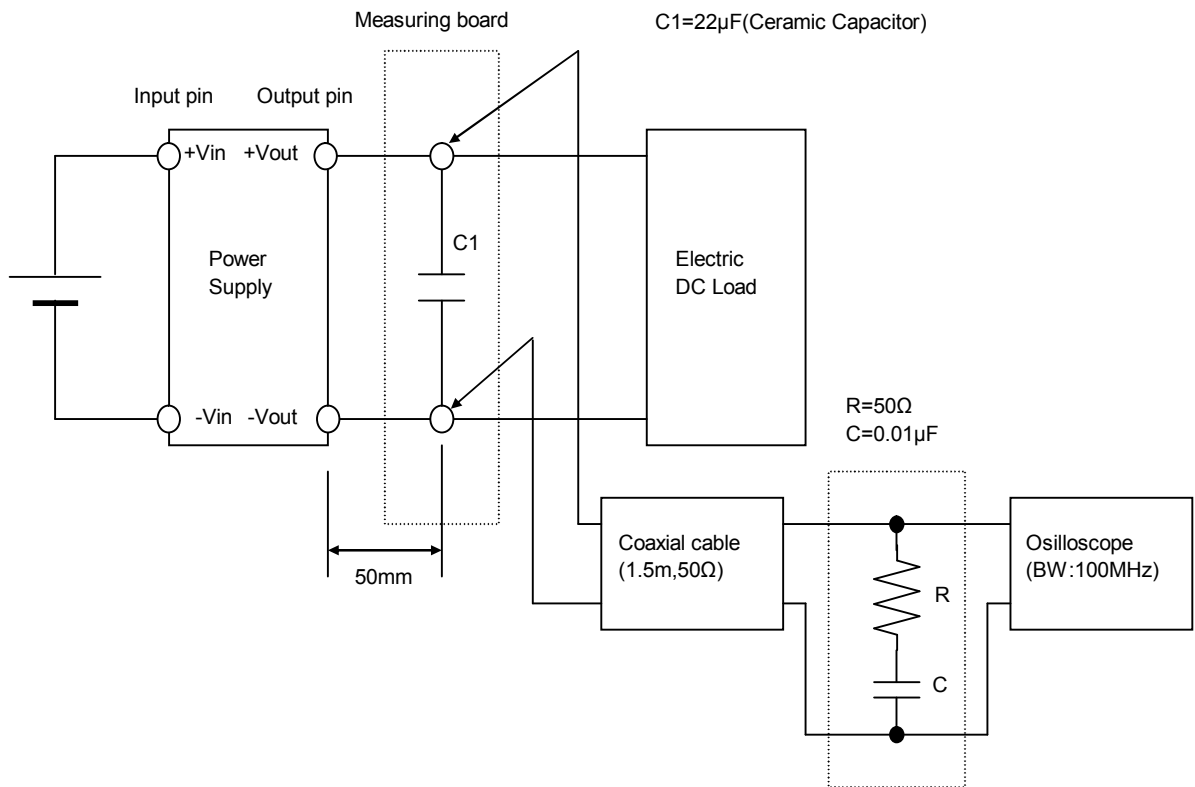


Figure B (Ripple and Ripple noise Characteristic)