



# TEST DATA OF MHFS32409

Regulated DC Power Supply  
May 27, 2020

Approved by : Kenichi Tsukada  
Kenichi Tsukada Design Manager

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Yoshihiko Saeki Design Engineer

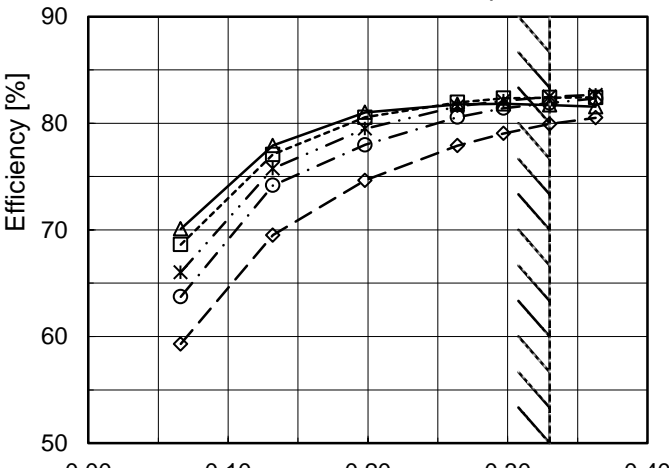
**COSEL CO.,LTD.**

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Model		MHFS32409	Temperature		25°C																																																																												
Item		Input Current (by Load Current)	Testing Circuitry		Figure A																																																																												
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1.Graph		<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>	2.Values																																																																														
<div><div>Input Current [A]</div><div><div>0.60</div><div>0.45</div><div>0.30</div><div>0.15</div><div>0.00</div><div>0.00</div><div>0.10</div><div>0.20</div><div>0.30</div><div>0.40</div><div>Load Current [A]</div></div></div>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="5">Input 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><tr><td>0.000</td><td>0.019</td><td>0.016</td><td>0.007</td><td>0.005</td><td>0.005</td></tr><tr><td>0.066</td><td>0.092</td><td>0.070</td><td>0.049</td><td>0.038</td><td>0.027</td></tr><tr><td>0.132</td><td>0.165</td><td>0.126</td><td>0.085</td><td>0.066</td><td>0.047</td></tr><tr><td>0.198</td><td>0.240</td><td>0.181</td><td>0.123</td><td>0.094</td><td>0.065</td></tr><tr><td>0.264</td><td>0.316</td><td>0.238</td><td>0.159</td><td>0.121</td><td>0.084</td></tr><tr><td>0.297</td><td>0.357</td><td>0.267</td><td>0.178</td><td>0.135</td><td>0.093</td></tr><tr><td>0.330</td><td>0.398</td><td>0.294</td><td>0.197</td><td>0.149</td><td>0.102</td></tr><tr><td>0.363</td><td>0.439</td><td>0.324</td><td>0.216</td><td>0.163</td><td>0.111</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. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	0.000	0.019	0.016	0.007	0.005	0.005	0.066	0.092	0.070	0.049	0.038	0.027	0.132	0.165	0.126	0.085	0.066	0.047	0.198	0.240	0.181	0.123	0.094	0.065	0.264	0.316	0.238	0.159	0.121	0.084	0.297	0.357	0.267	0.178	0.135	0.093	0.330	0.398	0.294	0.197	0.149	0.102	0.363	0.439	0.324	0.216	0.163	0.111	--	-	-	-	-	-	--	-	-	-	-	-	--	-	-	-	-	-
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Model		MHFS32409		Temperature 25°C	
Item		Efficiency (by Load Current)		Testing Circuitry Figure A	
Object					
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		<div>---□---</div> Input Volt. 12V			
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Model		MHFS32409	Temperature		25°C																																
Item		Line Regulation	Testing Circuitry		Figure A																																
Object		+9V0.33A																																			
1.Graph			2.Values																																		
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Load Current

Min.Load (0A) ← →  
Load 100% (0.33A)

200 mV/div

1 ms/div

t1

t2

t1, t2 = 50  $\mu$ s

Min.Load (0A) ← →  
Load 50% (0.165A)

200 mV/div

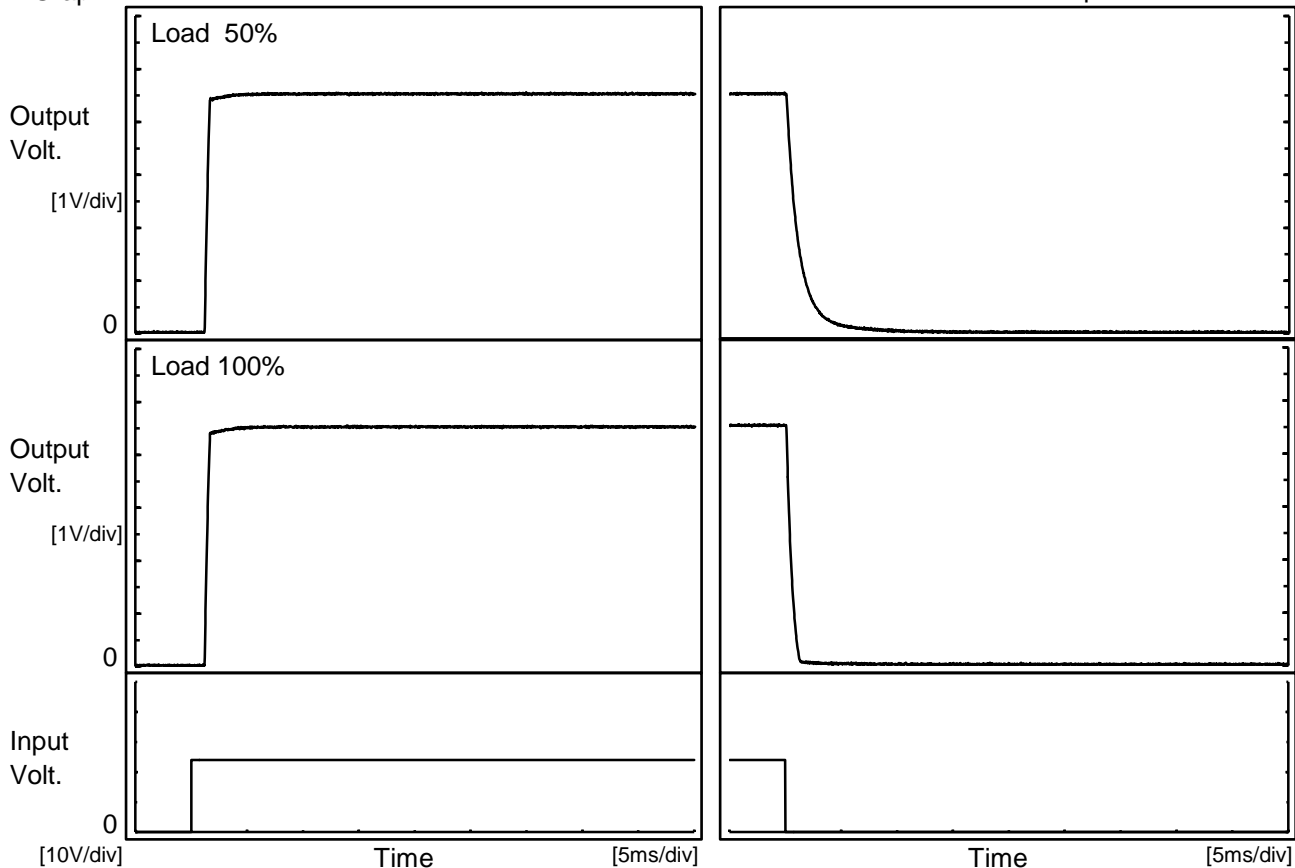
1 ms/div

The figure displays four oscilloscope waveforms arranged in a 2x2 grid, showing the load current response to a 50  $\mu$ s pulse. The top row corresponds to a 100% load (0.33A), and the bottom row corresponds to a 50% load (0.165A). The left column shows the rising edge (t1), and the right column shows the falling edge (t2). The waveforms illustrate the transient behavior of the load current, showing a sharp drop followed by a recovery to the steady-state level. The scale is 200 mV/div and 1 ms/div.



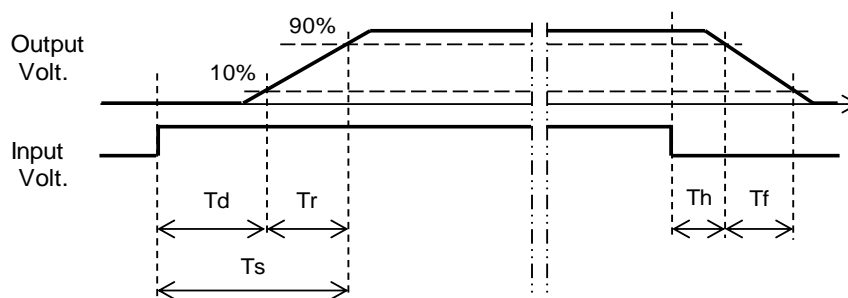
Model	MHFS32409	Temperature	25°C
Item	Rise and Fall Time	Testing Circuitry	Figure A
Object	+9V0.33A		

# 1.Graph



# 2.Values

Load \ Time	Td	Tr	Ts	Th	Tf
50 %	1.3	0.4	1.7	0.2	2.6
100 %	1.2	0.4	1.6	0.2	0.9





Model		MHFS32409		Temperature		25°C																																																																																
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**COSEL**

		Testing Circuitry Figure A
Model	MHFS32409	
Item	Ambient Temperature Drift	
Object	+9V0.33A	

## 1.Values

Ambient Temperature[°C]	Output Voltage [V]				
	Input Volt. 9V	Input Volt. 12V	Input Volt. 18V	Input Volt. 24V	Input Volt. 36V
-40	8.979	8.980	8.981	8.981	8.982
25	9.021	9.022	9.022	9.022	9.022
75	9.024	9.025	9.025	9.025	9.025

Item	Minimum Input Voltage for Regulated Output Voltage	Testing Circuitry Figure A
Object	+9V0.33A	

## 1.Values

Ambient Temperature[°C]	Input Voltage [V]	
	Load 50%	Load 100%
-40	7.3	7.3
25	7.2	7.2
75	7.0	7.1

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<div><div>Switching Frequency [kHz]</div><div><div><div>10000</div><div>1000</div><div>100</div></div><div><div>0.00</div><div>0.10</div><div>0.20</div><div>0.30</div><div>0.40</div></div><div>Load Current [A]</div></div></div>		<table><tr><th rowspan="2">Load Current [A]</th><th colspan="5">Switching Frequency [kHz]</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><tr><td>0.000</td><td>886</td><td>980</td><td>1050</td><td>1046</td><td>984</td></tr><tr><td>0.066</td><td>692</td><td>793</td><td>850</td><td>975</td><td>960</td></tr><tr><td>0.132</td><td>520</td><td>624</td><td>699</td><td>812</td><td>854</td></tr><tr><td>0.198</td><td>443</td><td>537</td><td>591</td><td>727</td><td>796</td></tr><tr><td>0.264</td><td>364</td><td>453</td><td>516</td><td>636</td><td>706</td></tr><tr><td>0.297</td><td>336</td><td>418</td><td>483</td><td>596</td><td>667</td></tr><tr><td>0.330</td><td>310</td><td>390</td><td>454</td><td>564</td><td>634</td></tr><tr><td>0.363</td><td>260</td><td>332</td><td>440</td><td>491</td><td>558</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. 9[V]	Input Volt. 12[V]	Input Volt. 18[V]	Input Volt. 24[V]	Input Volt. 36[V]	0.000	886	980	1050	1046	984	0.066	692	793	850	975	960	0.132	520	624	699	812	854	0.198	443	537	591	727	796	0.264	364	453	516	636	706	0.297	336	418	483	596	667	0.330	310	390	454	564	634	0.363	260	332	440	491	558	--	-	-	-	-	-	--	-	-	-	-	-	--	-	-	-	-	-
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