



**MILITARY DATA SHEET**

**MNLM109-H REV 0AL**

Original Creation Date: 06/29/95  
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**5 VOLT REGULATOR**

**Industry Part Number**

LM109

**NS Part Numbers**

LM109H/883

**Prime Die**

LM109

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**Processing**

MIL-STD-883, Method 5004

**Quality Conformance Inspection**

MIL-STD-883, Method 5005

**Subgrp Description**

**Temp ( °C)**

1	Static tests at	+25
2	Static tests at	+125
3	Static tests at	-55
4	Dynamic tests at	+25
5	Dynamic tests at	+125
6	Dynamic tests at	-55
7	Functional tests at	+25
8A	Functional tests at	+125
8B	Functional tests at	-55
9	Switching tests at	+25
10	Switching tests at	+125
11	Switching tests at	-55

## Electrical Characteristics

### DC/AC PARAMETERS

(The following conditions apply to all the following parameters, unless otherwise specified.)

DC:  $I_L = 5\text{mA}$ . Pre-Burn-In Stress Test per (SG) RPI-3-371.

AC:  $I_L = 5\text{mA}$ . Pre-Burn-In Stress Test per (SG) RPI-3-371.

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
Vstart	Start Up Input Voltage	$V_{out} \geq 4.706\text{V}$ , $R_L = 5\ \Omega$	1			9	V	1
Iq	Quiescent Current	$V_{in} = 7\text{V}$			-10		mA	1, 2, 3
		$V_{in} = 7.2\text{V}$ , $I_L = 500\text{mA}$	2		-10		mA	1, 2, 3
		$V_{in} = 25\text{V}$			-10		mA	1, 2, 3
		$V_{in} = 25\text{V}$ , $I_L = 500\text{mA}$	2		-10		mA	1, 2, 3
		$V_{in} = 35\text{V}$			-10		mA	1
Delta Iq	Quiescent Current Change	$7\text{V} \leq V_{in} \leq 25\text{V}$			-0.5	0.5	mA	1, 2, 3
		$V_{in} = 7.2\text{V}$ , $5\text{mA} \leq I_L \leq 500\text{mA}$	2		-0.8	0.8	mA	1, 2, 3
Vrline	Line Regulation	$7\text{V} \leq V_{in} \leq 25\text{V}$			-50	50	mV	1
		$7\text{V} \leq V_{in} \leq 25\text{V}$			-100	100	mV	2, 3
Vrload	Load Regulation	$V_{in} = 7.2\text{V}$ , $5\text{mA} \leq I_L \leq 500\text{mA}$	2		-50	50	mV	1
		$V_{in} = 7.2\text{V}$ , $5\text{mA} \leq I_L \leq 500\text{mA}$	2		-100	-100	mV	2, 3
		$V_{in} = 10\text{V}$ , $5\text{mA} \leq I_L \leq 500\ \text{mA}$			-50	50	mV	1
		$V_{in} = 10\text{V}$ , $5\text{mA} \leq I_L \leq 500\ \text{mA}$			-100	100	mV	2, 3
		$V_{in} = 25\text{V}$ , $20\text{mA} \leq I_L \leq 500\ \text{mA}$			-150	150	mV	1
		$V_{in} = 25\text{V}$ , $500\text{mA} \geq I_L \geq 20\ \text{mA}$ , ( $t_{pw} \leq 10\text{mS}$ )	2		-50	50	mV	1
Vout	Output Voltage	$V_{in} = 7\text{V}$ , $P_L \leq 2\text{W}$			4.6	5.4	V	1, 2, 3
		$V_{in} = 7.2\text{V}$ , $I_L = 500\text{mA}$ , $P \leq 2\text{W}$			4.6	5.4	V	1, 2, 3
		$V_{in} = 10\text{V}$ , $I_L = 100\text{mA}$ , $P \leq 2\text{W}$	2		4.7	5.3	V	1
		$V_{in} = 25\text{V}$ , $I_L = 20\text{mA}$ , $P \leq 2\text{W}$			4.6	5.4	V	1
		$V_{in} = 25\text{V}$ , $I_L = 500\text{mA}$ , $P \leq 2\text{W}$ , ( $t_{pw} \leq 10\text{mS}$ )			4.6	5.4	V	1, 2, 3
		$V_{in} = 25\text{V}$ , $P \leq 2\text{W}$	2		4.6	5.4	V	1, 2, 3
Ios	Short Circuit Current	$V_{in} = 35\text{V}$				2	A	1
Rr	Ripple Rejection	$f \leq 120\text{Hz}$ , $e_{in}=1\text{V(rms)}$ , $I_L=125\text{mA}$	5		50		dB	4

- Note 1: This test is performed by shifting the input voltage in 50 mV increments until output reaches 4.706V.
- Note 2: At -55 C & 125 C, I<sub>l</sub> = 200mA rather than 500mA.
- Note 3: Guaranteed parameter not tested.
- Note 4: Pre-Burn-In Stress Test per (SG) RPI-3-371.
- Note 5: Bench test, use 70256655.

### Graphics and Diagrams

GRAPHICS#	DESCRIPTION
08346HR	(blank)
MKT-H03RB	(blank)

See attached graphics following this page.

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Datasheets for electronics components.