



MILITARY DATA SHEET

MNLM741A-X REV 0BL

Original Creation Date: 08/07/95
Last Update Date: 12/10/96
Last Major Revision Date: 08/07/95

OPERATIONAL AMPLIFIER

Industry Part Number

LM741A

NS Part Numbers

LM741AH/883

Prime Die

LM741A

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

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
Vio	Input Offset Voltage	$V_{CM} = -15V$			-3	3	mV	1
					-4	4	mV	2, 3
		$V_{CM} = +15V$			-3	3	mV	1
					-4	4	mV	2, 3
					-3	3	mV	1
					-4	4	mV	2, 3
		$+V_{CC} = 5V, -V_{CC} = -5V$			-3	3	mV	1
					-4	4	mV	2, 3
Vio(adj)+	Adjustment for Input Offset Voltage				5		mV	1, 2, 3
Vio(adj)-	Adjustment for Input Offset Voltage					-5	mV	1, 2, 3
Iio	Input Offset Current	$V_{CM} = -15V, R_S = 100K \text{ Ohms}$			-30	30	nA	1, 2
					-70	70	nA	3
		$V_{CM} = +15V, R_S = 100K \text{ Ohms}$			-30	30	nA	1, 2
					-70	70	nA	3
		$R_S = 100K \text{ Ohms}$			-30	30	nA	1, 2
					-70	70	nA	3
		$+V_{CC} = 5V, -V_{CC} = -5V, R_S = 100K \text{ Ohms}$			-30	30	nA	1, 2
					-70	70	nA	3
+Iib	Input Bias Current	$V_{CM} = -15V, R_S = 100K \text{ Ohms}$			1	110	nA	1, 2
					1	265	nA	3
		$V_{CM} = +15V, R_S = 100K \text{ Ohms}$			1	110	nA	1, 2
					1	265	nA	3
		$R_S = 100K \text{ Ohms}$			1	110	nA	1, 2
					1	265	nA	3
		$+V_{CC} = 5V, -V_{CC} = -5V, R_S = 100K \text{ Ohms}$			1	110	nA	1, 2
					1	265	nA	3

Electrical Characteristics

DC PARAMETERS(Continued)

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

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

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
-I _{ib}	Input Bias Current	$V_{cm} = -15V$, $R_s = 100K\ \Omega$ ms			1	110	nA	1, 2
					1	265	nA	3
		$V_{cm} = +15V$, $R_s = 100K\ \Omega$ ms			1	110	nA	1, 2
					1	265	nA	3
		$R_s = 100K\ \Omega$ ms			1	110	nA	1, 2
					1	265	nA	3
		$+V_{cc} = 5V$, $-V_{cc} = -5V$, $R_s = 100K\ \Omega$ ms			1	110	nA	1, 2
					1	265	nA	3
+PSRR	Power Supply Rejection Ratio	$+V_{cc} = 10V$, $-V_{cc} = -20V$			-50	50	uV/V	1
					-100	100	uV/V	2, 3
-PSRR	Power Supply Rejection Ratio	$+V_{cc} = 20V$, $-V_{cc} = -10V$			-50	50	uV/V	1
					-100	100	uV/V	2, 3
CMRR	Common Mode Rejection Ratio	$V_{cm} = -15V$ to $15V$			80		dB	1, 2, 3
I _{os} +	Output Short Circuit Current	$+V_{cc} = 15V$, $-V_{cc} = -15V$			-60		mA	1, 2, 3
I _{os} -	Output Short Circuit Current	$+V_{cc} = 15V$, $-V_{cc} = -15V$				60	mA	1, 2, 3
I _{cc}	Power Supply Current	$+V_{cc} = 15V$, $-V_{cc} = -15V$				3.8	mA	1
						3.4	mA	2
						4.2	mA	3
-A _{vs}	Large Signal (Open Loop) Voltage Gain	$V_{out} = +15V$, $R_l = 2K\ \Omega$ ms	1		50		V/mV	4
			1		25		V/mV	5, 6
+A _{vs}	Large Signal (Open Loop) Voltage Gain	$V_{out} = -15V$, $R_l = 2K\ \Omega$ ms	1		50		V/mV	4
			1		25		V/mV	5, 6
A _{vs}	Large Signal (Open Loop) Voltage Gain	$+V_{cc} = 5V$, $-V_{cc} = -5V$, $V_{out} = \pm 2V$, $R_l = 2K\ \Omega$ ms	1		10		V/mV	4, 5, 6
V _{opp} +	Output Voltage Swing	$R_l = 10K\ \Omega$ ms			16		V	4, 5, 6
		$R_l = 2K\ \Omega$ ms			15		V	4, 5, 6

Electrical Characteristics

DC PARAMETERS(Continued)

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

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

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
Vopp-	Output Voltage Swing	$R_l = 10K\ \Omega$ ms				-16	V	4, 5, 6
		$R_l = 2K\ \Omega$ ms				-15	V	4, 5, 6

AC PARAMETERS

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

AC: $V_{CC} = \pm 20V$, $R_l = 2K\ \Omega$ ms, $C_l = 1000pF$, $A_v = 1$

TR(tr)	Rise Time	Test on LTX				800	nS	7
TR(os)	Overshoot	Test on LTX				25	%	7
Sr+	Slew Rate Rise	$V_{in} = -5V$ to $+5V$, $A_v = 1$			0.3		V/ μ S	7
Sr-	Slew Rate Fall	$V_{in} = +5V$ to $-5V$, $A_v = 1$			0.3		V/ μ S	7

DC PARAMETERS: DRIFT VALUES

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

DC: $V_{CC} = \pm 20V$, $R_s = 0$, $V_{cm} = 0$. "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				-0.5	0.5	mV	1
+Iib	Input Bias Current	$R_s = 100K\ \Omega$ ms			-12	12	nA	1
-Iib	Input Bias Current	$R_s = 100K\ \Omega$ ms			-12	12	nA	1

Note 1: Datalog reading in K = V/mV.