



MILITARY DATA SHEET

MNLM146-X REV OBL

Original Creation Date: 07/26/95
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PROGRAMMABLE QUAD OP AMP

Industry Part Number

LM146

NS Part Numbers

LM146J/883

Prime Die

LM146

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: $V_s = \pm 15V$, $I_{set} = 10\mu A$

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
Vio	Input Offset Voltage	$I_{set} = 1\mu A$, $V_{cm} = 0$			-5	5	mV	1
		$V_{cm} = 0$			-5	5	mV	1
		$V_s = \pm 1.5V$, $V_{cm} = 0$			-6	6	mV	2, 3
+Iib	Input Bias Current	$I_{set} = 1\mu A$, $V_{cm} = 0$			-20	-0	nA	1
		$V_{cm} = 0$			-100	-1	nA	1, 2, 3
-Iib	Input Bias Current	$I_{set} = 1\mu A$, $V_{cm} = 0$			-20	-0	nA	1
		$V_{cm} = 0$			-1	-100	nA	1, 2, 3
Iio	Input Offset Current	$V_{cm} = 0$			-20	20	nA	1
					-25	25	nA	2, 3
CMRR	Common Mode Rejection Ratio	$V_{cm} = \pm 13.5V$			80		dB	1
		$V_{cm} = \pm 13.5V$			70		dB	2, 3
PSRR	Power Supply Rejection Ratio	$\pm 15V \leq V_s \leq \pm 5V$			80		dB	1
		$\pm 15V \leq V_s \leq \pm 5V$			70		dB	2, 3
Icc	Supply Current	$I_{set} = 1\mu A$				250	μA	1
						2	mA	1
						2.2	mA	2, 3
+Avs	Open Loop Voltage Gain	$V_o = 0V$ to $10V$, $R_l = 10K$	1		100		V/mV	1
			1		50		V/mV	2, 3
-Avs	Open Loop Voltage Gain	$V_o = 0V$ to $-10V$, $R_l = 10K$	1		100		V/mV	1
			1		50		V/mV	2, 3
Vop+	Output Voltage Swing	$V_s = \pm 1.5V$, $R_l = 10K$			0.6		V	1
		$R_l = 10K$ Ohms, $R_l = 10K$			12		V	1, 2, 3
Vop	Output Voltage Swing	$V_s = \pm 1.5V$, $R_l = 10K$				-0.6	V	1
		$R_l = 10K$ Ohms, $R_l = 10K$				-12	V	1, 2, 3
Ios+	Output Short Circuit Current				-35	-5	mA	1
Ios-	Output Short Circuit Current				5	35	mA	1

Electrical Characteristics

AC PARAMETERS

(The following conditions apply to all the following parameters, unless otherwise specified.)
 AC: $V_s = \pm 15V$, $I_{set} = 10\mu A$

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
Gbw-	Gain Bandwidth				800		KHz	1
		$I_{set} = 1\mu A$			80		KHz	1

DC PARAMETERS: DRIFT VALUES

(The following conditions apply to all the following parameters, unless otherwise specified.)
 DC: $V_s = \pm 15V$, $I_{set} = 10\mu A$. "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	$V_{cm} = 0$			-1	1	mV	1
+Iib	Input Bias Current	$V_{cm} = 0$			-20	20	nA	1
-Iib	Input Bias Current	$V_{cm} = 0$			-20	20	nA	1

Note 1: For Teradyne only - datalog reading in K = V/mV.