

MILITARY DATA SHEET

MNLM108-X REV 0BL

Original Creation Date: 06/29/95
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OPERATIONAL AMPLIFIERS

Industry Part Number

LM108

Prime Die

LM108

NS Part Numbers

LM108H/883
 LM108J-8/883
 LM108J/883

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 PARAMETERS

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

DC: $V_{CC} = \pm 20V$, $V_{CM} = 0V$

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
Vio	Input Offset Voltage	$V_{CM} = -15V$			-2.0	2.0	mV	1
					-3.0	3.0	mV	2, 3
		$V_{CM} = 15V$			-2.0	2.0	mV	1
					-3.0	3.0	mV	2, 3
					-2.0	2.0	mV	1
					-3.0	3.0	mV	2, 3
		$V_{CC} = \pm 5V$			-2.0	2.0	mV	1
		$V_{CC} = \pm 5V$			-3.0	3.0	mV	2, 3
Iio	Input Offset Current	$V_{CM} = -15V$			-0.2	0.2	nA	1
					-0.4	0.4	nA	2, 3
					-0.2	0.2	nA	1
					-0.4	0.4	nA	2, 3
					-0.2	0.2	nA	1
					-0.4	0.4	nA	2, 3
		$V_{CC} = \pm 5V$			-0.2	0.2	nA	1
		$V_{CC} = \pm 5V$			-0.4	0.4	nA	2, 3
Iib+	Input Bias Current	$V_{CM} = -15V$			-0.1	2	nA	1
					-1.0	3.0	nA	2, 3
		$V_{CM} = 15V$			-0.1	2	nA	1
					-1.0	3.0	nA	2, 3
					-0.1	2	nA	1
					-1.0	3.0	nA	2, 3
		$V_{CC} = \pm 5V$			-0.1	2	nA	1
		$V_{CC} = \pm 5V$			-0.1	3.0	nA	2, 3

Electrical Characteristics

DC PARAMETERS(Continued)

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

DC: $V_{CC} = \pm 20V$, $V_{CM} = 0V$

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
Iib-	Input Bias Current	$V_{CM} = -15V$			-0.1	2	nA	1
					-1.0	3.0	nA	2, 3
		$V_{CM} = 15V$			-0.1	2	nA	1
					-1.0	3.0	nA	2, 3
					-0.1	2	nA	1
					-1.0	3.0	nA	2, 3
		$V_{CC} = \pm 5V$			-1.0	2	nA	1
		$V_{CC} = \pm 5V$			-1.0	3.0	nA	2, 3
PSRR	Power Supply Rejection Ratio	$\pm 20V \leq V_{CC} \leq \pm 5V$			80		dB	1, 2, 3
CMRR	Common Mode Rejection Ratio	$-15V \leq V_{CM} \leq 15V$			85		dB	1, 2, 3
Ios+	Short Circuit Current	$V_{CC} = \pm 15V$			-30	-1.0	mA	1, 2, 3
Ios-	Short Circuit Current	$V_{CC} = \pm 5V$			1	30	mA	1, 2, 3
Icc	Power Supply Current					0.6	mA	1
						0.4	mA	2
						0.8	mA	3
Rin	Input Resistance		2		30		MOhm	1

Electrical Characteristics

DC/AC PARAMETERS

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

DC: $V_{cc} = \pm 20V$, $V_{cm} = 0V$

AC: $V_{cc} = \pm 20V$, $V_{cm} = 0V$

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
Vin	Input Voltage Range	$V_{cc} = \pm 15V$	1		± 14		V	1, 2
		$V_{cc} = \pm 15V$	1		± 13.5		V	3
			1		± 15		V	1, 2, 3
Delta Vio/Delta T	Temperature Coefficient of Input Offset Voltage	$25C \leq TA \leq +125C$	4			15	$\mu V/C$	2
		$-55C \leq TA \leq 25C$	4			15	$\mu V/C$	3
Delta Iio/Delta T	Temperature Coefficient of Input Offset Current	$25C \leq TA \leq +125C$	4			2.5	pA/C	2
		$-55C \leq TA \leq 25C$	4			2.5	pA/C	3
Vop+	Output Voltage Swing	$V_{cc} = \pm 15V$, $R_L = 10K \text{ Ohms}$			13		V	4, 5, 6
Vop-	Output Voltage Swing	$V_{cc} = \pm 15V$, $R_L = 10K \text{ Ohms}$				-13	V	4, 5, 6
Avs+	Open Loop Voltage Gain	$V_{cc} = \pm 15V$, $R_L = 10K \text{ Ohms}$, $V_{out} = 0 \text{ to } 10V$	3		50		V/mV	4
		$V_{cc} = \pm 15V$, $R_L = 10K \text{ Ohms}$, $V_{out} = 0 \text{ to } 10V$	3		25		V/mV	5, 6
Avs-	Open Loop Voltage Gain	$V_{cc} = \pm 15V$, $R_L = 10K \text{ Ohms}$, $V_{out} = 0 \text{ to } -10V$	3		50		V/mV	4
		$V_{cc} = \pm 15V$, $R_L = 10K \text{ Ohms}$, $V_{out} = 0 \text{ to } -10V$	3		25		V/mV	5, 6
TR(tr)	Rise Time		2		1		μS	7
TR(os)	Overshoot		2			30	%	7

DC PARAMETERS: DRIFT VALUES

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

DC: $V_{cc} = \pm 20V$, $V_{cm} = 0V$. "Deltas not required on B-Level product. Deltas required for S-Level product ONLY as specified on Internal Processing Instructions (IPI)."

Vio	Input Offset Voltage	$V_{cm} = 15V$			-0.5	0.5	mV	1
Iib+	Input Bias Current	$V_{cm} = 15V$			-1	1	nA	1
Iib-	Input Bias Current	$V_{cm} = 15V$			-1	1	nA	1

Note 1: Parameter tested go-no-go only.

Note 2: Guaranteed parameter not tested.

Note 3: Datalog in K = V/mV.

Note 4: Calculated parameter for Class "S" only.