



**MILITARY DATA SHEET**

**MNLM747-X REV OBL**

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

**DUAL OPERATIONAL AMPLIFIER**

**Industry Part Number**

LM747

**NS Part Numbers**

LM747H/883  
LM747J/883

**Prime Die**

LM747

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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 PARAMETERS

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

DC:  $V_{cc} = \pm 15V$ ,  $V_{cm} = 0$

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS	
Vio	Input Offset Voltage	$R_s = 50 \text{ Ohms}$ , $V_{cm} = -12V$			-5	5	mV	1	
					-6	6	mV	2, 3	
		$R_s = 50 \text{ Ohms}$ , $V_{cm} = 12V$			-5	5	mV	1	
					-6	6	mV	2, 3	
		$R_s = 50 \text{ Ohms}$			-5	5	mV	1	
					-6	6	mV	2, 3	
	$R_s = 50 \text{ Ohms}$ , $V_{cc} = \pm 5V$			-5	5	mV	1		
	$R_s = 50 \text{ Ohms}$ , $V_{cc} = \pm 5V$			-6	6	mV	2, 3		
Iio	Input Offset Current	$V_{cm} = -12V$			-200	200	nA	1	
					-500	500	nA	2, 3	
		$V_{cm} = 12V$			-200	200	nA	1	
					-500	500	nA	2, 3	
			$V_{cc} = \pm 5V$			-200	200	nA	1
			$V_{cc} = \pm 5V$			-500	500	nA	2, 3
Iib+	Input Bias Current	$V_{cm} = -12V$			0	500	nA	1	
					0	1500	nA	2, 3	
		$V_{cm} = 12V$			0	500	nA	1	
					0	1500	nA	2, 3	
			$V_{cc} = \pm 5V$			0	500	nA	1
			$V_{cc} = \pm 5V$			0	1500	nA	2, 3

## Electrical Characteristics

### DC PARAMETERS (Continued)

(The following conditions apply to all the following parameters, unless otherwise specified.)  
DC:  $V_{cc} = \pm 15V$ ,  $V_{cm} = 0$

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
Iib-	Input Bias Current	$V_{cm} = -12V$			0	500	nA	1
					0	1500	nA	2, 3
		$V_{cm} = 12V$			0	500	nA	1
					0	1500	nA	2, 3
					0	500	nA	1
					0	1500	nA	2, 3
		$V_{cc} = \pm 5V$			0	500	nA	1
		$V_{cc} = \pm 5V$			0	1500	nA	2, 3
Vioadj+	Input Offset Voltage Adjustment Range		4		6		mV	1, 2, 3
Vioadj-	Input Offset Voltage Adjustment Range		4			-6	mV	1, 2, 3
PSRR+	Power Supply Rejection Ratio	$R_s = 50 \text{ Ohms}$ , $V_{cc} = \pm 15V$ to $\pm 5V$			77		dB	1, 2, 3
PSRR-	Power Supply Rejection Ratio	$R_s = 50 \text{ Ohms}$ , $V_{cc} = \pm 15V$ to $\pm 5V$			77		dB	1, 2, 3
CMRR	Common Mode Rejection Ratio	$R_s = 50 \text{ Ohms}$ , $V_{cm} = \pm 12V$			70		dB	1, 2, 3
Ios+	Output Short Circuit Current				-45	-9	mA	1, 2
					-50	-9	mA	3
Ios-	Output Short Circuit Current				9	45	mA	1, 2
					9	50	mA	3
Icc	Supply Current					5.6	mA	1
						5	mA	2
						6.6	mA	3
Vop+	Output Voltage Swing	$R_l = 10K \text{ Ohms}$			12		V	1, 2, 3
		$R_l = 2K \text{ Ohms}$			10		V	1, 2, 3
		$V_{cc} = \pm 20V$ , $R_l = 10K \text{ Ohms}$			16		V	1, 2, 3
		$V_{cc} = \pm 20V$ , $R_l = 2K \text{ Ohms}$			15		V	1, 2, 3

## Electrical Characteristics

### DC PARAMETERS (Continued)

(The following conditions apply to all the following parameters, unless otherwise specified.)  
DC:  $V_{cc} = \pm 15V$ ,  $V_{cm} = 0$

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
Vop-	Output Voltage Swing	$R_l = 10K \text{ Ohms}$				-12	V	1, 2, 3
		$R_l = 2K \text{ Ohms}$				-10	V	1, 2, 3
		$V_{cc} = \pm 20V$ , $R_l = 10K \text{ Ohms}$				-16	V	1, 2, 3
		$V_{cc} = \pm 20V$ , $R_l = 2K \text{ Ohms}$				-15	V	1, 2, 3
Avs+	Open Loop Voltage Gain	$V_{out} = 0 \text{ to } +10V$ , $R_l = 2K$	3		50		V/mV	1
					25		V/mV	2, 3
Avs-	Open Loop Voltage Gain	$V_{out} = 0 \text{ to } -10V$ , $R_l = 2K$	3		50		V/mV	1
					25		V/mV	2, 3
Vin	Input Voltage Range		1		$\pm 12$		V	1, 2, 3
Vopp	Output Voltage Swing	$V_{cc} = \pm 5V$	2		$\pm 2$		V	1, 2, 3

### AC PARAMETERS

(The following conditions apply to all the following parameters, unless otherwise specified.)  
AC:  $V_{cc} = \pm 15V$ ,  $V_{cm} = 0$

Sr+	Slew Rate	$A_v = 1$ , $V_{in} = -5V \text{ to } +5V$			0.2		V/uS	9
Sr-	Slew Rate	$A_v = 1$ , $V_{in} = +5V \text{ to } -5V$			0.2		V/uS	9
Gbw	Gain Bandwidth	$V_{in} = 50mV$ , $f = 20KHz$ , $R_l = 2K \text{ Ohms}$			0.25		Mhz	9

### DC PARAMETERS: DRIFT VALUES

(The following conditions apply to all the following parameters, unless otherwise specified.)  
DC:  $V_{cc} = \pm 15V$ ,  $V_{cm} = 0$ . "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	$R_s = 50 \text{ Ohms}$			-1	1	mV	1
Iib+	Input Bias Current				-50	50	nA	1
Iib-	Input Bias Current				-50	50	nA	1

Note 1: Parameter tested go-no-go only.  
Note 2: Guaranteed parameter, not tested.  
Note 3: Datalog reading in K = V/mV for Teradyne J-273 ONLY.  
Note 4: Tested for Dips and Flats only.