

# TEST DATA OF MHFS61215

Regulated DC Power Supply  
October 26, 2021

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Design Manager

Prepared by : Yoshihiko Saeki  
Design Engineer

**COSEL CO.,LTD.**

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Model		MHFS61215		Temperature 25°C																																																																												
Item		Input Current (by Load Current)		Testing Circuitry Figure A																																																																												
Object		_____																																																																														
1.Graph		<div><div>—△—</div>Input Volt. 4.5V</div> <div><div>---□---</div>Input Volt. 5V</div> <div><div>-·-*·-</div>Input Volt. 9V</div> <div><div>-·-○-</div>Input Volt. 12V</div> <div><div>--◇--</div>Input Volt. 18V</div>		2.Values																																																																												
<div><div>Input Current [A]</div><div><div>0.000.100.200.300.400.50</div></div></div>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="5">Input Current [A]</th></tr><tr><th>Input Volt. 4.5[V]</th><th>Input Volt. 5[V]</th><th>Input Volt. 9[V]</th><th>Input Volt. 12[V]</th><th>Input Volt. 18[V]</th></tr><tr><td>0.00</td><td>0.054</td><td>0.049</td><td>0.019</td><td>0.014</td><td>0.012</td></tr><tr><td>0.08</td><td>0.343</td><td>0.310</td><td>0.177</td><td>0.139</td><td>0.110</td></tr><tr><td>0.16</td><td>0.644</td><td>0.579</td><td>0.328</td><td>0.250</td><td>0.183</td></tr><tr><td>0.24</td><td>0.954</td><td>0.853</td><td>0.475</td><td>0.363</td><td>0.256</td></tr><tr><td>0.32</td><td>1.275</td><td>1.140</td><td>0.624</td><td>0.473</td><td>0.331</td></tr><tr><td>0.36</td><td>1.443</td><td>1.290</td><td>0.701</td><td>0.529</td><td>0.367</td></tr><tr><td>0.40</td><td>*1</td><td>1.437</td><td>0.777</td><td>0.585</td><td>0.404</td></tr><tr><td>0.44</td><td>*1</td><td>1.590</td><td>0.856</td><td>0.642</td><td>0.440</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]	Input Current [A]					Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	0.00	0.054	0.049	0.019	0.014	0.012	0.08	0.343	0.310	0.177	0.139	0.110	0.16	0.644	0.579	0.328	0.250	0.183	0.24	0.954	0.853	0.475	0.363	0.256	0.32	1.275	1.140	0.624	0.473	0.331	0.36	1.443	1.290	0.701	0.529	0.367	0.40	*1	1.437	0.777	0.585	0.404	0.44	*1	1.590	0.856	0.642	0.440	--	-	-	-	-	-	--	-	-	-	-	-	--	-	-	-	-	-
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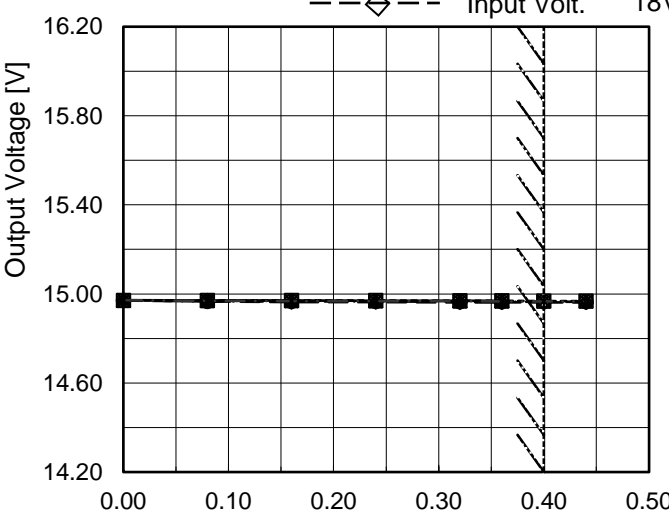
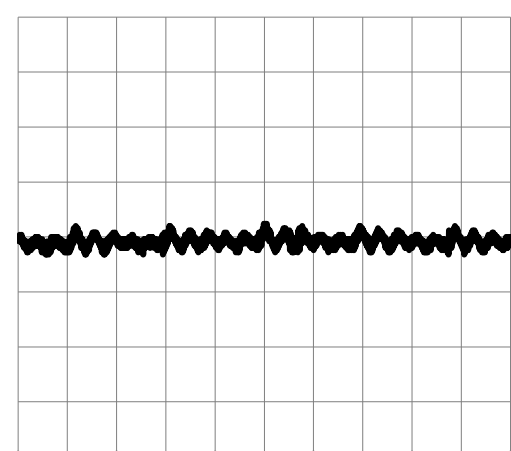
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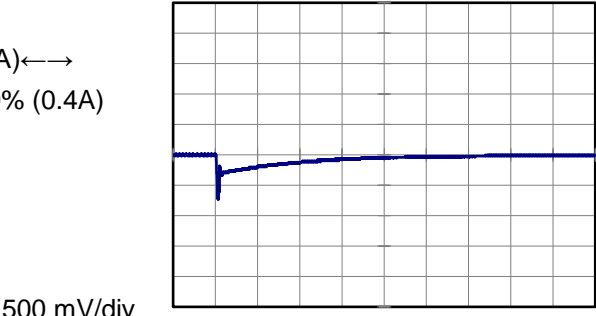
Model	MHFS61215		
Item	Dynamic Load Response	Temperature	25°C
		Testing Circuitry	Figure A
Object	+15V0.4A		

Input Volt. 12 V  
Cycle 100 ms

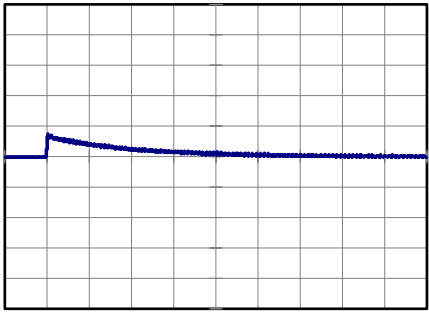
Response.  $t_1=t_2=50\mu\text{s}$ . Typ



Min.Load (0A) ←→  
Load 100% (0.4A)

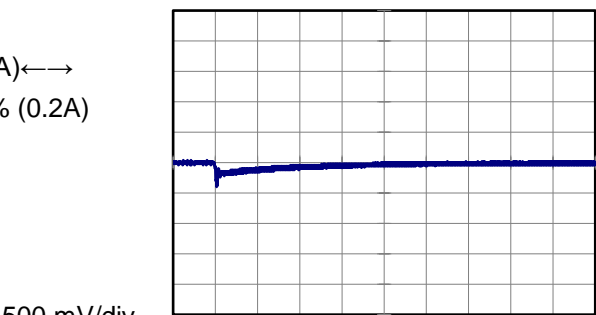


1 ms/div

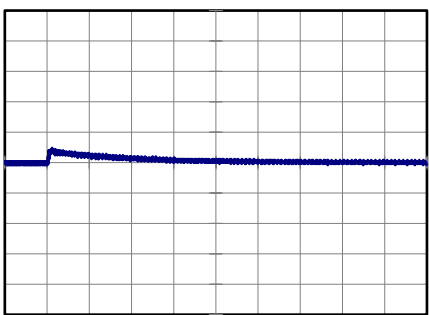


1 ms/div

Min.Load (0A) ←→  
Load 50% (0.2A)



1 ms/div

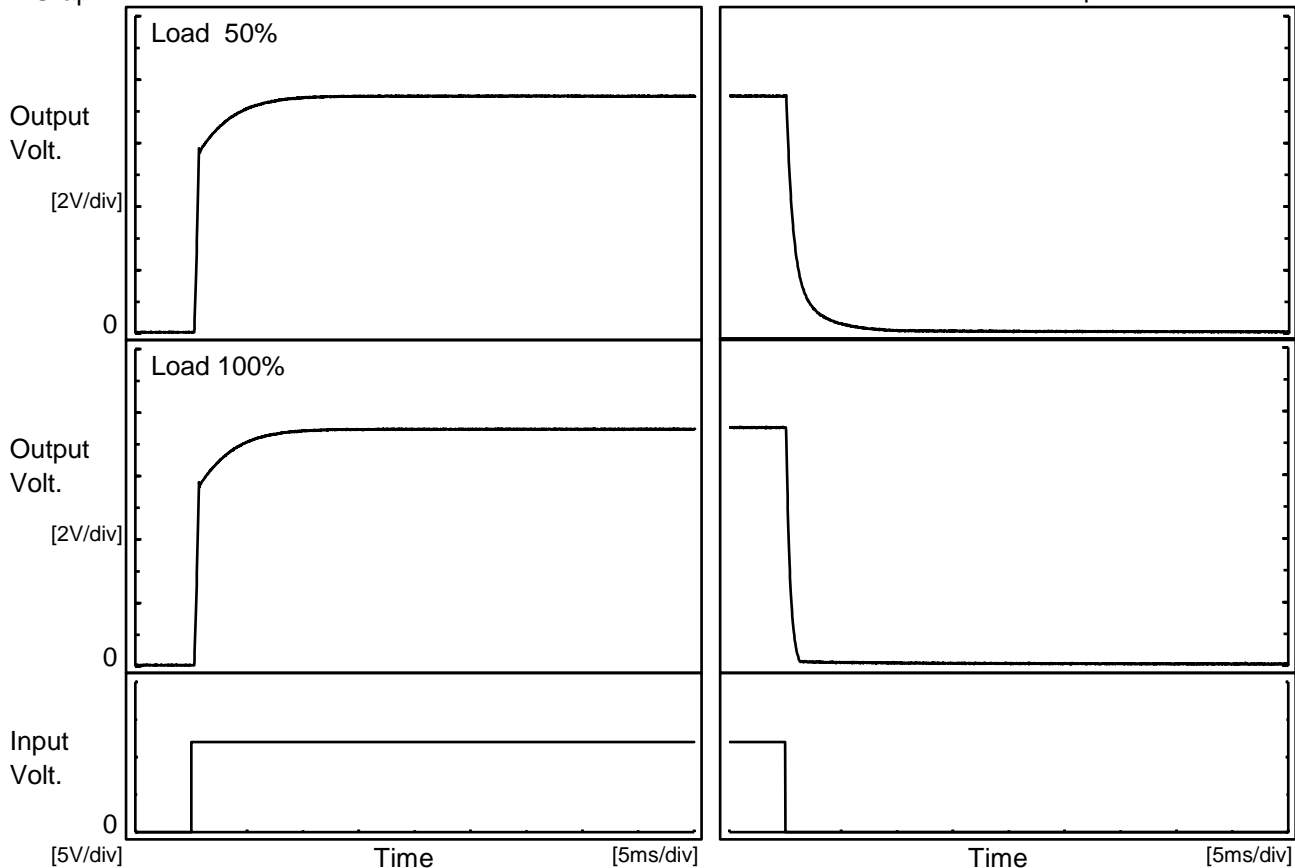


1 ms/div



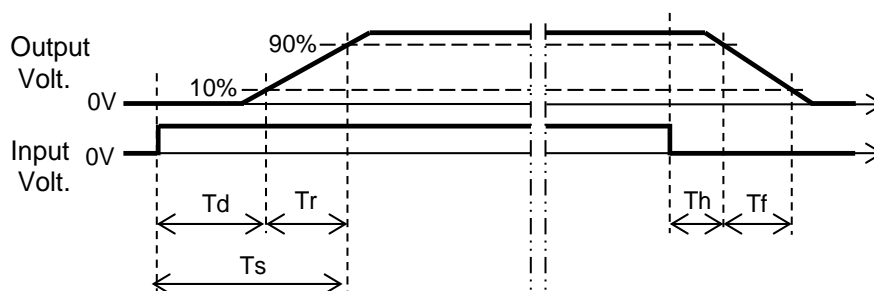
Model	MHFS61215	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	+15V0.4A		

# 1.Graph



# 2.Values

		[ms]				
Load	Time	Td	Tr	Ts	Th	Tf
50 %		0.4	3.1	3.5	0.2	2.4
100 %		0.4	3.2	3.6	0.1	0.8





<div>Model</div> <div>MHFS61215</div>		<div>Temperature</div> <div>25°C</div>																																																																																				
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10.5	0.589	0.601	0.654	0.640	0.606																																																																																	
9.0	0.647	0.655	0.690	0.671	0.635																																																																																	
7.5	0.696	0.707	0.729	0.704	0.655																																																																																	
6.0	0.760	0.768	0.773	0.739	0.685																																																																																	
4.5	0.818	0.828	0.818	0.776	0.715																																																																																	
3.0	0.882	0.891	0.863	0.814	0.745																																																																																	
1.5	0.942	0.948	0.906	0.846	0.769																																																																																	
0.0	0.890	0.879	0.779	0.711	0.638																																																																																	
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<div>Note: Slanted line shows the range of the rated load current.</div> <div>Maximum output current at 4.5V input Voltage is 80% of rated load current.</div> <div>Refer to instruction manuals for details of input derating.</div>																																																																																						

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BC-11821

# COSEL

		Testing Circuitry Figure A
Model	MHFS61215	
Item	Ambient Temperature Drift	
Object	+15V0.4A	

## 1.Values

Load 100%

Ambient Temperature[°C]	Output Voltage [V]				
	Input Volt. 4.5V*1	Input Volt. 5V	Input Volt. 9V	Input Volt. 12V	Input Volt. 18V
-40	14.856	14.858	14.859	14.860	14.859
25	14.958	14.960	14.958	14.958	14.957
55	14.976	14.978	14.978	14.977	14.976

\*1 Load 80%

Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A
Object	+15V0.4A	

## 1.Values

Ambient Temperature[°C]	Input Voltage [V]	
	Load 50%	Load 80%
-40	3.6	3.5
25	3.6	3.6
55	3.5	3.5

Model		MHFS61215		Temperature 25°C																																																																														
Item		Switching frequency (by Load Current)		Testing Circuitry Figure A																																																																														
Object		+15V0.4A																																																																																
1.Graph		<div><div><div>—△—</div>Input Volt. 4.5V</div><div><div>---□---</div>Input Volt. 5V</div><div><div>-·-*·-</div>Input Volt. 9V</div><div><div>-·-○-</div>Input Volt. 12V</div><div><div>--◇--</div>Input Volt. 18V</div></div> <div>Switching Frequency [kHz]</div> <div>Load Current [A]</div>		2.Values																																																																														
				<table><tr><th rowspan="2">Load Current [A]</th><th colspan="5">Switching Frequency [kHz]</th></tr><tr><th>Input Volt. 4.5[V]</th><th>Input Volt. 5[V]</th><th>Input Volt. 9[V]</th><th>Input Volt. 12[V]</th><th>Input Volt. 18[V]</th></tr><tr><td>0.00</td><td>1124</td><td>1164</td><td>1340</td><td>1322</td><td>1321</td></tr><tr><td>0.08</td><td>667</td><td>711</td><td>962</td><td>1032</td><td>1102</td></tr><tr><td>0.16</td><td>461</td><td>506</td><td>738</td><td>815</td><td>901</td></tr><tr><td>0.24</td><td>353</td><td>394</td><td>605</td><td>680</td><td>770</td></tr><tr><td>0.32</td><td>283</td><td>316</td><td>509</td><td>586</td><td>670</td></tr><tr><td>0.36</td><td>257</td><td>287</td><td>473</td><td>546</td><td>636</td></tr><tr><td>0.40</td><td>*1</td><td>264</td><td>438</td><td>512</td><td>594</td></tr><tr><td>0.44</td><td>*1</td><td>243</td><td>412</td><td>480</td><td>564</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]	Switching Frequency [kHz]					Input Volt. 4.5[V]	Input Volt. 5[V]	Input Volt. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	0.00	1124	1164	1340	1322	1321	0.08	667	711	962	1032	1102	0.16	461	506	738	815	901	0.24	353	394	605	680	770	0.32	283	316	509	586	670	0.36	257	287	473	546	636	0.40	*1	264	438	512	594	0.44	*1	243	412	480	564	--	-	-	-	-	-	--	-	-	-	-	-	--	-	-	-	-	-
Load Current [A]	Switching Frequency [kHz]																																																																																	
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When load current is low, MH operates intermittently, so switching frequency would not become constant.																																																																																		

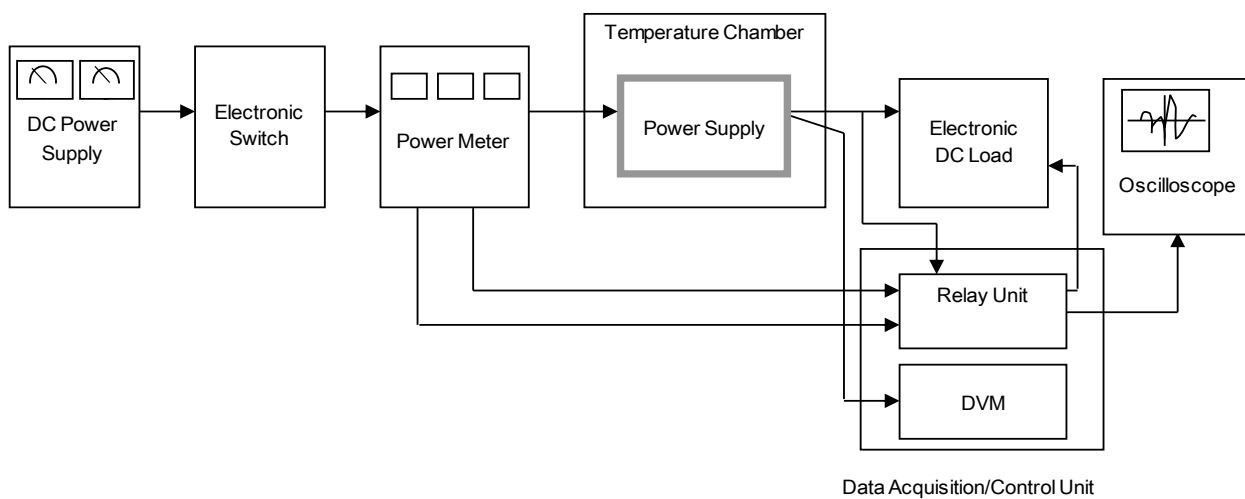


Figure A

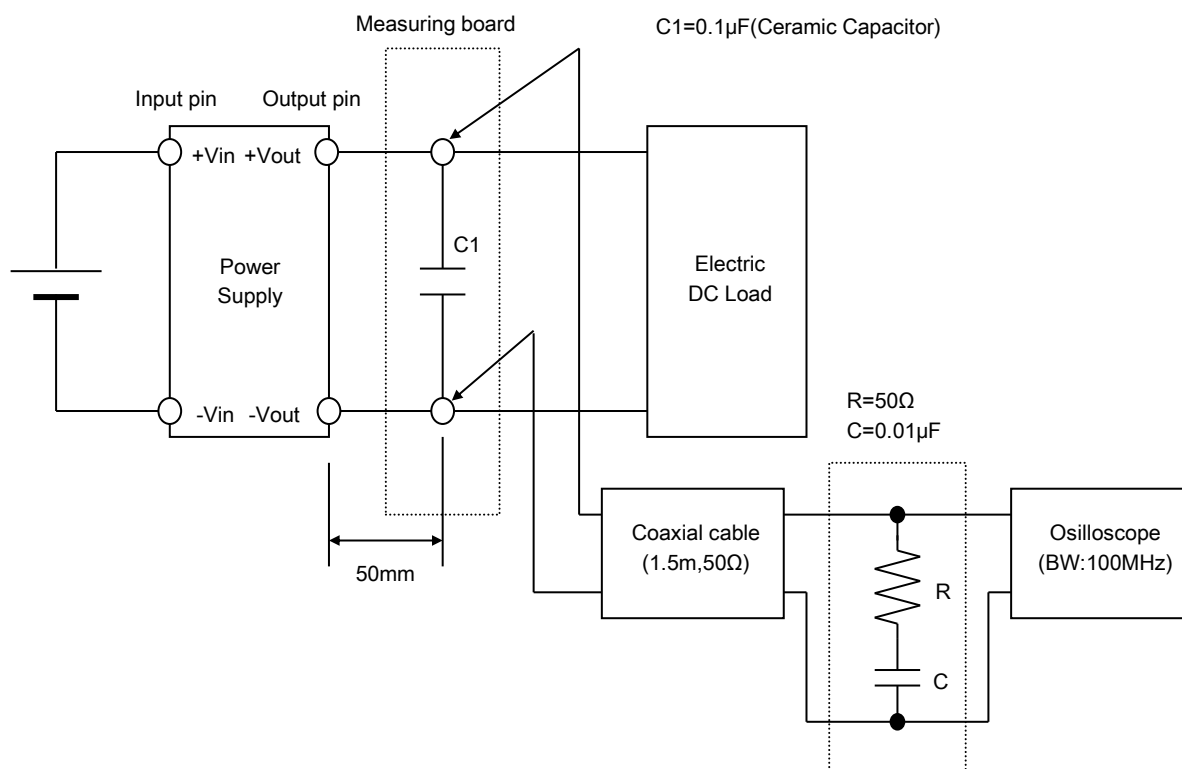


Figure B