

TEST DATA OF STMGFS30243R3

Regulated DC Power Supply
February 1, 2013

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Takahiro Yoneda Design Manager

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COSEL CO.,LTD.

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(Final Page 18)

Model		STMGFS30243R3	
Item		Input Current (by Input Voltage)	
Object			
1.Graph		2.Values	

—△—

Load 100%

---□---

Load 50%

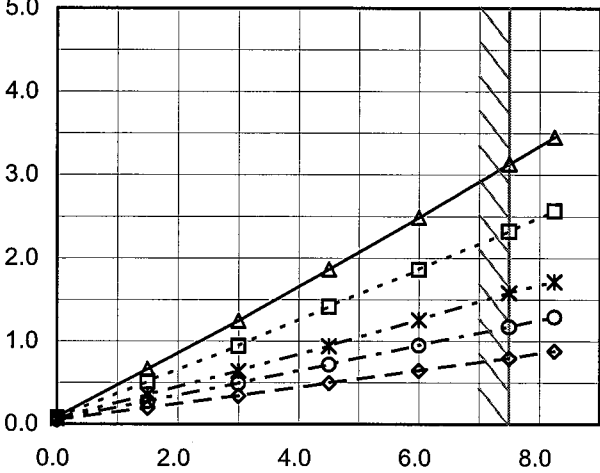
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Load 0%

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

Input Voltage [V]	Input Current [A]		
	Load 0%	Load 50%	Load 100%
0.0	0.000	0.000	0.000
6.0	0.001	0.002	0.002
7.0	0.002	0.002	0.002
8.0	0.002	0.002	0.002
8.1	0.002	0.003	0.002
8.2	0.090	1.700	3.440
8.3	0.088	1.678	3.438
8.5	0.088	1.637	3.329
9.0	0.087	1.543	3.131
12.0	0.078	1.171	2.322
18.0	0.064	0.805	1.582
24.0	0.057	0.603	1.171
36.0	0.049	0.419	0.797
40.0	0.049	0.382	0.723
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Model		STMGFS30243R3																																																																														
Item		Input Current (by Load Current)																																																																														
Object																																																																																
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>																																																																														
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Model

STMGFS30243R3

Item

Line Regulation

Object

+3.3V7.5A

Temperature

25°C

Testing Circuitry

Figure A

1.Graph

□

Load 50%

—

△

—

Load 100%

Output Voltage [V]

3.38

3.36

3.34

3.32

3.30

3.28

3.26

3.24

5

15

25

35

45

Input Voltage [V]

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

2.Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
8.5	3.317	3.309
9.0	3.317	3.309
12.0	3.317	3.309
15.0	3.317	3.309
18.0	3.317	3.309
24.0	3.316	3.309
30.0	3.316	3.308
36.0	3.316	3.308
40.0	3.316	3.308



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3.00	3.319	3.319	3.318	3.318	3.318																																																																														
4.50	3.316	3.315	3.315	3.315	3.315																																																																														
6.00	3.312	3.312	3.312	3.312	3.311																																																																														
7.50	3.309	3.309	3.309	3.309	3.308																																																																														
8.25	3.308	3.307	3.307	3.307	3.307																																																																														
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Model		STMGFS30243R3		Temperature 25°C																																							
Item		Ripple Voltage (by Load Current)		Testing Circuitry Figure B																																							
Object		+3.3V7.5A																																									
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>9V</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 Voltage [mV]</th></tr><tr><th>Input Volt. 9 [V]</th><th>Input Volt. 36 [V]</th></tr><tr><td>0.00</td><td>10</td><td>10</td></tr><tr><td>1.50</td><td>10</td><td>10</td></tr><tr><td>3.00</td><td>10</td><td>10</td></tr><tr><td>4.50</td><td>10</td><td>10</td></tr><tr><td>6.00</td><td>10</td><td>10</td></tr><tr><td>7.50</td><td>10</td><td>10</td></tr><tr><td>8.25</td><td>10</td><td>10</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. 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	--	-	-	--	-	-	--	-	-	--	-	-
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<div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div>Ripple [mVp-p]</div><div></div></div><p>Fig.Complex Ripple Wave Form</p></div>																																											
				BC - 10718																																							

LUXEL																																									
Model	STMGFS30243R3	Temperature	25°C																																						
Item	Ripple-Noise	Testing Circuitry	Figure B																																						
Object	+3.3V7.5A																																								
1.Graph		2.Values																																							
<div><div><div>—△—</div><div>Input Volt. 9V</div></div><div><div>-·-○-·-</div><div>Input Volt. 36V</div></div></div> <p>Ripple-Noise [mV]</p> <p>Load Current [A]</p> <p>Measured by 100 MHz Oscilloscope. Ripple-Noise is shown as p-p in the figure below. Note: Slanted line shows the range of the rated load current.</p> <div><div><div>↓</div><div>Ripple Noise[mVp-p]</div><div>↑</div></div></div> <p>Fig.Complex Ripple Noise Wave Form</p>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="2">Ripple-Noise [mV]</th></tr><tr><th>Input Volt. 9 [V]</th><th>Input Volt. 36 [V]</th></tr><tr><td>0.00</td><td>20</td><td>20</td></tr><tr><td>1.50</td><td>20</td><td>20</td></tr><tr><td>3.00</td><td>20</td><td>20</td></tr><tr><td>4.50</td><td>20</td><td>20</td></tr><tr><td>6.00</td><td>20</td><td>20</td></tr><tr><td>7.50</td><td>20</td><td>20</td></tr><tr><td>8.25</td><td>20</td><td>20</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-Noise [mV]		Input Volt. 9 [V]	Input Volt. 36 [V]	0.00	20	20	1.50	20	20	3.00	20	20	4.50	20	20	6.00	20	20	7.50	20	20	8.25	20	20	--	-	-	--	-	-	--	-	-	--	-	-
Load Current [A]	Ripple-Noise [mV]																																								
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9

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BC - 10718

Model		STMGFS30243R3	
Item		Ambient Temperature Drift	
Object		+3.3V7.5A	

1.Graph

—△—

Input Volt.

9V

---□---

Input Volt.

12V

---*---

Input Volt.

18V

---○---

Input Volt.

24V

---◇---

Input Volt.

36V

Output Voltage [V]



		Testing Circuitry Figure A
Model	STMGFS30243R3	
Item	Output Voltage Accuracy	
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 : -20 - 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	-20	9	0	3.329	±13	±0.4
Minimum Voltage	60	36	7.5	3.303		

COSEL

Model	STMGFS30243R3																								
Item	Time Lapse Drift	Temperature	25°C																						
		Testing Circuitry	Figure A																						
Object	+3.3V7.5A																								
1.Graph		2.Values																							
<div><div><div>3.38</div><div>3.36</div><div>3.34</div><div>3.32</div><div>3.30</div><div>3.28</div><div>3.26</div><div>3.24</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>Load100%</div></div></div>		<table><tr><th>Time since start [H]</th><th>Output Voltage [V]</th></tr><tr><td>0.0</td><td>3.309</td></tr><tr><td>0.5</td><td>3.308</td></tr><tr><td>1.0</td><td>3.308</td></tr><tr><td>2.0</td><td>3.308</td></tr><tr><td>3.0</td><td>3.308</td></tr><tr><td>4.0</td><td>3.308</td></tr><tr><td>5.0</td><td>3.308</td></tr><tr><td>6.0</td><td>3.308</td></tr><tr><td>7.0</td><td>3.308</td></tr><tr><td>8.0</td><td>3.308</td></tr></table>		Time since start [H]	Output Voltage [V]	0.0	3.309	0.5	3.308	1.0	3.308	2.0	3.308	3.0	3.308	4.0	3.308	5.0	3.308	6.0	3.308	7.0	3.308	8.0	3.308
Time since start [H]	Output Voltage [V]																								
0.0	3.309																								
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5.0	3.308																								
6.0	3.308																								
7.0	3.308																								
8.0	3.308																								

- 13 -

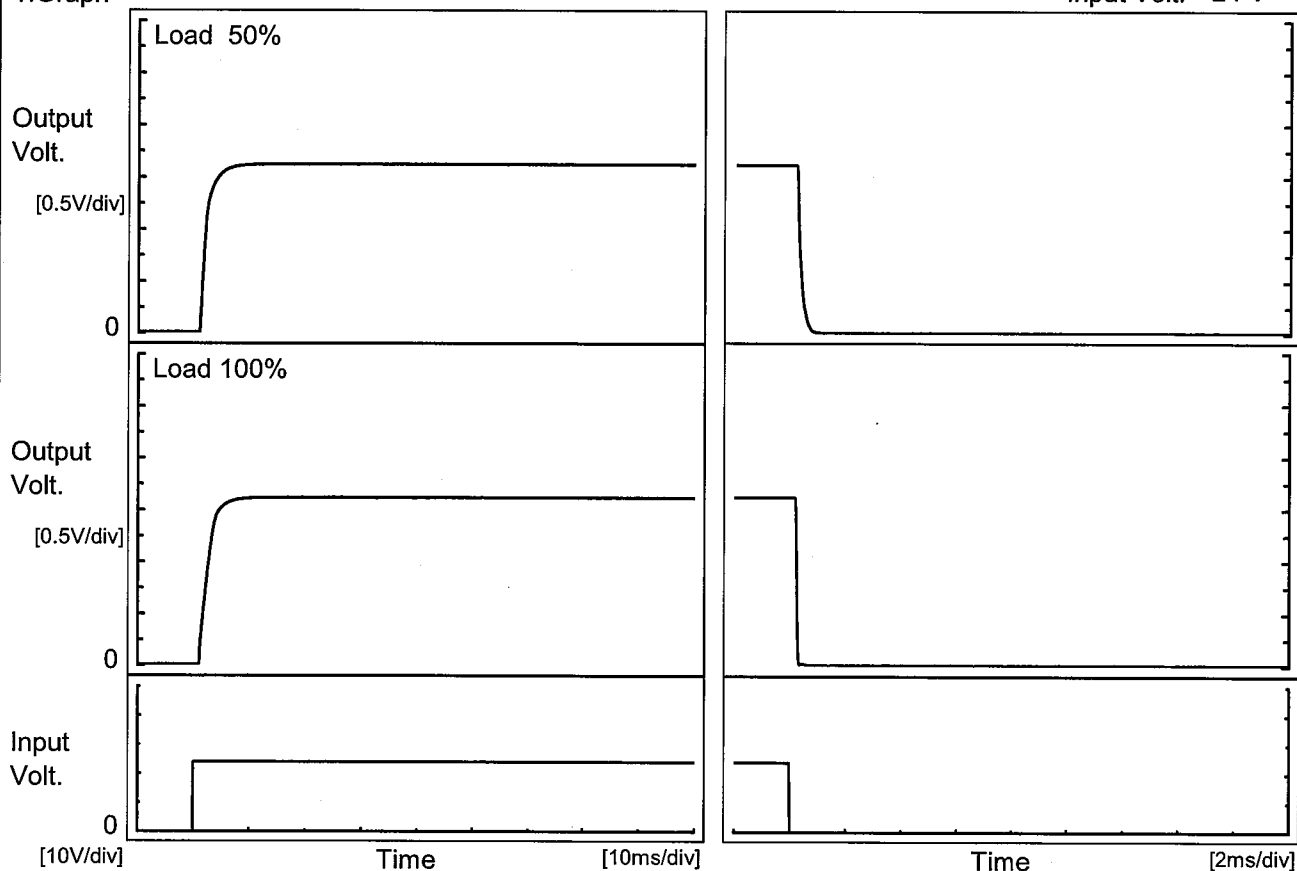
BC - 10718

COSEL

Model	STMGFS30243R3	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	+3.3V7.5A		

1. Graph

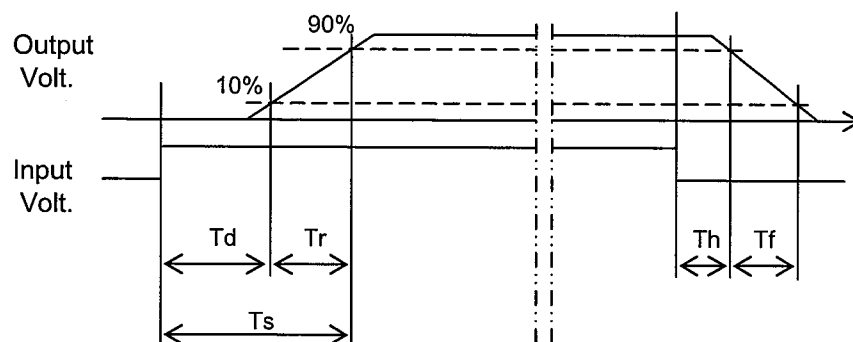
Input Volt. 24 V



2. Values

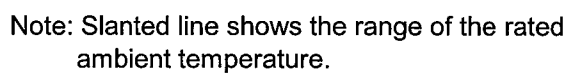
[ms]

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	1.3	3.1	4.4	0.2	0.3
100 %	1.3	3.4	4.7	0.2	0.1



Testing Circuitry Figure A

2.Values



Ambient Temperature [°C]	Input Voltage [V]	
	Load 50%	Load 100%
-40	8.0	8.1
-20	8.0	8.2
0	8.0	8.2
10	8.0	8.1
25	8.0	8.2
30	8.1	8.2
40	8.1	8.2
50	8.1	8.1
60	8.1	8.1
65	8.1	8.2
--	-	-

BC - 10718

COSEL

Model		STMGFS30243R3
Item		Overvoltage Protection
Object		+3.3V7.5A

1.Graph

—△—

Input Volt. 24V

---□---

Input Volt. 36V

Operating Point [V]

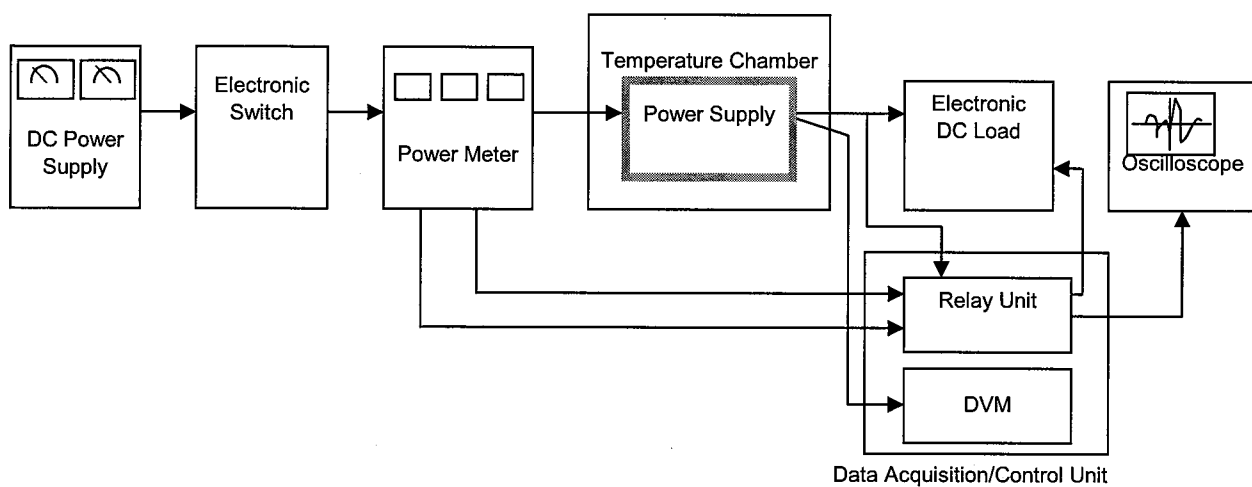


Figure A

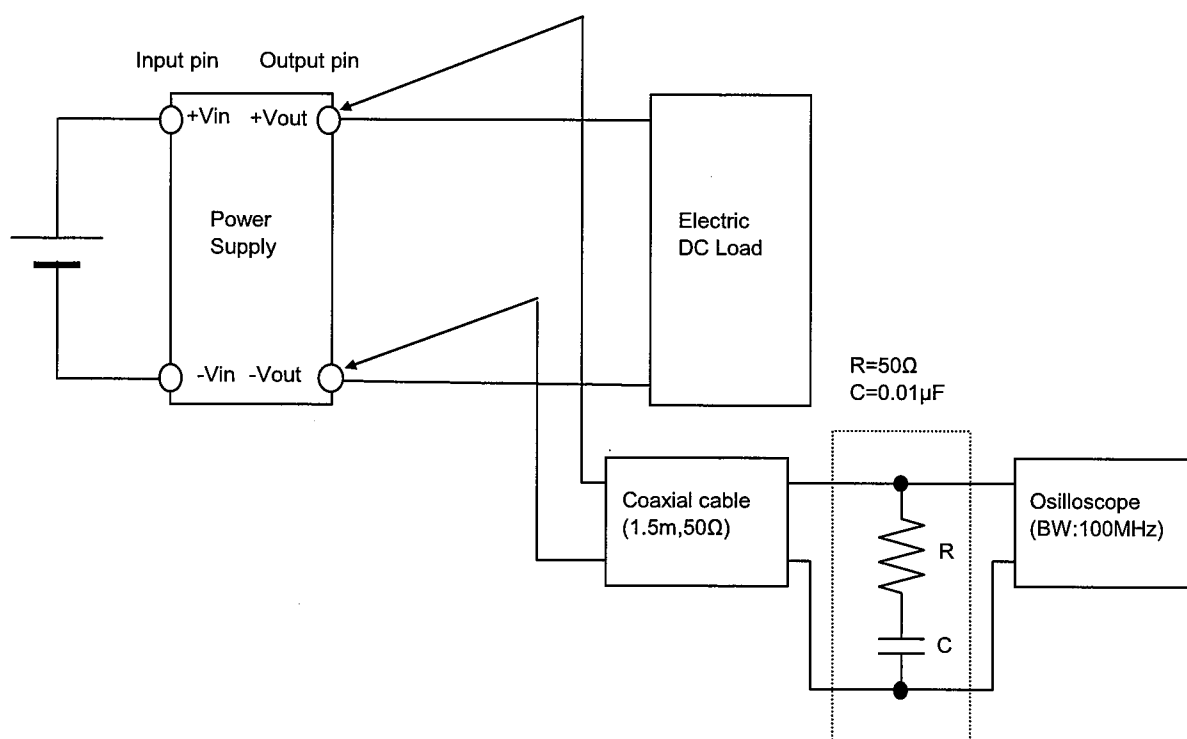


Figure B (Ripple and Ripple noise Characteristic)