

MNLM747A-X REV 0BLOriginal Creation Date: 08/07/95
Last Update Date: 11/12/98
Last Major Revision Date: 08/07/95**DUAL OPERATIONAL AMPLIFIER****Industry Part Number**

LM747A

NS Part NumbersLM747AH-MIL
LM747AJ-MIL**Prime Die**

LMJ747

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: $V_{CC} = \pm 20V$, $V_{CM} = 0$, $R_S = 50\ \Omega$

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
Vio	Input Offset Voltage	Rl = 2K			-3	3	mV	1
					-4	4	mV	2, 3
		$V_{CC} = \pm 5V$, Rl = 2K			-3	3	mV	1
		$V_{CC} = \pm 5V$, Rl = 2K			-4	4	mV	2, 3
Iio	Input Offset Current				-30	30	nA	1
					-70	70	nA	2, 3
		$V_{CC} = \pm 5V$			-30	30	nA	1
		$V_{CC} = \pm 5V$			-70	70	nA	2, 3
Iib+	Input Bias Current					80	nA	1
						210	nA	2, 3
		$V_{CC} = \pm 5V$				80	nA	1
		$V_{CC} = \pm 5V$				210	nA	2, 3
Iib-	Input Bias Current					80	nA	1
						210	nA	2, 3
		$V_{CC} = \pm 5V$				80	nA	1
		$V_{CC} = \pm 5V$				210	nA	2, 3
Vioadj+	Input Offset Voltage Adjustment Range		3		6		mV	1, 2, 3
Vioadj-	Input Offset Voltage Adjustment Range		3			-6	mV	1, 2, 3
PSRR+	Power Supply Rejection Ratio	$+V_{CC} = 20V$ to $10V$, $-V_{CC} = -20V$				50	uV/V	1
						100	uV/V	2, 3
PSRR-	Power Supply Rejection Ratio	$-V_{CC} = -20V$ to $-10V$, $+V_{CC} = 20V$				50	uV/V	1
						100	uV/V	2, 3
CMRR	Common Mode Rejection Ratio	$V_{CM} = \pm 15V$			80		dB	1, 2, 3

Electrical Characteristics

DC PARAMETERS(Continued)

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

DC: $V_{CC} = \pm 20V$, $V_{CM} = 0$, $R_S = 50\ \Omega$

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
Ios+	Output Short Circuit Current	Vout = -20V			-40	-9	mA	1
					-45	-9	mA	2
					-50	-9	mA	3
		Vout = -5V, $V_{CC} = \pm 5V$			-40	-9	mA	1
		Vout = -5V, $V_{CC} = \pm 5V$			-45	-9	mA	2
		Vout = -5V, $V_{CC} = \pm 5V$			-50	-9	mA	3
Ios-	Output Short Circuit Current	Vout = 20V			9	40	mA	1
					9	45	mA	2
					9	50	mA	3
		Vout = 5V, $V_{CC} = \pm 5V$			9	40	mA	1
		Vout = 5V, $V_{CC} = \pm 5V$			9	45	mA	2
		Vout = 5V, $V_{CC} = \pm 5V$			9	50	mA	3
Icc	Supply Current	Vout = 0				5.6	mA	1
						5.0	mA	2
						6.6	mA	3
Rin	Input Resistance				1.0		M Ω ms	1
					0.5		M Ω ms	2
Vop+	Output Voltage Swing	Rl = 10K Ω ms			16		V	1, 2, 3
		Rl = 2K Ω ms			15		V	1, 2, 3
		$V_{CC} = \pm 15V$, Rl = 10K Ω ms			12		V	1, 2, 3
		$V_{CC} = \pm 15V$, Rl = 2K Ω ms			10		V	1, 2, 3
Vop-	Output Voltage Swing	Rl = 10K Ω ms				-16	V	1, 2, 3
		Rl = 2K Ω ms				-15	V	1, 2, 3
		$V_{CC} = \pm 15V$, Rl = 10K Ω ms				-12	V	1, 2, 3
		$V_{CC} = \pm 15V$, Rl = 2K Ω ms				-10	V	1, 2, 3

Electrical Characteristics

DC PARAMETERS(Continued)

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

DC: $V_{cc} = \pm 20V$, $V_{cm} = 0$, $R_s = 50\ \Omega$

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
Avs+	Open Loop Voltage Gain	Vout = 0 to +15V, $R_l = 2K\ \Omega$ ms	4		50		V/mV	1
			4		32		V/mV	2, 3
		$V_{cc} = \pm 5V$, Vout = 0 to 2V, $R_l = 2K$			10		V/mV	1, 2, 3
Avs-	Open Loop Voltage Gain	Vout = 0 to -15V, $R_l = 2K\ \Omega$ ms	4		50		V/mV	1
			4		32		V/mV	2, 3
		$V_{cc} = \pm 5V$, Vout = 0 to -2V, $R_l = 2K$			10		V/mV	1, 2, 3
Vin	Input Voltage Range		1		-15	15	V	1, 2, 3
Vopp	Output Voltage Swing	$V_{cc} = \pm 5V$	2		-2	2	V	1, 2, 3
Cs	Channel Separation	Vin = $\pm 10V$, CH A to B			100		dB	1, 2, 3
		Vin = $\pm 10V$, CH B to A			100		dB	1, 2, 3
Pc	Power Consumption (Total)		5			300	mW	1
			5			270	mW	2
			5			330	mW	3

AC PARAMETERS

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

AC: $V_{cc} = \pm 20V$, $V_{cm} = 0$, $R_s = 50\ \Omega$

Sr+	Slew Rate	Av = 1, Vin = -5V to +5V, $R_l = 2K\ \Omega$ ms			0.3		V/ μ S	9
Sr-	Slew Rate	Av = 1, Vin = +5V to -5V, $R_l = 2K\ \Omega$ ms			0.3		V/ μ S	9
Gbw	Gain Bandwidth	Vin = 50mV, f = 20Khz, $R_l = 2K\ \Omega$ ms			0.25		Mhz	9
tr	Rise Time	Vin = 50mV, $R_l = 2K$, Av = 1, Cl = 100pF	6			800	nS	9
os	Overshoot	Vin = 50mV, $R_l = 2K$, Av = 1, Cl = 100pF	6			25	%	9

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

Note 2: Guaranteed by Gain test.

Note 3: Tested for Dips and FPacks ONLY.

Note 4: Datalog reading in K = V/mV for Teradyne J-273 ONLY.

Note 5: Guaranteed by Icc Test: Pc = 40XIcc.

Note 6: Periodic Group C Test.

Revision History

Rev	ECN #	Rel Date	Originator	Changes
0BL	M0001705	11/12/98	Barbara Lopez	Changed: MNLM747A-X Rev. 0AL to MNLM747A-X Rev. 0BL.