

TEST DATA OF MHFS6243R3

Regulated DC Power Supply
October 27, 2021

Approved by : _____ Kenichi Tsukada

Design Manager

Prepared by : _____ Yoshihiko Saeki

Design Engineer

COSEL CO.,LTD.

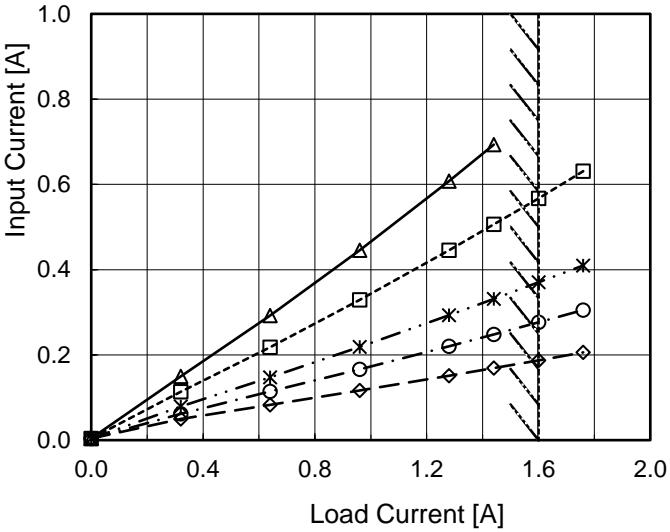


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Model	MHFS6243R3	Temperature Testing Circuitry	25°C Figure A																																																																													
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Note: Slanted line shows the range of the rated load current.

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Model	MHFS6243R3	Temperature Testing Circuitry	25°C Figure A																																																																													
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1.Graph	<p>The graph plots Efficiency [%] on the y-axis (40 to 90) against Load Current [A] on the x-axis (0.0 to 2.0). Five data series are shown for different input voltages: 9V (solid line with open triangles), 12V (dashed line with open squares), 18V (dash-dot line with crosses), 24V (dotted line with open circles), and 36V (dash-dot-dot line with open diamonds). All curves show efficiency increasing with load current up to a peak around 1.2-1.4A, then slightly decreasing. A slanted line from approximately (0.4, 58%) to (1.6, 40%) indicates the rated load current range.</p>																																																																															
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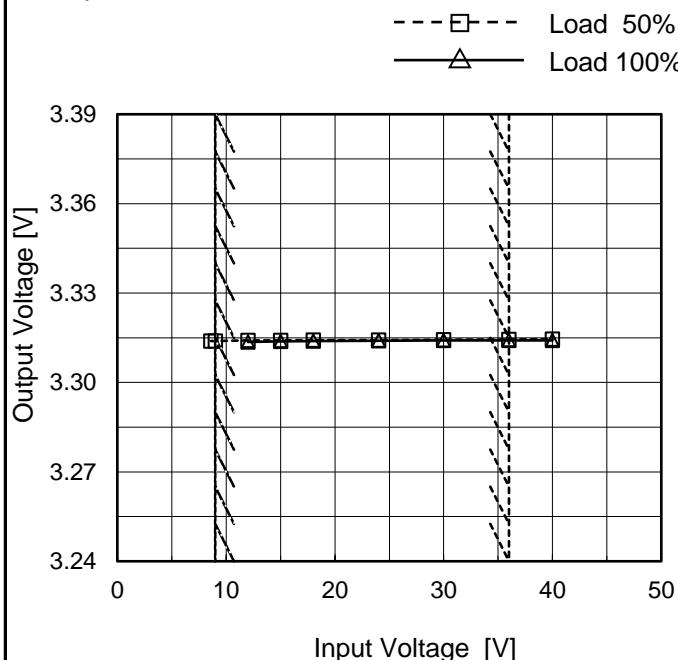
Note: Slanted line shows the range of the rated load current.

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Model	MHFS6243R3
Item	Line Regulation
Object	+3.3V1.6A

 Temperature 25°C
 Testing Circuitry Figure A

1. Graph



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

2. Values

Input Voltage [V]	Output Voltage [V]	
	Load 50%	Load 100%
8.6	3.314	*1
9.0	3.314	*1
12.0	3.314	3.314
15.0	3.314	3.314
18.0	3.314	3.314
24.0	3.314	3.314
30.0	3.314	3.314
36.0	3.314	3.314
40.0	3.315	3.314

*1 Maximum output current at 9V input
 Voltage is 80% of rated load current.
 Refer to instruction manuals for details of
 input derating.

COSEL

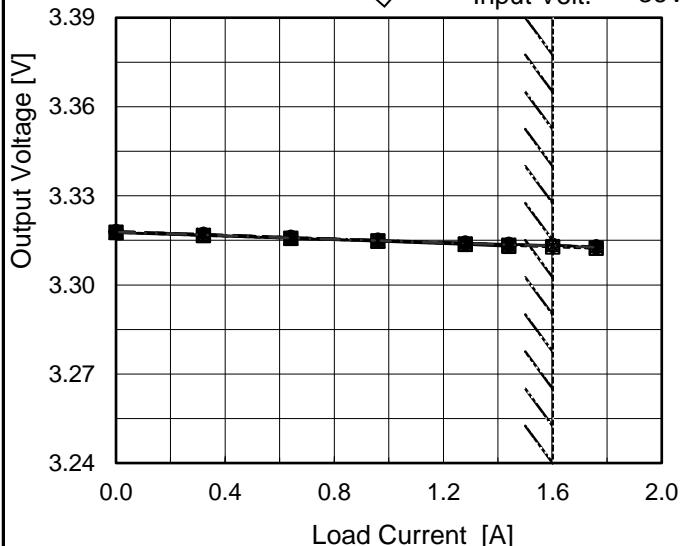
Model MHFS6243R3

Item Load Regulation

Object +3.3V1.6A

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.

Temperature 25°C
 Testing Circuitry Figure A

2.Values

Load Current [A]	Output Voltage [V]				
	9[V]	12[V]	18[V]	24[V]	36[V]
0.00	3.318	3.318	3.318	3.318	3.318
0.32	3.317	3.317	3.317	3.317	3.317
0.64	3.316	3.316	3.316	3.316	3.316
0.96	3.315	3.315	3.315	3.315	3.315
1.28	3.314	3.314	3.314	3.314	3.314
1.44	3.313	3.313	3.314	3.314	3.314
1.60	*1	3.313	3.313	3.313	3.313
1.76	*1	3.312	3.313	3.313	3.313
--	-	-	-	-	-
--	-	-	-	-	-
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*1 Maximum output current at 9V input
 Voltage is 80% of rated load current.
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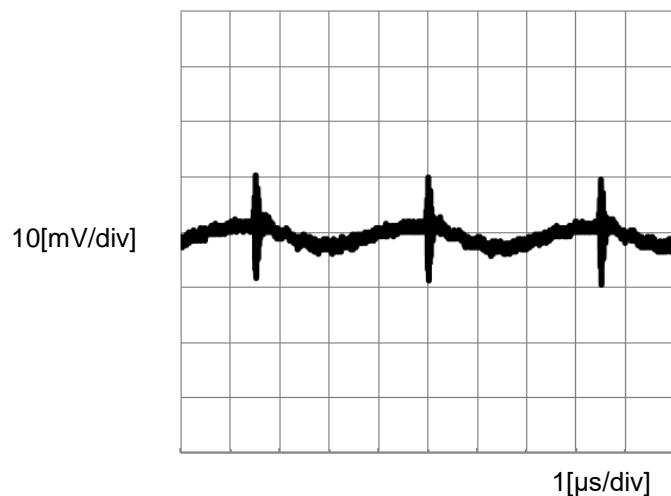
Item Ripple-Noise

Temperature 25°C
 Testing Circuitry Figure B

Object +3.3V1.6A

1.Graph

Input Voltage 24V
 Load 100%



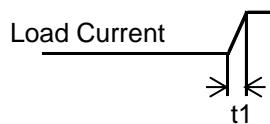
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Model	MHFS6243R3	Temperature	25°C
Item	Dynamic Load Response	Testing Circuitry	Figure A
Object	+3.3V1.6A		

Input Volt. 24 V
 Cycle 100 ms

Response. $t_1=t_2=50\mu s$. Typ

Load Current



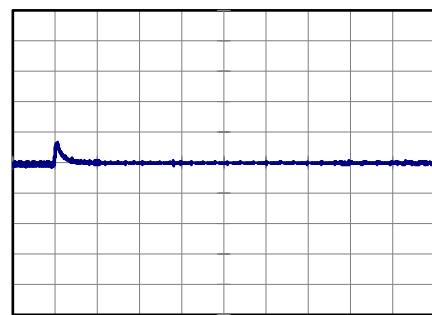
t_1

t_2

Min.Load (0A)↔
 Load 100% (1.6A)

200 mV/div

1 ms/div

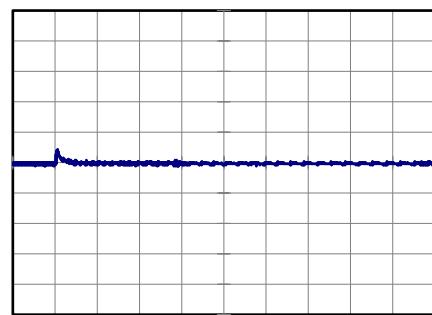


1 ms/div

Min.Load (0A)↔
 Load 50% (0.8A)

200 mV/div

1 ms/div

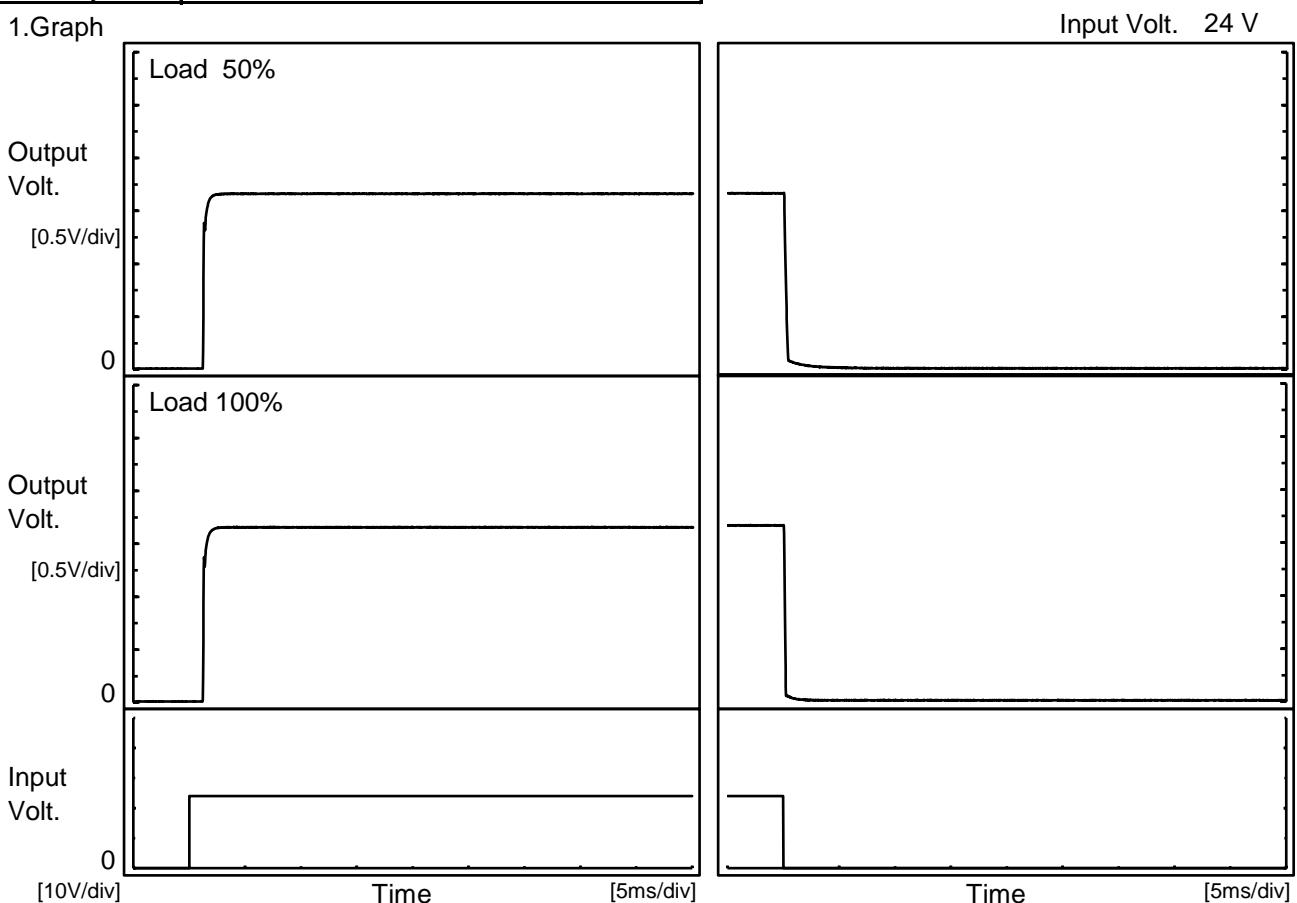


1 ms/div

COSEL

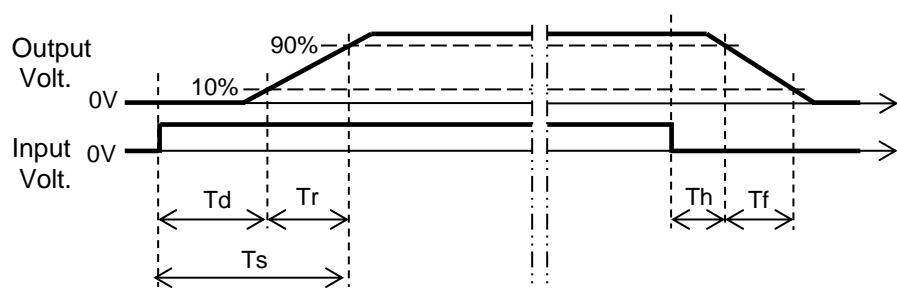
Model	MHFS6243R3	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	+3.3V1.6A		

1. Graph



2. Values

Load	Time	Td	Tr	Ts	Th	Tf	[ms]
50 %		1.3	0.3	1.6	0.1	0.3	
100 %		1.2	0.4	1.6	0.1	0.1	



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Model	MHFS6243R3	Testing Circuitry Figure A
Item	Ambient Temperature Drift	
Object	+3.3V1.6A	

1.Values

Load 100%

Ambient Temperature[°C]	Output Voltage [V]				
	Input Volt. 9V*1	Input Volt. 12V	Input Volt. 18V	Input Volt. 24V	Input Volt. 36V
-40	3.306	3.306	3.306	3.306	3.306
25	3.312	3.312	3.313	3.313	3.313
50	3.315	3.315	3.315	3.315	3.315

*1 Load 80%

Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A
Object	+3.3V1.6A	

1.Values

Ambient Temperature[°C]	Input Voltage [V]	
	Load 50%	Load 80%
-40	7.3	7.2
25	7.1	7.1
50	7.1	7.0

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2.Values	<table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th colspan="5">Switching Frequency [kHz]</th> </tr> <tr> <th>9[V]</th> <th>12[V]</th> <th>18[V]</th> <th>24[V]</th> <th>36[V]</th> </tr> </thead> <tbody> <tr> <td>0.00</td> <td>963</td> <td>1011</td> <td>1045</td> <td>966</td> <td>848</td> </tr> <tr> <td>0.32</td> <td>507</td> <td>581</td> <td>660</td> <td>704</td> <td>744</td> </tr> <tr> <td>0.64</td> <td>331</td> <td>394</td> <td>469</td> <td>510</td> <td>558</td> </tr> <tr> <td>0.96</td> <td>245</td> <td>297</td> <td>364</td> <td>402</td> <td>446</td> </tr> <tr> <td>1.28</td> <td>193</td> <td>239</td> <td>297</td> <td>332</td> <td>373</td> </tr> <tr> <td>1.44</td> <td>174</td> <td>217</td> <td>272</td> <td>306</td> <td>344</td> </tr> <tr> <td>1.60</td> <td>*1</td> <td>199</td> <td>251</td> <td>283</td> <td>320</td> </tr> <tr> <td>1.76</td> <td>*1</td> <td>183</td> <td>233</td> <td>264</td> <td>299</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> </tbody> </table>			Load Current [A]	Switching Frequency [kHz]					9[V]	12[V]	18[V]	24[V]	36[V]	0.00	963	1011	1045	966	848	0.32	507	581	660	704	744	0.64	331	394	469	510	558	0.96	245	297	364	402	446	1.28	193	239	297	332	373	1.44	174	217	272	306	344	1.60	*1	199	251	283	320	1.76	*1	183	233	264	299	--	-	-	-	-	-	--	-	-	-	-	-	--	-	-	-	-	-
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Note:	Slanted line shows the range of the rated load current. When load current is low, MH operates intermittently, so switching frequency would not become constant.																																																																															
	<p>*1 Maximum output current at 9V input Voltage is 80% of rated load current. Refer to instruction manuals for details of input derating.</p>																																																																															

COSEL

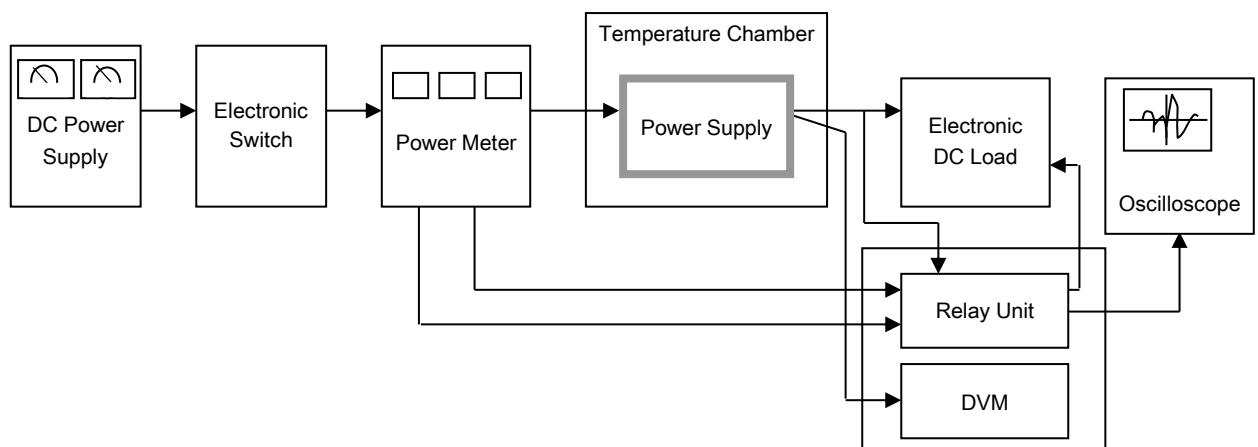


Figure A

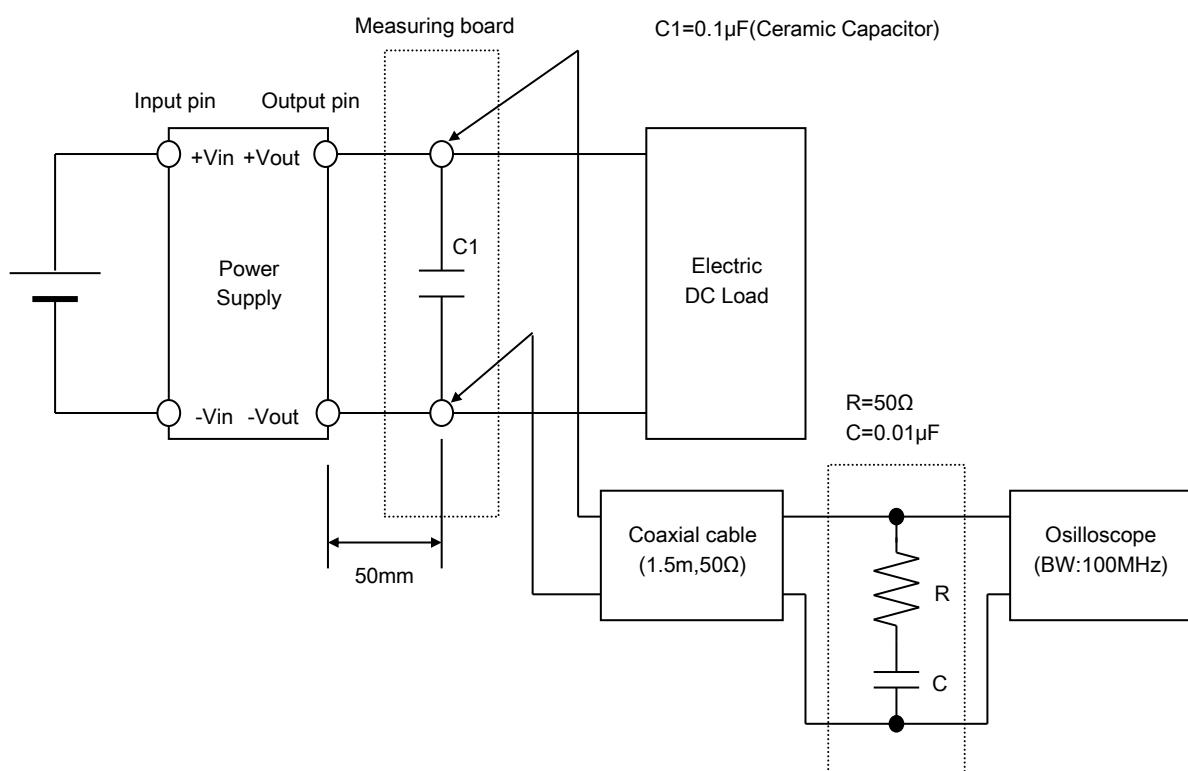


Figure B